3R - 204

REPORTS

DATE:

2000

EPFS GROUNDWATER PITS
2000 ANNUAL GROUNDWATER REPORT

K-27 LINE DRIP
Meter/Line ID - LD072

SITE DETAILS

Legals - Twn: 25N **Rng:** 6W **Sec:** 4 **Unit:** E
NMOCD Hazard Ranking: 40 **Land Type:** FEDERAL
Operator: EL PASO FIELD SERVICES

PREVIOUS ACTIVITIES

Site Assessment: Jul-94 **Excavation:** Aug-94 (90 cy) **Soil Boring:** Sep-95
Monitor Well: Sep-95 **Additional Monitor Well:** Dec-99 **Replace Monitor Well:** Jul-00

2000 ACTIVITIES

Phase Separated Hydrocarbon (PSH) Measurements - PSH thickness was monitored in MW-1, MW-2, and MW-3 (Table 1). PSH in MW-2 was measured at 1.27 feet on October 6, 2000.

Monitor Well Installation – Completion of MW-2 failed during the December 22, 1999 installation and the monitor well was replaced in July of 2000.

Groundwater Monitoring – Groundwater samples were collected from MW-2 and MW-3.

SUMMARY TABLES

Groundwater levels and product thickness are presented in Table 1. Groundwater analytical data are presented in Table 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 gradient is included as Figure 1.

GEOLOGIC LOGS AND WELL COMPLETION DIAGRAMS

Drilling activities were conducted July 17, 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 not generated for this site.

CONCLUSIONS

A measurable thickness of product was not detected in MW-1 during 2000. A measurable thickness of product was detected in MW-2 in September and October of 2000. No product has been removed to date. Analysis of groundwater samples from MW-3 show no detectable levels of the analytes.

The groundwater flow trends to the north on this site.

RECOMMENDATIONS

- Monitor and remove product from MW-1, if necessary.
- Remove product at MW-2 as needed.
- Following product recovery, sample MW-1, MW-2, and MW-3 annually until BTEX levels are below NMWQCC groundwater standards, then sample quarterly for closure.

Meter/Line #	Location/Line Name	Date	MW	Depth to Product	Depth to Water	Product Thickness	Volume Removed Gallons	Cumulative Gallons
LD072	LAT K-27 LINE DRIP	9/5/00	1	0	37.22	0	0	0
LD072	LAT K-27 LINE DRIP	10/6/00	1	0	37.42	0	0	0
LD072	LAT K-27 LINE DRIP	9/5/00	2	36.11	37.28	1.17	0	0
LD072	LAT K-27 LINE DRIP	10/6/00	2	36.04	37.31	1.27	0	0
LD072	LAT K-27 LINE DRIP	9/5/00	3	0	37.4	0	0	0
LD072	LAT K-27 LINE DRIP	10/6/00	3	0	37.8	0	0	0

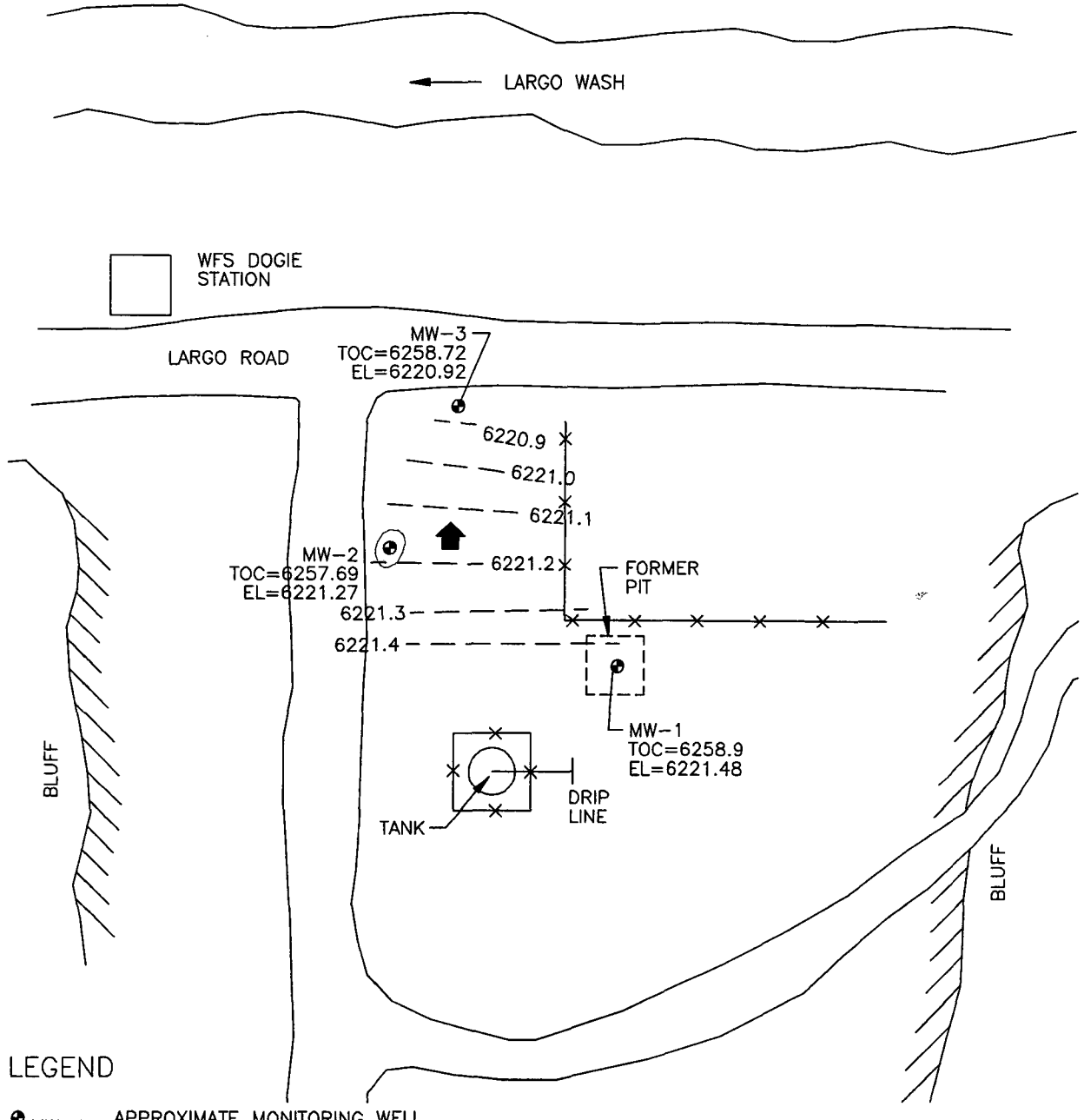
EPFS Groundwater Pits
2000 Groundwater Report

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)
072-0008-MW2	LD072	LAT K-27 LINE DRIP	8/31/00	2	Sample 1 - 1st Annual	= 5,500	= 14,000	= 670	= 5,800	25,970
072-0009-MW3	LD072	LAT K-27 LINE DRIP	9/5/00	3	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
TOC	TOP OF CASING ELEVATION
EL	GROUNDWATER ELEVATION
58	GROUNDWATER POTENTIOMETRIC SURFACE
	GROUNDWATER GRADIENT

0 40
FEET

N

628\002198B-003
COL

PHILIP SERVICES CORP

TITLE:
K-27 LINE DRIP
METER LD072
OCTOBER 6, 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

PHILIP ENVIRONMENTAL

Well Number MW 02

Serial No. WDPD-

☑ Development ☐ Purging

WELL DEVELOPMENT AND PURGING DA

Page ____ of ____

Project Name EPFS Quarterly Sampling | Project Manager R Thompson | Project No. 62800107

Client Company EPFS | Phase.Task No. 0301

Site Name K 27 Line Drip (LD022) | Site Address Rural San Juan CO.

Development Criteria

☑ 3 to 5 Casing Volumes of Water Removal

☑ Stabilization of Indicator Parameters

☐ Other ____

Methods of Development

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

☐ Other ____

Water Volume Calculation

Initial Depth of Well (feet) 40.52

Initial Depth to Water (feet) 35.81

Height of Water Column in Well (feet) 4.71

Diameter (inches): Well 2" Gravel Pack ____

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	4.71	.16 x 3	2.28
Gravel Pack			
Drilling Fluids			
Total			2.28

Instruments

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

Water Disposal

K+Z Seperator Bloomfield NM.

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
8-31-00	10:12		X				.5	.5			19.1	6.96	4940		Cloudy Brown product in well Strong odor
	10:18		X				.5	1			17.0	7.02	4810		" "
	10:23		X				.5	1.5			16.8	6.83	4710		" "
	10:28		X				.5	2			16.2	6.95	4730		" "
	10:32		X				.5	2.5			15.8	7.04	4750		No Change

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

Comments Sampled for BTEX 10:39 well needs 2" well Cap

Developer's Signature(s) Chris A. May Date 08-31-00 Reviewer ____ Date ____

Form A0101 Rev. 10/6/94

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PHILIP ENVIRONMENTAL

Well Number MW-03

☐ Development ☐ Purging

WELL DEVELOPMENT AND PURGING D[illegible]A

Page ____ of ____

Serial No. WDPD-

Project Name EpFS quarterly Sampling

Project Manager R. Thompson

Project No. 62800102

Client Company EpFS

Phase.Task No. 0301

Site Name K27 Line Drip (LD072)

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) 43.34

Initial Depth to Water (feet) 37.40

Height of Water Column in Well (feet) 5.94

Diameter (inches): Well 2" Gravel Pack ____

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	5.94	0.96X3	2.88
Gravel Pack			
Drilling Fluids			
Total			2.88

Instruments

	Serial No. (If applicable)
☑ pH Meter	Hydac
☐ DO Monitor	
☑ Conductivity Meter	Hydac
☑ Temperature Meter	Hydac
☐ Other ____	

Methods of Development

Pump
- ☐ Centrifugal
- ☐ Submersible
- ☐ Peristaltic

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

☐ Other ____

Water Disposal

KWJ2 Seperator Bloomfield N.M.

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
09-05-00	10:46		X				.75	.75			23.8	7.75	OR		Brown no odor color
	10:51		X				.75	1.5			21.2	7.63	OR		" "
	10:55		X				.75	2.25			20.2	7.59	OR		" "
	10:59		X				.75	3			19.1	7.56	OR		" "
	11:04		X				.75	3.75			19.1	7.43	OR		Remained Same

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

Comments Sampled for BTex 11:10 AM Conductivity Higher than 1000 X meter could not Read it

Developer's Signature(s) Chris A. Mann Date 09-05-00 Reviewer ____ Date ____

Form A0101 Rev. 10/6/94

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PINNACLE LABORATORIES

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

Pinnacle Lab ID number **009019**
September 08, 2000

PHILIP ENVIRONMENTAL
4000 MONROE ROAD
FARMINGTON, NM 87401

EL PASO FIELD SERVICES
614 RIELY STREET
FARMINGTON, NM 87401

Project Name EPFS QUARTERLY SAMPLING
Project Number 62800107

Attention: ROBERT THOMPSON/LEAUDRA STANLEY

On 09/06/00 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

PINNACLE LABORATORIES

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

CLIENT	: PHILIP ENVIRONMENTAL	PINNACLE ID	: 009019
PROJECT #	: 62800107	DATE RECEIVED	: 09/06/00
PROJECT NAME	: EPFS QUARTERLY SAMPLING	REPORT DATE	: 09/08/00

PIN ID. #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	072-0008-MW02	AQUEOUS	08/31/00
02	072-0009-MW03	AQUEOUS	09/05/00
03	TRIP BLANK	AQUEOUS	09/05/00

PINNACLE LABORATORIES

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

GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : PHILIP ENVIRONMENTAL PINNACLE I.D.: 009019
PROJECT # : 62800107
PROJECT NAME : EPFS QUARTERLY SAMPLING

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
01	072-0008-MW02	AQUEOUS	08/31/00	NA	09/07/00	200
02	072-0009-MW03	AQUEOUS	09/05/00	NA	09/07/00	1
03	TRIP BLANK	AQUEOUS	09/05/00	NA	09/07/00	1

PARAMETER	DET. LIMIT	UNITS	072-0008-MW02	072-0009-MW03	TRIP BLANK
BENZENE	0.5	**UG/L**	**5500**	< 0.5	< 0.5
TOLUENE	0.5	**UG/L**	**14000**	< 0.5	< 0.5
ETHYLBENZENE	0.5	**UG/L**	**670**	< 0.5	< 0.5
TOTAL XYLENES	0.5	**UG/L**	**5800**	< 0.5	< 0.5
SURROGATE:					
BROMOFLUOROBENZENE (%)			113	103	97
SURROGATE LIMITS	(80 - 120)				

CHEMIST NOTES:
N/A

PINNACLE LABORATORIES

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

GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 009019
BLANK I. D.	: 090700	DATE EXTRACTED	: NA
CLIENT	: PHILIP ENVIRONMENTAL	DATE ANALYZED	: 09/07/00
PROJECT #	: 62800107	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: EPFS QUARTERLY SAMPLING		

PARAMETER	UNITS	
BENZENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
ETHYLBENZENE	UG/L	<0.5
TOTAL XYLENES	UG/L	<0.5
SURROGATE:		
BROMOFLUOROBENZENE (%)		111
SURROGATE LIMITS:	(80 - 120)	

CHEMIST NOTES:
N/A

PINNACLE LABORATORIES

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

GAS CHROMATOGRAPHY QUALITY CONTROL
MSMSD

TEST	: EPA 8021 MODIFIED		
MSMSD #	: 009011-11	PINNACLE I.D.	: 009019
CLIENT	: PHILIP ENVIRONMENTAL	DATE EXTRACTED	: NA
PROJECT #	: 62800107	DATE ANALYZED	: 09/07/00
PROJECT NAME	: EPFS QUARTERLY SAMPLING	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	19.1	96	6	(80 - 120)	20
TOLUENE	<0.5	20.0	20.3	102	21.0	105	3	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	22.3	112	21.8	109	2	(80 - 120)	20
TOTAL XYLENES	<0.5	60.0	66.5	111	65.4	109	2	(80 - 120)	20

CHEMIST NOTES:
N/A

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

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

009019

PHILIP ENVIRONMENTAL — Chain of Custody Record

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

COC Serial No. C 2445

Project Name EpFS quarterly Sampling
Project Number 62900107 Phase . Task 0301
Samplers C Maez
Laboratory Name piNNacle
Location Alb9. N.M.

Sample Number (and depth)	Date	Time	Matrix	Total Number of Bottles	Type of Analysis and Bottle: BTEX 8021	Lab ID #	Comments
072-0008-MW02	9-31-00	10:39 Am	H_2O	2	X	01	K-27 line Drip (LD072)
072 0009 MW03	9-5-00	11:10 Am	H_2O	4	X	02	K-27 line Drip (LD072)
Trip Blank	9-5-00	2:35 pm	H_2O	1	X	03	

Relinquished by:

Signature	Date	Time
Chris L. Mann	09-05-00	1500

Received By:

Signature	Date	Time
Francine Irvine	9/6/00	1020

Samples Iced: ☑ Yes ☐ No

Preservatives (ONLY for Water Samples)
- ☐ Cyanide ..... Sodium hyroxide (NaOH)
- ☐ Volatile Organic Analysis ..... Hydrochloric acid (HCl)
- ☐ Metals ..... Nitric acid (HNO_3)
- ☐ TPH (418.1) ..... Sulfuric acid (H_2SO_4)
- ☒ Other (Specify) $HgCl_2$
- ☐ Other (Specify)

Carrier: Greyhound Lines
Airbill No GLI 1606918544

Shipping and Lab Notes:

Rec'd @ 5.2°c On Ice

PE-176 4/95

ATTACHMENT 2

2000 MONITOR WELL INSTALLATION RECORDS

MONITORING WELL INSTALLATION RECORD

Borehole # MW02
Well #
Page 1 of 1

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

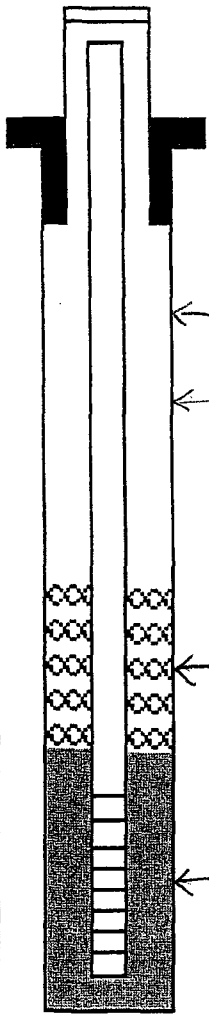
Project Name: EPFS Drilling
Project Number: 62800219 Cost Code: 35
Project Location: T25-R6-S4-E

Elevation:
Well Location: K-27 Line Drip
GWL Depth: 33.32
Installed By: ~~K. Padilla~~ D. PADILLA

On-Site Geologist: J. Wagnon
Personnel On-Site: R. Lefebre
Contractors On-Site: None
Client Personnel On-Site: None

Date/Time Started: ~~7/13/00~~ 7/17/00, 1006
Date/Time Completed: 7/17/00, 1330

Depths in Reference to Ground Surface		
Item	Material	Depth (feet)
Top of Protective Casing		3
Bottom of Protective Casing		0
Top of Permanent Borehole Casing		0
Bottom of Permanent Borehole Casing		-40
Top of Concrete		0.04
Bottom of Concrete		0
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		-33.32
Total Depth of Borehole		-40



Top of Protective Casing 3
Top of Riser 3
Ground Surface 0

← QUIKGEL (1 BAG)
← 21A TYPE I-II CEMENT (4 BAGS)

Top of Seal -21
← 3/8 HOLE PLUG (1 BAG)
Top of Gravel Pack -23
Top of Screen -25
← 10X20 SiO2 SAND (9 BAGS)
Bottom of Screen -40
Bottom of Borehole -40

Comments: _____

Geologist Signature: J. Wagnon

RECORD OF SUBSURFACE EXPLORATION

Borehole # MW-02
Well #
Page 1 of 1

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

Project Name EPFS Drilling
Project Number 62800219 Cost Code 35
Project Location T25-R6-S4-E

Elevation
Borehole Locatio K-27 Line Drip
GWL Depth 33.32
Logged By J. Wagnon
Drilled By ~~K. Padilla~~ D. PADILLA
Date/Time Started ~~07/13/00~~ 7/17/00, 1000
Date/Time Completed 7/17/00, 1330

Well Logged By J. Wagnon
Personnel On-Site R. Lefebre
Contractors On-Site None
Client Personnel On-Site None

Drilling Method 4 1/4 ID H.S.A.
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										
1017	1	5-7	10"	0-7' BROWN, COMPACT, DRY FINE SAND					0.6 ppm	20 COUNTS
10										
1024	2	10-12	12"	7-12' SAA, NOT AS CONSOLIDATED					0 ppm	13 COUNTS
15										
1031	3	15-17	10"	12-17' SAA					1.3 ppm	15 COUNTS
20										
1038	4	20-22	9"	17-22 SAA; MODERATELY CONSOLIDATED					1.1 ppm	8 COUNTS
25										
1045	5	25-27	11"	22-27' SAA BUT MOIST W/ SOME CLAY.					0.5 ppm	5 COUNTS
30										
1053	6	32-32	9"	27-32' BLACK, MOIST FINE SAND & CLAY. HC ODOR, STRONG.					262 ppm	AT 27' DRILL BEGAN TO GRIND LOUDLY. 7 COUNTS
35										
1106	7	35-37	5"	32-37' GREY-BROWN, V. MOIST FINE SAND & CLAY NO ODOR.					15.1 ppm	PID = 614 AT CUTTINGS P.I.D = 8.4 AT 32 CUTTINGS AR BLACK, MOIST W/ STRONG ODOR. 8 COUNTS
40										
1120	8	40-42		37-42' WET FINE SAND (-) CLAY						P.I.D AT 766 AT CUTTINGS. 6 COUNTS

Comments: 18" NO ODOR. TD=40'

PID READINGS OF CUTTINGS HIGH; ODOR IN AREA WAS STRONG.

Geologist Signature Joan Wagnon

J:\Z Misc folders\Drilling\1-40ft