

Rule Engineering, LLCSolutions to Regulations for Industry

August 21, 2013

Mr. Charlie Jensen
Encana Oil & Gas (USA) Inc.
143 Diamond Ave
Parachute, CO 81635

Re: West Divide Creek July 2013 Seep Status – Remediation #1815

Dear Mr. Jensen:

Rule Engineering (Rule) prepared this report to present the results of the quarterly monitoring and modification sampling associated with the West Divide Creek Seep for Encana Oil and Gas (USA) Inc. The COGCC approved modification to the remediation system and sampling plan and recommendations for the gas seep associated with Colorado Oil and Gas Conservation Commission (COGCC) Remediation #1815 pursuant to the Schwartz 2-15B well Order No. 1V-276. Figure 1 provides a map of monitoring stations and remediation system locations for this site.

July 2013 Quarterly Monitoring
Groundwater

On July 30, 2013 Rule sampled 7 groundwater monitoring wells (MW-2, 4, 8, 12, 17, 20, 22) as part of the quarterly monitoring program. Prior to sample collection, static water levels were measured at the wells to within 0.01 feet (ft) from the top of the north side of the PVC casing using an electronic water level meter. Prior to collection of the groundwater sample, each well was purged of three casing volumes of water using disposable bailers. Field parameters were obtained during sample collection which included pH, temperature, specific conductance, dissolved oxygen, and oxygen reduction potential (ORP) with an YSI® water quality meter. Groundwater field measurement results are provided in Table 1.

All groundwater samples were immediately placed on ice after sample collection and shipped under Chain-of-Custody procedures to Environmental Science Corporation (ESC) for laboratory analysis. Samples were received in good condition within appropriate temperatures by ESC. Quarterly samples were analyzed for benzene, toluene, ethylbenzene, xylene (BTEX) and methane, method-RSK175.

A summary of the groundwater analytical results is presented in Tables 2 and 3.

Remediation System

On December 20, 2012 the air sparge system was shut down to evaluate source area concentrations and remediation through natural attenuation.

Results**Site Hydrology**

During the July 2013 monitoring period, groundwater elevation varied from 5963 feet above mean seal level (AMSL) at MW-12 to 5945 feet at MW-20. Figure 2 illustrates the potentiometric surface for the site during this quarter. An average groundwater gradient was

determined to be 0.025 with a groundwater flow to the northeast/north consistent with the drainage system of West Divide Creek within the seep area.

July 2013 Analytical Results

Groundwater analytical results indicate that monitoring stations MW-2, MW-4 and MW-17 had dissolved benzene concentrations of 0.018 mg/L, 0.011 mg/L and 0.013 mg/L, respectively. Dissolved toluene, ethylbenzene, and xylene concentrations were below detection levels in all wells. Figure 3 illustrates dissolved BTEX and dissolved methane results for the July 2013.

Figure 4 illustrates the dissolved benzene impacts greater than 0.005 mg/L. Dissolved benzene concentrations above Table 910-1 allowable limits were detected in wells MW-2, MW-4, and MW-17.

The highest concentrations of dissolved methane were observed in MW-17 (1.9 mg/L), MW-2 (1.6 mg/L), and MW-4 (1.3 mg/L). Analytical results indicate methane was below 1.0 mg/L in all other sampled monitoring wells during the July 2013.

Below is a summary of monitoring stations that are in the current sampling plan that had been impacted by the seep:

- MW-2: Dissolved benzene concentrations remain above the groundwater standard (Figure 5). MW-2 is upgradient of the treatment area, but dissolved benzene concentrations have declined over time. The concentration during the July sampling events was 0.018 mg/L which is consistent with previous data.
- MW-4: Dissolved benzene concentrations remain above the groundwater standard (Figure 6). MW-4 is upgradient of the treatment area, but dissolved benzene concentrations have declined over time. The concentration during the July sampling events was 0.011 mg/L which is consistent with previous data.
- MW-8: Dissolved benzene concentrations declined to non-detect levels before the system was installed (Figure 7) and have remained below the groundwater standard since July 2005.
- MW-12: Dissolved benzene concentrations declined dramatically before the system was installed in 2005 (Figure 8) and have remained below the groundwater standard since March 2007. MW-12 is upgradient of the treatment area.
- MW-17: Dissolved benzene concentrations declined before the system start up and continue to decline (Figure 9). The concentration during the July sampling event was 0.013 mg/L which is consistent with previous data.

A summary of the historical BTEX and Methane concentrations is provided in the electronic attachment (Appendix B).

Divide Creek Remediation Analysis

Mr. Charlie Jensen
WDC July 2013 Status Report
August 21, 2013
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As described in previous West Divide Creek Seep Status Reports, the overall decline in dissolved benzene concentrations are attributed to a reduction in the mass flux of hydrocarbons from the seep. The natural processes of dilution, degradation, dispersion, and volatilization under the current site conditions provide remediation through natural attenuation (RNA), resulting in the observed decline in concentrations. Based on the extensive monitoring conducted to date, the groundwater plume is stable and/or diminishing, and demonstrates no potential for migration towards downgradient groundwater receptors (ie. water wells), without immediate detection within the existing monitoring well network.

We suggest continuing the current remediation plan through RNA. We would also suggest abandoning all monitoring wells, system wells, and system equipment that are not part of the current sampling plan.

Rule Engineering appreciates the opportunity to provide services to Encana. If you have any questions please contact me at 970-244-8500.

Sincerely,
Rule Engineering, LLC

Shad Johnson
Scientist/Project Manager

cc: Alex Fischer-COGCC
Brett Middleton-Encana
Russ Knight-Rule
Pepi Langegger

Tables

Table 1. 4/16/13 - 7/30/13 Groundwater Field Parameters

Monitoring Station	Date	DTW (ft)	Temp (°C)	SPC (mS/cm)	DO (mg/L)	TDS (mg/L)	SAL (ppt)	pH	ORP (mV)	Water Quality Observations
MW-2	4/16/2013	4.71	8.50	0.82	2.95	533.00	0.40	7.37	-60.20	Light brown in color, no sheen, no effervescence, mild sulfur odor, mildly visually turbid
MW-4	4/16/2013	7.26	8.50	0.77	2.99	500.50	0.38	7.50	-78.20	Light brown in color, large particles present, minor effervescence, no sheen, no odor, highly visually turbid
MW-8	4/16/2013	8.87	8.20	0.92	2.53	591.50	0.45	7.39	-56.00	Light gray in color, no effervescence, no sheen, no odor, mild visually turbid
MW-12	4/16/2013	-0.10	5.80	0.82	5.14	533.00	0.40	7.24	-81.80	Light gray in color, no effervescence, no sheen, no odor, mild visually turbid
MW-17	4/16/2013	6.39	7.70	1.12	2.48	728.00	0.56	7.49	-61.40	Light brown in color, no sheen, no effervescence, no odor, mildly visually turbid
MW-20	4/16/2013	9.13	7.00	0.76	5.90	507.00	0.38	7.39	4.30	Light gray in color, no effervescence, no sheen, no odor, mild visually turbid
MW-22	4/16/2013	10.66	7.50	0.85	4.50	552.50	0.42	7.42	-22.40	Light brown in color, no sheen, no effervescence, no odor, mildly visually turbid
MW-2	7/30/2013	5.23	13.10	0.92	2.35	NR	NR	8.21	-28.70	Light brown in color, no sheen, no effervescence, mild sulfur odor, mildly visually turbid
MW-4	7/30/2013	6.83	13.00	0.95	2.61	NR	NR	8.71	-70.30	Light brown in color, large particles present, minor effervescence, no sheen, no odor, highly visually turbid
MW-8	7/30/2013	9.93	13.70	1.33	3.05	NR	NR	8.17	-63.20	Light gray in color, no effervescence, no sheen, no odor, mild visually turbid
MW-12	7/30/2013	2.78	13.70	0.97	3.11	NR	NR	7.99	-62.10	Light gray in color, no effervescence, no sheen, no odor, mild visually turbid
MW-17	7/30/2013	7.69	13.00	1.27	2.41	NR	NR	8.41	-162.70	Light brown in color, no sheen, no effervescence, no odor, mildly visually turbid
MW-20	7/30/2013	10.38	13.30	1.23	3.88	NR	NR	8.21	-17.90	Light gray in color, no effervescence, no sheen, no odor, mild visually turbid
MW-22	7/30/2013	12.15	13.60	0.91	4.89	NR	NR	8.07	-25.60	Light brown in color, no sheen, no effervescence, no odor, mildly visually turbid

Notes: NR= Not recorded

Table 2. 4/16/13 - 7/30/13 West Divide Creek BTEX Groundwater Concentrations

Monitoring Station	Sample ID	Lab ID	Sample Date	Benzene (mg/L)				Toluene (mg/L)				Ethylbenzene (mg/L)				Total Xylenes (mg/L)			
				RDL	MDL	Value	Qual	RDL	MDL	Value	Qual	RDL	MDL	Value	Qual	RDL	MDL	Value	Qual
MW-2	MW-2-041613	L630994-01	4/16/2013	0.001	0.00033	0.018		0.005	0.00078	ND		0.001	0.00038	ND		0.003	0.0011	0.0032	
MW-4	MW-4-041613	L630994-02	4/16/2013	0.001	0.00033	0.042		0.005	0.00078	ND		0.001	0.00038	ND		0.003	0.0011	0.005	
MW-8	MW-8-041613	L630994-03	4/16/2013	0.001	0.00033	ND		0.005	0.00078	ND		0.001	0.00038	ND		0.003	0.0011	ND	
MW-12	MW-12-041613	L630994-04	4/16/2013	0.001	0.00033	ND		0.005	0.00078	ND		0.001	0.00038	ND		0.003	0.0011	ND	
MW-17	MW-17-041613	L630994-05	4/16/2013	0.001	0.00033	0.0035		0.005	0.00078	ND		0.001	0.00038	ND		0.003	0.0011	ND	
MW-20	MW-20-041613	L630994-06	4/16/2013	0.001	0.00033	ND		0.005	0.00078	ND		0.001	0.00038	ND		0.003	0.0011	ND	
MW-22	MW-22-041613	L630994-07	4/16/2013	0.001	0.00033	ND		0.005	0.00078	ND		0.001	0.00038	ND		0.003	0.0011	ND	
MW-2	MW-2-073013	L649377-01	7/30/2013	0.001	0.00033	0.018		0.005	0.00078	ND		0.001	0.00038	ND		0.003	0.0011	ND	
MW-4	MW-4-073013	L649377-02	7/30/2013	0.001	0.00033	0.011		0.005	0.00078	ND		0.001	0.00038	ND		0.003	0.0011	ND	
MW-8	MW-8-073013	L649377-03	7/30/2013	0.001	0.00033	ND		0.005	0.00078	ND		0.001	0.00038	ND		0.003	0.0011	ND	
MW-12	MW-12-073013	L649377-04	7/30/2013	0.001	0.00033	ND		0.005	0.00078	ND		0.001	0.00038	ND		0.003	0.0011	ND	
MW-17	MW-17-073013	L649377-05	7/30/2013	0.001	0.00033	0.013		0.005	0.00078	ND		0.001	0.00038	ND		0.003	0.0011	ND	
MW-20	MW-20-073013	L649377-06	7/30/2013	0.001	0.00033	ND		0.005	0.00078	ND		0.001	0.00038	ND		0.003	0.0011	ND	
MW-22	MW-22-073013	L649377-07	7/30/2013	0.001	0.00033	ND		0.005	0.00078	ND		0.001	0.00038	ND		0.003	0.0011	ND	

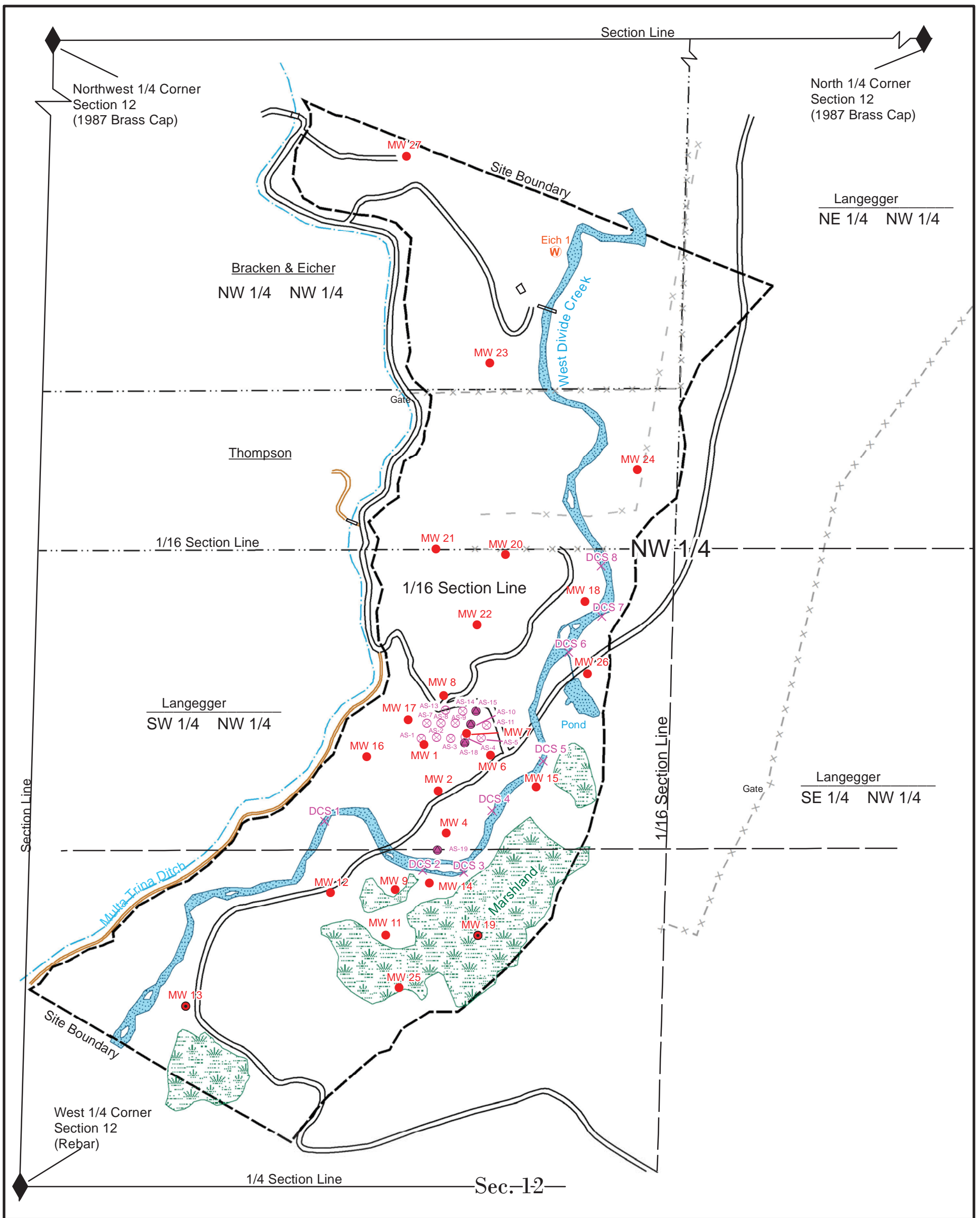
Value exceeds Table 910-1

Table 3. 4/16/13 - 7/30/13 Methane Groundwater Concentrations.

Monitoring Station	Sample ID	Lab ID	Sample Date	Methane (mg/L)			
				RDL	MDL	Value	Qual
MW-2	MW-2-041613	L630994-01	4/16/2013	0.05	0.01	2.6	
MW-4	MW-4-041613	L630994-02	4/16/2013	0.05	0.01	2.8	
MW-8	MW-8-041613	L630994-03	4/16/2013	0.01	0.0021	0.055	
MW-12	MW-12-041613	L630994-04	4/16/2013	0.01	0.0021	<0.010	
MW-17	MW-17-041613	L630994-05	4/16/2013	0.01	0.0021	0.42	
MW-20	MW-20-041613	L630994-06	4/16/2013	0.01	0.0021	<0.010	
MW-22	MW-22-041613	L630994-07	4/16/2013	0.01	0.0021	<0.010	
MW-2	MW-2-041613	L630994-01	4/16/2013	0.05	0.01	1.6	
MW-4	MW-4-041613	L630994-02	4/16/2013	0.05	0.01	1.3	
MW-8	MW-8-041613	L630994-03	4/16/2013	0.01	0.0021	0.051	
MW-12	MW-12-041613	L630994-04	4/16/2013	0.01	0.0021	0.66	
MW-17	MW-17-041613	L630994-05	4/16/2013	0.01	0.0021	1.9	
MW-20	MW-20-041613	L630994-06	4/16/2013	0.01	0.0021	<0.010	
MW-22	MW-22-041613	L630994-07	4/16/2013	0.01	0.0021	<0.010	

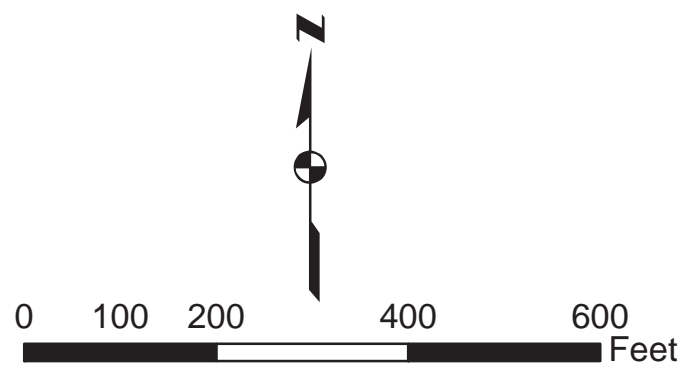
Note: No Methane Standard for Groundwater in COGCC Table 910-1

Figures



Legend

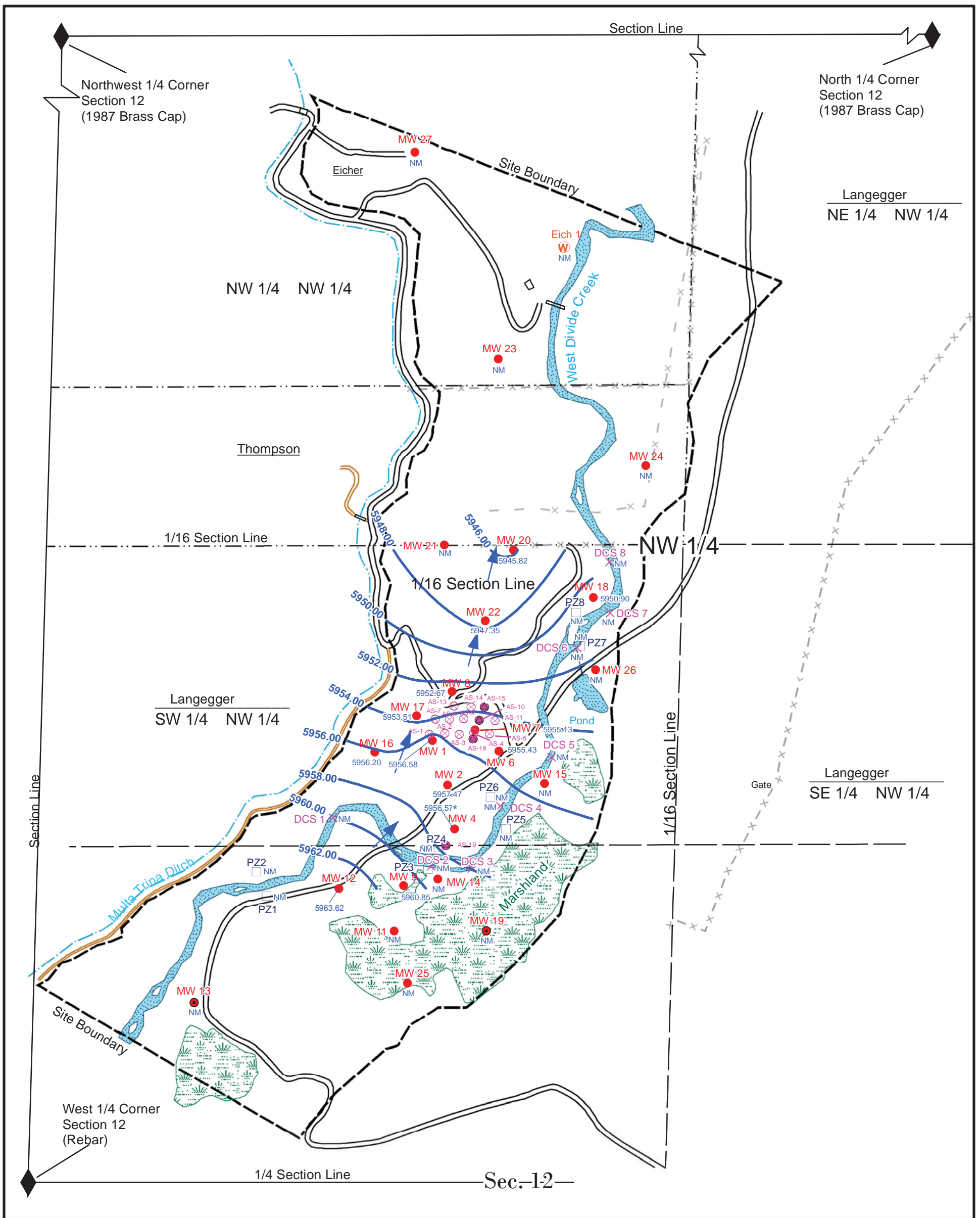
- Site Boundary
- Road
- - - Drainage
- x - x - Fence
- x - - Old Fence
- - - Property Line
- Trail
- ⊗ Air Sparge
- × Divide Creek Sample Location
- Monitoring Well Location
- Abandoned or Plugged Monitoring Well Location
- Nested Air Sparge Well Location
- Piezometer Location
- ◆ Section Corners



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Site Location Map

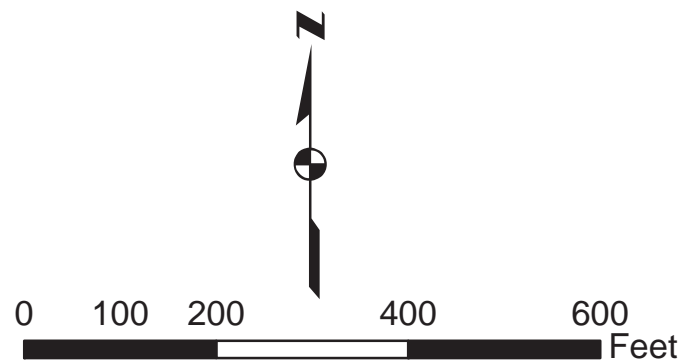


Legend

- Site Boundary
- Road
- Drainage
- × Fence
- × Old Fence
- · - Property Line
- Trail
- Air_Sparge_unconverted
- × Divide Creek Sample Location
- Monitoring Well Location
- Abandoned or Plugged Monitoring Well Location
- Nested Air Sparge Well Location
- Piezometer Location
- ◆ Section Corners

Groundwater Legend

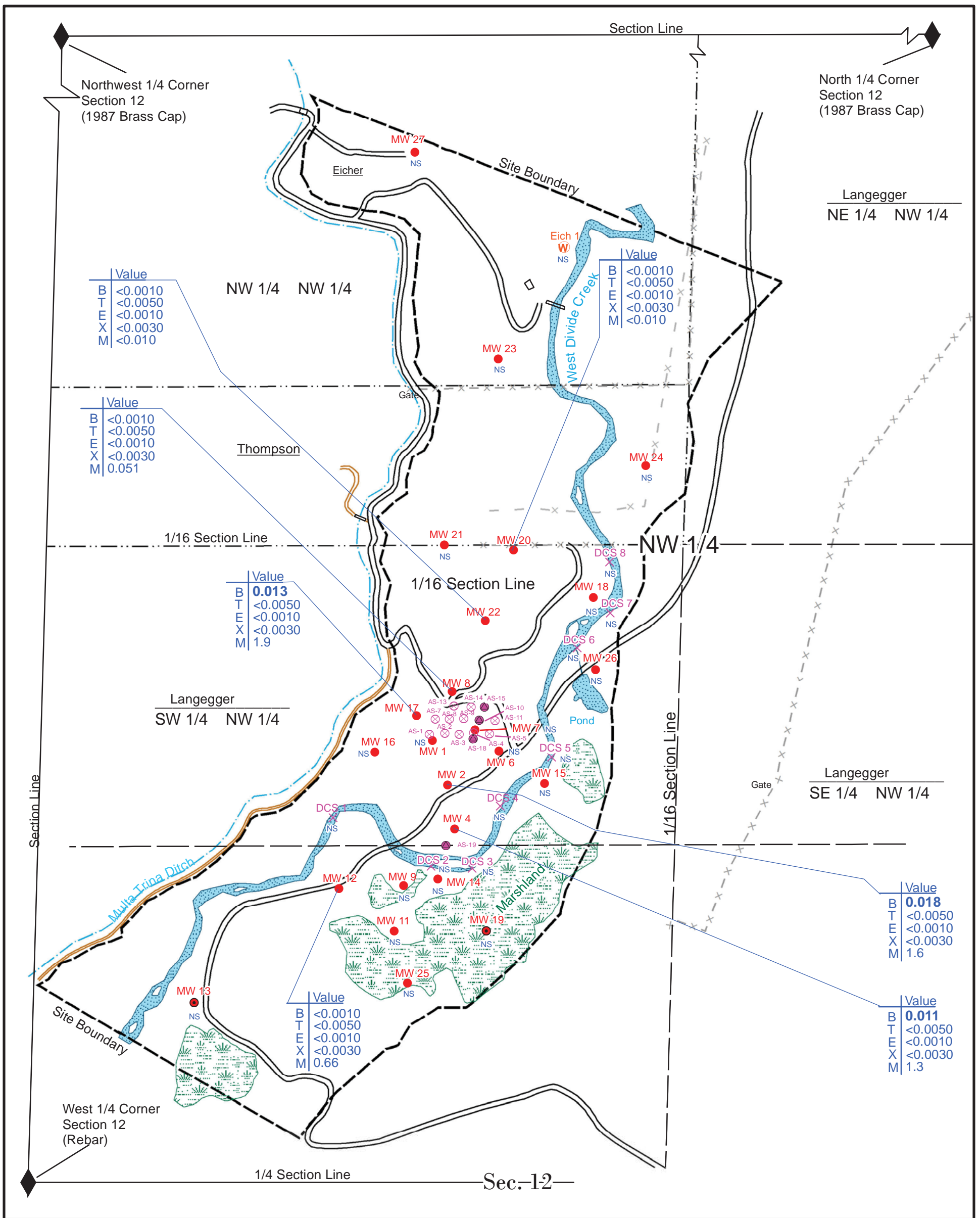
- 5940.00 = Groundwater Elevation Contour (Feet)
- 5940.17 = Groundwater Elevation (Feet)
- NM = Not Measured
- * = Data not used in contouring
- ↑ = Flow Vector



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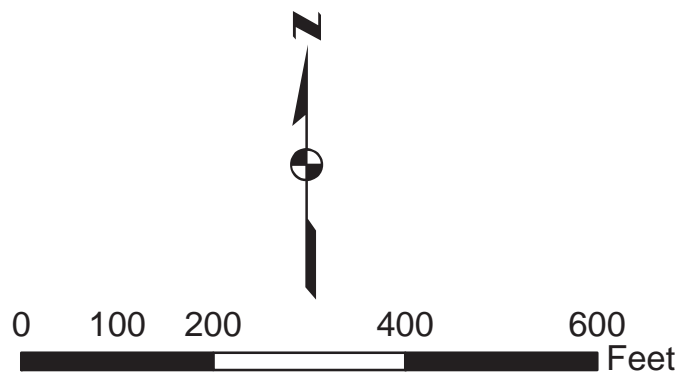


Groundwater Elevation Map
July 2013



- Legend**
- Site Boundary
 - Road
 - Drainage
 - × Fence
 - × Old Fence
 - · - Property Line
 - Trail
 - Air Sparge
 - × Divide Creek Sample Location
 - Monitoring Well Location
 - Abandoned or Plugged Monitoring Well Location
 - Nested Air Sparge Well Location
 - Piezometer Location
 - ◆ Section Corners

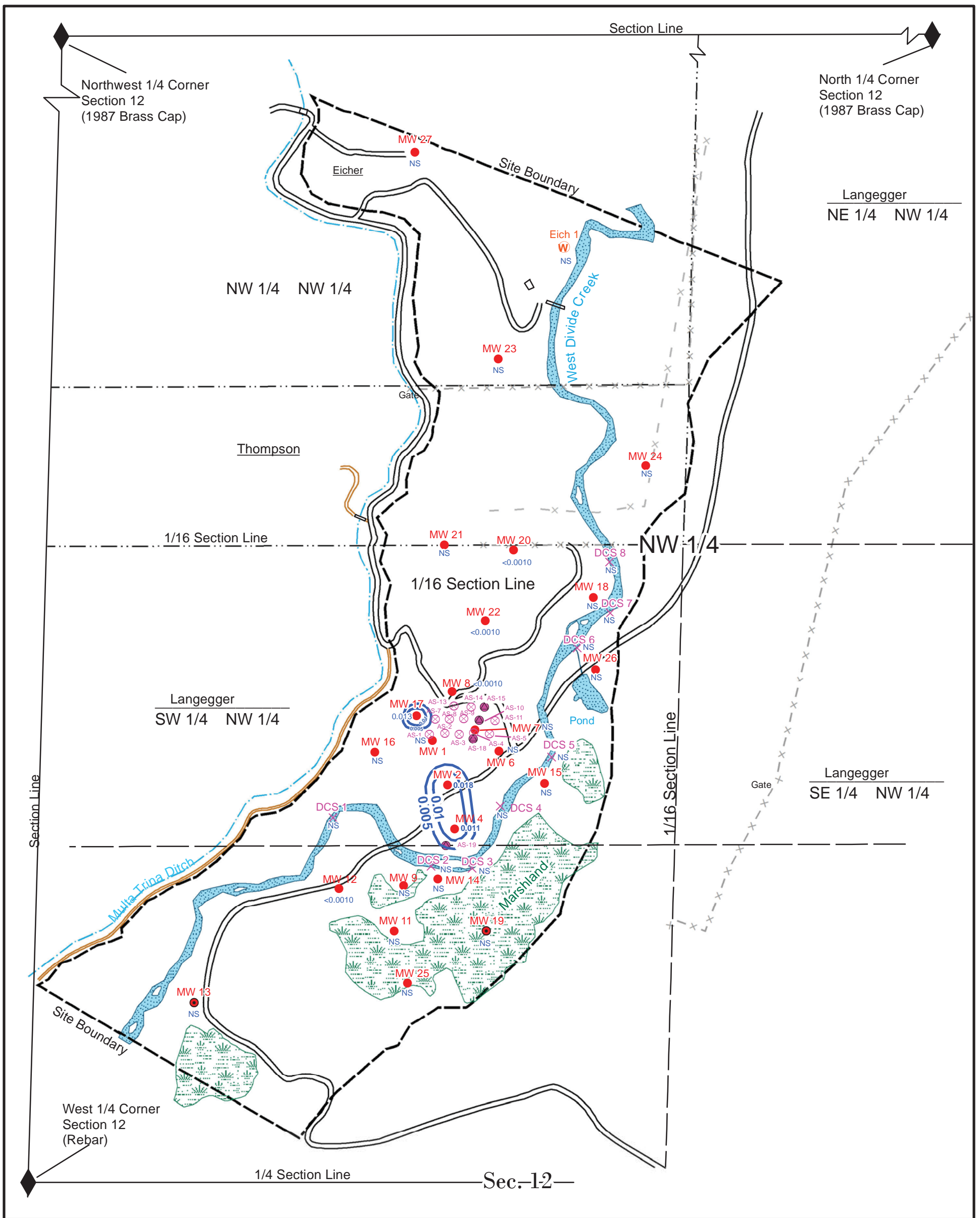
Chemical Data
 B = Benzene (mg/L)
 T = Toluene (mg/L)
 E = Ethylbenzene (mg/L)
 X = Xylenes (mg/L)
 M = Total Methane (mg/L)
 NS = Not Sampled
 NA = Not Analyzed



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**Groundwater Analytical Results
 July 2013**



Legend

- Site Boundary
- Road
- Drainage
- × × Fence
- × — Old Fence
- - - Property Line
- Trail
- Air Sparge
- × Divide Creek Sample Location
- Monitoring Well Location
- Abandoned or Plugged Monitoring Well Location
- Nested Air Sparge Well Location
- Piezometer Location
- ◆ Section Corners

Chemical Data

- 0.005— = Benzene Concentration Contour (mg/L)
- 0.045 = Benzene Concentration (mg/L)
- NS = Not Sampled

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Dissolved Benzene Concentrations
July 2013

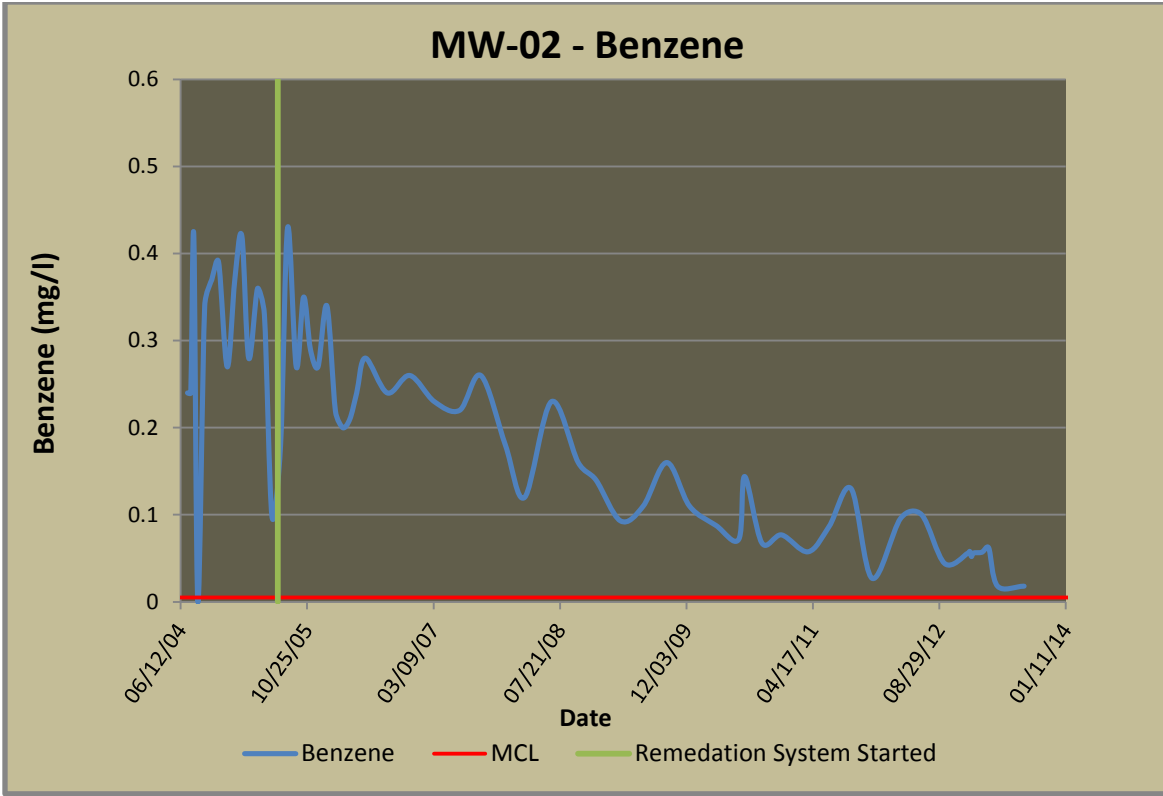


Figure 5 (MW-02 Historical Benzene Concentrations)

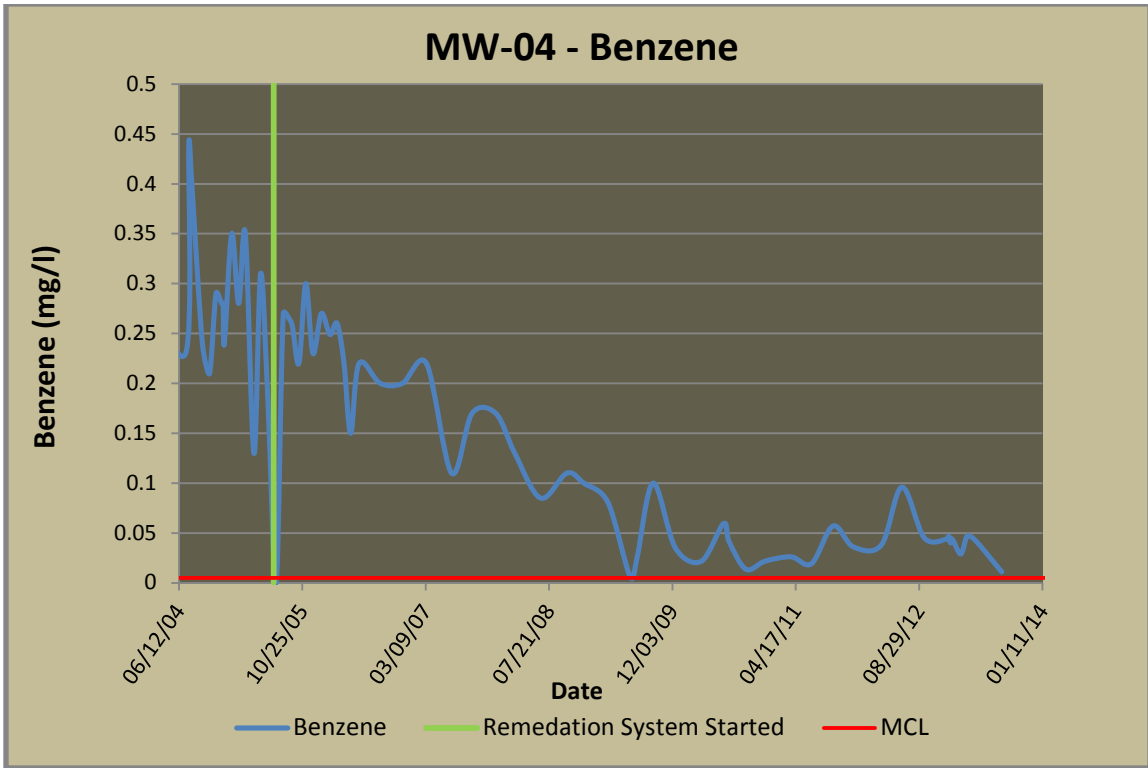


Figure 6 (MW-04 Historical Benzene Concentrations)

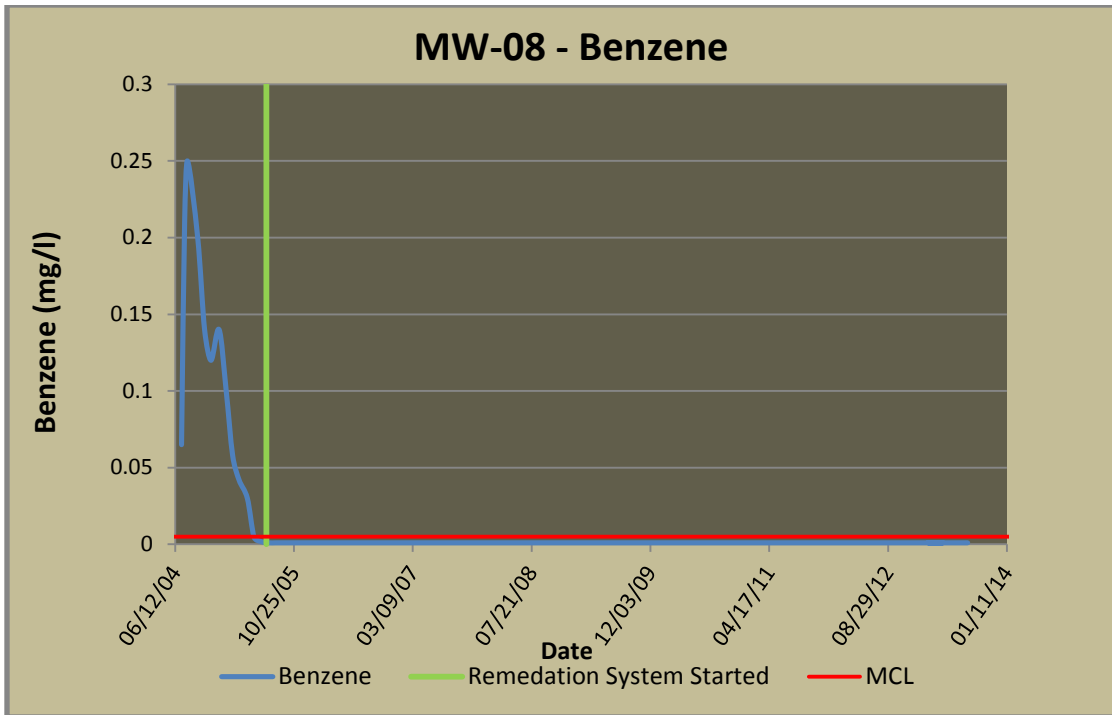


Figure 7 (MW-08 Historical Benzene Concentrations)

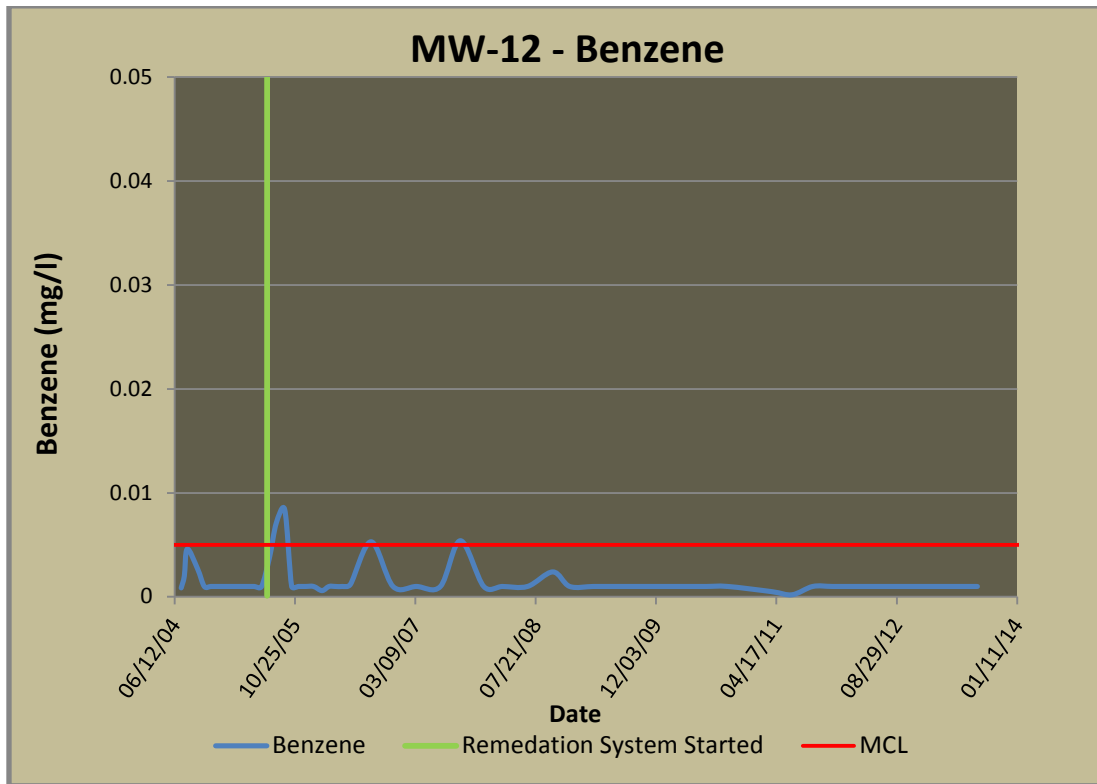


Figure 8 (MW-12 Historical Benzene Concentrations)

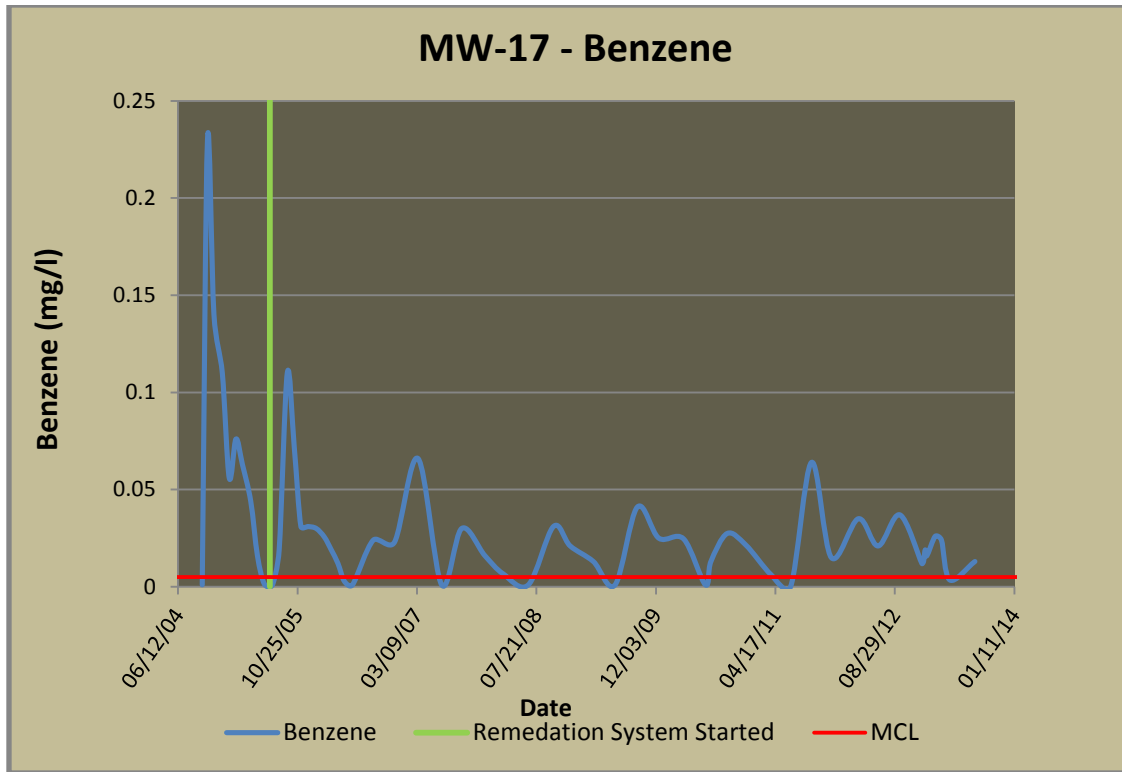


Figure 9 (MW-17 Historical Benzene Concentrations)

Appendix A



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

Brett Middleton
EnCana Oil & Gas Inc. - CO
143 Diamond Avenue
Parachute, CO 81635

Report Summary

Wednesday August 07, 2013

Report Number: L649377


Samples Received: 07/31/13

Client Project: WDC-01E

Description: West Divide Creek-Quarterly

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

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

Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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.



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REPORT OF ANALYSIS

Brett Middleton
 EnCana Oil & Gas Inc. - CO
 143 Diamond Avenue
 Parachute, CO 81635

August 07, 2013

Date Received : July 31, 2013
 Description : West Divide Creek-Quarterly
 Sample ID : MW-2-073013
 Collected By : Shad Johnson
 Collection Date : 07/30/13 10:15

ESC Sample # : L649377-01
 Site ID : WDC
 Project # : WDC-01E

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Methane	1.6	0.10	mg/l	RSK175	08/07/13	10
Ethane	0.67	0.013	mg/l	RSK175	08/06/13	1
Ethene	BDL	0.013	mg/l	RSK175	08/06/13	1
Propane	0.15	0.019	mg/l	RSK175	08/06/13	1
Benzene	0.018	0.0010	mg/l	8260B	08/01/13	1
Toluene	BDL	0.0050	mg/l	8260B	08/01/13	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	08/01/13	1
Total Xylenes	BDL	0.0030	mg/l	8260B	08/01/13	1
Surrogate Recovery						
Toluene-d8	100.		% Rec.	8260B	08/01/13	1
Dibromofluoromethane	97.3		% Rec.	8260B	08/01/13	1
a,a,a-Trifluorotoluene	101.		% Rec.	8260B	08/01/13	1
4-Bromofluorobenzene	103.		% Rec.	8260B	08/01/13	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: 08/07/13 15:22 Printed: 08/07/13 15:23



12065 Lebanon Rd.
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Est. 1970

REPORT OF ANALYSIS

Brett Middleton
 EnCana Oil & Gas Inc. - CO
 143 Diamond Avenue
 Parachute, CO 81635

August 07, 2013

Date Received : July 31, 2013
 Description : West Divide Creek-Quarterly
 Sample ID : MW-4-073013
 Collected By : Shad Johnson
 Collection Date : 07/30/13 10:35

ESC Sample # : L649377-02
 Site ID : WDC
 Project # : WDC-01E

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Methane	1.3	0.020	mg/l	RSK175	08/07/13	2
Ethane	0.21	0.013	mg/l	RSK175	08/07/13	1
Ethene	BDL	0.013	mg/l	RSK175	08/07/13	1
Propane	0.076	0.019	mg/l	RSK175	08/07/13	1
Benzene	0.011	0.0010	mg/l	8260B	08/01/13	1
Toluene	BDL	0.0050	mg/l	8260B	08/01/13	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	08/01/13	1
Total Xylenes	BDL	0.0030	mg/l	8260B	08/01/13	1
Surrogate Recovery						
Toluene-d8	101.		% Rec.	8260B	08/01/13	1
Dibromofluoromethane	92.1		% Rec.	8260B	08/01/13	1
a,a,a-Trifluorotoluene	99.7		% Rec.	8260B	08/01/13	1
4-Bromofluorobenzene	102.		% Rec.	8260B	08/01/13	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: 08/07/13 15:22 Printed: 08/07/13 15:23



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Est. 1970

REPORT OF ANALYSIS

Brett Middleton
 EnCana Oil & Gas Inc. - CO
 143 Diamond Avenue
 Parachute, CO 81635

August 07, 2013

Date Received : July 31, 2013
 Description : West Divide Creek-Quarterly
 Sample ID : MW-8-073013
 Collected By : Shad Johnson
 Collection Date : 07/30/13 11:17

ESC Sample # : L649377-03
 Site ID : WDC
 Project # : WDC-01E

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Methane	0.051	0.010	mg/l	RSK175	08/07/13	1
Ethane	BDL	0.013	mg/l	RSK175	08/07/13	1
Ethene	BDL	0.013	mg/l	RSK175	08/07/13	1
Propane	BDL	0.019	mg/l	RSK175	08/07/13	1
Benzene	BDL	0.0010	mg/l	8260B	08/01/13	1
Toluene	BDL	0.0050	mg/l	8260B	08/01/13	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	08/01/13	1
Total Xylenes	BDL	0.0030	mg/l	8260B	08/01/13	1
Surrogate Recovery						
Toluene-d8	99.9		% Rec.	8260B	08/01/13	1
Dibromofluoromethane	97.5		% Rec.	8260B	08/01/13	1
a,a,a-Trifluorotoluene	105.		% Rec.	8260B	08/01/13	1
4-Bromofluorobenzene	101.		% Rec.	8260B	08/01/13	1

BDL - Below Detection Limit
 Det. Limit - Practical Quantitation Limit(PQL)
 Note:
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Reported: 08/07/13 15:22 Printed: 08/07/13 15:23



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

Brett Middleton
 EnCana Oil & Gas Inc. - CO
 143 Diamond Avenue
 Parachute, CO 81635

August 07, 2013

Date Received : July 31, 2013
 Description : West Divide Creek-Quarterly
 Sample ID : MW-12-073013
 Collected By : Shad Johnson
 Collection Date : 07/30/13 11:00

ESC Sample # : L649377-04
 Site ID : WDC
 Project # : WDC-01E

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Methane	0.66	0.010	mg/l	RSK175	08/07/13	1
Ethane	0.14	0.013	mg/l	RSK175	08/07/13	1
Ethene	BDL	0.013	mg/l	RSK175	08/07/13	1
Propane	BDL	0.019	mg/l	RSK175	08/07/13	1
Benzene	BDL	0.0010	mg/l	8260B	08/01/13	1
Toluene	BDL	0.0050	mg/l	8260B	08/01/13	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	08/01/13	1
Total Xylenes	BDL	0.0030	mg/l	8260B	08/01/13	1
Surrogate Recovery						
Toluene-d8	101.		% Rec.	8260B	08/01/13	1
Dibromofluoromethane	99.3		% Rec.	8260B	08/01/13	1
a,a,a-Trifluorotoluene	105.		% Rec.	8260B	08/01/13	1
4-Bromofluorobenzene	102.		% Rec.	8260B	08/01/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Brett Middleton
 EnCana Oil & Gas Inc. - CO
 143 Diamond Avenue
 Parachute, CO 81635

August 07, 2013

Date Received : July 31, 2013
 Description : West Divide Creek-Quarterly
 Sample ID : MW-17-073013
 Collected By : Shad Johnson
 Collection Date : 07/30/13 10:43

ESC Sample # : L649377-05
 Site ID : WDC
 Project # : WDC-01E

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Methane	1.9	0.050	mg/l	RSK175	08/07/13	5
Ethane	0.30	0.013	mg/l	RSK175	08/07/13	1
Ethene	BDL	0.013	mg/l	RSK175	08/07/13	1
Propane	0.035	0.019	mg/l	RSK175	08/07/13	1
Benzene	0.013	0.0010	mg/l	8260B	08/01/13	1
Toluene	BDL	0.0050	mg/l	8260B	08/01/13	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	08/01/13	1
Total Xylenes	BDL	0.0030	mg/l	8260B	08/01/13	1
Surrogate Recovery						
Toluene-d8	99.2		% Rec.	8260B	08/01/13	1
Dibromofluoromethane	97.3		% Rec.	8260B	08/01/13	1
a,a,a-Trifluorotoluene	103.		% Rec.	8260B	08/01/13	1
4-Bromofluorobenzene	101.		% Rec.	8260B	08/01/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

Brett Middleton
 EnCana Oil & Gas Inc. - CO
 143 Diamond Avenue
 Parachute, CO 81635

August 07, 2013

Date Received : July 31, 2013
 Description : West Divide Creek-Quarterly
 Sample ID : MW-20-073013
 Collected By : Shad Johnson
 Collection Date : 07/30/13 11:35

ESC Sample # : L649377-06
 Site ID : WDC
 Project # : WDC-01E

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Methane	BDL	0.010	mg/l	RSK175	08/07/13	1
Ethane	BDL	0.013	mg/l	RSK175	08/07/13	1
Ethene	BDL	0.013	mg/l	RSK175	08/07/13	1
Propane	BDL	0.019	mg/l	RSK175	08/07/13	1
Benzene	BDL	0.0010	mg/l	8260B	08/01/13	1
Toluene	BDL	0.0050	mg/l	8260B	08/01/13	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	08/01/13	1
Total Xylenes	BDL	0.0030	mg/l	8260B	08/01/13	1
Surrogate Recovery						
Toluene-d8	101.		% Rec.	8260B	08/01/13	1
Dibromofluoromethane	96.2		% Rec.	8260B	08/01/13	1
a,a,a-Trifluorotoluene	101.		% Rec.	8260B	08/01/13	1
4-Bromofluorobenzene	102.		% Rec.	8260B	08/01/13	1

BDL - Below Detection Limit
 Det. Limit - Practical Quantitation Limit(PQL)
 Note:
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REPORT OF ANALYSIS

Brett Middleton
 EnCana Oil & Gas Inc. - CO
 143 Diamond Avenue
 Parachute, CO 81635

August 07, 2013

Date Received : July 31, 2013
 Description : West Divide Creek-Quarterly
 Sample ID : MW-22-073013
 Collected By : Shad Johnson
 Collection Date : 07/30/13 11:50

ESC Sample # : L649377-07
 Site ID : WDC
 Project # : WDC-01E

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Methane	BDL	0.010	mg/l	RSK175	08/07/13	1
Ethane	BDL	0.013	mg/l	RSK175	08/07/13	1
Ethene	BDL	0.013	mg/l	RSK175	08/07/13	1
Propane	BDL	0.019	mg/l	RSK175	08/07/13	1
Benzene	BDL	0.0010	mg/l	8260B	08/01/13	1
Toluene	BDL	0.0050	mg/l	8260B	08/01/13	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	08/01/13	1
Total Xylenes	BDL	0.0030	mg/l	8260B	08/01/13	1
Surrogate Recovery						
Toluene-d8	99.8		% Rec.	8260B	08/01/13	1
Dibromofluoromethane	97.3		% Rec.	8260B	08/01/13	1
a,a,a-Trifluorotoluene	101.		% Rec.	8260B	08/01/13	1
4-Bromofluorobenzene	102.		% Rec.	8260B	08/01/13	1

BDL - Below Detection Limit
 Det. Limit - Practical Quantitation Limit(PQL)
 Note:
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Reported: 08/07/13 15:22 Printed: 08/07/13 15:23

Summary of Remarks For Samples Printed
08/07/13 at 15:23:19

TSR Signing Reports: 358
R5 - Desired TAT

Log ALL samples for EDD (COGCC EDD). Log all PAHs as PAHSIM. DRO and DRO-SGT needed if TPH is listed twice on COC, one being TPH-GEL EXTRACT.

Sample: L649377-01 Account: ENCANACO Received: 07/31/13 09:00 Due Date: 08/07/13 00:00 RPT Date: 08/07/13 15:22
Sample: L649377-02 Account: ENCANACO Received: 07/31/13 09:00 Due Date: 08/07/13 00:00 RPT Date: 08/07/13 15:22
Sample: L649377-03 Account: ENCANACO Received: 07/31/13 09:00 Due Date: 08/07/13 00:00 RPT Date: 08/07/13 15:22
Sample: L649377-04 Account: ENCANACO Received: 07/31/13 09:00 Due Date: 08/07/13 00:00 RPT Date: 08/07/13 15:22
Sample: L649377-05 Account: ENCANACO Received: 07/31/13 09:00 Due Date: 08/07/13 00:00 RPT Date: 08/07/13 15:22
Sample: L649377-06 Account: ENCANACO Received: 07/31/13 09:00 Due Date: 08/07/13 00:00 RPT Date: 08/07/13 15:22
Sample: L649377-07 Account: ENCANACO Received: 07/31/13 09:00 Due Date: 08/07/13 00:00 RPT Date: 08/07/13 15:22

Company Name/Address:
Encana
 143 Diamond Ave
 Parachute, CO 81635
 ENCRCO - ENCRCO-RULEENG

Billing Information:
Charles Jensen
 143 Diamond Ave
 Parachute, CO 81635
 970-285-2735

Report to:
Charles Jensen

Email To:
charles.jensen@encana.com

Project Description:
West Divide Creek-Quarterly

City/State Collected:
CO

Phone:

Client Project #
WDC-01E

Lab Project #
ENCRCO-RULEENG

Fax: **970-285-2735**

Site/Facility ID #
WDC

P.O. #

Collected by (print):
Shad Johnson

Collected by (signature): 

Date Results Needed

Immediately Packed on Ice N Y

Rush? (Lab MUST Be Notified)
 ___ Same Day200%
 ___ Next Day100%
 ___ Two Day50%
 ___ Three Day25%

Email? ___ No Yes
 FAX? No ___ Yes

BTEX (8260)

CH4

Analysis / Container / Preservative

Chain of Custody Page 1 of 1



YOUR LAB OF CHOICE

12065 Lebanon Rd
 Mount Juliet, TN 37122
 Phone: 615-758-5858
 Phone: 800-767-5859
 Fax: 615-758-5859



L# **UG9577**

Table # **D129**

Acctnum:
 Template:
 Prelogin:
 TSR:
 Cooler:

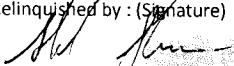
Shipped Via:

Rem./Contaminant	Sample # (lab only)
------------------	---------------------

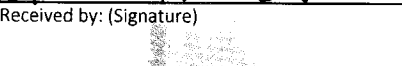
Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	BTEX (8260)	CH4
MW-2-073013	Grab	GW	NA	7/30/13	1015	6	X	X
MW-4-073013	Grab	GW	NA	7/30/13	1035	6	X	X
MW-8-073013	Grab	GW	NA	7/30/13	1117	6	X	X
MW-12-073013	Grab	GW	NA	7/30/13	1100	6	X	X
MW-17-073013	Grab	GW	NA	7/30/13	1043	6	X	X
MW-20-073013	Grab	GW	NA	7/30/13	1135	6	X	X
MW-22-073013	Grab	GW	NA	7/30/13	1150	6	X	X

* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other _____ pH _____ Temp _____

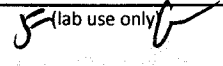
Remarks: _____ Flow _____ Other _____ Hold # _____

Relinquished by: (Signature) 

Date: **7/30/13** Time: **1500**

Received by: (Signature) 

Samples returned via: UPS FedEx Courier _____

Condition: **F** (lab use only) 

Relinquished by: (Signature)

Date:

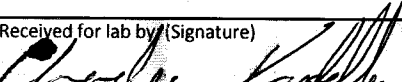
Received by: (Signature)

Temp: **3.7** °C Bottles Received: **42 up**

COC Seal Intact: Y ___ N ___ NA

Relinquished by: (Signature)

Date:

Received for lab by (Signature) 

Date: **7-31-13** Time: **0900**

pH Checked: _____ NCF: _____

Appendix B

(Electronic Attachment)