3R - 244

REPORTS

DATE:
1998

EL PASO
FIELD SERVICES

Certified Mail: #Z 211 324 121

March 31, 1999

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

RE: 1998 Pit Project Annual Groundwater Report

Dear Mr. Olson:

In accordance with reporting requirements, El Paso Field Services (EPFS) has enclosed annual updates for the 49 remaining groundwater impacted locations that were identified during our pit closure project of 1994 / 1995.

Of the 49 reports, EPFS hereby requests closure of 18 of these locations. The 18 sites EPFS is requesting closure on are presented in 4 separate binders entitled "Final Closure Report for Groundwater Sites with Four Consecutive Quarters Below Standards".

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".

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

Sincerely,

Scott T. Pope P.G.
Senior Environmental Scientist

xc: Mr. Denny Foust, NMOCD, Aztec - w / enclosures; **Certified Mail # Z 211 324 122**
Mr. Bill Liesse, BLM – w / enclosures; **Certified Mail # Z 211 324 123**
Ms. Charmaine Tso, Navajo EPA – w / enclosures; **Certified Mail # Z 211 324 120**

SAN JUAN BASIN PIT CLOSURES
San Juan Basin, New Mexico

El Paso Field Services
Final Closure Report For Groundwater Sites With Four Consecutive Quarters Below Standards

December 1998

Prepared For

El Paso Field Services
Farmington, New Mexico

Project 17520
Book 1

PHILIP SERVICES CORP

EPFS GROUNDWATER PITS
1998 ANNUAL GROUNDWATER REPORT

TURNER A #1 PM (PIT #1 & #2)
Meter/Line ID - 71676

SITE DETAILS

Legals - Twn: 31N **Rng:** 11W **Sec:** 34 **Unit:** K
NMOCD Hazard Ranking: 40 **Land Type:** STATE
Operator: BURLINGTON RESOURCES

PREVIOUS ACTIVITIES

Site Assessment: Apr-94 **Excavation:** Apr-94 (40 cy-pit 1) **Excavation:** Dec-95 (700 cy-pit 2)
Soil Boring: Mar-97 **Monitor Well #1:** Mar-97 **Monitor Well #2:** Dec-98 (pit 2)
Quarterly Sampling Initiated (Pit #1): August-97
Quarterly Sampling Initiated (Pit #2): December-98

1998 ACTIVITIES

Quarterly Groundwater Monitoring- Quarterly groundwater monitoring continued through 1998 for MW-1 and was initiated for MW-2. Groundwater analytical data are presented in Table 1. A site map is presented as Figure 1.

Provided Operator with Site Data - EPFS has provided operator with all pertinent site data generated to date.

Monitor Well Completion- Monitor well MW-2 was completed in the approximate center of Pit #2.

CONCLUSIONS

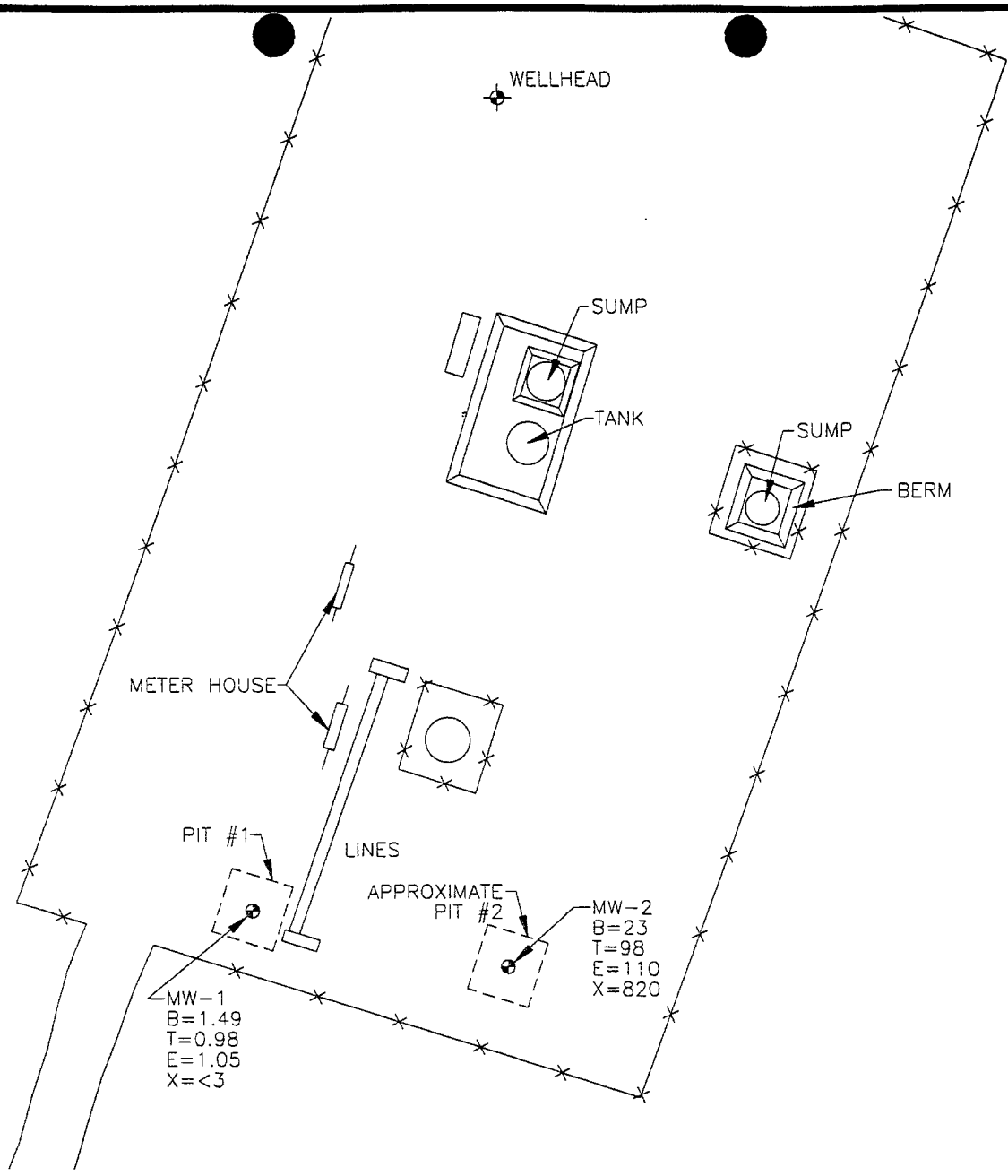
Analytical results of groundwater samples collected from MW-1 (Pit #1) during the last two quarters of 1998 show that hydrocarbon constituents were below New Mexico Water Quality Standards for groundwater.

Analytical results of groundwater samples collected from MW-2 (Pit #2) during the last quarter of 1998 shows benzene and total xylenes were above New Mexico Water Quality Standards for groundwater.

Pertinent data from the 1997 groundwater report includes the following: A groundwater gradient map generated for the 1997 groundwater report that included data collected from temporary wellpoints shows that the groundwater gradient is to the west at this site. A groundwater sample collected from PZ-1 was above standards for benzene, toluene, and total xylenes.

RECOMMENDATIONS

- EPFS will continue quarterly groundwater sampling at MW-1 and MW-2 until four consecutive clean quarters have been achieved.
- EPFS will continue to work with the operator.
- Following OCD approval for closure MW-1 and MW-2 will be abandoned using OCD approved procedures.



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

0 50
FEET

N

PHILIP SERVICES CORP

TITLE:
TURNER A1
METER 71676
NOVEMBER 3, 1998

DWN:	DES.:	PROJECT NO.: 17520
TMM	CI	EPFS GW PITS
CHKD: CI	APPD:	
DATE: 3/3/99	REV.: 0	FIGURE 1

COL. 17520P-002

EPFS Groundwater Pits
1998 Annual Groundwater Report

TABLE 1
Pit #1

Sample #	Meter/ Line #	Site Name	Sample Date	MW #	Project	Benzene (PPB)	Toluene (PPB)	Ethyl Benzene (PPB)	Total Xylenes (PPB)	Total BTEX
980146	71676	Turner A #1	02/06/98	1	Sample 4 - 3rd Qtr	= 12.70	= 9.99	= 8.95	= 10.9	= 43.00
980384	71676	Turner A #1	05/08/98	1	Sample 4 - 4th Qtr	= 26.50	< 1.00	= 11.00	= 17.8	= 55.00
980548	71676	Turner A #1	08/06/98	1	Sample 4 - 5th Qtr	= 7.13	= 3.39	< 1.00	< 3.0	= 11.00
980792	71676	Turner A #1	11/03/98	1	Sample 4 - 6th Qtr	= 1.49	= 0.98	= 1.05	< 3.0	= 3.51

Pit #2

Sample #	Meter/ Line #	Site Name	Sample Date	MW #	Project	Benzene (PPB)	Toluene (PPB)	Ethyl Benzene (PPB)	Total Xylenes (PPB)	Total BTEX
980864	71676	Turner A #1(Pit #2)	12/15/98	2	Sample 4 - Initial	= 23	= 98	= 110	= 820	= 1051

PHASE II MONITORING WELL INSTALLATION

CORD OF SUBSURFACE EXPLO[redacted]ION

Hole # BH- 1
2
Page 1 of 1

IP SERVICES CORP.
Monroe Road
ington, New Mexico 87401
325-[redacted] FAX (505) 326-2388

Project Number 19643 Phase
Project Name
Project Location TURNER #1 PIT 2 7/16/96

vation
ehole Location LTR: G S: 34 T: 31 R: 11
/L Depth 61
ied By K. PADILLA
il Logged By H. BRADBURY
te Started 12/10/98
te Completed 12/10/98

Drilling Method 4 1/4 ID 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: PPM BZ	BH	S/HS	Drilling Conditions & Blow Counts
0										BZ=Breathing Zone BH=Borehole S/HS=Sample/Headspace
1	1	4-6	12	LT BR SAND FINE GRND POOR SORTED, DRY FILL MATERIAL					0	
2	2	5-7	12	LT BR SAND, COBBLE MOIST					211	
3	3	7-8					0	0	230	
4				LT BR SAND, COBBLE WET					1	
5				TCB 11.5					296	
10										
15										
20										
25										
30										
35										
40										

Comments: H.I GW AT 6' HABB6 SENT to LAB FOR TPH, BTEX
SET WELL

Geologist Signature Holly Bradbury

8/18/98\Drillog

MONITORING WELL INSTALLATION RECORD

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

Borehole # 1
Well # 2
Page 1 of 1

Project Name EPFS

Project Number _____ Phase
Project Location TURNER A #1 PIT 2 71676

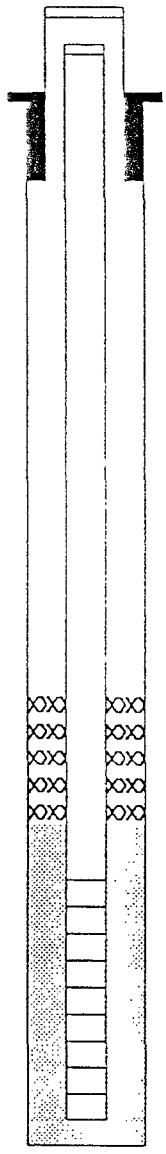
On-Site Geologist H. BRADBURY
Personnel On-Site A. LUERITO
Contractors On-Site _____
Client Personnel On-Site _____

Elevation _____
Well Location 31N 11W 34 G
GWL Depth _____
Installed By K PADILLA

Date/Time Started 12/10/98 1300 HRS
Date/Time Completed 12/10/98 1500 HRS

Depths in Reference to Ground Surface

Item	Material	Depth
Top of Protective Casing		+3
Bottom of Protective Casing		2
Top of Permanent Borehole Casing		
Bottom of Permanent Borehole Casing		
Top of Concrete		+2
Bottom of Concrete		0
Top of Grout		NA
Bottom of Grout		NA
Top of Well Riser	PVC	+3
Bottom of Well Riser	PVC	1.3
Top of Well Screen	PVC	1.3
Bottom of Well Screen	PVC	11.3
Top of Peltonite Seal		0
Bottom of Peltonite Seal		1.3
Top of Gravel Pack		1.3
Bottom of Gravel Pack		11.5
Top of Natural Cave-In		
Bottom of Natural Cave-In		
Top of Groundwater	6.1	6.1
Total Depth of Borehole	11.5	11.5



Top of Protective Casing +3
Top of Riser +2.5
Ground Surface 0

Top of Seal 0

Top of Gravel Pack 1.3
Top of Screen 1.3

Bottom of Screen 11.3
Bottom of Borehole 11.5

Comments: _____

Geologist Signature Holly Bradbury

Phase II Drilling

El Paso Natural Gas Company

CHAIN OF CUSTODY RECORD

1-5-99 Anal. 1-5-99 Appr.
1-5-99 Chron.

Page 1 of 1

PROJECT NUMBER	PROJECT NAME					TOTAL NUMBER OF CONTAINERS	SAMPLE TYPE	REQUESTED ANALYSIS						CONTRACT LABORATORY P. O. NUMBER
# 24324	Pit Closure Project							TPH EPA 418.1	BTEX EPA 8020	LAB PID	TPH 8015	FIELD PID	SEQUENCE #	
SAMPLERS: (Signature)	Holly Bradley		DATE: 12/10/98											
LAB ID	DATE	TIME	MATRIX	FIELD ID										REMARKS
980859	12/10/98	1112	soil	HAB86		1	VG		✓		✓	230	86	TURNER A1 Pit 2 71676 5-6.

HAB 12/10/98

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
Holly Bradley	12/10/98 1145	Adrian Fonseca	Adrian Fonseca	12/14/98 1013	Adrian Fonseca
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED OF LABORATORY BY: (Signature)
Adrian Fonseca	12/14/98 1217			12/14/98 12:20	

REQUESTED TURNAROUND TIME:
☐ ROUTINE ☐ RUSH

CARRIER CO.

BILL NO.:

SAMPLE RECEIPT REMARKS: COOL + Intact 39°F

CHARGE CODE

RESULTS & INVOICES TO:

FIELD SERVICES LABORATORY
EL PASO NATURAL GAS COMPANY
P. O. BOX 4990
FARMINGTON, NEW MEXICO 87499
505-599-2144 FAX: 505-599-2261

White - Testing Laboratory Canary - EPNG Lab Pink - Field Sampler

FM-08-0565 A (Rev. 05-94)

5-31-99;10:09AM;MEASUREMENT/LAB ;5055992261 # 13/ 13

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	HAB86	980859
MTR CODE | SITE NAME:	71676	Turner A1 Pit 2
SAMPLE DATE | TIME (Hrs):	12/10/98	1112
PROJECT:	Phase II Drilling	
DATE OF TPH EXT. | ANAL.:	12/15/98	12/16/98
DATE OF BTEX EXT. | ANAL.:	12/15/98	12/17/98
TYPE | DESCRIPTION:	VG	SOIL

Field Remarks: 5-6'

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS DF	Q	M(g)	V(ml)
BENZENE	0.08	MG/KG				
TOLUENE	0.24	MG/KG				
ETHYL BENZENE	0.32	MG/KG				
TOTAL XYLENES	2.70	MG/KG				
TOTAL BTEX	3.34	MG/KG				
TPH (MOD.8015)	718	MG/KG				
HEADSPACE PID	230	PPM				
PERCENT SOLIDS	NA	%				

-- TPH is by EPA Method 8015 and BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 122.0 % for this sample All QA/QC was acceptable.

Narrative:

All samples analyzed by Pinnacle Labs. Surrogate recovery high due to matrix interference.

DF = Dilution Factor Used

Approved By: John Saenz Date: 1-4-99

1998 GROUNDWATER ANALYTICAL

PIT #1

SAMPLE 4 3RD QTR

El Paso Natural Gas Company

A 2197

CHAIN OF CUSTODY RECORD

Project No.	Project Name	Type and No. of Sample Containers	Preservation Technique	Requested Analysis			Remarks
	MC #7167			BTXE			
Samplers: (Signature) Dennis Bird	Date: 2-6-98						

MATRIX	Date	Time	Comp.	GRAB	Sample Number							
WATER	2-6-98	1033		X	980146	G-1	4°C	X				TURNER A #1 MW-1
WATER	2-6-98	1033		X	980147	G-1	4°C	X				TURNER A #1 MW-1 FIELD DUP
WATER	2-6-98	—		X	—	G-1	4°C	X				TRIP BLANK

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Dennis Bird	2-6-98 1435				
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks:	
		Marlin Hopper	2/6/98 1530		
Carrier Co:		Carrier Phone No.		Date Results Reported / by: (Signature)	
Air Bill No.:					

san juan repro Form 71-55 A

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	980146
MTR CODE | SITE NAME:	71676	Turner A #1
SAMPLE DATE | TIME (Hrs):	2/6/98	1033
PROJECT:	Sample 4 3rd Quarter	
DATE OF BTEX EXT. | ANAL.:	2/18/98	2/18/98
TYPE | DESCRIPTION:	MW-1	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS DF	Q		
BENZENE	12.7	PPB				
TOLUENE	9.99	PPB				
ETHYL BENZENE	8.95	PPB				
TOTAL XYLENES	10.9	PPB				
TOTAL BTEX	43	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 86.3 % for this sample All QA/QC was acceptable.

DF = Dilution Factor Used

Narrative:

Approved By: John Fabbi Date: 3/2/98

980146BTEXMW,2/19/98

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	980147
MTR CODE | SITE NAME:	71676	Turner A #1 Field Dup
SAMPLE DATE | TIME (Hrs):	2/6/98	1033
PROJECT:	Sample 4 3rd Quarter	
DATE OF BTEX EXT. | ANAL.:	2/18/98	2/18/98
TYPE | DESCRIPTION:	MW-1	Water

Field Remarks: Field Duplicate

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	13.3	PPB				
TOLUENE	9.91	PPB				
ETHYL BENZENE	10.3	PPB				
TOTAL XYLENES	12.9	PPB				
TOTAL BTEX	46	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 85.2 % for this sample All QA/QC was acceptable.

DF = Dilution Factor Used

Narrative:

Approved By: John Fortner Date: 3/2/98

980147BTEXMW,2/19/98

EL PASO FIELD SERVICES

Well Development and Purging Data

☐ Development
☒ Purging

Well Number MW-1

Site Name TURNER A #1

Meter Code 71676

Development Criteria

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

Water Volume Calculation

Initial Depth of Well (feet) 14.65
Initial Depth to Water (feet) 7.89
Height of Water Column in Well (feet) 6.76
Diameter (inches): Well 4 Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		4.5	13.4
Gravel Pack			
Drilling Fluids			
Total			

Instruments

☒ pH Meter
☐ DO Monitor
☒ Conductivity Meter
☒ Temperature Meter
☒ Other D.O. CHEMETS KIT

Methods of Development

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

☐ Other

Water Disposal

KUTZ SEPARATOR

Water Removal Data

Date	Time	Development Method		Removal Rate	Intake Depth	Ending Water Depth	Water Volume Removed (gal)		Product Volume Removed (gallons)		Temperature °C	pH	Conductivity µmho/cm	Dissolved Oxygen mg/L	Comments
		Pump	Bailer	(gal/min)	(feet)	(feet)	Increment	Cumulative	Increment	Cumulative					
2-6-98	0940										9.3	6.47	2290		
2-6-98	0947						3.0	3.0			9.1	6.80	2240		
2-6-98	0958						2.0	5.0			9.1	6.90	2200		
2-6-98	1022						4.0	9.0			10.0	7.15	1880	2.5	

Comments THE WELL BAILED DRY @ 9.0 GALLONS.

Developer's Signature Dennis Bird Date 2-6-98 Reviewer [signature] Date 3/2/98

EL PASO FIELD SERVICES

Well Development and Purging Data

☐ Development
☒ Purging

Well Number MW-1

Site Name TURNER A #1

Meter Code 71676

Development Criteria

☒ 3 to 5 Casing Volumes of Water Removel
☐ 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) 14.65
Initial Depth to Water (feet) 7.80
Height of Water Column in Well (feet) 6.85
Diameter (inches): Well 4 Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		4.5	13.6
Gravel Pack			
Drilling Fluids			
Total			

Instruments

☒ pH Meter
☐ DO Monitor
☒ Conductivity Meter
☒ Temperature Meter
☒ Other D.O. CHEMETS KIT

Water Disposal

KUTZ SEPARATOR

Water Removal Data

Date	Time	Development Method		Removal Rate	Intake Depth	Ending Water Depth	Water Volume Removed (gal)		Product Volume Removed (gallons)		Temperature °C	pH	Conductivity µmho/cm	Dissolved Oxygen mg/L	Comments
		Pump	Bailer	(gal/min)	(feet)	(feet)	Increment	Cumulative	Increment	Cumulative					
5-8-98	0955										13.3	5.96	3320		
5-8-98	1005						3.0	3.0			12.2	6.33	3430		
5-8-98	1014						2.0	5.0			12.2	6.63	3370		
5-8-98	1030						3.0	8.0			12.2	6.88	2850		
5-8-98	1047						2.0	10.0			12.8	7.19	2350	2.5	

Comments THE WELL BAILED DRY @ 10.0 GALLONS.

Developer's Signature Dennis Bird Date 5-8-98 Reviewer John Landa Date 5/20/98

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	980384
MTR CODE | SITE NAME:	71676	Turner A #1
SAMPLE DATE | TIME (Hrs):	5/8/98	1105
PROJECT:	Sample 4 4th Quarter	
DATE OF BTEX EXT. | ANAL.:	5/15/98	5/15/98
TYPE | DESCRIPTION:	MW-1	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	26.5	PPB				
TOLUENE	<1	PPB				
ETHYL BENZENE	11.0	PPB				
TOTAL XYLENES	17.8	PPB				
TOTAL BTEX	55	PPB				

--BTEX is by EPA Method 8020 --

he Surrogate Recovery was at 80.6 % for this sample All QA/QC was acceptable.

F = Dilution Factor Used

larrative:

pproved By: John Fowler Date: 5/20/98

980384BTEXMW,5/19/98

Samples 4 4TH QTR

El Paso Natural Gas Company

A 2352

CHAIN OF CUSTODY RECORD

Project No.	Project Name	Type and No. of Sample Containers	Preservation Technique	Requested Analysis			Remarks
	MC #71676			BTXE			
Samplers: (Signature) Dennis Bird	Date: 5-8-98						

MATRIX	Date	Time	Comp.	GRAB	Sample Number						
WATER	5-8-98	1105		X	980384 ✓	5	4°C	X			TURNER A #1 MW-1
WATER	5-8-98	—		X	—	5	4°C	X			TRIP BLANK

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Dennis Bird	5-8-98 1515				
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks:	
		Marlon Hopper	5/11/98 0745		

Carrier Co:	Carrier Phone No.	Date Results Reported / by: (Signature)
Air Bill No.:		

EL PASO FIELD SERVICES

Well Development and Purging Data

☐ Development
☒ Purging

Well Number MW-1

Site Name TURNER A #1

Meter Code 71676

Development Criteria

☒ 3 to 5 Casing Volumes of Water Removel
☐ 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) 14.65
Initial Depth to Water (feet) 9.83
Height of Water Column in Well (feet) 4.82
Diameter (inches): Well 4 Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		3.2	9.6
Gravel Pack			
Drilling Fluids			
Total			

Instruments

☒ pH Meter
☐ DO Monitor
☒ Conductivity Meter
☒ Temperature Meter
☒ Other D.O. CHEMETS KIT

Water Disposal

KUTZ SEPARATOR

Water Removal Data

Date	Time	Development Method		Removal Rate	Intake Depth	Ending Water Depth	Water Volume Removed (gal)		Product Volume Removed (gallons)		Temperature °C	pH	Conductivity µmho/cm	Dissolved Oxygen mg/L	Comments
		Pump	Bailer	(gal/min)	(feet)	(feet)	Increment	Cumulative	Increment	Cumulative					
8-6-98	0929										18.9	6.22	1632		
8-6-98	0938						3.0	3.0			18.3	6.55	1734		
8-6-98	0958						2.0	5.0			18.9	7.05	1694		
8-6-98	1026						2.0	7.0			19.3	7.25	1730	3.5	

Comments THE WELL BAILED DRY @ 7.0 GALLONS.

Developer's Signature Dennis Bird Date 8-6-98 Reviewer John Fowler Date 8/12/98

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	980548
MTR CODE | SITE NAME:	71676	Turner A #1
SAMPLE DATE | TIME (Hrs):	8/6/98	1039
PROJECT:	Sample 4 5th Quarter	
DATE OF BTEX EXT. | ANAL.:	8/10/98	8/10/98
TYPE | DESCRIPTION:	MW-1	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	7.13	PPB				
TOLUENE	3.39	PPB				
ETHYL BENZENE	<1	PPB				
TOTAL XYLENES	<3	PPB				
TOTAL BTEX	11	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 92.2 % for this sample All QA/QC was acceptable.

DF = Dilution Factor Used

Narrative:

Approved By: _____ Date: 8/12/98

980548BTEXMW,8/11/98

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	980549
MTR CODE | SITE NAME:	71676	Turner A #1
SAMPLE DATE | TIME (Hrs):	8/6/98	1039
PROJECT:	Sample 4 5th Quarter	
DATE OF BTEX EXT. | ANAL.:	8/10/98	8/10/98
TYPE | DESCRIPTION:	MW-1 Field Dup	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	6.67	PPB				
TOLUENE	2.77	PPB				
ETHYL BENZENE	<1	PPB				
TOTAL XYLENES	<3	PPB				
TOTAL BTEX	9	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 87.5 % for this sample All QA/QC was acceptable.

DF = Dilution Factor Used

Narrative:

Approved By: _____ Date: 8/12/98

980548BTEXMW,8/11/98

SAMPLE 4 5TH QTR

El Paso Natural Gas Company

A 2379

CHAIN OF CUSTODY RECORD

Project No.	Project Name	Samplers: (Signature)	Date
	MC #71696	Dennis Bird	8-6-98

Matrix	Date	Time	Comp.	GRAB	Sample Number	Type and No. of Sample Containers	Preservation Technique	Requested Analysis: BTXE				Remarks
WATER	8-6-98	1037		X	980548	G-1	4°C	X				TURNER A #1 MW-1
WATER	8-6-98	1039		X	980549	G-1	4°C	X				TURNER A #1 MW-1 FIELD DUP
WATER	8-6-98	—		X	—	G-1	4°C	X				TRIP BLANK

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Dennis Bird	8-6-98 1730				
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks:	
		Marsha Hopper	8/10/98 0720		

Carrier Co:

Carrier Phone No.

Date Results Reported / by: (Signature)

Air Bill No.:

EL PASO FIELD SERVICES

Well Development and Purging Data

☐ Development
☒ Purging

Well Number MW-1

Site Name TURNER A #1

Meter Code 71676

Development Criteria

☒ 3 to 5 Casing Volumes of Water Removel
☐ 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) 14.65
Initial Depth to Water (feet) 8.83
Height of Water Column in Well (feet) 5.82
Diameter (inches): Well 4 Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		3.8	11.5
Gravel Pack			
Drilling Fluids			
Total			

Instruments

☒ pH Meter
☐ DO Monitor
☒ Conductivity Meter
☒ Temperature Meter
☒ Other D.O. CHEMETS KIT

Water Disposal

KOTZ SEPARATOR

Water Removal Data

Date	Time	Development Method		Removal Rate	Intake Depth	Ending Water Depth	Water Volume Removed (gal)		Product Volume Removed (gallons)		Temperature °C	pH	Conductivity µmho/cm	Dissolved Oxygen mg/L	Comments
		Pump	Bailer	(gal/min)	(feet)	(feet)	Increment	Cumulative	Increment	Cumulative					
11-6-98	0920										13.2	6.72	1810		
11-6-98	0927						3.0	3.0			13.9	6.56	1724		
11-6-98	0940						2.0	5.0			13.8	6.85	1744		
11-6-98	1020						5.0	10.0			13.6	7.11	1745	3.5	

Comments THE WELL BAILED DRY @ 10.0 GALLONS.

Developer's Signature Dennis Bird Date 11-6-98 Reviewer John Fowler Date 11/10/98

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	980792
MTR CODE | SITE NAME:	71676	Turner A #1
SAMPLE DATE | TIME (Hrs):	11/6/98	1032
PROJECT:	Sample 4 6th Quarter	
DATE OF BTEX EXT. | ANAL.:	11/9/98	11/9/98
TYPE | DESCRIPTION:	MW-1	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	1.49	PPB				
TOLUENE	0.98	PPB				
ETHYL BENZENE	1.05	PPB				
TOTAL XYLENES	<3	PPB				
TOTAL BTEX	3.51	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 101.0 % for this sample All QA/QC was acceptable.

DF = Dilution Factor Used

Narrative:

Approved By: John Fowler Date: 11/16/98

980792BTEXMW,11/15/98

El Paso Natural Gas Company

A 2410

CHAIN OF CUSTODY RECORD

Project No.

Project Name: MC # 71676

Samplers: (Signature) [signature]

Date: 11-6-98

Matrix	Date	Time	Comp.	GRAB	Sample Number	Type and No. of Sample Containers	Preservation Technique	BTXE				Remarks
WATER	11-6-98	1032		X	980792	G-1		X				TURNER A #1 3UN-1
WATER	11-6-98	—		X	—	G-1		X		/		TRIP BLANK

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[signature]	11-6-98 1415				

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)

Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks:
		[signature]	11/6/98 1530	

Carrier Co:

Air Bill No.:

Carrier Phone No.

Date Results Reported / by: (Signature)

san juan repro Form 71-55 A

1998 GROUNDWATER ANALYTICAL

PIT #2

CORD OF SUBSURFACE EXPLORATION

P SERVICES CORP.
Monroe Road
Mexico 87401
FAX (505) 326-2388

Hole # BH-1
Well # 2
Page 1 of 1

Project Number _____ Phase _____
Project Name _____
Project Location TURNER A1 PIT 2 71676

vation _____
ehole Location LTR: G S: 34 T: 31 R: 11
'L Depth _____
led By K. PADILLA
ll Logged By H. BRADBURY
:e Started 12/10/98
:e Completed 12/10/98

Drilling Method 4 1/4 ID 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: PPM BZ	BH	S/HS	Drilling Conditions & Blow Counts
0										BZ=Breathing Zone BH=Borehole S/HS=Sample/Headspace
4	1	4-6	12	LT BR SAND FINE SAND 100% clay FILL MATERIAL					0 0 211 230	1111 1113 & H2S
7	2 3	5-7 7-8	12	LT BR SAND, COBBLE 95% SAT LT GR SAND, COBBLE WET			0	0	1 206	1127 H2S
10										
15										
20										
25										
30										
35										
40										

ents: H.T GW A1 6' HABB6 SENT to lab for TPH, BTEX
SET WELL

Geologist Signature Holly Bradbury

8/18/98\Drillog

Sample 4 - Initial

Initial MW Installation

1-12-99 Hisa.
1-12-99 Anal.
1-12-99 Chm.

El Paso Natural Gas Company

CHAIN OF CUSTODY RECORD

Page 1 of 1

PROJECT NUMBER	PROJECT NAME
# 24324	Pit Closure Project

SAMPLERS: (Signature) Holly Bradley DATE: 12/15/98

LAB ID	DATE	TIME	MATRIX	FIELD ID	TOTAL NUMBER OF CONTAINERS	SAMPLE TYPE	TPH EPA 418.1	BTEX EPA 8020	LAB PID			SEQUENCE #	REMARKS
980864	12/15/98	1244	WATER	HAB87	2			X					Meter No. 7676 TURNER A #1 MW2
980865	12/15/98	1251	WATER	HAB88	2			X					TURNER A #1 MW2 Duplicate
980866	12/15/98	N/A	WATER	HAB89	2			X					Trip Blank

HAB 12/15/98

CONTRACT LABORATORY P. O. NUMBER

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
Holly Bradley	12/15/98 1433				
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED OF LABORATORY BY: (Signature)
				12/15/98 1433	CR Vella

REQUESTED TURNAROUND TIME:
☐ ROUTINE ☐ RUSH

CARRIER CO.

BILL NO.:

SAMPLE RECEIPT REMARKS: Cool & Intact 39°F

CHARGE CODE

RESULTS & INVOICES TO:

FIELD SERVICES LABORATORY
EL PASO NATURAL GAS COMPANY
P. O. BOX 4990
FARMINGTON, NEW MEXICO 87499
505-599-2144 FAX: 505-599-2261

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	HAB87	980864
MTR CODE | SITE NAME:	71676	Turner A #1
SAMPLE DATE | TIME (Hrs):	12/15/98	1244
PROJECT:	Sample 4 - Initial	
DATE OF BTEX EXT. | ANAL.:	NA	12/22/98
TYPE | DESCRIPTION:	MW-2	Water

Field Remarks: New Monitor Well Installation.

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	23	PPB	10			
TOLUENE	98	PPB	10			
ETHYL BENZENE	110	PPB	10			
TOTAL XYLENES	820	PPB	10			
TOTAL BTEX	1051	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 108 % for this sample All QA/QC was acceptable.

DF = Dilution Factor Used

Narrative:

Samples analyzed by Pinnacle Laboratories.

Approved By: John Sanders Date: 1-11-99

PINNACLE LABORATORIES

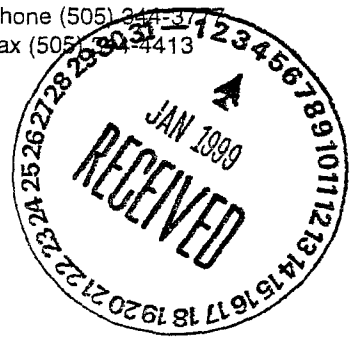
2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

CLIENT	: EL PASO FIELD SERVICES	PINNACLE ID	: 812082
PROJECT #	: (none)	DATE RECEIVED	: 12/22/98
PROJECT NAME	: MW INSTALL	REPORT DATE	: 12/29/98

AEN ID. #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	980864	AQUEOUS	12/15/98
02	980865	AQUEOUS	12/15/98
03	980866 TRIP BLANK	AQUEOUS	12/15/98

PINNACLE LABORATORIES

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



Pinnacle Lab ID number **812082**
December 29, 1998

EL PASO FIELD SERVICES
770 WEST NAVAJO
FARMINGTON, NM 87401

Project Name MW INSTALL 980864 to 980866
Project Number (none)
TURNER A #1 MW-2
Meter Code # 71676

Attention: JOHN LAMBDIN

On 12/22/98 Pinnacle Laboratories, Inc. Inc., (ADHS License No. AZ0592), 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: mt

Enclosure

Reviewed & Approved
D.S.
1-6-99

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	HAB88	980865
MTR CODE | SITE NAME:	71676	Turner A #1
SAMPLE DATE | TIME (Hrs):	12/15/98	1251
PROJECT:	Sample 4 - Initial	
DATE OF BTEX EXT. | ANAL.:	NA	12/22/98
TYPE | DESCRIPTION:	MW-2 Duplicate	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	24	PPB	10			
TOLUENE	99	PPB	10			
ETHYL BENZENE	110	PPB	10			
TOTAL XYLENES	820	PPB	10			
TOTAL BTEX	1053	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 99 % for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative:
Samples analyzed by Pinnacle Laboratories.

Approved By: _____ Date: 1-11-99

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 : MW INSTALL

PINNACLE I.D.: 812082

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
01	980864	AQUEOUS	12/15/98	NA	12/22/98	10
02	980865	AQUEOUS	12/15/98	NA	12/22/98	10
03	980866 TRIP BLANK	AQUEOUS	12/15/98	NA	12/22/98	1

PARAMETER	DET. LIMIT	UNITS	980864	980865	980866 TRIP BLANK
BENZENE	0.5	**UG/L**	**23**	**24**	< 0.5
TOLUENE	0.5	**UG/L**	**98**	**99**	< 0.5
ETHYLBENZENE	0.5	**UG/L**	**110**	**110**	< 0.5
TOTAL XYLENES	0.5	**UG/L**	***820***	***820***	< 0.5
SURROGATE:					
BROMOFLUOROBENZENE (%)			108	99	108
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.	: 812082
BLANK I. D.	: 122398	DATE EXTRACTED	: NA
CLIENT	: EL PASO FIELD SERVICES	DATE ANALYZED	: 12/23/98
PROJECT #	: (none)	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: MW INSTALL		

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 (%)		108
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.	: 812082
BLANK I. D.	: 122298	DATE EXTRACTED	: NA
CLIENT	: EL PASO FIELD SERVICES	DATE ANALYZED	: 12/22/98
PROJECT #	: (none)	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: MW INSTALL		

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 (%)		116
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 #	: 812072-02	PINNACLE I.D.	: 812082
CLIENT	: EL PASO FIELD SERVICES	DATE EXTRACTED	: NA
PROJECT #	: (none)	DATE ANALYZED	: 12/23/98
PROJECT NAME	: MW INSTALL	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	10.0	9.7	97	10.0	100	3	(80 - 120)	20
TOLUENE	<0.5	10.0	10.8	108	11.1	111	3	(80 - 120)	20
ETHYLBENZENE	<0.5	10.0	10.8	108	10.7	107	1	(80 - 120)	20
TOTAL XYLENES	<0.5	30.0	31.9	106	31.7	106	1	(80 - 120)	20

CHEMIST NOTES:
N/A

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

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

American Environmental Network (NM), Inc.

CHAIN OF CUSTODY

DATE: 12/21/98 PAGE: 1 OF 1

AEN(NM) Accession #: 812082

SHADED AREAS ARE FOR LAB USE ONLY.

PLEASE FILL THIS FORM IN COMPLETELY.

PROJECT MANAGER: John Lambdin

COMPANY: El Paso Field Services
ADDRESS: 770 W. Navajo
Farmington NM 87401
PHONE: (505) 599-2144
FAX: (505) 599-2261
BILL TO: (Same As Above)
COMPANY:
ADDRESS:

SAMPLE ID	DATE	TIME	MATRIX	LAB I.D.	Petroleum Hydrocarbons (418.1) TRPH	(MOD.8015) Diesel/Direct Inject	(M8015) Gas/Purge & Trap	8021 (BTEX)/8015 (Gasoline)	8021 (BTEX) ☐ MTBE ☐ TMB ☐ PCE	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)	Herbicides (615/8151)	Base/Neutral/Acid Compounds GC/MS (625/8270)	Polynuclear 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
980864	12/15/98	1244	water	01					X																						2
980865	12/15/98	1251	water	02					X																						2
980866 TRIP BLANK	12/15/98	NA	water	03					X																						1

ANALYSIS REQUEST

PROJECT INFORMATION	
PROJ. NO.:	NA
PROJ. NAME:	NA MW Install
P.O. NO.:	NA
SHIPPED VIA:	Fed-X

SAMPLE RECEIPT	
NO. CONTAINERS	5
CUSTODY SEALS	(Y) N / NA
RECEIVED INTACT	Yes
BLUE ICE/ICE	0.3°C

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

(RUSH) [ ] 24hr [ ] 48hr [ ] 72hr [ ] 1 WEEK (NORMAL) [X]

CERTIFICATION REQUIRED: [ ] NM [ ] SDWA [ ] OTHER

METHANOL PRESERVATION [ ]

COMMENTS: FIXED FEE [ ]

RELINQUISHED BY: 1.	RELINQUISHED BY: 2.
Signature: Time: 1340	Signature: Time:
Printed Name: John Lambdin Date: 12/21/98	Printed Name: Date:
Company: El Paso Field Services	Company:
RECEIVED BY: 1.	**RECEIVED BY: (LAB) 2.**
Signature: Time:	Signature: Francine Tanno Time: 1025
Printed Name: Date:	Printed Name: Francine Tanno Date: 12/22/98
Company:	American Environmental Network (NM), Inc.

DISTRIBUTION: White - AEN, Canary - Originator

PHILIP ENVIRONMENTAL

Well Number MW-2

☒ Development ☐ Purging

WELL DEVELOPMENT AND PURGING DATA

Serial No. WDPD-

Project Name EPFS pits <10 Project Manager Scott Pope Project No. 19643

Client Company EPFS Phase.Task No. 1004.77

Site Name TURNER A #1 MC# 71676 Site Address

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) 13.45
Initial Depth to Water (feet) 7.93
Height of Water Column in Well (feet) 5.52
Diameter (inches): Well 4 Gravel Pack

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	3.60	18.00	18.00
Gravel Pack			
Drilling Fluids			
Total			18.00

Instruments

	Serial No. (If applicable)
☒ pH Meter	OYSTER
☐ DO Monitor	
☒ Conductivity Meter	OYSTER
☒ Temperature Meter	OYSTER
☐ Other	

Water Disposal ON GROUND ON SITE

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
12/15/98	1014		X				1	1			11.8	7.54	145		DK BR VERY SILTY
12/15/98	1020		X				1	2			11.3	7.48	139		SAA
12/15/98	1024		X				1	3			11.5	7.48	135		SAA
12/15/98	1029		X				1	4			11.3	7.49	136		SAA
12/15/98	1033		X				1	5			11.1	7.46	138		SAA
12/15/98	1037		X				1	6			11.0	7.46	136		SAA
12/15/98	1041		X				1	7			11.1	7.46	136		SAA
12/15/98	1045						1	8			11.3	7.44	135		SAA
12/15/98	1050						1	9			11.1	7.44	137		SAA
12/15/98	1055						1	10			11.2	7.42	132		DK BR LESS SILTY

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

Comments

Developer's Signature(s) Holly Bradbury Date 12/15/98 Reviewer J.P. Date 1-11-99

PHILIP ENVIRONMENTAL

Well Number MW-2

☒ Development ☐ Purging

WELL DEVELOPMENT AND PURGING DATA

Serial No. WDPD-

Project Name EPFS pits <10 Project Manager Scott Pope Project No. 19643

Client Company EPFS Phase.Task No. 1004.77

Site Name TURNER A #1 (MCH71676) Site Address

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) 13.45
Initial Depth to Water (feet) 7.93
Height of Water Column in Well (feet) 5.52
Diameter (inches): Well 4 Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	3.60	18.00	18.00
Gravel Pack			
Drilling Fluids			
Total			18.00

Instruments

	Serial No. (If applicable)
☒ pH Meter	OYSTER
☐ DO Monitor	
☒ Conductivity Meter	OYSTER
☒ Temperature Meter	OYSTER
☐ Other	

Water Disposal ON GROUND ON SITE

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
12/15/98	1059		X				1	11			11.3	7.41	134		DK BR silty
12/15/98	1127		X				1	12			11.8	7.41	132		SAA
12/15/98	1131		X				1	13			11.5	7.42	133		SAA
12/15/98	1135		X				1	14			11.4	7.42	132		SAA
12/15/98	1139		X				1	15			11.5	7.42	132		SAA
12/15/98	1142		X				1	16			11.8	7.40	132		SAA
12/15/98	1146		X				1	17			11.6	7.40	133		SAA
12/15/98	1202		X				~~4.5~~ 5	23			12.2	7.41	128		SAA
12/15/98	1217		X				4.5	27.5			12.6	7.38	124		LT BR LESS silty

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

Comments

Developer's Signature(s) Holly Bradbury Date 12/15/98 Reviewer JS Date 1-11-99

PHILIP ENVIRONMENTAL

Location No. TURNER MW-2

WATER SAMPLING DATA

Serial No. WSD-

Group List Number

Sample Type: ☒ Groundwater ☐ Surface Water ☐ Other Date 12/15/98

Project Name Project No. 19643

Project Manager Scott Pope Phase.Task No.

Site Name TURNER A #1 MC# 71676

Sampling Specifications

Requested Sampling Depth Interval (feet) UPPER 3'

Requested Wait Following Development/Purging (hours)

Initial Measurements

Time Elapsed From Final Development/Purging (hours)

Initial Water Depth (feet)

Nonaqueous Liquids Present (Describe)

Water Quality/Water Collection

DO = Dissolved Oxygen; Cond. = Conductivity

Date	Time	Sampler Initials	Water Quality Readings				Water Collection Data					Notes (Explain in Comment Below)
			Temp. (°C)	pH	DO (mg/L)	Cond. (µmnos/cm)	Volume Removed (gallons)	Removal Rate (gal/min)	Pump Intake Depth (ft)	Bail	Final Water Depth ft	
SEE WELL DEVELOPMENT and PURGING FORM												

Container Type: G = Clear Glass; A = Amber Glass; P = Plastic; V = VOA Vial (Glass); O = Other (Specify)

Sample Containers

Preservatives: H = HCl; N = HNO_3; S = H_2SO_4; A = NaOH; O = Other (Specify); — = None

Analytical Parameter List	Container			Field Filtered		Preserved	Cooled During Collection		Comments
	Number	Type	Volume (mL)	Yes	No		Yes	No	
BTEX 8020	2		40ml		X	HCL	X		HAB87 SAMPLED AT 1244
BTEX 8020	2		40ml		X	HCL	X		HAB88 Dup. sampled at 1251

Filter Type Chain-of-Custody Form Number

Comments

Signature Holly Bradbury Date 12/15/98 Reviewer JF Date 1-11-99