3RP-416

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XTO ENERGY

Annual Groundwater Remediation Reports For Year 2008

April 2009

XTO ENERGY

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April 13, 2009

Mr. Glenn von Gonten
Hydrologist-Groundwater Remediation
New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

RE: Annual Groundwater Remediation Reports

Dear Mr. von Gonten,

XTO Energy Inc. (XTO) herein submits the Annual Groundwater Remediation Reports for year 2008, in accordance with the New Mexico Oil Conservation Division (NMOCD) approved Groundwater Management Plan (GMP). Enclosed are summary reports with analytical data, summary tables, site maps, topographic maps, potentiometric surface diagrams and recommendations/proposed actions for:

- Bruington Gas Com #1- 3RP106
- EJ Johnson C #1E- 3RP385
- Federal Gas Com #H1- 3RP110
- Frost, Jack B #2- 3RP416
- McCoy GC D #1E- 3RP414
- OH Randel #7- 3RP386
- PO Pipken #3E- 3RP409
- Rowland Gas Com #1- 3RP124
- Valdez A #1E- 3RP134

We have also enclosed an Annual Groundwater Report for three sites that meet the closure requirements outlined in the GMP. XTO respectfully requests closure of:

- Carson Gas Com #1E- 3RP315
- Snyder Gas Com #1A- 3RP126
- Sullivan Gas Com D #1- 3RP131

In previously submitted reports, fifteen sites met the closure requirements outlined in the GMP and XTO requested closure of those sites in 2006, 2007 and 2008. The reports for the below listed sites are being submitted again for your review.

- Abrams J #1- 3RP100
- Armenta Gas Com C #1E- 3RP394
- Baca Gas Com A #1A- 3RP104
- Bergin Gas Com #1E- 3RP105
- Garcia Gas Com B #1- 3RP111
- Haney Gas Com B #1E- 3RP113
- Hare Gas Com B #1- 3RP413
- Hare Gas Com B #1E- 3RP384
- Hare Gas Com I #1- 3RP412
- Masden Gas Com #1E- 3RP120
- McDaniel Gas Com B #1E- 3RP121
- Romero Gas Com A #1- 3RP123
- State Gas Com BS #1- 3RP127
- Stedje Gas Com #1- 3RP128
- Sullivan Frame A #1E- 3RP130

Thank you for your review of the reports. XTO looks forward to hearing from you regarding closure requests and proposed remedial actions. If you have any questions please do not hesitate to contact me at (505) 333-3100.

Respectfully,

Martin Nee
EH & S Manager
San Juan Division

cc: Mr. Brandon Powell, Environmental, NMOCD District III Office, Aztec, NM
Ms. Ashley Ager, Lodestar Services Inc.
File- San Juan Groundwater

Frost, Jack B #2-
3RP416

XTO ENERGY INC.

ANNUAL GROUNDWATER REPORT

2008

JACK FROST B #2
3RP-416
(D) SECTION 27 – T27N – R10W, NMPM
SAN JUAN COUNTY, NEW MEXICO

PREPARED FOR:
MR. GLENN VON GONTEN
NEW MEXICO OIL CONSERVATION DIVISION

April 2009

TABLE OF CONTENTS

Site Details 3

Introduction 3

History..... 3

Methodology..... 4

Results..... 5

Conclusions..... 5

Recommendations 5

Appendices

Table 1: Summary Groundwater Laboratory Results

Table 2: General Water Quality

Figure 1: Site Map

Figure 2: Topographic Map

Figures 3-7: Geologic Logs

Figures 8-11: Potentiometric Surface Diagrams

Attachment 1: Pit Closure Report (08/94)

Attachment 2: 2008 Laboratory Reports

2008 XTO GROUNDWATER REPORT

FROST, JACK B #2
3RP-416

SITE DETAILS

LEGALS - TWN: 27N **RNG:** 10W **SEC:** 27 **UNIT:** D
OCD HAZARD RANKING: 30 **LAND TYPE:** FEDERAL
LATITUDE: 36.55081 **LONGITUDE:** 107.88783

INTRODUCTION

XTO Energy Inc. (XTO) acquired the Jack Frost B #2 well site from Amoco Production Company in January 1998. This is a gas producing well in the Basin Dakota and Angel Peak Gallup formations and is currently active. A site map and topographic map are presented as Figures 1 and 2.

HISTORY

XTO has learned that in August 1994 Amoco encountered groundwater during the closure excavation of an abandoned separator pit (Attachment 1). Approximately 400 cubic yards of impacted soil was removed and groundwater was encountered at a depth of 15 feet. The initial assessment of groundwater impact came from samples collected from groundwater pooling in the bottom of the excavated pit. The analytical results of the initial samples indicated elevated levels of benzene. A pit closure was submitted to the New Mexico Oil Conservation Division (OCD). OCD denied closure of the separator pit in December 1996 requesting further investigation. Three groundwater monitoring wells were installed in September 1999. Bore/Test Hole Reports are presented as Figures 3-5 representing drilling that occurred on site in September 1999. Groundwater samples were collected for laboratory analysis in September 1999 and again in February and June 2000. Groundwater collected for analysis from monitoring wells MW-1 and MW-3 exhibited elevated levels of benzene in 1999 while MW-2 exhibited benzene, toluene, ethyl benzene, and total xylenes (BTEX) concentrations that exceeded New Mexico Water Quality Control Commission (WQCC) standards. Up gradient monitoring well MW-1 and down gradient monitoring well MW-3 exhibited no detectable concentrations of BTEX constituents during the 2000 sampling events. Sampling was discontinued for an unknown reason in 2000. In May 2001 a request for closure was submitted to OCD. The request was denied pending submittal of four consecutive quarters of sample analyses and further down gradient delineation of groundwater quality.

XTO submitted the first annual groundwater report to the OCD in April 2006 for year 2005. In order to comply with the 2001 correspondence from OCD, installation of an additional groundwater monitoring well to further delineate groundwater conditions and placing the monitoring wells on a quarterly sampling schedule was recommended.

Monitoring well MW-2 was repaired (MW-2R) due to damage and MW-4 was installed down gradient of the estimated source area in August 2006. Figures 6-7 are presented for the monitoring wells installed during 2006. Monitoring well MW-4 has been sampled quarterly since installation. Groundwater analyses from MW-4 show a consistent decrease in BTEX constituents and currently exhibits benzene concentrations that no longer exceed WQCC standards.

2008 XTO GROUNDWATER REPORT

The 2006 annual groundwater report was submitted to the OCD in February 2007, proposing continued quarterly sampling of the groundwater monitoring wells, in accordance with the OCD approved Groundwater Management Plan.

The 2007 annual groundwater report was submitted to the OCD in February 2008, proposing terminating quarterly sampling of groundwater monitoring wells MW-1, MW-2R and MW-3 along with continued quarterly sampling of MW-4 until analytical results show hydrocarbon constituents are below WQCC groundwater standards for four (4) consecutive quarters.

A summary of laboratory results from historical and current groundwater monitoring is presented as Table 1. A summary of general water quality data from 1999 is presented as Table 2. Copies of the laboratory data sheets and associated quality assurance/quality control data for 2008 are presented as Attachment 2.

METHODOLOGY

Quarterly groundwater samples were collected from monitoring well MW-4 during 2008.

Water Level Measurements

Static groundwater level monitoring includes recording depth to groundwater measurements with a Keck oil/water interface probe. The interface probe is decontaminated with Alconox™ soap and rinsed with de-ionized water prior to each measurement. These data are recorded as Depth to Water (DTW) and Total Depth (TD) in feet on Table 1.

Groundwater Sampling

Prior to sampling at monitoring wells, depth to groundwater and total depth of wells is measured with a Keck oil/water interface probe. Presence of any free-phase crude oil is also investigated using the interface probe. The interface probe is decontaminated with Alconox™ soap and rinsed with de-ionized water prior to each measurement. The volume of water in the wells is calculated, and a minimum of three casing volumes of water is purged from each well using a disposable bailer or a permanent decontaminated PVC bailer. As water is extracted, pH, electric conductivity and temperature are monitored. Wells are purged until these properties stabilize, indicating that the purge water is representative of aquifer conditions. Stabilization is defined as three consecutive stable readings for each water property (±0.4 units for pH, ±10 percent for electric conductivity and ±2° C for temperature). All purge water is disposed of into tanks on site.

Once each monitoring well is properly purged, groundwater samples are collected by filling at least two 40-millititer (ml) glass vials. The pre-cleaned and pre-preserved (with hydrochloric acid or mercuric chloride) vials are filled and capped with no air inside to prevent degradation of the sample. Samples are labeled with the date and time of collection, well designation, project name, collector's name and parameters to be analyzed. They are immediately sealed and packed on ice. The samples are shipped to Hall Environmental Analysis Laboratory (HEAL) in Albuquerque, New Mexico in a sealed cooler via bus before designated holding times expire. Proper chain-of-custody (COC) procedures are followed with logs documenting the date and time sampled, sample number, type of sample, sampler's name, preservative used, analyses required and sampler's signature.

Groundwater Contour Maps
Top of casing well elevations are surveyed using a surveyor's level; and groundwater elevations obtained from monitoring wells during site visits are used to draft groundwater contour maps. Contours are inferred based on groundwater elevations obtained and observation of physical characteristics at the site (topography, proximity to irrigation ditches, etc.).

RESULTS

Laboratory analytical results from MW-4 have been below standards for BTEX for three consecutive quarters. All laboratory analytical results are presented in Table 1. Laboratory reports are presented as Attachment 2.

Field data collected during site monitoring activities indicate a groundwater gradient that trends towards the west with a slight southwest component, following surface contours and the general flow of the arroyo. In March the gradient shifted to the south so that groundwater was flowing towards the adjacent wash rather than the same direction as the wash. The gradient increased slightly at this time also. Figures 8-11 illustrate the estimated groundwater gradients for 2008.

CONCLUSIONS

Groundwater analysis from MW-4 shows a consistent decrease in BTEX constituents and currently exhibits benzene concentrations that no longer exceed WQCC standards.

RECOMMENDATIONS

Quarterly sampling will continue at MW-4 until four (4) consecutive quarters have been analyzed for BTEX constituents and indicate groundwater is below WQCC standards.

Following OCD approval for closure, all monitoring well locations will be abandoned in accordance with the monitoring well abandonment plan.

TABLE 1

XTO ENERGY INC. GROUNDWATER LAB RESULTS

FROST, JACK B #2- SEPARATOR PIT
UNIT D, SEC. 27, T27N, R10W

					BTEX EPA Method 801 (PPB)			
Sample Date	Monitor Well No.	DTW (ft)	TD (ft)	Product (ft)	Benzene (ug/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Total Xylene (ug/L)
27-Sep-99	MW #1	8.73	20		24.9	4	ND	6.3
18-Feb-00		9.26			ND	ND	ND	ND
20-Jun-00		9.28			ND	ND	ND	ND
20-Jun-06		10.24	20.44		ND	ND	ND	ND
20-Sep-06		10.34	20.4		ND	ND	ND	ND
5-Dec-06		9.74	20.4		ND	ND	ND	ND
8-Mar-07		9.56	20.4		ND	ND	ND	ND
12-Jun-07		9.5	20.4		ND	ND	ND	ND
28-Sep-07		9.78	20.4		ND	ND	ND	ND
20-Dec-07		10.11	20.4		NS			
27-Sep-99	MW #2	11.71	20		350	60.1	90.5	253.9
18-Feb-00		11.87			0.9	ND	2.6	3.9
20-Jun-00		11.38			0.5	ND	1.6	3.5
20-Jun-06		MONITORING WELL NOT FOUND						
20-Sep-06	MW #2R	13.44	22.44		ND	ND	1	3.7
5-Dec-06		13.33	22.44		ND	ND	ND	ND
8-Mar-07		13.91	22.44		ND	ND	ND	ND
12-Jun-07		12.52	22.44		ND	ND	ND	2.4
28-Sep-07		12.78	22.44		ND	ND	ND	2.1
20-Dec-07		13.02	22.44		NS			
27-Sep-99	MW #3	13.76	20		21.2	3.1	3.1	15.1
18-Feb-00		12.87			ND	ND	ND	ND
20-Jun-00		12.42			ND	ND	ND	ND
20-Jun-06		13.29	20.41		ND	ND	ND	ND
20-Sep-06		13.34	20.4		ND	ND	ND	ND
5-Dec-06		13.4	20.4		ND	ND	ND	ND
8-Mar-07		12.63	20.4		ND	ND	ND	ND
12-Jun-07		12.41	20.4		ND	ND	ND	ND
28-Sep-07		12.54	20.4		ND	ND	ND	ND
20-Dec-07		12.7	20.4		NS			
20-Sep-06	MW #4	13.24	22.62		46	240	53	640
5-Dec-06		13.22	22.62		73	6.4	62	130
8-Mar-07		12.84	22.62		17	ND	18	14
12-Jun-07		12.43	22.62		16	ND	11	3
28-Sep-07		12.54	22.62		11	ND	5.9	ND
20-Dec-07		12.72	22.62		29	ND	4.4	ND
13-Mar-08		12.5	22.62		17	ND	ND	ND
3-Jun-08		12.4	22.62		9.7	ND	ND	2.4
22-Sep-08		12.64	22.62		3.1	ND	ND	ND
4-Dec-08		12.9	22.62		1.7	ND	ND	ND
NMWQCC GROUNDWATER STANDARDS					10	750	750	620

TABLE 2

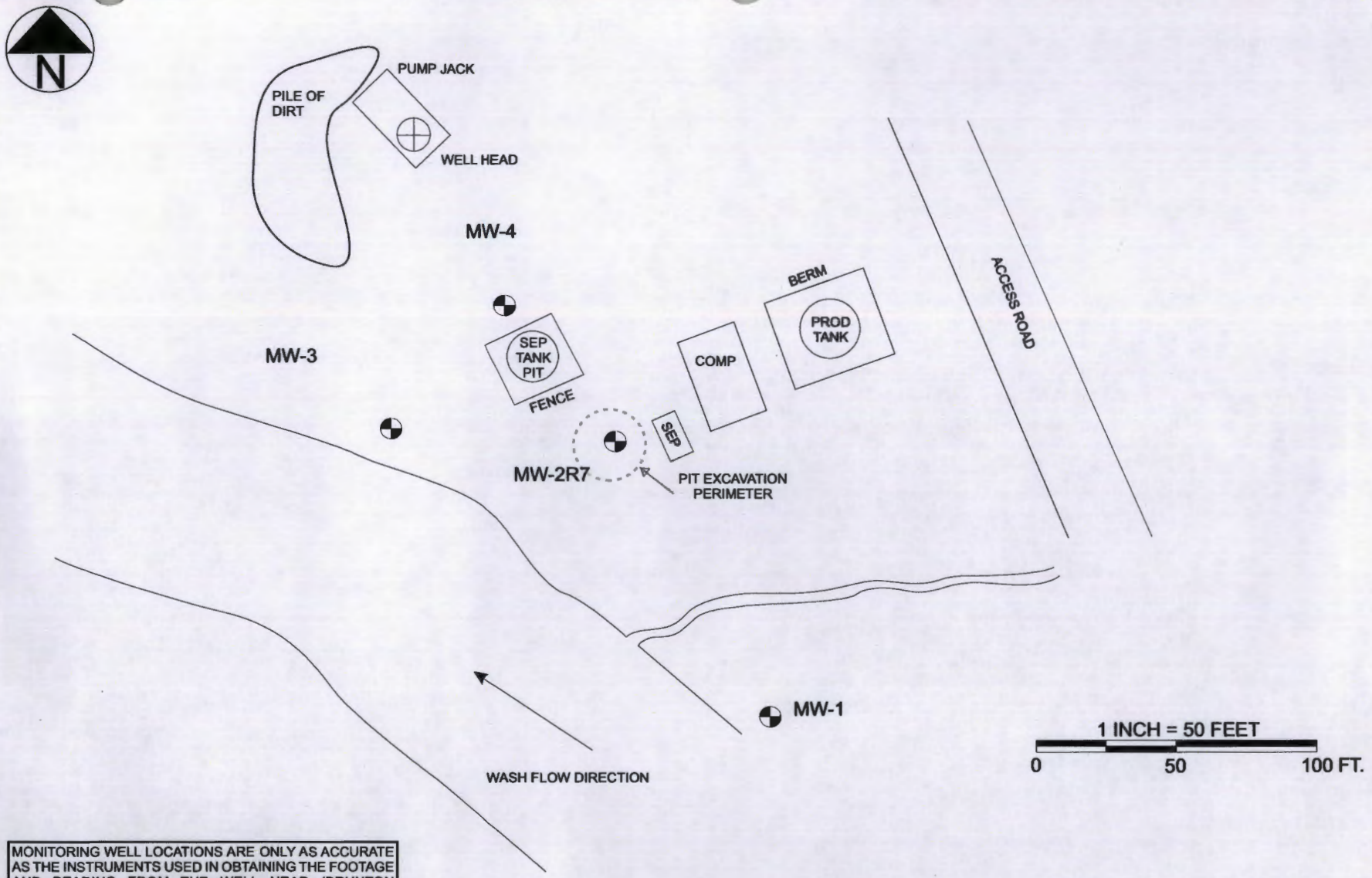
XTO ENERGY INC. GROUNDWATER LAB RESULTS

FROST, JACK B #2- SEPARATOR PIT
UNIT D, SEC. 27, T27N, R10W

Sample Date: September 27, 1999

PARAMETERS	MW #1	MW #2	MW #3	UNITS
LAB Ph	7.85	7.98	7.8	s.u.
LAB CONDUCTIVITY @ 25 C	6,810	1,876	4,180	umhos/cm
TOTAL DISSOLVED SOLIDS @ 180 C	3,400	915	2,080	mg/L
TOTAL DISSOLVED SOLIDS (Calc)	3,370	710	1,980	mg/L
SODIUM ABSORPTION RATIO	48.9	10.5	39.2	ratio
TOTAL ALKALINITY AS CaCO3	638	316	524	mg/L
TOTAL HARDNESS AS CaCO3	94	78	52	mg/L
BICARBONATE AS HCO3	638	316	524	mg/L
CARBONATE AS CO3	< 1	< 1	< 1	mg/L
HYDROXIDE AS OH	< 1	< 1	< 1	mg/L
NITRATE NITORGEN	0.1	1	0.5	mg/L
NITRITE NITROGEN	0.004	0.300	0.021	mg/L
CHLORIDE	5	2	4.5	mg/L
FLUORIDE	1.96	1.21	4.4	mg/L
PHOSPHATE	0.9	6.5	1	mg/L
SULFATE	1,850	260	983	mg/L
IRON	0.007	0.288	0.042	mg/L
CALCIUM	28.8	25.6	18.4	mg/L
MAGNESIUM	5.4	3.4	1.5	mg/L
POTASSIUM	3.0	3.0	3.0	mg/L
SODIUM	1,090	214	650	mg/L
CATION/ANION DIFFERENCE	0.25	0.02	0.2	%

FIGURE 1



MONITORING WELL 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 MAY NOT BE TO SCALE.

Lodestar Services, Inc PO Box 3861 Farmington, NM 87499	JACK FROST B #2 NW/4 NW/4 SEC. 27, T27N, R10W SAN JUAN COUNTY, NEW MEXICO	PROJECT: XTO GROUND WATER DRAWN BY: ALA REVISED: 01/24/2007	SITE MAP

FIGURE 2


XTO ENERGY INC.
JACK FROST B No. 2
NW/4 NW/4 SEC. 27D, T-27-N, R-10-W, N.M.P.M.
SAN JUAN COUNTY, NEW MEXICO
JACK FROST B No. 2
LAT: 36.55081
LONG: 107.88783
Angel Peak
TN MAIN
10½°
0 1 MILE
0 1000 FEET 0 500 1000 METERS
Printed from TOPO! ©2001 National Geographic Holdings (www.topo.com)

FIGURE 3

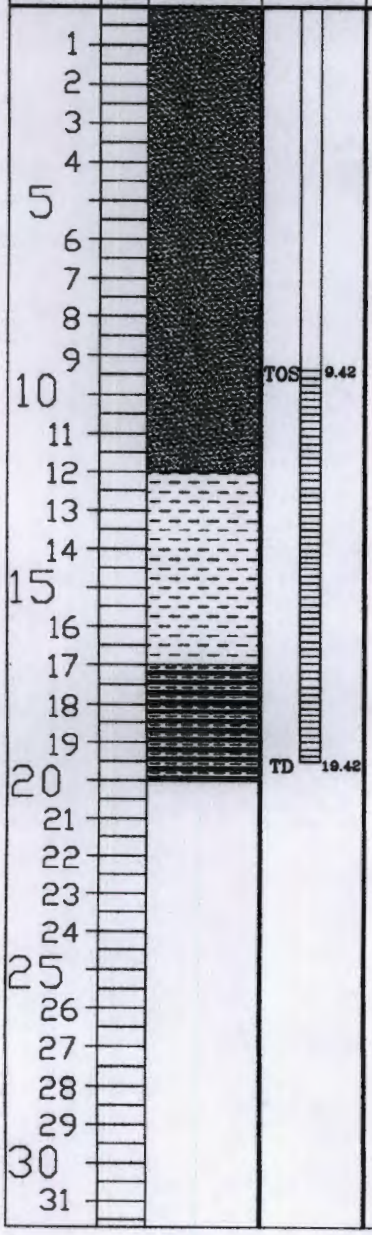
BLAGG ENGINEERING, Inc.

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

BORE / TEST HOLE REPORT

BORING #..... BH - 1
MW #..... 1
PAGE #..... 1
DATE STARTED 9/21/99
DATE FINISHED 9/21/99
OPERATOR..... REP
PREPARED BY NJV

CLIENT: XTO ENERGY INC.
LOCATION NAME: FROST, JACK B #2
CONTRACTOR: BLAGG ENGINEERING, INC.
EQUIPMENT USED: MOBILE DRILL RIG (EARTHPROBE)
BORING LOCATION: 273 FT., S33E FEET FROM WELL HEAD.



FIELD CLASSIFICATION AND REMARKS

GROUND SURFACE

TOP OF CASING APPROX. 0.58 FT. ABOVE GROUND SURFACE.

MODERATE YELLOWISH SAND TO SILTY SAND, NON COHESIVE, SLIGHTLY MOIST, FIRM, NO APPARENT DISCOLORATION OBSERVED OR HYDROCARBON ODOR DETECTED PHYSICALLY (0.0 - 12.0 FT. INTERVAL).

▼ GW DEPTH ON 9/27/99 = 8.15 FT. (APPROX.) FROM GROUND SURFACE.

DARK YELLOWISH SILTY CLAY, COHESIVE, SLIGHTLY MOIST, FIRM TO STIFF, NO APPARENT DISCOLORATION OBSERVED OR HYDROCARBON ODOR DETECTED PHYSICALLY (12.0 - 17.0 FT. INTERVAL).

OLIVE GRAY CLAY, PLASTIC TO HIGHLY PLASTIC, SLIGHTLY MOIST TO SLIGHTLY SATURATED, STIFF TO VERY STIFF, NO APPARENT DISCOLORATION OBSERVED OR HYDROCARBON ODOR DETECTED PHYSICALLY (17.0 - 20.0 FT. INTERVAL).

NOTE:
- SAND TO SILTY SAND.
- SILTY CLAY.
- CLAY.

TOS - TOP OF SCREEN FROM GROUND SURFACE.
TD - TOTAL DEPTH OF MONITOR WELL FROM GROUND SURFACE.
GW - GROUND WATER.

DRAWING: BH-1.SKD	DATE: 9/25/99	DWN BY: NJV

FIGURE 4

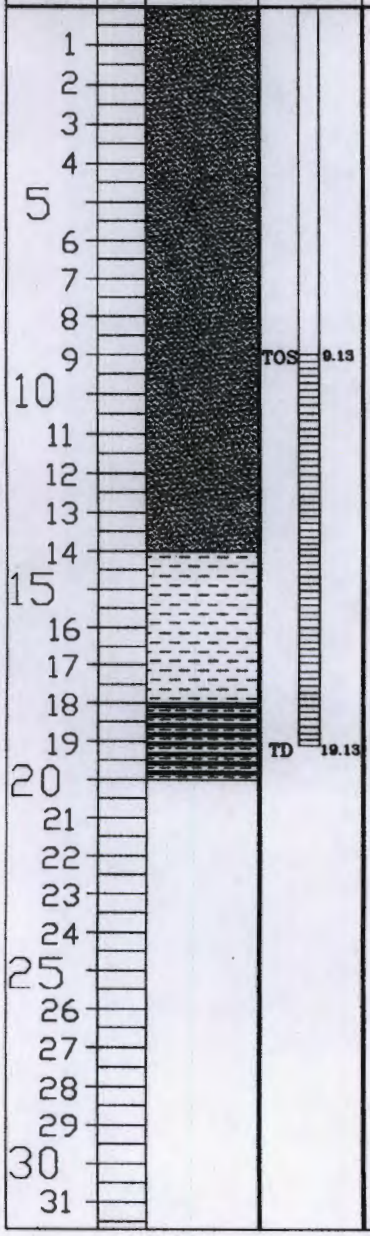
BLAGG ENGINEERING, Inc.

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

BORE / TEST HOLE REPORT

BORING # BH - 2
MW # 2
PAGE # 2
DATE STARTED 9/21/99
DATE FINISHED 9/21/99
OPERATOR REP
PREPARED BY NJV

CLIENT: XTO ENERGY INC.
LOCATION NAME: FROST, JACK B #2
CONTRACTOR: BLAGG ENGINEERING, INC.
EQUIPMENT USED: MOBILE DRILL RIG (EARTHPROBE)
BORING LOCATION: 156 FT., S35E FEET FROM WELL HEAD.



FIELD CLASSIFICATION AND REMARKS

GROUND SURFACE

TOP OF CASING APPROX. 0.87 FT. ABOVE GROUND SURFACE.

MODERATE YELLOWISH SAND, NON COHESIVE, SLIGHTLY MOIST, FIRM, NO APPARENT DISCOLORATION OBSERVED OR HYDROCARBON ODOR DETECTED PHYSICALLY (0.0 – 14.0 FT. INTERVAL).

▼ GW DEPTH ON 9/27/99 = 10.84 FT. (APPROX.) FROM GROUND SURFACE.

MEDIUM TO DARK GRAY SILTY SAND, NON COHESIVE, SLIGHTLY MOIST, FIRM TO LOOSE, NO APPARENT DISCOLORATION OBSERVED OR HYDROCARBON ODOR DETECTED PHYSICALLY (14.0 – 18.0 FT. INTERVAL).

LIGHT TO MEDIUM GRAY SILTY CLAY TO CLAY, PLASTIC TO HIGHLY PLASTIC, SLIGHTLY MOIST TO SLIGHTLY SATURATED, STIFF TO VERY STIFF, NO APPARENT DISCOLORATION OBSERVED OR HYDROCARBON ODOR DETECTED PHYSICALLY (18.0 – 20.0 FT. INTERVAL).

NOTE:
- SAND.
- SILTY SAND.
- SILTY CLAY TO CLAY.

TOS – TOP OF SCREEN FROM GROUND SURFACE.
TD – TOTAL DEPTH OF MONITOR WELL FROM GROUND SURFACE.
GW – GROUND WATER.

DRAWING: BH-2.SKD	DATE: 9/25/99	DWN BY: NJV

FIGURE 5

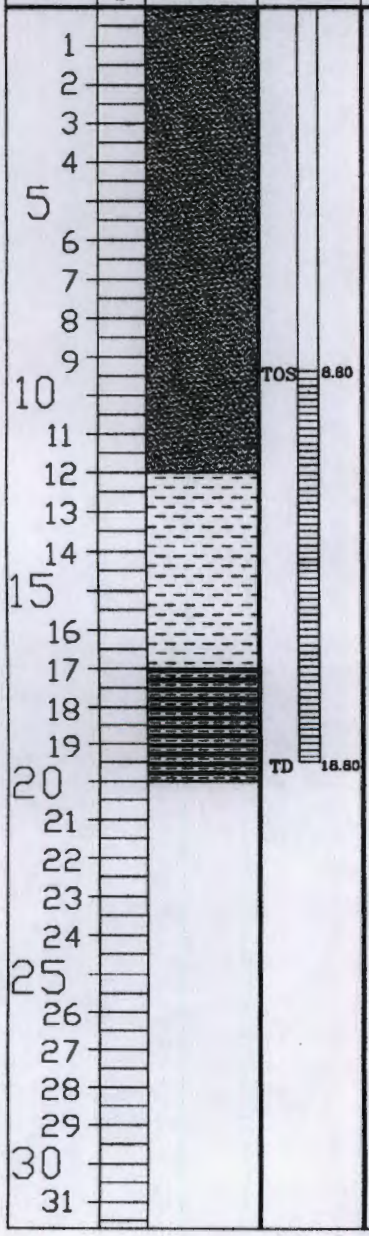
BLAGG ENGINEERING, Inc.

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

BORE / TEST HOLE REPORT

BORING # BH - 3
MW # 3
PAGE # 3
DATE STARTED 9/21/99
DATE FINISHED 9/21/99
OPERATOR REP
PREPARED BY NJV

CLIENT: XTO ENERGY INC.
LOCATION NAME: FROST, JACK B #2
CONTRACTOR: BLAGG ENGINEERING, INC.
EQUIPMENT USED: MOBILE DRILL RIG (EARTHPROBE)
BORING LOCATION: 120 FT., S1E FEET FROM WELL HEAD.



FIELD CLASSIFICATION AND REMARKS

GROUND SURFACE

TOP OF CASING APPROX. 1.20 FT. ABOVE GROUND SURFACE.

MODERATE YELLOWISH SAND TO SILTY SAND, NON COHESIVE, SLIGHTLY MOIST, FIRM, NO APPARENT DISCOLORATION OBSERVED OR HYDROCARBON ODOR DETECTED PHYSICALLY (0.0 - 12.0 FT. INTERVAL).

▼ GW DEPTH ON 9/27/99 = 12.56 FT. (APPROX.) FROM GROUND SURFACE.

DARK YELLOWISH SILTY CLAY, COHESIVE, SLIGHTLY MOIST, FIRM TO STIFF, NO APPARENT DISCOLORATION OBSERVED OR HYDROCARBON ODOR DETECTED PHYSICALLY (12.0 - 17.0 FT. INTERVAL).

OLIVE GRAY CLAY, PLASTIC TO HIGHLY PLASTIC, SLIGHTLY MOIST TO SLIGHTLY SATURATED, STIFF TO VERY STIFF, NO APPARENT DISCOLORATION OBSERVED OR HYDROCARBON ODOR DETECTED PHYSICALLY (17.0 - 20.0 FT. INTERVAL).

NOTE:
- SAND TO SILTY SAND.
- SILTY CLAY.
- CLAY.

TOS - TOP OF SCREEN FROM GROUND SURFACE.
TD - TOTAL DEPTH OF MONITOR WELL FROM GROUND SURFACE.
GW - GROUND WATER.

DRAWING: BH-3.SKD	DATE: 9/25/99	DWN BY: NJV

FIGURE 6

RECORD OF SUBSURFACE EXPLORATION

LodeStar Services
P.O. Box 4465
Durango, CO 81302
303-917-6288

Borehole #: 1
Well #: MW-2R
Page: 1 of 1
Project Number:
Project Name: XTO Ground Water
Project Location: Jack Frost B #2

Borehole Location: 36° 33.041' N, 107° 53.289' W
GWL Depth: 13'
Drilled By: Envirotech
Well Logged By: Ashley Ager
Date Started: 08/31/06
Date Completed: 08/31/06

Drilling Method: Hollow Stem Auger
Air Monitoring Method: PID

Depth (feet)	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description	Air Monitoring	Drilling Conditions
0		0-1.5	cuttings	Tan, poorly sorted coarse sand and gravel (<10? Gravel), angular and dry (Fill)	0	Easy and fast
		1.5-15.5	cuttings	Brown, poorly sorted coarse sand, no gravel, angular, varying mineralogies, damp and unconsolidated	0	Easy and fast
5						
10						
				13' = wet sand		
15		15.5-20	cuttings	Gray, poorly sorted coarse sand, angular, varying mineralogy, wet and unconsolidated	5.8	Easy and fast
20						

Comments: Very easy well to install.

Geologist Signature: Ashley L. Ager

FIGURE 7

RECORD OF SUBSURFACE EXPLORATION

LodeStar Services
P.O. Box 4465
Durango, CO 81302
303-917-6288

Borehole #: 1
Well #: MW-4
Page: 1 of 1
Project Number:
Project Name: XTO Ground Water
Project Location: Jack Frost B #2

Borehole Location: 36° 33.044' N, 107° 53.297' W
GWL Depth: 18'
Drilled By: Envirotech
Well Logged By: Ashley Ager
Date Started: 08/31/06
Date Completed: 08/31/06

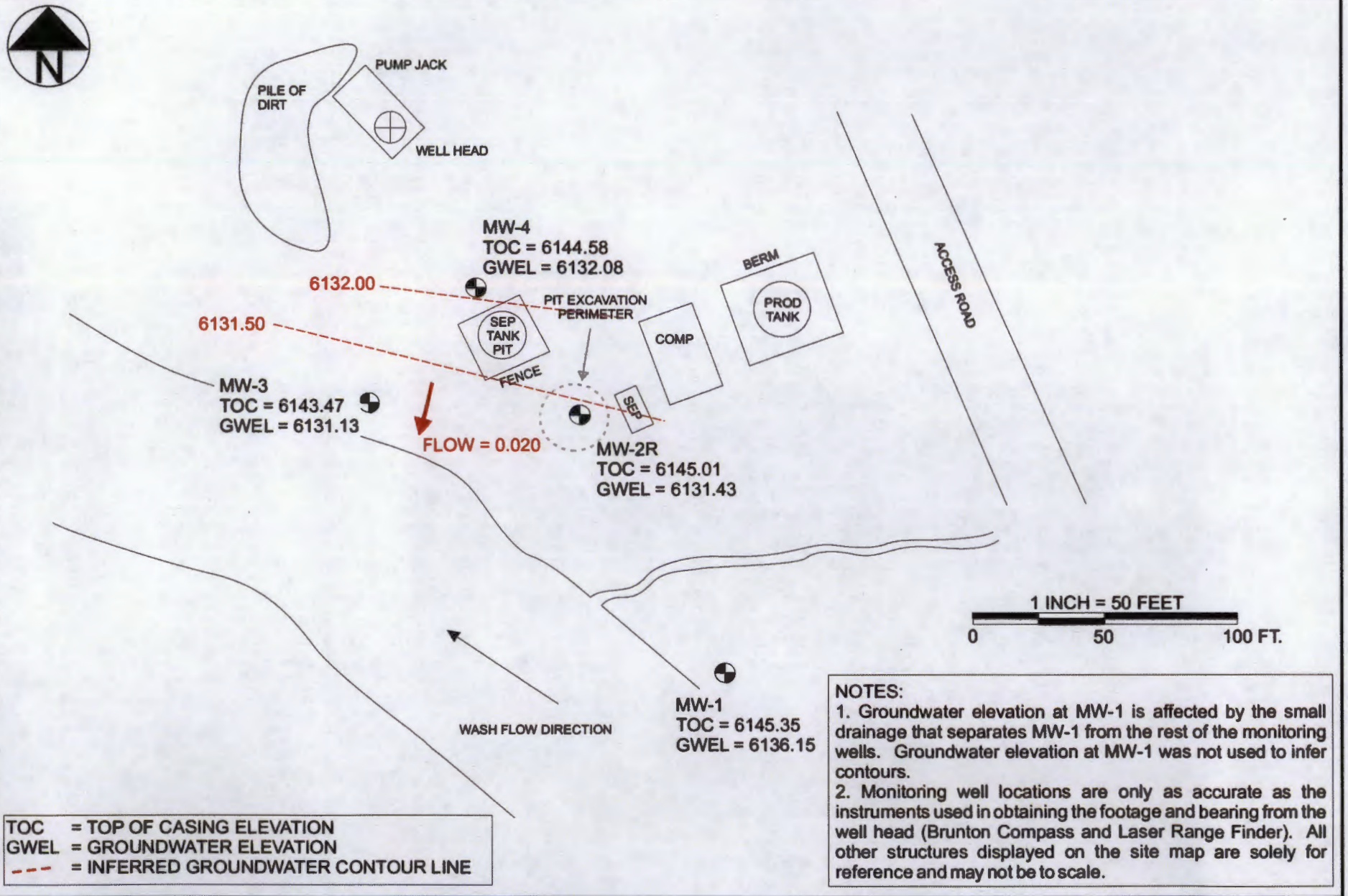
Drilling Method: Hollow Stem Auger
Air Monitoring Method: PID

Depth (feet)	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description	Air Monitoring	Drilling Conditions
0		0-0.5	cuttings	Tan, poorly sorted coarse sand and gravel (<10%), angular and dry (Fill)	0	Easy
		0.5-13.5	cuttings	Brown, poorly sorted coarse sand, damp, subangular, <1% gravel content	0	Easy
5						
10						
		13.5-17	cuttings	Gray, silty sand, very coarse, angular, wet, poorly sorted	2.9	Easy
15						
		17-19	cuttings	Brown, poorly sorted coarse sand, wet, subangular, no gravel	0	Easy
		19-22	cuttings	Brown, poorly sorted coarse sand with cobbles (<5%)	0	Hard and slow
20						

Comments:

Geologist Signature: Ashley L. Ager

FIGURE 8

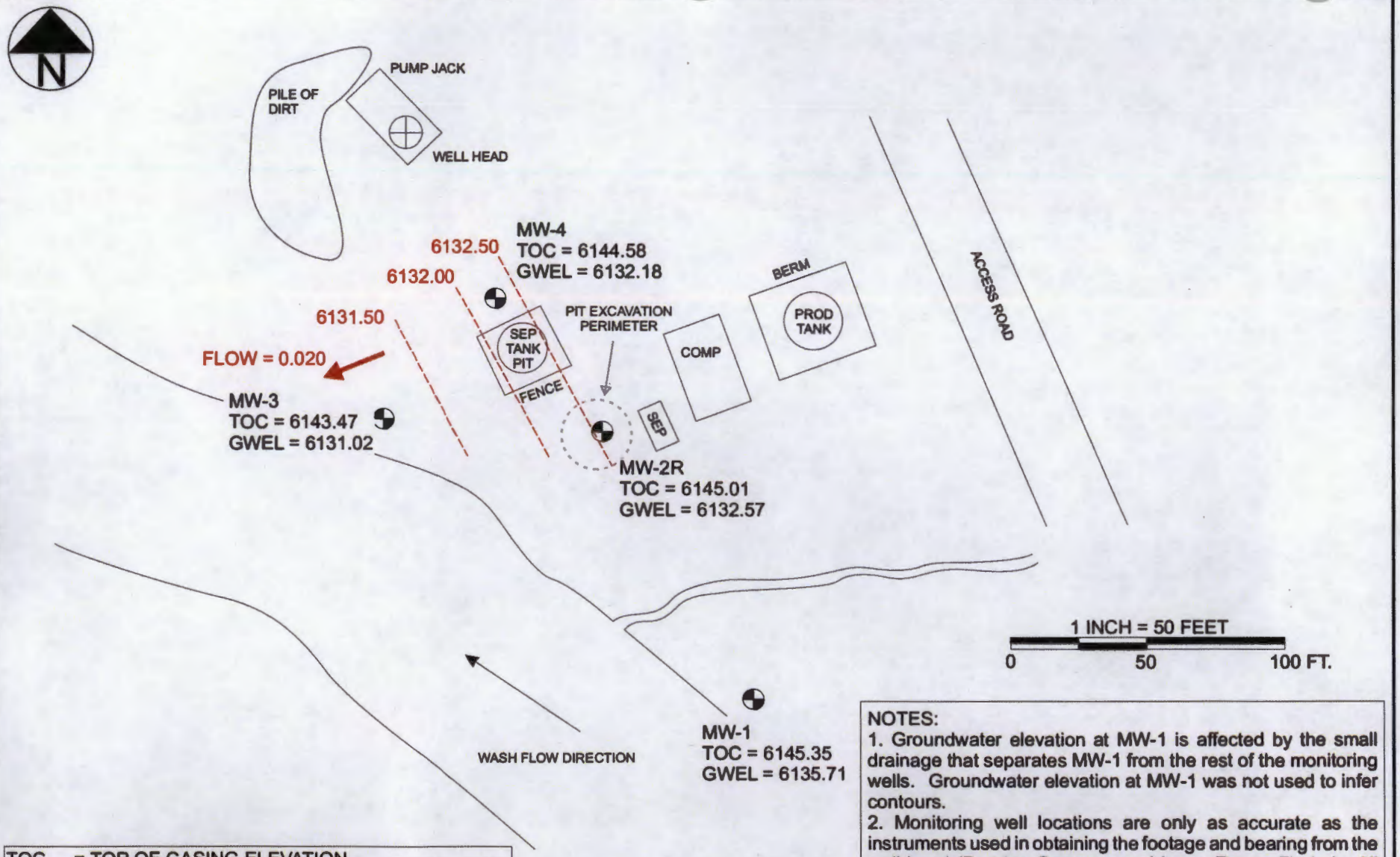


TOC = TOP OF CASING ELEVATION
GWEL = GROUNDWATER ELEVATION
--- = INFERRED GROUNDWATER CONTOUR LINE

NOTES:
1. Groundwater elevation at MW-1 is affected by the small drainage that separates MW-1 from the rest of the monitoring wells. Groundwater elevation at MW-1 was not used to infer contours.
2. Monitoring well 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 may not be to scale.

Lodestar Services, Inc PO Box 3861 Farmington, NM 87499	JACK FROST B #2 NW/4 NW/4 SEC. 27, T27N, R10W SAN JUAN COUNTY, NEW MEXICO	PROJECT: XTO GROUND WATER DRAWN BY: ALA REVISED: 03/17/08	GROUNDWATER GRADIENT MAP 03/13/2008

FIGURE 9

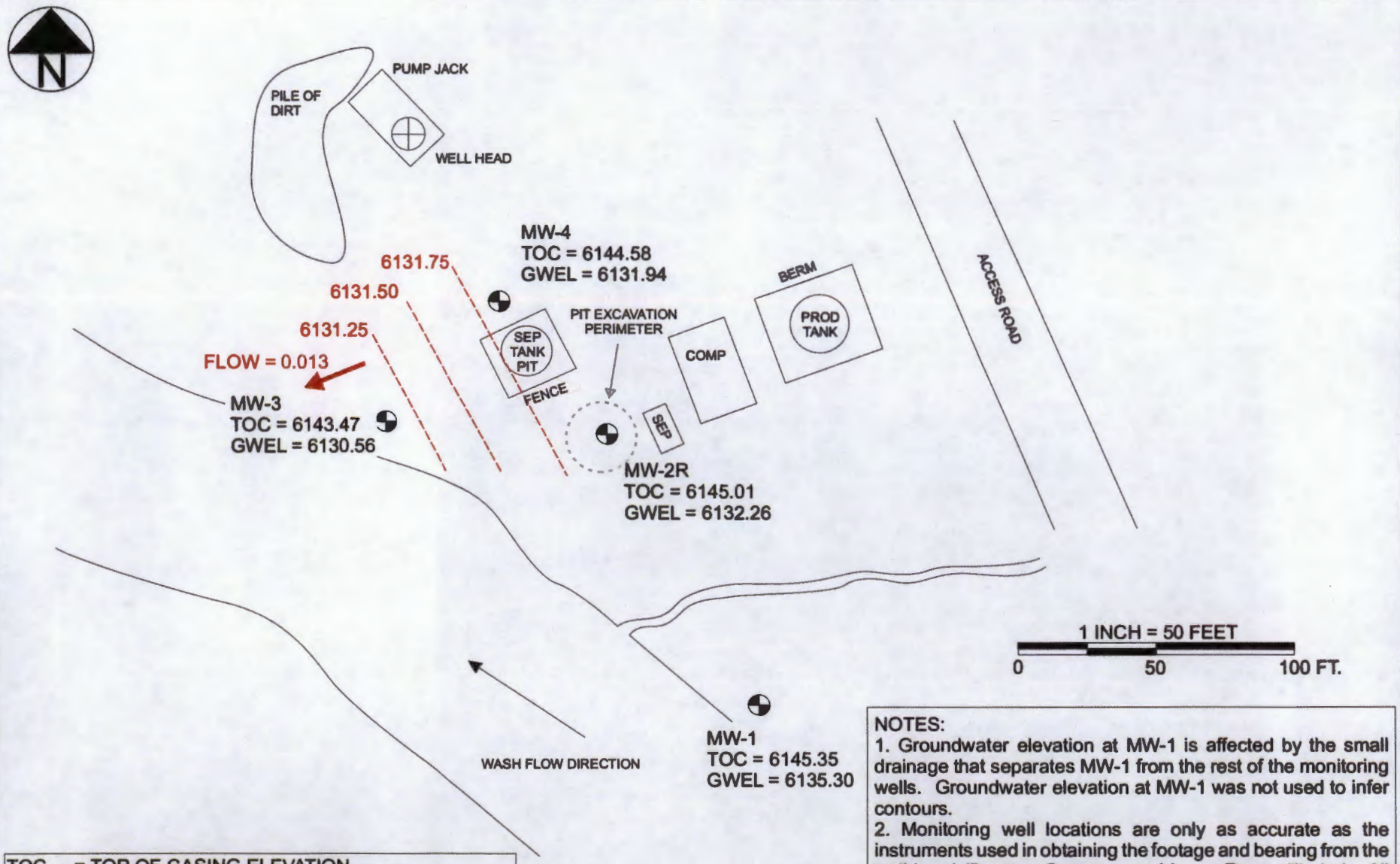


TOC = TOP OF CASING ELEVATION
GWEL = GROUNDWATER ELEVATION
--- = INFERRED GROUNDWATER CONTOUR LINE

NOTES:
1. Groundwater elevation at MW-1 is affected by the small drainage that separates MW-1 from the rest of the monitoring wells. Groundwater elevation at MW-1 was not used to infer contours.
2. Monitoring well 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 may not be to scale.

Lodestar Services, Inc PO Box 3861 Farmington, NM 87499	JACK FROST B #2 NW/4 NW/4 SEC. 27, T27N, R10W SAN JUAN COUNTY, NEW MEXICO	PROJECT: XTO GROUND WATER DRAWN BY: ALA REVISED: 06/30/08	GROUNDWATER GRADIENT MAP 06/03/2008

FIGURE 10

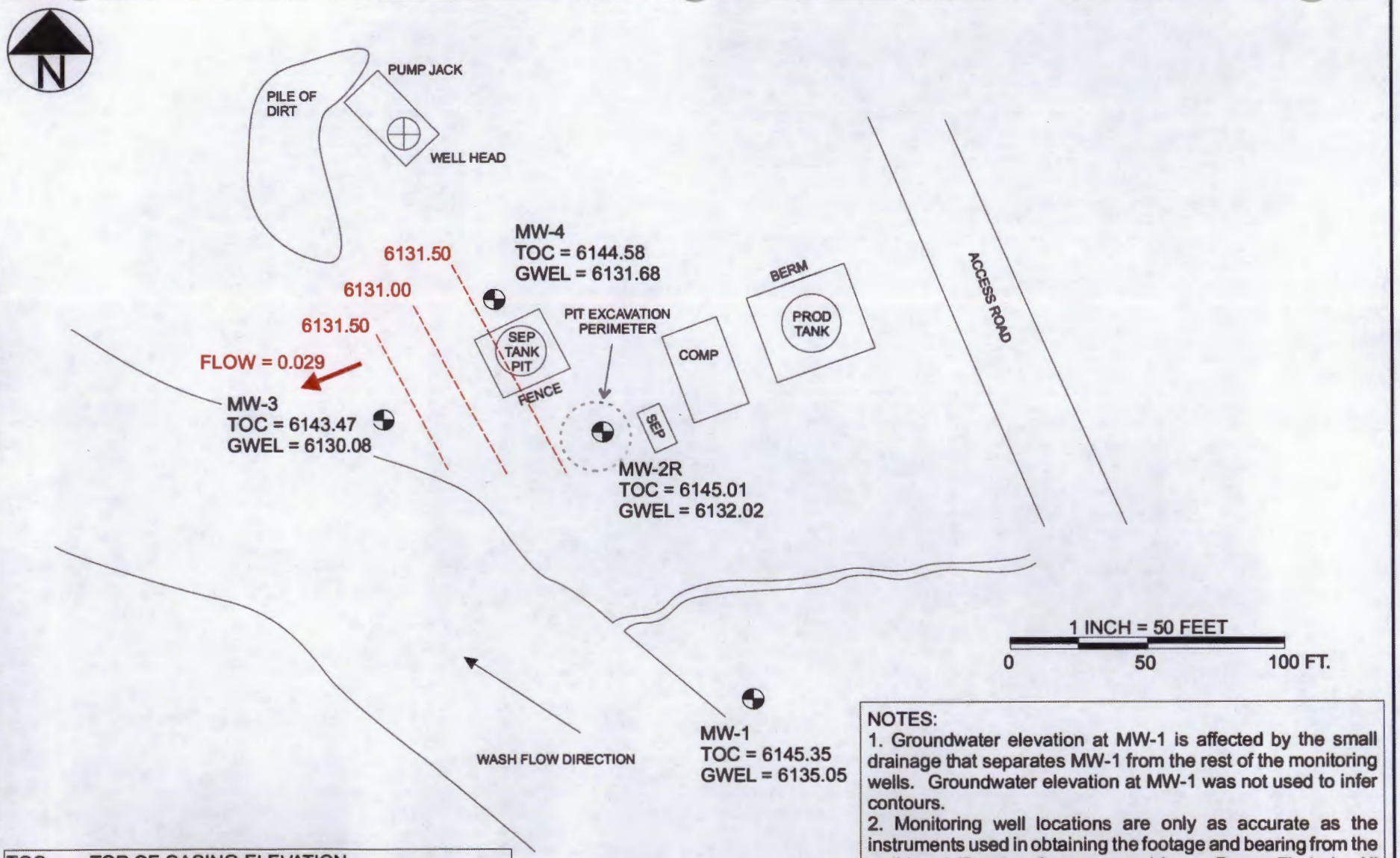


NOTES:
1. Groundwater elevation at MW-1 is affected by the small drainage that separates MW-1 from the rest of the monitoring wells. Groundwater elevation at MW-1 was not used to infer contours.
2. Monitoring well locations are only as accurate as the instruments used in obtaining the footage and bearing from the well head (Brunton Compass and Laser Range Finder). All other structures displayed on the site map are solely for reference and may not be to scale.

TOC = TOP OF CASING ELEVATION
GWEL = GROUNDWATER ELEVATION
--- = INFERRED GROUNDWATER CONTOUR LINE

Lodestar Services, Inc PO Box 3861 Farmington, NM 87499	JACK FROST B #2 NW/4 NW/4 SEC. 27, T27N, R10W SAN JUAN COUNTY, NEW MEXICO	PROJECT: XTO GROUND WATER DRAWN BY: ADH REVISED: 09/30/08	GROUNDWATER GRADIENT MAP 09/22/2008

FIGURE 11



TOC = TOP OF CASING ELEVATION
GWEL = GROUNDWATER ELEVATION
--- = INFERRED GROUNDWATER CONTOUR LINE

NOTES:
1. Groundwater elevation at MW-1 is affected by the small drainage that separates MW-1 from the rest of the monitoring wells. Groundwater elevation at MW-1 was not used to infer contours.
2. Monitoring well 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 may not be to scale.

Lodestar Services, Inc PO Box 3861 Farmington, NM 87499	JACK FROST B #2 NW/4 NW/4 SEC. 27, T27N, R10W SAN JUAN COUNTY, NEW MEXICO	PROJECT: XTO GROUND WATER DRAWN BY: ADH REVISED: 12/22/2008	GROUNDWATER GRADIENT MAP 12/04/2008

ATTACHMENT 1

B0114

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals

SUBMIT IN TRIPLICATE

5. Lease Designation and Serial No.: SF-077951 A

6. If Indian, Allottee or Tribe Name:

7. If Unit or CA, Agreement Designation:

1. Type of Well: ☐ Oil Well ☒ Gas Well ☐ Other

8. Well Name and No.: JACK FROST B #2

2. Name of Operator: Amoco Production Company

9. API Well No.: 3004506295

3. Address and Telephone No.: 200 Amoco Court, Farmington, N.M. 87401 Tel: (505) 326-9200

10. Field and Pool, or Exploratory Area: DAKOTA

4. Location of Well (Footage, Sec., T., R., M., or Survey Description): NW/NW SEC. 27, T 27N, R 10 W NMPM

11. County or Parish, State: SAN JUAN, N.M.

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
☐ Notice of Intent	☐ Abandonment	☐ Change of Plans
☒ Subsequent Report	☐ Recompletion	☐ New Construction
☐ Final Abandonment Notice	☐ Plugging Back	☐ Non-Routine Fracturing
	☐ Casing Repair	☐ Water Shut-Off
	☐ Altering Casing	☐ Conversion to Injection
	☒ Other Pit closure	☐ Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Pit closure verification - see attached documentation.

SEPARATOR PIT - ABANDONED

14. I hereby certify that the foregoing is true and correct

Signed R J Shaw Title Enviro. Coordinator Date 10/14/94

(This space for Federal or State office use)

Approved by _____ Title _____ Date _____

Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

*See Instruction on Reverse Side

BO 114

District I
P.O. Box 1980, Hobbs, NM
District II
P.O. Drawer DD, Artesia, NM 88211
District III
1000 Rio Brazos Rd, Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

SUBMIT 1 COPY TO APPROPRIATE DISTRICT OFFICE AND 1 COPY TO SANTA FE OFFICE

PIT REMEDIATION AND CLOSURE REPORT

Operator: Amoco Production Company **Telephone:** (505) - 326-9200

Address: 200 Amoco Court, Farmington, New Mexico 87401

Facility Or: Well Name JACK FROST B * 2

Location: Unit or Qtr/Qtr Sec D Sec 27 T 27N R 10 W County SAN JUAN

Pit Type: Separator X Dehydrator ___ Other ___

Land Type: BLM X, State ___, Fee ___, Other ___

Pit Location: (Attach diagram)
Pit dimensions: length 25', width 25', depth 15'
Reference: wellhead X, other ___
Footage from reference: 150
Direction from reference: 45 Degrees ___ East North X
of
X West South ___

Depth To Ground Water: (Vertical distance from contaminants to seasonal high water elevation of ground water)	Less than 50 feet (20 points) 50 feet to 99 feet (10 points) Greater than 100 feet (0 Points)	20
Wellhead Protection Area: (Less than 200 feet from a private domestic water source, or; less than 1000 feet from all other water sources)	Yes (20 points) No (0 points)	0
Distance To Surface Water: (Horizontal distance to perennial lakes, ponds, rivers, streams, creeks, irrigation canals and ditches)	Less than 200 feet (20 points) 200 feet to 1000 feet (10 points) Greater than 1000 feet (0 points)	0
	RANKING SCORE (TOTAL POINTS):	20

B0114

Date Remediation Started: 8-5-94 **Date Completed:** 8-25-94

Remediation Method: (Check all appropriate sections) Excavation X Approx. cubic yards 400

Landfarmed ___ Insitu Bioremediation ___

Other COMPOST

Remediation Location: (ie. landfarmed onsite, name and location of offsite facility) Onsite X Offsite ___

General Description Of Remedial Action:

Excavation. ON-SITE COMPOST PILE CLOSURE RECORD SUBMITTED WITH BLOW PIT CLOSURE. BLOW PIT & COMPOST PILE CLOSURE APPROVED BY NMOCD WITH LETTER DATED 12/12/96 (ATTACHED.) SEPARATOR PIT CLOSURE DENIED BY NMOCD WITH LETTER DATED 12/5/96 (ATTACHED) - DUE TO GROUNDWATER CONTAMINATION EXCEEDING NMWQCC STANDARDS.

Ground Water Encountered: No ___ Yes X Depth 15'

Final Pit: Closure Sampling: (if multiple samples, attach sample results and diagram of sample locations and depths)

Sample location see Attached Documents

Sample depth 15'

Sample date 8-25-94 Sample time ___

Sample Results

Benzene(ppm) ND

Total BTEX(ppm) 0.018

Field headspace(ppm) ___

TPH ___

Ground Water Sample: Yes X No ___ (If yes, attach sample results)

I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF

DATE 10/14/94

SIGNATURE B J Shaw

PRINTED NAME AND TITLE Buddy D. Shaw Environmental Coordinator

10-7-94 KW

CLIENT: Amoco	BLAGG ENGINEERING, INC. P.O. BOX 87, BLOOMFIELD, NM 87413 (505) 632-1199	LOCATION NO: B 0114 C.O.C. NO: 3834-3892 ENVIROTECH

FIELD REPORT: PIT CLOSURE VERIFICATION

LOCATION: NAME: JACK FROST B WELL #: 2 PIT: SEP.
QUAD/UNIT: D SEC: 27 TWP: 27N RNG: 10W BM: NM CNTY: SJ ST: NM
QTR/FOOTAGE: NW/NW CONTRACTOR: EPC

DATE STARTED: 8-5-94
DATE FINISHED: 8-25-94
ENVIRONMENTAL SPECIALIST: F.M. - ENVIROTECH

EXCAVATION APPROX. 25 FT. x 25 FT. x 15 FT. DEEP. CUBIC YARDS: 400
DISPOSAL FACILITY: ON SITE REMEDIATION METHOD: COMPOST
LAND USE: RANGE LEASE: SF-077951 A FORMATION:

FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY 155 FEET N45°W FROM WELLHEAD.
DEPTH TO GROUNDWATER: 15' NEAREST WATER SOURCE: > 1000' NEAREST SURFACE WATER: > 1000'
NMOCD RANKING SCORE: 20 NMOCD TPH CLOSURE STD: 100 PPM

SOIL AND EXCAVATION DESCRIPTION: PIT DISPOSITION: ABANDONED

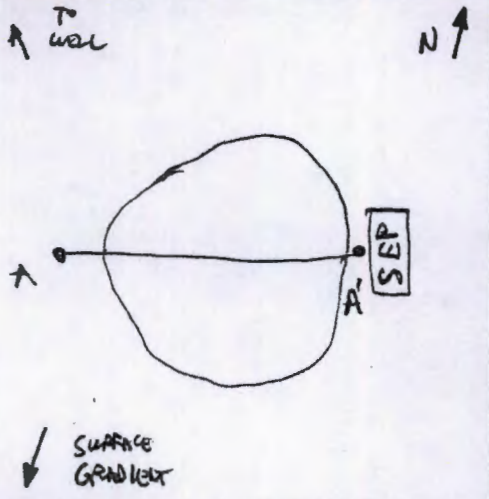
PIT BACKFILLED WITH CLEAN SOIL AS OF 10-7-94.
ENVIROTECH PERFORMED ORIGINAL CLOSURE - FIELD REPORT NEVER PRODUCED.
R.E. O'NEILL MET FRANK McDONALD ON SITE TO PRODUCE FIELD REPORT.

FIELD 418.1 CALCULATIONS

SAMPLE I.D.	LAB No:	WEIGHT (g)	mL. FREON	DILUTION	READING	CALC. ppm

SCALE
0 5 10 FT

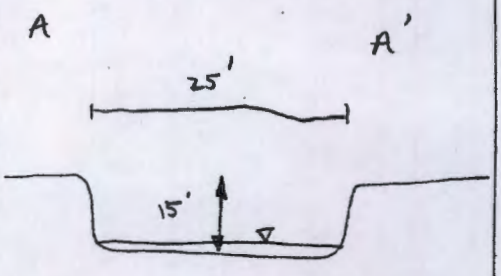
PIT PERIMETER



OVM RESULTS

SAMPLE ID	FIELD HEADSPACE PID (ppm)
1	
2	
3	
4	
5	
LAB	SAMPLES
PIT WATER	6 DEP

PIT PROFILE



TRAVEL NOTES: CALLOUT: ONSITE:

ENVIROTECH LABS

5796 US HIGHWAY 64-3014 • FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	AMOCO	Project #:	92140
Sample ID:	ground water	Date Reported:	08-15-94
Laboratory Number:	7765	Date Sampled:	08-05-94
Sample Matrix:	Water	Date Received:	08-08-94
Preservative:	HgCl & Cool	Date Analyzed:	08-11-94
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	48	0.3
Toluene	411	0.3
Ethylbenzene	ND	0.2
p,m-Xylene	55.9	0.3
o-Xylene	35.2	0.3

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	74 %
Bromofluorobenzene	97 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: JACK FROST B # 2 A0079 SEPARATOR PIT

Roy L. Griffin
Analyst

Review

ENVIROTECH LABS

5796 US HIGHWAY 64-3014 • FARMINGTON, NEW MEXICO 87401
PHONE: (505) 632-0615 • FAX: (505) 632-1865

EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

Client:	Amoco	Project #:	92140
Sample ID:	Groundwater	Date Reported:	09-01-94
Laboratory Number:	7847	Date Sampled:	08-25-94
Sample Matrix:	Water	Date Received:	08-25-94
Preservative:	HgCl & Cool	Date Analyzed:	08-29-94
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	ND	0.3
Toluene	ND	0.3
Ethylbenzene	ND	0.2
p,m-Xylene	ND	0.3
o-Xylene	18.0	0.3

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	96 %
Bromofluorobenzene	97 %

Method: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1986

ND - Parameter not detected at the stated detection limit.

Comments: Jack Frost B #2 ground Water Pit A0079 Separator Pit

Roy L Griffin
Analyst

Review

Pit # 40079

34

B0114

CHAIN OF CUSTODY RECORD

Client/Project Name	Project Location
Amoco 92140	Jack Frost B #2
Sampler: (Signature)	Chain of Custody Tape No.

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	BTEX (8020)						Remarks
Ground Water	8/5/94	6:43	7765	Water	2	~						

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
	8/5/94	16:40		8/8/94	8:00
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

ENVIROTECH INC.
5796 U.S. Highway 64-3014
Farmington, New Mexico 87401
(505) 632-0615

3892

Pit # A0079

CHAIN OF CUSTODY RECORD

B0114

Client/Project Name	Project Location
Amoco 92140	Jack Frost B #2
Sampler: (Signature)	**Chain of Custody Tape No.**
J C McDonald	

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	BTEX (8020)						Remarks
Ground Water	8/25/94	1100	7847	WATER	2	✓						Sep pit

ANALYSIS/PARAMETERS

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
J C McDonald	8/26/94	1333	Rex Griffin	25 Aug 94 1500	1500
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

ENVIROTECH INC.
5796 U.S. Highway 64-3014
Farmington, New Mexico 87401
(505) 632-0615

ATTACHMENT 2

Hall Environmental Analysis Laboratory, Inc.

Date: *27-Mar-08*

CLIENT: XTO Energy
Project: Ground Water
Lab Order: 0803158

Lab ID: 0803158-01 **Collection Date:** 3/13/2008 12:30:00 PM
Client Sample ID: ~~PO Pipken 3E MW-2~~ **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **BDH**
Benzene	9.7	1.0		µg/L	1	3/25/2008 11:31:05 AM
Toluene	ND	1.0		µg/L	1	3/25/2008 11:31:05 AM
Ethylbenzene	1.1	1.0		µg/L	1	3/25/2008 11:31:05 AM
Xylenes, Total	5.7	2.0		µg/L	1	3/25/2008 11:31:05 AM
Surr: 4-Bromofluorobenzene	98.9	68.9-122		%REC	1	3/25/2008 11:31:05 AM

Lab ID: 0803158-02 **Collection Date:** 3/13/2008 2:34:00 PM
Client Sample ID: ~~El Johnson CIE MW-5~~ **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **BDH**
Benzene	ND	1.0		µg/L	1	3/25/2008 12:01:16 PM
Toluene	ND	1.0		µg/L	1	3/25/2008 12:01:16 PM
Ethylbenzene	ND	1.0		µg/L	1	3/25/2008 12:01:16 PM
Xylenes, Total	ND	2.0		µg/L	1	3/25/2008 12:01:16 PM
Surr: 4-Bromofluorobenzene	96.4	68.9-122		%REC	1	3/25/2008 12:01:16 PM

Lab ID: 0803158-03 **Collection Date:** 3/13/2008 3:11:00 PM
Client Sample ID: Jack Frost B2 MW-4 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **BDH**
Benzene	17	1.0		µg/L	1	3/25/2008 12:31:24 PM
Toluene	ND	1.0		µg/L	1	3/25/2008 12:31:24 PM
Ethylbenzene	ND	1.0		µg/L	1	3/25/2008 12:31:24 PM
Xylenes, Total	ND	2.0		µg/L	1	3/25/2008 12:31:24 PM
Surr: 4-Bromofluorobenzene	109	68.9-122		%REC	1	3/25/2008 12:31:24 PM

Lab ID: 0803158-04 **Collection Date:**
Client Sample ID: Trip Blank **Matrix:** TRIP BLANK

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **BDH**
Benzene	ND	1.0		µg/L	1	3/25/2008 1:01:32 PM
Toluene	ND	1.0		µg/L	1	3/25/2008 1:01:32 PM
Ethylbenzene	ND	1.0		µg/L	1	3/25/2008 1:01:32 PM
Xylenes, Total	ND	2.0		µg/L	1	3/25/2008 1:01:32 PM
Surr: 4-Bromofluorobenzene	98.8	68.9-122		%REC	1	3/25/2008 1:01:32 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level
E	Value above quantitation range
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
S	Spike recovery outside accepted recovery limits
B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
MCL	Maximum Contaminant Level
RL	Reporting Limit

QA/QC SUMMARY REPORT

Client: XTO Energy
Project: Ground Water **Work Order:** 0803158

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8021B: Volatiles									
Sample ID: 0803158-01A MSD		*MSD*			Batch ID:	**R27861**	Analysis Date:		3/25/2008 2:01:44 PM
Benzene	28.56	µg/L	1.0	94.4	85.9	113	1.36	27	
Toluene	19.46	µg/L	1.0	96.0	86.4	113	1.31	19	
Ethylbenzene	20.31	µg/L	1.0	96.1	83.5	118	1.87	10	
Xylenes, Total	62.71	µg/L	2.0	95.0	83.4	122	2.20	13	
Sample ID: 5ML RB		*MBLK*			Batch ID:	**R27861**	Analysis Date:		3/25/2008 9:00:00 AM
Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Sample ID: 100NG BTEX LCS		*LCS*			Batch ID:	**R27861**	Analysis Date:		3/25/2008 2:32:03 PM
Benzene	20.48	µg/L	1.0	102	85.9	113			
Toluene	20.78	µg/L	1.0	104	86.4	113			
Ethylbenzene	20.85	µg/L	1.0	104	83.5	118			
Xylenes, Total	61.22	µg/L	2.0	102	83.4	122			
Sample ID: 0803158-01A MS		*MS*			Batch ID:	**R27861**	Analysis Date:		3/25/2008 1:31:37 PM
Benzene	28.95	µg/L	1.0	96.3	85.9	113			
Toluene	19.72	µg/L	1.0	97.3	86.4	113			
Ethylbenzene	20.69	µg/L	1.0	98.0	83.5	118			
Xylenes, Total	64.11	µg/L	2.0	97.3	83.4	122			

Qualifiers:

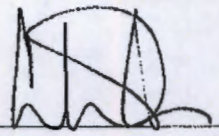
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name XTO ENERGY | Date Received: 3/18/2008

Work Order Number 0803158 | Received by: ARS

Checklist completed by:  Signature 3/18/08 Date | Sample ID labels checked by: AB Initials

Matrix: | Carrier name Greyhound

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐	Not Shipped ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	N/A ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Water - VOA vials have zero headspace? No VOA vials submitted ☐		Yes ☑	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	
Container/Temp Blank temperature?	4°	<6° C *Acceptable* If given sufficient time to cool.		

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

Chain-of-Custody Record

Client: XTO Energy
Kim Champlin
Address: 382 CR 3100
Aztec, NM 87410
Phone #: 505 333 3207
email or Fax#:
QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)
☐ Other
☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: Ground Water
Project #:
Project Manager: Ashley Ager 970 946 1093
Sampler: Ashley Ager
On Ice: Yes No
Sample Temperature: 4°

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0803158	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8260)	8310 (PNA or PAH)	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	8021B BTEX				Air Bubbles (Y or N)
03-13-08	1230	PO Pipken 3E MW-2	2oz/3	HCl	1												✓				
03-13-08	1434	EJ Johnson CIE MW-5	2oz/2	HCl	2												✓				
03-13-08	1511	Jack Frost B2 MW-4	2oz/3	HCl	3												✓				
03-13-08	0700	TRIP BLANK	2oz/2	HCl	4												✓				

Date:	Time:	Relinquished by:	Received by:	Remarks:
3-17-08	1630	Ashley L Ager	8:25 8/18/08	please copy results to ALA@lodestarservices.com
Date:	Time:	Relinquished by:	Received by:	

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Hall Environmental Analysis Laboratory, Inc.

Date: *12-Jun-08*

CLIENT: XTO Energy
Project: Ground Water
Lab Order: 0806072

Lab ID: 0806072-01 **Collection Date:** 6/3/2008 9:37:00 AM
Client Sample ID: Jack Frost B2 MW-4 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	9.7	1.0		µg/L	1	6/12/2008 12:16:47 AM
Toluene	ND	1.0		µg/L	1	6/12/2008 12:16:47 AM
Ethylbenzene	ND	1.0		µg/L	1	6/12/2008 12:16:47 AM
Xylenes, Total	2.4	2.0		µg/L	1	6/12/2008 12:16:47 AM
Surr: 4-Bromofluorobenzene	92.8	68.9-122		%REC	1	6/12/2008 12:16:47 AM

Lab ID: 0806072-02 **Collection Date:** 6/3/2008 11:47:00 AM
Client Sample ID: ~~Valdez AE #1 MW-6~~ **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	1.5	1.0		µg/L	1	6/12/2008 1:19:40 AM
Toluene	ND	1.0		µg/L	1	6/12/2008 1:19:40 AM
Ethylbenzene	88	1.0		µg/L	1	6/12/2008 1:19:40 AM
Xylenes, Total	660	20		µg/L	10	6/12/2008 12:49:32 AM
Surr: 4-Bromofluorobenzene	96.3	68.9-122		%REC	1	6/12/2008 1:19:40 AM

Lab ID: 0806072-03 **Collection Date:** 6/3/2008 12:22:00 PM
Client Sample ID: ~~Valdez AE #1 MW-7~~ **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	34	1.0		µg/L	1	6/12/2008 2:52:24 AM
Toluene	ND	1.0		µg/L	1	6/12/2008 2:52:24 AM
Ethylbenzene	63	1.0		µg/L	1	6/12/2008 2:52:24 AM
Xylenes, Total	490	20		µg/L	10	6/12/2008 2:22:23 AM
Surr: 4-Bromofluorobenzene	103	68.9-122		%REC	1	6/12/2008 2:52:24 AM

Lab ID: 0806072-04 **Collection Date:** 6/4/2008 10:40:00 AM
Client Sample ID: Snyder GC #1A MW-3 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	1.0		µg/L	1	6/12/2008 3:52:25 AM
Toluene	ND	1.0		µg/L	1	6/12/2008 3:52:25 AM
Ethylbenzene	ND	1.0		µg/L	1	6/12/2008 3:52:25 AM
Xylenes, Total	ND	2.0		µg/L	1	6/12/2008 3:52:25 AM
Surr: 4-Bromofluorobenzene	89.1	68.9-122		%REC	1	6/12/2008 3:52:25 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

QA/QC SUMMARY REPORT

Client: XTO Energy
Project: Ground Water **Work Order:** 0806072

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8021B: Volatiles									
Sample ID: 0806072-05A MSD		*MSD*			Batch ID:	**R28897**	Analysis Date:		6/12/2008 5:52:50 AM
Benzene	22.68	µg/L	1.0	101	85.9	113	0.677	27	
Toluene	20.86	µg/L	1.0	104	86.4	113	0.621	19	
Ethylbenzene	21.25	µg/L	1.0	106	83.5	118	0.816	10	
Xylenes, Total	63.51	µg/L	2.0	106	83.4	122	1.86	13	
Sample ID: 5ML RB		*MBLK*			Batch ID:	**R28897**	Analysis Date:		6/11/2008 9:05:26 AM
Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Sample ID: 100NG BTEX LCS		*LCS*			Batch ID:	**R28897**	Analysis Date:		6/12/2008 6:23:00 AM
Benzene	21.45	µg/L	1.0	107	85.9	113			
Toluene	21.73	µg/L	1.0	109	86.4	113			
Ethylbenzene	22.21	µg/L	1.0	111	83.5	118			
Xylenes, Total	66.49	µg/L	2.0	111	83.4	122			
Sample ID: 0806072-05A MS		*MS*			Batch ID:	**R28897**	Analysis Date:		6/12/2008 5:22:41 AM
Benzene	22.84	µg/L	1.0	102	85.9	113			
Toluene	20.99	µg/L	1.0	105	86.4	113			
Ethylbenzene	21.42	µg/L	1.0	107	83.5	118			
Xylenes, Total	64.70	µg/L	2.0	108	83.4	122			

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name XTO ENERGY | Date Received: 6/5/2008

Work Order Number 0806072 | Received by: TLS

Sample ID labels checked by: AB (Initials)

Checklist completed by: Tonya Shomin (Signature) 6/5/08 (Date)

Matrix: | Carrier name Greyhound

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐	Not Shipped ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	N/A ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Water - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☑	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	
Container/Temp Blank temperature?	5°	*<6° C Acceptable* If given sufficient time to cool.		

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

Chain-of-Custody Record

Client: XTO Energy
Kim Champlin
Address: 382 CR 3100
Aztec NM 87410
Phone #: 505-333-3207
email or Fax#:
QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)
☐ Other
☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: Ground Water
Project #:
Project Manager: Ashley Ager
970-946-1093
Sampler: Troy Urban
On Ice: ☐ Yes ☐ No
Sample Temperature: 5°

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0806007a	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8260)	8310 (PNA or PAH)	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	8021 B BTEX				Air Bubbles (Y or N)
060308	0937	Jack Frost B2 MW-4	2oz/3	HCl	1												✓				
060308	1147	Valdez AE#1 MW-6	2oz/3	HCl	2												✓				
060308	1222	Valdez AE#1 MW-7	2oz/3	HCl	3												✓				
060408	1040	Snyder GC#1A MW-3	2oz/3	HCl	4												✓				
060408	1145	Sullivan GCD#1 MW1R	2oz/3	HCl	5												✓				

Date:	Time:	Relinquished by:	Received by:	
6/4/08	5:55	Troy Urban		6/5/08 951
Date:	Time:	Relinquished by:	Received by:	

Remarks: please copy results to ALA@lodestarservices.com

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Hall Environmental Analysis Laboratory, Inc.

Date: *06-Oct-08*

CLIENT:	XTO Energy	**Client Sample ID:**	Jack Frost B #2 MW-4
Lab Order:	0809507	**Collection Date:**	9/22/2008 9:30:00 AM
Project:	Groundwater	**Date Received:**	9/23/2008
Lab ID:	0809507-13	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: DAM
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	10/1/2008 4:29:50 AM
Benzene	3.1	1.0		µg/L	1	10/1/2008 4:29:50 AM
Toluene	ND	1.0		µg/L	1	10/1/2008 4:29:50 AM
Ethylbenzene	ND	1.0		µg/L	1	10/1/2008 4:29:50 AM
Xylenes, Total	ND	2.0		µg/L	1	10/1/2008 4:29:50 AM
1,2,4-Trimethylbenzene	3.5	1.0		µg/L	1	10/1/2008 4:29:50 AM
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	10/1/2008 4:29:50 AM
Surr: 4-Bromofluorobenzene	93.4	65.9-130		%REC	1	10/1/2008 4:29:50 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *06-Oct-08*

CLIENT:	XTO Energy	**Client Sample ID:**	Trip Blank
Lab Order:	0809507	**Collection Date:**	
Project:	Groundwater	**Date Received:**	9/23/2008
Lab ID:	0809507-19	**Matrix:**	TRIP BLANK

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **DAM**
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	10/1/2008 5:00:15 AM
Benzene	ND	1.0		µg/L	1	10/1/2008 5:00:15 AM
Toluene	ND	1.0		µg/L	1	10/1/2008 5:00:15 AM
Ethylbenzene	ND	1.0		µg/L	1	10/1/2008 5:00:15 AM
Xylenes, Total	ND	2.0		µg/L	1	10/1/2008 5:00:15 AM
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	10/1/2008 5:00:15 AM
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	10/1/2008 5:00:15 AM
Surr: 4-Bromofluorobenzene	86.9	65.9-130		%REC	1	10/1/2008 5:00:15 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

QA/QC SUMMARY REPORT

Client: XTO Energy
Project: Groundwater **Work Order:** 0809507

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8021B: Volatiles									
Sample ID: 0809507-10A MSD		*MSD*			Batch ID:	R30439	Analysis Date:	9/30/2008 4:07:13 AM	
Methyl tert-butyl ether (MTBE)	16.33	µg/L	2.5	81.6	51.2	138	10.1	28	
Benzene	20.33	µg/L	1.0	101	85.9	113	0.393	27	
Toluene	20.11	µg/L	1.0	101	86.4	113	0.0697	19	
Ethylbenzene	20.50	µg/L	1.0	102	83.5	118	1.51	10	
Xylenes, Total	62.27	µg/L	2.0	104	83.4	122	1.08	13	
1,2,4-Trimethylbenzene	20.61	µg/L	1.0	103	83.5	115	1.64	21	
1,3,5-Trimethylbenzene	20.49	µg/L	1.0	102	85.2	113	0.865	10	
Sample ID: b 5		*MBLK*			Batch ID:	R30439	Analysis Date:	9/29/2008 11:11:28 AM	
Methyl tert-butyl ether (MTBE)	ND	µg/L	2.5						
Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
1,2,4-Trimethylbenzene	ND	µg/L	1.0						
1,3,5-Trimethylbenzene	ND	µg/L	1.0						
Sample ID: 5ML RB		*MBLK*			Batch ID:	R30439	Analysis Date:	9/30/2008 9:14:37 AM	
Methyl tert-butyl ether (MTBE)	ND	µg/L	2.5						
Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
1,2,4-Trimethylbenzene	ND	µg/L	1.0						
1,3,5-Trimethylbenzene	ND	µg/L	1.0						
Sample ID: 100NG BTEX LCS		*LCS*			Batch ID:	R30439	Analysis Date:	9/30/2008 4:37:39 AM	
Methyl tert-butyl ether (MTBE)	15.54	µg/L	2.5	77.7	51.2	138			
Benzene	19.76	µg/L	1.0	98.8	85.9	113			
Toluene	19.47	µg/L	1.0	97.4	86.4	113			
Ethylbenzene	20.41	µg/L	1.0	102	83.5	118			
Xylenes, Total	61.43	µg/L	2.0	102	83.4	122			
1,2,4-Trimethylbenzene	21.15	µg/L	1.0	106	83.5	115			
1,3,5-Trimethylbenzene	20.95	µg/L	1.0	105	85.2	113			
Sample ID: 0809507-10A MS		*MS*			Batch ID:	R30439	Analysis Date:	9/30/2008 3:36:51 AM	
Methyl tert-butyl ether (MTBE)	14.75	µg/L	2.5	73.8	51.2	138			
Benzene	20.41	µg/L	1.0	101	85.9	113			
Toluene	20.09	µg/L	1.0	100	86.4	113			
Ethylbenzene	20.81	µg/L	1.0	104	83.5	118			
Xylenes, Total	62.94	µg/L	2.0	105	83.4	122			
1,2,4-Trimethylbenzene	20.95	µg/L	1.0	105	83.5	115			
1,3,5-Trimethylbenzene	20.87	µg/L	1.0	103	85.2	113			

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: XTO Energy
Project: Groundwater **Work Order:** 0809507

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SM 2540C Total Dissolved Solids									
Sample ID: MB-17178		*MBLK*			Batch ID:	17178	Analysis Date:		9/26/2008
Total Dissolved Solids	ND	mg/L	20						
Sample ID: LCS-17178		*LCS*			Batch ID:	17178	Analysis Date:		9/26/2008
Total Dissolved Solids	1005	mg/L	20	101	80	120			

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name XTO ENERGY | Date Received: 9/23/2008

Work Order Number 0809507 | Received by: ARS

Checklist completed by: _____ 9/23/08 | Sample ID labels checked by: _____

Signature | Date | Initials

Matrix: | Carrier name Greyhound

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐	Not Shipped ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	N/A ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Water - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☑	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	
Container/Temp Blank temperature?	13°	*<6° C Acceptable* If given sufficient time to cool.		

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

Chain-of-Custody Record

Client: XTO Energy
Kim Champlin
Mailing Address: 382 CR 3100
Aztec, NM 87410
Phone #: 505-333-3207
email or Fax#:
QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)
☐ Other
☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: Groundwater
Project #:
Project Manager: Ashley Ager
Sampler: Troy Urban
On Ice: Yes No
Sample Temperature: 1.3

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No 0809507
9-22-08	0930	GW	Jack Frost B#2 MW-4	3	HgCl2	-13
9-22-08	1043	GW	EJ Johnson CIE MW-1	1		-14
9-22-08	1118	GW	EJ Johnson CIE MW-2	1		-15
9-22-08	1145	GW	EJ Johnson CIE MW-3	1		-16
9-22-08	1246	GW	EJ Johnson CIE MW-5	1		-17
9-22-08	1340	GW	EJ Johnson CIE MW-6	1		-18
9-22-08	0710	Water	TRIP BLANK	2		-19

Analysis Request

BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	8021 BTEX	TDS			Air Bubbles (Y or N)
											✓				
												✓			
												✓			
												✓			
												✓			
												✓			
											✓				

Date:	Time:	Relinquished by:	Received by:	Date	Time
9/22/08	1507	Troy Urban	Ashley L Ager	9-22-08	1507
9-23-08	0730	Ashley L Ager		9/23/08	16:00

Remarks: Please copy results to ALA@lodestarservices.com

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Hall Environmental Analysis Laboratory, Inc.

Date: *11-Dec-08*

CLIENT: XTO Energy
Project: XTO Water
Lab Order: 0812149

Lab ID: 0812149-01 **Collection Date:** 12/4/2008 12:10:00 PM
Client Sample ID: Jack Frost-B2-MW-4 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **DAM**
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	12/9/2008 1:53:58 PM
Benzene	1.7	1.0		µg/L	1	12/9/2008 1:53:58 PM
Toluene	ND	1.0		µg/L	1	12/9/2008 1:53:58 PM
Ethylbenzene	ND	1.0		µg/L	1	12/9/2008 1:53:58 PM
Xylenes, Total	ND	2.0		µg/L	1	12/9/2008 1:53:58 PM
1,2,4-Trimethylbenzene	2.5	1.0		µg/L	1	12/9/2008 1:53:58 PM
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	12/9/2008 1:53:58 PM
Surr: 4-Bromofluorobenzene	83.5	65.9-130		%REC	1	12/9/2008 1:53:58 PM

Lab ID: 0812149-02 **Collection Date:** 12/4/2008 11:05:00 AM
Client Sample ID: ~~EJ Johnson C1E-MW-5~~ **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **DAM**
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	12/9/2008 2:24:19 PM
Benzene	ND	1.0		µg/L	1	12/9/2008 2:24:19 PM
Toluene	ND	1.0		µg/L	1	12/9/2008 2:24:19 PM
Ethylbenzene	4.8	1.0		µg/L	1	12/9/2008 2:24:19 PM
Xylenes, Total	2.8	2.0		µg/L	1	12/9/2008 2:24:19 PM
1,2,4-Trimethylbenzene	5.0	1.0		µg/L	1	12/9/2008 2:24:19 PM
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	12/9/2008 2:24:19 PM
Surr: 4-Bromofluorobenzene	97.9	65.9-130		%REC	1	12/9/2008 2:24:19 PM

Lab ID: 0812149-03 **Collection Date:** 12/4/2008 1:37:00 PM
Client Sample ID: ~~Snyder Gas Com 1A-MW-3~~ **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **DAM**
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	12/9/2008 2:54:42 PM
Benzene	ND	1.0		µg/L	1	12/9/2008 2:54:42 PM
Toluene	ND	1.0		µg/L	1	12/9/2008 2:54:42 PM
Ethylbenzene	ND	1.0		µg/L	1	12/9/2008 2:54:42 PM
Xylenes, Total	ND	2.0		µg/L	1	12/9/2008 2:54:42 PM
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	12/9/2008 2:54:42 PM
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	12/9/2008 2:54:42 PM
Surr: 4-Bromofluorobenzene	80.3	65.9-130		%REC	1	12/9/2008 2:54:42 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

QA/QC SUMMARY REPORT

Client: XTO Energy
Project: XTO Water **Work Order:** 0812149

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8021B: Volatiles									
Sample ID: 0812149-01A MSD		*MSD*			Batch ID:	**R31538**	Analysis Date:		12/9/2008 7:00:43 PM
Methyl tert-butyl ether (MTBE)	20.44	µg/L	2.5	102	51.2	138	0.147	28	
Benzene	23.01	µg/L	1.0	106	85.9	113	0.555	27	
Toluene	21.33	µg/L	1.0	107	86.4	113	0.598	19	
Ethylbenzene	21.46	µg/L	1.0	106	83.5	118	1.07	10	
Xylenes, Total	64.88	µg/L	2.0	106	83.4	122	4.02	13	
1,2,4-Trimethylbenzene	23.71	µg/L	1.0	106	83.5	115	2.86	21	
1,3,5-Trimethylbenzene	20.76	µg/L	1.0	104	85.2	113	3.20	10	
Sample ID: 5ML RB		*MBLK*			Batch ID:	**R31538**	Analysis Date:		12/9/2008 9:17:44 AM
Methyl tert-butyl ether (MTBE)	ND	µg/L	2.5						
Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
1,2,4-Trimethylbenzene	ND	µg/L	1.0						
1,3,5-Trimethylbenzene	ND	µg/L	1.0						
Sample ID: 100NG BTEX LCS		*LCS*			Batch ID:	**R31538**	Analysis Date:		12/9/2008 7:31:17 PM
Methyl tert-butyl ether (MTBE)	24.73	µg/L	2.5	124	51.2	138			
Benzene	21.35	µg/L	1.0	107	85.9	113			
Toluene	21.20	µg/L	1.0	106	86.4	113			
Ethylbenzene	21.23	µg/L	1.0	106	83.5	118			
Xylenes, Total	63.87	µg/L	2.0	106	83.4	122			
1,2,4-Trimethylbenzene	20.67	µg/L	1.0	102	83.5	115			
1,3,5-Trimethylbenzene	19.98	µg/L	1.0	99.9	85.2	113			
Sample ID: 0812149-01A MS		*MS*			Batch ID:	**R31538**	Analysis Date:		12/9/2008 6:30:15 PM
Methyl tert-butyl ether (MTBE)	20.47	µg/L	2.5	102	51.2	138			
Benzene	23.14	µg/L	1.0	107	85.9	113			
Toluene	21.46	µg/L	1.0	107	86.4	113			
Ethylbenzene	21.69	µg/L	1.0	107	83.5	118			
Xylenes, Total	67.54	µg/L	2.0	110	83.4	122			
1,2,4-Trimethylbenzene	24.40	µg/L	1.0	109	83.5	115			
1,3,5-Trimethylbenzene	21.44	µg/L	1.0	107	85.2	113			

Qualifiers:

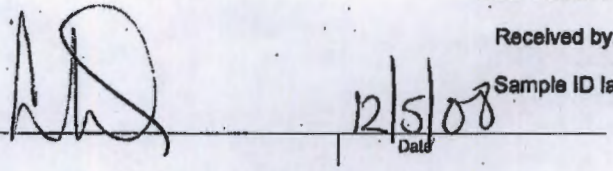
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name XTO ENERGY | Date Received: 12/5/2008

Work Order Number 0812149 | Received by: ARS

Checklist completed by:  12/5/08 (Signature / Date) | Sample ID labels checked by:  (Initials)

Matrix: | Carrier name Greyhound

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐	Not Shipped ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	N/A ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
[illegible]er - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☑	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	
Container/Temp Blank temperature?	5°	*<6° C Acceptable* If given sufficient time to cool.		

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

[illegible]rrective Action _____

Chain-of-Custody Record

Client: XTO Energy
Kim Champlin
Mailing Address: 382 CR 3100
Aztec, NM
Phone #: 505-333-3207
email or Fax#:
QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)
☐ Other
☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: XTO water
Project #:
Project Manager: Martin Nee
Sampler: Allie Dayhuff
On Ice: ☒ Yes ☐ No
Sample Temperature: 5 °C

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HAL No. 0812179	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	8021 BTEX				Air Bubbles (Y or N)
4Dec08	12:10		Jackson B2-MW-4	glass/3	HCl	1												X				
4Dec08	1105		EJohnson 1E-MW-5	glass/3	HCl	2												X				
4Dec08	1337		Snyder Gas Com 1A-MW-3	glass/3	HCl	3												X				
4Dec08	1432		Sullivan Gas Com D1-MW-1R	glass/3	HCl	4												X				
4Dec08	15:40		Valdez A1E-MW-7	glass/3	HCl	5												X				
4Dec08	16:05		Valdez A1E-MW-6	glass/3	HCl	6												X				

Date	Time	Relinquished by:	Received by:	Date	Time
5Dec08	0730	Allie Dayhuff		15:00	12/5/08
Date	Time	Relinquished by:	Received by:	Date	Time

Remarks: please email results to
ala@lodestarservices.com
adh@lodestarservices.com

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.