

3R - 197

AGWMR

2001

SAN JUAN BASIN PIT CLOSURES

San Juan Basin, New Mexico

El Paso Field Services

Pit Project Groundwater Report

Annual Report

Volume IV (Sites on Navajo Owned Land)

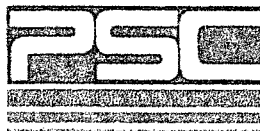
March 2001



Prepared For

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

Project 62800398



VOLUME IV

Index

El Paso Field Services Annual Groundwater Report

Annual Groundwater Report:

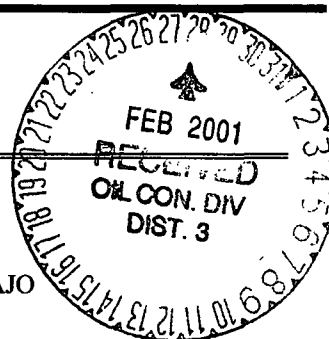
TWN	RNG	SEC	UNIT	SITE NAME	METER	LAND TYPE
28	12	35	N	Gallegos Canyon 124 E	95608	Navajo
28	9	36	H	Jennapah #1	71816	Navajo
27	9	13	J	Ramenta Et Al #1	75155	Navajo

Sites Previously Submitted for Closure:

TWN	RNG	SEC	UNIT	SITE NAME	METER	LAND TYPE
27	9	12	K	Charley Pah #4	71531	Navajo
27	9	13	B	John Charles #8	93126	Navajo
27	9	12	B	Charley Pah #2	70804	Navajo

EPFS GROUNDWATER PITS 2000 ANNUAL GROUNDWATER REPORT

JENNAPAH #1
Meter/Line ID - 71816



SITE DETAILS

Legals - Twn: 28N Rng: 9W Sec: 36 Unit: H
NMOCD Hazard Ranking: 40 Land Type: NAVAJO
Operator: AMOCO PRODUCTION COMPANY

PREVIOUS ACTIVITIES

Site Assessment: May-94 Excavation: Jun-94 (70 cy) Re-Excavation: Nov-95 (234 cy)
Soil Boring: Feb-97 Monitor Well: Feb-97 Quarterly Sampling Initiated: Jun-97
ORC Nutrient Injection: Jul-98
Additional Monitor Wells: May-99

2000 ACTIVITIES

Quarterly Groundwater Monitoring - Quarterly groundwater monitoring at MW-1 continued through 2000 and annual groundwater monitoring was completed at MW-2 and MW-3.

Additional Monitoring Wells - The temporary wells drilled in 1999 were completed.

SUMMARY TABLES

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

SITE MAP

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

GEOLOGIC LOGS AND WELL COMPLETION DIAGRAMS

The temporary monitor wells, MW-2 and MW-3, were completed January 30, 2001. Well completion diagrams are included as Attachment 2.

DISPOSITION OF GENERATED WASTES

There were no generated wastes at this site in 2000.

ISOCONCENTRATION MAPS

Isoconcentration maps was generated for benzene and total xylenes and are included as Figures 2 and 3.

CONCLUSIONS

Analytical results of groundwater samples collected from MW-1 show levels of hydrocarbon constituents below New Mexico groundwater standards for all constituents during the first two quarters of 2000. The levels of all constituents have increased during the last half of 2000. During the last two-quarters that MW-1 was sampled, a clear, phase separated liquid has been observed in the well. An increase in the analytes have been observed, however the samples collected from this well are not representative of a hydrocarbon product

EPFS GROUNDWATER PITS 2000 ANNUAL GROUNDWATER REPORT

Monitor wells MW-2 and MW-3 are below detection limits for all BTEX constituents. A phase-separated liquid has not been observed in either of these wells. The groundwater gradient is to the northwest at this site (Figure 1).

Since this site is on Navajo land, EPFS assumes the Navajo Environmental Protection Agency has jurisdiction of this site and will either approve or deny closure of this site upon submittal.

RECOMMENDATIONS

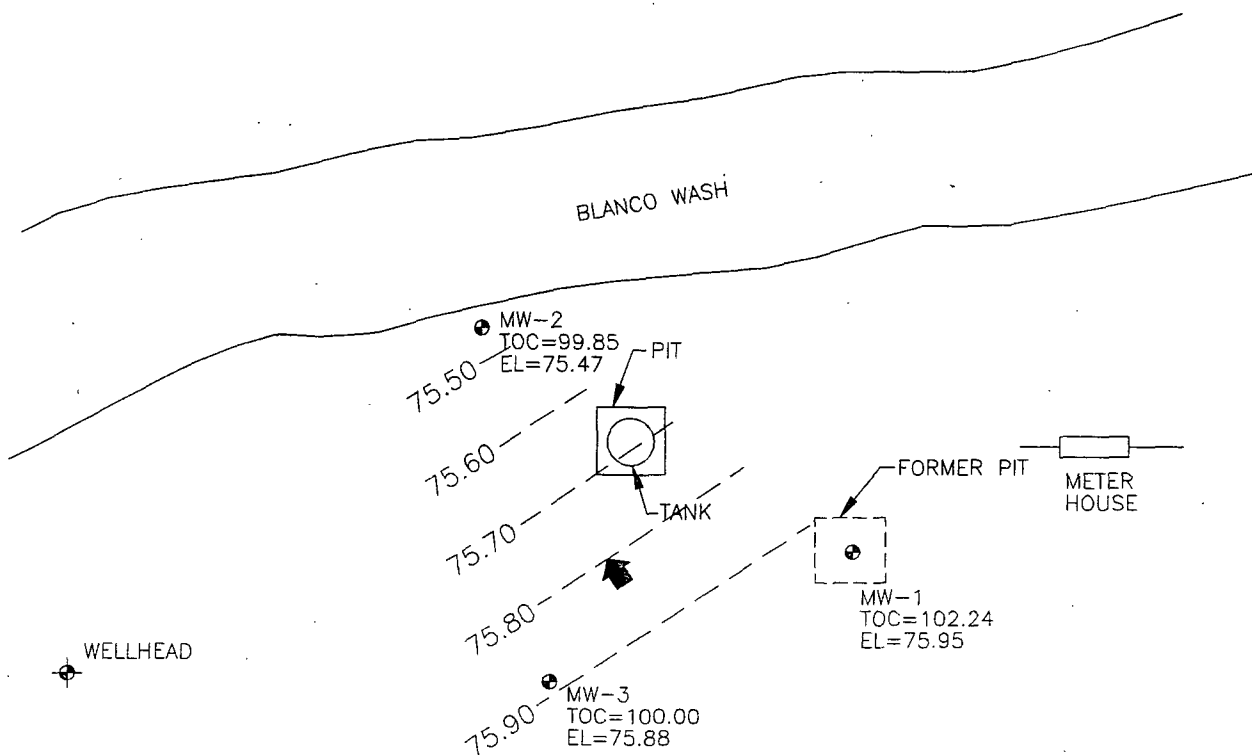
- Quarterly sampling will continue at MW-1, pending evaluation of the phase separated liquid, until analytical results show hydrocarbon constituents are below the NMWQCC groundwater standards for four consecutive quarters.
- If the presence of a phase separated liquid is confirmed a product recovery system will be installed on MW-1.
- Monitor wells MW-2 and MW-3 will be sampled annually until the site is approved for closure.
- EPFS will continue to work with the operator of this site.
- Following approval for closure, MW-1, MW-2, and MW-3 will be abandoned using OCD approved abandonment procedures.

Table 1

March 2001

Sample #	Meter/ Line #	Site Name	Sample Date	MW #	Project	Benzene (PPB)	Toluene (PPB)	Ethyl Benzene (PPB)	Total Xylenes (PPB)	Total BTX (PPB)
JEN-0003-MW01	71816	JENNAPAH #1	3/16/00	1	Sample 4 - 12th Quarter	= 1.3	= 32	= 58	= 470	= 561.3
JEN-0006-MW01	71816	JENNAPAH #1	6/12/00	1	Sample 4 - 13th Quarter	< 2.5	= 18	= 52	= 430	= 500
JEN-0009-MW01	71816	JENNAPAH #1	9/25/00	1	Sample 4 - 14th Quarter	= 41	= 350	= 300	= 2,400	= 3,091
JEN-0012-MW01	71816	JENNAPAH #1	12/12/00	1	Sample 4 - 15th Quarter	= 210	= 1,200	= 1,900	= 14,000	= 17,310
JEN-0101-MW02	71816	JENNAPAH #1	1/29/01	2	Sample 1 - 2nd Annual	< 0.5	< 0.5	< 0.5	< 0.5	ND
JEN-0101-MW03	71816	JENNAPAH #1	1/29/01	3	Sample 1 - 2nd Annual	< 0.5	< 0.5	< 0.5	< 0.5	ND

ND - No detectable levels
Sample 1 - Annual Sampling
Sample 4 - Quarterly Sampling



LEGEND

- MW-1 APPROXIMATE MONITORING WELL LOCATION AND NUMBER
- TOC TOP OF CASING ELEVATION
- EL GROUNDWATER ELEVATION
- ➡ APPROXIMATE GROUNDWATER GRADIENT
- 77.1 GROUNDWATER POTENTIOMETRIC SURFACE

NOTE: Well locations are to scale, production equipment location and dimensions are approximate.

0 40
FEET

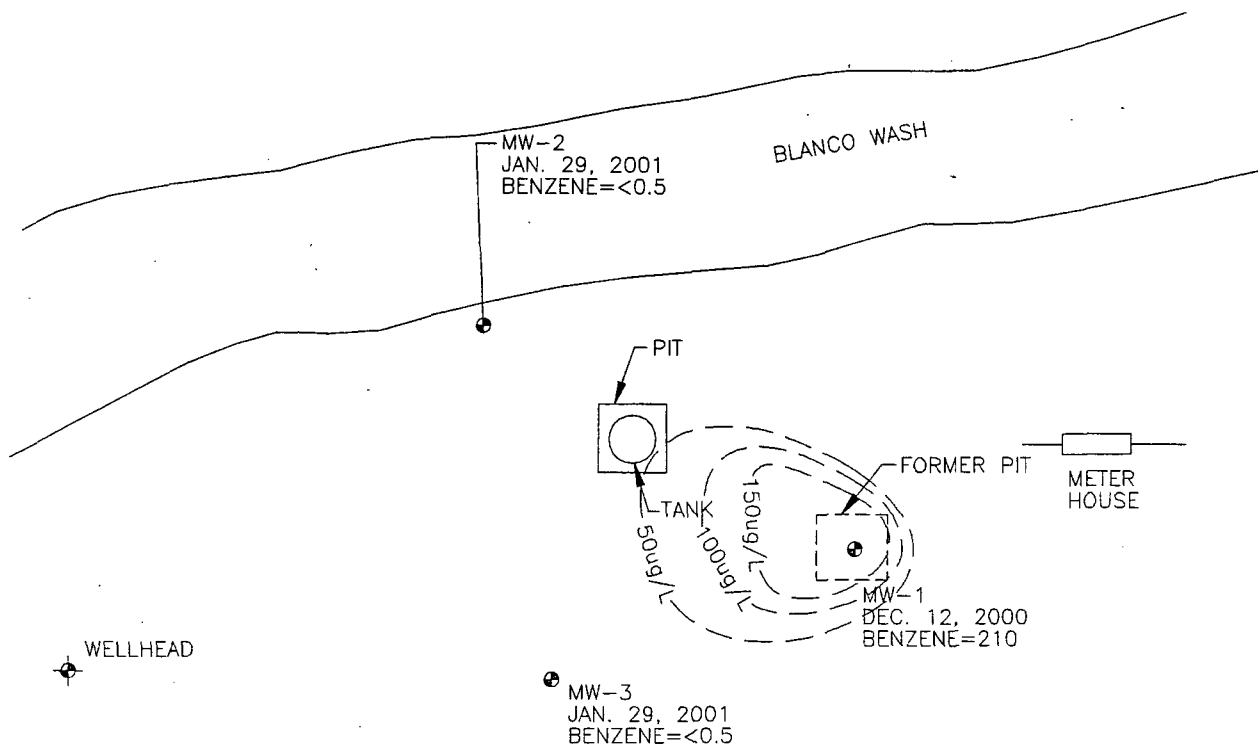


COL 62800219N-004



TITLE:
JENNEPAH #1
METER 71816
JANUARY 29, 2001

DWN: TMM	DES.: LW	PROJECT NO.: 62800219 EPFS GW PITS
CHKD: LW	APPD: MN	
DATE: 2/19/01	REV.: 0	FIGURE 1



LEGEND

- MW-1 APPROXIMATE MONITORING WELL LOCATION AND NUMBER
- 77.1 — GROUNDWATER POTENTIOMETRIC SURFACE
- B BENZENE (ug\L)
- ug\L MICROGRAMS PER LITER

NOTE: Well locations are to scale, relative to each other. The surface features are not to scale.



COL 628\00219BN-005

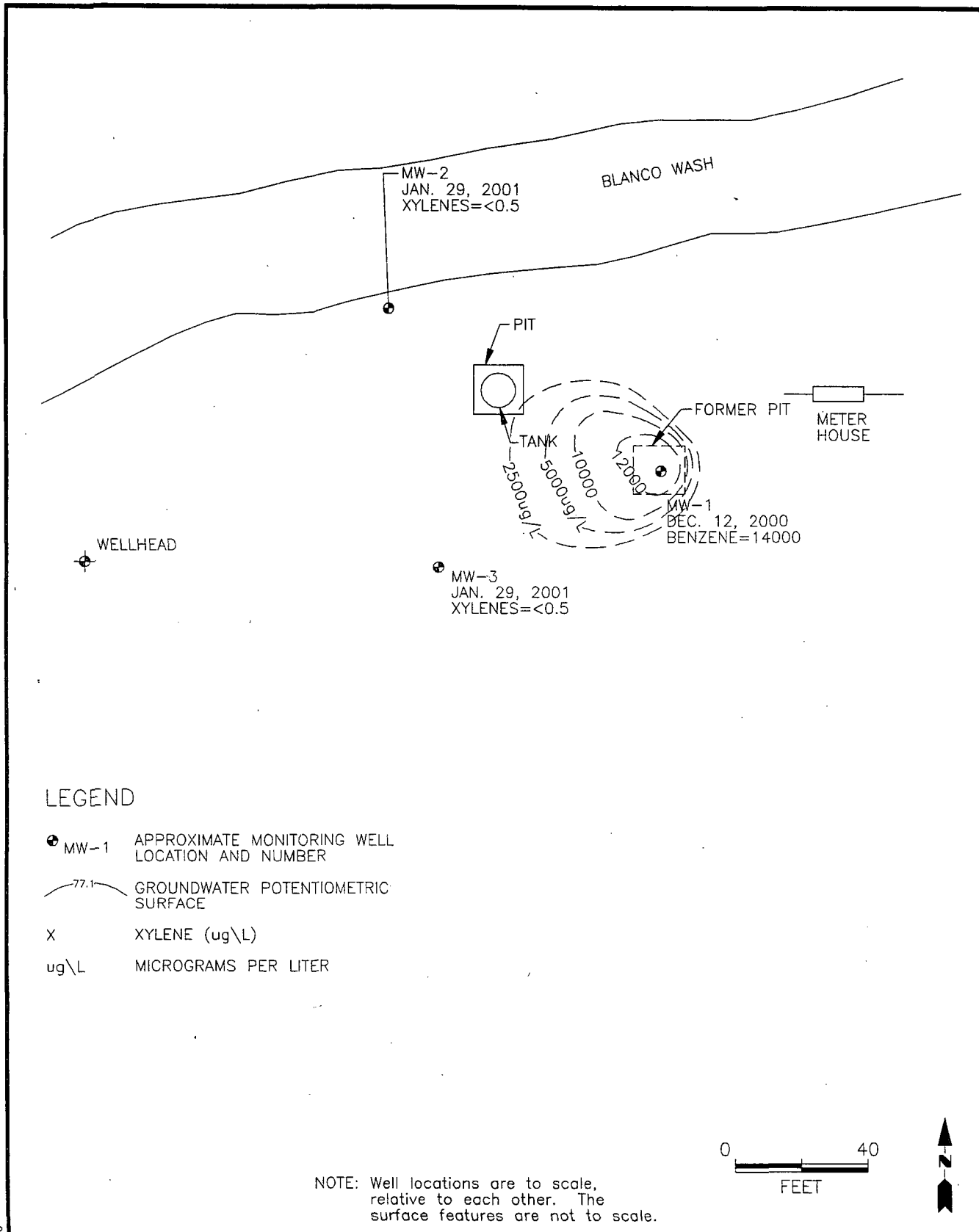


TITLE:
JENNEPAH #1 METER 71816
JAN. 29, 2001 ISOCONCENTRATION
MAP - BENZENE

DWN:	DES.:
TMM	LW
CHKD:	APPD:
LW	MN
DATE:	REV.:
2/19/01	0

PROJECT NO.: 62800219
EPFS GW PITS

FIGURE 2



COL 628002198N-006



TITLE:

JENNEPAH #1 METER 71816

JAN. 29, 2001 ISOCONCENTRATION

MAP - TOTAL XYLENES

DWN:	DES.:
TMM	LW
CHKD:	APPD:
LW	MN
DATE:	REV.:
2/19/01	0

PROJECT NO.: 62800219

EPFS GW PITS

FIGURE 3

ATTACHMENT 1

2000 GROUNDWATER ANALYTICAL

Well Number MW-01

Serial No. WDPD

Project Name EPFS QUARTERLY SAMPLING

Client Company EL PASO FIELD SERVICES

Site Name JENNAPAH #1 (71816)

Project Manager R. THOMPSON

Site Address RURAL SAN JUAN CO.

WELL DEVELOPMENT AND PURGING DATA

Page 1 of 1

Project No. 62800107

Phase/Task No. _____

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) 34.28' TOR
 Initial Depth to Water (feet) 26.08' TOR
 Height of Water Column in Well (feet) 8.20'
 Diameter (inches): Well 4" Gravel Pack _____

Item	Water Volume in Well Cubic Feet	Gallons Removed
Well Casing	<u>5.35</u>	<u>5.35 x 3</u>
Gravel Pack		
Drilling Fluids		
Total		<u>16.05</u>

Instruments

- Serial No. (if applicable) _____
☒ pH Meter HYDAC
☐ DO Monitor _____
☒ Conductivity Meter HYDAC
☒ Temperature Meter HYDAC
☐ Other _____

Water Disposal

KUTZ SEPARATOR

Water Removal Data

Date	Time	Development Method	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons)		Product Volume Removed (gallons)	Temperature (°C)	pH	Conductivity (umhos/cm)	Dissolved Oxygen (mg/l)	Comments
						Incremental	Cumulative						
3/16/00	1225	X				5	5		17.5	7.69	1730		GREYISH BROWN
3/16/00	1240	X				5	10		17.6	7.70	1530		GREYISH BROWN
3/16/00	1253	X				5	15		16.9	7.75	1480		MEDIUM BROWN
3/16/00	1305	X				5	20		17.3	7.78	1540		MEDIUM BROWN

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

Comments SAMPLED AT 1325. COLLECTED A DUPLICATE SAMPLE. COC # C2513

Developer's Signature(s) Robert Thompson

Date 3/16/00

Reviewer RT Date 3/16/00

PHILIP



Chain of Custody Record

4000 Monroe Road
Farmington, NM 87401

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

COC Serial No. **C 2513**

Project Name EPFS QUARTERLY SAMPLING		Type of Analysis and Bottle	
Project Number 62800107 Phase Task		Total Number of Bottles	
Samplers R. THOMPSON			
Laboratory	Name PINNACLE LABS		
Location ALBUQUERQUE NM			
Sample Number (and depth)	Date	Time	Matrix
JEN-0003-MW01	3/16/00	1325	H ₂ O
JEN-0003-MW01	3/16/00	1330	H ₂ O
TRIP BLANK	3/16/00	1610	H ₂ O
1209 X 319			
Comments			
JENNAFAN #1			
7/8/16			
JENNAFAN #1			
7/8/16			

Relinquished by:

Received By:

Signature	Date	Time	Signature	Date	Time
<i>R. Thompson</i>	3/16/00	1610			

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: **GREY HOUND**

Airbill No. **GLJ160665066**

Shipping and Lab Notes: **NEED RESULTS BY 3/24/00!**



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

Pinnacle Lab ID number 003057
March 22, 2000

PHILIP ENVIRONMENTAL
4000 MONROE ROAD
FARMINGTON, NM 87401

Project Name EPFS QUARTERLY SAMPLING
Project Number 62800107

Attention: ROBERT THOMPSON

On 03/17/00 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

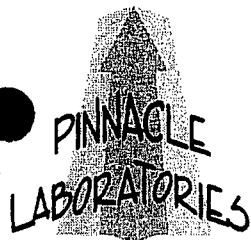
MR: jt

Enclosure



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

CLIENT	: PHILIP ENVIRONMENTAL	PINNACLE ID	: 003057
PROJECT #	: 62800107	DATE RECEIVED	: 03/17/00
PROJECT NAME	: EPFS QUARTERLY SAMPLING	REPORT DATE	: 03/22/00
PIN			
ID. #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	JEN-0003-MW01	AQUEOUS	03/16/00
02	JEN-0003-MW51	AQUEOUS	03/16/00
03	TRIP BLANK	AQUEOUS	03/10/00



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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

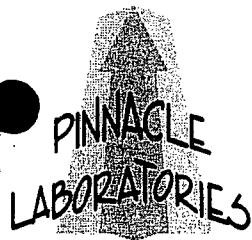
PINNACLE I.D.: 003057

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
01	JEN-0003-MW01	AQUEOUS	03/16/00	NA	03/20/00	1
02	JEN-0003-MW51	AQUEOUS	03/16/00	NA	03/20/00	1
03	TRIP BLANK	AQUEOUS	03/10/00	NA	03/20/00	1

PARAMETER	DET. LIMIT	UNITS	JEN-0003-MW01	JEN-0003-MW51	TRIP BLANK
BENZENE	0.5	UG/L	1.3	2.8	< 0.5
TOLUENE	0.5	UG/L	32	48	< 0.5
ETHYLBENZENE	0.5	UG/L	58	55	< 0.5
TOTAL XYLENES	0.5	UG/L	470	520	< 0.5

SURROGATE:
BROMOFLUOROBENZENE (%) 112 113 112
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.	: 003057
BLANK I. D.	: 032000	DATE EXTRACTED	: NA
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 03/20/00
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



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 # : 003055-01
CLIENT : PHILIP ENVIRONMENTAL
PROJECT # : 62800107
PROJECT NAME : EPFS QUARTERLY SAMPLING

PINNACLE I.D. : 003057
DATE EXTRACTED : NA
DATE ANALYZED : 03/20/00
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	21.3	107	20.4	102	4	(80 - 120)	20
TOLUENE	<0.5	20.0	20.7	104	19.3	97	7	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	21.2	106	21.7	109	2	(80 - 120)	20
TOTAL XYLENES	<0.5	60.0	61.4	102	62.6	104	2	(80 - 120)	20

CLIENT NOTES:
N/A

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

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

PHILIP

ENVIRONMENTAL

Chain of Custody Record

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

COC Serial No. C 2513

Project Name		EPFS QUARTERLY SAMPLING	
Project Number		62800107 Phase 1 Task	
Samplers		R. THOMPSON	
Laboratory		Name Pinnacle Labs	
Location		AUBURN, NM	
Sample Number (and depth)	Date	Time	Matrix
JEN - 0003-MW01	3/16/00	1325	H ₂ O
JEN - 0003-MW51	3/16/00	1330	H ₂ O
TRIP BLANK	3/10/00	1640	H ₂ O
Total Number of Bottles			
Type of Analysis and Bottle			
Comments			

Relinquished by:

Received By:

Signature	Date	Time	Signature	Date	Time
Robert Thompson	3/16/00	1640	R. Thompson	3/17/00	12:40p

Samples Iced:	Yes	No	Carrier:	GREY HOUND	Airbill No.	GLT 1601650661
Preservatives (ONLY for Water Samples)						
☐ Cyanide						
☒ Volatile Organic Analysis						
☐ Metals						
☐ TPH (418.1)						
☐ Other (Specify)						
☐ Other (Specify)						
Shipping and Lab Notes: NEED RESULTS BY 3/24/00! RVD on ice 3.8°C						

Chain of Custody Record

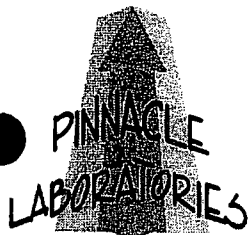
4000 Monroe Road
Farmington, NM 87401

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

COC Serial No. C 2573

[illegible]

Samples Iced: ☒ Yes ☐ No		Carrier: <u>GREYHOUND LINES</u>	Airbill No. <u>GLI 1606918511</u>
Preservatives (ONLY for Water Samples)		Shipping and Lab Notes:	
☐ 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) _____			



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

Pinnacle Lab ID number **006061**
June 19, 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

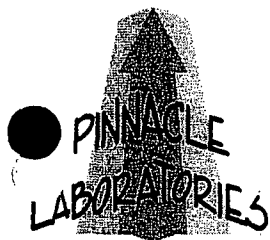
On 06/15/00 Pinnacle Laboratories, Inc. Inc., (ADHS License No. AZ0592 pending), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

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H. Mitchell Rubenstein, Ph. D.
General Manager

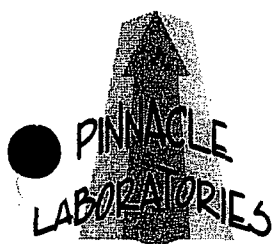
MR: jt

Enclosure



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

CLIENT	: PHILIP ENVIRONMENTAL	PINNACLE ID	: 006061
PROJECT #	: 62800107	DATE RECEIVED	: 06/15/00
PROJECT NAME	: EPFS QUARTERLY SAMPLING	REPORT DATE	: 06/19/00
PIN			DATE
ID. #	CLIENT DESCRIPTION	MATRIX	COLLECTED
01	JEN-0006-MW01	AQUEOUS	06/12/00



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

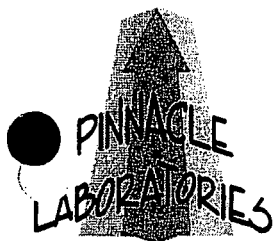
PINNACLE I.D.: 006061

SAMPLE		DATE	DATE	DATE	DIL.	
ID. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	JEN-0006-MW01	AQUEOUS	06/12/00	NA	06/16/00	5

PARAMETER	DET. LIMIT	UNITS	JEN-0006-MW01
BENZENE	0.5	UG/L	< 2.5
TOLUENE	0.5	UG/L	18
ETHYLBENZENE	0.5	UG/L	52
TOTAL XYLENES	0.5	UG/L	430

SURROGATE:
BROMOFLUOROBENZENE (%) 116
SURROGATE LIMITS (80 - 120)

CHEMIST NOTES:
N/A



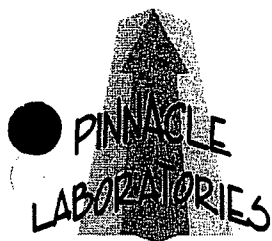
2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 006061
BLANK I. D.	: 061500	DATE EXTRACTED	: NA
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 06/15/00
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 (%) 107
SURROGATE LIMITS: (80 - 120)
CHEMICAL NOTES:
N/A



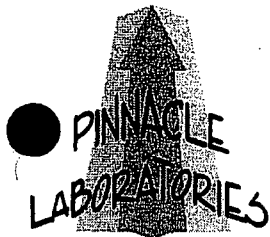
2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 006061
BLANK I. D.	: 061600	DATE EXTRACTED	: NA
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 06/16/00
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 (%) 113
SURROGATE LIMITS: (80 - 120)
CHEMICAL 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 # : 006058-05
CLIENT : PHILIP ENVIRONMENTAL
PROJECT # : 62800107
PROJECT NAME : EPFS QUARTERLY SAMPLING

PINNACLE I.D. : 006061
DATE EXTRACTED : NA
DATE ANALYZED : 06/15/00
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	18.2	91	17.9	90	2	(80 - 120)	20
TOLUENE	<0.5	20.0	19.9	100	20.0	100	1	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	20.2	101	20.3	102	0	(80 - 120)	20
TOTAL XYLENES	0.9	60.0	61.6	101	61.7	101	0	(80 - 120)	20

CHEMIST NOTES:
N/A

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

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

Philip

4000 Monroe Road
Farmington, NM 87401

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

COC Serial No. C 2573

Project Name		EPFS QUARTERLY SAMPLING	
Project Number		62800107 Phase . Task 0301	
Samplers		J. WAGNER	
Laboratory		Name PINNACLE LABS	
Sample Number (and depth)		Date	Time
Location		Matrix	
JEN-0006-MW01		6/12/00	1312
ALBUQUERQUE, NM		H ₂ O	
Total Number of Bottles		2	
Type of Analysis and Bottle		X	
BTEX			
Comments		KENNEDY #1 # 71816	

Relinquished by:

Received By:

Signature	Date	Time	Signature	Date	Time
<i>Jess Wagner</i>	6/14/00	1140	<i>H. M. T. Chaffin</i>	6/15/00	9:22

Samples Iced: ☒ Yes ☐ No		Carrier: GREYHOUND LINES	Airbill No. GLI-1606918511
Preservatives (ONLY for Water Samples)		Shipping and Lab Notes:	
☐ Cyanide Sodium hydroxide (NaOH)		16°C, still cool 13.9 AT	
☒ Volatile Organic Analysis Hydrochloric acid (HCl)			
☐ Metals Nitric acid (HNO ₃)			
☐ TPH (418.1) Sulfuric acid (H ₂ SO ₄)			
☐ Other (Specify) _____			
☐ Other (Specify) _____			

Project Name EpFS quarterly sampling

Project Manager R Thompson

Project No. 628 00107

Client Company EpFS

Phase/Task No. 0301

Site Name JENNA PAH #1

Site Address Rural San Juan Co.

Development Criteria

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

Water Volume Calculation

Initial Depth of Well (feet) 34.27
Initial Depth to Water (feet) 26.53
Height of Water Column in Well (feet) 7.74
Diameter (inches): Well Gravel Pack

Item	Water Volume in Well Cubic Feet	Gallons Removed
Well Casing	<u>7.74</u>	<u>5.05 x 3</u>
Gravel Pack		<u>15.15</u>
Drilling Fluids		
Total		<u>15.15</u>

Methods of Development

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

Instruments

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

Serial No. (if applicable)

Water Disposal

Kutz Separator Bloomfield NM.

Water Removal Data

Date	Time	Development Method	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons)		Product Volume Removed (gallons)		Temperature (°C)	pH	Conductivity (microhm/cm)	Dissolved Oxygen (mg/l)	Comments
						Increment	Cumulative	Increment	Cumulative					
09-25-00	11:53	X				3	3			17	6.59	1190		Flow production
	11:59	X				3	6			15	6.52	1360		"
	12:04	X				3	9			15.9	6.51	1400		"
	12:11	X				3	12			15.9	6.25	1370		"
	12:17	X				3.25	15.25			15.8	6.15	1410	2.5	No Change
	12:26													

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

Comments Sampled for BTEX 1223 Top of product 26.18

Developer's Signature(s) Dr. A. May

Date 09-25-00

Reviewer

Date

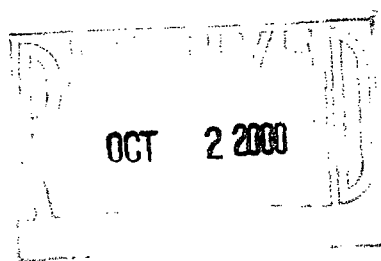
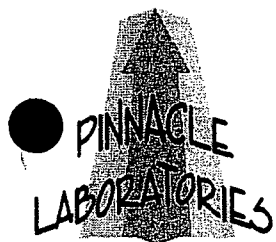
Chain of Custody Record

4000 Monroe Road
Farmington, NM 87401

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

COC Serial No. C 2462

[illegible]



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

Pinnacle Lab ID number 009131
September 29, 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

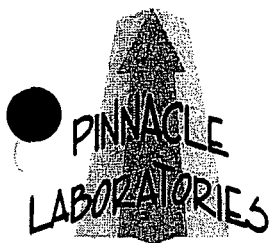
On 09/26/00 Pinnacle Laboratories, Inc., (ADHS License No. AZ0592 pending), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

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

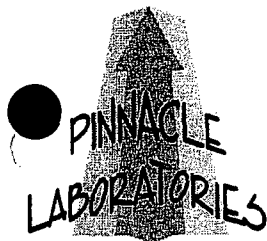
MR: jt

Enclosure



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

CLIENT	: PHILIP ENVIRONMENTAL	PINNACLE ID	: 009131
PROJECT #	: 62800107	DATE RECEIVED	: 09/26/00
PROJECT NAME	: EPFS QUARTERLY SAMPLING	REPORT DATE	: 09/29/00
PIN			
ID. #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	JEN-0009-MW01	AQUEOUS	09/25/00
02	TRIP BLANK	AQUEOUS	09/25/00



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

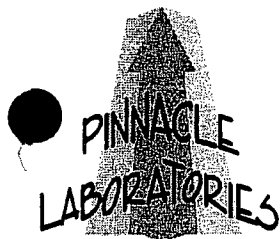
PINNACLE I.D.: 009131

SAMPLE			DATE	DATE	DATE	DIL.
D. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	JEN-0009-MW01	AQUEOUS	09/25/00	NA	09/27/00	20
02	TRIP BLANK	AQUEOUS	09/25/00	NA	09/27/00	1

PARAMETER	DET. LIMIT	UNITS	JEN-0009-MW01	TRIP BLANK
BENZENE	0.5	UG/L	41	< 0.5
TOLUENE	0.5	UG/L	350	< 0.5
ETHYLBENZENE	0.5	UG/L	300	< 0.5
TOTAL XYLENES	0.5	UG/L	2400	< 0.5

SURROGATE:
BROMOFLUOROBENZENE (%) 112 93
SURROGATE LIMITS (80 - 120)

CHEMIST NOTES:
N/A



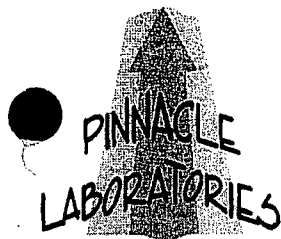
2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 009131
BLANK I. D.	: 092700	DATE EXTRACTED	: NA
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 09/27/00
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 (%) 103
SURROGATE LIMITS: (80 - 120)
CHEMICAL 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 # : 009128-02
CLIENT : PHILIP ENVIRONMENTAL
PROJECT # : 62800107
PROJECT NAME : EPFS QUARTERLY SAMPLING

PINNACLE I.D. : 009131
DATE EXTRACTED : NA
DATE ANALYZED : 09/27/00
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	18.5	93	19.4	97	5	(80 - 120)	20
TOLUENE	<0.5	20.0	20.4	102	21.0	105	3	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	21.1	106	21.5	108	2	(80 - 120)	20
TOTAL XYLENES	<0.5	60.0	63.6	106	64.4	107	1	(80 - 120)	20

CHEMIST NOTES:
N/A

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

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

ALFA

ENVIRONMENTAL

00915

[illegible]

Samples Iced: ☒ Yes ☐ No		Carrier: <i>Greyhound</i>	Airbill No. <i>GI 160919697</i>
Preservatives (ONLY for Water Samples)			
☐ Cyanide Sodium hydroxide (NaOH)			
☐ Volatile Organic Analytels Hydrochloric acid (HCl)			
☐ Metals Nitric acid (HNO ₃)			
☐ TPH (418.1) Sulfuric acid (H ₂ SO ₄)			
☒ Other (Specify) <i>H₂Cl₂</i>			
☐ Other (Specify) _____			
		<i>Rec'd @ 6⁰⁰ Ice Present</i>	

Chain of Custody Record

4000 Monroe Road
Farmington, NM 87401

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

COC Serial No. C 2815

[illegible]

Relinquished by:

Received By:

[illegible]

Samples Iced: ☒ Yes ☐ No

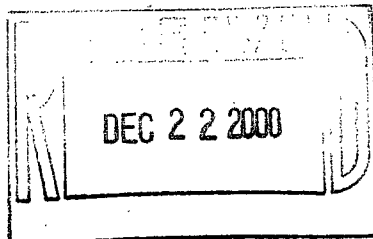
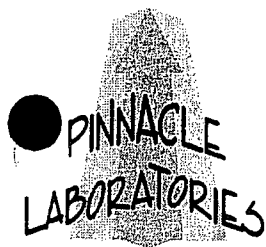
Preservatives (ONLY for Water Samples)

- ☐ Cyanide Sodium hydroxide (NaOH)
☐ Volatile Organic Analysis Hydrochloric acid (HCl)
☐ Metals Nitric acid (HNO₃)
☐ TPH (418.1) Sulfuric acid (H₂SO₄)
☒ Other (Specify) HCl
☐ Other (Specify) _____

Carrier: Orlando

Shipping and Lab Notes:

Airbill No. **641 1606919974**



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

Pinnacle Lab ID number **012059**
December 19, 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

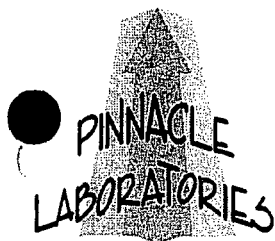
On 12/14/00 Pinnacle Laboratories, Inc., (ADHS License No. AZ0592 pending), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

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

GAS CHROMATOGRAPHY RESULTS

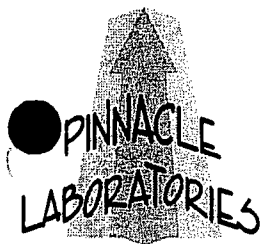
EST : EPA 8021 MODIFIED
CLIENT : PHILIP ENVIRONMENTAL
PROJECT # : 62800107
PROJECT NAME : EPFS QUARTERLY SAMPLING

PINNACLE I.D.: 012059

SAMPLE			DATE	DATE	DATE	DIL.
S. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
1	JEN-0012-MW 01	AQUEOUS	12/12/00	NA	12/15/00	50
PARAMETER	DET. LIMIT		UNITS	JEN-0012-MW 01		
BENZENE	0.5		UG/L	210		
TOLUENE	0.5		UG/L	1200		
ETHYLBENZENE	0.5		UG/L	1900		
TOTAL XYLENES	0.5		UG/L	14000		

REFERENCE:
BROMOFLUOROBENZENE (%) 106
SURROGATE LIMITS (80 - 120)

ANALYST NOTES:
/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.	: 012059
BLANK I. D.	: 121500	DATE EXTRACTED	: NA
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 12/15/00
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

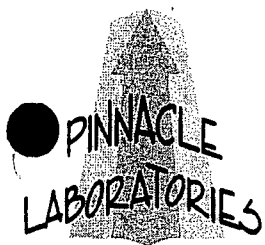
SURROGATE:
BROMOFLUOROBENZENE (%)

107

SURROGATE LIMITS: (80 - 120)

CHEM. 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

EST : EPA 8021 MODIFIED
SMSD # : 012057-01
CLIENT : PHILIP ENVIRONMENTAL
PROJECT # : 62800107
PROJECT NAME : EPFS QUARTERLY SAMPLING

PINNACLE I.D. : 012059
DATE EXTRACTED : NA
DATE ANALYZED : 12/15/00
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	20.8	104	21.1	106	1	(80 - 120)	20
TOLUENE	<0.5	20.0	19.6	98	19.5	98	1	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	20.8	104	20.9	105	0	(80 - 120)	20
ORTHAL XYLENES	<0.5	60.0	60.6	101	61.1	102	1	(80 - 120)	20

ANALYST NOTES:
NA

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

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

PHILIP

Chain of Custody, Record

4000 Monroe Road
Farmington, NM 87401

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

012059

COC Serial No. C 2815

Project Name <i>EPFS Quarterly Sampling</i>		Type of Analysis and Bottle		Total Number of Bottles	01	Comments <i>Sennepack #1 (3/8/16)</i>
Project Number <i>62800107 Phase Task 0301</i>		Lab ID# <i>Lab ID#</i>				
Samplers <i>C. Maez</i>	Name <i>PINNACLE</i>		BTEX 8021			
Laboratory	Location <i>ALBQ NM</i>					
Sample Number (and depth)	Date	Time	Matrix			
<i>JEN-0012-MW 01</i>	<i>12-12-00</i>	<i>1148</i>	<i>H₂O</i>	<i>2</i>	<i>1</i>	
(The following table is a grid for recording sample results. It is currently blank.)						

Relinquished by:

Received By:

Signature <i>Riz A May</i>	Date <i>12-13-00</i>	Time <i>11 30</i>	Signature <i>Shaneane Janno</i>	Date <i>12/14/00</i>	Time <i>0915</i>
-------------------------------	-------------------------	----------------------	------------------------------------	-------------------------	---------------------

Samples Iced: ☒ Yes ☐ No

Preservatives (ONLY for Water Samples)

- ☐ Cyanide
- ☐ Volatile Organic Analysis
- ☐ Metals
- ☐ TPH (418.1)
- ☒ Other (Specify) *H₂SO₄*
- ☐ Other (Specify)
- ☐ Sodium hydroxide (NaOH)
- ☐ Hydrochloric acid (HCl)
- ☐ Nitric acid (HNO₃)
- ☐ Sulfuric acid (H₂SO₄)

Carrier: *Greyhound*

Shipping and Lab Notes:

Rec'd @ 4°C

Airbill No. *641 1606919974*

WELL DEVELOPMENT AND PURGING DATA

Project Name EPES Annual Sampling Project No. 62800107
Client Company El Paso Field Services Phase/Task No. 0301
Site Name TENN/EPAH #1 (71816) Site Address Rural San Juan CO.

Development Criteria

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

Water Volume Calculation

Initial Depth of Well (feet) 29.76
Initial Depth to Water (feet) 24.39
Height of Water Column in Well (feet) 5.39
Diameter (inches): Well 2 Gravel Pack

Methods of Development

Pump
☐ Centrifugal
☐ Submersible
☐ Peristaltic
☐ Other

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

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	5.39	0.80 x 3	7.61
Gravel Pack			
Drilling Fluids			
Total			7.61

Instruments

☒ pH Meter	<u>Hyd</u>
☐ DO Monitor	
☒ Conductivity Meter	<u>Hyd</u>
☒ Temperature Meter	<u>Hyd</u>
☐ Other	

Water Disposal

Entz Separator Bloomfield NM.

Water Removal Data

[illegible]

Circle the date and time that the development called for one met.

Comments: SAMPLED for BTEx 1450

Developer's Signature(s) [Signature] Date 01-29-01
Reviewer RT Date 1/31/01

WELL DEVELOPMENT AND PURGING DATA

Project Name GPS Annual Sampling

Project Manager *R Thompson*

Project No. 62800/07

Client Company El Paso Field Services

1. The first step in the process of identifying a problem is to recognize that a problem exists. This is often done by comparing current performance with a desired state or goal. If there is a significant difference, a problem is identified.

Phase.Task No. 0301

Site Name TENVENOAH #1 (71816)

Site Address River 1 San Juan CO

Site Address River 1 San Juan CO

Development Criteria

3.5 Casing Volumes of Water Removal

Well No.	Initial Depth of Well (feet)	Final Depth of Well (feet)	Depth of Water (feet)	Time of Day	Remarks
1	30.3				

☑ Stabilization of Indicator Parameters

Initial Depth to Water (feet) =

Initial Depth to Water (feet) 24.17

☐ Other _____--Height of Water Column in Well (feet) 6.25--Height of Water Column in Well (feet) 6.25

Methods of Development

Pump · Bgiler

Bgiler

☐ Centrifugal ☒ Bottom Valve

☐ 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	6.25	102 x 3	3.06
Gravel Pack			
Drilling fluids			
Total			3.06

Water Disposal

KW-2 Separator Bloomfield N.M.

Water Removal Data

[illegible]

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

Comments: SAMPLED for BTEX 1405

Developer's Signature(s) Ben A. May

Date 0-29-01

Reviewer RT

Date 1/31/01

PHILIP

Chain of Custody Record

4000 Monroe Road
Farmington, NM 87401

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

COC Serial No. C 2845

Project Name <i>EDFS ANNEX-1 Sampling</i>		Project Number <i>62800107</i>		Phase / Task <i>0301</i>	
Samplers <i>C. Macer</i>		Total Number of Bottles			
Laboratory		Type of Analysis and Bottle			
Name <i>PEANACHE</i>		Comments			
Location <i>ALBQ NM</i>		Comments			
Sample Number (and depth)	Date	Time	Matrix		
REM-0101-MW 02	01-29-01	1150	H ₂ O		REMEDIATION #1
REM-0101-MW 03	01-29-01	1245	H ₂ O		"
JEN-0101-MW 03	01-29-01	1405	H ₂ O		JENNEDAH #1
JEN-0101-MW 03	01-29-01	1405	H ₂ O		"
JEN-0101-MW 02	01-29-01	1450	H ₂ O		"
TRIP-BLANK	01-29-01	1600	H ₂ O		"

Relinquished by:

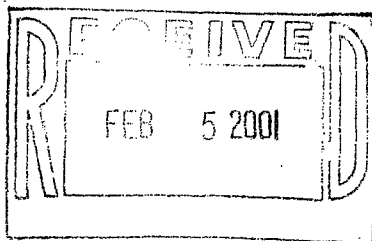
Signature	Date	Time	Signature	Date	Time
<i>Ch. A. Macer</i>	01-29-01	1030			

Received By:

Samples Iced: ☒ Yes ☐ No		Carrier: <i>BAQ</i>	
Preservatives (ONLY for Water Samples)		Shipping and Lab Notes:	
☐ 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) <i>HSCA</i>	☐ Other (Specify)		

Airbill No. *GLT106919941*

PINNACLE
LABORATORIES



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

Pinnacle Lab ID number
February 01, 2001

101088

PHILIP ENVIRONMENTAL
4000 MONROE ROAD
FARMINGTON, NM 87401

EL PASO FIELD SERVICES
614 RIELLY STREET
FARMINGTON, NM 87401

Project Name EPFS ANNUAL SAMPLING
Project Number 62800107

Attention: ROBERT THOMPSON/SCOTT POPE

On 01/31/01 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 black ink, appearing to read "H. Mitchell Rubenstein".

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	: 101088
PROJECT #	: 62800107	DATE RECEIVED	: 01/31/01
PROJECT NAME	: EPFS ANNUAL SAMPLING	REPORT DATE	: 02/01/01

PINNACLE ID #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
101088 - 01	REM-0101-MW 02	AQUOEUS	01/29/01
101088 - 02	REM-0101-MW 03	AQUOEUS	01/29/01
101088 - 03	JEN-0101-MW 03	AQUOEUS	01/29/01
101088 - 04	JEN-0101-MW S3	AQUOEUS	01/29/01
101088 - 05	JEN-0101-MW 02	AQUOEUS	01/29/01
101088 - 06	TRIP BLANK	AQUOEUS	01/29/01



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GAS CHROMATOGRAPHY RESULTS

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

PINNACLE I.D.: 101088

SAMPLE			DATE	DATE	DATE	DIL.
D. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	REM-0101-MW 02	AQUEOUS	01/29/01	NA	01/31/01	1
02	REM-0101-MW 03	AQUEOUS	01/29/01	NA	01/31/01	1
03	JEN-0101-MW 03	AQUEOUS	01/29/01	NA	01/31/01	1

PARAMETER	DET. LIMIT	UNITS	REM-0101-MW 02	REM-0101-MW 03	JEN-0101-MW 03
BENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
TOLUENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
ETHYLBENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
TOTAL XYLENES	0.5	UG/L	< 0.5	< 0.5	< 0.5

SURROGATE:
BROMOFLUOROBENZENE (%) 99 100 101
SURROGATE LIMITS (80 - 120)

CHEMIST NOTES:
N/A



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Albuquerque, New Mexico 8710
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GAS CHROMATOGRAPHY RESULTS

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

PINNACLE I.D.: 101088

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
04	JEN-0101-MW S3	AQUEOUS	01/29/01	NA	01/31/01	1
05	JEN-0101-MW 02	AQUEOUS	01/29/01	NA	01/31/01	1
06	TRIP BLANK	AQUEOUS	01/29/01	NA	01/31/01	1

PARAMETER	DET. LIMIT	UNITS	JEN-0101-MW S3	JEN-0101-MW 02	TRIP BLANK
BENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
TOLUENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
E L BENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
TC L XYLENES	0.5	UG/L	< 0.5	< 0.5	< 0.5

SURROGATE:

BROMOFLUOROBENZENE (%)

101

99

102

SURROGATE LIMITS (80 - 120)

CHEMIST NOTES:

N/A



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GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 101088
BLANK I. D.	: 013101	DATE EXTRACTED	: NA
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 01/31/01
PROJECT #	: 62800107	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: EPFS ANNUAL 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)
CHEMIST NOTES:
N/A



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GAS CHROMATOGRAPHY QUALITY CONTROL
MSMSD

TEST : EPA 8021 MODIFIED
MSMSD # : 013101
CLIENT : PHILIP ENVIRONMENTAL
PROJECT # : 62800107
PROJECT NAME : EPFS ANNUAL SAMPLING

PINNACLE I.D. : 101088
DATE EXTRACTED : NA
DATE ANALYZED : 01/31/01
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	20.7	104	2	(80 - 120)	20
TOLUENE	<0.5	20.0	18.1	91	18.3	92	1	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	19.5	98	19.8	99	2	(80 - 120)	20
TOTAL XYLENES	<0.5	60.0	57.1	95	57.9	97	1	(80 - 120)	20

CHEMIST NOTES:
N/A

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

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

MONITORING WELL INSTALLATION RECORD

Lillip Environmental Services Corp.
 100 Monroe Road
 Farmington, New Mexico 87401
 (505) 326-2388 FAX (505) 326-2388

Borehole # 2
 Well # MW 2
 Page 1 of 1

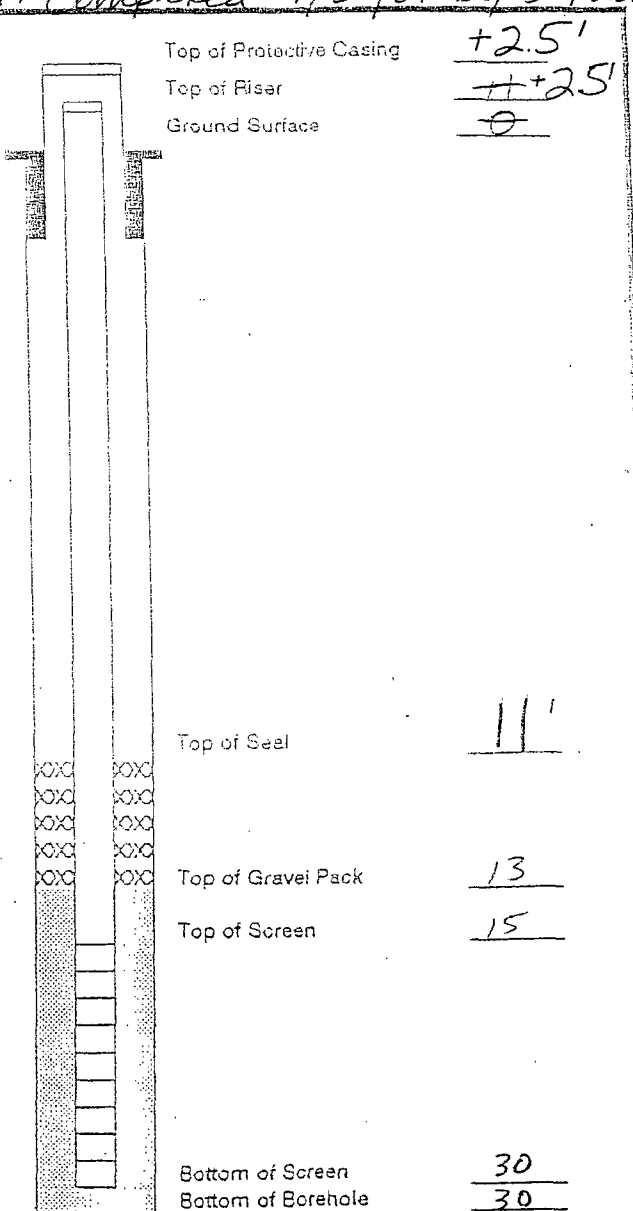
Project Name EPFS GW Inv.
 Project Number 20990 Phase 100%
 Project Location Penney #1
 On-Site Geologist P. Cheney
 Personnel On-Site K. Padilla, D. Padilla
 Contractors On-Site -
 Client Personnel On-Site -

Elevation _____
 Well Location _____
 Borehole Depth 22
 Installed By K. Padilla
 Date/Time Started 5/4/99
 Date/Time Completed 5/4/99

Monitor well completed 1/31/01 by D. Padilla

Depths in Reference to Ground Surface

Item	Material	Depth
Top of Protective Casing		+2.5'
Bottom of Protective Casing		-2.5'
Top of Permanent Borehole Casing		+2.5'
Bottom of Permanent Borehole Casing		-30'
Top of Concrete		-
Bottom of Concrete		0
Top of Grout		0
Bottom of Grout		-11'
Top of Well Riser		+1'
Bottom of Well Riser		15'
Top of Well Screen		15'
Bottom of Well Screen		30'
Top of Peltonite Seal		N.A.
Bottom of Peltonite Seal		N.A.
Top of Gravel Pack		13'
Bottom of Gravel Pack		30'
Top of Natural Cave-In		N.A.
Bottom of Natural Cave-In		N.A.
Top of Groundwater		22'
Total Depth of Borehole		30'



Comments: Temporary Completion

Geologist Signature

Paul Cheney

MONITORING WELL INSTALLATION RECORD

Philip Environmental Services Corp.
4000 Monroe Road
Farmington, New Mexico 87401
(506) 325-262 FAX (506) 325-2388

Borehole # 3
Well # NW-3
Page 1 of 1

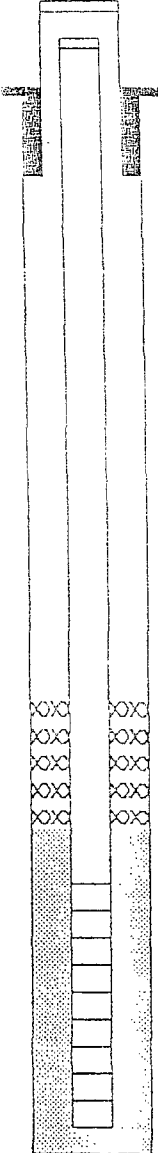
Project Name EPFS GW Inv.
Project Number 20990 Phase 1000
Project Location Jenneyah #1

On-Site Geologist P. Cheney
Personnel On-Site K. Padilla, D. Padilla
Contractors On-Site _____
Client Personnel On-Site _____

Elevation _____
Well Location _____
GWL Depth 23
Installed By K. Padilla

Date/Time Started 5/4/99
Date/Time Completed 5/4/99

Monitor well completed 1/31/01 by D. Padilla

Depths in Reference to Ground Surface				
Item	Material	Depth		
Top of Protective Casing		+25'		Top of Protective Casing <u>N.A. +2.5'</u> <i>win</i> Top of Riser <u>H +2.5'</u> Ground Surface <u>0</u>
Bottom of Protective Casing		-2.5'		
Top of Permanent Borehole Casing		+25'		
Bottom of Permanent Borehole Casing		-30'		
Top of Concrete		0'		
Bottom of Concrete		0'		
Top of Grout		0'		
Bottom of Grout		11'		
Top of Well Riser		+1'		
Bottom of Well Riser		-15'		
Top of Well Screen		15'		
Bottom of Well Screen		30'		
Top of Peltonite Seal		N.A.		
Bottom of Peltonite Seal		N.A.		
Top of Gravel Pack		13'		
Bottom of Gravel Pack		30'		
Top of Natural Cave-In		N.A.		
Bottom of Natural Cave-In		N.A.		
Top of Groundwater		23'		
Total Depth of Borehole		30'		
			Top of Seal	<u>11'</u>
			Top of Gravel Pack	<u>13'</u>
			Top of Screen	<u>15'</u>
			Bottom of Screen	<u>30'</u>
			Bottom of Borehole	<u>30'</u>

Comments: Temporary Completion

Geologist Signature

Paul Cheney