3R - 104

2007 AGWMR

JAN 2008

XTO ENERGY INC.

ANNUAL GROUNDWATER REPORT

2007

BACA GC A #1A
(F) SECTION 26 – T29N – R10W, NMPM
SAN JUAN COUNTY, NEW MEXICO

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

January 2008

TABLE OF CONTENTS

2007 XTO GROUNDWATER REPORT

BACA GAS COM A #1A

SITE DETAILS

LEGALS - TWN: 29N **RNG:** 10W **SEC:** 26 **UNIT:** F
NMOCD HAZARD RANKING: 50 **LAND TYPE:** FEE

PREVIOUS ACTIVITIES

Excavation: Apr-94 (<70 CY) **Monitoring Wells:** May-96
Additional Monitoring Wells: Aug-06 **Quarterly Sampling Initiated:** Aug-06

SITE MAP

A site map is presented as Figure 1.

SUMMARY TABLES

Summary tables of groundwater analytical results are presented as Tables 1 through 3. Table 1 summarizes the benzene, toluene, ethyl benzene and total xylenes (BTEX) concentrations in groundwater from 1994 to present. Analytical results of general water quality parameters from 1996 and 1999 are summarized in Tables 2 and 3. Copies of the laboratory data sheets and associated quality assurance/quality control data for 2006 and 2007 are presented as Attachment 1.

POTENTIOMETRIC SURFACE DIAGRAMS

Field data collected during site monitoring activities indicates a groundwater gradient that trends towards the northwest. Figures 2 – 5 illustrate the estimated groundwater gradients for 2006 and 2007.

ANNUAL GROUNDWATER REMEDIATION REPORTS

The 2005 annual groundwater report was submitted to New Mexico Oil Conservation Division (NMOCD) in April 2006 proposing quarterly sampling of the groundwater monitoring wells as directed by NMOCD in correspondence dated December 14, 2000 (Attachment 2) and in accordance with the NMOCD approved Groundwater Management Plan.

The 2006 annual groundwater report was submitted to NMOCD in February 2007, proposing continued quarterly sampling of the groundwater monitoring wells until analytical results confirm hydrocarbon constituents are below New Mexico Water Quality Control Commission (NMWQCC) standards for four (4) consecutive quarters.

2007 ACTIVITIES

Quarterly groundwater samples were collected from MW-1, MW-2, MW-3, and MW-4 in 2007 and submitted for laboratory analysis of BTEX. Laboratory results indicate BTEX constituents are below standards or not detectable for four quarters.

GEOLOGIC LOGS AND WELL COMPLETION DIAGRAMS

Bore/Test Hole Reports are presented as Figures 6 - 8 representing drilling that occurred at the site in May 1996.

2007 XTO GROUNDWATER REPORT

DISPOSITION OF GENERATED WASTES

Waste generated (groundwater) during monitoring well sampling and development was placed in the produced water tank located on the well site.

CONCLUSIONS

January 1998 XTO Energy Inc. (XTO) acquired the Baca Gas Com A #1A from Amoco Production Company. XTO understands the initial evaluation of groundwater impact came from samples of groundwater collected from the bottom of the earthen pit in 1994 following excavation of hydrocarbon impacted soil (Attachment 3). Laboratory analysis of the initial samples collected in 2004 indicate elevated levels of dissolved phase BTEX constituents in groundwater, which are included in summary Table 1. In 1996 three groundwater monitoring wells were installed to delineate the extent of hydrocarbon impact to groundwater (Figure 1). Monitoring well numbered MW-2 was installed near the center of the source area, (closed and backfilled earthen blow pit). Monitoring well numbered MW-3 was placed down gradient of MW-2. BTEX constituents were not detected above the laboratory equipment detection limits (0.2 ug/L) in any of the three monitoring wells (Table 1). Sampling was terminated and site closure requests were submitted. Correspondence from the NMOCD, included as Attachment 2, required four (4) consecutive quarters below NMWQCC standards.

Groundwater analytical data from MW-1, MW-2, MW-3 and MW-4 for four (4) consecutive quarters have demonstrated no detectable levels of BTEX constituents and NMWQCC standards have been met. The quarterly sampling has confirmed no rebound of BTEX constituents has occurred, therefore, XTO requests closure of this site.

RECOMMENDATIONS

- XTO requests closure of this site.
- 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

BACA GC A #1A
UNIT F, SEC. 26, T29N, 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)
12-Jun-96	MW #1	4.92	7.79		0.67	6	ND	1
30-Aug-06		6.69	7.7		ND	ND	ND	ND
28-Nov-06		4.39	7.7		ND	ND	ND	ND
19-Feb-07		3.79	7.7		ND	ND	ND	ND
17-May-07		4.34	7.7		ND	ND	ND	ND
12-Jun-96	MW #2	6.97	10.03		ND	ND	ND	ND
30-Aug-06		8.48	9.5		ND	ND	ND	ND
28-Nov-06		6.36	9.5		ND	ND	ND	ND
19-Feb-07		5.75	9.5		ND	ND	ND	ND
17-May-07		6.62	9.5		ND	ND	ND	ND
12-Jun-96	MW #3	6.77	9.24		ND	4	ND	ND
30-Aug-06		8.2	9.15		ND	ND	ND	ND
28-Nov-06		7.38	9.15		ND	ND	ND	ND
19-Feb-07		5.95	9.15		ND	ND	ND	ND
17-May-07		6.73	9.15		ND	ND	ND	ND
30-Aug-06	MW #4	8.34	15.07		ND	ND	ND	ND
28-Nov-06		6.2	15.07		ND	ND	ND	ND
19-Feb-07		5.59	15.07		ND	ND	ND	ND
17-May-07		6.55	15.07		ND	ND	ND	ND
NMWQCC GROUNDWATER STANDARDS					10	750	750	620

NOTE: MW-4 installed 08/06

TABLE 2

XTO ENERGY INC. GROUNDWATER LAB RESULTS

BACA GC A #1A
UNIT F, SEC. 26, T29N, R10W

Sample Date: May 25, 1999

PARAMETERS	MW #1	MW #2	MW #3	UNITS
LAB Ph	6.88	7.29	7.19	s.u.
LAB CONDUCTIVITY @ 25 C	10,700	8,800	6,470	umhos/cm
TOTAL DISSOLVED SOLIDS @ 180 C	5,350	4,380	3,230	mg/L
TOTAL DISSOLVED SOLIDS (Calc)	5,317	4,351	3,209	mg/L
SODIUM ABSORPTION RATIO	9.9	7.9	8.7	ratio
TOTAL ALKALINITY AS CaCO3	570	352	326	mg/L
TOTAL HARDNESS AS CaCO3	1,795	975	934	mg/L
BICARBONATE AS HCO3	570	352	326	mg/L
CARBONATE AS CO3	< 1	< 1	< 1	mg/L
HYDROXIDE AS OH	< 1	< 1	< 1	mg/L
NITRATE NITORGEN	0.2	0.4	0.2	mg/L
NITRITE NITROGEN	0.003	0.025	< 0.001	mg/L
CHLORIDE	11.5	58.8	54	mg/L
FLUORIDE	630	1.8	1.55	mg/L
PHOSPHATE	< 0.1	23.2	< 0.1	mg/L
SULFATE	3,300	2,710	1,920	mg/L
IRON	1.15	0.15	0.27	mg/L
CALCIUM	552	520	328	mg/L
MAGNESIUM	101	79.4	27.8	mg/L
POTASSIUM	40.0	14.0	70.0	mg/L
SODIUM	960	730	310	mg/L
CATION/ANION DIFFERENCE	0.09	0.14	0.12	%

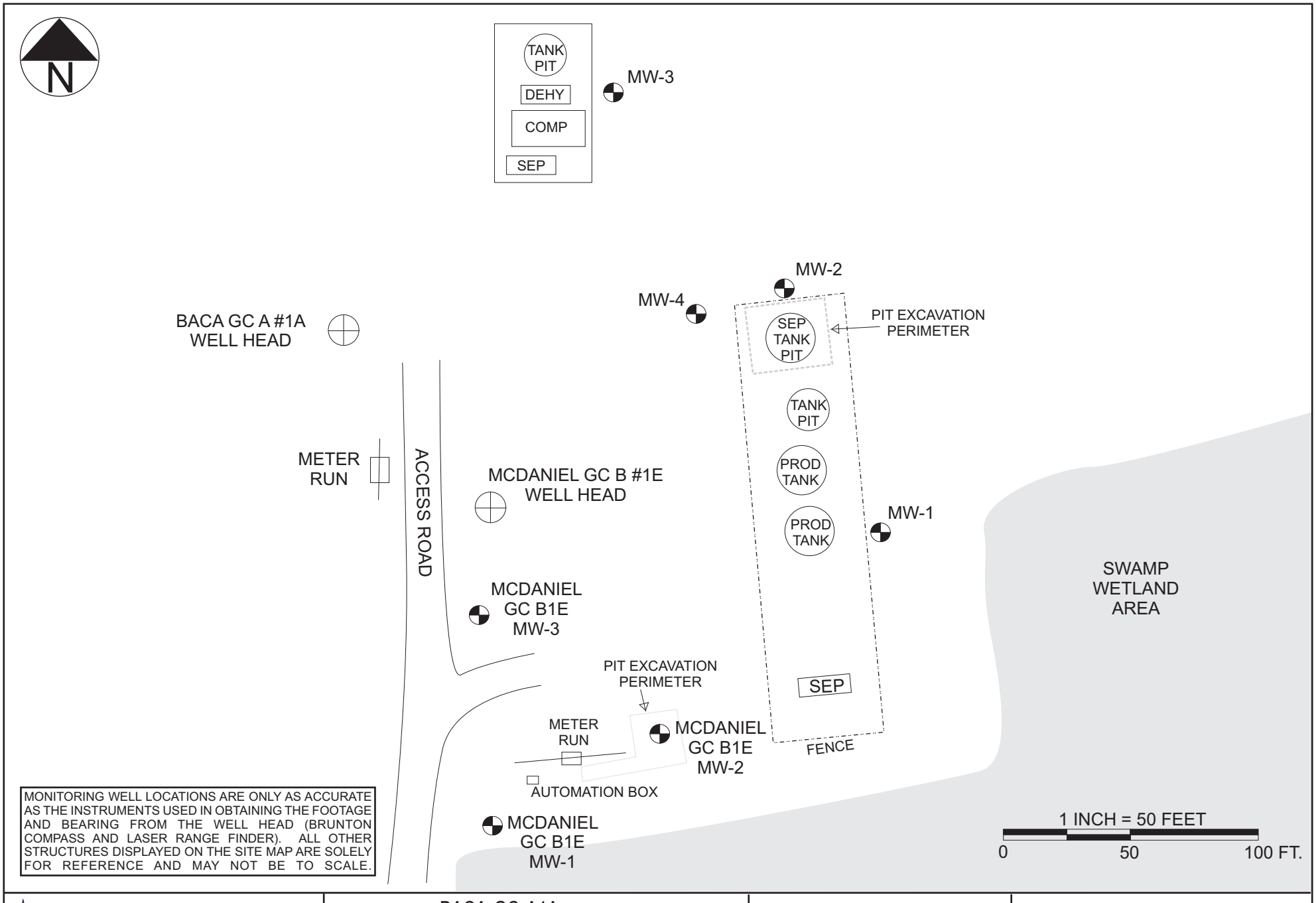
TABLE 3

XTO ENERGY INC. GROUNDWATER LAB RESULTS

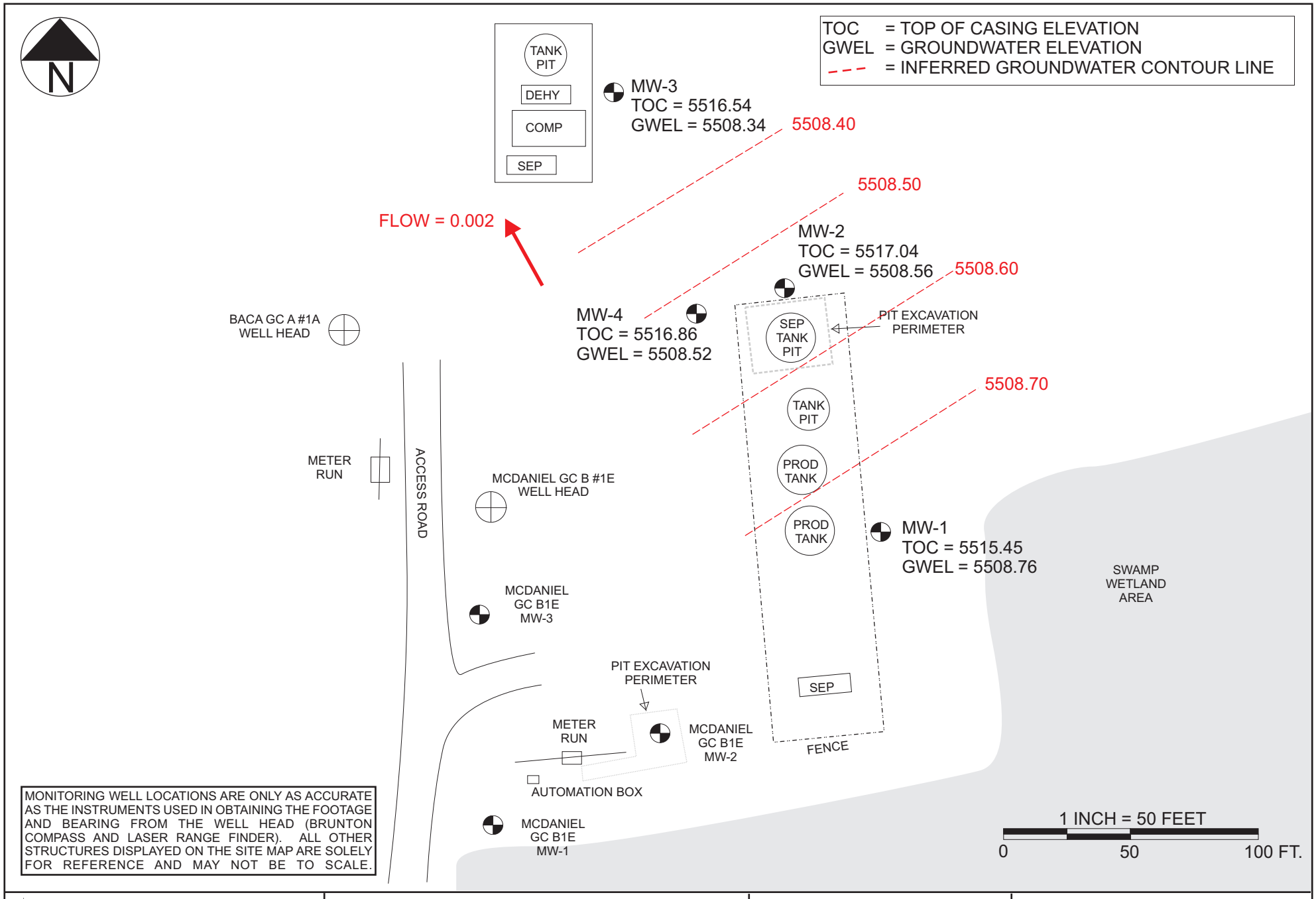
BACA GC A #1A
UNIT F, SEC. 26, T29N, R10W

Sample Date: June 12, 1996

PARAMETERS	MW #1	MW #2	MW #3	UNITS
LAB Ph	7.3	7.5	7.2	s.u.
LAB CONDUCTIVITY @ 25 C	8,210	3,720	5,670	umhos/cm
TOTAL DISSOLVED SOLIDS @ 180 C	8,210	2,860	4,710	mg/L
TOTAL DISSOLVED SOLIDS (Calc)	7,860	2,560	4,130	mg/L
SODIUM ABSORPTION RATIO				ratio
TOTAL ALKALINITY AS CaCO3	764	239	358	mg/L
TOTAL HARDNESS AS CaCO3	4,620	900	1,460	mg/L
BICARBONATE AS HCO3	764	239	358	mg/L
CARBONATE AS CO3	NA	NA	NA	mg/L
HYDROXIDE AS OH	NA	NA	NA	mg/L
NITRATE NITORGEN	NA	NA	NA	mg/L
NITRITE NITROGEN	NA	NA	NA	mg/L
CHLORIDE	40	17.5	342	mg/L
FLUORIDE				mg/L
PHOSPHATE				mg/L
SULFATE	4,960	1,600	2,250	mg/L
IRON				mg/L
CALCIUM	497	311	498	mg/L
MAGNESIUM	91.6	30.2	53.2	mg/L
POTASSIUM	17.0	36.0	12.0	mg/L
SODIUM	1,800	420	760	mg/L
CATION/ANION DIFFERENCE	3.75	1.87	0.8	%

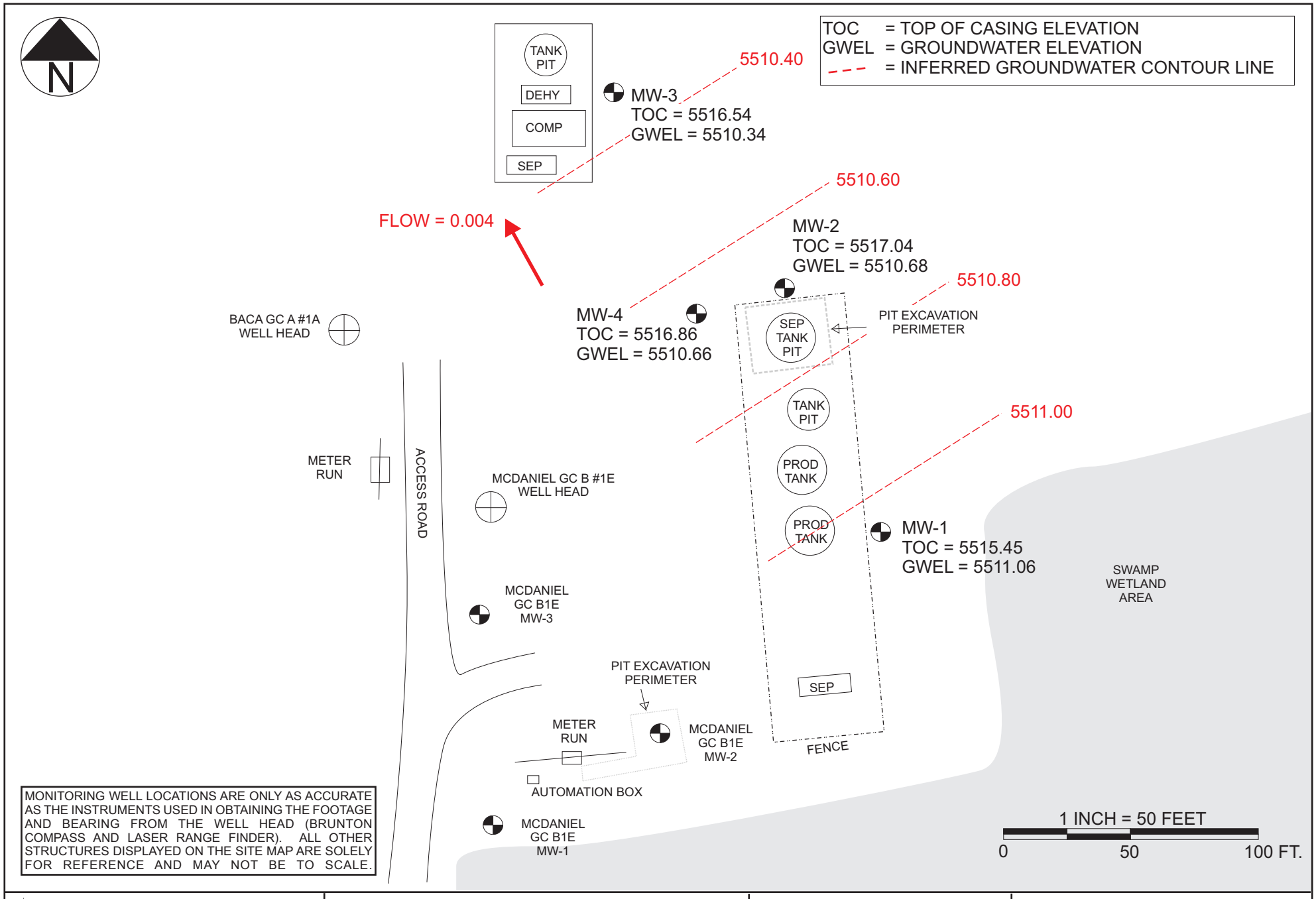


Lodestar Services, Inc PO Box 3861 Farmington, NM 87499	BACA GC A1A SE/4 NW/4 SEC. 26, T29N, R10W SAN JUAN COUNTY, NEW MEXICO	PROJECT: XTO GROUND WATER DRAWN BY: ALA REVISED: 01/24/07	FIGURE 1 SITE MAP



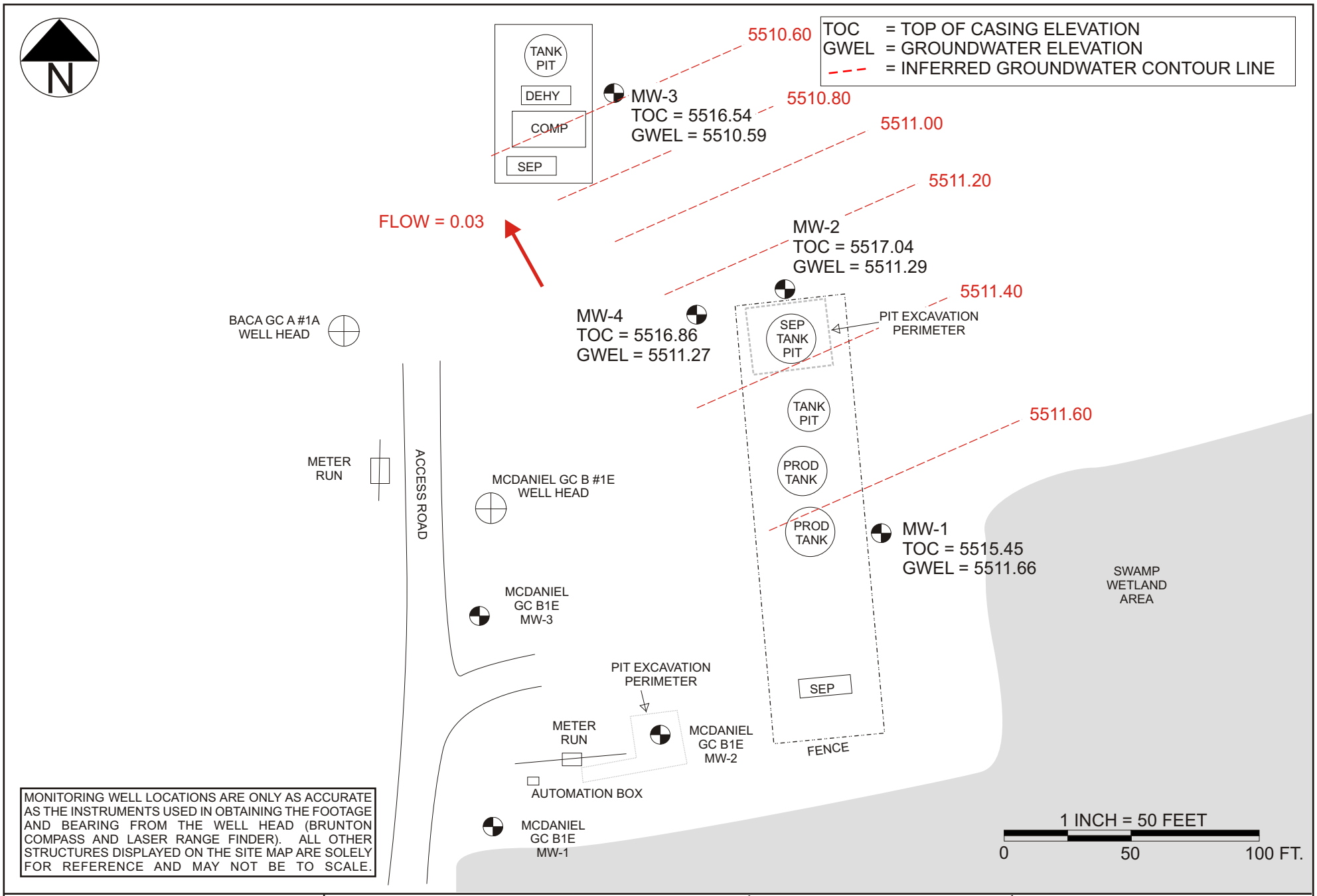
MONITORING WELL LOCATIONS ARE ONLY AS ACCURATE AS THE INSTRUMENTS USED IN OBTAINING THE FOOTAGE AND BEARING FROM THE WELL HEAD (BRUNTON COMPASS AND LASER RANGE FINDER). ALL OTHER STRUCTURES DISPLAYED ON THE SITE MAP ARE SOLELY FOR REFERENCE AND MAY NOT BE TO SCALE.

Lodestar Services, Inc PO Box 3861 Farmington, NM 87499	BACA GC A1A SE/4 NW/4 SEC. 26, T29N, R10W SAN JUAN COUNTY, NEW MEXICO	PROJECT: XTO GROUND WATER DRAWN BY: ALA REVISED: 01/05/07	GROUNDWATER GRADIENT MAP 08/29/2006 FIGURE 2



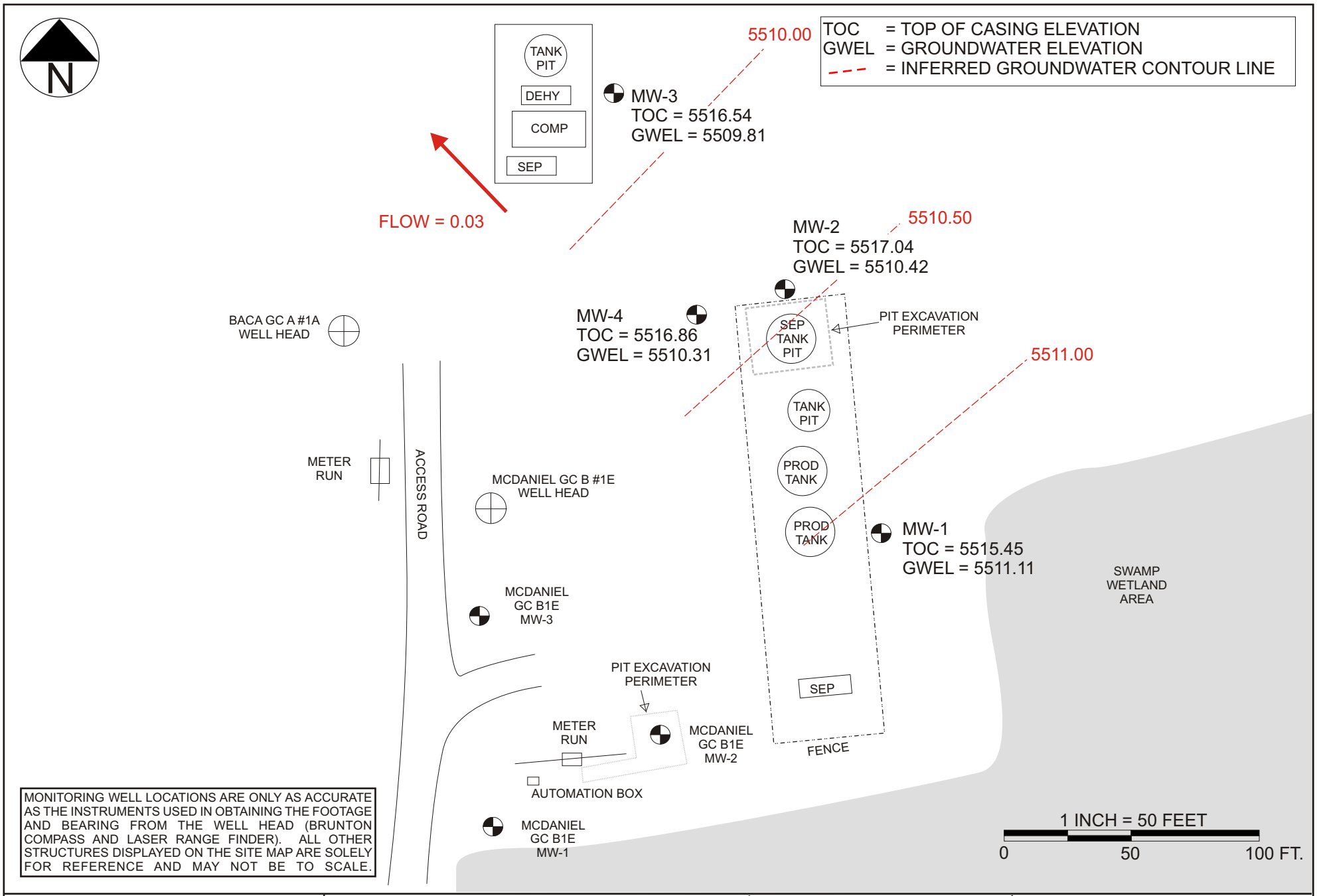
MONITORING WELL LOCATIONS ARE ONLY AS ACCURATE AS THE INSTRUMENTS USED IN OBTAINING THE FOOTAGE AND BEARING FROM THE WELL HEAD (BRUNTON COMPASS AND LASER RANGE FINDER). ALL OTHER STRUCTURES DISPLAYED ON THE SITE MAP ARE SOLELY FOR REFERENCE AND MAY NOT BE TO SCALE.

Lodestar Services, Inc PO Box 3861 Farmington, NM 87499	BACA GC A1A SE/4 NW/4 SEC. 26, T29N, R10W SAN JUAN COUNTY, NEW MEXICO	PROJECT: XTO GROUND WATER DRAWN BY: ALA REVISED: 01/05/07	GROUNDWATER GRADIENT MAP 11/28/2006 FIGURE 3



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	BACA GC A1A SE/4 NW/4 SEC. 26, T29N, R10W SAN JUAN COUNTY, NEW MEXICO	PROJECT: XTO GROUND WATER DRAWN BY: ALA REVISED: 02/20/07	GROUNDWATER GRADIENT MAP 02/19/2007 FIGURE 4



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	BACA GC A1A SE/4 NW/4 SEC. 26, T29N, R10W SAN JUAN COUNTY, NEW MEXICO	PROJECT: XTO GROUND WATER DRAWN BY: ALA REVISED: 05/21/07	GROUNDWATER GRADIENT MAP 05/17/2007 FIGURE 5

FIGURE 6

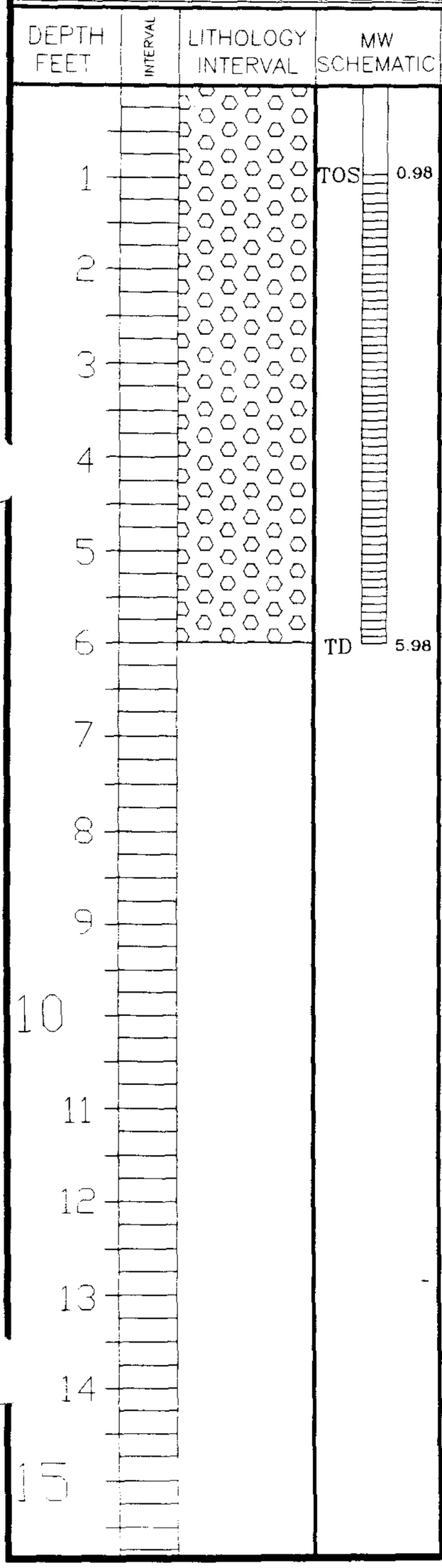
BLAGG ENGINEERING, Inc.

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

BORE / TEST HOLE REPORT

LOCATION NAME:	BACA GC A # 1A
CLIENT:	AMOCO PRODUCTION COMPANY
CONTRACTOR:	BLAGG ENGINEERING, INC. / PAUL & SONS
EQUIPMENT USED:	BACKHOE
BORING LOCATION:	S73E, 225 FEET FROM WELL HEAD.

BORING #.....	BH - 1
MW #.....	1
PAGE #.....	1
DATE STARTED	5/17/96
DATE FINISHED	5/17/96
OPERATOR.....	BM
PREPARED BY	NJV



FIELD CLASSIFICATION AND REMARKS

TOP OF CASING APPROX. 1.75 FT. ABOVE GROUND SURFACE.

DARK YELLOWISH BROWN SAND AND GRAVEL CONTINUOUS THROUGHOUT ENTIRE BORING, NON COHESIVE, SLIGHTLY MOIST TO SATURATED (AT GROUNDWATER), FIRM, NO APPARENT HYDROCARBON ODOR OBSERVED (0.0 - 5.98 FT. INTERVAL).

▼ GW DEPTH ON 6/12/96 = 3.17 FT. (APPROX.) FROM GROUND SURFACE.

NOTES:
- SAND & GRAVEL (VARYING SIZES).
- TOS - TOP OF SCREEN FROM GROUND SURFACE.
- TD - TOTAL DEPTH OF MONITOR WELL FROM GROUND SURFACE.
- GW - GROUND WATER.

DRAWING: BACA-1 DATE: 2/25/97 DWN BY: NJV

FIGURE 7

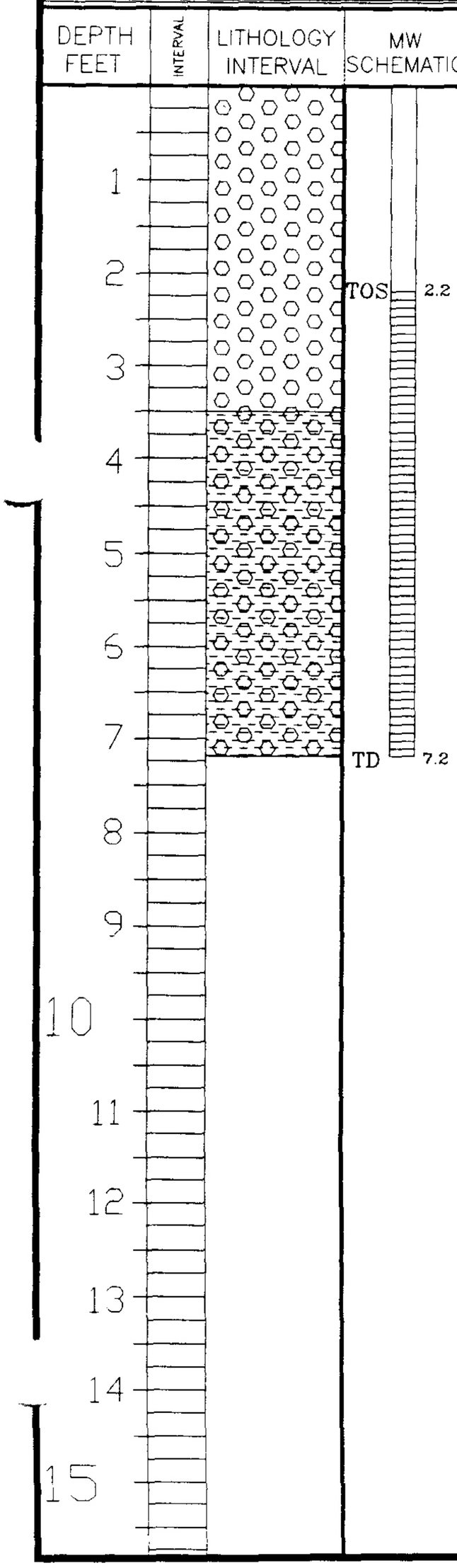
BLAGG ENGINEERING, Inc.

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

BORE / TEST HOLE REPORT

LOCATION NAME:	BACA GC A # 1A
CLIENT:	AMOCO PRODUCTION COMPANY
CONTRACTOR:	BLAGG ENGINEERING, INC. / PAUL & SONS
EQUIPMENT USED:	BACKHOE
BORING LOCATION:	S86E, 174 FEET FROM WELL HEAD.

BORING #.....	BH - 2
MW #.....	2
PAGE #.....	2
DATE STARTED	5/17/96
DATE FINISHED	5/17/96
OPERATOR.....	BM
PREPARED BY	NJV



FIELD CLASSIFICATION AND REMARKS

TOP OF CASING APPROX. 2.80 FT. ABOVE GROUND SURFACE.

DARK YELLOWISH BROWN SAND AND GRAVEL, NON COHESIVE, SLIGHTLY MOIST, FIRM, NO APPARENT HYDROCARBON ODOR OBSERVED (0.0 - 3.5 FT. INTERVAL).

▼ GW DEPTH ON 6/12/96 = 4.17 FT. (APPROX.) FROM GROUND SURFACE.

DARK GRAY SAND AND GRAVEL, NON COHESIVE, SATURATED, FIRM TO LOOSE, NO APPARENT HYDROCARBON ODOR OBSERVED (3.5 - 7.2 FT. INTERVAL).

NOTES:
- SAND & GRAVEL (VARYING SIZES).
- SAND & GRAVEL (VARYING SIZES) DISCOLORED.
- TOS – TOP OF SCREEN FROM GROUND SURFACE.
- TD – TOTAL DEPTH OF MONITOR WELL FROM GROUND SURFACE.
- GW – GROUND WATER.

DRAWING: BACA-2	DATE: 2/25/97	DWN BY: NJV

FIGURE 8

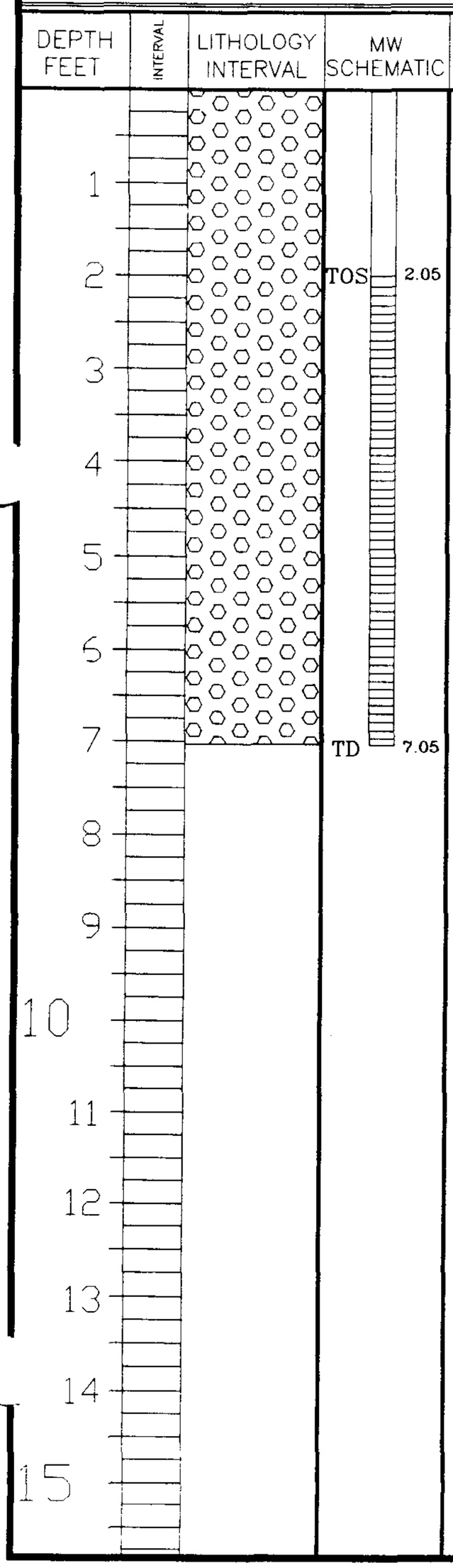
BLAGG ENGINEERING, Inc.

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

BORE / TEST HOLE REPORT

LOCATION NAME:	BACA GC A # 1A
CLIENT:	AMOCO PRODUCTION COMPANY
CONTRACTOR:	BLAGG ENGINEERING, INC. / PAUL & SONS
EQUIPMENT USED:	BACKHOE
BORING LOCATION:	N53E, 126 FEET FROM WELL HEAD.

BORING #.....	BH - 3
MW #.....	3
PAGE #.....	3
DATE STARTED	5/17/96
DATE FINISHED	5/17/96
OPERATOR.....	BM
PREPARED BY	NJV



FIELD CLASSIFICATION AND REMARKS

TOP OF CASING APPROX. 2.15 FT. ABOVE GROUND SURFACE.

DARK YELLOWISH BROWN SAND AND GRAVEL CONTINUOUS THROUGHOUT ENTIRE BORING, NON COHESIVE, SLIGHTLY MOIST TO SATURATED (AT GROUNDWATER), FIRM, NO APPARENT HYDROCARBON ODOR OBSERVED (0.0 – 7.05 FT. INTERVAL).

▼ GW DEPTH ON 6/12/96 = 4.62 FT. (APPROX.) FROM GROUND SURFACE.

NOTES:
- SAND & GRAVEL (VARYING SIZES).
- TOS – TOP OF SCREEN FROM GROUND SURFACE.
- TD – TOTAL DEPTH OF MONITOR WELL FROM GROUND SURFACE.
- GW – GROUND WATER.

DRAWING: BACA-3	DATE: 2/25/97	DWN BY: NJV

Hall Environmental Analysis Laboratory, Inc.

Date: *07-Sep-06*

CLIENT: XTO Energy
Project: Ground water
Lab Order: 0609024

Lab ID: 0609024-01 **Collection Date:** 8/30/2006 7:45:00 AM
Client Sample ID: Baca Gas Com AIA MW-2 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	1.0		µg/L	1	9/5/2006 12:28:41 PM
Toluene	ND	1.0		µg/L	1	9/5/2006 12:28:41 PM
Ethylbenzene	ND	1.0		µg/L	1	9/5/2006 12:28:41 PM
Xylenes, Total	ND	3.0		µg/L	1	9/5/2006 12:28:41 PM
Surr: 4-Bromofluorobenzene	97.0	72.2-125		%REC	1	9/5/2006 12:28:41 PM

Lab ID: 0609024-02 **Collection Date:** 8/30/2006 7:48:00 AM
Client Sample ID: Baca Gas Com AIA 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	9/5/2006 11:59:47 AM
Toluene	ND	1.0		µg/L	1	9/5/2006 11:59:47 AM
Ethylbenzene	ND	1.0		µg/L	1	9/5/2006 11:59:47 AM
Xylenes, Total	ND	3.0		µg/L	1	9/5/2006 11:59:47 AM
Surr: 4-Bromofluorobenzene	99.0	72.2-125		%REC	1	9/5/2006 11:59:47 AM

Lab ID: 0609024-03 **Collection Date:** 8/30/2006 7:52:00 AM
Client Sample ID: Baca Gas Com AIA 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	9/5/2006 12:57:38 PM
Toluene	ND	1.0		µg/L	1	9/5/2006 12:57:38 PM
Ethylbenzene	ND	1.0		µg/L	1	9/5/2006 12:57:38 PM
Xylenes, Total	ND	3.0		µg/L	1	9/5/2006 12:57:38 PM
Surr: 4-Bromofluorobenzene	97.9	72.2-125		%REC	1	9/5/2006 12:57:38 PM

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

Date: *07-Sep-06*

CLIENT: XTO Energy
Project: Ground water

Lab Order: 0609024

Lab ID: 0609024-04
Collection Date: 8/30/2006 4:57:00 PM
Client Sample ID: Baca Gas Com AIA MW-4
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	1.0		µg/L	1	9/6/2006 4:26:52 PM
Toluene	ND	1.0		µg/L	1	9/6/2006 4:26:52 PM
Ethylbenzene	ND	1.0		µg/L	1	9/6/2006 4:26:52 PM
Xylenes, Total	ND	3.0		µg/L	1	9/6/2006 4:26:52 PM
Surr: 4-Bromofluorobenzene	97.6	72.2-125		%REC	1	9/6/2006 4:26:52 PM

Qualifiers:

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

QA/QC SUMMARY REPORT

Client: XTO Energy
Project: Ground water **Work Order:** 0609024

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8021									
Sample ID: 5ML REAGENT BLA		*MBLK*			Batch ID:	**R20558**	Analysis Date:		9/5/2006 9:05:41 AM
Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	3.0						
Sample ID: 5ML REAGENT BLA		*MBLK*			Batch ID:	**R20581**	Analysis Date:		9/6/2006 11:07:46 AM
Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	3.0						
Sample ID: 100NG BTEX CCV		*LCS*			Batch ID:	**R20558**	Analysis Date:		9/5/2006 9:34:46 AM
Benzene	18.47	µg/L	1.0	92.4	85	115			
Toluene	18.11	µg/L	1.0	90.6	85	118			
Ethylbenzene	18.79	µg/L	1.0	94.0	85	116			
Xylenes, Total	53.77	µg/L	3.0	88.1	85	119			
Sample ID: 100NG BTEX LCS		*LCS*			Batch ID:	**R20581**	Analysis Date:		9/6/2006 10:45:52 PM
Benzene	21.00	µg/L	1.0	105	85	115			
Toluene	21.78	µg/L	1.0	109	85	118			
Ethylbenzene	23.42	µg/L	1.0	117	85	116			S
Xylenes, Total	67.49	µg/L	3.0	111	85	119			
Sample ID: 100NG BTEX LCSD		*LCSD*			Batch ID:	**R20581**	Analysis Date:		9/6/2006 11:14:40 PM
Benzene	20.84	µg/L	1.0	104	85	115	0.746	27	
Toluene	20.71	µg/L	1.0	104	85	118	5.06	19	
Ethylbenzene	21.79	µg/L	1.0	109	85	116	7.20	10	
Xylenes, Total	64.96	µg/L	3.0	107	85	119	3.83	13	

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

Date: *05-Dec-06*

CLIENT: XTO Energy
Project: Ground Water

Lab Order: 0611364

Lab ID: 0611364-04
Client Sample ID: ~~Garcia Gas Com B1 MW-2~~

Collection Date: 11/28/2006 8:50:00 AM
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	1.0		µg/L	1	11/30/2006 4:27:26 PM
Toluene	2.1	1.0		µg/L	1	11/30/2006 4:27:26 PM
Ethylbenzene	4.8	1.0		µg/L	1	11/30/2006 4:27:26 PM
Xylenes, Total	190	3.0		µg/L	1	11/30/2006 4:27:26 PM
Surr: 4-Bromofluorobenzene	84.3	70.2-105		%REC	1	11/30/2006 4:27:26 PM

Lab ID: 0611364-05
Client Sample ID: Baca Gas Com A1A MW-3

Collection Date: 11/28/2006 10:10:00 AM
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	1.0		µg/L	1	11/30/2006 4:57:29 PM
Toluene	ND	1.0		µg/L	1	11/30/2006 4:57:29 PM
Ethylbenzene	ND	1.0		µg/L	1	11/30/2006 4:57:29 PM
Xylenes, Total	ND	3.0		µg/L	1	11/30/2006 4:57:29 PM
Surr: 4-Bromofluorobenzene	81.8	70.2-105		%REC	1	11/30/2006 4:57:29 PM

Lab ID: 0611364-06
Client Sample ID: Baca Gas Com A1A MW-2

Collection Date: 11/28/2006 10:06:00 AM
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	1.0		µg/L	1	11/30/2006 5:27:26 PM
Toluene	ND	1.0		µg/L	1	11/30/2006 5:27:26 PM
Ethylbenzene	ND	1.0		µg/L	1	11/30/2006 5:27:26 PM
Xylenes, Total	ND	3.0		µg/L	1	11/30/2006 5:27:26 PM
Surr: 4-Bromofluorobenzene	81.9	70.2-105		%REC	1	11/30/2006 5:27:26 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

Hall Environmental Analysis Laboratory, Inc.

Date: *05-Dec-06*

CLIENT: XTO Energy
Project: Ground Water

Lab Order: 0611364

Lab ID: 0611364-07 **Collection Date:** 11/28/2006 10:55:00 AM
Client Sample ID: Baca Gas Com A1A 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	12/1/2006 8:58:48 AM
Toluene	ND	1.0		µg/L	1	12/1/2006 8:58:48 AM
Ethylbenzene	ND	1.0		µg/L	1	12/1/2006 8:58:48 AM
Xylenes, Total	ND	3.0		µg/L	1	12/1/2006 8:58:48 AM
Surr: 4-Bromofluorobenzene	83.7	70.2-105		%REC	1	12/1/2006 8:58:48 AM

Lab ID: 0611364-08 **Collection Date:** 11/28/2006 10:49:00 AM
Client Sample ID: Baca Gas Com A1A MW-4 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	1.0		µg/L	1	12/1/2006 9:30:34 AM
Toluene	ND	1.0		µg/L	1	12/1/2006 9:30:34 AM
Ethylbenzene	ND	1.0		µg/L	1	12/1/2006 9:30:34 AM
Xylenes, Total	ND	3.0		µg/L	1	12/1/2006 9:30:34 AM
Surr: 4-Bromofluorobenzene	82.3	70.2-105		%REC	1	12/1/2006 9:30:34 AM

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:** 0611364

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8021									
Sample ID: 5ML RB		*MBLK*			Batch ID: R21633		Analysis Date: 11/30/2006 8:50:27 AM		
Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	3.0						
Sample ID: 125NG BTEX CCV-B		*LCS*			Batch ID: R21633		Analysis Date: 12/1/2006 8:28:43 AM		
Benzene	24.67	µg/L	1.0	98.7	85.9	113			
Toluene	24.24	µg/L	1.0	97.0	86.4	113			
Ethylbenzene	23.65	µg/L	1.0	94.6	83.5	118			
Xylenes, Total	71.15	µg/L	3.0	94.9	83.4	122			

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

Date: *26-Feb-07*

CLIENT: XTO Energy
Project: Ground Water
Lab Order: 0702229

Lab ID: 0702229-01 **Collection Date:** 2/19/2007 9:35:00 AM
Client Sample ID: Baca GC AIA MW-2 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	2/22/2007 9:54:49 AM
Benzene	ND	1.0		µg/L	1	2/22/2007 9:54:49 AM
Toluene	ND	1.0		µg/L	1	2/22/2007 9:54:49 AM
Ethylbenzene	ND	1.0		µg/L	1	2/22/2007 9:54:49 AM
Xylenes, Total	ND	2.0		µg/L	1	2/22/2007 9:54:49 AM
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	2/22/2007 9:54:49 AM
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	2/22/2007 9:54:49 AM
Surr: 4-Bromofluorobenzene	85.0	70.2-105		%REC	1	2/22/2007 9:54:49 AM

Lab ID: 0702229-02 **Collection Date:** 2/19/2007 9:52:00 AM
Client Sample ID: Baca GC AIA MW-1 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	2/22/2007 10:24:59 AM
Benzene	ND	1.0		µg/L	1	2/22/2007 10:24:59 AM
Toluene	ND	1.0		µg/L	1	2/22/2007 10:24:59 AM
Ethylbenzene	ND	1.0		µg/L	1	2/22/2007 10:24:59 AM
Xylenes, Total	ND	2.0		µg/L	1	2/22/2007 10:24:59 AM
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	2/22/2007 10:24:59 AM
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	2/22/2007 10:24:59 AM
Surr: 4-Bromofluorobenzene	88.4	70.2-105		%REC	1	2/22/2007 10:24:59 AM

Lab ID: 0702229-03 **Collection Date:** 2/19/2007 10:05:00 AM
Client Sample ID: Baca GC AIA MW-3 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	2/22/2007 10:55:10 AM
Benzene	ND	1.0		µg/L	1	2/22/2007 10:55:10 AM
Toluene	ND	1.0		µg/L	1	2/22/2007 10:55:10 AM
Ethylbenzene	ND	1.0		µg/L	1	2/22/2007 10:55:10 AM
Xylenes, Total	ND	2.0		µg/L	1	2/22/2007 10:55:10 AM
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	2/22/2007 10:55:10 AM
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	2/22/2007 10:55:10 AM
Surr: 4-Bromofluorobenzene	87.4	70.2-105		%REC	1	2/22/2007 10:55:10 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		

CLIENT: XTO Energy **Lab Order:** 0702229
Project: Ground Water

Lab ID: 0702229-04 **Collection Date:** 2/19/2007 10:54:00 AM
Client Sample ID: Baca GC AIA MW-4 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	2/22/2007 11:25:14 AM
Benzene	ND	1.0		µg/L	1	2/22/2007 11:25:14 AM
Toluene	ND	1.0		µg/L	1	2/22/2007 11:25:14 AM
Ethylbenzene	ND	1.0		µg/L	1	2/22/2007 11:25:14 AM
Xylenes, Total	ND	2.0		µg/L	1	2/22/2007 11:25:14 AM
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	2/22/2007 11:25:14 AM
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	2/22/2007 11:25:14 AM
Surr: 4-Bromofluorobenzene	85.8	70.2-105		%REC	1	2/22/2007 11:25:14 AM

Lab ID: 0702229-05 **Collection Date:** 2/19/2007 11:24:00 AM
Client Sample ID: ~~Abrams JI MW-10~~ **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	2/22/2007 11:55:15 AM
Benzene	ND	1.0		µg/L	1	2/22/2007 11:55:15 AM
Toluene	ND	1.0		µg/L	1	2/22/2007 11:55:15 AM
Ethylbenzene	ND	1.0		µg/L	1	2/22/2007 11:55:15 AM
Xylenes, Total	ND	2.0		µg/L	1	2/22/2007 11:55:15 AM
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	2/22/2007 11:55:15 AM
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	2/22/2007 11:55:15 AM
Surr: 4-Bromofluorobenzene	87.0	70.2-105		%REC	1	2/22/2007 11:55:15 AM

Lab ID: 0702229-06 **Collection Date:** 2/19/2007 11:36:00 AM
Client Sample ID: ~~Abrams JI MW-11~~ **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	2/22/2007 12:25:21 PM
Benzene	ND	1.0		µg/L	1	2/22/2007 12:25:21 PM
Toluene	ND	1.0		µg/L	1	2/22/2007 12:25:21 PM
Ethylbenzene	ND	1.0		µg/L	1	2/22/2007 12:25:21 PM
Xylenes, Total	ND	2.0		µg/L	1	2/22/2007 12:25:21 PM
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	2/22/2007 12:25:21 PM
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	2/22/2007 12:25:21 PM
Surr: 4-Bromofluorobenzene	88.6	70.2-105		%REC	1	2/22/2007 12:25:21 PM

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:** 0702229

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8021									
Sample ID: 0702229-10A MSD		*MSD*			Batch ID: **R22570**		Analysis Date:	2/22/2007 3:25:51 PM	
Methyl tert-butyl ether (MTBE)	19.30	µg/L	2.5	96.5	51.2	138	0.897	28	
Benzene	19.64	µg/L	1.0	98.2	85.9	113	2.69	27	
Toluene	19.77	µg/L	1.0	98.8	86.4	113	1.36	19	
Ethylbenzene	19.78	µg/L	1.0	98.9	83.5	118	2.27	10	
Xylenes, Total	59.88	µg/L	2.0	99.8	83.4	122	2.13	13	
1,2,4-Trimethylbenzene	19.41	µg/L	1.0	97.1	83.5	115	2.48	21	
1,3,5-Trimethylbenzene	19.43	µg/L	1.0	97.2	85.2	113	2.27	10	
Sample ID: 5ML REAGENT BLA		*MBLK*			Batch ID: **R22570**		Analysis Date:	2/22/2007 8:13:34 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 REAGENT BLA		*MBLK*			Batch ID: **R22594**		Analysis Date:	2/23/2007 8:08:20 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: **R22570**		Analysis Date:	2/22/2007 3:55:54 PM	
Methyl tert-butyl ether (MTBE)	19.74	µg/L	2.5	98.7	51.2	138			
Benzene	20.24	µg/L	1.0	101	85.9	113			
Toluene	20.28	µg/L	1.0	101	86.4	113			
Ethylbenzene	20.44	µg/L	1.0	102	83.5	118			
Xylenes, Total	61.89	µg/L	2.0	103	83.4	122			
1,2,4-Trimethylbenzene	20.52	µg/L	1.0	103	83.5	115			
1,3,5-Trimethylbenzene	20.33	µg/L	1.0	102	85.2	113			
Sample ID: 100NG BTEX LCS		*LCS*			Batch ID: **R22594**		Analysis Date:	2/23/2007 8:14:12 PM	
Methyl tert-butyl ether (MTBE)	17.63	µg/L	2.5	88.2	51.2	138			
Benzene	20.52	µg/L	1.0	103	85.9	113			
Toluene	20.30	µg/L	1.0	102	86.4	113			
Ethylbenzene	20.25	µg/L	1.0	101	83.5	118			
Xylenes, Total	61.56	µg/L	2.0	103	83.4	122			
1,2,4-Trimethylbenzene	20.17	µg/L	1.0	101	83.5	115			
1,3,5-Trimethylbenzene	20.03	µg/L	1.0	100	85.2	113			
Sample ID: 0702229-10A MS		*MS*			Batch ID: **R22570**		Analysis Date:	2/22/2007 2:55:46 PM	
Methyl tert-butyl ether (MTBE)	19.48	µg/L	2.5	97.4	51.2	138			
Benzene	20.17	µg/L	1.0	101	85.9	113			
Toluene	20.04	µg/L	1.0	100	86.4	113			

Qualifiers:

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

QA/QC SUMMARY REPORT

Client: XTO Energy
Project: Ground Water **Work Order:** 0702229

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8021									
Sample ID: 0702229-10A MS		*MS*			Batch ID: **R22570**		Analysis Date:	2/22/2007 2:55:46 PM	
Ethylbenzene	20.24	µg/L	1.0	101	83.5	118			
Xylenes, Total	61.17	µg/L	2.0	102	83.4	122			
1,2,4-Trimethylbenzene	19.90	µg/L	1.0	99.5	83.5	115			
1,3,5-Trimethylbenzene	19.88	µg/L	1.0	99.4	85.2	113			

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

Date: *29-May-07*

CLIENT: XTO Energy
Project: Ground Water

Lab Order: 0705289

Lab ID: 0705289-07 **Collection Date:** 5/17/2007 2:10:00 PM
Client Sample ID: Baca GCA #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	5/24/2007 12:37:28 AM
Toluene	ND	1.0		µg/L	1	5/24/2007 12:37:28 AM
Ethylbenzene	ND	1.0		µg/L	1	5/24/2007 12:37:28 AM
Xylenes, Total	ND	2.0		µg/L	1	5/24/2007 12:37:28 AM
Surr: 4-Bromofluorobenzene	85.2	70.2-105		%REC	1	5/24/2007 12:37:28 AM

Lab ID: 0705289-08 **Collection Date:** 5/17/2007 2:14:00 PM
Client Sample ID: Baca GCA #1A MW-2 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	1.0		µg/L	1	5/24/2007 1:07:31 AM
Toluene	ND	1.0		µg/L	1	5/24/2007 1:07:31 AM
Ethylbenzene	ND	1.0		µg/L	1	5/24/2007 1:07:31 AM
Xylenes, Total	ND	2.0		µg/L	1	5/24/2007 1:07:31 AM
Surr: 4-Bromofluorobenzene	86.5	70.2-105		%REC	1	5/24/2007 1:07:31 AM

Lab ID: 0705289-09 **Collection Date:** 5/17/2007 2:22:00 PM
Client Sample ID: Baca GCA #1A 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	5/24/2007 1:37:30 AM
Toluene	ND	1.0		µg/L	1	5/24/2007 1:37:30 AM
Ethylbenzene	ND	1.0		µg/L	1	5/24/2007 1:37:30 AM
Xylenes, Total	ND	2.0		µg/L	1	5/24/2007 1:37:30 AM
Surr: 4-Bromofluorobenzene	87.7	70.2-105		%REC	1	5/24/2007 1:37:30 AM

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

Hall Environmental Analysis Laboratory, Inc.

Date: *29-May-07*

CLIENT: XTO Energy
Project: Ground Water
Lab Order: 0705289

Lab ID: 0705289-10 **Collection Date:** 5/17/2007 2:42:00 PM
Client Sample ID: Baca GCA #1A MW-4 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	1.0		µg/L	1	5/24/2007 2:07:31 AM
Toluene	ND	1.0		µg/L	1	5/24/2007 2:07:31 AM
Ethylbenzene	ND	1.0		µg/L	1	5/24/2007 2:07:31 AM
Xylenes, Total	ND	2.0		µg/L	1	5/24/2007 2:07:31 AM
Surr: 4-Bromofluorobenzene	85.1	70.2-105		%REC	1	5/24/2007 2:07:31 AM

Lab ID: 0705289-11 **Collection Date:** 5/17/2007 3:13:00 PM
Client Sample ID: ~~McCoy GCD #1E MW-2~~ **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	1.0		µg/L	1	5/24/2007 5:32:21 PM
Toluene	ND	1.0		µg/L	1	5/24/2007 5:32:21 PM
Ethylbenzene	ND	1.0		µg/L	1	5/24/2007 5:32:21 PM
Xylenes, Total	3.1	2.0		µg/L	1	5/24/2007 5:32:21 PM
Surr: 4-Bromofluorobenzene	87.8	70.2-105		%REC	1	5/24/2007 5:32:21 PM

Lab ID: 0705289-12 **Collection Date:** 5/17/2007 3:32:00 PM
Client Sample ID: ~~McCoy GCD #1E 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	5/24/2007 6:02:34 PM
Toluene	ND	1.0		µg/L	1	5/24/2007 6:02:34 PM
Ethylbenzene	ND	1.0		µg/L	1	5/24/2007 6:02:34 PM
Xylenes, Total	ND	2.0		µg/L	1	5/24/2007 6:02:34 PM
Surr: 4-Bromofluorobenzene	88.0	70.2-105		%REC	1	5/24/2007 6:02:34 PM

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:** 0705289

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8021									
Sample ID: 0705289-02A MSD		*MSD*			Batch ID:	**R23705**	Analysis Date:	5/23/2007 9:34:21 PM	
Benzene	19.06	µg/L	1.0	95.3	85.9	113	0.794	27	
Toluene	19.13	µg/L	1.0	95.7	86.4	113	0.812	19	
Ethylbenzene	19.00	µg/L	1.0	95.0	83.5	118	0.462	10	
Xylenes, Total	56.16	µg/L	2.0	93.6	83.4	122	0.901	13	
Sample ID: 0705289-16A MSD		*MSD*			Batch ID:	**R23752**	Analysis Date:	5/25/2007 10:32:54 AM	
Benzene	20.43	µg/L	1.0	102	85.9	113	1.85	27	
Toluene	20.97	µg/L	1.0	105	86.4	113	1.52	19	
Ethylbenzene	20.81	µg/L	1.0	104	83.5	118	2.27	10	
Xylenes, Total	61.35	µg/L	2.0	102	83.4	122	1.79	13	
Sample ID: 5ML RB-II		*MBLK*			Batch ID:	**R23705**	Analysis Date:	5/23/2007 10:03:56 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 REAGENT BLA		*MBLK*			Batch ID:	**R23736**	Analysis Date:	5/24/2007 8:33:09 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 REAGENT BLA		*MBLK*			Batch ID:	**R23752**	Analysis Date:	5/25/2007 8:32:19 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:	**R23705**	Analysis Date:	5/23/2007 11:04:02 AM	
Benzene	18.93	µg/L	1.0	94.6	85.9	113			
Toluene	19.74	µg/L	1.0	98.7	86.4	113			
Ethylbenzene	19.87	µg/L	1.0	99.3	83.5	118			
Xylenes, Total	60.16	µg/L	2.0	100	83.4	122			
Sample ID: 100NG BTEX LCS		*LCS*			Batch ID:	**R23736**	Analysis Date:	5/24/2007 9:38:17 PM	
Benzene	19.56	µg/L	1.0	97.8	85.9	113			
Toluene	19.93	µg/L	1.0	99.7	86.4	113			
Ethylbenzene	19.97	µg/L	1.0	99.9	83.5	118			
Xylenes, Total	59.82	µg/L	2.0	99.7	83.4	122			
Sample ID: 100NG BTEX LCS		*LCS*			Batch ID:	**R23752**	Analysis Date:	5/25/2007 2:03:57 PM	
Benzene	19.64	µg/L	1.0	98.2	85.9	113			
Toluene	20.09	µg/L	1.0	100	86.4	113			
Ethylbenzene	19.98	µg/L	1.0	99.9	83.5	118			
Xylenes, Total	59.73	µg/L	2.0	99.5	83.4	122			
Sample ID: 0705289-02A MS		*MS*			Batch ID:	**R23705**	Analysis Date:	5/23/2007 9:04:25 PM	
Benzene	19.21	µg/L	1.0	96.0	85.9	113			
Toluene	19.29	µg/L	1.0	96.4	86.4	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: Ground Water **Work Order:** 0705289

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: SW8021									
Sample ID: 0705289-02A MS		*MS*			Batch ID: **R23705**		Analysis Date:	5/23/2007 9:04:25 PM	
Ethylbenzene	19.09	µg/L	1.0	95.4	83.5	118			
Xylenes, Total	56.66	µg/L	2.0	94.4	83.4	122			
Sample ID: 0705289-16A MS		*MS*			Batch ID: **R23752**		Analysis Date:	5/25/2007 10:02:41 AM	
Benzene	20.05	µg/L	1.0	100	85.9	113			
Toluene	20.66	µg/L	1.0	103	86.4	113			
Ethylbenzene	20.34	µg/L	1.0	102	83.5	118			
Xylenes, Total	60.26	µg/L	2.0	99.8	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

Blow GC A #1A

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON
Governor
Jennifer A. Salisbury
Cabinet Secretary

Lori Wrotenbery
Director
Oil Conservation Division

December 14, 2000

CERTIFIED MAIL
RETURN RECEIPT NO: 5051-3983

02

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) February 21, 2000 "1999 ANNUAL GROUNDWATER REPORTS, SAN JUAN COUNTY, NEW MEXICO, 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 10 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.	Hare GC C #1 (Blow pit)	Unit M, Sec. 25, T29N, R10W.
2.	Pearce GC #1E (Blow pit)	Unit J, Sec. 23, T29N, R11W.
3.	Sanchez GC #1 (Blow pit)	Unit G, Sec. 28, T29N, R10W.
4.	Texas National GC #1 (Blow pit)	Unit L, Sec. 19, T29N, R09W.

B. 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 contain only one subsequent round of water quality sampling events demonstrating that ground water currently meets WQCC standards. CTOC's approved ground water management plan required that all sites contaminated in excess of the WQCC standards would not be submitted for final closure until ground water quality at all monitoring points were below WQCC standards for a minimum of 4 consecutive quarters. Therefore, approval of the closure actions at these sites 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.

In addition, the OCD could not find that any analytical results have been submitted for the landfarm activities at the Haney GC B#1E site. Please include these results in all future final closure requests.

1.	Baca GC A #1A (Blow/separator pit)	Unit F, Sec. 26, T29N, R10W.
2.	Haney GC B#1E (Separator pit)	Unit M, Sec. 20, T29N, R10W.
3.	Masden GC #1E (Blow pit)	Unit D, Sec. 28, T29N, R11W.
4.	McDaniel GC B#1E (Dehy pit)	Unit F, Sec. 26, T29N, R10W.
5.	Snyder GC #1A (Blow pit)	Unit E, Sec. 19, T29N, R09W.
6.	Sullivan Frame A#1E (Dehy pit)	Unit A, Sec. 30, T29N, R10W.

If you have any questions, please contact me at (505) 827-7154.

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.

C4961

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

5. Lease Designation and Serial No.

6. If Indian, Allottee or Tribe Name

SUBMIT IN TRIPLICATE

7. If Unit or CA, Agreement Designation
COM. AGMT: NM015P3586C

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

8. Well Name and No.
BACA GC A #1A

2. Name of Operator
Amoco Production Company

9. API Well No.
3004526180

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

10. Field and Pool, or Exploratory Area
MESA VERDE

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
SE/4 NW/4 S-26 T29N R10W NMPM

11. County or Parish, State
SAN JUAN, NM

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 DOCUMENTS

① BLOW PIT / SEPARATOR PIT — STEEL TANK INSTALLED, GROUNDWATER, PERMANENT CLOSURE UNDER AMOCO'S GW PLAN (SEC. 2.3) — REVISED 5/11/98.

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

Signed R A Shaw Title ENVIRO. COORDINATOR Date 4/25/94 RAS

7/19/98 RAS

(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

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 BACA GC A # 1A

Location: Unit or Qtr/Qtr Sec F Sec 26 T 29N R 10 W County SAN JUAN

Pit Type: Separator X Dehydrator ___ Other Blow

Land Type: BLM ___, State ___, Fee ___, Other COM. AGMT.

Pit Location: (Attach diagram)
Pit dimensions: length 25', width 25', depth 3'
Reference: wellhead X, other ___
Footage from reference: 160'
Direction from reference: 75 Degrees X East North X of ___ 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)	20
	RANKING SCORE (TOTAL POINTS):	40

Date Remediation Started: _____ **Date Completed:** 4/1/94

Remediation Method: (Check all appropriate sections) Excavation X Approx. cubic yards 69

Landfarmed X Insitu Bioremediation ___

Other _____

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

General Description Of Remedial Action: Excavation

Ground Water Encountered: No ___ Yes X Depth 3'

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 BES OF MY KNOWLEDGE AND BELIEF

DATE 4/25/94

SIGNATURE B J Shaw

PRINTED NAME AND TITLE Buddy D. Shaw Environmental Coordinator

B - 14.8
T - 68
E - 20.2
X - 337.8

RESULTS TO BOB McCOY 4-11-94

TPH= ND

NEAR: MCDANIEL GC "B" #1E

ENVIROTECH Inc

5796 US HWY. 64, FARMINGTON, NM 87401
(505) 632-0615

PIT NO C4961
LOC NO 3472

FIELD REPORT: CLOSURE VERIFICATION

JOB NO 92140
PAGE NO 1 of 1

LOCATION: LEASE BACA GC "A" WELL 1A QD SE/4, NW/4 (F)
SEC. 26 TWP: 29N RNG: 10W BM NM CNTY SJ ST NM PIT Blow/sep
CONTRACTOR: PAUL VELASQUEZ
EQUIPMENT USED: EXCAVATOR

DATE STARTED 4-1-94
DATE FINISHED 4-1-94
ENVIRONMENTAL SPECIALIST REG

SOIL REMEDIATION: QUANTITY: PIT ~ 25' x 25' x 3' DEEP
DISPOSAL FACILITY: LAND FARM ON SITE
LAND USE: SWAMP LAND
SURFACE CONDITIONS: EXCAVATED PRIOR TO ARRIVAL.

FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY 160 FEET N 75° E FROM WELLHEAD.
PIT EXCAVATED TO GROUNDWATER @ 3'
APPEARS TO SERVICE 3 SEPARATORS + BLOW FOR POSSIBLY BOTH WELLS.
GAS BLOWING INTO PIT AT ARRIVAL.
WAITED FOR GAS TO STOP PRIOR TO SAMPLING

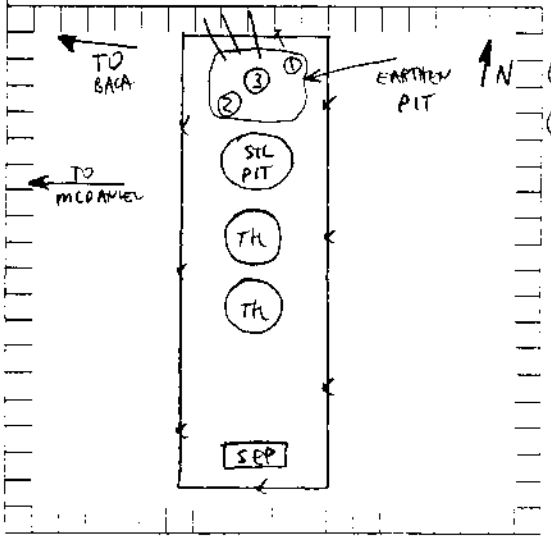
FIELD 418.1 CALCULATIONS

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

DEPTH TO GROUNDWATER: 3'
NEAREST WATER SOURCE: SAN JUAN → NORTH
NEAREST SURFACE WATER: SWAMP 20' EAST
NMOCD RANKING SCORE: >20
NMOCD TPH CLOSURE STD: 100 ppm TPH

SCALE
0 20 40 FEET

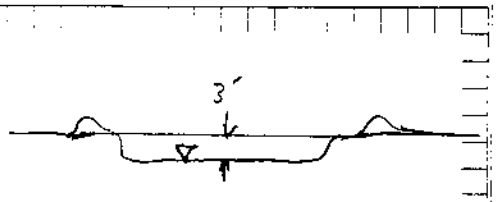
PIT PERIMETER



OVM RESULTS

SAMPLE #	FIELD HEADSPACE PID (ppm)
① NES@2'	18
② SWS@2'	79
③ B@3'	WATER
	LAB
③ BTEX	
② 418.1	

PIT PROFILE



TRAVEL NOTES: CALLED IN 3-31-94 ONSITE 4-1-94 1300 HRS

Y
1

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:	3 @ 3'	Date Reported:	04-05-94
Laboratory Number:	7140	Date Sampled:	04-01-94
Sample Matrix:	Water	Date Received:	04-04-94
Preservative:	HgCl & Cool	Date Analyzed:	04-04-94
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/L)	Det. Limit (ug/L)
Benzene	14.8	0.2
Toluene	68	0.4
Ethylbenzene	20.2	0.2
p,m-Xylene	298	0.2
o-Xylene	39.8	0.2

SURROGATE RECOVERIES:

Parameter	Percent Recovery
Trifluorotoluene	97 %
Bromofluorobenzene	86 %

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: Baca GC "A" #1A Blow/Sep C4961

Tony Tinsley
Analyst

Review

ENVIROTECH LABS

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

EPA METHOD 418.1
TOTAL PETROLEUM HYDROCARBONS

Client:	Amoco	Project #:	92140
Sample ID:	2 SWS @ 2'	Date Sampled:	04-01-94
Laboratory Number:	7139	Date Received:	04-04-94
Sample Matrix:	Soil	Date Analyzed:	04-08-94
Preservative:	Cool	Date Reported:	04-08-94
Condition:	Cool & Intact	Analysis Needed:	TPH

Parameter	Concentration (mg/kg)	Det. Limit (mg/kg)
Total Petroleum Hydrocarbons	ND	20.0

ND = Parameter not detected at the stated detection limit.
N/A = Not applicable

Method: Method 418.1, Petroleum Hydrocarbons, Total Recoverable, Chemical Analysis of Water and Waste, USEPA Storet No.4551, 1978

Comments: Baca GC "A" #1A Blow/Sep Pit C4961

Tony Trujano
Analyst

David D. Young
Review

CHAIN OF CUSTODY RECORD

Client/Project Name	Project Location	ANALYSIS/PARAMETERS	C4961
AMOCO # 92140	BACA GC "A" #1A Blow/SEP		
Sampler: (Signature) R. E. O'Neill	Chain of Custody Tape No.		

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	418.1	BTEX					Remarks
(2) SWS @ 2'	4-1-94	1320	7139	SOIL	1	✓						RUSH
(3) @ 3'	4-1-94	1320	7140	WATER	2		✓					"

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
R. E. O'Neill	4-4-94	0735	Tony Tristano	4/4/94	0735
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