

3R - 214

REPORTS

DATE:

1999



Certified Mail: #Z 213 707 666 (Box 1 of 2)
 #Z 213 707 664 (Box 2 of 2)

March 24, 2000

Mr. William C. Olson
New Mexico Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87504

RECEIVED

MAR 25 2000

ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

RE: 1999 Pit Project Annual Groundwater Report

Dear Mr. Olson:

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

Of the 32 reports, EPFS hereby requests closure of 4 of these locations. The 4 sites EPFS is requesting closure on are presented in one separate binder entitled "San Juan Basin Pit Closures, El Paso Field Services, Pit Closure Reports".

The Jaquez Com. C #1 and Jaquez Com. E #1 site is included in a separate report which is entitled "Jaquez Com. C #1 and Jaquez Com. E #1 Annual Report for Soil and Groundwater Remediation".

EPFS has also included for your information five Navajo sites in a separate binder and a separate report for the Bisti Flare Pit #1.

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

Sincerely,

A handwritten signature in dark ink, appearing to read "Scott T. Pope".

Scott T. Pope P.G.
Senior Environmental Scientist

xc: Mr. Denny Foust, NMOCD, Aztec - w / enclosures; **Certified Mail # Z 213 707 667**
Mr. Bill Liesse, BLM - w / enclosures; **Certified Mail # Z 213 707 668**
Mr. John Jaquez, - w / Jaquez enclosures; **Certified Mail # Z 213 707 669**
Ms. Charmaine Tso, Navajo EPA - w / enclosures; **Certified Mail # Z 213 707 670**

bc: J. A. Lambdin w / enclosures

Philip Services Corp. – Cecil Irby, w / o enclosures

B. B. McDaniel / 24321 – NMOCD Regulatory w / o

SAN JUAN BASIN PIT CLOSURES
San Juan Basin, New Mexico

El Paso Field Services Pit Project Groundwater Report
Annual Report

March 2000

RECEIVED

MAR 29 2000

ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

Prepared For

El Paso Field Services
Farmington, New Mexico

Project 62800158



EPFS GROUNDWATER PITS 1999 ANNUAL GROUNDWATER REPORT

**LINDRITH B #24
Meter/Line ID - 94967**

SITE DETAILS

**Legals - Twn: 24N Rng: 3W
NMOCD Hazard Ranking: 40
Operator: MOBIL**

Sec: 9

**Unit: N
Land Type: FEE**

PREVIOUS ACTIVITIES

**Site Assessment: Aug-94 Excavation: Oct-94 (60 cy) Soil Boring: Jun-95
Re-Excavation: Aug-95 (180 cy) Monitor Well: May-97 Quarterly Sampling Initiated: Aug-97
Down-gradient Monitor Wells: Oct-99**

1999 ACTIVITIES

Quarterly Groundwater Monitoring - Quarterly groundwater monitoring continued through 1999.

Monitor Well Installation - The groundwater gradient was estimated based on topography and additional wells were drilled as requested in OCD correspondence dated July 28, 1999.

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 in Attachment 1.

SITE MAP

A site map showing the groundwater gradient is presented as Figure 1.

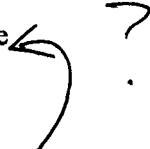
GEOLOGIC LOGS AND WELL COMPLETION DIAGRAMS

Drilling activities were conducted on October 5, 1999, 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 1999.

ISOCONCENTRATION MAPS

BTEX parameters at this site are at or below regulatory standards and isoconcentration maps were not generated. 

CONCLUSIONS

Analytical results of groundwater samples from MW-1 show levels of benzene above NMWQCC Standards. The 1999 quarterly sampling events show a steady decline in total xylenes with the most recent groundwater sampling event indicating that total xylenes are now below NMWQCC Standards. Hydrocarbon constituent concentrations are decreasing at this location which indicate that natural attenuation is occurring at this site.

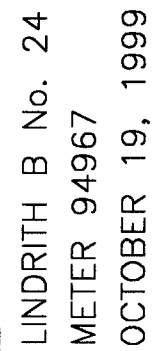
EPFS GROUNDWATER PITS

1999 ANNUAL GROUNDWATER REPORT

Recently installed monitor well MW-2 and down-gradient monitor well MW-3 are below detection limits for all BTEX constituents. Groundwater gradient is to the west at this site.

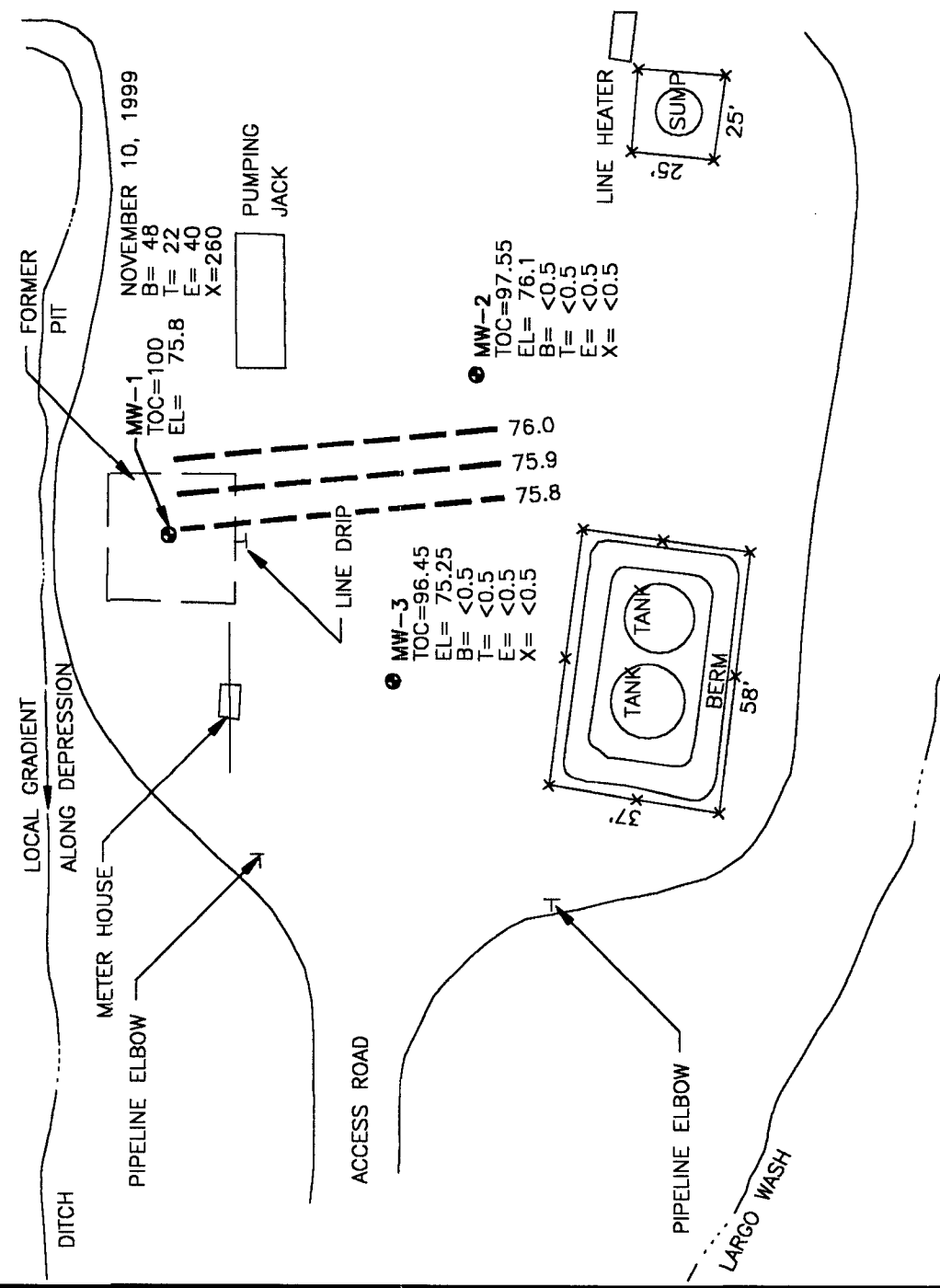
RECOMMENDATIONS

- Quarterly sampling will continue at MW-1 until analytical results show hydrocarbon constituents are below New Mexico Groundwater Standards for four consecutive quarters.
- Collect quarterly static groundwater levels of MW-1, MW-2, and MW-3.
- Sample monitor wells MW-2 and MW-3 annually until closure is approved for MW-1.
- Following OCD approval for closure, all monitor wells will be abandoned using OCD approved abandonment procedures.



DWN:	CJG	DIES:	CI	PROJECT NO.: 17520 EPFS GW PITS
CHKD:	CI	APPD:		
DATE:	02/28/00	REV:	0	

FIGURE 1



NOT TO SCALE

FIGURE 1

TABLE 1

Sample #	Meter/ Line #	Site Name	Sample Date	MW #	Project	Benzene (PPB)	Toluene (PPB)	Ethyl Benzene (PPB)	Total Xylenes (PPB)	Total BTEX
990027	94967	Lindrith B #24	02/04/99	1	Sample 4 - 7th Quarter	= 48.7	= 23.1	= 62.4	= 668	= 802
990206	94967	Lindrith B #24	05/03/99	1	Sample 4 - 8th Quarter	= 56.4	= 94.8	= 64.7	= 849	= 1065
990364	94967	Lindrith B #24	08/17/99	1	Sample 4 - 9th Quarter	= 70.3	= 69.0	= 56.8	= 595	= 791
990439	94967	Lindrith B #24	11/10/99	1	Sample 4 - 10th Quarter	= 48	= 22.0	= 40.0	= 260	= 370
990424	94967	Lindrith B #24	10/19/99	2	Sample 4 - 1st Quarter	< 0.5	< 0.5	< 0.5	< 0.5	< 2
990425	94967	Lindrith B #24	10/19/99	3	Sample 4 - 1st Quarter	< 0.5	< 0.5	< 0.5	< 0.5	< 2

ATTACHMENT 1
1999 GROUNDWATER ANALYTICAL

A 2428



Natural Gas Company

CHAIN OF CUSTODY RECORD

SAMPLE 4 DTHQTR

Project No.		Project Name		Type and No. of Sample Containers		Preservation Technique		Requested Analysis		Remarks	
Samplers: (Signature)		Date: 2-4-99		Sample Number		Type and No. of Sample Containers		Relinquished by: (Signature)		Received by: (Signature)	
Date	Time	Comp.	GRAB	Date	Time	Comp.	GRAB	Date	Time	Comp.	GRAB
WATER	2-4-99	1216	X	990027				G-2	38°F	X	
WATER	2-4-99	---	X					G-1	38°F	X	
Remarks: LINDRITH B #24 MW-1 TRIP BLANK											
Carrier Co: Dennis Bird											
Air Bill No.: 24991500											



FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	990027
MTR CODE SITE NAME:	94967	Lindrith B #24
SAMPLE DATE TIME (Hrs):	2/4/99	1216
PROJECT:	Sample 4 7th Quarter	
ATE OF BTEX EXT. ANAL.:	NA	2/4/99
TYPE DESCRIPTION:	MW-1	Water

Field Remarks:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	48.7	PPB	2	D		
TOLUENE	23.1	PPB	2	D		
ETHYL BENZENE	62.4	PPB	2	D		
TOTAL XYLENES	668	PPB	2	D, D1		
TOTAL BTEX	802	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 140.0 for this sample All QA/QC was acceptable.

DF = Dilution Factor Used

The "D" qualifier indicates that the analyte calculated is based on a secondary dilution factor.

The "D1" qualifier indicates that the analyte concentration exceeded the calibration curve limit.

Narrative:

Surrogate recovery high due to matrix interference.

Approved By:

Date:

2-16-99



EL PASO FIELD SERVICES

QUALITY CONTROL REPORT
EPA METHOD 8020 - BTEX
Samples: 990021 to 990027

QA/QC for 02/04/99 Sample Set

LABORATORY CALIBRATION CHECKS / LABORATORY CONTROL SAMPLES:

SAMPLE NUMBER	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	%R	ACCEPTABLE	
					YES	NO
ICV LA-52589 50 PPB					RANGE	
Benzene	Standard	50.0	54.1	108.2	75 - 125 %	X
Toluene	Standard	50.0	55.0	110.0	75 - 125 %	X
Ethylbenzene	Standard	50.0	56.3	112.5	75 - 125 %	X
m & p - Xylene	Standard	100	112.4	112.4	75 - 125 %	X
o - Xylene	Standard	50.0	56.3	112.6	75 - 125 %	X
LCS LA-45476 25 PPB					RANGE	
Benzene	Standard	25.0	30.1	120	39 - 150	X
Toluene	Standard	25.0	30.1	120	46 - 148	X
Ethylbenzene	Standard	25.0	29.7	119	32 - 160	X
m & p - Xylene	Standard	50.0	59.8	120	Not Given	X
o - Xylene	Standard	25.0	30.9	124	Not Given	X

Narrative: Acceptable.

LABORATORY DUPLICATES:

SAMPLE ID	TYPE	SAMPLE RESULT PPB	DUPLICATE RESULT PPB	RPD	ACCEPTABLE	
					YES	NO
990021					RANGE	
Benzene	Matrix Duplicate	48.0	50.2	4.56	+/- 20 %	X
Toluene	Matrix Duplicate	12.0	13.1	8.72	+/- 20 %	X
Ethylbenzene	Matrix Duplicate	27.1	18.0	40.21	+/- 20 %	X
m & p - Xylene	Matrix Duplicate	122	125	2.24	+/- 20 %	X
o - Xylene	Matrix Duplicate	9.7	17.1	55.40	+/- 20 %	X

Narrative: Acceptable. Matrix interference observed on EB and MPX.

LABORATORY SPIKES:

SAMPLE ID	SPIKE ADDED PPB	SAMPLE RESULT PPB	SPIKE SAMPLE RESULT PPB	%R	ACCEPTABLE	
					YES	NO
2nd Analysis 990021					RANGE	
Benzene	25	48.0	76.4	114	75 - 125 %	X
Toluene	25	12.0	36.4	97	75 - 125 %	X
Ethylbenzene	25	27.1	50.1	92	75 - 125 %	X
m & p - Xylene	50	122	169	94	75 - 125 %	X
o - Xylene	25	9.7	34.6	99	75 - 125 %	X

Narrative: Acceptable.

AUTO BLANK	SOURCE	PPB (1 analyzed with set)	STATUS
Benzene	Boiled Water	<1.0	ACCEPTABLE
Toluene	Boiled Water	<1.0	ACCEPTABLE
Ethylbenzene	Boiled Water	<1.0	ACCEPTABLE
Total Xylenes	Boiled Water	<3.0	ACCEPTABLE

Narrative: Acceptable.

SOIL VIAL BLANK	SOURCE Lot MB1461	PPB (one analyzed with set)	STATUS
Benzene	Vial + Boiled Water	<1.0	ACCEPTABLE
Toluene	Vial + Boiled Water	<1.0	ACCEPTABLE
Ethylbenzene	Vial + Boiled Water	<1.0	ACCEPTABLE
Total Xylenes	Vial + Boiled Water	<3.0	ACCEPTABLE

Narrative: Acceptable.

CONTAMINATION CARRYOVER CHECK	SOURCE	PPB (none analyzed with this set)	STATUS
Benzene	Vial + Boiled Water	NA	ACCEPTABLE
Toluene	Vial + Boiled Water	NA	ACCEPTABLE
Ethylbenzene	Vial + Boiled Water	NA	ACCEPTABLE
Total Xylenes	Vial + Boiled Water	NA	ACCEPTABLE

Narrative: Acceptable.

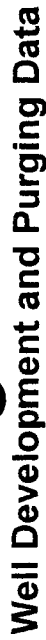
TRIP BLANK 020499	SOURCE	PPB (one analyzed with this set)	STATUS
Benzene	Vial + Boiled Water	<1.0	ACCEPTABLE
Toluene	Vial + Boiled Water	<1.0	ACCEPTABLE
Ethylbenzene	Vial + Boiled Water	<1.0	ACCEPTABLE
Total Xylenes	Vial + Boiled Water	<3.0	ACCEPTABLE

Narrative: Acceptable.

Reported By: JAL

Approved By: John Lardi

Date: 2-4-99



Well Development and Purging Data

☐	Development
☒	Purging

Well Number

Meter Code 94967

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

Initial Depth of Well (feet) 31.75
Initial Depth to Water (feet) 24.43
Height of Water Column in Well (feet) 7.32

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

☒	pH Meter
☐	DO Monitor
☒	Conductivity Meter
☒	Temperature Meter
☒	Other <u>D.O.G.</u>

Water Disposal

K072 SEPAPATP

item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		4.8	14.5
Gravel Pack			
Drilling Fluids			
Total			

[illegible]

Comments

THERE WAS A LIGHT SHOWN ON TOP OF THE WATER.

Developer's Signature *Dennis Bied*

Date 2-4-99

Reviewer_

Date 2-16-99

CHAIN OF CUSTODY RECORD

Project No.	Project Name		MC # 949617		Date: 5-3-99		Remarks	
Samplers: (Signature)		Dennis Bird		Date: 5-3-99		Remarks		
Date	Time	Comp.	GRAB	Sample Number	Type and No. of Sample Containers	Preservation Technique	Requested Analysis	
WATER	5-3-99 1228	X		990206	G-2 34F	X	LINDRITH B #24 MW-1	
WATER	5-3-99	X			G-1 34F	X	TRIP BLANK	
Relinquished by: (Signature)		Dennis Bird		Date/Time		5-3-99 1525		
Received by: (Signature)				Date/Time				
Relinquished by: (Signature)				Date/Time				
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FIELD SERVICES LABORATORY
ANALYTICAL REPORT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	NA	990206
MTR CODE SITE NAME:	94967	Lindrith B #24
SAMPLE DATE TIME (Hrs):	5/3/99	1228
PROJECT:	Sample 4 - 8th Quarter	
DATE OF BTEX EXT. ANAL:	NA	5/7/99
TYPE DESCRIPTION:	MW-1	Water

Field Remarks:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	56.4	PPB				
TOLUENE	94.8	PPB				
ETHYL BENZENE	64.7	PPB				
TOTAL XYLENES	849	PPB	5	D		
TOTAL BTEX	1065	PPB				

--BTEX is by EPA Method 8021 --

The Surrogate Recovery was at 92.8 % for this sample All QA/QC was acceptable.

DF = Dilution Factor Used

The "D" qualifier indicates that the analyte calculated is based on a secondary dilution factor.

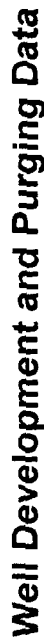
Narrative:

Approved By:

John L. Linder

Date:

5/21/99



☐	Development
☒	Purging

Well Number MW-1
Meter Code 94967

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

Water Volume Calculation

Initial Depth of Well (feet) 31.15

Initial Depth to Water (feet) 24.84

Height of Water Column in Well (feet) 7.11

Diameter (inches): Well 4 Gravel Pack

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

☐ Other _____

Initial Depth of Well (feet) 31.75
Initial Depth to Water (feet) 24.64
Height of Water Column in Well (feet) 2.11
Diameter (inches): Well 4 Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		4.7	14.1
Gravel Pack			
Drilling Fluids			
Total			

☒	pH Meter
☐	DO Monitor
☒	Conductivity Meter
☒	Temperature Meter
☒	Other <u>D.O. Cal</u>

Water Disposal
KUTZ SEPARATOR

[illegible]

Developer's Signature: Dennis Bird

Date 5-3-99 Reviewer _____

Date 5/14/69



EL PASO FIELD SERVICES

QUALITY CONTROL REPORT

EPA METHOD 8020 - BTEX

Samples: 990206 to 990209

QA/QC for 05/07/99 Sample Set

LABORATORY CALIBRATION CHECKS / LABORATORY CONTROL SAMPLES:

SAMPLE NUMBER ICV LA-52589 25 PPB	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	%R	ACCEPTABLE	
					YES	NO
					RANGE	
Benzene	Standard	25.0	23.8	95.2	75 - 125 %	X
Toluene	Standard	25.0	23.7	94.7	75 - 125 %	X
Ethylbenzene	Standard	25.0	23.8	95.3	75 - 125 %	X
m & p - Xylene	Standard	50.0	47.8	95.6	75 - 125 %	X
o - Xylene	Standard	25.0	23.9	95.5	75 - 125 %	X

SAMPLE NUMBER LCS LA-45476 25 PPB	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	%R	ACCEPTABLE	
					YES	NO
					RANGE	
Benzene	Standard	25.0	22.8	91.3	39 - 150	X
Toluene	Standard	25.0	22.7	91.0	46 - 148	X
Ethylbenzene	Standard	25.0	23.1	92.4	32 - 160	X
m & p - Xylene	Standard	50.0	46.2	92.4	Not Given	X
o - Xylene	Standard	25.0	23.0	91.8	Not Given	X

Narrative: Acceptable.

LABORATORY DUPLICATES:

SAMPLE ID 990206	TYPE	SAMPLE RESULT PPB	DUPLICATE RESULT PPB	RPD	ACCEPTABLE	
					YES	NO
					RANGE	
Benzene	Matrix Duplicate	56.4	57.3	1.47	+/- 20 %	X
Toluene	Matrix Duplicate	94.8	96.56	1.79	+/- 20 %	X
Ethylbenzene	Matrix Duplicate	64.7	61.82	4.62	+/- 20 %	X
m & p - Xylene	Matrix Duplicate	637.9	638.2	0.04	+/- 20 %	X
o - Xylene	Matrix Duplicate	156.5	159.6	1.95	+/- 20 %	X

Narrative: Acceptable.

LABORATORY SPIKES:

SAMPLE ID 2nd Analysis 990206	SPIKE ADDED PPB	SAMPLE RESULT PPB	SPIKE SAMPLE RESULT PPB	%R	ACCEPTABLE	
					YES	NO
					RANGE	
Benzene	25	56.4	73.4	68	75 - 125 %	X
Toluene	25	94.8	112.6	71	75 - 125 %	X
Ethylbenzene	25	64.7	78.2	54	75 - 125 %	X
m & p - Xylene	50	637.9	658.1	40	75 - 125 %	X
o - Xylene	25	156.5	174.3	71	75 - 125 %	X

Narrative: See Spike Dup.

SPIKE DUPLICATE:

SAMPLE ID 2nd Analysis 990206	SPIKE ADDED PPB	SAMPLE RESULT PPB	SPIKE SAMPLE RESULT PPB	%R	ACCEPTABLE	
					YES	NO
					RANGE	
Benzene	25	56.4	68.9	50	75 - 125 %	X
Toluene	25	94.8	100.4	22	75 - 125 %	X
Ethylbenzene	25	64.7	71.3	26	75 - 125 %	X
m & p - Xylene	50	637.9	583.7	-108	75 - 125 %	X
o - Xylene	25	156.5	155.7	-3	75 - 125 %	X

Narrative: Matrix interference confirmed. The sample had a strong odor of Hydrogen Sulfide.

LABORATORY BLANKS:

AUTO BLANK	SOURCE	PPB (1 analyzed with set)	STATUS
Benzene	Boiled Water	<1.0	ACCEPTABLE
Toluene	Boiled Water	<1.0	ACCEPTABLE
Ethylbenzene	Boiled Water	<1.0	ACCEPTABLE
Total Xylenes	Boiled Water	<3.0	ACCEPTABLE

Narrative: Acceptable.

SOIL VIAL BLANK	SOURCE Lot MB1461	PPB (one analyzed with set)	STATUS
Benzene	Vial + Boiled Water	<1.0	ACCEPTABLE
Toluene	Vial + Boiled Water	<1.0	ACCEPTABLE
Ethylbenzene	Vial + Boiled Water	<1.0	ACCEPTABLE
Total Xylenes	Vial + Boiled Water	<3.0	ACCEPTABLE

Narrative: Acceptable.

CONTAMINATION CARRYOVER CHECK	SOURCE	PPB (one analyzed with this set)	STATUS
Benzene	Vial + Boiled Water	<1.0	ACCEPTABLE
Toluene	Vial + Boiled Water	<1.0	ACCEPTABLE
Ethylbenzene	Vial + Boiled Water	<1.0	ACCEPTABLE
Total Xylenes	Vial + Boiled Water	<3.0	ACCEPTABLE

Narrative: Acceptable.

TRIP	SOURCE	PPB	STATUS
BLK 05/03, 05/0499		(two analyzed with this set)	
Benzene	Vial + Boiled Water	<1.0	ACCEPTABLE
Toluene	Vial + Boiled Water	<1.0	ACCEPTABLE
Ethylbenzene	Vial + Boiled Water	<1.0	ACCEPTABLE
Total Xylenes	Vial + Boiled Water	<3.0	ACCEPTABLE

Narrative: Acceptable.

Reported By: J.L.

Approved By: John Lardner

Date: 5/10/99



FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	990364
MTR CODE SITE NAME:	94967	Lindrith B#24
SAMPLE DATE TIME (Hrs):	08/17/1999	1119
PROJECT:	Sample 4 9th Quarter	
DATE OF BTEX EXT. ANAL.:	NA	08/23/1999
TYPE DESCRIPTION:	MW-1	Water

Field Remarks:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	70.3	PPB				
TOLUENE	69.0	PPB				
ETHYL BENZENE	56.8	PPB				
TOTAL XYLENES	595	PPB	2	D		
TOTAL BTEX	791	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 68.7 % for this sample All QA/QC was acceptable.

DF = Dilution Factor Used

The "D" qualifier indicates that the analyte calculated is based on a secondary dilution factor.

Narrative:

Matrix interference on surrogate.

Approved By:

John Lander

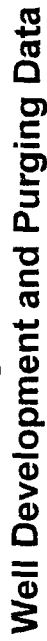
Date:

9/1/99



CHAIN OF CUSTODY RECORD

Project Number		Project Name		Contract Laboratory P.O. Number																			
8-17-99		MC # 949617																					
Samplers: (Signature)		Date: 8-17-99																					
Dennis Bird																							
Lab ID	Date	Time	Matrix	Sample Number	Remarks																		
8-17-99	1119		WATER	990364	LINCOLN B #24 MW-1																		
8-17-99			WATER		TRIP BLANK																		
Requested Analysis <table border="1"> <tr> <td>Composite or Grab</td> <td>Total No. of Containers</td> <td colspan="4">Requested Analysis</td> </tr> <tr> <td>G</td> <td>2</td> <td colspan="4">BTK</td> </tr> <tr> <td>G</td> <td>1</td> <td colspan="4">X</td> </tr> </table>						Composite or Grab	Total No. of Containers	Requested Analysis				G	2	BTK				G	1	X			
Composite or Grab	Total No. of Containers	Requested Analysis																					
G	2	BTK																					
G	1	X																					
Requested Turnaround Time: ☐ Routine ☐ Rush																							
Carrier Co.																							
Relinquished by: (Signature)		Date/Time		Received by: (Signature)																			
Dennis Bird		8-17-99 1508																					
Relinquished by: (Signature)		Date/Time		Received for Laboratory by: (Signature)																			
				8/18/99 0820 John Faldut																			
Sample Receipt Remarks COOL & INTACT 36 OF																							
Results & Invoices to: North Region Laboratory El Paso Natural Gas Company P. O. Box 4990 Farmington, New Mexico 87499																							
Charge Code																							
Bill No.:																							
505-599-2144 FAX: 505-599-2261																							



Well Number MW-1
Meter Code 94967

Site Name LINDRITH B #24

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 |

Water Volume Calculation

Initial Depth of Well (feet) 31.75
Initial Depth to Water (feet) 23.96
Height of Water Column in Well (feet) 7.79

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

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		5.1	15.4
Gravel Pack			
Drilling Fluids			
Total			

Instruments

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

Water Disposal

NOT SEPARATE

Water Removal Data

[illegible]

Comments THERE WAS A LIGHT SHEEN ON TOP OF THE WATER.

Developer's Signature *Lennix Bica*

Date 8-17-99 Reviewer

John Linder

Date 8/24/99



EL PASO FIELD SERVICES

QUALITY CONTROL REPORT

EPA METHOD 8020 - BTEX

Samples: 990364 to 990368 and 990371

QA/QC for 08/23/99 Sample Set

LABORATORY CALIBRATION CHECKS / LABORATORY CONTROL SAMPLES:

SAMPLE NUMBER	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	%R	ACCEPTABLE	
					YES	NO
ICV LA-67475 50 PPB					RANGE	
Benzene	Standard	50.0	53.2	106.3	75 - 125 %	X
Toluene	Standard	50.0	51.0	101.9	75 - 125 %	X
Ethylbenzene	Standard	50.0	50.9	101.9	75 - 125 %	X
m & p - Xylene	Standard	100	103.2	103.2	75 - 125 %	X
o - Xylene	Standard	50.0	50.9	101.8	75 - 125 %	X
SAMPLE NUMBER	TYPE	EXPECTED RESULT PPB	ANALYTICAL RESULT PPB	%R	ACCEPTABLE	
					YES	NO
LCS LA-53560 25 PPB					RANGE	
Benzene	Standard	25.0	26.1	104	39 - 150	X
Toluene	Standard	25.0	24.6	98	46 - 148	X
Ethylbenzene	Standard	25.0	25.2	101	32 - 160	X
m & p - Xylene	Standard	50.0	49.9	100	Not Given	X
o - Xylene	Standard	25.0	24.8	99	Not Given	X

Narrative: Acceptable.

LABORATORY DUPLICATES:

SAMPLE ID	TYPE	SAMPLE RESULT PPB	DUPLICATE RESULT PPB	RPD	ACCEPTABLE	
					YES	NO
990365					RANGE	
Benzene	Matrix Duplicate	<1.0	<1.0	0.00	+/- 20 %	X
Toluene	Matrix Duplicate	<1.0	<1.0	0.00	+/- 20 %	X
Ethylbenzene	Matrix Duplicate	<1.0	<1.0	0.00	+/- 20 %	X
m & p - Xylene	Matrix Duplicate	<2.0	<2.0	0.00	+/- 20 %	X
o - Xylene	Matrix Duplicate	<1.0	<1.0	0.00	+/- 20 %	X

Narrative: Acceptable.

LABORATORY SPIKES:

SAMPLE ID	SPIKE ADDED PPB	SAMPLE RESULT PPB	SPIKE SAMPLE RESULT PPB	%R	ACCEPTABLE	
					YES	NO
2nd Analysis 990365					RANGE	
Benzene	50	<1.0	37.5	75	75 - 125 %	X
Toluene	50	<1.0	36.9	74	75 - 125 %	X
Ethylbenzene	50	<1.0	36.6	73	75 - 125 %	X
m & p - Xylene	100	<2.0	73.9	74	75 - 125 %	X
o - Xylene	50	<1.0	37.7	75	75 - 125 %	X

Narrative: See MSD.

MATRIX SPIKE DUPLICATE:

SAMPLE ID MSD 2nd Analysis	SPIKE ADDED PPB	SAMPLE RESULT PPB	SPIKE SAMPLE RESULT PPB	%R	ACCEPTABLE	
					YES	NO
					RANGE	
Benzene	50	<1.0	40.7	81	75 - 125 %	X
Toluene	50	<1.0	40.7	81	75 - 125 %	X
Ethylbenzene	50	<1.0	40.9	82	75 - 125 %	X
m & p - Xylene	100	<1.0	82.5	83	75 - 125 %	X
o - Xylene	50	<2.0	40.7	81	75 - 125 %	X

Narrative: Acceptable.

AUTO BLANK	SOURCE	PPB (1 analyzed with set)	STATUS
Benzene	Boiled Water	<1.0	ACCEPTABLE
Toluene	Boiled Water	<1.0	ACCEPTABLE
Ethylbenzene	Boiled Water	<1.0	ACCEPTABLE
Total Xylenes	Boiled Water	<3.0	ACCEPTABLE

Narrative: Acceptable.

SOIL VIAL BLANK	SOURCE Lot MB1451	PPB (one analyzed with set)	STATUS
Benzene	Vial + Boiled Water	<1.0	ACCEPTABLE
Toluene	Vial + Boiled Water	<1.0	ACCEPTABLE
Ethylbenzene	Vial + Boiled Water	<1.0	ACCEPTABLE
Total Xylenes	Vial + Boiled Water	<3.0	ACCEPTABLE

Narrative: Acceptable.

CONTAMINATION CARRYOVER CHECK	SOURCE	PPB (one analyzed with this set)	STATUS
Benzene	Vial + Boiled Water	<1.0	ACCEPTABLE
Toluene	Vial + Boiled Water	<1.0	ACCEPTABLE
Ethylbenzene	Vial + Boiled Water	<1.0	ACCEPTABLE
Total Xylenes	Vial + Boiled Water	<3.0	ACCEPTABLE

Narrative: Acceptable.

TRIP BLANK(s) 8/17, 8/18, 8/19	SOURCE	PPB (three analyzed with this set)	STATUS
Benzene	Vial + Boiled Water	<1.0	ACCEPTABLE
Toluene	Vial + Boiled Water	<1.0	ACCEPTABLE
Ethylbenzene	Vial + Boiled Water	<1.0	ACCEPTABLE
Total Xylenes	Vial + Boiled Water	<3.0	ACCEPTABLE

Narrative: Acceptable.

Reported By: J.L.

Approved By: John Landrum

Date: 8/24/99

Page _____ of _____

Project No. 628 00018

Phase.Task No. 035

Serial No. (If applicable)

- ☐ pH Meter _____

☐ Conductivity Meter

- ☐ Temperature Meter _____
- ☐ Other _____
- Water Disposal _____

[illegible]

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

Comments

Developer's Signature(s)

Date _____

Reviewer

Date:

WELL DEVELOPMENT AND PURGING DATA

Page 1 of 1.

Project No. 62800018

Phase Task No. 035

9

Serial No. (If applicable)

- ☒ Conductivity Meter _____
- ☒ Temperature Meter _____
- ☐ Other _____

☐ Other _____

- NA - No Known Contaminations

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

Comments Bailed 10 gallons after above stabilization & prior to sampling

Date:

WELL DEVELOPMENT AND PURGING DATA

Page 1 of 1

Project No. 62800018

Phase.Task No. 035

1

Serial No. (If applicable)

-

- 

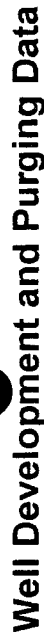
er

- ☒ Conductivity Meter _____
- ☒ Temperature Meter _____
- ☐ Other _____
- Water Disposal _____

Comments Sample ID CI-11

Date _____

**MC# 94967, Lindrith B#24,
MW-1 : Sample 4 - 10th Quarter**



Site Name *LINDRITH B 824*

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) 31.75
Initial Depth to Water (feet) 24.24
Height of Water Column in Well (feet) 7.51

Diameter (inches): Well 4 Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		5.0	14.9
Gravel Pack			
Drilling Fluids			
Total			

Instruments

- | | |
|-------------------------------------|--------------------|
| ☒ | pH Meter |
| ☐ | DO Monitor |
| ☒ | Conductivity Meter |
| ☒ | Temperature Meter |
| ☒ | Other <u>200</u> |

Water Disposal

VOTZ SEPARATOR

Water Removal Data

[illegible]

Comments

THERE WAS A LIGHT SHEEN ON TOP OF THE WATER.

Developer's Signature *Dennis Bied*

Date 11-8-99 Reviewer

John Funder Date *11/30/99*

PINNACLE
LABORATORIES

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

Pinnacle Lab ID number
November 19, 1999

911048



EL PASO FIELD SERVICES
770 WEST NAVAJO
FARMINGTON, NM 87401

Project Name
Project Number

PIT MONITOR WELLS
(none)

Lindrita B #24, mc# 94967

Sample 4 - 10th Quarter

Attention: JOHN LAMBDIN

On 11/16/99 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.

Handwritten signature of Kimberly D. McNeill.

Kimberly D. McNeill
Project Manager

MR: jt

Enclosure

Handwritten signature of H. Mitchell Rubenstein.

H. Mitchell Rubenstein, Ph. D.
General Manager

Reviewed & Accepted
J.P.
11/30/99

PINNACLE
LABORATORIES

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

CLIENT : EL PASO FIELD SERVICES
PROJECT # : (none)
PROJECT NAME : PIT MONITOR WELLS

PINNACLE ID : 911048
DATE RECEIVED : 11/16/99
REPORT DATE : 11/19/99

PIN			DATE
ID. #	CLIENT DESCRIPTION	MATRIX	COLLECTED
01	990439	AQUEOUS	11/10/99
02	TRIP BLANK	AQUEOUS	11/10/99

GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : EL PASO FIELD SERVICES
PROJECT # : (none)
PROJECT NAME : PIT MONITOR WELLS

PINNACLE I.D.: 911048

SAMPLE		MATRIX	DATE	DATE	DATE	DIL.
ID. #	CLIENT I.D.		SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	990439	AQUEOUS	11/10/99	NA	11/16/99	10
02	TRIP BLANK	AQUEOUS	11/10/99	NA	11/16/99	1
PARAMETER		DET. LIMIT	UNITS	990439	TRIP BLANK	
BENZENE		0.5	UG/L	48	< 0.5	
TOLUENE		0.5	UG/L	22	< 0.5	
ETHYLBENZENE		0.5	UG/L	40	< 0.5	
TOTAL XYLENES		0.5	UG/L	260	< 0.5	

SURROGATE:
BROMOFLUOROBENZENE (%) 99 99
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.	: 911048
BLANK I. D.	: 111699	DATE EXTRACTED	: NA
CLIENT	: EL PASO FIELD SERVICES	DATE ANALYZED	: 11/16/99
PROJECT #	: (none)	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: PIT MONITOR WELLS		

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



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 # : 111699
CLIENT : EL PASO FIELD SERVICES
PROJECT # : (none)
PROJECT NAME : PIT MONITOR WELLS

PINNACLE I.D. : 911048
DATE EXTRACTED : NA
DATE ANALYZED : 11/17/99
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	17.5	88	17.4	87	1	(80 - 120)	20
TOLUENE	<0.5	20.0	18.9	95	18.5	93	2	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	19.6	98	19.5	98	1	(80 - 120)	20
TOTAL XYLENES	<0.5	60.0	59.6	99	59.1	99	1	(80 - 120)	20

CHEMIST NOTES:
N/A

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

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

SHADED AREAS ARE FOR LAB USE ONLY.



Pinnacle
Laboratories

Pinnacle Laboratories Inc.

CHAIN OF CUSTODY
DATE: 11-2-99 PAGE: 1 OF 1

PL Accession #

911048

[illegible]



FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	990424
MTR CODE SITE NAME:	94967	Lindrith B #24
SAMPLE DATE TIME (Hrs):	10/19/1999	1552
PROJECT:	Sample 4 - 1st Quarter	
DATE OF BTEX EXT. ANAL:	N/A	10/25/1999
TYPE DESCRIPTION:	MW-2	Water

Field Remarks:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	<0.5	PPB				
TOLUENE	<0.5	PPB				
ETHYL BENZENE	<0.5	PPB				
TOTAL XYLENES	<0.5	PPB				
TOTAL BTEX	<2.0	PPB				

—BTEX is by EPA Method 8021 —

The Surrogate Recovery was at 103 % for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative:

Sample Analyzed by Pinnacle Laboratories, Albuquerque, NM.

Approved By:

John Lubelin

Date:

11/2/99



FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	990425
MTR CODE SITE NAME:	94967	Lindrith B #24
SAMPLE DATE TIME (Hrs):	10/19/1999	1600
PROJECT:	Sample 4 - 1st Quarter	
DATE OF BTEX EXT. ANAL.:	N/A	10/25/1999
TYPE DESCRIPTION:	MW-3	Water

Field Remarks:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	<0.5	PPB				
TOLUENE	<0.5	PPB				
ETHYL BENZENE	<0.5	PPB				
TOTAL XYLENES	<0.5	PPB				
TOTAL BTEX	<2.0	PPB				

—BTEX is by EPA Method 8021—

The Surrogate Recovery was at 101 % for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative:

Sample Analyzed by Pinnacle Laboratories, Albuquerque, NM.

Approved By:

John Linder

Date:

11/2/99

Chain of Custody Record

4000 Monroe Road
Farmington, NM 87401

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

COC Serial No. C 2394

[illegible]

Relinquished by:

Received By:

Signature	Date	Time	Signature	Date	Time
locked off	10-19-99	5:45	locked	10-19-99	5:45 Cat
locked	10-20-99	10:08	Stennin Bldg	10-20-99	10:10

Samples Iced: ☐ Yes ☐ No		Carrier:	Airbill No.
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)			

PINNACLE
LABORATORIES



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

Pinnacle Lab ID number **910073**
October 28, 1999

EL PASO FIELD SERVICES
770 WEST NAVAJO
FARMINGTON, NM 87401

Project Name PIT MONITOR WELLS
Project Number (none)

Attention: JOHN LAMBDIN

On 10/21/99 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

MR: jt

Enclosure

H. Mitchell Rubenstein, Ph. D.
General Manager

Reviewed & Accepted
J. L. Linder 11/2/99



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 : EL PASO FIELD SERVICES
PROJECT # : (none)
PROJECT NAME : PIT MONITOR WELLS

PINNACLE I.D.: 910073

SAMPLE		MATRIX	DATE	DATE	DATE	DIL.
ID. #	CLIENT I.D.		SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	990416	AQUEOUS	10/15/99	NA	10/25/99	1
02	990417	AQUEOUS	10/15/99	NA	10/25/99	1
03	990418	AQUEOUS	10/15/99	NA	10/25/99	1

PARAMETER	DET. LIMIT	UNITS	990416	990417	990418
BENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
TOLUENE	0.5	UG/L	2.1	0.9	< 0.5
Ethylbenzene	0.5	UG/L	5.5	< 0.5	< 0.5
TOTAL XYLENES	0.5	UG/L	2.8	3.1	< 0.5

SURROGATE:
BROMOFLUOROBENZENE (%) 102 96 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 RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : EL PASO FIELD SERVICES
PROJECT # : (none)
PROJECT NAME : PIT MONITOR WELLS

PINNACLE I.D.: 910073

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
04	990419	AQUEOUS	10/15/99	NA	10/25/99	1
05	990420	AQUEOUS	10/15/99	NA	10/25/99	1
06	990421	AQUEOUS	10/15/99	NA	10/25/99	1

PARAMETER	DET. LIMIT	UNITS	990419	990420	990421
BENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
TOLUENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
ETHYLBENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
TOTAL XYLENES	0.5	UG/L	< 0.5	< 0.5	< 0.5

SURROGATE:

BROMOFLUOROBENZENE (%)	103	104	101
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

TEST : EPA 8021 MODIFIED
CLIENT : EL PASO FIELD SERVICES
PROJECT # : (none)
PROJECT NAME : PIT MONITOR WELLS

PINNACLE I.D.: 910073

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
07	990422	AQUEOUS	10/15/99	NA	10/25/99	1
08	990423	AQUEOUS	10/15/99	NA	10/25/99	1
09	TRIP BLANK	AQUEOUS	10/15/99	NA	10/25/99	1

PARAMETER	DET. LIMIT	UNITS	990422	990423	TRIP BLANK
BENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
TOLUENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
ETHYLBENZENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
TOTAL XYLENES	0.5	UG/L	< 0.5	< 0.5	< 0.5

SURROGATE:

BROMOFLUOROBENZENE (%)

102

100

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

TEST : EPA 8021 MODIFIED
CLIENT : EL PASO FIELD SERVICES
PROJECT # : (none)
PROJECT NAME : PIT MONITOR WELLS

PINNACLE I.D.: 910073

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
10	990424	AQUEOUS	10/19/99	NA	10/25/99	1
11	990425	AQUEOUS	10/19/99	NA	10/25/99	1

PARAMETER	DET. LIMIT	UNITS	990424	990425
BENZENE	0.5	UG/L	< 0.5	< 0.5
TOLUENE	0.5	UG/L	< 0.5	< 0.5
ETHYLBENZENE	0.5	UG/L	< 0.5	< 0.5
TOTAL XYLENES	0.5	UG/L	< 0.5	< 0.5

SURROGATE:

BROMOFLUOROBENZENE (%)

103

101

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.	: 910073
BLANK I. D.	: 102599	DATE EXTRACTED	: NA
CLIENT	: EL PASO FIELD SERVICES	DATE ANALYZED	: 10/25/99
PROJECT #	: (none)	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: PIT MONITOR WELLS		

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 # : 910073-03
CLIENT : EL PASO FIELD SERVICES
PROJECT # : (none)
PROJECT NAME : PIT MONITOR WELLS

PINNACLE I.D. : 910073
DATE EXTRACTED : NA
DATE ANALYZED : 10/25/99
SAMPLE MATRIX : AQUEOUS
UNITS : UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
BENZENE	<0.5	20.0	19.7	99	19.8	99	1	(80 - 120)	20
TOLUENE	<0.5	20.0	20.7	104	20.3	102	2	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	21.0	105	20.8	104	1	(80 - 120)	20
TOTAL XYLENES	<0.5	60.0	64.7	108	64.0	107	1	(80 - 120)	20

CHEMIST NOTES:
N/A

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

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

PROJECT MANAGER: JOHN LAMBDA

COMPANY: EL PASO FIELD SERVICES
 ADDRESS: 720 WEST HAWARD
 PHONE: FARMINGTON NM 87401
 (505) 599-2144
 FAX: (505) 599-3287
 BILL TO: SAME AS ABOVE
 COMPANY:
 ADDRESS:

SAMPLE ID	DATE	TIME	MATRIX	LAB ID
990416	10-15-99	0935	WATER	U
990417	10-15-99	1025	WATER	U
990418	10-15-99	1125	WATER	U
990419	10-15-99	1150	WATER	U
990420	10-15-99	1250	WATER	U
990421	10-15-99	1335	WATER	U
990422	10-15-99	1450	WATER	U
990423	10-15-99	1505	WATER	U
TRIP BLANK	10-15-99		WATER	U

ANALYSIS REQUEST	8260 (TCL) Volatile Organics	8260 (CUST) Volatile Organics	8260 (Full) Volatile Organics	8260 (CUST) Volatile Organics	8260 (Landfill) Volatile Organics	Pesticides /PCB (608/8081)	Herbicides (615/8151)	Base/Neutral/Acid Compounds GC/MS (625/8270)	Polyuclear Aromatics (610/8310)	General Chemistry:	Priority Pollutant Metals (13)	Target Analyte List Metals (23)	RCRA Metals (8)	RCRA Metals by TCLP (Method 1311)	Metals:	NUMBER OF CONTAINERS
Petroleum Hydrocarbons (418.1) TRPH																2
(MOD.8015) Diesel/Direct Inject																2
(M8015) Gas/Purge & Trap																2
8021 (BTEX)/8015 (Gasoline)																2
8021 (BTEX) MTBE TMB PCE	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	2
8021 (TCL)																2
8021 (EDX)																2
8021 (HALO)																2
8021 (CUST)																2
504.1 EDB / DBCP																2

PROJECT INFORMATION		PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS		RELINQUISHED BY:	
PROJ. NO.:		(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK	(NORMAL) ☒	Signature:	Time:
PROJ. NAME:	PIT MONITOR WELLS	CERTIFICATION REQUIRED: ☐ NM ☐ SDWA ☐ OTHER		Printed Name:	Date:
P.O. NO.:		METHANOL PRESERVATION ☐		Company:	
SHIPPED VIA: FED-X		COMMENTS: FIXED FEE ☐			
SAMPLE RECEIPT					
NO. CONTAINERS	17				
CUSTOMER SEAL	ON NM				
RECEIVED DATE	10/20/99				
BUCKET NO.	216				

REPORT: Attn. to: JOHN LAMBDA

COMPANY: EL PASO FIELD SERVICES

ADDRESS: 770 WEST MAIN
FARMINGTON NM 87401

PHONE: (505) 599-2144

FAX: (505) 599-2267

BILL TO: SAMERS ABOVE

COMPANY: _____

ADDRESS: _____

ANALYSIS REQUEST

ANALYSIS REQUEST	NUMBER OF CONTAINERS
RCRA Metals by TCLP (1311)	2
RCRA Metals by Total Digestion	2
Polynuclear Aromatics (610/8310)	
Volatile Organics GC/MS (624/8240/8260)	
Semi-Volatiles GC/MS (Tics/No Tics)	
Herbicides (615/8150/515)	
Pesticides/PCB (608/8080/505/508)	
Volatiles 502.2 (SDWA/UST)	
Aromatic Hydrocarbons (602/8020)	
Chlorinated Hydrocarbons (601/8010)	
BTXE/MTBE (8020/602)	X
(BLS-191) Diesel	
(M8015) Gas	
(MOD.8015) Fuel Fingerprint	
Petroleum Hydrocarbons (418.1)	

COMPOSITE OR GRAB

SAMPLE ID	DATE	TIME	MATRIX	LAB ID
990424	10-19-99	1530	WATER	-10
990425	10-19-99	1600	WATER	-11

PROJECT INFORMATION

PROJ. NO.: _____

PROJ. NAME: PIT MANTER WELLS

P.O. NO.: _____

SHIPPED VIA: FED-EX

☐ JUST (72 hr. est.)

☐ NPDES

☐ SDWA

☐ RCRA

☐ OTHER

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK ☒ 2 WEEKS (NORMAL)

Comments:

3.6

SAMPLED & RELINQUISHED BY:

1. SIGNED BY:	2. RELINQUISHED BY:	3. RECEIVED BY:
Signature: <u>Denise Bird</u>	Signature: _____	Signature: _____
Printed Name: <u>Denise Bird</u>	Printed Name: _____	Printed Name: _____
Date: <u>10-20-99</u>	Date: _____	Date: _____
Company: <u>EL PASO FIELD SERVICES</u>	Company: _____	Company: _____

1. SIGNED BY:	2. RELINQUISHED BY:	3. RECEIVED BY:
Signature: _____	Signature: _____	Signature: _____
Printed Name: _____	Printed Name: _____	Printed Name: _____
Date: _____	Date: _____	Date: <u>10/21</u>
Company: _____	Company: _____	Company: <u>American Environmental Network</u>

ATTACHMENT 2
MONITOR WELL INSTALLATION

RECORD OF SUBSURFACE EXPLORATION

Philip Environmental Services Corp.

4000 Monroe Road

Farmington, New Mexico 87401

(505) 228-2282 FAX (505) 328-2388

Borehole #

Well #

Page

1

MW2

1 of 2

Project Name

Project Number

Project Location

EPFS GROUNDWATER

62800018 Phase 35

LINDAITH B24

Well Logged By

Personnel On-Site

Contractors On-Site

Client Personnel On-Site

C. CULLICOTT

K. PADILLA & D. PADILLA

Drilling Method

Air Monitoring Method

AUGER

OLD

Elevation

Borehole Location

GWL Depth

Logged By

Drilled By

Date/Time Started

Date/Time Completed

T24N R3W S9N

20.68'

C. CULLICOTT

K. PADILLA & D. PADILLA

10/5/99 10am

10/5/99 11:30am

MPJL 94967

Depth (Feet)	Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: NDU			Drilling Conditions & Blow Counts
						BZ	BH	S	
0			① SURFACE - GRAVELLY SAND - PAD MATERIAL						
5	① 5-7'		① 12" RECOVERY LOOSE, POORLY SORTED SAND (FINE - COARSE). WHITE W/ ORANGE STAIN IN PLACES. CLEAN						① 14 BLOWS SS 0.0 ppm
10	② 10-11 1/2'		② FULL RECOVERY MOSTLY ORANGE LOOSE, POORLY SORTED SAND - 2 patches (a few inches each) w/ higher SILT CONTENT. CLEAN						② 9 BLOWS SS 0.0 ppm
15	③ 15-17'		③ 18" RECOVERY LOOSE, POORLY SORTED (BUT 60% COARSE) REDDISH BROWN SAND - CLEAN						③ 14 BLOWS SS 0.0 ppm
20	④ 20-22'		④ 12" RECOVERY FIRST 6" SATURATED REDDISH BROWN MEDIUM SAND BOTTOM 12" SATURATED REDDISH BROWN POORLY SORTED SAND FINE - COARSE WT ~ 21"						④ 10 BLOWS SS 0.0 ppm
25									
30									
35									
40									

Comments:

SUNNY, COOL

DTW in MW1 = 21.4'

@ BOTTOM OF HOLE, WHEN AUGERS WERE DISCONNECTED FROM

RIF THEY SAW ~ 1 foot.

Geologist Signature

Cathy Cullcott

MONITORING WELL INSTALLATION RECORD

ilip Environmental Services Corp.
 30 [redacted] Road
 [redacted] New Mexico 87401
 (505) 326-2262 FAX (505) 326-2388

Borehole # 1
 Well # MW 2
 Page 2 of 2

Project Name EPFS GROUND WATER

Project Number 62800018 Phase 35
 Project Location LINDRITH B#24

Elevation _____
 Well Location T24N R3W S9N
 Well Depth 20.68'
 Installed By K. PADILLA & D. PADILLA

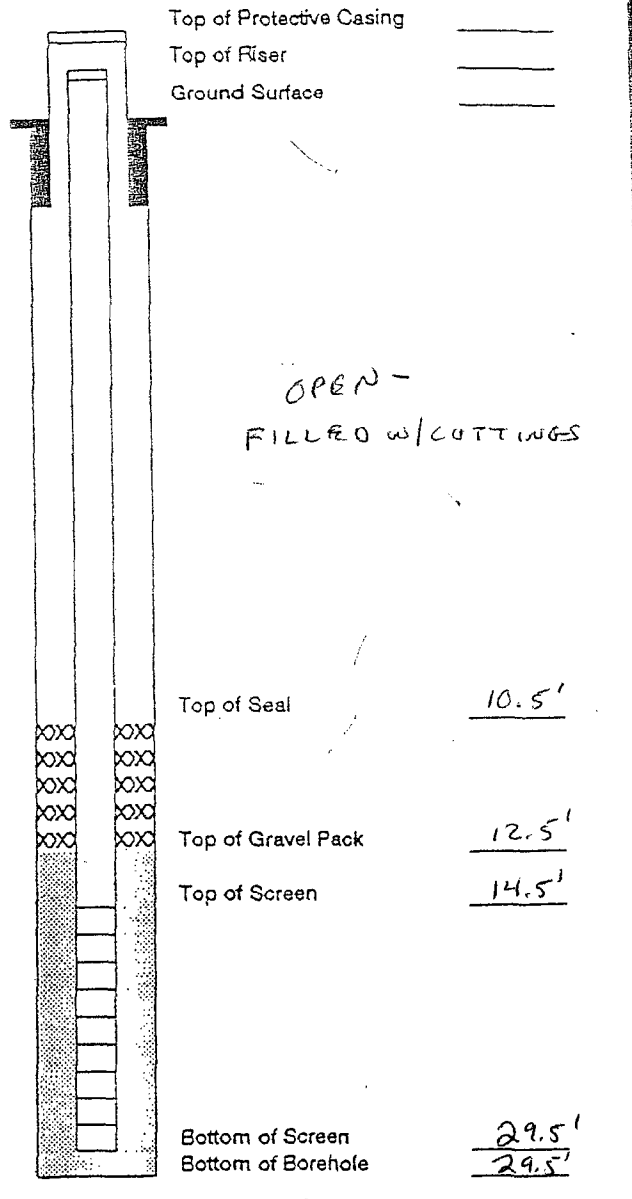
On-Site Geologist C. CULLICOTT
 Personnel On-Site K. PADILLA & D. PADILLA
 Contractors On-Site Ø
 Client Personnel On-Site Ø

Date/Time Started 10/5/99 10am
 Date/Time Completed 10/5/99 11:30am

meter 94967

Depths in Reference to Ground Surface

Item	Material	Depth
Top of Protective Casing		
Bottom of Protective Casing		
Top of Permanent Borehole Casing		
Bottom of Permanent Borehole Casing		
Top of Concrete		
Bottom of Concrete		
Top of Grout		
Bottom of Grout		
Top of Well Riser	2"	+
Bottom of Well Riser	2"	14.5'
Top of Well Screen	2"	14.5'
Bottom of Well Screen	2"	29.5'
Top of Peltonite Seal	BENT.	10.5'
Bottom of Peltonite Seal	CHIPS	12.5'
Top of Gravel Pack	CO	12.5'
Bottom of Gravel Pack	SAND	29.5'
Top of Natural Cave-In		
Bottom of Natural Cave-In		
Top of Groundwater		20.68'
Total Depth of Borehole		29.5'



Comments: HOLE WAS DRILLED TO 30', BUT SEDIMENT BACKFILLED AUGERS. WELL SET @ 29'12" TO

Geologist Signature

Cathy Cullicott

DTW AFTER
 Bailing
 20.78'

WELL DEVELOPED WITH 8 gallons
 removed 12:30-12:50pm. well is good
 Producer water was very turbid the entire time (REDDISH BROWN SEDIMENT)

RECORD OF SUBSURFACE EXPLORATION

Philip Environmental Services Corp.

4000 Monroe Road

Elmington, New Mexico 87401

Phone 505-26-2282 FAX (505) 326-2388

Borehole #

Well #

Page

2

MW3

1 of 2

Project Name

Project Number

Project Location

EPFS GROUNDWATER

62800018 Phase 35

LINDRITH B #24

Well Logged By

Personnel On-Site

Contractors On-Site

Client Personnel On-Site

C. CULLICOTT

K. PADILLA & D. PADILLA

Drilling Method

Air Monitoring Method

AUGER

PID

Elevation

Borehole Location

GWL Depth

Logged By

Drilled By

Date/Time Started

Date/Time Completed

T24N R8W S9N

21.1

C. CULLICOTT

K. PADILLA & D. PADILLA

10/5/99 11:30am

10/5/99 12:00pm

note - 94567

Depth (Feet)	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			SURFACE - GRAVELLY SANDY PAD MATERIAL						
5	① 5-7		① 8" RECOVERY LOOSE, TAN, SILTY FINE SAND, CLEAN. BROWNISH RED SILT IN VERY BOTTOM OF SPLIT SPOON						① 9 BLOWS SS 0.8ppm
10	② 10-11 1/2		② 12" RECOVERY LOOSE BROWNISH RED POORLY SORTED SAND. SMALL TO SILT @ TOP FEW INCHES OF SAMPLE						② 12 BLOWS SS 0.6ppm
15	③ 15-16 1/2		③ 12" RECOVERY UPPER 6" BROWNISH RED BROWN MEDIUM SAND LOWER 6" BROWNISH RED POORLY SORTED SAND (FINE - COARSE).						③ 16 BLOWS SS 0.4ppm
20	④ 20-21 1/2		④ 6" RECOVERY SATURATED POORLY SORTED SAND, 75% COARSE. WT 21						④ 9 BLOWS SS ppm
25									
30									
35									
40									

Comments:

SUNNY, BREEZY, WARM

Geologist Signature

Cathy Cullcott

MONITORING WELL INSTALLATION RECORD

Lilip Environmental Services Corp.

3000 [redacted] Road

Albuquerque, New Mexico 87401

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

Borehole # 2
Well # MW3
Page 2 of 2

Project Name EPFS GROUNDWATER

Project Number 028000 Phase 35

Project Location LINDRITH BL

On-Site Geologist C. CULLICOTT

Personnel On-Site R. PADILLA, D. PADILLA

Contractors On-Site [initials]

Client Personnel On-Site [initials]

Elevation T24N R3W S9N

Well Location 21.1'

SWL Depth 21.1'

Installed By R. PADILLA

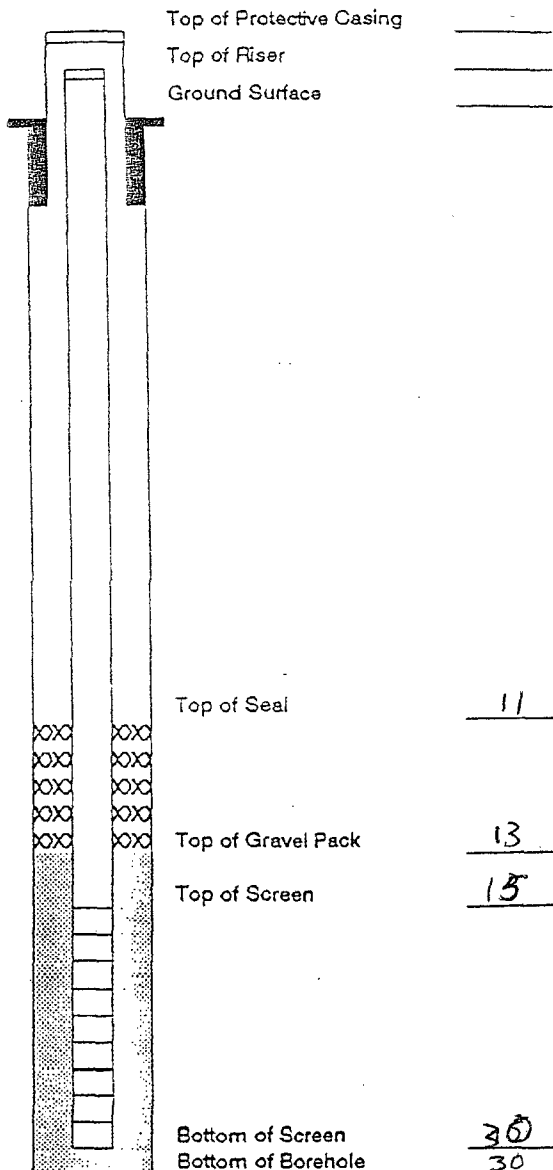
Date/Time Started 10/5/99 11:30am

Date/Time Completed 10/5/99 1pm

meter 94967

Depths in Reference to Ground Surface

Item	Material	Depth
Top of Protective Casing		
Bottom of Protective Casing		
Top of Permanent Borehole Casing		
Bottom of Permanent Borehole Casing		
Top of Concrete		
Bottom of Concrete		
Top of Grout		
Bottom of Grout		
Top of Well Riser	2"	0
Bottom of Well Riser	2"	15
Top of Well Screen	2"	15
Bottom of Well Screen	2"	30
Top of Peltonite Seal	BENT.	11
Bottom of Peltonite Seal	CHIPS	13
Top of Gravel Pack	CO	13
Bottom of Gravel Pack	SAND	30
Top of Natural Cave-In		
Bottom of Natural Cave-In		
Top of Groundwater		21.1'
Total Depth of Borehole		30'



Notes: SOME SEDIMENT FLOW INTO AUGERS

DTW AFTER PURGING=21.1' Geologist Signature

Cathy Cullicott

WELL DEVELOPED w/ 8 gallons

removed 1.05-1.15 pm. WELL IS EXCELLENT PRODUCER. WATER AVAILABLE THROUGHOUT BAILING. BROWN SED.