Closed Olson
2/10/03

EPFS GROUNDWATER PITS
GROUNDWATER CLOSURE REPORT

W D Heath B-5

Meter Code: 87493 30-045-20970

SITE DETAILS

Legals Twn: 30N Rng: 09W Sec: 31 UNIT: M (N) D-27-3/26/03

NMOCD Haz Ranking: 30 Land Type: Federal Operator: Amoco Production Company

PREVIOUS ACTIVITIES

Site Assessment: Apr-94 Excavation: May-94 (50cy) Soil Boring: May-95 Monitor Well: May-95

Geoprobe: Jan-97 Additional MWs: NA Downgradient MW's: NA Replace MW: NA

PSH Removal Initiated: NA ORC Nutrient Injection: NA Re-Excavation: NA

Quarterly Initiated: Apr-1996 Annual Initiated NA Quarterly Resumed: NA

Following the initial site assessment in April of 1994 the existing pit was excavated to a depth of 12 feet beneath ground surface (bgs). Approximately 50 cubic yards of source material were removed and disposed of at the Tierra land farm. The headspace soil reading from the bottom of the excavation was 407 ppm and no groundwater was encountered. Soil analytical for the sample was as follows: Benzene <0.62 mg/kg, Toluene 44 mg/kg, Ethyl Benzene 20 mg/kg, Total Xylenes 190 mg/kg, Total BTEX 255mg/kg, and TPH (418.1) 1380 mg/kg (See Appendix A).

One soil boring was drilled in the center of the pit and a sample collected from 30-32 feet bgs. The sample results were as follows: Benzene <0.025 mg/kg, Toluene <0.025 mg/kg, Ethyl Benzene <0.025 mg/kg, Total Xylenes <0.025 mg/kg, Total BTEX <0.10 mg/kg, and TPH (418.1) 25.2 mg/kg, the headspace soil reading from the bottom of the boring was 52 ppm (See Appendix B). MW-1 was set at a TD of 42.5 bgs with the water level at 32.5 bgs (See Appendix B).

Geoprobe groundwater data was collected in various locations, upgradient and downgradient of MW-1 during January and February of 1997. The geoprobe groundwater data indicated groundwater below standards at all locations except PH2 (See Appendix C, Figure 2 and Figure 4).

Well points were established in August 1997, the data was used to establish gradient flow direction and the water samples were non detect for PZ 1 and PZ 2 (See attached Figure 2, locating the approximate well points and geoprobe locations). Based on groundwater levels collected from temporary well point data, the groundwater flow trends to the west, southwest.

Historical groundwater data is included as Table 1 along with a trend graph (Figure 3) showing historical and present BTEX concentrations. Since, previous analytical data were submitted in prior annual reports, only the analytical data and purge forms for the first and second quarter of 2002 are appended. Included in appendices B (MW-1), C (geoprobe), and D (well points) are well logs, well completions and supporting analytical.

EPFS GROUNDWATER PITS
GROUNDWATER CLOSURE REPORT

W D Heath B-5

Meter Code: 87493

2002 ACTIVITY

First quarter samples were taken on January 3, 2002, Benzene was 1.2 ppb, Toluene was 0.5 ppb, Ethyl Benzene was 2.1 ppb, and Total Xylenes was 1.0 ppb (See Appendix E analytical data).

Second quarter samples were taken on April 2, 2002, Benzene was 3.6 ppb, Toluene was 0.70 ppb, Ethyl Benzene was 2.1 ppb, and Total Xylenes was 1.0 ppb (See Appendix E analytical data).

The second quarter sample represents the fourth consecuative sample below NMQCC standards for BTEX in groundwater.

SUMMARY TABLES AND GRAPHS

Table 1 is attached and shows historic to present BTEX analytical data. Accompanying Table 1 is Figure 3, which also shows historic to present BTEX data graphically over time.

SITE MAP

A site map (Figure 1) is included and shows the previous geoprobe and the temporary well point locations. Also Figure 2 indicates BTEX for the past four quarters .

GEOLOGIC LOGS AND WELL COMPLETION DIAGRAMS

Analytical Data, Completion Diagrams and Geologic Logs are appended for MW-1 as follows: Appendix A contains phase one assessment data including pit excavation data, soil sample data and analytical data; Appendix B contains phase two assessment data including well logs, well completion data for MW-1 and soil analytical; Appendix C contains Geoprobe data including analytical (See Figure 2 for approximate geoprobe locations); and Appendix D contains well point data including analytical and well completion (See Figure 2 for approximate well point locations).

DISPOSITION OF GENERATED WASTES

No wastes were generated at this site for 2002.

ISOCONCENTRATION MAPS

An isoconcentration map was not generated at this site.

EPFS GROUNDWATER PITS
GROUNDWATER CLOSURE REPORT

W D Heath B-5

Meter Code: 87493

CONCLUSIONS

EPFS previously excavated approximately 50 cubic yards of source material from the former pit, soils samples collected from the pit during excavation were below 1 mg/kg (ppm) for benzene. Initial laboratory analysis done May 30, 1995 for MW-1, had a benzene level of 29.8 ppm. The soil samples collected during the MW-1 installation were taken from 30-32 bgs and indicated BTEX and TPH levels below standards. Over the next seven years benzene levels in groundwater had a high of 61.9 ppm in April 10, 1996 and averaged 13.4 ppm over the seven year period. Benzene levels remained consistently over 10 ppm, until July 2000, at this point in time benzene levels began a trend below 10 ppm.

The beginning of four clean consecutive quarters began with the July 2001 quarterly sample and ended with the fourth clean quarter in April 2002. Previous information included in the 1997 temporary well point data shows a groundwater flow in a west, southwest direction (See Figure 4).

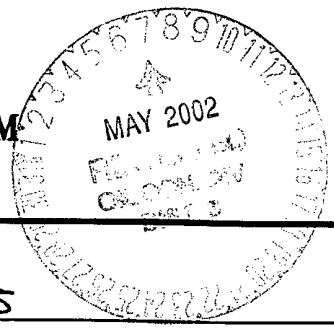
Minimal impact has occurred to groundwater at this site. Monitor Well One has showed a decreasing trend in BTEX over time with no evidence of significant rebound. BTEX levels have been below NMWQCC standards for four consecutive quarters. Based on the data presented in this closure report, the site posses minimal risk to human health and the environment. No potential receptors exist within 1,000 feet of the site and the majority of source material has been removed from the former EPFS pit. Therefore, EPFS requests this site be closed and MW-1 be abandoned according to approved Monitoring Well Abandonment Plan.

RECOMMENDATIONS

> EPFS requests closure of this site

> Following NMOCD approval for closure, MW-1 will be abandoned in accordance with the approved Monitoring Well Abandonment Plan.

FIELD PIT SITE ASSESSMENT FORM



GENERAL

Meter: 87493 Location: W.D. HEATH B #5
Operator #: 0203 Operator Name: AMOCO P/L District: BLOOMFIELD
Coordinates: Letter: M Section 31 Township: 30 Range: 9
Or Latitude _____ Longitude _____
Pit Type: Dehydrator ___ Location Drip: X Line Drip: ___ Other: _____
Site Assessment Date: 4.15.94 Area: 10 Run: 83

SITE ASSESSMENT

NMOCD Zone: (From NMOCD Maps)
Inside ☒ (1)
Outside ☐ (2)

Land Type:
BLM ☒ (1)
State ☐ (2)
Fee ☐ (3)
Indian _____

Depth to Groundwater
Less Than 50 Feet (20 points) ☐ (1)
50 Ft to 99 Ft (10 points) ☐ (2)
Greater Than 100 Ft (0 points) ☒ (3)

Wellhead Protection Area :
Is it less than 1000 ft from wells, springs, or other sources of fresh water extraction? , or ; Is it less than 200 ft from a private domestic water source? ☐ (1) YES (20 points) ☒ (2) NO (0 points)

Horizontal Distance to Surface Water Body
Less Than 200 Ft (20 points) ☐ (1)
200 Ft to 1000 Ft (10 points) ☐ (2)
Greater Than 1000 Ft (0 points) ☒ (3)
Name of Surface Water Body _____
(Surface Water Body : Perennial Rivers, Major Wash, Streams, Creeks, Irrigation Canals, Ditches, Lakes, Ponds)
Distance to Nearest Ephemeral Stream ☐ (1) < 100' (Navajo Pits Only)
☐ (2) > 100'

TOTAL HAZARD RANKING SCORE: 0 **POINTS**

REMARKS

Remarks : TWO PITS ON LOCATION. WILL CLOSE ONLY ONE. PIT IS DRY. DO NOT KNOW WHY LOCATION IS IN THE WATER VULNERABLE ZONE.

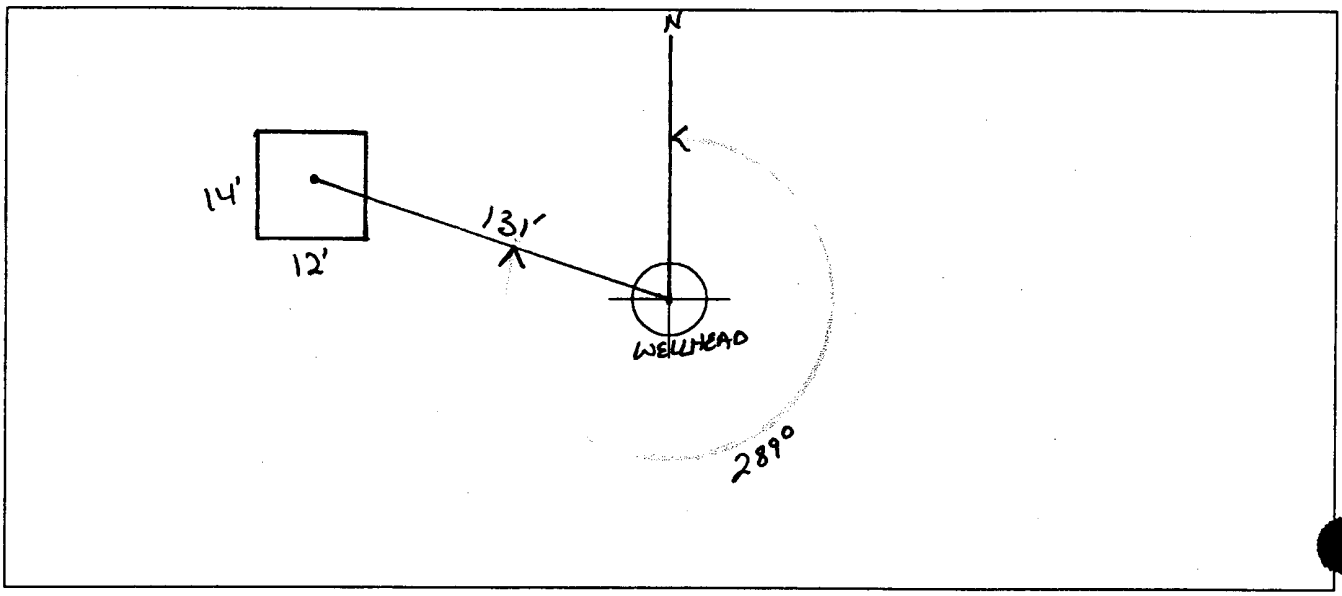
(SP3190) 04/08/94

ORIGINAL PIT LOCATION

ORIGINAL PIT LOCATION

Original Pit : a) Degrees from North 289° Footage from Wellhead 131'

b) Length : 14' Width : 12' Depth : 2'



REMARKS

Remarks :

STARTED TAKING PICTURES AT 9:57 A.M.
END DUMP

Completed By:

Robert Thompson
Signature

4.15.94
Date

FIELD PIT SITE ASSESSMENT FORM

GENERAL

Meter: 87493 Location: W.D. HEATH B #5

Operator #: _____ Operator Name: _____ P/L District: _____

Coordinates: Letter: ___ Section ___ Township: ___ Range: ___

Or Latitude _____ Longitude _____

Pit Type: Dehydrator ___ Location Drip: ___ Line Drip: ___ Other: _____

Site Assessment Date: _____ Area: 10 Run: 83

SITE ASSESSMENT

NMOCD Zone: (From NMOCD Maps)

Inside ☐ (1)

Outside ☐ (2)

Land Type:

BLM ☐ (1)

State ☐ (2)

Fee ☐ (3)

Indian _____

Depth to Groundwater

Less Than 50 Feet (20 points) ☒ (1)

50 Ft to 99 Ft (10 points) ☐ (2)

Greater Than 100 Ft (0 points) ☐ (3)

Wellhead Protection Area :

Is it less than 1000 ft from wells, springs, or other sources of fresh water extraction? , or ; Is it less than 200 ft from a private domestic water source? ☐ (1) YES (20 points) ☐ (2) NO (0 points)

Horizontal Distance to Surface Water Body

Less Than 200 Ft (20 points) ☐ (1)

200 Ft to 1000 Ft (10 points) ☒ (2)

Greater Than 1000 Ft (0 points) ☐ (3)

Name of Surface Water Body VACA CANYON

(Surface Water Body : Perennial Rivers, Major Wash, Streams, Creeks, Irrigation Canals, Ditches, Lakes, Ponds)

Distance to Nearest Ephemeral Stream ☐ (1) < 100' (Navajo Pits Only)

☐ (2) > 100'

TOTAL HAZARD RANKING SCORE: 30 **POINTS**

REMARKS

Remarks : _____

FIELD PIT REMEDIATION/CLOSURE FORM

GENERAL

Meter: 87493 Location: W. D. HEATH B #5

Coordinates: Letter: N Section 31 Township: 30 Range: 9

Or Latitude _____ Longitude _____

Date Started : 5-6-94 Area: 10 Run: 83

FIELD OBSERVATIONS

Sample Number(s): 945087 K.P #27 _____ _____ _____

Sample Depth: 12 Feet

Final PID Reading 407 PID Reading Depth 12 Fee

	Yes	No	
Groundwater Encountered	☐ (1)	☒ (2)	Approximate Depth _____ Fee

CLOSURE

Remediation Method :

Excavation	☒ (1)	Approx. Cubic Yards 50
Onsite Bioremediation	☐ (2)	
Backfill Pit Without Excavation	☐ (3)	

Soil Disposition:

Envirotech	☐ (1)	☒ (3)	Tierra
Other Facility	☐ (2)	Name:	_____

Pit Closure Date: 5-6-94 Pit Closed By: BEI

REMARKS

Remarks : LINE MARKER'S HAVE TO HAVE MIKE STAHLE dig BECAUSE 30" LINE CLOSE to Pit. Remediated Pit TO 12' FLOOR. WEST & EAST WALL STILL BLACK PID 407

Signature of Specialist: Kelly Padilla

(SP3191) 04/

El Paso Natural Gas Company

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT - Soil

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	KP27	945087
MTR CODE | SITE NAME:	87493	N/A
SAMPLE DATE | TIME (Hrs):	5/6/94	1100
SAMPLED BY:	N/A	
DATE OF TPH EXT. | ANAL.:	5/10/94	5/10/94
DATE OF BTEX EXT. | ANAL.:	5/13/94	5/15/94
TYPE | DESCRIPTION:	VC	Black Coarse Sand

REMARKS: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q	M(g)	V(ml)
BENZENE	<0.62	MG/KG				
TOLUENE	44	MG/KG				
ETHYL BENZENE	20	MG/KG				
TOTAL XYLENES	190	MG/KG				
TOTAL BTEX	255	MG/KG				
TPH (418.1)	1380	MG/KG			2.04	28
HEADSPACE PID	407	PPM				
PERCENT SOLIDS	91.3	%				

– TPH is by EPA Method 418.1 and BTEX is by EPA Method 8020 –

The Surrogate Recovery was at 152 % for this sample All QA/QC was acceptable.

Narrative: Surrogate recovery was outside ATI QC limits due to matrix interference. ATI results attached.

DF = Dilution Factor Used

Approved By: John Leordi Date: 6/15/94

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

TEST : BTEX (EPA 8020)

CLIENT : EL PASO NATURAL GAS CO. ATI I.D.: 405343

PROJECT # : 24324

PROJECT NAME : PIT CLOSURE

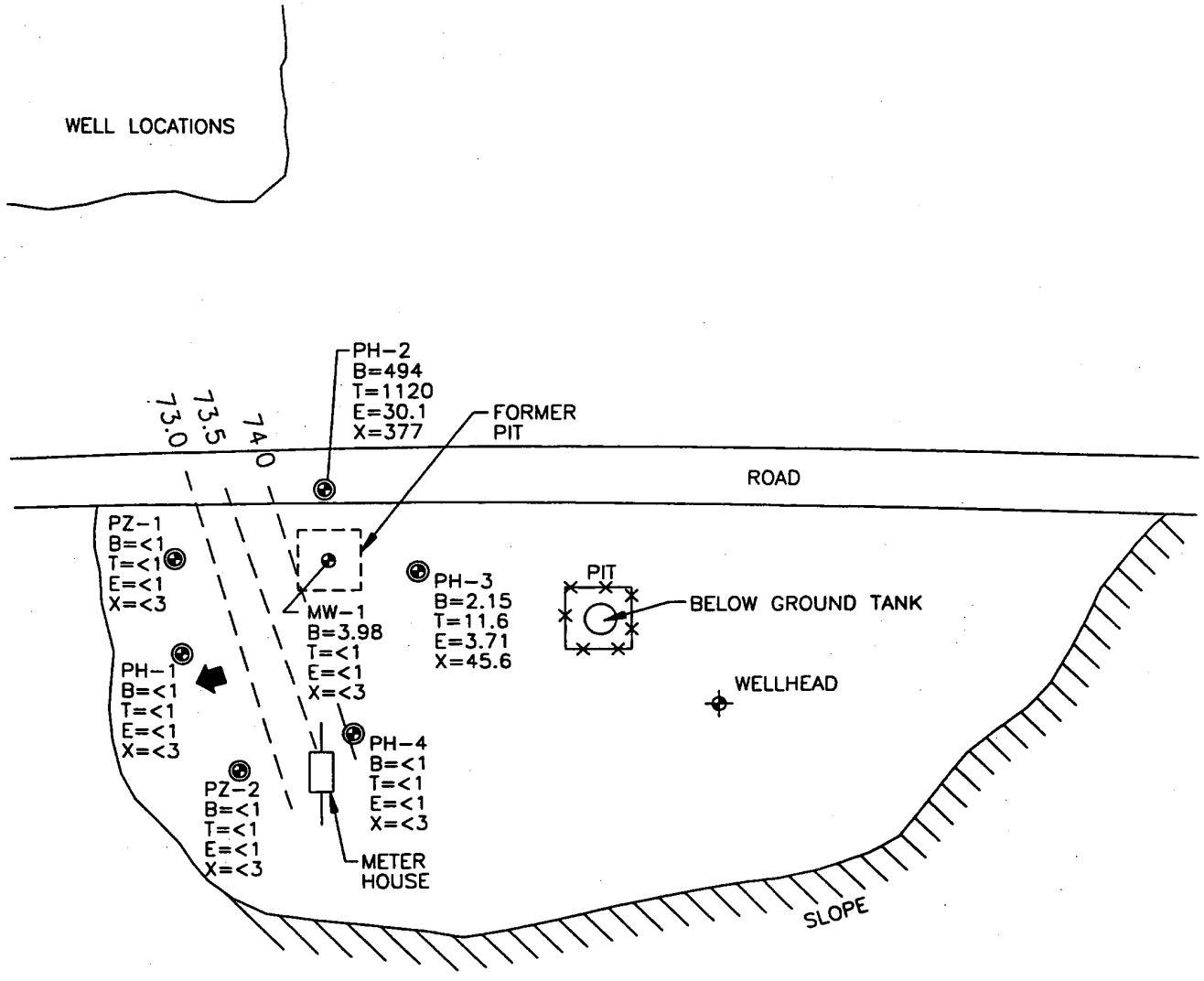
SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
11	945087	NON-AQ	05/06/94	05/13/94	05/15/94	25
12	945088	NON-AQ	05/06/94	05/13/94	05/15/94	25
13	945089	NON-AQ	05/06/94	05/13/94	05/15/94	25

PARAMETER	UNITS	11	12	13
BENZENE	MG/KG	<0.62	<0.62	<0.62
TOLUENE	MG/KG	44	15	38
ETHYLBENZENE	MG/KG	20	8.8	18
TOTAL XYLENES	MG/KG	190	89	240
SURROGATE:				
BROMOFLUOROBENZENE (%)		152*	58*	273*

*OUTSIDE ATI QUALITY CONTROL LIMITS DUE TO MATRIX INTERFERENCE

Table 1 BTEX
WD Heath B#5

Sample #	Meter Line #	Site Name	Sample Date	MW#	Benzene (ppb)	Ethyl Benzene (ppb)	Toluene (ppb)	Total Xylenes (ppb)
946844	87493	W D Heath B-5	5/30/1995	1	29.8	8.68	99.1	83.5
960325	87493	W D Heath B-5	4/10/1996	1	61.9	23.3	8.24	9.47
960654	87493	W D Heath B-5	7/26/1996	1	22.7	8.72	1	1
960869	87493	W D Heath B-5	10/18/1996	1	9.42	2.81	1	3
970009	87493	W D Heath B-5	1/20/1997	1	1	5.03	1	3
970303	87493	W D Heath B-5	4/16/1997	1	29.1	6.22	1.29	2.2
970644	87493	W D Heath B-5	7/15/1997	1	9.06	2.48	1	3
971120	87493	W D Heath B-5	10/20/1997	1	3.98	1	1	3
980007	87493	W D Heath B-5	1/6/1998	1	11.7	3.3	1	3
980311	87493	W D Heath B-5	4/23/1998	1	18.2	5.82	1	6.06
980532	87493	W D Heath B-5	7/21/1998	1	7.38	3.9	1	1.4
980695	87493	W D Heath B-5	10/8/1998	1	9.07	3.06	1	3
990010	87493	W D Heath B-5	1/14/1999	1	13.3	7.03	2.5	7.5
990173	87493	W D Heath B-5	4/15/1999	1	10.5	9.36	1.52	4.7
990321	87493	W D Heath B-5	7/20/1999	1	7.59	8.74	1	3
990402	87493	W D Heath B-5	10/14/1999	1	14	11	1.6	9.4
HEA0007	87493	W D Heath B-5	7/24/2000	1	2.8	5	0.5	0.5
WBH0001	87493	W D Heath B-5	1/21/2000	1	26	32	1.1	5.2
WBH0004	87493	W D Heath B-5	4/13/2000	1	18	13	7.7	3.4
WDH0010	87493	W D Heath B-5	10/23/2000	1	11	17	0.5	2.3
WDH0101	87493	W D Heath B-5	1/3/2001	1	2.6	2	0.5	0.5
WDH0104	87493	W D Heath B-5	4/3/2001	1	14	10	0.7	2.7
WDH0107	87493	W D Heath B-5	7/5/2001	1	4.3	8	0.5	1.2
WDH0110	87493	W D Heath B-5	10/1/2001	1	6.6	5.7	0.91	2.7
WDH0201-MW1	87493	W D Heath B-5	1/3/2002	1	1.2	2.1	0.5	1
WDH-0204-MW1	87493	W D Heath B-5	4/2/2002	1	3.6	2.1	0.7	1



LEGEND

⊕ PZ-1	APPROXIMATE PIEZOMETER LOCATION AND NUMBER
⊕ MW-1	APPROXIMATE MONITORING WELL LOCATION AND NUMBER
B	BENZENE (ug\L)
T	TOLUENE (ug\L)
E	ETHYL BENZENE (ug\L)
X	XYLENE (ug\L)
ug\L	MICROGRAMS PER LITER
/73.0\	GROUNDWATER POTENTIOMETRIC SURFACE
⬋	APPROXIMATE GROUNDWATER GRADIENT

NOT TO SCALE

N

PHILIP SERVICES CORP

TITLE:
WD HEATH B#5
87493

DWN: TMM	DES.: CC	PROJECT NO.: 17520	
CHKD: CC	APPD:	EPFS GW PITS	
DATE: 1/20/98	REV.: 0	FIGURE 4	

COL_17520BF-001

RECORD OF SUBSURFACE EXPLORATION

Borehole # BH-1
Well # MW-1
Page 1 of 2

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

Project Name EPNG PITS
Project Number 14509 Phase 6000 77
Project Location WD Hearn B#5 87499

Elevation
Borehole Location
GWL Depth
Logged By CM Chance
Drilled By M. Donahue
Date/Time Started 5/26/95 - 0645
Date/Time Completed 5/26/95 - 0817

Well Logged By CM Chance
Personnel On-Site M. Donahue, K. Padilla
Contractors On-Site
Client Personnel On-Site

Drilling Method 4 1/4 I.D. HSA
Air Monitoring Method PID, CGI

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	HS	Drilling Conditions & Blow Counts
0				Backfill to 12'						
15	1	15-17	8"	BlK sandy CLAY, tr vF sand, soft, med plastic, sl moist, strong odor			10	79	650/903	-0657 hr
20	2	20-22	4"	DK gry silty CLAY, tr vF sand, soft, med plastic, odor			2	68	297/792	-0705
25	3	25-27	12"	BlK clayey SAND, abnt silt, soft, med dense, sl moist, strong odor			8	92	421/750	-0714
30	4	30-32	8"	Gry sandy CLAY, abnt vf-f sand, med stiff, low plastic, sl moist			10	95	28/52	-0729
35	5	35-37	20"	lt Br silty SAND, med dense, soft, saturated			0	65	NA	-GW @ 33.7' -GW @ 32.5' after 15 min
40										

Comments: 30-32' sample submitted to lab CMC 28 (BTEX, TPH). Will set well at 42.5'
* GW < 50'. Assessment Form has > 100'.

Geologist Signature

RECORD OF SUBSURFACE EXPLORATION

Borehole # BH-1
Well #
Page 2 of 2

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

Project Name EPNG PITS
Project Number 14509 Phase 6000 77
Project Location W.D. Heath B#5 87493

Elevation
Borehole Location
GWL Depth
Logged By CM Chance
Drilled By M. Donahue
Date/Time Started
Date/Time Completed

Well Logged By CM Chance
Personnel On-Site M. Donahue, K. Padilla
Contractors On-Site
Client Personnel On-Site

Drilling Method 4 1/4 I.D. HSA
Air Monitoring Method PID, CGI

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	H S	Drilling Conditions & Blow Counts
40										-Will set well @42.5'
				TDB 42.5'						
45										
50										
55										
60										
65										
70										
75										
80										

Comments:

Geologist Signature

MONITORING WELL INSTALLATION RECORD

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

Borehole # BH-1
Well # MW-1
Page 1 of 1

Project Name EPNG PHS

Project Number 14509 Phase 6000.77
Project Location W. D. Heath B#5 87493

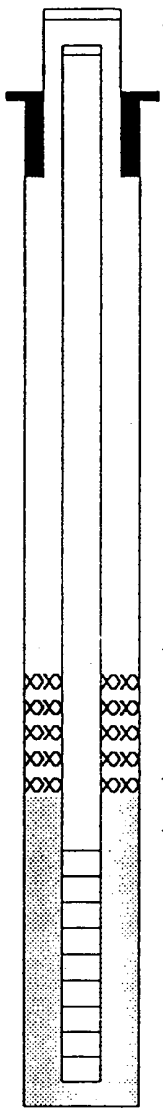
Elevation
Well Location
GWL Depth 32.5' BGS
Installed By K. Padilla, M. Donahue

Date/Time Started 5/26/95 - 0820
Date/Time Completed 5/26/95 - 1000

On-Site Geologist CM Chance
Personnel On-Site M. Donahue, K. Padilla, F. Rivera
Contractors On-Site
Client Personnel On-Site

Depths in Reference to Ground Surface

Item	Material	Depth
Top of Protective Casing		NA
Bottom of Protective Casing		NA
Top of Permanent Borehole Casing		NA
Bottom of Permanent Borehole Casing		NA
Top of Concrete		NA
Bottom of Concrete		NA
Top of Grout	- 94# bags Type-II cement	0'
Bottom of Grout	-50# bags bentonite	21.5
Top of Well Riser	22.5'-sch 40 flush joint	+3'
Bottom of Well Riser	PVC	22.2
Top of Well Screen	15'-0.01 slot sch 40	27.2
Bottom of Well Screen	Flush joint PVC	42.2
Top of Peltonite Seal	2 - bags 50#	21.5
Bottom of Peltonite Seal	No 8 Enviroplug	23.5 ~~24.2~~
Top of Gravel Pack	12 - 50# bags	23.5 ~~24.2~~
Bottom of Gravel Pack	10-20 silica sand	42.5
Top of Natural Cave-In		NA
Bottom of Natural Cave-In		~~42.5~~ NA
Top of Groundwater		32.5
Total Depth of Borehole		42.5



Top of Protective Casing NA
Top of Riser +3'
Ground Surface 0'
Top of Seal 21.5'
Top of Gravel Pack 23.5'
Top of Screen 22.2
Bottom of Screen 42.2
Bottom of Borehole 42.5

Comments: 4" bottom cap. Locking well cap & padlock placed on well. Seal hydrated w/ 3 gal potable water

Geologist Signature

Phase II

W.D. Heath B #5

El Paso Natural Gas Company

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT - Soil Samples Inside the GWV Zone

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	cmc 28	946848
MTR CODE | SITE NAME:	87493	N/A
SAMPLE DATE | TIME (Hrs):	5-26-95	0729
SAMPLED BY:	N/A	
DATE OF TPH EXT. | ANAL.:	6-2-95	6-2-95
DATE OF BTEX EXT. | ANAL.:	6-5-95	6-6-95
TYPE | DESCRIPTION:	VG	grey sand and clay

REMARKS: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q	M(g)	V(ml)
BENZENE	<0.025	MG/KG	1			
TOLUENE	<0.025	MG/KG	1			
ETHYL BENZENE	<0.025	MG/KG	1			
TOTAL XYLENES	<0.025	MG/KG	1			
TOTAL BTEX	<0.10	MG/KG				
TPH (418.1)	25.2	MG/KG			2.06	28
HEADSPACE PID	52	PPM				
PERCENT SOLIDS	84.4	%				

-- TPH is by EPA Method 418.1 and BTEX is by EPA Method 8020 --

Surrogate Recovery was at 89 % for this sample All QA/QC was acceptable.

Narrative:

QTI Results attached

DF = Dilution Factor Used

Approved By: _____ Date: 6/28/95

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

TEST : BTEX (EPA 8020)
CLIENT : EL PASO NATURAL GAS ATI I.D.: 506317
PROJECT # : 24324
PROJECT NAME : PIT CLOSURE

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
01	946848	NON-AQ	05/26/95	06/05/95	06/06/95	1
02	946849	NON-AQ	05/30/95	06/05/95	06/06/95	1
03	946850	NON-AQ	05/30/95	06/05/95	06/06/95	1

PARAMETER	UNITS	01	02	03
BENZENE	MG/KG	<0.025	<0.025	<0.025
TOLUENE	MG/KG	<0.025	<0.025	<0.025
ETHYLBENZENE	MG/KG	<0.025	<0.025	<0.025
TOTAL XYLENES	MG/KG	<0.025	<0.025	<0.025
SURROGATE:				
BROMOFLUOROBENZENE (%)		89	100	102

PHILIP ENVIRONMENTAL

SITE SKETCH

Serial No. SS- Title WD Heath B#5 87493

Project Name EPFS GW Pits Project No. 16297

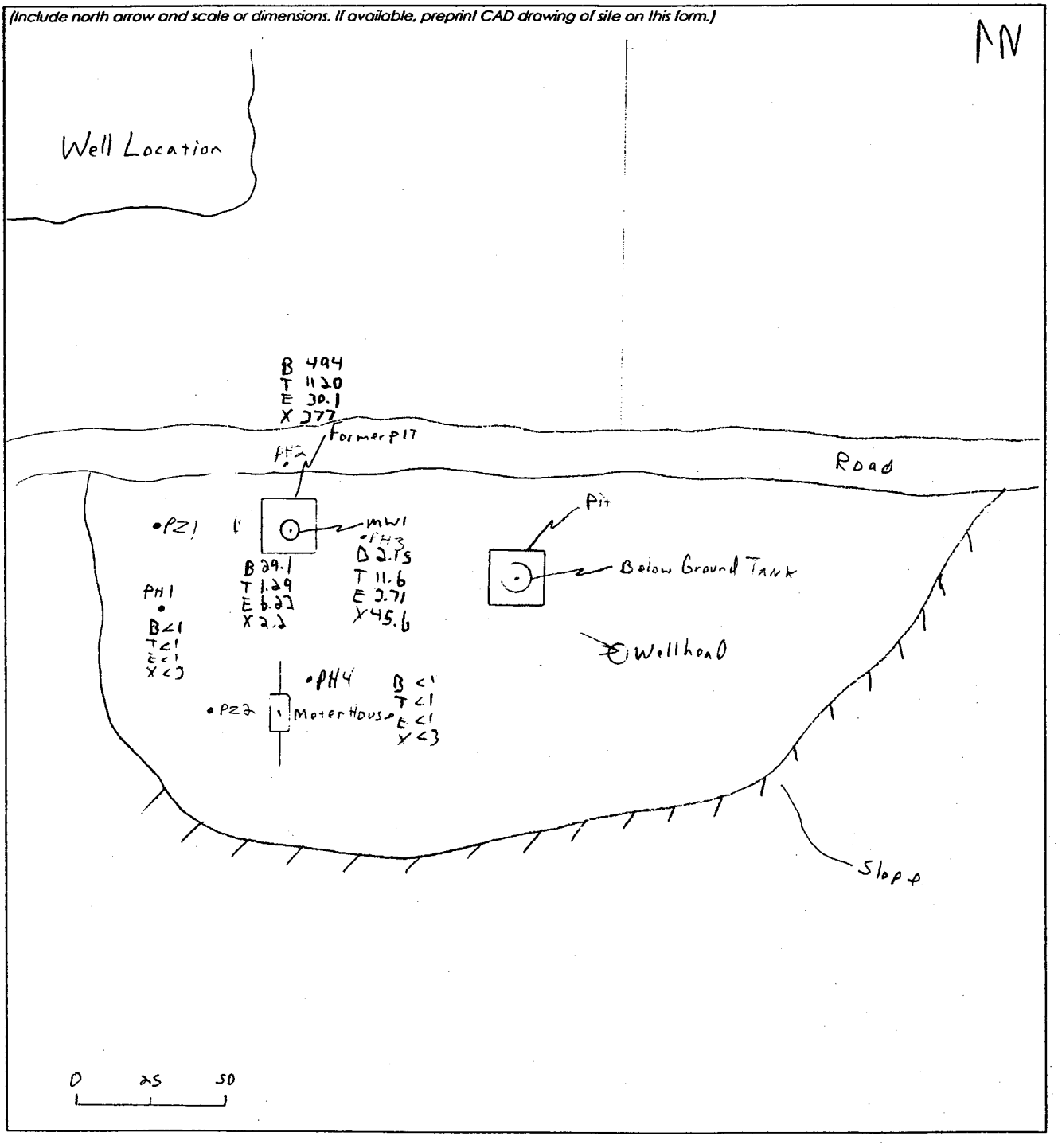
Project Manager CM Chance Phase.Task No. 6004.77

Client Company EPFS

Site Name WD Heath B#5 87493

Site Address M-S31-T30-R9

(Include north arrow and scale or dimensions. If available, preprint CAD drawing of site on this form.)



Sketched by (signature) _____ Date _____

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	CMC286	970038
MTR CODE | SITE NAME:	87493	W D Heath B-5
SAMPLE DATE | TIME (Hrs):	1/30/97	1300
PROJECT:	Geoprobe	
DATE OF BTEX EXT. | ANAL.:	2/3/97	2/3/97
TYPE | DESCRIPTION:	PH1	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	<1	PPB				
TOLUENE	<1	PPB				
ETHYL BENZENE	<1	PPB				
TOTAL XYLENES	<3	PPB				
TOTAL BTEX	<6	PPB				

–BTEX is by EPA Method 8020 –

The Surrogate Recovery was at 98.9 % for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative:

Approved By: John Laulder Date: 2-19-97

970038.XLS,2/19/97

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	CMC287	970039
MTR CODE | SITE NAME:	87493	W D Heath B-5
SAMPLE DATE | TIME (Hrs):	1/30/97	1400
PROJECT:	Geoprobe	
DATE OF BTEX EXT. | ANAL.:	2/3/97	2/3/97
TYPE | DESCRIPTION:	PH2	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	494	PPB	5	D		
TOLUENE	1120	PPB	5	D,D1		
ETHYL BENZENE	30.1	PPB	5	D		
TOTAL XYLENES	377	PPB	5	D		
TOTAL BTEX	2020	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 97.6 % for this sample All QA/QC was acceptable.

DF = Dilution Factor Used

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

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

Narrative:

Approved By: John Saldana Date: 2-4-97

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	CMC288	970040
MTR CODE | SITE NAME:	87493	W D Heath B-5
SAMPLE DATE | TIME (Hrs):	1/30/97	1545
PROJECT:	Geoprobe	
DATE OF BTEX EXT. | ANAL.:	2/3/97	2/3/97
TYPE | DESCRIPTION:	PH3	Water

Field Remarks:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	2.15	PPB				
TOLUENE	11.6	PPB				
ETHYL BENZENE	3.71	PPB				
TOTAL XYLENES	45.6	PPB				
TOTAL BTEX	63.1	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 97.3 % for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative:

Approved By: John Hollen Date: 2-4-97

970040.XLS,2/4/97

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	CMC303	970106
MTR CODE | SITE NAME:	87493	W D Heath B #5
SAMPLE DATE | TIME (Hrs):	2/13/97	920
PROJECT:	Geoprobe	
DATE OF BTEX EXT. | ANAL.:	2/19/97	2/19/97
TYPE | DESCRIPTION:	PH4	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	<1	PPB				
TOLUENE	<1	PPB				
ETHYL BENZENE	<1	PPB				
TOTAL XYLENES	<3	PPB				
TOTAL BTEX	<6	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 98.8 % for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative:

Approved By: _____ Date: 2-27-97

970106.XLS,2/26/97

Well Points

PHILIP ENVIRONMENTAL

SITE SKETCH

Serial No. SS- Title WD Heath B#5 87493

Project Name EPFS GW Pits Project No. 16297

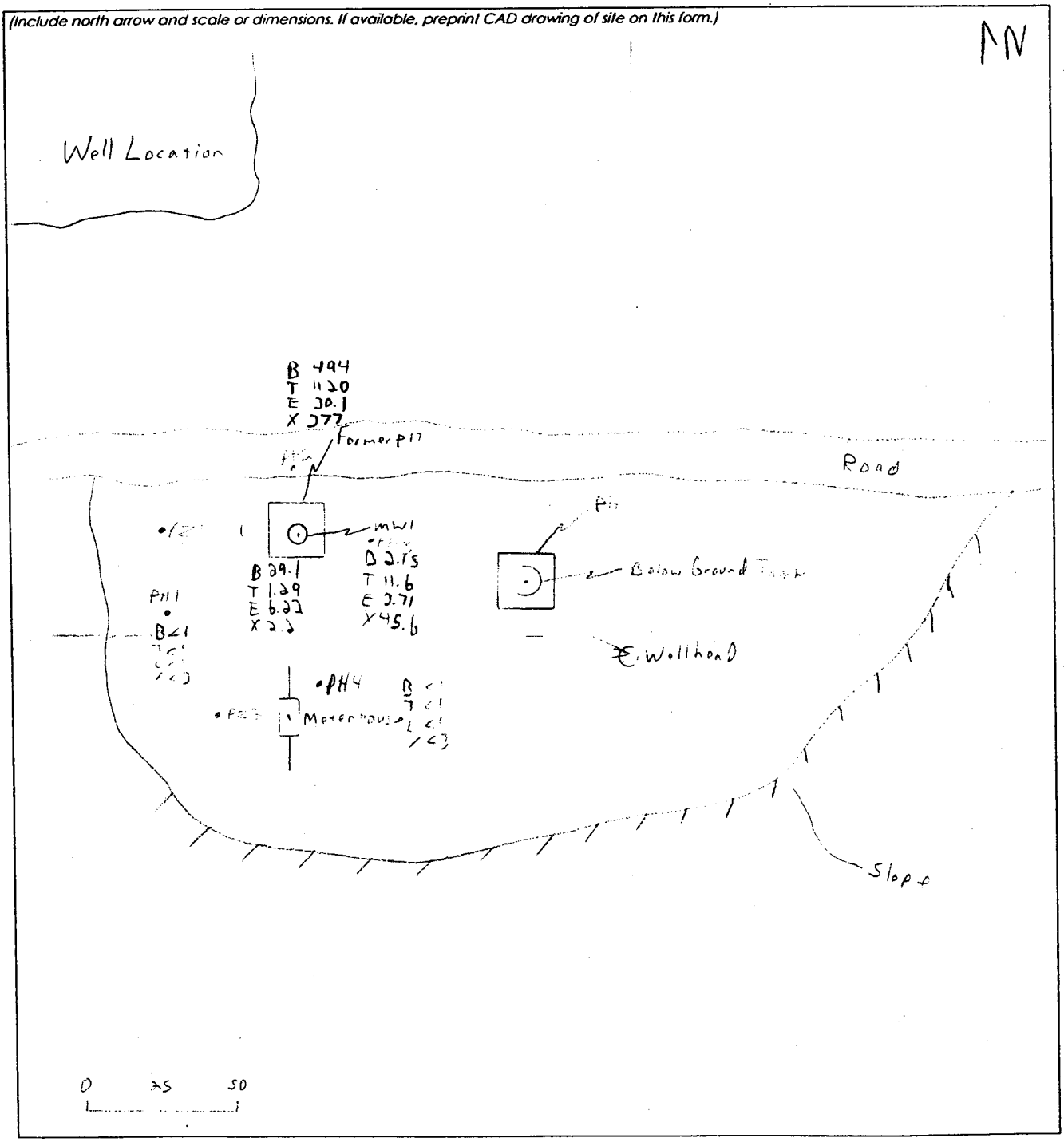
Project Manager CM Chance Phase.Task No. 6004.77

Client Company EPFS

Site Name WD Heath B#5 87493

Site Address M-S31-T30-R9

(Include north arrow and scale or dimensions. If available, preprint CAD drawing of site on this form.)



Sketched by (signature) _____ Date _____

MONITORING WELL INSTALLATION RECORD

Borehole # _____
Well # PZ1
Page 1 of 1

Philip Environmental Services, Inc.
4000 Monroe Rd.
Farmington, NM 87401
(505) 326-2262 FAX (505) 326-2388

Project Name EPFS GW PITS
Project Number 17520 Phase 6006
Site Location WD Heath #45 87493

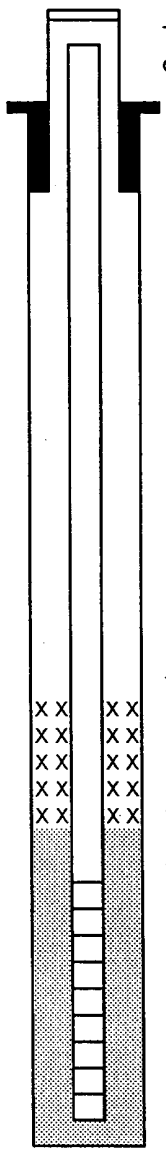
Elevation _____
Well Location Ltr M -S31-T30-R9
GWL Depth 28.22 TOR
Installed By ~~K Padilla~~ M. Pendleton

Date/Time Started 8/19/97
Date/Time Completed 8/19/97

On-Site Geologist CM CHANCE
Personnel On-Site ~~D CHARLEY~~ C Gomez
Contractors On-Site _____
Client Personnel On-Site _____

Depths in Reference to Ground Surface

Item	Material	Depth (feet)
Top of Protective Casing	8" steel well vault	
Bottom of Protective Casing		
Top of Permanent Borehole Casing		N/A
Bottom of Permanent Borehole Casing		N/A
Top of Concrete		
Bottom of Concrete		
Top of Grout	Type I/II Portland cement	
Bottom of Grout	Powder Bentonite	
Top of Well Riser	4" SCH 40 PVC	
Bottom of Well Riser	FLUSH THREAD	
Top of Well Screen	4" SCH 40 PVC	
Bottom of Well Screen	0.01 SLOT FLUSH THREA	
Top of Peltonite Seal	ENVIROPLUG	
Bottom of Peltonite Seal		
Top of Gravel Pack	10-20 SILICA SAND	
Bottom of Gravel Pack		
Top of Natural Cave-In		
Bottom of Natural Cave-In		
Top of Groundwater		
Total Depth of Borehole		



Top of Protective Casing NA
Top of Riser Survey Elev. ~~3.14~~ 1008
Ground Surface 0'
Top of Seal NA
Top of Gravel Pack NA
Top of Screen 24
Bottom of Screen 34
Bottom of Borehole 35

Survey TOR = 3.94 + 100' = 103.94

	TOR	Elev.	GW TOR	GW Elev
MW1	2.49	101.45	26.95	74.50
PZ1	3.14	100.80	28.28	72.58
PZ2	5.14	98.80	26.34	72.46

Comments PZ1 is 265° & 31' from MW1. Collect GW sample (CMC324)
MW1 Survey elev. is 101.45

Geologist Signature Cory Chance

MWINSTAL.wk1

MONITORING WELL INSTALLATION RECORD

Borehole # _____
Well # PZ2
Page 1 of 1

Philip Environmental Services, Inc.
4000 Monroe Rd.
Farmington, NM 87401
(505) 326-2262 FAX (505) 326-2388

Project Name EPFS GW PITS
Project Number 17520 Phase 6006
Site Location W D Heath GAS 87492

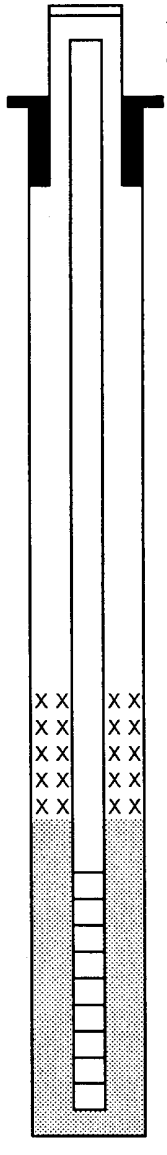
Elevation _____
Well Location Ltr M -S31 -T30-R9
GWL Depth 26.34 TDR
Installed By ~~K Padilla~~ M. Donahue

Date/Time Started 8/19/97
Date/Time Completed 8/19/97

On-Site Geologist CM CHANCE
Personnel On-Site ~~D CHARLEY~~ C Bonds
Contractors On-Site _____
Client Personnel On-Site _____

Depths in Reference to Ground Surface

Item	Material	Depth (feet)
Top of Protective Casing	8" steel well vault	
Bottom of Protective Casing		
Top of Permanent Borehole Casing		N/A
Bottom of Permanent Borehole Casing		N/A
Top of Concrete		
Bottom of Concrete		
Top of Grout	Type I/II Portland cement	
Bottom of Grout	Powder Bentonite	
Top of Well Riser	4" SCH 40 PVC	
Bottom of Well Riser	FLUSH THREAD	
Top of Well Screen	4" SCH 40 PVC	
Bottom of Well Screen	0.01 SLOT FLUSH THREA	
Top of Peltonite Seal	ENVIROPLUG	
Bottom of Peltonite Seal		
Top of Gravel Pack	10-20 SILICA SAND	
Bottom of Gravel Pack		
Top of Natural Cave-In		
Bottom of Natural Cave-In		
Top of Groundwater		
Total Depth of Borehole		



Top of Protective Casing NA
Top of Riser Survey Elev. 98.8
Ground Surface 0
Top of Seal NA
Top of Gravel Pack NA
Top of Screen 24
Bottom of Screen 34
Bottom of Borehole 35

Comments PZ2 is 191° & 56' From MW1. Collect GW Sample (CMC335)
MW1 Survey elev. is 101.45. MW1 GW @ 29.65 TDR

Geologist Signature _____

MWINSTAL.wk1

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	CMC334	970907
MTR CODE | SITE NAME:	87493	WD Heath #5
SAMPLE DATE | TIME (Hrs):	8/19/97	1210
PROJECT:	Well Points	
DATE OF BTEX EXT. | ANAL.:	8/20/97	8/20/97
TYPE | DESCRIPTION:	PZ-1	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	<1	PPB				
TOLUENE	<1	PPB				
ETHYL BENZENE	<1	PPB				
TOTAL XYLENES	<3	PPB				
TOTAL BTEX	<6	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 96.9 % for this sample All QA/QC was acceptable.

DF = Dilution Factor Used

Narrative:

Approved By: _____ Date: 8/28/97

970907 PZ-1 BTEX,8/28/97

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	CMC335	970908
MTR CODE | SITE NAME:	87493	WD Heath #5
SAMPLE DATE | TIME (Hrs):	8/19/97	1400
PROJECT:	Well Points	
DATE OF BTEX EXT. | ANAL.:	8/20/97	8/20/97
TYPE | DESCRIPTION:	PZ-2	Water

Field Remarks: ______________________________

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	<1	PPB				
TOLUENE	<1	PPB				
ETHYL BENZENE	<1	PPB				
TOTAL XYLENES	<3	PPB				
TOTAL BTEX	<6	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 97.4 % for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative:

Approved By: [signature] Date: 8/28/97

970908 PZ-2 BTEX,8/28/97

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	970909
MTR CODE | SITE NAME:	87493	WD Heath #5
SAMPLE DATE | TIME (Hrs):	8/19/97	1400
PROJECT:	Well Points	
DATE OF BTEX EXT. | ANAL.:	8/20/97	8/20/97
TYPE | DESCRIPTION:	Trip Blank	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	<1	PPB				
TOLUENE	<1	PPB				
ETHYL BENZENE	<1	PPB				
TOTAL XYLENES	<3	PPB				
TOTAL BTEX	<6	PPB				

--BTEX is by EPA Method 8020 --

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

Narrative:

Approved By: John Labbe Date: 8/28/97

9709089 Trip Blank BTEX,8/28/97

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.	: 204016
BLANK I. D.	: 040502	DATE EXTRACTED	: N/A
CLIENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 04/05/02
PROJECT #	: 1517000121	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: W.D. HEATH B #5		

PARAMETER	UNITS	
BENZENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
ETHYLBENZENE	UG/L	<0.5
TOTAL XYLENES	UG/L	<1.0
SURROGATE:		
BROMOFLUOROBENZENE (%)		88
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
MS/MSD

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 204016
MSMSD #	: 204016-01	DATE EXTRACTED	: N/A
CLIENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 04/05/02
PROJECT #	: 1517000121	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: W.D. HEATH B #5	UNITS	: UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
BENZENE	3.6	20.0	23.6	100	24.5	105	4	(80 - 120)	20
TOLUENE	0.70	20.0	19.6	95	19.4	94	1	(80 - 120)	20
ETHYLBENZENE	2.1	20.0	21.8	99	21.5	97	1	(80 - 120)	20
TOTAL XYLENES	<1.0	60.0	62.6	104	62.3	104	0	(80 - 120)	20

CHEMIST NOTES:
N/A

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

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

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 : AMEC EARTH & ENVIRONMENTAL
PROJECT # : 1517000121
PROJECT NAME : WD HEATH B-5

PINNACLE I.D.: 201013

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
01	WDH-0201-MW1	AQUEOUS	01/03/02	NA	01/07/02	1

PARAMETER	DET. LIMIT	UNITS	WDH-0201-MW1
BENZENE	0.5	**UG/L**	**1.2**
TOLUENE	0.5	UG/L	< 0.5
ETHYLBENZENE	0.5	**UG/L**	**2.1**
TOTAL XYLENES	1.0	UG/L	< 1.0

SURROGATE:
BROMOFLUOROBENZENE (%) 109
SURROGATE LIMITS (80 - 120)

CHEMIST NOTES:
N/A