April 5, 2017

Randy Bayliss
New Mexico Oil Conservation Division
1220 South Street Francis Drive
Santa Fe, New Mexico 87505

RE: Online Submission of 2016 Annual Groundwater Reports

Dear Mr. Randy Bayliss:

LT Environmental (LTE), Inc., on behalf of XTO Energy, Inc. (XTO), is electronically submitting the attached 2016 annual groundwater monitoring reports covering the period from January 1, 2016, to December 31, 2016, for the following sites:

- Sullivan Gas Com D #1E (3RP-1035);
- Bruington Gas Com #1 (3RP-106);
- Federal Gas Com H #1 (3RP-110);
- McCoy Gas Com D #1E (3RP-414);
- OH Randel #007 (3RP-386); and
- Valdez A #1E (3RP-134).

If you have any questions regarding these reports please contact Ashley Ager with LTE at (970) 385-1096 or aager@ltenv.com or James McDaniel with XTO at (505) 333-3701 or James_McDaniel@xtoenergy.com.

Sincerely,

James McDaniel, CHMM #15676
XTO Energy Inc., a subsidiary of ExxonMobil
EH&S Supervisor

cc: Attachments (6)

2016 ANNUAL GROUNDWATER REPORT

Federal Gas Com H #1

3RP-110

NENW, Section 31, Township 30N, Range 12W
San Juan County, New Mexico

PREPARED FOR:

New Mexico Oil Conservation Division
1220 South St. Francis Street
Santa Fe, New Mexico 87505
(505) 476-3488

April 2017

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FEDERAL GAS COM H #1
3RP-110

SITE DETAILS

LEGALS – **TWN**: 30N **RNG**: 12W **SEC**: 31 **UNIT**: NENW
OCD HAZARD RANKING: 30 **LAND TYPE**: FEE
LATITUDE: 36.77479 **LONGITUDE**: -108.14236

INTRODUCTION

XTO Energy Inc. (XTO) acquired the Federal Gas Com H #1 well site from Amoco Production Company (Amoco) in January of 1998. This well has since been plugged and abandoned by XTO. The only active well onsite is the Federal Gas Com H #3. This is a gas producing well in the Dakota Sandstone. A topographic map detailing the well site location is attached as ***Figure 1***.

HISTORY

In November of 1999, XTO responded to a release of approximately 69 barrels of produced water and condensate. The response involved excavating and disposing of 304 cubic yards of impacted soil and collecting confirmation soil samples from the perimeter of the excavation.

On January 28, 2000, Blagg Engineering, Inc. submitted a *Spill Cleanup Report* detailing response activities that is included as ***Attachment 1***. Field and analytical data presented in the report suggested that the vertical extent of the release had been established and that the lateral extent of soil impact met closure standards with the exception of the source area. Vertical vent piping was installed in the source area in an effort to passively remediate the remaining impacted soil.

In March of 2005, while upgrading equipment on location, XTO discovered what was believed to be a historical earthen blow pit. Approximately 300 cubic yards of impacted soil were excavated and disposed of offsite. Groundwater was encountered in the excavation; therefore, monitoring wells MW-1 and MW-2 were installed in the vicinity of the 2005 and 1999 excavations, respectively. Completion Diagrams and Borehole Logs documenting drilling that occurred in 2005 are presented in ***Attachment 2***. In April of 2006, monitoring well MW-3 was installed cross-gradient of the source areas. In June of 2010, monitoring well MW-3 was plugged and abandoned. In January of 2011, monitoring well MW-3R was installed in the vicinity of former monitoring well MW-3. A Completion Diagram is included in ***Attachment 2***. A borehole log was not completed for monitoring well MW-3R as it was completed in the vicinity of former monitoring well MW-3.

The *2006 Annual Groundwater Report* was submitted to the New Mexico Oil Conservation Division

(NMOCD) proposing the removal of the passive remediation system (wind turbines) and the implementation of quarterly sampling of monitoring wells in accordance with an NMOCD approved *Groundwater Management Plan*. In June of 2010, the vertical vent piping was removed.

Between 2007 and 2009, XTO conducted regular groundwater sampling of source monitoring wells MW-1 and MW-2 and measured groundwater elevations in all monitoring wells. XTO submitted annual groundwater reports comparing laboratory analytical results to the New Mexico Water Quality Control Commission (NMWQCC) groundwater standards.

The *2010 Annual Groundwater Report* and the *2011 Annual Groundwater Report* submitted to NMOCD recommended continued quarterly sampling at monitoring wells MW-1 and MW-2 until analytical results indicated hydrocarbon constituents were compliant with NMWQCC groundwater standards for four consecutive quarters. Additionally, XTO recommended injection of hydrogen peroxide to the groundwater aquifer using monitoring wells MW-1 and MW-2 as injection points to oxygenate the aquifer and enhance naturally occurring bioremediation.

In October of 2011, XTO met with the NMOCD to present a brief history of the site and the hydrogen peroxide injection work plan. NMOCD did not provide comments for the hydrogen peroxide work plan; therefore, XTO did not proceed with the remediation, but continued to sample monitoring wells MW-1 and MW-2 and monitor groundwater elevations in all monitoring wells quarterly through 2012.

In the *2012 Annual Groundwater Report* submitted to the NMOCD, XTO presented laboratory analytical results of benzene, toluene, ethylbenzene, and total xylenes (BTEX) concentrations in groundwater samples collected from monitoring well MW-2 for four consecutive quarters that were compliant with NMWQCC standards. As a result, XTO proposed removing monitoring well MW-2 from the sampling plan and continued sampling monitoring well MW-1 and monitor groundwater elevations in MW-1, MW-2, and MW-3R quarterly during 2013.

In the *2015 Annual Groundwater Report* submitted to the NMOCD, XTO proposed semi-annual groundwater sampling of monitoring well MW-1 and the collection of semi-annual depth to groundwater measurements of monitoring wells MW-1, MW-2, and MW-3R.

A summary of the relative groundwater elevations and the laboratory analytical results from historical and current groundwater monitoring events are presented in ***Table 1*** and ***Table 2***, respectively.

METHODOLOGY

In 2016, semi-annul depth to groundwater data was collected from monitoring wells MW-1, MW-2, and MW-3R. Semi-annual groundwater samples were collected from groundwater monitoring well MW-1 and submitted to Environmental Science Corporation (ESC) of Mt. Juliet, Tennessee, for laboratory analysis of BTEX by the United States Environmental Protection Agency (EPA) Method 8021B.

Water Level Measurements

Static groundwater level monitoring included measuring depth to groundwater with a Keck oil/water interface probe. The interface probe was decontaminated with Alconox™ soap and rinsed with de-ionized water prior to each measurement. Presence of free-phase petroleum hydrocarbons was also investigated using the interface probe.

Groundwater Sampling

The volume of water in monitoring well MW-1 was calculated and a minimum of three casing volumes of water was purged (unless the monitoring well purged dry) from the monitoring well using a new disposable polyvinyl chloride (PVC) bailer or a dedicated PVC bailer. All purge water was disposed into on-site tanks.

Once the monitoring well was purged, groundwater samples were collected by filling a minimum of two 40-milliliter (mL) glass vials. The laboratory supplied vials were filled and capped with zero headspace to prevent degradation of the sample. Samples were labeled with the date and time of collection, well designation, project name, sample collector's name, and parameters to be analyzed. They were immediately sealed, packed on ice, and shipped via FedEx to ESC for analysis of BTEX. Proper chain-of-custody (COC) procedures were followed documenting the date and time sampled, sample number, type of sample, sample collector's name, preservative used, analyses required, and sample collector's signature. Laboratory reports are presented in ***Attachment 3*** and copies of the field notes are presented in ***Attachment 4***.

Groundwater Contour Maps

Groundwater elevations obtained from monitoring wells during quarterly site visits were used to draft groundwater contour maps. Contours were inferred based on measured groundwater elevations and physical characteristics at the site (topography, proximity to irrigation ditches, etc.).

RESULTS

During 2016, benzene concentrations in monitoring well MW-1 exceeded the NMWQCC standard during the June and December semi-annual sampling events ranging from 19.0 micrograms per liter (µg/L) in December of 2016 to 37.6 µg/L in June of 2016. In June of 2016, the total xylenes concentration in monitoring well MW-1 exceeded the NMWQCC standard with a concentration of 626 µg/L. Toluene and ethylbenzene concentrations in MW-1 were compliant with NMWQCC standards during both sampling events.

Groundwater elevations measured during site monitoring events in 2016 indicated the groundwater flows to the southeast. ***Figures 2*** and ***3*** depict the semi-annual groundwater elevations and groundwater analytical results for 2016.

CONCLUSIONS

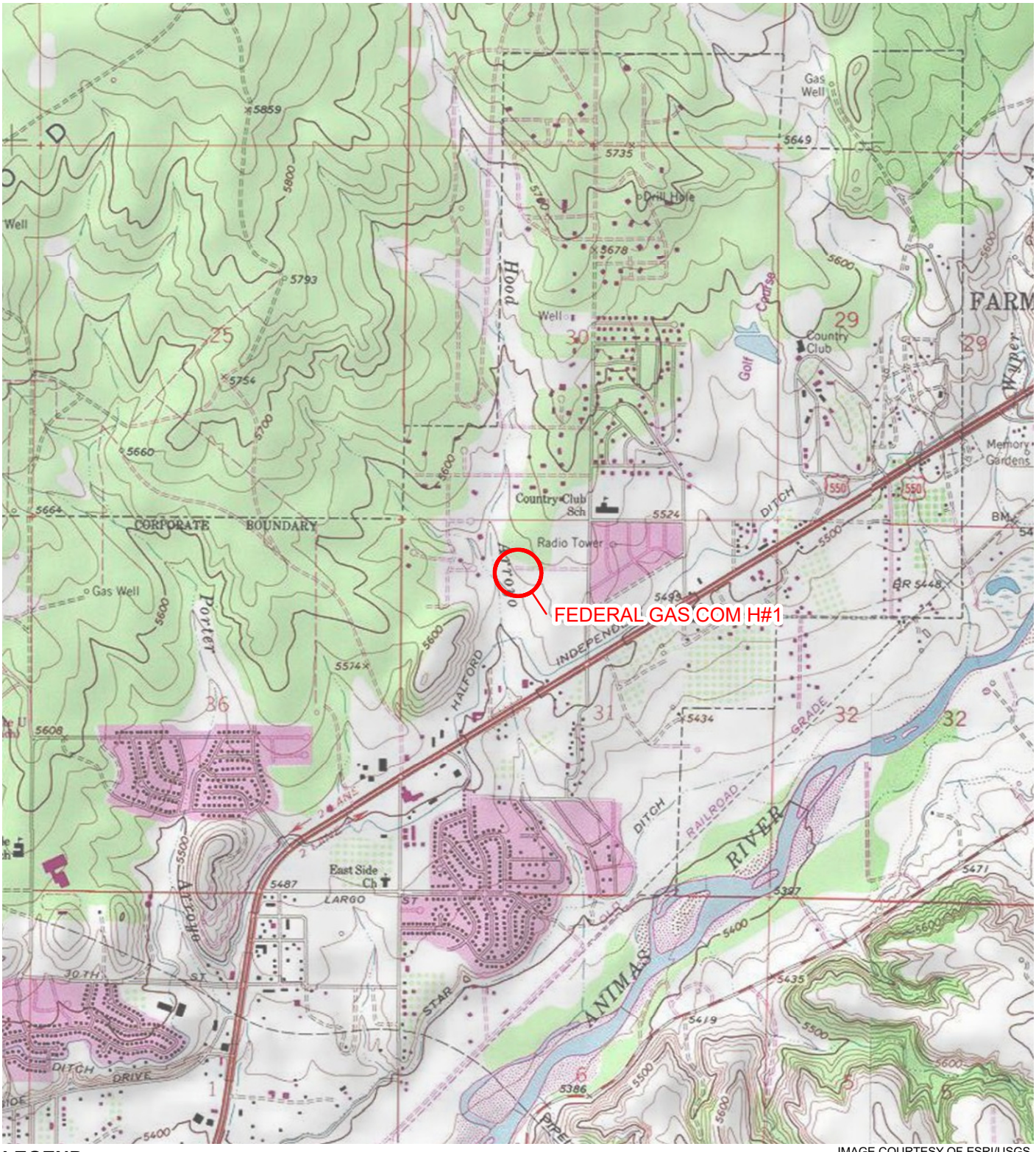
Laboratory analytical results indicate benzene and total xylenes concentrations continue to exceed NMWQCC standards in groundwater sampled from MW-1.

RECOMMENDATIONS

XTO proposes the continued semi-annual sampling schedule at monitoring well MW-1 until analytical results indicate hydrocarbon constituents are compliant with NMWQCC standards for four consecutive quarters. Depth to groundwater in monitoring wells MW-1, MW-2, and MW-3R will also be measured semi-annually in 2017.

FIGURE 1

SITE LOCATION MAP



LEGEND

SITE LOCATION

0 2,000 4,000

Feet

N

NEW MEXICO

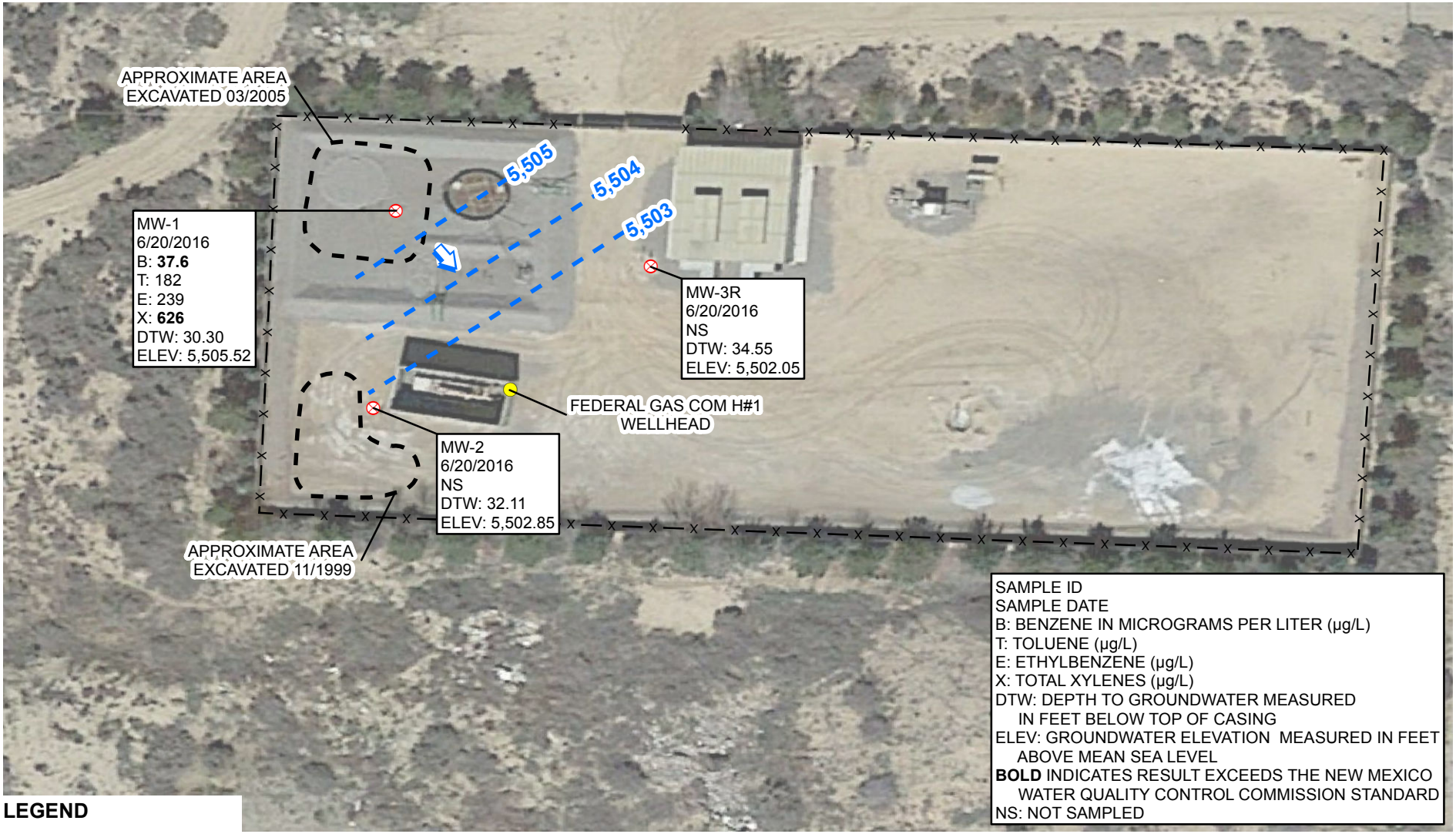
FIGURE 1
SITE LOCATION MAP
FEDERAL GAS COM H#1
NENW SEC 31 T30N R12W
SAN JUAN COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012911009\2016\012911009_002_FEDERAL_H#1_FIG01_SL.mxd

FIGURE 2

GROUNDWATER ELEVATIONS AND ANALYTICAL RESULTS

(JUNE 2016)



LEGEND

- MONITORING WELL
- WELLHEAD
- ESTIMATED GROUNDWATER FLOW DIRECTION
- INFERRED RELATIVE GROUNDWATER ELEVATION CONTOUR
- CONTOUR INTERVAL = 1 FOOT

RELATIVE GROUNDWATER ELEVATIONS WERE MEASURED IN FEET ABOVE MEAN SEA LEVEL

0 50 100
Feet

N

IMAGE COURTESY OF GOOGLE EARTH 2015

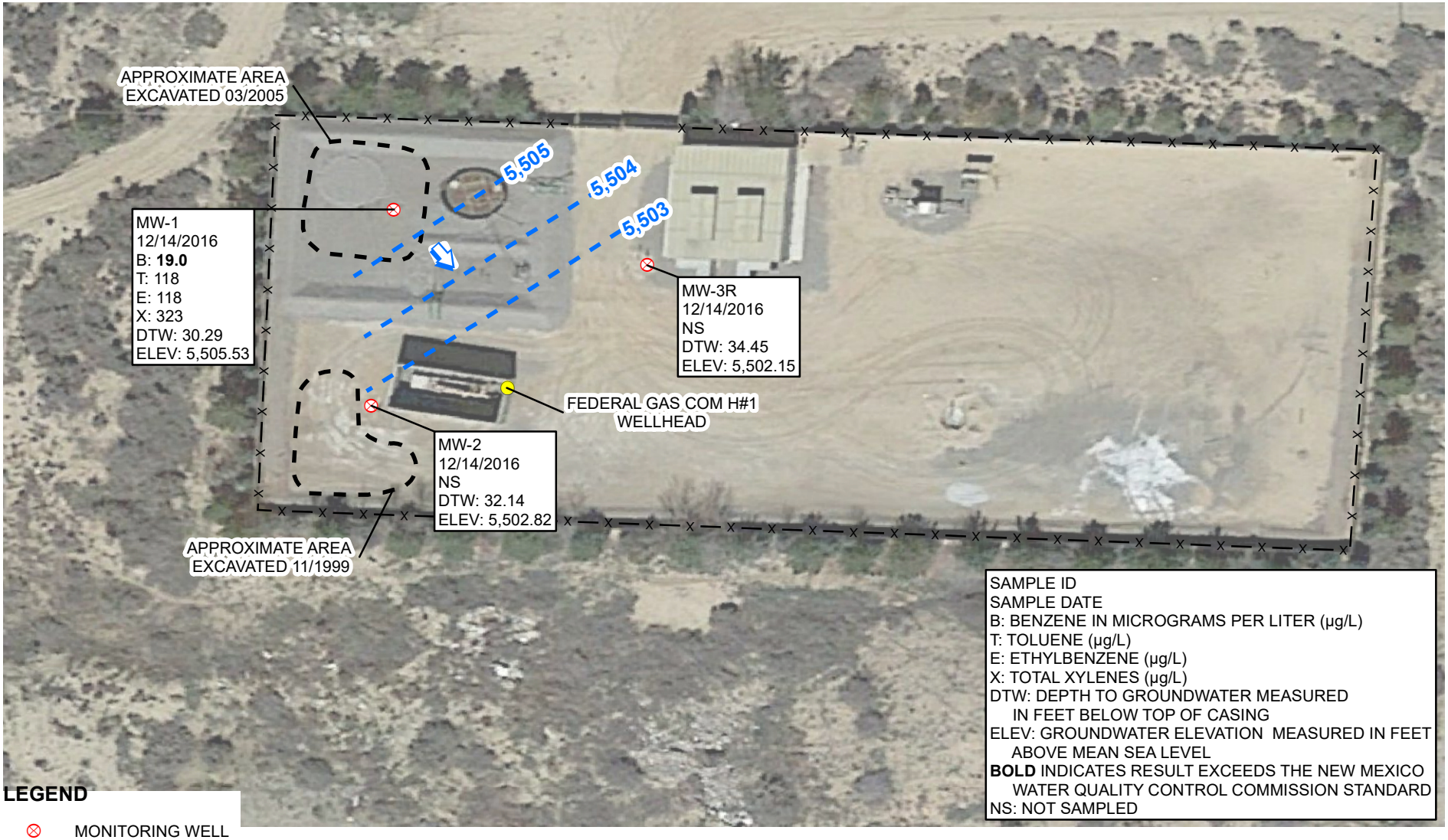
FIGURE 2
GROUNDWATER ELEVATIONS AND ANALYTICAL RESULTS (JUNE 2016)
FEDERAL GAS COM H#1
NENW SEC 31 T30N R12W
SAN JUAN COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012911009\2016\012911009_002_FEDERAL_H#1_FIG05_GWE_GWA_2016_Q2.mxd

FIGURE 3

GROUNDWATER ELEVATIONS AND ANALYTICAL RESULTS

(DECEMBER 2016)



LEGEND

- MONITORING WELL
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- ESTIMATED GROUNDWATER FLOW DIRECTION
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- CONTOUR INTERVAL = 1 FOOT

RELATIVE GROUNDWATER ELEVATIONS WERE MEASURED IN FEET ABOVE MEAN SEA LEVEL

0 50 100
Feet

N

IMAGE COURTESY OF GOOGLE EARTH 2015

FIGURE 3
GROUNDWATER ELEVATIONS AND ANALYTICAL RESULTS (DECEMBER 2016)
FEDERAL GAS COM H#1
NENW SEC 31 T30N R12W
SAN JUAN COUNTY, NEW MEXICO
XTO ENERGY, INC.

P:\XTO Energy\GIS\MXD\012911009\2016\012911009_002_FEDERAL_H#1_FIG05_GWE_GWA_2016_Q4.mxd

TABLE 1

GROUNDWATER ELEVATION SUMMARY

TABLE 1

GROUNDWATER ELEVATION SUMMARY
FEDERAL GAS COM H #1
XTO ENERGY, INC.

Well ID	Date	Depth to Groundwater (feet BTOC)	Groundwater Elevation (feet AMSL)
MW-1	3/29/2007	31.34	5,504.48
MW-1	7/23/2007	31.55	5,504.27
MW-1	10/11/2007	31.09	5,504.73
MW-1	1/8/2008	31.26	5,504.56
MW-1	7/1/2008	31.40	5,504.42
MW-1	1/20/2009	31.29	5,504.53
MW-1	7/8/2009	31.58	5,504.24
MW-1	10/20/2009	31.31	5,504.51
MW-1	1/12/2010	31.29	5,504.53
MW-1	4/7/2010	31.03	5,504.79
MW-1	7/20/2010	31.11	5,504.71
MW-1	10/7/2010	30.51	5,505.31
MW-1	1/18/2011	30.56	5,505.26
MW-1	4/12/2011	30.83	5,504.99
MW-1	8/9/2011	30.92	5,504.90
MW-1	11/9/2011	30.46	5,505.36
MW-1	3/8/2012	30.64	5,505.18
MW-1	6/14/2012	31.00	5,504.82
MW-1	9/12/2012	31.11	5,504.71
MW-1	12/12/2012	31.05	5,504.77
MW-1	3/14/2013	29.94	5,505.88
MW-1	6/17/2013	30.98	5,504.84
MW-1	9/11/2013	31.05	5,504.77
MW-1	12/16/2013	30.14	5,505.68
MW-1	3/12/2014	30.33	5,505.49
MW-1	6/11/2014	30.36	5,505.46
MW-1	9/22/2014	30.46	5,505.36
MW-1	12/9/2014	30.17	5,505.65
MW-1	3/12/2015	30.25	5,505.57
MW-1	6/11/2015	29.95	5,505.87
MW-1	9/21/2015	29.57	5,506.25
MW-1	12/21/2015	29.75	5,506.07
MW-1	6/20/2016	30.30	5,505.52
MW-1	12/14/2016	30.29	5,505.53

TABLE 1

GROUNDWATER ELEVATION SUMMARY
FEDERAL GAS COM H #1
XTO ENERGY, INC.

Well ID	Date	Depth to Groundwater (feet BTOC)	Groundwater Elevation (feet AMSL)
MW-2	3/29/2007	33.05	5,501.91
MW-2	7/23/2007	33.24	5,501.72
MW-2	10/11/2007	32.87	5,502.09
MW-2	1/8/2008	32.98	5,501.98
MW-2	7/1/2008	33.08	5,501.88
MW-2	1/20/2009	35.34	5,499.62
MW-2	7/8/2009	33.23	5,501.73
MW-2	10/20/2009	32.94	5,502.02
MW-2	1/12/2010	32.94	5,502.02
MW-2	4/7/2010	32.71	5,502.25
MW-2	7/20/2010	32.80	5,502.16
MW-2	10/7/2010	32.30	5,502.66
MW-2	1/18/2011	32.33	5,502.63
MW-2	4/12/2011	32.55	5,502.41
MW-2	8/9/2011	32.70	5,502.26
MW-2	11/9/2011	32.28	5,502.68
MW-2	3/8/2012	32.39	5,502.57
MW-2	6/14/2012	32.74	5,502.22
MW-2	9/12/2012	32.84	5,502.12
MW-2	12/12/2012	32.78	5,502.18
MW-2	3/14/2013	32.67	5,502.29
MW-2	6/17/2013	32.68	5,502.28
MW-2	9/11/2013	32.76	5,502.20
MW-2	12/16/2013	31.90	5,503.06
MW-2	3/12/2014	32.05	5,502.91
MW-2	6/11/2014	32.15	5,502.81
MW-2	9/22/2014	32.28	5,502.68
MW-2	12/9/2014	32.03	5,502.93
MW-2	3/12/2015	31.96	5,503.00
MW-2	6/11/2015	31.82	5,503.14
MW-2	9/21/2015	31.47	5,503.49
MW-2	12/21/2015	31.61	5,503.35
MW-2	6/20/2016	32.11	5,502.85
MW-2	12/14/2016	32.14	5,502.82

TABLE 1

GROUNDWATER ELEVATION SUMMARY
FEDERAL GAS COM H #1
XTO ENERGY, INC.

Well ID	Date	Depth to Groundwater (feet BTOC)	Groundwater Elevation (feet AMSL)
MW-3	12/6/2006	34.76	5,504.79
MW-3	3/29/2007	34.85	5,504.70
MW-3	7/23/2007	35.00	5,504.55
MW-3	10/11/2007	34.55	5,505.00
MW-3	1/8/2008	31.74	5,507.81
MW-3	7/1/2008	34.86	5,504.69
MW-3	1/20/2009	34.75	5,504.80
MW-3	7/8/2009	35.01	5,504.54
MW-3	10/20/2009	34.68	5,504.87
MW-3	1/12/2010	34.71	5,504.84
MW-3	4/7/2010	34.53	5,505.02
MW-3R	1/18/2011	34.69	5,501.91
MW-3R	4/12/2011	34.91	5,501.69
MW-3R	8/9/2011	35.01	5,501.59
MW-3R	11/9/2011	34.59	5,502.01
MW-3R	3/8/2012	34.72	5,501.88
MW-3R	6/14/2012	35.04	5,501.56
MW-3R	9/12/2012	35.13	5,501.47
MW-3R	12/12/2012	35.07	5,501.53
MW-3R	3/14/2013	34.97	5,501.63
MW-3R	6/17/2013	34.98	5,501.62
MW-3R	9/11/2013	35.05	5,501.55
MW-3R	12/16/2013	34.28	5,502.32
MW-3R	3/12/2014	34.43	5,502.17
MW-3R	6/11/2014	34.57	5,502.03
MW-3R	9/22/2014	34.60	5,502.00
MW-3R	12/9/2014	34.35	5,502.25
MW-3R	3/12/2015	34.31	5,502.29
MW-3R	6/11/2015	34.19	5,502.41
MW-3R	9/21/2015	33.83	5,502.77
MW-3R	12/21/2015	33.95	5,502.65
MW-3R	6/20/2016	34.55	5,502.05
MW-3R	12/14/2016	34.45	5,502.15

Notes:
AMSL - above mean sea level
BTOC - below top of casing

TABLE 2

GROUNDWATER ANALYTICAL RESULTS SUMMARY

TABLE 2

GROUNDWATER ANALYTICAL RESULTS SUMMARY
FEDERAL GAS COM H #1
XTO ENERGY, INC.

Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
NMWQCC Groundwater Standard		**10**	**750**	**750**	**620**
MW-1	3/29/2007	**39**	ND	560	**2,300**
MW-1	7/23/2007	**32**	ND	610	**2,300**
MW-1	10/11/2007	**50**	18	440	**1,500**
MW-1	1/8/2008	**47**	7.1	730	**3,000**
MW-1	7/1/2008	**18**	9.6	350	**980**
MW-1	1/20/2009	**30**	22	370	**910**
MW-1	7/8/2009	**16**	ND	280	**530**
MW-1	10/20/2009	**33**	9.7	310	**630**
MW-1	1/12/2010	**31**	<1.0	270	**500**
MW-1	4/7/2010	**33**	16	290	**630**
MW-1	7/20/2010	**27**	10	360	**710**
MW-1	10/7/2010	**26**	<50	320	600
MW-1	1/18/2011	**33**	50	300	600
MW-1	4/12/2011	**27**	<100	320	**700**
MW-1	8/9/2011	**20.8**	21	257	444
MW-1	11/9/2011	**17**	<250	240	390
MW-1	3/8/2012	**22**	<50	200	260
MW-1	6/14/2012	**14**	<50	170	170
MW-1	9/12/2012	**11**	<5	110	73
MW-1	12/12/2012	**23**	<25	170	270
MW-1	3/14/2013	**16**	14	130	220
MW-1	6/17/2013	**20**	16	99	160
MW-1	9/11/2013	**23**	<50	120	230
MW-1	12/16/2013	**28**	61	160	310
MW-1	3/12/2014	**26**	85	140	320
MW-1	6/11/2014	**35**	150	160	390
MW-1	9/22/2014	**34**	<100	230	530
MW-1	12/9/2014	**22**	82	96	230
MW-1	3/12/2015	8.0	26	72	140
MW-1	6/11/2015	**44**	220	320	**980**
MW-1	9/21/2015	**65.9**	391	212	599
MW-1	12/21/2015	**105**	105	205	**634**
MW-1	6/20/2016	**37.6**	182	239	**626**
MW-1	12/14/2016	**19.0**	118	118	323

TABLE 2

GROUNDWATER ANALYTICAL RESULTS SUMMARY
FEDERAL GAS COM H #1
XTO ENERGY, INC.

Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
NMWQCC Groundwater Standard		**10**	**750**	**750**	**620**
MW-2	3/29/2007	**55**	ND	39	60
MW-2	7/23/2007	**39**	ND	25	9.2
MW-2	10/11/2007	**86**	ND	97	140
MW-2	1/8/2008	**65**	ND	82	56
MW-2	7/1/2008	**15**	ND	22	7.3
MW-2	1/20/2009	**38**	ND	85	49
MW-2	7/8/2009	7.5	ND	13	3
MW-2	10/20/2009	**20**	<1.0	31	29
MW-2	1/12/2010	**22**	<1.0	54	41
MW-2	4/7/2010	**37**	1.3	110	130
MW-2	7/20/2010	**17**	<1.0	94	92
MW-2	10/7/2010	**34**	<5	120	140
MW-2	1/18/2011	**30**	<50	160	170
MW-2	4/12/2011	**25**	<25	62	100
MW-2	8/9/2011	4	<1	9.8	33.2
MW-2	11/9/2011	**26**	<5	160	160
MW-2	3/8/2012	9.3	<10	79	90
MW-2	6/14/2012	2.6	<5	29	44
MW-2	9/12/2012	0.91	<5	8.8	5.2
MW-2	12/12/2012	0.71	<5	3.5	3.9
MW-3	12/6/2006	ND	ND	ND	ND
MW-3	3/29/2007	ND	ND	ND	ND
MW-3	7/23/2007	ND	ND	ND	ND
MW-3	10/11/2007	ND	ND	ND	ND
MW-3*	1/8/2008	ND	ND	ND	ND

Notes:

< - indicates result is less than the stated laboratory method detection limit
* MW-3 was abandoned on May 10, 2010
BOLD values exceed the NMWQCC Standard
ug/L - micrograms per liter
ND - Not detected above the laboratory detection limit
NMWQCC - New Mexico Water Quality Control Commission

ATTACHMENT 1

BLAGG ENGINEERING, INC., SPILL CLEANUP REPORT (1999)

BLAGG ENGINEERING, INC.
P.O. Box 87, Bloomfield, New Mexico 87413
Phone: (505) 632-1199 Fax: (505) 632-3903

January 28, 2000

Mr. Denny G. Foust -Environmental Geologist
New Mexico Oil Conservation Division - (NMOCD)
1000 Rio Brazos Road
Aztec, New Mexico 87410

RE: Cross Timbers Oil Co. Federal GC H # 1 Spill Cleanup Report
Unit C, SEC. 31, T30N, R12W, San Juan County, New Mexico

Dear Mr. Foust:

On behalf of Cross Timbers Oil Company, Blagg Engineering, Inc. (BEI) respectfully submits the attached report affiliated with the Federal GC H # 1 spill release (approximately 69 barrels) which occurred on approximately November 25, 1999.

In briefly summarizing the cleanup effort which took place between November 26th and 29th, 1999, approximately 304 cubic yards of impacted soil was removed (refer to Figure 1) and transported to Envirotech, Inc.'s Soil Remediation Facility (NMOCD rule 7/11 permit for commercial facility - Landfarm #2) located in NW/4, Sec. 6, T26N, R10W, NMPM, San Juan County, NM. The excavation perimeter was arbitrarily and judgmentally sampled during and upon completion of the excavation activity (refer to Figure 2 for sample locations and result summary). In reviewing the field and analytical results, it appears that vertical extent has been established utilizing the PB @ 12 ft. and PB5 @ 14 ft. data and that lateral extent of contamination appears to have met state closure standards with the exception of the 2A sample point area (point of release). It was then suggested and agreed upon between BEI and NMOCD to remediate the remaining contamination passively (estimated to be 20-30 cubic yards) utilizing vertical vent piping (refer to Figure 3) and a 50% Nitrogen, 0% Phosphorus, 0% Potassium fertilizer application (installed and introduced on January 25, 2000 by BEI).

Based upon the attached information given, Cross Timbers Oil Company is requesting closure based on risk that the remaining soil contamination does not appear to pose a present or future threat to groundwater (estimated at a depth greater than 30 feet), health, or the environment.

If you have any questions or comments concerning this report, please contact myself or Jeff Blagg at the address or phone number listed above. Thank you for your cooperation.

Respectfully submitted,
Blagg Engineering, Inc.

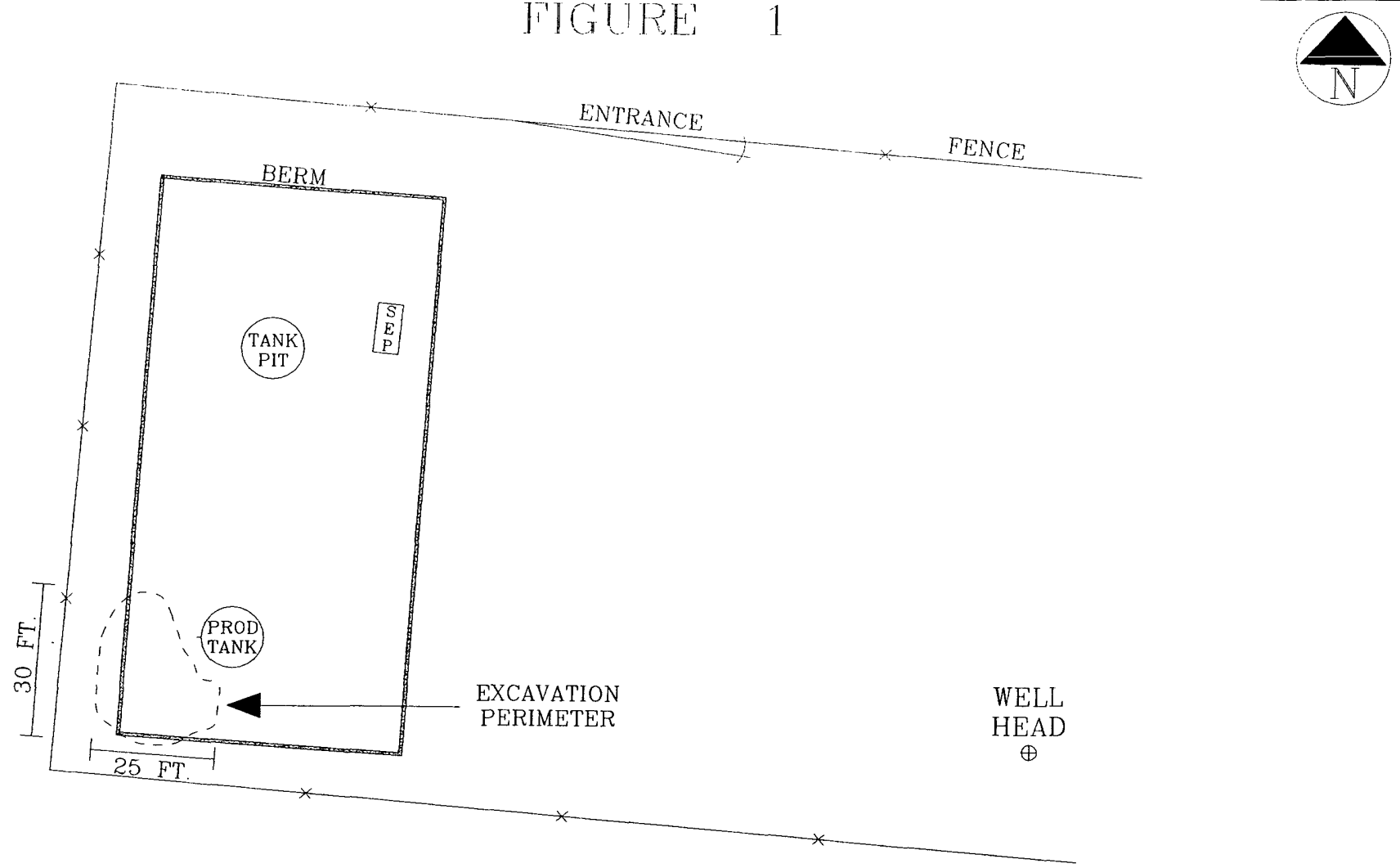
Nelson J. Velez
Staff Geologist

Attachments: Spill Cleanup Report

xc: Bill Olson, Hydrologist, NMOCD, Santa Fe Office, NM
Rueben Sanchez, Environmental Team Lead, BLM, Farmington, NM (2 copies)
Terry Matthews, Regional Supervisor, Cross Timbers Oil Co., Farmington, NM

NJV/njv FED-H1.CVL

FIGURE 1



PRODUCTION TANK & SEPARATOR LOCATIONS ARE ONLY AS ACCURATE AS THE INSTRUMENTS USED IN OBTAINING THE FOOTAGE AND BEARING FROM THE WELL HEAD (BRUNTON COMPASS AND LASER RANGE FINDER). ALL OTHER STRUCTURES DISPLAYED ON THE SITE MAP ARE SOLELY FOR REFERENCE AND ARE NOT TO SCALE.

CROSS TIMBERS OIL COMPANY

FEDERAL GC H #1

NE/4 NW/4 SEC. 31, T30N, R12W

SAN JUAN COUNTY, NEW MEXICO

BLAGG ENGINEERING, INC.

CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87

BLOOMFIELD, NEW MEXICO 87413

PHONE: (505) 632-1199

PROJECT: SPILL CLEAN UP

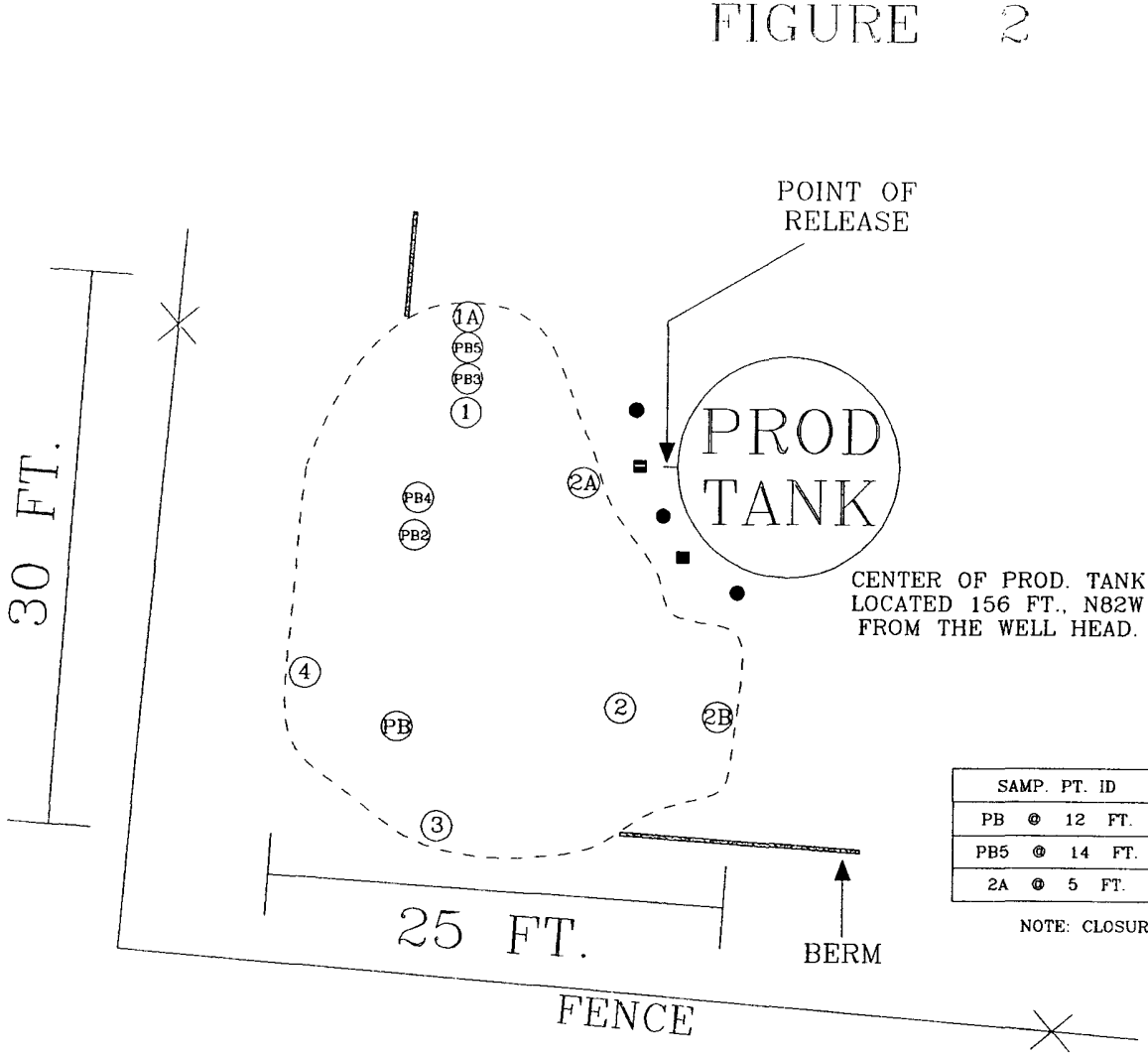
DRAWN BY: NJV

FILENAME: FED-MAP.SKD

SITE MAP

11/99

FIGURE 2



NOV. 29, 1999

SAMP. PT. ID	OVM READING (ppm)
1 @ 6 FT.	219
1A @ 6 FT.	131.6
2 @ 5 FT.	242
2A @ 5 FT.	248
2B @ 5 FT.	126.7
3 @ 6 FT.	115.2
4 @ 6 FT.	97.1
PB @ 12 FT.	78.3
PB2 @ 11 FT.	275
PB3 @ 11 FT.	510
PB4 @ 12 FT.	121.9
PB5 @ 14 FT.	142.1

NOTE: CLOSURE STANDARD – OVM < 100 ppm.

SAMP. PT. ID	TPH (ppm)	BENZENE (ppb)	TOTAL BTEX (ppb)
PB @ 12 FT.	19.7	–	–
PB5 @ 14 FT.	12.0	820	5,240
2A @ 5 FT.	3,540	12,130	41,460

NOTE: CLOSURE STANDARDS – TPH < 100 ppm, benzene < 10,000 ppb, & total BTEX < 50,000 ppb.

LEGEND: ■ DENOTES BORING LOCATION OF FERTILIZER APPLICATION.

● DENOTES BORING LOCATION OF VERTICAL PASSIVE VENT PIPING.

CROSS TIMBERS OIL COMPANY

FEDERAL GC H #1

NE/4 NW/4 SEC. 31, T30N, R12W

SAN JUAN COUNTY, NEW MEXICO

BLAGG ENGINEERING, INC.

CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87

BLOOMFIELD, NEW MEXICO 87413

PHONE: (505) 632-1199

PROJECT: SPILL CLEAN UP

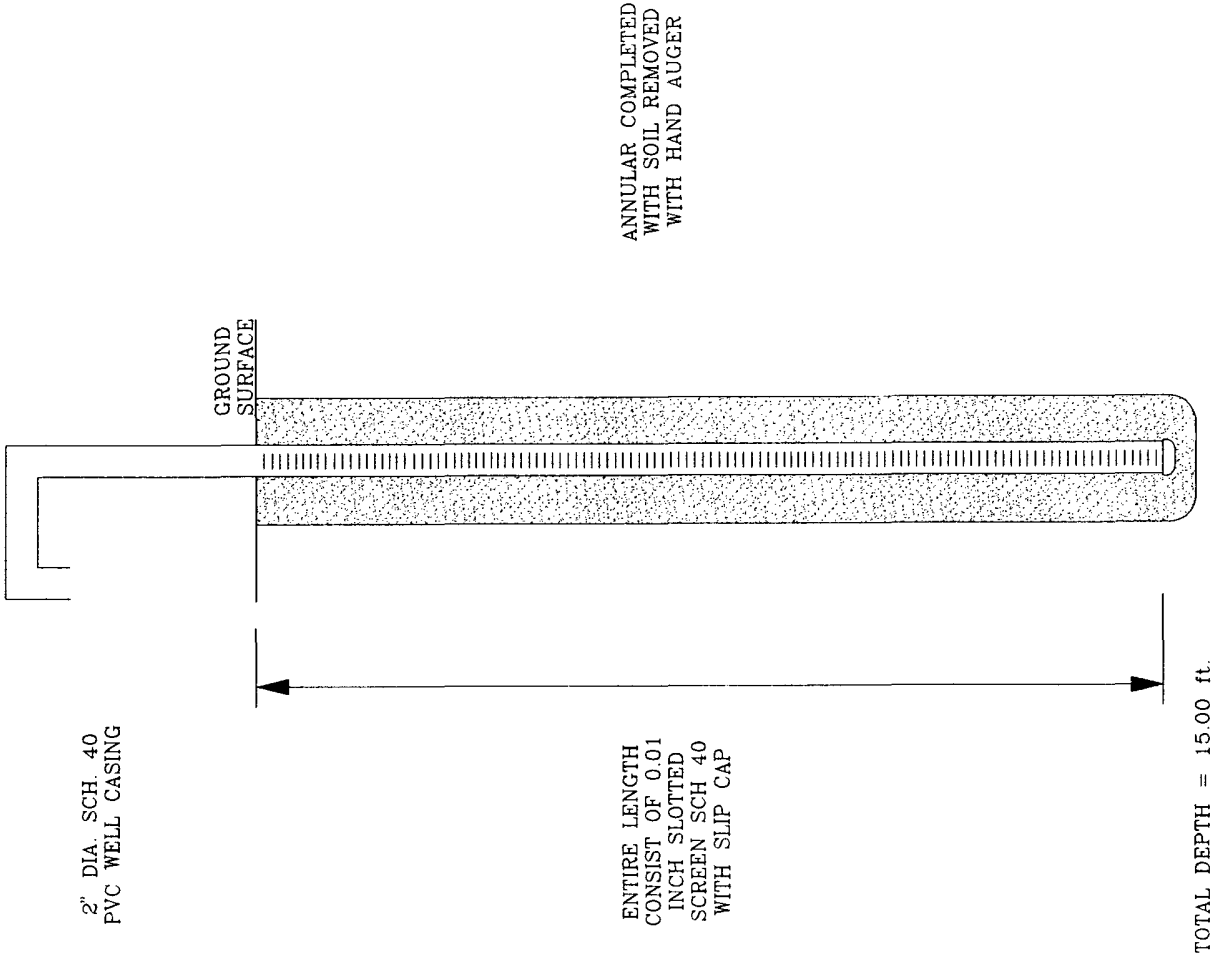
DRAWN BY: NJV

FILENAME: FED-MAP2.SKD

SITE MAP

11/99

FIGURE 3



CROSS TIMBERS OIL COMPANY

FEDERAL GC H # 1

MONITOR WELL CONSTRUCTION & COMPLETION

INSTALLED WITH HAND AUGER

BLAGG ENGINEERING, INC.

CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87

BLOOMFIELD, NEW MEXICO 87413

PHONE: (505) 632-1199

VENT PIPING SCHEMATIC

DRAFTED BY: NJV

DATE: JAN. '00

FILENAME: FED-PVP.SKD

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	Blagg / Cross Timbers	Project #:	403410
Sample ID:	PB @ 12'	Date Reported:	11-30-99
Laboratory Number:	G509	Date Sampled:	11-29-99
Chain of Custody No:	7443	Date Received:	11-30-99
Sample Matrix:	Soil	Date Extracted:	11-30-99
Preservative:	Cool	Date Analyzed:	11-30-99
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	**0.6**	**0.2**
Diesel Range (C10 - C28)	**19.1**	**0.1**
Total Petroleum Hydrocarbons	**19.7**	**0.2**

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Federal GC H #1 Tank Spill.**

Analyst

Review

5796 U.S. Highway 64 • Farmington, NM 87401 • Tel 505 • 632 • 0615 • Fax 505 • 632 • 1865

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	Blagg / Cross Timbers	Project #:	403410
Sample ID:	PB5 @ 14'	Date Reported:	11-30-99
Laboratory Number:	G510	Date Sampled:	11-29-99
Chain of Custody No:	7443	Date Received:	11-30-99
Sample Matrix:	Soil	Date Extracted:	11-30-99
Preservative:	Cool	Date Analyzed:	11-30-99
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	**8.2**	**0.2**
Diesel Range (C10 - C28)	**3.8**	**0.1**
Total Petroleum Hydrocarbons	**12.0**	**0.2**

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Federal GC H #1 Tank Spill.**

Analyst

Review

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	Blagg / Cross Timbers	Project #:	403410
Sample ID:	2A @ 5'	Date Reported:	11-30-99
Laboratory Number:	G511	Date Sampled:	11-29-99
Chain of Custody No:	7443	Date Received:	11-30-99
Sample Matrix:	Soil	Date Extracted:	11-30-99
Preservative:	Cool	Date Analyzed:	11-30-99
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	**3,170**	**0.2**
Diesel Range (C10 - C28)	**372**	**0.1**
Total Petroleum Hydrocarbons	**3,540**	**0.2**

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Federal GC H #1 Tank Spill.**

Analyst

Review

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Blagg / Cross Timbers	Project #:	403410
Sample ID:	PB5 @ 14'	Date Reported:	11-30-99
Laboratory Number:	G510	Date Sampled:	11-29-99
Chain of Custody:	7443	Date Received:	11-30-99
Sample Matrix:	Soil	Date Analyzed:	11-30-99
Preservative:	Cool	Date Extracted:	11-30-99
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	**820**	**10.4**
Toluene	**506**	**10.4**
Ethylbenzene	**159**	**10.4**
p,m-Xylene	**3,280**	**10.4**
o-Xylene	**475**	**5.2**
Total BTEX	**5,240**	

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	**100 %**
	Bromofluorobenzene	**100 %**

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Federal GC H #1 Tank Spill.**

Analyst

Review

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Blagg / Cross Timbers	Project #:	403410
Sample ID:	2A @ 5'	Date Reported:	11-30-99
Laboratory Number:	G511	Date Sampled:	11-29-99
Chain of Custody:	7443	Date Received:	11-30-99
Sample Matrix:	Soil	Date Analyzed:	11-30-99
Preservative:	Cool	Date Extracted:	11-30-99
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	**12,130**	**10.4**
Toluene	**4,690**	**10.4**
Ethylbenzene	**15,590**	**10.4**
p,m-Xylene	**5,860**	**10.4**
o-Xylene	**3,190**	**5.2**
Total BTEX	**41,460**	

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	**100 %**
	Bromofluorobenzene	**100 %**

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **Federal GC H #1 Tank Spill.**

Analyst

Review

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CHAIN OF CUSTODY RECORD

7443

Client / Project Name	Project Location	ANALYSIS / PARAMETERS
BLAGG/CROSS TIMBERS	TANK SPILL FEDERAL GC H #1	
Sampler: NJV	Client No. 403410	

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	TPH (8015)	BTEX (8021)					Remarks
PB @ 12'	11/29/99	1205	G509	SOIL	1	✓						PRESERV. - COOL
PB5 @ 14'	11/29/99	1540	G510	SOIL	1	✓	✓					PRESERV. - COOL
2A @ 5'	11/29/99	1520	G511	SOIL	1	✓	✓					PRESERV. - COOL

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Nelson Velez	11/30/99	0722	Dena L. Ofenum	11.30.99	0722
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

ENVIROTECH INC.

5796 U.S. Highway 64
Farmington, New Mexico 87401
(505) 632-0615

Sample Receipt	Y	N	N/A
Received Intact	✓		
Cool - Ice/Blue Ice	✓		

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA Method 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	11-30-TPH QA/QC	Date Reported:	11-30-99
Laboratory Number:	G509	Date Sampled:	N/A
Sample Matrix:	Methylene Chloride	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	11-30-99
Condition:	N/A	Analysis Requested:	TPH

	I-Cal Date	I-Cal RF:	C-Cal RF:	% Difference	Accept. Range
Gasoline Range C5 - C10	06-17-99	2.6810E-002	2.6783E-002	**0.10%**	**0 - 15%**
Diesel Range C10 - C28	06-17-99	2.6962E-002	2.6908E-002	**0.20%**	**0 - 15%**

Blank Conc. (mg/L - mg/Kg)	Concentration	Detection Limit
Gasoline Range C5 - C10	**ND**	**0.2**
Diesel Range C10 - C28	**ND**	**0.1**
Total Petroleum Hydrocarbons	**ND**	**0.2**

Duplicate Conc. (mg/Kg)	Sample	Duplicate	% Difference	Accept. Range
Gasoline Range C5 - C10	**0.6**	**0.6**	**0.0%**	**0 - 30%**
Diesel Range C10 - C28	**19.1**	**19.1**	**0.0%**	**0 - 30%**

Spike Conc. (mg/Kg)	Sample	Spike Added	Spike Result	% Recovery	Accept. Range
Gasoline Range C5 - C10	**0.6**	**250**	**250**	**100%**	**75 - 125%**
Diesel Range C10 - C28	**19.1**	**250**	**269**	**100%**	**75 - 125%**

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **QA/QC for samples G509 - G511.**

Analyst

Review

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS
QUALITY ASSURANCE REPORT

Client:	N/A	Project #:	N/A
Sample ID:	11-30-BTEX QA/QC	Date Reported:	11-30-99
Laboratory Number:	G503	Date Sampled:	N/A
Sample Matrix:	Water	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	11-30-99
Condition:	N/A	Analysis:	BTEX

Calibration and Detection Limits (ug/L)	I-Cal RF:	C-Cal RF:	%Diff. Accept. Range 0 - 15%	Blank Conc	Detect. Limit
Benzene	7.0291E-002	7.0516E-002	0.32%	ND	0.2
Toluene	6.3951E-002	6.3963E-002	0.02%	ND	0.2
Ethylbenzene	5.2614E-002	5.2677E-002	0.12%	ND	0.2
p,m-Xylene	3.9700E-002	3.9708E-002	0.02%	ND	0.2
o-Xylene	6.5791E-003	6.5989E-003	0.30%	ND	0.1

Duplicate Conc. (ug/L)	Sample	Duplicate	%Diff.	Accept Limit
Benzene	ND	ND	0.0%	0 - 30%
Toluene	ND	ND	0.0%	0 - 30%
Ethylbenzene	ND	ND	0.0%	0 - 30%
p,m-Xylene	ND	ND	0.0%	0 - 30%
o-Xylene	ND	ND	0.0%	0 - 30%

Spike Conc. (ug/L)	Sample	Amount Spiked	Spiked Sample	% Recovery	Accept Limits
Benzene	ND	50.0	50.1	100%	39 - 150
Toluene	ND	50.0	50.0	100%	46 - 148
Ethylbenzene	ND	50.0	50.0	100%	32 - 160
p,m-Xylene	ND	100.0	100	100%	46 - 148
o-Xylene	ND	50.0	50.0	100%	46 - 148

ND - Parameter not detected at the stated detection limit.

* - Administrative level set at 80 - 120.

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.
Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: **QA/QC for samples G503 - G508 and G510 - G511.**

Analyst

Review

5796 U.S. Highway 64 • Farmington, NM 87401 • Tel 505 • 632 • 0615 • Fax 505 • 632 • 1865

ATTACHMENT 2

COMPLETION DIAGRAMS AND BOREHOLE LOGS

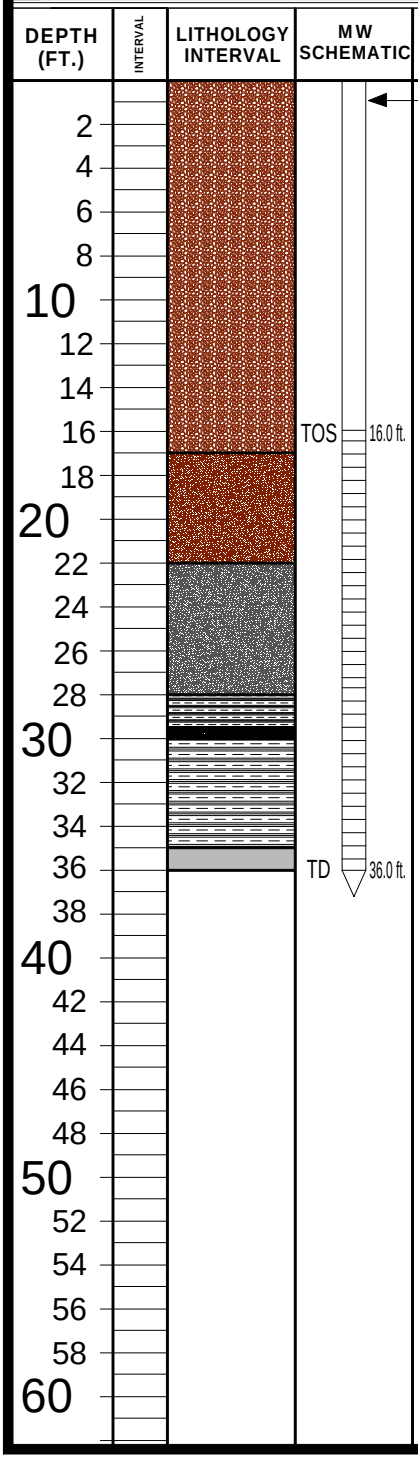
BLAGG ENGINEERING, Inc.

P.O. BOX 87
BLOOMFIELD, NM 87413
(505) 632-1199

BORE / TEST HOLE REPORT

CLIENT:	**XTO ENERGY INC.**
LOCATION NAME:	FEDERAL GC H # 1 UNIT C, SEC. 31, T30N, R12W
CONTRACTOR:	**BLAGG ENGINEERING, INC./ENVIROTECH**
EQUIPMENT USED:	**MOBILE DRILL RIG SIMILAR TO CME 75**
BORING LOCATION:	**171** FEET, **N61.5W** FROM WELL HEAD.

BORING #.....	BH - 1
MW #.....	1
PAGE #.....	1
DATE STARTED	03/14/05
DATE FINISHED	03/14/05
OPERATOR.....	KP
PREPARED BY	NJV



FIELD CLASSIFICATION AND REMARKS

GROUND SURFACE

TOP OF CASING APPROX. 4.00 FEET ABOVE GRADE.

MODERATE TO DARK YELLOWISH BROWN SAND & ROCK AGGREGATE, NON COHESIVE, SLIGHTLY MOIST, LOOSE TO FIRM, NO APPARENT HC ODOR DETECTED PHYSICALLY WITHIN AUGER CUTTINGS (0.0 - 17.0 FT. BELOW GRADE).

DARK YELLOWISH BROWN SAND, NON COHESIVE, LOOSE TO FIRM, MOIST, NO APPARENT HC ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (17.0 - 22.0 FT. BELOW GRADE).

SAME AS ABOVE EXCEPT MEDIUM GRAY TO BLACK, WET (22.0 - 28.0 FT. BELOW GRADE).

LIGHT MEDIUM GRAY SILTY CLAY TO CLAY, MEDIUM PLASTIC, STIFF, MOIST TO WET, APPARENT HC ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (30.5 - 35.0 FT. BELOW GRADE).

SAMPLE COLLECTED FROM SPLIT SPOON SAMPLER BH-2 @ 30.5 FT. OVM READING - 18.1 ppm, COLLECTED - 3/14/05, TIME - 9:30 am, blow count = 11/2 ft.

LIGHT MEDIUM GRAY SILTY CLAY TO CLAY, MEDIUM PLASTIC, STIFF, MOIST TO WET, APPARENT HC ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (30.5 - 35.0 FT. BELOW GRADE).

LIGHT GRAY BEDROCK (SANDSTONE), DRY, FINE GRAIN, WELL CONSOLIDATED, WELL CEMENTED, COMPETENT, HC ODOR DETECTED PHYSICALLY WITHIN AUGER CUTTINGS (35.0 - 36.0 FT. BELOW GRADE).

NOTES:

- IMPORTED SAND & ROCK AGGREGATE.
- SAND (IMPACTED).
- SILTY CLAY TO CLAY (IMPACTED).

TOS - Top of screen of monitor well.
TD - Total depth/bottom extent of monitor well.
OVM - Organic Vapor Meter or Photoionization Detector (PID).
TPH - Total Petroleum Hydrocarbon US EPA method modified 8015B.
ppm - Parts per million or milligrams per liter (mg/L).

Monitor well consist of 2 inch PVC piping - casing from 4.0 ft. above grade to 16.0 ft. below grade, 0.010 slotted screen between 16.0 to 36.0 feet below grade, sand packed annular to 13 ft. below grade, bentonite plugged to 5 ft. below grade, then finished to surface with clean soil.

DRAWING: FED-GC-H1-MW1. SKF	DATE: 03/14/05	DWN BY: NJV

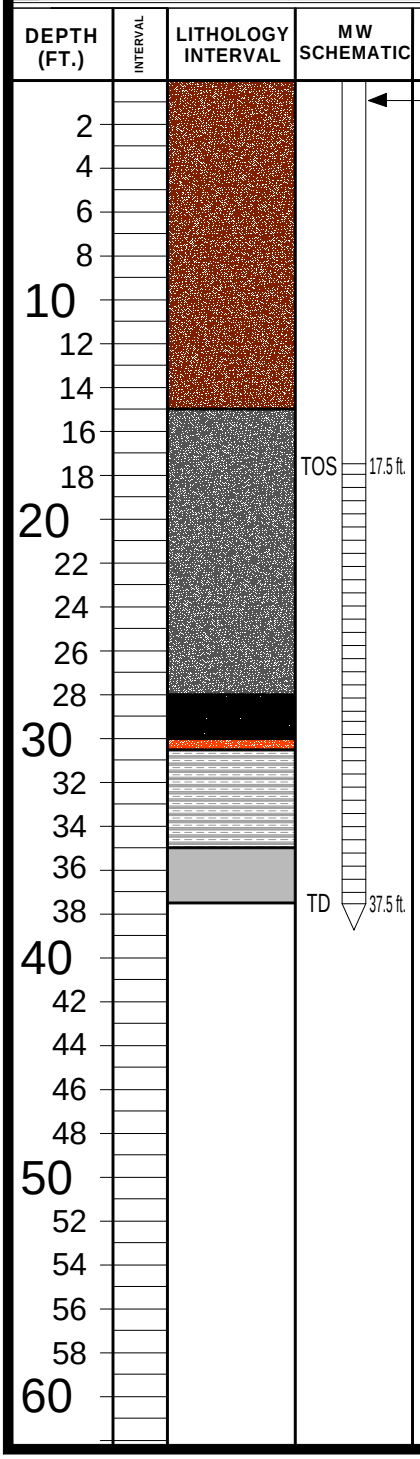
BLAGG ENGINEERING, Inc.

P.O. BOX 87
BLOOMFIELD, NM 87413
(505) 632-1199

BORE / TEST HOLE REPORT

CLIENT:	**XTO ENERGY INC.**
LOCATION NAME:	FEDERAL GC H # 1 UNIT C, SEC. 31, T30N, R12W
CONTRACTOR:	**BLAGG ENGINEERING, INC./ENVIROTECH**
EQUIPMENT USED:	**MOBILE DRILL RIG SIMILAR TO CME 75**
BORING LOCATION:	**156** FEET, **N82W** FROM WELL HEAD.

BORING #.....	BH - 2
MW #.....	2
PAGE #.....	2
DATE STARTED	03/14/05
DATE FINISHED	03/14/05
OPERATOR.....	KP
PREPARED BY	NJV



FIELD CLASSIFICATION AND REMARKS

GROUND SURFACE

TOP OF CASING APPROX. 2.50 FEET ABOVE GRADE.

MODERATE TO DARK YELLOWISH BROWN SAND, NON COHESIVE, SLIGHTLY MOIST, LOOSE TO FIRM, APPARENT HC ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (0.0 - 15.0 FT. BELOW GRADE).

DARK YELLOWISH BROWN TO MEDIUM GRAY SAND, NON COHESIVE, MOIST, STRONG HC ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (15.0 - 28.0 FT. BELOW GRADE).

SAME AS ABOVE EXCEPT BLACK AND SATURATED (28.0 - 30.0 FT. BELOW GRADE).

SAME AS ABOVE EXCEPT DARK YELLOWISH ORANGE (30.0 - 30.5 FT. BELOW GRADE).

LIGHT MEDIUM GRAY SILTY CLAY TO CLAY, MEDIUM PLASTIC, STIFF, MOIST, APPARENT HC ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (30.5 - 35.0 FT. BELOW GRADE).

LIGHT GRAY BEDROCK (SANDSTONE), DRY, FINE GRAIN, WELL CONSOLIDATED, WELL CEMENTED, COMPETENT, HC ODOR DETECTED PHYSICALLY WITHIN SPLIT SPOON SAMPLER (35.0 - 37.5 FT. BELOW GRADE).

NOTES:

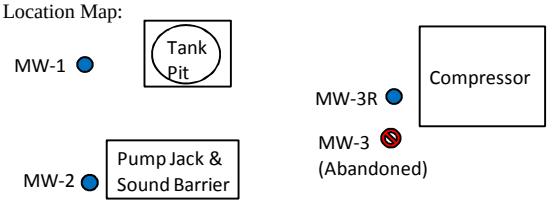
- SAND.
- SAND (IMPACTED).
- SILTY CLAY TO CLAY (IMPACTED).

TOS - Top of screen of monitor well.
TD - Total depth/bottom extent of monitor well.

Monitor well consist of 2 inch PVC piping - casing from 2.5 ft. above grade to 17.5 ft. below grade, 0.010 slotted screen between 17.5 to 37.5 feet below grade, sand packed annular to 13 ft. below grade, bentonite plugged to 5 ft. below grade, then finished to surface with clean soil.

DRAWING: FED-GC-H1-MW2. SKF	DATE: 03/14/05	DWN BY: NJV

Location Map:



Compliance • Engineering • Remediation
LT Environmental, Inc.
2243 Main Avenue, Suite 3
Durango, Colorado 81301

BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: MW-3R		Project: XTO Groundwater Monitoring	
Site Name: Federal H#1		Date: 1/7/2011	Project Number: XTO1002
Location: 36.774886; -108.142525		Logged By: D. Hencmann	Drilled By: EnviroDrill, Inc.
Elevation: 5536.6	Detector: N/A	Drilling Method: Hollow Stem Auger	Sampling Method: N/A
Gravel Pack: 10/20 Colorado Silica Sand		Seal: Bentonite Pellets	Grout: Neat Cement
Casing Type: Schedule 40 PVC		Diameter: 2 inch / Length: 28 feet	Hole Diameter: / Depth to Liquid: None
Screen Type: Schedule 40 PVC	Slot: 0.010 inch	Diameter: 2 inch / Length: 15 feet	Total Depth: 40 feet / Depth to Water: 34 feet

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
					0			Not Logged (replacement well)	
					4				
					8				
					12				
					16				
					20				
					24				
					28				
					32				
					36				
					40				

ATTACHMENT 3

2016 LABORATORY REPORTS

ANALYTICAL REPORT

June 28, 2016

XTO Energy - San Juan Division

Sample Delivery Group:	L842708
Samples Received:	06/21/2016
Project Number:	30-045-12054
Description:	Federal GC H#1

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

Entire Report Reviewed By: Daphne R Richards

Daphne Richards
Technical Service Representative

FARAC-062016-1430 L842708-01 GW

Collected by: A. Crooks
Collected date/time: 06/20/16 14:30
Received date/time: 06/21/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC) by Method 8021B	WG883929	5	06/28/16 15:01	06/28/16 15:01	JHH

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. 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

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Benzene	0.0376		0.00250	5	06/28/2016 15:01	WG883929
Toluene	0.182		0.0250	5	06/28/2016 15:01	WG883929
Ethylbenzene	0.239		0.00250	5	06/28/2016 15:01	WG883929
Total Xylene	0.626		0.00750	5	06/28/2016 15:01	WG883929
(S) a,a,a-Trifluorotoluene(PID)	*101*		*55.0-122*		*06/28/2016 15:01*	WG883929

Method Blank (MB)

(MB) R3146339-3 06/28/16 12:34

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
Benzene	U		0.000190	0.000500
Toluene	U		0.000180	0.00500
Ethylbenzene	U		0.000160	0.000500
Total Xylene	U		0.000510	0.00150
(S) a,a,a-Trifluorotoluene(PID)	*102*			*55.0-122*

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

(LCS) R3146339-1 06/28/16 11:26 • (LCSD) R3146339-2 06/28/16 11:49

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	0.0616	0.0599	123	120	70.0-130			2.78	20
Toluene	0.0500	0.0606	0.0583	121	117	70.0-130			3.88	20
Ethylbenzene	0.0500	0.0611	0.0588	122	118	70.0-130			3.84	20
Total Xylene	0.150	0.184	0.177	123	118	70.0-130			4.10	20
(S) a,a,a-Trifluorotoluene(PID)				*102*	*102*	*55.0-122*				

L843090-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L843090-05 06/28/16 13:08 • (MS) R3146339-4 06/28/16 13:30 • (MSD) R3146339-5 06/28/16 13:53

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	%	%		%			%	%
Benzene	0.0500	U	0.0611	0.0587	122	117	1	57.2-131			4.08	20
Toluene	0.0500	U	0.0599	0.0571	120	114	1	63.7-134			4.82	20
Ethylbenzene	0.0500	U	0.0602	0.0575	120	115	1	67.5-135			4.65	20
Total Xylene	0.150	U	0.182	0.173	121	116	1	65.9-138			4.77	20
(S) a,a,a-Trifluorotoluene(PID)					*101*	*101*		*55.0-122*				

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
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.

Qualifier	Description

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

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.**
***** Not all certifications held by the laboratory are applicable to the results reported in the attached report.

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 [1 4]	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		

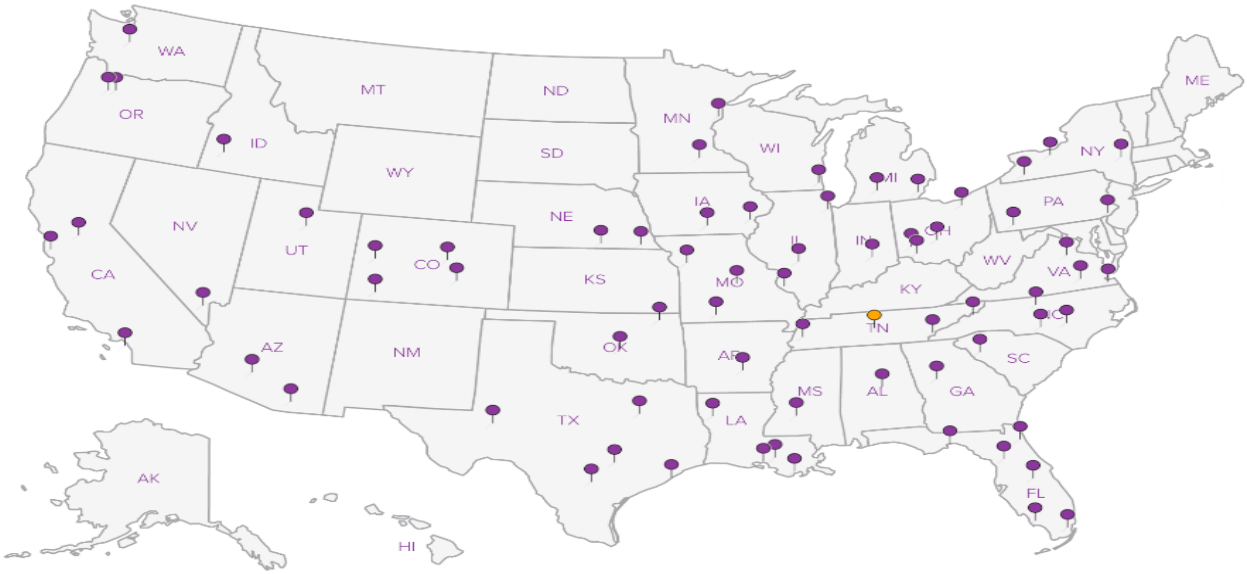
Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

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

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.**



XTO ENERGY
Western Division

	Quote Number **XTO Contact:**	**Page _1_ of _1_**
	XTO Contact: James McDaniel	**XTO Contact Phone #:** 505-333-3701
	Email Results to: james_mcdaniel@xtoenergy.com bherb@ltenv.com	
Well Site/Location Federal GC H#1	**API Number** 30-045-12054	**Test Reason** Quarterly GW
Collected By A. Crooks	**Samples on Ice (Y / N)**	**Turnaround** ___ 24-Hour ___ Next Day ___ Two Day ___ Three Day _X_ Std.5 Bus. Days(by contract)
Company LT Environmental, Inc.	**QA/QC Requested** Standard	**Date Needed** _____
Signature		

Analysis

Lab Information

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

A235

Sample ID	Sample Name	Media	Date	Time	Preservative	No. of Conts.	BTEX
FARAC-062016-1430	~~MW-2~~ MW-1	GW	6/20/2016	1430	HCL	3	X

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)	**Date:** 6/20/16	**Time:** 1530	**Received By: (Signature)**
Relinquished By: (Signature)	**Date:**	**Time:**	**Received By: (Signature)**
Relinquished By: (Signature)	**Date:**	**Time:**	

Comments

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

ANALYTICAL REPORT

December 23, 2016

XTO Energy - San Juan Division

Sample Delivery Group:	L879643
Samples Received:	12/17/2016
Project Number:	30-045-12054
Description:	Federal GC H#1

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

Entire Report Reviewed By: Daphne R Richards

Daphne Richards
Technical Service Representative

TABLE OF CONTENTS

FARES-121416-1205 L879643-01 GW

Collected by: Emilee Skyles
Collected date/time: 12/14/16 12:05
Received date/time: 12/17/16 10:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC) by Method 8021B	WG936564	10	12/22/16 12:41	12/22/16 12:41	CMJ

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. 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

Volatile Organic Compounds (GC) by Method 8021B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Benzene	0.0190		0.00500	10	12/22/2016 12:41	WG936564
Toluene	0.118		0.0100	10	12/22/2016 12:41	WG936564
Ethylbenzene	0.118		0.00500	10	12/22/2016 12:41	WG936564
Total Xylene	0.323		0.0150	10	12/22/2016 12:41	WG936564
(S) a,a,a-Trifluorotoluene(PID)	*99.5*		*55.0-122*		*12/22/2016 12:41*	WG936564

Method Blank (MB)

(MB) R3186574-3 12/22/16 02:07

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
Benzene	U		0.000190	0.000500
Toluene	U		0.000412	0.00100
Ethylbenzene	U		0.000160	0.000500
Total Xylene	U		0.000510	0.00150
(S) a,a,a-Trifluorotoluene(PID)	*99.7*			*55.0-122*

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

(LCS) R3186574-1 12/22/16 01:22 • (LCSD) R3186574-2 12/22/16 01:44

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	0.0517	0.0505	103	101	70.0-130			2.22	20
Toluene	0.0500	0.0502	0.0491	100	98.1	70.0-130			2.25	20
Ethylbenzene	0.0500	0.0509	0.0497	102	99.4	70.0-130			2.40	20
Total Xylene	0.150	0.151	0.148	101	98.5	70.0-130			2.37	20
(S) a,a,a-Trifluorotoluene(PID)				*98.7*	*99.0*	*55.0-122*				

L879413-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L879413-02 12/22/16 05:43 • (MS) R3186574-4 12/22/16 02:29 • (MSD) R3186574-5 12/22/16 04:36

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	%	%		%			%	%
Benzene	0.0500	0.0913	0.0852	0.0805	0.000	0.000	1	57.2-131	J6	J6	5.63	20
Toluene	0.0500	0.204	0.167	0.158	0.000	0.000	1	63.7-134	V	V	5.59	20
Ethylbenzene	0.0500	0.0153	0.0435	0.0405	56.4	50.4	1	67.5-135	J6	J6	7.16	20
Total Xylene	0.150	0.105	0.174	0.163	46.2	38.5	1	65.9-138	J6	J6	6.91	20
(S) a,a,a-Trifluorotoluene(PID)					*99.4*	*96.4*		*55.0-122*				

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
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.

Qualifier	Description
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
V	The sample concentration is too high to evaluate accurate spike recoveries.

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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 [1 4]	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		

Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

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

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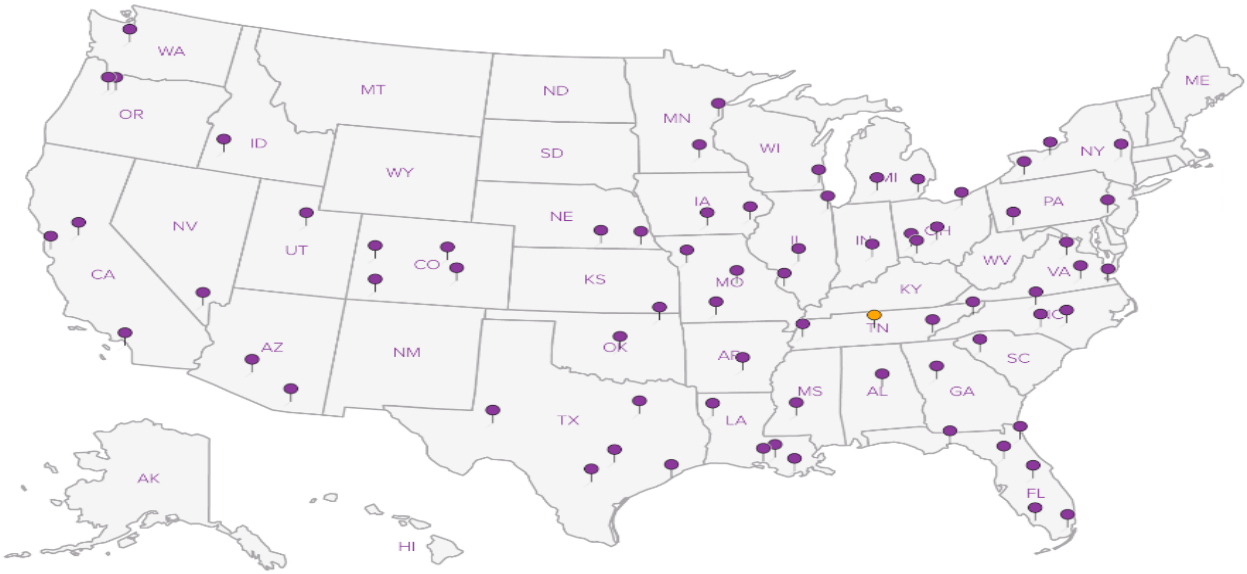

XTO ENERGY
Western Division

Quote Number	Page _1_ of _1_
XTO Contact: James McDaniel	XTO Contact Phone #: (505) 333-3701
Email Results to: james_mcdaniel@XTOenergy.com, Logan_Hixon@XTOenergy.com, Bherb@LTEnv.com, Dburns@ltenv.com	
Well Site/Location: Federal GC H#1	API Number: 30-045-12054
Collected By: Emilee Skyles	Samples on Ice (Y / N)
Company: LT Environmental, Inc.	QA/QC Requested: Standard
Signature:	Gray Areas for Lab Use Only!

Test Reason: Quarterly GW

Turnaround:
___ 24-Hour
___ Next Day
___ Two Day
___ Three Day
_X_ Standard
Date Needed _____

Analysis: TPH-GRO/DRO; 8021 - BTEX; SAR; EC; CHLORIDE; See Attached

Lab Information

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

Sample ID	Sample Name	Media	Date	Time	Preservative	No. of Conts.	TPH-GRO/DRO	8021 - BTEX	SAR	EC	CHLORIDE	See Attached	Sample Number
FARES-121416-1205	MW-1	GW	12/14/2016	12:05	HCl	3		X					379643-01

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)	Date: 12/14/16	Time: 13:00	Received By: (Signature)	Number of Bottles	Sample Condition
Relinquished By: (Signature)	Date:	Time:	Received By: (Signature)	Temperature: 1.9 MWSO COOL	Other Information
Relinquished By: (Signature)	Date:	Time:	Received for Lab by: (Signature)	Date: 12-17-16 Time: 10:30	

Comments Please include 3 EDD's- LTE Format, COGCC Format, and XTO Format

TOTAL = 3 = VP

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

ESC
LAB SCIENCES
YOUR LAB OF CHOICE

Cooler Receipt Form

Client:	XTOSMT	SDG#	379643
Cooler Received/Opened On: 12/17/16		Temperature Upon Receipt:	1.9 °c
Received By: Michael Witherspoon			
Signature: MWat			

Receipt Check List	Yes	No	N/A
Were custody seals on outside of cooler and intact?	✓		
Were custody papers properly filled out?	✓		
Did all bottles arrive in good condition?	✓		
Were correct bottles used for the analyses requested?	✓		
Was sufficient amount of sample sent in each bottle?	✓		
Were all applicable sample containers correctly preserved and checked for preservation? (Any not in accepted range noted on COC)			✓
If applicable, was an observable VOA headspace present?		✓	
Non Conformance Generated. (If yes see attached NCF)			

ATTACHMENT 4

2016 FIELD NOTES

COMPLIANCE / ENGINEERING / REMEDIATION

LT Environmental, Inc.
2243 Main Avenue, Suite 3
Durango, Colorado 81301
T 970.385.1096 / F
970.385.1873

Water Sample Collection Form

Project Name XTO Groundwater Monitoring
Project Number 01291809
Site Name Federal gc H #1
Sampler Alex Crooks
Sample Date ~~6/17/2016~~ 6/20/2016
Matrix Groundwater
Analyses 8021 BTEX
Laboratory ESC
Turn Around Time Standard
Shipping FedEx
Trip Blank No
Method of Purging Dedicated bailer
Method of Sampling Purge 3 volumes or bail dry

Sample ID	Depth to Water (ft)	Total Depth (ft)	Vol to Purge (gal)*	Actual Vol Purged (gal)	Sample Time	Comments
MW-1	30.30	37.86	3.70	3.75	1430	Black / cloudy / hydrocarbon odor

*(height of water column * 0.1631 for 2" well or 0.6524 for 4" well) * 3 well vols

Comments
37.86 - 30.30 = 7.56 x .1631 = 1.23 x 3 = 3.70
purged 3 well volumes + took sample at 1430

Signature: Alex Crooks Date: 6/20/16

COMPLIANCE / ENGINEERING / REMEDIATION

LT Environmental, Inc.
2243 Main Avenue, Suite 3
Durango, Colorado 81301
T 970.385.1096 / F

Water Sample Collection Form

Project Name XTO Groundwater Monitoring
Project Number ~~12911007~~ 012911009

Site Name Federal GC H#1
Sampler E. Skyles
Sample Date 12/14/16
Matrix Groundwater
Laboratory ESC
Shipping FedEx
Method of Purging Dedicated bailer
Method of Sampling Purge 3 volumes or bail dry

Analyses 8021 BTEX
Turn Around Time Standard
Trip Blank No

Sample ID	Depth to Water (ft)	Total Depth (ft)	Vol to Purge (gal)*	Actual Vol Purged (gal)	Sample Time	Comments
MW-1	30.29	37.77	3.6	3.25	1205	cloudy/gray, odor, sheen
MW-2	32.14	35.27	—	—	NS	- not sampled
MW-3R	34.45	41.78	—	—	NS	- not sampled

*(height of water column * 0.1631 for 2" well or 0.6524 for 4" well) * 3 well vols

Comments

Signature: E Sky

Date: 12/27/16