3R - 385

2009 AGWMR

MAR 2010

XTO ENERGY INC.

ANNUAL GROUNDWATER REPORT

2009

E.J. JOHNSON C #1E
3RP-385
(C) SECTION 21 – T27N – R10W, NMPM
SAN JUAN COUNTY, NEW MEXICO

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

MARCH 2010

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Appendices

2009 XTO GROUNDWATER REPORT

E.J. JOHNSON C #1E
3RP-385

SITE DETAILS

LEGALS - TWN: 27N **RNG:** 10W **SEC:** 21 **UNIT:** C
OCD HAZARD RANKING: 20 **LAND TYPE:** FEDERAL
LATITUDE: 36.54786 **LONGITUDE:** 107.85792

INTRODUCTION

XTO Energy Inc. (XTO) acquired the EJ Johnson C #1E well site from Amoco Production Company (Amoco) in January 1998. This is a gas producing well in the Dakota Sandstone and is currently active. A topographic map and site map are presented as Figures 1 and 2.

HISTORY

XTO learned that remedial efforts at this location initially included the excavation of approximately 440 cubic yards of hydrocarbon impacted soil from an abandoned production pit in August 1994 by Amoco (Attachment 1). Groundwater was encountered at approximately 10 feet below ground surface and was removed with pump trucks and aerated until December 1995, when analytical results identified residual hydrocarbon levels below New Mexico Water Quality Control Commission (WQCC) standards. In November 1996 New Mexico Oil Conservation Division (OCD) denied closure due to lack of information regarding benzene, toluene, ethyl benzene and total xylene (BTEX) concentrations. Remedial activities were re-initiated by XTO after the acquisition of the property.

Monitoring wells MW-1, MW-2 and MW-3 were installed and sampled in September 1999. There are no Completion Diagrams or Borehole Logs for the installation on file. Groundwater analytical results from all three monitoring wells were consistently below laboratory equipment detection limits (0.2 ug/L) or below the WQCC standards for BTEX and sampling was discontinued by XTO in 2003 in accordance with the OCD approved Groundwater Management Plan.

In response to OCD correspondence dated December 26, 2001, XTO installed a down gradient monitoring well (MW-4) in January 2002. Completion Diagram and Borehole Log is presented as Figure 3 documenting drilling that occurred on site in January 2002. Groundwater from monitoring well MW-4 was below laboratory equipment detection limits or below WQCC standards for BTEX and sampling was discontinued in 2004.

An additional monitoring well (MW-5) was installed further down gradient of monitoring well MW-4 and the source area in July 2003. Completion Diagram and Borehole Log for the monitoring well installed on site in 2003 is presented in Figure 4. Groundwater samples from monitoring well MW-5 revealed BTEX concentrations exceeded WQCC standards.

The 2005 annual groundwater report was submitted to the OCD in January 2006 proposing installation of an additional monitoring well (MW-6) northwest of monitoring well MW-5 to further delineate the potential of hydrocarbon impact in the down gradient direction. Monitoring well MW-6 was installed in April 2007. Completion Diagram and Borehole Log for the monitoring well installed on site in 2007 is presented in Figure 5. Laboratory results from monitoring well MW-6 indicate concentrations of BTEX were non-detect and sampling of monitoring well MW-6 was discontinued.

The 2006 annual groundwater report was submitted to the OCD in February 2007 proposing continued quarterly sampling of monitoring well MW-5.

The 2007 annual groundwater report was submitted to the OCD in February 2008 proposing continued quarterly sampling of monitoring well MW-5.

The 2008 annual groundwater report was submitted to the OCD in April 2009 proposing continued quarterly sampling of monitoring well MW-5.

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 2009 are presented as Attachment 2.

METHODOLOGY

Quarterly groundwater samples were collected from monitoring well MW-5 and submitted for laboratory analysis of BTEX during 2009.

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

RESULTS

Laboratory results from monitoring well MW-5 indicate BTEX concentrations remained constant throughout the year and are currently below standards or not detectable. All laboratory analytical results are presented in Table 1. Laboratory reports are presented in Attachment 2.

Field data collected during site monitoring activities indicate a groundwater gradient that consistently trends west with a slight northwest component. The estimated groundwater flow has been constant and parallels the nearby surface drainage (Kutz Wash). In June 2007 a new data point (MW-6) revealed that the groundwater gradient becomes steeper as it approaches the adjacent drainage. Figures 6-9 illustrate the estimated groundwater gradients during 2009.

CONCLUSIONS

Groundwater analytical data from monitoring well MW-5 for 4 consecutive quarters has demonstrated no detectable concentrations or concentrations below WQCC standards of BTEX constituents and WQCC standards have been met.

RECOMMENDATIONS

The quarterly sampling has confirmed no rebound of BTEX constituents has occurred, therefore, XTO requests closure of this site.

Sampling will be discontinued and following OCD approval for closure, all monitoring wells will be abandoned in accordance with the monitoring well abandonment plan.

XTO ENERGY INC. GROUNDWATER LAB RESULTS

JOHNSON, E.J. C #1E- PROD. TANK PIT
UNIT C, SEC. 21, T27N, R10W

					BTEX EPA Method 8021 (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	15.32	20.00		13.9	11.0	17.2	10.0
18-Feb-00		15.39			2.4	ND	11.0	ND
20-Jun-00		15.19			3.8	1.6	16	ND
23-Jun-03		16.27			1.0	0.91	ND	ND
26-Aug-03		16.28			0.52	ND	ND	ND
20-Sep-06		16.8	23.34					
25-Sep-07		16.63	17.30					
20-Dec-07		16.2	17.30					
22-Sep-08		16.9	17.33					
27-Sep-99	MW #2	12.96	20.00		58.7	39.0	90.2	107.4
18-Feb-00		13.08			ND	ND	86	42.6
20-Jun-00		12.86			ND	ND	41	12.5
23-Jun-03		13.90			ND	11	15	1.3
26-Aug-03		13.89			ND	ND	35	2.0
20-Sep-06		14.44	20.21					
25-Sep-07		14.22	20.21					
20-Dec-07		13.88	20.21					
22-Sep-08		14.51	20.21					
27-Sep-99	MW #3	8.24	20.00		22.7	3.3	2.1	11.6
18-Feb-00		8.51			ND	ND	ND	ND
20-Jun-00		8.14			ND	ND	ND	ND
23-Jun-03		9.30			ND	ND	ND	ND
26-Aug-03		9.28			ND	ND	ND	ND
20-Sep-06		9.91	17.41					
25-Sep-07		9.85	17.41					
20-Dec-07		9.53	17.41					
22-Sep-08		10.13	17.41					
20-Feb-02	MW #4	12.63	19.80		120	33	840	3,540
23-Jun-03		12.38			1.1	22	7.3	17
26-Aug-03		12.36			2.2	ND	31	15
24-Nov-03		12.15			1.3	ND	38	18
26-Mar-04		12.17			ND	ND	ND	7.0
16-Jun-04		12.00			0.92	ND	9.3	4.2
25-Sep-07					Monitor Well Missing			
20-Dec-07					Monitor Well Missing			
22-Sep-08					Monitor Well Missing			
26-Aug-03	MW #5	15.50	20.00		64	1,100	520	4,200
24-Nov-03		12.35			100	43	190	940
26-Mar-04		12.39			51	ND	61	300
16-Jun-04		12.22			61	3.2	76	380

XTO ENERGY INC. GROUNDWATER LAB RESULTS

JOHNSON, E.J. C #1E- PROD. TANK PIT
UNIT C, SEC. 21, T27N, R10W

					BTEX EPA Method 8021 (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)
28-Jun-05	MW-5	12.44			23	ND	15	71
20-Sep-06		13.02	19.84		2.9	ND	ND	ND
28-Mar-07		13.1	19.84		8.2	ND	ND	ND
12-Jun-07		12.74	19.84		15	ND	ND	ND
25-Sep-07		12.91	19.84		8.2	ND	ND	ND
20-Dec-07					9	ND	ND	ND
13-Mar-08		13.7	14.40		ND	ND	ND	ND
22-Sep-08		14	14.40					
04-Dec-08					ND	ND	4.8	2.8
02-Mar-09		14.18	30.32		ND	ND	ND	ND
10-Jun-09		14.22	30.32		ND	ND	ND	ND
15-Sep-09		14.36	30.32		ND	ND	ND	ND
07-Dec-09		14.41	30.32		ND	ND	ND	ND
12-Jun-07	MW #6	14.8	27.14		ND	ND	ND	ND
28-Sep-07		15.21	27.14					
20-Dec-07		15.05	27.14					
22-Sep-08		15.51	27.14					
NMWQCC GROUNDWATER STANDARDS					10	750	750	620

XTO ENERGY INC. GROUNDWATER LAB RESULTS

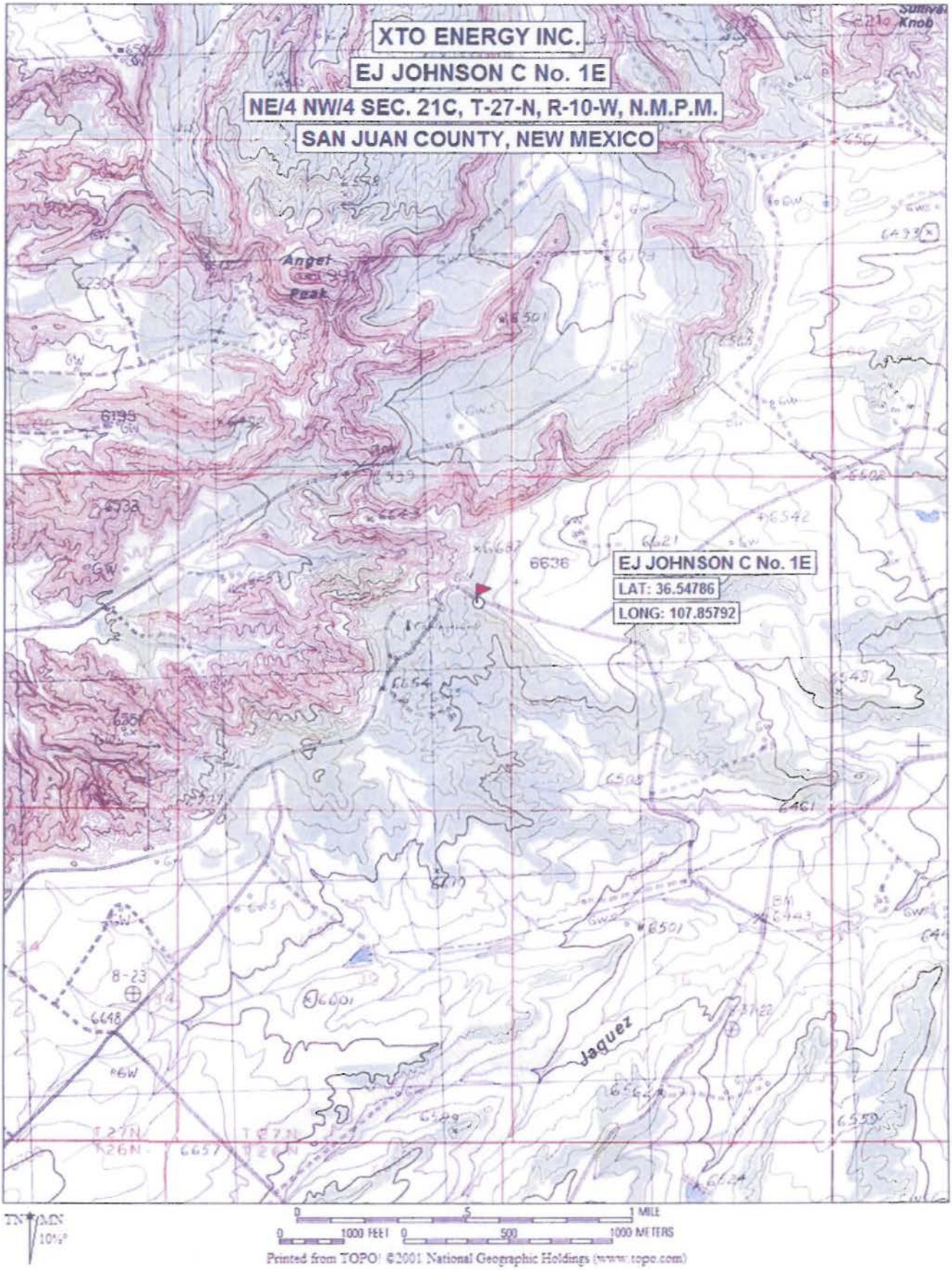
JOHNSON, E.J. C #1E- PROD. TANK PIT
UNIT C, SEC. 21, T27N, R10W

Sample Date: September 27, 1999
February 20, 2002

PARAMETERS	MW #1R 09/27/99	MW #2R 09/27/99	MW #3 09/27/99	MW #4 02/20/02	UNITS
LAB Ph	7.51	8.09	7.85	8.05	s.u.
LAB CONDUCTIVITY @ 25 C	6,920	1,472	6,840	10,600	umhos/cm
TOTAL DISSOLVED SOLIDS @ 180 C	3,440	720	3,410	5,810	mg/L
TOTAL DISSOLVED SOLIDS (Calc)	3,400	710	3,320	5,700	mg/L
SODIUM ABSORPTION RATIO	27.4	11.5	29.3	70.9	ratio
TOTAL ALKALINITY AS CaCO3	648	482	376	1,560	mg/L
TOTAL HARDNESS AS CaCO3	260	72	220	152	mg/L
BICARBONATE AS HCO3	648	482	376	1,560	mg/L
CARBONATE AS CO3	< 1	< 1	< 1	< 0.1	mg/L
HYDROXIDE AS OH	< 1	< 1	< 1	< 0.1	mg/L
NITRATE NITORGEN	0.2	0.2	0.1	0.8	mg/L
NITRITE NITROGEN	0.005	0.015	0.005	0.064	mg/L
CHLORIDE	5.0	15	18	1030	mg/L
FLUORIDE	2.1	0.96	1.66	0.88	mg/L
PHOSPHATE	0.7	3.4	0.5	119	mg/L
SULFATE	1,870	140	1,990	1,540	mg/L
IRON	0.011	0.147	0.008	0.135	mg/L
CALCIUM	88	25.6	60	46.4	mg/L
MAGNESIUM	9.8	2	17.1	8.79	mg/L
POTASSIUM	7.5	7.5	7.5	0.5	mg/L
SODIUM	1,020	225	1,000	2,010	mg/L
CATION/ANION DIFFERENCE	0.14	0.19	0.24	0.02	%

Sample Date: September 20, 2006

PARAMETERS	MW #1R 09/20/06	MW #2R 09/20/06	MW #3 09/20/06	MW #5 09/20/06	UNITS
TOTAL DISSOLVED SOLIDS (Calc)	1,900	1,600	2,600	1,800	mg/L
CHLORIDE	7.3	4	8.2	20	mg/L



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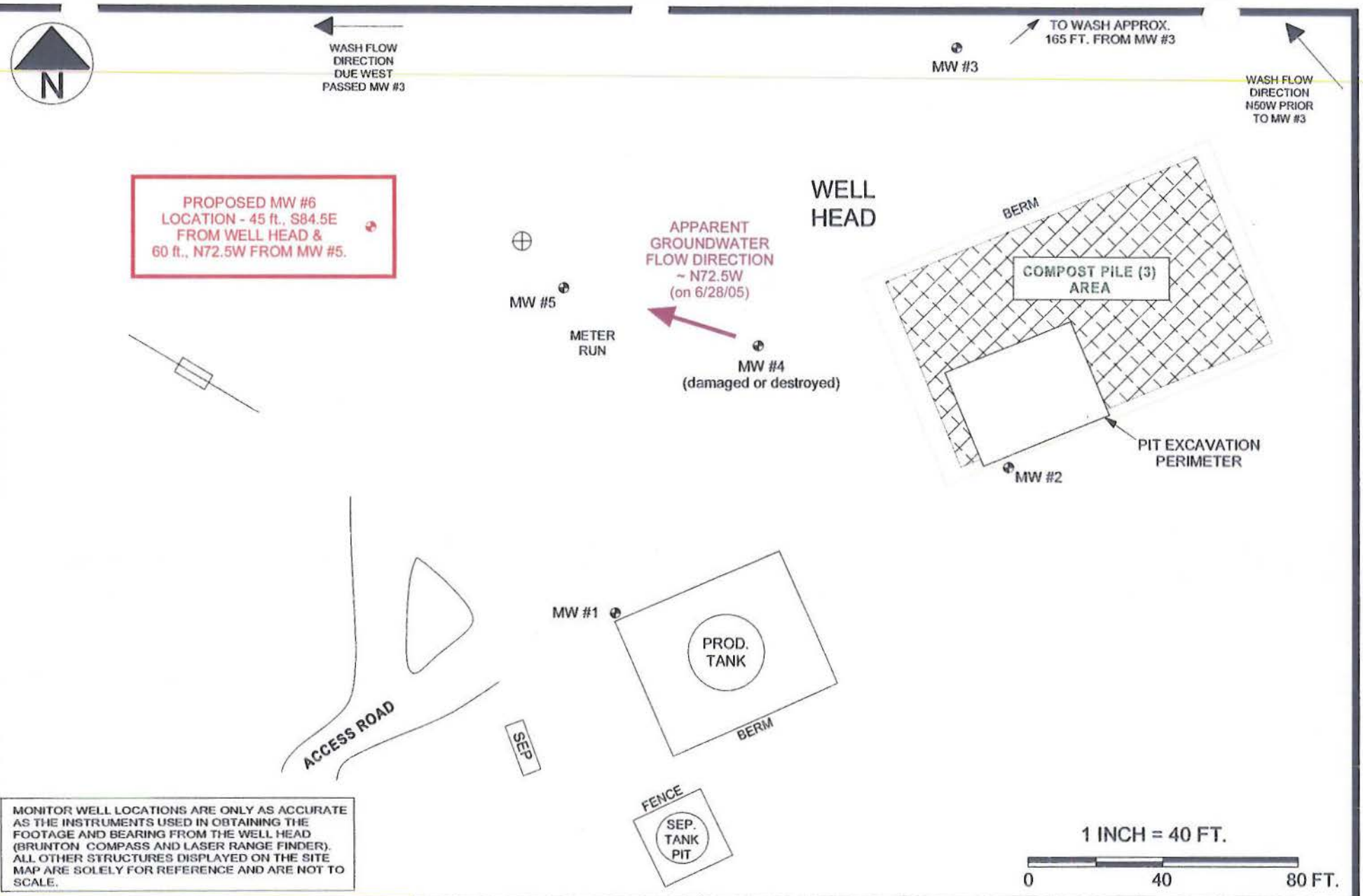


XTO ENERGY INC.

JOHNSON, E.J. C #1E

NE/4 NW/4, SEC. 21, T27N, R10W

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: DELINEATION

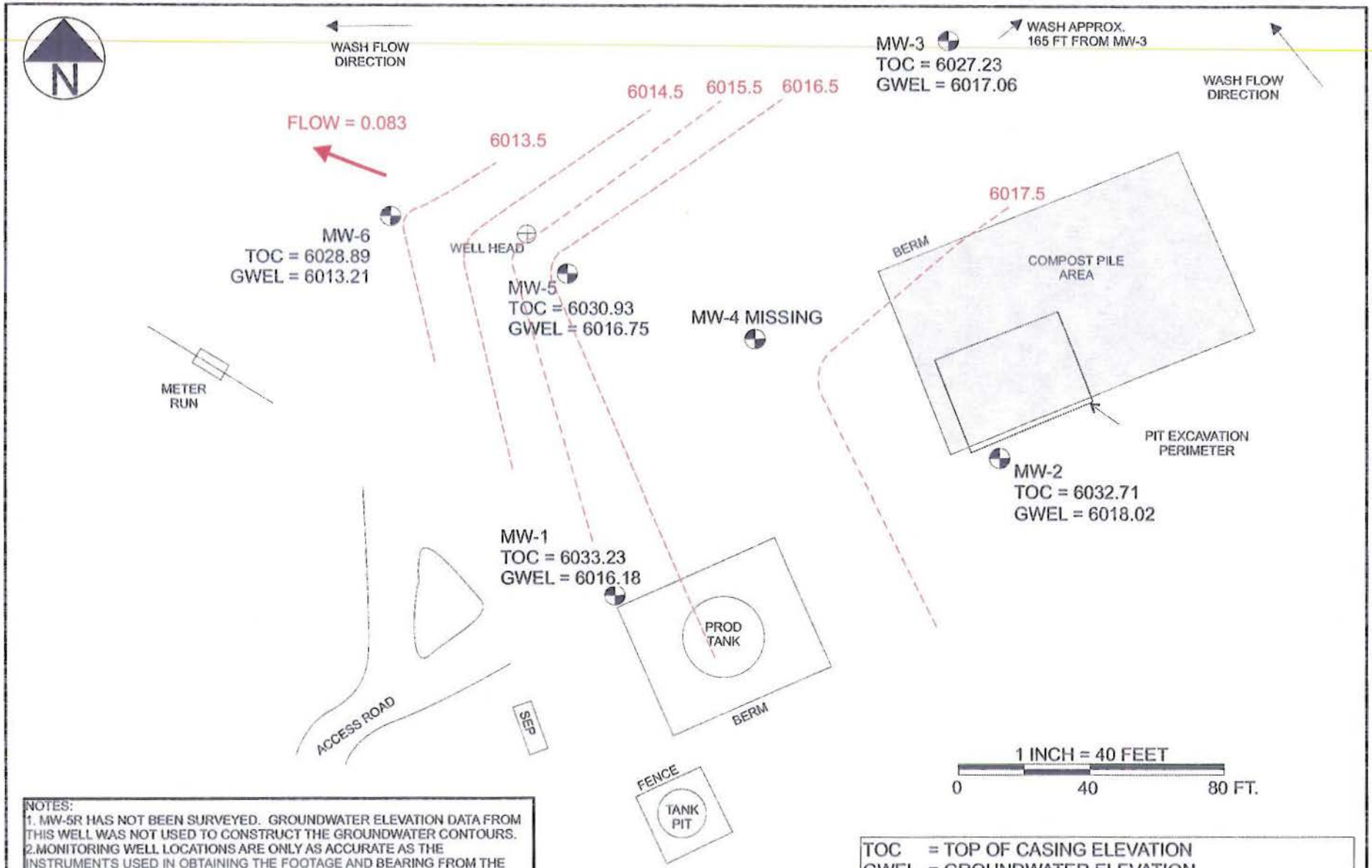
DRAWN BY: NJV

FILENAME: 05-22-06-SM.SKF

REVISED: 05/19/06

SITE MAP

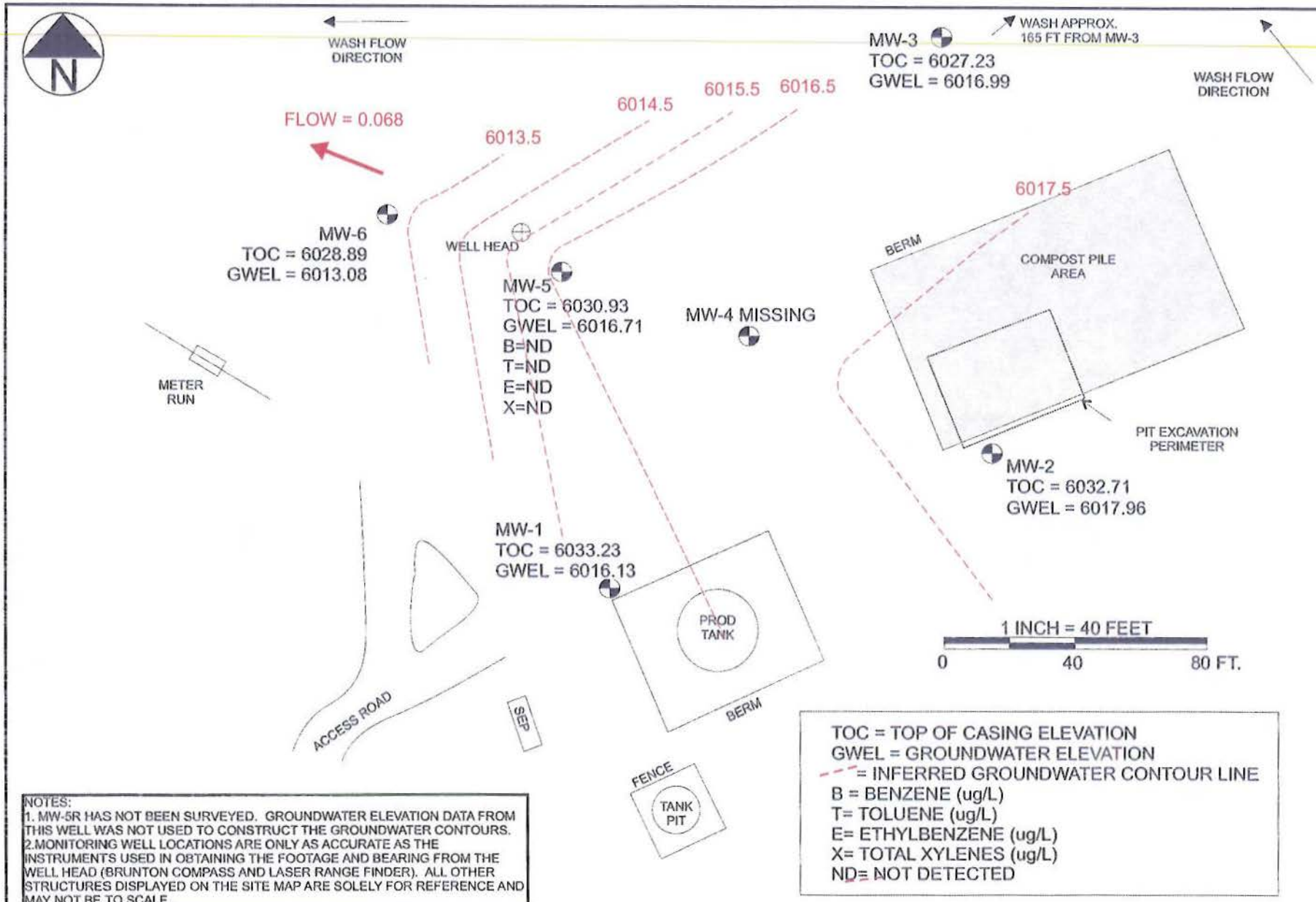
05/06



NOTES:
1. MW-5R HAS NOT BEEN SURVEYED. GROUNDWATER ELEVATION DATA FROM THIS WELL WAS NOT USED TO CONSTRUCT THE GROUNDWATER 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	E.J. JOHNSON C #1E NE/4 NW/4 SEC. 21, T27N, R10W SAN JUAN COUNTY, NEW MEXICO	PROJECT: XTO GROUND WATER DRAWN BY: ADH REVISED: 04 Mar 09	GROUNDWATER GRADIENT MAP 02 Mar 09



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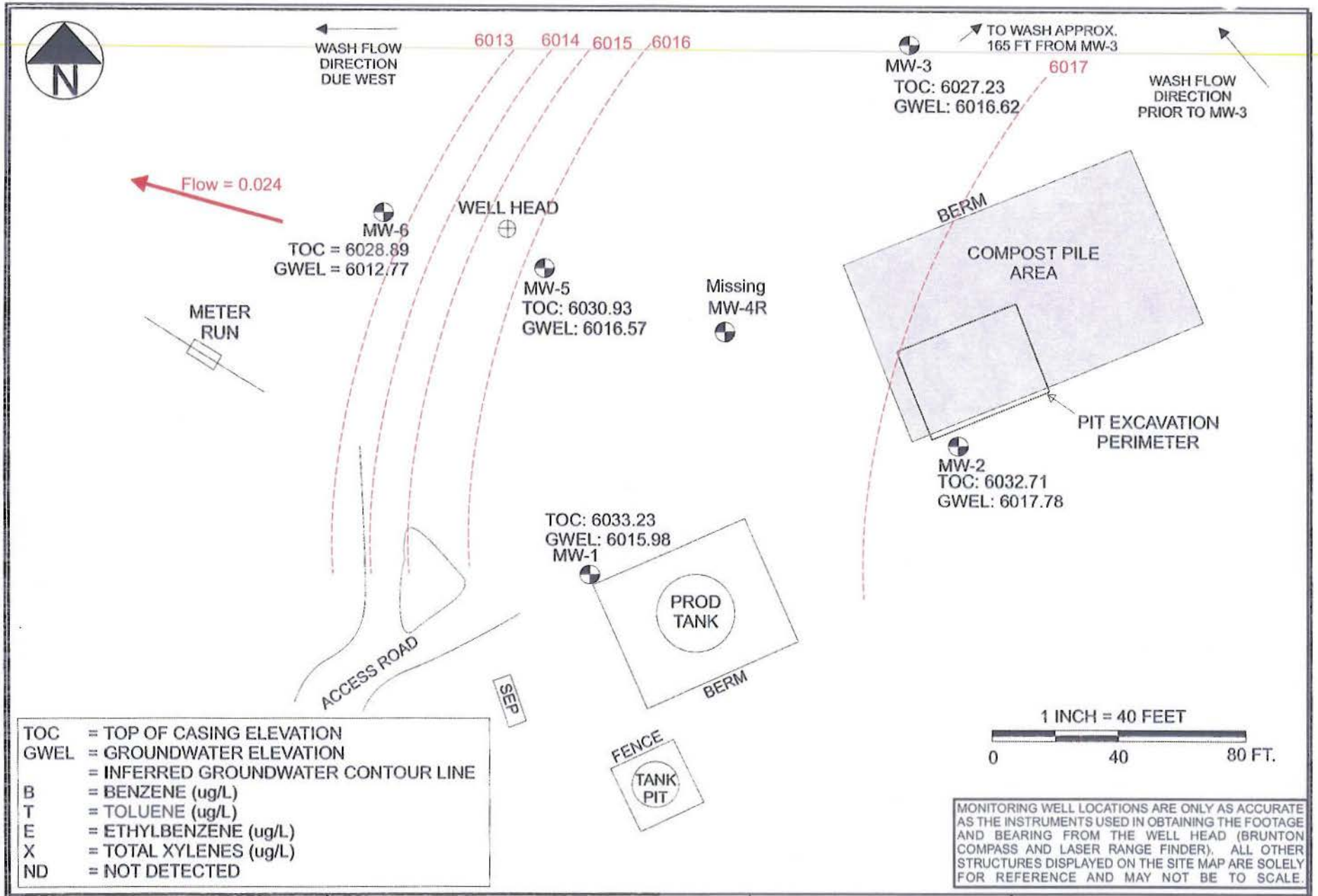
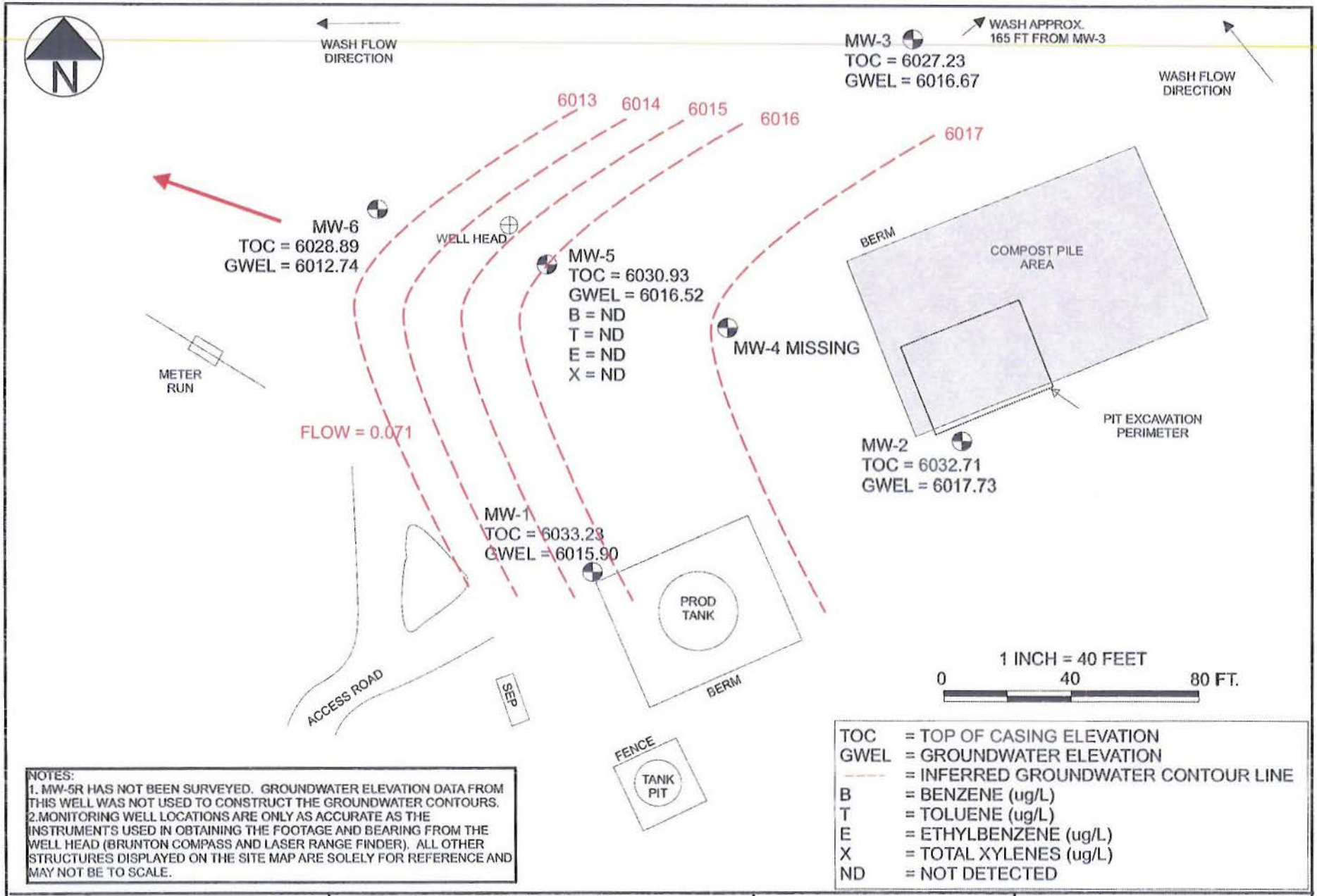
Lodestar Services, Inc PO Box 3861 Farmington, NM 87499	E.J. JOHNSON C #1E NE/4 NW/4 SEC. 21, T27N, R10W SAN JUAN COUNTY, NEW MEXICO	PROJECT: XTO GROUND WATER DRAWN BY: ADH REVISED: 11 Jun 09	GROUNDWATER GRADIENT MAP 10 Jun 09



TOC	= TOP OF CASING ELEVATION
GWEL	= GROUNDWATER ELEVATION
	= INFERRED GROUNDWATER CONTOUR LINE
B	= BENZENE (ug/L)
T	= TOLUENE (ug/L)
E	= ETHYLBENZENE (ug/L)
X	= TOTAL XYLENES (ug/L)
ND	= NOT DETECTED

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	E.J. JOHNSON C #1E NE/4 NW/4 SEC. 21, T27N, R10W SAN JUAN COUNTY, NEW MEXICO	PROJECT: XTO GROUND WATER DRAWN BY: ALA REVISED: 09/30/09	GROUNDWATER GRADIENT MAP 9/2009



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ND	= NOT DETECTED

Lodestar Services, Inc PO Box 3861 Farmington, NM 87499	E.J. JOHNSON C #1E NE/4 NW/4 SEC. 21, T27N, R10W SAN JUAN COUNTY, NEW MEXICO	PROJECT: XTO GROUND WATER DRAWN BY: ADH REVISED: 12/31/2009	GROUNDWATER GRADIENT MAP 12/07/2009

RECORD OF SUBSURFACE EXPLORATION

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

Borehole #: 1
Well #: MW-6
Page: 1 of 2
Project Number:
Project Name: XTO Ground Water
Project Location: EJ Johnson C #1E

Borehole Location: 36° 33.945' N, 107° 54.244' W
GWL Depth: 19.5'
Drilled By: Enviro-Drill
Well Logged By: Ashley Ager
Date Started: 04/30/07
Date Completed: 04/30/07

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	1	0-5'	cuttings	damp, reddish brown, moderately sorted medium sand, subrounded		Easy
5	2	5-10'	cuttings	damp, brown, moderately sorted coarse sand, subrounded, varying mineralogies		Easy
10	3	10-15'	cuttings	moist, dark brown, poorly sorted coarse sand, subrounded, varying mineralogies		Easy
15	4	15-20'	cuttings	grayish brown moist silty sand, poorly sorted, subrounded sand content	0.7	Easy
20						

Comments: Well is located on edge of well pad, close to wash. Wash has some running water.

Geologist Signature: Ashley L Ager

RECORD OF SUBSURFACE EXPLORATION

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

Borehole #: 1
Well #: MW-6
Page: 2 of 2

Project Number:
Project Name: XTO Ground Water
Project Location: EJ Johnson C #1E

Borehole Location: 36° 33.945' N, 107° 54.244' W
GWL Depth: 19.5'
Drilled By: Enviro-Drill
Well Logged By: Ashley Ager
Date Started: 04/30/07
Date Completed: 04/30/07

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
20 25 30 35 40	5	20-25'	cuttings	wet, gray sandy silt, coarse sand content, poorly sorted. GWL at ~19.5' water gushing out of hole at 25'	0.9	Easy

Comments:

Geologist Signature: Ashley L. Ager

BO 115

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 - 077386 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.: E J JOHNSON C # 1E

2. Name of Operator: Amoco Production Company

9. API Well No.: 3004524206

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): NE/NW. SEC. 21, T 27 N, 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.

PRODUCTION PIT - ABANDONED - WATER SAMPLE
↓
PREVIOUSLY SUBMITTED - ●

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

Signed B. Shaw Title Enviro. Coordinator Date 2-9-95

(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 115

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: E J JOHNSON C #1E
Well Name

Location: Unit or Qtr/Qtr Sec C Sec 21 T 27 N R 10 W County SAN JUAN

Pit Type: Separator ___ Dehydrator ___ Other PRODUCTION TANK

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

Pit Location: (attach diagram)
Pit dimensions: length 40', width 30', depth 10'
Reference: wellhead X, other ___
Footage from reference: 75
Direction from reference: 90 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

Date Remediation Started: 8-24-94 Date Completed: _____

Remediation Method: (Check all appropriate sections) Excavation X Approx. cubic yards 350

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 + PUMPING CONTAMINATED WATER - CONTINUING

Ground Water Encountered: No ___ Yes X Depth 10'

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

Sample location see Attached Documents

Sample depth 10'

Sample date _____ Sample time _____

Sample Results

Benzene(ppm) _____

Total BTEX(ppm) _____

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 12-14-94

SIGNATURE B J Shaw PRINTED NAME AND TITLE Buddy D. Shaw Environmental Coordinator

80115

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 E. J. JOHNSON C # 1E

Location: Unit or Qtr/Qtr Sec C Sec 21 T 27N R 10W County SAN JUAN

Pit Type: Separator ___ Dehydrator ___ Other PRODUCTION TANK

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

Pit Location: (* each diagram)
Pit dimensions: length 40', width 30', depth 10'
Reference: wellhead X, other ___
Footage from reference: 75
Direction from reference: 90 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

Date Remediation Started: _____ Date Completed: 1-27-95

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

Landfarmed ___ Insitu Bioremediation ___

Other SOIL COMPOSTED

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

General Description Of Remedial Action:

Excavation - PUMPING + AERATION OF CONTAMINATED WATER,

PIT PREVIOUSLY SUBMITTED AS ONGOING GROUNDWATER REMEDIATION.

Ground Water Encountered: No ___ Yes X Depth 10'

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

Sample location see Attached Documents

Sample depth _____

Sample date _____ Sample time _____

Sample Results

Benzene(ppm) _____

Total BTEX(ppm) _____

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 2-9-95

SIGNATURE B J Shaw

PRINTED NAME AND TITLE Buddy D. Shaw Environmental Coordinator

R 20

CLIENT: AMOCO	BLAGG ENGINEERING, INC. P.O. BOX 87, BLOOMFIELD, NM 87413 (505) 632-1199	LOCATION NO: B0115 C.O.C. NO: _____

FIELD REPORT: PIT CLOSURE VERIFICATION

FIELD REPORT COMPLETED: 10-7-94

LOCATION: NAME: E J JOHNSON C WELL #: 1E PIT: PROD.
QUAD/UNIT: C SEC: 21 TWP: 27 N RNG: 10 W BM: NM CNTY: SJ ST: NM
QTR/FOOTAGE: NE/NW CONTRACTOR: EPC

DATE STARTED: 8-24-94
DATE FINISHED: _____
ENVIRONMENTAL SPECIALIST: F.M. / REG

EXCAVATION APPROX. 40 FT. x 30 FT. x 10 FT. DEEP. CUBIC YARDS: 350
DISPOSAL FACILITY: ON SITE REMEDIATION METHOD: COMPOST
LAND USE: RANGE LEASE: SF-077386 A FORMATION: _____

FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY 75 FEET WEST FROM WELLHEAD.
DEPTH TO GROUNDWATER: 10' NEAREST WATER SOURCE: >1000' NEAREST SURFACE WATER: >100'
NMOCD RANKING SCORE: 20 NMOCD TPH CLOSURE STD: 100 PPM

SOIL AND EXCAVATION DESCRIPTION: PIT DISPOSITION: ? OPEN -

ENVIROTECH TOOK ORIGINAL SAMPLE - NO FIELD REPORT PRODUCED, MET ON SITE WITH FRANK MCDONALD - WATER NOT REMEDIATED AS OF 10-7-94. REG.

12-14-94
CONTAMINATED WATER BEING PUMPED.

1/27/95
CONTAM - WATER BEING PUMPED.

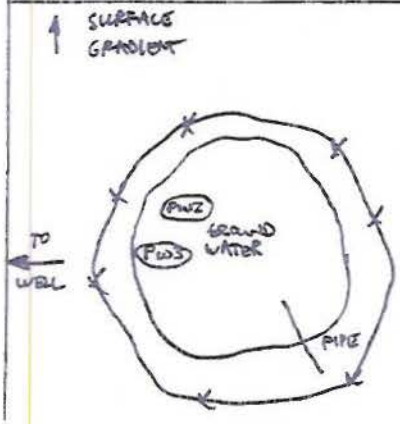
G.W.

FIELD 418.1 CALCULATIONS

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

SCALE
0 10 20 FT

PIT PERIMETER

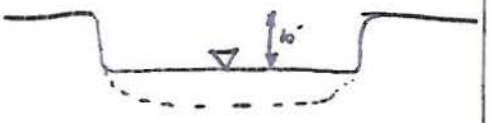


OVM RESULTS

SAMPLE ID	FIELD HEADSPACE PID (ppm)
1	
2	
3	
4	
5	
LAB	SAMPLES
PIT WATER @ 10'	BTEX 8/24/94
PW2 @ GW (10')	BTEX 10/20/94 NV
PW3 @ GW (10')	BTEX 1/27/95 NV
PASSED	

B - 2.0 T - 80.4 E - 57.2 X - 403 ppb

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:	~~MW #1~~ GROUNDWATER	Date Reported:	09-02-94
Laboratory Number:	7939	Date Sampled:	08-24-94
Sample Matrix:	Water	Date Received:	08-24-94
Preservative:	HgCl & Cool	Date Analyzed:	09-01-94
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	258	0.3
Toluene	0.3	0.3
thylbenzene	0.5	0.2
,m-Xylene	0.7	0.3
o-Xylene	1.6	0.3

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	104 %
Bromofluorobenzene	105 %

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: EJ Johnson C #1E Production Pit A0099

Analyst

Review

OFF: (505) 325-8786

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-5667

AROMATIC VOLATILE ORGANICS

Attn:	Nelson Velez	Date:	10/21/94
Company:	Blagg Engineering	Lab ID:	2157
Address:	P.O. Box 87	Sample ID:	3673
City, State:	Bloomfield, NM 87413	Job No.	2-1000

Project Name:	E. J. Johnson C 1 E				
Project Location:	PW 2 @ GW (10')				
Sampled by:	NV	Date:	10/20/94	Time:	9:45
Analyzed by:	DLA	Date:	10/21/94		
Sample Matrix:	Water				

Aromatic Volatile Organics

Component	Measured Concentration ug/L	Detection Limit Concentration ug/L
Benzene	33.6	0.2
Toluene	21.2	0.2
Ethylbenzene	ND	0.2
m,p-Xylene	16.0	0.2
o-Xylene	58.3	0.2
TOTAL	129.1 ug/L	

ND - Not Detectable

Method - SW-846 EPA Method 8020 Aromatic Volatile Organics by Gas Chromatography

Approved by:

Date: 10/24/94

OFF: (505) 325-8786

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-5667

AROMATIC VOLATILE ORGANICS

Attn:	Nelson Velez	Date:	12/17/94
Company:	Blagg Engineering	Lab ID:	2333
Address:	P.O. Box 87	Sample ID:	4421
City, State:	Bloomfield, NM 87413	Job No.	2-1000

Project Name:	E. J. Johnson C 1 E				
Project Location:	PW 2 @ GW (10') - Prod. Pit				
Sampled by:	NV	Date:	12/16/94	Time:	14:35
Analyzed by:	DLA	Date:	12/17/94		
Sample Matrix:	Water				

Aromatic Volatile Organics

Component	Measured Concentration ug/L	Detection Limit Concentration ug/L
Benzene	154.9	0.2
Toluene	54.2	0.2
Ethylbenzene	126.9	0.2
m,p-Xylene	577.2	0.2
o-Xylene	43.2	0.2
TOTAL	956.3 ug/L	

ND - Not Detectable

Method - SW-846 EPA Method 8020 Aromatic Volatile Organics by Gas Chromatography

Approved by:
Date: 12/19/94

OFF: (505) 325-8786

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-5667

AROMATIC VOLATILE ORGANICS

Attn:	Nelson Velez	Date:	1/28/95
Company:	Blagg Engineering	Lab ID:	2529
Address:	P.O. Box 87	Sample ID:	4933
City, State:	Bloomfield, NM 87413	Job No.	2-1000

Project Name:	E. J. Johnson C 1 E				
Project Location:	PW 3 @ GW (10') - Prod				
Sampled by:	NV	Date:	1/27/95	Time:	10:20
Analyzed by:	DLA	Date:	1/28/95		
Sample Matrix:	Water				

Aromatic Volatile Organics

Component	Measured Concentration ug/L	Detection Limit Concentration ug/L
Benzene	2.0	0.2
Toluene	80.4	0.2
Ethylbenzene	57.2	0.2
m,p-Xylene	338.2	0.2
o-Xylene	64.8	0.2
TOTAL	542.7 ug/L	

ND - Not Detectable

Method - SW-846 EPA Method 8020 Aromatic Volatile Organics by Gas Chromatography

Approved by: Da G
Date: 1/30/95

CHAIN OF CUSTODY RECORD

ON SITE TECHNOLOGIES, LTD.

Date: 11/27/95

Page 1 of 1

657 W. Maple • P. O. Box 2606 • Farmington NM 87499
LAB: (505) 325-5667 • FAX: (505) 325-6256

80115

Purchase Order No.:		Job No.			
SEND INVOICE TO	Name		REPORT RESULTS TO	Name [illegible]	Title PE
	Company ELMORE ENGINEERING	Dept.		Company [illegible]	
	Address P.O. BOX 37			Mailing Address [illegible]	
	City, State, Zip AZTEC, NM 87410			City, State, Zip [illegible]	
				Telephone No. 632-1199	Telefax No.
Sampling Location: E.T. Johnson C1E				ANALYSIS REQUESTED	
Sampler: [signature]					

SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	MATRIX	PRES.	Number of Containers	BTEX (8020)	LAB ID
PIT 2 C EW (10') - PROD.	11/27/95	1020	WATER	HCl	2	1	9511-2529
PIT C EW ( ) -	11/27/95		WATER	HCl	2	1	

Relinquished by: [signature]	Date/Time 11/27/95 1200	Received by: [signature]	Date/Time 11/27/95 12:00
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time

Method of Shipment:	Rush	24-48 Hours	10 Working Days
Authorized by: _____ Date _____ (Client Signature Must Accompany Request)			Special Instructions:

Distribution: White – On Site Yellow – LAB Pink – Sampler Goldenrod – Client

Hall Environmental Analysis Laboratory, Inc.

Date: *13-Mar-09*

CLIENT:	XTO Energy	**Client Sample ID:**	EJ Johnson C1E- MW-5R
Lab Order:	0903056	**Collection Date:**	3/2/2009 10:35:00 AM
Project:	Ground Water	**Date Received:**	3/4/2009
Lab ID:	0903056-02	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **DAM**
Benzene	ND	1.0		µg/L	1	3/5/2009 6:59:22 PM
Toluene	ND	1.0		µg/L	1	3/5/2009 6:59:22 PM
Ethylbenzene	ND	1.0		µg/L	1	3/5/2009 6:59:22 PM
Xylenes, Total	ND	2.0		µg/L	1	3/5/2009 6:59:22 PM
Surr: 4-Bromofluorobenzene	85.3	65.9-130		%REC	1	3/5/2009 6:59:22 PM
SM 2540 C: TOTAL DISSOLVED SOLIDS						Analyst: **DMG**
Total Dissolved Solids	2100	200		mg/L	1	3/10/2009

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: Ground Water **Work Order:** 0903056

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8021B: Volatiles									
Sample ID: 0903056-13A MSD		*MSD*			Batch ID:	**R32670**	Analysis Date:		3/5/2009 8:30:29 PM
Benzene	18.39	µg/L	1.0	92.0	85.9	113	1.99	27	
Toluene	18.68	µg/L	1.0	93.4	86.4	113	2.57	19	
Ethylbenzene	19.24	µg/L	1.0	96.2	83.5	118	3.14	10	
Xylenes, Total	58.70	µg/L	2.0	97.8	83.4	122	3.65	13	
Sample ID: 5ML RB		*MBLK*			Batch ID:	**R32670**	Analysis Date:		3/5/2009 9:37:36 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:	**R32670**	Analysis Date:		3/5/2009 9:00:58 PM
Benzene	17.20	µg/L	1.0	86.0	85.9	113			
Toluene	17.27	µg/L	1.0	86.4	86.4	113			S
Ethylbenzene	17.87	µg/L	1.0	89.3	83.5	118			
Xylenes, Total	54.36	µg/L	2.0	90.6	83.4	122			
Sample ID: 0903056-13A MS		*MS*			Batch ID:	**R32670**	Analysis Date:		3/5/2009 8:00:04 PM
Benzene	18.76	µg/L	1.0	93.8	85.9	113			
Toluene	19.16	µg/L	1.0	95.8	86.4	113			
Ethylbenzene	19.85	µg/L	1.0	99.3	83.5	118			
Xylenes, Total	60.88	µg/L	2.0	101	83.4	122			
Method: SM 2540 C: Total Dissolved Solids									
Sample ID: MB-18469		*MBLK*			Batch ID:	**18469**	Analysis Date:		3/10/2009
Total Dissolved Solids	ND	mg/L	20						
Sample ID: LCS-18469		*LCS*			Batch ID:	**18469**	Analysis Date:		3/10/2009
Total Dissolved Solids	976.0	mg/L	20	97.6	80	120			

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: 3/4/2009

Work Order Number 0903056 | Received by: ARS

Checklist completed by: [signature] Signature | 3/4/09 Date | Sample ID labels checked by: TJ 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: Per Ashley Neal #3 should be GC.1A instead of GCA1. TS 3/4/09

Corrective Action _____

Chain-of-Custody Record

Client: XTO Energy
Kim Champlin
Mailing Address: 382 CR 3100
~~3~~ 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:
On Ice: ☑ Yes ☐ No
Sample Temperature: 1

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	HEAL No. 0903054	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)
2Mar09	0930	Aq	Jack Frost B2 - MW-4	glass/3	$HgCl_2$	1												✓	✓			
2Mar09	1035		EJ Johnson GE-MW-5R	glass/3	$HgCl_2$	2												✓	✓			
2Mar09	1243		Snyder ~~GC~~ GC1A ~~GC1~~ MW3 TJ3155	glass/3	$HgCl_2$	3												✓				
2Mar09	1404		Sullivan GCD1 - MW1R	glass/3	$HgCl_2$	4												✓				
2Mar09	1532		Rowland GC1 MW-5	glass/3	$HgCl_2$	5												✓				
03Mar09	0915		Brnington GC1 MW-6	glass/3	$HgCl_2$	6												✓				
03Mar09	0922		Brnington GC1 MW-7	glass/3	$HgCl_2$	7												✓				
	~~0925~~																					
03Mar09	0955		Brnington GC1 MW-8	glass/3	$HgCl_2$	8												✓				
03Mar09	~~[illegible]~~ 1040		Brnington GC1 MW-5	glass/3	$HgCl_2$	9												✓				
03Mar09	1035		Brnington GC1 MW-2R	glass/3	$HgCl_2$	10												✓				
03Mar09	1140		Brnington GC1 MW-1R	glass/3	$HgCl_2$	11												✓				

Date:	Time:	Relinquished by:	Received by:	Date	Time
4Mar09	0700	[signature]	[signature]	3/4/09	14:20
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks:
NOTE: Brnington MW-5 was sampled @ 1040 and 1115
* sample was sampled from 2 different bails.
SEE attached - please send emails of results.

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: *25-Jun-09*

CLIENT: XTO Energy
Project: Ground Water
Lab Order: 0906245

Lab ID: 0906245-01 **Collection Date:** 6/10/2009 2:06:00 PM
Client Sample ID: EJ Johnson C1E-MW-5R **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						**Analyst: NSB**
Benzene	ND	1.0		µg/L	1	6/17/2009 6:45:43 PM
Toluene	ND	1.0		µg/L	1	6/17/2009 6:45:43 PM
Ethylbenzene	ND	1.0		µg/L	1	6/17/2009 6:45:43 PM
Xylenes, Total	ND	2.0		µg/L	1	6/17/2009 6:45:43 PM
Surr: 4-Bromofluorobenzene	85.1	65.9-130		%REC	1	6/17/2009 6:45:43 PM

Lab ID: 0906245-02 **Collection Date:** 6/10/2009 10:15:00 AM
Client Sample ID: ~~Rowland GC1-MW-5~~ **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						**Analyst: NSB**
Benzene	120	5.0		µg/L	5	6/17/2009 11:50:00 PM
Toluene	ND	5.0		µg/L	5	6/17/2009 11:50:00 PM
Ethylbenzene	240	5.0		µg/L	5	6/17/2009 11:50:00 PM
Xylenes, Total	590	10		µg/L	5	6/17/2009 11:50:00 PM
Surr: 4-Bromofluorobenzene	110	65.9-130		%REC	5	6/17/2009 11:50:00 PM

Lab ID: 0906245-03 **Collection Date:** 6/10/2009 11:20:00 AM
Client Sample ID: ~~Valdez A1E-MW-7~~ **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						**Analyst: NSB**
Benzene	43	1.0		µg/L	1	6/18/2009 1:21:18 AM
Toluene	25	1.0		µg/L	1	6/18/2009 1:21:18 AM
Ethylbenzene	160	10		µg/L	10	6/18/2009 12:50:55 AM
Xylenes, Total	1100	20		µg/L	10	6/18/2009 12:50:55 AM
Surr: 4-Bromofluorobenzene	111	65.9-130		%REC	10	6/18/2009 12:50:55 AM

Lab ID: 0906245-04 **Collection Date:** 6/10/2009 1:10:00 PM
Client Sample ID: ~~Jack Frost B2-MW-4~~ **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						**Analyst: NSB**
Benzene	19	1.0		µg/L	1	6/18/2009 2:22:07 AM
Toluene	ND	1.0		µg/L	1	6/18/2009 2:22:07 AM
Ethylbenzene	1.2	1.0		µg/L	1	6/18/2009 2:22:07 AM
Xylenes, Total	ND	2.0		µg/L	1	6/18/2009 2:22:07 AM
Surr: 4-Bromofluorobenzene	93.2	65.9-130		%REC	1	6/18/2009 2:22:07 AM

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: Ground Water **Work Order:** 0906245

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8021B: Volatiles									
Sample ID: 0906245-01A MSD		*MSD*			Batch ID:	**R34138**	Analysis Date:		6/17/2009 8:16:58 PM
Benzene	22.37	µg/L	1.0	112	85.9	113	0.526	27	
Toluene	21.26	µg/L	1.0	106	86.4	113	1.97	19	
Ethylbenzene	20.74	µg/L	1.0	103	83.5	118	3.21	10	
Xylenes, Total	60.36	µg/L	2.0	101	83.4	122	4.04	13	
Sample ID: 5ML RB		*MBLK*			Batch ID:	**R34138**	Analysis Date:		6/17/2009 9:34:54 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 CCV		*LCS*			Batch ID:	**R34138**	Analysis Date:		6/17/2009 8:47:28 PM
Benzene	21.71	µg/L	1.0	109	85.9	113			
Toluene	20.57	µg/L	1.0	103	86.4	113			
Ethylbenzene	20.04	µg/L	1.0	100	83.5	118			
Xylenes, Total	58.31	µg/L	2.0	97.2	83.4	122			
Sample ID: 0906245-01A MS		*MS*			Batch ID:	**R34138**	Analysis Date:		6/17/2009 7:46:33 PM
Benzene	22.49	µg/L	1.0	112	85.9	113			
Toluene	21.68	µg/L	1.0	108	86.4	113			
Ethylbenzene	21.42	µg/L	1.0	106	83.5	118			
Xylenes, Total	62.85	µg/L	2.0	105	83.4	122			

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: 6/12/2009

Work Order Number 0906245 | Received by: ARS

Checklist completed by: _____ (Signature) 6/12/09 (Date) | Sample ID labels checked by: TS 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 ☐		Number of preserved bottles checked for pH:
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 ☑	*<2 >12 unless noted below.*
Container/Temp Blank temperature?	1.6°	*<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)
Accreditation
☐ NELAP ☐ Other
☐ EDD (Type)

Turn-Around Time:
☑ Standard ☐ Rush
Project Name: Groundwater
Project #:
Project Manager: Ashley Ager
Sampler: adh
On Ice: ☑ Yes ☐ No
Sample Temperature: 1.6

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. 0901245
10Jun09	14:06	gg	EJ Johnson CTE-MW.SR	3/glass	HCl	1
10Jun09	10:15	gg	Rowland GC1-MW.5	3/glass	HCl	2
10Jun09	11:20	gg	Valdez AIE-MW.7	3/glass	HCl	3
10Jun09	13:10	gg	Jackfrost B2-MW.4	3/glass	HCl	4
10Jun09	11:50	gg	Valdez AIE-MW.6	3/glass	HCl	5

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				Air Bubbles (Y or N)
											✓				
											✓				
											✓				
											✓				
											✓				

Date	Time	Relinquished by:	Received by:	Date	Time
11Jun09	1700			9:20 6/12/09	
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks:
please copy (via email) results to
ala@lodestarservices.com
adh@lodestarservices.com
NOTE: 1 trip blank broken upon receipt

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: *28-Sep-09*

CLIENT: XTO Energy
Project: Ground Water
Lab Order: 0909312

Lab ID: 0909312-01 **Collection Date:** 9/15/2009 2:47:00 PM
Client Sample ID: ~~Bruington GC #1-MW-8~~ **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						**Analyst: NSB**
Benzene	15000	400		µg/L	400	9/24/2009 11:32:13 PM
Toluene	7800	400		µg/L	400	9/24/2009 11:32:13 PM
Ethylbenzene	590	400		µg/L	400	9/24/2009 11:32:13 PM
Xylenes, Total	4900	800		µg/L	400	9/24/2009 11:32:13 PM
Surr: 4-Bromofluorobenzene	99.9	65.9-130		%REC	400	9/24/2009 11:32:13 PM

Lab ID: 0909312-02 **Collection Date:** 9/15/2009 2:04:00 PM
Client Sample ID: ~~Bruington GC #1-MW-6~~ **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						**Analyst: NSB**
Benzene	18000	400		µg/L	400	9/25/2009 12:02:33 AM
Toluene	14000	400		µg/L	400	9/25/2009 12:02:33 AM
Ethylbenzene	740	400		µg/L	400	9/25/2009 12:02:33 AM
Xylenes, Total	7700	800		µg/L	400	9/25/2009 12:02:33 AM
Surr: 4-Bromofluorobenzene	97.4	65.9-130		%REC	400	9/25/2009 12:02:33 AM

Lab ID: 0909312-03 **Collection Date:** 9/15/2009 10:46:00 AM
Client Sample ID: EJ Johnson C1E-MW-5 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						**Analyst: NSB**
Benzene	ND	1.0		µg/L	1	9/25/2009 12:32:55 AM
Toluene	ND	1.0		µg/L	1	9/25/2009 12:32:55 AM
Ethylbenzene	ND	1.0		µg/L	1	9/25/2009 12:32:55 AM
Xylenes, Total	ND	2.0		µg/L	1	9/25/2009 12:32:55 AM
Surr: 4-Bromofluorobenzene	95.0	65.9-130		%REC	1	9/25/2009 12:32:55 AM

Lab ID: 0909312-04 **Collection Date:** 9/15/2009 2:54:00 PM
Client Sample ID: ~~Bruington GC #1-MW-7~~ **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						**Analyst: NSB**
Benzene	15000	400		µg/L	400	9/25/2009 1:03:05 AM
Toluene	4900	400		µg/L	400	9/25/2009 1:03:05 AM
Ethylbenzene	640	400		µg/L	400	9/25/2009 1:03:05 AM
Xylenes, Total	3600	800		µg/L	400	9/25/2009 1:03:05 AM
Surr: 4-Bromofluorobenzene	101	65.9-130		%REC	400	9/25/2009 1:03:05 AM

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: Ground Water **Work Order:** 0909312

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8021B: Volatiles											
Sample ID: 5ML RB		*MBLK*				**Batch ID:**	**R35456**	**Analysis Date:**		**9/24/2009 9:20:39 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: b 6		*MBLK*				**Batch ID:**	**R35469**	**Analysis Date:**		**9/26/2009 1:18:45 PM**	
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: b 23		*MBLK*				**Batch ID:**	**R35469**	**Analysis Date:**		**9/26/2009 9:47:27 PM**	
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:**	**R35456**	**Analysis Date:**		**9/25/2009 5:36:05 AM**	
Benzene	19.44	µg/L	1.0	20	0	97.2	85.9	113			
Toluene	18.86	µg/L	1.0	20	0	94.3	86.4	113			
Ethylbenzene	19.13	µg/L	1.0	20	0	95.7	83.5	118			
Xylenes, Total	56.77	µg/L	2.0	60	0	94.6	83.4	122			
Sample ID: 100NG BTEX LCS		*LCS*				**Batch ID:**	**R35469**	**Analysis Date:**		**9/26/2009 9:16:59 PM**	
nzene	21.42	µg/L	1.0	20	0	107	85.9	113			
Toluene	22.30	µg/L	1.0	20	0	111	86.4	113			
Ethylbenzene	21.64	µg/L	1.0	20	0	108	83.5	118			
Xylenes, Total	63.86	µg/L	2.0	60	0	106	83.4	122			
Sample ID: 100NG BTEX LCS-II		*LCS*				**Batch ID:**	**R35469**	**Analysis Date:**		**9/27/2009 8:54:42 AM**	
Benzene	20.98	µg/L	1.0	20	0	105	85.9	113			
Toluene	21.30	µg/L	1.0	20	0.282	105	86.4	113			
Ethylbenzene	21.21	µg/L	1.0	20	0.122	105	83.5	118			
Xylenes, Total	62.15	µg/L	2.0	60	0	104	83.4	122			
Sample ID: 100NG BTEX LCSD		*LCSD*				**Batch ID:**	**R35456**	**Analysis Date:**		**9/25/2009 6:06:20 AM**	
Benzene	17.48	µg/L	1.0	20	0	87.4	85.9	113	10.6	27	
Toluene	16.57	µg/L	1.0	20	0	82.9	86.4	113	12.9	19	S
Ethylbenzene	17.44	µg/L	1.0	20	0	87.2	83.5	118	9.23	10	
Xylenes, Total	53.18	µg/L	2.0	60	0	88.6	83.4	122	6.53	13	

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: 9/17/2009

Work Order Number 0909312 | Received by: ARS

Checklist completed by: _____ 9/17/09 (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 ☐		Number of preserved bottles checked for pH:
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 ☑	*<2 >12 unless noted below.*
Container/Temp Blank temperature?	5.4°	*<6° C Acceptable* If given sufficient time to cool.		

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: Ok per A.H., corrected ID for 0909312-9 is MW-3R as 9/17

Corrective Action _____

Chain-of-Custody Record

Client: XTO Energy
Kim Champlin
Mailing Address: 382 CR3100
Aztec, NM 87410
Phone #: 505-333-3207
email or Fax#:
QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☐ EDD (Type)

Turn-Around Time:
☐ Standard ☐ Rush
Project Name: Groundwater
Project #:
Project Manager: Ashley Ager
Sampler:
On Ice: Yes No
Sample Temperature: 0.4

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	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0909312	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)
15Sep09	14:47	aq	Brungton GC#1-MW.8	glass/3	$HgCl_2$	1												✓				
15Sep09	14:04	aq	Brungton GC#1-MW.6	glass/3	$HgCl_2$	2												✓				
15Sep09	10:46	aq	EJ Johnson CIE -MW.5	glass/3	HCl	3												✓				
15Sep09	14:54	aq	Brungton GC#1-MW.7	glass/3	$HgCl_2$	4												✓				
15Sep09	1360	aq	Brungton GC#1-MW.9	glass/3	$HgCl_2$	5												✓				
15Sep09	1322	aq	Brungton GC#1-MW.2R	glass/3	$HgCl_2$	6												✓				
15Sep09	1555	aq	Rowland GC#1-MW.5	glass/3	HCl	7												✓				
15Sep09	12:35	aq	Brungton GC#1-MW.1R	glass/3	$HgCl_2$	8												✓				
15Sep09	13:28	aq	Brungton GC#1-MW.3R	glass/3	$HgCl_2$	9												✓				
15Sep09	14:08	aq	Brungton GC#1-MW.5	glass/3	$HgCl_2$	10												✓				

Date	Time	Relinquished by:	Received by:	Date	Time
16Sep09	17:00			9/17/09	10:00
Date	Time	Relinquished by:	Received by:	Date	Time

Remarks:
please cc results to
alac@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.

Hall Environmental Analysis Laboratory, Inc.

Date: *16-Dec-09*

CLIENT: XTO Energy
Project: Ground Water
Lab Order: 0912211

Lab ID: 0912211-01 **Collection Date:** 12/7/2009 1:07:00 PM
Client Sample ID: ~~Valdez A #1E MW6~~ **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	1.0		µg/L	1	12/10/2009 5:29:54 PM
Toluene	ND	1.0		µg/L	1	12/10/2009 5:29:54 PM
Ethylbenzene	7.2	1.0		µg/L	1	12/10/2009 5:29:54 PM
Xylenes, Total	29	2.0		µg/L	1	12/10/2009 5:29:54 PM
Surr: 4-Bromofluorobenzene	89.6	65.9-130		%REC	1	12/10/2009 5:29:54 PM

Lab ID: 0912211-02 **Collection Date:** 12/7/2009 12:34:00 PM
Client Sample ID: ~~Valdez A #1E MW-7~~ **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	62	1.0		µg/L	1	12/10/2009 7:01:02 PM
Toluene	33	1.0		µg/L	1	12/10/2009 7:01:02 PM
Ethylbenzene	320	10		µg/L	10	12/10/2009 6:30:34 PM
Xylenes, Total	2400	100		µg/L	50	12/11/2009 11:57:57 AM
Surr: 4-Bromofluorobenzene	105	65.9-130		%REC	10	12/10/2009 6:30:34 PM

Lab ID: 0912211-03 **Collection Date:** 12/7/2009 11:15:00 AM
Client Sample ID: EJ Johnson MW-5 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	1.0		µg/L	1	12/11/2009 12:03:52 AM
Toluene	ND	1.0		µg/L	1	12/11/2009 12:03:52 AM
Ethylbenzene	ND	1.0		µg/L	1	12/11/2009 12:03:52 AM
Xylenes, Total	ND	2.0		µg/L	1	12/11/2009 12:03:52 AM
Surr: 4-Bromofluorobenzene	90.2	65.9-130		%REC	1	12/11/2009 12:03:52 AM

Lab ID: 0912211-04 **Collection Date:** 12/7/2009 1:59:00 PM
Client Sample ID: ~~Bruington GC #1 MW-1~~ **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	1.0		µg/L	1	12/11/2009 12:34:11 AM
Toluene	ND	1.0		µg/L	1	12/11/2009 12:34:11 AM
Ethylbenzene	ND	1.0		µg/L	1	12/11/2009 12:34:11 AM
Xylenes, Total	ND	2.0		µg/L	1	12/11/2009 12:34:11 AM
Surr: 4-Bromofluorobenzene	87.9	65.9-130		%REC	1	12/11/2009 12:34:11 AM

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: Ground Water
Work Order: 0912211

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8021B: Volatiles											
Sample ID: 5ML RB		*MBLK*				Batch ID: **R36519**		Analysis Date:	12/10/2009 9:24:16 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: 5ML RB		*MBLK*				Batch ID: **R36545**		Analysis Date:	12/11/2009 9:26:11 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: **R36519**		Analysis Date:	12/10/2009 9:02:21 PM		
Benzene	19.63	µg/L	1.0	20	0	98.2	85.9	113			
Toluene	20.20	µg/L	1.0	20	0	101	86.4	113			
Ethylbenzene	19.78	µg/L	1.0	20	0.072	98.5	83.5	118			
Xylenes, Total	59.81	µg/L	2.0	60	0	99.7	83.4	122			
Sample ID: 100NG BTEX LCS		*LCS*				Batch ID: **R36545**		Analysis Date:	12/11/2009 8:33:09 PM		
Benzene	20.04	µg/L	1.0	20	0	100	85.9	113			
Toluene	20.13	µg/L	1.0	20	0	101	86.4	113			
Ethylbenzene	19.71	µg/L	1.0	20	0.066	98.2	83.5	118			
Xylenes, Total	58.27	µg/L	2.0	60	0	97.1	83.4	122			

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: **12/10/2009**

Work Order Number **0912211** Received by: **ARS**

Checklist completed by: _____ 12/10/09 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 ☐		Number of preserved bottles checked for pH:
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 ☑	*<2 >12 unless noted below.*
Container/Temp Blank temperature?	**0.2°**	*<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

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)

Accreditation

☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:

☒ Standard ☐ Rush _____

Project Name:

XTO Groundwater

Project #:

Project Manager:

Ashley Ager

Sampler: Devin Hencmann

On Ice: ☒ Yes ☐ No

Sample Temperature: 0.2

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	HEAL No. 091221	BTEX (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,NO3,NO2,PO4,SO4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
12/7/09	1307	Aq	Valdez A #1E MW-6	3	HCl	1	X															
12/7/09	1234	AQ	Valdez A#1E MW-7	3	$HgCl_2$	2	X															
12/7/09	1115	AQ	EJ Johnson MW-5	3	HCl	3	X															
12/7/09	1359	AQ	Bruington GC#1 MW-1	3	HCl	4	X															
12/7/09	1422	AQ	Bruington GC#1 MW-2	2	$HgCl_2$	5	X															
12/7/09	1447	AQ	Bruington GC#1 MW-4	3	HCl	6	X															
12.7.09	1515	AQ	Bruington GC#1 MW-3	3	HCl	7	X															
12.7.09	1540	AQ	Bruington GC#1 MW-5	2	$HgCl_2$	8	X															
12-7-09	1600	AQ	Bruington GC#1 MW-6	3	NONE	9	X															
12.7.09	1630	AQ	Bruington GC#1 MW-7	2	$HgCl_2$	10	X															
12-7-09	1655	AQ	Bruington GC#1 MW-8	3	$HgCl_2$	11	X															

Date	Time	Relinquished by:	Received by:	Date	Time
12/9/09	19:00			12/10/09	10:05
Date:	Time:	Relinquished by:	Received by:	Date	Time

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.

NEW MEXICO ENERGY, MINERALS and
NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON
Governor
Jennifer A. Salisbury
Cabinet Secretary

Lori Wrotenbery
Director
Oil Conservation Division

December 26, 2001

CERTIFIED MAIL
RETURN RECEIPT NO: 5357-8215

Ms. Nina Hutton
Cross Timbers Oil Company
810 Houston St., Suite 2000
Fort Worth, Texas 76102-6298

RE: PIT CLOSURE/GROUND WATER MONITORING REPORTS

Dear Ms. Hutton:

The New Mexico Oil Conservation Division (OCD) has reviewed Cross Timbers Oil Company's (CTOC) May 11, 2000 "CROSS TIMBERS OPERATING COMPANY (CTOC) 2000 ANNUAL GROUNDWATER REPORTS, SAN JUAN COUNTY, NM, PERMANENT CLOSURE REQUESTED" which was submitted on behalf of CTOC by their consultant Blagg Engineering, Inc. This document contains the results of CTOC's investigation, remediation and monitoring of soil and ground water contamination related to the disposal of oilfield wastes in unlined pits at 7 sites in the San Juan Basin and requests closure of the remedial actions.

Below is the OCD's review of the above referenced document:

A. The soil and ground water remedial actions at the sites listed below are satisfactory and the OCD **approves** of the closure of these pit sites. Please be advised that OCD approval does not relieve CTOC of responsibility if remaining contaminants pose a future threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve CTOC of responsibility for compliance with any other federal, state, tribal or local laws and regulations.

1.	McCoy GC C #1 (Blow pit)	Unit A, Sec. 28, T30N, R12W.
2.	Prespentt GC #1 (Blow pit)	Unit O, Sec. 21, T29N, R10W.
3.	Sullivan Frame A#1 (Reserve pit)	Unit D, Sec. 30, T29N, R10W.

B. The site listed below initially had ground water contaminated with benzene, toluene, ethylbenzene and xylene (BTEX) in excess of New Mexico Water Quality Control Commission (WQCC) standards. The report for this site does not contain 4 consecutive rounds of water quality sampling events demonstrating that ground water meets WQCC standards. Therefore,

approval of the closure actions at this site is **denied**. The OCD requires that CTOC continue ground water quality monitoring at these sites. Pursuant to the previously approved ground water management plan, the OCD will reconsider issuing final closure approval after CTOC demonstrates that ground water quality at all monitoring points are below WQCC standards for a minimum of 4 consecutive quarters.

1. Hare GC B #1E (Separator pit) Unit E, Sec. 23, T29N, R11W.

C. The sites listed below were initially found to have ground water contaminated with benzene, toluene, ethylbenzene and xylene (BTEX) in excess of New Mexico Water Quality Control Commission (WQCC) standards. The reports for these sites do not contain 4 consecutive rounds of water quality sampling events demonstrating that ground water meets WQCC standards. While the reports maintain that there may be a discrepancy in some of the prior elevated BTEX sampling results, upon a review of the site data it is not clear whether the discrepancy is the result of laboratory error or biodegradation of dissolved BTEX during the 4 to 5 month time lag between sampling events. The OCD has observed a similar decrease in magnitude of BTEX as a result of biodegradation within similar time frames at other sites. In addition, a review of the reports shows that there is only one other downgradient ground water monitoring well at each site. These wells are laterally off gradient of the direction of ground water flow at the sites and as a result there was no downgradient delineation of the extent of the BTEX plume. Therefore, approval of the closure actions at these sites is **denied**. The OCD requires that CTOC install additional ground water monitoring wells at these sites to delineate the downgradient extent of contamination and continue the site ground water quality monitoring. The OCD will reconsider issuing final closure approval after CTOC demonstrates that the downgradient extent of contamination has been determined and that ground water quality at all monitoring points are below WQCC standards for a minimum of 4 consecutive quarters, pursuant to the previously approved ground water management plan.

1. Jack Frost B #2 (Separator pit) Unit D, Sec. 27, T27N, R10W.
2. E.J. Johnson C#1E (Tank drain pit) Unit C, Sec. 21, T27N, R10W.
3. Stedje GC #1 (Separator pit) Unit F, Sec. 27, T30N, R12W.

If you have any questions, please contact me at (505) 476-3491.

Sincerely,

William C. Olson
Hydrologist
Environmental Bureau

xc: Denny Foust, OCD Aztec District Office
Bill Liess, BLM Farmington District Office
Nelson Velez, Blagg Engineering, Inc.