

3R - 205

# 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:

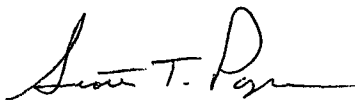
In accordance with reporting requirements, El Paso Field Services (EPFS) has enclosed annual reports for the 30 remaining groundwater impacted sites that were identified during our pit closure project of 1994 / 1995.

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

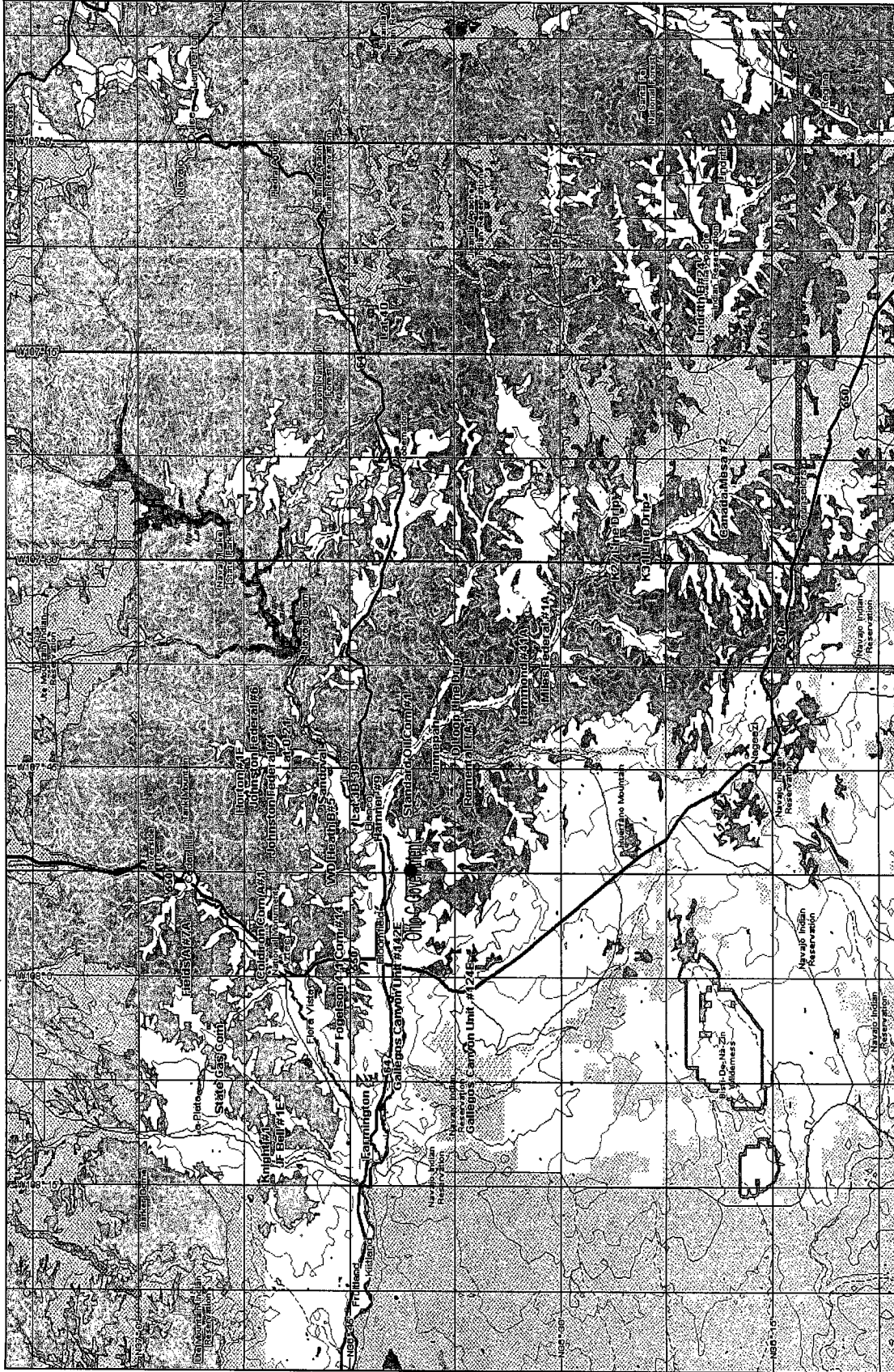
#### Site Map

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



3 mi Scale: 1: 600,000 Dearth: 4-4 Datum: WGS84  
3-D TopoQuad Copyright © 1999 DeLorme Vermont, ME 04005

# EPFS GROUNDWATER PITS

## 2001 ANNUAL GROUNDWATER REPORT

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K-31 Line Drip

Meter Code LD087

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### **SITE DETAILS**

Legals Twn: 25N Rng: 06W Sec: 16 UNIT: N  
NMOCD Haz Ranking 40 Land Type: State Operator: EPFS

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### **PREVIOUS ACTIVITIES**

Site Assessment: Jul-94 Excavation Aug-94 (90cy) Soil Boring: Sep-95 Monitor Well: Mar-97  
Geoprobe: Jul-97 Additional MWs: Jul-00 Downgradient MW's: Jul-00 Replace MW: NA  
PSH Removal Initiated: NA ORC Nutrient Injection NA Re-Excavation: Nov-95 (1786cy)  
Quarterly Initiated Jun-97 Annual Initiated Jun-99 Quarterly Resumed: NA

### **2001 ACTIVITY**

Groundwater monitoring - Semi-annual monitoring of MW-1 and MW-2 continued through 2001.

### **SUMMARY TABLES AND GRAPHS**

Groundwater analytical data are presented in Table 1 BTEX. Copies of the laboratory data sheets and the associated quality assurance/quality control data are presented as Attachment 1. Included are BTEX Data graphs for MW-1 and MW-2.

### **SITE MAP**

Site Maps with BTEX concentrations and groundwater elevations are attached.

### **GEOLOGIC LOGS AND WELL COMPLETION DIAGRAMS**

No drilling activities were performed at this site for 2001.

### **DISPOSITION OF GENERATED WASTES**

No wastes were generated at this site for 2001.

# EPFS GROUNDWATER PITS 2001 ANNUAL GROUNDWATER REPORT

K-31 Line Drip  
Meter Code: LD087

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## **ISOCONCENTRATION MAPS**

No isoconcentration maps were generated at this site.

## **CONCLUSIONS**

Hydrocarbon concentrations in MW-1 have decreased over time, dropping from 5 to 3.3 ppb benzene. Two additional sampling events are needed to drop MW-1 from sampling until closure.

Hydrocarbon concentrations in MW-2 decreased from 340 to 290 ppb benzene.

MW-3 had a history of concentrations less than the analytical detection limits and was not sampled in 2001.




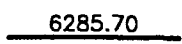

Groundwater gradients at this site are vary flat and flow directions ranged from northeast in 2000 to northwest in 2001.

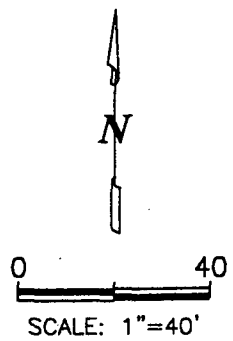
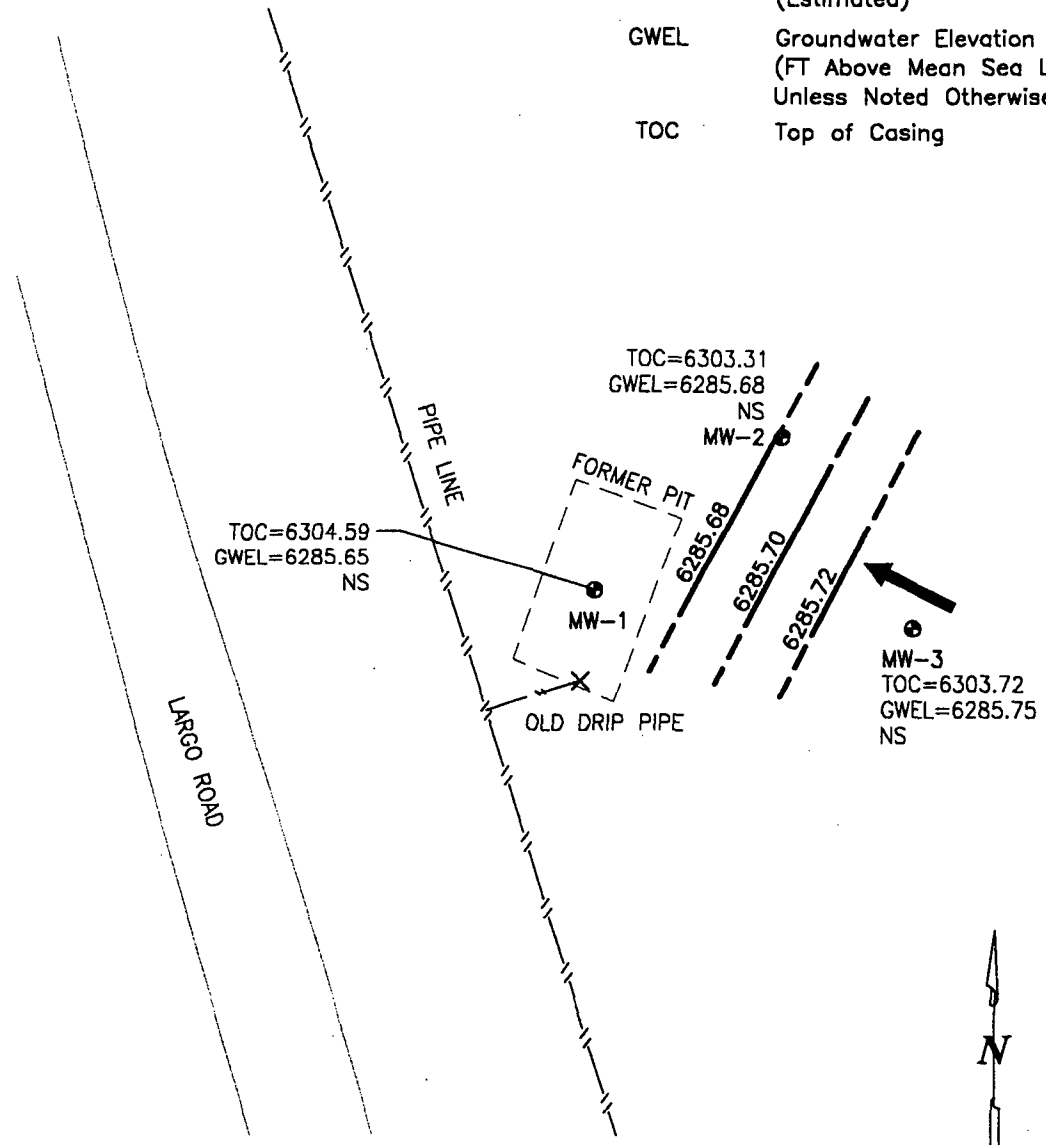
## **RECOMMENDATIONS**

- > EPFS proposed to oxygenate the area around MW-2.
- > Evaluate groundwater gradient and verify flow direction.
- > EPFS will continue semi-annual sampling of MW-1 and MW-2 until BTEX constituents fall below NMWQCC standards. MW-3 will be sampled at closure
- > Once OCD approves closure, the monitoring wells will be abandoned per OCD guidelines.

DOG LEG

**LEGEND**

-  MW-1      Approximate Monitoring Well Location and Number
-       Centerline of Road
-       Pipe Line
- NS      Not Sampled
-  6285.70      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



K-31 LINE DRIP, LD087  
OCTOBER, 2001

GROUNDWATER SITES  
EL PASO FIELD SERVICES

FIGURE 1

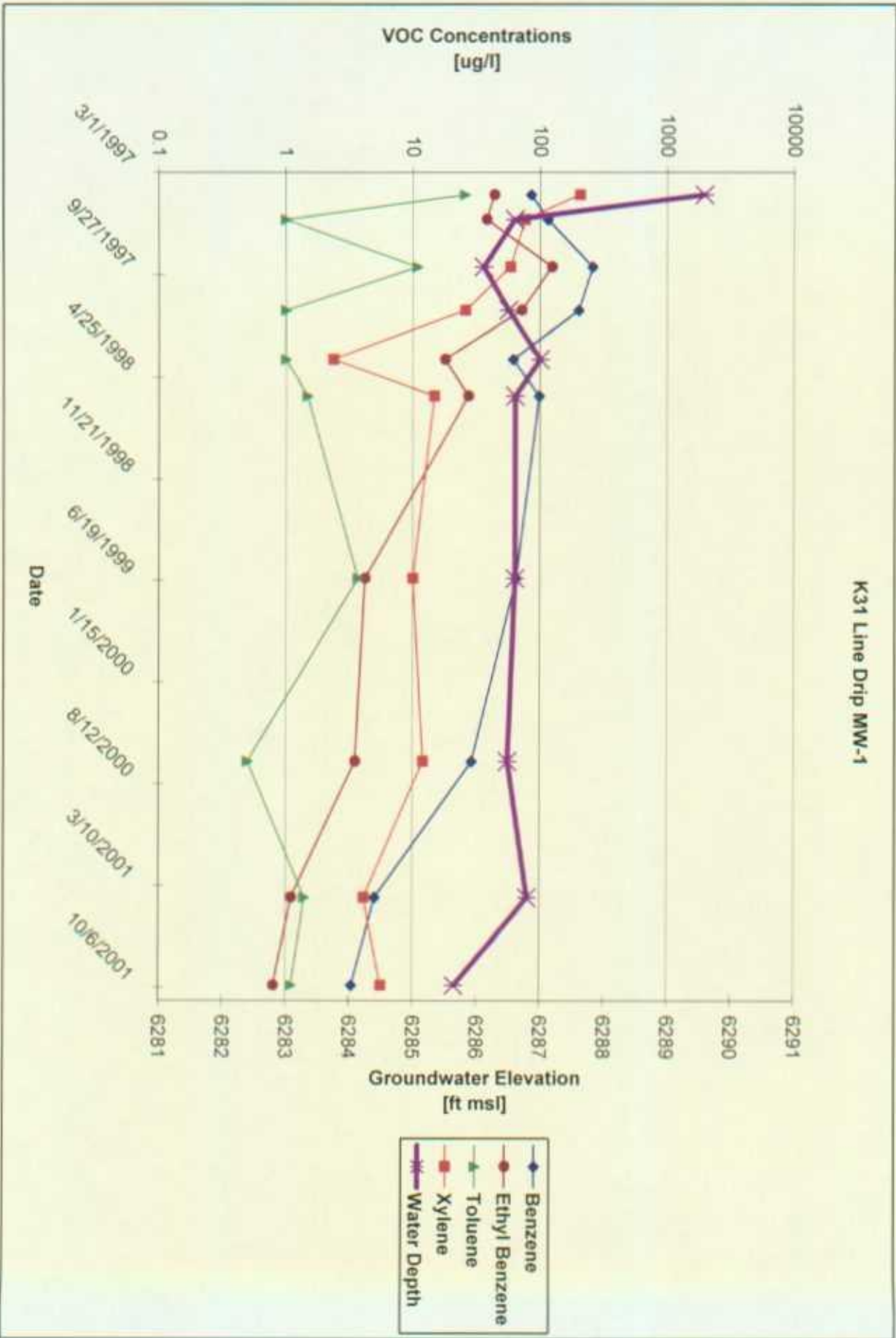
k31ld\_01.dwg



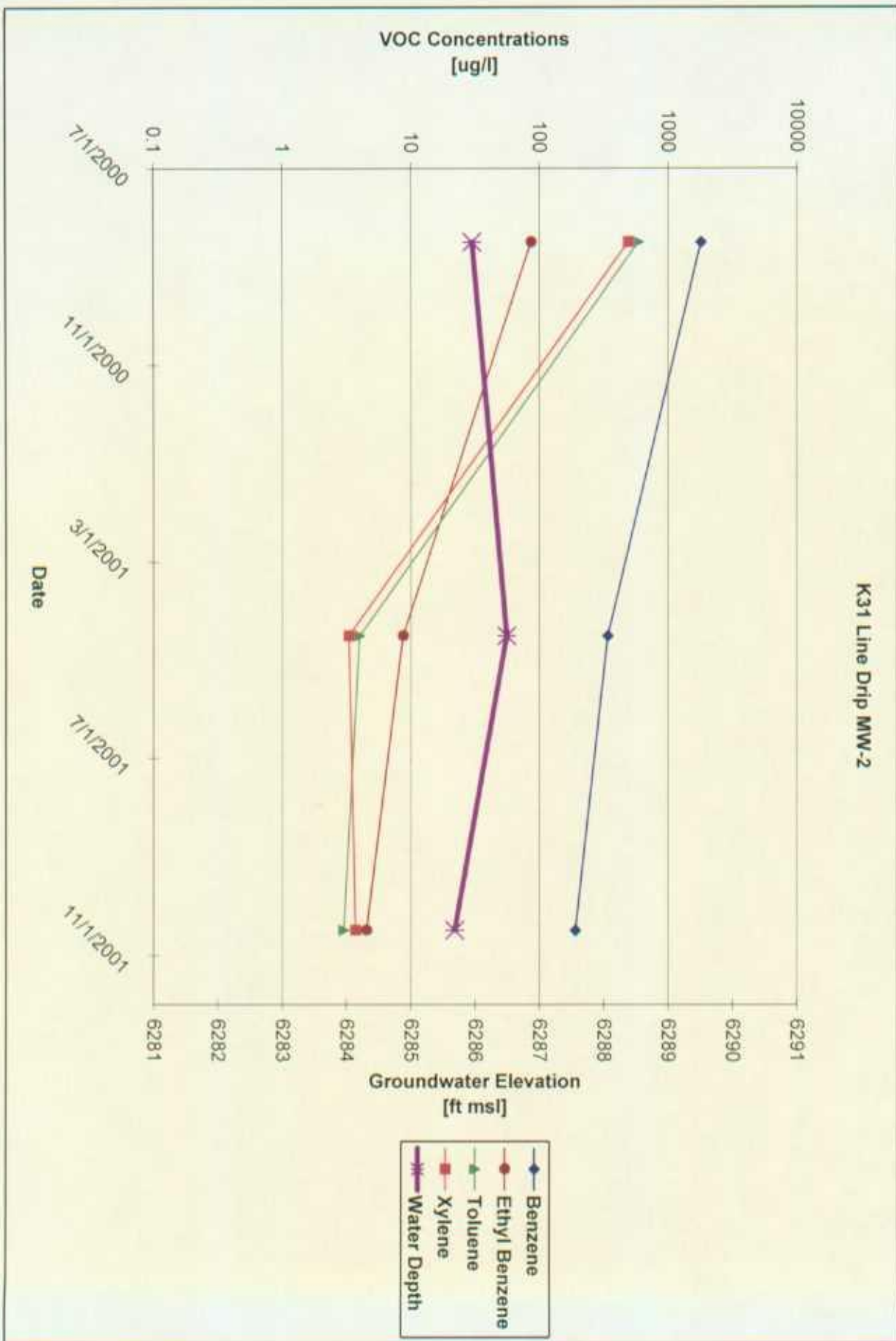
Table 1 BTEX  
K-31 Line Drip

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)
870104	LD087	K-31 Line Drip	4/3/2001	1	5	1.1	1.4	4.1	17.79	6286.8
087-0110	LD087	K-31 Line Drip	10/1/2001	1	3.3	0.8	1.1	5.6	18.94	6285.65
870104	LD087	K-31 Line Drip	4/3/2001	2	340	8.7	4	3.3	16.82	6286.49
087-0110	LD087	K-31 Line Drip	10/1/2001	2	190	4.5	3.0	3.7	17.63	6285.68

K31 Line Drip MW-1



K31 Line Drip MW-2

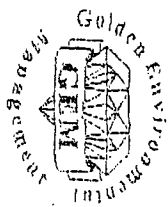


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**ATTACHMENT 1**

**2001 GROUNDWATER ANALYTICAL**

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# Well Development and Purging Data

Project No. CLGA Development  Purging  Page 1 of 1

Task No. \_\_\_\_\_ Site Name/Identification K-31 (LD087) Site Address Rural Rio Arriba County

Well No. Mw 1 Client/Project Name El Paso Field Services EGFS Remediation project Project Manager LISA WILSON

## Development Criteria

- 5 to 5 Casing Volumes of Water Removal
- Stabilization of Indicator Parameters
- Other \_\_\_\_\_

Water Volume Calculation  
 Initial Depth of Well (feet) 29.42  
 Initial Depth to Water (feet) 19.99  
 Height of Water Column in Well (feet) 10.48  
 Diameter (inches): Well 4" Gravel Pack \_\_\_\_\_

Item	Water Volume in Well Cubic Feet	Gallons	Gallons to be Removed
Well Casing	<u>10.48</u>	<u>684X3</u>	<u>20.52</u>
Gravel Pack			
Drilling Fluids			
Total			<u>20.52</u>

- Methods of Development
- Bailor
  - Bottom Valve
  - Double Check Valve
  - Peristaltic
  - Stainless-steel Kemmerer
  - Other?? \_\_\_\_\_

Water Disposal 11  
Water Separator Roomfield MW

Sampling Activities  
 Type of Container LOA No. of Containers 2  
 Parameters Sampled For RTX

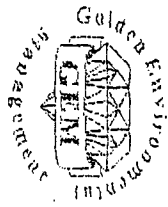
## Water Removal Data

Date	Time	Development Method		Removal Rate (gpm)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume		Product Volume		Temperature (°C)	pH	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Congruents
		Pump	Bailer				Removed (gallons)	Current	Removed (gallons)	Current					
<u>10-1-01</u>	<u>1113</u>		<u>X</u>			<u>28.22</u>	<u>4.25</u>	<u>4.25</u>			<u>17.7</u>	<u>6.54</u>	<u>14100</u>		<u>29.42 m<sup>3</sup> Product</u>
			<u>X</u>												<u>No Change</u>

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

Comments AFTER Bailing Approximately 85 gal Bailed well Dry Let Pressure Sampled for RTX 1155

Developer Signature (s) David A. Miller Date 10-1-01 Reviewer J. Wilson Date 10/3/01



# Well Development and Purging Data

Project No. 6169 Development  Purging  Page 1 of 1

Task No. \_\_\_\_\_ Site Name/Identification K-31 (LLO 087) Site Address Rural 12th Avila CO.

Well No. MW2 Client/Project Name El Paso Field Services EOPS Remediation project Project Manager Lisa Minn

Development Criteria  0-5 Casing Volumes of Water Removal 23,44 Serial No. (if applicable) Hyd-2

Stabilization of Indicator Parameters 17,63 Initial Depth of Well (feet) 5,81 Initial Depth to Water (feet) 5,81

Other \_\_\_\_\_ Height of Water Column in Well (feet) \_\_\_\_\_ Diameter (inches): Well 2" Gravel Pack \_\_\_\_\_

Methods of Development  Pump  Bailor  Centrifugal  Bottom Valve  Submersible  Double Check Valve  Peristaltic  Stainless-steel Kemmeter  Other \_\_\_\_\_

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	5.81	0.94X2	2.82
Gravel Pack			
Drilling Fluids			
Total			2.82

Water Disposal WWTZ Separator Blumfield NM.  Other \_\_\_\_\_

Sampling Activities WDA No. of Containers 2

Type of Container \_\_\_\_\_ Parameters Sampled For RTex

## Water Removal Data

Date	Time	Development Method		Removal Rate (gpm)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons)		Product Volume Removed (gallons)		Temperature (°C)	pH	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Comments
		Pump	Bailor				Incremental	Cumulative	Incremental	Cumulative					
0-1-01	11:31		X			32.87	.25	.25			16.5	6.94	14110		0-1-01 Brown water
	11:38		X				.35	.35			16.4	6.98	13990		no change

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

Comments AFTER Bailing Approximately 1.5 gal Bailed well Dry let Recover Sampled for

Developer RTex 1150 Signature (s) Alan A. Quinn Date 10-1-01 Reviewer Alan A. Quinn Date 10/3/01

SHADED AREAS ARE FOR LAB USE ONLY.

PLEASE FILL THIS FORM IN COMPLETELY.

<b>PROJECT INFORMATION</b> PROJ. NO.: G169 PROJ. NAME: PDS Residential PO. NO.: SHIPPED VIA: NO. CONTAINERS: CUSTODY SEALS: Y/N/NA RECEIVED INTACT: BULK ICE/CE		<b>PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS</b> (RUSH) <input type="checkbox"/> 24hr <input type="checkbox"/> 48hr <input type="checkbox"/> 72hr <input type="checkbox"/> 1 WEEK (NORMAL) <input checked="" type="checkbox"/> CERTIFICATION REQUIRED: <input type="checkbox"/> NM <input type="checkbox"/> SDWA <input type="checkbox"/> OTHER METHANOL PRESERVATION <input type="checkbox"/> COMMENTS: FIXED FEE <input type="checkbox"/> K-31(LD087)		<b>RELINQUISHED BY: 1.</b> Signature: [Signature] Printed Name: [Name] Date: 10-2-01 Company: Pinnacle Laboratories Inc.		<b>RELINQUISHED BY: 2.</b> Signature: [Signature] Printed Name: [Name] Date: [Date] Company: Pinnacle Laboratories Inc.	
<b>COMPANY:</b> GEM <b>ADDRESS:</b> 906 Sun Town Blvd Ste D Farmington NM. 87401 <b>PHONE:</b> (505) 566-9115 <b>FAX:</b> (505) 566-9120 <b>BILL TO:</b> SCOTT POPE <b>COMPANY:</b> Elk Paso Field Services <b>ADDRESS:</b> 604 Reilly Ave Farmington NM.		<b>SAMPLE ID</b> <b>DATE</b> <b>TIME</b> <b>MATRIX</b> <b>LAB I.D.</b> 062-0110-MW 1      10-1-01      11:55      H <sub>2</sub> O 062-0110-MW 2      10-1-01      11:50      H <sub>2</sub> O		Petroleum Hydrocarbons (418.1) TRPH (MOD.8015) Diesel/Direct Inject (M8015) Gas/Purge & Trap 8021 (BTEX)/8015 (Gasoline) MTBE 8021 (BTEX) <input type="checkbox"/> MTBE <input type="checkbox"/> TMB <input type="checkbox"/> PCE 8021 (TCL) 8021 (EDX) 8021 (HALO) 8021 (CUST) 504.1 EDB <input type="checkbox"/> / DBCP <input type="checkbox"/> 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:			







Project Name EL PASO WATERLY SAMPLING

Client Company EL PASO FIELD SERVICES

Project No. 62800107

Site Name K-31 LD. LDD087

Well Number Mw 2

Phase/Task No. CO

**Development Criteria**

- 0.5 Casing Volumes of Water Removal
- Stabilization of Indicator Parameters
- Other

**Methods of Development**

- Pump
- Centrifugal
- Submersible
- Peristaltic
- Other

Method	Flow Rate (gpm)	Duration (min)	Volume (gal)
Centrifugal	6.62	1.08x3	5.24
Submersible			
Peristaltic			
Other			

**Water Removal Data**

Date	Time	Development Method		Removal Rate (gal/min)	Inlet Depth (feet)	Outlet Water Depth (feet)	Flow Rate (gpm)	Volume (gal)	PH	Conductivity (micro/mho/cm)	Dissolved Oxygen (mg/l)	Comments
		Pump	Boiler									
4-3-01	1039		X									
	1041		X									
	1045		X									

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

Comments AFTER BAILING APPROXIMATELY 2.5 gal DRAINED WELL DRY LET RECOVER COLLECT SAMPLES

Developer's Signature(s) [Signature] Date 4-3-01 Reviewer PT Date 4/3/01

Well Number MW 1  
Serial No. WOPD

WELL DEVELOPMENT AND PURGING DATA  
Page 1 of 1

Project Name EPFS quarterly sampling  
Client Company El Paso Field Services  
Site Name K-3112D (LD087)

Operator Lisa Winn  
Company Rural Sun Town CO

Project No. 62800107  
Phase/Task No. 0301

Development Criteria  
 0-5 Casing Volumes of Water Removal  
 Stabilization of Indicator Parameters  
 Other

Indicators: 29.42  
97.79  
11.63  
4"

Serial No. (if applicable)  
Hydac  
 pH Meter  
 DO Monitor  
 Conductivity Meter  
 Temperature Meter  
Hydac  
 Other

Methods of Development

- Pump:  Centrifugal  Booster  
 Submersible  Double Check Valve  
 Peristaltic  Stainless-steel Kemmerer  
 Other

11.63	259X3	22.77	22.77
-------	-------	-------	-------

Water Disposal  
KITZ Separator Bloomfield NM

Water Removal Data

Date	Time	Development Method (Pump/Boiler)	Removal Rate (gal/min)	Inlet a (gpg) (pscl)	Outlet a (gpg) (pscl)	pH	Conductivity (umhos/cm)	Disposal (method)	Comments
4-3-01	1002	X	4.75	12.1	6.73	9020	8610		CRUD, XENON SK FILL will Specific above no change
	1004	X	4.75	9.50					

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

Comments AFTER Bailing Approximately 10.5 gal. Bailed well Dry LET Recover Sampled for BTEX 1056

Developer's Signature(s) Steve A. May

Date 4-3-01 Reviewer RT Date 4/3/01

# PHILIP

Well Number Mw 2

Development

WELL DEVELOPMENT AND PURGING DATA

## ENVIRONMENTAL

Serial No. WOPD

Page 1 of 1

Project Name EPFS Quarterly Samplings  
 Client Company EL Paso Field Services  
 Site Name K-31 LD EDD87

Operator LISA Wynn  
 Location Rural San Juan CO

Project No. 62800107  
 Phase/Task No. \_\_\_\_\_

### Development Criteria

- 5 Casing Volumes of Water Removal
- Stabilization of Indicator Parameters
- Other \_\_\_\_\_

### Instruments

Serial No. (if applicable)

### Methods of Development

- Pump
- Centrifugal
- Submersible
- Peristaltic
- Other \_\_\_\_\_

Method	Volume (gal)	Time (min)	Flow Rate (gpm)
Boiler	6.62	1.08 X 3	3.24
Bottom Valve			
Double Check Valve			
Stainless-steel Kemmerer			
Other			

### Water Removal Data

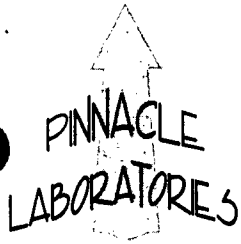
Water Disposal K-72 Separator Brownfield RM

Date	Time	Development Method	Removal Rate (gal/min)	Intake Depth (ft)	Ending Water Depth (ft)	Volume (gal)	Flow Rate (gpm)	Duration (min)	gll	Conductivity (micro-mhos/cm)	Dissolved Oxygen (mg/l)	Comments
4-3-01	10:39	X						12.3	6.12	9050		C/O-Dr. Brownfield Sports club
	10:41	X						12.1	6.13	8800		"
	10:45							12.3	5.99	9400		no change

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

Comments AFTER Bailing Approximately 2.5 gal Dailed well Dry LET RECOVER COLLECTE Samples

Developer's Signature(s) [Signature] Date 4-3-01 Reviewer RT Date 4/3/01



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

Pinnacle Lab ID number      **110010**  
October 11, 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

K 31

Attention:                      LISA WINN/SCOTT POPE

On 10/02/01 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

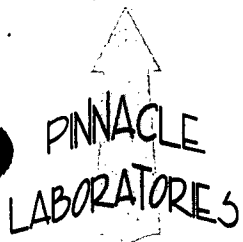
MR: jt

Enclosure

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

PINNACLE  
LABORATORIES

CLIENT	: GOLDEN ENVIRONMENTAL MNGT.	PINNACLE ID	: 110010
PROJECT #	: 6169	DATE RECEIVED	: 10/02/01
PROJECT NAME	: EPFS REMEDIATION PROJECT	REPORT DATE	: 10/11/01
PINNACLE			DATE
ID #	CLIENT DESCRIPTION	MATRIX	COLLECTED
10010 - 01	087-0110-MW1	AQUEOUS	10/01/01
10010 - 02	087-0110-MW2	AQUEOUS	10/01/01



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.: 110010

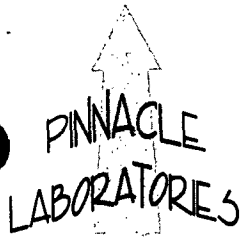
SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
01	087-0110-MW1	AQUEOUS	10/01/01	NA	10/04/01	1
02	087-0110-MW2	AQUEOUS	10/01/01	NA	10/03/01	1

PARAMETER	DET. LIMIT	UNITS	087-0110-MW1	087-0110-MW2
BENZENE	0.5	UG/L	3.3	190
TOLUENE	0.5	UG/L	1.1	3.0
ETHYLBENZENE	0.5	UG/L	0.8	4.5
TOTAL XYLENES	0.5	UG/L	5.6	3.7

SURROGATE:  
BROMOFLUOROBENZENE (%) 142\* 100  
SURROGATE LIMITS ( 80 - 120 )

CHEMIST NOTES:

\*Surrogate out of range due to matrix interference.



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. : 110010  
BLANK I. D. : 100301                              DATE EXTRACTED : NA  
CLIENT : GOLDEN ENVIRONMENTAL MNGT.      DATE ANALYZED : 10/03/01  
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 (%)                      92

SURROGATE LIMITS:                      ( 80 - 120 )

COMMENTS NOTES:

N/A





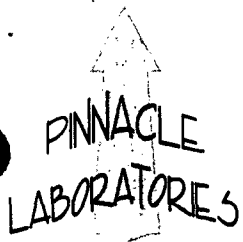
2709-D Pan American Freeway NE  
Albuquerque, New Mexico 87107  
Phone (505) 344-3777  
Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS  
REAGENT BLANK

TEST : EPA 8021 MODIFIED                      PINNACLE I.D. : 110010  
BLANK I. D. : 100401                              DATE EXTRACTED : NA  
CLIENT : GOLDEN ENVIRONMENTAL MNGT.      DATE ANALYZED : 10/04/01  
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 (%)                      90  
SURROGATE LIMITS:                      ( 80 - 120 )  
ADDITIONAL NOTES:  
N/A



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 Albuquerque, New Mexico 87107  
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GAS CHROMATOGRAPHY QUALITY CONTROL  
 MSMSD

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 110010
MSMSD #	: 109114-02	DATE EXTRACTED	: NA
CLIENT	: GOLDEN ENVIRONMENTAL MNGT.	DATE ANALYZED	: 10/03/01
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	21.6	108	21.7	109	0	( 80 - 120 )	20
TOLUENE	<0.5	20.0	20.1	101	20.3	102	1	( 80 - 120 )	20
ETHYLBENZENE	<0.5	20.0	20.5	103	20.7	104	1	( 80 - 120 )	20
TOTAL XYLENES	<0.5	60.0	62.2	104	62.7	105	1	( 80 - 120 )	20

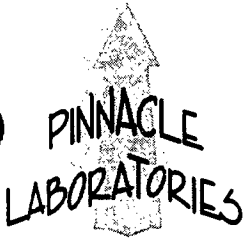
CHEMIST NOTES:  
 N/A

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

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



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Pinnacle Lab ID number      **104012**  
April 12, 2001

PHILIP SERVICE CORPORATION  
4000 MONROE ROAD  
FARMINGTON, NM 87401

EL PASO FIELD SERVICES  
614 RIELLY STREET  
FARMINGTON, NM 87401

Project Name                      EPFS QUARTERLY SAMPLING  
Project Number                  62800107

Attention:                      ROBERT THOMPSON/SCOTT POPE

On 04/04/01 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.

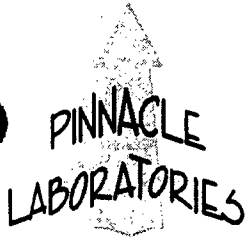
A handwritten signature in dark ink, appearing to read "H. Mitchell Rubenstein". The signature is fluid and cursive, with a large, sweeping flourish at the end.

H. Mitchell Rubenstein, Ph. D.  
General Manager

MR: jt

Enclosure

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CLIENT : PHILIP SERVICE CORPORATION      PINNACLE ID : 104012  
PROJECT # : 62800107      DATE RECEIVED : 04/04/01  
PROJECT NAME : EPFS QUARTERLY SAMPLING      REPORT DATE : 04/12/01

PINNACLE			DATE
ID #	CLIENT DESCRIPTION	MATRIX	COLLECTED
104012 - 01	087-0104-MW 1	AQUEOUS	04/03/01
104012 - 02	087-0104-MW 2	AQUEOUS	04/03/01

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**PINNACLE  
LABORATORIES**

**GAS CHROMATOGRAPHY RESULTS**

TEST : EPA 8021 MODIFIED  
CLIENT : PHILIP SERVICE CORPORATION  
PROJECT # : 62800107  
PROJECT NAME : EPFS QUARTERLY SAMPLING

PINNACLE I.D.: 104012

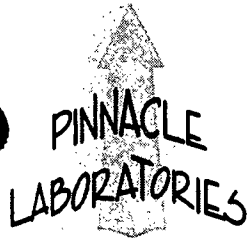
SAMPLE	DATE	DATE	DATE	DIL.		
D. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	087-0104-MW 1	AQUEOUS	04/03/01	NA	04/09/01	1
02	087-0104-MW 2	AQUEOUS	04/03/01	NA	04/09/01	1

PARAMETER	DET. LIMIT	UNITS	087-0104-MW 1	087-0104-MW 2
BENZENE	0.5	UG/L	5.0	340(D5)
TOLUENE	0.5	UG/L	1.4	4.0
ETHYLBENZENE	0.5	UG/L	1.1	8.7
M-XYLENES	0.5	UG/L	4.1	3.3

SURROGATE:  
BROMOFLUOROBENZENE (%) 122\* 102  
SURROGATE LIMITS ( 80 - 120 )

**CHEMIST NOTES:**

High surrogate recovery due to matrix interference.  
D5) = 5x dilution analyzed on 4/10/01.



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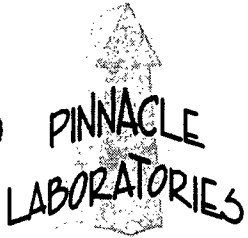
GAS CHROMATOGRAPHY RESULTS  
REAGENT BLANK

TEST : EPA 8021 MODIFIED                      PINNACLE I.D. : 104012  
BLANK I. D. : 040901                              DATE EXTRACTED : NA  
CLIENT : PHILIP SERVICE CORPORATION        DATE ANALYZED : 04/09/01  
PROJECT # : 62800107                            SAMPLE MATRIX : AQUEOUS  
PROJECT NAME : EPFS QUARTERLY SAMPLING

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 (%)                      96  
SURROGATE LIMITS: ( 80 - 120 )  
CHEMIST NOTES:  
N/A

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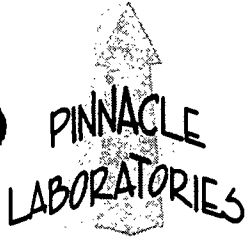
GAS CHROMATOGRAPHY RESULTS  
REAGENT BLANK

TEST : EPA 8021 MODIFIED                      PINNACLE I.D. : 104012  
BLANK I. D. : 041001                              DATE EXTRACTED : NA  
CLIENT : PHILIP SERVICE CORPORATION        DATE ANALYZED : 04/10/01  
PROJECT # : 62800107                            SAMPLE MATRIX : AQUEOUS  
PROJECT NAME : EPFS QUARTERLY SAMPLING

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 (%)                      101  
SURROGATE LIMITS: ( 80 - 120 )  
CHEMIST NOTES:  
N/A





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GAS CHROMATOGRAPHY QUALITY CONTROL  
 MSMSD

TEST : EPA 8021 MODIFIED  
 MSMSD # : 104030-01  
 CLIENT : PHILIP SERVICE CORPORATION  
 PROJECT # : 62800107  
 PROJECT NAME : EPFS QUARTERLY SAMPLING

PINNACLE I.D. : 104012  
 DATE EXTRACTED : NA  
 DATE ANALYZED : 04/10/01  
 SAMPLE MATRIX : AQUEOUS  
 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	20.3	102	19.8	99	2	( 80 - 120 )	20
TOLUENE	<0.5	20.0	20.8	104	20.0	100	4	( 80 - 120 )	20
ETHYLBENZENE	<0.5	20.0	21.8	109	20.9	105	4	( 80 - 120 )	20
TOTAL XYLENES	<0.5	60.0	60.6	101	57.0	95	6	( 80 - 120 )	20

CHEMIST NOTES:  
 N/A

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

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

