3R - 131

2008 AGWMR

APR 2009

XTO ENERGY INC.

ANNUAL GROUNDWATER REPORT

2008

SULLIVAN GAS COM D #1
3RP-131
(B) SECTION 26 – T29N – R11W, NMPM
SAN JUAN COUNTY, NEW MEXICO

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

April 2009

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2008 XTO GROUNDWATER REPORT

SULLIVAN GAS COM D #1
3RP-131

SITE DETAILS

LEGALS - TWN: 29N **RNG:** 11W **SEC:** 26 **UNIT:** B
LAND TYPE: FEE

PREVIOUS ACTIVITIES

Excavation: June-94 **Monitoring Wells:** Jun-96
Quarterly Sampling Initiated: Nov-99

SITE MAP

A site map is presented as Figure 1.

SUMMARY TABLES

A summary of laboratory results from historical and current groundwater monitoring is presented as Table 1. A summary of General Water Quality from 1999 and 2000 is presented as Table 2. Copies of the laboratory data sheets and associated quality assurance/quality control data from 2008 are presented as Attachment 1.

POTENTIOMETRIC SURFACE DIAGRAMS

Field data collected during site monitoring activities indicate a groundwater gradient that trends toward the northwest. Figures 2 - 5 illustrate the estimated groundwater gradients for 2008.

ANNUAL GROUNDWATER REMEDIATION REPORTS

The 2005 annual groundwater report was submitted to New Mexico Oil Conservation Division (NMOCD) in January 2006, proposing semi-annual sampling of monitoring well MW-1R in 2006 and possible application of an oxidizer.

The 2006 annual groundwater report was submitted to NMOCD in February 2007, proposing continued semi-annual sampling of monitoring well MW-1R until benzene, toluene, ethyl benzene and total xylenes (BTEX) concentrations are below New Mexico Water Quality Control Commission (NMWQCC) closure standards.

The 2007 annual groundwater report was submitted to NMOCD in February 2008, proposing quarterly sampling until analytical results reveal BTEX concentrations are below NMWQCC closure standards.

2008 ACTIVITIES

Quarterly groundwater samples were collected from MW-1R in 2008. Laboratory results reveal BTEX concentrations were not detected above the laboratory equipment detection limits (0.2 ug/L) or below NMWQCC standards.

GEOLOGIC LOGS AND WELL COMPLETION DIAGRAMS

Bore/Test Hole Reports are presented as Figures 6 - 8 representing drilling that occurred on site in May 2000.

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 Sullivan Gas Com D #1 from Amoco Production Company. XTO understands that evidence of groundwater impact was discovered during remedial work to close blow and separator pits. In 1996 monitoring wells were installed to evaluate residual water quality. Monitoring well sampling indicated limited hydrocarbon impact that appeared to be in the area of MW-1R. Natural attenuation appeared to be successful, resulting in decreased hydrocarbon levels since June 2000.

XTO had proposed continuing semi-annual groundwater samples in the 2006 annual groundwater report until BTEX concentrations are below NMWQCC closure standards. A groundwater sample from MW-1R was submitted for analysis in June 2007. The results indicated no detectable levels of BTEX constituents above the laboratory equipment detection limits (0.2 ug/L). XTO reconsidered the application of an oxidizer in groundwater based on strong evidence that natural degradation was occurring. The monitoring well was then sampled quarterly for the remainder of 2007. XTO recommended continued quarterly sampling of MW-1R for BTEX during the first quarter of 2008 or until results show hydrocarbon constituents are below NMWQCC standards.

Groundwater analytical data from MW-1R for four (4) consecutive quarters have demonstrated no detectable levels, or levels below NMWQCC standards, 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

SULLIVAN GC D #1- BLOW & SEP. PITS
UNIT B, SEC. 26, T29N, R11W

Sample Date	Monitor Well No.	DTW (ft)	TD (ft)	Product (ft)	Benzene	Toluene	Ethyl Benzene	Total Xylene
10-Jun-96	MW #1	7.69	10.00		298	90.6	29.8	417.5
27-Jun-97		7.81	10.00		675	208	342	645
12-Jun-98		7.31	10.00		131	8.8	0.4	8.6
27-May-99		6.79			345	17.9	13.1	87.3
29-Jun-00	MW #1R	7.85	15.00		570	76	51	303
16-May-01		7.31			180	1	3.5	52.9
27-Jun-02		7.78			67	ND	4.8	9.1
27-Jun-03		7.96			280	ND	10	16
16-Jun-04		7.73			400	ND	6.8	12
28-Jun-05		8.71			130	ND	7.4	6.4
28-Jun-06		8	15.02		130	ND	21	ND
05-Dec-06		7.4	15.02		ND	ND	ND	ND
12-Jun-07		7.54	15.02		2	ND	ND	ND
25-Sep-07		8.48	15.02		ND	ND	ND	ND
20-Dec-07		7.88	15.02		ND	ND	ND	ND
12-Mar-08		7.05	15.02		ND	ND	ND	ND
04-Jun-08		7.07	15.02		2.5	ND	ND	ND
22-Sep-08		7.65	15.02		ND	ND	ND	ND
04-Dec-08		7.01	15.02		1.5	ND	ND	ND
10-Jun-96	MW #2	7.85	10.00		ND	ND	ND	ND
01-Jun-99		6.44			NA	NA	NA	NA
28-Jun-06					MONITORING WELL MISSING			
10-Jun-96	MW #3	8.48	10.00		ND	13	ND	2.52
26-May-99		6.57			NA	NA	NA	NA
28-Jun-06		7.7	10.00		NO RECOVERY			
10-Jun-96	MW #4	8.04	10.00		ND	ND	ND	9.24
26-May-99		6.97			NA	NA	NA	NA
29-Jun-00	MW #5	8.39	15.00		6.1	1.1	3.2	22.2
30-Aug-00		9.14			ND	0.6	1.5	1.8
05-Dec-00		8.28			ND	ND	ND	ND
03-Mar-01		7.48			ND	ND	ND	ND
28-Jun-06		8.45	15.00		NO RECOVERY			
NMWQCC GROUNDWATER STANDARDS					10	750	750	620

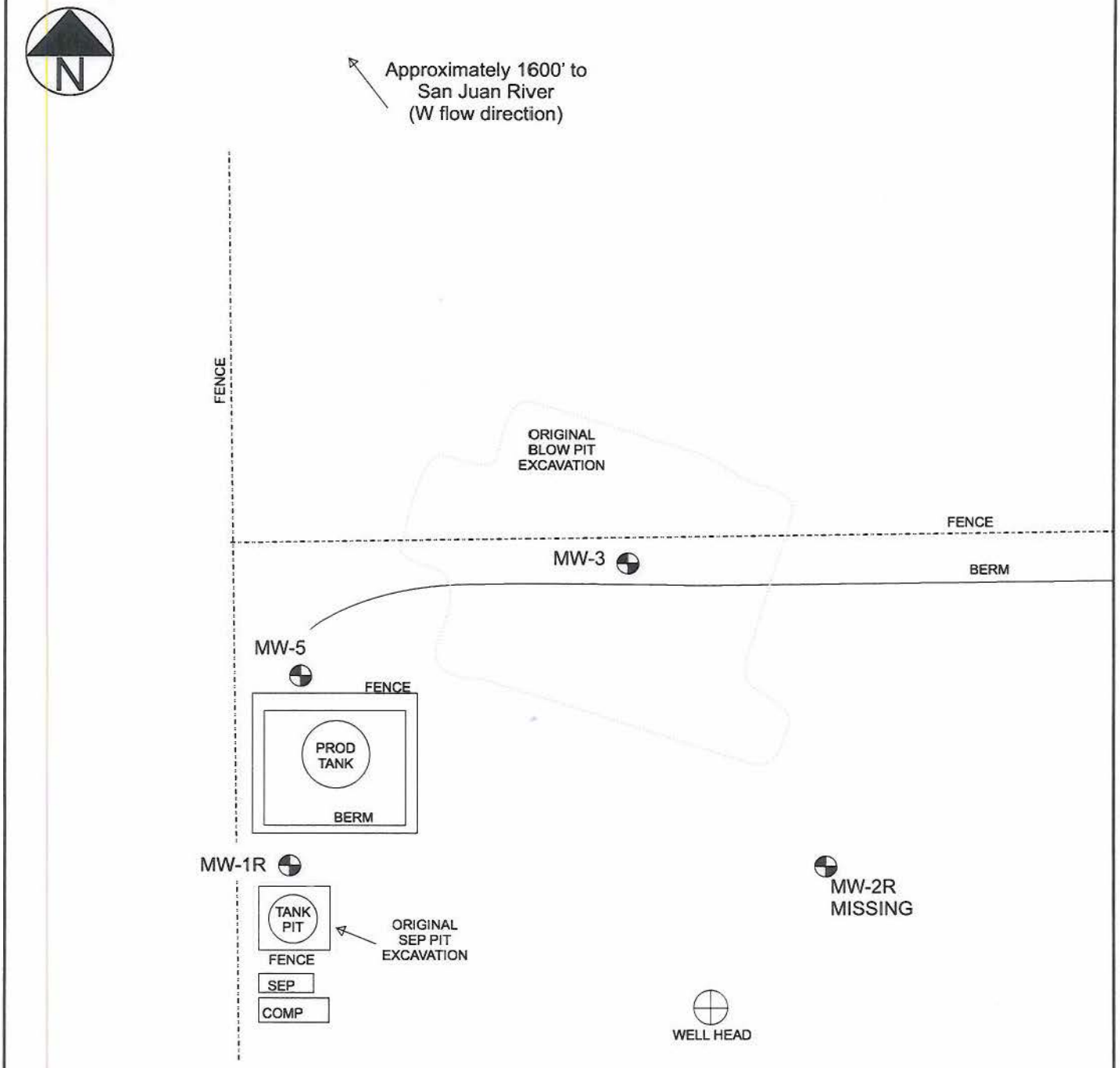
TABLE 2

XTO ENERGY INC. GROUNDWATER LAB RESULTS

SULLIVAN GC D #1- BLOW & SEP. PITS
UNIT B, SEC. 26, T29N, R11W

Sample Date: May 26, 1999
June 29, 2000

PARAMETERS	MW #1R 05/26/99	MW #2 05/26/99	MW #3 05/26/99	MW #4 05/26/99	MW #5 06/29/00	UNITS
LAB Ph	7.6	7.41	7.16	7.4	7.29	s.u.
LAB CONDUCTIVITY @ 25 C	19,600	59,200	12,650	12,660	12,060	umhos/cm
TOTAL DISSOLVED SOLIDS @ 180 C	9,800	23,200	6,300	6,320	6,010	mg/L
TOTAL DISSOLVED SOLIDS (Calc)	9,764	22,121	6,285	6,230	5,970	mg/L
SODIUM ABSORPTION RATIO	26.2	73.9	21.7	23.6	15.9	ratio
TOTAL ALKALINITY AS CaCO3	1,484	485	444	592	422	mg/L
TOTAL HARDNESS AS CaCO3	1,720	1,495	1,040	904	1,400	mg/L
BICARBONATE AS HCO3	1,484	485	444	592	422	mg/L
CARBONATE AS CO3	< 1	< 1	< 1	< 1	< 0.1	mg/L
HYDROXIDE AS OH	< 1	< 1	< 1	< 1	< 0.1	mg/L
NITRATE NITORGEN	2.2	0.6	0.7	0.3	1.1	mg/L
NITRITE NITROGEN	0.001	0.058	0.036	0.013	0.035	mg/L
CHLORIDE	88	170	68	120	23.4	mg/L
FLUORIDE	1.42	1.79	1.23	1.24	2.64	mg/L
PHOSPHATE	23	2	0.5	2.5	1.6	mg/L
SULFATE	5,600	14,550	3,930	3,720	3,850	mg/L
IRON	0.21	0.307	0.037	0.089	1.16	mg/L
CALCIUM	464	408	350	272	306	mg/L
MAGNESIUM	137	116	40	54.7	155	mg/L
POTASSIUM	52.5	8.0	15.0	70.0	3.4	mg/L
SODIUM	2,495	6,570	1,610	1,630	1,370	mg/L
CATION/ANION DIFFERENCE	0.05	0.02	0.07	0.09	0.27	%



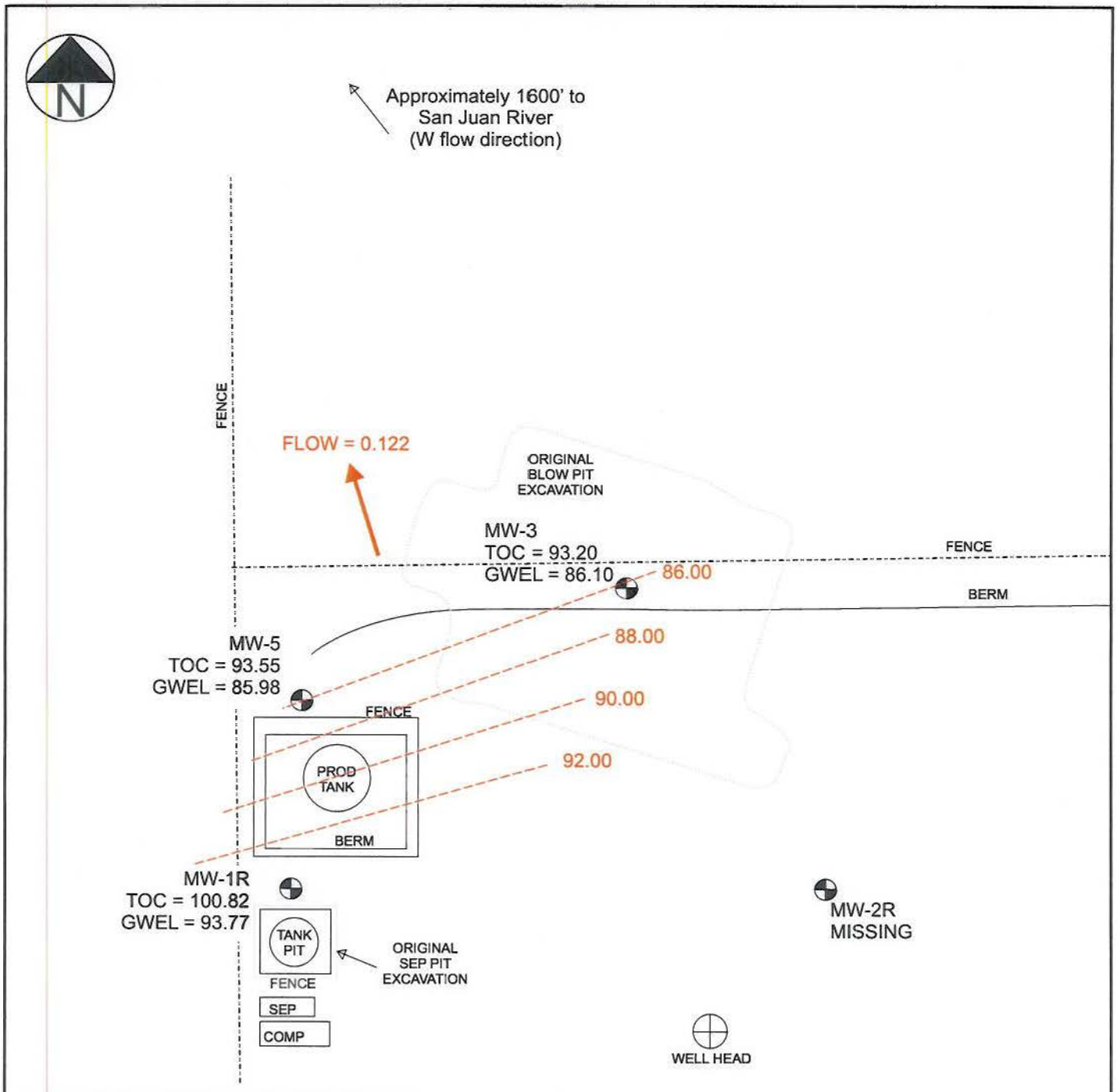
MONITORING WELL LOCATIONS ARE ONLY AS ACCURATE AS THE INSTRUMENTS USED IN OBTAINING THE FOOTAGE AND BEARING FROM THE WELL HEAD (BRUNTON COMPASS AND LASER RANGE FINDER). ALL OTHER STRUCTURES DISPLAYED ON THE SITE MAP ARE SOLELY FOR REFERENCE AND MAY NOT BE TO SCALE.

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

1 INCH = 50 FEET

0 50 100 FT.

Lodestar Services, Inc PO Box 3861 Farmington, NM 87499	SULLIVAN GAS COM D #1 NW/4 NE/4 SEC. 26, T29N, R11W SAN JUAN COUNTY, NEW MEXICO	PROJECT: XTO GROUND WATER DRAWN BY: ALA REVISED: 01/30/08	SITE MAP



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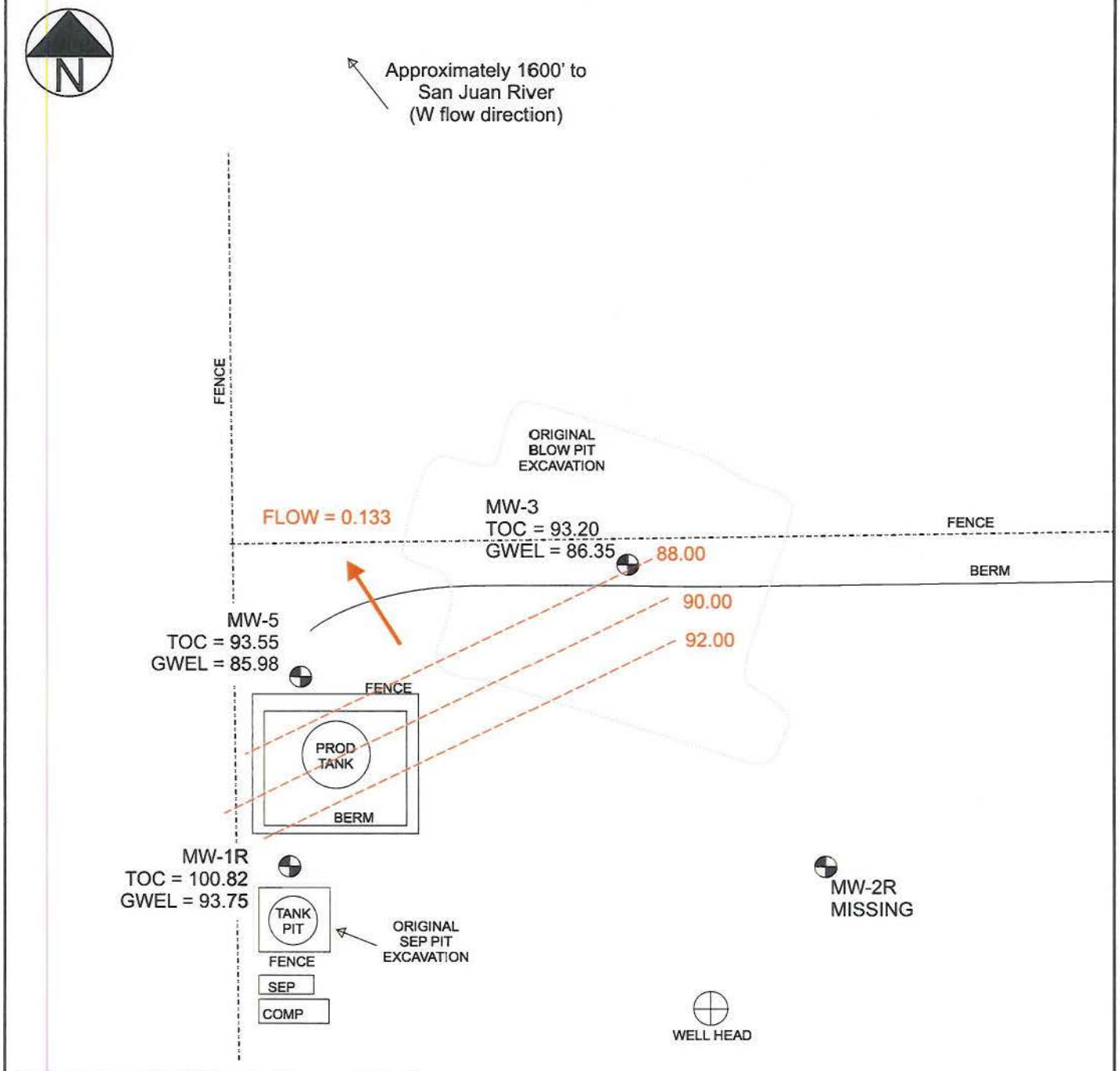

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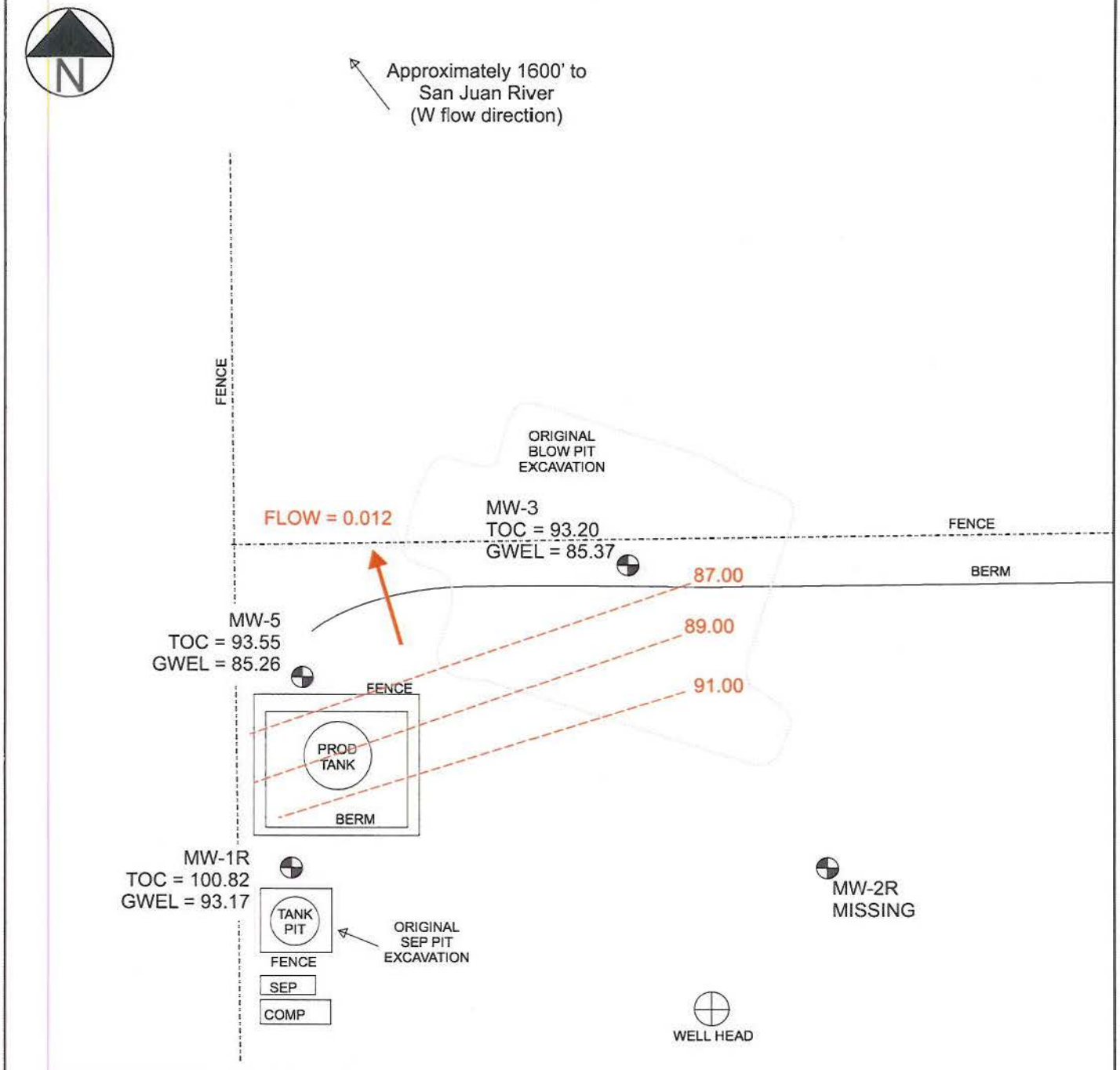

MONITORING WELL LOCATIONS ARE ONLY AS ACCURATE AS THE INSTRUMENTS USED IN OBTAINING THE FOOTAGE AND BEARING FROM THE WELL HEAD (BRUNTON COMPASS AND LASER RANGE FINDER). ALL OTHER STRUCTURES DISPLAYED ON THE SITE MAP ARE SOLELY FOR REFERENCE AND MAY NOT BE TO SCALE.

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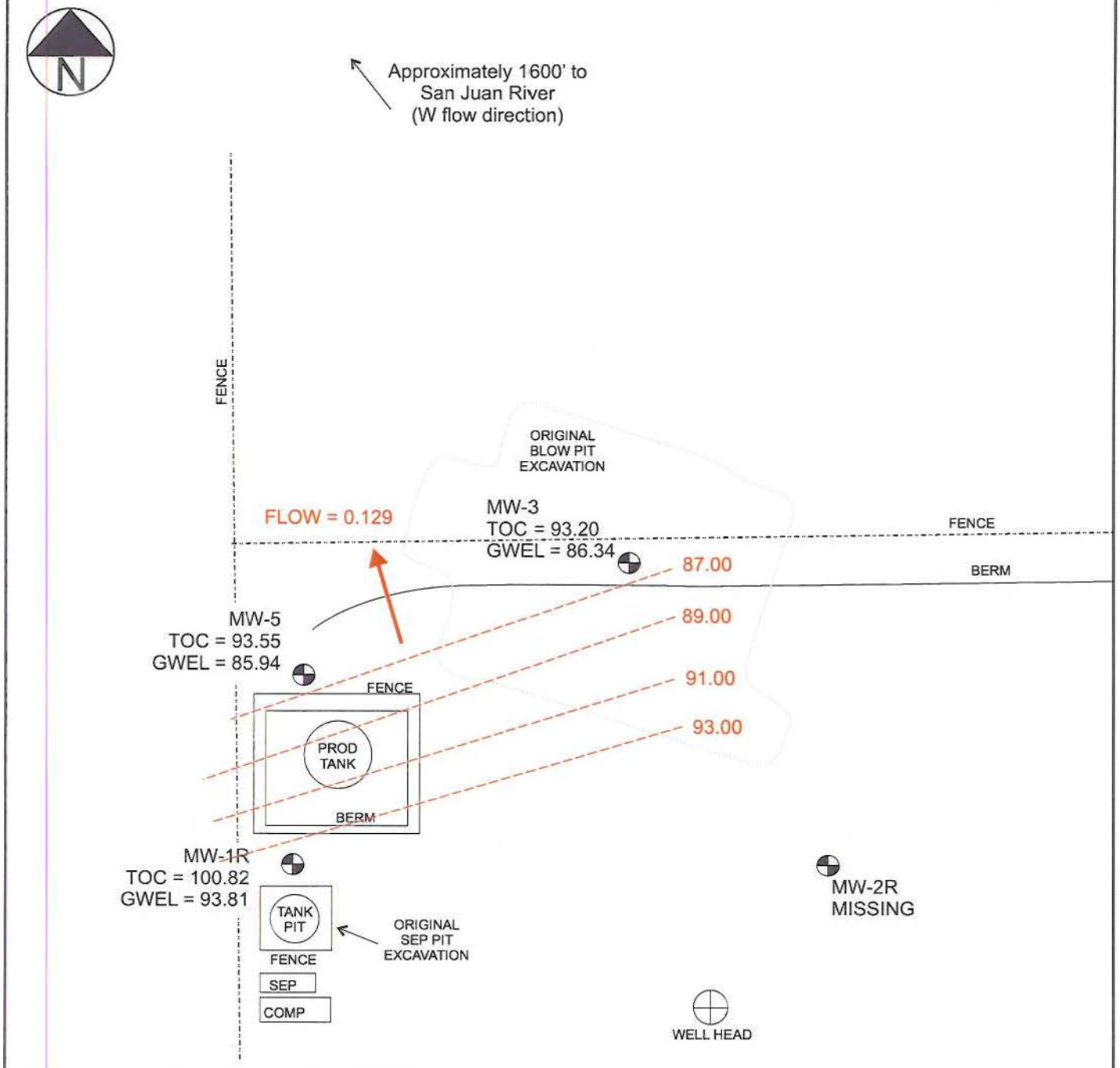
0 50 100 FT.

Lodestar Services, Inc PO Box 3861 Farmington, NM 87499	SULLIVAN GAS COM D #1 NW/4 NE/4 SEC. 26, T29N, R11W SAN JUAN COUNTY, NEW MEXICO	PROJECT: XTO GROUND WATER DRAWN BY: ADH REVISED: 30Sep08	GROUNDWATER GRADIENT MAP 09/19/08



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1 INCH = 50 FEET

0 50 100 FT.

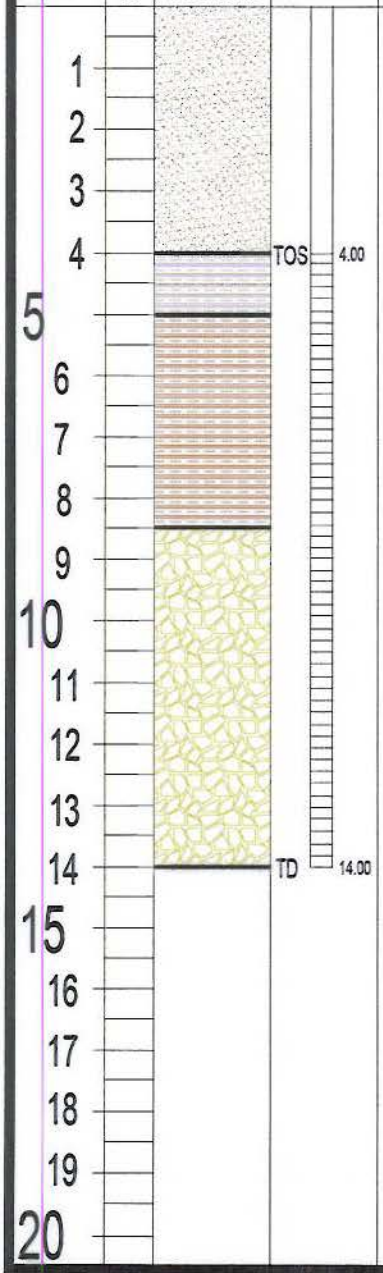
Lodestar Services, Inc PO Box 3861 Farmington, NM 87499	SULLIVAN GAS COM D #1 NW/4 NE/4 SEC. 26, T29N, R11W SAN JUAN COUNTY, NEW MEXICO	PROJECT: XTO GROUND WATER DRAWN BY: ADH REVISED: 22DEC08	GROUNDWATER GRADIENT MAP 12/04/08

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

BORE / TEST HOLE REPORT

BORING #.....	BH - 7
MW #.....	1R
PAGE #.....	1
DATE STARTED	5/03/00
DATE FINISHED	5/03/00
OPERATOR.....	DE
PREPARED BY	NJV

CLIENT: XTO ENERGY INC.
LOCATION NAME: SULLIVAN GC D # 1 - BLOW PIT, UNIT B, SEC. 26, T29N, R11W
CONTRACTOR: BLAGG ENGINEERING, INC. / ENVIROTECH, INC.
EQUIPMENT USED: MOBILE DRILL RIG (CME 61)
BORING LOCATION: 159 FT., N70W FROM WELL HEAD.



FIELD CLASSIFICATION AND REMARKS

GROUND SURFACE

TOP OF CASING APPROX. 1.00 FT. ABOVE GROUND SURFACE.

DARK YELLOWISH BROWN SILTY SAND TO SILTY CLAY, NON TO SLIGHTLY COHESIVE, FIRM, SLIGHTLY MOIST, NO APPARENT HC ODOR DETECTED PHYSICALLY FROM AUGER CUTTINGS (0.0 - 4.0 FT. BELOW GRADE).

DARK GRAY CLAY, SLIGHTLY COHESIVE, FIRM TO STIFF, SLIGHTLY MOIST, STRONG HC ODOR DETECTED PHYSICALLY FROM AUGER CUTTINGS (4.0 - 5.0 FT. BELOW GRADE).

▼ GW DEPTH ON 6/29/00 = 6.85 FT. (APPROX.) FROM GROUND SURFACE.

DARK YELLOWISH BROWN CLAY, SLIGHTLY COHESIVE TO MEDIUM PLASTIC, FIRM TO STIFF, SATURATED, NO APPARENT HC ODOR DETECTED PHYSICALLY FROM AUGER CUTTINGS (5.0 - 8.5 FT. BELOW GRADE).

OLIVE GRAY SAND AND GRAVEL, NON COHESIVE, FIRM TO LOOSE, SATURATED, NO APPARENT HC ODOR DETECTED PHYSICALLY FROM AUGER CUTTINGS (8.5 - 14.0 FT. BELOW GRADE).

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

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

Monitor well consist of 2 inch PVC piping - casing from 1.00 ft. above grade to 4.00 ft. below grade, 0.010 slotted screen between 4.00 to 14.00 feet below grade, sand packed annular from 3.00 to 10.00 ft. below grade, then bentonite plugged to grade.

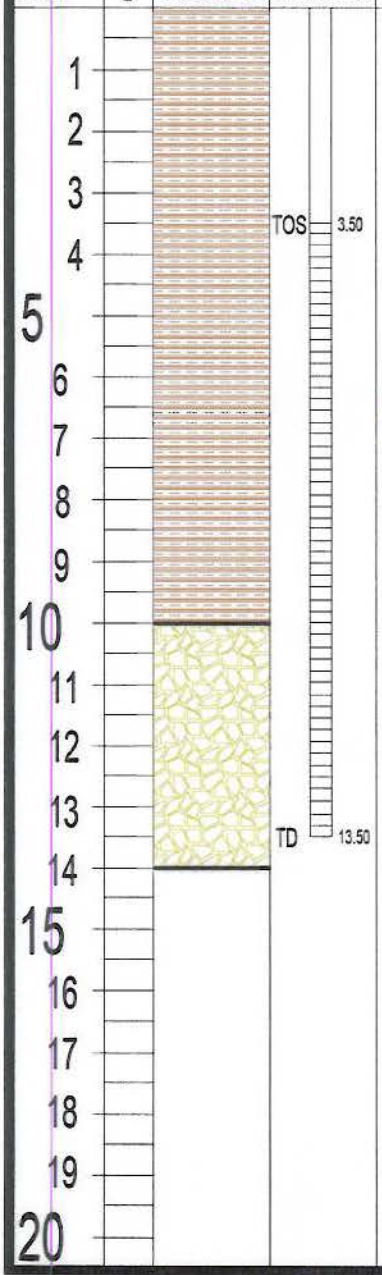
DRAWING: SULL-D1-MW1R.SKF | DATE: 01/17/06 | DWN BY: NJV

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

BORE / TEST HOLE REPORT

BORING #.....	BH - 5
MW #.....	2R
PAGE #.....	2
DATE STARTED	5/03/00
DATE FINISHED	5/03/00
OPERATOR.....	DE
PREPARED BY	NJV

CLIENT: XTO ENERGY INC.
LOCATION NAME: SULLIVAN GC D # 1 - BLOW PIT, UNIT B, SEC. 26, T29N, R11W
CONTRACTOR: BLAGG ENGINEERING, INC. / ENVIROTECH, INC.
EQUIPMENT USED: MOBILE DRILL RIG (CME 61)
BORING LOCATION: 66 FT., N40E FROM WELL HEAD.



FIELD CLASSIFICATION AND REMARKS

GROUND SURFACE

TOP OF CASING APPROX. 0.30 FT. ABOVE GROUND SURFACE.

DARK YELLOWISH BROWN SILTY CLAY TO CLAY, NON COHESIVE TO SLIGHTLY COHESIVE, FIRM TO STIFF, SLIGHTLY MOIST TO SATURATED, NO APPARENT HC ODOR DETECTED PHYSICALLY FROM AUGER CUTTINGS (0.0 - 10.0 FT. BELOW GRADE).

▼ GW DEPTH ON 6/29/00 = 6.76 FT. (APPROX.) FROM GROUND SURFACE.

OLIVE GRAY SAND AND GRAVEL, NON COHESIVE, FIRM TO LOOSE, SATURATED, NO APPARENT HC ODOR DETECTED PHYSICALLY FROM AUGER CUTTINGS (10.0 - 14.0 FT. BELOW GRADE).

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

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

Monitor well consist of 2 inch PVC piping - casing from 0.30 ft. above grade to 3.50 ft. below grade, 0.010 slotted screen between 3.50 to 13.50 feet below grade, sand packed annular from 3.00 to 10.00 ft. below grade, then bentonite plugged to grade.

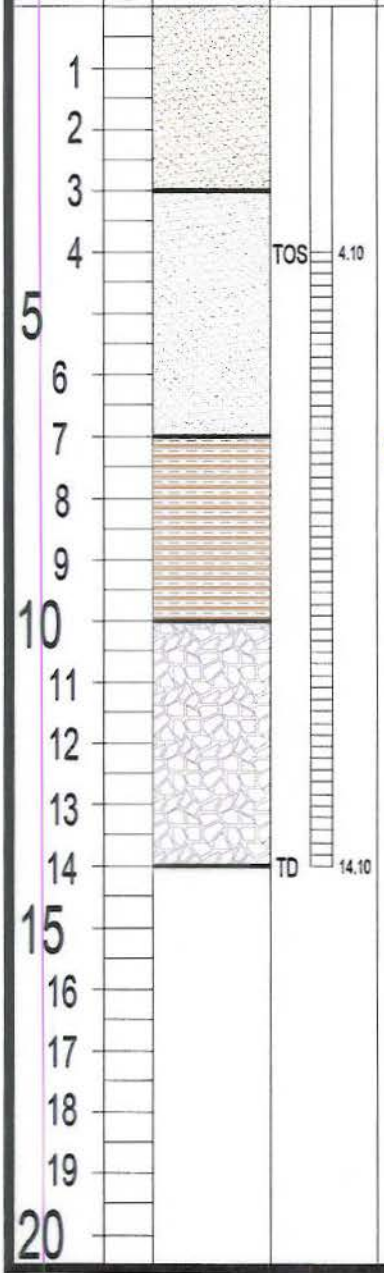
DRAWING: SULL-D1-MW2R.SKF | DATE: 01/17/06 | DWN BY: NJV

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

BORE / TEST HOLE REPORT

BORING #.....	BH - 6
MW #.....	5
PAGE #.....	3
DATE STARTED	5/03/00
DATE FINISHED	5/03/00
OPERATOR.....	DE
PREPARED BY	NJV

CLIENT: XTO ENERGY INC.
LOCATION NAME: SULLIVAN GC D # 1 - BLOW PIT, UNIT B, SEC. 26, T29N, R11W
CONTRACTOR: BLAGG ENGINEERING, INC. / ENVIROTECH, INC.
EQUIPMENT USED: MOBILE DRILL RIG (CME 61)
BORING LOCATION: 187 FT., N50W FROM WELL HEAD.



FIELD CLASSIFICATION AND REMARKS

GROUND SURFACE

TOP OF CASING APPROX. 0.90 FT. ABOVE GROUND SURFACE.

DARK YELLOWISH BROWN SAND TO SILTY SAND, NON COHESIVE, FIRM, SLIGHTLY MOIST, NO APPARENT HC ODOR DETECTED PHYSICALLY FROM AUGER CUTTINGS (0.0 - 3.0 FT. BELOW GRADE).

DARK GRAY SAND TO SILTY SAND, NON COHESIVE, FIRM, SLIGHTLY MOIST TO WET. STRONG HC ODOR DETECTED PHYSICALLY FROM AUGER CUTTINGS (3.0 - 7.0 FT. BELOW GRADE).

▼ GW DEPTH ON 6/29/00 = 7.49 FT. (APPROX.) FROM GROUND SURFACE.

DARK YELLOWISH BROWN CLAY, SLIGHTLY COHESIVE TO MEDIUM PLASTIC, FIRM TO STIFF, SATURATED, NO APPARENT HC ODOR DETECTED PHYSICALLY FROM AUGER CUTTINGS (7.0 - 10.0 FT. BELOW GRADE).

DARK GRAY SAND AND GRAVEL, NON COHESIVE, FIRM TO LOOSE, SATURATED, SLIGHT HC ODOR DETECTED PHYSICALLY FROM AUGER CUTTINGS (10.0 - 14.0 FT. BELOW GRADE).

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

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

Monitor well consist of 2 inch PVC piping - casing from 0.90 ft. above grade to 4.10 ft. below grade, 0.010 slotted screen between 4.10 to 14.10 feet below grade, sand packed annular from 2.50 to 11.00 ft. below grade, then bentonite plugged to grade.

DRAWING: SULL-D1-MW5.SKF | DATE: 01/17/06 | DWN BY: NJV

Hall Environmental Analysis Laboratory, Inc.

Date: *24-Mar-08*

CLIENT: XTO Energy
Project: Ground Water
Lab Order: 0803131

Lab ID: 0803131-01 **Collection Date:** 3/12/2008 6:08:00 PM
Client Sample ID: Sullivan GCD1 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	3/20/2008 5:56:49 PM
Toluene	ND	1.0		µg/L	1	3/20/2008 5:56:49 PM
Ethylbenzene	ND	1.0		µg/L	1	3/20/2008 5:56:49 PM
Xylenes, Total	ND	2.0		µg/L	1	3/20/2008 5:56:49 PM
Surr: 4-Bromofluorobenzene	104	68.9-122		%REC	1	3/20/2008 5:56:49 PM

Lab ID: 0803131-02 **Collection Date:** 3/12/2008 4:52:00 PM
Client Sample ID: ~~Snyder 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	3/20/2008 6:27:04 PM
Toluene	ND	1.0		µg/L	1	3/20/2008 6:27:04 PM
Ethylbenzene	ND	1.0		µg/L	1	3/20/2008 6:27:04 PM
Xylenes, Total	ND	2.0		µg/L	1	3/20/2008 6:27:04 PM
Surr: 4-Bromofluorobenzene	99.7	68.9-122		%REC	1	3/20/2008 6:27:04 PM

Lab ID: 0803131-03 **Collection Date:** 3/12/2008 8:42:00 AM
Client Sample ID: ~~Bruington GC1 MW-1R~~ **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	1.0		µg/L	1	3/20/2008 6:57:15 PM
Toluene	ND	1.0		µg/L	1	3/20/2008 6:57:15 PM
Ethylbenzene	ND	1.0		µg/L	1	3/20/2008 6:57:15 PM
Xylenes, Total	ND	2.0		µg/L	1	3/20/2008 6:57:15 PM
Surr: 4-Bromofluorobenzene	102	68.9-122		%REC	1	3/20/2008 6:57:15 PM

Lab ID: 0803131-04 **Collection Date:** 3/12/2008 9:25:00 AM
Client Sample ID: ~~Bruington GC1 MW-2R~~ **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	2800	50		µg/L	50	3/20/2008 7:57:29 PM
Toluene	890	50		µg/L	50	3/20/2008 7:57:29 PM
Ethylbenzene	750	50		µg/L	50	3/20/2008 7:57:29 PM
Xylenes, Total	5300	100		µg/L	50	3/20/2008 7:57:29 PM
Surr: 4-Bromofluorobenzene	118	68.9-122		%REC	50	3/20/2008 7:57:29 PM

Qualifiers:

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

QA/QC SUMMARY REPORT

ient: XTO Energy
roject: Ground Water **Work Order:** 0803131

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8021B: Volatiles									
Sample ID: 0803131-01A MSD		*MSD*			Batch ID: **R27804**		Analysis Date:		3/21/2008 12:28:54 AM
Benzene	21.54	µg/L	1.0	104	85.9	113	0.409	27	
Toluene	20.86	µg/L	1.0	103	86.4	113	1.83	19	
Ethylbenzene	20.70	µg/L	1.0	103	83.5	118	0.523	10	
Xylenes, Total	61.20	µg/L	2.0	101	83.4	122	0.357	13	
Sample ID: 5ML RB		*MBLK*			Batch ID: **R27804**		Analysis Date:		3/20/2008 8:53:24 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: **R27825**		Analysis Date:		3/21/2008 10:56:55 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: **R27804**		Analysis Date:		3/21/2008 12:59:07 AM
Benzene	21.41	µg/L	1.0	107	85.9	113			
Toluene	21.41	µg/L	1.0	107	86.4	113			
Ethylbenzene	21.55	µg/L	1.0	108	83.5	118			
enes, Total	63.70	µg/L	2.0	106	83.4	122			
mple ID: 100NG BTEX CCV		*LCS*			Batch ID: **R27825**		Analysis Date:		3/21/2008 11:27:08 AM
Benzene	20.48	µg/L	1.0	101	85.9	113			
Toluene	21.13	µg/L	1.0	102	86.4	113			
Ethylbenzene	20.46	µg/L	1.0	101	83.5	118			
Xylenes, Total	62.14	µg/L	2.0	102	83.4	122			
Sample ID: 0803131-01A MS		*MS*			Batch ID: **R27804**		Analysis Date:		3/20/2008 11:58:40 PM
Benzene	21.46	µg/L	1.0	103	85.9	113			
Toluene	20.49	µg/L	1.0	101	86.4	113			
Ethylbenzene	20.60	µg/L	1.0	102	83.5	118			
Xylenes, Total	60.98	µg/L	2.0	101	83.4	122			

alifiers:

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

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name XTO ENERGY | Date Received: 3/14/2008

Work Order Number 0803131 | Received by: TLS

Checklist completed by: Amy Thomas 3/14/08 (Signature / Date) | Sample ID labels checked by: (Initials) AT

Matrix: | Carrier name Greyhound

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

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

Chain-of-Custody Record

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

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

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

Analysis Request

Date	Time	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0803131	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8260)	8310 (PNA or PAH)	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	8021B BTEX				Air Bubbles (Y or N)
031208	1808	Sullivan GCD1 MW-1	20cc/3	HCl	1												✓				
031208	1652	SNYDER MW-3	20cc/3	HCl	2												✓				
031208	0842	Bruington GCI MW-1R TU	20cc/3	None	3												✓				
031208	0925	Bruington GCI MW-2R TU	20cc/3	None	4												✓				
031208	0958	Bruington GCI MW-3R TU	20cc/3	None	5												✓				
031208	1033	Bruington GCI MW-4	20cc/3	None	6												✓				
031208	1125	Bruington GCI MW-5	20cc/3	None	7												✓				
031208	1210	Bruington GCI MW-6	20cc/3	None	8												✓				
031208	1245	Bruington GCI MW-7	20cc/3	None	9												✓				
031208	1325	Bruington GCI MW-8	20cc/3	None	10												✓				
031208	0700	TRIP BLANK	20cc/2	HCl	11												✓				
031308	1022	Rowland GCI MW-5	20cc/3	HCl	12												✓				

Date: 3/13/08 Time: 11:45 Relinquished by: Troy Urban Received by: 3/14/08 952
Date: Time: Relinquished by: Received by:

Remarks: Please copy results to ALA@lodestarservices.com

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

Hall Environmental Analysis Laboratory, Inc.

Date: *12-Jun-08*

CLIENT: XTO Energy
Project: Ground Water

Lab Order: 0806072

Lab ID: 0806072-05
Collection Date: 6/4/2008 11:45:00 AM
Client Sample ID: Sullivan GCD #1 MW-1R
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	2.5	1.0		µg/L	1	6/12/2008 4:52:35 AM
Toluene	ND	1.0		µg/L	1	6/12/2008 4:52:35 AM
Ethylbenzene	ND	1.0		µg/L	1	6/12/2008 4:52:35 AM
Xylenes, Total	ND	2.0		µg/L	1	6/12/2008 4:52:35 AM
Surr: 4-Bromofluorobenzene	86.7	68.9-122		%REC	1	6/12/2008 4:52:35 AM

Qualifiers:

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

QA/QC SUMMARY REPORT

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

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

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

Work Order Number 0806072 | Received by: TLS

Checklist completed by: Tonya Shomin (Signature) 6/5/08 (Date) | Sample ID labels checked by: AB (Initials)

Matrix: | Carrier name Greyhound

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

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

Chain-of-Custody Record

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

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

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

Analysis Request

Date	Time	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0806007a	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8260)	8310 (PNA or PAH)	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	8021 B BTEX				Air Bubbles (Y or N)
060308	0937	Jack Frost B2 mw-4	2oz/3	HCl	1												✓				
060308	1147	Valdez AE#1 mw-6	2oz/3	HCl	2												✓				
060308	1222	Valdez AE#1 mw-7	2oz/3	HCl	3												✓				
060408	1040	Snyder GC#1A mw-3	2oz/3	HCl	4												✓				
060408	1145	Sullivan GCD#1 mw1R	2oz/3	HCl	5												✓				

Date: 6/4/08 Time: 5:55 Relinquished by: Troy Urban
Received by: 6/5/08 931
Date: Time: Relinquished by:
Received by:

Remarks: please copy results to ALA@lodestarservices.com

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

Hall Environmental Analysis Laboratory, Inc.

Date: *06-Oct-08*

CLIENT:	XTO Energy	**Client Sample ID:**	Sullivan GCD1 MW-1R
Lab Order:	0809507	**Collection Date:**	9/22/2008 3:58:00 PM
Project:	Groundwater	**Date Received:**	9/23/2008
Lab ID:	0809507-11	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **DAM**
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	10/1/2008 3:29:11 AM
Benzene	ND	1.0		µg/L	1	10/1/2008 3:29:11 AM
Toluene	ND	1.0		µg/L	1	10/1/2008 3:29:11 AM
Ethylbenzene	ND	1.0		µg/L	1	10/1/2008 3:29:11 AM
Xylenes, Total	ND	2.0		µg/L	1	10/1/2008 3:29:11 AM
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	10/1/2008 3:29:11 AM
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	10/1/2008 3:29:11 AM
Surr: 4-Bromofluorobenzene	95.6	65.9-130		%REC	1	10/1/2008 3:29:11 AM

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

Date: *06-Oct-08*

CLIENT:	XTO Energy	**Client Sample ID:**	Trip Blank
Lab Order:	0809507	**Collection Date:**	
Project:	Groundwater	**Date Received:**	9/23/2008
Lab ID:	0809507-12	**Matrix:**	TRIP BLANK

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **DAM**
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	10/1/2008 3:59:29 AM
Benzene	ND	1.0		µg/L	1	10/1/2008 3:59:29 AM
Toluene	ND	1.0		µg/L	1	10/1/2008 3:59:29 AM
Ethylbenzene	ND	1.0		µg/L	1	10/1/2008 3:59:29 AM
Xylenes, Total	ND	2.0		µg/L	1	10/1/2008 3:59:29 AM
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	10/1/2008 3:59:29 AM
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	10/1/2008 3:59:29 AM
Surr: 4-Bromofluorobenzene	85.2	65.9-130		%REC	1	10/1/2008 3:59:29 AM

Qualifiers:

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

QA/QC SUMMARY REPORT

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

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8021B: Volatiles									
Sample ID: 0809507-10A MSD		*MSD*			Batch ID:	**R30439**	Analysis Date:		9/30/2008 4:07:13 AM
Methyl tert-butyl ether (MTBE)	16.33	µg/L	2.5	81.6	51.2	138	10.1	28	
Benzene	20.33	µg/L	1.0	101	85.9	113	0.393	27	
Toluene	20.11	µg/L	1.0	101	86.4	113	0.0697	19	
Ethylbenzene	20.50	µg/L	1.0	102	83.5	118	1.51	10	
Xylenes, Total	62.27	µg/L	2.0	104	83.4	122	1.06	13	
1,2,4-Trimethylbenzene	20.61	µg/L	1.0	103	83.5	115	1.64	21	
1,3,5-Trimethylbenzene	20.49	µg/L	1.0	102	85.2	113	0.865	10	
Sample ID: b 5		*MBLK*			Batch ID:	**R30439**	Analysis Date:		9/29/2008 11:11:28 AM
Methyl tert-butyl ether (MTBE)	ND	µg/L	2.5						
Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
1,2,4-Trimethylbenzene	ND	µg/L	1.0						
1,3,5-Trimethylbenzene	ND	µg/L	1.0						
Sample ID: 5ML RB		*MBLK*			Batch ID:	**R30439**	Analysis Date:		9/30/2008 9:14:37 AM
Methyl tert-butyl ether (MTBE)	ND	µg/L	2.5						
Benzene	ND	µg/L	1.0						
luene	ND	µg/L	1.0						
ethylbenzene	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
1,2,4-Trimethylbenzene	ND	µg/L	1.0						
1,3,5-Trimethylbenzene	ND	µg/L	1.0						
Sample ID: 100NG BTEX LCS		*LCS*			Batch ID:	**R30439**	Analysis Date:		9/30/2008 4:37:39 AM
Methyl tert-butyl ether (MTBE)	15.54	µg/L	2.5	77.7	51.2	138			
Benzene	19.76	µg/L	1.0	98.8	85.9	113			
Toluene	19.47	µg/L	1.0	97.4	86.4	113			
Ethylbenzene	20.41	µg/L	1.0	102	83.5	118			
Xylenes, Total	61.43	µg/L	2.0	102	83.4	122			
1,2,4-Trimethylbenzene	21.15	µg/L	1.0	106	83.5	115			
1,3,5-Trimethylbenzene	20.95	µg/L	1.0	105	85.2	113			
Sample ID: 0809507-10A MS		*MS*			Batch ID:	**R30439**	Analysis Date:		9/30/2008 3:36:51 AM
Methyl tert-butyl ether (MTBE)	14.75	µg/L	2.5	73.8	51.2	138			
Benzene	20.41	µg/L	1.0	101	85.9	113			
Toluene	20.09	µg/L	1.0	100	86.4	113			
Ethylbenzene	20.81	µg/L	1.0	104	83.5	118			
Xylenes, Total	62.94	µg/L	2.0	105	83.4	122			
1,2,4-Trimethylbenzene	20.95	µg/L	1.0	105	83.5	115			
1,3,5-Trimethylbenzene	20.67	µg/L	1.0	103	85.2	113			

ualifiers:

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

QA/QC SUMMARY REPORT

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

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

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

Work Order Number 0809507 | Received by: ARS

Checklist completed by: _____ 9/23/08 (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 ☐		
Water - VOA vials have zero headspace? No VOA vials submitted ☐		Yes ☑	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	
Container/Temp Blank temperature?	13°	*<6° C Acceptable* If given sufficient time to cool.		

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

Chain-of-Custody Record

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

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

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

Analysis Request

Date	Time	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0809507	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8260)	8310 (PNA or PAH)	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	8021B BTEX				Air Bubbles (Y or N)
9-22-08	1046	Bruington GC #1 MW-1R	3	$HgCl_2$	-1												✓				
9-22-08	1148	Bruington GC #1 MW-2R	3	$HgCl_2$	-2												✓				
9-22-08	1110	Bruington GC #1 MW-3R	3	$HgCl_2$	-3												✓				
9-22-08	1130	Bruington GC #1 MW-4	3	$HgCl_2$	-4												✓				
9-22-08	1210	Bruington GC #1 MW-5	3	$HgCl_2$	-5												✓				
9-22-08	1230	Bruington GC #1 MW-6	3	$HgCl_2$	-6												✓				
9-22-08	1250	Bruington GC #1 MW-7	3	$HgCl_2$	-7												✓				
9-22-08	1323	Bruington GC #1 MW-8	3	$HgCl_2$	-8												✓				
9-22-08	1415	Rowland MW-5	3	$HgCl_2$	-9												✓				
9-22-08	1502	Snyder MW-3	3	$HgCl_2$	-10												✓				
9-22-08	1558	~~Simple~~ Sullivan GCD1 MW-1R	3	$HgCl_2$	-11												✓				
9-22-08	0700	TRIP BLANK	2		-12												✓				

Date:	Time:	Relinquished by:	Received by:	Remarks:
9-23-08	0730	Ashley L Ager	16:00 9/23/08	Please copy results to ALA@ladestarservices.com
Date:	Time:	Relinquished by:	Received by:	

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

Hall Environmental Analysis Laboratory, Inc.

Date: *11-Dec-08*

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

Lab ID: 0812149-04 **Collection Date:** 12/4/2008 2:32:00 PM
Client Sample ID: Sullivan Gas Com D1-MW-1R **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: DAM
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	12/9/2008 3:25:21 PM
Benzene	1.5	1.0		µg/L	1	12/9/2008 3:25:21 PM
Toluene	ND	1.0		µg/L	1	12/9/2008 3:25:21 PM
Ethylbenzene	ND	1.0		µg/L	1	12/9/2008 3:25:21 PM
Xylenes, Total	ND	2.0		µg/L	1	12/9/2008 3:25:21 PM
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	12/9/2008 3:25:21 PM
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	12/9/2008 3:25:21 PM
Surr: 4-Bromofluorobenzene	93.4	65.9-130		%REC	1	12/9/2008 3:25:21 PM

Lab ID: 0812149-05 **Collection Date:** 12/4/2008 3:40:00 PM
Client Sample ID: ~~Valdez A1E MW-7~~ **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: DAM
Methyl tert-butyl ether (MTBE)	ND	50		µg/L	20	12/10/2008 11:56:45 AM
Benzene	100	20		µg/L	20	12/10/2008 11:56:45 AM
Toluene	31	20		µg/L	20	12/10/2008 11:56:45 AM
Ethylbenzene	430	20		µg/L	20	12/10/2008 11:56:45 AM
Xylenes, Total	3600	40		µg/L	20	12/10/2008 11:56:45 AM
1,2,4-Trimethylbenzene	690	20		µg/L	20	12/10/2008 11:56:45 AM
1,3,5-Trimethylbenzene	320	20		µg/L	20	12/10/2008 11:56:45 AM
Surr: 4-Bromofluorobenzene	108	65.9-130		%REC	20	12/10/2008 11:56:45 AM

Lab ID: 0812149-06 **Collection Date:** 12/4/2008 4:05:00 PM
Client Sample ID: ~~Valdez A1E MW-6~~ **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: DAM
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	12/9/2008 4:58:57 PM
Benzene	1.6	1.0		µg/L	1	12/9/2008 4:58:57 PM
Toluene	3.6	1.0		µg/L	1	12/9/2008 4:58:57 PM
Ethylbenzene	98	1.0		µg/L	1	12/9/2008 4:58:57 PM
Xylenes, Total	640	10		µg/L	5	12/10/2008 1:00:23 PM
1,2,4-Trimethylbenzene	70	1.0		µg/L	1	12/9/2008 4:58:57 PM
1,3,5-Trimethylbenzene	31	1.0		µg/L	1	12/9/2008 4:58:57 PM
Surr: 4-Bromofluorobenzene	107	65.9-130		%REC	1	12/9/2008 4:58:57 PM

Qualifiers:

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

QA/QC SUMMARY REPORT

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

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

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

Work Order Number 0812149 | Received by: ARS

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

Matrix: | Carrier name Greyhound

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

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

Chain-of-Custody Record

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

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

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

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0812149	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	8021 BTEX				Air Bubbles (Y or N)
4Dec08	12:10		Jackson Prot B2-MW-4	glass/3	HCl	1												X				
4Dec08	1105		EJ Johnson 1E-MW-5	glass/3	HCl	2												X				
4Dec08	1337		Snyder Gas Com 1A-MW-3	glass/3	HCl	3												X				
4Dec08	1432		Sullivan Gas Com D1-MW-1R	glass/3	HCl	4												X				
4Dec08	15:40		Valdez A1E-MW-7	glass/3	HCl	5												X				
4Dec08	16:05		Valdez A1E-MW-6	glass/3	HCl	6												X				

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

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

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

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION
2040 S. PACHECO
SANTA FE, NEW MEXICO 87505
(505) 827-7131

January 15, 1997

CERTIFIED MAIL
RETURN RECEIPT NO. P-269-269-236

Mr. B.D. Shaw
Amoco Production Company
200 Amoco Court
Farmington, New Mexico 87401

RE: FINAL SAN JUAN BASIN PIT CLOSURE REPORTS

Dear Mr. Shaw:

The New Mexico Oil Conservation Division (OCD) has completed a review of Amoco Production Company's (Amoco) May 23, 1994 "AMOCO PRODUCTION COMPANY PIT CLOSURE VERIFICATIONS" which were submitted on behalf of Amoco by their consultant Envirotech, Inc. This document contains "PIT REMEDIATION AND CLOSURE REPORTS" for 32 unlined pits in the San Juan Basin of Northwestern New Mexico.

The OCD's review of the above referenced document is addressed below:

A. The pit closure/soil remediation activities conducted at the sites listed below are **approved.**

1.	Atlantic A #19 (Separator pit)	Unit B, Sec. 27, T31N, R10W.
2.	Aztec Com 1-1 (Blow pit)	Unit B, Sec. 02, T30N, R11W.
3.	Daum LS #6 (Separator pit)	Unit D, Sec. 32, T28N, R09W.
4.	Federal GC L-1 (Separator pit)	Unit F, Sec. 14, T30N, R11W.
5.	Federal GCL #1E (Separator pit)	Unit B, Sec. 14, T30N, R11W.
6.	Lackey B LS #4 (Abandoned pit)	Unit A, Sec. 29, T28N, R09W.
7.	Lackey B LS #4 (Blow pit)	Unit A, Sec. 29, T28N, R09W.
8.	Lackey B LS #4 (Separator pit)	Unit A, Sec. 29, T28N, R09W.
9.	Lackey B LS #13E (Blow pit)	Unit C, Sec. 20, T28N, R09W.
10.	Lackey B LS #13E (Separator pit)	Unit C, Sec. 20, T28N, R09W.
11.	Michener A LS #5 (Blow pit)	Unit A, Sec. 31, T28N, R09W.
12.	Michener A LS #6 (Blow pit)	Unit H, Sec. 31, T28N, R09W.
13.	Storey BLS #8 (Separator pit)	Unit M, Sec. 11, T30N, R11W.

Please be advised that OCD approval does not relieve Amoco of liability if remaining contaminants are found to pose a future threat to surface water, ground water, human health or the environment. In addition, OCD approval does not relieve Amoco of responsibility for compliance with any other federal, state or local laws and/or regulations.

B. The pit remedial activities conducted at the sites listed below are satisfactory. However, according to the reports, onsite landfarming and/or composting actions are still continuing at the sites. Subsequently, the OCD cannot issue final closure approval at this time and approval of closure actions at these sites is **denied**. Please resubmit final closure reports for these sites upon completion of the landfarming and/or composting activities. The final reports will include the results of the soil remediation levels achieved, the laboratory analyses and associated quality assurance/quality control data and the disposition of the remediated soils.

1.	Harold B. Chapson B#1 (Separator)	Unit J, Sec. 28, T29N, R09W.
2.	Gerk GC #1 (Separator pit)	Unit B, Sec. 30, T29N, R09W.
3.	Gerk GC #1 (Blow pit)	Unit B, Sec. 30, T29N, R09W.
4.	Gerk GC B#1 (Blow pit)	Unit G, Sec. 30, T29N, R09W.
5.	Gerk GC B#1 (Compressor pit)	Unit G, Sec. 30, T29N, R09W.
6.	Gerk GC B#1 (Separator pit)	Unit G, Sec. 30, T29N, R09W.
7.	Gerk GC D#1 (Blow pit)	Unit C, Sec. 30, T29N, R09W.
8.	Lackey B LS #15E (Separator pit)	Unit D, Sec. 29, T28N, R09W.
9.	State BZ #1 (Separator pit)	Unit I, Sec. 32, T29N, R10W.
10.	Valencia Canyon Unit #24 (Blow pit)	Unit D, Sec. 15, T28N, R04W.
11.	Valencia Canyon Unit #25 (Blow pit)	Unit N, Sec. 15, T28N, R04W.

C. The final pit remedial contaminant levels at the sites listed below are in excess of the OCD's recommended remediation levels. Consequently, the OCD cannot issue final closure approval and approval of closure actions at these sites is **denied**. The OCD requests that Amoco address the extent of the remaining contamination at these sites. The OCD will reconsider issuing closure approval upon resubmission of pit closure forms which address the remaining extent of contamination at the sites. The resubmitted forms should include the completed form and all pertinent information related to the extent of contamination, the results of the soil remediation levels achieved, the results of the soil remediation levels achieved, the laboratory analyses and associated quality assurance/quality control data and the disposition of the remediated soils.

1.	Blanco Com 1-1 (Separator pit)	Unit G, Sec. 02, T30N, R11W.
2.	Daum LS #6 (Separator pit)	Unit D, Sec. 32, T28N, R09W.
3.	Eaton A#1 (Separator pit)	Unit P, Sec. 25, T29N, R11W.
4.	Johnson #1 (Blow pit)	Unit J, Sec. 02, T30N, R11W.
5.	Keys GC B#1 (Blow pit)	Unit D, Sec. 32, T29N, R10W.
6.	Lackey B LS #15E (Blow pit)	Unit D, Sec. 29, T28N, R09W.
7.	Skelly GC #1 (Separator pit)	Unit A, Sec. 32, T29N, R10W.

D. Ground waters at the sites listed below are contaminated with petroleum related constituents in excess of New Mexico Water Quality Control Commission ground water standards. In addition, the extent of ground water contamination at the sites has not been determined. Therefore, approval of these pit closure forms is **denied**. The OCD requests that Amoco investigate the extent of contamination and, if necessary, remediate contaminated ground water pursuant to Amoco's November 21, 1995 ground water investigation/remediation work plan which was approved by the OCD on November 29, 1995.

1. Sullivan GC D#1 (Blow pit) Unit B, Sec. 26, T29N, R11W.

To simplify the approval process for both Amoco and OCD, the OCD requests that Amoco submit all future pit closure reports only upon completion of all closure activities including onsite landfarming or composting of contaminated soils. The reports should include the completed form and all pertinent information related to the extent of contamination, the results of the soil remediation levels in the pits and landfarms, all laboratory analyses and associated quality assurance/quality control data and the disposition of all remediated soils.

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

Sincerely,

William C. Olson
Hydrogeologist
Environmental Bureau

xc: OCD Aztec District Office
Bill Liess, BLM Farmington District Office
David Deardorff, New Mexico State Land Office
Nelson Velez, Blagg Engineering, Inc.