

June 15, 2015

Mr. Chris Canfield
Department of Natural Resources
Colorado Oil and Gas Conservation Commission
1120 Lincoln Street, Suite 801
Denver, Colorado 80203-2136

**RE: Remediation Activity 2013/2014 Annual Report
Encana Oil & Gas (USA) Inc.
Ione 4 Tank Battery
API 05-123-07455
COGCC Remediation # 5130
Weld County, Colorado**

Dear Mr. Canfield:

Rule Engineering, LLC, has prepared this report on behalf of Encana Oil and Gas (USA), Inc., to summarize activities conducted in 2013/ 2014 to address petroleum hydrocarbon impacts at the Ione 4 Tank Battery (site). The site is located approximately 2.5 miles northeast of the intersection of County Road (CR) 22 and CR 31, Weld County, Colorado (Figure 1).

BACKGROUND

A site investigation was completed on September 29, 2011. Three borings were completed and temporary one-inch monitoring wells were installed. Soil samples were collected from each location. The soil sample from SB-02 was reported above the COGCC Table 910 allowable limit for total petroleum hydrocarbons (TPH) at 880 mg/kg. Benzene was reported above the allowable limit for groundwater in sample SB-02 during the fourth quarter 2011 and first quarter 2012 monitoring events.

An excavation was completed the week of March 23, 2012, in the vicinity of SB-02. The excavation was approximately 40 feet east to west, 40 feet north to south and averaged 17 feet in depth. Monitoring well SB-02 was destroyed during excavation activities. Five sidewall samples and one floor sample were collected from the excavation area. All samples were reported below the COGCC Table 910 allowable limits for benzene, toluene, ethylbenzene, and xylenes (BTEX) and TPH. A fourth soil boring, SB-04, was completed on May 8, 2012 as a temporary monitoring well. Groundwater monitoring has continued at the site well installation.

ADDITIONAL SITE ASSESSMENT

On July 8, 2014, five two-inch permanent monitoring wells, MW-01 through MW-05 were installed to replace the temporary wells. The wells were installed to 17.5 feet below ground surface (bgs) using a truck-mounted drill rig and hollow stem augers. Boring logs and well completion summaries are included as Attachment A. A site map is included as Figure 2. Soil samples were collected from each location. BTEX was reported below the COGCC Table 910 allowable limit in all wells. TPH was reported above the allowable limit at 1,360 mg/kg in MW-02. Soil analytical data is summarized in Table 1 and a soil analytical map is included as Figure 3. Laboratory reports are included as Attachment B.

2013 MONITORING RESULTS

Groundwater samples were collected from each well and analyzed quarterly for BTEX. Quarterly groundwater monitoring was conducted on February 11, 2013, May 20, 2013, August 14, 2013, and November 13, 2013. The one-inch monitoring wells were not surveyed before they were destroyed. Groundwater flow was estimated to be to the north east.

During 2013, BTEX was reported below the COGCC Table 910 allowable limits in SB-01 and SB-04. Benzene, toluene, and ethylbenzene were reported below the allowable limit in SB-03. Xylenes were reported above the allowable limit in SB-03 during first, third, and fourth quarter 2013.

2014 MONITORING RESULTS

Quarterly groundwater monitoring was conducted on the one-inch monitoring wells on March 11, 2014 and June 11, 2014. The replacement monitoring wells were sampled on September 23, 2014 and December 18, 2014. Prior to sampling, groundwater depth is measured in each well and temperature, specific conductivity, dissolved oxygen, pH, and oxidation reduction potential parameters are taken with a field instrument and recorded. Groundwater ranged from a depth of 11.56 feet bgs in MW-04 on September 23, 2014, to 13.02 feet bgs in MW-03 on December 18, 2014. Groundwater flow is to the northwest. Groundwater measurements and field parameters are summarized in Table 2 and groundwater elevation maps from third and fourth quarter 2014 are included as Figures 4a and 4b.

Monitoring wells SB-01 and SB-04 were reported below the COGCC Table 910 allowable limit for BTEX during first and second quarter. Xylenes were reported above the allowable limit in SB-03 during first and second quarter. Monitoring wells MW-01, MW-04, and MW-05 were reported below the allowable limits for BTEX during third and fourth quarter. Monitoring well MW-02, near the former SB-02 location, had benzene reported above the allowable limit during third and fourth quarter 2014, and decreased between quarters. Monitoring well MW-03, located southwest of the former SB-03 location, had xylenes reported below the allowable limit in third quarter 2014 and increased to 3,300 µg/L in fourth quarter 2014.

CONCLUSION

Benzene has been detected above the COGCC Table 910 allowable limit in MW-02 since the well was installed in July 2014. Xylene concentrations in SB-02 decreased before the well was destroyed, but remained above the allowable limit. Xylene was detected above the allowable limit for the first time in MW-03 during fourth quarter 2014. Further assessment will be conducted at the site to address remaining hydrocarbon impacts in groundwater. Per Water Quality Regulation 41, groundwater monitoring will continue until four consecutive quarters of groundwater samples below the Table 910 levels have been obtained in order to request closure.

If you have any questions please contact myself or Russell Knight at (303) 431-8500

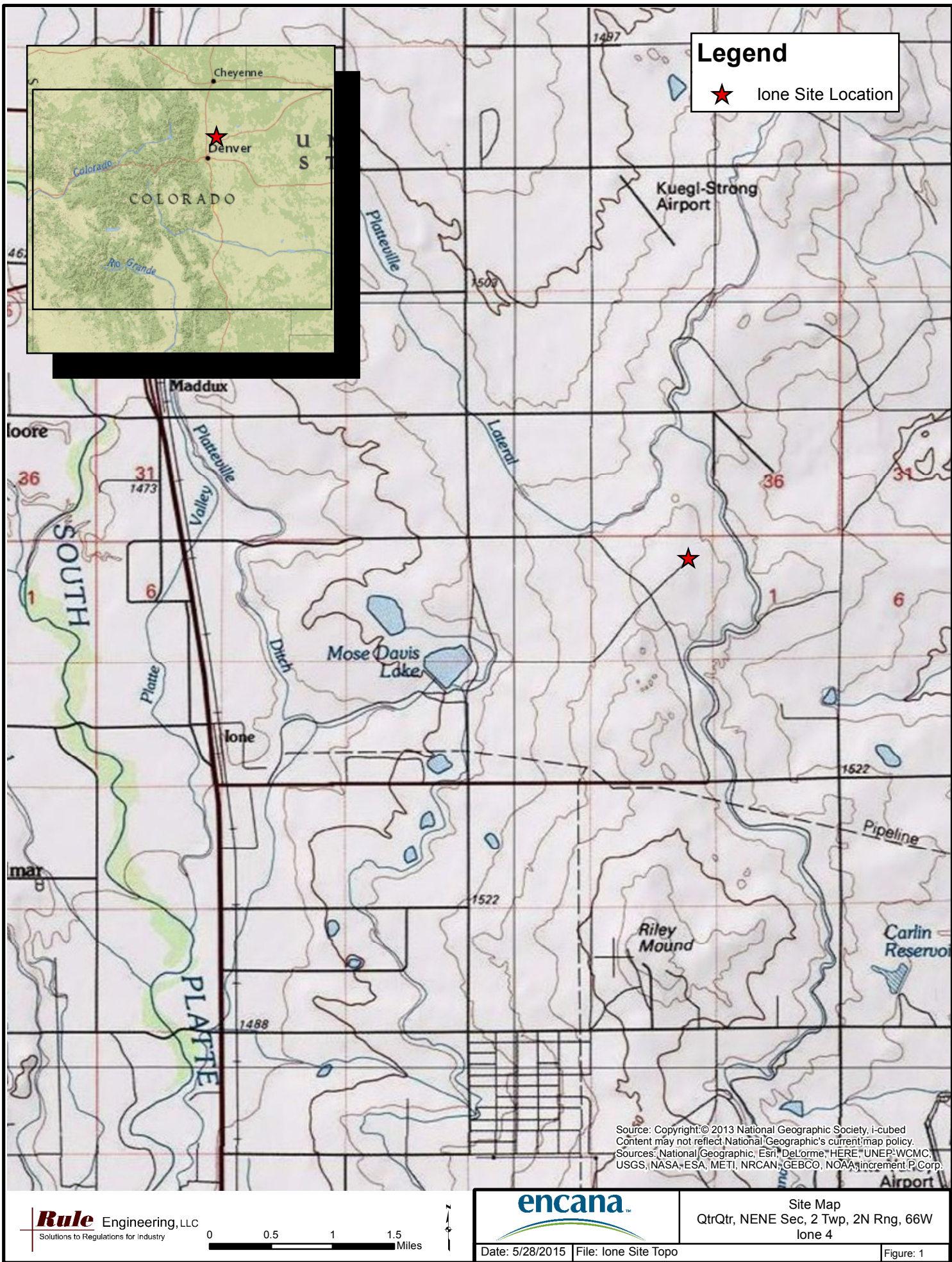
Sincerely,
Rule Engineering, LLC

Tracy Loftus

Tracy Loftus
Project Scientist

Cc: Blake Ford, Encana

Attachment A- Bore Logs
Attachment B- Laboratory Reports

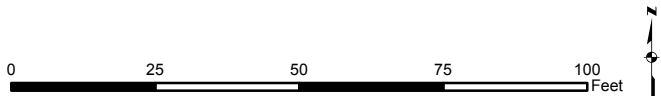


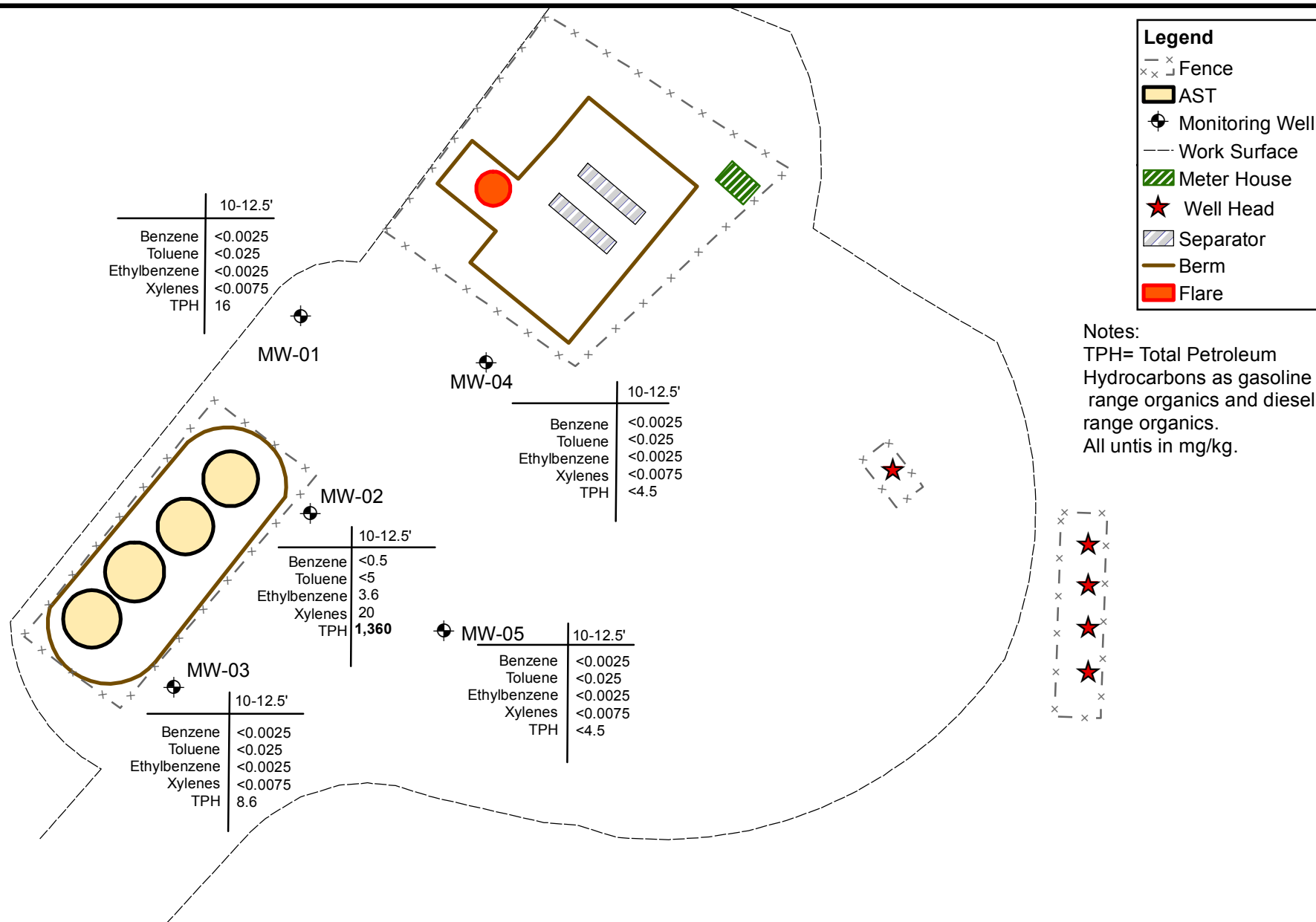


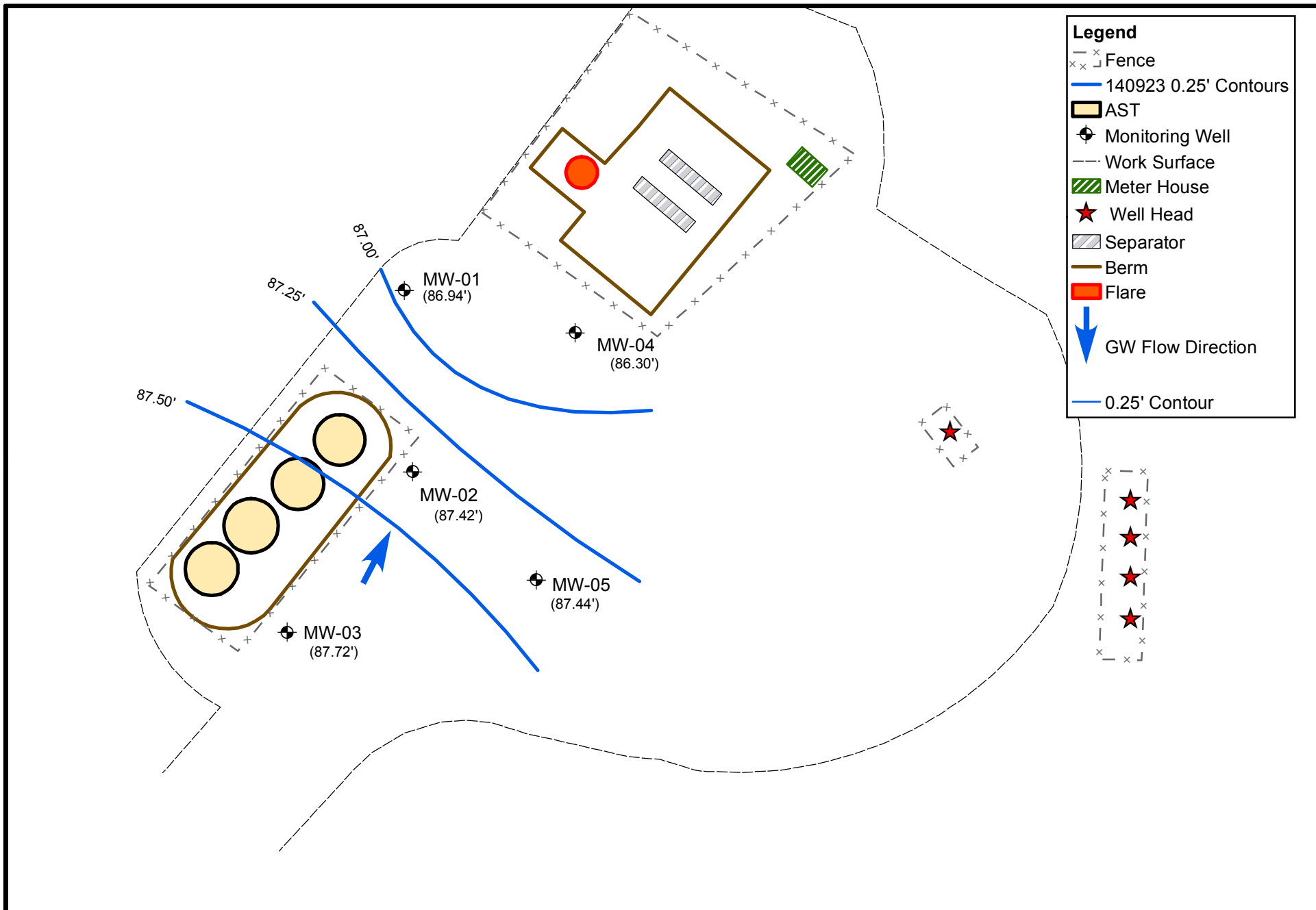
Legend

- ★ Well Head
- ⊕ Monitoring Well
- x-x- Fence
- AST
- ▨ Meter House
- ▨ Separator
- Flare
- Berm

Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

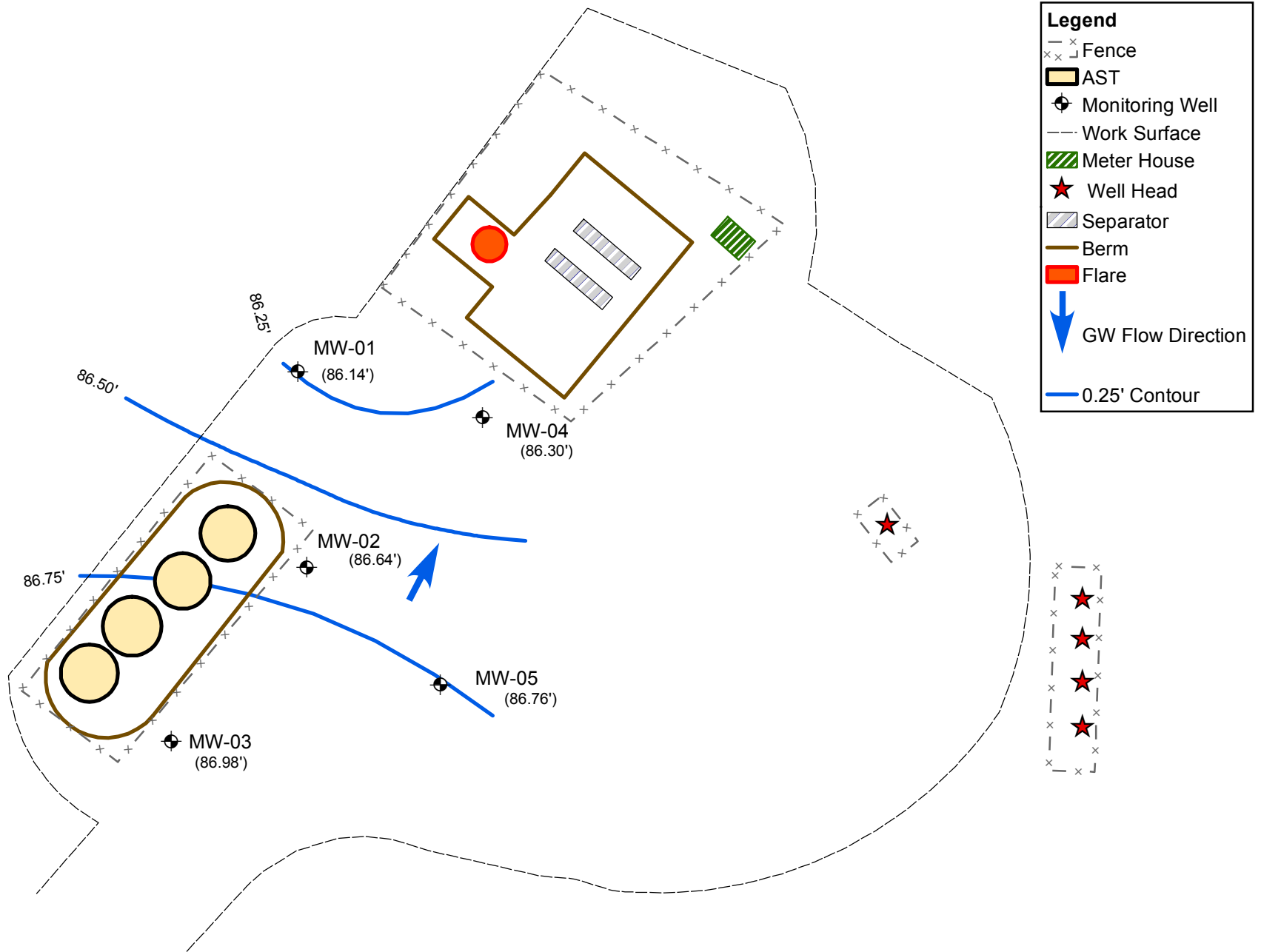


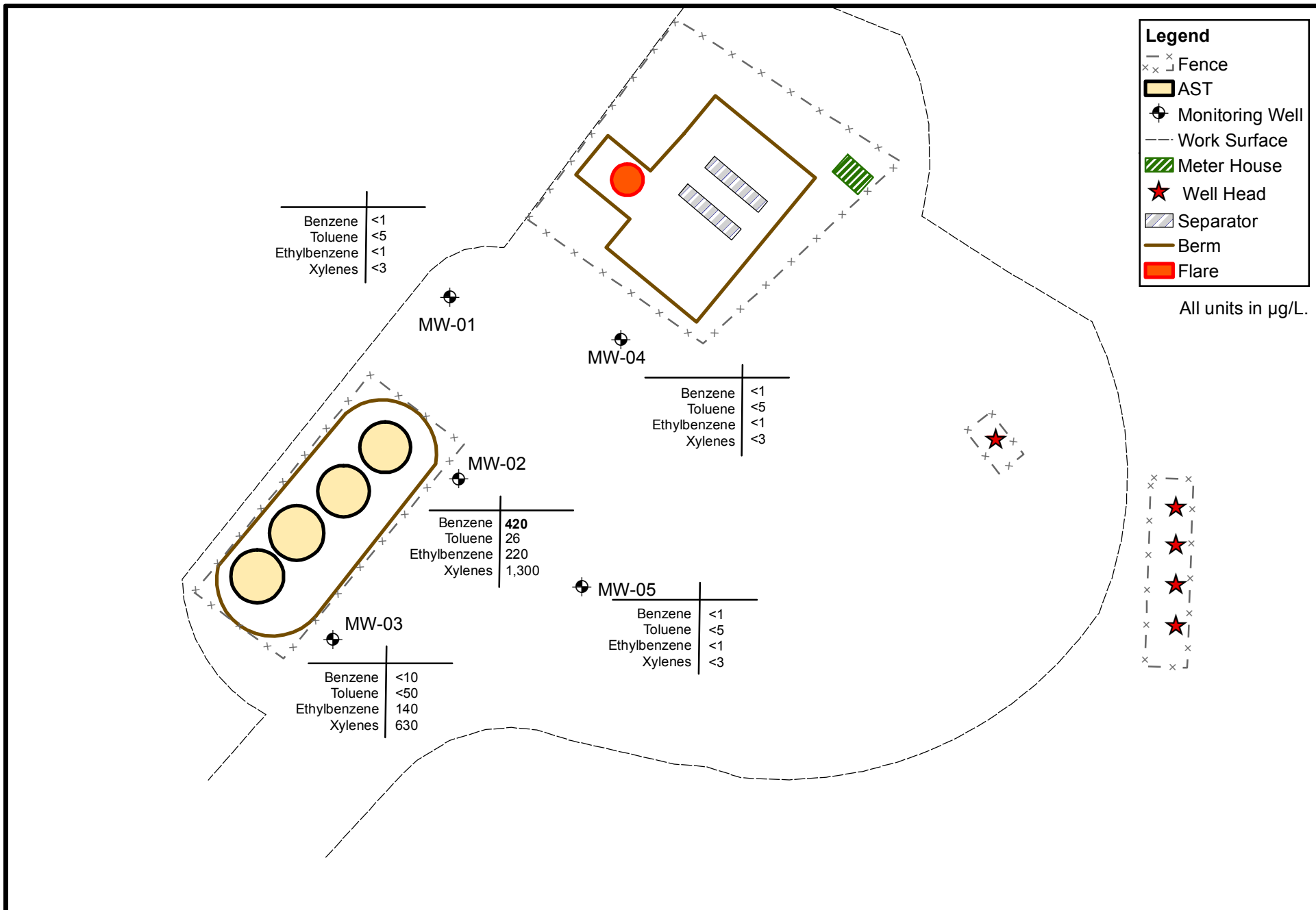




Legend

- x — x — Fence
- 140923 0.25' Contours
- AST
- Monitoring Well
- Work Surface
- Meter House
- Well Head
- Separator
- Berm
- Flare
- GW Flow Direction
- 0.25' Contour





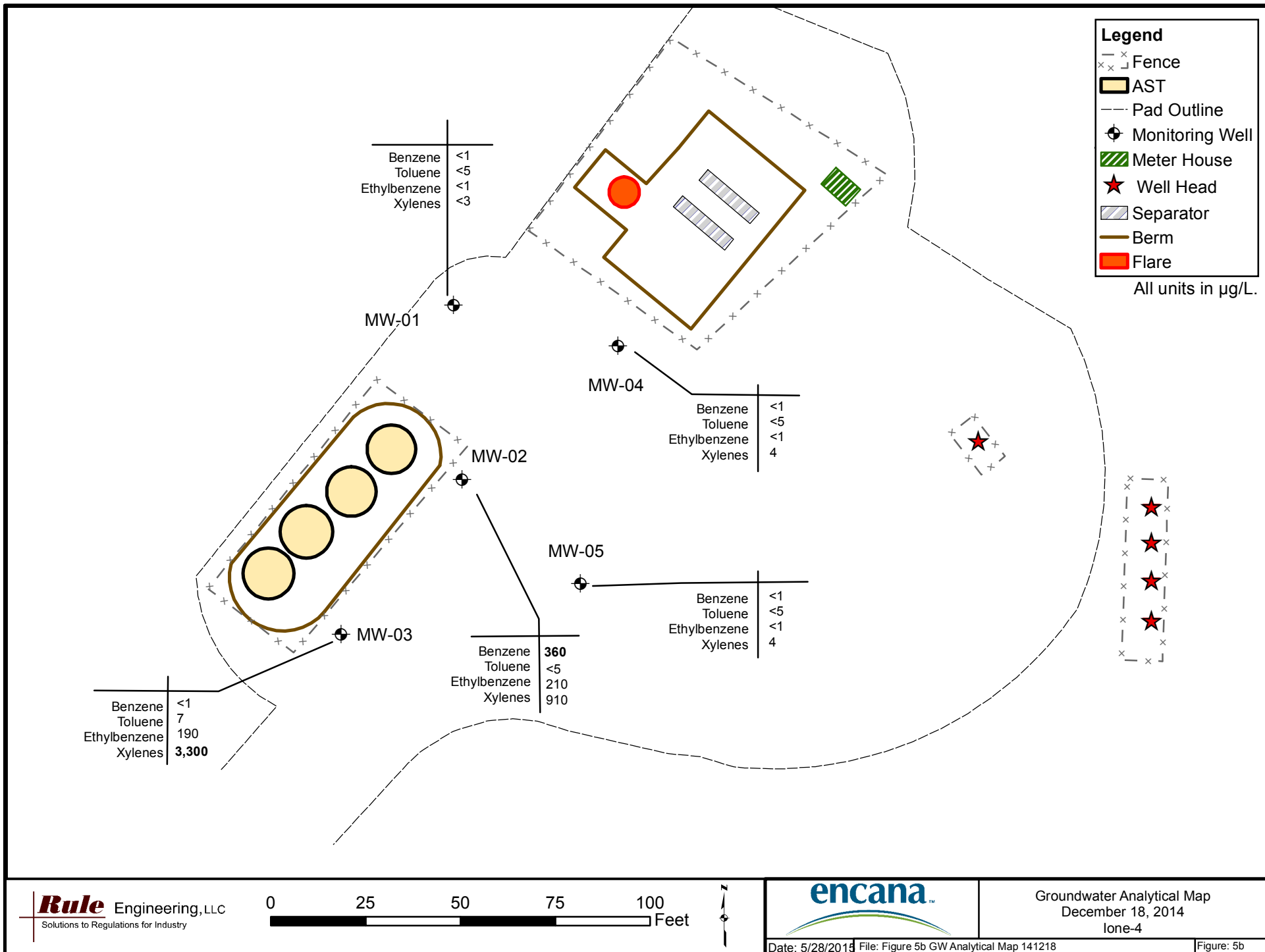


TABLE 1 - SOIL ANALYTICAL RESULTS
IONE 4 TANK BATTERY
WELD COUNTY, COLORADO
ENCANA OIL & GAS (USA) INC.

Sample ID	Date	Depth (Feet)	PID (ppm)	BTX/TPH						
				Benzene	Toluene	Ethylbenzene	Total Xylene	TPH-GRO	TPH-DRO	TPH
COGCC Table 910-1 Limit				0.17	85	100	175			500
MW-01	7/8/2014	10-12.5	5.5	<0.0025	<0.025	<0.0025	<0.0075	<0.5	16	16
MW-02	7/8/2014	10-12.5	1,451	<0.5	<5	3.6	20	800	560	1,360
MW-03	7/8/2014	10-12.5	949.3	<0.0025	<0.025	<0.0025	<0.0075	<0.5	8.6	8.6
MW-04	7/8/2014	10-12.5	5.5	<0.0025	<0.025	<0.0025	<0.0075	<0.5	<4	<4.5
MW-05	7/8/2014	10-12.5	0.9	<0.0025	<0.025	<0.0025	<0.0075	<0.5	<4	<4.5

Sample ID	Date	Metals											
		Arsenic	Barium	Cadmium	Chromium III	Chromium VI	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc
COGCC Table 910-1 Limit		0.39	15000	70	120000	23	3100	400	23	1600	390	390	23000
MW-02	7/8/2014	2.1	30	≤0.5	4.1	≤2	3.3	4.4	≤0.02	3.7	≤2	≤1	16

Sample ID	Date	PAHs												Inorganics			
		Anthracene	Acenaphthene	Benzo(A)anthracene	Benzo(A)pyrene	Benzo(B)fluoranthene	Benzo(K)fluoranthene	Chrysene	Dibenzo(A,H)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3,C)Dipylene	Naphthalene	Pyrene	pH (su)	Sodium Adsorption Ratio (calc)	Electrical Conductance (umhos/cm)
		1000	1000	0.22	0.022	0.22	2.2	22	0.022	1000	1000	0.22	23	1000	6-9	<12 ³	<4000
MW-02	7/8/2014	0.02	0.035	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	0.066	<0.006	0.28	<0.006	8.4	2.5	150

COGCC = Colorado Oil and Gas Conservation Commission

All units in mg/kg unless otherwise noted

TPH-GRO = Total Petroleum Hydrocarbons - Gasoline Range Organics

TPH-DRO = Total Petroleum Hydrocarbons - Diesel Range Organics

Note: Values presented in bold typeface exceed their respective COGCC Table 910-1 Regulatory Limits.

< = indicates result is less than the stated laboratory reporting limit

* = data not available

**TABLE 2- GROUNDWATER ELEVATION SUMMARY AND WATER QUALITY FIELD PARAMETERS
 IONE 4 TANK BATTERY
 WELD COUNTY, COLORADO
 ENCANA OIL & GAS (USA) INC.**

Sample ID	Date	Depth to Water (feet)	Groundwater Elevation (feet)	Groundwater Quality Field Parameters				
				Temperature (°C)	Conductivity (µS/cm)	ORP (mV)	Dissolved Oxygen (mg/L)	pH (SU)
MW-01	9/23/2014	11.66	86.94	17.30	1,322	-152.7	1.97	6.82
MW-01	12/18/2014	12.46	86.14	13.31	1,350	-21.0	0.69	8.02
TOC Elevation (ft) 98.60								
MW-02	9/23/2014	11.81	87.42	18.50	2,483	-231.2	2.25	6.45
MW-02	12/18/2014	12.59	86.64	13.49	2,451	-48.9	1.04	7.88
TOC Elevation (ft) 99.23								
MW-03	9/23/2014	12.28	87.72	18.50	1,124	-226.4	2.31	6.66
MW-03	12/18/2014	13.02	86.98	13.66	1,257	-57.3	0.57	8.10
TOC Elevation (ft) 100.00								
MW-04	9/23/2014	11.56	87.06	18.20	1,710	-215.1	1.75	6.64
MW-04	12/18/2014	12.32	86.30	13.35	1,767	-40.0	0.44	7.97
TOC Elevation (ft) 98.62								
MW-05	9/23/2014	11.78	87.44	18.40	713	-185.1	1.95	7.22
MW-05	12/18/2014	12.46	86.76	13.58	754	-25.3	1.41	8.21
TOC Elevation (ft) 99.22								

NOTES:

TOC - top of casing

*- information not available

°C - degrees Celsius

µS/cm - microsiemens per centimeter

mg/L - milligram per liter

SU - standard unit

TABLE 3- GROUNDWATER ANALYTICAL RESULTS - ORGANIC COMPOUNDS
IONE 4 TANK BATTERY
WELD COUNTY, COLORADO
ENCANA OIL & GAS (USA) INC.

Sample ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
COGCC Table 910-1 Limit		5	560	700	1,400
MW-01	9/23/2014	<1	<5	<1	<3
MW-01	12/18/2014	<1	<5	<1	<3
MW-02	9/23/2014	420	26	220	1,300
MW-02	12/18/2014	360	<5	210	910
MW-03	9/23/2014	<10	<50	140	360
MW-03	12/18/2014	<1	6.9	190	3,300
MW-04	9/23/2014	<1	<5	<1	<3
MW-04	12/18/2014	<1	<5	<1	3.9
MW-05	9/23/2014	<1	<5	<1	<3
MW-05	12/18/2014	<1	<5	<1	3.7
SB-01	10/6/2011	<1.0	<1.0	<1.0	<1.0
SB-01	1/6/12	<1.0	<1.0	<1.0	<1.0
SB-01	4/12/12	<1.0	<1.0	<1.0	<1.0
SB-01	8/8/12	<1.0	<1.0	<1.0	<1.0
SB-01	11/13/12	<1.0	<1.0	<1.0	<1.0
SB-01	2/11/13	<1.0	<1.0	<1.0	<3.0
SB-01	5/20/13	<0.5	<5.0	<0.5	1.7
SB-01	8/14/13	<1.0	<5.0	<1.0	<3.0
SB-01	11/13/2013	<1.0	<5.0	<1.0	<3.0
SB-01	3/11/2014	<1.0	<5.0	<1.0	<3.0
SB-01	6/11/2014	<1.0	<5.0	<1.0	<3.0
SB-03	10/6/2011	<1.0	13	67	7,700
SB-03	1/6/2012	1.2	3.8	1,600	6,000
SB-03	4/12/2012	<1.0	12	36	12,000
SB-03	8/8/2012	<1.0	6	190	2,200
SB-03	11/13/2012	<1.0	5.3	230	6,000
SB-03	2/11/2013	<1.0	2.81	56.8	3,830
SB-03	5/20/2013	2.8	26	76.0	1,200
SB-03	8/14/2013	<1.0	<5.0	<1.0	2,600
SB-03	11/13/2013	<5.0	<25	230	3,300
SB-03	3/11/2014	<1.0	<5.0	230	3,700
SB-03	6/11/2014	<20	<100	210	3,400
SB-04	5/11/2012	<1.0	<1.0	<1.0	<1.0
SB-04	8/8/2012	<1.0	<1.0	<1.0	<1.0
SB-04	11/13/2012	NOT SAMPLED - WELL DRY			
SB-04	2/11/2013	<1.0	<1.0	<1.0	<3.0
SB-04	5/20/2013	<0.5	<5.0	<0.5	<1.5
SB-04	8/14/2013	<1.0	<5.0	<1.0	<3.0
SB-04	11/13/2013	<1.0	<5.0	<1.0	<3.0
SB-04	3/11/2014	<1.0	<5.0	<1.0	<3.0
SB-04	6/11/2014	<1.0	<5.0	<1.0	<3.0

NOTES:

µg/L - micrograms per liter

BOLD - indicates result exceeds the applicable standard

< - indicates result is less than the stated laboratory reporting limit

NS - not sampled

COGCC Table 910-1 - Colorado Oil and Gas Conservation Commission Table 910-1

Benzene, toluene, ethylbenzene, and total xylenes analyzed by EPA Method 8260B

Attachment A

Bore Logs

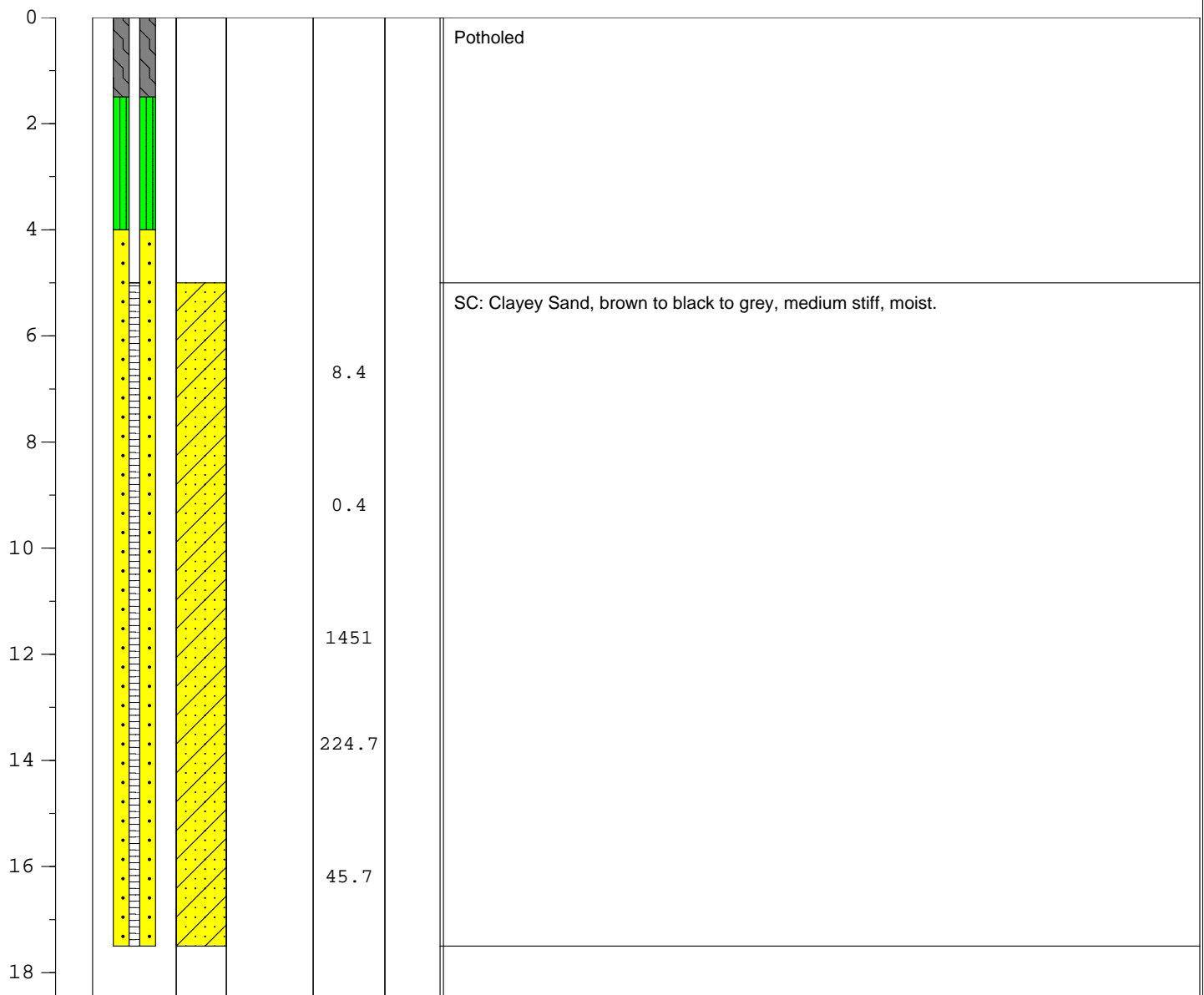
CLIENT:	Encana	PROJECT #:	335.015	NORTHING:	
DRILLING CO.:	Site Services Inc	LOGGED BY:	B. Ford	EASTING:	
DATE DRILLED:	07/08/14	DRILLER:		SURFACE ELEV:	ft
LOCATION:	lone 4	DRILLING METHOD:	HSA	CASING ELEV:	ft
SCREEN DIAM:	2 in	SCREEN:	12.5 ft	SLOT SIZE:	0.01 in
CASING DIAM:	2 in	CAS LENGTH:	5 ft	TYPE:	Stick Up
BORING DEPTH:	17.5 ft	WELL DEPTH:	17.5 ft	BORING DIAM:	8 in
WELL TYPE:	Stick Up	SAMPLING METHOD:	Splitspoon	DEPTH TO GW:	ft

DEPTH (ft BGS)	WELL LOG	SOIL LOG	BLOWS / ft.	PID ppm	% REC	SOIL DESCRIPTION
0						Potholed
2						
4						
6			0.8			SC: Clayey Sand, brown and green mottles, medium stiff, lightly moist.
8						
10			12.0			SC: Clayey sand, grey-green to rust, very stiff, lightly moist.
12			5.5			
14			4.2			
16			2.6			
18						

NOTES:

CLIENT:	Encana	PROJECT #:	335.015	NORTHING:	
DRILLING CO.:	Site Services Inc	LOGGED BY:	B. Ford	EASTING:	
DATE DRILLED:	07/08/14	DRILLER:		SURFACE ELEV:	ft
LOCATION:	lone 4	DRILLING METHOD:	HSA	CASING ELEV:	ft
SCREEN DIAM:	2 in	SCREEN:	12.5 ft	SLOT SIZE:	0.01 in
CASING DIAM:	2 in	CAS LENGTH:	5 ft	TYPE:	Stick Up
BORING DEPTH:	17.5 ft	WELL DEPTH:	17.5 ft	BORING DIAM:	8 in
WELL TYPE:	Stick Up	SAMPLING METHOD:	Splitspoon	DEPTH TO GW:	ft

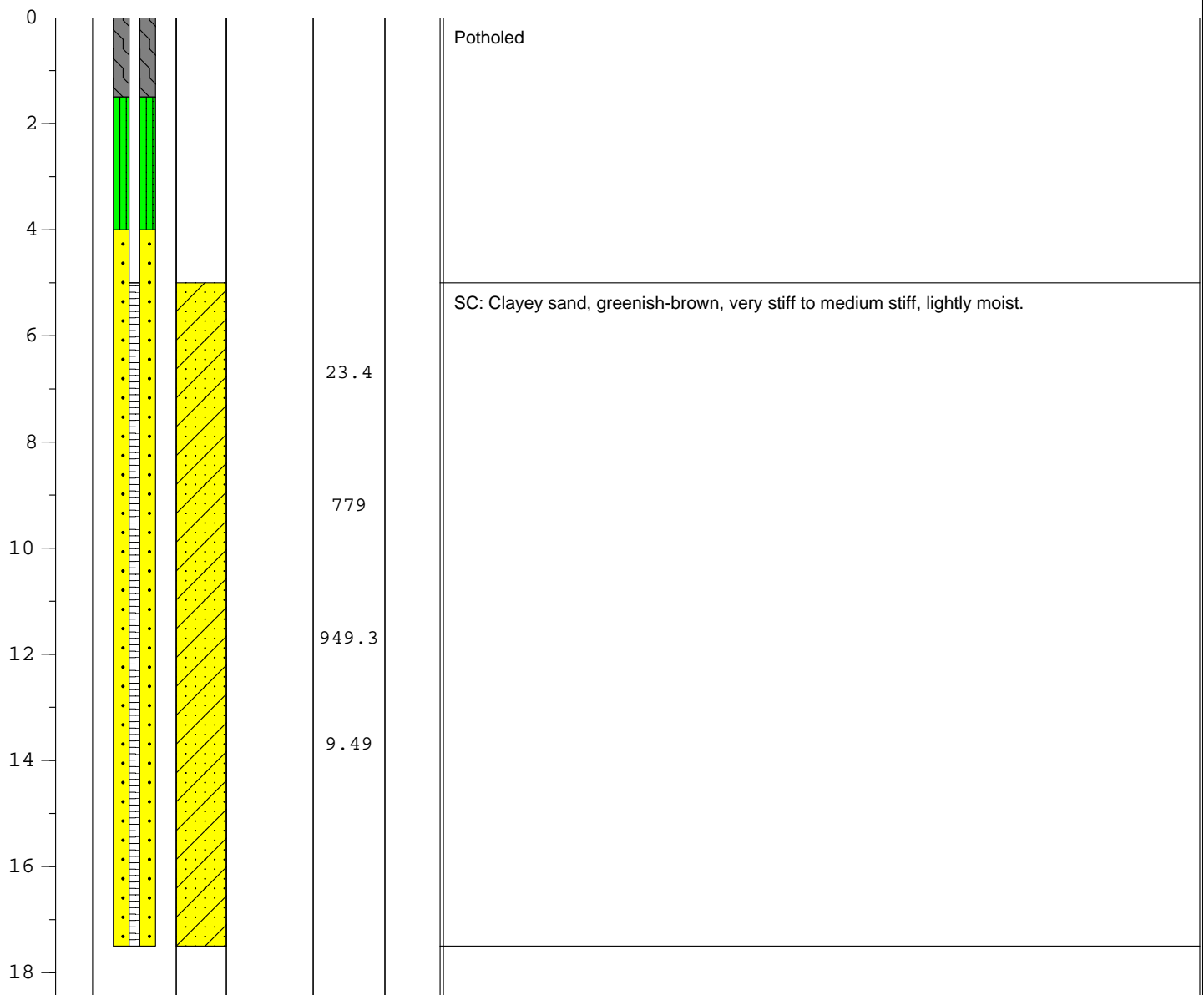
DEPTH (ft BGS)	WELL LOG	SOIL LOG	BLOWS / ft.	PID ppm	% REC	SOIL DESCRIPTION
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NOTES:

CLIENT:	Encana	PROJECT #:	335.015	NORTHING:	
DRILLING CO.:	Site Services Inc	LOGGED BY:	B. Ford	EASTING:	
DATE DRILLED:	07/08/14	DRILLER:		SURFACE ELEV:	ft
LOCATION:	lone 4	DRILLING METHOD:	HSA	CASING ELEV:	ft
SCREEN DIAM:	2 in	SCREEN:	12.5 ft	SLOT SIZE:	0.01 in
CASING DIAM:	2 in	CAS LENGTH:	5 ft	TYPE:	Stick Up
BORING DEPTH:	17.5 ft	WELL DEPTH:	17.5 ft	BORING DIAM:	8 in
WELL TYPE:	Stick Up	SAMPLING METHOD:	Splitspoon	DEPTH TO GW:	ft

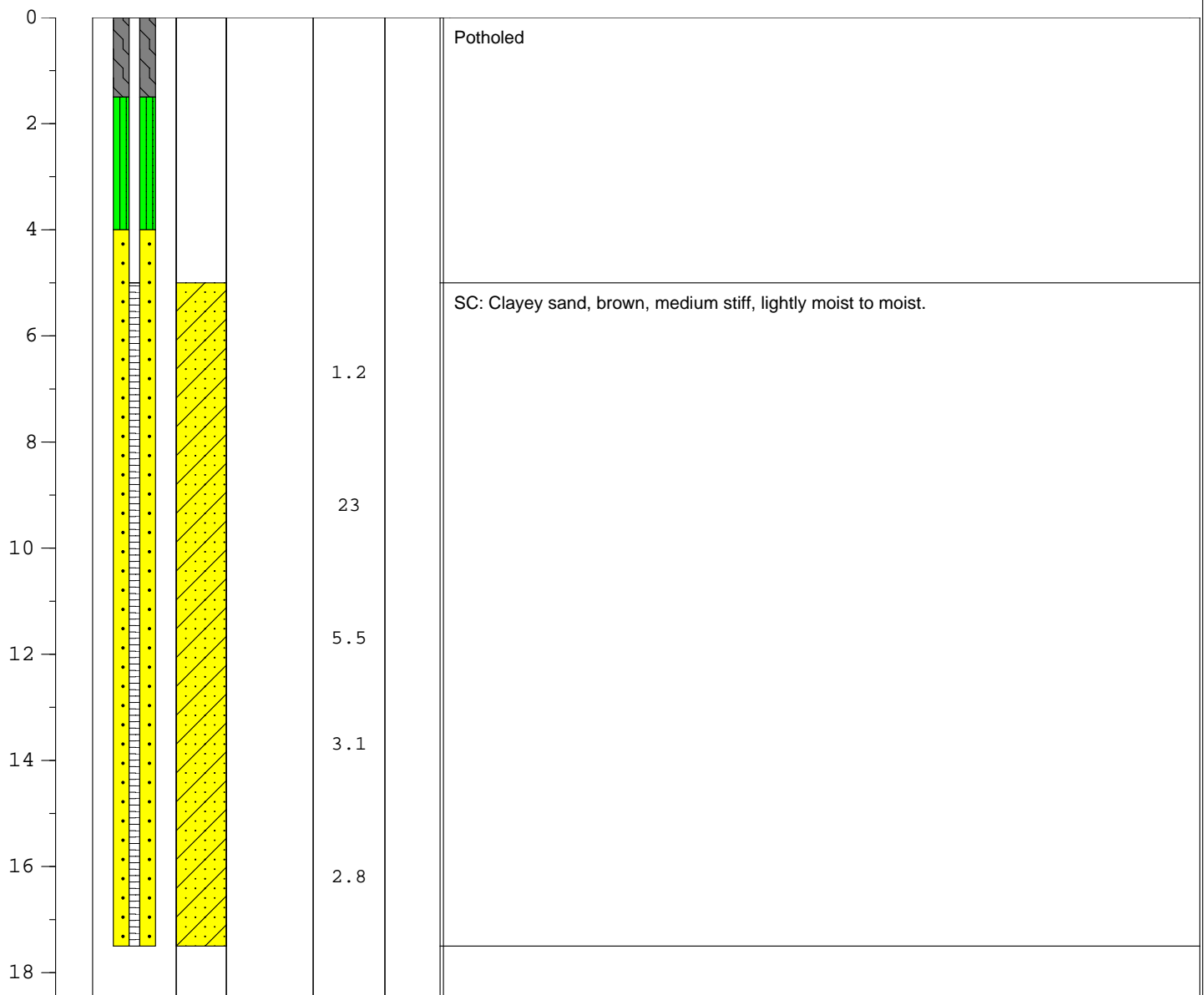
DEPTH (ft BGS)	WELL LOG	SOIL LOG	BLOWS / ft.	PID ppm	% REC	SOIL DESCRIPTION
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NOTES: HSA

CLIENT:	Encana	PROJECT #:	335.015	NORTHING:	
DRILLING CO.:	Site Services Inc	LOGGED BY:	B. Ford	EASTING:	
DATE DRILLED:	07/08/14	DRILLER:		SURFACE ELEV:	ft
LOCATION:	lone 4	DRILLING METHOD:	HSA	CASING ELEV:	ft
SCREEN DIAM:	2 in	SCREEN:	12.5 ft	SLOT SIZE:	0.01 in
CASING DIAM:	2 in	CAS LENGTH:	5 ft	TYPE:	Stick Up
BORING DEPTH:	17.5 ft	WELL DEPTH:	17.5 ft	BORING DIAM:	8 in
WELL TYPE:	Stick Up	SAMPLING METHOD:	Splitspoon	DEPTH TO GW:	ft

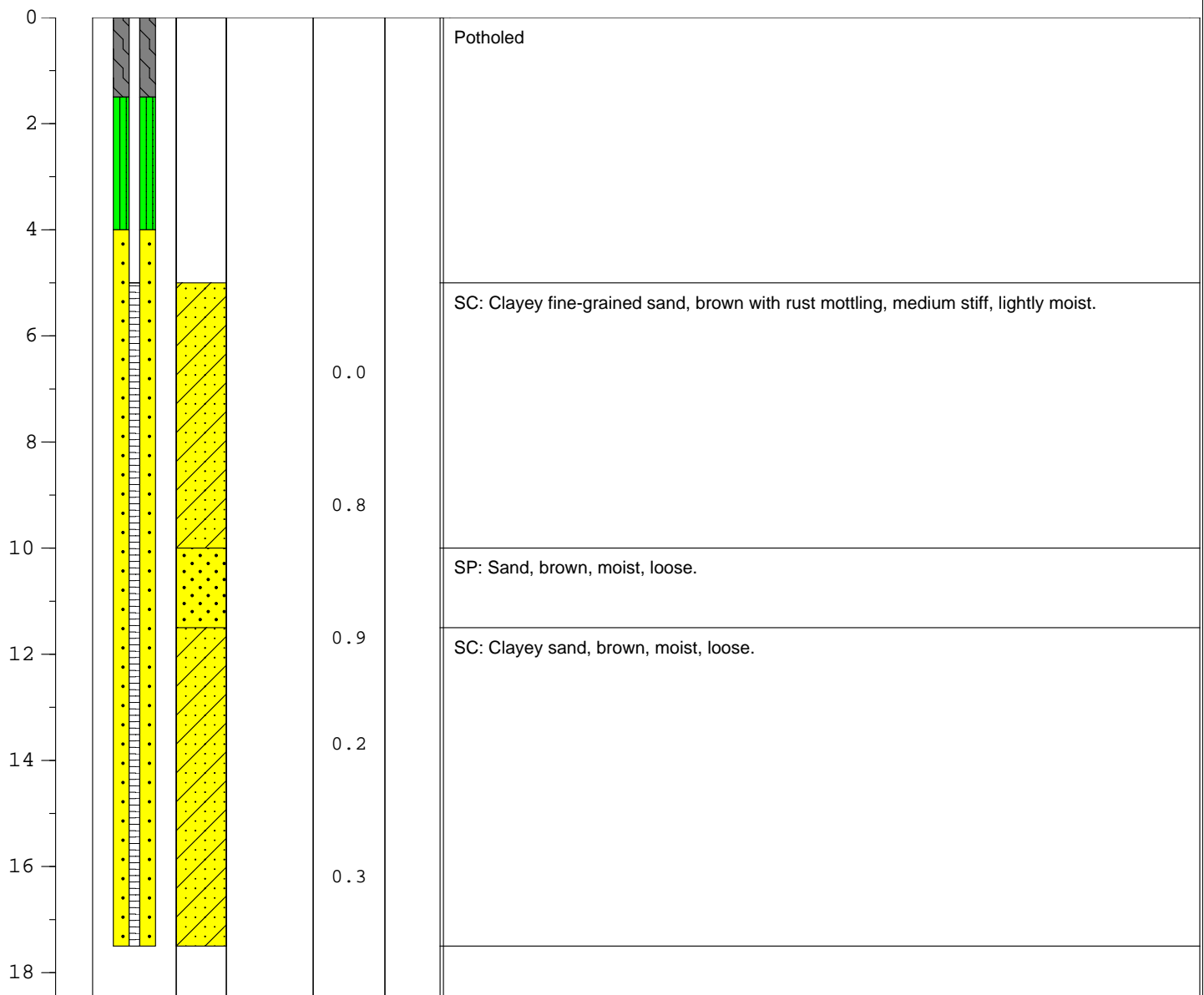
DEPTH (ft BGS)	WELL LOG	SOIL LOG	BLOWS / ft.	PID ppm	% REC	SOIL DESCRIPTION
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NOTES:

CLIENT:	Encana	PROJECT #:	335.015	NORTHING:	
DRILLING CO.:	Site Services Inc	LOGGED BY:	B. Ford	EASTING:	
DATE DRILLED:	07/08/14	DRILLER:		SURFACE ELEV:	ft
LOCATION:	Ione 4	DRILLING METHOD:	HSA	CASING ELEV:	ft
SCREEN DIAM:	2 in	SCREEN:	12.5 ft	SLOT SIZE:	0.01 in
CASING DIAM:	2 in	CAS LENGTH:	5 ft	TYPE:	Stick Up
BORING DEPTH:	17.5 ft	WELL DEPTH:	17.5 ft	BORING DIAM:	8 in
WELL TYPE:	Stick Up	SAMPLING METHOD:	Splitspoon	DEPTH TO GW:	ft

DEPTH (ft BGS)	WELL LOG	SOIL LOG	BLOWS / ft.	PID ppm	% REC	SOIL DESCRIPTION
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NOTES:

Attachment B

Laboratory Reports



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

Tax I.D. 62-0814289

Est. 1970

D Blake Ford
EnCana Oil & Gas - Longmont, CO
3601 Stagecoach Rd
Longmont, CO 80504

Report Summary

Monday March 17, 2014

Report Number: L687537

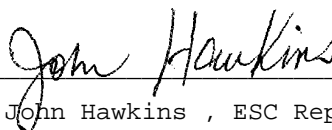
Samples Received: 03/12/14

Client Project: LONE 4

Description: LONE 4

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

Entire Report Reviewed By:


John Hawkins , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,
FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016,
NC - ENV375/DW21704/BIO041, ND - R-140, NJ - TN002, NJ NELAP - TN002,
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,
TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364, EPA - TN002

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

This report may not be reproduced, except in full, without written approval from ESC Lab Sciences. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



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

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

D Blake Ford
EnCana Oil & Gas - Longmont, CO
3601 Stagecoach Rd
Longmont, CO 80504

March 17, 2014

Date Received : March 12, 2014
Description : LONE 4
Sample ID : LONE4-SB04-031114
Collected By : Blake Ford
Collection Date : 03/11/14 11:20

ESC Sample # : L687537-01

Site ID : LONE 4

Project # : LONE 4

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	1.0	ug/l	8260B	03/14/14	1
Toluene	BDL	5.0	ug/l	8260B	03/14/14	1
Ethylbenzene	BDL	1.0	ug/l	8260B	03/14/14	1
Total Xylenes	BDL	3.0	ug/l	8260B	03/14/14	1
Surrogate Recovery						
Toluene-d8	103.		% Rec.	8260B	03/14/14	1
Dibromofluoromethane	106.		% Rec.	8260B	03/14/14	1
a,a,a-Trifluorotoluene	97.6		% Rec.	8260B	03/14/14	1
4-Bromofluorobenzene	97.9		% Rec.	8260B	03/14/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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.

Reported: 03/17/14 08:34 Printed: 03/17/14 08:35



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

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

D Blake Ford
EnCana Oil & Gas - Longmont, CO
3601 Stagecoach Rd
Longmont, CO 80504

March 17, 2014

Date Received : March 12, 2014
Description : LONE 4
Sample ID : LONE4-SB01-031114
Collected By : Blake Ford
Collection Date : 03/11/14 12:00

ESC Sample # : L687537-02

Site ID : LONE 4

Project # : LONE 4

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	1.0	ug/l	8260B	03/14/14	1
Toluene	BDL	5.0	ug/l	8260B	03/14/14	1
Ethylbenzene	BDL	1.0	ug/l	8260B	03/14/14	1
Total Xylenes	BDL	3.0	ug/l	8260B	03/14/14	1
Surrogate Recovery						
Toluene-d8	104.		% Rec.	8260B	03/14/14	1
Dibromofluoromethane	104.		% Rec.	8260B	03/14/14	1
a,a,a-Trifluorotoluene	98.4		% Rec.	8260B	03/14/14	1
4-Bromofluorobenzene	99.3		% Rec.	8260B	03/14/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Est. 1970

REPORT OF ANALYSIS

D Blake Ford
EnCana Oil & Gas - Longmont, CO
3601 Stagecoach Rd
Longmont, CO 80504

March 17, 2014

Date Received : March 12, 2014
Description : LONE 4
Sample ID : LONE4-SB03-031114
Collected By : Blake Ford
Collection Date : 03/11/14 12:40

ESC Sample # : L687537-03

Site ID : LONE 4

Project # : LONE 4

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	1.0	ug/l	8260B	03/14/14	1
Toluene	BDL	5.0	ug/l	8260B	03/14/14	1
Ethylbenzene	230	10.	ug/l	8260B	03/15/14	10
Total Xylenes	3700	30.	ug/l	8260B	03/15/14	10
Surrogate Recovery						
Toluene-d8	115.		% Rec.	8260B	03/14/14	1
Dibromofluoromethane	98.7		% Rec.	8260B	03/14/14	1
a,a,a-Trifluorotoluene	105.		% Rec.	8260B	03/14/14	1
4-Bromofluorobenzene	105.		% Rec.	8260B	03/14/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L687537-03	WG710638	SAMP	Toluene-d8	R2893423	J1

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits

Qualifier Report Information

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

Definitions

- Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.
- Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.
- Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.
- TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed
03/17/14 at 08:35:11

TSR Signing Reports: 358
R5 - Desired TAT

Log all BTEX waters as V8260BTEX unless specified otherwise. Try not to report benzene as BDL
above a 5x dilution. Enter depths for all samples as part of sample ID.

Sample: L687537-01 Account: ENCANLCO Received: 03/12/14 09:30 Due Date: 03/19/14 00:00 RPT Date: 03/17/14 08:34

Sample: L687537-02 Account: ENCANLCO Received: 03/12/14 09:30 Due Date: 03/19/14 00:00 RPT Date: 03/17/14 08:34

Sample: L687537-03 Account: ENCANLCO Received: 03/12/14 09:30 Due Date: 03/19/14 00:00 RPT Date: 03/17/14 08:34



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D Blake Ford
EnCana Oil & Gas - Longmont, CO
3601 Stagecoach Rd
Longmont, CO 80504

Report Summary

Thursday June 19, 2014

Report Number: L704676


Samples Received: 06/13/14

Client Project: IONE 4

Description: Ione 4

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

Entire Report Reviewed By:


Jared Willis , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,
FL - E87487, GA - 923, IN - C-IN-01, KY - 90010, KYUST - 0016,
NC - ENV375/DW21704/BIO041, ND - R-140, NJ - TN002, NJ NELAP - TN002,
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,
TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364, EPA - TN002

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REPORT OF ANALYSIS

D Blake Ford
EnCana Oil & Gas - Longmont, CO
3601 Stagecoach Rd
Longmont, CO 80504

June 19, 2014

Date Received : June 13, 2014
Description : Ione 4
Sample ID : IONE4-SB04-061114
Collected By : Blake Ford
Collection Date : 06/11/14 14:40

ESC Sample # : L704676-01

Site ID : IONE 4

Project # : IONE 4

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	1.0	ug/l	8260B	06/17/14	1
Toluene	BDL	5.0	ug/l	8260B	06/17/14	1
Ethylbenzene	BDL	1.0	ug/l	8260B	06/17/14	1
Total Xylenes	BDL	3.0	ug/l	8260B	06/17/14	1
Surrogate Recovery						
Toluene-d8	96.5		% Rec.	8260B	06/17/14	1
Dibromofluoromethane	91.6		% Rec.	8260B	06/17/14	1
a,a,a-Trifluorotoluene	99.6		% Rec.	8260B	06/17/14	1
4-Bromofluorobenzene	95.5		% Rec.	8260B	06/17/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

D Blake Ford
EnCana Oil & Gas - Longmont, CO
3601 Stagecoach Rd
Longmont, CO 80504

June 19, 2014

Date Received : June 13, 2014
Description : Ione 4
Sample ID : IONE4-SB01-061114
Collected By : Blake Ford
Collection Date : 06/11/14 15:11

ESC Sample # : L704676-02

Site ID : IONE 4

Project # : IONE 4

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	1.0	ug/l	8260B	06/17/14	1
Toluene	BDL	5.0	ug/l	8260B	06/17/14	1
Ethylbenzene	BDL	1.0	ug/l	8260B	06/17/14	1
Total Xylenes	BDL	3.0	ug/l	8260B	06/17/14	1
Surrogate Recovery						
Toluene-d8	95.1		% Rec.	8260B	06/17/14	1
Dibromofluoromethane	91.5		% Rec.	8260B	06/17/14	1
a,a,a-Trifluorotoluene	99.6		% Rec.	8260B	06/17/14	1
4-Bromofluorobenzene	94.8		% Rec.	8260B	06/17/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 06/19/14 14:24 Printed: 06/19/14 14:24



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REPORT OF ANALYSIS

D Blake Ford
EnCana Oil & Gas - Longmont, CO
3601 Stagecoach Rd
Longmont, CO 80504

June 19, 2014

Date Received : June 13, 2014
Description : Ione 4
Sample ID : IONE4-SB03-061114
Collected By : Blake Ford
Collection Date : 06/11/14 15:35

ESC Sample # : L704676-03

Site ID : IONE 4

Project # : IONE 4

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	20.	ug/l	8260B	06/19/14	20
Toluene	BDL	100	ug/l	8260B	06/19/14	20
Ethylbenzene	210	20.	ug/l	8260B	06/19/14	20
Total Xylenes	3400	60.	ug/l	8260B	06/19/14	20
Surrogate Recovery						
Toluene-d8	100.		% Rec.	8260B	06/19/14	20
Dibromofluoromethane	87.2		% Rec.	8260B	06/19/14	20
a,a,a-Trifluorotoluene	108.		% Rec.	8260B	06/19/14	20
4-Bromofluorobenzene	102.		% Rec.	8260B	06/19/14	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Summary of Remarks For Samples Printed
06/19/14 at 14:24:43

TSR Signing Reports: 358
R5 - Desired TAT

Log all BTEX waters as V8260BTEX unless specified otherwise. Enter depths for all samples as part of sample ID. Try not to report benzene as BDL above a 5x dilution.

Sample: L704676-01 Account: ENCANLCO Received: 06/13/14 09:00 Due Date: 06/20/14 00:00 RPT Date: 06/19/14 14:24

Sample: L704676-02 Account: ENCANLCO Received: 06/13/14 09:00 Due Date: 06/20/14 00:00 RPT Date: 06/19/14 14:24

Sample: L704676-03 Account: ENCANLCO Received: 06/13/14 09:00 Due Date: 06/20/14 00:00 RPT Date: 06/19/14 14:24



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D Blake Ford
EnCana Oil & Gas - Longmont, CO
3601 Stagecoach Rd
Longmont, CO 80504

Report Summary

Friday July 18, 2014

Report Number: L709368


Samples Received: 07/10/14

Client Project: IONE 4

Description: Ione 4 Well Installation

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

Entire Report Reviewed By:


Jared Willis , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,
FL - E87487, GA - 923, IN - C-IN-01, KY - 90010, KYUST - 0016,
NC - ENV375/DW21704/BIO041, ND - R-140, NJ - TN002, NJ NELAP - TN002,
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,
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REPORT OF ANALYSIS

D Blake Ford
EnCana Oil & Gas - Longmont, CO
3601 Stagecoach Rd
Longmont, CO 80504

July 18, 2014

Date Received : July 10, 2014
Description : Ione 4 Well Installation
Sample ID : IONE4-MW01-070814 10-12.5FT
Collected By : Blake Ford
Collection Date : 07/08/14 08:43

ESC Sample # : L709368-01

Site ID : IONE 4

Project # : IONE 4

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	07/14/14	5
Toluene	BDL	0.025	mg/kg	8021/8015	07/14/14	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	07/14/14	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	07/14/14	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	07/14/14	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	96.9		% Rec.	8021/8015	07/14/14	5
a,a,a-Trifluorotoluene(PID)	101.		% Rec.	8021/8015	07/14/14	5
TPH (GC/FID) High Fraction	16.	4.0	mg/kg	3546/DRO	07/15/14	1
Surrogate recovery(%)						
o-Terphenyl	68.5		% Rec.	3546/DRO	07/15/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

D Blake Ford
EnCana Oil & Gas - Longmont, CO
3601 Stagecoach Rd
Longmont, CO 80504

July 18, 2014

Date Received : July 10, 2014
Description : Ione 4 Well Installation
Sample ID : IONE4-MW02-070814 10-12.5FT
Collected By : Blake Ford
Collection Date : 07/08/14 14:07

ESC Sample # : L709368-02

Site ID : IONE 4

Project # : IONE 4

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	07/15/14	1
Chromium, Trivalent	4.1	2.0	mg/kg	Calc.	07/16/14	1
ORP	110		mV	2580 B-2011	07/16/14	1
pH	8.4		su	9045D	07/16/14	1
Sodium Adsorption Ratio	2.5			Calc.	07/18/14	1
Specific Conductance	150		umhos/cm	9050AMod	07/16/14	1
Mercury	BDL	0.020	mg/kg	7471	07/12/14	1
Arsenic	2.1	2.0	mg/kg	6010B	07/15/14	1
Barium	30.	0.50	mg/kg	6010B	07/15/14	1
Cadmium	BDL	0.50	mg/kg	6010B	07/15/14	1
Chromium	4.1	1.0	mg/kg	6010B	07/15/14	1
Copper	3.3	2.0	mg/kg	6010B	07/15/14	1
Lead	4.4	0.50	mg/kg	6010B	07/15/14	1
Nickel	3.7	2.0	mg/kg	6010B	07/15/14	1
Selenium	BDL	2.0	mg/kg	6010B	07/15/14	1
Silver	BDL	1.0	mg/kg	6010B	07/15/14	1
Zinc	16.	3.0	mg/kg	6010B	07/15/14	1
Benzene	BDL	0.50	mg/kg	8021/8015	07/12/14	1000
Toluene	BDL	5.0	mg/kg	8021/8015	07/12/14	1000
Ethylbenzene	3.6	0.50	mg/kg	8021/8015	07/12/14	1000
Total Xylene	20.	1.5	mg/kg	8021/8015	07/12/14	1000
TPH (GC/FID) Low Fraction	800	100	mg/kg	GRO	07/12/14	1000
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	97.2		% Rec.	8021/8015	07/12/14	1000
a,a,a-Trifluorotoluene(PID)	102.		% Rec.	8021/8015	07/12/14	1000
TPH (GC/FID) High Fraction	560	80.	mg/kg	3546/DRO	07/15/14	20
Surrogate recovery(%)						
o-Terphenyl	70.1		% Rec.	3546/DRO	07/15/14	20
Polynuclear Aromatic Hydrocarbons						
Anthracene	0.020	0.0060	mg/kg	8270C-SIM	07/12/14	1
Acenaphthene	0.035	0.0060	mg/kg	8270C-SIM	07/12/14	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	07/12/14	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	07/12/14	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	07/12/14	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L709368-02 (PH) - 8.4@22.0c



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REPORT OF ANALYSIS

D Blake Ford
EnCana Oil & Gas - Longmont, CO
3601 Stagecoach Rd
Longmont, CO 80504

July 18, 2014

Date Received : July 10, 2014
Description : Ione 4 Well Installation
Sample ID : IONE4-MW02-070814 10-12.5FT
Collected By : Blake Ford
Collection Date : 07/08/14 14:07

ESC Sample # : L709368-02

Site ID : IONE 4

Project # : IONE 4

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	07/12/14	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	07/12/14	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	07/12/14	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	07/12/14	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	07/12/14	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	07/12/14	1
Fluorene	0.066	0.0060	mg/kg	8270C-SIM	07/12/14	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	07/12/14	1
Naphthalene	0.28	0.020	mg/kg	8270C-SIM	07/12/14	1
Phenanthrene	0.073	0.0060	mg/kg	8270C-SIM	07/12/14	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	07/12/14	1
1-Methylnaphthalene	0.34	0.020	mg/kg	8270C-SIM	07/12/14	1
2-Methylnaphthalene	0.91	0.020	mg/kg	8270C-SIM	07/12/14	1
2-Chloronaphthalene	BDL	0.020	mg/kg	8270C-SIM	07/12/14	1
Surrogate Recovery						
Nitrobenzene-d5	134.		% Rec.	8270C-SIM	07/12/14	1
2-Fluorobiphenyl	94.4		% Rec.	8270C-SIM	07/12/14	1
p-Terphenyl-d14	98.3		% Rec.	8270C-SIM	07/12/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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L709368-02 (PH) - 8.4@22.0c



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Est. 1970

REPORT OF ANALYSIS

D Blake Ford
EnCana Oil & Gas - Longmont, CO
3601 Stagecoach Rd
Longmont, CO 80504

July 18, 2014

Date Received : July 10, 2014
Description : Ione 4 Well Installation
Sample ID : IONE4-MW03-070814 10-12.5FT
Collected By : Blake Ford
Collection Date : 07/08/14 10:18

ESC Sample # : L709368-03

Site ID : IONE 4

Project # : IONE 4

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	07/14/14	5
Toluene	BDL	0.025	mg/kg	8021/8015	07/14/14	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	07/14/14	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	07/14/14	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	07/14/14	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	97.0		% Rec.	8021/8015	07/14/14	5
a,a,a-Trifluorotoluene(PID)	101.		% Rec.	8021/8015	07/14/14	5
TPH (GC/FID) High Fraction	8.6	4.0	mg/kg	3546/DRO	07/15/14	1
Surrogate recovery(%)						
o-Terphenyl	82.2		% Rec.	3546/DRO	07/15/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

D Blake Ford
EnCana Oil & Gas - Longmont, CO
3601 Stagecoach Rd
Longmont, CO 80504

July 18, 2014

Date Received : July 10, 2014
Description : Ione 4 Well Installation
Sample ID : IONE4-MW04-070814 10-12.5FT
Collected By : Blake Ford
Collection Date : 07/08/14 16:30

ESC Sample # : L709368-04

Site ID : IONE 4

Project # : IONE 4

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	07/12/14	5
Toluene	BDL	0.025	mg/kg	8021/8015	07/12/14	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	07/12/14	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	07/12/14	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	07/12/14	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	97.0		% Rec.	8021/8015	07/12/14	5
a,a,a-Trifluorotoluene(PID)	101.		% Rec.	8021/8015	07/12/14	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	07/15/14	1
Surrogate recovery(%)						
o-Terphenyl	56.4		% Rec.	3546/DRO	07/15/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 07/18/14 16:06 Printed: 07/18/14 16:07



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REPORT OF ANALYSIS

D Blake Ford
EnCana Oil & Gas - Longmont, CO
3601 Stagecoach Rd
Longmont, CO 80504

July 18, 2014

Date Received : July 10, 2014
Description : Ione 4 Well Installation
Sample ID : IONE4-MW05-070814 10-12.5FT
Collected By : Blake Ford
Collection Date : 07/08/14 12:01

ESC Sample # : L709368-05

Site ID : IONE 4

Project # : IONE 4

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	07/12/14	5
Toluene	BDL	0.025	mg/kg	8021/8015	07/12/14	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	07/12/14	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	07/12/14	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	07/12/14	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	96.7		% Rec.	8021/8015	07/12/14	5
a,a,a-Trifluorotoluene(PID)	101.		% Rec.	8021/8015	07/12/14	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	07/15/14	1
Surrogate recovery(%)						
o-Terphenyl	63.3		% Rec.	3546/DRO	07/15/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L709368-02	WG731232	SAMP	o-Terphenyl	R2962107	J7

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.

Qualifier Report Information

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

Definitions

- Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.
- Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.
- Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.
- TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed
07/18/14 at 16:07:32

TSR Signing Reports: 358
R5 - Desired TAT

Log all BTEX waters as V8260BTEX unless specified otherwise. Enter depths for all samples as part of sample ID. Try not to report benzene as BDL above a 5x dilution.

Sample: L709368-01 Account: ENCANLCO Received: 07/10/14 09:00 Due Date: 07/17/14 00:00 RPT Date: 07/18/14 16:06

Sample: L709368-02 Account: ENCANLCO Received: 07/10/14 09:00 Due Date: 07/17/14 00:00 RPT Date: 07/18/14 16:06

Sample: L709368-03 Account: ENCANLCO Received: 07/10/14 09:00 Due Date: 07/17/14 00:00 RPT Date: 07/18/14 16:06

Sample: L709368-04 Account: ENCANLCO Received: 07/10/14 09:00 Due Date: 07/17/14 00:00 RPT Date: 07/18/14 16:06

Sample: L709368-05 Account: ENCANLCO Received: 07/10/14 09:00 Due Date: 07/17/14 00:00 RPT Date: 07/18/14 16:06



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Blake Ford
EnCana Oil & Gas - Longmont, CO
3601 Stagecoach Rd
Longmont, CO 80504

Report Summary

Thursday October 09, 2014

Report Number: L723752

Samples Received: 09/25/14

Client Project: IONE 4

Description: Ione 4

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

Entire Report Reviewed By:

Daphne Richards , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,
FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016,
NC - ENV375/DW21704/BIO041, ND - R-140, NJ - TN002, NJ NELAP - TN002,
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,
TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364, EPA - TN002

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REPORT OF ANALYSIS

October 09, 2014

Blake Ford
EnCana Oil & Gas - Longmont, CO
3601 Stagecoach Rd
Longmont, CO 80504

Date Received : September 25, 2014
Description : Ione 4
Sample ID : IONE4-MW01-092314
Collected By : Blake Ford
Collection Date : 09/23/14 09:40

ESC Sample # : L723752-01

Site ID : IONE 4

Project # : IONE 4

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	1.0	ug/l	8260B	10/01/14	1
Toluene	BDL	5.0	ug/l	8260B	10/01/14	1
Ethylbenzene	BDL	1.0	ug/l	8260B	10/01/14	1
Total Xylenes	BDL	3.0	ug/l	8260B	10/01/14	1
Surrogate Recovery						
Toluene-d8	106.		% Rec.	8260B	10/01/14	1
Dibromofluoromethane	102.		% Rec.	8260B	10/01/14	1
a,a,a-Trifluorotoluene	108.		% Rec.	8260B	10/01/14	1
4-Bromofluorobenzene	108.		% Rec.	8260B	10/01/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

October 09, 2014

Blake Ford
EnCana Oil & Gas - Longmont, CO
3601 Stagecoach Rd
Longmont, CO 80504

Date Received : September 25, 2014
Description : Ione 4
Sample ID : IONE4-MW02-092314
Collected By : Blake Ford
Collection Date : 09/23/14 10:11

ESC Sample # : L723752-02

Site ID : IONE 4

Project # : IONE 4

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	420	5.0	ug/l	8260B	10/01/14	5
Toluene	26.	25.	ug/l	8260B	10/01/14	5
Ethylbenzene	220	5.0	ug/l	8260B	10/01/14	5
Total Xylenes	1300	15.	ug/l	8260B	10/01/14	5
Surrogate Recovery						
Toluene-d8	105.		% Rec.	8260B	10/01/14	5
Dibromofluoromethane	93.6		% Rec.	8260B	10/01/14	5
a,a,a-Trifluorotoluene	107.		% Rec.	8260B	10/01/14	5
4-Bromofluorobenzene	105.		% Rec.	8260B	10/01/14	5

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

October 09, 2014

Blake Ford
EnCana Oil & Gas - Longmont, CO
3601 Stagecoach Rd
Longmont, CO 80504

Date Received : September 25, 2014
Description : Ione 4
Sample ID : IONE4-MW03-092314
Collected By : Blake Ford
Collection Date : 09/23/14 10:40

ESC Sample # : L723752-03

Site ID : IONE 4

Project # : IONE 4

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	10.	ug/l	8260B	10/02/14	10
Toluene	BDL	50.	ug/l	8260B	10/02/14	10
Ethylbenzene	140	10.	ug/l	8260B	10/02/14	10
Total Xylenes	630	30.	ug/l	8260B	10/02/14	10
Surrogate Recovery						
Toluene-d8	104.		% Rec.	8260B	10/02/14	10
Dibromofluoromethane	99.4		% Rec.	8260B	10/02/14	10
a,a,a-Trifluorotoluene	110.		% Rec.	8260B	10/02/14	10
4-Bromofluorobenzene	106.		% Rec.	8260B	10/02/14	10

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

October 09, 2014

Blake Ford
EnCana Oil & Gas - Longmont, CO
3601 Stagecoach Rd
Longmont, CO 80504

Date Received : September 25, 2014
Description : Ione 4
Sample ID : IONE4-MW04-092314
Collected By : Blake Ford
Collection Date : 09/23/14 11:38

ESC Sample # : L723752-04

Site ID : IONE 4

Project # : IONE 4

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	1.0	ug/l	8260B	10/02/14	1
Toluene	BDL	5.0	ug/l	8260B	10/02/14	1
Ethylbenzene	BDL	1.0	ug/l	8260B	10/02/14	1
Total Xylenes	BDL	3.0	ug/l	8260B	10/02/14	1
Surrogate Recovery						
Toluene-d8	107.		% Rec.	8260B	10/02/14	1
Dibromofluoromethane	99.2		% Rec.	8260B	10/02/14	1
a,a,a-Trifluorotoluene	106.		% Rec.	8260B	10/02/14	1
4-Bromofluorobenzene	108.		% Rec.	8260B	10/02/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

October 09, 2014

Blake Ford
EnCana Oil & Gas - Longmont, CO
3601 Stagecoach Rd
Longmont, CO 80504

Date Received : September 25, 2014
Description : Ione 4
Sample ID : IONE4-MW05-092314
Collected By : Blake Ford
Collection Date : 09/23/14 11:05

ESC Sample # : L723752-05

Site ID : IONE 4

Project # : IONE 4

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	1.0	ug/l	8260B	10/02/14	1
Toluene	BDL	5.0	ug/l	8260B	10/02/14	1
Ethylbenzene	BDL	1.0	ug/l	8260B	10/02/14	1
Total Xylenes	BDL	3.0	ug/l	8260B	10/02/14	1
Surrogate Recovery						
Toluene-d8	106.		% Rec.	8260B	10/02/14	1
Dibromofluoromethane	104.		% Rec.	8260B	10/02/14	1
a,a,a-Trifluorotoluene	108.		% Rec.	8260B	10/02/14	1
4-Bromofluorobenzene	107.		% Rec.	8260B	10/02/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Company Name/Address *ENCANLCO* Encana Oil and Gas- Longmont, CO 3601 Stagecoach Rd Longmont, CO 80504 970-379-9558				Billing Address: Encana Oil and Gas- Longmont, CO Attn: Blake Ford Longmont, CO 80504 Report to: B. Ford E-mail: blake.ford@encana.com				Analysis/Container/Preservative <div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">BTEX</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">SV8270PAHSIM - 8270SIM</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">SPCON - 9050AMod</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">SAR - Calc.</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">RCRA8 Metals + Cu, Ni, and Zn - 6010/7470</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">CR6SS - 3060A/7196</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">CR3 - Calc.</div> </div>				Chain of Custody Page ___ of ___ <div style="border: 1px solid black; padding: 5px; text-align: center;">B034</div> Prepared by: <div style="text-align: center;"> ENVIRONMENTAL Science corp 12065 Lebanon Road Mt. Juliet TN 37122 Phone (615)758-5858 Phone (800) 767-5859 FAX (615)758-5859 </div>			
Project Description: lone 4				ENCANLCO											
PHONE: 970-379-9558		Client Project No. lone 4		Lab Project #											
FAX:															
Collected by: Blake Ford		Site/Facility ID# lone 4		P.O.#											
Collected by (signature) Immediately Packed on Ice N <input checked="" type="checkbox"/> Y <input type="checkbox"/>		Rush? (Lab MUST be Notified) _____ Same Day.....200% _____ Next Day.....100% _____ Two Day.....50%		Date Results Needed Email? <input type="checkbox"/> No <input type="checkbox"/> Yes FAX? <input type="checkbox"/> No <input type="checkbox"/> Yes		No of Cntrs									
Sample ID	Comp/Grat	Matrix	Depth	Date	Time										
lone4-MW01-092314	Grab	GW	NA	09/23/14	0940	2	X								
lone4-MW02-092314	Grab	GW	NA	09/23/14	1011	2	X								
lone4-MW03-092314	Grab	GW	NA	09/23/14	1040	2	X								
lone4-MW04-092314	Grab	GW	NA	09/23/14	1138	2	X								
lone4-MW05-092314	Grab	GW	NA	09/23/14	1105	2	X								

*Matrix: SS-Soil/Solid GW-Groundwater WW-Wastewater DW-Drinking Water OT- Other _____

Remarks: 6127 6742 8698

pH _____ Temp _____

Flow _____ Other _____

Relinquisher by: (Signature) 		Date: 09/24/14	Time: 1:15	Received by: (Signature) 		Samples returned via: FedEx <input checked="" type="checkbox"/> UPS <input type="checkbox"/> Other _____		Condition (lab use only) 	
Relinquisher by: (Signature) 		Date: 9/24/14	Time: 4:30	Received by: (Signature) 		Temp: 3.1		Bottles Received: 10	
Relinquisher by: (Signature) 		Date:	Time:	Received for lab by: (Signature) 		Date: 9/25/14		Time: 09:00	
						COC Seals Intact <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA			
						pH Checked: NCF			



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Blake Ford
EnCana Oil & Gas - Longmont, CO
3601 Stagecoach Rd
Longmont, CO 80504

Report Summary

Tuesday December 30, 2014

Report Number: L740076


Samples Received: 12/19/14

Client Project: 335.015

Description: Ione

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

Entire Report Reviewed By:


Jared Willis , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,
FL - E87487, GA - 923, IN - C-IN-01, KY - 90010, KYUST - 0016,
NC - ENV375/DW21704/BIO041, ND - R-140, NJ - TN002, NJ NELAP - TN002,
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,
TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364, EPA - TN002

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REPORT OF ANALYSIS

Blake Ford
EnCana Oil & Gas - Longmont, CO
3601 Stagecoach Rd
Longmont, CO 80504

December 30, 2014

Date Received : December 19, 2014
Description : Ione
Sample ID : MW-01
Collected By : Jeff Braden
Collection Date : 12/18/14 15:10

ESC Sample # : L740076-01

Site ID : IONE

Project # : 335.015

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	1.0	ug/l	8260B	12/27/14	1
Toluene	BDL	5.0	ug/l	8260B	12/27/14	1
Ethylbenzene	BDL	1.0	ug/l	8260B	12/27/14	1
Total Xylenes	BDL	3.0	ug/l	8260B	12/30/14	1
Surrogate Recovery						
Toluene-d8	107.		% Rec.	8260B	12/27/14	1
Dibromofluoromethane	102.		% Rec.	8260B	12/27/14	1
a,a,a-Trifluorotoluene	103.		% Rec.	8260B	12/27/14	1
4-Bromofluorobenzene	101.		% Rec.	8260B	12/27/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

Blake Ford
EnCana Oil & Gas - Longmont, CO
3601 Stagecoach Rd
Longmont, CO 80504

December 30, 2014

Date Received : December 19, 2014
Description : Ione
Sample ID : MW-02
Collected By : Jeff Braden
Collection Date : 12/18/14 15:30

ESC Sample # : L740076-02

Site ID : IONE

Project # : 335.015

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	360	10.	ug/l	8260B	12/30/14	10
Toluene	BDL	5.0	ug/l	8260B	12/27/14	1
Ethylbenzene	210	10.	ug/l	8260B	12/30/14	10
Total Xylenes	910	30.	ug/l	8260B	12/30/14	10
Surrogate Recovery						
Toluene-d8	107.		% Rec.	8260B	12/27/14	1
Dibromofluoromethane	99.3		% Rec.	8260B	12/27/14	1
a,a,a-Trifluorotoluene	106.		% Rec.	8260B	12/27/14	1
4-Bromofluorobenzene	100.		% Rec.	8260B	12/27/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

Blake Ford
EnCana Oil & Gas - Longmont, CO
3601 Stagecoach Rd
Longmont, CO 80504

December 30, 2014

Date Received : December 19, 2014
Description : Ione
Sample ID : MW-03
Collected By : Jeff Braden
Collection Date : 12/18/14 14:10

ESC Sample # : L740076-03

Site ID : IONE

Project # : 335.015

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	1.0	ug/l	8260B	12/27/14	1
Toluene	6.9	5.0	ug/l	8260B	12/27/14	1
Ethylbenzene	190	20.	ug/l	8260B	12/30/14	20
Total Xylenes	3300	60.	ug/l	8260B	12/30/14	20
Surrogate Recovery						
Toluene-d8	104.		% Rec.	8260B	12/27/14	1
Dibromofluoromethane	92.8		% Rec.	8260B	12/27/14	1
a,a,a-Trifluorotoluene	96.7		% Rec.	8260B	12/27/14	1
4-Bromofluorobenzene	105.		% Rec.	8260B	12/27/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Tax I.D. 62-0814289

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REPORT OF ANALYSIS

Blake Ford
EnCana Oil & Gas - Longmont, CO
3601 Stagecoach Rd
Longmont, CO 80504

December 30, 2014

Date Received : December 19, 2014
Description : Ione
Sample ID : MW-04
Collected By : Jeff Braden
Collection Date : 12/18/14 14:50

ESC Sample # : L740076-04

Site ID : IONE

Project # : 335.015

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	1.0	ug/l	8260B	12/27/14	1
Toluene	BDL	5.0	ug/l	8260B	12/27/14	1
Ethylbenzene	BDL	1.0	ug/l	8260B	12/27/14	1
Total Xylenes	3.9	3.0	ug/l	8260B	12/30/14	1
Surrogate Recovery						
Toluene-d8	107.		% Rec.	8260B	12/27/14	1
Dibromofluoromethane	95.6		% Rec.	8260B	12/27/14	1
a,a,a-Trifluorotoluene	108.		% Rec.	8260B	12/27/14	1
4-Bromofluorobenzene	111.		% Rec.	8260B	12/27/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

This report shall not be reproduced, except in full, without the written approval from ESC.

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Reported: 12/30/14 17:04 Printed: 12/30/14 17:04



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

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

December 30, 2014

Blake Ford
EnCana Oil & Gas - Longmont, CO
3601 Stagecoach Rd
Longmont, CO 80504

Date Received : December 19, 2014
Description : Ione
Sample ID : MW-05
Collected By : Jeff Braden
Collection Date : 12/18/14 14:30

ESC Sample # : L740076-05

Site ID : IONE

Project # : 335.015

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	1.0	ug/l	8260B	12/27/14	1
Toluene	BDL	5.0	ug/l	8260B	12/27/14	1
Ethylbenzene	BDL	1.0	ug/l	8260B	12/27/14	1
Total Xylenes	3.7	3.0	ug/l	8260B	12/30/14	1
Surrogate Recovery						
Toluene-d8	106.		% Rec.	8260B	12/27/14	1
Dibromofluoromethane	97.9		% Rec.	8260B	12/27/14	1
a,a,a-Trifluorotoluene	108.		% Rec.	8260B	12/27/14	1
4-Bromofluorobenzene	106.		% Rec.	8260B	12/27/14	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 12/30/14 17:04 Printed: 12/30/14 17:04

Summary of Remarks For Samples Printed
12/30/14 at 17:04:32

TSR Signing Reports: 358
R5 - Desired TAT

Log all BTEX waters as V8260BTEX unless specified otherwise. Enter depths for all samples as part of sample ID. Try not to report benzene as BDL above a 5x dilution.

Sample: L740076-01 Account: ENCANLCO Received: 12/19/14 09:00 Due Date: 12/29/14 00:00 RPT Date: 12/30/14 17:04

Sample: L740076-02 Account: ENCANLCO Received: 12/19/14 09:00 Due Date: 12/29/14 00:00 RPT Date: 12/30/14 17:04

Sample: L740076-03 Account: ENCANLCO Received: 12/19/14 09:00 Due Date: 12/29/14 00:00 RPT Date: 12/30/14 17:04

Sample: L740076-04 Account: ENCANLCO Received: 12/19/14 09:00 Due Date: 12/29/14 00:00 RPT Date: 12/30/14 17:04

Sample: L740076-05 Account: ENCANLCO Received: 12/19/14 09:00 Due Date: 12/29/14 00:00 RPT Date: 12/30/14 17:04

