

3R - 207

REPORTS

DATE:

1997



Certified Mail: #Z 295 387 297; #Z 295 387 296

February 27, 1998

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

RECEIVED

MAR 02 1998

Environmental Bureau
Oil Conservation Division

Re: 1997 Groundwater Annual Report

Dear Mr. Olson:

In accordance with reporting requirements, El Paso Field Services (EPFS) has enclosed annual updates for 57 groundwater impacted locations that were identified during our pit closure project of 1994/1995.

Of the 57 reports, EPFS hereby requests your approval for closure of 11 of these locations. The 11 reports for which EPFS requests closure, are in 2 separate binders entitled "Request for Closure".

After you have had an opportunity to review these updates, EPFS would like to schedule a meeting with you to discuss issues related to closure criteria for some of the more complex locations that are currently being addressed.

If you have any questions regarding this information, please call me at 505/599-2141. I will contact you within the next quarter to schedule a meeting.

Sincerely,

A handwritten signature in cursive script that reads 'Sandra D. Miller'.

Sandra D. Miller
Environmental Manager

xc: Mr. Bill Lisse, BLM w/o enclosures
Mr. Denny Foust, NMOCD - Aztec w/enclosures; **Certified Mail #Z 295 387 298; #Z 295 387 299**
Ms. Charmaine Tso, Navajo EPA w/enclosures; **Certified Mail #Z 295 387 292**

SAN JUAN BASIN PIT CLOSURES
San Juan Basin, New Mexico

El Paso Field Services Pit Project Groundwater Report
Annual Report

March 1998

Prepared For

El Paso Field Services
Farmington, New Mexico

Project 17520

PHILIP
ENVIRONMENTAL

EPFS GROUNDWATER PITS

1997 ANNUAL GROUNDWATER REPORT

KNIGHT #1
Meter/Line ID - 72556

SITE DETAILS

Legals - Twn: 30N	Rng: 13 W	Sec: 5	Unit: A
NMOC Hazard Ranking: 30			Land Type: FEE
Operator: FULLER PETROLEUM INC.			

PREVIOUS ACTIVITIES

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

1997 ACTIVITIES

Geoprobe - Collected groundwater samples from temporary piezometers.

Quarterly Groundwater Monitoring - Quarterly groundwater monitoring was initiated on 4/9/96 and has continued into 1997. Groundwater analytical data are presented in Table 1.

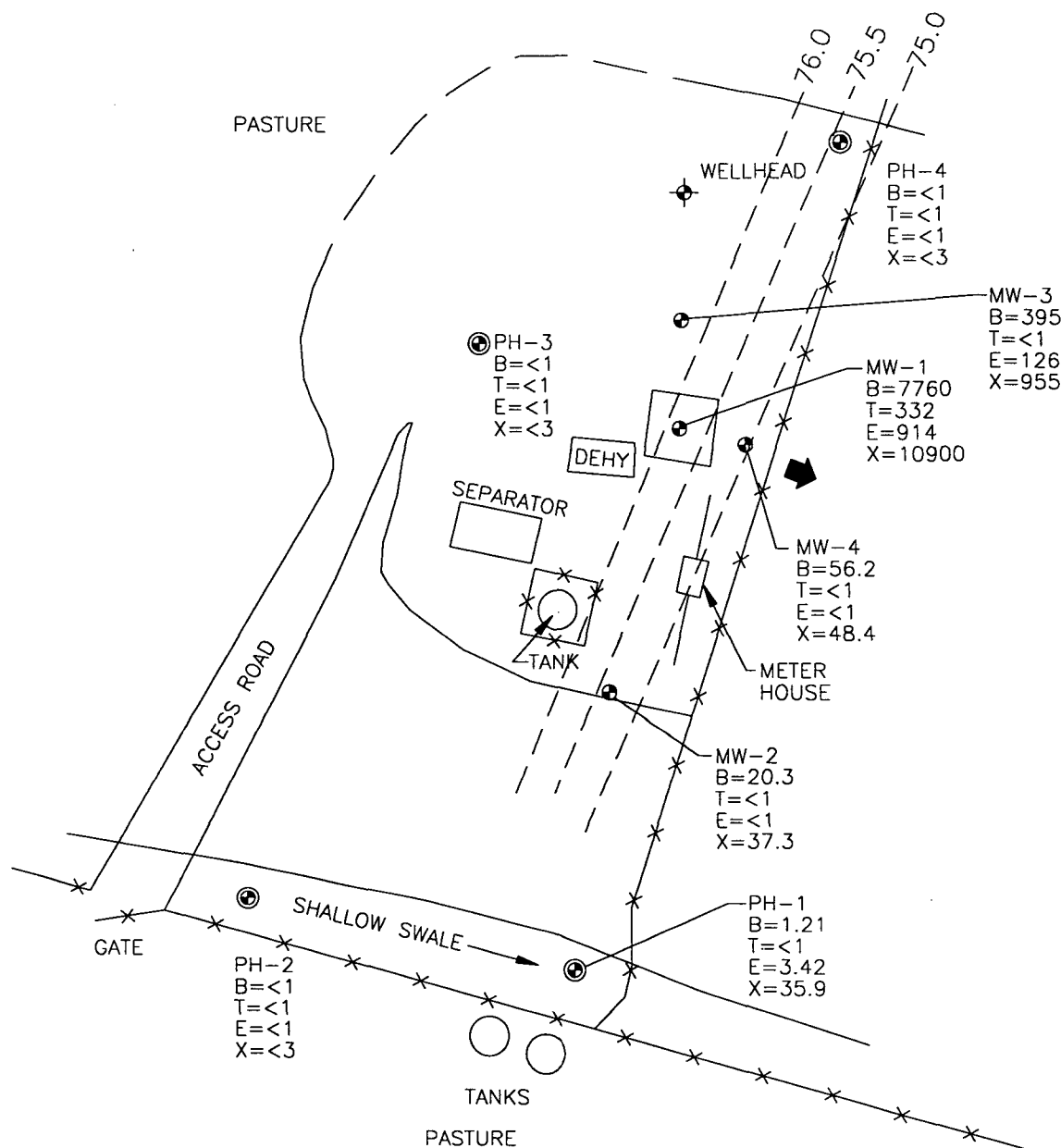
CONCLUSIONS

Based on groundwater levels collected from four groundwater monitoring wells, the groundwater flow trends to the east-southeast on this site, as presented in Figures 1-4. In addition to the four monitoring wells, groundwater samples were collected up and cross-gradient of MW-1 with a Geoprobe. One up-gradient sample was below standards for BTEX. Additional cross-gradient samples were also below standards for BTEX. However, groundwater samples collected from MW-2, which is downgradient of a production pit, have been in excess of standards for benzene since quarterly sampling was initiated, and indicates an additional contaminant source.

Off-site work will be required to obtain downgradient samples and determine the downgradient edge of contaminants.

RECOMMENDATIONS

- EPFS proposes to conduct no further action at this site, until the operator commences with remediation of their production pit.
- Discontinue quarterly sampling until extent of contamination is determined. Initiate sampling on an annual basis.



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)
- 77.3 GROUNDWATER POTENTIOMETRIC SURFACE
- ug\L MICROGRAMS PER LITER
- ➔ APPROXIMATE GROUNDWATER GRADIENT

NOT TO SCALE



COL. 17520BJ-001



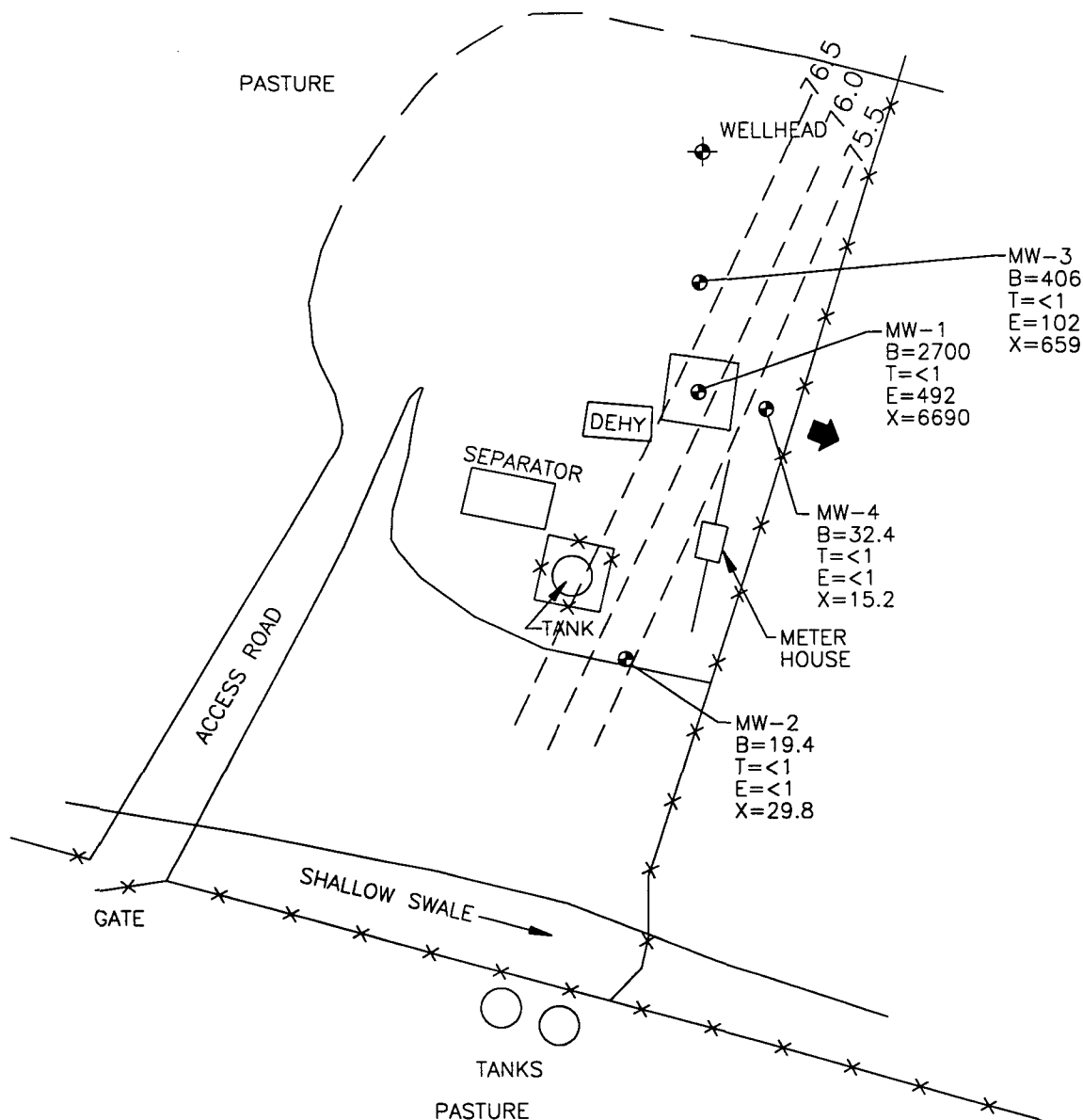
TITLE:
KNIGHT #1 1/13/97
72556

OWN:
TMM
CHKD:
CC
DATE:
1/20/98

DES.:
CC
APPD:
REV.:
0

PROJECT NO.: 17520
EPFS GW PITS

FIGURE 1



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)

—77.3— GROUNDWATER POTENTIOMETRIC SURFACE

ug\L MICROGRAMS PER LITER

➔ APPROXIMATE GROUNDWATER GRADIENT

NOT TO SCALE



COL. 17520BJ-002



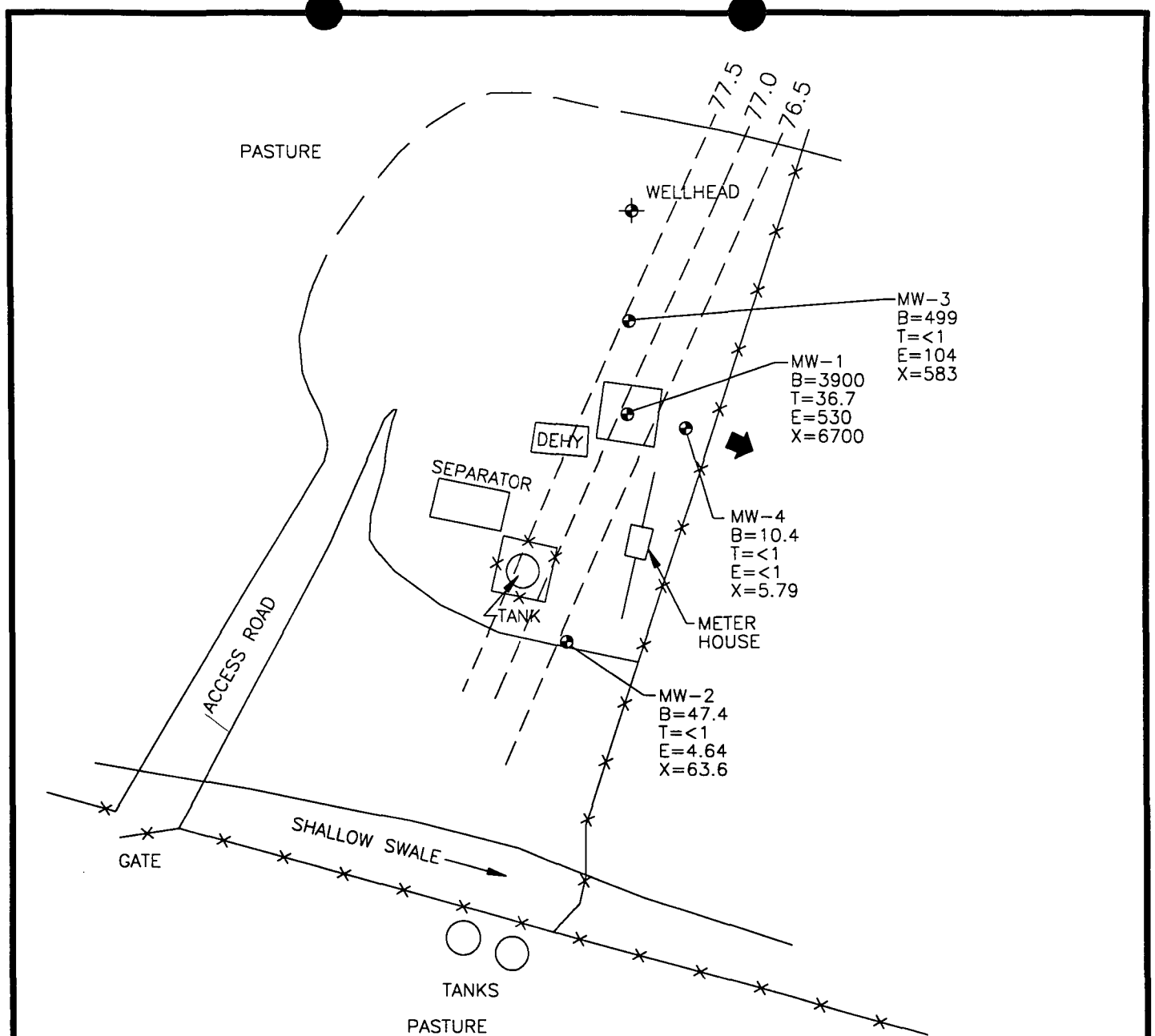
TITLE:
KNIGHT #1 4/22/97
72556

DWN:
TMM
CHKD:
CC
DATE:
1/20/98

DES.:
CC
APPD:
REV.:
0

PROJECT NO.: 17520
EPFS GW PITS

FIGURE 2



LEGEND

● MW-1 APPROXIMATE MONITORING WELL LOCATION AND NUMBER

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

77.3 GROUNDWATER POTENTIOMETRIC SURFACE

ug\L MICROGRAMS PER LITER

➔ APPROXIMATE GROUNDWATER GRADIENT

NOT TO SCALE



COL. 17520BJ-003



TITLE:
KNIGHT #1 7/14/97
72556

DWN:
TMM

DES.:
CC

CHKD:
CC

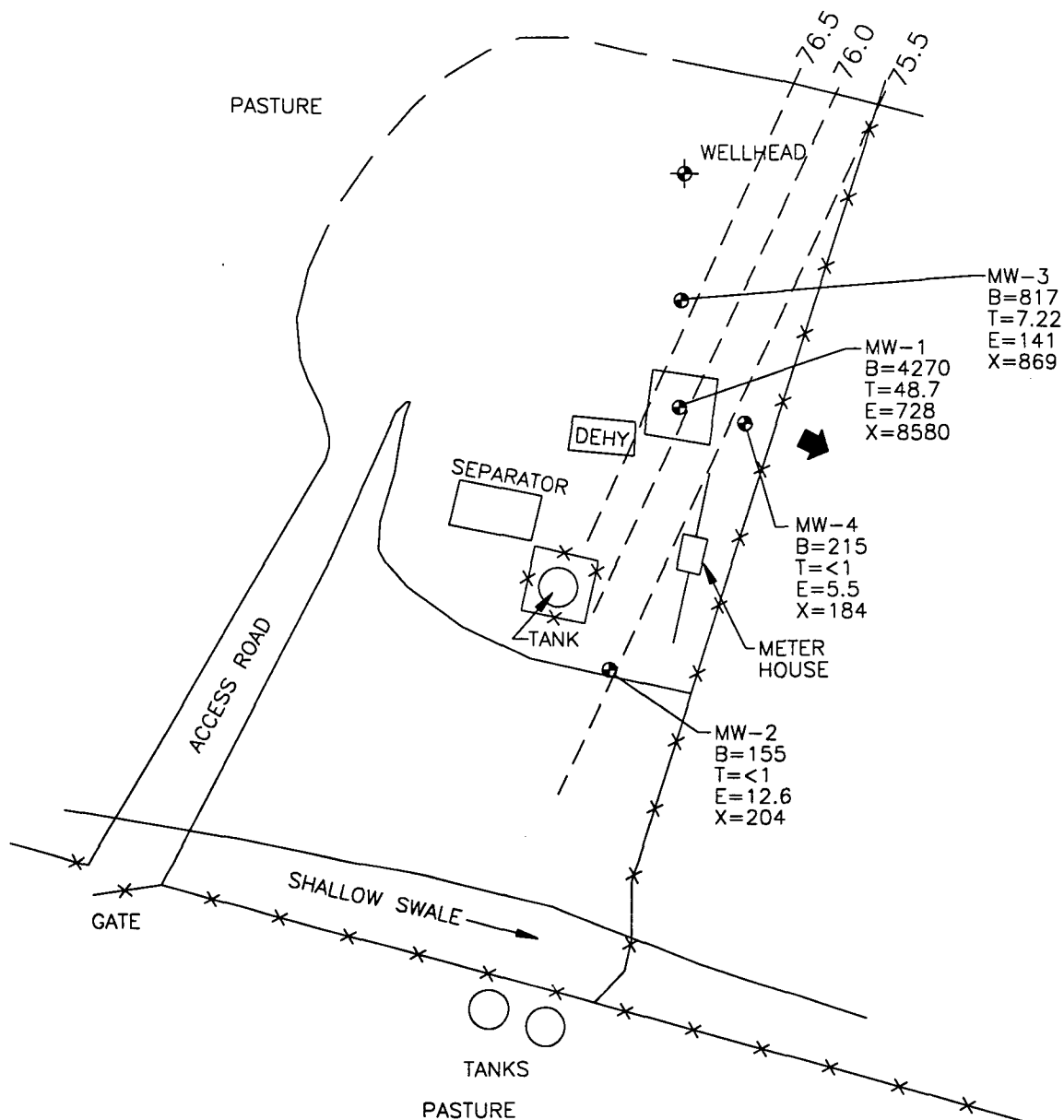
APPD:

DATE:
1/20/98

REV.:
0

PROJECT NO.: 17520
EPFS GW PITS

FIGURE 3



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)

—77.3— GROUNDWATER POTENTIOMETRIC SURFACE

ug\L MICROGRAMS PER LITER

➔ APPROXIMATE GROUNDWATER GRADIENT

NOT TO SCALE



COL 17520BJ-004



TITLE:
KNIGHT #1 10/22/97
72556

DWN:
TMM

DES.:
CC

PROJECT NO.: 17520
EPFS GW PITS

CHKD:
CC

APPD:

DATE:
1/21/98

REV.:
0

FIGURE 4

TABLE 1

Sample #	Meter/ Line #	Site Name	Sample Date	MW #	Project	Benzene (PPB)	Toluene (PPB)	Ethyl Benzene (PPB)	Total Xylenes (PPB)	Total BTEX
960320	72556	Knight #1	04/09/96	1	Sample 4 - 1st Qtr	= 5490	= 208	= 1100	= 7370	14168
960625	72556	Knight #1	07/17/96	1	Sample 4 - 2nd Qtr	= 6450	= 279	= 990	= 9060	16779
960855	72556	Knight #1	10/15/96	1	Sample 4 - 3rd Quarter	= 9870	= 840	= 1120	= 10900	22730
970002	72556	Knight #1	01/13/97	1	Sample 4 - 4th Quarter	= 7760	= 332	= 914	= 10900	19906
970332	72556	Knight #1	4/22/97	1	Sample 4 - 5th Quarter	= 2700	< 1	= 492	= 6690	9883
970647	72556	Knight #1	7/14/97	1	Sample 4 - 6th Quarter	= 3900	= 36.7	= 530	= 6700	11167
971128	72556	Knight #1	10/22/97	1	Sample 4 - 7th Quarter	= 4270	= 48.7	= 728	= 8580	13627
960321	72556	Knight #1	04/09/96	2	Sample 4 - 1st Qtr	= 39.2	< 1	= 13.4	= 77.9	132
960626	72556	Knight #1	07/17/96	2	Sample 4 - 2nd Qtr	= 9.55	= 1	= 2.39	= 3.65	17
960856	72556	Knight #1	10/15/96	2	Sample 4 - 3rd Quarter	= 49.7	= 1	= 1	= 38.4	90
970003	72556	Knight #1	01/13/97	2	Sample 4 - 4th Quarter	= 20.3	< 1	< 1	= 37.3	60
970333	72556	Knight #1	4/22/97	2	Sample 4 - 5th Quarter	= 19.4	< 1	< 1	= 29.8	51
970648	72556	Knight #1	7/14/97	2	Sample 4 - 6th Quarter	= 47.4	< 1	= 4.64	= 63.6	117
971129	72556	Knight #1	10/22/97	2	Sample 4 - 7th Quarter	= 155	< 1	= 12.6	= 204	373
960322	72556	Knight #1	04/09/96	3	Sample 4 - 1st Qtr	= 328	< 1	= 132	= 369	830
960627	72556	Knight #1	07/17/96	3	Sample 4 - 2nd Qtr	= 299	< 1	= 76.7	= 251	628
960857	72556	Knight #1	10/15/96	3	Sample 4 - 3rd Quarter	= 115	< 1	= 9.92	= 89.8	216
970004	72556	Knight #1	01/13/97	3	Sample 4 - 4th Quarter	= 395	< 1	= 126	= 955	1477
970334	72556	Knight #1	4/22/97	3	Sample 4 - 5th Quarter	= 406	< 1	= 102	= 659	1168
970649	72556	Knight #1	7/14/97	3	Sample 4 - 6th Quarter	= 499	= 1	= 104	= 583	1187
971130	72556	Knight #1	10/22/97	3	Sample 4 - 7th Quarter	= 817	= 7.22	= 141	= 869	1834

TABLE 1

Sample #	Meter/ Line #	Site Name	Sample Date	MW #	Project	Benzene (PPB)	Toluene (PPB)	Ethyl Benzene (PPB)	Total N/tenes (PPB)	Total BTEX
960323	72556	Knight #1	04/09/96	4	Sample 4 - 1st Qtr	63.1	1	1	42.5	108
960628	72556	Knight #1	07/17/96	4	Sample 4 - 2nd Qtr	= 35	< 1	< 1	= 17.8	= 55
960858	72556	Knight #1	10/15/96	4	Sample 4 - 3rd Quarter	= 53.5	< 1	< 1	= 28.4	= 84
970005	72556	Knight #1	01/13/97	4	Sample 4 - 4th Quarter	= 56.2	< 1	< 1	= 48.4	= 107
970335	72556	Knight #1	4/22/97	4	Sample 4 - 5th Quarter	= 32.8	< 1	< 1	= 15.2	= 50
970650	72556	Knight #1	7/14/97	4	Sample 4 - 6th Quarter	= 10.4	< 1	< 1	= 5.79	= 16
971132	72556	Knight #1	10/22/97	4	Sample 4 - 7th Quarter	= 215	< 1	= 5.5	= 184	= 404

02-42 KUTZ

RECORD OF SUBSURFACE EXPLORATION

PHILIP ENVIRONMENTAL

4000 Monroe Road

Farmington, New Mexico 87401

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

Borehole # BH-1

Well # MW-1

Page 1 of

Project Name EPNG PITS

Project Number 14509 Phase 6000 77

Project Location KNIGHT #1 (72556)

Elevation

Borehole Location T 30, R 13, S 5, A

GWL Depth 24'

Logged By ST Pope

Drilled By M DONOHUE

Date/Time Started 10/3/95 1330

Date/Time Completed 10/3/95 1530

Well Logged By

ST Pope

Personnel On-Site

J Long, C Macz

Contractors On-Site

N/A

Client Personnel On-Site

N/A

Drilling Method

4 1/4" ID HSA / 6 1/4 ID 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			Drilling Conditions & Blow Counts
							BZ	BH	HS	
0				Brown Sandy Fill						
5										
10				Bottom of Pit		12				
15										
20	1	18 20	6"	Brownish Gray, Sandy Clay, Fine-Medium Sand, Silt, Mgt Moist Plastic	CL		0	7	258	Strong Odor HS = 436ppm
25	2	23 25	4"	SAA Black, trace gravel			0	17	336	Water @ 24' * HS = Not enough Sample Noted Black discoloration
30	3	28 30	0	No Sample Recovery. Split Spoon Saturated water came up to 24' Encountered cobbles in cuttings @ 30'		30	Z	110	N/A	Sampler Saturated Water came up to 24' will drill to 34' and set well. Ream hole w/ 6 1/4 ID Augers. Drilled 1 additional foot to compensate for blowing will have to complete well 10/4/95
35										
40				TOB-35						

Comments:

* Sample STP-24, 23-25' Collect and sent to EPNG Lab for
BTEX and TPH Analysis

Geologist Signature

Steve T. Pore

RECORD OF SUBSURFACE EXPLORATION

Philip Environmental Services Corp.

4000 Monroe Road

Farmington, New Mexico 87401

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

Borehole #

Well #

Page

MW-2

of

Project Name

Project Number

Project Location

EPNG Pit Drilling

14509

Phase

###

Knight #1, 72556

Well Logged By

Personnel On-Site

Contractors On-Site

Client Personnel On-Site

S. Kelly

M. Donohue, H. Liles

Drilling Method

Air Monitoring Method

6 3/4" ID Hollow Stem Auger

PID, CGI

Elevation

Borehole Location

GWL Depth

Logged By

Drilled By

Date/Time Started

Date/Time Completed

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	Cuttings
0			silty SAND, brown, 20-35% silt, fine sand, loose, dry						
5						0	0	0	
10			clayey SAND, brown, 5-15% clayey, trace silt, fine angular sand, loose, damp.		12-13'	0	29	21	
15			clayey SAND, black 10-25% clay, trace silt, fine, angular sand, loose, damp			0	18	6	strong hydro- carbon odor in cuttings.
20			sandy CLAY, dk. grey, 5-20% fine sand, soft, damp, med. plasticity.			0	25	63	Hit cobble at 21'. not a continuous layer.
25			SAA			0	14	7	At 23.5, becomes more continuous 25
30			gravelly CLAY with sand, 5-20% fine sand, 2% gravel. SAA - some coarse, rounded gravel coming up the augers with the sandy CLAY, fine subrounded gravel also.			0	14	0	Added 5 gal. tap water at 35'. Hole is dry, with center plug in place. Center plug is stuck in augers, water will help break it out.
35			SAA						
40			TOB - 35.0'						

Comments:

Material on the end of the cutting head was a silty SAND with trace clay, 10-25%
silt, fine to med. sand.

Geologist Signature

David Kelley

RECORD OF SUBSURFACE EXPLORATION

Philip Environmental Services Corp.

4000 Monroe Road

Farmington, New Mexico 87401

(605) 326-2262 FAX (605) 326-2388

Borehole #

Well #

Page

MW-3

of

Project Name

EPNG Pit Drilling

Project Number

14509

Phase

###

Project Location

Knight #1, 72556

Well Logged By

S. Kelly

Personnel On-Site

M. Donohue, H. Liles

Contractors On-Site

Client Personnel On-Site

Elevation

Borehole Location T30, R13, S. 5, A

GWL Depth

Logged By

S. Kelly

Drilled By

M. Donohue

Date/Time Started

12/1/95, 1400

Date/Time Completed

12/1/95, 1445

Drilling Method

6 3/4" ID Hollow Stem Auger

Air Monitoring Method

PID, CGI

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			silty SAND, brown, 20-35% silt, fine angular sand, loose, dry						
5						0	0	0	
10			silty SAND w/ trace clay, black, 10-25% silt, fine to med. angular sand, loose, damp.			0	165	—	strong hydrocarbon odor.
15			SAA			0	1154	476	
20			SAA			0	1260 41 26 12/1/95	910	
25			SAA			4	56	—	Hit cobble at 24'
30			Cuttings not coming up						
35			— silty SAND with gravel, black 15-25% silt, med. angular sand, 5-10% fine, sub rounded gravel.						Sand blowing in, added 10 gal. of water to help break center plug out.
40			TOB - 35.0'						

Comments:

At 1445 Water level at 26.2' bgs and rising.

Geologist Signature

S. Kelly

RECORD OF SUBSURFACE EXPLORATION

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

Borehole #
Well # MW-4
Page 1 of 1

Project Name EPNG Pit Drilling
Project Number 14509 Phase ###
Project Location Knight #1, 72556

Elevation _____
Borehole Location _____
GWL Depth _____
Logged By S. Kelly
Drilled By M. Donohue
Date/Time Started 12/8/95, 0745
Date/Time Completed 12/8/95, 0845

Well Logged By S. Kelly
Personnel On-Site M. Donohue, D. Charley, T. Begg
Contractors On-Site _____
Client Personnel On-Site _____

Drilling Method 6 3/4" ID Hollow Stem Auger
Air Monitoring Method PID, CGI

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	RH	S	
0									
5									
10			silty SAND, light brown, 20-35% silt, fine angular sand, loose, dry		10-12	0	0	0	
15			silty SAND, black, 20-35% fine to med. sand, angular, sand, loose, dry			0	28	26	
20			silty CLAY, black, 20-35% silt, soft, low plasticity			0	26	-	
25			SAA						Hit what feels like cobble at 25'. then it smoothed out.
30			sandy CLAY, black, 25-40% fine, angular sand, soft med. plasticity			0	119	-	Added 10 gal. tap water at 25' to prevent blow in.
35									
40			TOB - 34.3'						

Comments:

Geologist Signature

[Handwritten 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 EPN Pit Drilling
Project Number 14509 Phase 6002.77
Project Location Knight #1, 72556
On-Site Geologist 10/3/95 S. Pope & S. Kelly
Personnel On-Site 10/4/95 J. Long, C. Moez
Contractors On-Site _____
Client Personnel On-Site _____

Elevation _____
Well Location T30, R13, S.5, A
GWL Depth _____
Installed By M. Donohue

Date/Time Started 10/3/95, 1530
Date/Time Completed 10/4/95, 1230

Depths in Reference to Ground Surface				
Item	Material	Depth		
Top of Protective Casing			Top of Protective Casing <u>N/A</u>	
Bottom of Protective Casing			Top of Riser <u>+2.5'</u>	
Top of Permanent Borehole Casing			Ground Surface <u>0.0'</u>	
Bottom of Permanent Borehole Casing				
Top of Concrete				
Bottom of Concrete				
Top of Grout	Type I & II cement with 5% bentonite	0.0		
Bottom of Grout		-10.5'		
Top of Well Riser	Sch. 40, 4" PVC	+2.5'		
Bottom of Well Riser	Sch. 40, 4" PVC	15.5'		
Top of Well Screen	4" Sch. 40, 4" PVC, .010 slot	15.5'		
Bottom of Well Screen	Sch. 40, 4" PVC .010 slot	30.5'		
Top of Peltonite Seal		-10.5'	Top of Seal <u>-10.5'</u>	
Bottom of Peltonite Seal		-12.5'		
Top of Gravel Pack	10-20 CSSI Sand	-12.5'	Top of Gravel Pack <u>-12.5'</u>	
Bottom of Gravel Pack	" "	-30.5'	Top of Screen <u>-15.5'</u>	
Top of Natural Cave-In		-30.5'		
Bottom of Natural Cave-In		-35.0'		
Top of Groundwater		-24.0'		
Total Depth of Borehole		-35.0'	Bottom of Screen <u>-30.5'</u>	
			Bottom of Borehole <u>-30.5'</u>	

Comments: On 10/3/95, augers became plugged with cobble, had to redrill bottom 10' of hole on 10/4/95. On 10/4/95, Rods and centerplug getting bound up in augers by blown in sediments and cobble. Were only able to redrill and keep hole open

Geologist Signature

Sarah Kelly

MONITORING WELL INSTALLATION RECORD

Philip Environmental Services Corp.
4000 Marvick Road
Farmington, New Mexico 87401
(505) 326-7262 FAX (505) 326-7368

Borehole #
Well # MW-2
Page 1 of 1

Project Name EPNG Pit Drilling

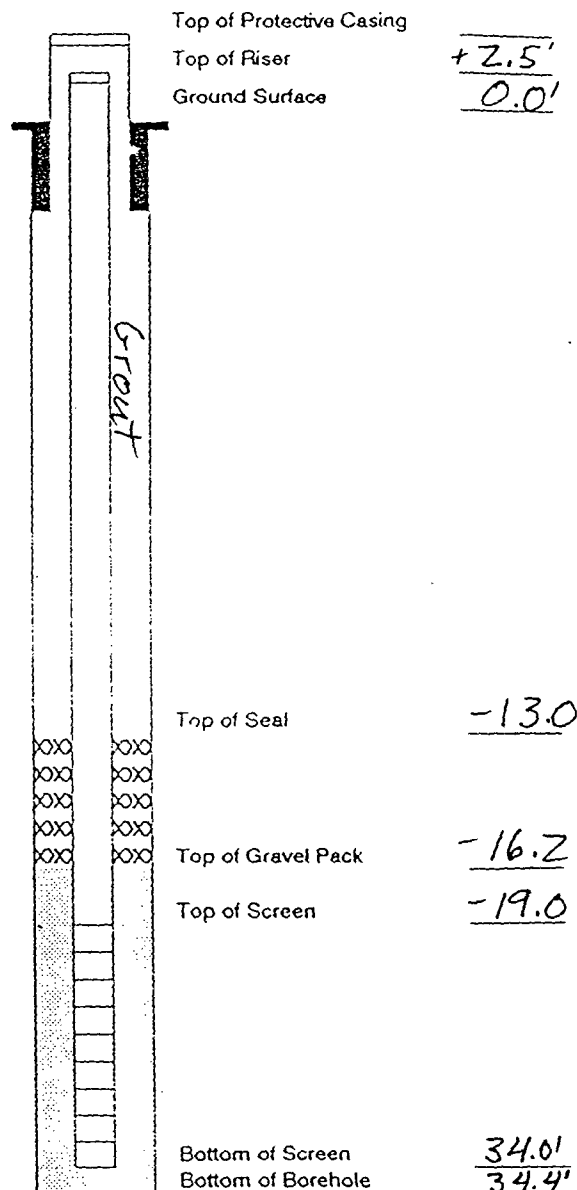
Project Number 14509 Phase 6000
Project Location Knight #1, 72556

On-Site Geologist S. Kelly
Personnel On-Site M. Donohue, H. Liles
Contractors On-Site
Client Personnel On-Site

Elevation
Well Location T30, R13, S. 5, A
GWL Depth
Installed By M. Donohue

Date/Time Started 12/1/95, 1145
Date/Time Completed 12/1/95, 1355

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	Type I & II cement w/ bentonite - 5%	
Bottom of Grout	4" 94# bags cement 5" 689 50# bent.	-13.0
Top of Well Riser	4" sch 40 PVC	+2.5
Bottom of Well Riser	" "	-19.0'
Top of Well Screen	4" sch 40 PVC .010 slot	-19.0'
Bottom of Well Screen	" "	-34.0'
Top of Peltonite Seal	3/4" Holeplug bentonite pellets	-13.0'
Bottom of Peltonite Seal	2-50# bags	-16.2
Top of Gravel Pack	10-20 CSSI sand	-16.2
Bottom of Gravel Pack	12-50# bags	-34.4
Top of Natural Cave-In	—	N/A
Bottom of Natural Cave-In	—	N/A
Top of Groundwater		
Total Depth of Borehole		-34.4'



Comments: .4' PVC end cap at the bottom of the screen.

Geologist Signature

[Signature]

MONITORING WELL INSTALLATION RECORD

Philip Environmental Services Corp.
4000 Marvao Road
Farmington, New Mexico 87401
(506) 326-2262 FAX (506) 326-2368

Borehole # _____
Well # MW-3
Page 1 of 1

Project Name EPNG Pit Drilling

Project Number 14509 Phase 6001

Project Location Knight #1, 72556

On-Site Geologist S. Kelly

Personnel On-Site M. Donohue, H. Liles

Contractors On-Site _____

Client Personnel On-Site _____

Elevation _____

Well Location T30, R13, S.5, A

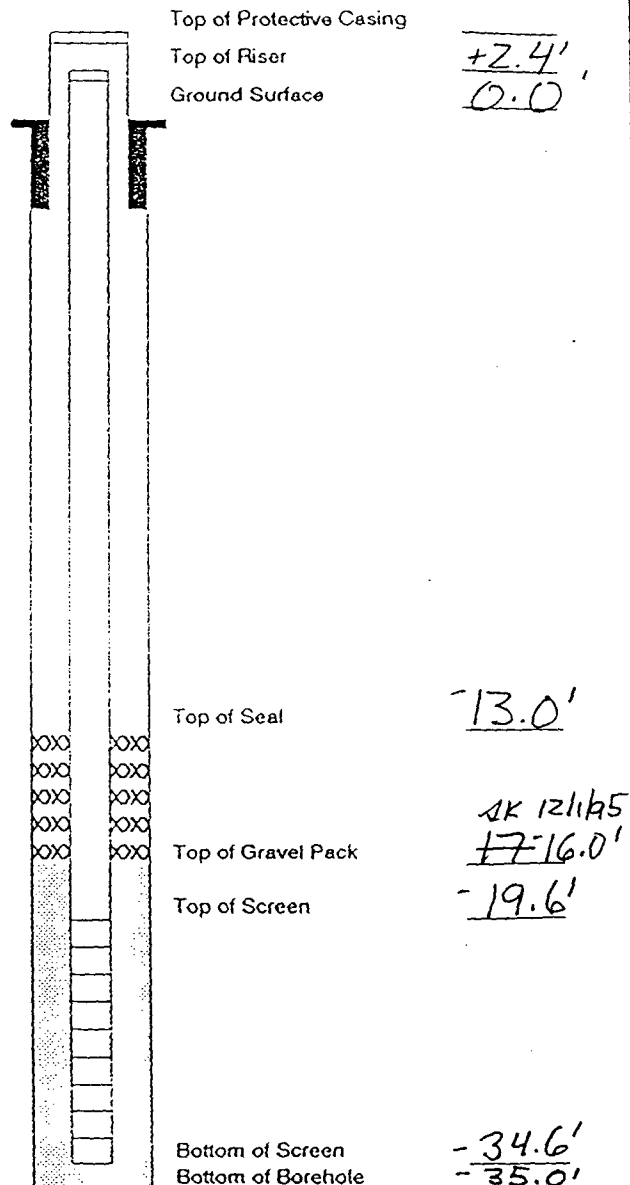
GWL Depth _____

Installed By S. Kelly

Date/Time Started 12/1/95, 1445

Date/Time Completed 12/1/95, 1700

Depths in Reference to Ground Surface				
Item	Material	Depth		
Top of Protective Casing			Top of Protective Casing	
Bottom of Protective Casing			Top of Riser	
Top of Permanent Borehole Casing			Ground Surface	
Bottom of Permanent Borehole Casing				
Top of Concrete	Type Ia II cement w/ 5% bentonite			
Bottom of Concrete	3- 94 # bags cement			
	5- 50 # bag bent.			
Top of Grout		0.0		
Bottom of Grout		-13.0		
Top of Well Riser	"	+2.4		
Bottom of Well Riser	4" sch. 40 PVC	-19.6		
Top of Well Screen	"	-19.6		
Bottom of Well Screen	4" sch. 40 .010 slot PVC	-34.6		
Top of Peltonite Seal	3/4" Holeplug Bentonite pellets	-13.0		
Bottom of Peltonite Seal	"2- 50 # bags"	-16.0		
Top of Gravel Pack	10-20 C35T sand	-16.0		
Bottom of Gravel Pack	"17- 50 # bags"	-35.0		
Top of Natural Cave-In	—	N/A		
Bottom of Natural Cave-In	—	N/A		
Top of Groundwater		-22.59		
Total Depth of Borehole		35.0'		



Comments: .4' PVC end cap at base of well.

Geologist Signature

Sarah Kelly

Philip Environmental Services Corp.
4000 Morroc Road
Farmington, New Mexico 87401
(606) 326-2262 FAX (606) 326-2388

Borehole # _____
Well # MW-4
Page 1 of 1

Project Name EPNG Pit Drilling
Project Number 14509 Phase 6000
Project Location Knight #1, 72556

On-Site Geologist S. Kelly
 Personnel On-Site M. Donahue, D. Charley, T. Begg
 Contractors On-Site _____
 Client Personnel On-Site _____

Elevation _____
Well Location _____
GWL Depth _____
Installed By M. Donohue

Date/Time Started 12/8/95, 0845
Date/Time Completed 12/8/95, 1035

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	Type I & II cement w/ bentonite	0.0
Bottom of Grout	4-94# bag cement .5-50# bag bent.	-12.9
Top of Well Riser	4", Sch. 40, PVC	+2.3
Bottom of Well Riser	" "	-18.9
Top of Well Screen	4", Sch. 40, PVC .010 slot	-18.9
Bottom of Well Screen	" "	-33.9
Top of Peltonite Seal	Enviroplug Med	-12.9
Bottom of Peltonite Seal	2-50# bags	-16.0
Top of Gravel Pack	16-20 CSSI sand	-16.0
Bottom of Gravel Pack	13-50# bags	-34.3
Top of Natural Cave-In	—	N/A
Bottom of Natural Cave-In	—	N/A
Top of Groundwater		
Total Depth of Borehole		-34.3

Top of Protective Casing
Top of Riser
Ground Surface
Top of Seal
Top of Gravel Pack
Top of Screen
Bottom of Screen
Bottom of Borehole

+2.3
0.0
12.9
-16.0
-18.9
-33.9
34.3

Comments: .4' PVC end cap

Geologist Signature

Annex Kelly

GEOPROBE

Site Activities

11-Mar-97

Meter/Line #: 72556

Location/Line #: Knight #1

MW#:

Depth to GW: 22-25

Depth to Product:

Product Thickness:

Date: 2/25/97

Activity: Geoprobe

Sample Type: Geoprobe

Sample Depth: 22-27

Refusal Depth:

Comments: Collect 4 GW samples from probeholes surrounding the site.
Could not get east of the site without taking down the fence
and cutting down some small trees.

Geo Probe



Natural Gas Company

A 2229

CHAIN OF CUSTODY RECORD

Project No.		Project Name		Requested Analysis		Remarks	
17520		EFES GWPITS					
Samplers: (Signature)		Date:		Type and No. of Sample Containers		Preservation Technique	
Cory Chavez		2/25/97				Bottle	
Date	Time	Comp	GRAB	Sample Number			
2/25/97	0915		✓	CMC 309	2	✓	PH1 Knight #1 72558
2/25/97	1025		✓	CMC 310	2	✓	PH2
2/25/97	1140		✓	CMC 311	2	✓	PH3
2/25/97	1205		✓	CMC 312	2	✓	PH4
2/25/97	---			TRIP BLANK	1	✓	TRIP BLANK
Sample 2/25/97							
Relinquished by: (Signature) Received by: (Signature) Date/Time 2/25/97 1300							
Relinquished by: (Signature) Received by: (Signature) Date/Time 2/25/97 1415							
Relinquished by: (Signature) Received by: (Signature) Date/Time 2/25/97 1415							
Carrier Co: Carrier Phone No. Date Results Reported / by: (Signature)							



FIELD SERVICES LABORATORY

ANALYTICAL REPORT

PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	CMC309	970157
MTR CODE SITE NAME:	72556	Knight #1
SAMPLE DATE TIME (Hrs):	2/25/97	915
PROJECT:	Geoprobe	
DATE OF BTEX EXT. ANAL:	2/27/97	2/27/97
TYPE DESCRIPTION:	PH1	Water

Field Remarks:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	1.21	PPB				
TOLUENE	< 1	PPB				
ETHYL BENZENE	3.42	PPB				
TOTAL XYLENES	35.9	PPB				
TOTAL BTEX	40.5	PPB				

—BTEX is by EPA Method 8020 —

The Surrogate Recovery was at 95.8 % for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative:

Approved By:

John Larch

Date:

4-3-97



FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	CMC310	970158
MTR CODE SITE NAME:	72556	Knight #1
SAMPLE DATE TIME (Hrs):	2/25/97	1025
PROJECT:	Geoprobe	
DATE OF BTEX EXT. ANAL.:	2/27/97	2/27/97
TYPE DESCRIPTION:	PH2	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 95.2 % for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative: _____

Approved By: _____

John Zurek

Date: _____

4-3-97



FIELD SERVICES LABORATORY

ANALYTICAL REPORT

PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	CMC311	970159
MTR CODE SITE NAME:	72556	Knight #1
SAMPLE DATE TIME (Hrs):	2/25/97	1140
PROJECT:	Geoprobe	
DATE OF BTEX EXT. ANAL.:	2/27/97	2/27/97
TYPE DESCRIPTION:	PH3	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 95.4 % for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative: _____

Approved By: _____

John L. Linder

Date: 3-4-97



FIELD SERVICES LABORATORY

ANALYTICAL REPORT

PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	CMC312	970160
MTR CODE SITE NAME:	72556	Knight #1
SAMPLE DATE TIME (Hrs):	2/25/97	1205
PROJECT:	Geoprobe	
DATE OF BTEX EXT. ANAL.:	2/27/97	2/27/97
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 97.7 % for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative:

Approved By:

John L. Landon

Date:

3-4-97

**1997 GROUNDWATER
ANALYTICAL**



CHAIN OF CUSTODY RECORD

Project No.		Project Name		Total No. of Containers		Chain of Custody Seals		Intact?		Requested Analysis		Contract Laboratory															
Samplers: (Signature)		Date		Receiving Temp. (°F)		Composite or Grab		See Attached		BTL		BTL															
Lab ID	Date	Time	Matrix	Sample Number								Remarks															
	4/9/96	1118	WATER	960320		G	X	X				EL PASO FIELD SERVICE															
	4/9/96	1203	WATER	960321		G	X	X				770 WEST MAIN ST															
	4/9/96	1328	WATER	960322		G	X	X				FARMINGTON N.M.															
	4/9/96	1442	WATER	960323		G	X	X																			
	4/9/96	—	WATER	—			X					TRIP BLANK															
Relinquished by: (Signature) <i>Dennis Bird</i> Date/Time 4/9/96 1555 Received by: (Signature) _____ Date/Time _____ Relinquished by: (Signature) _____ Date/Time _____ Received by: (Signature) _____ Date/Time _____ Relinquished by: (Signature) _____ Date/Time _____ Received by: (Signature) _____ Date/Time _____														Relinquished by: (Signature)		Date/Time		Received by: (Signature)		Date/Time		Relinquished by: (Signature)		Date/Time		Received by: (Signature)	
														Relinquished by: (Signature)		Date/Time		Received by: (Signature)		Date/Time		Relinquished by: (Signature)		Date/Time		Received by: (Signature)	
														Relinquished by: (Signature)		Date/Time		Received by: (Signature)		Date/Time		Relinquished by: (Signature)		Date/Time		Received by: (Signature)	
														Relinquished by: (Signature)		Date/Time		Received by: (Signature)		Date/Time		Relinquished by: (Signature)		Date/Time		Received by: (Signature)	
Results & Invoices to:														Remarks:		Date Results Reported / by: (Signature)											
<i>M. Gordon / Napper</i>														4/9/96 1615													

EPFS

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY ANALYTICAL REPORT

SAMPLE IDENTIFICATION

SAMPLE NUMBER:	960320
SITE NAME:	Aztec Pipeline
SAMPLE SITE:	Knight #1 MW-1
SAMPLE DATE:	04/09/96
SAMPLE TIME (Hrs):	1118
SAMPLED BY:	D. Bird
DATE OF BTEX ANALYSIS:	04/10/96
SAMPLE TYPE:	Water

MTR # 72556

REMARKS:

EPA Method 8020 (BTEX) RESULTS

PARAMETER	RESULT PPB	QUALIFIER	WQCC LIMIT PPB
BENZENE	5490	D (X20)	10
TOLUENE	208	D (X10)	740
ETHYL BENZENE	1100	D (X10)	750
TOTAL XYLENES	7370	D (X20)	620
SURROGATE % RECOVERY	97.2	Allowed Range 80 to 120 %	

NOTES:

"D" Qualifier indicates that the reported result for this analyte is calculated based on the secondary solution factor shown.

Reported By:

mh

Approved By:

John L. Smith

Date:

4/19/96

EPFS

EL PASO FIELD SERVICES

Field Services Laboratory

Analytical Report

SAMPLE IDENTIFICATION

EPNG LAB ID:	960320
DATE SAMPLED:	04/09/96
TIME SAMPLED (Hrs):	1118
SAMPLED BY:	D. Bird
MATRIX:	Water
SAMPLE SITE NAME:	Aztec Pipeline
SAMPLE POINT:	Knight #1, MW-1
METER CODE:	72556

FIELD REMARKS: None

GENERAL CHEMISTRY WATER ANALYSIS RESULTS

PARAMETER	RESULT	UNITS	DATE ANALYZED
pH	7.9	Units	04/15/96
Alkalinity as CO ₃	0	PPM	04/15/96
Alkalinity as HCO ₃	839	PPM	04/15/96
Calcium as Ca	195	PPM	04/15/96
Magnesium as Mg	73	PPM	04/15/96
Total Hardness as CaCO ₃	788	PPM	04/15/96
Chloride as Cl	89	PPM	04/15/96
Sulfate as SO ₄	521	PPM	04/15/96
Fluoride as F	0.9	PPM	04/15/96
Nitrate as NO ₃ -N	<0.1	PPM	04/15/96
Potassium as K	1.4	PPM	04/15/96
Sodium as Na	269	PPM	04/15/96
Total Dissolved Solids	1,630	PPM	04/15/96
Conductivity	1,960	umhos/cm	04/15/96
Anion/Cation %	0.6%	%, <5.0 Accepted	04/15/96

Lab Remarks:

Reported By: DB

Approved By:

John L. Linder

Date: 4/19/96

EPFS

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY ANALYTICAL REPORT

SAMPLE IDENTIFICATION

SAMPLE NUMBER:	960320
LOCATION:	Aztec Pipeline
SAMPLE SITE:	Knight #1 MW-1
METER CODE:	72556
SAMPLE DATE:	04/09/96
SAMPLE TIME (Hrs):	1118
SAMPLED BY:	D. Bird

REMARKS: _____

RESULTS

PARAMETER	TOTAL RESULT (mg/L)	N. M. WQCC LIMIT (mg/L)
ARSENIC	<0.025	0.100
BARIUM	<0.5	1.00
CADMIUM	<0.0005	0.010
CHROMIUM	0.001	0.050
LEAD	<0.004	0.050
MERCURY	<0.00024	0.002
SELENIUM	<0.005	0.050
SILVER	<0.0004	0.050

NOTE: The sample results have been corrected for volume adjustment associated with Method 3015.

References:

Method 3015, Microwave Assisted Acid Digestion of Aqueous Samples and Extracts, Test Methods for Evaluating Solid Waste, SW-846, Sept., 1994.
Method 7061A, Arsenic (Atomic Absorption, Gaseous Hydride), Test Methods for Evaluating Solid Waste, SW-846, USEPA, July, 1992.
Method 7080A, Barium (Atomic Absorption, Direct Aspiration), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1994.
Method 7131, Cadmium (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1986.
Method 7191, Chromium (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1986.
Method 7421, Lead (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1986.
Method 245.5, Mercury (Automated Cold Vapor Technique), Methods for the Determination of Metals in Environmental Samples, EPA 600/4-91/010, USEPA, June, 1991.
Method 7741A, Selenium (Atomic Absorption, Gaseous Hydride), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1994.
Method 7761, Silver (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, July, 1992.

Reported By: mh

Approved By: John Linder

Date: 10/5/96

EPFS

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY ANALYTICAL REPORT

SAMPLE IDENTIFICATION

SAMPLE NUMBER:	960321
SITE NAME:	Aztec Pipeline
SAMPLE SITE:	Knight #1 MW-2
SAMPLE DATE:	04/09/96
SAMPLE TIME (Hrs):	1203
SAMPLED BY:	D. Bird
DATE OF BTEX ANALYSIS:	04/10/96
SAMPLE TYPE:	Water

REMARKS: _____

EPA Method 8020 (BTEX) RESULTS

PARAMETER	RESULT PPB	QUALIFIER	WQCC LIMIT PPB
BENZENE	39.2		10
TOLUENE	<1.0		740
ETHYL BENZENE	13.4		750
TOTAL XYLENES	77.9		620
SURROGATE % RECOVERY	99.2	Allowed Range 80 to 120 %	

NOTES:

Reported By: mh

Approved By: John Lander

Date: 4/19/96

EPFS

EL PASO FIELD SERVICES

Field Services Laboratory Analytical Report

SAMPLE IDENTIFICATION

EPNG LAB ID:	960321
DATE SAMPLED:	04/09/96
TIME SAMPLED (Hrs):	1203
SAMPLED BY:	D. Bird
MATRIX:	Water
SAMPLE SITE NAME:	Aztec Pipeline
SAMPLE POINT:	Knight #1, MW-2
METER CODE:	72556

FIELD REMARKS: None

GENERAL CHEMISTRY WATER ANALYSIS RESULTS

PARAMETER	RESULT	UNITS	DATE ANALYZED
pH	7.9	Units	04/15/96
Alkalinity as CO ₃	0	PPM	04/15/96
Alkalinity as HCO ₃	576	PPM	04/15/96
Calcium as Ca	289	PPM	04/15/96
Magnesium as Mg	79	PPM	04/15/96
Total Hardness as CaCO ₃	1,047	PPM	04/15/96
Chloride as Cl	79	PPM	04/15/96
Sulfate as SO ₄	994	PPM	04/15/96
Fluoride as F	0.9	PPM	04/15/96
Nitrate as NO ₃ -N	<0.1	PPM	04/15/96
Potassium as K	2.0	PPM	04/15/96
Sodium as Na	277	PPM	04/15/96
Total Dissolved Solids	2,160	PPM	04/15/96
Conductivity	2,250	umhos/cm	04/15/96
Anion/Cation %	0.9%	%, <5.0 Accepted	04/15/96

Lab Remarks:

Reported By: DB

Approved By: John Lumbkin

Date: 4/19/96

EPFS

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY ANALYTICAL REPORT

SAMPLE IDENTIFICATION

SAMPLE NUMBER:	960321
LOCATION:	Aztec Pipeline
SAMPLE SITE:	Knight #1 MW-2
METER CODE:	72556
SAMPLE DATE:	04/09/96
SAMPLE TIME (Hrs):	1203
SAMPLED BY:	D. Bird

REMARKS: _____

RESULTS

PARAMETER	TOTAL RESULT (mg/L)	N. M. WQCC LIMIT (mg/L)
ARSENIC	<0.025	0.100
BARIUM	<0.5	1.00
CADMIUM	<0.0005	0.010
CHROMIUM	0.002	0.050
LEAD	<0.004	0.050
MERCURY	<0.00024	0.002
SELENIUM	<0.005	0.050
SILVER	<0.0004	0.050

NOTE: The sample results have been corrected for volume adjustment associated with Method 3015.

References:

Method 3015, Microwave Assisted Acid Digestion of Aqueous Samples and Extracts, Test Methods for Evaluating Solid Waste, SW-846, Sept., 1994.
Method 7061A, Arsenic (Atomic Absorption, Gaseous Hydride), Test Methods for Evaluating Solid Waste, SW-846, USEPA, July, 1992.
Method 7080A, Barium (Atomic Absorption, Direct Aspiration), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1994.
Method 7131, Cadmium (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1986.
Method 7191, Chromium (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1986.
Method 7421, Lead (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1986.
Method 245.5, Mercury (Automated Cold Vapor Technique), Methods for the Determination of Metals in Environmental Samples, EPA 600/4-91/010, USEPA, June, 1991.
Method 7741A, Selenium (Atomic Absorption, Gaseous Hydride), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1994.
Method 7761, Silver (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, July, 1992.

Reported By: mh

Approved By: John T. T. T.

Date: 10/9/96

EPFS

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY ANALYTICAL REPORT

SAMPLE IDENTIFICATION

SAMPLE NUMBER:	960322
SITE NAME:	Aztec Pipeline
SAMPLE SITE:	Knight #1 MW-3
SAMPLE DATE:	04/09/96
SAMPLE TIME (Hrs):	1328
SAMPLED BY:	D. Bird
DATE OF BTEX ANALYSIS:	04/10/96
SAMPLE TYPE:	Water

REMARKS:

EPA Method 8020 (BTEX) RESULTS

PARAMETER	RESULT PPB	QUALIFIER	WQCC LIMIT PPB
BENZENE	328.0	D (X5)	10
TOLUENE	<1.0	D (X5)	740
ETHYL BENZENE	132.0	D (X5)	750
TOTAL XYLENES	369	D (X5)	620
SURROGATE % RECOVERY	95.8	Allowed Range 80 to 120 %	

NOTES:

"D" Qualifier indicates that the reported result for this analyte is calculated based on the secondary ionization ratio shown.

Reported By: mh

Approved By: John L. Smith

Date: 4/19/96

EPFS

EL PASO FIELD SERVICES

Field Services Laboratory
Analytical Report

SAMPLE IDENTIFICATION

EPNG LAB ID:	960322
DATE SAMPLED:	04/09/96
TIME SAMPLED (Hrs):	1328
SAMPLED BY:	D. Bird
MATRIX:	Water
SAMPLE SITE NAME:	Aztec Pipeline
SAMPLE POINT:	Knight #1, MW-3
METER CODE:	72556

FIELD REMARKS: None

GENERAL CHEMISTRY WATER ANALYSIS RESULTS

PARAMETER	RESULT	UNITS	DATE ANALYZED
pH	8.0	Units	04/15/96
Alkalinity as CO ₃	0	PPM	04/15/96
Alkalinity as HCO ₃	679	PPM	04/15/96
Calcium as Ca	243	PPM	04/15/96
Magnesium as Mg	85	PPM	04/15/96
Total Hardness as CaCO ₃	957	PPM	04/15/96
Chloride as Cl	78	PPM	04/15/96
Sulfate as SO ₄	771	PPM	04/15/96
Fluoride as F	0.9	PPM	04/15/96
Nitrate as NO ₃ -N	<0.1	PPM	04/15/96
Potassium as K	2.0	PPM	04/15/96
Sodium as Na	252	PPM	04/15/96
Total Dissolved Solids	1,900	PPM	04/15/96
Conductivity	2,100	umhos/cm	04/15/96
Anion/Cation %	1.2%	%, <5.0 Accepted	04/15/96

Lab Remarks:

Reported By: DB

Approved By: John Lubben

Date: 4/19/96

EPFS

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY ANALYTICAL REPORT

SAMPLE IDENTIFICATION

SAMPLE NUMBER:	960322
LOCATION:	Aztec Pipeline
SAMPLE SITE:	Knight #1 MW-3
METER CODE:	72556
SAMPLE DATE:	04/09/96
SAMPLE TIME (Hrs):	1328
SAMPLED BY:	D. Bird

REMARKS: _____

RESULTS

PARAMETER	TOTAL RESULT (mg/L)	N. M. WQCC LIMIT (mg/L)
ARSENIC	<0.025	0.100
BARIUM	<0.5	1.00
CADMIUM	<0.0005	0.010
CHROMIUM	0.001	0.050
LEAD	<0.004	0.050
MERCURY	<0.00024	0.002
SELENIUM	<0.005	0.050
SILVER	<0.0004	0.050

NOTE: The sample results have been corrected for volume adjustment associated with Method 3015.

References:

Method 3015, Microwave Assisted Acid Digestion of Aqueous Samples and Extracts, Test Methods for Evaluating Solid Waste, SW-846, Sept., 1994.
Method 7061A, Arsenic (Atomic Absorption, Gaseous Hydride), Test Methods for Evaluating Solid Waste, SW-846, USEPA, July, 1992.
Method 7080A, Barium (Atomic Absorption, Direct Aspiration), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1994.
Method 7131, Cadmium (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1986.
Method 7191, Chromium (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1986.
Method 7421, Lead (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1986.
Method 245.5, Mercury (Automated Cold Vapor Technique), Methods for the Determination of Metals in Environmental Samples, EPA 600/4-91/010, USEPA, June, 1991.
Method 7741A, Selenium (Atomic Absorption, Gaseous Hydride), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1994.
Method 7761, Silver (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, July, 1992.

Reported By: mh

Approved By: _____

Date: 10/6/96

EPFS

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY ANALYTICAL REPORT

SAMPLE IDENTIFICATION

SAMPLE NUMBER:	960323
SITE NAME:	Aztec Pipeline
SAMPLE SITE:	Knight #1 MW-4
SAMPLE DATE:	04/09/96
SAMPLE TIME (Hrs):	1443
SAMPLED BY:	D. Bird
DATE OF BTEX ANALYSIS:	04/10/96
SAMPLE TYPE:	Water

REMARKS:

EPA Method 8020 (BTEX) RESULTS

PARAMETER	RESULT PPB	QUALIFIER	WQCC LIMIT PPB
BENZENE	63.1		10
TOLUENE	<1.0		740
ETHYL BENZENE	<1.0		750
TOTAL XYLENES	42.5		620
SURROGATE % RECOVERY	98.2	Allowed Range 80 to 120 %	

NOTES:

Reported By: mh

Approved By: John Larch

Date: 4/19/96

EPFS

EL PASO FIELD SERVICES

Field Services Laboratory

Analytical Report

SAMPLE IDENTIFICATION

EPNG LAB ID:	960323
DATE SAMPLED:	04/09/96
TIME SAMPLED (Hrs):	1442
SAMPLED BY:	D. Bird
MATRIX:	Water
SAMPLE SITE NAME:	Aztec Pipeline
SAMPLE POINT:	Knight #1, MW-4
METER CODE:	72556

FIELD REMARKS: None

GENERAL CHEMISTRY WATER ANALYSIS RESULTS

PARAMETER	RESULT	UNITS	DATE ANALYZED
pH	7.7	Units	04/15/96
Alkalinity as CO_3	0	PPM	04/15/96
Alkalinity as HCO_3	501	PPM	04/15/96
Calcium as Ca	280	PPM	04/15/96
Magnesium as Mg	75	PPM	04/15/96
Total Hardness as CaCO_3	1,008	PPM	04/15/96
Chloride as Cl	75	PPM	04/15/96
Sulfate as SO_4	994	PPM	04/15/96
Fluoride as F	0.9	PPM	04/15/96
Nitrate as $\text{NO}_3\text{-N}$	<0.1	PPM	04/15/96
Potassium as K	2.0	PPM	04/15/96
Sodium as Na	277	PPM	04/15/96
Total Dissolved Solids	2,140	PPM	04/15/96
Conductivity	2,320	umhos/cm	04/15/96
Anion/Cation %	1.8%	%, <5.0 Accepted	04/15/96

Lab Remarks:

Reported By: DB

Approved By: John Santolucito

Date: 4/19/96

EPFS

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY ANALYTICAL REPORT

SAMPLE IDENTIFICATION

SAMPLE NUMBER:	960323
LOCATION:	Aztec Pipeline
SAMPLE SITE:	Knight #1 MW-4
METER CODE:	72556
SAMPLE DATE:	04/09/96
SAMPLE TIME (Hrs):	1443
SAMPLED BY:	D. Bird

REMARKS: _____

RESULTS

PARAMETER	TOTAL RESULT (mg/L)	N. M. WQCC LIMIT (mg/L)
ARSENIC	<0.025	0.100
BARIUM	<0.5	1.00
CADMIUM	<0.0005	0.010
CHROMIUM	0.001	0.050
LEAD	<0.004	0.050
MERCURY	<0.00024	0.002
SELENIUM	<0.005	0.050
SILVER	<0.0004	0.050

NOTE: The sample results have been corrected for volume adjustment associated with Method 3015.

References:

Method 3015, Microwave Assisted Acid Digestion of Aqueous Samples and Extracts, Test Methods for Evaluating Solid Waste, SW-846, Sept., 1994.
Method 7061A, Arsenic (Atomic Absorption, Gaseous Hydride), Test Methods for Evaluating Solid Waste, SW-846, USEPA, July, 1992.
Method 7080A, Barium (Atomic Absorption, Direct Aspiration), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1994.
Method 7131, Cadmium (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1986.
Method 7191, Chromium (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1986.
Method 7421, Lead (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1986.
Method 245.5, Mercury (Automated Cold Vapor Technique), Methods for the Determination of Metals in Environmental Samples, EPA 600/4-91/010, USEPA, June, 1991.
Method 7741A, Selenium (Atomic Absorption, Gaseous Hydride), Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept., 1994.
Method 7761, Silver (Atomic Absorption, Furnace Technique), Test Methods for Evaluating Solid Waste, SW-846, USEPA, July, 1992.

Reported By: mh

Approved By: _____

Date: 10/9/96

EPFS

EL PASO FIELD SERVICES

QUALITY CONTROL REPORT

Sample ID: 960320 to 960323, 960325 to 960327, 960330 to 960334,
960340 to 960343, 960350 to 960353, 960355 to 960356,
960370 to 960373, and 960375 to 960378, 960380 & 960386

Date Reported: 05/10/96

TOTAL METALS

LABORATORY CONTROL SAMPLE

Analyte	Found Value (µg/L)	Known Value (µg/L)	% Recovery
Arsenic	26.2	27.0	97%
Barium	309	315	98%
Cadmium	3.06	2.90	106%
Chromium	7.09	6.70	106%
Lead	35.9	39.5	91%
Mercury	1.79	1.75	102%
Selenium	36.7	31.0	118%
Silver	3.16	3.06	103%

LABORATORY CONTROL SAMPLE (2nd run)

Analyte	Found Value (µg/L)	Known Value (µg/L)	% Recovery
Arsenic	NA	NA	NA
Barium	NA	NA	NA
Cadmium	2.76	2.90	95%
Chromium	7.34	6.70	110%
Lead	35.9	39.5	91%
Mercury	1.71	1.75	98%
Selenium	NA	NA	NA
Silver	NA	NA	NA

NA: Not Applicable. A second run was not required.

Reported By: mh

Approved By: John L. Linder

Date: 10/5/96

EPFS

EL PASO FIELD SERVICES

QUALITY CONTROL REPORT

TOTAL METALS, DUPLICATE ANALYSIS

SAMPLE ID: 960321

Analyte	Original Sample Result (µg/L)	Duplicate Sample Result (µg/L)	% RPD
Arsenic	ND	ND	NA
Barium	ND	ND	NA
Cadmium	ND	ND	NA
Chromium	1.65	1.61	2.5%
Lead	2.3	2.1	8.2%
Mercury	ND	ND	NA
Selenium	ND	ND	NA
Silver	ND	ND	NA

SAMPLE ID: 960343

Analyte	Original Sample Result (µg/L)	Duplicate Sample Result (µg/L)	% RPD
Arsenic	ND	ND	NA
Barium	ND	ND	NA
Cadmium	ND	ND	NA
Chromium	1.14	1.28	11.6%
Lead	2.4	2.1	11.7%
Mercury	ND	ND	NA
Selenium	ND	ND	NA
Silver	ND	ND	NA

SAMPLE ID: 960375

Analyte	Original Sample Result (µg/L)	Duplicate Sample Result (µg/L)	% RPD
Arsenic	ND	ND	NA
Barium	1.15	1.12	2.6%
Cadmium	0.56	0.55	1.8%
Chromium	29.1	29.0	0.3%
Lead	12.1	13.3	9.4%
Mercury	ND	ND	NA
Selenium	ND	ND	NA
Silver	ND	ND	NA

ND: Analyte Not Detected at stated detection level.

NA: Not Applicable.

Reported By: mh

Approved By: [Signature]

Date: 10/5/96

EPFS

EL PASO FIELD SERVICES

QUALITY CONTROL REPORT

TOTAL METALS, SPIKE ANALYSIS

SAMPLE ID: 960321

Analyte	Original Sample Result (µg/L)	Spike Sample Result (µg/L)	Spike Added	Recovery Percent
Arsenic	ND	47.4	45.5	104%
Barium	236	1098	959	92%
Cadmium	ND	8.12	9.59	85%
Chromium	1.65	51.9	45.5	108%
Lead	ND	37.3	45.5	82%
Mercury	ND	1.94	2.00	97%
Selenium	ND	9.64	9.60	100%
Silver	ND	43.0	45.5	95%

SAMPLE ID: 960343

Analyte	Original Sample Result (µg/L)	Spike Sample Result (µg/L)	Spike Added	Recovery Percent
Arsenic	ND	53.7	45.5	118%
Barium	166	1102	959	99%
Cadmium	ND	9.33	9.60	96%
Chromium	1.14	39.8	45.5	85%
Lead	ND	40.0	45.5	88%
Mercury	ND	1.92	2.00	96%
Selenium	ND	10.3	9.60	108%
Silver	ND	36.0	45.5	79%

SAMPLE ID: 960375

Analyte	Original Sample Result (µg/L)	Spike Sample Result (µg/L)	Spike Added	Recovery Percent
Arsenic	8.5	55.3	45.5	105%
Barium	1036	1889	959	99%
Cadmium	0.42	11.1	9.60	112%
Chromium	29.1	59.5	45.5	73%
Lead	10.9	38.1	45.5	62%
Mercury	ND	2.03	2.00	101%
Selenium	ND	9.47	9.60	99%
Silver	ND	39.1	45.5	86%

NOTE: Spike recoveries for Cr and Pb for Sample 960375 are below acceptance criteria due to matrix interference.

Reported By: mh

Approved By: *John Larkin*

Date: 10/5/90

EPFS

EL PASO FIELD SERVICES

QUALITY CONTROL REPORT

TOTAL METALS, METHOD BLANK ANALYSIS

04/24/96 METHOD BLANK

Analyte	Found Value (µg/L)	Detection Level (µg/L)
Arsenic	ND	25
Barium	ND	500
Cadmium	ND	0.5
Chromium	ND	1
Lead	ND	4
Mercury	ND	0.24 *
Selenium	ND	5
Silver	ND	0.4

04/25/96 METHOD BLANK

Analyte	Found Value (µg/L)	Detection Level (µg/L)
Arsenic	ND	25
Barium	ND	500
Cadmium	ND	0.5
Chromium	ND	1
Lead	11	4
Mercury	ND	0.24 *
Selenium	ND	5
Silver	ND	0.4

ND: Not Detected at stated detection level.

NA: Not Applicable.

NOTE: All detection levels except Hg are 5X MDL.

Hg detection level is based on a Practical Quantitation Level (PQL) of 10X MDL.

Reported By: mh

Approved By: *John L. Landon*

Date: 10/5/06 (6)

MEMORANDUM

To: John Lambdin
From: Dennis Bird

Date: April 25, 1996
Place: Laboratory Services

Subject: Aztec Pipeline Pit Monitor Wells

On Tuesday, April 9, 1996, I went to the Aztec Pipeline and started sampling the pit monitor wells. The following analytical parameters are to be performed on these groundwater samples: BTXE, 8 RCRA METALS, General Chemistry to include Nitrate as NO3 and dissolved oxygen. The samples were assigned the laboratory numbers 960320 to 960323. The dissolved oxygen results were taken at the time of sampling with a ChemMets kit. Monitor Well MW-1 was also sampled for Polynuclear Aromatics and sent to American Environmental Network in Albuquerque N.M. for analysis. The Field Service Laboratory will be performing all of the other analysis.

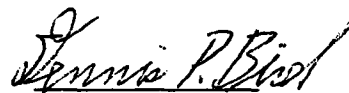
The following information was collected on each well.

	Well Name	Monitor Well#	Pipe ID	Static Level	Total Depth	Gallons Bailed	Dissolved Oxygen
960320	Knight #1	MW-1	4"	26.71'	33.94'	10.0	3.0 ppm
960321	Knight #1	MW-2	4"	25.58'	36.93'	25.0	3.5 ppm
960322	Knight #1	MW-3	4"	25.78'	37.20'	26.2	2.5 ppm
960323	Knight #1	MW-4	4"	26.40'	36.80'	25.0	1.5 ppm

Monitor Well MW-1 had a 0.37' of free floating hydrocarbon.

All bailing and sampling was done with disposable, one time use equipment and bottles. All samples were preserved on ice immediately after collection. The static level and total depth was measured from the top of the pipe.

Should you have any question or comments, please let me know.


Dennis P. Bird

cc: Nancy Prince
Sandra Miller

**ATT LAB I.D.**

DATE: 4-9-96 PAGE 1 OF 1

PROJECT MANAGER:

JOHN CARROLL

COMPANY:

EX 9-150 FILED JAN 16 1960

ADDRESS:

P.O. Box 4070

PHONE:

FRANKLIN N.Y. 87499
505-299-2144

FAX:

122-44-605

BILL TO:

5715 AS 1901E

COMPANY:**ADDRESS:**

SAMPLEID	DATE	TIME	MATRIX	LABID
1	2010-01-01	10:00	1	1
2	2010-01-01	10:00	1	1
3	2010-01-01	10:00	1	1
4	2010-01-01	10:00	1	1
5	2010-01-01	10:00	1	1
6	2010-01-01	10:00	1	1
7	2010-01-01	10:00	1	1
8	2010-01-01	10:00	1	1
9	2010-01-01	10:00	1	1
10	2010-01-01	10:00	1	1
11	2010-01-01	10:00	1	1
12	2010-01-01	10:00	1	1
13	2010-01-01	10:00	1	1
14	2010-01-01	10:00	1	1
15	2010-01-01	10:00	1	1
16	2010-01-01	10:00	1	1
17	2010-01-01	10:00	1	1
18	2010-01-01	10:00	1	1
19	2010-01-01	10:00	1	1
20	2010-01-01	10:00	1	1
21	2010-01-01	10:00	1	1
22	2010-01-01	10:00	1	1
23	2010-01-01	10:00	1	1
24	2010-01-01	10:00	1	1
25	2010-01-01	10:00	1	1
26	2010-01-01	10:00	1	1
27	2010-01-01	10:00	1	1
28	2010-01-01	10:00	1	1
29	2010-01-01	10:00	1	1
30	2010-01-01	10:00	1	1
31	2010-01-01	10:00	1	1
32	2010-01-01	10:00	1	1
33	2010-01-01	10:00	1	1
34	2010-01-01	10:00	1	1
35	2010-01-01	10:00	1	1
36	2010-01-01	10:00	1	1
37	2010-01-01	10:00	1	1
38	2010-01-01	10:00	1	1
39	2010-01-01	10:00	1	1
40	2010-01-01	10:00	1	1
41	2010-01-01	10:00	1	1
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43	2010-01-01	10:00	1	1
44	2010-01-01	10:00	1	1
45	2010-01-01	10:00	1	1
46	2010-01-01	10:00	1	1
47	2010-01-01	10:00	1	1
48	2010-01-01	10:00	1	1
49	2010-01-01	10:00	1	1
50	2010-01-01	10:00	1	1
51	2010-01-01	10:00	1	1
52	2010-01-01	10:00	1	1
53	2010-01-01	10:00	1	1
54	2010-01-01	10:00	1	1
55	2010-01-01	10:00	1	1
56	2010-01-01	10:00	1	1
57	2010-01-01	10:00	1	1
58	2010-01-01	10:00	1	1
59	2010-01-01	10:00	1	1
60	2010-01-01	10:00	1	1
61	2010-01-01	10:00	1	1
62	2010-01-01	10:00	1	1
63	2010-01-01	10:00	1	1
64	2010-01-01	10:00	1	1
65	2010-01-01	10:00	1	1
66	2010-01-01	10:00	1	1
67	2010-01-01	10:00	1	1
68	2010-01-01	10:00	1	1
69	2010-01-01	10:00	1	1
70	2010-01-01	10:00	1	1
71	2010-01-01	10:00	1	1
72	2010-01-01	10:00	1	1
73				

96096

DATE	TIME	MATRIX
4-9-06	1118	WATER

3115	WATER
------	-------

PROJECT INFORMATION

SAMPLE RECEIPT

PROJ. NO.:

NO CONTAINERS

PROJ. NAME:

CHT #1	CISTODY SEALS	YIN/NA
--------	---------------	--------

P.O. NO.:

RECEIVED INTACT

SHIPPED

RECEIVED CON

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

☐ (BUSINESS) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK

(NORMAL) ☒ 2

Comments:

CHARGE TO: 6138 - 610-6117-9000-

27

Analytical Technologies, Inc.

ATI Labs: San Diego (619) 458-9141 • Phoenix (602) 496-4400 • Seattle (206) 228-8335 • Pensacola (904) 474-1001 • Portland (503) 894-0447 • Albuquerque (505) 344-3777

American Environmental Network, Inc.

AEN I.D. 604352

May 7, 1996

El Paso Field Service Co.
P.O. Box 4990
Farmington, NM 87499



Project Name/Number: KNIGHT #1 MW-1

Attention: John Lambdin

On 04/12/96, American Environmental Network (NM), Inc. (ADHS License No. AZ0015) received a request to analyze aqueous sample(s). The sample(s) 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.

All analyses were performed by American Environmental Network (FL), Inc., 11 East Olive Road, Pensacola, FL.

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:ft

Enclosure



American Environmental Network, Inc.

CLIENT : EL PASO FIELD SERVICE
PROJECT # : (NONE)
PROJECT NAME : KNIGHT #1 MW-1

DATE RECEIVED : 04/12/96

REPORT DATE : 05/07/96

AEN ID: 604352

	AEN ID #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	604352-01	960320	AQUEOUS	04/09/96

---TOTALS---

<u>MATRIX</u>	<u>#SAMPLES</u>
AQUEOUS	1

AEN STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of this report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

American Environmental Network, Inc.

"FINAL REPORT FORMAT - SINGLE"

Accession: 604294
Client: AMERICAN ENVIRONMENTAL NETWORK OF NEW MEXICO
Project Number: 604352
Project Name: KNIGHT #1
Project Location: N/S
Test: POLYNUCLEAR AROMATICS BY 8310
Analysis Method: 8310 / SW 846, 3rd Edition, September 1986 and Revision 1, July 1992
Extraction Method: 3510 / SW-846, 3rd Edition, September 1986 and Revision 1, July 1992
Matrix: WATER
QC Level: I

Lab Id: 001 Sample Date/Time: 09-APR-96 1118
Client Sample Id: 604352-01 Received Date: 13-APR-96

Batch: PAW068 Extraction Date: 13-APR-96
Blank: B Dry Weight %: N/A Analysis Date: 29-APR-96

Parameter:	Units:	Results:	Rpt Lmts:	Q:
ACENAPHTHENE	UG/L	37	1	
ACENAPHTHYLENE	UG/L	9	1	
ANTHRACENE	UG/L	4	1	
BENZO(a) ANTHRACENE	UG/L	8	1	
BENZO(a) PYRENE	UG/L	3	1	
BENZO(b) FLUORANTHENE	UG/L	5	1	
BENZO(g,h,i) PERYLENE	UG/L	ND	1	
BENZO(k) FLUORANTHENE	UG/L	5	1	
CHRYSENE	UG/L	ND	1	
DIBENZO(a,h) ANTHRACENE	UG/L	ND	1	
FLUORANTHENE	UG/L	ND	1	
FLUORENE	UG/L	ND	1	
INDENO(1,2,3-cd) PYRENE	UG/L	ND	1	
NAPHTHALENE	UG/L	7	1	
PHENANTHRENE	UG/L	6	1	
PYRENE	UG/L	57	1	
1-METHYLNAPHTHALENE	UG/L	40	1	
2-METHYLNAPHTHALENE	UG/L	440	1	
2-CHLOROANTHRACENE	%REC/SURR	117	28-138	
ANALYST	INITIALS	BV		

Comments:

American Environmental Network, Inc.

"Method Report Summary"

Accession Number: 604294
Client: AMERICAN ENVIRONMENTAL NETWORK OF NEW MEXICO
Project Number: 604352
Project Name: KNIGHT #1
Project Location: N/S
Test: POLYNUCLEAR AROMATICS BY 8310

Client Sample Id:	Parameter:	Unit:	Result:
604352-01	ACENAPHTHENE	UG/L	37
	ACENAPHTHYLENE	UG/L	9
	ANTHRACENE	UG/L	4
	BENZO (a) ANTHRACENE	UG/L	8
	BENZO (a) PYRENE	UG/L	3
	BENZO (b) FLUORANTHENE	UG/L	5
	BENZO (k) FLUORANTHENE	UG/L	5
	NAPHTHALENE	UG/L	7
	PHENANTHRENE	UG/L	6
	PYRENE	UG/L	57
	1-METHYLNAPHTHALENE	UG/L	40
	2-METHYLNAPHTHALENE	UG/L	440

American Environmental Network, Inc.

"QC Report"

Title: Water Blank
Batch: PAW068
Analysis Method: 8310 / SW 846, 3rd Edition, September 1986 and Revision 1, July 1992
Extraction Method: 3510 / SW-846, 3rd Edition, September 1986 and Revision 1, July 1992

Blank Id: B Date Analyzed: 30-APR-96 Date Extracted: 13-APR-96

Parameters:	Units:	Results:	Reporting Limits:
ACENAPHTHENE	UG/L	ND	1
ACENAPHTHYLENE	UG/L	ND	1
ANTHRACENE	UG/L	ND	1
BENZO (a) ANTHRACENE	UG/L	ND	1
BENZO (a) PYRENE	UG/L	ND	1
BENZO (b) FLUORANTHENE	UG/L	ND	1
BENZO (g, h, i) PERYLENE	UG/L	ND	1
BENZO (k) FLUORANTHENE	UG/L	ND	1
CHRYSENE	UG/L	ND	1
DIBENZO (a, h) ANTHRACENE	UG/L	ND	1
FLUORANTHENE	UG/L	ND	1
FLUORENE	UG/L	ND	1
INDENO (1, 2, 3-cd) PYRENE	UG/L	ND	1
NAPHTHALENE	UG/L	ND	1
PHENANTHRENE	UG/L	ND	1
PYRENE	UG/L	ND	1
1-METHYLNAPHTHALENE	UG/L	ND	1
2-METHYLNAPHTHALENE	UG/L	ND	1
2-CHLOROANTHRACENE	%REC/SURR	52	28-138
ANALYST	INITIALS	BV	

Comments:

American Environmental Network, Inc.

"QC Report"

Title: Water Reagent
Batch: PAW068
Analysis Method: 8310 / SW 846, 3rd Edition, September 1986 and Revision 1, July 1992
Extraction Method: 3510 / SW-846, 3rd Edition, September 1986 and Revision 1, July 1992

RS Date Analyzed: 24-Apr-96
RSD Date Analyzed: 24-Apr-96

RS Date Extracted: 12-Apr-96
RSD Date Extracted: 12-Apr-96

Parameters:	Spike Added	Sample Conc	RS Conc	RS %Rec	RSD Conc	RSD %Rec	RPD	Rec Lmts
ACENAPHTHYLENE	10.0	<1	7.8	78	8.2	82	5	46-110
BENZO(k) FLUORANTHENE	10.0	<1	9.0	90	9.3	93	3	58-128
CHRYSENE	10.0	<1	8.9	89	9.0	90	1	62-129
PHENANTHRENE	10.0	<1	8.1	81	8.2	82	1	61-116
PYRENE	10.0	<1	8.5	85	8.6	86	1	62-120

Surrogates:
2-CHLOROANTHRACENE 84 85 28-138

Comments:
NOT ENOUGH SAMPLE SUBMITTED TO EXTRACT
MATRIX SPIKE/MATRIX SPIKE DUPLICATE.

Notes:

N/S = NOT SUBMITTED N/A = NOT APPLICABLE D = DILUTED OUT
UG/L = PARTS PER BILLION. < = LESS THAN REPORTING LIMIT.
* = VALUES OUTSIDE OF QUALITY CONTROL LIMITS.
SOURCES FOR CONTROL LIMITS ARE INTERNAL LABORATORY QUALITY ASSURANCE
PROGRAM AND REFERENCED METHOD.

American Environmental Network, Inc.

Common notation for Organic reporting

N/S = NOT SUBMITTED
N/A = NOT APPLICABLE
D = DILUTED OUT
UG = MICROGRAMS
UG/L = PARTS PER BILLION.
UG/KG = PARTS PER BILLION.
MG/M3 = MILLIGRAM PER CUBIC METER.
PPMV = PART PER MILLION BY VOLUME.
MG/KG = PARTS PER MILLION.
MG/L = PARTS PER MILLION.
< = LESS THAN DETECTION LIMIT.
* = VALUES OUTSIDE OF QUALITY CONTROL LIMITS

SOURCES FOR CONTROL LIMITS ARE INTERNAL LABORATORY QUALITY ASSURANCE PROGRAM AND REFERENCED METHOD.

ORGANIC SOILS ARE REPORTED ON A DRYWEIGHT BASIS.

ND = NOT DETECTED ABOVE REPORTING LIMIT.

RPT LIMIT = REPORTING LIMITS BASED ON METHOD DETECTION LIMIT STUDIES.

RPD = RELATIVE PERCENT DIFFERENCE (OR DEVIATION)

ATI/GC/FID

ATI GAS CHROMATOGRAPHIC METHOD EMPLOYING DIRECT INJECTION ON COLUMN WITH FLAME IONIZATION DETECTOR (FID).

ATI/GC/FIX

ATI GAS CHROMATOGRAPHIC METHOD FOR ANALYSIS OF FIXED GASES EMPLOYING DIRECT INJECTION ON COLUMN WITH THERMAL CONDUCTIVITY DETECTOR (TCD) AND FLAME IONIZATION DETECTOR (FID).

ATI/GC/FPD

ATI GAS CHROMATOGRAPHIC METHOD EMPLOYING DIRECT INJECTION ON COLUMN WITH FLAME PHOTOMETRIC DETECTOR (FPD) IN SULFUR-SPECIFIC MODE.

ATI/GC/PID

ATI GAS CHROMATOGRAPHIC METHOD EMPLOYING DIRECT INJECTION ON COLUMN WITH PHOTOIONIZATION DETECTOR (PID).

ATI/GC/TCD

ATI GAS CHROMATOGRAPHIC METHOD EMPLOYING DIRECT INJECTION ON COLUMN WITH THERMAL CONDUCTIVITY DETECTOR (TCD).

LJT = LISA THOMASON
SW = STEVE WILHITE
KW = KAREN WADSWORTH
PL = PAUL LESCHENSKY
RW = ROBERT WOLFE
BV = BEN VAUGHN
BC = BETH COLEMAN
KS = KENDALL SMITH
KK = KERRY KUST
DWB = DAVID W. BOWERS
RP = ROB PEREZ

Interlab Chain of Custody

6004314

DATE: 4/12 PAGE: 1 OF 1

NETWORK PROJECT MANAGER: KIMBERLY D. MCNEILL

COMPANY: Analytical Technologies of New Mexico, Inc.
ADDRESS: 2709-D Pan American Freeway, NE
Albuquerque, NM 87107

CLIENT PROJECT MANAGER:

K McNeill

SAMPLE ID DATE TIME MATRIX LAB ID

604314-01

4.9.8

1118

AC

Metals - TAL

Metals - PP List

Metals - RCRA

RCRA Metals by TCLP (1311)

TOX

TOC

Gen Chemistry

Oil and Grease

BOD

COD

Pesticides/PCB (608/8080)

Herbicides (615/8150)

Base/Neutral Acid Compounds GC/MS (625/8270)

Volatile Organics GC/MS (624/8240)

☒ Polynuclear Aromatics (610/8310)

8240 (TCLP 1311) ZHE

8270 (TCLP 1311)

TO-14

Gross Alpha/Beta

NUMBER OF CONTAINERS

PROJECT INFORMATION

SAMPLE RECEIPT

SAMPLES SENT TO:

RELINQUISHED BY:

RELINQUISHED BY:

PROJECT NUMBER: 6004314

TOTAL NUMBER OF CONTAINERS

SAN DIEGO

Signature: [Signature]

Signature: [Signature]

PROJECT NAME: K. McNeill

CHAIN OF CUSTODY SEALS

FT. COLLINS

Printed Name: [Signature]

Printed Name: [Signature]

OC LEVEL: STD IV

INTACT?

RENTON

Date: 4/12/04

Date: [Signature]

QC REQUIRED: MS MSD BLANK

RECEIVED GOOD COND/COLD

PENSACOLA

Analytical Technologies of New Mexico, Inc.

Company: [Signature]

TAT: STANDARD RUSH

LAB NUMBER 6004314

PORTLAND

RECEIVED BY: 1.

RECEIVED BY: (LAB) 2.

DUE DATE: 4/12/04

Signature: [Signature]

Signature: [Signature]

Printed Name: [Signature]

Printed Name: [Signature]

RUSH SURCHARGE: 1.5%

Signature: [Signature]

Signature: [Signature]

Printed Name: [Signature]

Printed Name: [Signature]

CLIENT DISCOUNT: 1.5%

Signature: [Signature]

Signature: [Signature]

Printed Name: [Signature]

Printed Name: [Signature]

SPECIAL CERTIFICATION REQUIRED: YES NO

Signature: [Signature]

Signature: [Signature]

Printed Name: [Signature]

Printed Name: [Signature]

10/00/95 AT San Diego (619) 458-9141 • Phoenix (602) 496-4400 • Seattle (206) 228-8335 • Pensacola (904) 301 • Portland (503) 684-0447 • Albuquerque (505) 344-3777 DISTRIBUTION: White, Canary Pink - ORIGINATOR



Analytical Technologies, Inc., Albuquerque, NM
San Diego • Phoenix • Seattle • Pensacola • Ft. Collins • Portland • Albuquerque

CHAIN OF CUSTODY

DATE: 4-9-96 PAGE 1 OF 1

ATLAB I.D.

6003552

ANALYSIS REQUEST

PROJECT MANAGER: JOHN CAMPBELL

COMPANY: EL PASO FIELD SERVICES CO.

ADDRESS: P.O. BOX 4990

FARMINGTON N.M. 87499

PHONE: 505-599-2144

FAX: 505-599-8281

BILL TO: SAMS AS ABOVE

COMPANY:

ADDRESS:

SAMPLE ID DATE TIME MATRIX LAB ID

960320 4-9-96 1118 WATER -01

Petroleum Hydrocarbons (418.1)
(MOD 8015) Gas/Diesel
Diesel/Gasoline/BTXE/MTBE (MOD 8015/8020)
BTXE/MTBE (8020)
Chlorinated Hydrocarbons (601/8010)
Aromatic Hydrocarbons (602/8020)
SDWA Volatiles (502.1/503.1), 502.2 Reg. & Unreg.
Pesticides/PCB (608/8080)
Herbicides (615/8150)
Base/Neutral/Acid Compounds GC/MS (625/8270)
Volatile Organics GC/MS (624/8240)
Polynuclear Aromatics (610/8310)
SDWA Primary Standards - Arizona
SDWA Secondary Standards - Arizona
SDWA Primary Standards - Federal
SDWA Secondary Standards - Federal
The 13 Priority Pollutant Metals
RCRA Metals by Total Digestion
RCRA Metals by TCLP (1311)

NUMBER OF CONTAINERS

2

PROJECT INFORMATION

SAMPLE RECEIPT

PROJ. NO.: NO. CONTAINERS: 3

PROJ. NAME: KNIGHT #1 714-1 CUSTODY SEALS: Y (N) NA

P.O. NO.: RECEIVED INTACT: Y

SHIPPED VIA: AIR FREIGHT EXPRESS RECEIVED COLD: X 24

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

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

Comments:

CHARGE TO: 6138-6113-6115-9000-515

SAMPLED & RELINQUISHED BY: 1.

RELINQUISHED BY: 2.

RELINQUISHED BY: 3.

Signature: Dennis Bink Time: 1600

Signature: Time:

Signature: Time:

Printed Name: Date: 4-9-96

Printed Name: Date:

Printed Name: Date:

Company: EL PASO FIELD SERVICES

Company:

Company:

RECEIVED BY: 1.

RECEIVED BY: 2.

RECEIVED BY: (LAB) 3.

Signature: Time:

Signature: Time:

Signature: Time:

Printed Name: Date:

Printed Name: Date:

Printed Name: Date:

Company:

Company:

Company:

Signature: Time:

Signature: Time:

Signature: Time:

Printed Name: Date:

Printed Name: Date:

Printed Name: Date:

Company:

Company:

Company:

Analytical Technologies, Inc.

ORIGINATOR

PLEASE FILL THIS FORM IN COMPLETELY. SHADED AREAS ARE FOR LAB USE ONLY.

ATLAB I.D. 6003552

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DISTRIBUTION: White, Canary, A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z, AA, AB, AC, AD, AE, AF, AG, AH, AI, AJ, AK, AL, AM, AN, AO, AP, AQ, AR, AS, AT, AU, AV, AW, AX, AY, AZ, BA, BB, BC, BD, BE, BF, BG, BH, BI, BJ, BK, BL, BM, BN, BO, BP, BQ, BR, BS, BT, BU, BV, BW, BX, BY, BZ, CA, CB, CC, CD, CE, CF, CG, CH, CI, CJ, CK, CL, CM, CN, CO, CP, CQ, CR, CS, CT, CU, CV, CW, CX, CY, CZ, DA, DB, DC, DD, DE, DF, DG, DH, DI, DJ, DK, DL, DM, DN, DO, DP, DQ, DR, DS, DT, DU, DV, DW, DX, DY, DZ, EA, EB, EC, ED, EE, EF, EG, EH, EI, EJ, EK, EL, EM, EN, EO, EP, EQ, ER, ES, ET, EU, EV, EW, EX, EY, EZ, FA, FB, FC, FD, FE, FF, FG, FH, FI, FJ, FK, FL, FM, FN, FO, FP, FQ, FR, FS, FT, FU, FV, FW, FX, FY, FZ, GA, GB, GC, GD, GE, GF, GG, GH, GI, GJ, GK, GL, GM, GN, GO, GP, GQ, GR, GS, GT, GU, GV, GW, GX, GY, GZ, HA, HB, HC, HD, HE, HF, HG, HH, HI, HJ, HK, HL, HM, HN, HO, HP, HQ, HR, HS, HT, HU, HV, HW, HX, HY, HZ, IA, IB, IC, ID, IE, IF, IG, IH, II, IJ, IK, IL, IM, IN, IO, IP, IQ, IR, IS, IT, IU, IV, IW, IX, IY, IZ, JA, JB, JC, JD, JE, JF, JG, JH, JI, JJ, JK, JL, JM, JN, JO, JP, JQ, JR, JS, JT, JU, JV, JW, JX, JY, JZ, KA, KB, KC, KD, KE, KF, KG, KH, KI, KJ, KK, KL, KM, KN, KO, KP, KQ, KR, KS, KT, KU, KV, KW, KX, KY, KZ, LA, LB, LC, LD, LE, LF, LG, LH, LI, LJ, LK, LL, LM, LN, LO, LP, LQ, LR, LS, LT, LU, LV, LW, LX, LY, LZ, MA, MB, MC, MD, ME, MF, MG, MH, MI, MJ, MK, ML, MM, MN, MO, MP, MQ, MR, MS, MT, MU, MV, MW, MX, MY, MZ, NA, NB, NC, ND, NE, NF, NG, NH, NI, NJ, NK, NL, NM, NN, NO, NP, NQ, NR, NS, NT, NU, NV, NW, NX, NY, NZ, OA, OB, OC, OD, OE, OF, OG, OH, OI, OJ, OK, OL, OM, ON, OO, OP, OQ, OR, OS, OT, OU, OV, OW, OX, OY, OZ, PA, PB, PC, PD, PE, PF, PG, PH, PI, PJ, PK, PL, PM, PN, PO, PP, PQ, PR, PS, PT, PU, PV, PW, PX, PY, PZ, QA, QB, QC, QD, QE, QF, QG, QH, QI, QJ, QK, QL, QM, QN, QO, QP, QQ, QR, QS, QT, QU, QV, QW, QX, QY, QZ, RA, RB, RC, RD, RE, RF, RG, RH, RI, RJ, RK, RL, RM, RN, RO, RP, RQ, RR, RS, RT, RU, RV, RW, RX, RY, RZ, SA, SB, SC, SD, SE, SF, SG, SH, SI, SJ, SK, SL, SM, SN, SO, SP, SQ, SR, SS, ST, SU, SV, SW, SX, SY, SZ, TA, TB, TC, TD, TE, TF, TG, TH, TI, TJ, TK, TL, TM, TN, TO, TP, TQ, TR, TS, TT, TU, TV, TW, TX, TY, TZ, UA, UB, UC, UD, UE, UF, UG, UH, UI, UJ, UK, UL, UM, UN, UO, UP, UQ, UR, US, UT, UU, UV, UW, UX, UY, UZ, VA, VB, VC, VD, VE, VF, VG, VH, VI, VJ, VK, VL, VM, VN, VO, VP, VQ, VR, VS, VT, VU, VV, VW, VX, VY, VZ, WA, WB, WC, WD, WE, WF, WG, WH, WI, WJ, WK, WL, WM, WN, WO, WP, WQ, WR, WS, WT, WU, WV, WW, WX, WY, WZ, XA, XB, XC, XD, XE, XF, XG, XH, XI, XJ, XK, XL, XM, XN, XO, XP, XQ, XR, XS, XT, XU, XV, XW, XX, XY, XZ, YA, YB, YC, YD, YE, YF, YG, YH, YI, YJ, YK, YL, YM, YN, YO, YP, YQ, YR, YS, YT, YU, YV, YW, YX, YY, YZ, ZA, ZB, ZC, ZD, ZE, ZF, ZG, ZH, ZI, ZJ, ZK, ZL, ZM, ZN, ZO, ZP, ZQ, ZR, ZS, ZT, ZU, ZV, ZW, ZX, ZY, ZZ

Sample 4 - 2nd Qtr



A 2499

CHAIN OF CUSTODY RECORD

Project No.		Project Name		Requested Analysis		Remarks	
Samplers: (Signature)		Date: 7-17-96		Preservation Technique			
Date	Time	Comp.	GRAB	Sample Number	Type and No. of Sample Containers		
7-17-96	1218		X	960625	G-2	X	KNIGHT #1 MW-1 MC 72.55%
7-17-96	1238		X	960626	G-2	X	KNIGHT #1 MW-2 MC 72.55%
7-17-96	1435		X	960627	G-2	X	KNIGHT #1 MW-3 MC 72.55%
7-17-96	1543		X	960628	G-2	X	KNIGHT #1 MW-4 MC 72.55%
7-17-96	—		X	—	G-1	X	TRIP BLANK
Relinquished by: (Signature)		Date/Time		Received by: (Signature)		Date/Time	
Dennis Bird		7-17-96 1648					
Relinquished by: (Signature)		Date/Time		Relinquished by: (Signature)		Date/Time	
Relinquished by: (Signature)		Date/Time		Relinquished by: (Signature)		Date/Time	
Carrier Co:				Date Results Reported / by: (Signature)			
Air Bill No.:				Remarks:			
				7/22/96 0800			
				Received for Laboratory by: (Signature)			
				Carrier Phone No.			

EPFS

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY ANALYTICAL REPORT

SAMPLE IDENTIFICATION

SAMPLE NUMBER:	960626
SITE NAME:	Aztec Pipeline
SAMPLE SITE:	Knight #1 MW-2
METER CODE:	72556
SAMPLE DATE:	07/17/96
SAMPLE TIME (Hrs):	1238
SAMPLED BY:	D. Bird
DATE OF BTEX ANALYSIS:	07/24/96
SAMPLE TYPE:	Water

REMARKS:

EPA Method 8020 (BTEX) RESULTS

PARAMETER	RESULT PPB	QUALIFIER	WQCC LIMIT PPB
BENZENE	9.55		10
TOLUENE	<1.0		740
ETHYL BENZENE	2.39		750
TOTAL XYLENES	3.65		620
SURROGATE % RECOVERY	83.7	Allowed Range 80 to 120 %	

NOTES:

Reported By:

Mh

Approved By:

John L. Lusk

Date:

8/14/96

EPFS

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY ANALYTICAL REPORT

SAMPLE IDENTIFICATION

SAMPLE NUMBER:	960627
SITE NAME:	Aztec Pipeline
SAMPLE SITE:	Knight #1 MW-3
METER CODE:	72556
SAMPLE DATE:	07/17/96
SAMPLE TIME (Hrs):	1435
SAMPLED BY:	D. Bird
DATE OF BTEX ANALYSIS:	07/24/96
SAMPLE TYPE:	Water

REMARKS:

EPA Method 8020 (BTEX) RESULTS

PARAMETER	RESULT PPB	QUALIFIER	WQCC LIMIT PPB
BENZENE	299	D (X2)	10
TOLUENE	<1.0	D (X2)	740
ETHYL BENZENE	76.7	D (X2)	750
TOTAL XYLENES	251	D (X2)	620
SURROGATE % RECOVERY	90.8	Allowed Range 80 to 120 %	

NOTES:
"D" Qualifier indicates that the reported result for this analyte is calculated based on the secondary dilution factor shown.

Reported By: mh

Approved By: John Loder

Date: 8/4/96

EPFS

EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY ANALYTICAL REPORT

SAMPLE IDENTIFICATION

SAMPLE NUMBER:	960628
SITE NAME:	Aztec Pipeline
SAMPLE SITE:	knight #1 MW-4
METER CODE:	72556
SAMPLE DATE:	07/17/96
SAMPLE TIME (Hrs):	1543
SAMPLED BY:	D. Bird
DATE OF BTEX ANALYSIS:	07/23/96
SAMPLE TYPE:	Water

REMARKS:

EPA Method 8020 (BTEX) RESULTS

PARAMETER	RESULT PPB	QUALIFIER	WQCC LIMIT PPB
BENZENE	35.0		10
TOLUENE	<1.0		740
ETHYL BENZENE	<1.0		750
TOTAL XYLENES	17.8		620
SURROGATE % RECOVERY	92.0	Allowed Range 80 to 120 %	

Reported By: mh

Approved By: John Locke

Date: 8/14/96



Date 8/14/96

Date: _____



Well Number 941-3
Meter Code 72558

Development Criteria

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

Methods of Development

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

Water Volume Calculation

Initial Depth of Well (feet) 37.20
Initial Depth to Water (feet) 25.15
Height of Water Column in Well (feet) 12.05

Diameter (Inches): Well 4" Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing			2442
Gravel Pack			
Drilling Fluids			
Total			

Instruments

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

Water Disposal

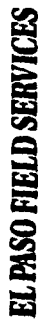
KNIGHT #1 SEPARATE TRUCK

Water Removal Data

[illegible]

Comments STRONG HYDROCARBON SMOELL.

Developer's Signature Dennis Bird Date 7-17-96 Reviewer JF Date 8/4/96



Well Development and Purging Data

Well Number MW-4
Meter Code 7255B

☐ Development ☒ Purging

Site Name KNIGHT #1

Development Criteria

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

Methods of Development

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

☐ Other

Water Volume Calculation

Initial Depth of Well (feet) 36.80
Initial Depth to Water (feet) 25.77
Height of Water Column in Well (feet) 11.03

Diameter (inches): Well 4" Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing			22.2
Gravel Pack			
Drilling Fluids			
Total			

Instruments

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

Water Disposal

KNIGHT #1 SEPARATOR TANK

Water Removal Data

[illegible]

Comments

Developer's Signature _____

Dennis Bird

Date 1-11-76 Reviewer

Date _____

8/14/66



Natural Gas Company

CHAIN OF CUSTODY RECORD

[illegible]



EL PASO FIELD SERVICES
FIELD SERVICES LABORATORY

ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	960855
MTR CODE SITE NAME:	72556	Knight #1 MW-1
SAMPLE DATE TIME (Hrs):	10/15/96	1105
PROJECT:	Sample 4 - 3rd Quarter	
DATE OF BTEX EXT. ANAL.:	10/16/96	10/16/96
TYPE DESCRIPTION:	Monitor Grab Well	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	D		
BENZENE	9870	PPB	50	D		
TOLUENE	840	PPB	50	D		
ETHYL BENZENE	1120	PPB	50	D		
TOTAL XYLENES	10900	PPB	100	D		
TOTAL BTEX	22730	PPB				

—BTEX is by EPA Method 8020 —

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

The Surrogate Recovery was at 95.8 % for this sample All QA/QC was acceptable.
Narrative: _____

= Dilution Factor Used

Approved By: John Smith

Date: 10-21-96



EL PASO FIELD SERVICES
FIELD SERVICES LABORATORY

ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	960856
MTR CODE SITE NAME:	72556	Knight #1 MW-2
SAMPLE DATE TIME (Hrs):	10/15/96	1210
PROJECT:	Sample 4 - 3rd Quarter	
DATE OF BTEX EXT. ANAL.:	10/16/96	10/16/96
TYPE DESCRIPTION:	Monitor - Grab Well	Water

Field Remarks:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	49.7	PPB				
TOLUENE	<1	PPB				
ETHYL BENZENE	<1	PPB				
TOTAL XYLENES	38.4	PPB				
TOTAL BTEX	88.1	PPB				

-BTEX is by EPA Method 8020 -

The Surrogate Recovery was at 95.6 % for this sample All QA/QC was acceptable.
Narrative:

DF = Dilution Factor Used

Approved By: John Larcher

Date: 10-21-96



EL PASO FIELD SERVICES
FIELD SERVICES LABORATORY

ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	960857
MTR CODE SITE NAME:	72556	Knight #1 MW-3
SAMPLE DATE TIME (Hrs):	10/15/96	1403
PROJECT:	Sample 4 - 3rd Quarter	
DATE OF BTEX EXT. ANAL.:	10/16/96	10/16/96
TYPE DESCRIPTION:	Monitor Grab Well	Water

Field Remarks:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	115	PPB				
TOLUENE	<1	PPB				
ETHYL BENZENE	9.92	PPB				
TOTAL XYLENES	89.8	PPB				
TOTAL BTEX	215	PPB				

—BTEX is by EPA Method 8020 —

The Surrogate Recovery was at 94.7 % for this sample All QA/QC was acceptable.
Narrative:

DF = Dilution Factor Used

Approved By: John Larch

Date: 10-21-96



EL PASO FIELD SERVICES
FIELD SERVICES LABORATORY

ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	960858
MTR CODE SITE NAME:	72556	Knight #1 MW-4
SAMPLE DATE TIME (Hrs):	10/15/96	1511
PROJECT:	Sample 4 - 3rd Quarter	
DATE OF BTEX EXT. ANAL:	10/16/96	10/16/96
TYPE DESCRIPTION:	Monitor Grab Well	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	53.5	PPB				
TOLUENE	<1	PPB				
ETHYL BENZENE	<1	PPB				
TOTAL XYLENES	28.4	PPB				
TOTAL BTEX	81.9	PPB				

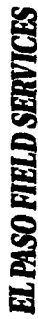
--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 93.8 % for this sample All QA/QC was acceptable.
Narrative: _____

DF = Dilution Factor Used

Approved By: John Linder

Date: 10-21-96



Well Number 174-1
Meter Code 22556

Site Name KNIGHT #1

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) 33.94
Initial Depth to Water (feet) 27.35
Height of Water Column in Well (feet) 6.59

Diameter (Inches): Well 4 Gravel Pack.

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		4.4	13.1
Gravel Pack			
Drilling Fluids			
Total			

Instruments

- ☒ pH Meter
☐ DO Monitor
☒ Conductivity Meter
☒ Temperature Meter
☒ Other 0.0.0

Water Disposal #
KNIGHT SEPARATOR TANK

Water Removal Data

[illegible]

Comments 0.73' OF FREE FLOATING HYDROCARBON. STRONG HYDROCARBON SMELL

Developer's Signature Lennie Bird

10-15-96
Date
10-21-96
Date
Reviewer
Feldman



Well Number 11W-2
Meter Code 77556

☐	Development
☒	Purging

Site Name **KNIGHT** #1

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

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

Initial Depth of Well (feet) 36.93
Initial Depth to Water (feet) 26.36
Height of Water Column in Well (feet) 10.57

Diameter (inches): Well 4 Gravel Pack

Item	Water Volume In Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		7.0	21.0
Gravel Pack			
Drilling Fluids			
Total			

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

Water Disposal

KNIGHT #1 SEPARATOR TANK

[illegible]

Developer's Signature Dennis Bird

Date 10-15-96 Reviewer John Ford Date 10-21-96



Well Number MW-3

Meter Code 72556

☒ Purgling

Site Name KNIGHT #1

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

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

Initial Depth of Well (feet) 37.20
Initial Depth to Water (feet) 26.64
Height of Water Column in Well (feet) 10.56

Diameter (Inches): Well 4 Gravel Pack _____

Item	Water Volume In Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		7.0	20.9
Gravel Pack			
Drilling Fluids			
Total			

- ☒ pH Meter
☐ DO Monitor
☒ Conductivity Meter
☒ Temperature Meter
☒ Other 000

Water Disposal #1 SEPARATOR TANK

[illegible]

Developer's Signature Lennia Bird

Date 10-15-96 Reviewer _____

John Lynch

Date 10-21-96



Well Number MW-4
Meter Code 72556

Site Name **KNIGHT #1**

Development Criteria

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

Methods of Development

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

☐ other

Water Volume Calculation

Initial Depth of Well (feet) 36.80
Initial Depth to Water (feet) 27.26
Height of Water Column in Well (feet) 9.54
Diameter (Inches): Well 4 Gravel Pack

Diameter (Inches): Well <u>4</u> Gravel Pack			
Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		<u>6.3</u>	<u>18.9</u>
Gravel Pack			
Drilling Fluids			
Total			

Instruments

- ☒ pH Meter
☐ DO Monitor
☒ Conductivity Meter
☒ Temperature Meter
☒ Other D.O.C.

Water Disposal

KNIGHT #1 SEPARATOR TANK

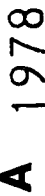
Water Removal Data

[illegible]

Comments

Developer's Signature Jennie Bird

Date 10-15-96 Reviewer *John Farkas* Date 10-21-96



CHAIN OF CUSTODY RECORD

Project No.		Project Name		Requested Analysis		Remarks	
Samplers: (Signature)		Date	Time	Type and No. of Sample Containers	Preservation Technique		
<i>AETEC PIPELINE</i>		<i>DATE: 1-13-97</i>					
<i>Dennis Bird</i>							
<i>MATRIX</i>	<i>1-13-97</i>	<i>1518</i>	<i>X</i>	<i>G-2</i>	<i>4°C</i>	<i>X</i>	<i>KNIGHT #1 MW-1 MC 72556</i>
<i>WATER</i>	<i>1-13-97</i>	<i>1138</i>	<i>X</i>	<i>G-2</i>	<i>4°C</i>	<i>X</i>	<i>KNIGHT #1 MW-2 MC 72556</i>
<i>WATER</i>	<i>1-13-97</i>	<i>1328</i>	<i>X</i>	<i>G-2</i>	<i>4°C</i>	<i>X</i>	<i>KNIGHT #1 MW-3 MC 72556</i>
<i>WATER</i>	<i>1-13-97</i>	<i>1505</i>	<i>X</i>	<i>G-2</i>	<i>4°C</i>	<i>X</i>	<i>KNIGHT #1 MW-4 MC 72556</i>
<i>WATER</i>	<i>1-13-97</i>	<i>---</i>	<i>X</i>	<i>G-1</i>	<i>4°C</i>	<i>X</i>	<i>TRIP BLANK</i>
A diagonal line crosses the remaining rows of the table.							
Relinquished by: (Signature)		Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	
<i>Dennis Bird</i>		<i>1-13-97 1645</i>					
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: REMOVED THE OXYGEN RECESS CONTAINERS TO BE USED FOR SAMPLING MW-1.		
			<i>[Signature]</i>	<i>1/14/97 1530</i>			
Carrier Co:		Carrier Phone No.		Date Results Reported / by: (Signature)			



FIELD SERVICES LABORATORY

ANALYTICAL REPORT

PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

SAMPLE NUMBER:	Field ID N/A	Lab ID 970002
MTR CODE SITE NAME:	72556	Knight #1 MW-1
SAMPLE DATE TIME (Hrs):	1/13/97	1518
PROJECT:	Sample 4 - 4th Quarter	
DATE OF BTEX EXT. ANAL.:	1/16/97	1/16/97
TYPE DESCRIPTION:	Monitor Well	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	7760	PPB	50	D		
TOLUENE	332	PPB	50	D		
ETHYL BENZENE	914	PPB	50	D		
TOTAL XYLENES	10900	PPB	50	D		
TOTAL BTEX	19900	PPB				

—BTEX is by EPA Method 8020—

The Surrogate Recovery was at 100 % 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: _____

Date: 1/23/97



EL PASO FIELD SERVICES



FIELD SERVICES LABORATORY

ANALYTICAL REPORT

PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	970003
MTR CODE SITE NAME:	72556	Knight #1 MW-2
SAMPLE DATE TIME (Hrs):	1/13/97	1138
PROJECT:	Sample 4 - 4th Quarter	
DATE OF BTEX EXT. ANAL.:	1/16/97	1/16/97
TYPE DESCRIPTION:	Monitor Well	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	20.3	PPB				
TOLUENE	< 1	PPB				
ETHYL BENZENE	< 1	PPB				
TOTAL XYLENES	37.3	PPB				
TOTAL BTEX	57.6	PPB				

—BTEX is by EPA Method 8020 —

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

Narrative: _____

Approved By: _____

John Lorch

Date: _____

1/23/97



EL PASO FIELD SERVICES



FIELD SERVICES LABORATORY ANALYTICAL REPORT PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	970004
MTR CODE SITE NAME:	72556	Knight #1 MW-3
SAMPLE DATE TIME (Hrs):	1/13/97	1328
PROJECT:	Sample 4 - 4th Quarter	
DATE OF BTEX EXT. ANAL.:	1/16/97	1/16/97
TYPE DESCRIPTION:	Monitor Well	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	395	PPB	5	D		
TOLUENE	<1	PPB	5	D		
ETHYL BENZENE	126	PPB	5	D		
TOTAL XYLENES	955	PPB	5	D		
TOTAL BTEX	1480	PPB				

—BTEX is by EPA Method 8020 —

The Surrogate Recovery was at 99.8 % 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 Sarch

Date: _____

1/23/97



FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	970005
MTR CODE SITE NAME:	72556	Knight #1 MW-4
SAMPLE DATE TIME (Hrs):	1/13/97	1505
PROJECT:	Sample 4 - 4th Quarter	
DATE OF BTEX EXT. ANAL:	1/16/97	1/16/97
TYPE DESCRIPTION:	Monitor Well	Water

Field Remarks:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	56.2	PPB				
TOLUENE	<1	PPB				
ETHYL BENZENE	<1	PPB				
TOTAL XYLENES	48.4	PPB				
TOTAL BTEX	105	PPB				

—BTEX is by EPA Method 8020 —

The Surrogate Recovery was at 100 % for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative:

Approved By:

Jon Tarkenton

Date:

1/23/97

EPA ID # 77000K

Project # 1 MW-3

Inc # 72556

J.F.
1/20/97

American Environmental Network, Inc.

AEN I.D. 701332



January 29, 1997

El Paso Field Service
P.O. Box 4990
Farmington, NM 87499

Project Name/Number: KNIGHT #1 MW-3 (NONE)

Attention: John Lambdin

On 01/15/97, American Environmental Network (NM), Inc., (ADHS License No. AZ0015) received a request to analyze aqueous sample(s). The sample(s) 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.

All analyses were performed by American Environmental Network (FL) Inc., 11 East Olive Road, Pensacola, FL.

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:ft

Enclosure

American Environmental Network, Inc.

CLIENT : EL PASO FIELD SERVICE DATE RECEIVED : 01/15/97
PROJECT # : (NONE)
PROJECT NAME : KNIGHT #1 MW-3 REPORT DATE : 01/29/97

AEN ID: 701332

	AEN ID #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	701332-01	970004	AQUEOUS	01/13/97

---TOTALS---

<u>MATRIX</u>	<u>#SAMPLE(S)</u>
AQUEOUS	1

AEN STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of this report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

American Environmental Network, Inc.

Knijet #1 MW-3

MC 72556

"FINAL REPORT FORMAT - SINGLE"

Accession: 701317
Client: AMERICAN ENVIRONMENTAL NETWORK (NEW MEXICO) INC.
Project Number: 701322
Project Name: EL PASO FIELD SERVICES
Project Location: N/S
Test: POLYNUCLEAR AROMATICS BY 8310
Analysis Method: 8310/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: 3510/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Matrix: WATER
QC Level: II

Lab Id: 001
Client Sample Id: 701322-01
Sample Date/Time: 13-JAN-97 1308
Received Date: 16-JAN-97
Batch: PAW010
Blank: C
Dry Weight %: N/A
Extraction Date: 16-JAN-97
Analysis Date: 23-JAN-97

Parameter:	Units:	Results:	Rpt Lmts:	Q:
ACENAPHTHENE	UG/L	5	1	
ACENAPHTHYLENE	UG/L	ND	1	
ANTHRACENE	UG/L	3.5	1	
BENZO(a)ANTHRACENE	UG/L	1	1	
BENZO(a)PYRENE	UG/L	0.38	0.3	
BENZO(b)FLUORANTHENE	UG/L	ND	1	
BENZO(g,h,i)PERYLENE	UG/L	ND	1	
BENZO(k)FLUORANTHENE	UG/L	ND	1	
CHRYSENE	UG/L	ND	1	
DIBENZO(a,h)ANTHRACENE	UG/L	ND	1	
FLUORANTHENE	UG/L	8.7	1	
FLUORENE	UG/L	11	1	
INDENO(1,2,3-cd)PYRENE	UG/L	ND	1	
NAPHTHALENE	UG/L	68	1	
PHENANTHRENE	UG/L	9.5	1	
PYRENE	UG/L	ND	1	
1-METHYLNAPHTHALENE	UG/L	250	1	E
2-METHYLNAPHTHALENE	UG/L	90	1	E
2-CHLOROANTHRACENE	%REC/SURR	103	28-138	
ANALYST	INITIALS	JBT		

Comments:

E = EXCEEDS CALIBRATION CURVE; THEREFORE, RESULT IS ESTIMATED.
SAMPLE WAS NOT DILUTED AND RE-ANALYZED BECAUSE COMPOUND IS NOT
PART OF METHOD LIST.

Total Naphthalene + Mon methyl naphthalene's = 408 ppb WQC Limit = 30 ppb
Benzo (a) Pyrene = 0.38 ppb WQC Limit = 0.7 ppb

American Environmental Network, Inc.

"Method Report Summary"

Accession Number: 701317
Client: AMERICAN ENVIRONMENTAL NETWORK (NEW MEXICO) INC.
Project Number: 701322
Project Name: EL PASO FIELD SERVICES
Project Location: N/S
Test: POLYNUCLEAR AROMATICS BY 8310

Client Sample Id:	Parameter:	Unit:	Result:
701322-01	ACENAPHTHENE	UG/L	5
	ANTHRACENE	UG/L	3.5
	BENZO (a) ANTHRACENE	UG/L	1
	BENZO (a) PYRENE	UG/L	0.38
	FLUORANTHENE	UG/L	8.7
	FLUORENE	UG/L	11
	NAPHTHALENE	UG/L	68
	PHENANTHRENE	UG/L	9.5
	1-METHYLNAPHTHALENE	UG/L	250
	2-METHYLNAPHTHALENE	UG/L	90

American Environmental Network, Inc.

"QC Report"

Title: Water Blank
Batch: PAW010
Analysis Method: 8310/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: 3510/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.

Blank Id: C Date Analyzed: 23-JAN-97 Date Extracted: 16-JAN-97

Parameters:	Units:	Results:	Reporting Limits:
ACENAPHTHENE	UG/L	ND	1
ACENAPHTHYLENE	UG/L	ND	1
ANTHRACENE	UG/L	ND	1
BENZO (a) ANTHRACENE	UG/L	ND	1
BENZO (a) PYRENE	UG/L	ND	1
BENZO (b) FLUORANTHENE	UG/L	ND	1
BENZO (g, h, i) PERYLENE	UG/L	ND	1
BENZO (k) FLUORANTHENE	UG/L	ND	1
CHRYSENE	UG/L	ND	1
DIBENZO (a, h) ANTHRACENE	UG/L	ND	1
FLUORANTHENE	UG/L	ND	1
FLUORENE	UG/L	ND	1
INDENO (1, 2, 3-cd) PYRENE	UG/L	ND	1
NAPHTHALENE	UG/L	ND	1
PHENANTHRENE	UG/L	ND	1
PYRENE	UG/L	ND	1
1-METHYLNAPHTHALENE	UG/L	ND	1
2-METHYLNAPHTHALENE	UG/L	ND	1
2-CHLOROANTHRACENE	%REC/SURR	91	28-138
ANALYST	INITIALS	JBT	

Comments:

O.K.
2-3-97

American Environmental Network, Inc.

"QC Report"

Title: Water Reagent
Batch: PAW010
Analysis Method: 8310/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: 3510/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.

RS Date Analyzed: 20-JAN-97
RSD Date Analyzed: 20-JAN-97

RS Date Extracted: 14-JAN-97
RSD Date Extracted: 14-JAN-97

Parameters:	Spike Added	Sample Conc	RS Conc	RS %Rec	RSD Conc	RSD %Rec	RPD	Rec Lmts	Rec Lmts
ACENAPHTHYLENE	10.0	<1	8.3	83	7.7	77	8	46	46-110
BENZO(k) FLUORANTHENE	10.0	<1	10.9	109	10.6	106	3	30	58-128
CHRYSENE	10.0	<1	10.9	109	10.6	106	3	29	62-129
PHENANTHRENE	10.0	<1	10.8	108	10.6	106	2	28	61-116
PYRENE	10.0	<1	10.0	100	9.8	98	2	26	62-120
Surrogates:									
2-CHLOROANTHRACENE				119		112			28-138

Comments:

Notes:

N/S = NOT SUBMITTED N/A = NOT APPLICABLE D = DILUTED OUT
UG/L = PARTS PER BILLION. < = LESS THAN REPORTING LIMIT.
* = VALUES OUTSIDE OF QUALITY CONTROL LIMITS.
SOURCES FOR CONTROL LIMITS ARE INTERNAL LABORATORY QUALITY ASSURANCE
PROGRAM AND REFERENCED METHOD.

G.K.
2-2-97

American Environmental Network, Inc.

"QC Report"

Title: Water Matrix
Batch: PAW010
Analysis Method: 8310/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: 3510/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.

Dry Weight %: N/A MS Date Analyzed: 23-JAN-97 MS Date Extracted: 16-JAN-97
Sample Spiked: 701317-1 MSD Date Analyzed: 23-JAN-97 MSD Date Extracted: 16-JAN-97

Parameters:	Spike Added	Sample Conc	MS Conc	MS %Rec	MSD Conc	MSD %Rec	RPD	Rec Lmts
ACENAPHTHYLENE	10.0	<1	7.5	75	7.5	75	0 51	18-146
BENZO(k) FLUORANTHENE	10.0	<1	8.7	87	7.1	71	20 40	26-137
CHRYSENE	10.0	<1	9.7	97	7.9	79	20 69	16-156
PHENANTHRENE	10.0	9.5	9.8	3*	8.7	-8*	440*36	30-145
PYRENE	10.0	<1	8.5	85	7.5	75	13 41	39-137

Surrogates:
2-CHLOROANTHRACENE 100 83 28-138

Comments:
MATRIX SPIKE/MATRIX SPIKE DUPLICATE HAD RECOVERY(S) AND/OR
RPD(S) OUTSIDE ACCEPTANCE LIMITS DUE TO MATRIX INTERFERENCE.
REFER TO REAGENT SPIKE/REAGENT SPIKE DUPLICATE DATA.

Notes:
N/S = NOT SUBMITTED N/A = NOT APPLICABLE D = DILUTED OUT
UG/L = PARTS PER BILLION. < = LESS THAN REPORTING LIMIT.
* = VALUES OUTSIDE OF QUALITY CONTROL LIMITS.
SOURCES FOR CONTROL LIMITS ARE INTERNAL LABORATORY QUALITY ASSURANCE
PROGRAM AND REFERENCED METHOD.

O.K.
2-3-97

American Environmental Network, Inc.

Common notation for Organic reporting

N/S = NOT SUBMITTED
N/A = NOT APPLICABLE
D = DILUTED OUT
UG = MICROGRAMS
UG/L = PARTS PER BILLION.
UG/KG = PARTS PER BILLION.
MG/M3 = MILLIGRAM PER CUBIC METER.
PPMV = PART PER MILLION BY VOLUME.
MG/KG = PARTS PER MILLION.
MG/L = PARTS PER MILLION.
< = LESS THAN DETECTION LIMIT.
* = VALUES OUTSIDE OF QUALITY CONTROL LIMITS

SOURCES FOR CONTROL LIMITS ARE INTERNAL LABORATORY QUALITY ASSURANCE PROGRAM AND REFERENCED METHOD.

ORGANIC SOILS ARE REPORTED ON A DRYWEIGHT BASIS.

ND = NOT DETECTED ABOVE REPORTING LIMIT.

RPT LIMIT = REPORTING LIMITS BASED ON METHOD DETECTION LIMIT STUDIES.

RPD = RELATIVE PERCENT DIFFERENCE (OR DEVIATION)

AEN/GC/FID

AEN GAS CHROMATOGRAPHIC METHOD EMPLOYING DIRECT INJECTION ON COLUMN WITH FLAME IONIZATION DETECTOR (FID).

AEN/GC/FIX

AEN GAS CHROMATOGRAPHIC METHOD FOR ANALYSIS OF FIXED GASES EMPLOYING DIRECT INJECTION ON COLUMN WITH THERMAL CONDUCTIVITY DETECTOR (TCD) AND FLAME IONIZATION DETECTOR (FID).

AEN/GC/FPD

AEN GAS CHROMATOGRAPHIC METHOD EMPLOYING DIRECT INJECTION ON COLUMN WITH FLAME PHOTOMETRIC DETECTOR (FPD) IN SULFUR-SPECIFIC MODE.

AEN/GC/PID

AEN GAS CHROMATOGRAPHIC METHOD EMPLOYING DIRECT INJECTION ON COLUMN WITH PHOTOIONIZATION DETECTOR (PID).

AEN/GC/TCD

AEN GAS CHROMATOGRAPHIC METHOD EMPLOYING DIRECT INJECTION ON COLUMN WITH THERMAL CONDUCTIVITY DETECTOR (TCD).

SW = STEVE WILHITE
PL = PAUL LESCHENSKY
RW = ROBERT WOLFE
KS = KENDALL SMITH
KK = KERRY LEMONT
RP = ROB PEREZ
JBT = JENNIFER TORRANCE
LP = LAVERNE PETERSON
PLD = PAULA DOUGHTY

CHAIN OF CUSTODY

DATE: 1-13-97 PAGE: 1 OF 1

AEN LAB I.D.

7013332 / 7013317

SHADED AREAS ARE FOR LAB USE ONLY.

PLEASE FILL THIS FORM IN COMPLETELY.

PROJECT MANAGER: <u>WILLIAM LAMBERTSON</u>		COMPANY: <u>ECO PACIFIC SERVICES</u>	
ADDRESS: <u>100 East 47th St</u>		ADDRESS: <u>100 East 47th St</u>	
PHONE: <u>(505) 597-8144</u>		PHONE: <u>(505) 597-8144</u>	
FAX: <u>(505) 597-8281</u>		FAX: <u>(505) 597-8281</u>	
BILL TO: <u>CHAMBERLAIN</u>		BILL TO: <u>CHAMBERLAIN</u>	
COMPANY: <u>CHAMBERLAIN</u>		COMPANY: <u>CHAMBERLAIN</u>	
ADDRESS: <u>CHAMBERLAIN</u>		ADDRESS: <u>CHAMBERLAIN</u>	
SAMPLE ID	DATE	TIME	MATRIX LAB I.D.
<u>7013332</u>	<u>1-13-97</u>	<u>1:55</u>	<u>MOD 8015</u>
Petroroleum Hydrocarbons (418.1) TRPH			
(MOD.8015) Diesel/Direct/Inject			
(M8015) Gas/Purge & Trap			
Gasoline/BTEX & MTBE (M8015/8020)			
BTXE/MTBE (8020)			
BTEX & Chlorinated Aromatics (602/8020)			
BTEX/MTBE/EDC & EDB (8020/8010/Short)			
Chlorinated Hydrocarbons (601/8010)			
504 EDB ☐ / DBCP ☐			
☒ Polynuclear Aromatics (610/8310)			
Volatile Organics (624/8240) GC/MS			
Volatile Organics (8260) GC/MS			
Pesticides/PCB (608/8080)			
Herbicides (615/8150)			
Base/Neutral/Acid Compounds GC/MS (625/8270)			
General Chemistry:			
Priority Pollutant Metals (13)			
Target Analyte List Metals (23)			
RCRA Metals (8)			
RCRA Metals by TCLP Method (31)			
Metals			
NUMBER OF CONTAINERS			
<u>2</u>			
PROJECT INFORMATION		PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS	
PROJECT NO:	(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☒ 1 WEEK (NORMAL) ☐		
PROJECT NAME: <u>WEIGHT #1 MW-3</u>	CERTIFICATION REQUIRED: ☐ NM ☐ SDWA ☐ OTHER		
PO. NO:	METHANOL PRESERVATION ☐		
SHIPPED VIA: <u>FED-EX</u>	COMMENTS: FIXED FEE ☐		
SAMPLE RECEIPT	<u>CHAMBERLAIN</u>		
NO. CONTAINERS	<u>2</u>		
CUSTODY SEALS	<u>100%</u>		
RECEIVED INTACT	<u>YES</u>		
BLUE TAGS	<u>4/5</u>		
RELINQUISHED BY: 1.		RELINQUISHED BY: 2.	
Signature: <u>William Lambertson</u> Time: <u>1:55</u>		Signature: <u>John Caldwell</u> Time: <u>1:15</u>	
Printed Name: <u>William Lambertson</u> Date: <u>1-13-97</u>		Printed Name: <u>John Caldwell</u> Date: <u>1/15/97</u>	
Company: <u>ECO PACIFIC SERVICES</u>		Company: <u>American Environmental Network (NM), Inc</u>	
RECEIVED BY: 1.		RECEIVED BY: (LAB) 2.	
Signature: <u>William Lambertson</u> Time: <u>1:55</u>		Signature: <u>John Caldwell</u> Time: <u>1:15</u>	
Printed Name: <u>William Lambertson</u> Date: <u>1-13-97</u>		Printed Name: <u>John Caldwell</u> Date: <u>1/15/97</u>	
Company: <u>ECO PACIFIC SERVICES</u>		Company: <u>American Environmental Network (NM), Inc</u>	



Well Development and Purging Data

Well Number 24W-1

Meter Code 77556

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

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

Initial Depth of Well (feet) 33.94
Initial Depth to Water (feet) 26.53
Height of Water Column in Well (feet) 7.41

Diameter (Inches): Well 4 Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		4.9	15.7
Gravel Pack			
Drilling Fluids			
Total			

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

Water Disposal

KNIGHT #1 SEPARATES THANK

[illegible]

Comments STRONG HYDROCARBON SMELL. REMOVED THE OXYGEN RELEASE COMPOUND SOCK BEFORE SAMPLING.

Developer's Signature:

Dennis Bishop

Date 1-13-97

Reviewer

Date 1-23-97



Well Development and Purging Data

Site Name KNIGHT #1

Well Number MW-2
Meter Code 22556

☐ Development
☒ Purging

Development Criteria

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

Methods of Development

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

Water Volume Calculation

Initial Depth of Well (feet) 26.93
Initial Depth to Water (feet) 26.08
Height of Water Column in Well (feet) 10.85
Diameter (inches): Well 4 Gravel Pack _____

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		<u>7.2</u>	<u>21.6</u>
Gravel Pack			
Drilling Fluids			
Total			

Instruments

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

Water Disposal

KNIGHT #1 SEPARATOR TANK

Water Removal Data

Date	Time	Development Method		Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gal)		Product Volume Removed (gallons) Increment	Temperature °C	pH	Conductivity µmho/cm	Dissolved Oxygen mg/L	Comments
		Pump	Ball				Increment	Cumulative						
1-13-97	1035						5.0	5.0		10.4	7.42	2400		
1-13-97	1042						5.0	10.0		11.8	7.27	2540		
1-13-97	1050						5.8	15.0		11.5	7.04	2470		
1-13-97	1059						5.0	20.0		11.1	7.00	2450		
1-13-97	1117						2.0	22.0		10.2	7.06	2520		
1-13-97	1125									10.4	7.11	2660	2.5	

Comments _____

Developer's Signature Lennie Bird

Date 1-13-97 Reviewer J.F.

Date 1-23-97



Well Development and Purging Data

Well Number NW-3
Meter Code 72556

	Development	Purging
1. Identify the problem	☐	☒
2. Identify the cause	☐	☒
3. Identify the solution	☐	☒
4. Identify the resources	☐	☒
5. Identify the stakeholders	☐	☒
6. Identify the risks	☐	☒
7. Identify the benefits	☐	☒
8. Identify the constraints	☐	☒
9. Identify the opportunities	☐	☒
10. Identify the threats	☐	☒

Site Name KNIGHT #1

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) 37.20
Initial Depth to Water (feet) 26.41
Height of Water Column in Well (feet) 10.79

Diameter (Inches): Well 4 Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		7.1	21.4
Gravel Pack			
Drilling Fluids			
Total			

Instruments

- ☒ pH Meter
☐ DO Monitor
☒ Conductivity Meter
☒ Temperature Meter
☒ Other D.O. C

Water Disposal.

KWIGHT & SEPARATOR BANK

Water Removal Data

[illegible]

Comments
0.15 OF FREE FLOATING HYDROCHLORON. STRONG HYDROCHLORON SMOEL.

Developer's Signature Dennis Bird Date 1-13-97 Reviewer J. L. Date 1-23-97



Well Number NW-4
Meter Code 72556

Site Name KNGT #1

Development Criteria

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

Methods of Development

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

☐ Other

Water Volume Calculation

Initial Depth of Well (feet) 36.80
Initial Depth to Water (feet) 26.96
Height of Water Column in Well (feet) 9.84

Diameter (Inches): Well 4 Gravel Pack _____

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		6.5	19.5
Gravel Pack			
Drilling Fluids			
Total			

Instruments

- ☒ pH Meter
☐ DO Monitor
☒ Conductivity Meter
☒ Temperature Meter
☒ Other 200

Water Disposal

KNIGHT #1 SEPARATOR TRUNK

Water Removal Data

[illegible]

Comments

Developer's Signature Dennis Bird

Date 1-13-97

Reviewer

80

Date 1-23-97

CHAIN OF CUSTODY RECORD

Project No.	Project Name	Date: 4-22-97		Type and No. of Sample Containers		Preservation Technique		Requested Analysis		Remarks
Samplers: (Signature)	Date	Time	Comp.	GRAB	Sample Number	4°C	X	X	X	
<i>[Signature]</i>	4-22-97	1210		X	970332	4°C	X	X	X	KNIGHT #1 MW-1 MC 7255K
<i>[Signature]</i>	4-22-97	1236		X	970333	4°C	X	X	X	KNIGHT #1 MW-2 MC 7255K
<i>[Signature]</i>	4-22-97	1453		X	970334	4°C	X	X	X	KNIGHT #1 MW-3 MC 7255K
<i>[Signature]</i>	4-22-97	1429		X	970335	4°C	X	X	X	KNIGHT #1 MW-4 MC 7255K
<i>[Signature]</i>	4-22-97	—		X	—	4°C	X			TRIP LOG
Relinquished by: (Signature) Received by: (Signature) Date/Time Relinquished by: (Signature) Received by: (Signature) Date/Time										
Relinquished by: (Signature) Received by: (Signature) Date/Time Relinquished by: (Signature) Received by: (Signature) Date/Time										
Relinquished by: (Signature) Received for Laboratory by: (Signature) Date/Time Remarks: 4/23/97 0900										
Carrier Co:	Morton Hopper					Carrier Phone No.				
Date Results Reported / by: (Signature)										



5-15-97

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	970332
MTR CODE SITE NAME:	72556	Knight #1 MW-1
SAMPLE DATE TIME (Hrs):	4/22/97	1210
PROJECT:	Sample 4 - 5th Quarter	
DATE OF BTEX EXT. ANAL.:	4/24/97	4/24/97
TYPE DESCRIPTION:	Monitor Well	Water

Field Remarks:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	2700	PPB	100	D		
TOLUENE	< 1	PPB	100	D		
ETHYL BENZENE	492	PPB	100	D		
TOTAL XYLENES	6690	PPB	100	D		
TOTAL BTEX	9880	PPB				

The Surrogate Recovery was at 87.4 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. Ladd

Date:

4/25/97

970332 btex, 4/24/97



Field Services Laboratory
Analytical Report

5-15-97

SAMPLE IDENTIFICATION

EPFS LAB ID:	970332
DATE SAMPLED:	04/22/97
TIME SAMPLED (Hrs):	1210
SAMPLED BY:	D. Bird
MATRIX:	Water
METER CODE:	72556
SAMPLE SITE NAME:	Aztec Pipeline
SAMPLE POINT:	Knight #1 MW-1

FIELD REMARKS:

GENERAL CHEMISTRY WATER ANALYSIS RESULTS

PARAMETER	RESULT	UNITS	DATE ANALYZED
Laboratory pH	7.6	Units	04/22/97
Alkalinity as CO ₃	0	PPM	04/22/97
Alkalinity as HCO ₃	830	PPM	04/22/97
Calcium as Ca	185	PPM	04/22/97
Magnesium as Mg	102	PPM	04/22/97
Total Hardness as CaCO ₃	882	PPM	04/22/97
Chloride as Cl	77	PPM	04/22/97
Sulfate as SO ₄	608	PPM	04/22/97
Fluoride as F	0.8	PPM	04/23/97
Nitrate as NO ₃ -N	<0.6	PPM	04/22/97
Nitrite as NO ₂ -N	<0.6	PPM	04/22/97
Ammonium as NH ₄ ⁺	<0.2	PPM	04/22/97
Phosphate as PO ₄	<0.6	PPM	04/22/97
Potassium as K	25.9	PPM	04/22/97
Sodium as Na	267	PPM	04/22/97
Total Dissolved Solids	1,680	PPM	04/23/97
Calculated TDS	1,674	PPM	04/25/97
Conductivity	2,440	umhos/cm	04/22/97
Anion/Cation %	2.4%	%, < 5.0 Accepted	04/28/97

Remarks:

Reported By: mh

Approved By:

John Little

Date:

5/6/97



EL PASO FIELD SERVICES



5-15-97

FIELD SERVICES LABORATORY ANALYTICAL REPORT PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	970333
MTR CODE SITE NAME:	72556	Knight #1 MW-2
SAMPLE DATE TIME (Hrs):	4/22/97	1236
PROJECT:	Sample 4 - 5th Quarter	
DATE OF BTEX EXT. ANAL.:	4/23/97	4/24/97
TYPE DESCRIPTION:	Monitor Well	Water

Field Remarks:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	19.4	PPB				
TOLUENE	<1	PPB				
ETHYL BENZENE	<1	PPB				
TOTAL XYLENES	29.8	PPB				
TOTAL BTEX	49.2	PPB				

The Surrogate Recovery was at 91.7 for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative:

Approved By:

John L. L...

Date:

4/25/97



5-15-97

Field Services Laboratory

Analytical Report

SAMPLE IDENTIFICATION

EPFS LAB ID:	970333
DATE SAMPLED:	04/22/97
TIME SAMPLED (Hrs):	1236
SAMPLED BY:	D. Bird
MATRIX:	Water
METER CODE:	72556
SAMPLE SITE NAME:	Aztec Pipeline
SAMPLE POINT:	Knight #1 MW-2

FIELD REMARKS:

GENERAL CHEMISTRY WATER ANALYSIS RESULTS

PARAMETER	RESULT	UNITS	DATE ANALYZED
Laboratory pH	7.8	Units	04/23/97
Alkalinity as CO_3	0	PPM	04/23/97
Alkalinity as HCO_3	503	PPM	04/23/97
Calcium as Ca	296	PPM	04/25/97
Magnesium as Mg	84	PPM	04/25/97
Total Hardness as CaCO_3	1,084	PPM	04/25/97
Chloride as Cl	78	PPM	04/24/97
Sulfate as SO_4	1,050	PPM	04/24/97
Fluoride as F	0.8	PPM	04/23/97
Nitrate as $\text{NO}_3\text{-N}$	<0.6	PPM	04/24/97
Nitrite as $\text{NO}_2\text{-N}$	<0.6	PPM	04/24/97
Ammonium as NH_4^+	<0.2	PPM	04/25/97
Phosphate as PO_4	<0.6	PPM	04/24/97
Potassium as K	1.6	PPM	04/25/97
Sodium as Na	281	PPM	04/25/97
Total Dissolved Solids	2,110	PPM	04/23/97
Calculated TDS	2,038	PPM	04/25/97
Conductivity	2,730	umhos/cm	04/23/97
Anion/Cation %	2.4%	%, <5.0 Accepted	04/25/97

Lab Remarks:

Reported By:

mh

Approved By:

Date:

5/6/97



5-15-97

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

SAMPLE NUMBER:	Field ID N/A	Lab ID 970334
MTR CODE SITE NAME:	72556	Knight #1 MW-3
SAMPLE DATE TIME (Hrs):	4/22/97	1253
PROJECT:	Sample 4 - 5th Quarter	
DATE OF BTEX EXT. ANAL.:	4/24/97	4/24/97
TYPE DESCRIPTION:	Monitor Well	Water

Field Remarks:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	406	PPB	5	D		
TOLUENE	<1	PPB	5	D		
ETHYL BENZENE	102	PPB	5	D		
TOTAL XYLENES	659	PPB	5	D		
TOTAL BTEX	1170	PPB				

The Surrogate Recovery was at 81.8 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:

Date:

4/25/97



5-15-97

Field Services Laboratory
Analytical Report

SAMPLE IDENTIFICATION

EPFS LAB ID:	970334
DATE SAMPLED:	04/22/97
TIME SAMPLED (Hrs):	1253
SAMPLED BY:	D. Bird
MATRIX:	Water
METER CODE:	72556
SAMPLE SITE NAME:	Aztec Pipeline
SAMPLE POINT:	Knight #1 MW-3

FIELD REMARKS:

GENERAL CHEMISTRY WATER ANALYSIS RESULTS

PARAMETER	RESULT	UNITS	DATE ANALYZED
Laboratory pH	7.6	Units	04/23/97
Alkalinity as CO ₃	0	PPM	04/23/97
Alkalinity as HCO ₃	542	PPM	04/23/97
Calcium as Ca	265	PPM	04/25/97
Magnesium as Mg	90	PPM	04/25/97
Total Hardness as CaCO ₃	1,033	PPM	04/25/97
Chloride as Cl	74	PPM	04/24/97
Sulfate as SO ₄	932	PPM	04/24/97
Fluoride as F	0.9	PPM	04/23/97
Nitrate as NO ₃ -N	<0.6	PPM	04/24/97
Nitrite as NO ₂ -N	<0.6	PPM	04/24/97
Ammonium as NH ₄ ⁺	<0.2	PPM	04/25/97
Phosphate as PO ₄	<0.6	PPM	04/24/97
Potassium as K	1.4	PPM	04/25/97
Sodium as Na	261	PPM	04/25/97
Total Dissolved Solids	1,970	PPM	04/23/97
Calculated TDS	1,891	PPM	04/25/97
Conductivity	2,590	umhos/cm	04/23/97
Anion/Cation %	2.5%	%, <5.0 Accepted	04/25/97

Remarks:

Reported By: mh

Approved By:

John L. Lohr

Date:

5/6/97



5-15-97

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	970335
MTR CODE SITE NAME:	72556	Knight #1 MW-4
SAMPLE DATE TIME (Hrs):	4/22/97	1429
PROJECT:	Sample 4 - 5th Quarter	
DATE OF BTEX EXT. ANAL.:	4/24/97	4/24/97
TYPE DESCRIPTION:	Monitor Well	Water

Field Remarks:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	32.8	PPB				
TOLUENE	<1	PPB				
ETHYL BENZENE	<1	PPB				
TOTAL XYLENES	15.2	PPB				
TOTAL BTEX	48.0	PPB				

The Surrogate Recovery was at 88.1 for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative:

Approved By:

Date:

4/25/97



EL PASO FIELD SERVICES

5-15-97

Field Services Laboratory

Analytical Report

SAMPLE IDENTIFICATION

EPFS LAB ID:	970335
DATE SAMPLED:	04/22/97
TIME SAMPLED (Hrs):	1429
SAMPLED BY:	D. Bird
MATRIX:	Water
METER CODE:	72556
SAMPLE SITE NAME:	Aztec Pipeline
SAMPLE POINT:	Knight #1 MW-4

FIELD REMARKS:

GENERAL CHEMISTRY WATER ANALYSIS RESULTS

PARAMETER	RESULT	UNITS	DATE ANALYZED
Laboratory pH	7.9	Units	04/23/97
Alkalinity as CO ₃	0	PPM	04/23/97
Alkalinity as HCO ₃	490	PPM	04/23/97
Calcium as Ca	284	PPM	04/25/97
Magnesium as Mg	81	PPM	04/25/97
Total Hardness as CaCO ₃	1,043	PPM	04/25/97
Chloride as Cl	73	PPM	04/24/97
Sulfate as SO ₄	1,030	PPM	04/24/97
Fluoride as F	0.8	PPM	04/23/97
Nitrate as NO ₃ -N	<0.6	PPM	04/24/97
Nitrite as NO ₂ -N	<0.6	PPM	04/24/97
Ammonium as NH ₄ ⁺	<0.2	PPM	04/25/97
Phosphate as PO ₄	<0.6	PPM	04/24/97
Potassium as K	1.7	PPM	04/25/97
Sodium as Na	272	PPM	04/25/97
Total Dissolved Solids	2,040	PPM	04/23/97
Calculated TDS	1,983	PPM	04/25/97
Conductivity	2,670	umhos/cm	04/23/97
Anion/Cation %	1.7%	%, < 5.0 Accepted	04/25/97

Lab Remarks:

Reported By: mh

Approved By: [Signature]

Date: 5/6/97

American Environmental Network, Inc.

AEN I.D. 704374



May 9, 1997

El Paso Field Service
P.O. Box 4990
Farmington, NM 87499

Project Name/Number: KNIGHT #1 MW-1 (NONE)

Attention: John Lambdin

On 04/23/97, American Environmental Network (NM), Inc., (ADHS License No. AZ0015) received a request to analyze **aqueous** sample(s). The sample(s) 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.

All analyses were performed by American Environmental Network (FL) Inc., 11 East Olive Road, Pensacola, FL.

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:ft

Enclosure

Reviewed & Approved
JF. 5/13/97

American Environmental Network Inc

CLIENT : EL PASO FIELD SERVICE CO. DATE RECEIVED : 04/23/97
PROJECT # : (NONE)
PROJECT NAME : KNIGHT #1 MW-1 REPORT DATE : 05/09/97

AEN ID: 704374

	AEN ID #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	704374-01	970332	AQUEOUS	04/22/97



---TOTALS---

<u>MATRIX</u>	<u>#SAMPLE(S)</u>
AQUEOUS	1

AEN STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of this report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

"FINAL REPORT FORMAT - SINGLE"

Accession: 704368
 Client: AMERICAN ENVIRONMENTAL NETWORK (NEW MEXICO) INC.
 Project Number: 704374
 Project Name: EL PASO FIELD SERVICES
 Project Location: KNIGHT #1 MW-1
 Test: POLYNUCLEAR AROMATICS BY 8310
 Analysis Method: 8310/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
 Extraction Method: 3510/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
 Matrix: WATER
 QC Level: I

Lab Id: 001 Sample Date/Time: 22-APR-97 1210
 Client Sample Id: 704374-01 Received Date: 24-APR-97
 Batch: PAW082 Extraction Date: 25-APR-97
 Blank: B Dry Weight %: N/A Analysis Date: 01-MAY-97

Parameter:	Units:	Results:	Rpt Lmts:	Q:
ACENAPHTHENE	UG/L	ND	1	
ACENAPHTHYLENE	UG/L	ND	1	
ANTHRACENE	UG/L	ND	1	
BENZO(a)ANTHRACENE	UG/L	ND	1	
BENZO(a)PYRENE	UG/L	0.35	0.3	
BENZO(b)FLUORANTHENE	UG/L	ND	1	
BENZO(g,h,i)PERYLENE	UG/L	ND	1	
BENZO(k)FLUORANTHENE	UG/L	ND	1	
CHRYSENE	UG/L	13	1	
DIBENZO(a,h)ANTHRACENE	UG/L	ND	1	
FLUORANTHENE	UG/L	2	1	
FLUORENE	UG/L	2	1	
INDENO(1,2,3-cd)PYRENE	UG/L	ND	1	
NAPHTHALENE	UG/L	150	1	
PHENANTHRENE	UG/L	3	1	
PYRENE	UG/L	4	1	
1-METHYLNAPHTHALENE	UG/L	75	1	
2-METHYLNAPHTHALENE	UG/L	63	1	
2-CHLOROANTHRACENE	%REC/SURR	60	28-138	
ANALYST	INITIALS	JBT		

Comments:

0.35 PPB Benzo(a) Pyrene WQCC Limit = 0.7 PPB PASS
 288 PPB Naphthalenes WQCC Limit = 30 PPB FAIL

"Method Report Summary"

Accession Number: 704368
Client: AMERICAN ENVIRONMENTAL NETWORK (NEW MEXICO) INC.
Project Number: 704374
Project Name: EL PASO FIELD SERVICES
Project Location: KNIGHT #1 MW-1
Test: POLYNUCLEAR AROMATICS BY 8310

Client Sample Id:	Parameter:	Unit:	Result:
704374-01	BENZO (a) PYRENE	UG/L	0.35
	CHRYSENE	UG/L	13
	FLUORANTHENE	UG/L	2
	FLUORENE	UG/L	2
	NAPHTHALENE	UG/L	150
	PHENANTHRENE	UG/L	3
	PYRENE	UG/L	4
	1-METHYLNAPHTHALENE	UG/L	75
	2-METHYLNAPHTHALENE	UG/L	63

American Environmental Network Inc

"QC Report"

Title: Water Blank
Batch: PAW082
Analysis Method: 8310/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: 3510/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.

Blank Id: B Date Analyzed: 01-MAY-97 Date Extracted: 25-APR-97

Parameters:	Units:	Results:	Reporting Limits:
ACENAPHTHENE	UG/L	ND	1
ACENAPHTHYLENE	UG/L	ND	1
ANTHRACENE	UG/L	ND	1
BENZO(a) ANTHRACENE	UG/L	ND	1
BENZO(a) PYRENE	UG/L	ND	1
BENZO(b) FLUORANTHENE	UG/L	ND	1
BENZO(g,h,i) PERYLENE	UG/L	ND	1
BENZO(k) FLUORANTHENE	UG/L	ND	1
CHRYSENE	UG/L	ND	1
DIBENZO(a,h) ANTHRACENE	UG/L	ND	1
FLUORANTHENE	UG/L	ND	1
FLUORENE	UG/L	ND	1
INDENO(1,2,3-cd) PYRENE	UG/L	ND	1
NAPHTHALENE	UG/L	ND	1
PHENANTHRENE	UG/L	ND	1
PYRENE	UG/L	ND	1
1-METHYLNAPHTHALENE	UG/L	ND	1
2-METHYLNAPHTHALENE	UG/L	ND	1
2-CHLOROANTHRACENE	%REC/SURR	111	28-138
ANALYST	INITIALS	JBT	

Comments:

American Environmental Network Inc

"QC Report"

Title: Water Reagent
Batch: PAW082
Analysis Method: 8310/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: 3510/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.

RS Date Analyzed: 01-May-97
RSD Date Analyzed: 01-May-97

RS Date Extracted: 24-Apr-97
RSD Date Extracted: 24-Apr-97

Parameters:	Spike Added	Sample Conc	RS Conc	RS %Rec	RSD Conc	RSD %Rec	RPD	Rec Lmts
ACENAPHTHYLENE	10.0	<1	10.7	107	11.0	110	3	45-127
BENZO(k) FLUORANTHENE	10.0	<1	10.1	101	10.2	102	1	68-131
CHRYSENE	10.0	<1	8.4	84	8.7	87	4	69-131
PHENANTHRENE	10.0	<1	9.6	96	9.6	96	0	63-124
PYRENE	10.0	<1	8.1	81	8.1	81	0	61-126

Surrogates:								
2-CHLOROANTHRACENE				109		104		28-138

Comments:
NOT ENOUGH SAMPLE SUBMITTED TO EXTRACT
MATRIX SPIKE/MATRIX SPIKE DUPLICATE.

Notes:
N/S = NOT SUBMITTED N/A = NOT APPLICABLE D = DILUTED OUT
UG/L = PARTS PER BILLION. < = LESS THAN REPORTING LIMIT.
* = VALUES OUTSIDE OF QUALITY CONTROL LIMITS.
SOURCES FOR CONTROL LIMITS ARE INTERNAL LABORATORY QUALITY ASSURANCE
PROGRAM AND REFERENCED METHOD.

American Environmental Network Inc

Common notation for Organic reporting

N/S = NOT SUBMITTED
N/A = NOT APPLICABLE
D = DILUTED OUT
UG = MICROGRAMS
UG/L = PARTS PER BILLION.
UG/KG = PARTS PER BILLION.
MG/M3 = MILLIGRAM PER CUBIC METER.
PPMV = PART PER MILLION BY VOLUME.
MG/KG = PARTS PER MILLION.
MG/L = PARTS PER MILLION.
< = LESS THAN DETECTION LIMIT.
* = VALUES OUTSIDE OF QUALITY CONTROL LIMITS
Y = IMPROPER PRESERVATION, NO PRESERVATIVE PRESENT IN SAMPLE UPON RECEIPT.

SOURCES FOR CONTROL LIMITS ARE INTERNAL LABORATORY QUALITY ASSURANCE PROGRAM AND REFERENCED METHOD.

ORGANIC SOILS ARE REPORTED ON A DRYWEIGHT BASIS.

ND = NOT DETECTED ABOVE REPORTING LIMIT.

RPT LIMIT = REPORTING LIMITS BASED ON METHOD DETECTION LIMIT STUDIES.

RPD = RELATIVE PERCENT DIFFERENCE (OR DEVIATION)

AEN/GC/FID
AEN GAS CHROMATOGRAPHIC METHOD EMPLOYING DIRECT INJECTION ON COLUMN WITH FLAME IONIZATION DETECTOR (FID).

AEN/GC/FIX
AEN GAS CHROMATOGRAPHIC METHOD FOR ANALYSIS OF FIXED GASES EMPLOYING DIRECT INJECTION ON COLUMN WITH THERMAL CONDUCTIVITY DETECTOR (TCD) AND FLAME IONIZATION DETECTOR (FID).

AEN/GC/FPD
AEN GAS CHROMATOGRAPHIC METHOD EMPLOYING DIRECT INJECTION ON COLUMN WITH FLAME PHOTOMETRIC DETECTOR (FPD) IN SULFUR-SPECIFIC MODE.

AEN/GC/PID
AEN GAS CHROMATOGRAPHIC METHOD EMPLOYING DIRECT INJECTION ON COLUMN WITH PHOTOIONIZATION DETECTOR (PID).

AEN/GC/TCD
AEN GAS CHROMATOGRAPHIC METHOD EMPLOYING DIRECT INJECTION ON COLUMN WITH THERMAL CONDUCTIVITY DETECTOR (TCD).

SW-846 METHOD 9020
PARTICULATE MATTER IS REMOVED BY ALLOWING PARTICULATES TO SETTLE IN THE SAMPLE CONTAINER AND DECANTING THE SUPERNATANT LIQUID. EXCESSIVE PARTICULATES ARE REMOVED BY FILTRATION OF THE SUPERNATANT LIQUID.

AEN-PN USES THE MOST CURRENT PROMULGATED METHODS CONTAINED IN THE REFERENCE MANUALS.

SW = STEVE WILHITE
PL = PAUL LESCHENSKY
RW = ROBERT WOLFE
KS = KENDALL SMITH
KL = KERRY LEMONT
RP = ROB PEREZ
JBT = JENNIFER TORRANCE
LP = LAVERNE PETERSON
PLD = PAULA DOUGHTY

CHAIN OF CUSTODY

DATE: 4-22-97 PAGE: 1 OF 1

AE NM LAB ID: 21511-0001

SHADED AREAS ARE FOR LAB USE ONLY

PLEASE FILL THIS FORM IN COMPLETELY.

PROJECT MANAGER: JOHN CAMPBELL COMPANY: EL PASO FIELD SERVICE CO. ADDRESS: P.O. BOX 4990 PHONE: FARMINGTON, NM 87407 (505) 599-2144 FAX: (505) 599-2281 BILL TO: STATE OF NEW MEXICO COMPANY: ADDRESS:		ANALYSIS REQUEST: Petroleum Hydrocarbons (418.1) TRPH (MOD.8015) Diesel/Direct/Inject (M8015) Gas/Purge & Trap Gasoline/BTEX & MTBE (M8015/8020) BTXE/MTBE (8020) BTEX & Chlorinated Aromatics (602/8020) BTEX/MTBE/EDC & EDB (8020/8010/Short) Chlorinated Hydrocarbons (601/8010) 504 EDB ☐ / DBCP ☐ Polynuclear Aromatics (610/8310) Volatile Organics (624/8240) GC/MS Volatile Organics (8260) GC/MS Pesticides/PCB (608/8080) Herbicides (615/8150) Base/Neutral/Acid Compounds GC/MS (625/8270) General Chemistry: Priority Pollutant Metals (13) Target Analyte List Metals (23) RCRA Metals (8) RCRA Metals by TCLP (Method 1311) Metals:	
PROJECT INFORMATION: PROJ. NO.: PROJ. NAME: KENHT #1 MW-1 P.O. NO.: SHIPPED VIA: FEDEX COMMENTS: FIXED FEE ☐ LOW LEVEL GENERAL PRESENT < 0.7 PPB		PRICING AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS: (RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) ☒ CERTIFICATION REQUIRED: ☐ NM ☐ SDWA ☐ OTHER METHANOL PRESERVATION ☐	
RELINQUISHED BY: Signature: <i>John Campbell</i> Time: 15:37 Printed Name: JOHN CAMPBELL Date: 4-22-97 Company: EL PASO FIELD SERVICE		RELINQUISHED BY: Signature: _____ Time: _____ Printed Name: _____ Date: _____ Company: _____	
RECEIVED BY: Signature: _____ Time: _____ Printed Name: _____ Date: _____ Company: _____		RECEIVED BY: Signature: _____ Time: _____ Printed Name: _____ Date: _____ Company: _____	

American Environmental Network of Florida
PROJECT SAMPLE INSPECTION FORM

Accession #: 704368

Date Received: 24-apr-97

- | | |
|---|---|
| <p>1. Was there a Chain of Custody? <u>Yes</u> No*</p> <p>2. Was Chain of Custody properly filled out and relinquished? <u>Yes</u> No*</p> <p>3. Were samples received cold? <u>Yes</u> No* N/A
(Criteria: 1° - 4°C: AEN-SOP 1055)</p> <p>4. Were all samples properly labeled and identified? Yes <u>No*</u></p> <p>5. Did samples require splitting? Yes* <u>No</u>
Req By: PM Client Other*</p> <p>6. Were samples received in proper containers for analysis requested? <u>Yes</u> No*</p> <p>7. Were all sample containers received intact? <u>Yes</u> No*</p> | <p>8. Were samples checked for preservative? <u>Yes</u> No* N/A
(Check pH of all H₂O requiring preservative except VOA vials that require zero headspace)*</p> <p>9. Is there sufficient volume for analysis requested? <u>Yes</u> No*</p> <p>10. Were samples received within Holding Time? <u>Yes</u> No*
(REFER TO AEN-SOP 1040)</p> <p>11. Is Headspace visible > ¼" in diameter in VOA vials? * If any headspace is evident, comment in out-of-control section. Yes* No <u>N/A</u></p> <p>12. If sent, were matrix spike bottles returned? Yes No* <u>N/A</u></p> <p>13. Was Project Manager notified of problems? (initials: <u>P/E</u>) <u>Yes</u> No* N/A</p> |
|---|---|

Airbill Number(s): 172 3598 572

Shipped By: FEDEX

Cooler Number(s): N/A

Shipping Charges: N/A

Cooler Weight(s): N/A

Cooler Temp(s) (°C): 1°C - CLK3

(LIST THERMOMETER NUMBER(S) FOR VERIFICATION)

Out of Control Events and Inspection Comments:

4. This sample is listed on the coc as 704374-01, but it is labeled 704347-01.

(USE BACK OF PSIF FOR ADDITIONAL NOTES AND COMMENTS)

Inspected By: P/E Date: 4/24/97 Logged By: P/E Date: 4/24/97

* Note all Out-of-Control and/or questionable events on Comment Section of this form.

Note who requested the splitting of samples on the Comment Section of this form.

All preservatives for the State of North Carolina, the State of New York, and other requested samples are to be recorded on the sheet provided to record pH results (AEN-SOP 938, section 2.2.9).

* According to EPA, ¼" of headspace is allowed in 40 ml vials requiring volatile analysis, however, AEN makes it policy to record any headspace as out-of-control (AEN-SOP 938, section 2.2.12).



American Environmental Network
Albuquerque, New Mexico

Interlab Chain of Custody

DATE: 4/23 PAGE: 1 OF 1

NETWORK PROJECT MANAGER: KIMBERLY D. MCNEILL

COMPANY: American Environmental Network
ADDRESS: 2709-D Pan American Freeway, NE
Albuquerque, NM 87107

CLIENT PROJECT MANAGER:

Kim McNeill

SAMPLE ID DATE TIME MATRIX LAB ID

704374-01 4/23/97 12:00 AQ 1

Metals - TAL
Metals - PP List
Metals - RCRA
RCRA Metals by TCLP (1311)

TOX
TOC
Gen Chemistry

Oil and Grease
BOD
COD
Pesticides/PCB (608/8080)
Herbicides (615/8150)
Base/Neutral Acid Compounds GC/MS (625/8270)
Volatile Organics GC/MS (624/8240)
Polynuclear Aromatics (610/8310)
8240 (TCLP 1311) ZHE
8270 (TCLP 1311)

TO-14
Gross Alpha/Beta

NUMBER OF CONTAINERS

ANALYSIS REQUEST

PROJECT INFORMATION

SAMPLE RECEIPT

PROJECT NUMBER: 704374 TOTAL NUMBER OF CONTAINERS

PROJECT NAME: 61 Paso Field Service CHAIN OF CUSTODY SEALS

OC LEVEL: STD IV INACT? RECEIVED GOOD COND/COLD

OC REQUIRED: MS MSD BLANK LAB NUMBER 704368

TA: STANDARD RUSHI

DUE DATE: 5/5/97 Low level Benz (4) ppm < 0.3 ppb

RUSH SURCHARGE: CLIENT DISCOUNT: SPECIAL CATION REQUIRED: YES NO

SAMPLES SENT TO:

RELINQUISHED BY:

1.

RELINQUISHED BY:

2.

SAN DIEGO

PARAGON

RENTON

PENSACOLA

PORTLAND

PHOENIX

Signature: Time: 1700

Printed Name: Date: 4/23/97

John Calaver

Abuquerque

RECEIVED BY: 1.

Signature: Time: 0810

Printed Name: Date: 4/23/97

Company: R. Elspenson

Signature: Time: 4/23/97

Printed Name: Date: 4/23/97

John Calaver

Abuquerque

RECEIVED BY: (LAB) 2.

Signature: Time: 0810

Printed Name: Date: 4/23/97

Company: R. Elspenson

SHADED AREAS ARE FOR LAB USE ONLY

CHAIN OF CUSTODY
DATE: 4-23-97 PAGE: 1 OF 1

7AENIABIIID

PROJECT INFORMATION		PRIORITY AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS	
PRIOT NO.	(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) ☒	SIGNATURE:	RELINQUISHED BY:
PRIOT NAME	CERTIFICATION REQUIRED: ☐ NM ☐ SDWA ☐ OTHER	Time	
P.O. NO.	METHANOL PRESERVATION ☐	Printed Name:	
SLIPPED VIA:	COMMENTS: FIXED FEE ☐	Date:	
		Company:	
		SIGNATURE:	RELINQUISHED BY:
		Time:	
		Printed Name:	
		Date:	
		Company:	



Well Number 11W-1
Meter Code 77556

Site Name KNIGHT #1

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) 33.94
Initial Depth to Water (feet) 26.23
Height of Water Column in Well (feet) 7.71

Diameter (inches): Well 4 Gravel Pack _____

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		5.1	15.3
Gravel Pack			
Drilling Fluids			
Total			

Instruments

- ☒ pH Meter
☐ DO Monitor
☒ Conductivity Meter
☒ Temperature Meter
☒ Other NO. 5

Water Disposal
KNIGHT #1 SEPARATOR TANK

Water Removal Data

[illegible]

Comments	BAILED DRY @ 6.0 GALLONS. STRONG HYDROCARBON SMELL. REMOVED ORC 4 DAYS BEFORE SAMPLING		
Developer's Signature	Date	Reviewer	Date
<i>Dennis Bird</i>	4-22-97	<i>John Tuller</i>	4/25/97

Developer's Signature Lennie Bied Date 4-22-97 Reviewer J. M. Sullivan



Well Number MW-2
Meter Code 72556

Site Name KNIGHT #1

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) 36.93
Initial Depth to Water (feet) 25.83
Height of Water Column in Well (feet) 11.11

Diameter (Inches): Well 4 Gravel Pack

Item	Water Volume In Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		7.3	72.0
Gravel Pack			
Drilling Fluids			
Total			

Instruments

- ☒ pH Meter
☐ DO Monitor
☒ Conductivity Meter
☒ Temperature Meter
☒ Other D.O. CR

Water Disposal

KNIGHT #1 SEPARATOR TANK

Water Removal Data

[illegible]

Comments

Developer's Signature
Dennis Bird

Date 4-22-97

Reviewer

John F. Sullivan

Date 4/25/67



Well Development and Purging Data

Well Number 11W-3
Meter Code 72556

☐	Development
☒	Purging

Site Name KNIGHT #1

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) 37.20
Initial Depth to Water (feet) 25.99
Height of Water Column in Well (feet) 11.31

Diameter (inches): Well 4 Gravel Pack

Item	Water Volume in Well			Gallons to be Removed
	Cubic Feet	Gallons		
Well Casing		7.4		223
Gravel Pack				
Drilling Fluids				
Total				

Instruments

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

Water Disposal

Water Disposal
KNIGHT #1 SEPARATOR TANK

Water Removal Data

[illegible]

Comments LIGHT HYDROCARBON SMELL

Developer's Signature Lennia Bird

Date 4-22-97 Reviewer *John L. L. R.* Date 4-22-97



Well Number MW-4
Meter Code 72556

Site Name **KNIGHT #1**

Development Criteria

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

Methods of Development

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

☐ Other _____

Water Volume Calculation

Initial Depth of Well (feet) 36.80
Initial Depth to Water (feet) 26.69
Height of Water Column in Well (feet) 10.11

Diameter (Inches): Well 4 Gravel Pack _____

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		6.7	20.0
Gravel Pack			
Drilling Fluids			
Total			

Instruments

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

Water Disposal
KNIGHT #1 SEPARATOR TANK

Water Removal Data

[illegible]

Comments

Continued

Developer's Signature *Dennis Bird*

Date 4-22-97 Reviewer _____

John L. Larkin Date 4/25/67

CHAIN OF CUSTODY RECORD

Project No.		Project Name		Requested Analysis		Remarks	
Samplers: (Signature)		Date		Type and No. of Sample Containers		Preservation Technique	
Dennis Bird		Date: 7-14-97					
Date	Time	Comp.	GRAB	Sample Number			
7-14-97	1144		X	970647	G-1 40C	X	KNIGHT #1 MW-1 MC 7255K
7-14-97	1201		X	970648	G-1 40C	X	KNIGHT #1 MW-2 MC 7255K
7-14-97	1347		X	970649	G-1 40C	X	KNIGHT #1 MW-3 MC 7255K
7-14-97	1347		X	970650	G-1 40C	X	KNIGHT #1 MW-3 MC 7255K
7-14-97	1456		X	970651	G-1 40C	X	KNIGHT #1 MW-4 MC 7255K
7-14-97			X		G-1 40C	X	TNP BEAK
Relinquished by: (Signature)		Date/Time		Received by: (Signature)		Date/Time	
Dennis Bird		7-14-97 1612					
Relinquished by: (Signature)		Date/Time		Relinquished by: (Signature)		Date/Time	
Relinquished by: (Signature)		Date/Time		Received for Laboratory by: (Signature)		Date/Time	
				M. J. ...		7/15/97 0740	
Carrier Co:		Carrier Phone No.		Date Results Reported / by: (Signature)			



EL PASO FIELD SERVICES



8/11/97

FIELD SERVICES LABORATORY ANALYTICAL REPORT PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	970647
MTR CODE SITE NAME:	72556	Knight #1 MW-1
SAMPLE DATE TIME (Hrs):	7/14/97	1144
PROJECT:	Sample 4 - 6th Quarter	
DATE OF BTEX EXT. ANAL.:	7/15/97	7/16/97
TYPE DESCRIPTION:	Monitor Well	Water

Field Remarks:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	3900	PPB	50	D		
TOLUENE	36.7	PPB	50	D		
ETHYL BENZENE	530	PPB	50	D		
TOTAL XYLENES	6700	PPB	50	D		
TOTAL BTEX	11200	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 87.1 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 Lando

Date:

7/22/97



FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT



8/11/97

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	970648
MTR CODE SITE NAME:	72556	Knight #1 MW-2
SAMPLE DATE TIME (Hrs):	7/14/97	1201
PROJECT:	Sample 4 - 6th Quarter	
DATE OF BTEX EXT. ANAL.:	7/15/97	7/15/97
TYPE DESCRIPTION:	Monitor Well	Water

Field Remarks:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	47.4	PPB				
TOLUENE	< 1	PPB				
ETHYL BENZENE	4.64	PPB				
TOTAL XYLENES	63.6	PPB				
TOTAL BTEX	116	PPB				

--BTEX is by EPA Method 8020 --

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

Narrative:

Approved By:

John L. Linder

Date:

7/22/97



EL PASO FIELD SERVICES



8/11/97

FIELD SERVICES LABORATORY ANALYTICAL REPORT PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	970649
MTR CODE SITE NAME:	72556	Knight #1 MW-3
SAMPLE DATE TIME (Hrs):	7/14/97	1347
PROJECT:	Sample 4 - 6th Quarter	
DATE OF BTEX EXT. ANAL.:	7/15/97	7/16/97
TYPE DESCRIPTION:	Monitor Well	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	499	PPB	5	D		
TOLUENE	<1	PPB	5	D		
ETHYL BENZENE	104	PPB	5	D		
TOTAL XYLENES	583	PPB	5	D		
TOTAL BTEX	1190	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 94.4 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. Lach

Date: _____

7/22/97



EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY ANALYTICAL REPORT PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	970650
MTR CODE SITE NAME:	72556	Knight #1 MW-3
SAMPLE DATE TIME (Hrs):	7/14/97	1347
PROJECT:	Sample 4 - 6th Quarter	
DATE OF BTEX EXT. ANAL.:	7/15/97	7/16/97
TYPE DESCRIPTION:	Monitor Well	Water

Field Remarks: Field Duplicate

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	D		
BENZENE	617	PPB	5	D		
TOLUENE	< 1	PPB	5	D		
ETHYL BENZENE	130	PPB	5	D		
TOTAL XYLENES	707	PPB	5	D		
TOTAL BTEX	1450	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 95.4 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: _____

Date: John Ladd



Well Development and Purging Data

Well Number MW-1
Meter Code 72556

Site Name KNIGHT #1

Development Criteria

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

Methods of Development

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

☐ Other _____

Water Volume Calculation

Initial Depth of Well (feet) 33.94
Initial Depth to Water (feet) 25.25
Height of Water Column in Well (feet) 8.69

Diameter (Inches): Well 4 Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		5.7	17.2
Gravel Pack			
Drilling Fluids			
Total			

Instruments

- ☒ pH Meter
☐ DO Monitor
☒ Conductivity Meter
☒ Temperature Meter
☒ Other 2.0.0

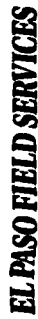
Water Disposal
KNIGHT #1 SEPARATOR TANK

Water Removal Data

[illegible]

THE WATER HAD A STRONG HYDROCARBON SMELL.

Developer's Signature Lennis Bird Date 7-14-97 Reviewer John Saha Date 7/24/97



Water Disposal
KNIGHT #1 SEPARATOR TANK



Well Number 11W-3
Meter Code 22556

☐	Development
☒	Purging

Site Name **KWIGHT #1**

Development Criteria

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

Methods of Development

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

☐ Other

Water Removal Data

[illegible]

Comments	THE WATER HAD A LIGHT HYDROCARBON SMELL.
----------	--

Developer's Signature Kenneth Bird Date 7-14-97 Reviewer John Suda Date 7/22/97



Well Development and Purging Data

Well Number MW-4
Meter Code 72556

☐ Development
☒ Purging

Site Name KULIGHT #1

Development Criteria

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

Methods of Development

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

Water Volume Calculation

Initial Depth of Well (feet) 26.88
Initial Depth to Water (feet) 25.78
Height of Water Column in Well (feet) 11.02

Diameter (Inches): Well <u>4</u> Gravel Pack		
Item	Water Volume in Well Cubic Feet	Gallons to be Removed
Well Casing	<u>7.3</u>	<u>21.9</u>
Gravel Pack		
Drilling Fluids		
Total		

Instruments

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

Water Disposal

KULIGHT #1 SEPARATOR TANK

Water Removal Data

Date	Time	Development Method		Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gal)		Product Volume Removed (gallons)	Temperature °C	pH	Conductivity µmho/cm	Dissolved Oxygen mg/L	Comments
		Pump	Bailer				Increment	Cumulative						
7-14-97	1405									20.7	6.63	2350		
7-14-97	1411						5.0	5.0		18.6	6.83	2390		
7-14-97	1418						5.0	10.0		18.3	6.87	2440		
7-14-97	1426						5.0	15.0		18.5	6.85	2490		
7-14-97	1433						5.0	20.0		18.3	6.85	2500		
7-14-97	1442						5.0	25.0		18.5	6.86	2510	0.5	

Comments

Developer's Signature Dennis Bied

Date 7-14-97

Reviewer

John Lark

Date

7/24/97



Natural Gas Company

SAMPLE 4 7THQTR

A 2116

CHAIN OF CUSTODY RECORD

Project No.		Project Name		MC # 72556		Requested Analysis		Remarks	
Samplers: (Signature)		Date: 10-22-97		Type and No. of Sample Containers		Preservation Technique			
Date		Time		Comp.		GRAB		Sample Number	
WATER 10-22-97		1143				X		971128 ✓	
WATER 10-22-97		1155				X		971129 ✓	
WATER 10-22-97		1356				X		971130 ✓	
WATER 10-22-97		1356				X		971131 ✓	
WATER 10-22-97		1507				X		971132 ✓	
WATER 10-22-97		—				X		—	
Relinquished by: (Signature)		Date/Time		Received by: (Signature)		Relinquished by: (Signature)		Date/Time	
Dennis Bied		10-22-97 1628							
Relinquished by: (Signature)		Date/Time		Received by: (Signature)		Relinquished by: (Signature)		Date/Time	
Relinquished by: (Signature)		Date/Time		Received for Laboratory by: (Signature)		Remarks:		Date Results Reported / by: (Signature)	
				M. Hopper		10/23/97 0810		Date Results Reported / by: (Signature)	
Carrier Co:		Carrier Phone No.							
Air Bill No:									



EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY ANALYTICAL REPORT PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	971128
MTR CODE SITE NAME:	72556	Knight #1
SAMPLE DATE TIME (Hrs):	10/22/97	1142
PROJECT:	Sample 4 7th Quarter	
DATE OF BTEX EXT. ANAL.:	10/23/97	10/23/97
TYPE DESCRIPTION:	MW-1	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	4270	PPB	50	D		
TOLUENE	48.7	PPB	50	D		
ETHYL BENZENE	728	PPB	50	D		
TOTAL XYLENES	8580	PPB	50	D		
TOTAL BTEX	13627	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 91.6 % 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 Larcher

Date: 11-3-97

971128BTEXMW,10/24/97



FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	971129
MTR CODE SITE NAME:	72556	Knight #1
SAMPLE DATE TIME (Hrs):	10/22/97	1155
PROJECT:	Sample 4 7th Quarter	
DATE OF BTEX EXT. ANAL.:	10/23/97	10/23/97
TYPE DESCRIPTION:	MW-2	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	155	PPB				
TOLUENE	<1	PPB				
ETHYL BENZENE	12.6	PPB				
TOTAL XYLENES	204	PPB				
TOTAL BTEX	372	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 91.4 % for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative: _____

Approved By: _____

John Larch

Date: _____

11-3-97

971128BTEXMW,10/24/97



FIELD SERVICES LABORATORY

ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	971130
MTR CODE SITE NAME:	72556	Knight #1
SAMPLE DATE TIME (Hrs):	10/22/97	1356
PROJECT:	Sample 4 7th Quarter	
DATE OF BTEX EXT. ANAL.:	10/23/97	10/23/97
TYPE DESCRIPTION:	MW-3	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	817	PPB	5	D		
TOLUENE	7.22	PPB	5	D		
ETHYL BENZENE	141	PPB	5	D		
TOTAL XYLENES	869	PPB	5	D		
TOTAL BTEX	1835	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 91.7 % 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: _____

Approved By: John LardnerDate: 11-3-97

971130BTEXMW,10/24/97



FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	971131
MTR CODE SITE NAME:	72556	Knight #1
SAMPLE DATE TIME (Hrs):	10/22/97	1356
PROJECT:	Sample 4 7th Quarter	
DATE OF BTEX EXT. ANAL.:	10/23/97	10/23/97
TYPE DESCRIPTION:	MW-3	Water

Field Remarks: Field Duplicate

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	885	PPB	5	D		
TOLUENE	6.91	PPB	5	D		
ETHYL BENZENE	153	PPB	5	D		
TOTAL XYLENES	966	PPB	5	D		
TOTAL BTEX	2011	PPB				

—BTEX is by EPA Method 8020 —

The Surrogate Recovery was at 92.6 % 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 Larch

Date: 11-4-97

971131BTEXMW,10/24/97



EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY

ANALYTICAL REPORT

PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	971132
MTR CODE SITE NAME:	72556	Knight #1
SAMPLE DATE TIME (Hrs):	10/22/97	1507
PROJECT:	Sample 4 7th Quarter	
DATE OF BTEX EXT. ANAL.:	10/23/97	10/23/97
TYPE DESCRIPTION:	MW-4	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	215	PPB				
TOLUENE	<1	PPB				
ETHYL BENZENE	5.50	PPB				
TOTAL XYLENES	184	PPB				
TOTAL BTEX	404	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 91.1 % for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Signature: _____

Approved By: _____

John Larch

Date: _____

11/4/97

971132BTEXMW,10/24/97

Well Development and Purging Data

Site Name **KNIGHT #1**

Well Number NW-1

Meter Code 72556

Development Criteria

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

Methods of Development

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

☐ Other

Water Volume Calculation

Initial Depth of Well (feet) 33.94

Initial Depth to Water (feet) 26.22

Height of Water Column in Well (feet) 7.73

Diameter (inches): Well 4 Gravel Pack

Item	Water Volume In Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		5.1	15.3
Gravel Pack			
Drilling Fluids			
Total			

Instruments

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

Water Disposal

KNIGHT #1 SEPARATOR TANK

Water Removal Data

[illegible]

Comments THE WATER HAD A STRONG HYDROCARBON SMELL.

Developer's Signature Dennis Bird

Date 10-22-97

Reviewer

John F. Ladd Date 11/3/47

Well Number MW-2

Meter Code 72556

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

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

☐ Other

Initial Depth of Well (feet) 36.93
Initial Depth to Water (feet) 25.86
Height of Water Column In Well (feet) 11.07

Diameter (inches): Well 4 Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		7.3	220
Gravel Pack			
Drilling Fluids			
Total			

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

Water Disposal

KNIGHT #1 SEPARATOR BANK

[illegible]

Developer's Signature Dennis Bied

Date 10-22-97

Reviewer

Date _____

11/3/97



Well Number 17W-4
Meter Code 72556

Site Name KNIGHT #1

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

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

Initial Depth of Well (feet) 36.80
Initial Depth to Water (feet) 26.73
Height of Water Column in Well (feet) 10.08

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

KWIGHT #1 SEPARATOR TANK

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		6.7	20.0
Gravel Pack			
Drilling Fluids			
Total			

[illegible]

Developer's Signature Lennie Bird

Reviewer

John Temple

Date 11/3/47