3R - 213

REPORTS

DATE:

2002

elpaso Field Services

Certified Mail: #7001 1940 0002 1371 7676

February 28, 2003

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

RE: 2002 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 Annual Reports (Volumes 1, 2 and 3) by land type. Volume 1 contains Annual Reports for sites found on Federal land. Volume 2 contains Non Federal sites and Volume 3 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 and EPFS reiterates request for closure of this site. EPFS understands closure of groundwater sites on Navajo land falls under jurisdiction of the Navajo Nation Environmental Protection Agency and original documents have been submitted to them for review. Other Navajo sites are included in the report for your information.

Three additional sites were submitted for closure in 2002. EPFS recently has received closure on the W.D. Heath B-5. Closure approval is pending on the D Loop Line Drip and Hammond # 41A. All of these sites are included in the 2002 Annual Report.

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 0002 1371 7669**
Mr. Bill Liesse, BLM – w / enclosures (federal sites only), **Certified Mail # 7001 1940 0002 1371 7652**

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MAR 0 5 2003
ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

El Paso Field Services

San Juan Basin Pit Program Groundwater Sites Project

2002 Annual Report Federal Sites (Volume 1)

March 2003

MWH
10619 South Jordan Gateway, Suite 100
Salt Lake City, Utah 84095

EL PASO FIELD SERVICES ANNUAL GROUNDWATER REPORT

FEDERAL SITES VOLUME I

TABLE OF CONTENTS

Site Map

METER or LINE ID	SITE NAME	TOWNSHIP	RANGE	SECTION	UNIT
89961	Fields A#7A	32N	11W	34	E
89232	Johnston Fed #6A	31N	09W	35	F
94715	James F. Bell #1E	30N	13W	10	P
89620	Sandoval GC A #1A	30N	09W	35	C
87493	W D Heath B-5	30N	09W	31	M
LD151	Lat 0-21 Line Drip	30N	09W	12	O
73220	Fogelson 4-1 Com. #14	29N	11W	4	P
97213	Hamner #9	29N	09W	20	A
72890	Ohio C Government #3	28N	11W	26	P
LD169	D Loop Line Drip	28N	08W	33	I
LD174	LAT LD 40	28N	04W	13	H
89894	Hammond #41A	27N	08W	25	O
94810	Miles Fed 1A	26N	07W	5	F
LD072	K27 LD072	25N	06W	4	E
87640	Canada Mesa #2	24N	06W	24	I

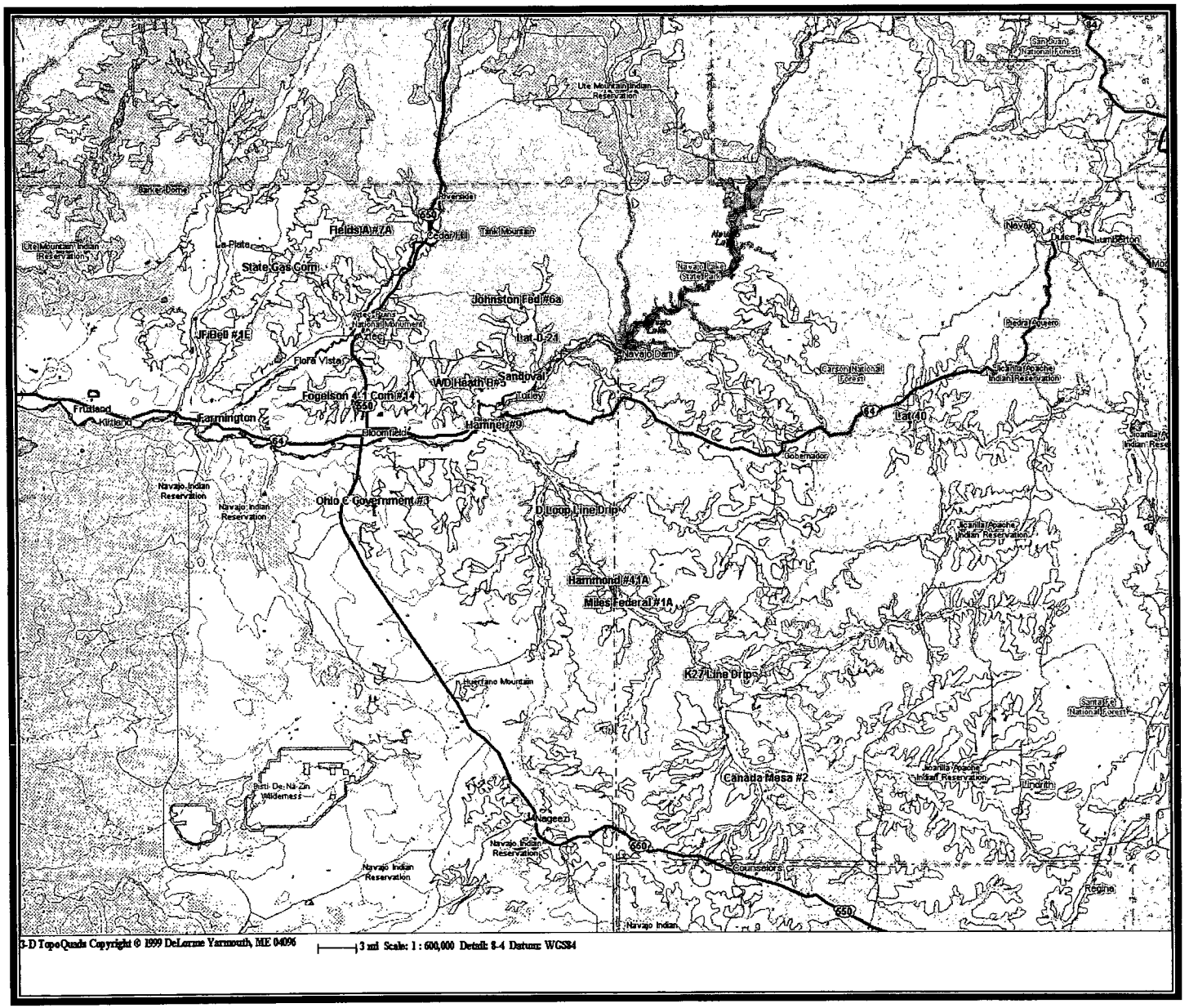
elpaso

MWH
MONTGOMERY WATSON HARZA

ACRONYMS

B	Benzene
E	Ethylbenzene
EPFS	El Paso Field Services
ft	foot/feet
GWEL	groundwater elevation
ID	identifier
MW	Monitoring Well
PSH	Phase Separated Hydrocarbons
NMWQCC	New Mexico Water Quality Control Commission
T	Toluene
TOC	Top Of Casing
NE	not establihed
NS	not sampled
ORC	oxygen release compound
OCD	Oil Conservation Division
ppb	parts per billion
µg/L	micrograms per liter
X	Total Xylenes

Federal Groundwater Site Map



EPFS GROUNDWATER SITES
2002 ANNUAL GROUNDWATER REPORT

Lat 0-21 Line Drip
Meter Code: LD151

SITE DETAILS

LEGAL DESCRIPTION: **Twn:** 30N **Rng:** 9W **Sec:** 12 **Unit:** O

NMOCD Haz Ranking: 40 **Land Type:** Federal **Operator:** EPFS

PREVIOUS ACTIVITIES

Site Assessment: 1/95	**Excavation:** 1/95	**Soil Boring:** 10/95
Monitor Well: 10/95	**Geoprobe:** 11/96	**Additional MWs:** 7/00
Downgradient MWs: 7/00	**Replace MW:** NA	**Quarterly Initiated:** 11/96
ORC Nutrient Injection: NA	**Re-Excavation:** NA	**PSH Removal Initiated:** NA
Annual Initiated: 5/97	**Quarterly Resumed:** NA	

SUMMARY OF 2002 ACTIVITIES

MW-1: Annual groundwater sampling and quarterly water level monitoring were performed during 2002.

MW-2: Annual groundwater sampling and quarterly water level monitoring were performed during 2002.

MW-3: Annual groundwater sampling and quarterly water level monitoring were performed during 2002.

Site-Wide Activities: Per recommendations made in the 2001 Annual Report, the groundwater flow direction was evaluated. This evaluation included review of groundwater and top of casing elevations since 2000, a review of relative groundwater elevation changes over time, a review of free-product corrections for potentiometric surface, and review of local topography. The site was re-surveyed during November 2001.

SUMMARY TABLES AND GRAPHS

- Analytical data are summarized in Table 1 and presented graphically in Figures 4 through 6.
- Laboratory reports are presented in Attachment 1.
- Field documentation is presented in Attachment 2.

SITE MAP

Site maps are attached as Figures 1 through 3.

Lat 0-21 Line Drip
Meter Code: LD151

GEOLOGIC LOGS AND WELL COMPLETION DIAGRAMS

No subsurface activities were performed at this site during 2002.

DISPOSITION OF GENERATED WASTES

All phase-separated hydrocarbons were disposed of at the EPFS Kutz Separator located in Bloomfield, New Mexico.

ISOCONCENTRATION MAPS

No isoconcentration maps were prepared for this site, however, the attached site maps present the potentiometric surface data collected during 2002.

CONCLUSIONS

- During the scheduled groundwater sampling event in June 2002, free-product was measured in MW-1 at 0.32 feet thick. After removing the product and bailing the well a sample was collected for BTEX analysis that indicated an elevated benzene concentration of 270 µg/l. Free-product was also measured in this monitoring well during subsequent water level monitoring events in September (0.29 inches of free-product) and December (0.31 inches).
- During the scheduled water level monitoring event in September 2002, free-product was measured in MW-3 at 0.64 feet thick. Subsequent monitoring performed during December 02 indicated a free-product thickness of 0.55 feet.
- The groundwater gradient assessment described earlier in this report indicated that the groundwater flow direction during 2002 appears to trend to the southeast, similar to the flow direction presented in the 2001 Annual Report. However, the groundwater gradient is extremely flat making interpretation of groundwater data difficult and is not supported by the local topography which indicates a surface flow to the southwest.
- Benzene concentrations in MW-1 were reduced significantly in 2002, dropping from 1,400 µg/l to 270 µg/l. Benzene was below detection limits in MW-2, and were reduced from 34 µg/l to 5.7 µg/l in MW-3.

Lat 0-21 Line Drip
Meter Code: LD151

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No subsurface activities were performed at this site during 2002.

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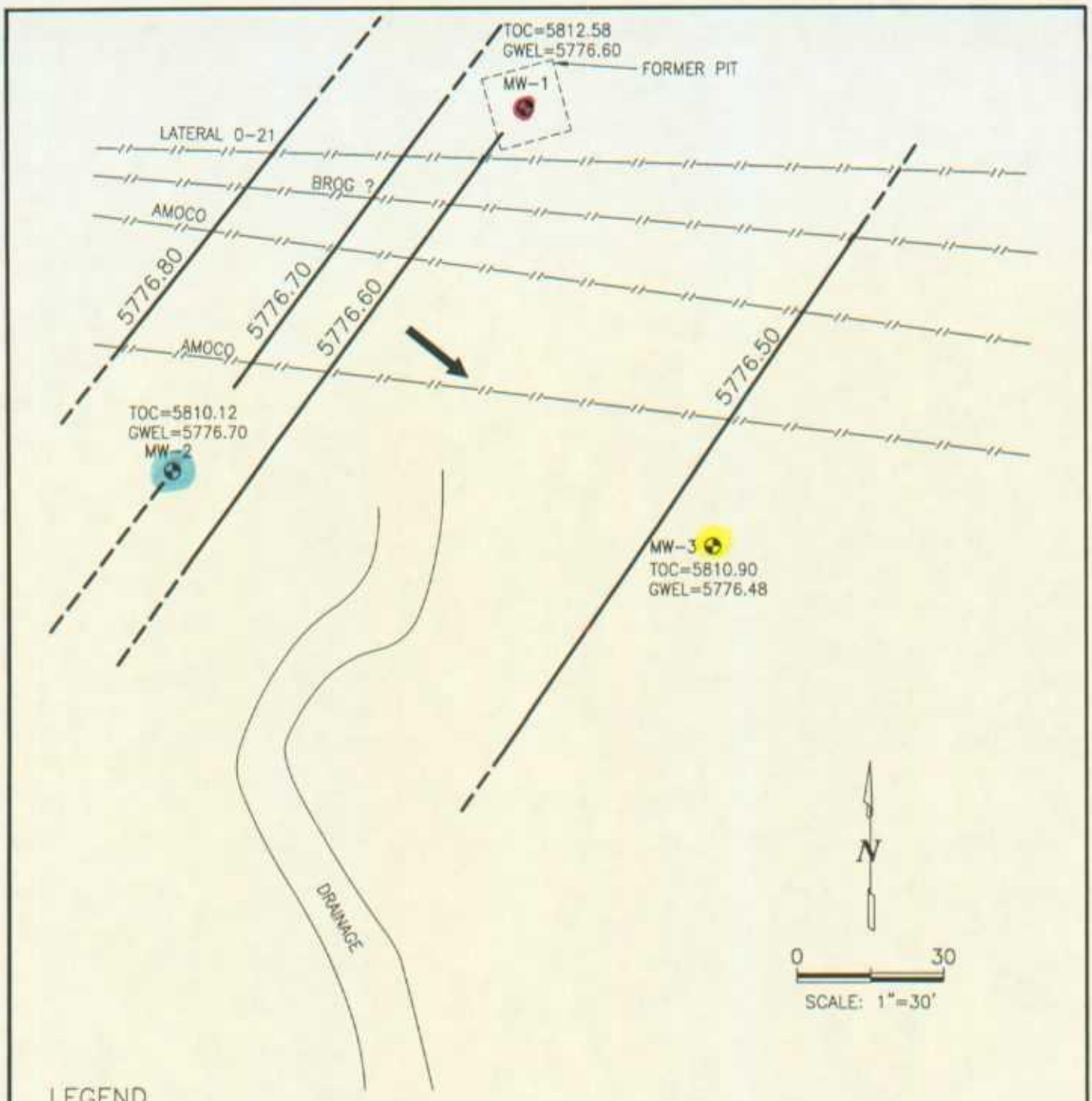


LEGEND

MW-1	Approximate Monitoring Well Location and Number	5777	Potentiometric Surface (Approximate & Assumed Where Dashed)
	Pipe Line	→	Direction of Groundwater Flow (Estimated)
B	Benzene (µg/L)	GWEL	Groundwater Elevation (FT Above Mean Sea Level Unless Noted Otherwise)
T	Toluene (µg/L)		
E	Ethylbenzene (µg/L)		
X	Total Xylenes (µg/L)	TOC	Top of Casing

LATERAL 0-21 LINE DRIP, LD151
JUNE, 2002

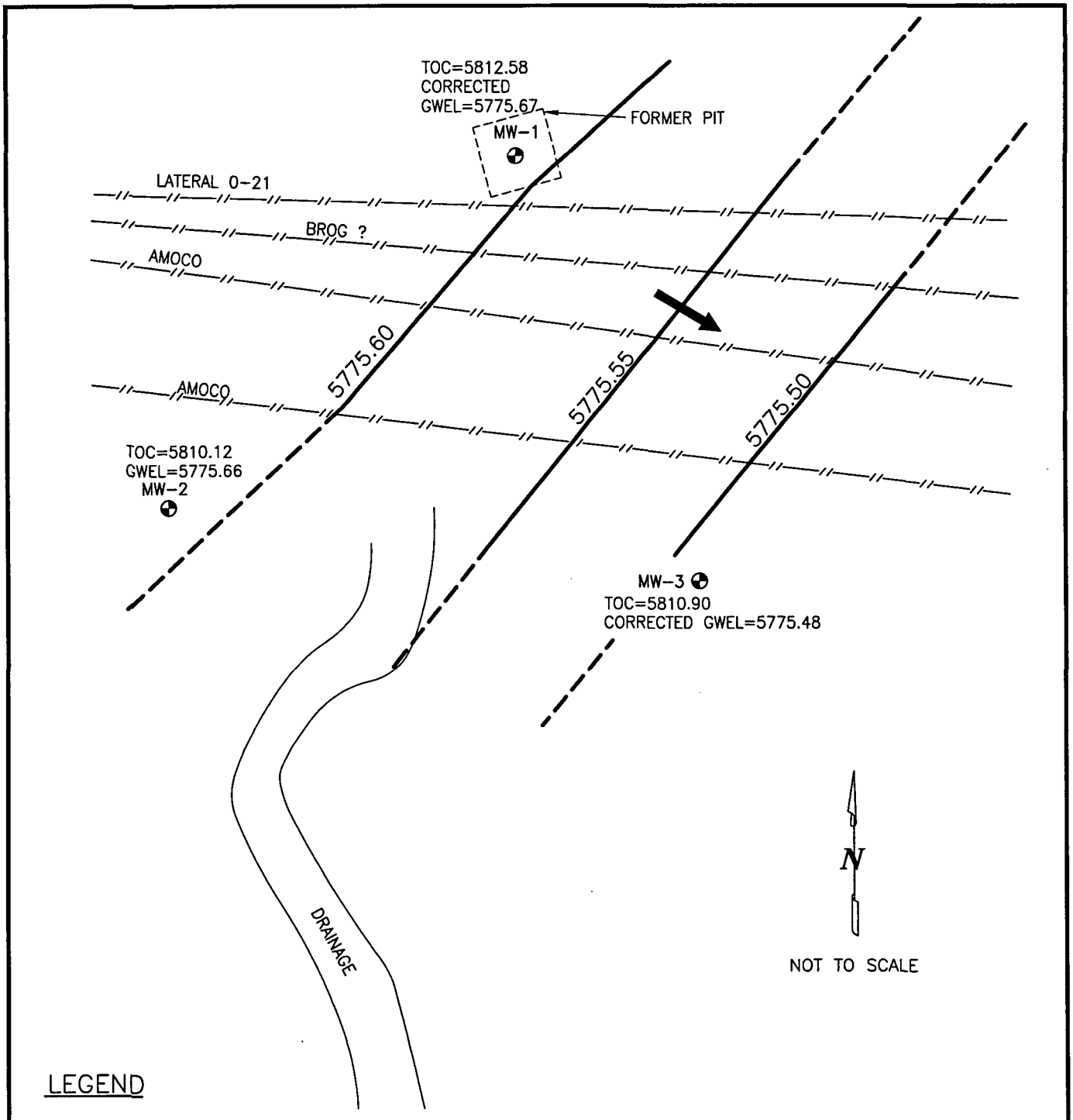
GROUNDWATER SITES
EL PASO FIELD SERVICES

FIGURE 1

bmp2_02_021

RECOMMENDATIONS

- EPFS recommends that free-product recovery efforts are initiated in MW-1 and MW-3 on a quarterly basis.
- EPFS recommends that annual groundwater sampling and quarterly water level monitoring continue at MW-2 during the next year.
- Once free-product removal has been completed at MW-1 and MW-3, these wells will be sampled on a semi-annual basis until sample results approach closure criteria. These wells will then be scheduled for quarterly sampling until closure criteria are met.



LEGEND

MW-1	Approximate Monitoring Well Location and Number
—//—//—	Pipe Line
5777	Potentiometric Surface (Approximate & Assumed Where Dashed)
→	Direction of Groundwater Flow (Estimated)

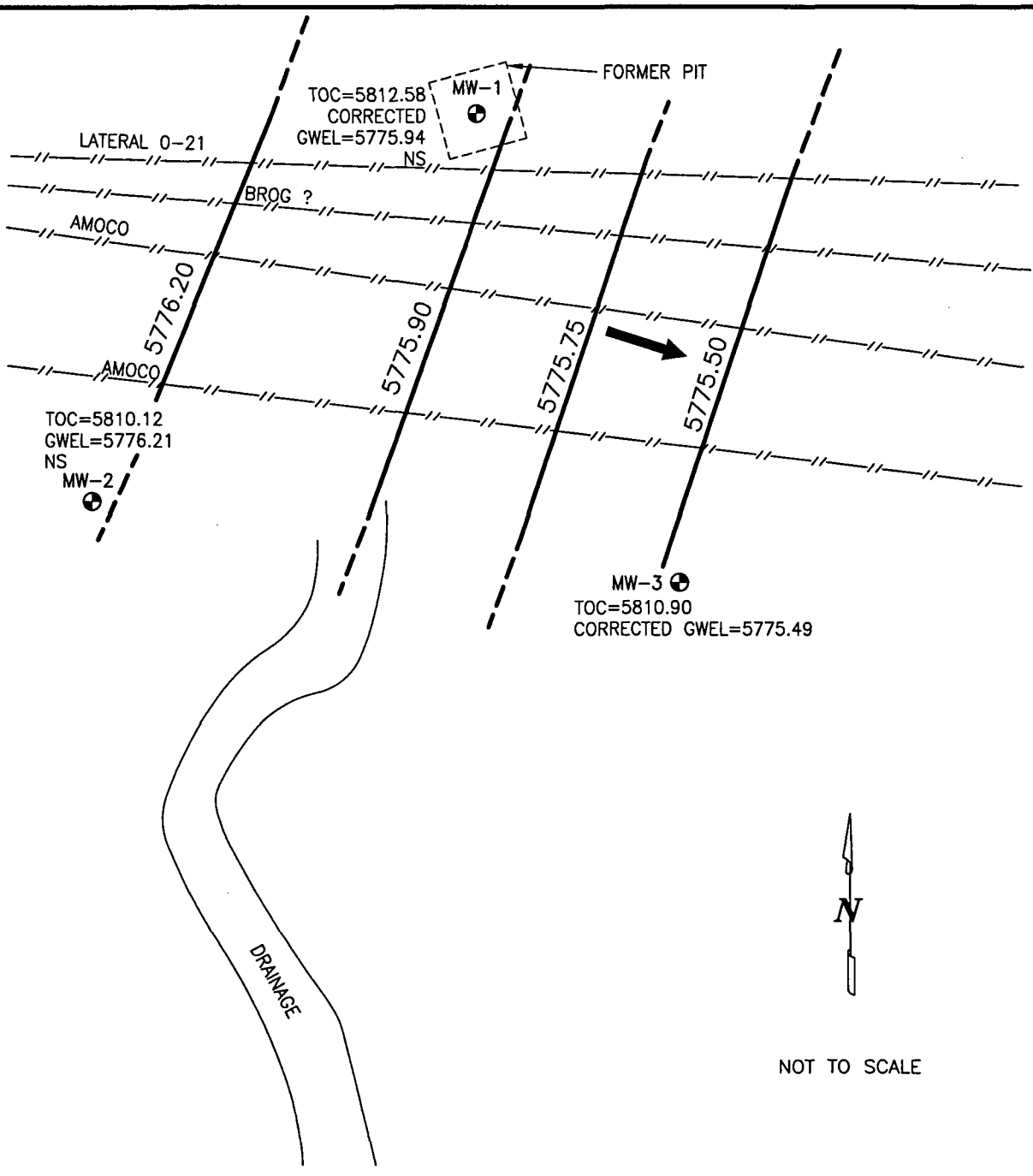
GWEL	Groundwater Elevation (FT Above Mean Sea Level Unless Noted Otherwise)
TOC	Top of Casing

latl021_02.dwg

LATERAL 0-21 LINE DRIP, LD151
SEPTEMBER, 2002

GROUNDWATER SITES
EL PASO FIELD SERVICES

FIGURE 2



LEGEND

MW-1	Approximate Monitoring Well Location and Number		
—//—//—	Pipe Line	GWEL	Groundwater Elevation (FT Above Mean Sea Level Unless Noted Otherwise)
5777	Potentiometric Surface (Approximate & Assumed Where Dashed)		
→	Direction of Groundwater Flow (Estimated)	TOC	Top of Casing
		NS	Not Sampled

latl021_02.dwg

LATERAL 0-21 LINE DRIP, LD151
DECEMBER, 2002

GROUNDWATER SITES
EL PASO FIELD SERVICES

FIGURE 3

TABLE 1

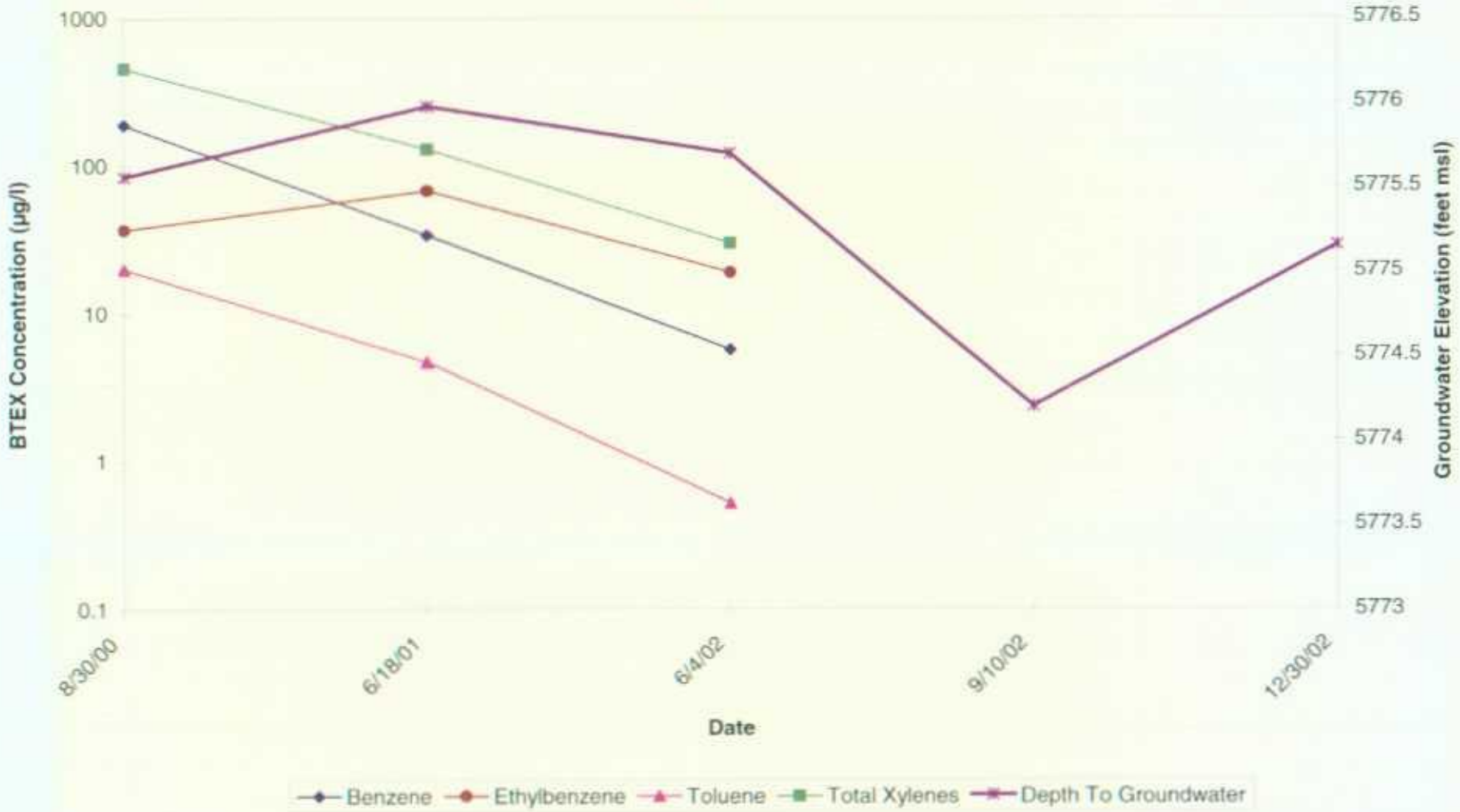
SUMMARY OF BTEX COMPOUNDS IN GROUNDWATER
LAT 0-21 LINE DRIP (METER #LD151)
(Page 1 of 1)

Sample Identification	Sample Date	MW Identification	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Total Xylenes (µg/l)
151-0206-MW1	04-Jun-2002	1	270	170	12	1900
151-0206-MW2	04-Jun-2002	2	<0.5	<0.5	<0.5	<1.0
151-0206-MW3	04-Jun-2002	3	5.7	0.52	19	30

Figure 4
BTEX Concentration and Groundwater Elevation vs. Time
Lat 0-21 Line Drip (Meter #LD151)
MW-1

Figure 5
BTEX Concentration and Groundwater Elevation vs. Time
Lat 0-21 Line Drip (Meter #LD151)
MW-2

Figure 6
BTEX Concentration and Groundwater Elevation vs. Time
Lat 0-21 Line Drip (Meter #LD151)
MW-3



ATTACHMENT 1

LABORATORY REPORTS

LD 151

PINNACLE LABORATORIES

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

Pinnacle Lab ID number **206032**
June 17, 2002

AMEC EARTH & ENVIRONMENTAL
2060 AFTON PLACE
FARMINGTON, NM 87401

EL PASO FIELD SERVICES
614 RIELLY STREET
FARMINGTON, NM 87401

Project Name LAT 021 (LD 151)
Project Number 1517000121

Attention: LISA WINN/SCOTT POPE

On 06/07/02 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

PINNACLE LABORATORIES

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

CLIENT	: AMEC EARTH & ENVIRONMENTAL	PINNACLE ID	: 206032
PROJECT #	: 1517000121	DATE RECEIVED	: 06/07/02
PROJECT NAME	: LAT 021 (LD 151)	REPORT DATE	: 06/17/02

PINNACLE ID #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
206032 - 01	151-0206-MW1	AQUEOUS	06/04/02
206032 - 02	151-0206-MW2	AQUEOUS	06/04/02
206032 - 03	151-0206-MW3	AQUEOUS	06/04/02

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 : AMEC EARTH & ENVIRONMENTAL
PROJECT # : 1517000121
PROJECT NAME : LAT 021 (LD 151)

PINNACLE I.D.: 206032

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
01	151-0206-MW1	AQUEOUS	06/04/02	NA	06/09/02	1
02	151-0206-MW2	AQUEOUS	06/04/02	NA	06/10/02	1
03	151-0206-MW3	AQUEOUS	06/04/02	NA	06/09/02	1

PARAMETER	DET. LIMIT	UNITS	151-0206-MW1	151-0206-MW2	151-0206-MW3
BENZENE	0.5	**UG/L**	**270 - D10**	< 0.5	**5.7**
TOLUENE	0.5	**UG/L**	**170**	< 0.5	**0.52**
ETHYLBENZENE	0.5	**UG/L**	**12**	< 0.5	**19**
TOTAL XYLENES	1.0	**UG/L**	**1900 - D10**	< 1.0	**30**
SURROGATE:					
BROMOFLUOROBENZENE (%)			118	97	108
SURROGATE LIMITS	(80 - 120)				

CHEMIST NOTES:
D10 = These compounds were reported from a 10X dilution, analyzed on 06/10/02.

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

EST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 206032
LANK I. D.	: 060902	DATE EXTRACTED	: N/A
LIENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 06/09/02
ROJECT #	: 1517000121	SAMPLE MATRIX	: AQUEOUS
ROJECT NAME	: LAT 021 (LD 151)		

ARAMETER	UNITS	
ENZENE	UG/L	<0.5
OLUENE	UG/L	<0.5
THYLBENZENE	UG/L	<0.5
OTAL XYLENES	UG/L	<1.0
URROGATE:		
ROMOFLUOROBENZENE (%)		99
U ATE LIMITS:	(80 - 120)	

T NOTES:
/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

EST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 206032
LANK I. D.	: 061002	DATE EXTRACTED	: N/A
LIENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 06/10/02
ROJECT #	: 1517000121	SAMPLE MATRIX	: AQUEOUS
ROJECT NAME	: LAT 021 (LD 151)		

PARAMETER	UNITS	
ENZENE	UG/L	<0.5
OLUENE	UG/L	<0.5
THYLBENZENE	UG/L	<0.5
OTAL XYLENES	UG/L	<1.0
URROGATE:		
ROMOFLUOROBENZENE (%)		95
U[illegible]GATE LIMITS:	(80 - 120)	

CH[illegible]T 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
LCS/LCSD

EST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 206032
ATCH #	: 060902	DATE EXTRACTED	: N/A
LIENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 06/09/02
ROJECT #	: 1517000121	SAMPLE MATRIX	: AQUEOUS
ROJECT NAME	: LAT 021 (LD 151)	UNITS	: UG/L

ARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
ENZENE	<0.5	20.0	19.1	96	19.4	97	2	(80 - 120)	20
OLUENE	<0.5	20.0	20.0	100	20.8	104	4	(80 - 120)	20
THYLBENZENE	<0.5	20.0	20.3	102	20.9	105	3	(80 - 120)	20
OTAL XYLENES	<1.0	60.0	62.9	105	64.6	108	3	(80 - 120)	20

HEMIST NOTES:
I/A

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

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

PINNACLE LABORATORIES

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

GAS CHROMATOGRAPHY QUALITY CONTROL
LCS/LCSD

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 206032
BATCH #	: 061002	DATE EXRACTED	: N/A
CLIENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 06/10/02
PROJECT #	: 1517000121	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: LAT 021 (LD 151)	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	19.1	96	18.9	95	1	(80 - 120)	20
TOLUENE	<0.5	20.0	20.0	100	19.8	99	1	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	20.3	102	20.1	101	1	(80 - 120)	20
TOTAL XYLENES	<1.0	60.0	62.8	105	62.3	104	1	(80 - 120)	20

[redacted] NOTES:
N/A

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

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

PINNACLE LABORATORIES

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

GAS CHROMATOGRAPHY QUALITY CONTROL
MS/MSD

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 206032
MSMSD #	: 206037-01	DATE EXTRACTED	: N/A
CLIENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 06/09/02
PROJECT #	: 1517000121	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: LAT 021 (LD 151)	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	19.4	97	19.2	96	1	(80 - 120)	20
TOLUENE	<0.5	20.0	20.4	102	20.4	102	0	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	20.8	104	20.6	103	1	(80 - 120)	20
TOTAL XYLENES	<1.0	60.0	64.3	107	64.2	107	0	(80 - 120)	20

CHEMIST NOTES:
N/A

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

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

ATTACHMENT 2

FIELD DOCUMENTATION

Product Recovery and Well Observation Data

Project Name: San Juan River Basin
Project Manager: Delbert Belcis
Client Company: MWH
Site Name: Lat 0-21

Project No: 220013
Date: 12/30/02

Well	Time	Depth to Water (ft)	Depth to Product (ft)	Total Well Depth (ft)	Product Thickness (ft)	Volume Removed	Comments
MW-1	1550	36.390	36.080	46.467	0.31	~~0~~	Strong odor
MW-2	1600	33.91	—	41.330	—	—	NO PRODUCT
MW-3	1610	34.97	34.420		0.55	—	Strong oder

COMMENTS:

MW-1 = Strong oder, Light colored product, Strong odor

MW-3 = Strong odor

MW-2 = brown silty sand on probe.

Signature: Delbert Belcis

Date: 12/30/02

LD 151

Product Recovery and Well Observation Data

Project Name: San Juan River Basin
Project Manager: Ashley Lowe
Client Company: MWH
Site Name: Lat 0-21

Project No: 220013
Date: 09/10/02

Well	Time	Depth to Water (ft)	Depth to Product (ft)	Total Well Depth (ft)	Product Thickness (ft)	Volume Removed	Comments
MW-3	8:20	35.920	35.285	31.640	0.635	0	Not a solid bottom
MW-1	8:30	37.145	36.852	46.467	0.293	0	Not a solid bottom, strong odor
MW-2	8:36	34.468	—	41.480	—	0	No product indicated

COMMENTS:
MW-3: odorous gray silt on probe after measuring TD
MW-2: light brown silt on probe

Signature: Ashley L Lowe Date: 09/10/02

☐ Development
☑ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number MW 1 Page 1 of 1

Project Name EPFS GW. PROJECT Project Manager LISA WINN Project No. 151700012

Client Company EL PASO Field Services

Site Name LAT-021 (LD 151) Site Address Rural SAN JAUN CO.

Development Criteria

☐ 3 to 5 Casing Volumes of Water Removal
☑ Stabilization of Indicator Parameters
☐ Other

Methods of Development

Pump	Bailer
☐ Centrifugal	☑ Bottom Valve
☐ Submersible	☐ Double Check Valve
☐ Peristaltic	☐ Stainless-steel Kemmerer

☐ Other

Water Volume Calculation

Initial Depth of Well (feet) 46.52
Initial Depth to Water (feet) 35.98
Height of Water Column in Well (feet) 10.54
Diameter (inches): Well 4" Gravel Pack

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	10.54	6.88 x 3	20.64
Gravel Pack			
Drilling Fluids			
Total			20.64

Instruments

	Serial No. (If applicable)
☑ pH Meter	YSI 63
☑ DO Monitor	YSI 95
☑ Conductivity Meter	YSI 63
☑ Temperature Meter	YSI 63
☐ Other	

Water Disposal

KUTZ Separator Bloomfield N.M.

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
6-4-02	1151		X				4.25	4.25			17.5	6.83	2438		Cloudy Visible product
	1158		X				4.25	8.5			16.3	6.82	2524		" "
	1205		X				4.25	12.75			16.1	6.82	2577		" "
	1215		X				4.25	17			16.2	6.86	2638		" "
	1222		X			35.90	4.25	21.25			16.0	6.83	2633	0.42	No Change

Comments product Level 35.96 product Thickness .32 Bailed Approximately .25 gal product SAMpled for BTeX 1230

Develo Signature(s) Chris A. May Date 6-4-02 Reviewer [illegible] Date 6/10/

L:\forms\MW Dvlpmnt 2.dot 11/29/01

amec

☐ Development
☒ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number MW 2 | Page 1 of 1

Project Name EPFS GW. project | Project Manager Lisa Winn | Project No. 15170000121

Client Company EL paso Field Services

Site Name LAT-021 (LD 151) | Site Address Rural SAN JAUN CO.

Development Criteria
☒ (3) to 5 Casing Volumes of Water Removal.
☒ Stabilization of Indicator Parameters
☐ Other

Methods of Development
Pump
☐ Centrifugal
☐ Submersible
☐ Peristaltic
Bailer
☒ Bottom Valve
☐ Double Check Valve
☐ Stainless-steel Kemmerer
☐ Other

Water Volume Calculation
Initial Depth of Well (feet) 41.79
Initial Depth to Water (feet) 33.42
Height of Water Column in Well (feet) 8.37
Diameter (inches): Well 2" Gravel Pack

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	8.37	.136X3	4.09
Gravel Pack			
Drilling Fluids			
Total			

Instruments — Serial No. (If applicable)
☒ pH Meter — YSI 63
☒ DO Monitor — YSI 85
☒ Conductivity Meter — YSI 63
☒ Temperature Meter — YSI 63
☐ Other

Water Disposal
KWT2 Seperator Bloomfield N.M.

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
6-4-02	1305		X				1	1			17.4	7.09	2193		Cloudy Brown No odor
	1308		X				1	2			15.9	6.93	2134		" "
	1311		X				1	3			15.3	6.93	2051		" "
	1314		X				1	4			15.1	6.91	2059		" "
	1319		X			33.47	1	5			15.1	6.91	2092	0.32	no Change

Comments SAMpled for BTeX 1330

Deve[redacted]'s Signature(s) [signature] Date 6-4-02 Reviewer [signature] Date 6/10[redacted]

☐ Development
☑ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Page 1 of 1

Well Number MW 3
Project Name EnFS GW project
Project Manager Lisa Winn
Project No. 151700012.1
Client Company El paso Field Services
Site Name LAT-021 (LO 151)
Site Address Rural San Juan CO

Development Criteria

☑ 3 to 5 Casing Volumes of Water Removal
☐ Stabilization of Indicator Parameters
☐ Other _____

Methods of Development

Pump	Bailer
☐ Centrifugal	☑ Bottom Valve
☐ Submersible	☐ Double Check Valve
☐ Peristaltic	☐ Stainless-steel Kemmerer

☐ Other _____

Water Volume Calculation

Initial Depth of Well (feet) 42.26
Initial Depth to Water (feet) 34.42
Height of Water Column in Well (feet) 7.84
Diameter (inches): Well 2" Gravel Pack ____

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	7.84	1.27X3	3.81
Gravel Pack			
Drilling Fluids			
Total			3.81

Instruments

	Serial No. (If applicable)
☑ pH Meter	YSI 63
☑ DO Monitor	YSI 95
☑ Conductivity Meter	YSI 63
☑ Temperature Meter	YSI 63
☐ Other _____	

Water Disposal

Kutz Seperator Bloomfield N.M.

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
6-4-02	1351		X				1	1			20.0	6.99	2452		Cloudy; Grey Septic Odor
	1353		X				1	2			16.6	6.96	2314		" "
	1356		X				1	3			16.5	6.95	2301		" "
	1359		X				1	4			16.5	6.97	2317		" "
	1403		X			34.44	1	5			16.5	6.93	2335	0.24	no Change

Comments SAMPled for BTEX 1410

Developer's Signature(s) Chris A Mann Date 6-4-02 Reviewer [signature] Date 6/10/02

SHADED AREAS ARE FOR LAB USE ONLY.

Pinnacle Laboratories Inc.

CHAIN OF CUSTODY

DATE: 6-4-02 PAGE: 1 OF 1

PLI Accession #: 206032

PROJECT MANAGER:	Lisa Winn
COMPANY:	AMEC
ADDRESS:	2060 AFTON Place, FarmingTON N.M. 87401
PHONE:	(505) 324 2928
FAX:	(505) 326-5721
BILL TO:	SCOTT Pope
COMPANY:	EL Paso Field Services
ADDRESS:	614 Reilly AVE, FarmingTON N.M. 87401

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB I.D.	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
151-0206-MW1	6-4-02	1230	H_2O	01					X																								2
151-0206-MW2	6-4-02	1330	H_2O	02					X																								2
151-0206-MW3	6-4-02	1410	H_2O	03					X																								2

PROJECT INFORMATION

PROJ. NO.:	1517000121
PROJ. NAME:	EPFS G.W. proj.
P.O. NO.:	
SHIPPED VIA:	Grey Hound

SAMPLE RECEIPT

NO CONTAINERS	6
CUSTODY SEALS	Y/N/(NA)
RECEIVED INTACT	Yes
BLUE ICE/ICE	6.0°c

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

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

CERTIFICATION REQUIRED ☐NM ☐SDWA ☐OTHER

METHANOL PRESERVATION ☐

COMMENTS: FIXED FEE ☐

LAT 021 (LD 151)

RELINQUISHED BY: 1.

Signature: [signature] Time: 1430

Printed Name: Chris AMAEZ Date: 6/6/02

Company: AMEC

See reverse side (Force Majeure)

RELINQUISHED BY: 2.

Signature: Time:

Printed Name: Date:

Company:

RECEIVED BY: 1.

Signature: Time:

Printed Name: Date:

Company:

RECEIVED BY: (LAB) 2.

Signature: [signature] Time: 1050

Printed Name: L. Montoya Date: 6/7/02

Pinnacle Laboratories Inc.

PLEASE FILL THIS FORM IN COMPLETELY.