Federal 18 #1T Remediation System
2015 3rd & 4th Quarter Report

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Introduction

The purpose of this report is to summarize the current on-site activities involving venting gas and producing water from a former coal bed methane gas well at the Federal 18 #1T. The casing of this well has been modified to vent gas and purge water from the Ojo Alamo Formation. The setup and initial installation of this system is detailed in a report submitted to Brandon Powell, New Mexico Oil Conservation Division (OCD), in November, 2010. This quarterly report details operations from October 1, 2015 through December 31, 2015.

History

The vacuum system at the Federal 18 #1T is being operated as part of an on going effort between the OCD and XTO Energy, Inc. (XTO) to vent gas from the Nacimiento formation just above the Ojo Alamo Formation. Gas was recently found in the Nacimiento formation which could have come from several contributing sources. The Federal 1 #18 (30-045-09466), located in Section 10 of Township 30N, Range 13W and approximately 2,600' to the south-west of water well SJ-01737, was plugged in 1988 by Southern Union Oil Company. This well only had an initial surface casing of 200' when it was drilled in 1959. Section 18 also has one (1) additional well plugged by XTO Energy, Inc. in 2010. Section 19 of Township 30N, Range 12W has two (2) historically plugged wells. Approximately 4,400' to the south of water well SJ-01737, the Dansby #2 (30-045-09402) was plugged by Don Trader, Inc. in 1954 with a total depth of 1980' and a surface casing of only 100', and the second was a well plugged by Amoco Production in 1988. There are also three (3) additional wells plugged by Texacoma in 1997 in Section 19. There are additionally numerous oil and gas wells being operated by local exploration and production companies in the area. In Section 18, there are three (3) wells being operated by XTO Energy, Inc., and two (2) wells being operated by ConocoPhillips as Burlington Resources. In Section 19, there are nine (9) wells being operated by XTO Energy, Inc. In Section 7, there are seven (7) wells being operated by XTO Energy, Inc, and four (4) wells being operated by Robert L Bayless Producers, LLC. Furthermore, there is naturally occurring gas in the formation according to statements from local water well drillers, and a casing leak was discovered at the New Mexico Federal N #3E well site, (located in Unit D, Section 18, Township 30N, Range 12W, San Juan County, New Mexico). This leak was identified as a result of discovery of gas in a local water well (SJ 1737) in April, 2010. Bradenhead pressures were observed at several XTO wells in the area. The New Mexico Federal N #3E, the New Mexico Federal N #3F and the New Mexico Federal N #3 all had bradenhead pressure tests performed. The bradenhead pressure from the New Mexico Federal N #3E was 17 psi, indicating a leak in the casing. The casing leak was repaired, and the New Mexico Federal N #3E was put back into operation. In agreement with the OCD, a nearby gas well scheduled to be plugged, Federal 18 #1T, was modified to act as a venting well by setting a plug at approximately 513 feet. Perforations were made in the casing at 437 feet and 457 feet in order to assess the groundwater and vent gas from the Nacimiento.

On September 24, 2010, a swab rig was used to determine if the well would produce water using the perforations. The swab rig recovered approximately 2 barrels of water, indicating that the perforations would produce water. A sample collected during the swab returned results above Water Quality Control Commission (WQCC) standards for benzene, total xylenes, and total

chlorides; see attached ***Federal 18 #1T Water Results Table***. Due to the low pH and high chlorides, it was inferred that the acid used to dissolve cement during perforation activities may have infiltrated the aquifer, causing the increased levels shown in the sampling results. XTO recommended pumping the aquifer until sampling results were below the WQCC standards for BTEX and chlorides.

A pump was installed in the Federal 18 #1T on November 9, 2010 at approximately 485 feet. During the pump installation, the water level was checked using a Keck ET Long water level indicator. The static water level was found to be approximately 402.20 feet. The pump was initially set to operate four (4) times a day for 15 minutes, purging approximately 260 gallons per day. During swab and pump installation activities, no gas was found flowing from the well.

On November 11, 2010, a small vacuum pump was installed at the Federal 18 #1T to determine if gas could be vented. The discharge from the vacuum was checked using a MSA 4-Gas Monitor, which confirmed that methane was being vented from the vacuum pump discharge. The vacuum pump operates at a discharge rate of three (3) standard cubic feet per minute (scfm), which is equivalent to approximately six (6) actual cubic feet per minute (acfm) based on elevation. This volume was calculated using the conversion factors provided by the vacuum pump manufacturer, Becker. The vacuum pump initially held a vacuum of approximately -12 inches of mercury on the casing of the Federal 18 #1T during operation. Both the vacuum pump and the water pump were powered by a portable generator placed on-site.

The water pump was plumbed into the existing water lines on site, so that all water would pump into the 210 barrel water tank left on-site from production activities. Water piping above ground was wrapped with heat trace and insulation to prevent freezing.

The system was electrified on February 3, 2011 to prevent down time due to generator maintenance issues.

4th Quarter Activities

During the 4th quarter of 2015, the system ran continuously with no down time. As of November 13, 2015, approximately 15,382 cubic feet (MCF) of gas has been vented from the Federal 18 #1T casing, with the system venting approximately 60.4 MCF per week during operation, while maintaining an average casing pressure of -10 inches of mercury on the Federal 18 #1T casing.

A total of 642,650 gallons of water have been removed from the Federal 18 #1T as of November 13, 2015. The attached ***Federal 18 #1T Water Results Table*** shows that that benzene concentrations have rebounded in the third and fourth quarter with two (2) separate sampling events returning results above the WQCC standard at 54.2 ppb (October 1, 2015) and 42.3 ppb (October 20, 2015) respectively. Chloride levels have remained constant through the 4th quarter, remaining steady at 21.3 ppm (October 1, 2015) and 18.1 ppm (October 20, 2015) respectively. pH values remained constant in the 4th quarter, returning results of 6.98 (October 1, 2015) and 7.09 (October 20, 2015) during the 4th quarter of 2015. TDS continues to be above WQCC standards at 2,260 ppm (October 1, 2015) and 2,330 ppm (October 20, 2015), but background levels (1,400 ppm) in water well SJ 1737 are historically above WQCC standards as well.

The pressure at well SJ 1737 was checked over the course of the 4th quarter. The pressure was checked by shutting in the casing for a minimum of one week prior to reading the pressure gauge. The pressure readings and average barometric pressures are outlined in the attached ***Well SJ 1731 Casing Pressures Table***. The pressure did not seem to show a correlation to the barometric pressure or temperature, and remained fairly constant over the course of the fourth quarter. The casing pressure in the water well SJ 1737 has shown an overall decrease from 9 oz in January of 2011 to 1.5 oz. in November of 2015. An overall decreasing trend has existed in the water well casing since 2011.

Recommendations

Groundwater samples will continue to be collected quarterly to monitor the benzene concentration in this well. Chlorides, pH, TDS and EC remained constant over the fourth quarter, and are very close to the background levels obtained in water well 1737. XTO proposes the continued operation of the vacuum pump at the Federal 18 #1T, but without the operation of the water pump, except to collect groundwater samples. A gas analysis sample will be collected from Federal 18-1T during the first quarter of 2016. Groundwater samples will continue to be collected on a quarterly basis until benzene levels remain below the WQCC standards for four (4) consecutive quarters. An alternative sampling schedule may be recommended at that time.

XTO proposes to discontinue gas analysis in water well 1737 due to the minimal pressure that appears on the casing. XTO will continue to monitor the pressure on the casing at water well 1737.

Logan Hixon
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Western Division

Federal 18 #1T Gas Vented

Date	SCFM	ACFM	Gas Vented Total (MCF)
11/24/2010	5	10	14.4
12/2/2010	3	6	89.13
12/3/2010	3	6	97.73
12/7/2010	3	6	123.53
12/9/2010	5	10	152.33
12/10/2010	3	6	160.93
12/13/2010	3	6	178.13
12/16/2011	4	8	212.69
12/17/2011	3.5	7	222.77
12/20/2011	3	6	248.57

Irratic readings due to freezing temperature and down time due to generator failures

2/9/2011	NA	NA	540.6
2/17/2011	3	6	601
2/24/2011	3	6	661.4
3/3/2011	3	6	721.8
3/10/2011	3	6	782.2
3/17/2011	3	6	842.6
3/24/2011	3	6	903
3/31/2011	3	6	963.4
4/7/2011	3	6	1023.8
4/14/2011	3	6	1084.2
4/21/2011	3	6	1144.6
4/28/2011	3	6	1205
5/5/2011	3	6	1265.4
5/12/2011	3	6	1325.8
5/19/2011	3	6	1386.2
5/26/2011	3	6	1446.6
6/2/2011	3	6	1507
6/9/2011	3	6	1567.4
6/16/2011	3	6	1627.8
6/23/2011	3	6	1688.2
6/30/2011	3	6	1748.6
7/7/2011	3	6	1792
7/14/2011	3	6	1852.4
7/21/2011	3	6	1912.8
7/28/2011	3	6	1973.2
8/5/2011	3	6	2033.6
8/12/2011	3	6	2094
8/19/2011	3	6	2154.4
8/26/2011	3	6	2214.8
9/2/2011	3	6	2275.2
9/9/2011	3	6	2335.6
9/16/2011	3	6	2396
9/23/2011	3	6	2456.4
9/30/2011	3	6	2516.8
10/7/2011	3	6	2577.2
10/14/2011	3	6	2637.6
10/21/2011	3	6	2698

Federal 18 #1T Gas Vented

Date	SCFM	ACFM	Gas Vented Total (MCF)
10/28/2011	3	6	2758.4
11/4/2011	3	6	2818.8
11/11/2011	3	6	2879.2
11/18/2011	3	6	2939.6
11/25/2011	3	6	3000
12/2/2011	3	6	3060.4
12/9/2011	3	6	3120.8
12/16/2011	3	6	3181.2
12/23/2011	3	6	3241.6
12/30/2011	3	6	3302
1/6/2012	3	6	3362.4
1/13/2012	3	6	3422.8
1/20/2012	3	6	3483.2
1/27/2012	3	6	3543.6
2/3/2012	3	6	3604
2/10/2012	3	6	3664.4
2/17/2012	3	6	3724.8
2/24/2012	3	6	3785.2
3/2/2012	3	6	3845.6
3/9/2012	3	6	3906
3/16/2012	3	6	3966.4
3/23/2012	3	6	4026.8
3/30/2012	3	6	4087.2
4/6/2012	3	6	4147.6
4/13/2012	3	6	4208
4/20/2012	3	6	4268.4
4/27/2012	3	6	4328.8
5/4/2012	3	6	4389.2
5/11/2012	3	6	4449.6
5/18/2012	3	6	4510
5/25/2012	3	6	4570.4
6/1/2012	3	6	4630.8
6/8/2012	3	6	4691.2
6/15/2012	3	6	4751.6
6/22/2012	3	6	4812
6/29/2012	3	6	4872.4
7/6/2012	3	6	4932.8
7/13/2012	3	6	4993.2
7/20/2012	3	6	5053.6
7/27/2012	3	6	5114
8/3/2012	3	6	5174.4
8/10/2012	3	6	5234.8
8/17/2012	3	6	5295.2
8/24/2012	3	6	5355.6
8/31/2012	3	6	5416
9/7/2012	3	6	5476.4
9/14/2012	3	6	5536.8
9/21/2012	3	6	5597.2
9/28/2012	3	6	5657.6
10/5/2012	3	6	5718
10/12/2012	3	6	5778.4
10/19/2012	3	6	5838.8

Federal 18 #1T Gas Vented

Date	SCFM	ACFM	Gas Vented Total (MCF)
10/26/2012	3	6	5899.2
11/2/2012	3	6	5959.6
11/9/2012	3	6	6020
11/16/2012	3	6	6080.4
11/23/2012	3	6	6140.8
11/30/2012	3	6	6201.2
12/7/2012	3	6	6261.6
12/14/2012	3	6	6322
12/21/2012	3	6	6382.4
12/28/2012	3	6	6442.8
1/4/2013	3	6	6503.2
1/11/2013	3	6	6563.6
1/18/2013	3	6	6624
1/25/2013	3	6	6684.4
2/1/2013	3	6	6744.8
2/8/2013	3	6	6805.2
2/15/2013	3	6	6865.6
2/22/2013	3	6	6926
3/1/2013	3	6	6986.4
3/8/2013	3	6	7046.8
3/15/2013	3	6	7107.2
3/22/2013	3	6	7167.6
3/29/2013	3	6	7228
4/5/2013	3	6	7288.4
4/12/2013	3	6	7348.8
4/19/2013	3	6	7409.2
4/26/2013	3	6	7469.6
5/3/2013	3	6	7530
5/10/2013	3	6	7590.4
5/17/2013	3	6	7650.8
5/24/2013	3	6	7711.2
5/31/2013	3	6	7771.6
6/7/2013	3	6	7832
6/14/2013	3	6	7892.4
6/21/2013	3	6	7952.8
6/28/2013	3	6	8013.2
7/5/2013	3	6	8073.6
7/12/2013	3	6	8134
7/19/2013	3	6	8194.4
7/26/2013	3	6	8254.8
8/2/2013	3	6	8315.2
8/9/2013	3	6	8375.6
8/16/2013	3	6	8436
8/23/2013	3	6	8496.4
8/30/2013	3	6	8556.8
9/6/2013	0	0	8556.8
9/13/2013	3	6	8617.2
9/20/2013	3	6	8677.6
9/27/2013	3	6	8738
10/4/2013	3	6	8798.4
10/11/2013	3	6	8858.8
10/18/2013	3	6	8919.2

Federal 18 #1T Gas Vented

Date	SCFM	ACFM	Gas Vented Total (MCF)
10/25/2013	3	6	8979.6
11/1/2013	3	6	9040
11/8/2013	3	6	9100.4
11/15/2013	3	6	9160.8
11/22/2013	3	6	9221.2
11/29/2013	3	6	9281.6
12/6/2013	3	6	9342
12/13/2013	3	6	9402.4
12/20/2013	3	6	9462.8
12/27/2013	3	6	9523.2
1/3/2014	3	6	9583.6
1/10/2014	3	6	9644
1/17/2014	3	6	9704.4
1/24/2014	3	6	9764.8
1/31/2014	3	6	9825.2
2/7/2014	3	6	9885.6
2/14/2014	3	6	9946
2/21/2014	3	6	10006.4
2/28/2014	3	6	10066.8
3/7/2014	3	6	10127.2
3/14/2014	3	6	10187.6
3/21/2014	3	6	10248
3/28/2014	3	6	10308.4
4/4/2014	3	6	10368.8
4/11/2014	3	6	10429.2
4/18/2014	3	6	10489.6
4/25/2014	3	6	10550
5/2/2014	3	6	10610.4
5/9/2014	3	6	10670.8
5/16/2014	3	6	10731.2
5/23/2014	3	6	10791.6
5/30/2014	3	6	10852
6/6/2014	3	6	10912.4
6/13/2014	3	6	10972.8
6/20/2014	3	6	11033.2
6/27/2014	3	6	11093.6
7/4/2014	3	6	11154
7/11/2014	3	6	11214.4
7/18/2014	3	6	11274.8
7/25/2014	3	6	11335.2
8/1/2014	3	6	11395.6
8/8/2014	3	6	11456
8/15/2014	3	6	11516.4
8/22/2014	3	6	11576.8
8/29/2014	3	6	11637.2
9/5/2014	3	6	11697.6
9/12/2014	3	6	11758
9/19/2014	3	6	11818.4
9/26/2014	3	6	11878.8
10/3/2014	3	6	11939.2
10/10/2014	3	6	11999.6
10/17/2014	3	6	12060

Federal 18 #1T Gas Vented

Date	SCFM	ACFM	Gas Vented Total (MCF)
10/24/2014	3	6	12120.4
10/31/2014	3	6	12180.8
11/7/2014	3	6	12241.2
11/14/2014	3	6	12301.6
11/21/2014	3	6	12362
11/28/2014	3	6	12422.4
12/5/2014	3	6	12482.8
12/12/2014	3	6	12543.2
12/19/2014	3	6	12603.6
12/26/2014	3	6	12603.6
1/2/2015	3	6	12664
1/9/2015	3	6	12724.4
1/16/2015	3	6	12784.8
1/23/2015	3	6	12845.2
1/30/2015	3	6	12905.6
2/6/2015	3	6	12966
2/13/2015	3	6	13026.4
2/20/2015	3	6	13086.8
2/27/2015	3	6	13147.2
3/6/2015	3	6	13207.6
3/13/2015	3	6	13268
3/20/2015	3	6	13328.4
3/27/2015	3	6	13388.8
4/3/2015	3	6	13449.2
4/10/2015	3	6	13509.6
4/17/2015	3	6	13570
4/24/2015	3	6	13630.4
5/1/2015	3	6	13690.8
5/8/2015	3	6	13751.2
5/15/2015	3	6	13811.6
5/22/2015	3	6	13872
5/29/2015	3	6	13932.4
6/5/2015	3	6	13992.8
6/12/2015	3	6	14053.2
6/19/2015	3	6	14113.6
6/26/2015	3	6	14174
7/3/2015	3	6	14234.4
7/10/2015	3	6	14294.8
7/17/2015	3	6	14355.2
7/24/2015	3	6	14415.6
7/31/2015	3	6	14476
8/7/2015	3	6	14536.4
8/14/2015	3	6	14596.8
8/21/2015	3	6	14657.2
8/28/2015	3	6	14717.6
9/4/2015	3	6	14778
9/11/2015	3	6	14838.4
9/18/2015	3	6	14898.8
9/25/2015	3	6	14959.2
10/2/2015	3	6	15019.6
10/9/2015	3	6	15080
10/16/2015	3	6	15140.4

Federal 18 #1T Gas Vented

Date	SCFM	ACFM	Gas Vented Total (MCF)
10/23/2015	3	6	15200.8
10/30/2015	3	6	15261.2
11/6/2015	3	6	15321.6
11/13/2015	3	6	15382

Federal 18 #1T Water Results

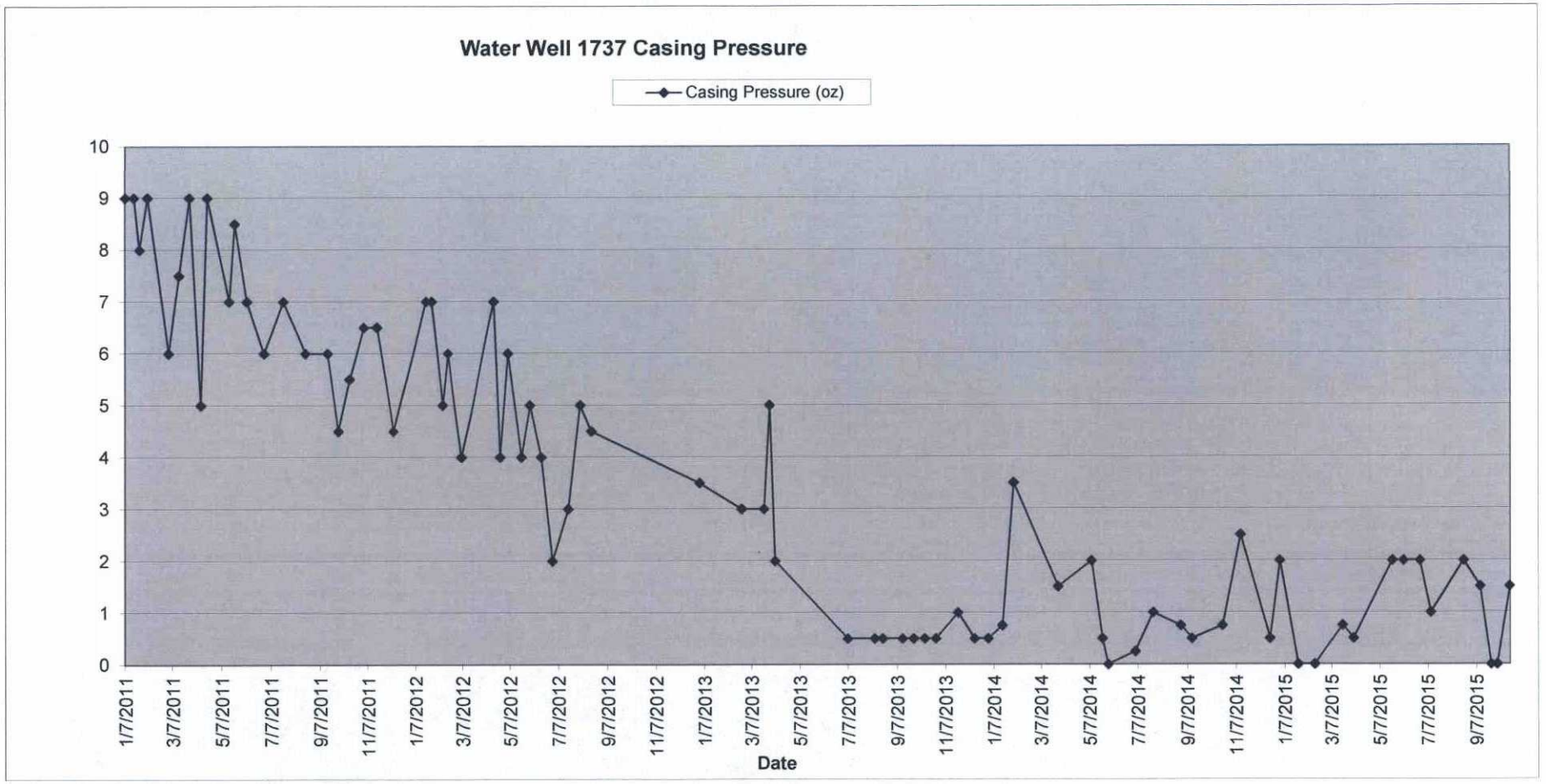
Date	Lab	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylene (ppb)	Chlorides (ppm)	TDS (ppm)	EC (umhos/cm)	pH	Purge Water Volume
NA	NA	10	750	750	620	250	1000	NA	6 thru 9	NA
9/24/2010	ESC	**150**	BDL	76	**670**	NS	NS	NS	NS	NA
9/24/2010	ESC	**190**	170	24	210	**6800**	**13000**	18000	6.1	NA
9/24/2010	Etech	**143**	221	63.6	**950**	NS	NS	NS	NS	NA
9/24/2010	Etech	**320**	377	31.8	568	**7150**	**11100**	16000	**5.84**	NA
12/10/2011	Hall	NS	NS	NS	NS	**2800**	**7610**	8900	6.36	3032.5
1/5/2011	Hall	**67**	93	7.9	25	NS	NS	NS	NS	7,798
1/5/2011	ESC	**73**	99	10	39	**1600**	**4800**	6000	6.6	7,798
1/29/2011	ESC	**60**	93	10	33	**930**	NS	4900	6.4	10791.0
2/28/2011	ESC	**42**	60	6.1	20	**550**	**3400**	4000	6.7	14795.0
4/1/2011	ESC	**23**	27	1.8	6.8	**260**	**2700**	3100	6.8	31237.5
4/29/2011	ESC	**29**	28	2.4	7.3	140	**2600**	2900	6.9	50217.0
5/31/2011	ESC	**14**	19	1.4	4.9	89	**2500**	2800	6.7	76513.0
6/14/2011	ESC	**55**	81	2.8	15	73	**2500**	2700	6.7	88120.0
6/30/2011	ESC	**52**	67	2.6	12	61	**2500**	2700	6.9	101208.5
8/15/2011	ESC	**21**	25	1.2	5.8	44	**2500**	2600	6.8	140267.0
9/2/2011	ESC	**10**	12	0.64	3.2	41	**2500**	2600	7.2	155801.0
9/16/2011	ESC	9.6	11	0.64	3	38	**2400**	2500	7.2	168040.0
9/30/2011	ESC	7.2	8.7	0.64	2.5	35	**2500**	2600	7	180392.5
10/28/2011	ESC	5.1	BDL	1.8	2.7	31	**2300**	2600	6.9	205,220
11/30/2011	ESC	4	BDL	3.9	2	27	**2500**	2600	7.1	233,487.5
12/30/2011	ESC	3.4	BDL	BDL	2.9	27	**2500**	2500	7.5	261,390.5
4/3/2012	ESC	6	BDL	BDL	1.6	NS	NS	NS	NS	351,300
4/9/2012	ESC	NS	NS	NS	NS	19	**2400**	2400	7.4	NA
7/3/2012	ESC	5.3	BDL	BDL	BDL	16	**2300**	2400	7.4	NA
7/6/2012	NA	NA	NA	NA	NA	NA	NA	NA	NA	441,053
9/19/2012	NA	NA	NA	NA	NA	NA	NA	NA	NA	521,271
9/27/2012	ESC	6.2	BDL	BDL	BDL	15	**2300**	2500	7.1	NA
12/14/2012	NA	NS	NS	NS	NS	NS	NS	NS	NS	598,540
12/31/2012	Etech	**13.9**	1.1	ND	3.3	15.5	**2690**	2440	7.05	604,689
1/23/2013	ESC	**160**	190	BDL	26	15	**2400**	2500	8	PUMP SHUT OFF
2/22/2013	ESC	7.1	77	BDL	1.8	15	**2100**	2500	7.1	605,860
5/2/2013	ESC	9	6.9	BDL	BDL	15	**2400**	2600	7.5	612,601
8/19/2013	ESC	**20**	11	BDL	2.3	16	**2200**	2600	7.2	NA
9/23/2013	ESC	**13**	11	BDL	2.2	16	**2300**	2500	7.1	621,744
11/25/2013	ESC	4.6	5.2	BDL	BDL	15	**2200**	2700	7.7	631,430
2/4/2014	ESC									636,120
10/1/2015	ESC	**54.2**	57	1.37	9.77	21.3	**2260**	2640	6.98	639,410
10/20/2015	ESC	**42.3**	39.9	0.964	7.06	18.1	**2330**	1460	7.09	642,650
11/5/2010	ESC	ND	5.2	ND	ND	15	**1400**	2600	7.2	NA

BDL = Below Detection Limits
NS = Not Sampled
Values in **BOLD** exceed WQCC Standards
Baseline Sample (Well SJ 1737)
WQCC Standards

Well SJ 1737 Casing Pressures

Date	Casing Pressure (oz)
1/7/2011	9
1/18/2011	9
1/25/2011	8
2/4/2011	9
3/2/2011	6
3/15/2011	7.5
3/28/2011	9
4/11/2011	5
4/19/2011	9
5/16/2011	7
5/23/2011	8.5
6/7/2011	7
6/28/2011	6
7/22/2011	7
8/19/2011	6
9/16/2011	6
9/30/2011	4.5
10/14/2011	5.5
11/1/2011	6.5
11/18/2011	6.5
12/9/2011	4.5
1/20/2012	7
1/27/2012	7
2/10/2012	5
2/17/2012	6
3/5/2012	4
4/16/2012	7
4/24/2012	4
5/4/2012	6
5/21/2012	4
6/1/2012	5
6/15/2012	4
6/29/2012	2
7/19/2012	3
8/3/2012	5
8/17/2012	4.5
12/31/2012	3.5
2/22/2013	3
3/22/2013	3
3/29/2013	5
4/5/2013	2
7/6/2013	0.5
8/9/2013	0.5
8/19/2013	0.5
9/13/2013	0.5
9/27/2013	0.5
10/11/2013	0.5
10/25/2013	0.5
11/22/2013	1
12/13/2013	0.5

12/30/2013	0.5
1/17/2014	0.75
1/31/2014	3.5
3/28/2014	1.5
5/9/2014	2
5/23/2014	0.5
5/30/2014	0
7/3/2014	0.25
7/25/2014	1
8/29/2014	0.75
9/12/2014	0.5
10/3/2015	0
10/20/2014	0.75
11/12/2014	2.5
12/19/2014	0.5
12/31/2014	2
1/23/2015	0
2/13/2015	0
3/20/2015	0.75
4/3/2015	0.5
5/22/2015	2
6/5/2015	2
6/26/2015	2
7/10/2015	1
8/21/2015	2
9/11/2015	1.5
9/25/2015	0
10/19/2015	1.5


Water Well 1737 Casing Pressure
Casing Pressure (oz)
10
9
8
7
6
5
4
3
2
1
0
1/7/2011
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5/7/2011
7/7/2011
9/7/2011
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3/7/2015
5/7/2015
7/7/2015
9/7/2015
Date

ESC LAB SCIENCES
YOUR LAB OF CHOICE

ANALYTICAL REPORT

October 31, 2015

myESC
REAL TIME DATA ACCESS

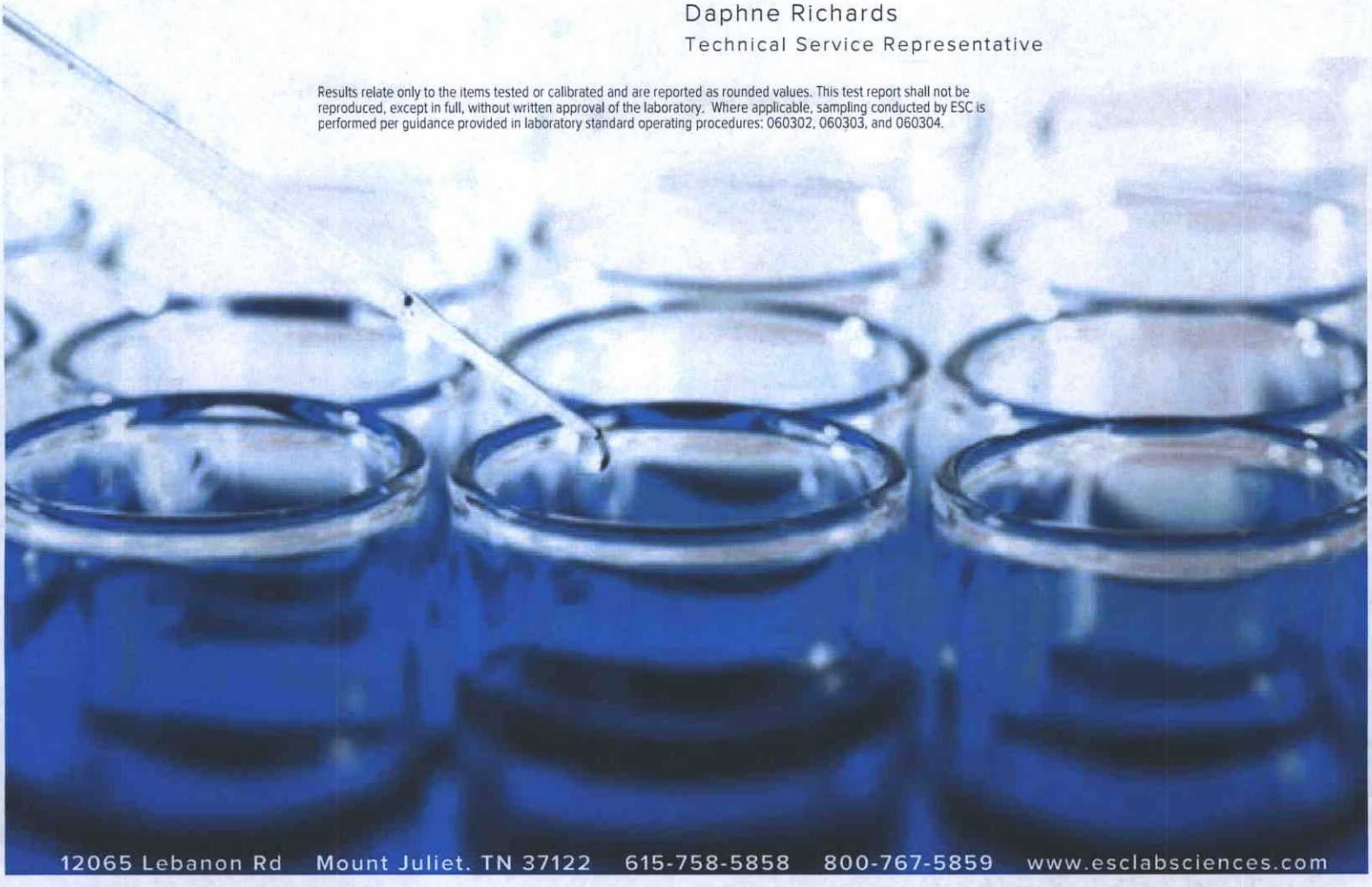
XTO Energy - San Juan Division

Sample Delivery Group:	L796642
Samples Received:	10/24/2015
Project Number:	
Description:	Federal 18-1T

Report To: James McDaniel
382 County Road 3100
Aztec, NM 87410

Entire Report Reviewed By: Daphne R Richards

Daphne Richards
Technical Service Representative



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ONE LAB. NATIONWIDE.

GROUNDWATER L796642-01 GW

Collected by	Collected date/time	Received date/time
Logan H.	10/20/15 08:00	10/24/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Gravimetric Analysis by Method 2540 C-2011	WG824462	1	10/27/15 05:45	10/28/15 05:03	JM
Volatile Organic Compounds (GC) by Method 8021B	WG825343	1	10/29/15 17:46	10/29/15 17:46	LRL
Wet Chemistry by Method 9040C	WG824492	1	10/28/15 08:23	10/28/15 08:23	JEH
Wet Chemistry by Method 9050A	WG825493	1	10/30/15 08:22	10/30/15 08:22	SAM
Wet Chemistry by Method 9056MOD	WG825183	1	10/29/15 15:58	10/29/15 15:58	CM

All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Daphne R Richards

Daphne Richards
Technical Service Representative

Sample Handling and Receiving

The following samples were prepared and/or analyzed past recommended holding time. Concentrations should be considered minimum values.

ESC Sample ID	Project Sample ID	Method
L796642-01	GROUNDWATER	9040C

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	2330		10.0	1	10/28/2015 05:03	WG824462

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.09		1	10/28/2015 08:23	WG824492

Sample Narrative:

9040C L796642-01 WG824492: 7.09 at 21.6c

Wet Chemistry by Method 9050A

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	umhos/cm			date / time	
Specific Conductance	1460		1	10/30/2015 08:22	WG825493

Wet Chemistry by Method 9056MOD

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	18.1		1.00	1	10/29/2015 15:58	WG825183

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Benzene	0.0423		0.000500	1	10/29/2015 17:46	WG825343
Toluene	0.0399		0.00500	1	10/29/2015 17:46	WG825343
Ethylbenzene	0.000964		0.000500	1	10/29/2015 17:46	WG825343
Total Xylene	0.00706		0.00150	1	10/29/2015 17:46	WG825343
(S) α,α,α-Trifluorotoluene(PID)	*96.3*		*55.0-122*		*10/29/2015 17:46*	WG825343

Method Blank (MB)

(MB) 10/28/15 05:02

Analyte	MB Result	MB Qualifier	MB RDL
	mg/l		mg/l
Dissolved Solids	ND		10.0

L796154-05 Original Sample (OS) • Duplicate (DUP)

(OS) 10/28/15 05:08 • (DUP) 10/28/15 05:07

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Dissolved Solids	20.0	20.0	1	0.000		5

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 10/28/15 05:03 • (LCSD) 10/28/15 05:09

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	%	%	%			%	%
Dissolved Solids	8800	8230	8410	93.5	95.6	85.0-115			2.16	5

L796262-04 Original Sample (OS) • Duplicate (DUP)

(OS) 10/28/15 08:23 • (DUP) 10/28/15 08:23

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	7.15	7.15	1	0.000		1

L796683-04 Original Sample (OS) • Duplicate (DUP)

(OS) 10/28/15 08:23 • (DUP) 10/28/15 08:23

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	7.04	7.03	1	0.142		1

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 10/28/15 08:23 • (LCSD) 10/28/15 08:23

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	su	su	su	%	%	%			%	%
pH	6.72	6.70	6.70	99.7	105	98.2-102			0.000	20

Method Blank (MB)

(MB) 10/30/15 08:22

Analyte	MB Result umhos/cm	MB Qualifier	MB RDL umhos/cm
Specific Conductance	1.42		

L796209-01 Original Sample (OS) • Duplicate (DUP)

(OS) 10/30/15 08:22 • (DUP) 10/30/15 08:22

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	2860	2800	1	2.12		20

L796683-04 Original Sample (OS) • Duplicate (DUP)

(OS) 10/30/15 08:22 • (DUP) 10/30/15 08:22

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	6430	6400	1	0.468		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 10/30/15 08:22 • (LCSD) 10/30/15 08:22

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCSD Result umhos/cm	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Specific Conductance	915	964	975	105	107	90.0-110			1.13	20

Method Blank (MB)

(MB) 10/29/15 06:57

Analyte	MB Result	MB Qualifier	MB RDL
	mg/l		mg/l
Chloride	ND		1.00

L796587-02 Original Sample (OS) • Duplicate (DUP)

(OS) 10/29/15 11:21 • (DUP) 10/29/15 11:36

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Chloride	14.7	14.6	1	0		20

L796639-01 Original Sample (OS) • Duplicate (DUP)

(OS) 10/29/15 15:27 • (DUP) 10/29/15 15:43

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Chloride	44.0	43.9	1	0		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 10/29/15 10:01 • (LCSD) 10/29/15 09:02

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	%	%	%			%	%
Chloride	40.0	40.0	37.5	100	94	90-110			6	20

L796587-03 Original Sample (OS) • Matrix Spike (MS)

(OS) 10/29/15 11:52 • (MS) 10/29/15 12:07

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
	mg/l	mg/l	mg/l	%		%	
Chloride	50.0	25.9	75.8	100	1	80-120	

Method Blank (MB)

(MB) 10/29/15 10:14

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
Benzene	ND		0.000500
Toluene	ND		0.00500
Ethylbenzene	ND		0.000500
Total Xylene	ND		0.00150
(S) a,a,a-Trifluorotoluene(PID)	*89.6*		*55.0-122*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 10/29/15 08:27 • (LCSD) 10/29/15 08:48

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.0500	0.0406	0.0398	81.3	79.6	70.0-130			2.13	20
Toluene	0.0500	0.0403	0.0394	80.6	78.9	70.0-130			2.12	20
Ethylbenzene	0.0500	0.0415	0.0405	83.0	81.1	70.0-130			2.38	20
Total Xylene	0.150	0.128	0.124	85.1	82.8	70.0-130			2.74	20
(S) a,a,a-Trifluorotoluene(PID)				*96.2*	*96.8*	*55.0-122*				

L797255-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 10/29/15 16:19 • (MS) 10/29/15 09:10 • (MSD) 10/29/15 09:31

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.0500	0.000102	0.0414	0.0398	82.5	79.3	1	57.2-131			3.96	20
Toluene	0.0500	0.000397	0.0410	0.0394	81.3	78.0	1	63.7-134			4.04	20
Ethylbenzene	0.0500	0.0000498	0.0424	0.0407	84.7	81.2	1	67.5-135			4.16	20
Total Xylene	0.150	0.000381	0.129	0.125	86.0	82.9	1	65.9-138			3.64	20
(S) a,a,a-Trifluorotoluene(PID)					*97.1*	*95.8*		*55.0-122*				

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND,U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.
SDL	Sample Detection Limit.
MQL	Method Quantitation Limit.
Unadj. MQL	Unadjusted Method Quantitation Limit.

Qualifier	Description

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

ACCREDITATIONS & LOCATIONS

ONE LAB. NATIONWIDE.

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE.**

State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Conneticut	PH-0197	North Carolina [1]	DW21704
Florida	E87487	North Carolina [2]	41
Georgia	NELAP	North Dakota	R-140
Georgia [1]	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky [1]	90010	South Dakota	n/a
Kentucky [2]	16	Tennessee [14]	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [n/a] Accreditation not applicable

Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA	100789
Canada	1461.01	DOD	1461.01
EPA–Crypto	TN00003	USDA	S-67674

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**

1309

XTO ENERGY
Western Division

Quote Number	Page 1 of 1	
XTO Contact: Logan H.	XTO Contact Phone #: 505 386-8018	
Email Results to: For XTO Group		
Well Site/Location: Federal 18-1T	API Number	Saturday Delivery (Y / N)
Collected By: Logan H.	Samples on Ice (Y / N)	Turnaround: X Standard; ___ Next Day; ___ Two Day; ___ Three Day; ___ Same Day; Date Needed ___
Company: XTO	Test Reason: Remediation	
Signature: Jay H	Gray Areas for Lab Use Only!	

Analysis/Container: X BTEX (8021); X EC; X pH; X TDS; X Chlorides

Lab Information

Office Abbreviations
Farmington = FAR
Durango = DUR
Bakken = BAK
Raton = RAT
Piceance = PC
Roosevelt = RSV
La Barge = LB
Orangeville = OV

B108

Sample ID	Sample Name	Media	Date	Time	Preservative	No. of Conts.	Sample Number
Groundwater	GW	GW	1020	8:00	Cool	2-500 mL 2-VOA	L796642-01

Media: Filter = F Soil = S Wastewater = WW Groundwater = GW Drinking Waster = DW Sludge = SG Surface Water = SW Air = A Drill Mud = DM Other = OT

Relinquished By: (Signature) Jay H	Date: 10-23-15	Time: 9:20	Received By: (Signature)	Number of Bottles: 4	Sample Condition: OK
Relinquished By: (Signature)	Date:	Time:		Temperature: 3.1	Other Information
Relinquished By: (Signature)	Date:	Time:	Received for Lab by: (Signature)	Date: 10/24/15 Time: 900	

Comments

JW7

* Sample ID will be the office and sampler-date-military time FARJM-MMDDYY-1200

ESC LAB SCIENCES
YOUR LAB OF CHOICE

ANALYTICAL REPORT

October 09, 2015

myESC
REAL TIME DATA ACCESS

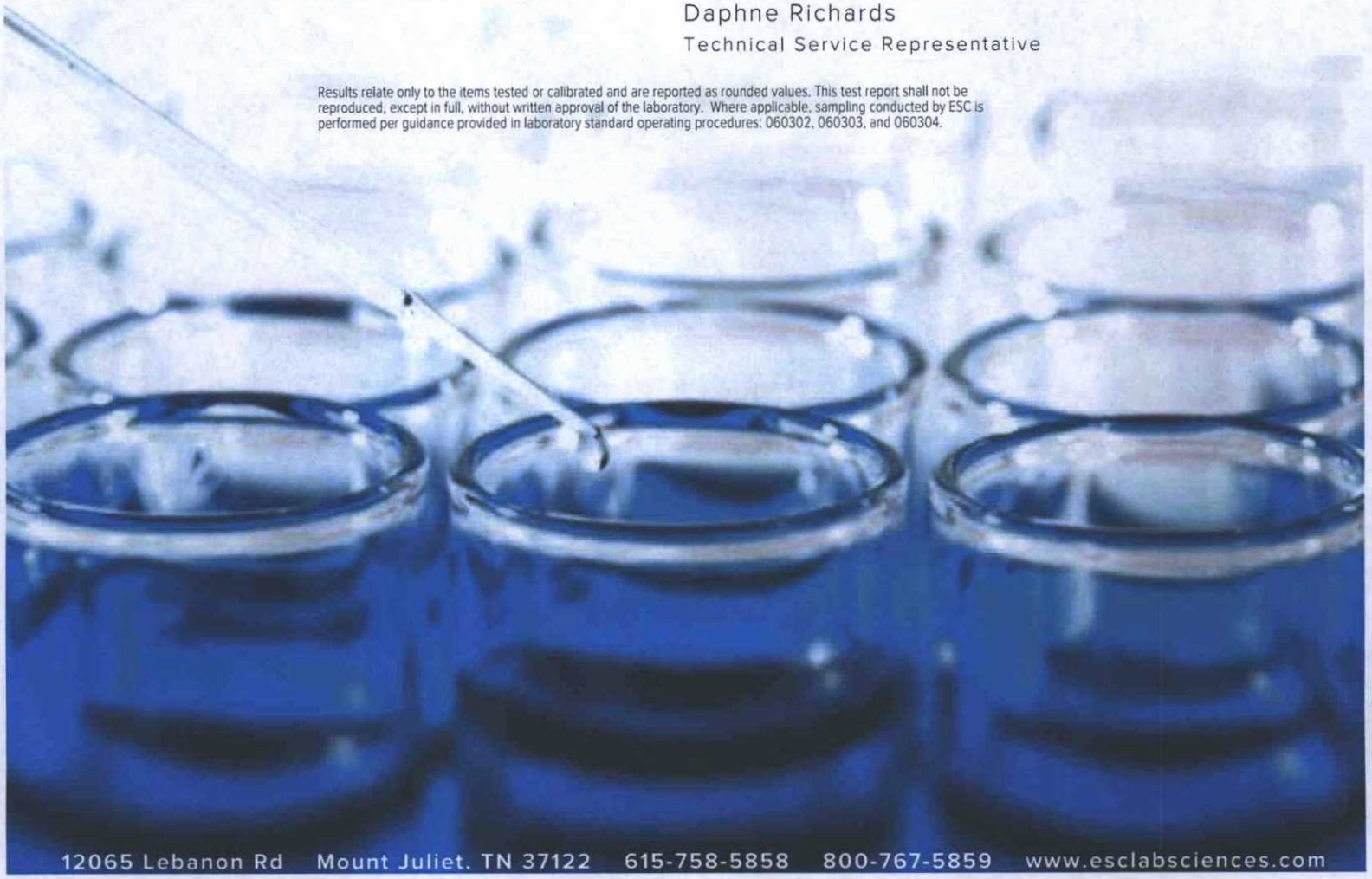
XTO Energy - San Juan Division

Sample Delivery Group:	L792131
Samples Received:	10/02/2015
Project Number:	30-045-33864
Description:	Federal 18-1T

Report To: James McDaniel
382 County Road 3100
Aztec, NM 87410

Entire Report Reviewed By: Daphne R Richards

Daphne Richards
Technical Service Representative



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ONE LAB. NATIONWIDE.

FARLH-100115-0730 L792131-01 GW

Collected by: Logan Hixon
Collected date/time: 10/01/15 07:30
Received date/time: 10/02/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Gravimetric Analysis by Method 2540 C-2011	WG819561	1	10/04/15 19:47	10/07/15 04:40	JM
Volatile Organic Compounds (GC) by Method 8021B	WG819621	1	10/08/15 18:59	10/08/15 18:59	KLO
Wet Chemistry by Method 9040C	WG819351	1	10/03/15 10:53	10/03/15 10:53	CM
Wet Chemistry by Method 9050A	WG819840	1	10/06/15 16:09	10/06/15 16:09	MZ
Wet Chemistry by Method 9056MOD	WG819874	1	10/07/15 01:17	10/07/15 01:17	DJD

All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Daphne R Richards

Daphne Richards
Technical Service Representative

Sample Handling and Receiving

The following samples were prepared and/or analyzed past recommended holding time. Concentrations should be considered minimum values.

ESC Sample ID	Project Sample ID	Method
L792131-01	FARLH-100115-0730	9040C

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	2260		10.0	1	10/07/2015 04:40	WG819561

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	6.98		1	10/03/2015 10:53	WG819351

Sample Narrative:

9040C L792131-01 WG819351: 6.98 at 18.0c

Wet Chemistry by Method 9050A

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	umhos/cm			date / time	
Specific Conductance	2640		1	10/06/2015 16:09	WG819840

Wet Chemistry by Method 9056MOD

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	21.3		1.00	1	10/07/2015 01:17	WG819874

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Benzene	0.0542		0.000500	1	10/08/2015 18:59	WG819621
Toluene	0.0570		0.00500	1	10/08/2015 18:59	WG819621
Ethylbenzene	0.00137		0.000500	1	10/08/2015 18:59	WG819621
Total Xylene	0.00977		0.00150	1	10/08/2015 18:59	WG819621
(S) a,a,a-Trifluorotoluene(PID)	*102*		*55.0-122*		*10/08/2015 18:59*	WG819621

Method Blank (MB)

(MB) 10/07/15 04:46

Analyte	MB Result	MB Qualifier	MB RDL
	mg/l		mg/l
Dissolved Solids	ND		10.0

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 10/07/15 04:41 • (LCSD) 10/07/15 04:46

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	%	%	%			%	%
Dissolved Solids	8800	8530	8620	96.9	98.0	85.0-115			1.05	5

L791702-01 Original Sample (OS) • Duplicate (DUP)

(OS) 10/03/15 10:53 • (DUP) 10/03/15 10:53

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	6.49	6.49	1	0.000		1

L792131-01 Original Sample (OS) • Duplicate (DUP)

(OS) 10/03/15 10:53 • (DUP) 10/03/15 10:53

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	6.98	6.96	1	0.287		1

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 10/03/15 10:53 • (LCSD) 10/03/15 10:53

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	su	su	su	%	%	%			%	%
pH	6.37	6.33	6.34	99.4	99.5	98.2-102			0.158	20

Method Blank (MB)

(MB) 10/06/15 16:09

Analyte	MB Result	MB Qualifier	MB RDL
	umhos/cm		umhos/cm
Specific Conductance	1.83		

L791430-02 Original Sample (OS) • Duplicate (DUP)

(OS) 10/06/15 16:09 • (DUP) 10/06/15 16:09

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	umhos/cm	umhos/cm		%		%
Specific Conductance	872	813	1	7.00		20

L792029-01 Original Sample (OS) • Duplicate (DUP)

(OS) 10/06/15 16:09 • (DUP) 10/06/15 16:09

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	umhos/cm	umhos/cm		%		%
Specific Conductance	617	635	1	2.88		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 10/06/15 16:09 • (LCSD) 10/06/15 16:09

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	umhos/cm	umhos/cm	umhos/cm	%	%	%			%	%
Specific Conductance	873	899	922	103	106	90.0-110			2.53	20

Method Blank (MB)

(MB) 10/06/15 20:10

Analyte	MB Result	MB Qualifier	MB RDL
	mg/l		mg/l
Chloride	ND		1.00

L792131-01 Original Sample (OS) • Duplicate (DUP)

(OS) 10/07/15 01:17 • (DUP) 10/07/15 01:30

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Chloride	21.3	21.4	1	0		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 10/06/15 20:24 • (LCSD) 10/06/15 20:38

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	%	%	%			%	%
Chloride	40.0	39.3	39.2	98	98	90-110			0	20

L792136-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 10/07/15 01:44 • (MS) 10/07/15 01:58 • (MSD) 10/07/15 02:12

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Chloride	50.0	28.5	72.7	74.0	88	91	1	80-120			2	20

Method Blank (MB)

(MB) 10/08/15 14:32

Analyte	MB Result	MB Qualifier	MB RDL
	mg/l		mg/l
Benzene	ND		0.000500
Toluene	ND		0.00500
Ethylbenzene	ND		0.000500
Total Xylene	ND		0.00150
(S) a,a,a-Trifluorotoluene(PID)	*102*		*55.0-122*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 10/08/15 12:26 • (LCSD) 10/08/15 12:47

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	%	%	%			%	%
Benzene	0.0500	0.0480	0.0484	95.9	96.8	70.0-130			0.960	20
Toluene	0.0500	0.0519	0.0523	104	105	70.0-130			0.880	20
Ethylbenzene	0.0500	0.0515	0.0519	103	104	70.0-130			0.900	20
Total Xylene	0.150	0.160	0.161	106	107	70.0-130			0.730	20
(S) a,a,a-Trifluorotoluene(PID)				*102*	*102*	*55.0-122*				

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND,U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.
SDL	Sample Detection Limit.
MQL	Method Quantitation Limit.
Unadj. MQL	Unadjusted Method Quantitation Limit.

Qualifier	Description

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

ACCREDITATIONS & LOCATIONS

ONE LAB. NATIONWIDE.

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE.**

State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Conneticut	PH-0197	North Carolina [1]	DW21704
Florida	E87487	North Carolina [2]	41
Georgia	NELAP	North Dakota	R-140
Georgia [1]	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky [1]	90010	South Dakota	n/a
Kentucky [2]	16	Tennessee [14]	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [n/a] Accreditation not applicable

Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA	100789
Canada	1461.01	DOD	1461.01
EPA–Crypto	TN00003	USDA	S-67674

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**

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XTO ENERGY
Western Division

Quote Number	Page 1 of 1
XTO Contact: Logan	XTO Contact Phone #: 505 386 8018
Email Results to: Logan, Kuit, Otto, Rev, Jams	
Well Site/Location: Federal 18-1T	API Number: 30-045-35864
Collected By: Logan Hixon	Samples on Ice (Y / N)
Company: XTO	Test Reason: Remediation
Signature: Logan H	Gray Areas for Lab Use Only!

Saturday Delivery (Y / N)

Turnaround
- (X) Standard
- ___ Next Day
- ___ Two Day
- ___ Three Day
- ___ Same Day

Date Needed ___

Analysis/Container: BTEX (8021), EC, pH, TDS, Chlorides

Lab Information: J123

Office Abbreviations
Farmington = FAR
Durango = DUR
Bakken = BAK
Raton = RAT
Piceance = PC
Roosevelt = RSV
La Barge = LB
Orangeville = OV

L792131

Sample ID	Sample Name	Media	Date	Time	Preservative	No. of Conts.	Sample Number
FARLH-100115-0730	GW Sample	GW	10-1	7:30	Cool	2-500 2-VOC	-01

Media: Filter = F Soil = S Wastewater = WW Groundwater = GW Drinking Water = DW Sludge = SG Surface Water = SW Air = A Drill Mud = DM Other = OT

Relinquished By: (Signature) Logan H	Date: 10-1-15	Time: 8:00	Received By: (Signature)	Number of Bottles	Sample Condition
Relinquished By: (Signature)	Date:	Time:		Temperature: 24.2 °C	Other Information
Relinquished By: (Signature)	Date:	Time:	Received for Lab by: (Signature)	Date: 10-2-15 Time: 0900	OK

Comments: 6127 6739 4148 TDIO

* Sample ID will be the office and sampler-date-military time FARJM-MMDDYY-1200