

GW - 8

**GENERAL
CORRESPONDENCE**

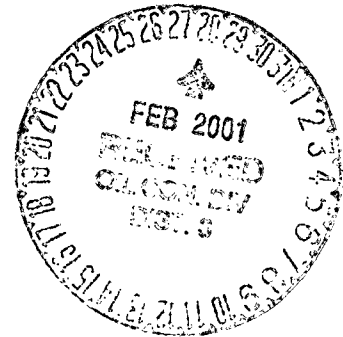
YEAR(S):

03/2001

SAN JUAN BASIN PIT CLOSURES
San Juan Basin, New Mexico

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

March 2001



Prepared For

El Paso Field Services
Farmington, New Mexico

Project 62800398



VOLUME I

Index

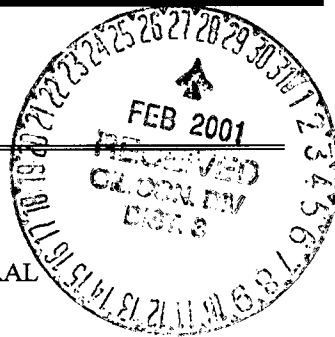
El Paso Field Services Annual Groundwater Report

TWN	RNG	SEC	UNIT	SITE NAME	METER	LAND TYPE
32	11	34	E	Fields A #7A	89961/ 97456	Federal
31	12	16	H	State Gas Com	71669	State
31	9	35	F	Johnson Fed. #6	89232	Fee
31	9	33	H	Johnson Fed #4	70194	Fee
31	9	28	H	Horton #1 E	93388	Fee
30	13	10	P	James F. Bell #1E	94715	Federal
30	13	5	A	Knight #1	72556	Fee
30	11	2	K	Coldiron Com A #1	73551	Fee
30	9	35	C	Sandoval GC A #1A	89620	Federal
30	9	31	M	WD Heath B #5	87493	Federal

EPFS GROUNDWATER PITS

2000 ANNUAL GROUNDWATER REPORT

FIELDS A #7A
Meter/Line ID - 89961/97546



SITE DETAILS

Legals - Twn: 32N Rng: 11W Sec: 34 Unit: E
NMOCD Hazard Ranking: 40 Land Type: FEDERAL
Operator: AMOCO PRODUCTION COMPANY

PREVIOUS ACTIVITIES

Site Assessment: Aug-94 Excavation: Sep-94 (70 cy) Soil Boring: Jul-95
Monitor Well: Jul-95 Additional MW's: Dec-95 PSH Removal Initiated: Aug-97

2000 ACTIVITIES

Phase Separated Hydrocarbon (PSH) Measurement - PSH was measured in monitor wells MW-1 and MW-4 in October of 2000 and a product skimmer was installed on MW-1.

SUMMARY TABLES

Groundwater and PSH level data are presented in Table 1.

SITE MAP

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

GEOLOGIC LOGS AND WELL COMPLETION DIAGRAMS

There were no drilling activities at this site in 2000.

DISPOSITION OF GENERATED WASTES

All PSH recovered was disposed of at the EPFS Kutz Separator in Bloomfield, New Mexico.

ISOCONCENTRATION MAPS

An isoconcentration map was not generated for this site.

CONCLUSIONS

Product measurement in MW-1 was 1.38 feet in 2000. A product skimmer was installed in MW-1 and product will be removed weekly or as needed. Product levels in MW-2 remain at negligible levels in 2000. The groundwater gradient is to the south-southwest.

Pertinent data from past groundwater reports include the following:

Product removal was initiated at MW-1 on 8/26/97. Due to the presence of product in MW-1 and high dissolved phase in additional monitoring wells, quarterly sampling was discontinued as of 4/21/97.

EPFS GROUNDWATER PITS 2000 ANNUAL GROUNDWATER REPORT

RECOMMENDATIONS

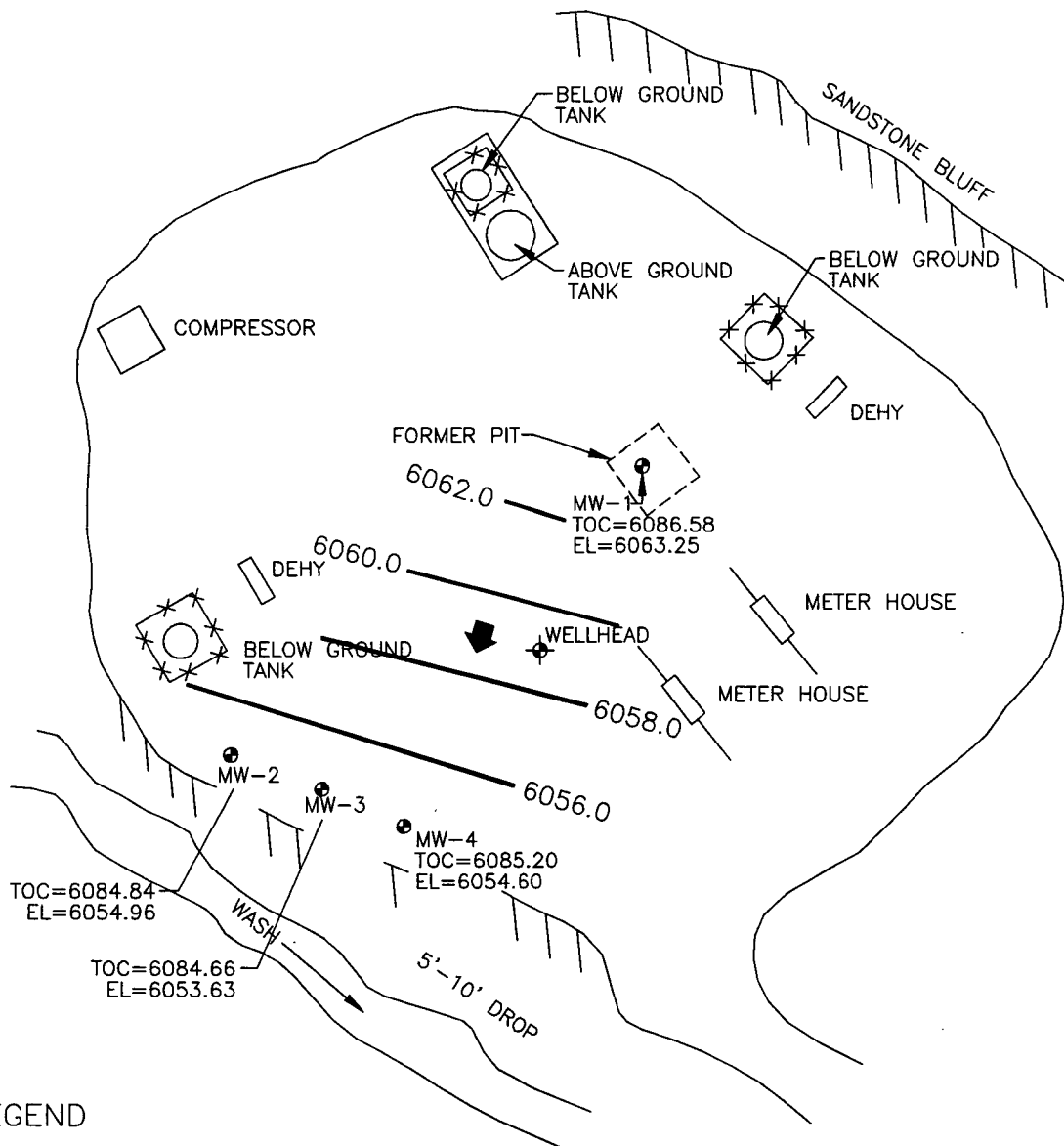
- Continue product removal at MW-1 and MW-4 as needed.
- Collect groundwater samples annually when PSH are not present until BTEX levels are below NMWQCC Standards, then water sample quarterly for closure.
- Collect static water level data when sampling.
- Following OCD approval for closure, all monitor wells will be abandoned using OCD approved abandonment procedures.

EPFS Groundwater Report
2000 Annual Report

Table 1

March 2001

Meter/Line #	Location/Line Name	Date	MW	Depth to Product	Depth to Water	Product Thickness	Volume Removed Gallons	Cumulative Gallons
89961	FIELDS A #7A	10/04/2000	1	28.34	29.72	1.38	0	0
89961	FIELDS A #7A	10/04/2000	2	0	29.88	0	0	0
89961	FIELDS A #7A	10/04/2000	3	0	30.03	0	0	0
89961	FIELDS A #7A	10/04/2000	4	30.53	30.76	0.23	0	0



LEGEND

- MW-1 APPROXIMATE MONITORING WELL LOCATION AND NUMBER
- TOC TOP OF CASING ELEVATION
- EL GROUNDWATER ELEVATION
- ➔ GROUNDWATER GRADIENT
- 6060— GROUNDWATER POTENTIOMETRIC SURFACE

0 40
FEET



TITLE:
FIELDS A #7A
METER 89961/97546
OCTOBER 4, 2000

DWN: TMM	DES.: LW
CHKD: LW	APPD: MN
DATE: 1/31/01	REV.: 0

PROJECT NO.: 62800219
EPFS GW PITS

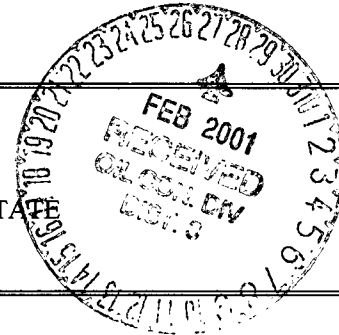
FIGURE 1

EPFS GROUNDWATER PITS

2000 ANNUAL GROUNDWATER REPORT

STATE GAS COM N #1
Meter/Line ID - 71669

SITE DETAILS
Legals - Twn: 31N Rng: 12W Sec: 16 Unit: H
NMOCD Hazard Ranking: 30 Land Type: STATE
Operator: AMOCO PRODUCTION COMPANY



PREVIOUS ACTIVITIES

Site Assessment: Mar-94 Excavation: May-94 (80 cy) Soil Boring: Oct-95
Monitor Well: Oct-95 Down-gradient MW's: Nov-95 PSH Removal Initiated: Jul-97

2000 ACTIVITIES

Phase Separated Hydrocarbon (PSH) Removal - PSH removal from MW-1, MW-2 and MW-3 continued through 2000.

Monitor Well Installation - Following approval from the State of New Mexico and the completion of an archeological survey, one downgradient monitor well, MW-5, was installed in July of 2000. A sixth monitor well was attempted on July 6, 2000. Drilling was slow and difficult; auger refusal was encountered at 78.65-feet. Groundwater was not observed after several hours and the borehole was grouted (Attachment 2).

SUMMARY TABLES

Groundwater elevation data and PSH recovery data are presented in Table 1. Groundwater analytical data is presented in Table 2. Copies of the laboratory data sheets and associated quality assurance/ quality control data are presented Attachment 1.

SITE MAP

A site map showing the groundwater gradient is presented as Figures 1-4.

GEOLOGIC LOGS AND WELL COMPLETION DIAGRAMS

Drilling activities were conducted on July 5, 2000, and the geologic logs and well completion diagrams are presented in Attachment 2.

DISPOSITION OF GENERATED WASTES

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

ISOCONCENTRATION MAPS

Isoconcentration maps were not generated for this site.

CONCLUSIONS

A total of 254.55 gallons of PSH have been removed from the site to date. PSH was not removed from MW-1 in 2000 due to negligible amounts of PSH measured. A total of 3.75 gallons of PSH was removed from MW-2 in 2000, indicating a reduction in PSH by more than 80 percent. A total

EPFS GROUNDWATER PITS

2000 ANNUAL GROUNDWATER REPORT

of 2.75 gallons of PSH was removed from MW-3 in 2000. Using groundwater elevations, corrected for product, the apparent groundwater gradient is toward the southeast.

An additional downgradient monitor well, MW-5, was installed off-site. Laboratory analyses of the groundwater from MW-5 exceeds the NMWQCC groundwater standards for all analytes.

Pertinent data from previous groundwater reports include the following:

Based on groundwater levels collected from four monitoring wells the groundwater flow trends to the southeast on this site. Product has been measured in monitoring wells MW-1, MW-2, MW-3, and MW-4, but was only observed in monitoring wells MW-1, MW-2 and MW-3 during 2000. Due to the depth to groundwater and difficult drilling conditions the horizontal extent of migration of hydrocarbon constituents in the groundwater has not been determined. Offsite work will be required to determine the down-gradient extent.

RECOMMENDATIONS

- Continue product removal at MW-1, MW-2, and MW-3 as needed.
- Following removal of product, sample annually until BTEX levels are below New Mexico groundwater standards, then sample quarterly for closure.
- Initiate annual sampling in monitor wells without product until BTEX levels are below NMWQCC, then quarterly for closure.
- Collect groundwater elevation data at least 24 hours after removing passive skimmers from hydrocarbon recovery monitor wells.

Table 1

March 2001

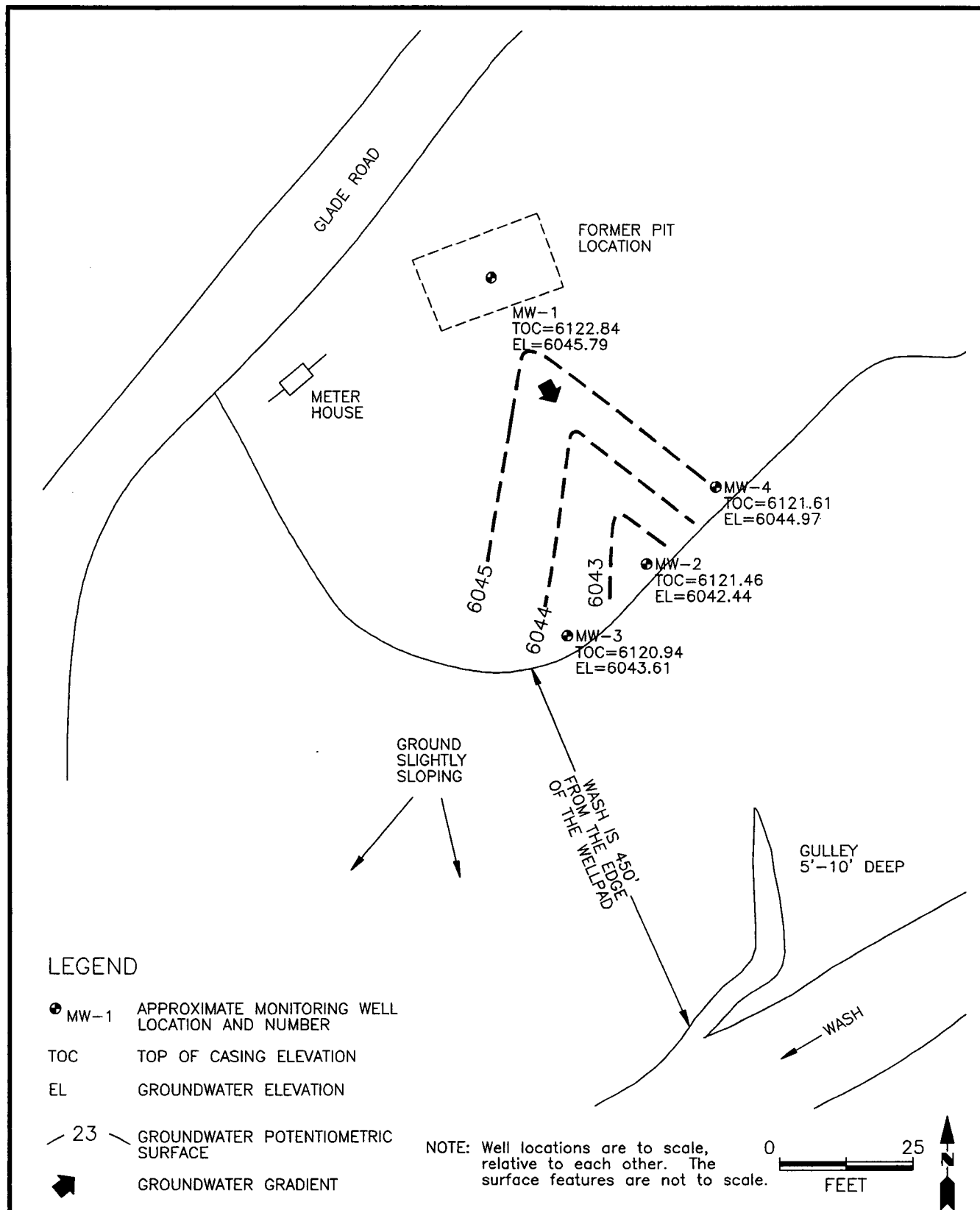
Meter/Line #	Location/Line Name	Date	MW	Depth to Product	Depth to Water	Product Thickness	Volume Removed Gallons	Cumulative Gallons
71669	STATE GAS COM #1	02/15/2000	1	76.93	77.3	0.37	0	78.05
71669	STATE GAS COM #1	05/19/2000	1	76.82	77.12	0.3	0	78.05
71669	STATE GAS COM #1	06/08/2000	1	0	76.74	0	0	78.05
71669	STATE GAS COM #1	10/03/2000	1	76.73	76.9	0.17	0	78.05
71669	STATE GAS COM #1	11/21/2000	1	76.8	77.08	0.28	0	78.05
71669	STATE GAS COM #1	12/20/2000	1	76.73	76.92	0.19	0	78.05
71669	STATE GAS COM #1	02/15/2000	2	78.43	80.39	1.96	1	129.71
71669	STATE GAS COM #1	05/19/2000	2	78.68	80.41	1.73	1.25	130.96
71669	STATE GAS COM #1	06/08/2000	2	78.6	78.84	0.24	1.25	132.21
71669	STATE GAS COM #1	07/06/2000	2	78.57	79.99	1.42	0.25	132.46
71669	STATE GAS COM #1	10/03/2000	2	76.4	77.02	0.62	0	132.46
71669	STATE GAS COM #1	11/21/2000	2	76.53	77.16	0.63	0	132.46
71669	STATE GAS COM #1	12/20/2000	2	76.47	77.06	0.59	0	132.46
71669	STATE GAS COM #1	02/15/2000	3	77.3	77.41	0.11	0.25	40.54
71669	STATE GAS COM #1	05/19/2000	3	77.53	78.25	0.72	1.25	41.79
71669	STATE GAS COM #1	06/08/2000	3	77.17	77.63	0.46	1.25	43.04
71669	STATE GAS COM #1	07/06/2000	3	77.2	77.62	0.42	1	44.04
71669	STATE GAS COM #1	10/03/2000	3	76.97	77.12	0.15	0	44.04
71669	STATE GAS COM #1	11/21/2000	3	77.15	77.18	0.03	0	44.04
71669	STATE GAS COM #1	12/20/2000	3	0	77	0	0	44.04
71669	STATE GAS COM #1	02/15/2000	4	0	76.64	0	0	0
71669	STATE GAS COM #1	05/19/2000	4	0	76.68	0	0	0
71669	STATE GAS COM #1	06/08/2000	4	0	76.53	0	0	0
71669	STATE GAS COM #1	10/03/2000	4	0	76.53	0	0	0
71669	STATE GAS COM #1	11/21/2000	4	0	76.79	0	0	0
71669	STATE GAS COM #1	12/20/2000	4	0	76.56	0	0	0
71669	STATE GAS COM #1	10/03/2000	5	0	74.56	0	0	0
71669	STATE GAS COM #1	11/21/2000	5	0	74.44	0	0	0
71669	STATE GAS COM #1	12/20/2000	5	0	74.12	0	0	0

Table 2

March 2001

Sample #	Meter / Line #	Site Name	Sample Date	MW #	Project	Benzene (PPB)	Toluene (PPB)	Ethyl Benzene (PPB)	Total Xylenes (PPB)	Total BTEX (PPB)
STA-0008-MW5	71669	STATE GAS COM #1	8/30/00	5	Sample 1 - 1st Event	= 27,000	= 570	= 930	= 8,600	309

Sample 1 - Annual Sampling



COL 628\00219380-007



TITLE:

STATE GAS COM N#1

METER 71669

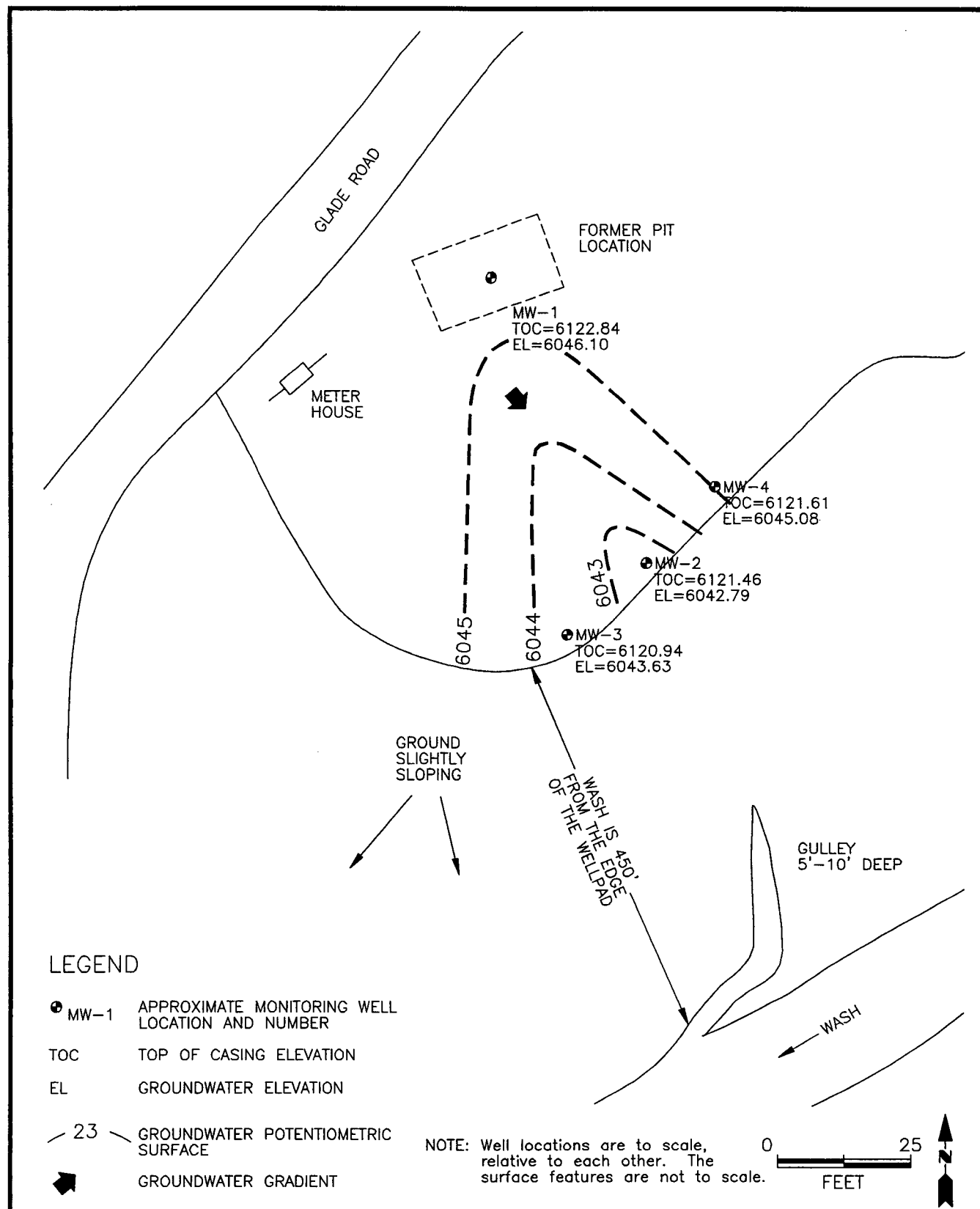
FEBRUARY 15, 2000

DWN:	DES.:
TMM	LW
CHKD:	APPD:
LW	MN
DATE:	REV.:
1/30/01	0

PROJECT NO.: 62800219

EPFS GW PITS

FIGURE 1

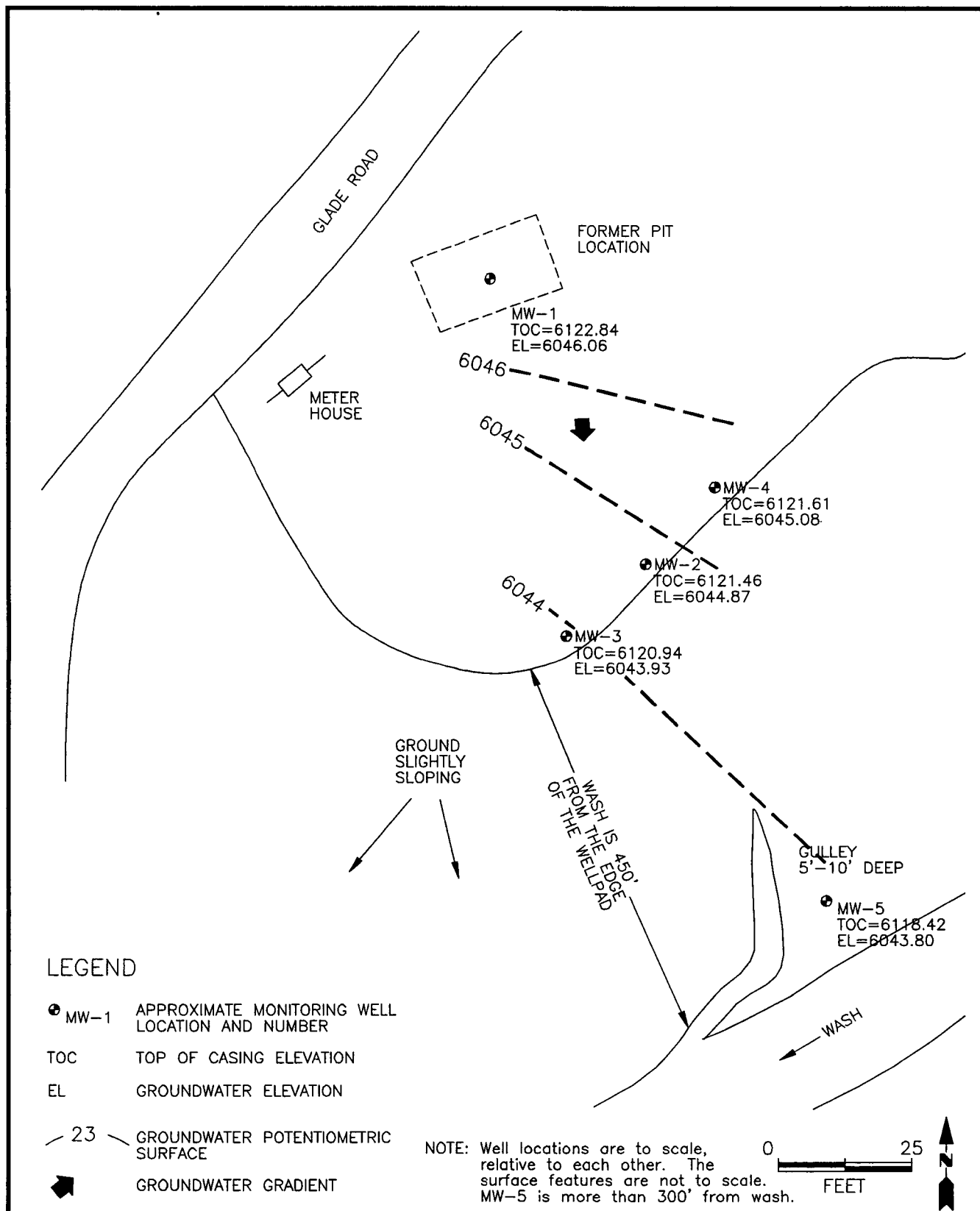


TITLE:
STATE GAS COM N#1
METER 71669
JUNE 8, 2000

DWN: TMM	DES.: LW
CHKD: LW	APPD: MN
DATE: 1/30/01	REV.: 0

PROJECT NO.: 62800219
EPFS GW PITS

FIGURE 2



COL 628\00219360-009

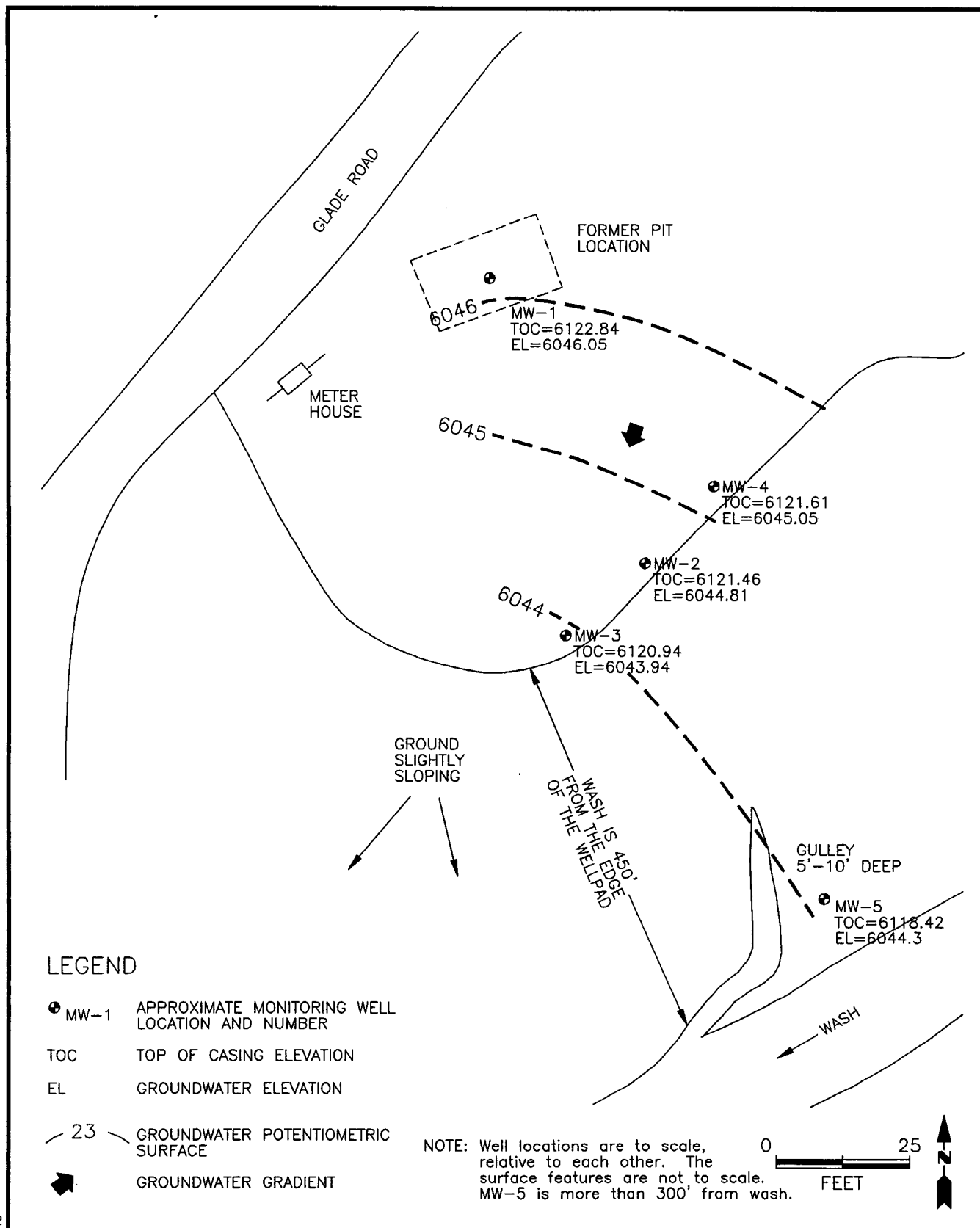


TITLE:
STATE GAS COM N#1
METER 71669
OCTOBER 3, 2000

DWN: TMM	DES.: LW
CHKD: LW	APPD: MN
DATE: 1/30/01	REV.: 0

PROJECT NO.: 62800219
EPFS GW PITS

FIGURE 3



COL 628\00219380-010



TITLE:
STATE GAS COM N#1
METER 71669
DECEMBER 20, 2000

DWN: TMM	DES.: LW
CHKD: LW	APPD: MN
DATE: 1/30/01	REV.: 0

PROJECT NO.: 62800219
EPFS GW PITS

FIGURE 4

ATTACHMENT 1

2000 GROUNDWATER ANALYTICAL

Project Name EPFS quarterly sampling

Project Manager R. Thomas, Sr.

Project No. 62800107

Client Company

Phase.Task No. 0301

Site Name STATE GAS COM M1 (71669)

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) 83.16

Initial Depth to Water (feet) 74.19

Height of Water Column in Well (feet) 8.97

Diameter (inches): Well 2" Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	8.97	146.83	4.38
Gravel Pack			
Drilling Fluids			
Total			4.38

Methods of Development

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

☐ Other

Water Disposal

Katz Separator Blended W.M.

Water Removal Data

[illegible]

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

Comments Sampled for BTex 150 ppm

Developer's Signature(s) George M. ...

Developer's Signature(s) _____ Date 8-30-00

Reviewer _____ Date _____

PHILIP

Chain of Custody Record

4000 Monroe Road
Farmington, NM 87401

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

COC Serial No. C 2656

Project Name <u>EqFS quarterly Sampling</u>		Type of Analysis and Bottle	
Project Number <u>62600107 Phase Task 0301</u>		Total Number of Bottles	
Samplers <u>C. MAEZ</u>		Type of Analysis and Bottle	
Laboratory		Type of Analysis and Bottle	
Name <u>PINMAGLE</u>		Type of Analysis and Bottle	
Location <u>ALBQ NM.</u>		Type of Analysis and Bottle	
Sample Number (and depth)	Date	Time	Matrix
<u>STA0008 MWQS</u>	<u>8/30/00</u>	<u>1:50</u>	<u>H₂O</u>
Comments			
<u>Stack Gas Com N1</u>			
<u>21669</u>			

Relinquished by:

Received By:

Signature	Date	Time	Signature	Date	Time
<u>Denn Wagner</u>	<u>8/31/00</u>	<u>1530</u>			

Samples Iced: ☐ Yes ☐ No

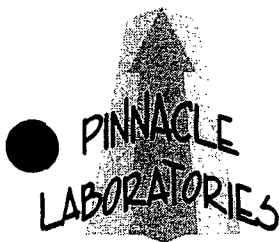
Preservatives (ONLY for Water Samples)

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

Airbill No. 62616069183544

Carrier: Greyhound Lines

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 009003
September 06, 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

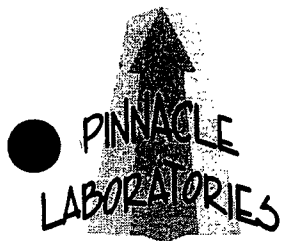
On 09/01/00 Pinnacle Laboratories, Inc., (ADHS License No. AZ0592 pending), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

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

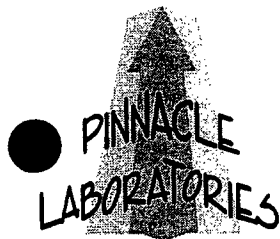
MR: jt

Enclosure



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

CLIENT	: PHILIP ENVIRONMENTAL	PINNACLE ID	: 009003
PROJECT #	: 62800107	DATE RECEIVED	: 09/01/00
PROJECT NAME	: EPFS QUARTERLY SAMPLING	REPORT DATE	: 09/06/00
PIN			DATE
ID. #	CLIENT DESCRIPTION	MATRIX	COLLECTED
01	STA0008 MW05	AQUEOUS	08/30/00



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

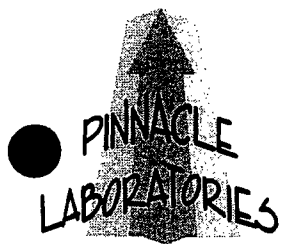
PINNACLE I.D.: 009003

SAMPLE			DATE	DATE	DATE	DIL.
ID. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	STA0008 MW05	AQUEOUS	08/30/00	NA	09/05/00	250

PARAMETER	DET. LIMIT	UNITS	STA0008 MW05
BENZENE	0.5	UG/L	27000
TOLUENE	0.5	UG/L	570
ETHYLBENZENE	0.5	UG/L	930
TOTAL XYLENES	0.5	UG/L	8600

SURrogate GATE:
BROMOFLUOROBENZENE (%) 115
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.	: 009003
BLANK I. D.	: 090500	DATE EXTRACTED	: NA
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 09/05/00
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)
CHECK 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 # : 090500
CLIENT : PHILIP ENVIRONMENTAL
PROJECT # : 62800107
PROJECT NAME : EPFS QUARTERLY SAMPLING

PINNACLE I.D. : 009003
DATE EXTRACTED : NA
DATE ANALYZED : 09/05/00
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	20.5	103	19.8	99	3	(80 - 120)	20
TOLUENE	<0.5	20.0	21.3	107	20.5	103	4	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	21.9	110	21.2	106	3	(80 - 120)	20
TOTAL XYLENES	<0.5	60.0	66.0	110	63.5	106	4	(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

ENVIRONMENTAL

Chain of Custody Record

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

COC Serial No. C 2656

009003

Project Name <u>EpfS quarterly Sampling</u>		Type of Analysis and Bottle		Comments
Project Number <u>62800107 Phase Task 0301</u>		Total Number of Bottles		
Samplers <u>C. MAEZ</u>		Name <u>PINMACLE</u>		B Tex 8021
Laboratory		Location <u>ALBQ N.M.</u>		
Sample Number (and depth)	Date	Time	Matrix	
<u>STA0008 MW05</u>	<u>8/30/00</u>	<u>1:50</u>	<u>H₂O</u>	<u>2 X</u>
(The following table is for use in recording data for each sample. It is to be filled out by the sampler and the analyst.)				

Relinquished by:

Received By:

Signature <u>Derrinagan</u>	Date <u>8/31/00</u>	Time <u>1530</u>	Signature <u>Glennine J. J. J.</u>	Date <u>9/1/00</u>	Time <u>0930</u>
--------------------------------	------------------------	---------------------	---------------------------------------	-----------------------	---------------------

Samples Iced: ☐ Yes ☐ No	Carrier: <u>Greyhound Lines</u>	Airbill No. <u>6516069184544</u>
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>H₂SO₄</u>		
☐ Other (Specify) _____		

Rec'd @ 2.60

ATTACHMENT 2

**2000 MONITOR WELL
INSTALLATION RECORDS**

MONITORING WELL INSTALLATION RECORD

Philip Services Corporation

4000 Monroe Road

Albuquerque, New Mexico 87401

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

Borehole # MW-05

Well # _____

Page 1 of 1

Project Name EPFS Drilling
Project Number 62800219 Cost Code 35
Project Location R12, T31, S14, QH

Elevation _____
Well Location STATE GAS CORP N-1
GWL Depth 72.93'
Installed By K. Padilla

On-Site Geologist J. Wagnon
Personnel On-Site R. Lefebvre, D. PADILLA
Contractors On-Site None
Client Personnel On-Site None

Date/Time Started 6/30/00 1158
Date/Time Completed 7/5/00

Depths in Reference to Ground Surface				
Item	Material	Depth (feet)		
Top of Protective Casing		+3		Top of Protective Casing <u>+ 3</u>
Bottom of Protective Casing		0		Top of Riser <u>+ 3</u>
Top of Permanent Borehole Casing		0		Ground Surface <u>0</u>
Bottom of Permanent Borehole Casing		-80		
Top of Concrete	QUIKRETE	+0.04		← QUIK GEL (2 BAGS)
Bottom of Concrete		0		← 2 1/2" TYPE I-II CEMENT (8 BAGS)
Top of Grout		0		
Bottom of Grout		-61		
Top of Well Riser		+3		
Bottom of Well Riser		-80		
Top of Well Screen		-65		
Bottom of Well Screen		-80		
Top of Peltonite Seal	3/8" HOLE PLUG BENTONITE	-61		Top of Seal <u>-61</u>
Bottom of Peltonite Seal		-63		← HOLE PLUG (1 BAG)
Top of Gravel Pack	CO SIO2 SAND 10 x 20	-63		Top of Gravel Pack <u>-63</u>
Bottom of Gravel Pack		-80		Top of Screen <u>-65</u>
Top of Natural Cave-In		/		← SILICA SAND (8 BAGS) 10 x 20
Bottom of Natural Cave-In		/		
Top of Groundwater		-72.93		Bottom of Screen <u>-80</u>
Total Depth of Borehole		-80		Bottom of Borehole <u>-80</u>

Comments: _____

Geologist Signature

J. Wagnon

RECORD OF SUBSURFACE EXPLORATION

Philip Environmental Services Corporation

4000 Monroe Road
Farmington, New Mexico 87401
(505) 326-2262 FAX (505) 326-2388

Borehole # MW-05

Well #

Page 1 of 2

Project Name EPFS Drilling

Project Number 62800219

Cost Code 35

Project Location R12, T31, S16, Q4

Well Logged By J. Wagnon

Personnel On-Site R. Lefebre

Contractors On-Site None

Client Personnel On-Site None

Elevation

Borehole Location STATE GAS COMM-1

GWL Depth 72.93

Logged By J. Wagnon

Drilled By K. Padilla

Date/Time Started 6/30/00 1158

Date/Time Completed 7/5/00

Drilling Method 4 1/4 ID HAS t SA

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)	Air Monitoring Units: NDU BZ BH P-10			Drilling Conditions & Blow Counts
0										
5										
1215	1	5-7'	3"	0-7' V. DENSE, FINE BROWN SAND, DRILLING IS HARD. MINOR CLAY					0.1 ppm	20 COUNTS
1222	2	10-12'	5"	7-12' AS ABOVE					0.2 ppm	35 COUNTS
1234	3	15-17'	12"	12-17' AS ABOVE, LESS COMPACTED					0.2 ppm	27 COUNTS
1239	4	20-22'	5"	17-22' AS ABOVE					0.6 ppm	19 COUNTS
1245	5	25-27'	12"	22-27' FINE TO (-) COARSE BROWN SAND, SOME CLAY					0.3 ppm	30 COUNTS
1259	6	30-32'	10"	27-32' BROWN FINE TO COARSE SAND; SEMI TO POORLY COMPACTED					0 ppm	28 COUNTS
35										
40										

Comments:

Geologist Signature

J. Wagnon

RECORD OF SUBSURFACE EXPLORATION

Philip Environmental Services Corporation

4000 Monroe Road
Farmington, New Mexico 87401
(505) 326-2262 FAX (505) 326-2388

Borehole # mw-05

Well # _____

Page 1 of 2

Project Name EPFS Drilling
Project Number 62800219 Cost Code 35
Project Location R12, T31, S16, QH

Elevation _____
Borehole Location STATE GAS COM N-1
GWL Depth 72.93'
Logged By J. Wagnon
Drilled By K. Padilla
Date/Time Started 6/30/00 1158
Date/Time Completed 7/5/00

Well Logged By J. Wagnon
Personnel On-Site R. Lefebvre
Contractors On-Site None
Client Personnel On-Site None
Drilling Method 4 1/4 ID-HAG HSA
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)	Air Monitoring Units: NDU P.D. BZ BH	Drilling Conditions & Blow Counts
1314	7	40-42'	3"	37-42' FINE-MED BROWN SAND, DENSELY COMPACTED. DRILLING IS HARD.			0 ppm	49 COUNTS AT 1325, ADDED 3 gal H ₂ O
1342	8	50-52'	2"	47-52' MOIST FINE BROWN SAND + CLAY (MAY BE FROM ETHAN CONDENSATION OR DUMPED WASTE)			1.4 ppm	50 COUNTS
1420	9	60-62'	3"	57-62' DRY FINE TO MED BROWN SAND. LOOSELY COMPACTED			1.8	30 COUNTS
1016	10	65-67'	12"	62-67' FINE-MED BROWN SAND, (-) RED BROWN CLAYS, SEMI COMPETENT - COMPETENT			12.3	40 COUNTS
20								
1114	11	75-77'	18"	72-77' WET BROWN - GREY MUD + CLAYS, STRONG H ₂ S ODOR			1039 ppm	11 COUNTS
80				TOTAL DEPTH 80' BGS				

Comments: Left augers at 60' to complete on Wed. 7/5/00

Geologist Signature

Jana Wagnon

RECORD OF SUBSURFACE EXPLORATION

Philip Environmental Services Corporation

4000 Monroe Road
Farmington, New Mexico 87401
(505) 326-2262 FAX (505) 326-2388

Borehole # MW-06
Well # _____
Page 1 of 2

Project Name EPFS Drilling
Project Number 62800219 Cost Code 35
Project Location R12, T31, S16, Q4

Elevation _____
Borehole Location STATE GAS COM N-1
GWL Depth _____
Logged By J. Wagnon
Drilled By K. Padilla
Date/Time Started 8/30/00 7:5100
Date/Time Completed HOLE GROUTED; NO WATER.

Well Logged By J. Wagnon
Personnel On-Site R. Lefebvre, D. PADILLA
Contractors On-Site None
Client Personnel On-Site None
Drilling Method 4 1/4 ID HAS HSA
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)	Air Monitoring Units: NDU BZ BH S			Drilling Conditions & Blow Counts
0										
5										
10										
1415	1	10-12'	9"	7-12' DR 1, FINE-MED BROWN SAND, SEMI- CONSOLIDATED					61.4 ppm	16 COUNTS
15										
20										
1429	2	20-22'	12"	17-22' AS ABOVE					30.8 ppm	13 COUNTS
25										
30										
1445	3	30-32'	12"	27-32' AS ABOVE, LESS CONSOLIDATED, MINOR CLAY					2.3 ppm	14 COUNTS
35										
40										

Comments:

Geologist Signature

J. Wagnon

RECORD OF SUBSURFACE EXPLORATION

Philip Environmental Services Corporation

4000 Monroe Road
Farmington, New Mexico 87401
(505) 326-2262 FAX (505) 326-2388

Borehole # MW-06
Well # _____
Page 2 of 2

Project Name EPFS Drilling
Project Number 62800219 Cost Code 35
Project Location R12, T31, S16, QM

Elevation _____
Borehole Location STATE GAS COM N-1
GWL Depth _____
Logged By J. Wagnon
Drilled By K. Padilla D. PADILLA
Date/Time Started 08/30/00 7/5/00
Date/Time Completed HOLE GROUTED; NO WATER

Well Logged By J. Wagnon
Personnel On-Site R. Lefebvre, R. PADILLA
Contractors On-Site None
Client Personnel On-Site None
Drilling Method 4 1/4 ID HAS HSA
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)	Air Monitoring Units: NDU BZ BH S	Drilling Conditions & Blow Counts
40	4	40-42	4"	37-42' FINE BROWN SAND, CLAY; V. WELL CONSOLIDATED.			1.0 ppm	48 COUNTS
45								
50	5	50-52	4"	47-52' AS ABOVE; (CONDENSATION?)			2.7 ppm	39 COUNTS
55				DRILLING IS SLOW + DIFFICULT.				
60	6	60-62	12"	57-62' DRY BROWN FINE SAND WITH CLAY, CALICHE LENSES WELL COMPACTED.			1039 ppm	50 COUNTS DRILLING VERY TIGHT.
65	7	65-70	10"	62-67 SHALE: BROWN, MORT, WELL-COMPACTED CLAY. BRITTLE IN DRY SPOTS.			149 ppm	60 COUNTS
70								1103 ADDED 4 gal H ₂ O
75	8	75-77	10"	72-77 DRY, COMPACT SHALE - BROWN.			1039 ppm	60 COUNTS
80	9	78-80		GREY/BLUE FINE SAND, CLAY. RESISTANT TO 78.65				53 COUNTS

Comments: WILL PAUSE DRILL AT 60'; CONTINUE 7/6/00. 7/6/00: DRILLING SLOW + DIFFICULT, TIGHT. 1155: TOOK SAMPLE AT 78', WHERE WE HAVE REFUSAL. WILL WAIT FOR WATER. 1335: NO WATER. GROUT HOLE.

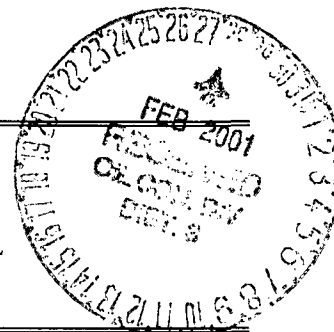
Geologist Signature

J. Wagnon

EPFS GROUNDWATER PITS

2000 ANNUAL GROUNDWATER REPORT

JOHNSTON FEDERAL #6A
Meter/Line ID - 89232



SITE DETAILS

Legals - Twn: 31N Rng: 9W Sec: 35 Unit: F
NMOCD Hazard Ranking: 40 Land Type: FEDERAL
Operator: BURLINGTON RESOURCES

PREVIOUS ACTIVITIES

Site Assessment: Aug-94 Excavation: Sep-94 (80 cy) Soil Boring: Aug-95
Monitor Well: Aug-95 Quarterly Sampling Initiated: Apr-96 PSH Removal Initiated: Jul-97
Additional Monitor Well: Jul-00

2000 ACTIVITIES

Phase Separated Hydrocarbon (PSH) Removal - PSH was not recovered in 2000.

Monitor Well Installation - An additional downgradient well was drilled cross-gradient (west) of MW-3 and MW-4, as requested by the OCD.

SUMMARY TABLES

Groundwater level data and PSH recovery data for MW-1 and MW-3 are presented in Table 1. Groundwater analytical data is presented in Table 2. 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 the groundwater elevations and gradient is presented as Figure 1.

GEOLOGIC LOGS AND WELL COMPLETION DIAGRAMS

Drilling activities were conducted on July 7, 2000, and geologic logs and well completion diagrams are presented as Attachment 2.

DISPOSITION OF GENERATED WASTES

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

ISOCONCENTRATION MAPS

An isoconcentration map was not generated for this site.

CONCLUSIONS

Groundwater gradient maps produced this year show the groundwater gradient is towards the north. Analyses of groundwater samples from MW-2 indicate no detectable levels of BTEX. Laboratory analyses of samples from MW-4 exhibits levels of benzene above the NMWQCC groundwater standards.

As required by the OCD in correspondence dated July 28, 1999, one additional monitor well, numbered MW-5, was installed downgradient of MW-1 and cross gradient of MW-3 and MW-4.

EPFS GROUNDWATER PITS

2000 ANNUAL GROUNDWATER REPORT

Laboratory analysis show benzene and total xylene levels exceed the New Mexico groundwater standards in MW-5.

Pertinent data from previous groundwater reports include the following:

Based on groundwater levels collected from four groundwater monitor wells, the groundwater flows to the north-northeast on this site. Quarterly sampling was discontinued due to the presence of free product. All recovered PSH has been disposed of at the EPFS Kutz Separator in Bloomfield, New Mexico.

Groundwater samples collected from MW-1 have historically been in excess of New Mexico groundwater standards for BTEX since quarterly sampling was initiated. Groundwater samples collected from two down-gradient monitor wells (MW-3 and MW-4) have historically been in excess of standards for benzene. MW-2, which is slightly down to crossgradient, has been below New Mexico groundwater standards for BTEX since quarterly sampling was initiated.

EPFS has provided operator with all pertinent site data generated to date.

RECOMMENDATIONS

- A detailed evaluation of the groundwater flow direction should be conducted with new data collection.
- Perform product removal at MW-1 as needed.
- Following completion of product removal initiate sampling in monitor well MW-1 on an annual basis.
- Sample monitor well MW-2, MW-3, MW-4, and MW-5 annually.
- EPFS will continue to work with the operator at this site.

EPFS Groundwater Report
2000 Annual Report

Table 1

March 2001

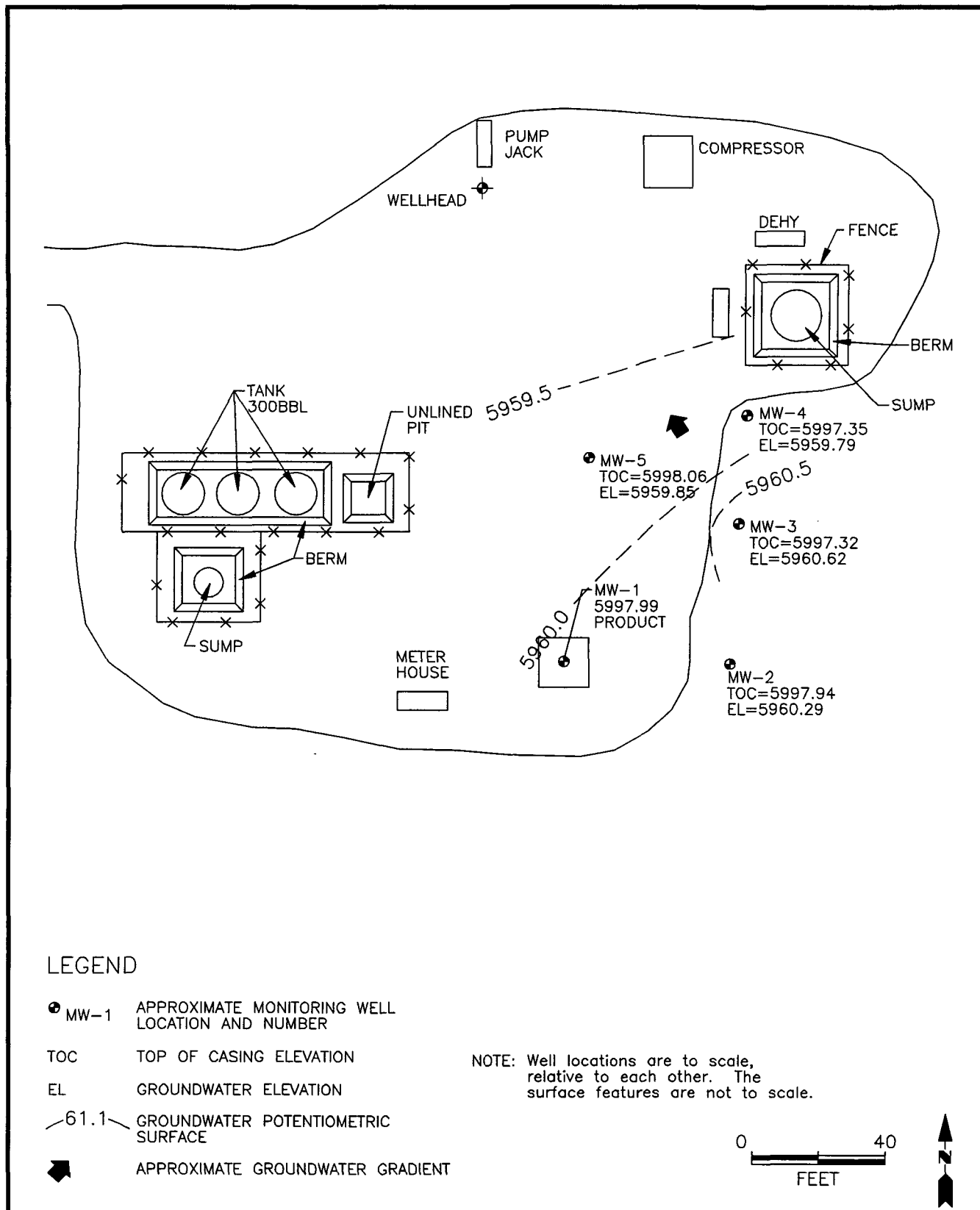
Meter/Line #	Location/Line Name	Date	MW	Depth to Product	Depth to Water	Product Thickness	Volume Removed Gallons	Cumulative Gallons
89232	JOHNSTON FEDERAL #6A	10/09/2000	1	37.49	38.04	0.55	0	0
89232	JOHNSTON FEDERAL #6A	10/04/2000	3	0	37.32	0	0	0

Table 2

March 2001

Sample #	Meter / Line #	Site Name	Sample Date	MW #	Project	Benzene (PPB)	Toluene (PPB)	Ethyl Benzene (PPB)	Total Xylenes (PPB)	Total BTEX (PPB)
JOH-0010-MW2	89232	JOHNSTON FEDERAL #6A	10/9/00	2	Sample 1 - 1st Annual	< 0.5	< 0.5	< 0.5	< 0.5	ND
JOH-0010-MW4	89232	JOHNSTON FEDERAL #6A	10/9/00	4	Sample 1 - 1st Annual	= 81	= 36	= 45	= 20	182
JOH-0008-MW5	89232	JOHNSTON FEDERAL #6A	10/9/00	5	Sample 1 - 1st Annual	= 130	= 180	= 56	= 650	1016

ND - No detectable levels
Sample 1 - Annual Sampling



COL 625\00219A\005



TITLE:
JOHNSTON FEDERAL #6A
METER 89232
OCTOBER 9, 2000

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

PROJECT NO.: 62800219 EPFS GW PITS
FIGURE 1

ATTACHMENT 1

2000 GROUNDWATER ANALYTICAL

MWOS

☒ Development
☐ Purging

WELL DEVELOPMENT AND PURGING DATA

Serial No. WDPD-

Page _____ of _____

Project Name **EDES** Quarter 1 v. Scumbin
Project Manager **Thompson**
Project No. **62800102**

Client Company E. O. F. S.
Phase, Task No. 0301

Site Name	Site Address	Site Type
Johnson Fed. 6A (89232)	Blue	San Tex 0.

Development Criteria

2.3 to 5 Casing Volumes of Water Removal

Stabilization of Indicator Parameters

☐ Other

Methods of Development

Pump	Boiler
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
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15	15
16	16
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90	90
91	91
92	92
93	93
94	94
95	95
96	96
97	97
98	98
99	99
100	100

☐ Centrifugal ☒ Bottom Valve

☐ Submersible ☐ Double Check Valve

☐ Peristaltic ☐ Stainless-steel Kemmerer

☐ Other

Water Removal Data

[illegible]

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

Comments	Sampled for BTEX	11/23/2011

Developer's Signature(s) David J. May

Date 8-30-00

Reviewer

Date _____



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

Pinnacle Lab ID number 009001
September 06, 2000

PHILIP ENVIRONMENTAL
4000 MONROE ROAD
FARMINGTON, NM 87401

EL PASO FIELD SERVICE
614 RIELY STREET
FARMINGTON, NM 87401

Project Name EPFS QUARTERLY SAMPLING
Project Number 62800107

Attention: ROBERT THOMPSON/LEAUDRA STANLEY

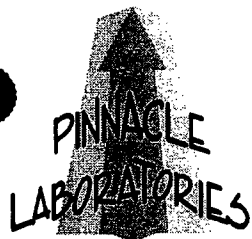
On 09/01/00 Pinnacle Laboratories, Inc., (ADHS License No. AZ0592 pending), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

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

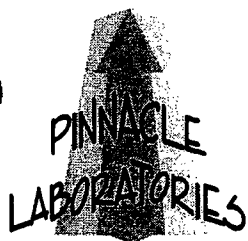
MR: jt

Enclosure



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

CLIENT	: PHILIP ENVIRONMENTAL	PINNACLE ID	: 009001
PROJECT #	: 62800107	DATE RECEIVED	: 09/01/00
PROJECT NAME	: EPFS QUARTERLY SAMPLING	REPORT DATE	: 09/06/00
PIN			DATE
ID. #	CLIENT DESCRIPTION	MATRIX	COLLECTED
01	JOH-0008-MW05	AQUEOUS	08/30/00



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.: 009001

SAMPLE	DATE	DATE	DATE	DIL.		
ID. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	JOH-0008-MW05	AQUEOUS	08/30/00	NA	09/05/00	5

PARAMETER	DET. LIMIT	UNITS	JOH-0008-MW05
BENZENE	0.5	UG/L	130
TOLUENE	0.5	UG/L	180
ETHYLBENZENE	0.5	UG/L	56
TOTAL XYLENES	0.5	UG/L	650

SURROGATE:-

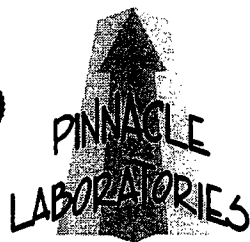
BROMOFLUOROBENZENE (%)

115

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.	: 009001
BLANK I. D.	: 090500	DATE EXTRACTED	: NA
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 09/05/00
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:

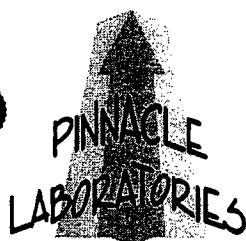
BROMOFLUOROBENZENE (%)

102

SURROGATE LIMITS: (80 - 120)

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 # : 090500
CLIENT : PHILIP ENVIRONMENTAL
PROJECT # : 62800107
PROJECT NAME : EPFS QUARTERLY SAMPLING

PINNACLE I.D. : 009001
DATE EXTRACTED : NA
DATE ANALYZED : 09/05/00
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	20.5	103	19.8	99	3	(80 - 120)	20
TOLUENE	<0.5	20.0	21.3	107	20.5	103	4	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	21.9	110	21.2	106	3	(80 - 120)	20
TOTAL XYLENES	<0.5	60.0	66.0	110	63.5	106	4	(80 - 120)	20

CHEMIST NOTES:
N/A

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

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

009001

Chain of Custody Record

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

#000 MORTUARY ROAD
FARMINGTON, NM 87401

COC Serial No. C 2654

Philip

ENVIRONMENTAL

Project Name EPFS QUARTERLY SAMPLING						
Project Number 62809127 Phase Task 0301.						
Samplers C. MAEZ						
Laboratory		Name PINNACLE				
		Location AUBQ. NM				
Sample Number (and depth)	Date	Time	Matrix	Total Number of Bottles	Type of Analysis and Bottle	Comments
JOH-0008-MURS	8/30/00	1123	H2O	2	X	JOHNSON FEN 89232

Relinquished by:

Received By:

Signature	Date	Time	Signature	Date	Time
Jean Wagner	8/13/00	1530	Hanuma Jivaro	9/1/00	0930

Samples Iced: ☒ Yes ☐ No		Carrier: GREYHOUND LINES Shipping and Lab Notes:	Airbill No. 66716006918549
Preservatives (ONLY for Water Samples)			
☐ Cyanide	☐ Sodium hydroxide (NaOH)	Rec'd @ 2.6°C	
☐ Volatile Organic Analysis	☐ Hydrochloric acid (HCl)		
☐ Metals	☐ Nitric acid (HNO ₃)		
☐ TPH (418.1)	☐ Sulfuric acid (H ₂ SO ₄)		
☒ Other (Specify) HgCl₂			
☐ Other (Specify)			

Well Number MW-02

Serial No. WDPD-

Project Name EPTS Quarterly Sampling
Client Company EPFS

Site Name Johnston Fed # 6A (89232)

Project Manager R Thompson

Project No. 62800107
Phase/Task No. 0301

WELL DEVELOPMENT AND PURGING DATA

Page 1 of 1

Development Criteria

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

Methods of Development

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

Water Volume Calculation
Initial Depth of Well (feet) 43.86
Initial Depth to Water (feet) 37.65
Height of Water Column in Well (feet) 6.21
Diameter (inches): Well 4" Gravel Pack

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

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

Serial No. (if applicable)

Hydac
Hydac
Hydac

Water Disposal

K-12 Separator Bloomfield N.M.

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)		pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/l)	Comments
						Incremental	Cumulative	Incremental	Cumulative				
10-09-00	1036	X				2.5	2.5			6.36	3490		210-210
	1043	X				2.5	5			5.85	3210		210-210
	1049	X				2.5	7.5			5.78	3200		210-210
	1054	X				2.5	10			5.66	3200		
	1102	X				2.5	12.5			5.53	3180		

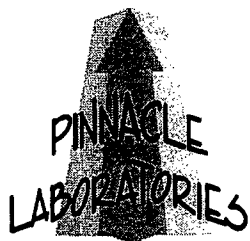
Circle the date and time that the development criteria are met.

Comments Sampled for BTEX 11/07

Developer's Signature(s) Ken A. May

Date 10-09-00

Reviewer RT Date 10/17/00



OCT 20 2000

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

Pinnacle Lab ID number 010035
October 18, 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

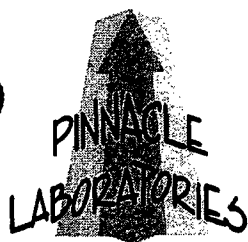
On 10/11/00 Pinnacle Laboratories, Inc., (ADHS License No. AZ0592 pending), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

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

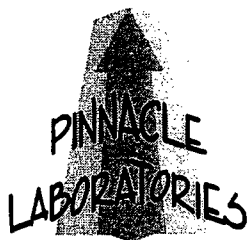
MR: jt

Enclosure



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

CLIENT	: PHILIP ENVIRONMENTAL	PINNACLE ID	: 010035
PROJECT #	: 62800107	DATE RECEIVED	: 10/11/00
PROJECT NAME	: EPFS QUARTERLY SAMPLING	REPORT DATE	: 10/18/00
PIN			DATE
ID. #	CLIENT DESCRIPTION	MATRIX	COLLECTED
01	JOH-0010-MW 02	AQUEOUS	10/09/00
02	JOH-0010-MW 04	AQUEOUS	10/09/00



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.: 010035

SAMPLE			DATE	DATE	DATE	DIL.
ID. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	JOH-0010-MW 02	AQUEOUS	10/09/00	NA	10/12/00	1
02	JOH-0010-MW 04	AQUEOUS	10/09/00	NA	10/12/00	1

PARAMETER	DET. LIMIT	UNITS	JOH-0010-MW 02	JOH-0010-MW 04
BENZENE	0.5	UG/L	< 0.5	81
TOLUENE	0.5	UG/L	< 0.5	36
BENZENE	0.5	UG/L	< 0.5	45
TOT. XYLENES	0.5	UG/L	< 0.5	20

SURROGATE:

BROMOFLUOROBENZENE (%)

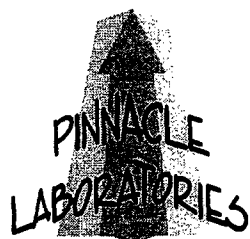
114

117

SURROGATE LIMITS (80 - 120)

CHEMIST NOTES:

N/A



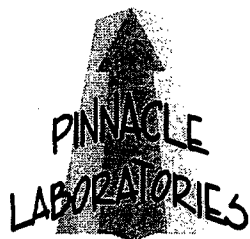
2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 010035
BLANK I. D.	: 101200	DATE EXTRACTED	: NA
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 10/12/00
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 (%) 105
SURROGATE 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 RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 010035
BLANK I. D.	: 101300	DATE EXTRACTED	: NA
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 10/13/00
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)
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 # : 101300
CLIENT : PHILIP ENVIRONMENTAL
PROJECT # : 62800107
PROJECT NAME : EPFS QUARTERLY SAMPLING

PINNACLE I.D. : 010035
DATE EXTRACTED : NA
DATE ANALYZED : 10/13/00
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	17.4	87	18.6	93	7	(80 - 120)	20
TOLUENE	<0.5	20.0	20.4	102	21.3	107	4	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	21.6	108	22.7	114	5	(80 - 120)	20
TOTAL XYLENES	<0.5	60.0	65.1	109	68.3	114	5	(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 2674

COC Serial No. C 2674

Project Name EpFS quarterly Sampling

Project Number 62800/07 Phase. Task 0301

Samplers C. McV2

Name DTANACLE

Location	ALBQ. N.M.
----------	------------

Sample Number (and depth)	Date	Time	Matrix
---------------------------	------	------	--------

Time

Date _____

Matrix

EQH-0010-MW0210-09-00	1107	H ₂ O	2	X	01	Johnston # 6A
-----------------------	------	------------------	---	---	----	---------------

10H-0010-MW 04/10-09-00	1314	H ₂ O	2	X	02	Johanson # 6A
-------------------------	------	------------------	---	---	----	---------------

Relinquished by:

Received By:

Signature

Date _____

Time

Signature _____

Date _____

Time

Samples Iced:

Yes ☒ No ☐

Preservatives (ONLY for Water Samples)

☐ Cyanide Sodium hydroxide (NaOH)☐ Volatile Organic Analysis Hydrochloric acid (HCl)☐ Nitric acid (HNO₃)

☐ Metals ☐ Pesticides/Herbicides

☒ **TPH (418.1)** Sulfuric acid (H2SO4)☒ Other (Specify) HSCT☐ Other (Specify) _____

Carrier: Grov & Howard

Shipping and Lab Notes:

Airbill No. **FLT 1606918764**

Rec'd @ 4.80

ATTACHMENT 2

**2000 MONITOR WELL
INSTALLATION RECORDS**

MONITORING WELL INSTALLATION RECORD

Philip Services Corporation

4000 Monroe Road

Farmington, New Mexico 87401

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

Borehole # MW-05
Well # METER # 89232
Page 1 of 1

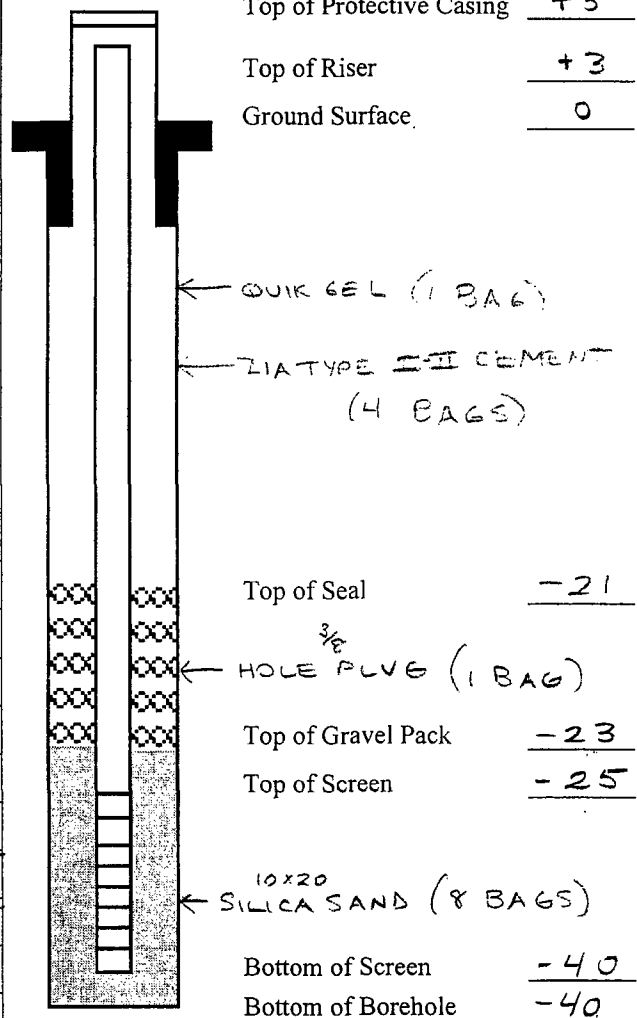
Project Name EPFS DRILLING
Project Number 62800219 Cost Code 35
Project Location T31-R9-S35-F

Elevation _____
Well Location JOHNSON FEDERAL 6-A
GWL Depth -35.19
Installed By D. PADILLA

On-Site Geologist J. WAGNON
Personnel On-Site K. PADILLA, R. LEFERRE
Contractors On-Site NONE
Client Personnel On-Site NONE

Date/Time Started 07/07/00, 0940
Date/Time Completed 07/07/00, 1210

Depths in Reference to Ground Surface				
Item	Material	Depth (feet)		
Top of Protective Casing		+3		Top of Protective Casing <u>+3</u>
Bottom of Protective Casing		0		Top of Riser <u>+3</u>
Top of Permanent Borehole Casing		0		Ground Surface <u>0</u>
Bottom of Permanent Borehole Casing		-40		
Top of Concrete		+0.04		← QUIK GEL (1 BAG)
Bottom of Concrete		0		← ZIATYPE II CEMENT (4 BAGS)
Top of Grout		0		
Bottom of Grout		-21		
Top of Well Riser		+3		
Bottom of Well Riser		-40		
Top of Well Screen		-25		
Bottom of Well Screen		-40		
Top of Peltonite Seal		-21		
Bottom of Peltonite Seal		-23		
Top of Gravel Pack		-23		
Bottom of Gravel Pack		-40		
Top of Natural Cave-In				
Bottom of Natural Cave-In				
Top of Groundwater		-35.19		
Total Depth of Borehole		-40		



Comments: _____

Geologist Signature J. Wagon

RECORD OF SUBSURFACE EXPLORATION

Philip Environmental Services Corporation

4000 Monroe Road
Farmington, New Mexico 87401
(505) 326-2262 FAX (505) 326-2388

Borehole # MW-05
Well # METER # 89232
Page 1 of 1

Project Name EPFS Drilling
Project Number 62800219 Cost Code 35
Project Location T31-R9-S35-F

Elevation _____
Borehole Location JOHNSON FEDERAL A
GWL Depth -35.19
Logged By J. Wagnon
Drilled By K. Padilla D. PADILLA
Date/Time Started 7/7/00 0940
Date/Time Completed 7/7/00 1210

Well Logged By J. Wagnon
Personnel On-Site R. Lefebvre K. PADILLA
Contractors On-Site None
Client Personnel On-Site None
Drilling Method 4 1/4 ID HAS HSA
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)	Air Monitoring Units: NDU BZ BH S	Drilling Conditions & Blow Counts	AIR
0									
0956				0-7'					
	1	5'-7"	7"	FINE TO (-) MED BROWN SAND, POORLY CONSOLIDATED. BOTTOM 5" MOIST.			5.7 ppm	7 COUNTS	
1002				7-12' AS ABOVE, ALL MOIST					
	2	10'-12"	12"				158 ppm	5 COUNTS	0.0 ppm
1008				12-17' AS ABOVE, BOTTOM 3" SANDY CLAY DRY-MOIST					
	3	15'-17"	13"				16.8 ppm	9 COUNTS	
1013				17-22' FINE TO MED BROWN SAND, POORLY CONSOLIDATED, BOTTOM 2" CLAYEY, MIDDLE 4" COARSE.					
	4	20'-22"	14"				0.0 ppm	11 COUNTS	0.0 ppm
1021				22-27' FINE TO (+) MED BROWN - GREEN-GREY SAND. ODOR, INITIAL PID = 50.3, MID 4" CSE, GRAVELS UP TO 1".					
	5	25'-27"	10"				101 ppm	14 COUNTS	0.0 ppm
1028				27-32' GREY TO BLUE FINES TO PEBBLES, STRONG ODOR, BOTTOM 2" BLUE SANDY CLAY.					
	6	30'-32"	10"				16.9 ppm	10 COUNTS	0.0 ppm
1038				32-37' WET DARK BLUE TO GREY SAND + CLAY, STRONG ODOR, PEBBLES UP TO 1".					
	7	35'-37"	7"				89.6 ppm	35 COUNTS	
1052				TD = 40' BGS					0.2 ppm

Comments:

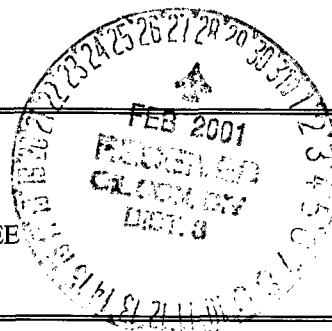
Geologist Signature

J. Wagnon

EPFS GROUNDWATER PITS

2000 ANNUAL GROUNDWATER REPORT

JOHNSTON FEDERAL #4
Meter/Line ID - 70194



SITE DETAILS

Legals - Twn: 31N Rng: 9W Sec: 33 Unit: H
NMOCD Hazard Ranking: 40 Land Type: FEE
Operator: BURLINGTON RESOURCES

PREVIOUS ACTIVITIES

Site Assessment: Aug-94 Excavation: Sep-94 (60 cy) Soil Boring: Aug-95
Monitor Well: Aug-95 Down-gradient MW's: Dec-95 PSH Removal Initiated: Sep-97

2000 ACTIVITIES

Phase Separated Hydrocarbon (PSH) Removal - PSH removal from MW-1 was not conducted during 2000 because of the small volumes of PSH observed in monitor wells MW-1 and MW-3.

SUMMARY TABLES

Groundwater level data and PSH thickness data are presented in Table 1.

SITE MAP

A site map with groundwater elevation and gradient is included as Figure 1.

GEOLOGIC LOGS AND WELL COMPLETION DIAGRAMS

There were no drilling activities conducted at this site during 2000.

DISPOSITION OF GENERATED WASTES

There were no wastes generated at this site in 2000.

ISOCONCENTRATION MAPS

An isoconcentration map was not generated for this site.

CONCLUSIONS

A total of 7.65 gallons of PSH has been removed from MW-1 to date. Approximately 0.1-foot was measured in MW-1 and 0.09-foot measured in MW-3 during 2000. Product removal was not conducted in 2000.

Based on groundwater levels collected from MW-1, MW-2, and MW-3 the groundwater flow trends to the north-northeast on this site.

EPFS provided operator with all pertinent site data generated to date. The operator has begun an investigation at the site.

EPFS GROUNDWATER PITS 2000 ANNUAL GROUNDWATER REPORT

Pertinent data from past groundwater reports include the following:

Quarterly sampling was discontinued in 1998 due to the presence of free product. A total of 7.65 gallons of PSH has been recovered from MW-1 to date. All PSH has been disposed of at the EPFS Kutz Separator in Bloomfield, New Mexico.

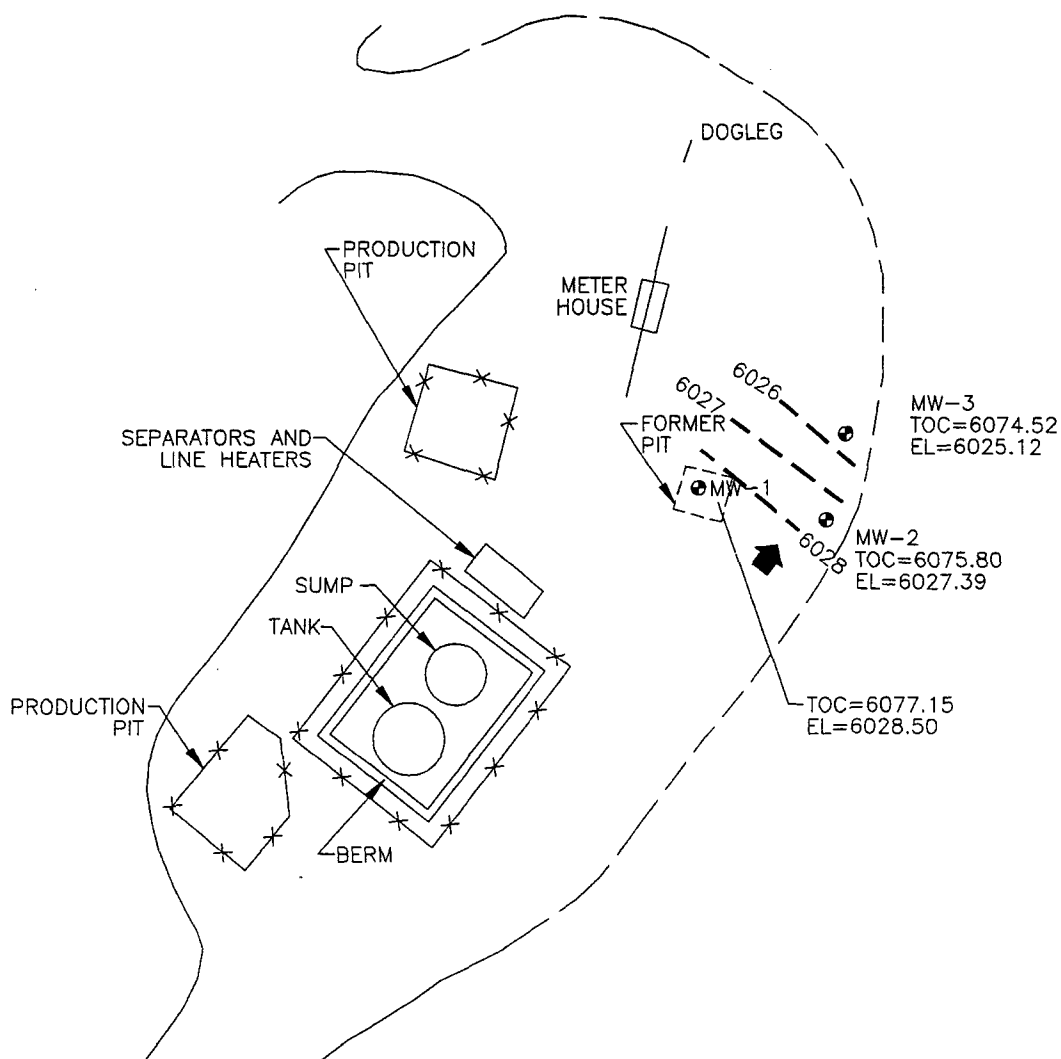
RECOMMENDATIONS

- Sample MW-2 annually.
- Continue with product removal as needed.
- When PSH is not present, sample annually until BTEX levels are below New Mexico groundwater standards, then sample quarterly for closure.
- EPFS will continue to work with the operator at this site.

Table 1

March 2001

Meter/Line #	Location/Line Name	Date	MW	Depth to Product	Depth to Water	Product Thickness	Volume Removed Gallons	Cumulative Gallons
70194	JOHNSTON FED #4	10/09/2000	1	49.62	48.72	0.1	0	7.65
70194	JOHNSTON FED #4	10/09/2000	2	0	48.41	0	0	0
70194	JOHNSTON FED #4	10/09/2000	3	49.37	49.46	0.09	0	0



LEGEND

- MW-1 APPROXIMATE MONITORING WELL LOCATION AND NUMBER
- TOC TOP OF CASING ELEVATION
- EL GROUNDWATER ELEVATION
- ➔ GROUNDWATER GRADIENT
- 25.0— GROUNDWATER POTENTIOMETRIC SURFACE



COL 62800219BP-004



TITLE:

JOHNSTON FEDERAL NO. 4

METER 70194

OCTOBER 9, 2000

DWN:	DES.:
TMM	LW
CHKD:	APPD:
LW	MN
DATE:	REV.:
1/30/01	0

PROJECT NO.: 62800219

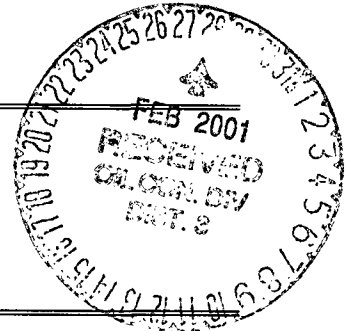
EPFS GW PITS

FIGURE 1

EPFS GROUNDWATER PITS

2000 ANNUAL GROUNDWATER REPORT

HORTON #1E
Meter/Line ID - 93388



SITE DETAILS

Legals - Twn: 31N Rng: 9W Sec: 28 Unit: H
NMOCD Hazard Ranking: 40 Land Type: FEE
Operator: AMOCO PRODUCTION COMPANY

PREVIOUS ACTIVITIES

Site Assessment: Aug-94
Monitor Well: Aug-95
Additional Monitor Wells: Oct-99

Excavation: Sep-94 (50 cy) Soil Boring: Aug-95
Quarterly Sampling Initiated: Dec-96

2000 ACTIVITIES

Quarterly Groundwater Monitoring - Quarterly groundwater monitoring of MW-1 and annual groundwater monitoring of MW-2 and MW-3 has continued through 2000.

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 showing the groundwater elevation and gradient for the last two quarters of 2000 is presented as Figure 1 and 2, respectively.

GEOLOGIC LOGS AND WELL COMPLETION DIAGRAMS

There were no drilling activities at this site in 2000.

DISPOSITION OF GENERATED WASTES

There were no wastes generated at this site in 2000.

ISOCONCENTRATION MAPS

An isoconcentration map was generated for benzene and is included as Figure 3.

CONCLUSIONS

Benzene has exceeded the NMWQCC groundwater standards since quarterly sampling was initiated in MW-1. With the groundwater gradient to the southeast, downgradient monitor wells MW-2 and MW3 show no evidence of hydrocarbon migration. This site, remotely located in rural San Juan County, exhibits moderately elevated levels of benzene and only traces of toluene, ethyl benzene, and total xylenes. Based upon sample results it appears that natural attenuation of the residual hydrocarbons remaining within the pit is occurring.

EPFS GROUNDWATER PITS

2000 ANNUAL GROUNDWATER REPORT

RECOMMENDATIONS

- Complete temporary monitor wells MW-2 and MW-3.
- Conduct semi-annual sampling at MW-1 until analytical results for the hydrocarbon constituents are near New Mexico groundwater standards, then sample quarterly for closure.
- Sample monitor wells MW-2 and MW-3 annually.
- Following OCD approval for closure, all associated monitor wells will be abandoned using OCD approved abandonment procedures.

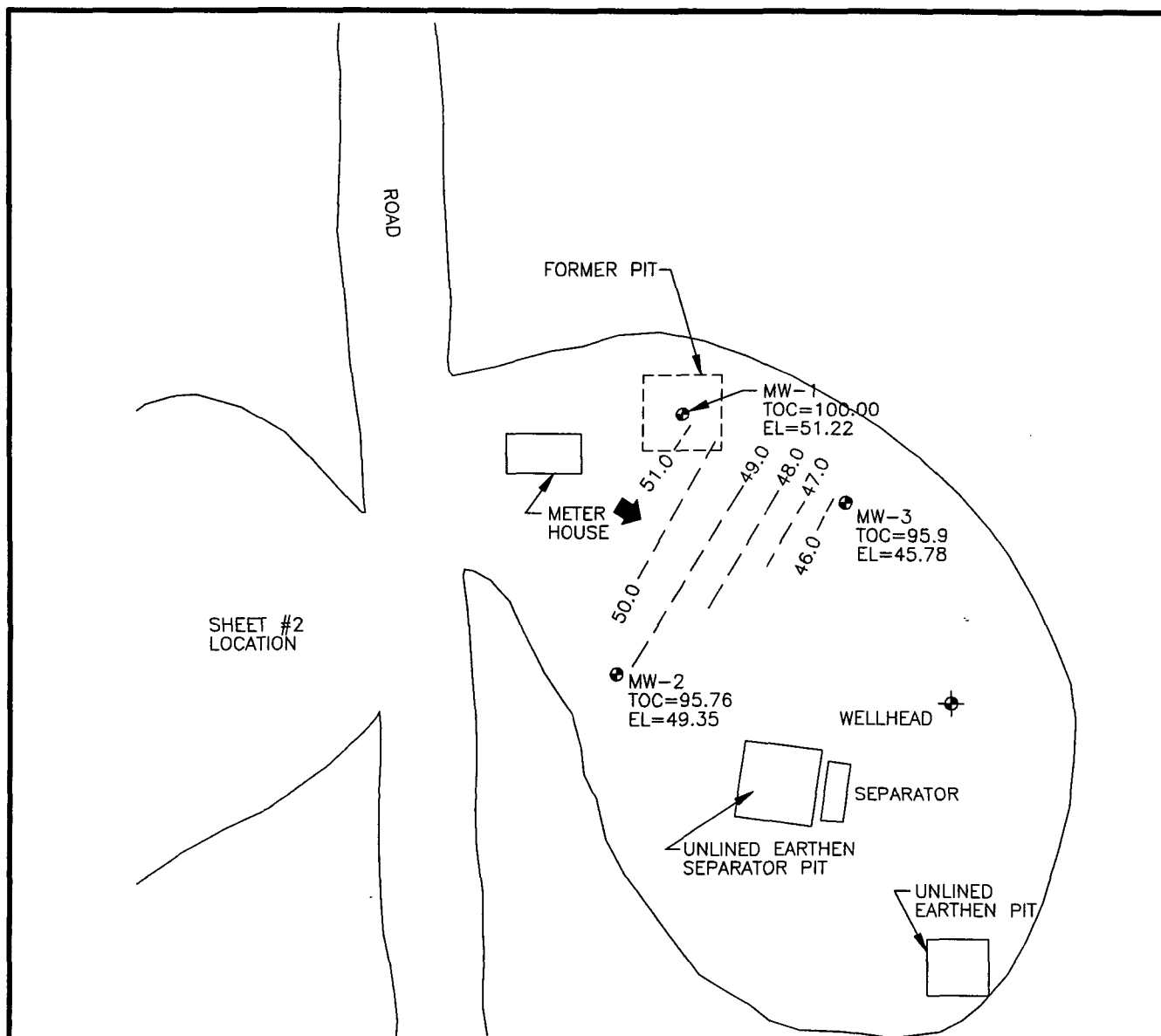
EPFS Groundwater Pits
2000 Groundwater Report

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)
HOR-0004-MW01	93388	Horton 1E	04/12/2000	1	Sample 4 - 14th Quarter	= 67	= 16	= 3.6	= 7.2	93.8
HOR-0006-MW01	93388	Horton 1E	06/09/2000	1	Sample 4 - 15th Quarter	= 110	= 37	= 1.1	= 7.4	155.5
HOR-0009-MW01	93388	Horton 1E	09/08/2000	1	Sample 4 - 16th Quarter	= 140	= 18	= 0.8	= 7.6	166.4
HOR-0012-MW01	93388	Horton 1E	12/11/2000	1	Sample 4 - 17th Quarter	= 93	= 7.2	= 0.6	= 5.3	106.1
HOR-0010-MW02	93388	Horton 1E	10/09/2000	2	Sample 1 - 2nd Annual	< 0.5	= 0.7	< 0.5	= 1.1	1.8
HOR-0010-MW03	93388	Horton 1E	10/10/2000	3	Sample 1 - 2nd Annual	< 0.5	= 1.0	< 0.5	= 2.0	3.0

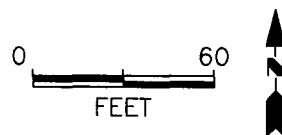
Sample 1 - Annual Sampling
Sample 4 - Quarterly Sampling



LEGEND

- MW-1 APPROXIMATE MONITORING WELL LOCATION AND NUMBER
- TOC TOP OF CASING ELEVATION
- EL GROUNDWATER ELEVATION
- 58 — GROUNDWATER POTENTIOMETRIC SURFACE
- ➔ GROUNDWATER GRADIENT

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



COL 628\00219C-002

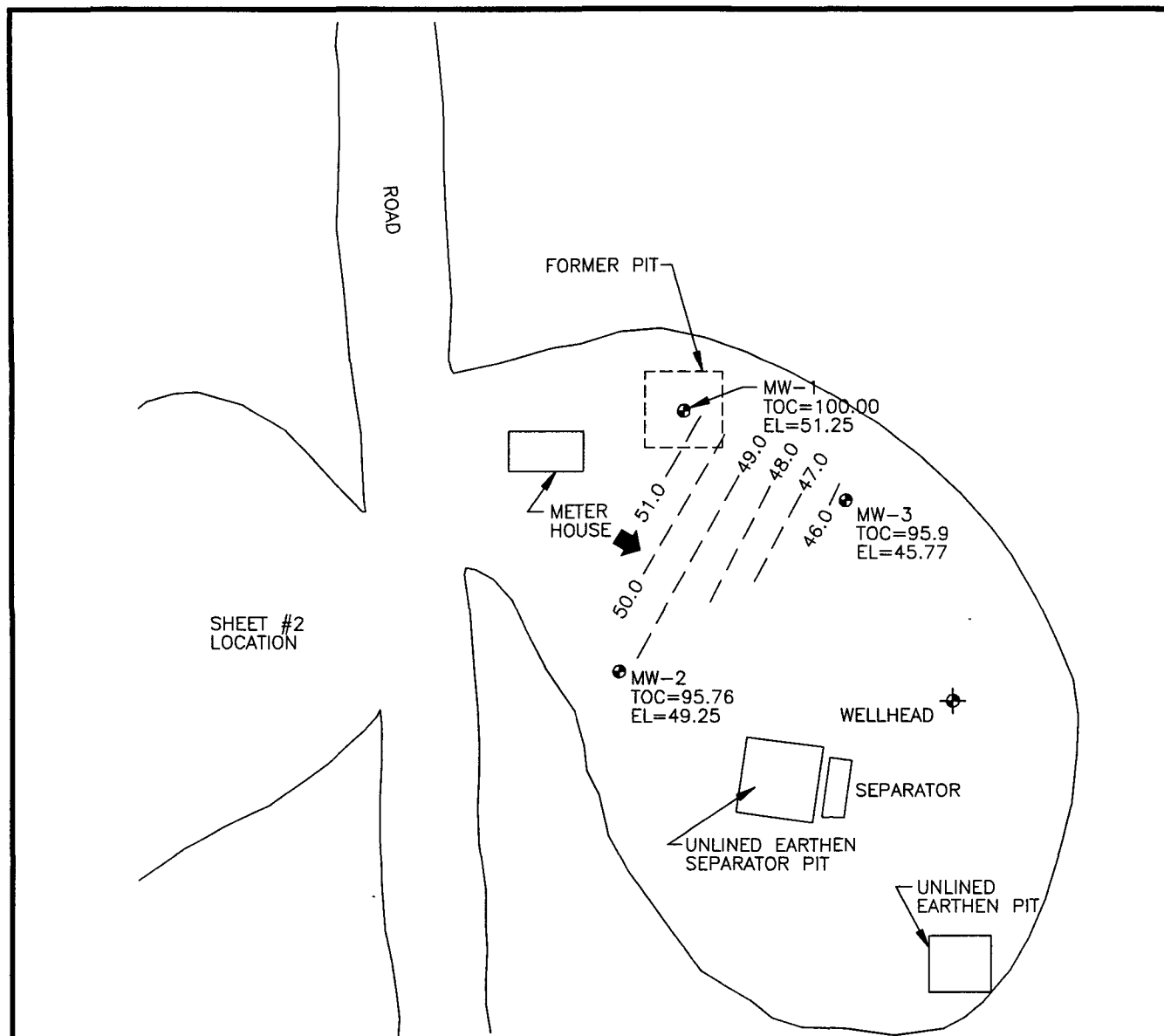


TITLE:
HORTON #1E
METER 93388
OCTOBER 9, 2000

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

PROJECT NO.: 62800219
EPFS GW PITS

FIGURE 1



LEGEND

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

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

0 60
FEET



COL 828\00219C-003

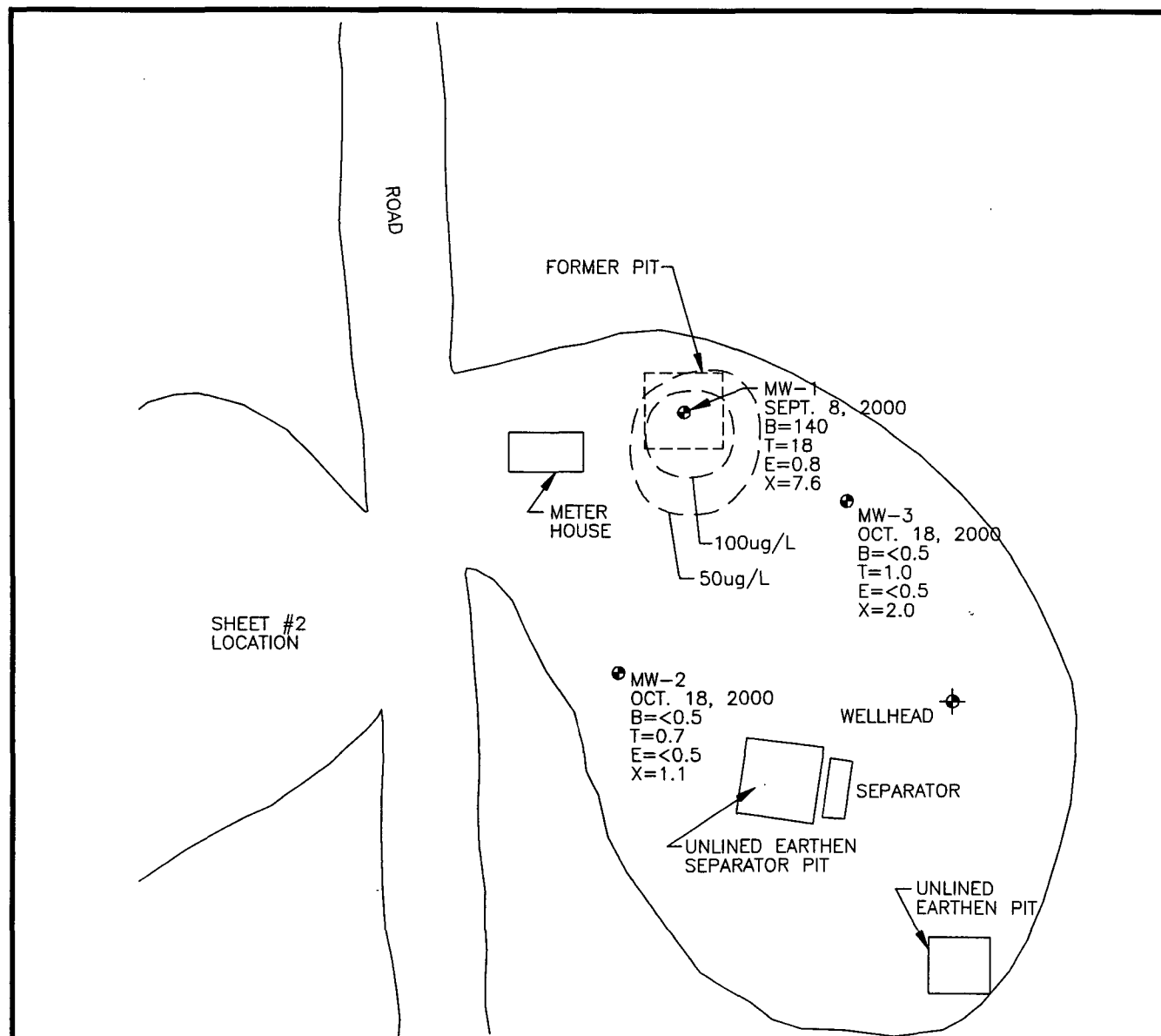


TITLE:
HORTON #1E
METER 93388
DECEMBER 11, 2000

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

PROJECT NO.: 62800018
EPFS GW PITS

FIGURE 2



LEGEND

● MW-1 APPROXIMATE MONITORING WELL LOCATION AND NUMBER

B BENZENE (ug\L)
T TOLUENE (ug\L)
E ETHYL BENZENE (ug\L)
X XYLENE (ug\L)

ug\L MICROGRAMS PER LITER

58 GROUNDWATER POTENTIOMETRIC SURFACE

0 60
FEET



COL. 828\00219C-004



TITLE:
HORTON #1E - METER 93388
OCT. 9, 2000 ISOCONCENTRATION
MAP - BENZENE

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

PROJECT NO.: 62800018
EPFS GW PITS

FIGURE 3

ATTACHMENT 1

2000 GROUNDWATER ANALYTICAL

Well Number MW-01Serial No. WDPD-☐ Develop
☒ Purging

WELL DEVELOPMENT AND PURGING ATA

Page 1 of 1Project Name EPFS QUARTERLY SAMPLINGProject Manager ROBERT THOMPSONProject No. 62800107Client Company EL PASO FIELD SERVICESPhase/Task No. 0301Site Name HORTON #1E (93388)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) 65.48' TORInitial Depth to Water (feet) 48.77' TORHeight of Water Column in Well (feet) 16.71'Diameter (inches): Well 4" Gravel Pack

Item	Water Volume in Well Cubic Feet	Gallons	Gallons to be Removed
Well Casing	<u>16.71</u>	<u>10.91 x 3</u>	
Gravel Pack			
Drilling Fluids			
Total			<u>32.73</u>

Methods of Development

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

Instruments

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

Serial No. (if applicable)

HYDACHYDACHYDAC

Water Disposal

KUTZ SEPARATOR

Water Removal Data

Date	Time	Development Method Pump Baller	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons)		Temperature (°C)	pH	Conductivity (mhos/cm)	Dissolved Oxygen (mg/l)	Comments
						Increment	Cumulative					
4/12/00	1240	X				5	5	18.5	7.21	2180		CLOUDY
4/12/00	1253	X				5	10	18.2	6.97	2240		LIGHT BROWN
4/12/00	1303	X				5	15	18.0	7.09	2100		LIGHT BROWN
4/12/00	1312	X				5	20	16.6	7.12	2120		CLOUDY
4/12/00	1326	X				5	25	17.5	7.18	2370		CLOUDY
4/12/00	1333	X				5	30	18.2	7.13	2410		CLOUDY
4/12/00	1343	X				5	35	17.7	7.25	2160		CLOUDY

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

Comments SAMPLED AT 1355. COC # C2516Developer's Signature(s) Robert Thompson

Developer's Name

Date 4/12/00

Reviewer

Date



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

Pinnacle Lab ID number **004054**
April 24, 2000

PHILIP ENVIRONMENTAL
4000 MONROE ROAD
FARMINGTON, NM 87401

Project Name EPFS QUARTERLY SAMPLING
Project Number 62800107

Attention: Robert Thompson/LeAudra Stanley

On 04/14/00 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.

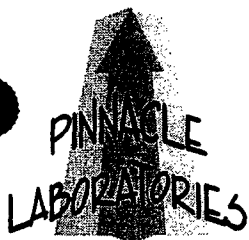
If you have any questions or comments, please do not hesitate to contact us at (505)344-3777.

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	: 004054
PROJECT #	: 62800107	DATE RECEIVED	: 04/14/00
PROJECT NAME	: EPFS QUARTERLY SAMPLING	REPORT DATE	: 04/24/00
PIN			DATE
ID. #	CLIENT DESCRIPTION	MATRIX	COLLECTED
01	HOR-0004-MW01	AQUEOUS	04/12/00
02	TRIP BLANK	AQUEOUS	04/12/00



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

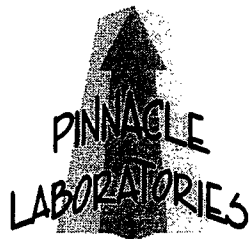
PINNACLE I.D.: 004054

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
01	HOR-0004-MW01	AQUEOUS	04/12/00	NA	04/15/00	1
02	TRIP BLANK	AQUEOUS	04/12/00	NA	04/15/00	1

PARAMETER	DET. LIMIT	UNITS	HOR-0004-MW01	TRIP BLANK
BENZENE	0.5	UG/L	67	< 0.5
TOLUENE	0.5	UG/L	16	< 0.5
o-XYLENES	0.5	UG/L	3.6	< 0.5
m-XYLENES	0.5	UG/L	7.2	< 0.5

SURROGATE:
BROMOFLUOROBENZENE (%) 87 104
SURROGATE LIMITS (80 - 120)

CHEMIST NOTES:
N/A



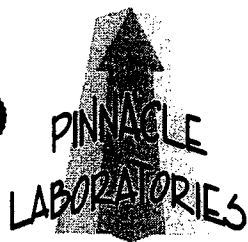
2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 004054
BLANK I. D.	: 041500	DATE EXTRACTED	: N/A
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 04/15/00
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:
DEFLUOROBENZENE (%) 92
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 # : 041500
CLIENT : PHILIP ENVIRONMENTAL
PROJECT # : 62800107
PROJECT NAME : EPFS QUARTERLY SAMPLING

PINNACLE I.D. : 004054
DATE EXTRACTED : N/A
DATE ANALYZED : 04/15/00
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	21.0	105	20.7	104	1	(80 - 120)	20
TOLUENE	<0.5	20.0	23.6	118	22.6	113	4	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	22.9	115	22.2	111	3	(80 - 120)	20
TOTAL XYLENES	<0.5	60.0	69.2	115	66.4	111	4	(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

COC Serial No. C 2516

150706
10-
20-

Received By:

Samples Iced: ☒ Yes ☐ No		Carrier: <u>GREY HOUND LINES</u>	Airbill No. <u>GLI1606650793</u>
Preservatives (ONLY for Water Samples)		Shipping and Lab Notes:	
☐ Cyanide Sodium hydroxide (NaOH)		<u>on ice @ 4.8°C</u>	
☒ Volatile Organic Analysis Hydrochloric acid (HCl)			
☐ Metals Nitric acid (HNO ₃)			
☐ TPH (418.1) Sulfuric acid (H ₂ SO ₄)			
☐ Other (Specify) _____			
☐ Other (Specify) _____			

Well Number ML001

☐ Development
☒ Purging

WELL DEVELOPMENT AND PURGING

Serial No. WDPD-

Page 1 of 1

Project Name EL PASO QUARTERLY SAMPLING

Project Manager ROBERT THOMPSON

Project No. 62800107

Client Company EL PASO FIELD SERVICES

Phase Task No. 0301

Site Name HORTON # 1 E #93388

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) 65.53 TOR
Initial Depth to Water (feet) 48.75 TOR
Height of Water Column in Well (feet) 16.78
Diameter (inches): Well 4 Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	<u>14.78</u>	<u>1095.53</u>	<u>32.9</u>
Gravel Pack			
Drilling Fluids			
Total			<u>32.9</u>

Methods of Development

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

Instruments

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

Serial No. (if applicable)

HYDAC

HYDAC

HYDAC

Water Disposal

KUTZ SEPARATORS Bloomfield, NM

Water Removal Data

Date	Time	Development Method	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons)		Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
						Incremental	Cumulative					
6/9/00	1343	X				6		21.7	6.83	2500		Brown, cloudy
"	1357	X				6		20.5	6.81	2380		"
"	1409	X				6		20.9	6.67	2260		"
"	1423	X				6		19.9	6.99	2230		"
"	1426	X				6		20.2	6.99	2310		"
"	1440	X				3		20.2	6.86	2240		"

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

Comments Sampled for BTEX at 1452.

Developer's Signature(s) Jean-Louis

Date 6/9/00

Reviewer RT Date 6/19/00

Chain of Custody, Record

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

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

[illegible]PE-176 4/95



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

Pinnacle Lab ID number **006059**
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.

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	: 006059
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	HOR-0006-MW01	AQUEOUS	06/09/00
02	TRIP BLANK	AQUEOUS	06/09/00



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.: 006059

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
01	HOR-0006-MW01	AQUEOUS	06/09/00	NA	06/15/00	1
02	TRIP BLANK	AQUEOUS	06/09/00	NA	06/16/00	1

PARAMETER	DET. LIMIT	UNITS	HOR-0006-MW01	TRIP BLANK
BENZENE	0.5	UG/L	110	< 0.5
TOLUENE	0.5	UG/L	37	< 0.5
ETHYLBENZENE	0.5	UG/L	1.1	< 0.5
M-XYLENES	0.5	UG/L	7.4	< 0.5

SURROGATE:
BROMOFLUOROBENZENE (%) 112 95
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.	: 006059
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:

10-FLUOROBENZENE (%)

107

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.	: 006059
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:

CHLOROFUORO BENZENE (%) 113

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 # : 006058-05
CLIENT : PHILIP ENVIRONMENTAL
PROJECT # : 62800107
PROJECT NAME : EPFS QUARTERLY SAMPLING

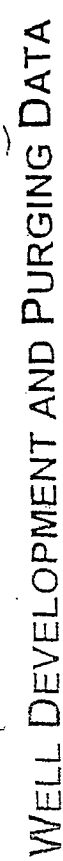
PINNACLE I.D. : 006059
DATE EXTRACTED : NA
DATE ANALYZED : 06/15/00
SAMPLE MATRIX : AQUEOUS
UNITS : UG/L

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

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

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

Well Number MW-013

Serial No. WDPD-

Project Name EPFS Quarterly Sampling
 Client Company EPFS
 Site Name Horton # 1E (93388)
 Project Manager R. Thompson
 Project No. 628 00107
 Phase/Task No. 0301
 Site Address Rural San Yuma Co.

Development Criteria

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

Water Volume Calculation

Initial Depth of Well (feet) 65.46
Initial Depth to Water (feet) 48.81
Height of Water Column in Well (feet) 16.65
Diameter (inches): Well 4" Gravel Pack

Instruments	Serial No. (If applicable)
☒ pH Meter	<u>Hydac</u>
☐ DO Monitor	<u></u>
☒ Conductivity Meter	<u>Hydac</u>
☒ Temperature Meter	<u>Hydac</u>
☐ Other	<u></u>

Water Disposal
KUTZ Separator Bloomfield N.M.

Water Removal Data

[illegible]

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

Comments Sampled for BTEX 1/15 pmh

Developer's Signature(s) *Ch. A. M.*

Date 09-08-00

Reviewer RT Date 9/19/00

Chain of Custody Record

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

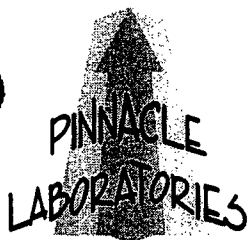
COC Serial No. C 2658

Relinquished by:

Received By:

Received By:		Date	Time	Signature	Date	Time
	<i>Chris A. May</i>	09-11-06	1:00			

Samples Iced: ☒ Yes ☐ No		Carrier: <u>600101113</u>	Airbill No. <u>GT1806918709</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) <u>WGL</u>			
☐ Other (Specify) _____			



SEP 15 2000

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

Pinnacle Lab ID number **009065**
September 13, 2000

PHILIP ENVIRONMENTAL
4000 MONROE ROAD
FARMINGTON, NM 87401

EL PASO FIELD SERVICES
614 RIELY STREET
FARMINGTON, NM 87401

Project Name EPFS QTRLY SAMP.
Project Number 62800107

Attention: ROBERT THOMPSON/LEAUDRA STANLEY

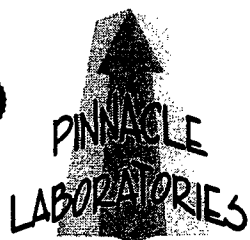
On 09/12/00 Pinnacle Laboratories, Inc., (ADHS License No. AZ0592 pending), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

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	: 009065
PROJECT #	: 62800107	DATE RECEIVED	: 09/12/00
PROJECT NAME	: EPFS QTRLY SAMP.	REPORT DATE	: 09/13/00
PIN			DATE
ID. #	CLIENT DESCRIPTION	MATRIX	COLLECTED
01	HOR-0009-MW-01	AQUEOUS	09/08/00



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 QTRLY SAMP.

PINNACLE I.D.: 009065

SAMPLE		DATE		DATE	DATE	DIL.
ID. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	HOR-0009-MW-01	AQUEOUS	09/08/00	NA	09/12/00	1
PARAMETER		DET. LIMIT	UNITS	HOR-0009-MW-01		
BENZENE		0.5	UG/L	140		
TOLUENE		0.5	UG/L	18		
ETHYLBENZENE		0.5	UG/L	0.8		
XYLENES		0.5	UG/L	7.6		

SURROGATE:

BROMOFLUOROBENZENE (%)

108

SURROGATE LIMITS (80 - 120)

CHEMIST NOTES:

N/A



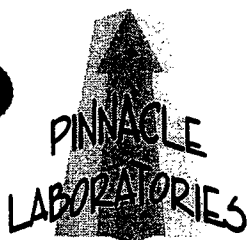
2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 009065
BLANK I. D.	: 091200	DATE EXTRACTED	: NA
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 09/12/00
PROJECT #	: 62800107	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: EPFS QTRLY SAMP.		

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)
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 # : 009065-01
CLIENT : PHILIP ENVIRONMENTAL
PROJECT # : 62800107
PROJECT NAME : EPFS QTRLY SAMP.

PINNACLE I.D. : 009065
DATE EXTRACTED : NA
DATE ANALYZED : 09/12/00
SAMPLE MATRIX : AQUEOUS
UNITS : UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
BENZENE	140	20.0	159	95	156	80	2	(80 - 120)	20
TOLUENE	18	20.0	40.5	113	39.6	108	2	(80 - 120)	20
ETHYLBENZENE	0.8	20.0	23.3	113	23.2	112	0	(80 - 120)	20
TOTAL XYLENES	7.6	60.0	74.8	112	75.0	112	0	(80 - 120)	20

CHEMIST NOTES:
N/A

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

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

Chain of Custody Record

4000 Monroe Road
Farmington, NM 87401

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

COC Serial No. C 2658

ENVIRONMENTAL

Relinquished by:		Received By:	
Signature	Date	Signature	Date
<i>Chris A. May</i>	09-11-00	<i>Gianene Jannu</i>	9/12/00

Samples Iced: ☒ Yes ☐ No		Carrier: Greyhound Bus Lines	Airbill No. GT 160 691 8709
Preservatives (ONLY for Water Samples)		Shipping and Lab Notes:	
☐ Cyanide Sodium hydroxide (NaOH)		Rec'd @ 40°C	
☐ Volatile Organic Analysis Hydrochloric acid (HCl)			
☐ Metals Nitric acid (HNO ₃)			
☐ TPH (418.1) Sulfuric acid (H ₂ SO ₄)			
☒ Other (Specify) <u>H₂SO₄</u>			
☐ Other (Specify) _____			

Project Name EpFS quarterly Sampling
 Client Company EpFS
 Site Name Horton #1E (93388)
 Project Manager R Thompson
 Project No. 62800102
 Phase/Task No. 0301
 Site Address Barrel 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) 63.79
 Initial Depth to Water (feet) 46.41
 Height of Water Column in Well (feet) 17.38
 Diameter (inches): Well 2" Gravel Pack

Methods of Development

Pump

- ☐ Centrifugal
- ☐ Submersible
- ☐ Peristaltic
- ☐ Other _____

Boiler

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

Instruments	Serial No. (If applicable)
☒ pH Meter	<u>Hydac</u>
☐ DO Monitor	
☒ Conductivity Meter	<u>Hydac</u>
☒ Temperature Meter	<u>Hydac</u>
☐ Other	

Water Disposal
K-72 Separator Blomfield N.M.

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 (mmhos/cm)	Dissolved Oxygen (mg/l)	Comments
		Pump	Roller				Increment	Cumulative	Increment	Cumulative					
10-09-00	1514		X				1.75	1.75			15.7	5.86	2360		Cigar odor
	1521		X				1.75	3.5			14.3	5.26	2180		"
	1527		X				1.75	5.25			13.9	5.30	2150		"
	1532		X				1.75	7			13.8	5.33	2140		Roller Cigar No odor
	1539		X				1.75	8.75			13.6	5.33	2150		No Change

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

Comments Sampled for BTEX 1544

Developer's Signature(s) Chris A May

Date 10-09-00

Reviewer RT Date 10/17/00

0/17/00

WELL DEVELOPMENT AND PURGING DATA

Serial No. WDPD-

Page 1 of 1

Project Name EpFS quarterly Sampling Project Manager R Thompson Project No. 62800107

Client Company: ES Phase/Task No. 0301

Site Name Horton #1E (93388)

Development Criteria

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

Water Volume Calculation

Initial Depth of Well (feet) 58.76
Initial Depth to Water (feet) 50.12
Height of Water Column in Well (feet) 8.64
Diameter (inches): Well 2" Gravel Pack

Methods of Development

Pump

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

Baller

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

Instruments	Serial No. (If applicable)
☒ pH Meter	<u>Hydax</u>
☐ DO Monitor	
☒ Conductivity Meter	<u>Hydax</u>
☒ Temperature Meter	<u>Hydax</u>
☐ Other	

Water Disposal
K-12508 For Homfield N.M.

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 (mmhos/cm)	Dissolved Oxygen (mg/l)	Comments
		Pump	Boiler				Increment	Cumulative	Increment	Cumulative					
6-10-88	1237		X				1	1			14.7	6.80	2930		Brown muddy
	1241		X				1	2			14.5	6.17	2440		" "
	1245		X				1	3			14.4	5.91	2350		" "
	1249		X				1	4			14.4	5.84	2400		" "
	1253		X				1	5			14.4	5.79	2440		no change

Circle the date and time that the development/idea are met.

Comments Sampled for BTEX ~~Sample~~ 12517

Developer's Signature(s) Chris A May Date 10-10-00
Reviewer RT Date 10/17/00

Chain of Custody Record

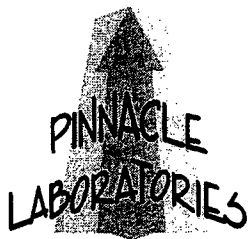
(505) 326-2262 Phone
(505) 326-2388 FAX

[illegible]

Received By:

Signature	Date	Time	Signature	Date	Time
<i>Alan F. M...</i>	10/10/00	11:55			

Samples Iced: ☒ Yes ☐ No		Carrier: <u> </u>	Airbill No. <u>6527106918764</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) <u>H₂Cl₂</u>			
☐ Other (Specify) _____			



OCT 20 2000

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

Pinnacle Lab ID number 010033
October 18, 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

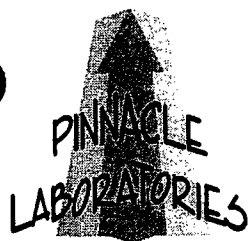
On 10/11/00 Pinnacle Laboratories, Inc., (ADHS License No. AZ0592 pending), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

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	: 010033
PROJECT #	: 62800107	DATE RECEIVED	: 10/11/00
PROJECT NAME	: EPFS QUARTERLY SAMPLING	REPORT DATE	: 10/18/00
PIN			DATE
ID. #	CLIENT DESCRIPTION	MATRIX	COLLECTED
01	HOR-0010-MW 02	AQUEOUS	10/09/00
02	HOR-0010-MW 03	AQUEOUS	10/10/00



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.: 010033

SAMPLE			DATE	DATE	DATE	DIL.
ID. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	HOR-0010-MW 02	AQUEOUS	10/09/00	NA	10/12/00	1
02	HOR-0010-MW 03	AQUEOUS	10/10/00	NA	10/12/00	1

PARAMETER	DET. LIMIT	UNITS	HOR-0010-MW 02	HOR-0010-MW 03
BENZENE	0.5	UG/L	< 0.5	< 0.5
TOLUENE	0.5	UG/L	0.7	1.0
BENZENE	0.5	UG/L	< 0.5	< 0.5
TOTAL XYLENES	0.5	UG/L	1.1	2.0

SURROGATE:

BROMOFLUOROBENZENE (%)

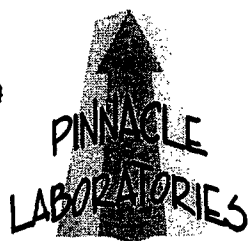
105

111

SURROGATE LIMITS (80 - 120)

CHEMIST NOTES:

N/A



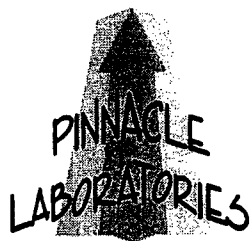
2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 010033
BLANK I. D.	: 101200	DATE EXTRACTED	: NA
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 10/12/00
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 (%) 105
SURROGATE LIMITS: (80 - 120)
CHEMIST NOTES:
N/A



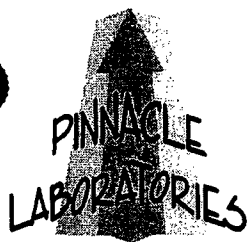
2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 010033
BLANK I. D.	: 101300	DATE EXTRACTED	: NA
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 10/13/00
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)
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 # : 010035-01
CLIENT : PHILIP ENVIRONMENTAL
PROJECT # : 62800107
PROJECT NAME : EPFS QUARTERLY SAMPLING

PINNACLE I.D. : 010033
DATE EXTRACTED : NA
DATE ANALYZED : 10/13/00
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	17.4	87	18.6	93	7	(80 - 120)	20
TOLUENE	<0.5	20.0	20.4	102	21.3	107	4	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	21.6	108	22.7	114	5	(80 - 120)	20
TOTAL XYLENES	<0.5	60.0	65.1	109	68.3	114	5	(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: R Thompson

Project No. 62800107

Client Company El Paso Field Services

Phase.Task No. 0307

Site Name Horton #1E 93388

Site Address Rural Sen Taun Co.

Development Criteria

☒ 3 to 5 Casing Volumes of Water Removal

☒ Stabilization of Indicator Parameters

☐ Other[illegible][illegible]

Initial Deposit to Water Fund

-Height of Water column in Well (feet) 16.71

Diameter (inches): Well 4" 6000 ft Pack

Methods of Development

Pump · Bailer

☐ Centrifugal ☒ Bottom Valve

☐ Submersible ☐ Double Check Valve

☐ Peristaltic ☐ Stainless-steel Kemmerer

□-Other

Instruments

10

Philip Meli

☐ DO Monitor

—

☒ Conducti

~~Temperature~~

五三二

☐ Other _____

Water Disposal

KWTZ Separator Bloomfield N.M.

Water Removal Data

Date	Time	Development Method		Removal Rate [gal/min]	Intake Depth (feet)	Ending Water Depth (feet)	Water Level (Feet)		Freeboard (Feet)	Temperature (°C)	pH	Conductivity [microhm/cm]	Dissolved Oxygen [mg/L]	Comments
		Pump	Boiler				Boiler	Ground						
	1439		X				6.75	6.75		12.5	6.36	3050		Clear water
	1449		X				6.75	6.95		12.0	5.85	3040		"
	1459		X				6.75	20.25		12.3	5.95	3040		"
	1508		X				6.75	27		11.5	5.83	2980		"
	1517		X				6.75	33.75		12.0	5.76	3000		No Change

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

Comments Sampled for BTex 1535

Developer's Signature(s) Robert A. May

00-11-00

Reviewer RT Date 12/18/00

Chain of Custody Record

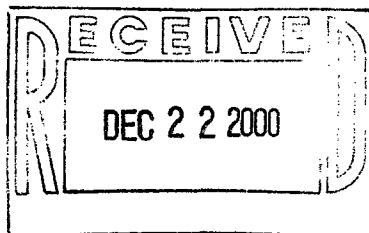
(505) 326-2262 Phone
(505) 326-2388 FAX

COC Serial No. C 2814

Relinquished by:		Received By:	
Signature	Date	Signature	Time
Chris A. Maag	12-13-00		11:30

Samples Iced: ☒ Yes ☐ No		Carrier: <i>Greyhound</i>	Airbill No. <i>GLT 1806919974</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>H₂SO₄</i> ☐ Other (Specify) _____			

PINNACLE
LABORATORIES



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

Pinnacle Lab ID number **012058**
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.

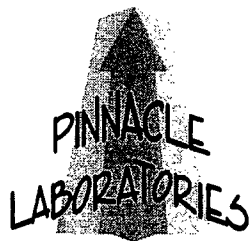
If you have any questions or comments, please do not hesitate to contact us at (505)344-3777.

A handwritten signature in cursive script, 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	: 012058
PROJECT #	: 62800107	DATE RECEIVED	: 12/14/00
PROJECT NAME	: EPFS QUARTERLY SAMPLING	REPORT DATE	: 12/19/00
PINNACLE			DATE
ID #	CLIENT DESCRIPTION	MATRIX	COLLECTED
012058 - 01	HOR-0012-MW 01	AQUEOUS	12/11/00



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.: 012058

AMPLE			DATE	DATE	DATE	DIL.
S. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
1	HOR-0012-MW 01	AQUEOUS	12/11/00	NA	12/15/00	1
PARAMETER	DET. LIMIT		UNITS	HOR-0012-MW 01		
BENZENE	0.5		UG/L	93		
TOLUENE	0.5		UG/L	7.2		
ETHYLBENZENE	0.5		UG/L	0.6		
XYLENES	0.5		UG/L	5.3		

SURROGATE:
BROMOFLUOROBENZENE (%) 101
SURROGATE 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 RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 012058
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)
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 # : 012057-01
CLIENT : PHILIP ENVIRONMENTAL
PROJECT # : 62800107
PROJECT NAME : EPFS QUARTERLY SAMPLING

PINNACLE I.D. : 012058
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
TOTAL XYLENES	<0.5	60.0	60.6	101	61.1	102	1	(80 - 120)	20

CHEMIST NOTES:
N/A

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

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

Chain of Custody record

4000 Monroe Road
Farmington, NM 87401

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

COC Serial No. C 2814

012058

Project Name		Project Number		Samplers	Laboratory	Name	Location	Sample Number (and depth)	Date	Time	Matrix	Total Number of Bottles	Type of Analysis and Bottle	Comments	
EPTS Quarterly Sampling		62800107 Phase Task 0301		C. Maez		DINNACLE	ALBQ NM	HOR-0012-MW 01	12-11-00	15:35	H ₂ O	2	X	01 LAB TO # #01907 BTGX 8021	Motion #1E (93388)

Relinquished by:

Received By:

Signature	Date	Time	Signature	Date	Time
Chris A. Mearns	12-13-00	11 30	Juanme	12/14/00	0915

Samples Iced:

Preservatives (ONLY for Water Samples)

☐ Cyanide Sodium hydroxide (NaOH)

☐ Volatile Organic Analysis Hydrochloric acid (HCl)☐ Nitric acid (HNO₃)☐ Metals nitric acid (HNO₃)
☐ Sulfuric acid (H₂SO₄)

☐ TPH (418.1) SULFURIC ACID (H₂SO₄)

☒ Other (Specify) ASCL-2☐ Other (Specify) _____

Carrier: Greyhound

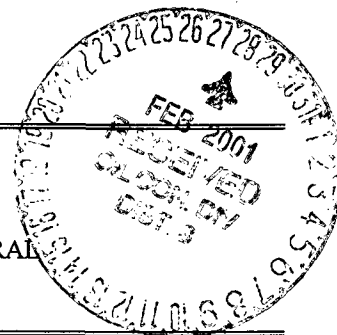
Shipping and Lab Notes:

Rec'd @ 4⁰⁰

EPFS GROUNDWATER PITS

2000 ANNUAL GROUNDWATER REPORT

JAMES F BELL # 1E
Meter/Line ID - 94715



SITE DETAILS

Legals - Twn: 30N Rng: 13W Sec: 10 Unit: P
NMOCD Hazard Ranking: 40 Land Type: FEDERAL
Operator: AMOCO PRODUCTION COMPANY

PREVIOUS ACTIVITIES

Site Assessment: Mar-94 Excavation: Apr-94 (0 cy) Soil Boring: Oct-95
Monitor Well: Oct-95 Down-gradient MW's: Nov-95 PSH Removal Initiated: Jul-97
Additional Monitor Wells: June-99

2000 ACTIVITIES

Phase Separated Hydrocarbon (PSH) Removal - PSH removal from MW-1 continued through 2000 and product thickness was monitored in MW-2, MW-3, and MW-4.

Groundwater Monitoring - Annual samples were obtained from MW-2 and MW-4 in January 2000.

SUMMARY TABLES

Groundwater levels and PSH recovery data are presented in Table 1. Groundwater analytical data are presented in Table 2. Copies of the laboratory data sheets and the associated quality assurance/quality control data are presented as Attachment 1.

SITE MAP

A site map is included as Figure 1. Groundwater gradient maps were not generated due to the presence of product and product skimmer.

GEOLOGIC LOGS AND WELL COMPLETION DIAGRAMS

There were no drilling activities at this site during 2000.

DISPOSITION OF GENERATED WASTES

The phase-separated hydrocarbons removed from MW-1 were disposed of at the EPFS Kutz Separator in Bloomfield, New Mexico.

ISOCONCENTRATION MAPS

With the presence of phase separated hydrocarbons at this site, isoconcentration maps were not generated.

CONCLUSIONS

A total of 431.14 gallons of PSH have been removed from MW-1 to date with approximately 45 gallons of the cumulative total removed in 2000. During 1999 approximately 80 gallons of PSH was removed from MW-1, indicating a reduction of almost half the volume of product recovered the year before. Laboratory analyses of groundwater samples from MW-2 indicate benzene levels

EPFS GROUNDWATER PITS 2000 ANNUAL GROUNDWATER REPORT

above the NMWQCC groundwater standards and no detectable levels of BTEX in the groundwater from MW-4.

Pertinent data from past groundwater reports include the following:

The northeastern edge of the site was drilled and two borings were drilled to a total depth of over 30 feet. Both of the borings resulted in dry holes, which confirms information collected in the past that assumes the aquifer is a very localized perched zone. Based on groundwater levels collected from the four monitoring wells, the groundwater flow trends to the south and the west on this site.

RECOMMENDATIONS

- Continue product removal at MW-1.
- Collect water samples annually until BTEX levels are below New Mexico groundwater standards, then sample quarterly for closure.
- Collect static water level data quarterly.
- Following OCD approval for closure, all monitor wells will be abandoned using OCD approved abandonment procedures.

Table 1

March 2001

Meter/Line #	Location/Line Name	Date	MW	Depth to Product	Depth to Water	Product Thickness	Volume Removed Gallons	Cumulative Gallons
94715	J.F. BELL #1 E	05/19/2000	1	27.15	29.16	2.01	0	386.14
94715	J.F. BELL #1 E	06/08/2000	1	27.15	29.34	2.19	45	431.14
94715	J.F. BELL #1 E	01/17/2001	1	27.96	28.19	0.23	0	431.14
94715	J.F. BELL #1 E	01/26/2000	2	25.835	25.834	0.005	0	0
94715	J.F. BELL #1 E	02/14/2000	2	25.08	25.09	0.01	0	0
94715	J.F. BELL #1 E	10/29/2000	2	NA	26.37	0	0	0
94715	J.F. BELL #1 E	01/17/2001	2	NA	26.52	0	0	0
94715	J.F. BELL #1 E	01/26/2000	3	26.97	28.41	1.44	0	0
94715	J.F. BELL #1 E	02/14/2000	3	27.06	28.59	1.53	0	0
94715	J.F. BELL #1 E	10/29/2000	3	27.49	29.04	1.55	0	0
94715	J.F. BELL #1 E	01/17/2001	3	27.66	29.15	1.49	0	0
94715	J.F. BELL #1 E	01/26/2000	4	26.03	26.035	0.005	0	0
94715	J.F. BELL #1 E	02/14/2000	4	26.18	26.18	<0.01	0	0
94715	J.F. BELL #1 E	10/29/2000	4	NA	26.55	0	0	0
94715	J.F. BELL #1 E	01/17/2001	4	NA	26.7	0	0	0

EPFS Groundwater Pits
2000 Groundwater Report

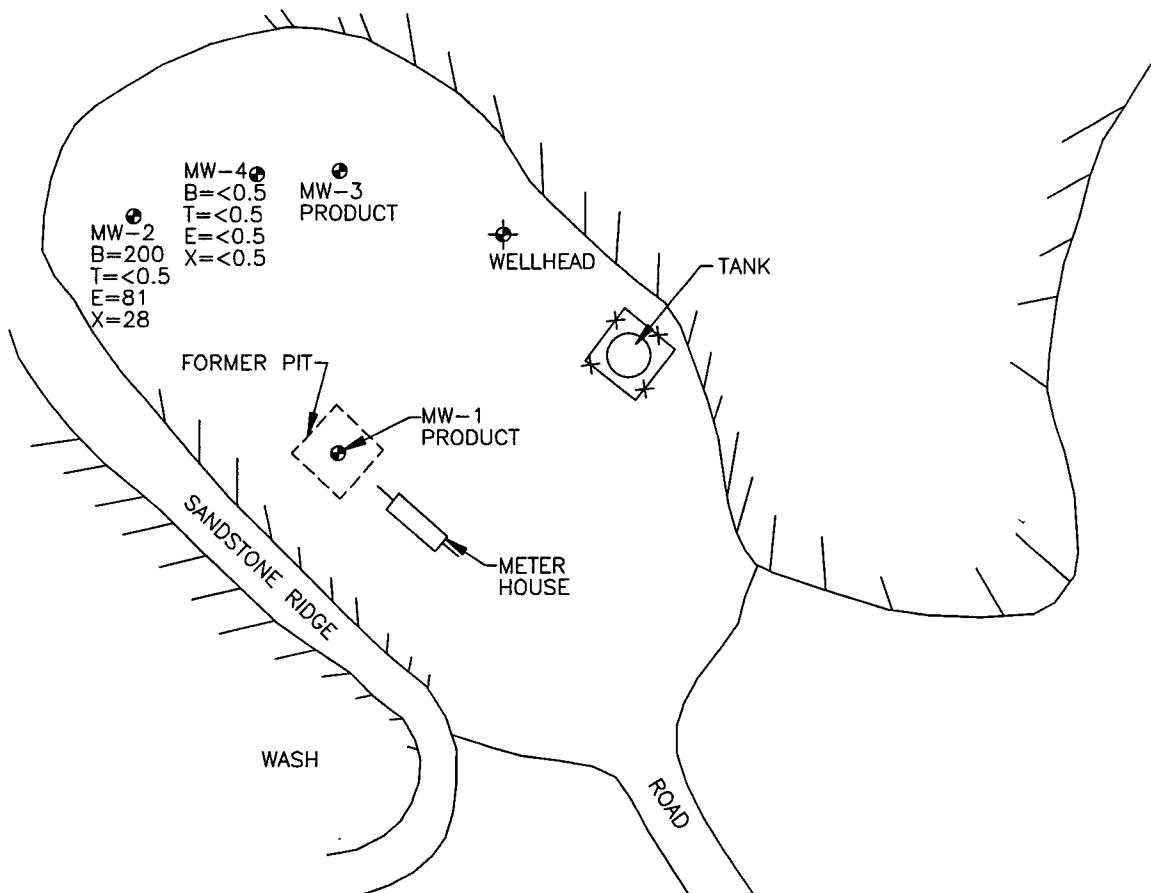
Table 2

March 2001

Sample #	Meter / Line #	Site Name	Sample Date	MW #	Project	Benzene (PPB)	Toluene (PPB)	Ethyl Benzene (PPB)	Total Xylenes (PPB)	Total BTEX (PPB)
JFB-0010-MW2	94715	J.F. Bell	01/11/2000	2	Sample 1 - 1st Annual	= 200	< 0.5	= 81	= 28	309
JFB-0010-MW3	94715	J.F. Bell	01/11/2000	4	Sample 1 - 1st Annual	< 0.5	< 0.5	< 0.5	< 0.5	ND

ND- No Detectable Levels

Sample 1 - Annual Sampling



LEGEND

● MW-1 APPROXIMATE MONITORING WELL LOCATION AND NUMBER

B BENZENE (ug\L)
 T TOLUENE (ug\L)
 E ETHYL BENZENE (ug\L)
 X XYLENE (ug\L)

ug\L MICROGRAMS PER LITER

NOT TO SCALE



COL 62800219AF-002



TITLE:
 J.F. BELL #1E
 METER 94715
 OCTOBER 11, 2000

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

PROJECT NO.: 62800219
 EPFS GW PITS

FIGURE 1

ATTACHMENT 1

2000 GROUNDWATER ANALYTICAL

Project Name EPFS Quarterly Sampling

Project Manager R Thompson

Project No. 628 00107

Client Company: E P F S

Phase, Task No. 0301

Site Name J. f. Bell #1E (94715)

Site Address Rural Sam Yarn Co.

Development Criteria

☒ 3 to 5 Casing Volumes of Water Removal

☒ Stabilization of Indicator Parameters☐ Other

Water Volume Calculation

Initial Depth of Well (feet)

Initial Depth to Water (feet) 26, 411

Height of Water Column in Well (feet) 8.66

Diameter (inches): Well 6" Gravel Pack

Methods of Development

Pump

☐ Centrifugal ☒ Bottom Valve

☐ Submersible ☐ Double Check Valve

☐ Peristaltic
☐ Stainless-steel Kemmerer

☐ Other

Water Disposal

KUTZ Separator Bloomfield N.M.

Water Removal Data

[illegible]

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

Comments	Sampled for BTEX	0927

Developer's Signature(s) Rob A. May

Date 10-11-00

Reviewer

Date 10/18/00

Project Name EpFS Quarterly Sampling
 Client Company EpFS
 Site Name J.F. Bell #1E (94715)
 Project Manager R Thompson
 Project No. 62800107
 Phase/Task No. 0301
 Site Address Rural Sun Tan Co.

Development Criteria

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

Water Volume Calculation

Initial Depth of Well (feet) 32.19
Initial Depth to Water (feet) 26.56
Height of Water Column in Well (feet) 8.63
Diameter (inches): Well 4" Gravel Pack

[illegible]

☒ pH Meter Hydac

☐ DO Monitor

☒ Conductivity Meter Hydac

☒ Temperature Meter Hydac

☐ Other

Water Disposal

k_{TZ} Separator Bionfic 18 N.M.

Water Removal Data

[illegible]

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

Comments Sampled for BTEX 1038 Level in well Dropped Allowed 15 minutes To Recover

Developer's Signature(s) David A. May

Date 10-11-00

Reviewer RT Date 10/18/00

Chain of Custody, Record

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

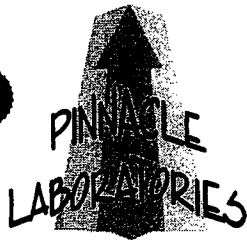
COC Serial No. C 2431

Relinquished by:

Received By:

Signature	Date	Time	Signature	Date	Time
<i>Rev. A. May</i>	10-16-10	1:17			

Samples Iced: ☒ Yes ☐ No		Carrier: <u>606918710</u>	Airbill No. <u>606918710</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 (#18.1) Sulfuric acid (H ₂ SO ₄)			
☒ Other (Specify) <u>HgCl₂</u>			
☐ Other (Specify) _____			



OCT 27 2000

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

Pinnacle Lab ID number 010058
October 23, 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/SCOTT POPE

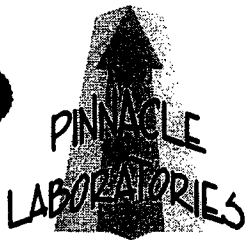
On 10/16/00 Pinnacle Laboratories, Inc., (ADHS License No. AZ0592 pending), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

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	: 010058
PROJECT #	: 62800107	DATE RECEIVED	: 10/16/00
PROJECT NAME	: EPFS QUARTERLY SAMPLING	REPORT DATE	: 10/23/00
PIN			DATE
ID. #	CLIENT DESCRIPTION	MATRIX	COLLECTED
01	JFB-0010-MW 02	AQUEOUS	10/11/00
02	JFB-0010-MW 04	AQUEOUS	10/11/00



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.: 010058

SAMPLE			DATE	DATE	DATE	DIL.
ID. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	JFB-0010-MW 02	AQUEOUS	10/11/00	NA	10/18/00	1
02	JFB-0010-MW 04	AQUEOUS	10/11/00	NA	10/18/00	1

PARAMETER	DET. LIMIT	UNITS	JFB-0010-MW 02	JFB-0010-MW 04
BENZENE	0.5	UG/L	200	< 0.5
TOLUENE	0.5	UG/L	< 0.5	< 0.5
BENZENE	0.5	UG/L	81	< 0.5
TOTAL XYLENES	0.5	UG/L	28	< 0.5

SURROGATE:

BROMOFLUOROBENZENE (%)

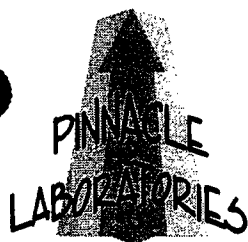
SURROGATE LIMITS (80 - 120)

81

95

CHEMIST NOTES:

N/A



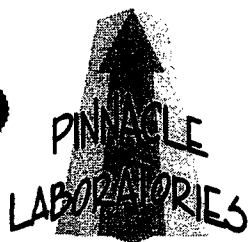
2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 010058
BLANK I. D.	: 101800	DATE EXTRACTED	: NA
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 10/18/00
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

SPRINKLER GATE:
BROMOFLUOROBENZENE (%) 94
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 # : 101800
CLIENT : PHILIP ENVIRONMENTAL
PROJECT # : 62800107
PROJECT NAME : EPFS QUARTERLY SAMPLING

PINNACLE I.D. : 010058
DATE EXTRACTED : NA
DATE ANALYZED : 10/18/00
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	17.3	87	18.2	91	5	(80 - 120)	20
TOLUENE	<0.5	20.0	18.9	95	18.3	92	3	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	20.2	101	19.6	98	3	(80 - 120)	20
TOTAL XYLENES	<0.5	60.0	58.7	98	57.1	95	3	(80 - 120)	20

CHEMIST NOTES:
N/A

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

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

EPFS GROUNDWATER PITS

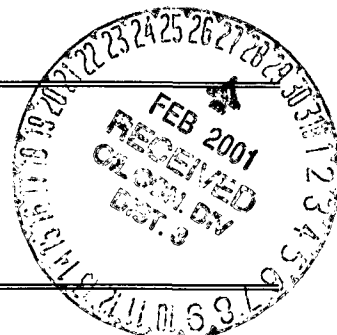
2000 ANNUAL GROUNDWATER REPORT

KNIGHT #1
Meter/Line ID - 72556

SITE DETAILS

Legals - Twn: 30N Rng: 13 W
NMOCD Hazard Ranking: 30
Operator: FULLER PETROLEUM INC.

Sec: 5 Unit: A
Land Type: FEE



PREVIOUS ACTIVITIES

Site Assessment: Jan-95 Excavation: Jan-95 (60 cy) Soil Boring: Oct-95
Monitor Well: Oct-95 Downgradient MW's: Dec-95 Nutrients: Nov-96
Quarterly Sampling Initiated: Apr-96
Additional Monitor Well: Nov-00

2000 ACTIVITIES

Groundwater Monitoring – Annual sampling was performed during April of 2000.

Monitor Well Installation – Localized surface recharge conditions appear to influence the groundwater gradient at this site. The topography and location of the La Plata River directed the placement of the fifth monitor well east of MW-3. The additional well, MW-5, was drilled based on the recommendations in the 1999 Annual Report.

SUMMARY TABLES

Groundwater analytical data are presented in Table 1 and Figures 1 and 2. Copies of the laboratory data sheets and associated quality assurance/quality control data are presented as Attachment 1.

SITE MAP

A site map with groundwater elevations and gradients are presented in Figures 1 and 2.

Site Map Revision- Please note that markings on monitor wells MW-3 and MW-4 were reversed in the field, therefore the analytical data associated with each well has been reversed to reflect the proper conditions.

GEOLOGIC LOGS AND WELL COMPLETION DIAGRAMS

Drilling activities were conducted on November 14, 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

Isoconcentration maps were generated for benzene, toluene, ethyl benzene, and total xylenes and are included as Figures 3 - 6.

CONCLUSIONS

Based on groundwater levels collected from four groundwater monitor wells in April and the five groundwater monitor wells in November, the groundwater flow exhibits a trend towards the south.

EPFS GROUNDWATER PITS 2000 ANNUAL GROUNDWATER REPORT

Site topography and proximity to the La Plata River indicate that groundwater should veer east. A small arroyo is located just south of MW-2 and leads east towards the La Plata River. Contiguous to the arroyo, south of MW-2, is a considerable irrigated field that appears to contribute to the localized surface recharge conditions that potentially influences the groundwater gradient at this site.

The off-site groundwater monitor well, MW-5, did not effect the direction of the groundwater gradient, but does demonstrate the edge of hydrocarbon constituents in the groundwater does not extend east of monitor well MW-3. Isoconcentration maps show elevated levels of benzene, ethyl benzene, and total xylenes located in the former pit area.

RECOMMENDATIONS

- EPFS proposes to conduct nutrient injection in monitor well MW-1 to enhance natural and bioremediation in the former pit.
- EPFS proposes to continue annual monitoring at the site until BTEX levels are below the NMWQCC groundwater standards, then conduct quarterly sampling for closure.
- EPFS will continue to work with the operator at this site.

EPFS Groundwater Pits
2000 Groundwater Report

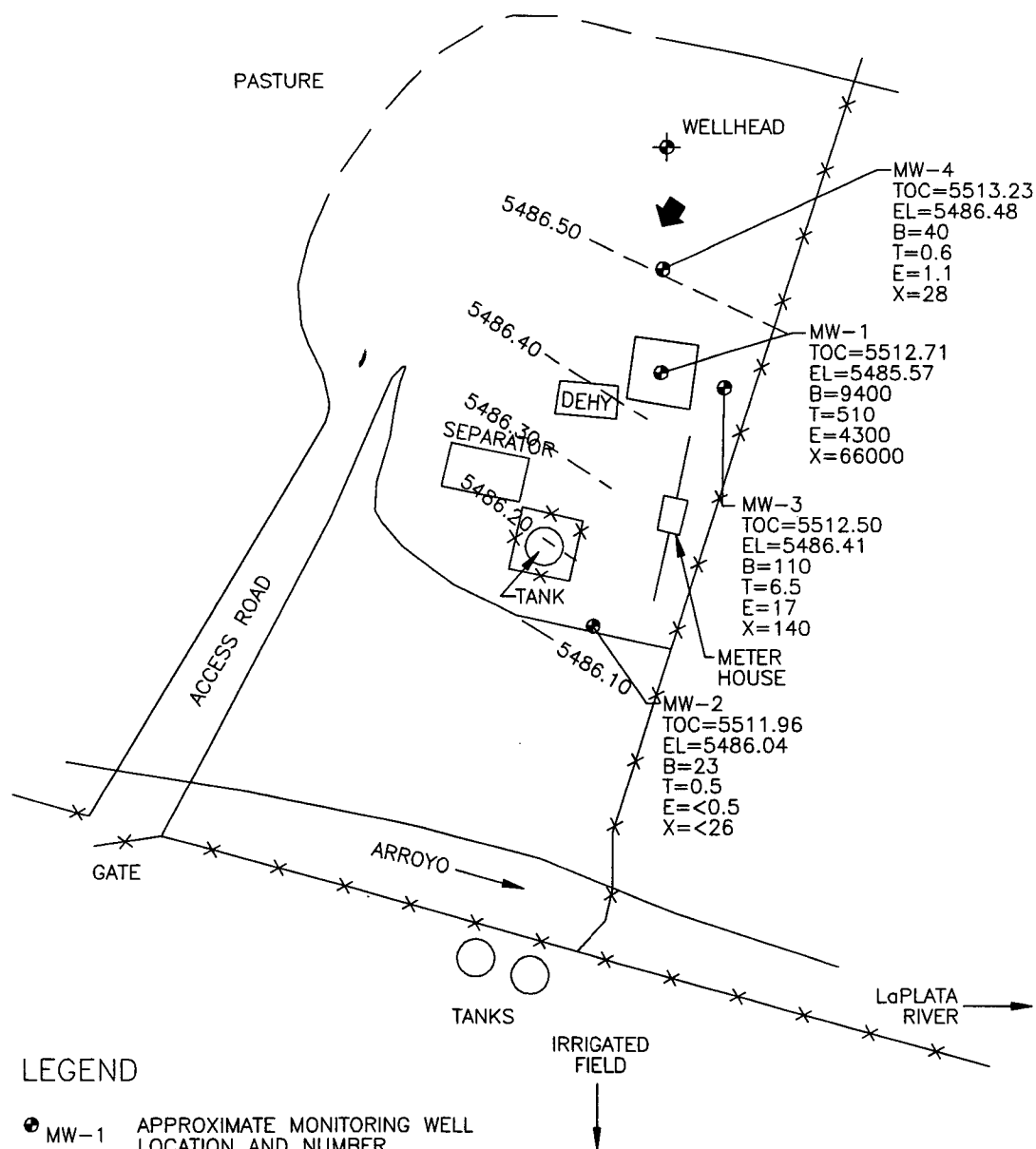
Table 1

March 2001

Sample #	Meter / Line #	Site Name	Sample Date	MW #	Project	Benzene (PPB)	Toluene (PPB)	Ethyl Benzene (PPB)	Total Xylenes (PPB)	Total BTEX (PPB)
KNI-0004-MW1	72556	KNIGHT #1	04/19/2000	1	Sample 1 - 11th Event	= 9,400	= 510	= 4,300	= 66,000	80,210
KNI-0004-MW2	72556	KNIGHT #1	04/19/2000	2	Sample 1 - 11th Event	= 23	= 0.5	< 0.5	= 26	49.5
KNI-0004-MW3	72556	KNIGHT #1	04/19/2000	3	Sample 1 - 11th Event	= 110	= 6.5	= 17	= 140	273.5
KNI-0004-MW4	72556	KNIGHT #1	04/19/2000	4	Sample 1 - 11th Event	= 40	= 0.6	= 1.1	= 28	69.7
KNI-0011-MW5	72556	KNIGHT #1	11/15/2000	5	Sample 1 - 11th Event	< 0.5	< 0.5	< 0.5	< 0.5	ND

ND = No detectable levels

Sample 1 - Annual Sampling



LEGEND

- MW-1 APPROXIMATE MONITORING WELL LOCATION AND NUMBER
- TOC TOP OF CASING ELEVATION
- EL GROUNDWATER ELEVATION
- B BENZENE (ug\L)
- T TOLUENE (ug\L)
- E ETHYL BENZENE (ug\L)
- X XYLENE (ug\L)
- 77.3- GROUNDWATER POTENTIOMETRIC SURFACE
- ug\L MICROGRAMS PER LITER
- ➔ APPROXIMATE GROUNDWATER GRADIENT

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

0 40
FEET



COL 628\00219BJ-014

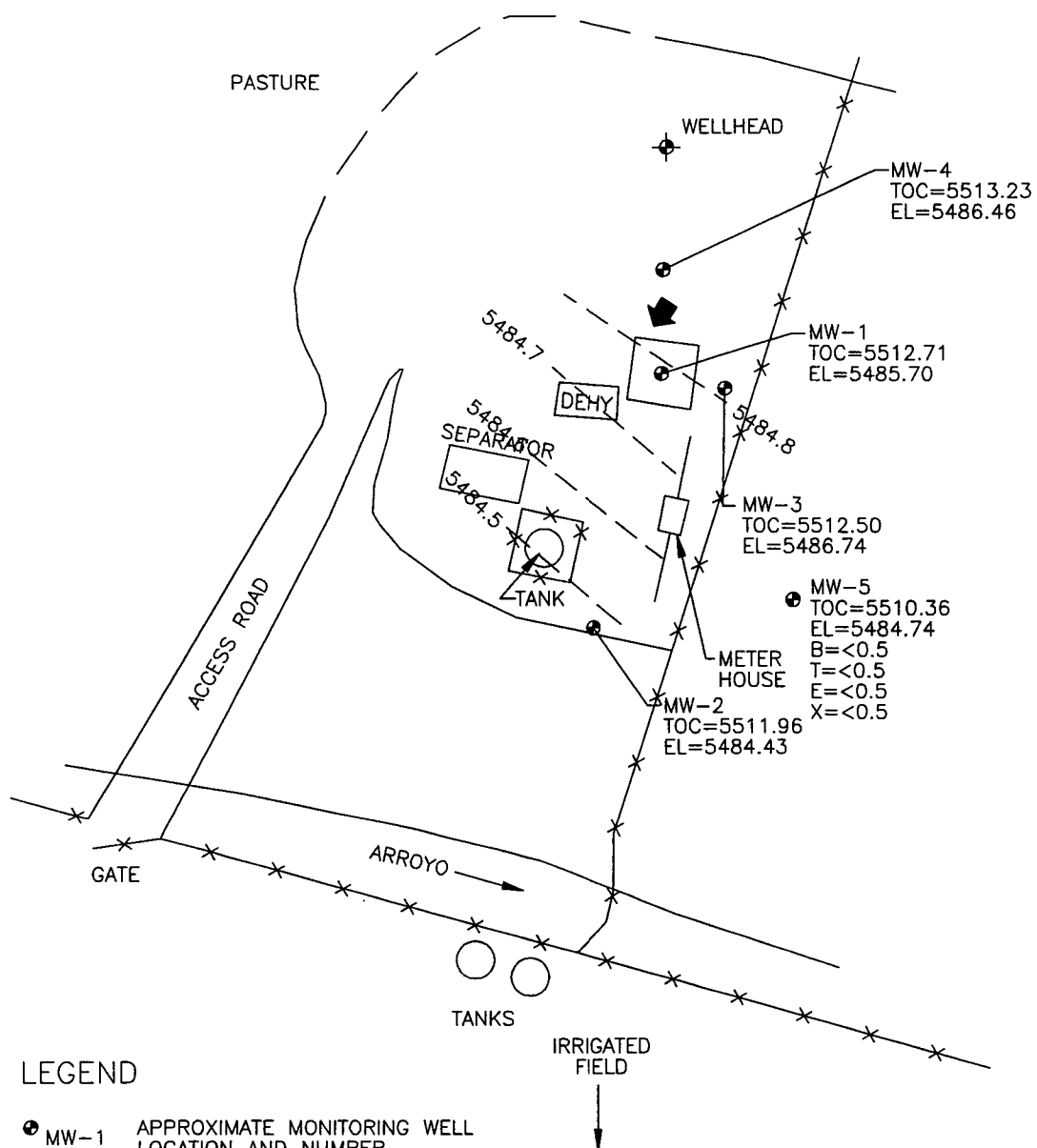


TITLE:
KNIGHT #1
METER 72556
APRIL 19, 2000

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

PROJECT NO.: 62800219
EPFS GW PITS

FIGURE 1



LEGEND

- MW-1 APPROXIMATE MONITORING WELL LOCATION AND NUMBER
- TOC TOP OF CASING ELEVATION
- EL GROUNDWATER ELEVATION
- B BENZENE (ug\L)
- T TOLUENE (ug\L)
- E ETHYL BENZENE (ug\L)
- X XYLENE (ug\L)
- 77.3- GROUNDWATER POTENTIOMETRIC SURFACE
- ug\L MICROGRAMS PER LITER
- ➔ APPROXIMATE GROUNDWATER GRADIENT

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

0 40
FEET



COL 628\002198J-015

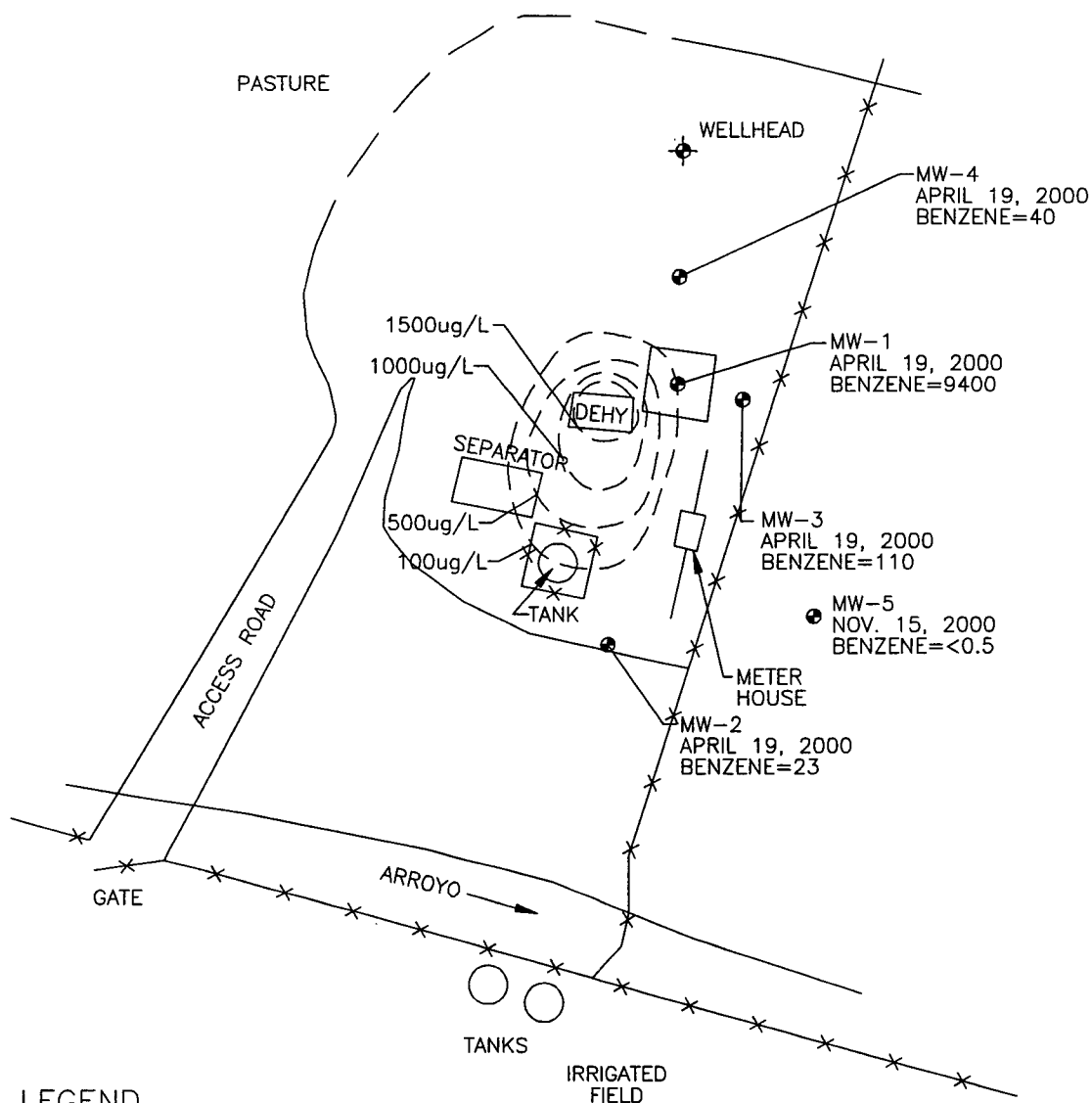


TITLE:
KNIGHT #1
METER 72556
NOVEMBER 15, 2000

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

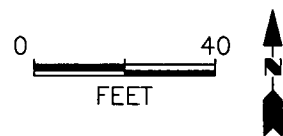
PROJECT NO.: 62800219
EPFS GW PITS

FIGURE 2



LEGEND

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



COL 62800219BJ-016



TITLE:

KNIGHT #1 - METER 72556

NOV. 15, 2000 ISOCONCENTRATION

MAP - BENZENE

DWN: TMM

DES.: LW

CHKD: LW

APPD: MN

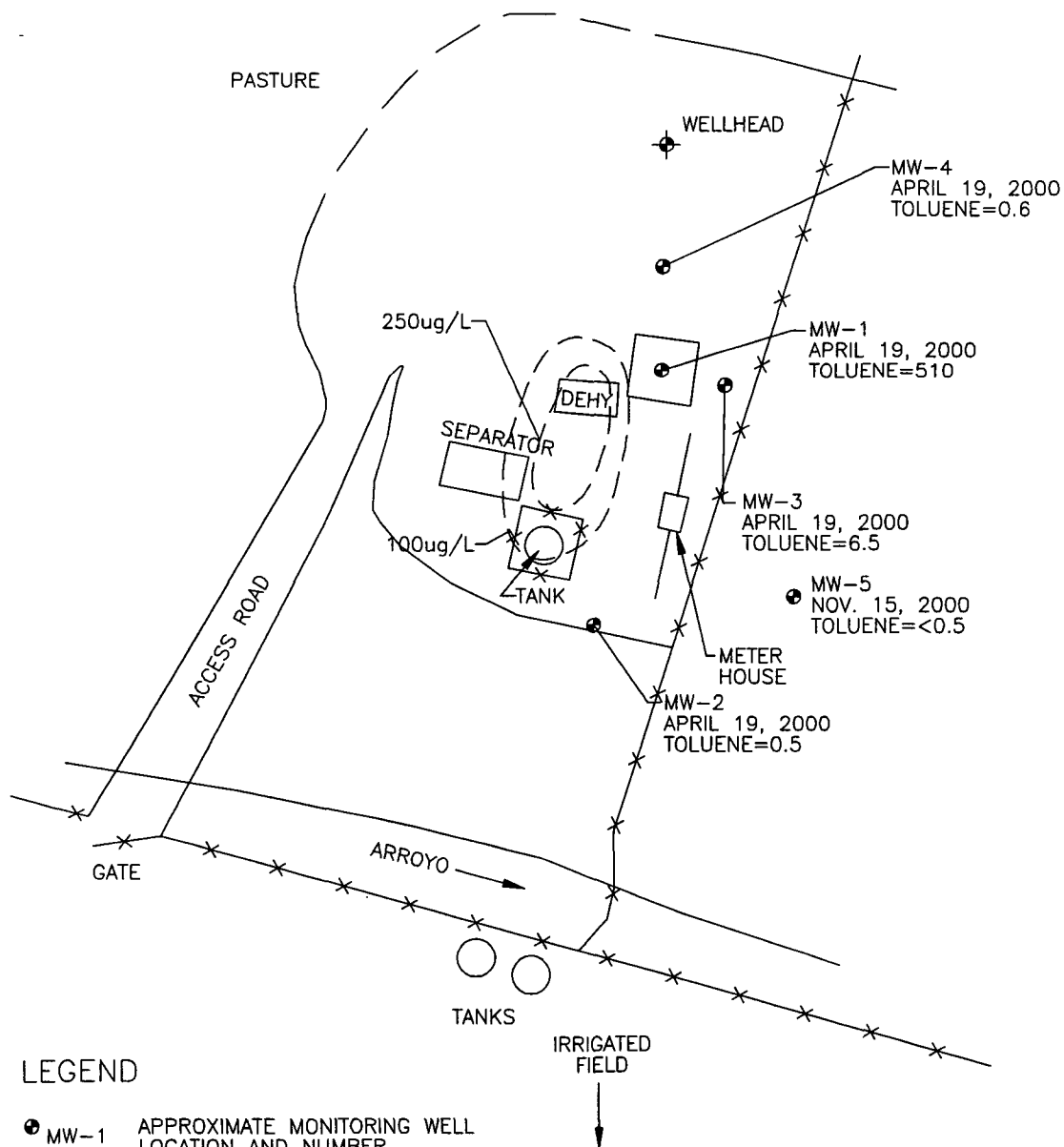
DATE: 2/20/01

REV.: 0

PROJECT NO.: 62800219

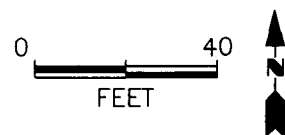
EPFS GW PITS

FIGURE 3



LEGEND

- MW-1 APPROXIMATE MONITORING WELL LOCATION AND NUMBER
- T TOLUENE (ug\L)
- 77.3 GROUNDWATER POTENTIOMETRIC SURFACE
- ug\L MICROGRAMS PER LITER



COL 62800219BL-017



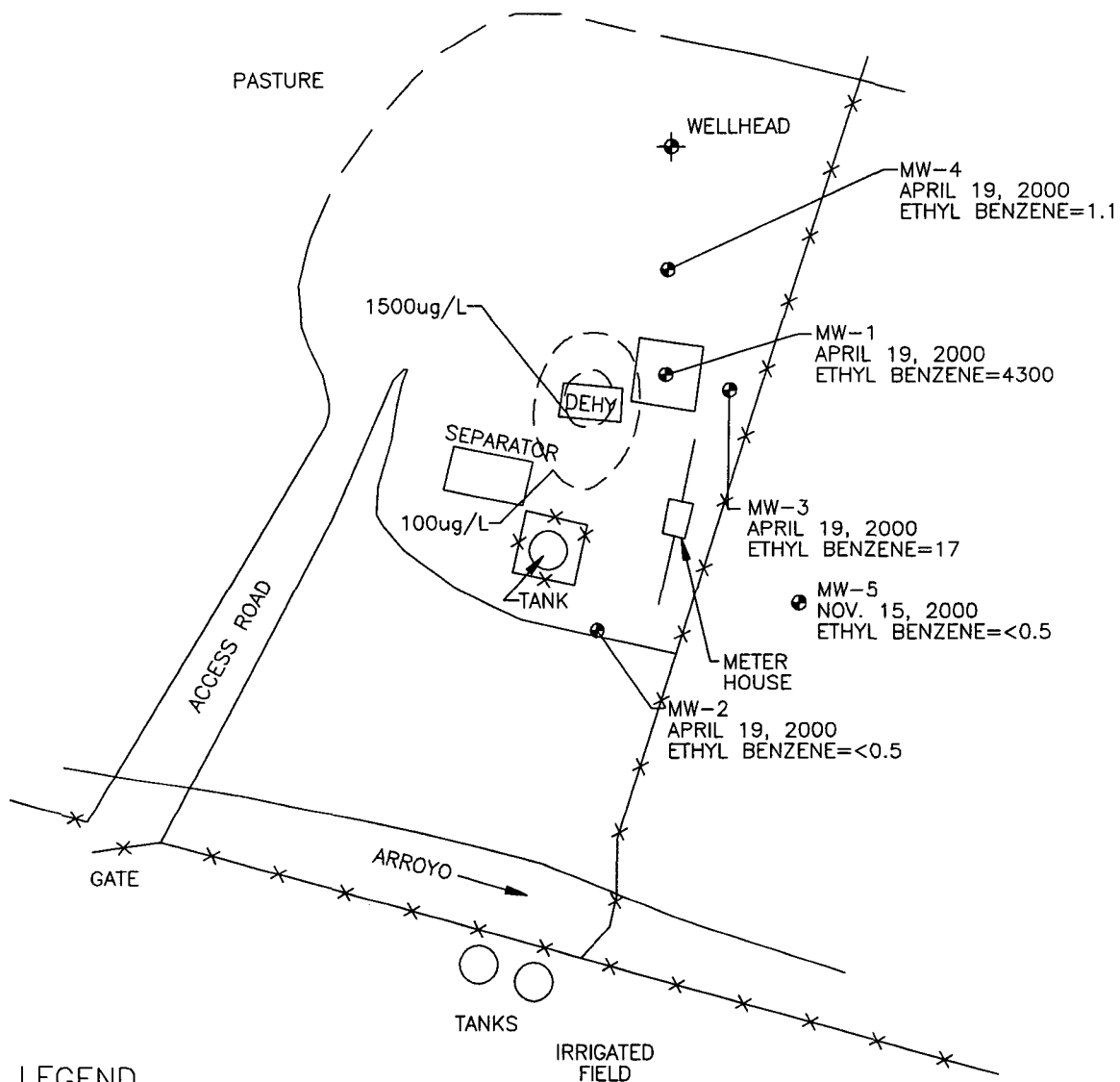
TITLE:
KNIGHT #1 - METER 72556
NOV. 15, 2000 ISOCONCENTRATION
MAP - TOLUENE

DWN: TMM
CHKD: LW
DATE: 2/20/01

DES.: LW
APPD: MN
REV.: 0

PROJECT NO.: 62800219
EPFS GW PITS

FIGURE 4



LEGEND

- MW-1 APPROXIMATE MONITORING WELL LOCATION AND NUMBER
- E ETHYL BENZENE (ug\L)
- 77.3 GROUNDWATER POTENTIOMETRIC SURFACE
- ug\L MICROGRAMS PER LITER

0 40
FEET



COL 628\00219BJ-018

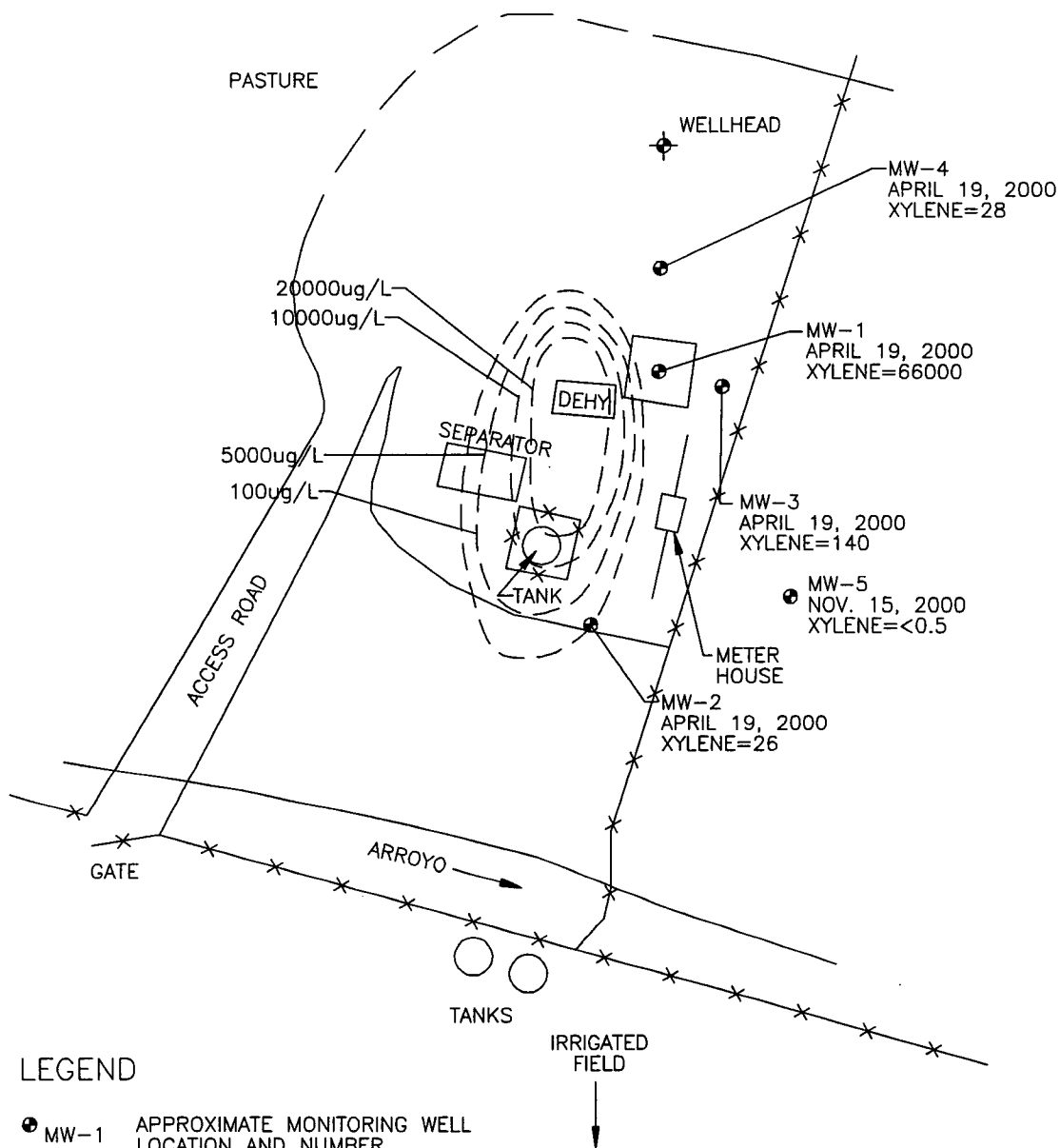


TITLE:
KNIGHT #1 - METER 72556
NOV. 15, 2000 ISOCONCENTRATION
MAP - ETHYL BENZENE

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

PROJECT NO.: 62800219
EPFS GW PITS

FIGURE 5



TITLE:
KNIGHT #1 - METER 72556
NOV. 15, 2000 ISOCONCENTRATION
MAP - XYLENES

DWN: TMM
CHKD: LW
DATE: 2/20/01

DES.: LW
APPD: MN
REV.: 0

PROJECT NO.: 62800219
EPFS GW PITS

FIGURE 6

ATTACHMENT 1

2000 GROUNDWATER ANALYTICAL

Project Name EPPS QUARTERLY SAMPLING

Project Manager
Robert Thompson

Project No. 62800107

Client Company: EL PASO FIELD SERVICES

Phase.Task No. 0301

Site Name KNIGHT #1 (72556)

Site Address RURAL SAN JUAN COUNTY

Development Criteria

~~4~~ ③ to 5 Casing Volumes of Water Removal

☒ Stabilization of Indicator Parameters

☐ Other

Water Volume Calculation

Initial Depth of Well (feet) 36.95' TOP

Initial Depth to Water (feet)	25.92'	TOR
-------------------------------	--------	-----

Height of Water Column in Well (feet) 11.03'

Diameter (inches): Well **4"** Gravel Pack

Methods of Development

Pump

☐ Centrifugal ☒ Bottom Valve

☐ Submersible ☐ Double Check Valve

☐ Peristaltic ☐ Stainless-steel Kemmerer

☐ Other

Water Disposal

KUTZ SEPARATOR

Water Removal Data

[illegible]

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

Comments WELL BEGAN TO BAIL DOWN AT APPR. 22-23 GAL. SAMPLED AT 1140. COC #

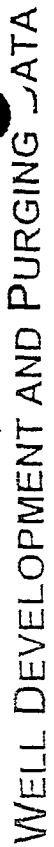
Developer's Signature(s)

Art Thompson

Date 4/19/00

Reviewer

Date _____

☐ Develop
☒ PurgingPage 1 of 1

Project Manager P. Thompson

Project No. 62800107

Phase.Task No. 0301

Water Volume Calculation

Initial Depth of Well (feet) 37.35 TOR

Initial Depth to Water (feet) 26.09' TOR

Height of Water Column in Well (feet) 11.26'

Instruments

Serial No. (if applicable)

Bailer

☒ Bottom Valve

☐ Double Check Valve☐ Stainless-steel Kemmerer

Water Disposal

KUTZ SEPARATOR

[illegible]

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

COLLECTED A DUPLICATE SAMPLE. SAMPLED AT 1310

Date 4/19/00

Reviewer

Date _____

Well Number MW-01
Serial No. WDPD-

WELL DEVELOPMENT AND PURGING DATA

Serial No. WDPD-

Page 1 of 1Project Name EP5 QUARTERLY SAMPLING

Project Manager ROBERT THOMPSON

Project No. 62800107

Client Company: EL PASO FIELD SERVICES

Phase.Task No. 0301

Site Name KNIGHT #1 (72556)

Site Address RURAL SAN JUAN COUNTY

Development Criteria

~~1~~ ③ to 5 Casing Volumes of Water Removal

Stabilization of Indicator Parameters

☐ Other

Methods of Development

Pump

☐ Centrifugal ☒ Bottom Valve

☐ Submersible ☐ Double Check Valve

☐ Peristaltic ☐ Stainless-steel Kemmerer

☐ Other

Water Removal Data

[illegible]

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

[illegible]

READINGS DOCUMENTED DUE TO PRESENCE OF FREE PHASE PRODUCT. WELL BAILED DRY AT 5 GAL. SAMPLED AT 1350.

Developer's Signature(s) Robert Thompson

Date 4/19/00

Reviewer _____ Date _____

Chain of Custody Record

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

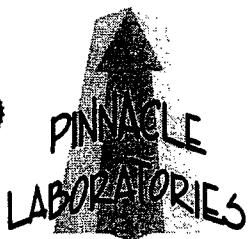
COC Serial No. C 2540

Relinquished by:

Received By:

Received By:			
Signature	Date	Time	
<i>[Handwritten Signature]</i>	07/08/2019	11:50	

Samples Iced: ☒ Yes ☐ No	Carrier: <u>SP-100-108</u>	Airbill No. <u>GLT 160 665 0782</u>
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) _____	Shipping and Lab Notes:	
☐ Other (Specify) _____		



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

APR 26

Pinnacle Lab ID number 004080
April 25, 2000

PHILIP ENVIRONMENTAL
4000 MONROE ROAD
FARMINGTON, NM 87401

Project Name EPFS QUARTERLY SAMPLING
Project Number 62800107

Attention: ROBERT THOMPSON

On 04/20/00 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	: 004080
PROJECT #	: 62800107	DATE RECEIVED	: 04/20/00
PROJECT NAME	: EPFS QUARTERLY SAMPLING	REPORT DATE	: 04/25/00

PIN ID. #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	KNI-0004-MW02	AQUEOUS	04/19/00
02	KNI-0004-MW04	AQUEOUS	04/19/00
03	KNI-0004-MW54	AQUEOUS	04/19/00
04	KNI-0004-MW01	AQUEOUS	04/19/00
05	KNI-0004-MW03	AQUEOUS	04/19/00
06	TRIP BLANK	AQUEOUS	04/19/00



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.: 004080

SAMPLE			DATE	DATE	DATE	DIL.
ID. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	KNI-0004-MW02	AQUEOUS	04/19/00	NA	04/20/00	1
02	KNI-0004-MW04	AQUEOUS	04/19/00	NA	04/20/00	1
03	KNI-0004-MW54	AQUEOUS	04/19/00	NA	04/20/00	1

PARAMETER	DET. LIMIT	UNITS	KNI-0004-MW02	KNI-0004-MW04	KNI-0004-MW54
BENZENE	0.5	UG/L	23	110	110
TOLUENE	0.5	UG/L	0.5	6.5	5.4
ETHYLBENZENE	0.5	UG/L	< 0.5	17	16
TOTAL XYLENES	0.5	UG/L	26	140	130

SURROGATE:

BROMOFLUOROBENZENE (%)	96	97	84
SURROGATE 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 RESULTS

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

PINNACLE I.D.: 004080

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
04	KNI-0004-MW01	AQUEOUS	04/19/00	NA	04/20/00	200
05	KNI-0004-MW03	AQUEOUS	04/19/00	NA	04/20/00	1
06	TRIP BLANK	AQUEOUS	04/19/00	NA	04/20/00	1

PARAMETER	DET. LIMIT	UNITS	KNI-0004-MW01	KNI-0004-MW03	TRIP BLANK
BENZENE	0.5	UG/L	9400	40	< 0.5
ETHYLBENZENE	0.5	UG/L	510	0.6	< 0.5
ETHYLBENZENE	0.5	UG/L	4300	1.1	< 0.5
TOTAL XYLENES	0.5	UG/L	66000	28	< 0.5

SURROGATE:

BROMOFLUOROBENZENE (%)	120	100	106
SURROGATE 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 RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 004080
BLANK I. D.	: 042000	DATE EXTRACTED	: NA
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 04/20/00
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 (%)	100
------------------------	-----

SURROGATE 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 # : 042000
CLIENT : PHILIP ENVIRONMENTAL
PROJECT # : 62800107
PROJECT NAME : EPFS QUARTERLY SAMPLING

PINNACLE I.D. : 004080
DATE EXTRACTED : NA
DATE ANALYZED : 04/20/00
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	18.0	90	18.5	93	3	(80 - 120)	20
TOLUENE	<0.5	20.0	19.4	97	19.6	98	1	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	19.9	100	19.9	100	0	(80 - 120)	20
TOTAL XYLENES	<0.5	60.0	62.8	105	60.4	101	4	(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

ENVIRONMENTAL

Chain of Custody Record

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

Lab ID 004082

COC Serial No. C 2540

Project Name EPFS QUARTERLY SAMPLING		Project Number 62800107 Phase Task 0301		Type of Analysis and Bottle		Total Number of Bottles	
Samplers	R. THOMPSON						
Laboratory	Name PINNACLE LABS						
Location ALBUQUERQUE, NM							
Sample Number (and depth)	Date	Time	Matrix				
KN1-0004-MW02	4/19/00	1140	H ₂ O	2	X	01	KNIGHT #1 - 72556
KN1-0004-MW04	4/19/00	1305	H ₂ O	2	X	02	KNIGHT #1 - 72556
KN1-0004-MW54	4/19/00	1310	H ₂ O	2	X	03	KNIGHT #1 - 72556
KN1-0004-MW01	4/19/00	1350	H ₂ O	2	X	04	KNIGHT #1 - 72556
KN1-0004-MW03	4/19/00	1455	H ₂ O	2	X	05	KNIGHT #1 - 72556
TRIP BLANK	4/19/00	1130	H ₂ O	2	X	06	KNIGHT #1 - 72556
BTEX 8021							
1995							

Relinquished by:

Robert Thompson

Received By:

Signature

Time

Date

Signature

Time

Date

Time

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) _____
☐ Other (Specify) _____

Carrier: GREYHOUND LINES

Shipping and Lab Notes:

rec. on ice 4°C

50

Airbill No. GLT160 665 0782

Well Number MW 05

Serial No. WDPD-

WELL DEVELOPMENT AND PURGING DATA

Page 1 of 1

Project Name EPFS well Sampling

Project Manager Lisa Winn

Project No. 62800219

Client Company El Paso Field Services

Phase/Task No. 0301

Site Name Knight #1 (72556)

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) 33.04
Initial Depth to Water (feet) 25.92
Height of Water Column in Well (feet) 7.42
Diameter (inches): Well Gravel Pack

Methods of Development

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

Instruments

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

Serial No. (if applicable)

Water Disposal

RTZ Superior 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 (umhos/cm)	Dissolved Oxygen (mg/l)	Comments
						Increment	Cumulative	Increment	Cumulative					
	1444	X				1	1			14.2	6.36	3000		cloudy odor
	1457	X				1	2			12.8	6.54	2910		" "
	1450	X				1	3			12.3	6.60	2860		" "
	1454	X				1	4			11.6	6.62	2760		" "
	1459	X				1	5			11.2	6.58	2730		" "
	1503	X				1	6			10.8	6.56	2650		" "
	1506	X				1	7			10.8	6.50	2650		" "
	1510	X				1	8			10.9	6.51	2670		no change

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

Comments Bailed 30 gallons then started water quality readings Sampled for

DTex 1520

Developer's Signature(s) Chris A. May

Reviewer

Date 11-15-00

Chain of Custody, Record

4000 Monroe Road
Farmington, NM 87401

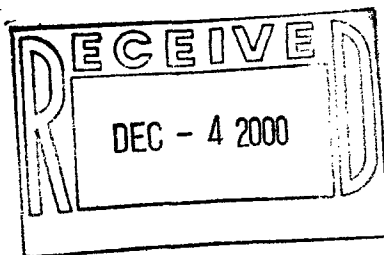
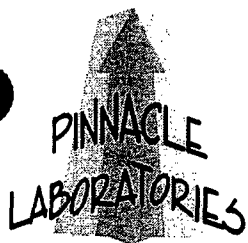
COC Serial No. C 2784

Relinquished by:

Received By:

[illegible]

Samples Iced: ☒ Yes ☐ No		Carrier: <u>60611</u>	Airbill No. <u>GLT 1608919996</u>
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>HgCl₂</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 **011072**
November 28, 2000

PHILIP ENVIRONMENTAL
4000 MONROE ROAD
FARMINGTON, NM 87401

EL PASO FIELD SERVICES
614 RIELLY STREET
FARMINGTON, NM 87401

Project Name EPFS
Project Number 62800219

Attention: ROBERT THOMPSON/SCOTT POPE

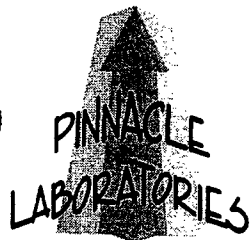
On 11/21/00 Pinnacle Laboratories, Inc., (ADHS License No. AZ0592 pending), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

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: ft

Enclosure



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

CLIENT	: PHILIP ENVIRONMENTAL	PINNACLE ID	: 011072
PROJECT #	: 62800219	DATE RECEIVED	: 11/21/00
PROJECT NAME	: EPFS	REPORT DATE	: 11/28/00
PIN			DATE
ID. #	CLIENT DESCRIPTION	MATRIX	COLLECTED
01	KNI-0011-MW05	AQUEOUS	11/15/00
02	TRIP BLANK	AQUEOUS	11/20/00



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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

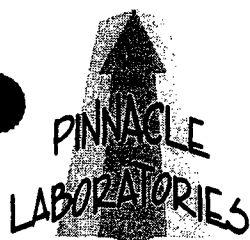
PINNACLE I.D.: 011072

SAMPLE			DATE	DATE	DATE	DIL.
ID. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	KNI-0011-MW05	AQUEOUS	11/15/00	NA	11/21/00	1
02	TRIP BLANK	AQUEOUS	11/20/00	NA	11/21/00	1

PARAMETER	DET. LIMIT	UNITS	KNI-0011-MW05	TRIP BLANK
BENZENE	0.5	UG/L	< 0.5	< 0.5
TOLUENE	0.5	UG/L	< 0.5	< 0.5
ETHYL BENZENE	0.5	UG/L	< 0.5	< 0.5
XYLENES	0.5	UG/L	< 0.5	< 0.5

SURROGATE:
BROMOFLUOROBENZENE (%) 115 117
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.	: 011072
BLANK I. D.	: 112100	DATE EXTRACTED	: NA
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 11/21/00
PROJECT #	: 62800219	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: EPFS		

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 (%)	112
------------------------	-----

SURROGATE 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 # : 011057-26
CLIENT : PHILIP ENVIRONMENTAL
PROJECT # : 62800219
PROJECT NAME : EPFS

PINNACLE I.D. : 011072
DATE EXTRACTED : NA
DATE ANALYZED : 11/21/00
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	20.3	102	19.2	96	6	(80 - 120)	20
TOLUENE	<0.5	20.0	21.0	105	19.9	100	5	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	22.0	110	21.2	106	4	(80 - 120)	20
TOTAL XYLENES	<0.5	60.0	63.9	107	61.6	103	4	(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 2784

011072

[illegible]

Relinquished by:

Received By:

Signature	Date	Time	Signature	Date	Time
Chris A. May	11 20 00	1630	A. Gummel	11/21/00	1016

Samples Iced:

☒ Yes ☐ No

Samples Iced: ☒ Yes ☐ No
Preservatives (ONLY for Water Samples)

☐ Cyanide Sodium hydroxide (NaOH)

☐ **Volatile Organic Analysis** Hydrochloric acid (HCl)

Metals Nitric acid (HNO₃)

TPH (A19.1) Sulfuric acid (H₂SO₄)

☒ Other (Specify) HCC13☒ Other (Specify) _____
☐ Other (Specify) _____

Journal of Management Education 35(3)

Carrier: Greyhound

Shipping and Lab Notes:

Rec'd @ 3.5c

Airbill No. G/I 160 691 999 C

ATTACHMENT 2

**2000 MONITOR WELL
INSTALLATION RECORDS**

MONITORING WELL INSTALLATION RECORD

Philip Services Corporation

4000 Monroe Road

Farmington, New Mexico 87401

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

Borehole #

Well # MW-5

Page 1 of 1

Project Name EPFS Drilling

Project Number 62800219 Cost Code

Project Location Knight #1

Elevation

Well Location L: S: T: R:

GWL Depth ~ 23-24' bgs

Installed By Danny Padilla

On-Site Geologist Don Fernald

Personnel On-Site Lisa Wynn, Danny Padilla, Ryan LaFaire

Contractors On-Site NONE

Client Personnel On-Site NONE

Date/Time Started 10:45 11-14-00

Date/Time Completed 11-14-00

Depths in Reference to Ground Surface			
Item	Material	Depth (feet)	
Top of Protective Casing	<u>Steel</u>	<u>+3.5'</u>	Top of Protective Casing <u>~35'</u>
Bottom of Protective Casing		<u>-1'</u>	Top of Riser <u>~3'</u>
Top of Permanent Borehole Casing		<u>+3'</u>	Ground Surface <u>0</u>
Bottom of Permanent Borehole Casing			
Top of Concrete		<u>6"</u>	
Bottom of Concrete		<u>-6"</u>	
Top of Grout		<u>-6"</u>	
Bottom of Grout		<u>11'</u>	
Top of Well Riser		<u>+3'</u>	
Bottom of Well Riser		<u>15'</u>	
Top of Well Screen	<u>.010 SCREEN</u>	<u>15'</u>	Top of Seal <u>11'</u>
Bottom of Well Screen	<u>.010 SCREEN</u>	<u>30'</u>	
Top of Peltonite Seal	<u>3/8" bentonite</u>	<u>11'</u>	Top of Gravel Pack <u>13'</u>
Bottom of Peltonite Seal	<u>3/8" bentonite</u>	<u>13'</u>	Top of Screen <u>15'</u>
Top of Gravel Pack		<u>13'</u>	
Bottom of Gravel Pack	<u>10-20 Sand</u>	<u>30'</u>	
Top of Natural Cave-In		<u>N/A</u>	
Bottom of Natural Cave-In		<u>N/A</u>	
Top of Groundwater			Bottom of Screen <u>30'</u>
Total Depth of Borehole		<u>30'</u>	Bottom of Borehole <u>30'</u>

Comments:

Geologist Signature

RECORD OF SUBSURFACE EXPLORATION

Philip Environmental Services Corp.

4000 Monroe Road

Farmington, New Mexico 87401

(505) 326-2282 FAX (505) 326-2388

Borehole #

Well #

Page

of

Project Name

Project Number

Project Location

Phase

Well Logged By

Personnel On-Site

Contractors On-Site

Client Personnel On-Site

Drilling Method

Air Monitoring Method

Elevation

Borehole Location

GWL Depth

Logged By

Drilled By

Date/Time Started

Date/Time Completed

MW-5

1 of 1

EPFS Drilling

62800219

Knight #1

Don Fernald

Lisa Wynn, Danny Padilla, Ryan Kline

NONE

NONE

HSA

PID

Depth (Feet)	Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	PID Air Monitoring BZ SH S	Drilling Conditions & Blow Counts
0			Initiated sampling @ 15' bgs				
15	X 18"		Moderate yellowish brown silty soil with medium to dark reddish brown mottles or streaking		4.7		
20	X 8"		Moderate to dark yellowish brown silty soil grading to black sandy silt, then to cobbles (slight HC odors).		3.7		
25	X 10"		Moderate brown silt sand with cobbles/gravel (very wet) 20% cobbles-gravel 50% med. grained sand 30% silt		N/A		
30			Terminated boring @ 30' and converted to MW-5				
35							
40							

Comments:

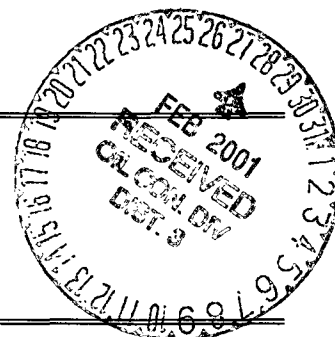
Geologist Signature

Don Fernald

EPFS GROUNDWATER PITS

2000 ANNUAL GROUNDWATER REPORT

COLDIRON COM A #1
Meter/Line ID - 73551



SITE DETAILS

Legals - Twn: 30N Rng: 11W Sec: 2 Unit: K
NMOCD Hazard Ranking: 40 Land Type: FEE
Operator: AMOCO PRODUCTION COMPANY

PREVIOUS ACTIVITIES

Site Assessment: Mar-94 Excavation: Apr-94 (50 cy) Soil Boring: Oct-95
Monitor Well: Oct-95 Quarterly Sampling Initiated: Apr-96

2000 ACTIVITIES

Quarterly Groundwater Monitoring - Quarterly groundwater monitoring was performed quarterly during 2000.

SUMMARY TABLES

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

SITE MAP

A site map is presented as Figure 1.

GEOLOGIC LOGS AND WELL COMPLETION DIAGRAMS

There were no drilling activities at this site in 2000.

DISPOSITION OF GENERATED WASTES

There were no wastes generated at this site in 2000.

ISOCONCENTRATION MAPS

Isoconcentration maps were not generated for this site.

CONCLUSIONS

Analytical results of groundwater samples from MW-1 show levels of total xylenes above NMWQCC groundwater standards during the first quarter and benzene levels above New Mexico groundwater standards during the last quarter. The analytical results of the groundwater samples from the second and third quarter events were below New Mexico groundwater standards for all constituents that were tested.

Pertinent data from past groundwater reports include the following:

Based on groundwater levels collected from temporary well point data, the groundwater flow trends to the northwest on this site.

EPFS GROUNDWATER PITS

2000 ANNUAL GROUNDWATER REPORT

One groundwater sample collected upgradient from MW-1 at PH-2 was in excess of standards for all BTEX components and indicates the production pit upgradient of MW-1 may be an additional source.

RECOMMENDATIONS

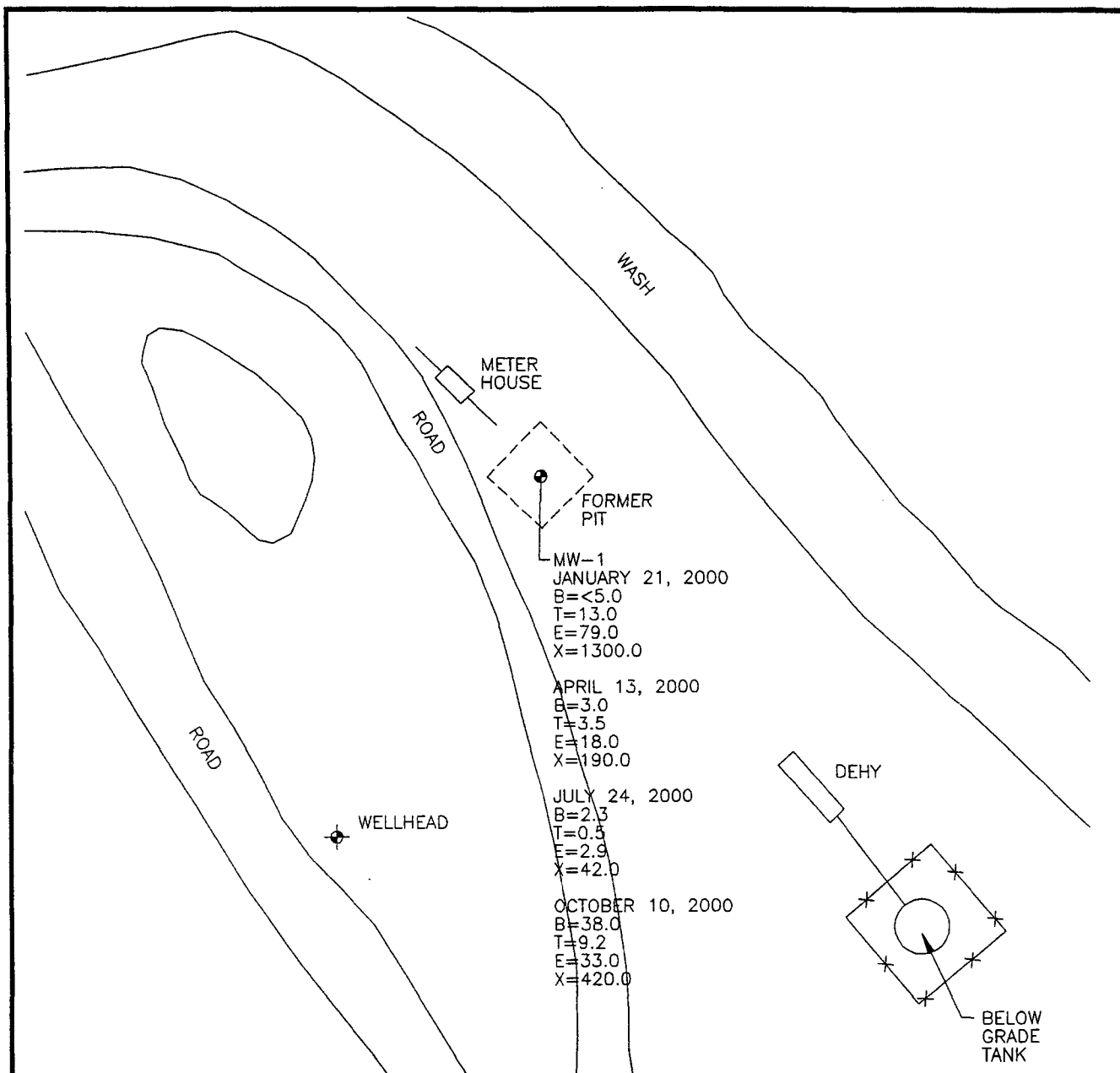
- Install additional downgradient monitor wells to determine if and to what extent hydrocarbon migration has occurred.
- EPFS will continue quarterly sampling at this site until BTEX constituents fall below NMWQCC Standards for four consecutive quarters.
- Following OCD approval for closure, MW-1 will 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 BTEX (PPB)
CIC-0001-MW1	73551	Coldiron A #1	01/21/2000	1	Sample 4 - 12th Quarter	< 5.0	= 13.0	= 79.0	= 1300.0	1392
COL-0004-MW1	73551	Coldiron A #1	04/13/2000	1	Sample 4 - 13th Quarter	= 3.0	= 3.5	= 18.0	= 190.0	214.5
COL-0007-MW1	73551	Coldiron A #1	07/24/2000	1	Sample 4 - 14th Quarter	= 2.3	= 0.5	= 2.9	= 42.0	47.7
COL-0010-MW1	73551	Coldiron A #1	10/10/2000	1	Sample 4 - 15th Quarter	= 38.0	= 9.2	= 33.0	= 420.0	500.2

Sample 4 - Quarterly Sampling



LEGEND

● MW-1 APPROXIMATE MONITORING WELL LOCATION AND NUMBER

B BENZENE (ug\L)
T TOLUENE (ug\L)
E ETHYL BENZENE (ug\L)
X XYLENE (ug\L)

ug\L MICROGRAMS PER LITER

NOT TO SCALE



COL 62800219AY-003



TITLE:

COLDIRON COM A#1
METER 73551
JANUARY 22, 2001

DWN:

TMM

DES.:

LW

PROJECT NO.:

62800219

CHKD:

LW

APPD:

MN

EPFS GW PITS

DATE:

1/30/01

REV.:

0

FIGURE 1

ATTACHMENT 1

2000 GROUNDWATER ANALYTICAL

Serial No. WDPD-

Project Name EPPS Quarterly Sampling

Project Manager Cecil Irby

Project No. 62800107

Client Company EPFS

Phase: Task No: 0301

Sile Name Coldiron Com A#1

Site Address Rural SAN JUAN Co.

Development Criteria

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

Methods of Development

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

Water Volume Calculation

Initial Depth of Well (feet)

Initial Depth to Water (feet) 33.01

Height of Water Column in Well (feet) 12.23

Diameter (inches): Well 4" Gravel Pack _____

Item	Water Volume In Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	7.98		798 x3
Gravel Pack			
Drilling Fluids			
Total			2394

Water Removal Data

[illegible]

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

Comments PH METER MALFUNCTIONED. NO PH READINGS.

Developer's Signature(s) *Steve Miller*

Date 1/21/2000

Reviewer RT Date 3/10/00



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

Pinnacle Lab ID number **001062**
February 01, 2000

PHILIP ENVIRONMENTAL
4000 MONROE ROAD
FARMINGTON, NM 87401

Project Name EPFS QUARTERLY SAMPLING
Project Number 62800107

Attention: CECIL IRBY

On 01/25/00 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.

A handwritten signature in black ink, appearing to read "Kimberly D. McNeill".

Kimberly D. McNeill
Project Manager

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	: 001062
PROJECT #	: 62800107	DATE RECEIVED	: 01/25/00
PROJECT NAME	: EPFS QUARTERLY SAMPLING	REPORT DATE	: 02/01/00
PIN			DATE
ID. #	CLIENT DESCRIPTION	MATRIX	COLLECTED
01	TRIP BLANK	AQUEOUS	01/21/00
02	CIC 0001 MW1-1	AQUEOUS	01/21/00



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.: 001062

SAMPLE		MATRIX	DATE	DATE	DATE	DIL.
ID. #	CLIENT I.D.		SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	TRIP BLANK	AQUEOUS	01/21/00	NA	01/31/00	1
02	CIC 0001 MW1-1	AQUEOUS	01/21/00	NA	01/31/00	10

PARAMETER	DET. LIMIT	UNITS	TRIP BLANK	CIC 0001 MW1-1
BENZENE	0.5	UG/L	< 0.5	< 5.0
TOLUENE	0.5	UG/L	< 0.5	13
MBENZENE	0.5	UG/L	< 0.5	79
TOTAL XYLENES	0.5	UG/L	< 0.5	1300

SURROGATE:
BROMOFLUOROBENZENE (%) 95 114
SURROGATE 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 RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 001062
BLANK I. D.	: 013100	DATE EXTRACTED	: N/A
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 01/31/00
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
AL XYLENES	UG/L	<0.5

SURROGATE:
BROMOFLUOROBENZENE (%) 107
SURROGATE 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 # : 013100
CLIENT : PHILIP ENVIRONMENTAL
PROJECT # : 62800107
PROJECT NAME : EPFS QUARTERLY SAMPLING

PINNACLE I.D. : 001062
DATE EXTRACTED : N/A
DATE ANALYZED : 01/31/00
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	23.7	119	22.8	114	4	(80 - 120)	20
TOLUENE	<0.5	20.0	21.7	109	20.5	103	6	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	23.1	116	21.8	109	6	(80 - 120)	20
TOTAL XYLENES	<0.5	60.0	66.8	111	63.6	106	5	(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 MANAGER: Cecil Irby

COMPANY: Philip Services Corp
 ADDRESS: 4000 Monroe Rd.
 Farmington, NM 87401
 PHONE: 505-326-2262
 FAX: (505)-326-2388
 BILL TO: EPFS
 COMPANY:
 ADDRESS:

SAMPLE ID DATE TIME MATRIX LAB ID.

Trip blank 1/21/2000 1030 H₂O 01
 CIC 0001 MW1-1 1/21/2000 1648 H₂O 02
 CIC0001 MW1-1 1/21/2000 1648 H₂O 03

ANALYSIS REQUEST

Petroleum Hydrocarbons (418.1) TRPH
 (MOD.8015) Diesel/Direct Inject
 (M8015) Gas/Purge & Trap
 8021 (BTX)/8015 (Gasoline) MTBE
 8021 (BTX) MTBE
 8021 (TCL)
 8021 (EDX)
 8021 (HALO)
 8021 (CUST)
 504.1 EDB □ / DBCP □
 8260 (TCL) Volatile Organics
 8260 (Full) Volatile Organics
 8260 (CUST) Volatile Organics
 8260 (Landfill) Volatile Organics
 Pesticides / PCB (608/8081/8082)
 Herbicides (615/8151)
 Base/Neutral/Acid Compounds GC/MS (625/8270)
 Polynuclear Aromatics (610/8310/8270-SIMS)
 General Chemistry:
 Priority Pollutant Metals (13)
 Target Analyte List Metals (23)
 RCRA Metals (8)
 RCRA Metals by TCLP (Method 1311)
 Metals:
 NUMBER OF CONTAINERS

PROJECT INFORMATION

PROJ. NO.: 62800107
 PROJ. NAME: EPFS Quarterly Sample
 P.O. NO.:
 SHIPPED VIA:

SAMPLE RECEIPT

NO. CONTAINERS: 3
 CUSTODY SEALS: Y/N (N)
 RECEIVED INTACT: YES
 BLUE ICE: 10

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

(RUSH) □ 24hr □ 48hr □ 72hr □ 1 WEEK (NORMAL) □
 CERTIFICATION REQUIRED: □ NM □ SDWA □ OTHER
 METHANOL PRESERVATION □
 COMMENTS: FIXED FEE □
 HCL
 Ice

RELINQUISHED BY:

Signature: Steve Miller
 Printed Name: Steve Miller
 Date: 1/24/00
 Company: Philip

RELINQUISHED BY:

Signature: Steve Miller
 Printed Name: Steve Miller
 Date: 1/24/00
 Company: Philip

RECEIVED BY:

Signature: Steve Miller
 Printed Name: Steve Miller
 Date: 1/24/00
 Company: Philip

RECEIVED BY:

Signature: Steve Miller
 Printed Name: Steve Miller
 Date: 1/24/00
 Company: Philip

SHADED AREAS ARE FOR LAB USE ONLY.

PLEASE FILL THIS FORM IN COMPLETELY.

Project Name EPFS QUARTERLY SAMPLING

Project Manager	ROBERT THOMPSON
-----------------	-----------------

Project No. 62800107

Client Company: EL PASO FIELD SERVICES

Phase.Task No. 0301

Site Name Coldiron A #1 (73551)

Site Address 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) 45.24' TOR

Initial Depth to Water (feet) 35.16' TOR

Height of Water Column in Well (feet)

Diameter (inches): Well 4" Gravel Pack

Methods of Development

Pump

☐ Centrifugal ☒ Bottom Valve

☐ Submersible ☐ Double Check Valve

☐ Peristaltic ☐ Stainless-steel Kemmerer

☐ Other

Water Disposal

KUTZ SEPARATOR

Water Removal Data

[illegible]

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

Comments WATER HAS SLIGHT SHEEN ON SURFACE. SAMPLED AT 1532. LOC # C25222

Developer's Signature(s)

Date 4/13/00

Reviewer

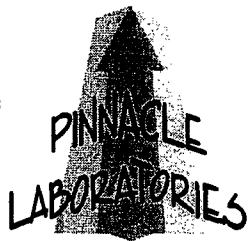
Date: _____

दिलिप

COC Serial No. C 2522

Belinquished by:			Received By:		
Signature	Date	Time	Signature	Date	Time
<i>Robert Thompson</i>	4/13/00	11:00			

Samples Iced: ☒ Yes ☐ No		Carrier: <u>GCY 10066650793</u>	Airbill No. <u>GLT 16066650793</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 **004057**
April 24, 2000

PHILIP ENVIRONMENTAL
4000 MONROE ROAD
FARMINGTON, NM 87401

Project Name EPFS QUARTERLY SAMPLING
Project Number 62800107

Attention: Robert Thompson/LeAudra Stanley

On 04/14/00 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.

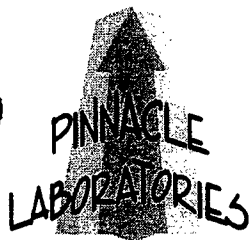
If you have any questions or comments, please do not hesitate to contact us at (505)344-3777.

Kimberly D. McNeill
Project Manager

H. Mitchell Rubenstein, Ph. D.
General Manager

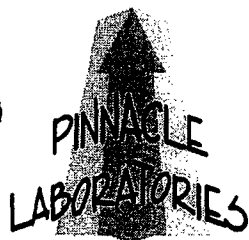
MR: jt

Enclosure



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

CLIENT	: PHILIP ENVIRONMENTAL	PINNACLE ID	: 004057
PROJECT #	: 62800107	DATE RECEIVED	: 04/14/00
PROJECT NAME	: EPFS QUARTERLY SAMPLING	REPORT DATE	: 04/24/00
PIN			DATE
ID. #	CLIENT DESCRIPTION	MATRIX	COLLECTED
01	COL-0004-MW01	AQUEOUS	04/13/00



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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.: 004057

SAMPLE			DATE	DATE	DATE	DIL.
ID. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	COL-0004-MW01	AQUEOUS	04/13/00	NA	04/16/00	1

PARAMETER	DET. LIMIT	UNITS	COL-0004-MW01
BENZENE	0.5	UG/L	3.0
TOLUENE	0.5	UG/L	3.5
ETHYLBENZENE	0.5	UG/L	18
TOTAL XYLENES	0.5	UG/L	190

SURROGATE: .
BROMOFLUOROBENZENE (%) 125*
SURROGATE LIMITS (80 - 120)

CHEMIST NOTES:

* Surrogate raised due to matrix interference.



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Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 004057
BLANK I. D.	: 041500	DATE EXTRACTED	: N/A
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 04/15/00
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

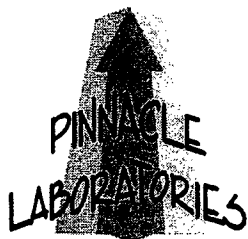
SURROGATE:
BROMOFLUOROBENZENE (%)

92

SURROGATE LIMITS: (80 - 120)

CHEMIST NOTES:

N/A



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
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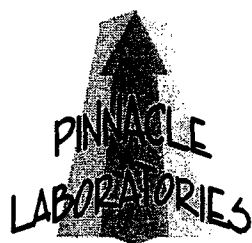
GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 004057
BLANK I. D.	: 041600	DATE EXTRACTED	: N/A
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 04/16/00
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 (%) 96
SURROGATE 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	PINNACLE I.D.	: 004057
MSMSD #	: 041500	DATE EXTRACTED	: N/A
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 04/15/00
PROJECT #	: 62800107	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: EPFS QUARTERLY SAMPLING	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	21.0	105	20.7	104	1	(80 - 120)	20
TOLUENE	<0.5	20.0	23.6	118	22.6	113	4	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	22.9	115	22.2	111	3	(80 - 120)	20
TOTAL XYLENES	<0.5	60.0	69.2	115	66.4	111	4	(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 2522

[illegible]

any

-01

Belinquished by:

Received By:

Signature	Date	Time	Signature	Date	Time
Robert Thompson	4/13/00	1620	[Signature]	04.14.02	9

Samples Iced:

☒ Yes ☐ No

Samples Iced: ☒ Yes ☐ No
Preservatives (ONLY for Water Samples)

☐ Cyanide Sodium hydroxide (NaOH)

☒ Volatile Organic Analysis Hydrochloric acid (HCl)☐ Volatile Organic Analytes : nitroaromatic compounds data (NO₂)
☐ Nitrate
☐ Nitric acid (HNO₃)☐ Metals NITRIC acid (HNO₃)
☐ Sulfuric acid (H₂SO₄)

☐ TPH (418.1) Sulfuric acid (H₂SO₄)

☐ Other (Specify) _____

☐ Other (Specify) _____

Carrier: GREY HOUND LINES

Shipping and Lab Notes:

Airbill No. GLF 1601650793

on ice @ 4.8°C

Chain of Custody Record

4000 Monroe Road
Farmington, NM 87401

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

COC Serial No. C 2596

[illegible]

Relinquished by:

Received By:

Signature	Date	Time	Signature	Date	Time
<i>J. M. Wagner</i>	<i>11/11/11</i>	<i>11:11</i>			

Samples Iced:☒ Yes ☐ No

Samples Iced: ☒ Yes ☐ No

Preservatives (ONLY for Water Samples)

Carrier: *USPS*

Shipping and Lab Notes:

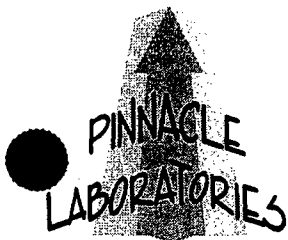
Carrier:

Airbill No. 601 11-00651101

Shipping and Lab Notes:

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) _____	



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

Pinnacle Lab ID number **007082**
August 03, 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 07/28/00 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

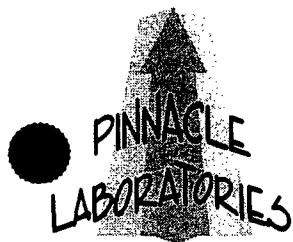
MR: jt

Enclosure



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

CLIENT	: PHILIP ENVIRONMENTAL	PINNACLE ID	: 007082
PROJECT #	: 62800107	DATE RECEIVED	: 07/28/00
PROJECT NAME	: EPFS QUARTERLY SAMPLING	REPORT DATE	: 08/03/00
PIN			DATE
ID. #	CLIENT DESCRIPTION	MATRIX	COLLECTED
01	COL-0007-MW01	AQUEOUS	07/24/00



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.: 007082

SAMPLE						
ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
01	COL-0007-MW01	AQUEOUS	07/24/00	NA	08/01/00	1

PARAMETER	DET. LIMIT	UNITS	COL-0007-MW01
BENZENE	0.5	UG/L	2.3
TOLUENE	0.5	UG/L	0.5
ETHYLBENZENE	0.5	UG/L	2.9
TOTAL XYLENES	0.5	UG/L	42

SURROGATE:

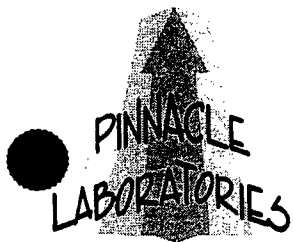
BROMOFLUOROBENZENE (%)

108

SURROGATE 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 RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 007082
BLANK I. D.	: 080100	DATE EXTRACTED	: NA
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 08/01/00
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:

BROMOFLUOROBENZENE (%)

95

SURROGATE LIMITS:

(80 - 120)

COMMENTS:

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 # : 007079-01
CLIENT : PHILIP ENVIRONMENTAL
PROJECT # : 62800107
PROJECT NAME : EPFS QUARTERLY SAMPLING

PINNACLE I.D. : 007082
DATE EXTRACTED : NA
DATE ANALYZED : 08/01/00
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	17.3	87	16.7	84	4	(80 - 120)	20
TOLUENE	<0.5	20.0	21.3	107	20.1	101	6	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	23.0	115	21.9	110	5	(80 - 120)	20
TOTAL XYLENES	1.1	60.0	70.4	116	66.9	110	5	(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

ENVIRONMENTAL

COC Serial No. C 2596

Project Name <i>EPFS QUARTERLY SAMPLING</i>		Type of Analysis and Bottle		Total Number of Bottles	Comments
Project Number <i>62500107 Phase 1 Task 0301</i>					
Samplers <i>J. WAGNER</i>	BTEX & COC				COLDIRON A#1 #73551
Laboratory					
Name <i>PINNACLE LABS</i>	Location <i>ALBUQUERQUE, NM</i>	Date	Time	Matrix	
Sample Number (and depth)	<i>COL-0007-MWD1</i>	<i>7/24/00</i>	<i>1253</i>	<i>420</i>	<i>X</i>

Relinquished by:

Received By:

Signature	Date	Time	Signature	Date	Time
Jerry Wagner	7/28/00	1010	Ann Marie Jamm	7/28/00	1646

Samples Iced:

Yes ☒ No ☐

Samples Iced: ☒ Yes ☐ No

Carrier: GRAYHOUND LINES

Airbill No. 6671606651101

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) _____	

REC'D 1/20

Project Name EpFS Quarterly Sampling Project Manager R Thompson Project No. 62800107
Client Company EpFS Phase Task No. 0301
Site Name COLDIRON COMA#1 Site Address Rural Sun Town Co. 73551

Development Criteria

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

Water Volume Calculation

Initial Depth of Well (feet) 46.26
Initial Depth to Water (feet) 55.06
Height of Water Column in Well (feet) 11.2
Diameter (inches): Well _____ Gravel Pack _____

Methods of Development

Pump

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

Baller

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

Instruments

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

Water Disposal

K-72 September Bloomfield NM.

Water Removal Data

[illegible]

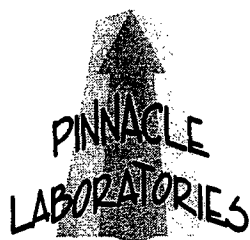
Circle the date and time that the development criteria are met.

Comments	Sampled for BTEX / S21

Developer's Signature(s) Dr. A. M. S.

Date 10-10-00

Reviewer RT Date 10/17/00



OCT 20 2000

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

Pinnacle Lab ID number **010034**
October 18, 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

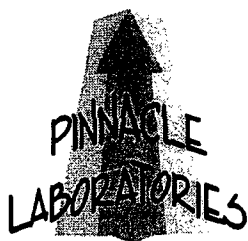
On 10/11/00 Pinnacle Laboratories, Inc., (ADHS License No. AZ0592 pending), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

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	: 010034
PROJECT #	: 62800107	DATE RECEIVED	: 10/11/00
PROJECT NAME	: EPFS QUARTERLY SAMPLING	REPORT DATE	: 10/18/00

PIN			DATE
ID. #	CLIENT DESCRIPTION	MATRIX	COLLECTED
01	COL-0010-MW 01	AQUEOUS	10/10/00
02	TRIP BLANK	AQUEOUS	10/10/00



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.: 010034

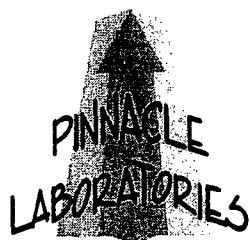
SAMPLE			DATE	DATE	DATE	DIL.
ID. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	COL-0010-MW 01	AQUEOUS	10/10/00	NA	10/12/00	1
02	TRIP BLANK	AQUEOUS	10/10/00	NA	10/12/00	1

PARAMETER	DET. LIMIT	UNITS	COL-0010-MW	
			01	TRIP BLANK
BENZENE	0.5	UG/L	38	< 0.5
TOLUENE	0.5	UG/L	9.2	< 0.5
BENZENE	0.5	UG/L	33	< 0.5
TOTAL XYLENES	0.5	UG/L	420	< 0.5

SURROGATE:
BROMOFLUOROBENZENE (%) 178* 104
SURROGATE LIMITS (80 - 120)

CHEMIST NOTES:

* High surrogate due to matrix interference.



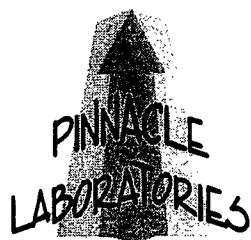
2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 010034
BLANK I. D.	: 101200	DATE EXTRACTED	: NA
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 10/12/00
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

GATE:
BROMOFLUOROBENZENE (%) 105
SURROGATE 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 RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 010034
BLANK I. D.	: 101300	DATE EXTRACTED	: NA
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 10/13/00
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)
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 # : 010035-01
CLIENT : PHILIP ENVIRONMENTAL
PROJECT # : 62800107
PROJECT NAME : EPFS QUARTERLY SAMPLING

PINNACLE I.D. : 010034
DATE EXTRACTED : NA
DATE ANALYZED : 10/13/00
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	17.4	87	18.6	93	7	(80 - 120)	20
TOLUENE	<0.5	20.0	20.4	102	21.3	107	4	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	21.6	108	22.7	114	5	(80 - 120)	20
TOTAL XYLENES	<0.5	60.0	65.1	109	68.3	114	5	(80 - 120)	20

CHEMIST NOTES:
N/A

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

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

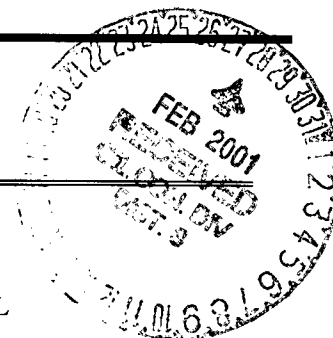
EPFS GROUNDWATER PITS

2000 ANNUAL GROUNDWATER REPORT

SANDOVAL GAS COM A #1A
Meter/Line ID - 89620

SITE DETAILS

Legals - Twn: 30N Rng: 9W Sec: 35 Unit: C
NMOCD Hazard Ranking: 10 Land Type: FEDERAL
Operator: AMOCO PRODUCTION COMPANY



PREVIOUS ACTIVITIES

Site Assessment: May-94 Excavation: Sep-94 (50 cy) Soil Boring: May-95
Monitor Well: May-95 Re-Excavation: Jul-97 (504 cy) Re-Install MW: Aug-97
Quarterly Sampling Initiated: Apr-96 Annual Sampling Initiated: Apr-99

2000 ACTIVITIES

Annual Groundwater Monitoring – Annual groundwater monitoring was conducted during April of 2000.

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 as Attachment 1.

SITE MAP

A site map is presented as Figure 1.

GEOLOGIC LOGS AND WELL COMPLETION DIAGRAMS

There were no drilling activities at this site in 2000.

DISPOSITION OF GENERATED WASTES

There were no wastes generated at this site in 2000.

ISOCONCENTRATION MAPS

An isoconcentration map was not generated for this site.

CONCLUSIONS

Analytical results of groundwater samples from MW-1 show levels of benzene, toluene and total xylenes above NMWQCC groundwater standards. Groundwater samples collected from MW-1 have been over standards for BTEX since sampling was initiated but appear to be decreasing each year.

Pertinent data from past groundwater reports include the following:

A formerly unlined pit is adjacent to MW-1 and may be an additional source. An attempt was made to install down-gradient monitor wells in December of 1995. Refusal was encountered at approximately 38 feet below ground surface and no groundwater was encountered. An attempt was made to collect groundwater samples with a Geoprobe and refusal was encountered at approximately 26 feet below ground surface on 4 sides of the pit.

EPFS GROUNDWATER PITS 2000 ANNUAL GROUNDWATER REPORT

RECOMMENDATIONS

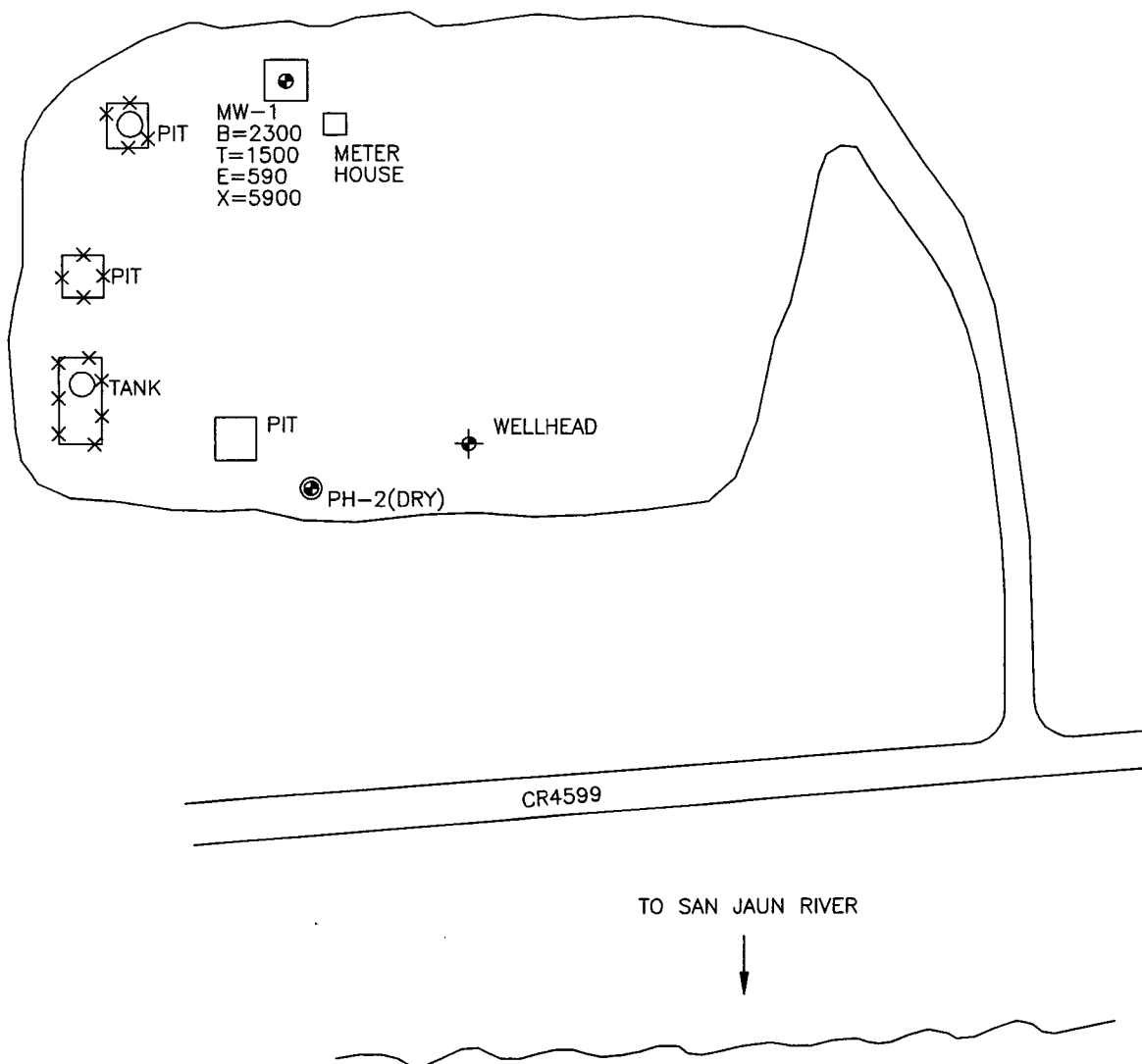
- EPFS proposes to conduct nutrient injection in MW-1 to enhance bioremediation and natural attenuation in the former pit.
- EPFS will conduct annual sampling at the site until BTEX constituents fall below New Mexico groundwater standards.
- After BTEX constituents fall below New Mexico Groundwater Standards, quarterly sampling will be conducted until analytical results show BTEX 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.

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)
SAN-0004-MW1	89620	Sandoval Gas Com A #1A	04/13/2000	1	Sample 1 - 5th Event	= 2,300	= 1,500	= 590	= 5,900	10,290

Sample 1 - Annual Sampling



LEGEND

- ⊙ PH-1 APPROXIMATE PIEZOMETER LOCATION AND NUMBER
- ⊙ MW-1 APPROXIMATE MONITORING WELL LOCATION AND NUMBER
- B BENZENE (ug\L)
- T TOLUENE (ug\L)
- E ETHYL BENZENE (ug\L)
- X XYLENE (ug\L)
- ug\L MICROGRAMS PER LITER

NOT TO SCALE



COL 628\00219AX-003



TITLE:
SANDOVAL GAS COM A #1A
METER 89620
APRIL 13, 2000

DWN: TMM	DES.: LW
CHKD: LW	APPD: MN
DATE: 1/30/01	REV.: 0

PROJECT NO.: 62800219
EPFS GW PITS

FIGURE 1

ATTACHMENT 1

2000 GROUNDWATER ANALYTICAL

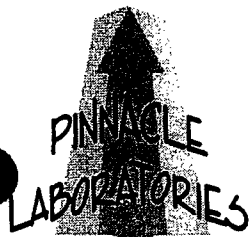
Chain of Custody, Record

4000 Monroe Road
Farmington, NM 87401

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

COC Serial No. C 2521

[illegible]



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

Pinnacle Lab ID number 004056
April 24, 2000

PHILIP ENVIRONMENTAL
4000 MONROE ROAD
FARMINGTON, NM 87401

Project Name EPFS QUARTERLY SAMPLING
Project Number 62800107

Attention: Robert Thompson/LeAudra Stanley

On 04/14/00 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.

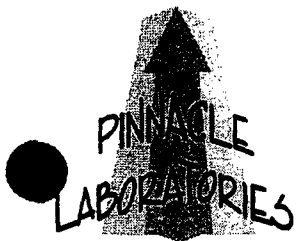
If you have any questions or comments, please do not hesitate to contact us at (505)344-3777.

Kimberly D. McNeill
Project Manager

H. Mitchell Rubenstein, Ph. D.
General Manager

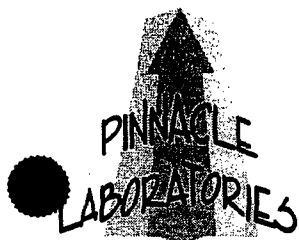
MR: jt

Enclosure



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

CLIENT	: PHILIP ENVIRONMENTAL	PINNACLE ID	: 004056
PROJECT #	: 62800107	DATE RECEIVED	: 04/14/00
PROJECT NAME	: EPFS QUARTERLY SAMPLING	REPORT DATE	: 04/24/00
PIN			DATE
ID. #	CLIENT DESCRIPTION	MATRIX	COLLECTED
01	SAN-0004-MW01	AQUEOUS	04/13/00



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

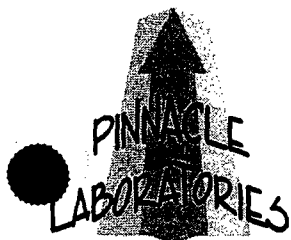
PINNACLE I.D.: 004056

SAMPLE	DATE	DATE	DATE	DIL.		
ID. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	SAN-0004-MW01	AQUEOUS	04/13/00	NA	04/15/00	10

PARAMETER	DET. LIMIT	UNITS	SAN-0004-MW01
BENZENE	0.5	UG/L	2300
TOLUENE	0.5	UG/L	1500
ETHYLBENZENE	0.5	UG/L	590
TOTAL XYLENES	0.5	UG/L	5900

8 SURROGATE:
BROMOFLUOROBENZENE (%) 100
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.	: 004056
BLANK I. D.	: 041500	DATE EXTRACTED	: N/A
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 04/15/00
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:

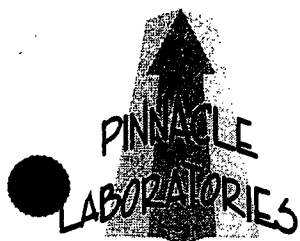
BROMOFLUOROBENZENE (%)

92

Gate Limits: (80 - 120)

ANALYST 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 # : 041500
CLIENT : PHILIP ENVIRONMENTAL
PROJECT # : 62800107
PROJECT NAME : EPFS QUARTERLY SAMPLING

PINNACLE I.D. : 004056
DATE EXTRACTED : N/A
DATE ANALYZED : 04/15/00
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	21.0	105	20.7	104	1	(80 - 120)	20
TOLUENE	<0.5	20.0	23.6	118	22.6	113	4	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	22.9	115	22.2	111	3	(80 - 120)	20
TOTAL XYLENES	<0.5	60.0	69.2	115	66.4	111	4	(80 - 120)	20

TEST NOTES:
N/A

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

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

Tip

4000 Monroe Road
Farmington, NM 87401

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

COC Serial No. C 2521

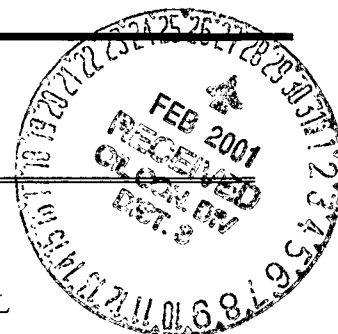
[illegible]

Samples Iced: ☒ Yes ☐ No		Carrier: GREYHOUND LINES	Airbill No. GLT/606650793
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: on 10 @ 4.50	

EPFS GROUNDWATER PITS

2000 ANNUAL GROUNDWATER REPORT

W. D. HEATH B #5
Meter/Line ID - 87493



SITE DETAILS

Legals - Twn: 30N Rng: 9W Sec: 31 Unit: M
NMOCD Hazard Ranking: 30 Land Type: FEDERAL
Operator: AMOCO PRODUCTION COMPANY

PREVIOUS ACTIVITIES

Site Assessment: Apr-94 Excavation: May-94 (50 cy) Soil Boring: May-95
Monitor Well: May-95 Geoprobe: Jan-97 Quarterly Sampling Initiated: Apr-96

2000 ACTIVITIES

Quarterly Groundwater Monitoring - Quarterly groundwater monitoring continued through 2000.

SUMMARY TABLES

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

SITE MAP

A site map is presented as Figure 1.

GEOLOGIC LOGS AND WELL COMPLETION DIAGRAMS

There were no drilling activities at this site in 2000.

DISPOSITION OF GENERATED WASTES

There were no wastes generated at this site in 2000.

ISOCONCENTRATION MAPS

An isoconcentration map was not generated for this site.

CONCLUSIONS

Analytical results of groundwater samples collected from MW-1 show levels of hydrocarbon constituents below the NMWQCC groundwater standards for all analytes except benzene during all monitoring events in 2000 and since well installation in 1995. A trend may be discerned in the data from 1998 through 2000 where all analytes including benzene are below standards during the third quarter of each respective year.

Pertinent data from past groundwater reports include the following:

Based on groundwater levels collected from temporary well point data, the groundwater flow trends to the west-southwest on this site.

EPFS GROUNDWATER PITS

2000 ANNUAL GROUNDWATER REPORT

RECOMMENDATIONS

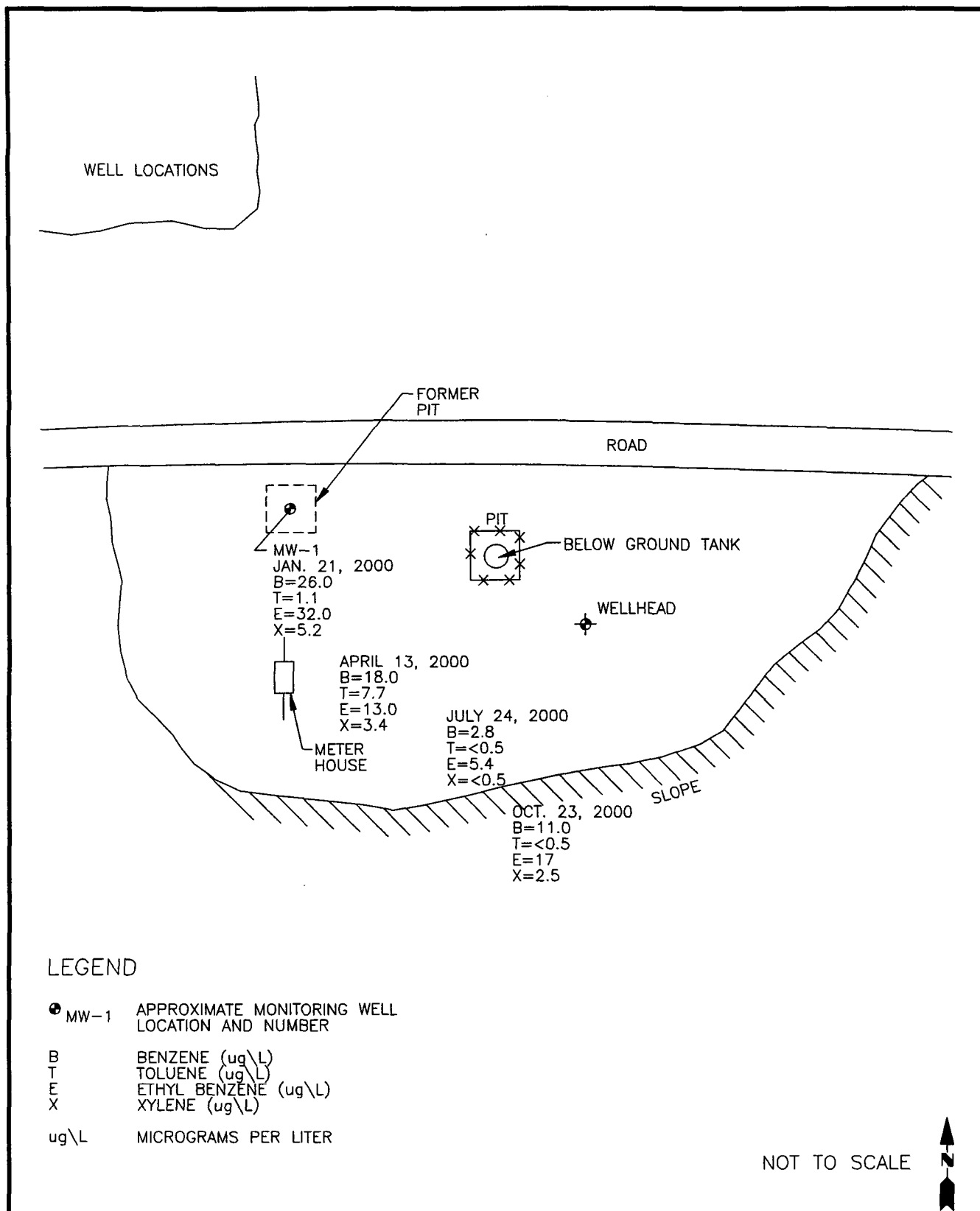
- Quarterly sampling will continue at MW-1 until analytical results indicate hydrocarbon constituents are below New Mexico groundwater standards for four consecutive quarters.
- Following OCD approval for closure, MW-1 will be abandoned using OCD approved abandonment procedures.

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)
WDH-0001-MW1	87493	WD Heath B #5	01/21/2000	1	Sample 4 - 16th Quarter	= 26.0	= 1.1	= 32.0	= 5.2	64.3
WDH-0004-MW1	87493	WD Heath B #5	04/13/2000	1	Sample 4 - 17th Quarter	= 18.0	= 7.7	= 13.0	= 3.4	42.1
HEA-0007-MW1	87493	WD Heath B #5	07/24/2000	1	Sample 4 - 18th Quarter	= 2.8	< 0.5	= 5.4	< 0.5	8.2
WDH-0010-MW1	87493	WD Heath B #5	10/23/2000	1	Sample 4 - 19th Quarter	= 11.0	< 0.5	= 17.0	= 2.3	30.3

Sample 4 - Quarterly Sampling



COL 628\002198F-003



TITLE:
WD HEATH B#5
METER 87493
JANUARY 22, 2001

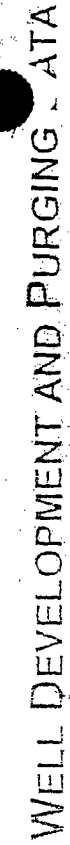
OWN: TMM	DES.: LW
CHKD: LW	APPD: MN
DATE: 1/31/01	REV.: 0

PROJECT NO.: 62800219
EPFS GW PITS

FIGURE 1

ATTACHMENT 1

2000 GROUNDWATER ANALYTICAL



200

Page 1 of 1

Serial No. WDPD-

Project Name EPFS Quarterly Sampling

Project Manager Cecil Irby

Project No. 62800107

Client Company ~~EPNC~~ EPFS

Phase Task No. 0301

Site Name WD Heath B5

Site Address RURAL SAN JUAN Co

Development Criteria

Development Criteria
☒ 3 to 5 Casing Volumes of Water Removal

Water Volume Calculation
 Initial Depth of Well (feet) **44.21**

Instruments
Serial No. (If applicable)

Stabilization of Indicator Parameters

Initial Depth of Well (feet)	412.
Initial Depth to Water (feet)	28.13

☐ pH Meter _____

Methods of Development

Pump

☐ Centrifugal

☐ Submersible

☐ Peristaltic

☐ Other

Bailer

☐ Bottom Valve

☒ Double Check Valve

☐ Stainless-steel Kemmerer

Item	Water Volume In Well Cubic Feet	Gallons	Gallons to be Removed
Well Casing	2.62	:	2.62 x 3
Gravel Pack			
Drilling Fluids			
Total			7.86

Water Disposal
separator tank (KUTZ)

Water Removal Data

[illegible]

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

Comments: pH METER MAFUNCTIONED: NO pH READINGS

Developer's Signature(s) Steve Oller

Date 1/21/2000

Reviewer RT Date 3/10/00



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

Pinnacle Lab ID number 001063
February 01, 2000

PHILIP ENVIRONMENTAL
4000 MONROE ROAD
FARMINGTON, NM 87401

Project Name EPFS QUARTERLY SAMPLING
Project Number 62800107

Attention: CECIL IRBY

On 01/25/00 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.

A handwritten signature in black ink, appearing to read "Kimberly D. McNeill".

Kimberly D. McNeill
Project Manager

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	: 001063
PROJECT #	: 62800107	DATE RECEIVED	: 01/25/00
PROJECT NAME	: EPFS QUARTERLY SAMPLING	REPORT DATE	: 02/01/00
PIN			DATE
ID. #	CLIENT DESCRIPTION	MATRIX	COLLECTED
01	TRIP BLANK	AQUEOUS	01/21/00
02	WBH 0001 MW1-1	AQUEOUS	01/21/00



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.: 001063

SAMPLE			DATE	DATE	DATE	DIL.
ID. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	TRIP BLANK	AQUEOUS	01/21/00	NA	01/31/00	1
02	WBH 0001 MW1-1	AQUEOUS	01/21/00	NA	01/31/00	1

PARAMETER	DET. LIMIT	UNITS	TRIP BLANK	WBH 0001 MW1
BENZENE	0.5	UG/L	< 0.5	26
TOLUENE	0.5	UG/L	< 0.5	1.1
ETHYLBENZENE	0.5	UG/L	< 0.5	32
TOTAL XYLENES	0.5	UG/L	< 0.5	5.2

SURROGATE:
BROMOFLUOROBENZENE (%) 101 114
SURROGATE LIMITS (80 - 120)

CHEMIST NOTES:
N/A



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
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GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 001063
BLANK I. D.	: 013100	DATE EXTRACTED	: N/A
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 01/31/00
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 (%) 107
SURROGATE LIMITS: (80 - 120)
CHEMIST NOTES:
N/A



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Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY QUALITY CONTROL
MSMSD

TEST : EPA 8021 MODIFIED
MSMSD # : 013100
CLIENT : PHILIP ENVIRONMENTAL
PROJECT # : 62800107
PROJECT NAME : EPFS QUARTERLY SAMPLING

PINNACLE I.D. : 001063
DATE EXTRACTED : N/A
DATE ANALYZED : 01/31/00
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	23.7	119	22.8	114	4	(80 - 120)	20
TOLUENE	<0.5	20.0	21.7	109	20.5	103	6	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	23.1	116	21.8	109	6	(80 - 120)	20
TOTAL XYLENES	<0.5	60.0	66.8	111	63.6	106	5	(80 - 120)	20

IST 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 MANAGER: Cecil Irby

COMPANY: Philip Services Corp

ADDRESS: 4000 Monroe Rd,

Farmington, NM 87401

PHONE: 800 326-2262

FAX: (505) 326-2388

EPFS

COMPANY:

ADDRESS:

[illegible]

ANALYSIS REQUEST

[illegible]

PROJECT INFORMATION		PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS				RELINQUISHED BY: 1. 2.	
PROJ. NO: 62800107		(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) ☐ CERTIFICATION REQUIRED: ☐ NM ☐ SDWA ☐ OTHER METHANOL PRESERVATION ☐				Signature: <i>Steve Allen</i> Time: 0825 Printed Name: Steve Allen Date: Company: Philip Date: See reverse side (Force Majeure)	
PROJ. NAME: <i>EPFS Quarterly Sampling</i>		COMMENTS: FIXED FEE ☐ <i>HEL</i> <i>ice</i>				RECEIVED BY: 1. 2.	
P.O. NO.:						Signature: <i>Steve Allen</i> Time: 1200 Printed Name: Steve Allen Date: 12/1/00 Company: Pinnacle Laboratories Inc.	
SHIPPED VIA:							
SAMPLE RECEIPT							
NO. CONTAINERS		3					
CUSTODY SEALS		Y/N (NA)					
RECEIVED INTACT		YES					
BLUE ICE (ICE)		YES					

SHADED AREAS ARE FOR LAB USE ONLY.

PLEASE FILL THIS FORM IN COMPLETELY.

PHILIP

Chain of Custody Record

4000 Monroe Road
Farmington, NM 87401

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

COC Serial No. C 2520

Project Name EPFS QUARTERLY SAMPLING		Type of Analysis and Bottle	
Project Number 62800107 Phase Task 0301		Total Number of Bottles	
Samplers R. THOMPSON			
Laboratory	Name PINNACLE LABS		
	Location ALBUQUERQUE, NM		
Sample Number (and depth)	Date	Time	Matrix
WDH-0004-MW01	4/13/00	1235	H ₂ O
TRIP BLANK	4/13/00	1230	H ₂ O
Comments			
WD HEATH B#S 97493			

Relinquished by:

Received By:

Signature	Date	Time	Signature	Date	Time
R. Thompson	4/13/00	1620			

Samples Iced: ☒ Yes ☐ No

Preservatives (ONLY for Water Samples)

- ☐ Cyanide Sodium hydroxide (NaOH)
☒ Volatile Organic Analysis Hydrochloric acid (HCl)
☐ Metals Nitric acid (HNO₃)
☐ TPH (#18.1) Sulfuric acid (H₂SO₄)
☐ Other (Specify) _____
☐ Other (Specify) _____

Carrier: BREYERHOOD LINES

Shipping and Lab Notes:

Airbill No. GLI 1006650793



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

Pinnacle Lab ID number 004055
April 24, 2000

PHILIP ENVIRONMENTAL
4000 MONROE ROAD
FARMINGTON, NM 87401

Project Name EPFS QUARTERLY SAMPLING
Project Number 62800107

Attention: Robert Thompson/LeAudra Stanley

On 04/14/00 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.

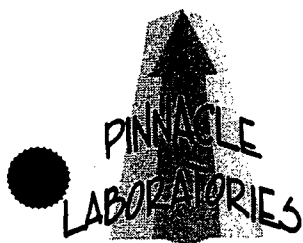
If you have any questions or comments, please do not hesitate to contact us at (505)344-3777.

Kimberly D. McNeill
Project Manager

H. Mitchell Rubenstein, Ph. D.
General Manager

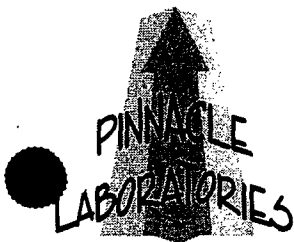
MR: jt

Enclosure



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

CLIENT	: PHILIP ENVIRONMENTAL	PINNACLE ID	: 004055
PROJECT #	: 62800107	DATE RECEIVED	: 04/14/00
PROJECT NAME	: EPFS QUARTERLY SAMPLING	REPORT DATE	: 04/24/00
PIN			DATE
ID. #	CLIENT DESCRIPTION	MATRIX	COLLECTED
01	WDH-0004-MW01	AQUEOUS	04/13/00
02	TRIP BLANK	AQUEOUS	04/13/00



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.: 004055

SAMPLE			DATE	DATE	DATE	DIL.
ID. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	WDH-0004-MW01	AQUEOUS	04/13/00	NA	04/15/00	1
02	TRIP BLANK	AQUEOUS	04/13/00	NA	04/15/00	1

PARAMETER	DET. LIMIT	UNITS	WDH-0004-MW01	TRIP BLANK
BENZENE	0.5	UG/L	18	< 0.5
TOLUENE	0.5	UG/L	7.7	< 0.5
ETHYLBENZENE	0.5	UG/L	13	< 0.5
TOTAL XYLENES	0.5	UG/L	3.4	< 0.5

SURROGATE:

BROMOFLUOROBENZENE (%)

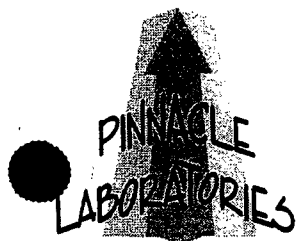
98

94

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.	: 004055
BLANK I. D.	: 041500	DATE EXTRACTED	: N/A
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 04/15/00
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:

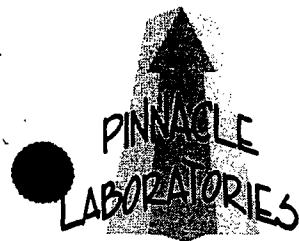
BROMOFLUOROBENZENE (%)

92

STANDARD LIMITS: (80 - 120)

COMMENTS:

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 # : 041500
CLIENT : PHILIP ENVIRONMENTAL
PROJECT # : 62800107
PROJECT NAME : EPFS QUARTERLY SAMPLING

PINNACLE I.D. : 004055
DATE EXTRACTED : N/A
DATE ANALYZED : 04/15/00
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	21.0	105	20.7	104	1	(80 - 120)	20
TOLUENE	<0.5	20.0	23.6	118	22.6	113	4	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	22.9	115	22.2	111	3	(80 - 120)	20
TOTAL XYLENES	<0.5	60.0	69.2	115	66.4	111	4	(80 - 120)	20

TEST 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

Chain of Custody Record

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

COC Serial No. C 2520

Project Name		EPFS QUARTERLY SAMPLING	
Project Number		62800107 Phase . Task 0301	
Samplers		R. THOMPSON	
Laboratory	Name	PINNACLE LABS	
Location		ALBUQUERQUE, NM	
Sample Number (and depth)	Date	Time	Matrix
WDH-0004-MW01	4/13/00	1235	H ₂ O
TRIP BLANK	4/13/00	1230	H ₂ O
Total Number of Bottles			
Type of Analysis and Bottle			
Comments			
WD HEAD 8#5 87493			

Relinquished by:

Signature	Date	Time	Signature	Date	Time
<i>Robert Thompson</i>	4/13/00	1620	<i>Jim H. H. H.</i>	04.14.00	9 00

Received By:

Samples Iced:	Yes	No	Carrier:	GREYHOUND LINES	Airbill No.	GLI 1006650793
Preservatives (ONLY for Water Samples)						
☐ Cyanide						
☒ Volatile Organic Analysis						
☐ Metals						
☐ TPH (418.1)						
☐ Other (Specify)						
☐ Other (Specify)						
Shipping and Lab Notes:						
on ice at 4.8°C						

Well Number mw-01

Serial No. WDPD-

Page 1 of 1

Project Name EPES QUARTERLY SAMPLING

Project Manager R. Thompson

Project No. 62800107

Client Company EPES

Phase/Task No. 0301

Site Name HEATH B-5 (87493)

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) 45.24 TOL
Initial Depth to Water (feet) 28.63 TOL
Height of Water Column in Well (feet) 16.61
Diameter (inches): Well 2 Gravel Pack _____

Methods of Development

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

Instruments

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

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)		Temperature (°C)	pH	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/l)	Comments
						Increment	Cumulative					
7/24/00	1524	X				2	2	25.4	7.27	6560		CLEAR, SEPTIC TANK
"	1528	X				2	4	23.1	7.28	6380		"
"	1532	X				2	6	22.8	7.23	6370		"
"	1534	X				2	8	22.8	7.31	6330		"
"	1536	X				2	10	22.6	7.29	6330		"

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

Comments Sampled for BTEX at 1540

Developer's Signature(s) Jane Wagoner

Date 7/24/00

Reviewer RT Date 8/3/00

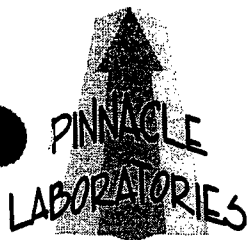
Chain of Custody Record

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

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

Relinquished by:			Received By:		
Signature	Date	Time	Signature	Date	Time
<i>Joe Wagner</i>	<i>7/28/00</i>	<i>1010</i>			

PE-176 4/95



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

Pinnacle Lab ID number 007083
August 08, 1998

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

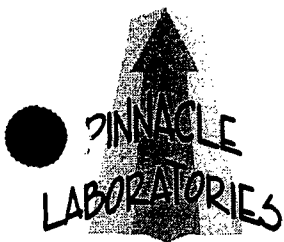
On 07/28/00 Pinnacle Laboratories, Inc., (ADHS License No. AZ0592 pending), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

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

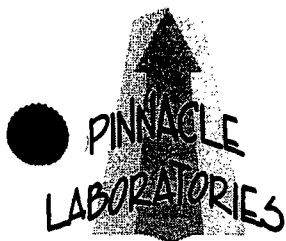
MR: jt

Enclosure



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

CLIENT	: PHILIP ENVIRONMENTAL	PINNACLE ID	: 007083
PROJECT #	: 62800107	DATE RECEIVED	: 07/28/00
PROJECT NAME	: EPFS QUARTERLY SAMPLING	REPORT DATE	: 08/03/00
PIN			DATE
ID. #	CLIENT DESCRIPTION	MATRIX	COLLECTED
01	HEA-0007-MW01	AQUEOUS	07/24/00



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.: 007083

SAMPLE			DATE	DATE	DATE	DIL.
ID. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	HEA-0007-MW01	AQUEOUS	07/24/00	NA	08/01/00	1

PARAMETER	DET. LIMIT	UNITS	HEA-0007-MW01
BENZENE	0.5	UG/L	2.8
TOLUENE	0.5	UG/L	< 0.5
ETHYLBENZENE	0.5	UG/L	5.4
TOTAL XYLENES	0.5	UG/L	< 0.5

SURROGATE:

BROMOFLUOROBENZENE (%)

102

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.	: 007083
BLANK I. D.	: 080100	DATE EXTRACTED	: NA
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 08/01/00
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:

BROMOFLUOROBENZENE (%)

95

STATE 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 # : 007079-01
CLIENT : PHILIP ENVIRONMENTAL
PROJECT # : 62800107
PROJECT NAME : EPFS QUARTERLY SAMPLING

PINNACLE I.D. : 007083
DATE EXTRACTED : NA
DATE ANALYZED : 08/01/00
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	17.3	87	16.7	84	4	(80 - 120)	20
TOLUENE	<0.5	20.0	21.3	107	20.1	101	6	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	23.0	115	21.9	110	5	(80 - 120)	20
TOTAL XYLENES	1.1	60.0	70.4	116	66.9	110	5	(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 2597

007083

Project Name <u>EPES QUARTERLY SAMPLING</u>		Type of Analysis and Bottle	
Project Number <u>628000107 Phase 0301</u>		<u>BTEX 8021</u>	
Samplers <u>J. WAGNON</u>			
Laboratory	Name <u>PINNACLE LABS</u>		
Location <u>ALBUQUERQUE, NM</u>			
Sample Number (and depth)	Date	Time	Matrix
<u>HEA-0007-MWD1</u>	<u>7/24/00</u>	<u>1540</u>	<u>H2O</u>
Total Number of Bottles		X	
2			
Comments		<u>HEATH 8-5</u> <u>#87493</u>	

Relinquished by:

Signature	Date	Time	Signature	Date	Time
<u>Jean Wagner</u>	<u>7/28/00</u>	<u>1010</u>	<u>Jean Wagner</u>	<u>7/28/00</u>	<u>1640</u>

Received By:

Samples Iced: ☒ Yes ☐ No	Carrier: <u>GREYHOUND LINES</u>	Airbill No. <u>6CJ1600651101</u>
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) _____ ☐ Other (Specify) _____	Shipping and Lab Notes: <u>Rec'd @ 3.12</u>	

Project Name Ep FS quarterly sampling

Client Company: E D S
Phase Task No: 0321

Site Name W.D. Heath B⁵S (87493) 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) 46.25
 Initial Depth to Water (feet) 29.42
 Height of Water Column in Well (feet) 16.83
 Diameter (inches): Well 2" Gravel Pack

Instruments

☒ pH Meter

☐ DO Monitor

Serial No. (If applicable) Hydac

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	16.83	2.74X3	8.22
Gravel Pack			
Drilling Fluids			
Total			8.22

Water Disposal
KUTZ separator Bloomfield
NM

Water Removal Data

[illegible]

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

Comments	Sampled for B Tex AT 1000

Developer's Signature(s) Edwin A. May

01/01/2023-23-00

Reviewer RT Date 10/27/00

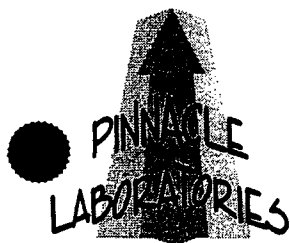
Chain of Custody, Record

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

COC Serial No. C 2684

Relinquished by:		Received By:			
Signature	Date	Time	Signature	Date	Time
<i>[Handwritten Signature]</i>	10-25-00	1600			

Samples Iced: ☒ Yes ☐ No		Carrier: <u>Greyhound</u> Airbill No. <u>GLI 1606918731</u>
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>HgCl₂</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

NOV - 6 2000

Pinnacle Lab ID number **010101**
November 01, 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 10/26/00 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.

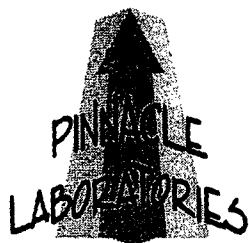
If you have any questions or comments, please do not hesitate to contact us at (505)344-3777.

H. Mitchell Rubenstein, Ph. D.
General Manager

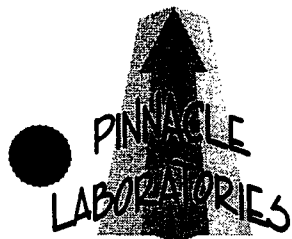
MR: jt

Enclosure

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



CLIENT	: PHILIP ENVIRONMENTAL	PINNACLE ID	: 010101
PROJECT #	: 62800107	DATE RECEIVED	: 10/26/00
PROJECT NAME	: EPFS QUARTERLY SAMPLING	REPORT DATE	: 11/02/00
PIN			DATE
ID. #	CLIENT DESCRIPTION	MATRIX	COLLECTED
01	WDH-0010-MW 01	AQUEOUS	10/23/00



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GAS CHROMATOGRAPHY RESULTS

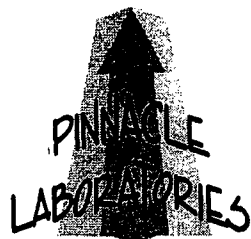
TEST : EPA 8021 MODIFIED
CLIENT : PHILIP ENVIRONMENTAL
PROJECT # : 62800107
PROJECT NAME : EPFS QUARTERLY SAMPLING

PINNACLE I.D.: 010101

SAMPLE			DATE	DATE	DATE	DIL.
S. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
1	WDH-0010-MW 01	AQUEOUS	10/23/00	NA	10/30/00	1
PARAMETER		DET. LIMIT	UNITS	WDH-0010-MW 01		
BENZENE		0.5	UG/L	11		
TOLUENE		0.5	UG/L	< 0.5		
ETHYLBENZENE		0.5	UG/L	17		
TOTAL XYLENES		0.5	UG/L	2.3		

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

CHEMIST NOTES:
I/A



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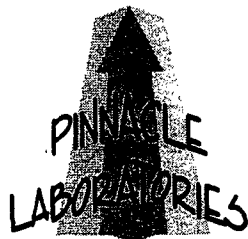
GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 010101
BLANK I. D.	: 103000	DATE EXTRACTED	: NA
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 10/30/00
PROJECT #	: 62800107	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: EPFS QUARTERLY SAMPLING		

PARAMETER	UNITS	
ENZENE	UG/L	<0.5
OLUENE	UG/L	<0.5
THYLBENZENE	UG/L	<0.5
OTAL XYLENES	UG/L	<0.5

CURROGATE:
BROMOFLUOROBENZENE (%) 105
DATE LIMITS: (80 - 120)
REMARKS: NOTES:
/A

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GAS CHROMATOGRAPHY QUALITY CONTROL
 MSMSD

TEST : EPA 8021 MODIFIED
 MSMSD # : 010100-01
 CLIENT : PHILIP ENVIRONMENTAL
 PROJECT # : 62800107
 PROJECT NAME : EPFS QUARTERLY SAMPLING

PINNACLE I.D. : 010101
 DATE EXTRACTED : NA
 DATE ANALYZED : 10/30/00
 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	19.9	100	17.6	88	12	(80 - 120)	20
TOLUENE	<0.5	20.0	19.9	100	19.9	100	0	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	21.3	107	21.5	108	1	(80 - 120)	20
OTAL XYLENES	<0.5	60.0	62.4	104	62.6	104	0	(80 - 120)	20

HEMIST NOTES:
 /A

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

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

