

3R - 210

REPORTS

DATE:

2000



Certified Mail: #7000 1670 0012 7260 6739

February 26, 2001

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

RECEIVED

FEB 28 2001

ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

RE: 2000 Pit Project Annual Groundwater Report

Dear Mr. Olson:

In accordance with reporting requirements, El Paso Field Services (EPFS) has enclosed annual updates for the 32 remaining groundwater impacted sites that were identified during our pit closure project of 1994 / 1995.

Of the 32 reports (Volumes 1-4), EPFS hereby requests closure of six sites. The six sites EPFS is requesting closure on are presented in one separate binder entitled "San Juan Basin Pit Closures, El Paso Field Services, Pit Closure Reports". Four of the six sites were submitted in last years report and a decision has not been made on closure. The remaining two sites have been submitted in previous years and denied closure.

The Jaquez Com. C #1 and Jaquez Com. E #1 site is not included in with this years report and will be submitted by the required deadline of April 1, 2001

EPFS has also included for your information six Navajo sites in a separate binder.

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

Sincerely,

A handwritten signature in dark ink, appearing to read 'Scott T. Pope', written over a horizontal line.

Scott T. Pope P.G.
Senior Environmental Scientist

xc: Mr. Denny Foust, NMOCD, Aztec - w / enclosures; **Certified Mail # 7000 1670 0012 7260 6722**
Mr. Bill Liesse, BLM - w / enclosures (federal sites only), **Certified Mail # 7000 1670 0012 7260 6715**

SAN JUAN BASIN PIT CLOSURES
San Juan Basin, New Mexico

El Paso Field Services
Pit Project Groundwater Report
Annual Report
Volume II

March 2001

Prepared For

El Paso Field Services
Farmington, New Mexico

Project 62800398



EPFS GROUNDWATER PITS

2000 ANNUAL GROUNDWATER REPORT

LAT 3B-39 LINE DRIP

Meter/Line ID - LD146

SITE DETAILS

Legals - Twn: 29N	Rng: 9W	Sec: 10	Unit: M
NMOC Hazard Ranking: 40			Land Type: FEE
Operator: EL PASO FIELD SERVICES			

PREVIOUS ACTIVITIES

Site Assessment: Jan-94	Excavation: Jan-95 (60 cy)	Soil Boring: Sep-95
Monitor Well: Sep-95	Geoprobe: Nov-96	Quarterly Sampling Initiated: Nov-96
Additional Monitor Wells: Nov-00		

2000 ACTIVITIES

Quarterly Groundwater Monitoring - Quarterly groundwater monitoring continued through 2000.

Monitor Well Installation - Following approval for off-site drilling, additional wells were drilled as requested by the OCD in correspondence dated July 28, 1999.

Operator Notification - Operator notified of field activities.

SUMMARY TABLES

Groundwater analytical data is presented in Table 1. Copies of the laboratory data sheets and the associated quality assurance/quality control data are presented as Attachment 1.

SITE MAP

A site map with groundwater elevation data and the groundwater gradient is presented as Figure 1.

GEOLOGIC LOG AND WELL COMPLETION DIAGRAMS

Drilling activities were conducted on November 21, 2000, and the geologic logs and well completion diagrams are presented in Attachment 2.

DISPOSITION OF GENERATED WASTES

There were no wastes generated at this site in 2000.

ISOCONCENTRATION MAPS

An isoconcentration map for total xylenes was generated and is included as Figure 2.

CONCLUSIONS

Analytical results of groundwater samples collected from MW-1 show levels of total xylenes above NMWQCC groundwater standards.

The site topography and proximity of the wash south of MW-1 were the factors for estimating the groundwater gradient. The additional wells were placed using this estimation. Based on the

EPFS GROUNDWATER PITS 2000 ANNUAL GROUNDWATER REPORT

groundwater elevations obtained from the additional monitor wells (requested by the OCD) the groundwater flow exhibits a trend towards the northwest. Therefore, monitor well MW-2 appears to be cross gradient of the former pit and MW-3 appears to be upgradient. The survey and groundwater data should be re-evaluated to confirm the actual groundwater gradient for this site.

Laboratory analyses of groundwater samples from MW-2 state there were no detectable levels of hydrocarbon constituents and only traces of total xylenes in MW-3.

Pertinent data from past groundwater reports include the following:

A geoprobe investigation was conducted in November of 1996 and groundwater samples, collected from various points outside the boundaries of the former pit and analyzed for hydrocarbon constituents, were within acceptable limits for New Mexico groundwater standards (data previously submitted). Based on Geoprobe data, there does not appear to have been any migration of contaminants.

RECOMMENDATIONS

- EPFS suggests further recommendations be proposed following a re-evaluation of the survey and groundwater elevation data and pending further groundwater investigations.
- Quarterly sampling will continue at MW-1 until analytical results show hydrocarbon constituents are below New Mexico groundwater standards for four consecutive quarters.
- Following OCD approval for closure, MW-1 will be abandoned using OCD approved abandonment procedures.

EPFS Groundwater Pits
2000 Groundwater Report

Table 1

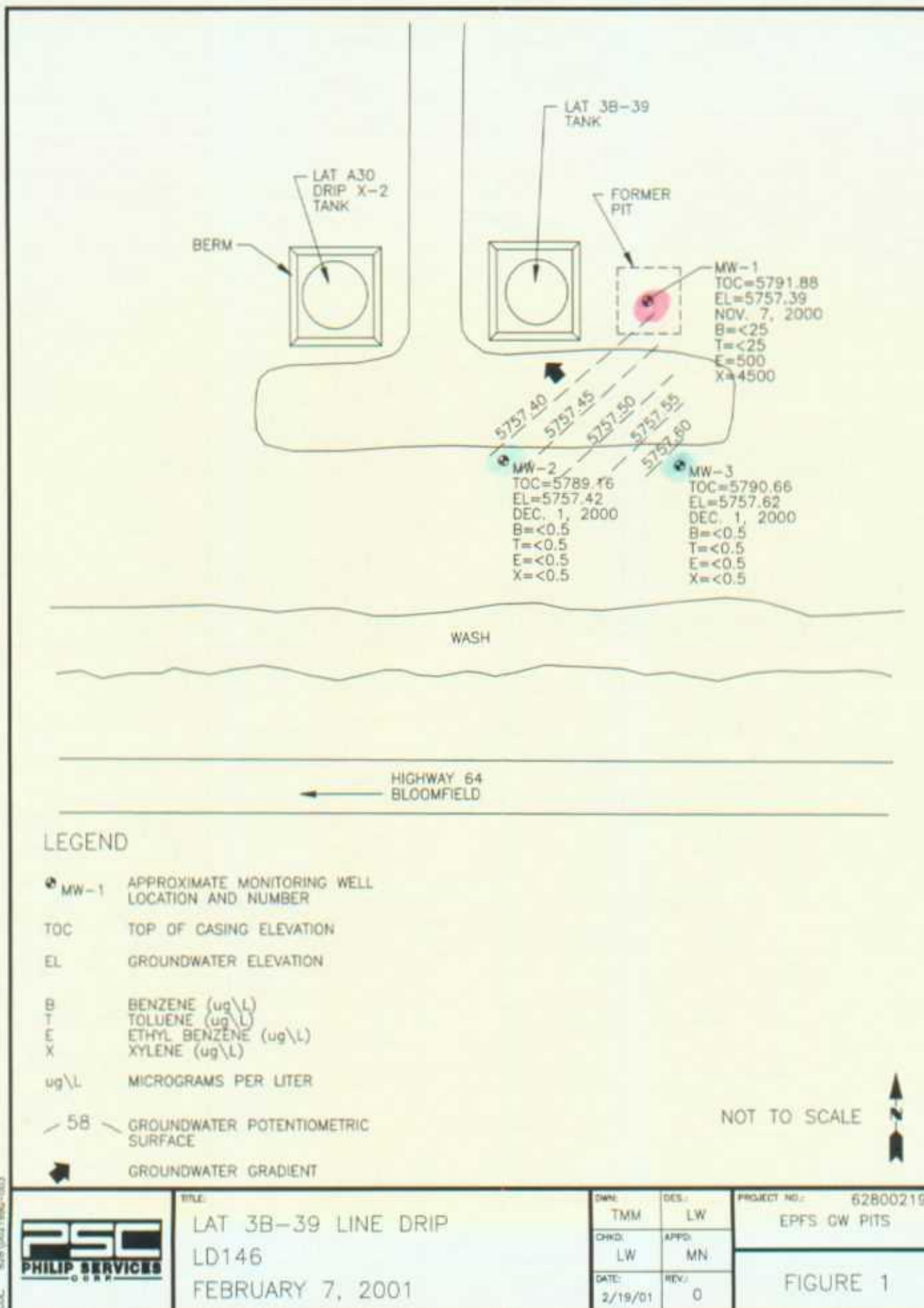
March 2001

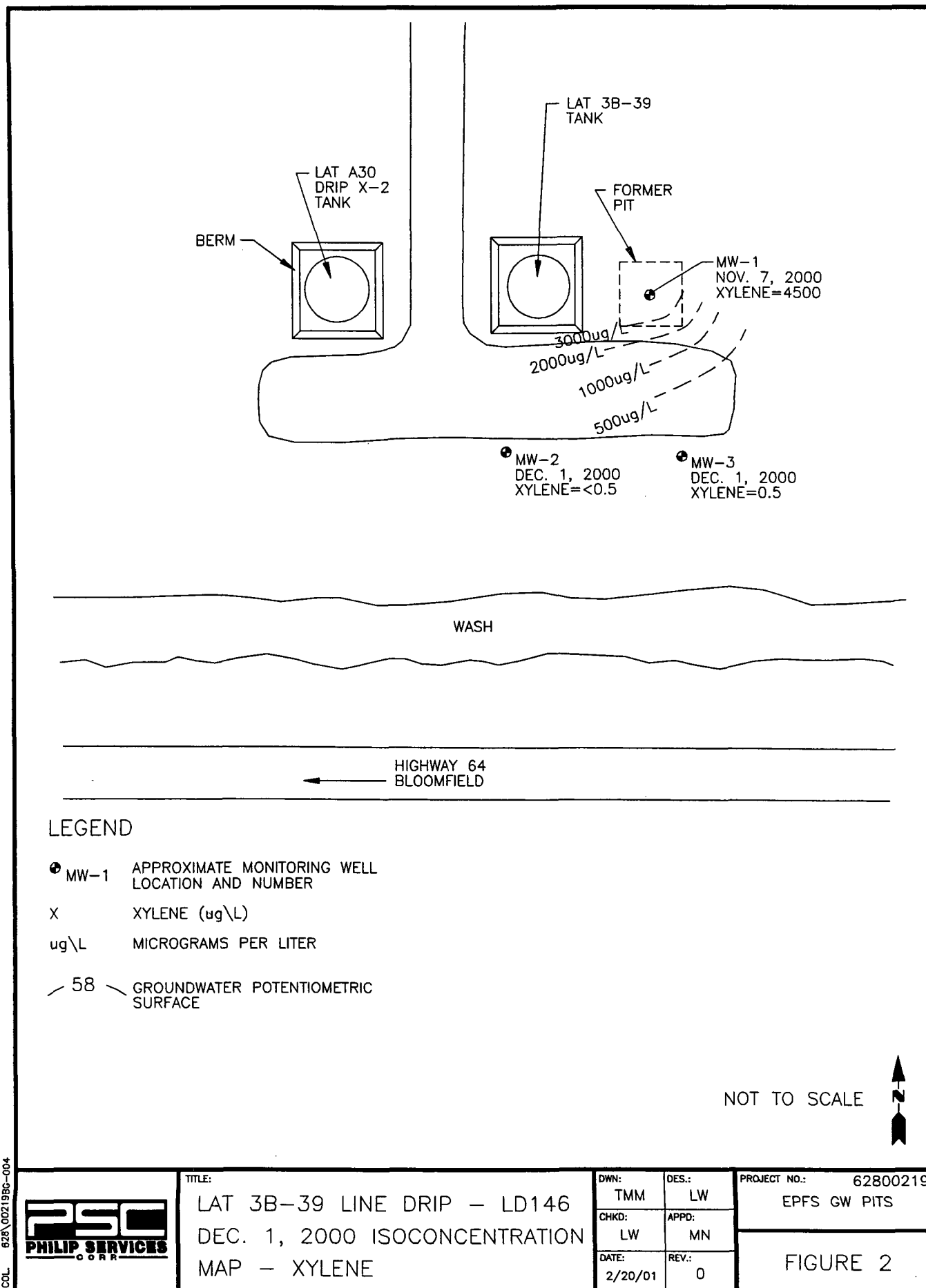
Sample #	Meter / Line #	Site Name	Sample Date	MW #	Project	Benzene (PPB)	Toluene (PPB)	Ethyl Benzene (PPB)	Total Xylenes (PPB)	Total BTEX (PPB)
146-0002-MW1	LD146	LAT 3B-39 LINE DRIP	2/24/00	1	Sample 4 - 12th Quarter	= 30	= 25	= 470	= 5,000	5,525
LAT-0005-MW1	LD146	LAT 3B-39 LINE DRIP	5/25/00	1	Sample 4 - 13th Quarter	< 0.5	< 0.5	= 600	= 6,800	7,400
146-0008-MW1	LD146	LAT 3B-39 LINE DRIP	8/1/00	1	Sample 4 - 14th Quarter	< 10	< 10	= 630	= 5,900	6,530
146-0011-MW1	LD146	LAT 3B-39 LINE DRIP	11/7/00	1	Sample 4 - 15th Quarter	< 25	< 25	= 500	= 4,500	5,000
146-0012-MW2	LD146	LAT 3B-39 LINE DRIP	12/1/00	2	Sample 1 - 1st Annual	< 0.5	< 0.5	< 0.5	< 0.5	ND
146-0012-MW3	LD146	LAT 3B-39 LINE DRIP	12/1/00	3	Sample 1 - 1st Annual	< 0.5	< 0.5	< 0.5	= 0.5	0.5

ND - No detectable levels

Sample 1 - Annual Sampling

Sample 4 - Quarterly Sampling





COL 6280021986-004



TITLE:
LAT 3B-39 LINE DRIP - LD146
DEC. 1, 2000 ISOCONCENTRATION
MAP - XYLENE

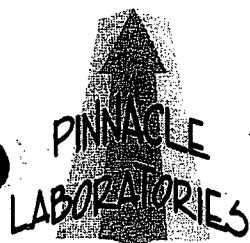
DWN: TMM
CHKD: LW
DATE: 2/20/01
DES.: LW
APPD: MN
REV.: 0

PROJECT NO.: 62800219
EPFS GW PITS

FIGURE 2

ATTACHMENT 1

2000 GROUNDWATER ANALYTICAL



MAR 13

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

Pinnacle Lab ID number 002094
March 09, 2000

PHILIP ENVIRONMENTAL
4000 MONROE ROAD
FARMINGTON, NM 87401

Project Name EPFS QUARTERLY SAMPLING
Project Number 62800107

Attention: KELLY PADILLA

On 02/29/00 Pinnacle Laboratories, Inc. 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.

Kimberly D. McNeill
Project Manager

H. Mitchell Rubenstein, Ph. D.
General Manager

MR: jt

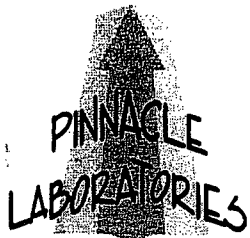
Enclosure



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

CLIENT	: PHILIP ENVIRONMENTAL	PINNACLE ID	: 002094
PROJECT #	: 62800107	DATE RECEIVED	: 02/29/00
PROJECT NAME	: EPFS QUARTERLY SAMPLING	REPORT DATE	: 03/08/00

PIN ID. #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	LIN-0002-MW1	AQUEOUS	02/24/00
02	146-0002-MW1	AQUEOUS	02/24/00
03	169-0002-MW1	AQUEOUS	02/25/00
04	STD-0002-MW1	AQUEOUS	02/25/00
05	HAM-0002-MW1	AQUEOUS	02/25/00
06	TNR-0002-MW2	AQUEOUS	02/28/00
07	JAQ-0002-MW4	AQUEOUS	02/24/00
08	JAQ-0002-MW3	AQUEOUS	02/24/00



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Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS

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

PINNACLE I.D.: 002094

SAMPLE			DATE	DATE	DATE	DIL.
ID. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	LIN-0002-MW1	AQUEOUS	02/24/00	NA	03/02/00	20
02	146-0002-MW1	AQUEOUS	02/24/00	NA	03/02/00	50
03	169-0002-MW1	AQUEOUS	02/25/00	NA	03/02/00	20

PARAMETER	DET. LIMIT	UNITS	LIN-0002-MW1	146-0002-MW1	169-0002-MW1
BENZENE	0.5	UG/L	120	30	750
TOLUENE	0.5	UG/L	39	25	29
ETHYLBENZENE	0.5	UG/L	78	470	790
AL XYLENES	0.5	UG/L	830	5000	1600

SURROGATE:

BROMOFLUOROBENZENE (%)

105

102

102

SURROGATE LIMITS (80 - 120)

CHEMIST NOTES:

N/A



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GAS CHROMATOGRAPHY RESULTS

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

PINNACLE I.D.: 002094

SAMPLE			DATE	DATE	DATE	DIL.
ID. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
04	STD-0002-MW1	AQUEOUS	02/25/00	NA	03/02/00	50
05	HAM-0002-MW1	AQUEOUS	02/25/00	NA	03/08/00	1
06	TNR-0002-MW2	AQUEOUS	02/28/00	NA	03/08/00	1

PARAMETER	DET. LIMIT	UNITS	STD-0002-MW1	HAM-0002-MW1	TNR-0002-MW2
BENZENE	0.5	UG/L	1300	130	2.6
TOLUENE	0.5	UG/L	1000	70	6.8
ETHYLBENZENE	0.5	UG/L	260	78	14
AL XYLENES	0.5	UG/L	1700	190	58

SURROGATE:

BROMOFLUOROBENZENE (%)

104

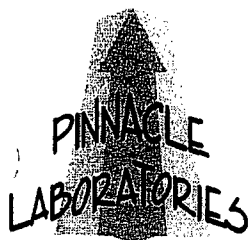
100

97

SURROGATE LIMITS (80 - 120)

CHEMIST NOTES:

N/A



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GAS CHROMATOGRAPHY RESULTS

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

PINNACLE I.D.: 002094

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
07	JAQ-0002-MW4	AQUEOUS	02/24/00	NA	03/02/00	1
08	JAQ-0002-MW3	AQUEOUS	02/24/00	NA	03/02/00	1

PARAMETER	DET. LIMIT	UNITS	JAQ-0002-MW4	JAQ-0002-MW3
BENZENE	0.5	UG/L	11	30
TOLUENE	0.5	UG/L	< 0.5	2
ETHYLBENZENE	0.5	UG/L	5.6	2.3
TOTAL XYLENES	0.5	UG/L	5.5	9.4

SURROGATE:

BROMOFLUOROBENZENE (%)

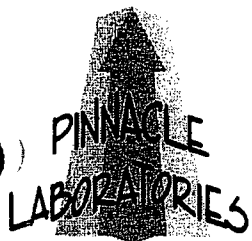
101

98

SURROGATE LIMITS (80 - 120)

CHEMIST NOTES:

N/A



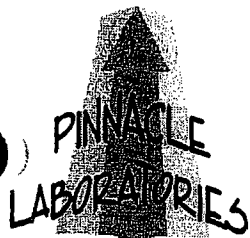
2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 002094
BLANK I. D.	: 030100	DATE EXTRACTED	: N/A
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 03/01/00
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:
MOFLUOROBENZENE (%) 103
SURROGATE LIMITS: (80 - 120)
CHEMIST NOTES:
N/A



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Albuquerque, New Mexico 87107
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GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 002094
BLANK I. D.	: 030200	DATE EXTRACTED	: N/A
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 03/02/00
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

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



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Albuquerque, New Mexico 87107
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Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 002094
BLANK I. D.	: 030800	DATE EXTRACTED	: N/A
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 03/08/00
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 (%) 97
SURROGATE LIMITS: (80 - 120)
CHEMIST NOTES:
N/A



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Albuquerque, New Mexico 87107
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GAS CHROMATOGRAPHY QUALITY CONTROL
MSMSD

TEST : EPA 8021 MODIFIED
MSMSD # : 030100
CLIENT : PHILIP ENVIRONMENTAL
PROJECT # : 62800107
PROJECT NAME : EPFS QUARTERLY SAMPLING

PINNACLE I.D. : 002094
DATE EXTRACTED : N/A
DATE ANALYZED : 03/01/00
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	21.8	109	21.9	110	0	(80 - 120)	20
TOLUENE	<0.5	20.0	20.4	102	20.0	100	2	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	22.2	111	22.0	110	1	(80 - 120)	20
TOTAL XYLENES	<0.5	60.0	62.1	104	62.9	105	1	(80 - 120)	20

CHEMIST NOTES:
N/A

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

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

Project Name EPFS QUARTERLY SAMPLING

Project Manager Robert Thompson

Project No. 62800107

Client Company: EL PASO FIELD SERVICES

Phase, Task No. 0301

Site Name LATERAL 3B 39 LINE DRIP (L0146) Site Address RURAL SAN JUAN COUNTY

Development Criteria

☒ (3) to 5 Casing Volumes of Water Removal

☒ Stabilization of Indicator Parameters☐ Other

Water Volume Calculation

Initial Depth of Well (feet) 41.43 DR

Initial Depth to Water (feet) 33.81 to 2

Height of Water Column in Well (feet) 762

Diameter (inches): Well 4 Gravel Pack

Methods of Development

Pump

☐ Centrifugal ☒ Bottom Valve

☐ Submersible ☐ Double Check Valve

☐ Peristaltic ☐ Stainless-steel Kemmerer

☐ Other

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	7.62	497 x 3	14.9
Gravel Pack			
Drilling Fluids			
↑ Total			14.9

Water Disposal

KUTZ SEPARATOR, BOOMFLO, NM

Water Removal Data

[illegible]

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

Comments	SAMPLED FOR BTEX AT 1040
----------	--------------------------

Developer's Signature(s) Jess Wagner

Date 5/25/00

Reviewer RT Date 5/25/00

Chain of Custody Record

(505) 326-2262 Phone
(505) 326-2388 FAX

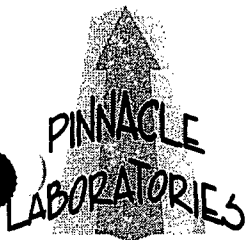
(505) 326-2262 Phone
(505) 326-2388 FAX

[illegible]

Received By:

Signature	Date	Time	Signature	Date	Time
<i>J. J. J.</i>	5/23/00	1612			

Samples Iced: ☒ Yes ☐ No Preservatives (ONLY for Water Samples) ☐ Cyanide Sodium hydroxide (NaOH) ☒ Volatile Organic Analysis Hydrochloric acid (HCl) ☐ Metals Nitric acid (HNO ₃) ☐ TPH (418.1) Sulfuric acid (H ₂ SO ₄) ☐ Other (Specify) _____ ☐ Other (Specify) _____	Carrier: GREYHOUND LINES Airbill No. 6LFI1606650749
Shipping and Lab Notes:	



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

Pinnacle Lab ID number **005110**
May 31, 2000

PHILIP ENVIRONMENTAL
4000 MONROE ROAD
FARMINGTON, NM 87401

EL PASO FIELD SERVICES
614 RIELY STREET
FARMINGTON, NM 87401

Project Name EPFS QUARTERLY SAMPLING
Project Number 62800107

Attention: Robert Thompson/LeAudra Stanley

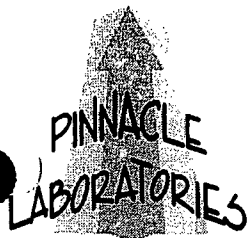
On 05/26/00 Pinnacle Laboratories, Inc. Inc., (ADHS License No. AZ0592 pending), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are 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

CLIENT	: PHILIP ENVIRONMENTAL	PINNACLE ID	: 005110
PROJECT #	: 62800107	DATE RECEIVED	: 05/26/00
PROJECT NAME	: EPFS QUARTERLY SAMPLING	REPORT DATE	: 05/31/00
PIN			DATE
ID. #	CLIENT DESCRIPTION	MATRIX	COLLECTED
01	LAT 0005-MW1	AQUEOUS	05/25/00



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 : PHILIP ENVIRONMENTAL
PROJECT # : 62800107
PROJECT NAME : EPFS QUARTERLY SAMPLING

PINNACLE I.D.: 005110

SAMPLE	DATE	DATE	DATE	DIL.		
ID. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	LAT 0005-MW1	AQUEOUS	05/25/00	NA	05/27/00	10

PARAMETER	DET. LIMIT	UNITS	LAT 0005-MW1
BENZENE	0.5	UG/L	< 5.0
TOLUENE	0.5	UG/L	< 5.0
ETHYLBENZENE	0.5	UG/L	600
TOTAL XYLENES	0.5	UG/L	6800(D50)

PROGATE:
BROMOFLUOROBENZENE (%) 117
SURROGATE LIMITS (80 - 120)

CHEMIST NOTES:
(D50) = 50X DILUTION ANALYZED ON 5/26/00.



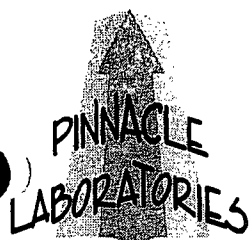
2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 005110
BLANK I. D.	: 052600	DATE EXTRACTED	: NA
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 05/26/00
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 (%) 102
SURROGATE LIMITS: (80 - 120)
CH NOTES:
N/A



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GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 005110
BLANK I. D.	: 052700	DATE EXTRACTED	: NA
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 05/27/00
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 (%) 100
SURROGATE LIMITS: (80 - 120)
CHROMATOGRAPHY NOTES:
N/A



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Albuquerque, New Mexico 87107
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GAS CHROMATOGRAPHY QUALITY CONTROL
MSMSD

EST : EPA 8021 MODIFIED
ISMSD # : 005101-04
CLIENT : PHILIP ENVIRONMENTAL
PROJECT # : 62800107
PROJECT NAME : EPFS QUARTERLY SAMPLING

PINNACLE I.D. : 005110
DATE EXTRACTED : NA
DATE ANALYZED : 05/26/00
SAMPLE MATRIX : AQUEOUS
UNITS : UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
ENZENE	<0.5	20.0	18.3	92	18.8	94	3	(80 - 120)	20
OLUENE	<0.5	20.0	18.2	91	18.9	95	4	(80 - 120)	20
THYLBENZENE	<0.5	20.0	20.2	101	20.6	103	2	(80 - 120)	20
OTAL XYLENES	<0.5	60.0	61.4	102	61.1	102	0	(80 - 120)	20

HEMI. NOTES:
/A

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

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

011500

Chain of Custody Record

(505) 326-2262 Phone
(505) 326-2388 FAX

4000 Monroe Road
Farmington, NM 87401

COC Serial No. C 2554

Project Name		Project Number		Phase		Task	
E.P.F.S. QUARTERLY SAMPLING		68800107		Phase		0301	
Samplers		R. THOMPSON					
Laboratory		Name PINNACLE LABS					
		Location ALBUQUERQUE, NM					
Sample Number (and depth)		Date		Time		Matrix	
LAT 0005-mw1		5/25/00		1440		H ₂ O	
Total Number of Bottles		2					
Type of Analysis and Bottle		BTEX 5021					
		LAB ID#					
		01					
		Comments					
		LAT. 28-39 LONG. 108-16					
		LD146					

Relinquished by:

Received By:

Signature	Date	Time	Signature	Date	Time
<i>James Wagon</i>	5/25/00	1612	<i>Glennene Dunn</i>	5/26/00	1110

Samples Iced:

Samples Iced: ☒ Yes ☐ No

test values (only, not test samples)

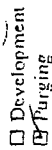
☐	Cyanide	Sodium hydroxide (NaOH)
☒	Toxic Organic Analytes	Hydrochloric acid (HCl)
☐	Metals	Nitric acid (HNO ₃)
☐	TRI (a.i.t.)	Sulfuric acid (H ₂ SO ₄)
☐	Other (Specify) _____	
☐	Other (Specify) _____	

Carrier: 6REYHJNO LINES

Shipping and Lab Notes:

Serial No. 62160650749

Rec'd @ lei



WELL DEVELOPMENT AND PURGING DATA

Serial No. WDPD.

Page 1 of 1

Project Name EPFS Quarterly Sam

Project Manager R THOMPSON

Project No. 62800107

Client Company EPFS
 Site Name 3B-39 LD (LD 46)

Site Address RURAL SAN JUAN CO.

Phase.Task No. 0301

Development Criteria

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

Water Volume Calculation

Initial Depth of Well (feet) 41.43 TOR
Initial Depth to Water (feet) 34.01 TOR
Height of Water Column in Well (feet) 7.42
Diameter (inches): Well 4 Gravel Pack

Methods of Development

Pump

☐ Centrifugal

☐ Submersible

☐ Peristaltic

☐ Other _____

Bailer

☒ Bottom Valve

☐ Double Check Valve

☐ Stainless-steel Kemmerer

Instruments

☒ pH Meter
☐ DO Monitor
☒ Conductivity
☒ Temperature
☐ Other

Serial No. (If applicable)

HYDAC

Water Removal Data

[illegible]

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

Comments

Sampled for BTEX at 1239

Developer's Signature(s) Jan Wagner

Date 8/1/00

Reviewer RT Date 8/11/00

Chain of Custody Record

4000 Monroe Road
Farmington, NM 87401
(505) 326-2262 Phone
(505) 326-2388 FAX

COC Serial No. C 2615

[illegible]

Relinquished by:

Received By:

Signature	Date	Time	Signature	Date	Time
<i>Quinn Wagner</i>	8/4/00	0915			

Samples Iced: ☒ Yes ☐ No		Carrier: GREY BOND LINES	Airbill No. 6LH1606651280
Preservatives (ONLY for Water Samples) ☐ Cyanide Sodium hydroxide (NaOH) ☒ Volatile Organic Analysis Hydrochloric acid (HCl) ☐ Metals Nitric acid (HNO ₃) ☐ TPH (418.1) Sulfuric acid (H ₂ SO ₄) ☐ Other (Specify) _____ ☐ Other (Specify) _____		Shipping and Lab Notes:	



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

Pinnacle Lab ID number 008025
August 08, 2000

PHILIP ENVIRONMENTAL
4000 MONROE ROAD
FARMINGTON, NM 87401

EL PASO FIELD SERVICES
614 RIELY STREET
FARMINGTON, NM 87401

Project Name EPFS QUARTERLY SAMPLING
Project Number 62800107

Attention: ROBERT THOMPSON/LEAUDRA STANLEY

On 08/04/00 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

CLIENT	: PHILIP ENVIRONMENTAL	PINNACLE ID	: 008025
PROJECT #	: 62800107	DATE RECEIVED	: 08/04/00
PROJECT NAME	: EPFS QUARTERLY SAMPLING	REPORT DATE	: 08/08/00
PIN			DATE
ID. #	CLIENT DESCRIPTION	MATRIX	COLLECTED
01	146-0008-MW01	AQUEOUS	08/01/00



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 : PHILIP ENVIRONMENTAL
PROJECT # : 62800107
PROJECT NAME : EPFS QUARTERLY SAMPLING

PINNACLE I.D.: 008025

SAMPLE	DATE	DATE	DATE	DIL.
ID. #	SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	08/01/00	NA	08/07/00	20

PARAMETER	DET. LIMIT	UNITS	146-0008-MW01
BENZENE	0.5	UG/L	< 10
TOLUENE	0.5	UG/L	< 10
ETHYLBENZENE	0.5	UG/L	630
TOTAL XYLENES	0.5	UG/L	5900

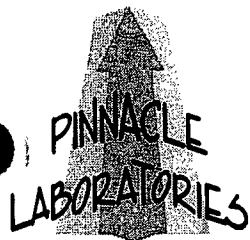
SURROGATE:

BROMOFLUOROBENZENE (%) 109

SURROGATE LIMITS (80 - 120)

CHEMIST 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.	: 008025
BLANK I. D.	: 080700	DATE EXTRACTED	: NA
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 08/07/00
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 (%)

93

RECOVERY LIMITS: (80 - 120)

CHEMIST NOTES:

N/A



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Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY QUALITY CONTROL
MSMSD

TEST : EPA 8021 MODIFIED
MSMSD # : 080700
CLIENT : PHILIP ENVIRONMENTAL
PROJECT # : 62800107
PROJECT NAME : EPFS QUARTERLY SAMPLING

PINNACLE I.D. : 008025
DATE EXTRACTED : NA
DATE ANALYZED : 08/07/00
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	19.0	95	20.1	101	6	(80 - 120)	20
TOLUENE	<0.5	20.0	19.6	98	20.7	104	5	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	20.1	101	20.5	103	2	(80 - 120)	20
TOTAL XYLENES	<0.5	60.0	61.4	102	63.1	105	3	(80 - 120)	20

CHEMIST NOTES:
N/A

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

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

Chain of Custody Record

4000 Monroe Road
Farmington, NM 87401

(505) 326-2262 Phone
(505) 326-2388 FAX

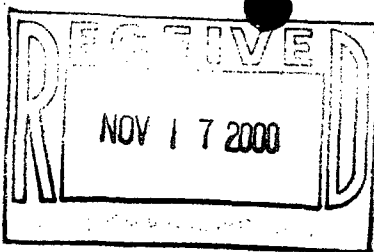
COC Serial No. C 2781

Relinquished by:

Received By:

requisitioned by.		received by.	
Signature	Date	Signature	Time
<i>Chris A. May</i>	11-13-08		1630

Samples Iced: ☒ Yes ☐ No		Carrier: <u>Greyhound</u> <u>3</u>	Airbill No.
Preservatives (ONLY for Water Samples) ☐ Cyanide Sodium hydroxide (NaOH) ☐ Volatile Organic Analysis Hydrochloric acid (HCl) ☐ Metals Nitric acid (HNO ₃) ☒ TPH (418.1) Sulfuric acid (H ₂ SO ₄) ☒ Other (Specify) <u>H₂O₂</u> ☐ Other (Specify) _____		Shipping and Lab Notes:	



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

Pinnacle Lab ID number **011041**
November 15, 2000

PHILIP ENVIRONMENTAL
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

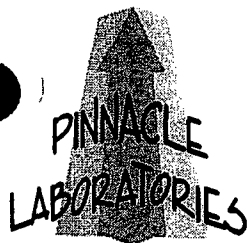
On 11/14/00 Pinnacle Laboratories, Inc., (ADHS License No. AZ0592 pending), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

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

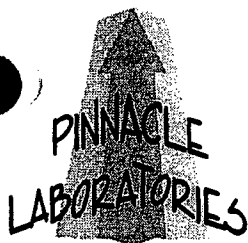
MR: jt

Enclosure



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

CLIENT	: PHILIP ENVIRONMENTAL	PINNACLE ID	: 011041
PROJECT #	: 62800107	DATE RECEIVED	: 11/14/00
PROJECT NAME	: EPFS QUARTERLY SAMPLING	REPORT DATE	: 11/15/00
PIN			DATE
ID. #	CLIENT DESCRIPTION	MATRIX	COLLECTED
01	146-0011-MW01	AQUEOUS	11/07/00



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 : PHILIP ENVIRONMENTAL
PROJECT # : 62800107
PROJECT NAME : EPFS QUARTERLY SAMPLING

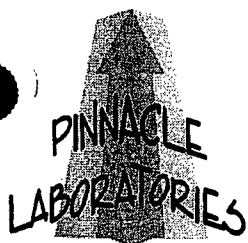
PINNACLE I.D.: 011041

SAMPLE	DATE	DATE	DATE	DIL.		
ID. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	146-0011-MW01	AQUEOUS	11/07/00	NA	11/14/00	50

PARAMETER	DET. LIMIT	UNITS	146-0011-MW01
BENZENE	0.5	UG/L	< 25
TOLUENE	0.5	UG/L	< 25
ETHYLBENZENE	0.5	UG/L	500
TOLUENE XYLENES	0.5	UG/L	4500

SURROGATE:
BROMOFLUOROBENZENE (%) 120
SURROGATE LIMITS (80 - 120)

CHEMIST NOTES:
N/A



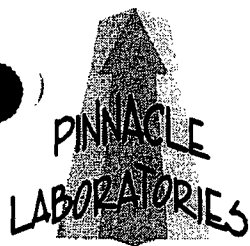
2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 011041
BLANK I. D.	: 111400	DATE EXTRACTED	: NA
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 11/14/00
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:
B FLUOROBENZENE (%) 114
SURROGATE LIMITS: (80 - 120)
CHEMIST NOTES:
N/A



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
MSMSD # : 111400
CLIENT : PHILIP ENVIRONMENTAL
PROJECT # : 62800107
PROJECT NAME : EPFS QUARTERLY SAMPLING

PINNACLE I.D. : 011041
DATE EXTRACTED : NA
DATE ANALYZED : 11/14/00
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	18.0	90	17.7	89	2	(80 - 120)	20
TOLUENE	<0.5	20.0	19.9	100	19.5	98	2	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	21.3	107	20.7	104	3	(80 - 120)	20
TOTAL XYLENES	<0.5	60.0	62.5	104	60.6	101	3	(80 - 120)	20

CHEMIST NOTES:
N/A

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

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

ENVIRONMENTAL

(505) 326-2262 Phone
(505) 326-2388 FAX

COC Serial No. C 2781

Samples Iced:	☒ Yes	☐ No	Carrier: Greyhound	Airbill No.
Preservatives (ONLY for Water Samples)				
☐ Cyanide	 Sodium hydroxide (NaOH)		Rec'd @ 3:30	
☐ Volatile Organic Analysis	 Hydrochloric acid (HCl)			
☐ Metals	 Nitric acid (HNO ₃)			
☐ TPH (418.1)	 Sulfuric acid (H ₂ SO ₄)			
☒ Other (Specify) H ₂ SO ₄	_____			
☐ Other (Specify)	_____			
Shipping and Lab Notes:				

Project Name EDFS well Development Project Manager LISA Winn Project No. 62906219
Client Company EL Paso Field Services Phase Task No. 350002
Site Name LAT 3B 39 (L10146) Site Address Rural Sun Town CO.

Development Criteria

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

Water Volume Calculation:

Initial Depth of Well (feet) 36.68
Initial Depth to Water (feet) 31.55
Height of Water Column in Well (feet) 5.13
Diameter (inches): Well 2" Gravel Pack

Methods of Development

Pump

- ☐ Centrifugal
- ☐ Submersible
- ☐ Peristaltic
- ☒ Other

Boiler

- ☒ Bottom Valve
- ☐ Double Check Valve
- ☐ Stainless-steel Kemmerer

Instruments

☒ pH Meter
☐ DO Monitor
☒ Conductivity
☒ Temperature
☐ Other

Serial No. (If applicable)

Hydax

Water Disposal

KUTZ Separator Bloomfield N.M.

Water Removal Data

[illegible]

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

Comments AFTER Bailing Approximately .75 Gal. Bailed well Dry-Started Adding potable water in .5 gallon increments Added 3 gal.¹ Potable water at 1545.1615 water level 34.36 Sampled for Rtex 1625

Developer's Signature(s) Eric A. May

Date 12-01-00

Reviewer Will Date 12/4/00

Chain of Custody Record

4000 Monroe Road
Farmington, NM 87401

(505) 326-2262 Phone
(505) 326-2388 FAX

COC Serial No. C 2788

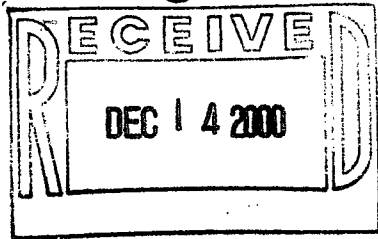
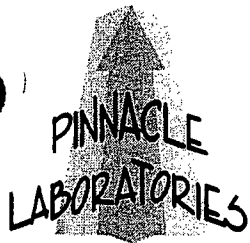
[illegible]

Relinquished by:

Received By:

Received by:		Signature		Date	Time
		<i>[Signature]</i>		12-07-00	1430

Samples Iced: ☒ Yes ☐ No Preservatives (ONLY for Water Samples) ☐ Cyanide Sodium hydroxide (NaOH) ☐ Volatile Organic Analysis Hydrochloric acid (HCl) ☐ Metals Nitric acid (HNO ₃) ☐ TPH (418.1) Sulfuric acid (H ₂ SO ₄) ☒ Other (Specify) <u>HgCd</u> ☐ Other (Specify) _____	Carrier: <u>Cargill</u> Shipping and Lab Notes: Airbill No. <u>GLT 160691998S</u>
---	--



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

Pinnacle Lab ID number **012032**
December 13, 2000

PHILIP ENVIRONMENTAL
4000 MONROE ROAD
FARMINGTON, NM 87401

EL PASO FIELD SERVICES
614 RIELLY STREET
FARMINGTON, NM 87401

Project Name EPFS WELL DEVELOPING
Project Number 62800219

Attention: ROBERT THOMPSON/SCOTT POPE

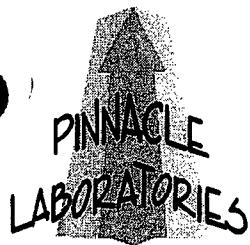
On 12/08/00 Pinnacle Laboratories, Inc., (ADHS License No. AZ0592 pending), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

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

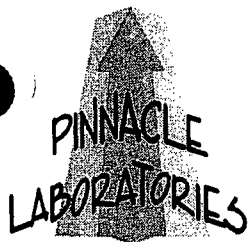
MR: jt

Enclosure



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

CLIENT	: PHILIP ENVIRONMENTAL	PINNACLE ID	: 012032
PROJECT #	: 62800219	DATE RECEIVED	: 12/08/00
PROJECT NAME	: EPFS WELL DEVELOPING	REPORT DATE	: 12/13/00
PINNACLE			DATE
ID #	CLIENT DESCRIPTION	MATRIX	COLLECTED
012032 - 01	146-0012-MW02	AQUEOUS	12/01/00
012032 - 02	146-0012-MW03	AQUEOUS	12/01/00



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Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : PHILIP ENVIRONMENTAL
PROJECT # : 62800219
PROJECT NAME : EPFS WELL DEVELOPING

PINNACLE I.D.: 012032

SAMPLE		MATRIX	DATE	DATE	DATE	DIL.
ID. #	CLIENT I.D.		SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	146-0012-MW02	AQUEOUS	12/01/00	NA	12/12/00	1
02	146-0012-MW03	AQUEOUS	12/01/00	NA	12/12/00	1
PARAMETER		DET. LIMIT	UNITS	146-0012-MW02	146-0012-MW03	
BENZENE		0.5	UG/L	< 0.5	< 0.5	
TOLUENE		0.5	UG/L	< 0.5	< 0.5	
ETHYLBENZENE		0.5	UG/L	< 0.5	< 0.5	
TOLUENE XYLENES		0.5	UG/L	< 0.5	0.5	

SURROGATE:

BROMOFLUOROBENZENE (%)

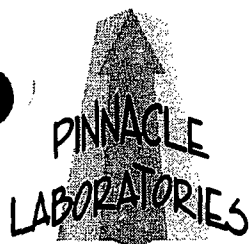
99

98

SURROGATE LIMITS (80 - 120)

CHEMIST 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.	: 012032
BLANK I. D.	: 121200	DATE EXTRACTED	: NA
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 12/12/00
PROJECT #	: 62800219	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: EPFS WELL DEVELOPING		

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

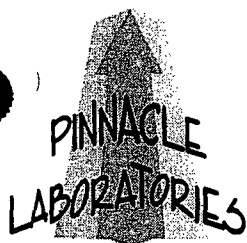
SURROGATE:
BROMOFLUOROBENZENE (%)

96

SURROGATE LIMITS: (80 - 120)

CHEMIST NOTES:

N/A



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
MSMSD # : 012033-01
CLIENT : PHILIP ENVIRONMENTAL
PROJECT # : 62800219
PROJECT NAME : EPFS WELL DEVELOPING

PINNACLE I.D. : 012032
DATE EXTRACTED : NA
DATE ANALYZED : 12/12/00
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	19.7	99	19.9	100	1	(80 - 120)	20
TOLUENE	<0.5	20.0	19.2	96	19.4	97	1	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	20.7	104	20.9	105	1	(80 - 120)	20
TOTAL XYLENES	<0.5	60.0	60.5	101	61.1	102	1	(80 - 120)	20

CHEMIST NOTES:
N/A

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

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

ATTACHMENT 2

**2000 MONITOR WELL
INSTALLATION RECORDS**

RECORD OF SUBSURFACE EXPLORATION

Philip Environmental Services Corporation

4000 Monroe Road

Farmington, New Mexico 87401

(505) 326-2262 FAX (505) 326-2388

Borehole #

Well #

Page 1

MW-2

of 1

Project Name EPFS Drilling

Project Number 62800219

Cost Code

Project Location AT 3B-39 Line Drip

Well Logged By

Personnel On-Site

Contractors On-Site

Client Personnel On-Site

Don Fernald

Danny Padilla, Ryan Lefebvre

None

NONE

Elevation

Borehole Location SE of Former Pit

GWL Depth 30' bgs

Logged By Don Fernald

Drilled By Danny Padilla

Date/Time Started 11/21/00 - 8:10 AM

Date/Time Completed 11/21/00 - 10:30 AM

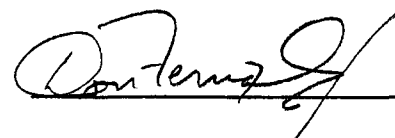
Drilling Method Hollow Stem Auger

Air Monitoring Method PID

Depth (Feet)	Sample Number	Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	PID Air Monitoring Units: ATM			Drilling Conditions & Blow Counts
							BZ	BH	S	
0				Initiated sampling @ 15' bgs 						
5										
10										
15										
		X	16"	Dark yellowish-orange fine grained silty-sand. Dry			2.3			
20										
		X	18"	Dark yellowish-orange fine grained silty-sand Dry			2.9			
25										
		X	16"	Dark yellowish-orange fine silty-sand (moist)			4.9			
30										
		X	9"	Dark yellowish-orange fine silty-sand (wet) water @ ~23' bgs			8.0			
35										
				Boring terminated @ 35' bgs. converted to MW-2						
40										

Comments:

Geologist Signature



MONITORING WELL INSTALLATION RECORD

Philip Services Corporation

4000 Monroe Road

Farmington, New Mexico 87401

(505) 326-2262 FAX (505) 326-2388

Borehole #

Well # MW-2

Page 1 of 1

Project Name EPFS Drilling

Project Number 62800219 Cost Code

Project Location LAT 3B-39

Elevation

Well Location L: S: T: R:

GWL Depth 30' logs

Installed By Danny Padilla

On-Site Geologist Don Fernald

Personnel On-Site Danny Padilla, Ryan Lefebvre

Contractors On-Site NONE

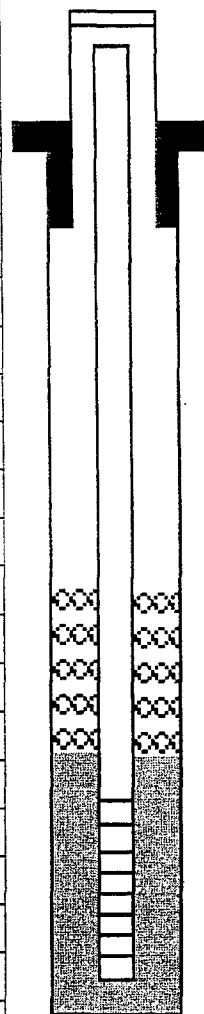
Client Personnel On-Site NONE

Date/Time Started 11-21-00 10:30 AM

Date/Time Completed 11-21-00 12:15 A.M.

Depths in Reference to Ground Surface

Item	Material	Depth (feet)
Top of Protective Casing	Steel	~2.5'
Bottom of Protective Casing	"	-6"
Top of Permanent Borehole Casing		
Bottom of Permanent Borehole Casing		
Top of Concrete	Quickcrete	~4"
Bottom of Concrete	"	0
Top of Grout	Portland-Quick Gel	0
Bottom of Grout	"	15.9'
Top of Well Riser	2" sch 40 PVC	0
Bottom of Well Riser	"	20'
Top of Well Screen	0.010 screen	20'
Bottom of Well Screen	"	35'
Top of Peltonite Seal	28" bentonite	15.9'
Bottom of Peltonite Seal	"	18.4'
Top of Gravel Pack	10-20 sand	18.4'
Bottom of Gravel Pack	10-20 sand	31.7'
Top of Natural Cave-In	—	—
Bottom of Natural Cave-In	—	—
Top of Groundwater	—	29.8'
Total Depth of Borehole	—	35'



Top of Protective Casing ~35'

Top of Riser ~3'

Ground Surface 0

Top of Seal 15.9'

Top of Gravel Pack 18.4'

Top of Screen 20.0

Bottom of Screen 35

Bottom of Borehole 35

Comments:

Geologist Signature

[Signature]

RABON

Borehole #

Well #

MW-3

Page

of

1

id@hili.

4000 M

Farmin:

(505)

Project Name EPFS Drilling

Project Number 62800219 Cost Code

Project Location LAT 3B-39 Line Drip

Well Logged By

Don Fernald

Personnel On-Site

Danny Padilla, Ryan Lefebvre

Contractors On-Site

None

Client Personnel On-Site

NONE

Drilling Method Hollow Stem Auger

Air Monitoring Method PID

Lithology Description USCS	USCS Symbol	Depth Lithology Change (feet)	PID Air Monitoring Unit: NDD			Drilling Conditions & Blow Counts
			BZ	BH	S	
<u>Sampling</u>						
<u>Light orange fine silty sand.</u>			2.6			
<u>Light orange fine silty (moist)</u>			5.1			
<u>Light orange fine silty (deep moist)</u>			3.6			
<u>Light orange fine silty (water)</u>			2.8			
<u>Red boring is converted</u>						

Con

Geologist Signature

Don Fernald

MONITORING WELL INSTALLATION RECORD

Philip Services Corporation

4000 Monroe Road

Farmington, New Mexico 87401

(505) 326-2262 FAX (505) 326-2388

Borehole # _____

Well # MW-3

Page 1 of 1

Project Name EPFS Drilling

Project Number 62800219 Cost Code _____

Project Location LAT 3B-39 Line Drip

Elevation _____

Well Location L: _____ S: _____ T: _____ R: _____

GWL Depth 28.2'

Installed By Danny Padilla

On-Site Geologist Don Fernald

Personnel On-Site Danny Padilla, Ryan LeFebvre

Contractors On-Site NONE

Client Personnel On-Site NONE

Date/Time Started 11-21-00 1:30 P.M.

Date/Time Completed 11-21-00 3:00 P.M.

Depths in Reference to Ground Surface			
Item	Material	Depth (feet)	
Top of Protective Casing			Top of Protective Casing <u>3.5'</u>
Bottom of Protective Casing			Top of Riser <u>3'</u>
Top of Permanent Borehole Casing			Ground Surface <u>0</u>
Bottom of Permanent Borehole Casing			
Top of Concrete			
Bottom of Concrete			
Top of Grout	<u>3/4" Bentonite</u>		
Bottom of Grout	"	<u>15.8'</u>	
Top of Well Riser	<u>2" Sch 40 PVC</u>	<u>3</u>	
Bottom of Well Riser	<u>2" PVC</u>	<u>19.5</u>	
Top of Well Screen	<u>0.010 SCREEN</u>	<u>19.5'</u>	Top of Seal <u>15.8'</u>
Bottom of Well Screen	"	<u>34.5'</u>	
Top of Peltonite Seal		<u>15.8'</u>	
Bottom of Peltonite Seal		<u>17.8'</u>	Top of Gravel Pack <u>17.8'</u>
Top of Gravel Pack	<u>10-20 SAND</u>	<u>17.8'</u>	Top of Screen <u>19.5'</u>
Bottom of Gravel Pack	"	<u>~34.5'</u>	<u>SCREEN IS Silted IN ~ 1'</u>
Top of Natural Cave-In			
Bottom of Natural Cave-In			
Top of Groundwater		<u>28.2'</u>	Bottom of Screen <u>34.5'</u>
Total Depth of Borehole		<u>35'</u>	Bottom of Borehole <u>35'</u>

Comments: _____

Geologist Signature Don Fernald