

3R - 239

REPORTS

DATE:

2001

Certified Mail: #7001 1940 0003 1553 8513

February 28, 2002

RECEIVED

MAR 04 2002

ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

Mr. William C. Olson
New Mexico Oil Conservation Division
1220 St. Francis Dr.
Santa Fe, NM 87504

RE: 2001 Pit Project Annual Groundwater Report

Dear Mr. Olson:

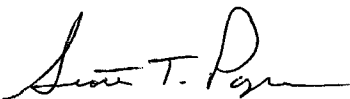
In accordance with reporting requirements, El Paso Field Services (EPFS) has enclosed annual reports for the 30 remaining groundwater impacted sites that were identified during our pit closure project of 1994 / 1995.

EPFS has organized the 30 reports (Volumes IA, IB, II and III), reports by land type. Volume IA and IB contain annual reports for sites found on Federal land. Volume II contains Non Federal sites and Volume III contains sites on Navajo land. Of the 30 reports submitted EPFS is requesting closure of three sites located on Navajo lands. Of the three Navajo sites submitted for closure OCD has closed the Charley Pah #4 and the John Charles #8. The Rementa et al #1 has not been closed by either agency. EPFS understands closure of groundwater sites on Navajo land falls under jurisdiction of the Navajo Environmental Protection Agency and original documents have been submitted to them for review. Other Navajo sites are included in the report for your information.

The Jaquez Com. C #1 and Jaquez Com. E #1 site is not included in with this report and will be submitted by the required deadline of April 1, 2002.

If you have any questions concerning the enclosed reports, please call me at (505) 599-2124.

Sincerely,



Scott T. Pope P.G.
Senior Environmental Scientist

xc: Mr. Denny Foust, NMOCD, Aztec - w / enclosures; **Certified Mail # 7001 1940 0003 1553 8506**
Mr. Bill Liesse, BLM - w / enclosures (federal sites only), **Certified Mail # 7001 1940 0003 1553 8520**

SAN JUAN BASIN PIT CLOSURES

San Juan Basin, New Mexico

**El Paso Field Services
Pit Project Groundwater Sites
Annual Report
Volume II-Non-Federal Sites**

March 2002

Prepared for

**El Paso Field Services
Farmington, New Mexico**



MWH

MONTGOMERY WATSON HARZA

EL PASO FIELD SERVICES ANNUAL GROUNDWATER REPORT

NON-FEDERAL SITES VOLUME II

TABLE OF CONTENTS

Site Map

METER or LINE ID	SITE NAME	TOWNSHIP	RANGE	SECTION	UNIT
71669	State Gas Com N #1	31N	12W	16	H
70194	Johnston Fed #4	31N	09W	33	H
93388	Horton #1E	31N	09W	28	H
72556	Knight #1	30N	13W	5	A
73551	Coldiron A #1	30N	11W	2	K
03906	GCU Com A #142E	29N	12W	25	G
70445	Standard Oil Com #1	29N	09W	36	N
LD146	Lat 3B-39 Line Drip	29N	09W	10	M
LD087	K-31 Line Drip	25N	06W	16	N
94967	Lindrith B #24	24N	03W	9	N



MWH

MONTGOMERY WATSON HARZA

Groundwater Site Map



EPFS GROUNDWATER PITS

2001 ANNUAL GROUNDWATER REPORT

State Gas Com N #1

Meter Code 71669

SITE DETAILS

Legals Twn: 31N Rng: 12W Sec: 16 UNIT: H
NMOCD Haz Ranking 30 Land Type: State Operator: Amoco Production Company

PREVIOUS ACTIVITIES

Site Assessment: Mar-94 Excavation May-94 (80cy) Soil Boring: Oct-95 Monitor Well: Oct-95
Geoprobe: NA Additional MWs: Dec-01 Downgradient MW's: Nov-95 Replace MW: NA
PSH Removal Initiated: Jul-97 ORC Nutrient Injection NA Re-Excavation: NA
Quarterly Initiated NA Annual Initiated NA Quarterly Resumed: NA

2001 ACTIVITY

Phase Separated Hydrocarbons (PSH) Measurements - PSH thickness was monitored throughout 2001. PSH recovered from MW-1 was 1.55 cumulative gallons for 2001. PSH recovered from MW-2 was 0.7 cumulative gallons for 2001. PSH recovered from MW-3 was 13.05 cumulative gallons for 2001. PSH recovered from MW-4 was 0.05 cumulative gallons for 2001.

Specific gravity - A sample was analyzed for Specific Gravity on September 4, 2001 and the result was 0.773 g/cc.

New Monitor Well Installation and Resurvey - The site was resurveyed in September and December 2001. A new monitor well, MW- 6, was installed and sampled in December 2001. Groundwater flow is generally towards the south and southeast.

SUMMARY TABLES AND GRAPHS

Groundwater concentration data and PSH recovery data are presented in Table 1 BTEX and Free Product Recovery Table. Copies of the laboratory data sheets and associated quality assurance/ quality control data are presented Attachment 1. Included are graphs for MW-1 through MW-5 and Free Product Recovery graphs for MW-1 through MW-3.

SITE MAP

Site Maps with BTEX concentrations and groundwater elevations are attached.

GEOLOGIC LOGS AND WELL COMPLETION DIAGRAMS

Drilling activities to install MW-6 were conducted on December 17, 2001 and the geologic logs and well completion diagrams are presented in Attachment 2.

DISPOSITION OF GENERATED WASTES

All PSH has been disposed of at the EPFS Kutz Separator in Bloomfield, New Mexico.

EPFS GROUNDWATER PITS

2001 ANNUAL GROUNDWATER REPORT

State Gas Com N #1

Meter Code: 71669

ISOCONCENTRATION MAPS

Isoconcentration maps were generated for this site and are provided as Figure 2.

CONCLUSIONS

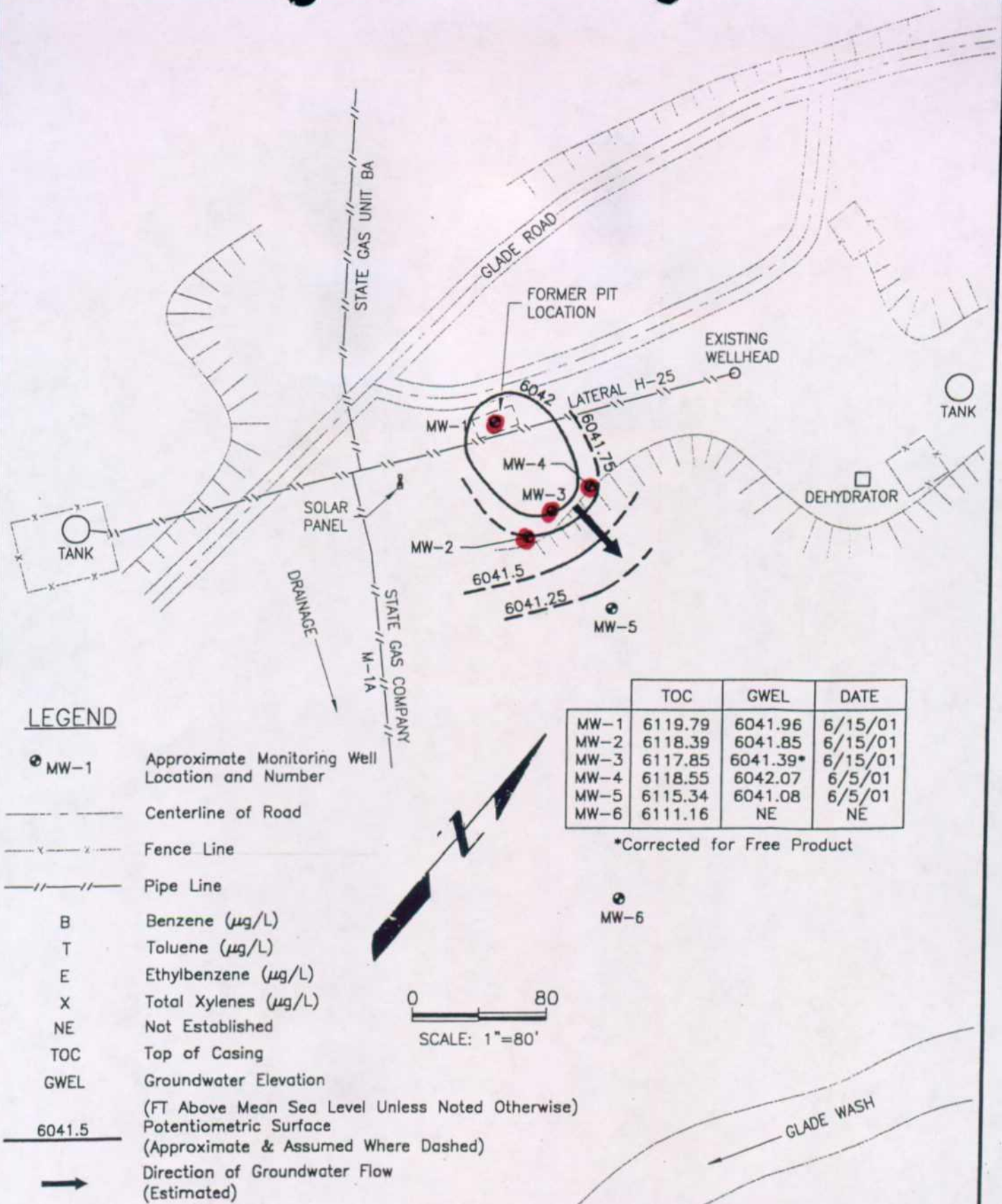
PSH recovered: MW-1 was purged of 1.55 cumulative gallons for 2001, with a cumulative total recovered of 79.6 gallons since 1997; MW-2 was 0.7 cumulative gallons for 2001, with a cumulative total of 133.16 gallons; MW-3 was 13.05 cumulative gallons for 2001, with a cumulative total of 57.1 gallons recovered since 1997; and MW-4 was 0.05 cumulative gallons for 2001, with a cumulative total of 0.05 gallons recovered since 1997.

EPFS installed an additional downgradient monitoring well MW-6, to attempt to define the downgradient extent of hydrocarbon contamination. This well had a benzene concentration of 5,000 ppb as sampled on December 19, 2001.

Other potential hydrocarbon sources at this site include: facilities associated with the operator - Amoco, numerous pipelines, and other production operations.

RECOMMENDATIONS

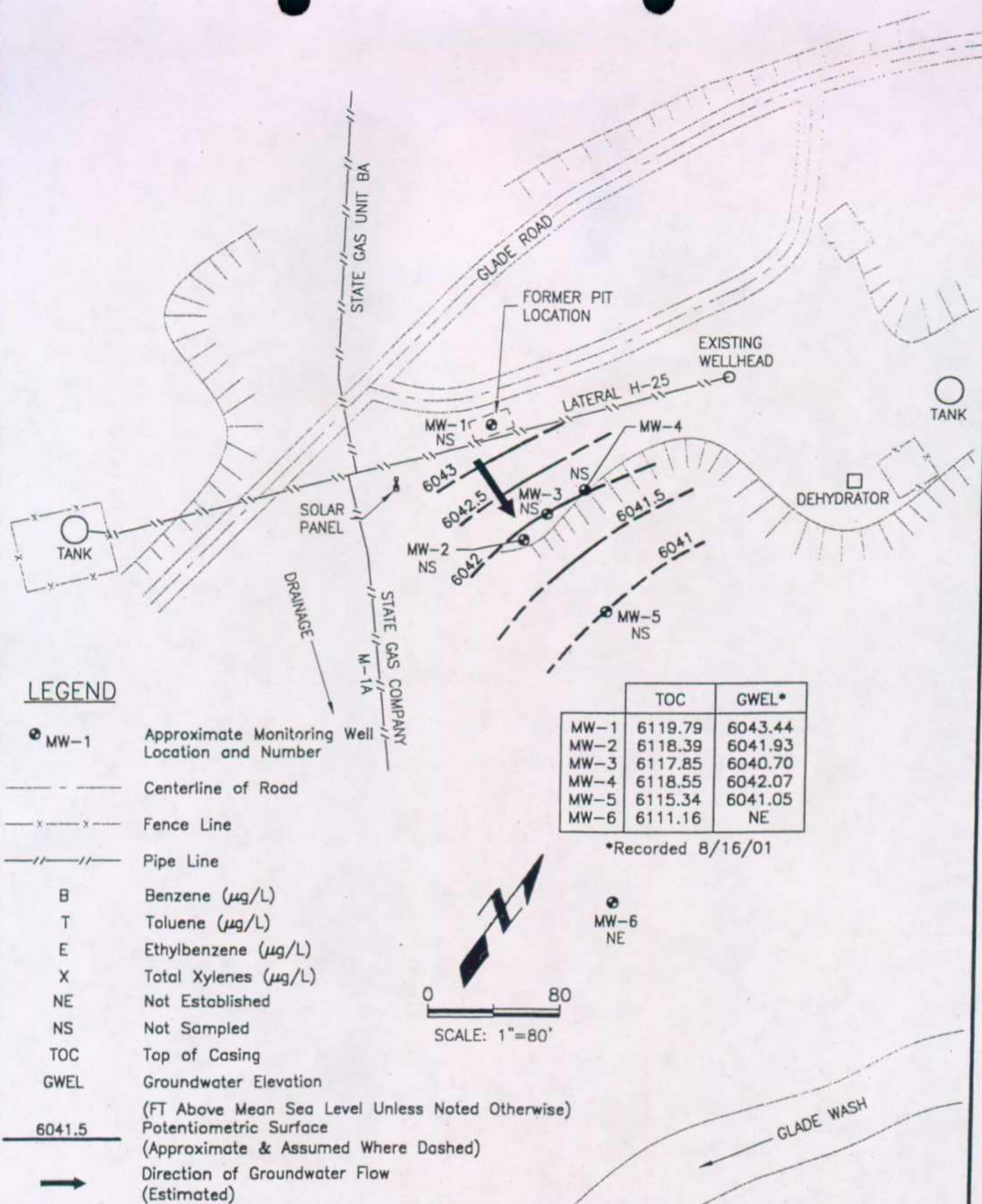
- > As this appears to be a commingled contamination site, we request a meeting with OCD to discuss this site and identify the other potentially responsible parties and their obligations to assist with source evaluation and with site characterization and remediation.
- > Continue product removal at MW-1, MW-2 and MW-3 as needed.
- > Initiate annual sampling in monitor wells without product until BTEX levels are below NMWQCC, then sample quarterly for closure.



STATE GAS COM N#1, METER 71669
JUNE, 2001

GROUNDWATER SITES
EL PASO FIELD SERVICES

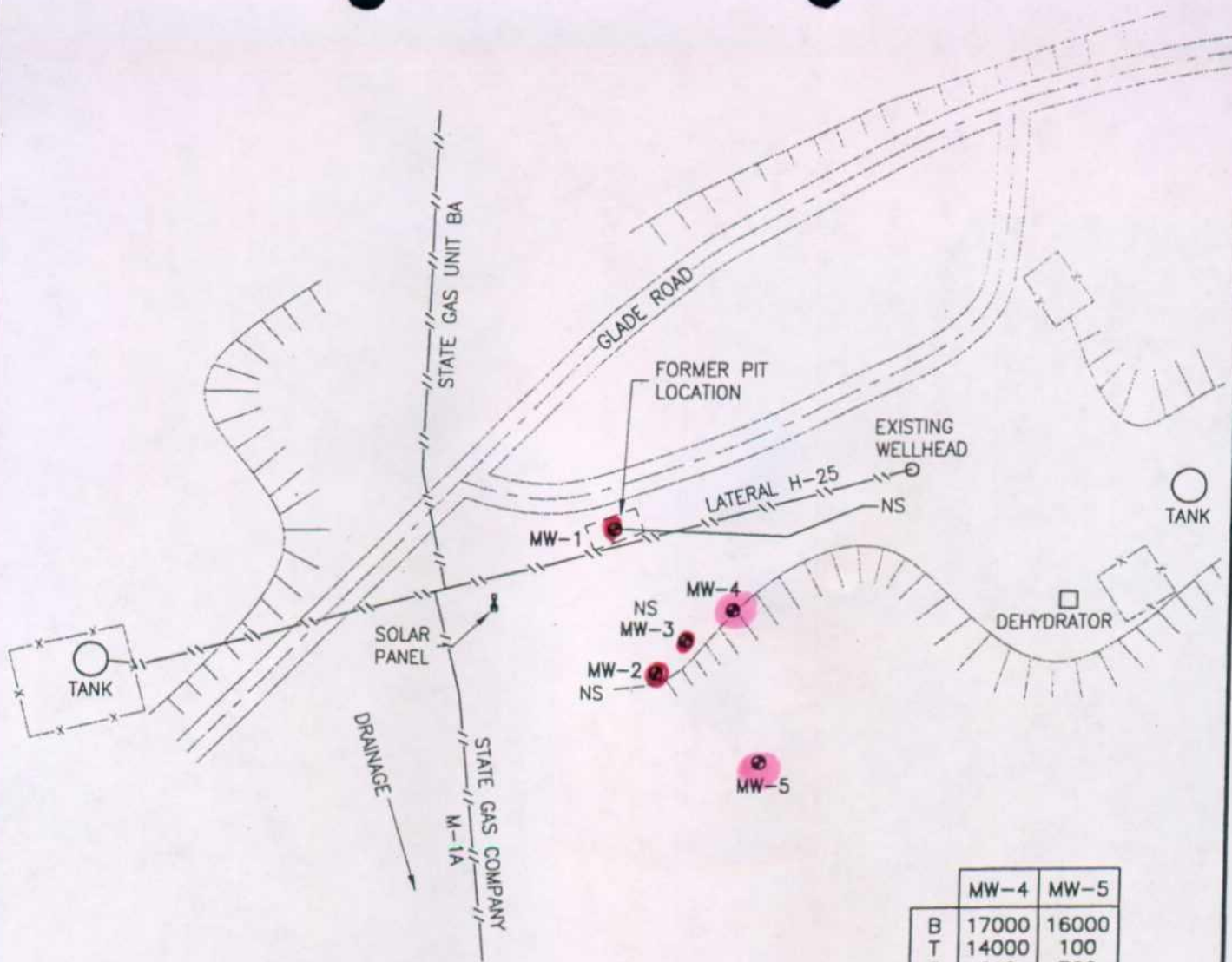
FIGURE 1



STATE GAS COM N#1, METER 71669
AUGUST, 2001

GROUNDWATER SITES
EL PASO FIELD SERVICES

FIGURE 2



	MW-4	MW-5
B	17000	16000
T	14000	100
E	610	720
X	6700	4600

LEGEND

- ⊙ MW-1 Approximate Monitoring Well Location and Number
- — — Centerline of Road
- x — x — Fence Line
- // — // — Pipe Line
- B Benzene ($\mu\text{g/L}$)
- T Toluene ($\mu\text{g/L}$)
- E Ethylbenzene ($\mu\text{g/L}$)
- X Total Xylenes ($\mu\text{g/L}$)
- NS Not Sampled
- NE Not Established
- TOC Top of Casing

0 80
SCALE: 1"=80'

STATE GAS COM N#1, METER 71669
SEPTEMBER, 2001

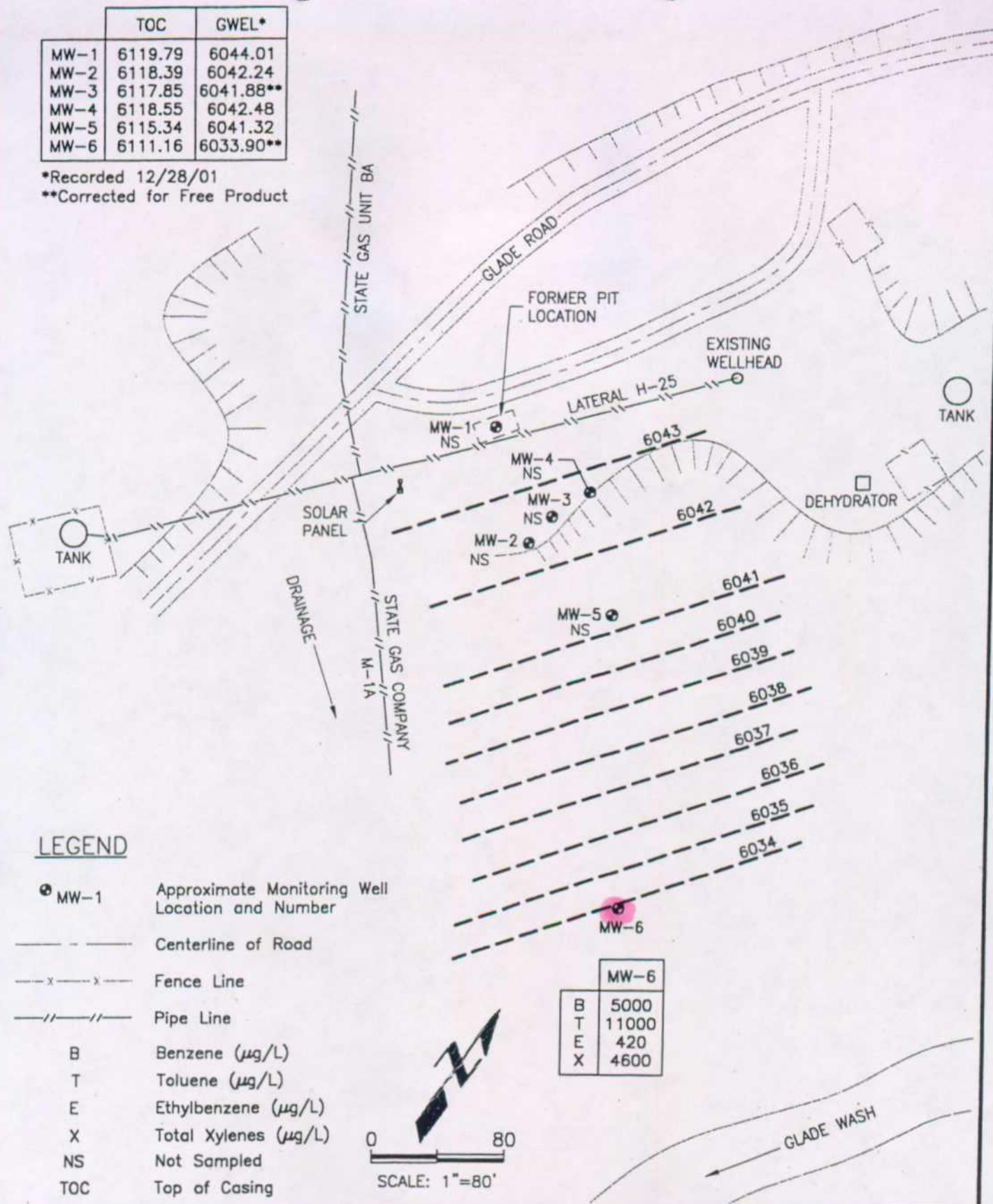
GROUNDWATER SITES
EL PASO FIELD SERVICES

FIGURE 3

	TOC	GWEL*
MW-1	6119.79	6044.01
MW-2	6118.39	6042.24
MW-3	6117.85	6041.88**
MW-4	6118.55	6042.48
MW-5	6115.34	6041.32
MW-6	6111.16	6033.90**

*Recorded 12/28/01

**Corrected for Free Product



STATE GAS COM N#1, METER 71669
DECEMBER, 2001

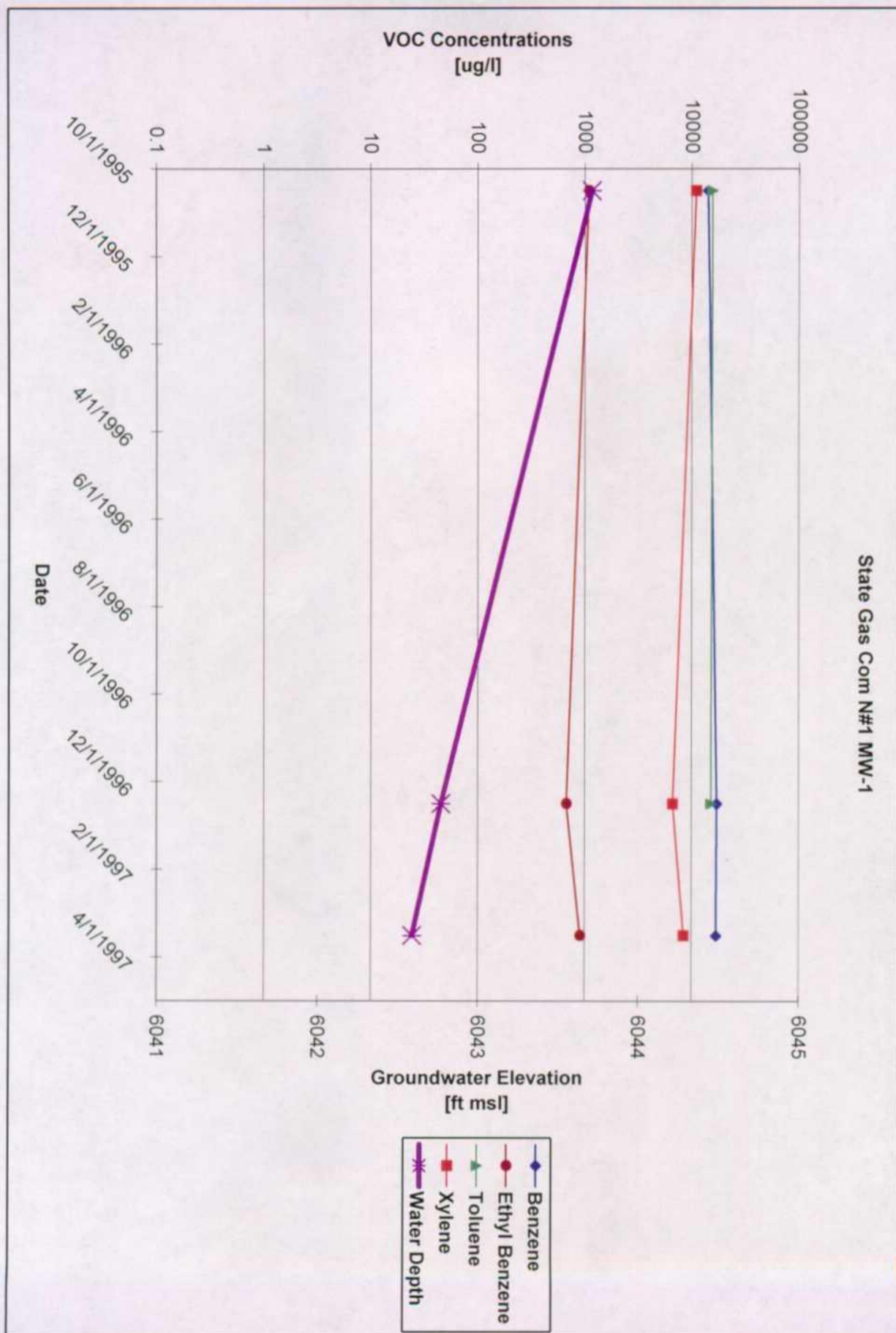
GROUNDWATER SITES
EL PASO FIELD SERVICES

FIGURE 4

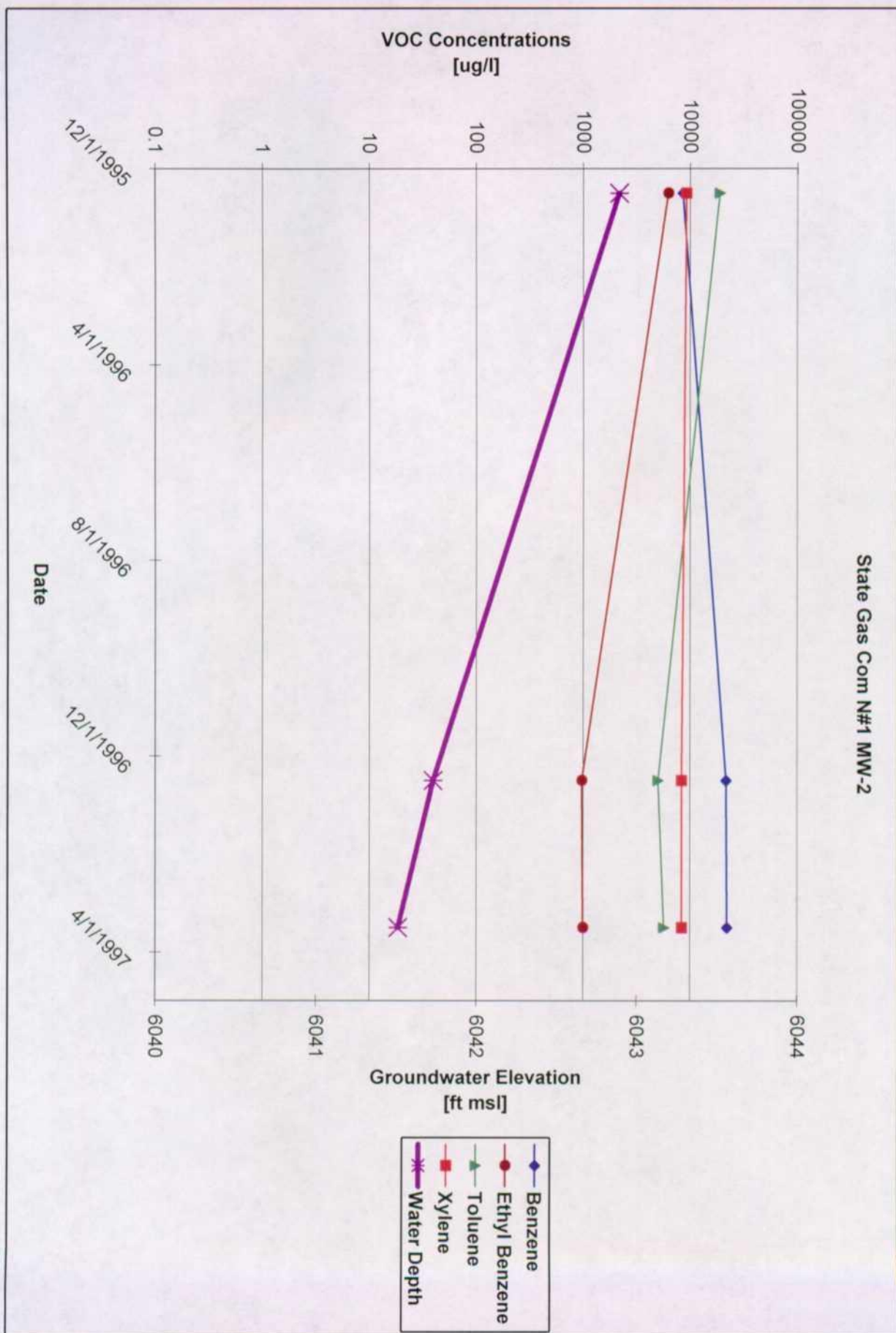
Table 1 BTEX
State Gas Comm N#1

Sample #	Meter Line #	Site Name	Sample Date	MW#	Benzene (µg/l)	Ethyl Benzene (µg/l)	Toluene (µg/l)	Total Xylenes (µg/l)	Depth to Water (Feet)	Groundwater Elevation (feet)
STA0109-01	71669	State Gas Com N #1	9/10/2001	4	17000	610	14000	6700	76.45	6042.1
STA0109	71669	State Gas Com N #1	9/10/2001	5	16000	720	100	4600	74.30	6041.04
112081	71669	State Gas Com N #1	12/20/2001	6	5000	420	11000	4600	80.63	6030.53

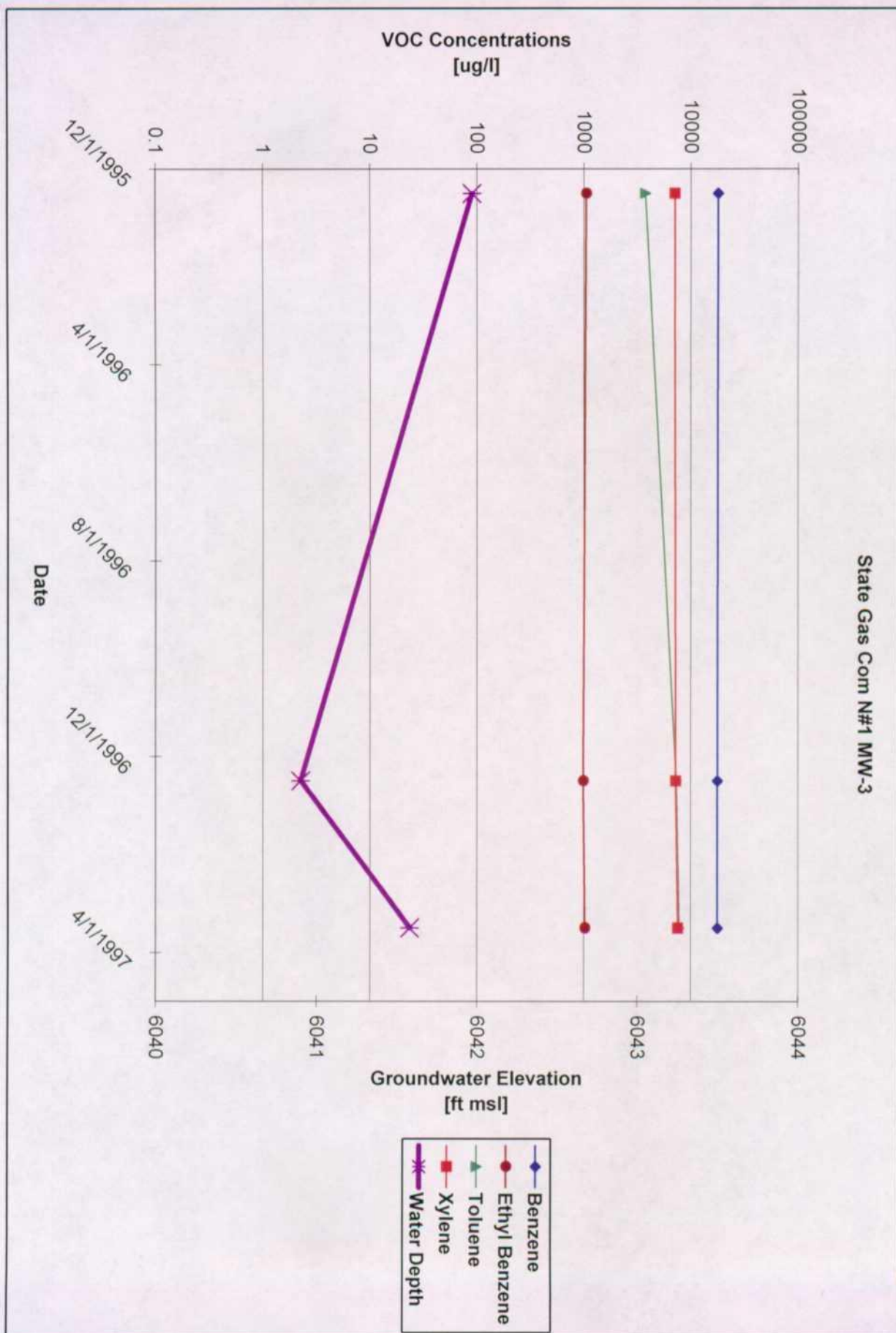
State Gas Com N#1 MW-1



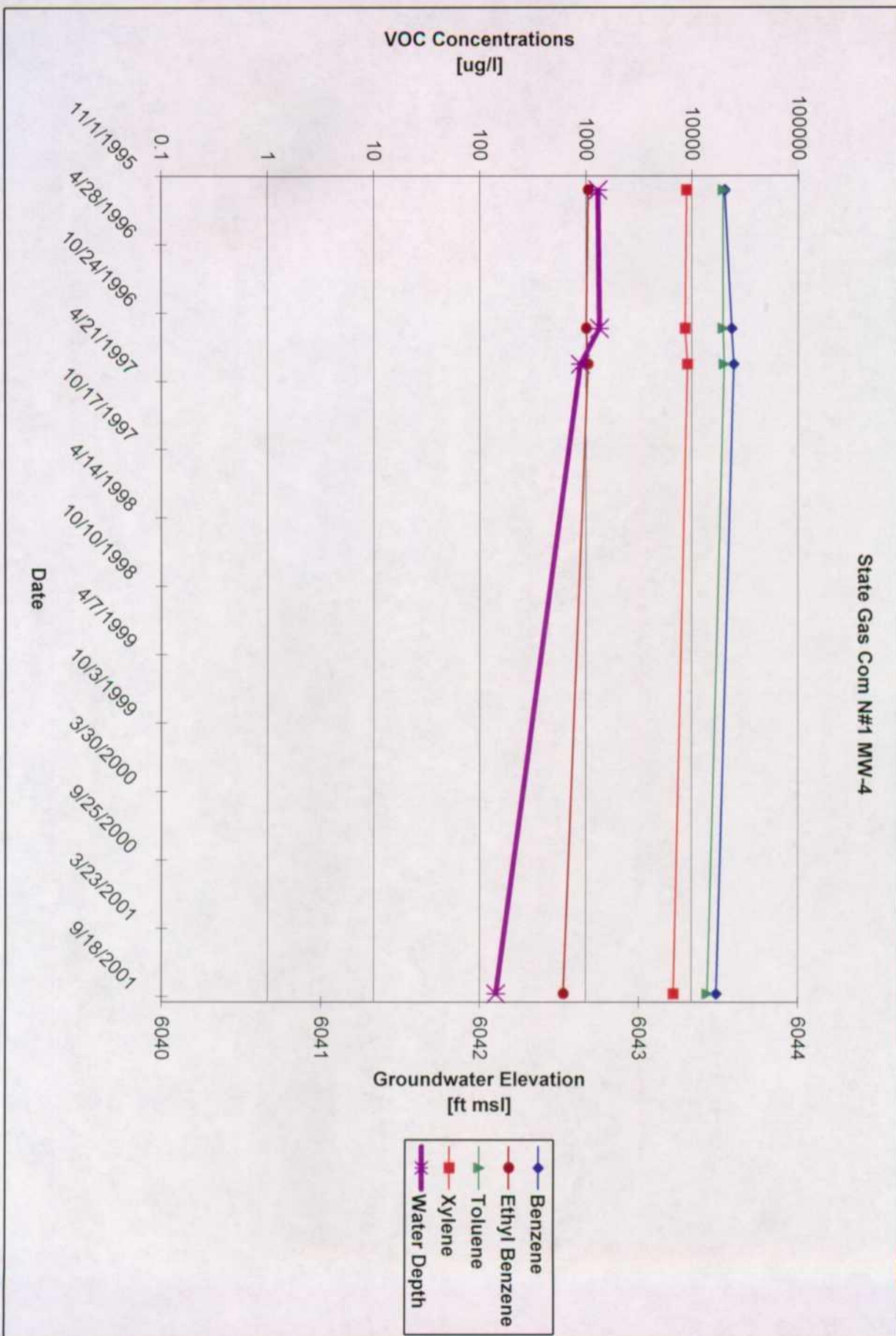
State Gas Com N#1 MW-2

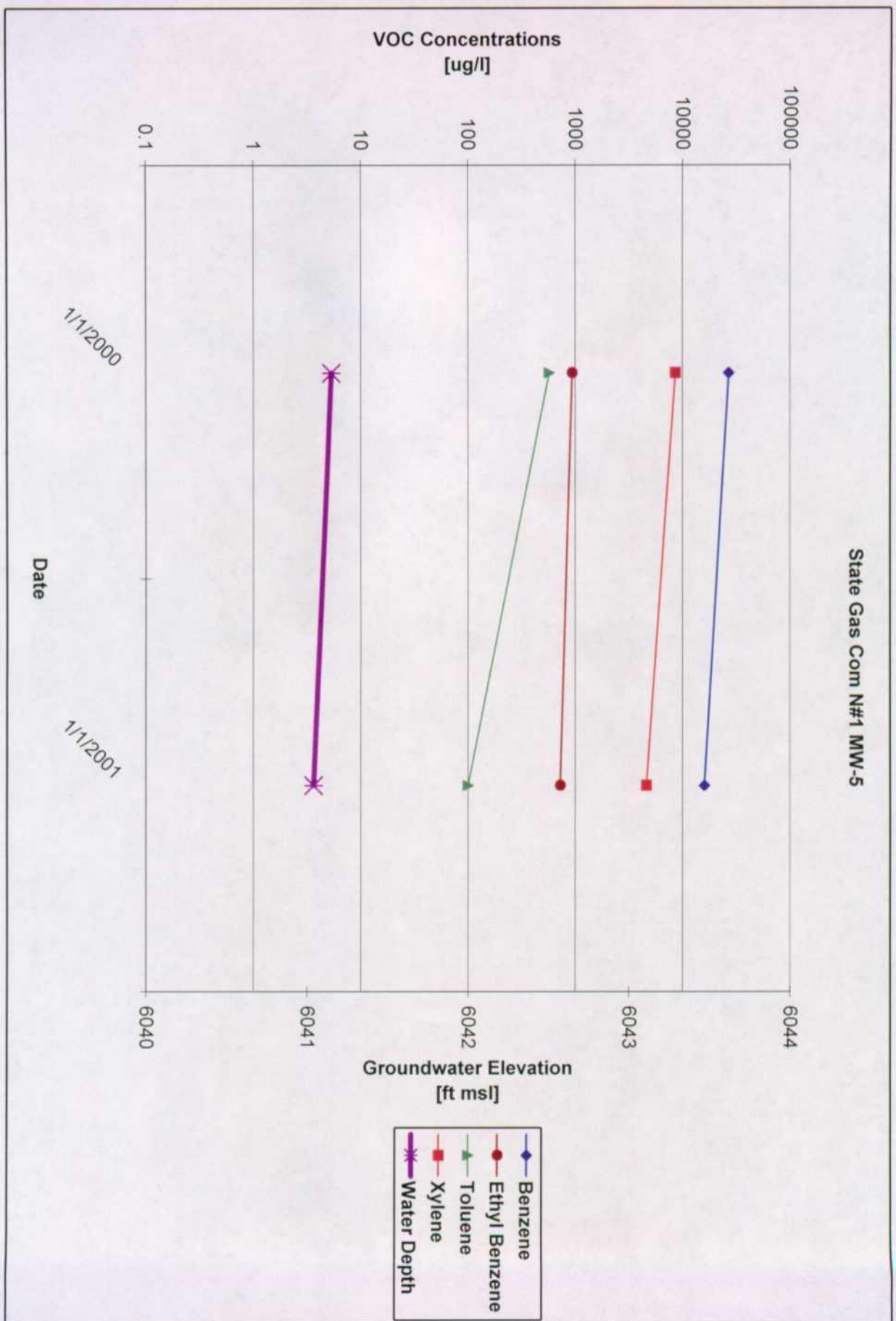


State Gas Com N#1 MW-3



State Gas Com N#1 MW-4





Product Removal Table State Gas Com N#1

Site Name	MW#	Date	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Volume Removed (Gallons)	Cumulative Total (Gallons)
State Gas Com N #1	1	1/16/2001	77.95	77.96	0.01	0.5	78.55
State Gas Com N #1	1	1/24/2001	78.27	78.28	0.01	0.05	78.60
State Gas Com N #1	1	1/31/2001	78.15	78.16	0.01	0.1	78.70
State Gas Com N #1	1	2/19/2001	78.18	78.19	0.01	0.25	78.95
State Gas Com N #1	1	3/5/2001	0	78.34	0	0.1	79.05
State Gas Com N #1	1	6/5/2001	77.71	77.71	0	0.5	79.55
State Gas Com N #1	1	6/15/2001	77.83	77.83	0	0	79.55
State Gas Com N #1	1	7/13/2001	76.51	76.52	0.01	0	79.55
State Gas Com N #1	1	7/20/2001	76.46	76.47	0.01	0	79.55
State Gas Com N #1	1	8/1/2001	77.22	77.22	0	0.05	79.60
State Gas Com N #1	1	8/8/2001	76.37	76.37	0	0	79.60
State Gas Com N #1	1	8/16/2001	76.35	76.35	0	0	79.60
State Gas Com N #1	1	8/20/2001	76.28	76.28	0	0	79.60
State Gas Com N #1	1	9/5/2001	76.20	76.20	0	0	79.60
State Gas Com N #1	1	9/19/2001	76.14	76.14	0	0	79.60
State Gas Com N #1	1	9/26/2001	76.09	76.09	0	0	79.60
State Gas Com N #1	1	10/3/2001	76.06	76.06	0	0	79.60
State Gas Com N #1	1	10/11/2001	76.04	76.04	0	0	79.60
State Gas Com N #1	2	1/16/2001	77.43	78.26	0.78	0	132.46
State Gas Com N #1	2	1/24/2001	78.72	79.06	0.34	0.35	132.81
State Gas Com N #1	2	1/30/2001	78.44	78.45	0.01	0.25	133.06
State Gas Com N #1	2	4/2/2001	78.36	78.36	0	0.1	133.16
State Gas Com N #1	2	6/5/2001	76.46	76.46	0	0	133.16
State Gas Com N #1	2	6/15/2001	76.54	76.54	0	0	133.16
State Gas Com N #1	2	7/13/2001	76.56	76.56	0	0	133.16
State Gas Com N #1	2	7/20/2001	76.48	76.48	0	0	133.16
State Gas Com N #1	2	8/1/2001	76.51	76.51	0	0	133.16
State Gas Com N #1	2	8/8/2001	76.5	76.5	0	0	133.16
State Gas Com N #1	2	8/16/2001	76.46	76.46	0	0	133.16
State Gas Com N #1	2	8/20/2001	76.43	76.43	0	0	133.16
State Gas Com N #1	2	9/5/2001	76.38	76.38	0	0	133.16
State Gas Com N #1	2	9/19/2001	76.34	76.34	0	0	133.16
State Gas Com N #1	2	9/26/2001	76.35	76.35	0	0	133.16
State Gas Com N #1	2	10/3/2001	76.31	76.31	0	0	133.16

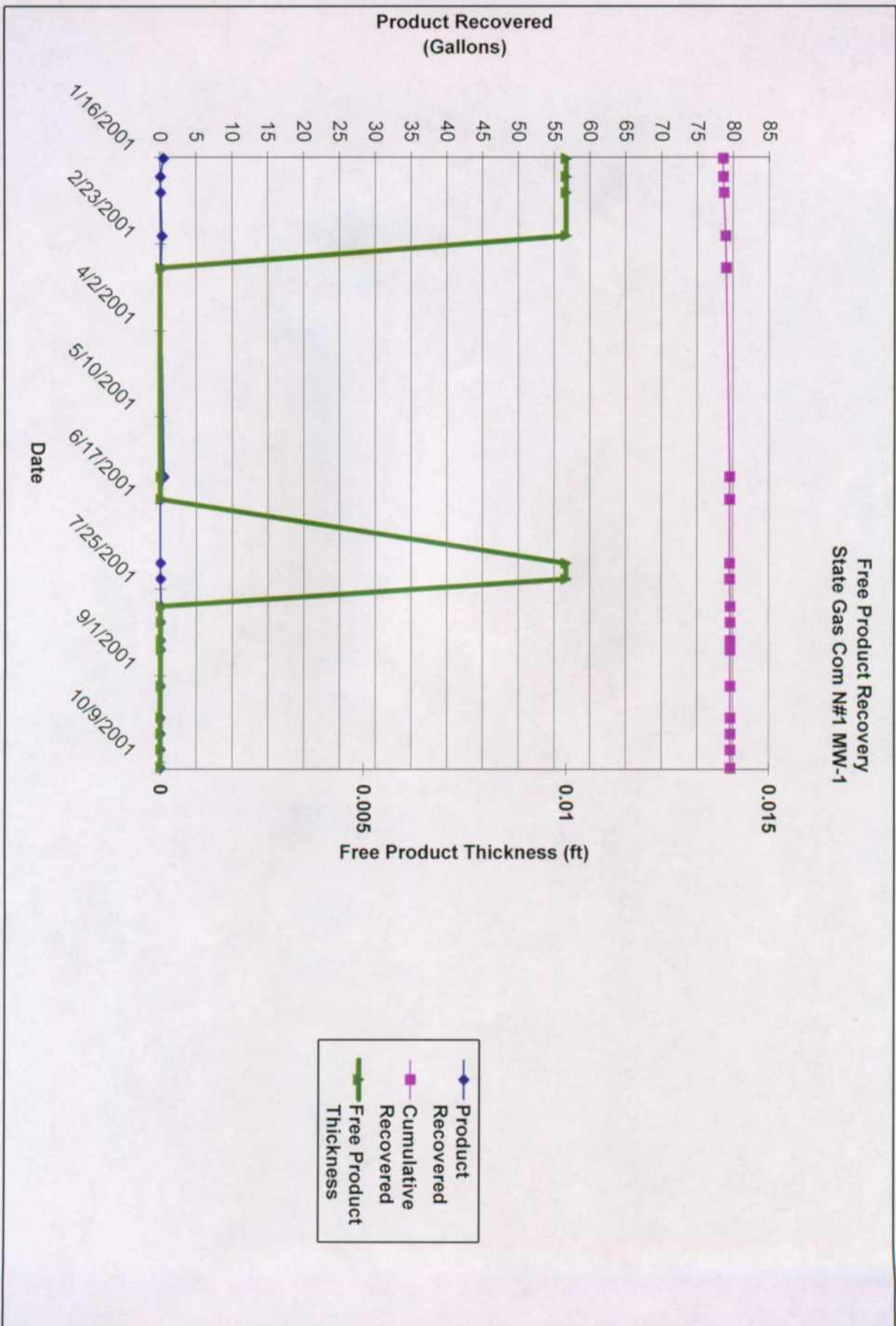
No product removed from MW-5 and MW-6 for 2001

Product Removal Table
State Gas Com N#1

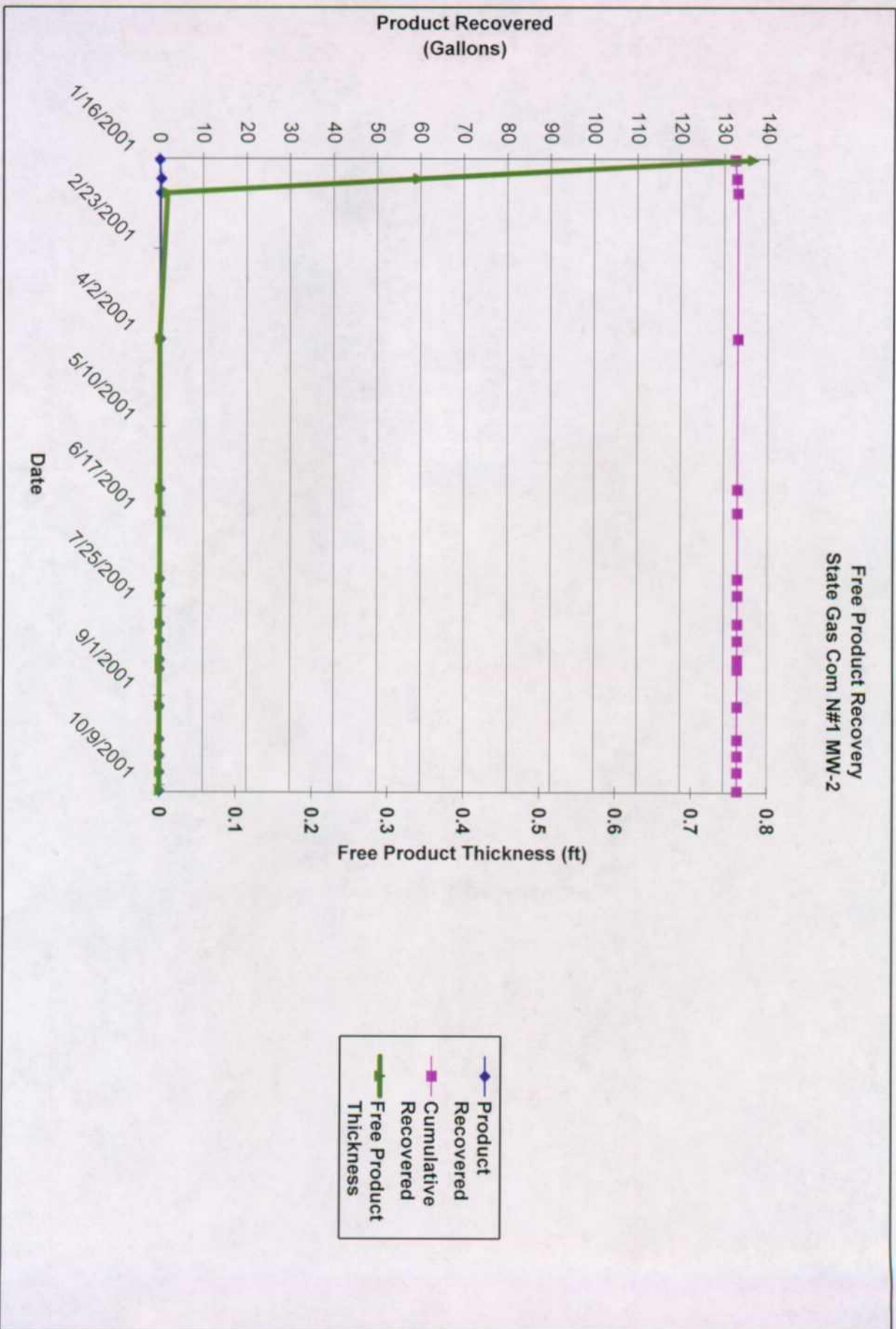
Site Name	MW#	Date	Depth to Product (feet)	Depth to Water (feet)	Product Thickness (feet)	Volume Removed (Gallons)	Cumulative Total (Gallons)
State Gas Com N #1	2	10/11/2001	76.29	76.29	0	0	133.16
State Gas Com N #1	3	11/10/2001		76.9	0	0	45.54
State Gas Com N #1	3	2/19/2001	77.06	77.08	0.02	0	45.54
State Gas Com N #1	3	3/5/2001	77.17	77.2	0.03	0	45.54
State Gas Com N #1	3	4/2/2001	77.09	77.11	0.02	0	45.54
State Gas Com N #1	3	6/5/2001		77.11		0.5	46.04
State Gas Com N #1	3	6/15/2001	76.44	76.5	0.06	0	46.04
State Gas Com N #1	3	7/13/2001	77.14	77.17	0.03	0.05	46.09
State Gas Com N #1	3	7/20/2001	77.13	77.14	0.01	0.15	46.24
State Gas Com N #1	3	8/1/2001	76.38	76.47	0.09	0	46.24
State Gas Com N #1	3	8/8/2001		77.15		0.1	46.34
State Gas Com N #1	3	8/16/2001		77.15		0.5	46.84
State Gas Com N #1	3	8/20/2001		77.13		0.5	47.34
State Gas Com N #1	3	9/5/2001		77.08		0.5	47.84
State Gas Com N #1	3	9/19/2001		77.11		5.025	52.87
State Gas Com N #1	3	9/26/2001		77.10		1.02	53.89
State Gas Com N #1	3	10/3/2001		77.08		2.02	55.91
State Gas Com N #1	3	10/11/2001		77.09		0	55.91
State Gas Com N #1	3	11/21/2001	77.15	77.18	0.03	1.1	57.01
State Gas Com N #1	3	12/13/2001	77.10	77.12	0.02	0.05	57.06
State Gas Com N #1	3	12/21/2001		76.88		0.04	57.10
State Gas Com N #1	3	12/28/2001	75.97	75.99	0.03	0	57.10
State Gas Com N #1	3	1/4/2002		77.03		0	57.10
State Gas Com N #1	4	6/5/2001		76.48		0	0.00
State Gas Com N #1	4	7/13/2001		76.59		0	0.00
State Gas Com N #1	4	8/16/2001		76.48		0	0.00
State Gas Com N #1	4	12/4/2001		77.29		0.05	0.05

No product removed from MW-5 and MW-6 for 2001

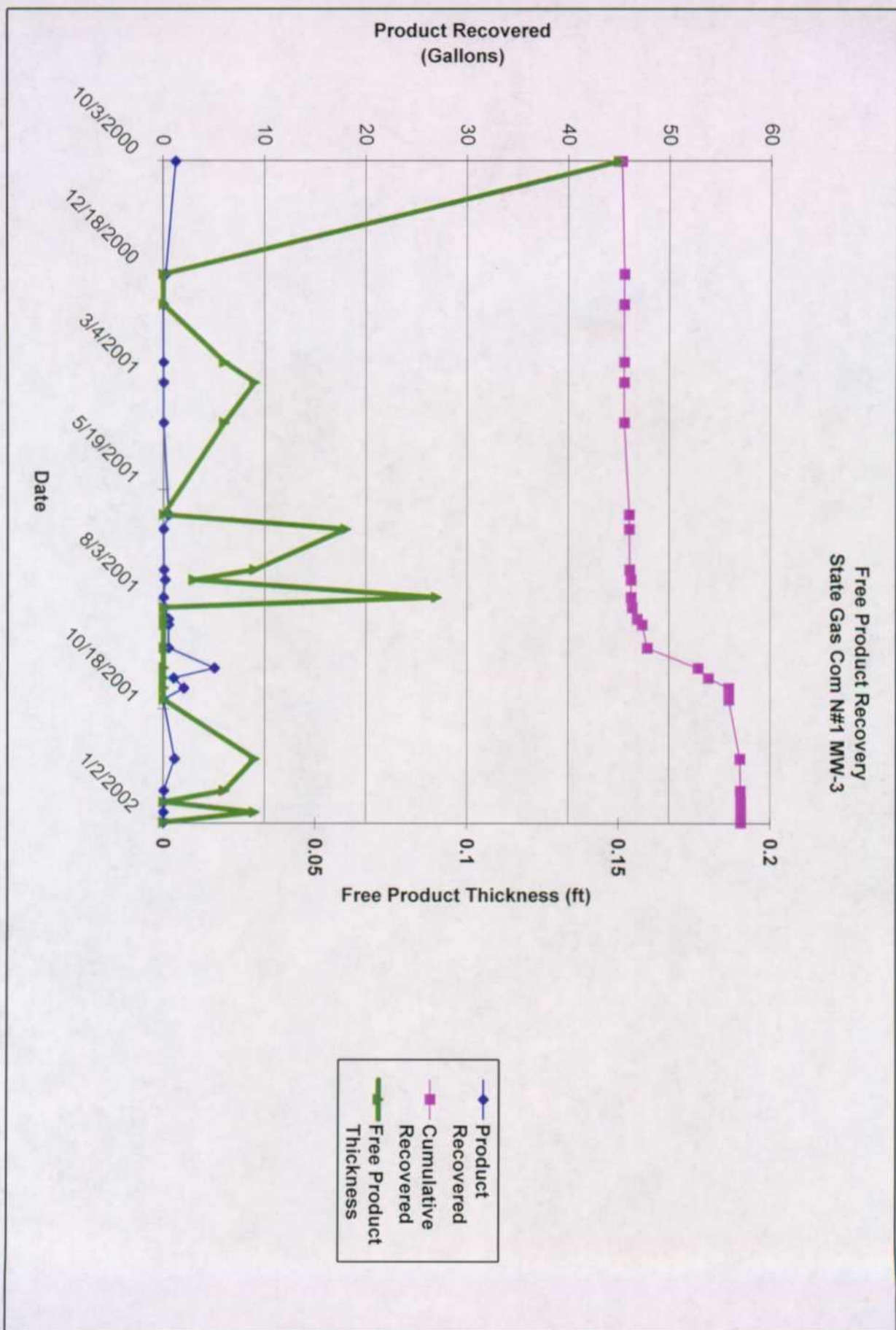
Free Product Recovery State Gas Com N#1 MW-1



Free Product Recovery State Gas Com N#1 MW-2



Free Product Recovery State Gas Com N#1 MW-3



ATTACHMENT 1

2001 GROUNDWATER ANALYTICAL

amec

Project No.: 15/7000121

Task: 3

Date: 1-4-02

[illegible]

Comments: Mlv 3 NO product recovered Skimmer empty. NO product collected
with water oil probe

Signature: Chris M. [Signature] Date: 1 4 02

WELL OBSERVATION DATA

amec

Project Name: EPFS SW project

Project No.: 15-2000-21

Project Mngr: L. S. Wilson

Task: 3

Client Co.: GL Asset Mgmt Services

Date: 12-28-01

Site Name: STATE GAS CO. N°1 (71669)

[illegible]

Reason Not Measured: D = Dry; O = Obstructed; N = Not Accessible

Comments: NO product recovery did NOT HAVE Skimmer in well
Re installed into Mur 3

Signature: Chris L. M...

Date: 12-28-01

Project No.: 1517 000

Task:

Date: 12-21-01

Site Name: STATE GAS Conn N#1 (71669)

[illegible]

Reason Not Measured: D = Dry; O = Obstructed; N = Not Accessible

Comments: NO water Recovered In MW3 NO product Detected with water bil
probe left Skinner out of well

Signature: Chris A. May

Date: 12-21-01

amec

Project No.: 675 2712

Task:

Date: 2-13-01

[illegible]

Comments: NO water recovered in Skinner

Date: 12-13-01

amec

Project No.: 15-000121

Task:

Date: 6-26-01

Site Name: STATE GARDEN N#1

[illegible]

Comments: MW 1-MW3 NO product detected with probe MW4 & below
Approximate 702's NO water recovered

Signature: Chris A. Mc Date: 12-4-01



Project No. 6169

Cost Code _____

Date 10-11-61

Site Name STATE GAS COM N#1 (71669)

[illegible]

Reason Not Measured: D = Dry; O = Obstructed; N = Not Accessible

Comments: Nothing Recovered in Skimmer, NO probe detected on probe

Signature: Chris A. May

Date 10-11-01

Date 10 3 01

Date 9-26-01

Date 9/19/01

Date 9-5-61

Date 8 20-01

TITLE PAGE

ADDENDUM Survey
NOTES
OFTopo Monitoring Wells
FROM

XID STATE Gas Com N # 1 AT E.S.

E.S. TO E.S.

CO. NAME Cross Timbers Operating Co.

FARM NAME & NO. STATE Gas Com N # 1 Monitoring
WELLS
LOCATION N.E. 1/4 SEC. 16 T. 31 N. R. 12 W. N.M.P.M.~~Left~~ FROM LINE FROM LINE
San Juan Co, N.M.

RW No. DATE Sept. 26, 2001

W/O No. WEATHER Clear & Hot

File: SGCNIMWP.TXT
B.O.B. G.R.S. ASTRO

Inst.: Trimble RTK

Ref: Redline Book

CREW

(D.E.I.)

Quadr.: Adobe Downs, N.Mex
Note: Survey on existing
location.

A. BENALLY

E. Sealy

CHECKED BY

DATED BY

WEATHER Clear Hot DATE 9-26-01

CO. & STATE San Juan, N.Mex PC A. Rosales

1

ST G C N14R TOPD MC# 71669

ENG STA	+	H.I.	GR. OR ROD	PIPE	TRELEV
STA		PI			

SEE HOUSE PAGE
for STARTS

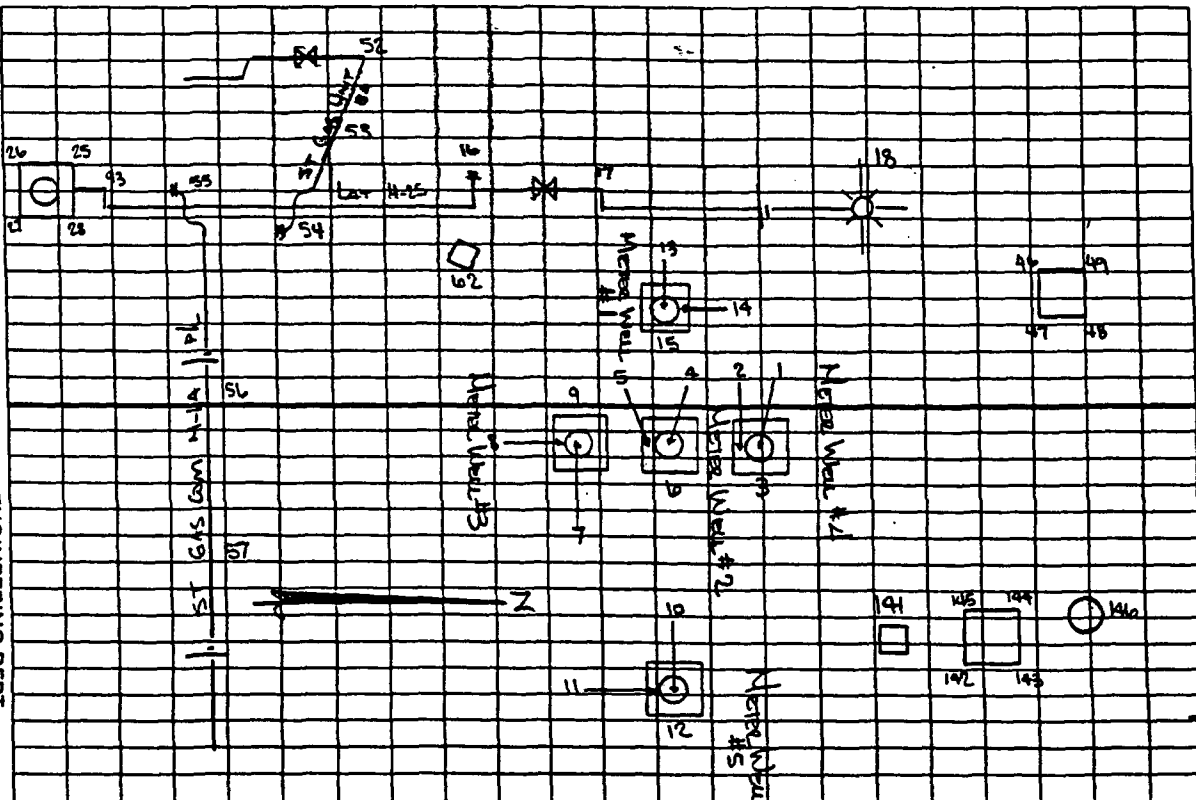
KEY FIELD NOTES - AS BUILT - ELEVATIONS

ENGINEERING DEPT

San Juan report Form 71-63

SURVEY FIELD NOTES

ENGINEERING DEPT.





Page 1 of 1

05



Developer's Signature (s) Chris A. Morris Date 10-10-01

Reviewer ADJUNA Date 9-10-01

PROJECT MANAGER: Lisa Medina

ANALYSIS REQUEST

COMPANY: G.E.M.

ADDRESS: 906 SAN JUAN BLVD. SITE D

Farmington N.M. 87401

PHONE: (505) 566-9111

FAX: (505) 566-9120

BILL TO: SCOTT Pope

COMPANY: El Paso Field Services

ADDRESS: 101 Kelly Ave

Farmington N.M. 87401

SAMPLE ID DATE TIME MATRIX LAB ID

STA-0109-MW 4 9-10-01/1330 HaO

STA-0109-MW 5 9-10-01/1445 HaO

Petroleum Hydrocarbons (418.1) TRPH
(MOD.8015) Diesel/Direct Inject

(M8015) Gas/Purge & Trap

8021 (BTEX)/8015 (Gasoline) MTBE

8021 (BTEX) ☐ MTBE ☐ TMB ☐ PCE

8021 (TCL)

8021 (EDX)

8021 (HALO)

8021 (CUST)

504.1 EDB ☐ / DBCP ☐

8260 (TCL) Volatile Organics

8260 (Full) Volatile Organics

8260 (CUST) Volatile Organics

8260 (Landfill) Volatile Organics

Pesticides /PCB (608/8081/8082)

Herbicides (615/8151)

Base/Neutral/Acid Compounds GC/MS (625/8270)

Polynuclear Aromatics (610/8310/8270-SIMS)

General Chemistry:

Priority Pollutant Metals (13)

Target Analyte List Metals (23)

RCRA Metals (8)

RCRA Metals by TCLP (Method 1311)

Metals:

NUMBER OF CONTAINERS

PLEASE FILL THIS FORM IN COMPLETELY.

SHADED AREAS ARE FOR LAB USE ONLY.

PROJECT INFORMATION

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

RELINQUISHED BY:

RELINQUISHED BY:

PROJ. NO: 6169

(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK(NORMAL) ☒

PROJ. NAME: EOPS Remediation Project

CERTIFICATION REQUIRED: ☐ NM ☐ SDWA ☐ OTHER

P.O. NO:

METHANOL PRESERVATION ☐

SHIPPED VIA:

COMMENTS: FIXED FEE ☐

SAMPLE RECEIPT

NO. CONTAINERS

CUSTODY SEALS

RECEIVED INTACT

BLUE ICE/ICE

STATE GAS COM. N#1

Meter # 71669

RECEIVED BY:

Signature:

Time:

Printed Name:

Date:

Company:

RECEIVED BY: (LAB)

Signature:

Time:

Printed Name:

Date:

Pinnacle Laboratories Inc.



Date: 9/11/01
Client: Golden Environmental Management
Lab ID: 0301W03833 - 3843
Project: G169

mw 3

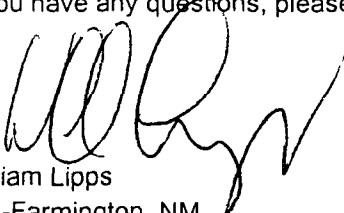
Dear Client:

The samples were received for analysis at Inter-Mountain Laboratories (IML), Farmington, New Mexico. Enclosed are the results of these analyses.

Comment:

Analytical results were obtained by approved methods. Sample analyses were obtained within the method specific holding times. Practical Quantitation Limits (PQL's) are based on method requirements, and any dilutions necessary to maintain proper method response without matrix interference.

If you have any questions, please call me at (505) 326-4737.


William Lipps
IML-Farmington, NM

Analytical Report

Client: Golden Environmental Management
Project: G169
IML Set: 0301W03833

Page 1 of 1

Date Received: 09/06/01**Date Reported:** 09/11/01

Lab Id	Sample Id	Date Sampled	Specific Gravity g/cc
0301W03833	LIN-0109-MW1	09/04/01	0.811
0301W03834	CAN-0109-MW1	09/04/01	0.736
0301W03835	GAL-0109-MW1	09/04/01	0.833
0301W03836	JFB-0109-MW3	09/04/01	0.773
0301W03837	072-0109-MW2	09/04/01	0.751
0301W03838	MIL-0109-MW1	09/04/01	0.754

Reviewed By:



Analytical Report

Client: Golden Environmental Management

Page 1 of 1

Project: G169

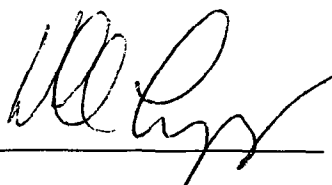
Date Received: 09/06/01

IML Set: 0301W03839

Date Reported: 09/11/01

Lab Id	Sample Id	Date Sampled	Specific Gravity g/cc
0301W03839	JOH-0109-MW1	09/05/01	0.750
0301W03839D	JOH-0109-MW1	09/05/01	0.751
0301W03840	JON-0109-MW1	09/05/01	0.757
0301W03841	KNI-0109-MW1	09/05/01	0.790
0301W03842	STA-0109-MW3	09/05/01	0.741
0301W03843	JEN-0109-MW1	09/05/01	0.761

Reviewed By:



2:11 2-1-850

Pinnacle Laboratories Inc.

CHAIN OF CUSTODY

PLI Accession #:

DATE: 9-6-01 PAGE: 1 OF 2

PROJECT MANAGER: LISA WINN		ANALYSIS REQUEST									
COMPANY: GOLDEN ENVIRONMENTAL MGMT.		504.1 EDB ☐ / DBCP ☐									
ADDRESS: 706 S. JAMES BLVD. SUITE D		8260 (TCL) Volatile Organics									
PHONE: FARMINGTON NM. 87401		8260 (CUST) Volatile Organics									
FAX: (505) 566-9114		8260 (Full) Volatile Organics									
BILL TO: SCOTT POPE		8260 (Landfill) Volatile Organics									
COMPANY: EL PASO Field Services		Pesticides / PCB (608/8081/8082)									
ADDRESS: 601 RALLY AVE		Herbicides (615/8151)									
FARMINGTON NM. 87401		Base/Neutral/Acid Compounds GC/MS (625/8270)									
		Polynuclear Aromatics (610/8310/8270-SIMS)									
		General Chemistry:									
		Priority Pollutant Metals (13)									
		Target Analyte List Metals (23)									
		RCRA Metals (8)									
		RCRA Metals by TCLP (Method 1311)									
		Metals									
		NUMBER OF CONTAINERS									

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS										RELINQUISHED BY:	
					Petroleum Hydrocarbons (418.1) TPH	(MOD.8015) Diesel/Direct Inject	(M8015) Gas/Purge & Trap	8021 (BTEX)/8015 (Gasoline) MTBE	8021 (BTEX) ☐ MTBE ☐ TMB ☐ PCE	8021 (TCL)	8021 (EDX)	8021 (HALO)	8021 (CUST)	1.	2.	
JOH-0109-MW1	9-5-01	0700	Liq. HC													
JOH-0109-MW1	9-5-01	1000	Liq. HC													
RNL-0109-MW1	9-5-01	1100	Liq. HC													
STA-0109-MW3	9-5-01	1200	Liq. HC													
JEN-0109-MW1	9-5-01	1300	Liq. HC													

PROJECT INFORMATION		PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS		RELINQUISHED BY:	
PROJ. NO: 0169	(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK	(NORMAL) ☒		Signature: [Signature]	Time: 0711
PROJ. NAME: GPS Remediation Project	CERTIFICATION REQUIRED: ☐ NM ☐ SOWA ☐ OTHER			Printed Name: [Name]	Date: 9-6-01
P.O. NO:	METHANOL PRESERVATION ☐			Company: [Company]	
SHIPPED VIA:	COMMENTS: FIXED FEE ☐			See reverse side (Force Majeure)	
SAMPLE RECEIPT		RECEIVED BY:		RECEIVED BY: (LAB)	
NO. CONTAINERS		Signature: [Signature]		Signature: [Signature]	Time: 5:10
CUSTODY SEALS	Y/N/NA	Printed Name: [Name]		Printed Name: [Name]	Date: 9/6/01
RECEIVED INTACT		Company: [Company]		Company: [Company]	
BLUE ICE/CE				Pinnacle Laboratories Inc.	

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PLEASE FILL THIS FORM IN COMPLETELY.

CHAIN OF CUSTODY

PLI Accession #: _____

DATE: 9-6-01 PAGE: 1 OF 1

PROJECT MANAGER: <u>List within</u>				ANALYSIS REQUEST																																					
COMPANY:	ADDRESS:	PHONE:	FAX:	BILL TO:	COMPANY:	ADDRESS:	SAMPLE ID	DATE	TIME	MATRIX	LAB ID	Petroleum Hydrocarbons (418.1) TRPH	(MOD.8015) Diesel/Direct Inject	(M8015) Gas/Purge & Trap	8021 (BTEX)/8015 (Gasoline) MTBE	8021 (BTEX) □ MTBE □ TMB □ PCE	8021 (TCL)	8021 (EDX)	8021 (HALO)	8021 (CUST)	504.1 EDB □ / DBCP □	8260 (TCL) Volatile Organics	8260 (Full) Volatile Organics	8260 (CUST) Volatile Organics	8260 (Landfill) Volatile Organics	Pesticides /PCB (608/8081/8082)	Herbicides (615/8151)	Base/Neutral/Acid Compounds GC/MS (625/8270)	Polynuclear Aromatics (610/8310/8270-SIMS)	General Chemistry:	Priority Pollutant Metals (13)	Target Analyte List Metals (23)	RCRA Metals (8)	RCRA Metals by TCLP (Method 1311)	Metals:	NUMBER OF CONTAINERS					
GOLDEN Environmental Mgmt.	904 San Juan Blvd. Suite D	Farmington NM. 87410	(505) 566-9116	(505) 566-9120	SCOTT POPE	El Paso Field Services		9-4-01	1100	Liq HC				X																											
								9-4-01	1300	Liq HC				X																											
								9-4-01	1400	Liq HC				X																											
								9-4-01	1500	Liq HC				X																											
								9-4-01	1600	Liq HC				X																											
								9-4-01	1700	Liq HC				X																											

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PROJECT INFORMATION		PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS		RELINQUISHED BY:		RECEIVED BY:	
PROJ NO:	PROJ NAME:	(RUSH) □ 12hr □ 48hr □ 72hr □ 1 WEEK	(NORMAL) ☒	Signature:	Time:	Signature:	Time:
6169	El Paso Field Services			Chris Adams	0911		
P.O. NO:		CERTIFICATION REQUIRED: □ INM □ SDWA □ OTHER		Printed Name:	Date:	Printed Name:	Date:
		METHANOL PRESERVATION □		Chris Adams	9-6-01		
SHIPPED VIA:		COMMENTS: FIXED FEE □		Company:		Company:	
SAMPLE RECEIPT				See reverse side (Force Majeure)			
NO. CONTAINERS				RECEIVED BY: (LAB)		2.	
CUSTODY SEALS	Y/N/NA			Signature:	Time:	Signature:	Time:
RECEIVED INTACT				Printed Name:	Date:	Printed Name:	Date:
BLUE ICE/CE				Company:		Company:	

PINNACLE
LABORATORIES

2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

Pinnacle Lab ID number 109047
September 19, 2001

GOLDEN ENVIRONMENTAL MNGT.
906 SAN JUAN BLVD.
FARMINGTON, NM 87401

EL PASO FIELD SERVICES
614 RIELLY STREET
FARMINGTON, NM 87401

Project Name EPFS REMEDIATION PROJECT
Project Number 6169

Attention: LISA WINN/SCOTT POPE

On 09/13/01 Pinnacle Laboratories, Inc., (ADHS License No. AZ0592 pending), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

If you have any questions or comments, please do not hesitate to contact us at (505)344-3777.



H. Mitchell Rubenstein, Ph. D.
General Manager

MR: jt

Enclosure

statisgas.com

*mw4
mws*

PINNACLE
LABORATORIES

2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

CLIENT	: GOLDEN ENVIRONMENTAL MNGT.	PINNACLE ID	: 109047
PROJECT #	: 6169	DATE RECEIVED	: 09/13/01
PROJECT NAME	: EPFS REMEDIATION PROJECT	REPORT DATE	: 09/19/01
PINNACLE			DATE
ID #	CLIENT DESCRIPTION	MATRIX	COLLECTED
109047 - 01	STA-0109-MW4	AQUEOUS	09/10/01
109047 - 02	STA-0109-MW5	AQUEOUS	09/10/01

PINNACLE
LABORATORIES

2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : GOLDEN ENVIRONMENTAL MNGT.
PROJECT # : 6169
PROJECT NAME : EPFS REMEDIATION PROJECT

PINNACLE I.D.: 109047

LEFT REMEDIATION PROJECT						
SAMPLE			DATE	DATE	DATE	DIL.
ID. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	STA-0109-MW4	AQUEOUS	09/10/01	NA	09/17/01	100
02	STA-0109-MW5	AQUEOUS	09/10/01	NA	09/18/01	100

PARAMETER	DET. LIMIT	UNITS	STA-0109-MW4	STA-0109-MW5
BENZENE	0.5	UG/L	17000	16000
TOLUENE	0.5	UG/L	14000	100
ETHYLBENZENE	0.5	UG/L	610	720
TOTAL XYLENES	0.5	UG/L	6700	4600

SURROGATE:

BROMOFLUOROBENZENE (%)

104

106

SURROGATE LIMITS (80 - 120)

CHEMIST NOTES:

N/A

PINNACLE
LABORATORIES

2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 109047
BLANK I. D.	: 091701	DATE EXTRACTED	: NA
CLIENT	: GOLDEN ENVIRONMENTAL MNGT.	DATE ANALYZED	: 09/17/01
PROJECT #	: 6169	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: EPFS REMEDIATION PROJECT		

PARAMETER	UNITS	
BENZENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
ETHYLBENZENE	UG/L	<0.5
TOTAL XYLENES	UG/L	<0.5

SURROGATE:

BROMOFLUOROBENZENE (%)

105

SURROGATE LIMITS:

(80 - 120)

CHROMATIST NOTES:

N/A

PINNACLE
LABORATORIES

2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 109047
BLANK I. D.	: 091801	DATE EXTRACTED	: NA
CLIENT	: GOLDEN ENVIRONMENTAL MNGT.	DATE ANALYZED	: 09/18/01
PROJECT #	: 6169	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: EPFS REMEDIATION PROJECT		

PARAMETER	UNITS	
BENZENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
ETHYLBENZENE	UG/L	<0.5
TOTAL XYLENES	UG/L	<0.5

SURROGATE:
BROMOFLUOROBENZENE (%) 103
SURROGATE LIMITS: (80 - 120)
CHECKLIST NOTES:
N/A

PINNACLE
LABORATORIES

2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY QUALITY CONTROL
MSMSD

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 109047
MSMSD #	: 109045-02	DATE EXTRACTED	: NA
CLIENT	: GOLDEN ENVIRONMENTAL MNGT.	DATE ANALYZED	: 09/17/01
PROJECT #	: 6169	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: EPFS REMEDIATION PROJECT	UNITS	: UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
BENZENE	<0.5	20.0	19.6	98	19.6	98	0	(80 - 120)	20
TOLUENE	<0.5	20.0	19.7	99	19.4	97	2	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	19.9	100	19.7	99	1	(80 - 120)	20
TOTAL XYLENES	<0.5	60.0	60.4	101	59.7	100	1	(80 - 120)	20

CHEMIST NOTES:
N/A

% Recovery =
$$\frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

RPD (Relative Percent Difference) =
$$\frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

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[illegible]

ATTACHMENT 2

**2001 MONITOR WELL
INSTALLATION RECORDS**

PINNACLE
LABORATORIES

2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

Stet Gas Con

GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : GOLDEN ENVIRONMENTAL MNGT.
PROJECT # : 6169
PROJECT NAME : EPFS MONITOR WELLS

PINNACLE I.D.: 112081

SAMPLE	DATE	DATE	DATE	DIL.		
D. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
1	0112200740 MW-6	AQUEOUS	12/20/01	NA	12/21/01	100

PARAMETER	DET. LIMIT	UNITS	0112200740 MW-6
BENZENE	0.5	UG/L	5000
OLUENE	0.5	UG/L	11000
ETHYLBENZENE	0.5	UG/L	420
TOTAL XYLENES	0.5	UG/L	4600

SURROGATE:
RO FLUOROBENZENE (%) 112
SURROGATE LIMITS (80 - 120)

HEMIST NOTES:
/A

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PLI Accession #:

ANALYSIS REQUEST

PROJECT INFORMATION		PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS	
PROJ NO:	6165	(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK	(NORMAL) ☒
PROJ NAME:	EPFS 11/17/12, 12/1/12	CERTIFICATION REQUIRED: ☐ NM ☐ SDWA ☐ OTHER	
P.O. NO:		METHANOL PRESERVATION ☐	
SHIPPED VIA:	Greyhound BUS	COMMENTS: ☐ FIXED FEE ☐	
SAMPLE RECEIPT		RESULTS to M.N. Lee ASE/GEN	
NO. CONTAINERS		4 L. Benchly EPFS	
CUSTODY SEALS	Y/N/NA	Preserved w/ HgCL ₂	
RECEIVED INTACT			
BLUE/CECE			

RELINQUISHED BY: 1.		RELINQUISHED BY: 2.	
Signature:	Time: 0930	Signature:	Time:
Printed Name: M. Lee	Date: 12-20-09	Printed Name:	Date:
Company:		Company:	
See reverse side (Force Majeure)			
RECEIVED BY:	1.	RECEIVED BY: (LAB)	2.
Signature:	Time:	Signature:	Time:
Printed Name:	Date:	Printed Name:	Date:
Company:		Company:	

Pinnacle Laboratories Inc.

AESE/Golden
Environmental
Management

Well Number MW-2

☒ Development
☐ Purging

WELL DEVELOPMENT AND PURGING DATA

Serial No. WDPD-

Page 1 of 2

Project Name EL 1350 / MW 14

Project Manager Martin Klean

Project No. 6165

Client Company EL 1350 Field Serv

Phase Task No.

Site Name St 1325 Cam

Site Address 1314 RIAU SEC 16 UNIT H

Development Criteria

☒ 3 to 5 Casing Volumes of Water Removal
☒ Stabilization of Indicator Parameters

☐ Other

Water Volume Calculation

Initial Depth of Well (feet) 82.75
Initial Depth to Water (feet) 80.63
Height of Water Column in Well (feet) 2.12
Diameter (inches): Well 2" Gravel Pack

Item	Water Volume in Well	Gallons to be Removed
Well Casing	Cubic Feet	Gallons
Gravel Pack	<u>.3432</u>	<u>1.0296</u>
Drilling Fluids		
Total		<u>1.6296</u>

Methods of Development

Pump
☐ Centrifugal
☐ Submersible
☐ Peristaltic
☒ Bailor
☒ Bottom Valve
☐ Double Check Valve
☐ Stainless-steel Kemmerer

☐ Other

Instruments
☒ PH Meter
☒ DO Monitor
☒ Conductivity Meter
☐ Temperature Meter
☐ Other
Water Disposal KUTZ

Water Removal Data

Date	Time	Development Method	Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons)	Product Volume Removed (gallons)	Temperature (°C)	pH	Conductivity (umhos/cm)	Dissolved Oxygen (mg/L)	Comments
12/19/01	10:20		X				N2	N2					Surge well
12/19/01	10:40		X				N2	N2					Start bailing
1/10/02	11:00					82.40	.66	.66	N2	143	656	8420	Bail out
1/10/02	11:05					82.24							Check water bearing
1/10/02	11:20												Add 34.1 hot water
1/10/02	11:30												Surge
1/10/02	11:45												Bail out surge
1/10/02	12:20					82.54	3'	3.66	12.8	713	3290		water
1/10/02	12:38												Let well settle
1/10/02	12:47		X			81.64	.132	3.742	13.7	695	8860		measured
1/10/02	06:47		X				.087	3.874	13.0	716	8440		Clear minor S.H
													Clear

[Handwritten signature]

Reviewer

Date _____

Circle the date and time that the development criteria are met.

[illegible]

20

MONITORING WELL INSTALLATION RECORD

Borehole # _____
Well # MW-6
Page _____ of _____

AESE/GEM

906 San Juan Blvd. Ste. D
Farmington, New Mexico 87401
(505) 566-9116 FAX (505) 566-9120

Project Name EPES 5 monitor wells
Project Number 6169 Cost Code _____
Project Location State Gas Com N#1
Meter Code 71669

Elevation 26115'
Well Location MW-6 T3N R12W S16, H
GWL Depth 78.34 (12/17/01)
Installed By ACPI

On-Site Geologist AESE NEE
Personnel On-Site _____
Contractors On-Site ACPI K Radilla TV Valdez
Client Personnel On-Site L Benally

Date/Time Started 12/13/01 0830
Date/Time Completed 12/17/01 1000

Depths in Reference to Ground Surface				
Item	Material	Depth (feet)		
Top of Protective Casing	6" steel	+3.00	Top of Protective Casing	<u>3.00</u>
Bottom of Protective Casing	6" steel	-1.00	Top of Riser	<u>2.60</u>
Top of Permanent Borehole Casing	NA		Ground Surface	<u>0.00</u>
Bottom of Permanent Borehole Casing	NA			
Top of Concrete	Quickcrete	+10.33		
Bottom of Concrete	Quickcrete	-9.00		
Top of Grout	7/8" x 1/2" Portland 9	-9.00		
Bottom of Grout	0.55 w/15% Quickset	-60.04		
Top of Well Riser	2" DIA PVC	+2.60		
Bottom of Well Riser	2" DIA PVC	-65.15		
Top of Well Screen	2" DIA PVC	-65.15		
Bottom of Well Screen	.010 BltH	-80.00	Top of Seal	<u>60.04</u>
Top of Peltonite Seal	1 bag 3/8"	-60.04		
Bottom of Peltonite Seal	chip Baroid Hole plug	-63.67	Top of Gravel Pack	<u>63.67</u>
Top of Gravel Pack	9 bags 10-20	-63.67	Top of Screen	<u>65.15</u>
Bottom of Gravel Pack	silica sand	-80.00		
Top of Natural Cave-In	NA			
Bottom of Natural Cave-In	NA			
Top of Groundwater		<u>78.34</u>	Bottom of Screen	<u>80.00</u>
Total Depth of Borehole		<u>80.00</u>	Bottom of Borehole	<u>80.00</u>

Comments: _____

Geologist Signature _____

RECORD OF SUBSURFACE EXPLORATION

Golden Environmental Management, Inc
an AESE Company

906 San Juan Boulevard, Suite D
Farmington, New Mexico 87401
(505) 566-9116 FAX (505) 566-9120

Page 1 of 2

Project Name BPEF 5 monitor Wells
Project Number 6163 Phase
Project Location STATE GAS COM N#1
T31N R12W S16, H meter 71669
Well Logged By NEE
Personnel On-Site
Contractors On-Site APPL R. Padilla TIVeldez
Client Personnel On-Site L. Benally
Drilling Method HSA
Air Monitoring Method detecting

Elevation 20115'
Borehole Location MW-12 & 100' 3 MW-5
GWL Depth 79' 555 (12/13/01)
Logged By NEE
Drilled By ACPI
Date/Time Started 12-13-01 0810
Date/Time Completed 12-17-01 1000

Depth (Feet)	Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: NDU			Drilling Conditions & Blow Counts
						BZ	BH	S	
0			0-45 SANDY SILT, yellowish grey, w/ minor clay. SAND is very fine, mod.			0			
5		90%	well sorted			0			43
10		80%				0			31
15		75%				0			29
20		60%	white alkali string ers in ss.			0			68
25		90%	cuttings alternate between 2 silty sand with very fine to fine sand			0			40
30		80%	and 2 sandy silt with clay through- out			0			28
35		80%				0			32
40						0			38

Comments:

Geologist Signature

RECORD OF SUBSURFACE EXPLORATION

Golden Environmental Management, Inc
an AESE Company
906 San Juan Boulevard, Suite D
Farmington, New Mexico 87401
(505) 566-9116 FAX (505) 566-9120

Page 2 of 2

Elevation 2 6115'
Borehole Location MW-6 2100' SMW-5
GWL Depth 71' 66.5 12/13/01
Logged By Nice
Drilled By ACPI
Date/Time Started 12-13-01 0815
Date/Time Completed 12-17-01 1600

Project Name BPTS 5 monitor wells
Project Number 6169 Phase Station 3 Corn N#1
Project Location T31N R12W sec 16 unit 7 H meter 71669
Well Logged By Nice
Personnel On-Site ACPI E. Padilla J. Volder
Contractors On-Site L. Benally
Client Personnel On-Site
Drilling Method HSA
Air Monitoring Method factory

Depth (Feet)	Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: NDU			Drilling Conditions & Blow Counts
						BZ	BH	S	
40						0			38
45			90% 45-47 clay yellowish grey, med well indurated well sorted & keli throughout			0			50
50			75% SAA			0			50
55			80% SAA			0			54
60			85% color change to light plum grey all clay			0			73
65			80% color change back to yellowish grey			0			90
70			60% 70-72 sand light yellow grey, very fine to fine well sorted, med well consolidated			0			72
75			30%			0			
80			TD = 80' bgs						

Comments: used 6 gal H₂O @ 60' to help retrieve cuttings

Geologist Signature