3R - 164

REPORTS

DATE:

2002

elpaso Field Services

Certified Mail: #7001 1940 0002 1371 7676

February 28, 2003

Mr. William C. Olson
New Mexico Oil Conservation Division
1220 St. Francis Dr.
Santa Fe, NM 87504

RE: 2002 Pit Project Annual Groundwater Report

Dear Mr. Olson:

In accordance with reporting requirements, El Paso Field Services (EPFS) has enclosed annual reports for the 30 remaining groundwater impacted sites that were identified during our pit closure project of 1994 / 1995.

EPFS has organized the 30 Annual Reports (Volumes 1, 2 and 3) by land type. Volume 1 contains Annual Reports for sites found on Federal land. Volume 2 contains Non Federal sites and Volume 3 contains sites on Navajo land. Of the 30 reports submitted, EPFS is requesting closure of three sites located on Navajo lands. Of the three Navajo sites submitted for closure OCD has closed the Charley Pah #4 and the John Charles #8. The Rementa et al #1 has not been closed by either agency and EPFS reiterates request for closure of this site. EPFS understands closure of groundwater sites on Navajo land falls under jurisdiction of the Navajo Nation Environmental Protection Agency and original documents have been submitted to them for review. Other Navajo sites are included in the report for your information.

Three additional sites were submitted for closure in 2002. EPFS recently has received closure on the W.D. Heath B-5. Closure approval is pending on the D Loop Line Drip and Hammond # 41A. All of these sites are included in the 2002 Annual Report.

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

Sincerely,

Scott T. Pope P.G.
Senior Environmental Scientist

xc: Mr. Denny Foust, NMOCD, Aztec - w / enclosures; **Certified Mail # 7001 1940 0002 1371 7669**
Mr. Bill Liesse, BLM – w / enclosures (federal sites only), **Certified Mail # 7001 1940 0002 1371 7652**

El Paso Field Services
614 Reilly Farmington, New Mexico 87401

elpaso

El Paso Field Services

San Juan Basin Pit Program Groundwater Sites Project

2002 Annual Report Non-Federal Sites (Volume 2)

March 2003

MWH
10619 South Jordan Gateway, Suite 100
Salt Lake City, Utah 84095

EL PASO FIELD SERVICES ANNUAL GROUNDWATER REPORT

NON-FEDERAL SITES VOLUME II

TABLE OF CONTENTS

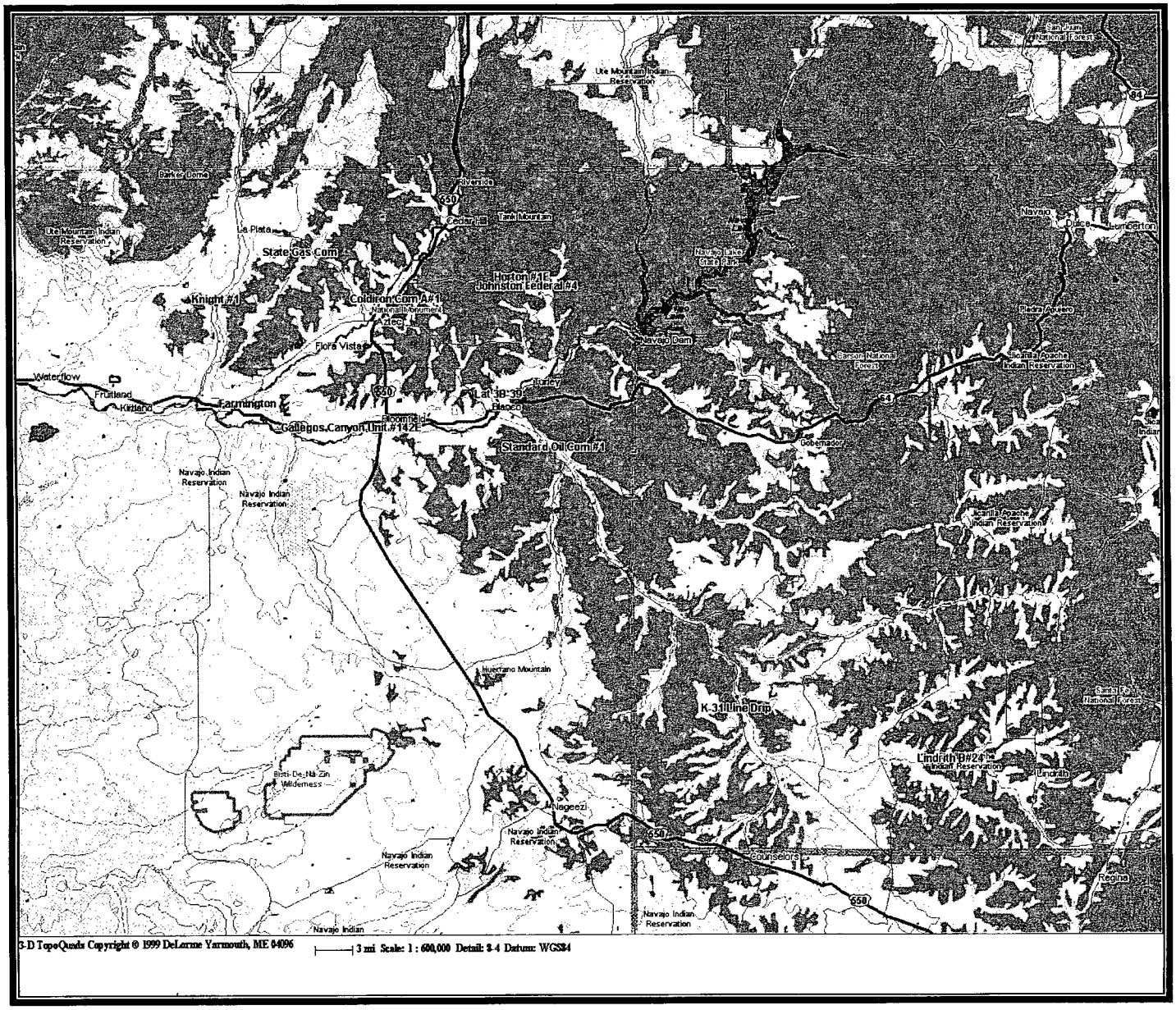
Site Map

METER or LINE ID	SITE NAME	TOWNSHIP	RANGE	SECTION	UNIT
71669	State Gas Com N #1	31N	12W	16	H
70194	Johnston Fed #4	31N	09W	33	H
93388	Horton #1E	31N	09W	28	H
72556	Knight #1	30N	13W	5	A
73551	Coldiron A #1	30N	11W	2	K
03906	GCU Com A #142E	29N	12W	25	G
70445	Standard Oil Com #1	29N	09W	36	N
LD146	Lat 3B-39 Line Drip	29N	09W	10	M
LD087	K-31 Line Drip	25N	06W	16	N
94967	Lindrith B #24	24N	03W	9	N

elpaso

MWH
MONTGOMERY WATSON HARZA

Non - Federal Groundwater Site Map



EPFS GROUNDWATER SITES
2002 ANNUAL GROUNDWATER REPORT

Coldiron A #1
Meter Code: 73551

SITE DETAILS

LEGAL DESCRIPTION: **Twn:** 30N **Rng:** 11W **Sec:** 2 **Unit:** K

NMOCD Haz Ranking: 40 **Land Type:** Fee **Operator:** Amoco Production Company

PREVIOUS ACTIVITIES

Site Assessment: 3/94	**Excavation:** 4/94 (50 cy)	**Soil Boring:** 10/95
Monitor Well: 10/95	**Geoprobe:** NA	**Additional MWs:** NA
Downgradient MWs: NA	**Replace MW:** NA	**Quarterly Initiated:** 4/96
ORC Nutrient Injection: NA	**Re-Excavation:** NA	**PSH Removal Initiated:** NA
Annual Initiated: NA	**Quarterly Resumed:** NA	

SUMMARY OF 2002 ACTIVITIES

MW-1: Quarterly groundwater sampling was performed during 2002.

Site-Wide Activities: No other activities were performed at this site during 2002.

SUMMARY TABLES AND GRAPHS

- Analytical data are summarized on Table 1 and presented graphically in Figure 2.
- Laboratory reports are presented in Attachment 1.
- Field documentation are presented in Attachment 2.

SITE MAP

A site map is attached as Figure 1.

GEOLOGIC LOGS AND WELL COMPLETION DIAGRAMS

No subsurface activities were performed at this site during 2002.

DISPOSITION OF GENERATED WASTES

No wastes were generated at this site during 2002.

ISOCONCENTRATION MAPS

No isoconcentration maps were prepared for this site, however, the attached site map presents the analytical data collected during 2002.

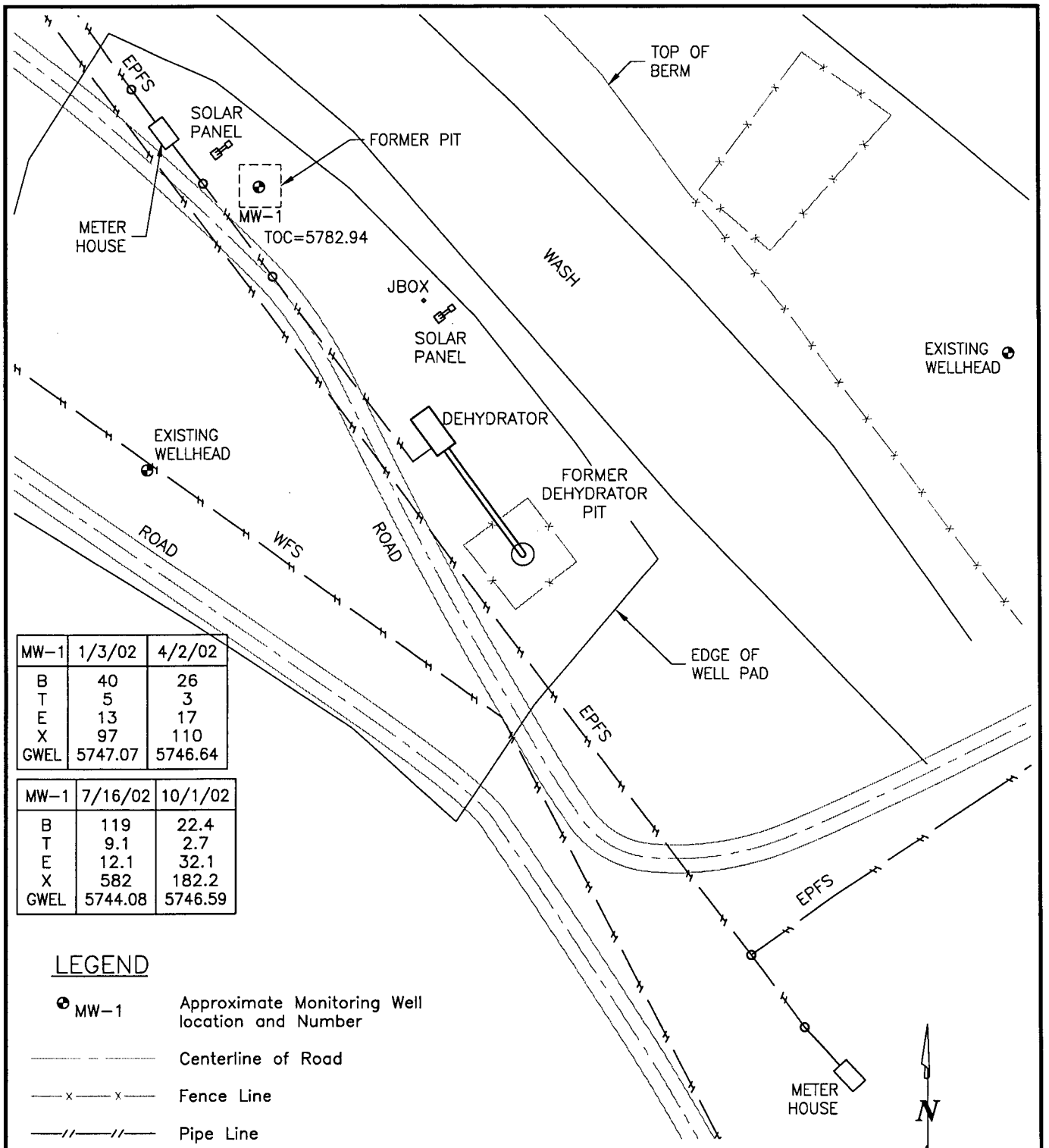
Coldiron A #1
Meter Code: 73551

CONCLUSIONS

- Benzene concentrations in samples collected from MW-1 in 2002 generally remained at the same level as 2001 (22 µg/l to 40 µg/l) with the exception of data collected during July 2002 (119 µg/l).
- Groundwater elevations fluctuated approximately three feet during 2002. Groundwater flow direction was not evaluated because only one monitoring well has been installed at this site.
- The 2001 Annual Report for this site indicated that EPFS would evaluate this site for oxygen or nutrient addition following the second quarter sampling round. Following collection of this data, the decision to not add oxygen/nutrients to the subsurface was made based on naturally declining concentrations of BTEX constituents.

RECOMMENDATIONS

- EPFS recommends that quarterly groundwater sampling at MW-1 continue until four consecutive quarterly samples are below closure criteria.
- EPFS recommends that the addition of oxygen-releasing compound to MW-1 be reconsidered based on analytical results from the sampling effort during the first two quarters of 2003.



MW-1	1/3/02	4/2/02
B	40	26
T	5	3
E	13	17
X	97	110
GWEL	5747.07	5746.64

MW-1	7/16/02	10/1/02
B	119	22.4
T	9.1	2.7
E	12.1	32.1
X	582	182.2
GWEL	5744.08	5746.59

LEGEND

- MW-1 — Approximate Monitoring Well location and Number
- Centerline of Road
- Fence Line
- Pipe Line
- B — Benzene (µg/L)
- T — Toluene (µg/L)
- E — Ethylbenzene (µg/L)
- X — Total Xylenes (µg/L)
- GWEL — Groundwater Elevation (FT Above Mean Sea Level Unless Noted Otherwise)
- TOC — Top of Casing

NOT TO SCALE

coldironcoma1a_02.dwg

COLDIRON COM A#1, METER 73551
JANUARY, APRIL, JULY, AND OCTOBER 2002

GROUNDWATER SITES
EL PASO FIELD SERVICES

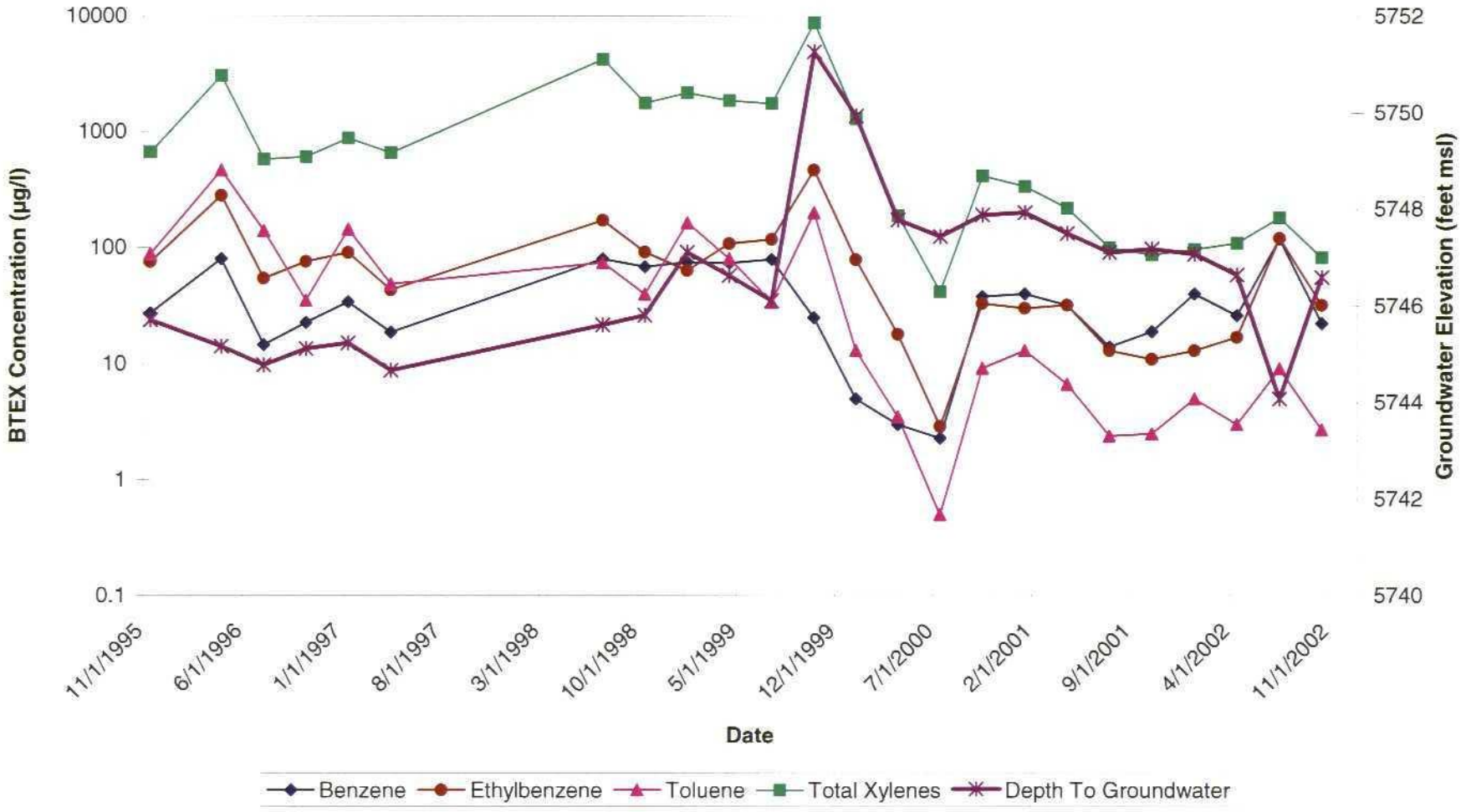
FIGURE 1

TABLE 1

SUMMARY OF BTEX COMPOUNDS IN GROUNDWATER
COLDIRON A#1 (METER #73551)
(Page 1 of 1)

Sample Identification	Sample Date	MW Identification	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	m,p-Xylene (µg/l)	o-Xylene (µg/l)	Total Xylenes (µg/l)
COL-0201-MW1	03-Jan-2002	1	40	<5.00	13	NA	NA	97
COL-0204-MW1	02-Apr-2002	1	26	3.00	17	NA	NA	110
COL-0204-MWS1	02-Apr-2002	1-DUP	17	<2.50	9.30	NA	NA	60
02-3922-1	16-Jul-2002	1	119	9.10	121	421	161	582
02-5228	01-Oct-2002	1	22.40	2.70	32.10	134	48.20	182.20

Figure 2
BTEX Concentration and Groundwater Elevation vs. Time
Coldiron A#1 (Meter #73551)
MW-1



ATTACHMENT 1

LABORATORY REPORTS

DATA VALIDATION WORKSHEET

Analytical Method/Analytes: SW-846 8021B (BTEX) **Sample Collection Date(s):** 10/01/02

Laboratory: APCL **MWH Job Number:** EPC-SJRB (Ground Water)

Batch Identification: 02-05228 **Matrix:** Water

QC Identification[a]: _____ **Page:** 1 of 2

Validation Complete: Brian Buttars 10-22-02
(Date/Signature)

Site ID	Sample ID	Lab. ID	Hits (Y/N)	Quals.	Comments
GW	Coldiron Com	02-05228-01	Y	B B	Ethylbenzene @ 32.1 µg/l m/p-Xylene @ 134 µg/l
GW	Lat 3B 39	02-05228-02	Y	B B	Ethylbenzene @ 302 µg/l m/p-Xylene @ 1,040 µg/l
QC	TB02100101	02-05228-03	Y		Ethylbenzene @ 0.9 µg/l m/p-Xylene @ 1T µg/l

DATA VALIDATION WORKSHEET

Analytical Method: SW-846 8021B (BTEX) **MWH Job Number:** EPC-SJRB (Ground Water)

Laboratory: APCL **Batch Identification:** 02-05228

Validation Criteria								
Sample ID	**Coldiron Com**	**Lat 3B 39**	**TB021001 01**					
Lab ID	**02-05228-01**	**02-05228-02**	**02-05228-03**					
Hardcopy vs. Chain-of-Custody	A	A	A					
Holding Time	A	A	A					
Analyte List	A	A	A					
Reporting Limits	A	A	A					
Method Blank	A	A	A					
Trip Blank	A[1]	A[1]	A[1]					
Equipment Rinseate Blanks	N/A	N/A	N/A					
Field Duplicate/Replicate	N/A	N/A	N/A					
Initial Calibration	N	N	N					
Initial Calibration Verification (ICV)	N	N	N					
Continuing Calibration Verification (CCV)	A	A	A					
Laboratory Control Sample (LCS)	A	A	A					
Laboratory Control Sample Duplicate (LCSD)	N	N	N					
Matrix Spike/Matrix Spike Dup. (MS/MSD)	N/A	N/A	N/A					
Surrogate Spike Recovery	A	A	A					
Retention Time Window	N	N	N					
Injection Time(s)	N	N	N					
EDD vs. Hardcopy	N	N	N					
EDD vs. Chain of Custody	N	N	N					

(a) List QC batch identification if different than Batch ID
A indicates validation criteria were met
A/L indicates validation criteria met based upon Laboratory's QC Summary Form
X indicates validation criteria were not met
N indicates data review were not a project specific requirement
N/A indicates criteria are not applicable for the specified analytical method or sample
N/R indicates data not available for review

NOTES:

1) The following analytes were detected in the trip blank:
   a) Ethylbenzene @ 0.9 µg/L, qualify all sample concentrations less than or equal to 4.5 µg/L with a "UB" flag and all sample concentrations greater than 4.5 µg/l with a "B" flag.
   b) m/p-Xylene @ 1T µg/L, qualify all sample concentrations less than or equal to 5.0 µg/L with a "UB" flag and all sample concentrations greater than 5.0 µg/l with a "B" flag.

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Submitted to:
Montgomery Watson Harza
Attention: Brian Buttars
10619 South Jordan Gateway
Salt Lake City UT 84095
Tel: (801)617-3200 Fax: (801)617-4200

Service ID #: 801-025228
Collected by: Ashley Lowe
Collected on: 10/01/02

Received: 10/02/02
Extracted: N/A
Tested: 10/04/02
Reported: 10/08/02

Sample Description: Water
Project Description: 220013 San Juan River Basin

Analysis of Water Samples

Component Analyzed	Method	Unit	PQL	Analysis Result GW Coldiron Com 02-05228-1	GW Lat 3B 39 02-05228-2	TB02100101 02-05228-3
BTXE						
Dilution Factor				1	5	1
BENZENE	8021B	µg/L	0.5	22.4	10	<0.5
ETHYLBENZENE	8021B	µg/L	0.5	32.1	302	0.9
TOLUENE	8021B	µg/L	0.5	2.7	4	<0.5
O-XYLENE	8021B	µg/L	0.5	48.2	19	<0.5
M,P-XYLENE	8021B	µg/L	1	134	1,040	1J

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit
N.D.: Not Detected or less than the practical quantitation limit. "-": Analysis is not required.
J: Reported between PQL and MDL.
Listed Dilution Factors (DF) are relative to the method default DF. All unlisted DFs are 1.0

Respectfully submitted,

Dominic Lau
Laboratory Director
Applied P & Ch Laboratory

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL QA/QC Report

Submitted to:
Montgomery Watson Harza
Attention: Brian Buttars
10619 South Jordan Gateway
Salt Lake City, UT 84095
Tel: (801)617-3200 Fax: (801)617-4200

Service ID #: 801-025228
Collected by: Ashley Lowe
Collected on: 10/01/02
Sample description:
Water
Project: San Juan River Basin /220013

Received: 10/02/02
Tested: 10/04/02
Reported: 10/09/02

Analysis of Water

801-025228QC

Component Name	Analysis Batch #	CCV (μg/L)	CCV %Rec	M-Blank	Conc. Unit	SP Level	LCS %Rec	MS %Rec	MSD %Rec	MS/MSD %RPD	Control Limit %Rec	Control Limit %Diff
BTXE												
Benzene	02G4108	100	100	N.D.	μg/L	18.0	90	91	88	4	68-130	31
Toluene	02G4108	100	100	N.D.	μg/L	70.0	94	98	94	5	66-133	33
Ethylbenzene	02G4108	100	104	N.D.	μg/L	18.0	99	99	95	4	65-134	35
m/p-Xylene	02G4108	200	97	N.D.	μg/L	70.0	95	99	95	4	65-134	35
o-Xylene	02G4108	100	98	N.D.	μg/L	25.0	95	101	96	5	65-134	35

Notation:
ICV – Initial Calibration Verification
CCV – Continuation Calibration Verification
LCS – Lab Control Spike
MS – Matrix Spike
MSD – Matrix Spike Duplicate
ICS – Interference Check Standard
MD – Matrix Duplicate
N.D. – Not detected or less than PQL
CCB – Continuation Calibration Blank
M-blank – Method Blank
SP Level – Spike Level
%Rec – Recovery Percent
%RPD – Relative Percent Differences
%Diff – Control Limit for %RPD
ICP-SD – ICP Serial Dilution
N.A. – Not Applicable

Respectfully submitted,

Regina Kirakozova,
Associate QA/QC Director
Applied P & Ch Laboratory

FORM-2A

Applied P & Ch Laboratory

Surrogate Recovery Summary for Method 8021B

Client Name:	Montgomery Watson Harza	Contract No:		Lab Code:	APCL
Case No:		SAS No:		SDG Number:	025228
Project ID:	San Juan River Basin	Project No:	220013	Sample Matrix:	Water
		Batch No:	02G4108		

#	Client Sample No	Lab Sample ID	S1 %	S1 #	TOT OUT
1		02G4108-LCS-01	82		0
2		02G4108-LSD-01	80		0
3		02G4108-MB-02	82		0
4	TB02100101	02-5228-3	87		0
5	GW COLDIRON COM	02-5228-1	113		0
6	GW LAT 3B 39	02-5228-2	103		0
7	EFF02OCT02	02-5254-2MS	86		0
8	EFF02OCT02	02-5254-2MSD	86		0
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

	QC Control Limit
S1 = 4-BROMO-FLUOROBENZENE (PID)	65-134

Column to be used to flag recovery values:

* – Values outside of contract required QC Limits D – Surrogate diluted out I – Matrix Interference

CHAIN OF CUSTODY RECORD/LAB WORK REQUEST

LABORATORY APCL
Contract El Paso Corp., San Juan River Basin

Chain of Custody ID 021001AL01
Page 1 of 1
Air Bill No. 836557901544

MWH
Phone (801) 617-3200 FAX (801) 617-4200
MWH Contact Brian Buffars

Project San Juan River Basin
Project Number 220013
Date Due 21 Days
Sampler's Name Ashley Lowe
(print clearly)

Location ID	Sample ID	Depth Interval (ft)	Date Collected	Time Collected	Matrix[a]	Sampling Technique[b]	ANALYSES REQUESTED: BTEX SW-846 8021B	Alkalinity SM 2320B	TDS USEPA 160.1	NM WQCC Metals SW-846 6010B & 7470A	Cations SW-846 6010B	Anions USEPA 300.0	Nitrate USEPA 300.0	Nitrite USEPA 300.0				
GW Coldiron Com	MW-1		10-01-02	9:29	WG	B	✓											
GW Lat 3B 39	MW-1		10-01-02	12:35	WG	B	✓											
TB021001 01			10-01-02				✓											

5228

[a] Matrix:
SO – Soil
WS – Surface Water
WG – Ground Water
AA – Air
WQ – Trip Blank/ Equipment Blanks
WW – Wastewater

[b] Sampling Technique:
Composite=C
Grab=G
Hand Auger=HA
Submersible Pump=SP
Bladder Pump=BP
Bailer=B
Wellhead Faucet=WF
Hydropunch=HP

Location IDs:
Groundwater Sites=GW
Bisti=BI
Jaquez=JA
North Flare Pit=NF
South Flare Pit=SF
San Juan River Plant=SJ

Relinquished by/Affiliation	Received by/Affiliation	Date	Time
Ashley Lowe/AESE	APC 10/2/02 1000	10-01-02	18:00

LABORATORY USE ONLY

SAMPLES WERE:

1 Shipped or hand delivered
Notes:

2 Ambient or Chilled
Notes:

3 Temperature _____

4 Received Broken/Leaking (Improperly Sealed)
Y N
Notes:

5 Properly Preserved
Y N
Notes:

6 Received Within Holding Times
Y N
Notes:

COC Tape Was:

1 Present on Outer Package
Y N NA

2 Unbroken on Outer Package
Y N NA

3 Present on Sample
Y N NA

4 Unbroken on Sample
Y N NA
Notes:

Discrepancies Between Sample Labels and COC Record?
Y N
Notes:

15 SEN

DATA VALIDATION WORKSHEET

Analytical Method/Analytes: SW-846 8021B (BTEX) **Sample Collection Date(s):** 07/15-16/02

Laboratory: APCL **MWH Job Number:** EPC-SJRB (Groundwater)

Batch Identification: 02-03922 **Matrix:** Water

QC Identification[a]: _____ **Page:** 1 of 2

Validation Complete: Brian Buttars 8-8-02
(Date/Signature)

Site ID	Sample ID	Lab. ID	Hits (Y/N)	Quals.	Comments
GW	Coldiron Com MW-1	02-03922-01	Y	J	Benzene @ 119 µg/L
				JB	Ethylbenzene @ 121 µg/L
				JB	Toluene @ 9.1 µg/L
				J	o-Xylene @ 161 µg/L
				JB	m/p-Xylene @ 421 µg/L
GW	Miles Federal MW-2	02-03922-02	Y	UB	Ethylbenzene @ 0.9 µg/L
				UB	Toluene @ 0.6F µg/L
				UB	m/p-Xylene @ 0.9F µg/L
QC	Trip Blank	02-03922-03	Y		

DATA VALIDATION WORKSHEET

Analytical Method: SW-846 8021B (BTEX) **MWH Job Number:** EPC-SJRB (Groundwater)

Laboratory: APCL **Batch Identification:** 02-03922

Validation Criteria								
Sample ID	**Coldiron Com MW-1**	**Miles Federal MW-2**						
Lab ID	**02-03922-01**	**02-03922-02**						
Hardcopy vs. Chain-of-Custody	A	A						
Holding Time	A	A						
Analyte List	A	A						
Reporting Limits	A	A						
Method Blank	A	A						
Trip Blank	A[1]	A[1]						
Equipment Rinseate Blanks	N/A	N/A						
Field Duplicate/Replicate	N/A	N/A						
Surrogate Spike Recovery	A[2]	A						
Laboratory Control Sample (LCS)	A	A						
Laboratory Control Sample Duplicate (LCSD)	N	N						
Matrix Spike/Matrix Spike Dup. (MS/MSD)	N/A	N/A						
Initial Calibration	N	N						
Initial Calibration Verification (ICV)	N	N						
Continuing Calibration Verification (CCV)	A	A						
Retention Time Window	N	N						
Injection Time(s)	N	N						
EDD vs. Hardcopy	N	N						
EDD vs. Chain of Custody	N	N						

(a) List QC batch identification if different than Batch ID
A indicates validation criteria were met
A/L indicates validation criteria met based upon Laboratory's QC Summary Form
X indicates validation criteria were not met
N indicates data review were not a project specific requirement
N/A indicates criteria are not applicable for the specified analytical method or sample
N/R indicates data not available for review

NOTES:

1) The following analytes were detected in the trip blank:
   a) Ethylbenzene @ 0.9 µg/L, qualify all sample concentrations less than or equal to 4.5 µg/L with a "UB" flag and all sample concentrations greater than 4.5 µg/l with a "B" flag.
   b) Toluene @ 0.3F µg/L, qualify all sample concentrations less than or equal to 1.5 µg/L with a "UB" flag and all sample concentrations greater than 1.5 µg/l with a "B" flag.
   c) M/p-Xylene @ 1F µg/L, qualify all sample concentrations less than or equal to 5 µg/L with a "UB" flag and all sample concentrations greater than 5 µg/l with a "B" flag.
2) Surrogate percent recovery above acceptance criterion @ 169% (65-134), possible high bias. Qualify all detected sample concentrations with a "J" flag.

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Submitted to:
Montgomery Watson Harza
Attention: Brian Buttars.
10619 South Jordan Gateway
Salt Lake City UT 84095
Tel: (801)617-3200 Fax: (801)617-4200

Service ID #: 801-023922
Collected by:
Collected on: 07/15-16/02

Received: 07/18/02
Extracted: N/A
Tested: 07/19-23/02
Reported: 07/25/02

Sample Description: Water
Project Description: San Juan River Basin

Analysis of Water Samples

Component Analyzed	Method	Unit	PQL	Analysis Result: Coldiron Corn MW-1 02-03922-1	Miles Federal MW-2 02-03922-2	Trip Blank 02-03922-3
BTXE						
Dilution Factor				1	1	1
BENZENE	8021B	µg/L	0.5	119	<0.5	<0.5
ETHYLBENZENE	8021B	µg/L	0.5	121	0.9	0.9
TOLUENE	8021B	µg/L	0.5	9.1	0.6	0.3J
O-XYLENE	8021B	µg/L	0.5	161	0.5J	<0.5
M,P-XYLENE	8021B	µg/L	1	421	0.9J	1J

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit
N.D.: Not Detected or less than the practical quantitation limit. "-": Analysis is not required.
J: Reported between PQL and MDL.
Listed Dilution Factors (DF) are relative to the method default DF. All unlisted DFs are 1.0

Respectfully submitted,

Dominic Lau
Laboratory Director
Applied P & Ch Laboratory

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL QA/QC Report

Submitted to:
Montgomery Watson Harza
Attention: Brian Buttars
10619 South Jordan Gateway
Salt Lake City, UT 84095
Tel: (801)617-3200 Fax: (801)617-4200

Service ID #: 801-023922
Collected by:
Collected on: 07/15-16/02
Sample description:
Water
Project: San Juan River Basin

Received: 07/18/02
Tested: 07/19-23/02
Reported: 07/29/02

Analysis of Water

801-023922QC

Component Name	Analysis Batch #	CCV (µg/L)	CCV %Rec	M-Blank	Conc. Unit	SP Level	LCS %Rec	MS %Rec	MSD %Rec	MS/MSD %RPD	Control Limit %Rec	Control Limit %Diff
BTXE												
Benzene	02G3209	100	97	N.D.	µg/L	18.0	88	88	87	1	68-130	31
Toluene	02G3209	100	98	N.D.	µg/L	70.0	96	95	93	2	66-133	33
Ethylbenzene	02G3209	100	101	N.D.	µg/L	18.0	103	97	96	1	65-134	35
m/p-Xylene	02G3209	200	93	N.D.	µg/L	70.0	101	97	94	3	65-134	35
o-Xylene	02G3209	100	96	N.D.	µg/L	25.0	100	98	95	3	65-134	35

Component Name	Analysis Batch #	CCV (µg/L)	CCV %Rec	M-Blank	Conc. Unit	SP Level	LCS %Rec	MS %Rec	MSD %Rec	MS/MSD %RPD	Control Limit %Rec	Control Limit %Diff
BTXE												
Benzene	02G3233	100	98	N.D.	µg/L	360	82	79	80	2	68-130	31
Toluene	02G3233	100	99	N.D.	µg/L	1400	94	92	94	2	66-133	33
Ethylbenzene	02G3233	100	101	N.D.	µg/L	18.0	104	104*	103*	1	82-134	35
m/p-Xylene	02G3233	200	93	N.D.	µg/L	70.0	99	99*	99*	0	73-134	35
o-Xylene	02G3233	100	96	N.D.	µg/L	500	100	95	100	5	65-134	35

*: LCS/LCSD is used.

Notation:
ICV – Initial Calibration Verification
CCV – Continuation Calibration Verification
LCS – Lab Control Spike
MS – Matrix Spike
MSD – Matrix Spike Duplicate
ICS – Interference Check Standard
MD – Matrix Duplicate
N.D. – Not detected or less than PQL
CCB – Continuation Calibration Blank
M-blank – Method Blank
SP Level – Spike Level
%Rec – Recovery Percent
%RPD – Relative Percent Differences
%Diff – Control Limit for %RPD
ICP-SD – ICP Serial Dilution
N.A. – Not Applicable

Respectfully submitted,

Kevin Xie, Ph. D.,
QA Director
Applied P & Ch Laboratory

FORM-2A

Applied P & Ch Laboratory

Surrogate Recovery Summary for Method 8021B

Client Name:	Montgomery Watson Harza	Contract No:		Lab Code:	APCL
Case No:		SAS No:		SDG Number:	023922
Project ID:	San Juan River Basin	Project No:		Sample Matrix:	Water
		Batch No:	02G3233		

#	Client Sample No	Lab Sample ID	S1 %	#	TOT OUT
1		02G3233-MB-02	93		0
2	MILES FEDERAL MW-2	02-3922-2	95		0
3		02G3233-LCS-01	89		0
4		02G3233-LSD-01	89		0
5	LAT 3B-39 MW-1	02-3933-3MS	94		0
6	LAT 3B-39 MW-1	02-3933-3MSD	95		0
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

QC Control Limit

S1 = 4-BROMO-FLUOROBENZENE (PID) 65-134

Column to be used to flag recovery values:

* – Values outside of contract required QC Limits D – Surrogate diluted out I – Matrix Interference

FORM-2A

Applied P & Ch Laboratory

Surrogate Recovery Summary for Method 8021B

Client Name:	Montgomery Watson Harza	Contract No:		Lab Code:	APCL
Case No:		SAS No:		Service ID:	023922
Project ID:	San Juan River Basin	Project No:		Sample Matrix:	Water
		Batch No:	02G3209		

#	Client Sample No	Lab Sample ID	S1 %	#	TOT OUT
1		02G3209-MB-02	90		0
2	COLDIRON COM MW-1	02-3922-1	169	I	1
3	TRIP BLANK	02-3922-3	89		0
4		02G3209-LCS-01	90		0
5		02G3209-LSD-01	87		0
6	JAQUEZ DOWNSTREAM	02-3933-1MS	88		0
7	JAQUEZ DOWNSTREAM	02-3933-1MSD	85		0
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

	QC Control Limit
S1 = 4-BROMO-FLUOROBENZENE (PID)	65-134

Column to be used to flag recovery values:

* – Values outside of contract required QC Limits D – Surrogate diluted out I – Matrix Interference

Pinnacle Laboratories Inc.

CHAIN OF CUSTODY

DATE: 07/16/02 PAGE: 1 OF 1

PLI Accession #:

PLEASE FILL THIS FORM IN COMPLETELY.

SHADED AREAS ARE FOR LAB USE ONLY

PROJECT MANAGER: Ashley Lowe

COMPANY: AESE
ADDRESS: 906 San Juan Blvd., Ste D
Farmington, NM 87401
PHONE: 505-566-9116
FAX: 505-566-9120

BILL TO: Montgomery Watson Harza
COMPANY:
ADDRESS:

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB I.D.
Coldiron Com MW-1	07/16/02	10:55	water	
Miles Federal MW-2	07/15/02	16:37	water	

Petroleum Hydrocarbons (418.1) TRPH	(MOD.8015) Diesel/Direct Inject	(M8015) Gas/Purge & Trap	8021 (BTEX)/8015 (Gasoline) MTBE	8021 (BTEX) ☐MTBE ☐TMB ☐PCE	8021 (TCL)	8021 (EDX)	8021 (HALO)	8021 (CUST)	504.1 EDB ☐ / DBCP ☐	8260 (TCL) Volatile Organics	8260 (Full) Volatile Organics	8260 (CUST) Volatile Organics	8260 (Landfill) Volatile Organics	Pesticides/PCB (608/8081/8082)	Herbicides (615/8151)	Base/Neutral/Acid Compounds GC/MS (625/8270)	Polynuclear Aromatics (610/8310/8270-SIMS)	General Chemistry:		Priority Pollutant Metals (13)	Target Analyte List Metals (23)	RCRA Metals (8)	RCRA Metals by TCLP (Method 1311)	Metals:		NUMBER OF CONTAINERS
					✓																				1
					✓																				1

3022

PROJECT INFORMATION	
PROJ. NO.:	
PROJ. NAME:	San Juan River Basin
P.O. NO.:	
SHIPPED VIA:	Fed Ex

SAMPLE RECEIPT	
NO. CONTAINERS	
CUSTODY SEALS	Y / N / NA
RECEIVED INTACT	
BLUE ICE	

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

(RUSH) ☐24hr ☐48hr ☐72hr ☐1 WEEK (NORMAL) ☑

CERTIFICATION REQUIRED ☐NM ☐SDWA ☐OTHER

METHANOL PRESERVATION ☐

COMMENTS: FIXED FEE ☐

Groundwater

RELINQUISHED BY: 1.	RELINQUISHED BY: 2.
Signature: Ashley Lowe Time: 16:50	Signature: Time:
Printed Name: Ashley Lowe Date: 07/16/02	Printed Name: Date:
Company:	Company:
See reverse side (Force Majeure)	
RECEIVED BY: 1.	**RECEIVED BY: (LAB) 2.**
Signature: Time: 1000	Signature: Time:
Printed Name: for Wendel Date: 7/18/02	Printed Name: Date:
Company:	Pinnacle Laboratories Inc.

PINNACLE LABORATORIES

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

Pinnacle Lab ID number **204017**
April 19, 2002

AMEC EARTH & ENVIRONMENTAL
2060 AFTON PLACE
FARMINGTON, NM 87401

EL PASO FIELD SERVICES
614 RIELLY STREET
FARMINGTON, NM 87401

Project Name COLD IRON A #1
Project Number 1517000121

Attention: LISA WINN/SCOTT POPE

On 04/03/02 Pinnacle Laboratories, Inc., (ADHS License No. AZ0592 pending), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

If you have any questions or comments, please do not hesitate to contact us at (505)344-3777.

H. Mitchell Rubenstein, Ph. D.
General Manager

MR: jt

Enclosure

PINNACLE LABORATORIES

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

CLIENT	: AMEC EARTH & ENVIRONMENTAL	PINNACLE ID	: 204017
PROJECT #	: 1517000121	DATE RECEIVED	: 04/03/02
PROJECT NAME	: COLD IRON A #1	REPORT DATE	: 04/19/02

PINNACLE ID #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
204017 - 01	COL-0204-MW1	AQUEOUS	04/02/02
204017 - 02	COL-0204-MWS1	AQUEOUS	04/02/02

PINNACLE LABORATORIES

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

GAS CHROMATOGRAPHY RESULTS

EST : EPA 8021 MODIFIED
LIENT : AMEC EARTH & ENVIRONMENTAL PINNACLE I.D.: 204017
ROJECT # : 1517000121
ROJECT NAME : COLD IRON A #1

AMPLE). #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
1	COL-0204-MW1	AQUEOUS	04/02/02	NA	04/05/02	5
2	COL-0204-MWS1	AQUEOUS	04/02/02	NA	04/05/02	5

ARAMETER	DET. LIMIT	UNITS	COL-0204-MW1	COL-0204-MWS1
ENZENE	0.5	UG/L	**26**	**17**
OLUENE	0.5	UG/L	**3.0**	< 2.5
THYLBENZENE	0.5	UG/L	**17**	**9.3**
O[illegible]YLENES	1.0	UG/L	**110**	**60**
JRROGATE:				
ROMOFLUOROBENZENE (%)			116	107
JRROGATE LIMITS	(80 - 120)			

HEMIST NOTES:
'A

PINNACLE LABORATORIES

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Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

'EST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 204017
3LANK I. D.	: 040502	DATE EXTRACTED	: N/A
:LIENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 04/05/02
'ROJECT #	: 1517000121	SAMPLE MATRIX	: AQUEOUS
'ROJECT NAME	: COLD IRON A #1		

'ARAMETER	UNITS	
3ENZENE	UG/L	<0.5
'OLUENE	UG/L	<0.5
:THYLBENZENE	UG/L	<0.5
'OTAL XYLENES	UG/L	<1.0
3URROGATE:		
3ROMOFLUOROBENZENE (%)		88
3U[illegible]GATE LIMITS:	(80 - 120)	
:H[illegible]T NOTES:		
I/A		

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GAS CHROMATOGRAPHY QUALITY CONTROL
LCS/LCSD

:ST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 204017
\TCH #	: 040502	DATE EXTRACTED	: N/A
.IENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 04/05/02
ROJECT #	: 1517000121	SAMPLE MATRIX	: AQUEOUS
ROJECT NAME	: COLD IRON A #1	UNITS	: UG/L

ARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
ENZENE	<0.5	20.0	18.9	95	18.0	90	5	(80 - 120)	20
OLUENE	<0.5	20.0	19.0	95	18.7	94	2	(80 - 120)	20
THYLBENZENE	<0.5	20.0	19.5	98	19.2	96	2	(80 - 120)	20
OTAL XYLENES	<1.0	60.0	62.0	103	61.0	102	2	(80 - 120)	20

NOTES:
A

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

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

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Albuquerque, New Mexico 87107
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Fax (505) 344-4413

GAS CHROMATOGRAPHY QUALITY CONTROL
MS/MSD

EST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 204017
SMSD #	: 204016-01	DATE EXTRACTED	: N/A
LIENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 04/05/02
ROJECT #	: 1517000121	SAMPLE MATRIX	: AQUEOUS
ROJECT NAME	: COLD IRON A #1	UNITS	: UG/L

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

HE NOTES:
A

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

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

Pinnacle Laboratories Inc.

CHAIN OF CUSTODY

DATE: 4-2-02 PAGE: 1 OF 1

PLI Accession #: 20407

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PLEASE FILL THIS FORM IN COMPLETELY.

PROJECT MANAGER:	Lisa Winn
COMPANY:	AMEC
ADDRESS:	2060 AFTON Place
	Farmington N.M. 87401
PHONE:	(505) 327-7928
FAX:	(505) 326-5721
BILL TO:	Scott Pope
COMPANY:	El Paso Field Services
ADDRESS:	614 Reilly AVE.
	Farmington N.M. 87401

SAMPLE ID	DATE	TIME	MATRIX	LAB I.D.	Petroleum Hydrocarbons (418.1) TRPH	(MOD.8015) Diesel/Direct Inject	(M8015) Gas/Purge & Trap	8021 (BTEX)/8015 (Gasoline) MTBE	8021 (BTEX) ☐ MTBE ☐ TMB ☐ PCE	8021 (TCL)	8021 (EDX)	8021 (HALO)	8021 (CUST)	504.1 EDB ☐ / DBCP ☐	8260 (TCL) Volatile Organics	8260 (Full) Volatile Organics	8260 (CUST) Volatile Organics	8260 (Landfill) Volatile Organics	Pesticides /PCB (608/8081/8082)	Herbicides (615/8151)	Base/Neutral/Acid Compounds GC/MS (625/8270)	Polynuclear Aromatics (610/8310/8270-SIMS)	General Chemistry:	Priority Pollutant Metals (13)	Target Analyte List Metals (23)	RCRA Metals (8)	RCRA Metals by TCLP (Method 1311)	Metals:	NUMB CONTAINERS
COL-0204-MW1	4-2-02	1300	H_2O	001					X																				2
COL-0204-MW51	4-2-02	1300	H_2O	002					X																				2

ANALYSIS REQUEST

PROJECT INFORMATION	
PROJ. NO.:	517000121
PROJ. NAME:	EPFS G.W. project
P.O. NO.:	
SHIPPED VIA:	Greyhound

SAMPLE RECEIPT	
NO. CONTAINERS:	4
CUSTODY SEALS:	Y / N (NA)
RECEIVED INTACT:	Y/N
BLUE ICE/ICE:	Y/N

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

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

CERTIFICATION REQUIRED: ☐ NM ☐ SDWA ☐ OTHER

METHANOL PRESERVATION ☐

COMMENTS: FIXED FEE ☐

COLDIRON A#1

meter # (73551)

RELINQUISHED BY: 1.	RELINQUISHED BY: 2.
Signature: Chris A. Mas Time: 1630	Signature: Time:
Printed Name: Chris A. Mas Date: 4-2-02	Printed Name: Date:
Company: AMEC	Company:
See reverse side (Force Majeure)	
RECEIVED BY: 1.	**RECEIVED BY: (LAB) 2.**
Signature: Time:	Signature: Francine Tavio Time: 0915
Printed Name: Date:	Printed Name: Francine Tavio Date: 4/3/02
Company:	Pinnacle Laboratories Inc.

PINNACLE LABORATORIES

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

Pinnacle Lab ID number **201015**
January 29, 2002

AMEC EARTH & ENVIRONMENTAL
2060 AFTON PLACE
FARMINGTON, NM 87401

EL PASO FIELD SERVICES
614 RIELLY STREET
FARMINGTON, NM 87401

Project Name COLD IRON A #1
Project Number 1517000121

Attention: LISA WINN/SCOTT POPE

On 01/04/02 Pinnacle Laboratories, Inc., (ADHS License No. AZ0592 pending), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

At the request of the client, this report is being reissued. We apologize for any inconvenience this may have caused. Original report was issued on January 23, 2002.

If you have any questions or comments, please do not hesitate to contact us at (505)344-3777.

H. Mitchell Rubenstein, Ph. D.
General Manager

MR: jt

Enclosure

PINNACLE LABORATORIES

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

CLIENT	: AMEC EARTH & ENVIRONMENTAL	PINNACLE ID	: 201015
PROJECT #	: 1517000121	DATE RECEIVED	: 01/04/02
PROJECT NAME	: COLD IRON A #1	REPORT DATE	: 01/29/02

PINNACLE ID #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
201015 - 01	COL-0201-MW1	AQUEOUS	01/03/02
201015 - 02	TRIP BLANK	AQUEOUS	11/26/01

PINNACLE LABORATORIES

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Albuquerque, New Mexico 87107
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Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : AMEC EARTH & ENVIRONMENTAL
PINNACLE I.D.: 201015
PROJECT # : 1517000121
PROJECT NAME : COLD IRON A #1

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED		DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR	
01	COL-0201-MW1	AQUEOUS	01/03/02		NA	01/11/02	10	**
02	TRIP BLANK	AQUEOUS	11/26/01	*	NA	01/11/02	1	

PARAMETER	DET. LIMIT	UNITS	COL-0201-MW1	TRIP BLANK
BENZENE	0.5	**UG/L**	**40**	< 0.5
TOLUENE	0.5	UG/L	< 5.0	< 0.5
ETHYLBENZENE	0.5	**UG/L**	**13**	< 0.5
TOTAL XYLENES	0.5	**UG/L**	**97**	< 0.5
SURROGATE:				
BROMOFLUOROBENZENE (%)			108	104
SURROGATE LIMITS	(80 - 120)			

CHEMIST NOTES:
*** The Trip Blank was received out of hold time.**
**** The dilution on this sample was due to matrix interference with surrogate recovery.**

PINNACLE LABORATORIES

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Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 201015
BLANK I. D.	: 011002B	DATE EXTRACTED	: N/A
CLIENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 01/10/02
PROJECT #	: 1517000121	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: COLD IRON A #1		

PARAMETER	UNITS	
BENZENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
ETHYLBENZENE	UG/L	<0.5
TOTAL XYLENES	UG/L	<0.5
SURROGATE:		
BROMOFLUOROBENZENE (%)		103
SURROGATE LIMITS:	(80 - 120)	

CHEMIST NOTES:
N/A

PINNACLE LABORATORIES

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

GAS CHROMATOGRAPHY QUALITY CONTROL
LCS/LCSD

TEST	: EPA 8021 MODIFIED		
BATCH ID#	: 011002B	PINNACLE I.D.	: 201015
CLIENT	: AMEC EARTH & ENVIRONMENTAL	DATE EXTRACTED	: N/A
PROJECT #	: 1517000121	DATE ANALYZED	: 01/10/02
PROJECT NAME	: COLD IRON A #1	SAMPLE MATRIX	: AQUEOUS
		UNITS	: UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
BENZENE	<0.5	20.0	21.0	105	21.0	105	0	(80 - 120)	20
TOLUENE	<0.5	20.0	20.8	104	20.6	103	1	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	21.0	105	20.8	104	1	(80 - 120)	20
TOTAL XYLENES	<0.5	60.0	63.6	106	62.6	104	2	(80 - 120)	20

CHEMIST NOTES:
N/A

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

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

PINNACLE LABORATORIES

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

GAS CHROMATOGRAPHY QUALITY CONTROL
MSMSD

TEST	: EPA 8021 MODIFIED		
MSMSD #	: 201020-09	PINNACLE I.D.	: 201015
CLIENT	: AMEC EARTH & ENVIRONMENTAL	DATE EXRACTED	: N/A
PROJECT #	: 1517000121	DATE ANALYZED	: 01/11/02
PROJECT NAME	: COLD IRON A #1	SAMPLE MATRIX	: AQUEOUS
		UNITS	: UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
BENZENE	<0.5	20.0	21.2	106	20.8	104	2	(80 - 120)	20
TOLUENE	<0.5	20.0	21.0	105	20.6	103	2	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	21.4	107	20.8	104	3	(80 - 120)	20
TOTAL XYLENES	<0.5	60.0	64.7	108	62.7	105	3	(80 - 120)	20

CHEMIST NOTES:
N/A

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

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

Pinnacle Laboratories Inc.

CHAIN OF CUSTODY

DATE: 1-3-02 PAGE: 1 OF 1

PLI Accession #: 201015

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

PROJECT MANAGER:	Lisa Winn
COMPANY:	AMEC
ADDRESS:	2060 IFTON place Farmington NM. 87401
PHONE:	(505) 327-7928
FAX:	(506) 326 5721
BILL TO:	SCOTT POOL
COMPANY:	El Paso Field Services
ADDRESS:	614 Reilly AVE Farmington N.M. 87401

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB I.D.	8021 (BTEX) ☐ MTBE ☐ TMB ☐ PCE	NUMBER OF CONTAINERS
C01-0201-MW1	1-3-02	1400	H2O	01	X	2
TRIP BLANK	11-26-01	1495	H2O	02	X	2

Petroleum Hydrocarbons (418.1) TRPH; (MOD.8015) Diesel/Direct Inject; (M8015) Gas/Purge & Trap; 8021 (BTEX)/8015 (Gasoline) MTBE; 8021 (BTEX) ☐ MTBE ☐ TMB ☐ PCE; 8021 (TCL); 8021 (EDX); 8021 (HALO); 8021 (CUST); 504.1 EDB ☐ / DBCP ☐; 8260 (TCL) Volatile Organics; 8260 (Full) Volatile Organics; 8260 (CUST) Volatile Organics; 8260 (Landfill) Volatile Organics; Pesticides /PCB (608/8081/8082); Herbicides (615/8151); Base/Neutral/Acid Compounds GC/MS (625/8270); Polynuclear Aromatics (610/8310/8270-SIMS); 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.:	517000121
PROJ. NAME:	EPFS G.W. Project
P.O. NO.:	
SHIPPED VIA:	Greyhound

SAMPLE RECEIPT	
NO. CONTAINERS:	3
CUSTODY SEALS:	Y / N (NA)
RECEIVED INTACT:	Y / N
BLUE ICE/ICE:	ICE

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) ☑

CERTIFICATION REQUIRED: ☐ NM ☐ SDWA ☐ OTHER

METHANOL PRESERVATION ☐

COMMENTS: FIXED FEE ☐

COLDIRON A#1 (73551)
meter #

RELINQUISHED BY: 1.	RELINQUISHED BY: 2.
Signature:	Signature:
Time: 1630	Time:
Printed Name: Chris A Mac	Printed Name:
Date: 1-3-02	Date:
Company: AMEC	Company:
See reverse side (Force Majeure)	

RECEIVED BY: 1.	RECEIVED BY: (LAB) 2.
Signature:	Signature: Francine Tanno
Time:	Time: 0915
Printed Name:	Printed Name: Francine Tanno
Date:	Date: 1/4/02
Company:	Pinnacle Laboratories Inc.

PINNACLE LABORATORIES

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

Pinnacle Lab ID number **201015**
January 23, 2002

AMEC EARTH & ENVIRONMENTAL
2060 AFTON PLACE
FARMINGTON, NM 87401

EL PASO FIELD SERVICES
614 RIELLY STREET
FARMINGTON, NM 87401

Project Name COLD IRON A #1
Project Number 1517000121

Attention: LISA WINN/SCOTT POPE

On 01/04/02 Pinnacle Laboratories, Inc., (ADHS License No. AZ0592 pending), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

If you have any questions or comments, please do not hesitate to contact us at (505)344-3777.

H. Mitchell Rubenstein, Ph. D.
General Manager

MR: jt

Enclosure

PINNACLE LABORATORIES

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

CLIENT	: AMEC EARTH & ENVIRONMENTAL	PINNACLE ID	: 201015
PROJECT #	: 1517000121	DATE RECEIVED	: 01/04/02
PROJECT NAME	: COLD IRON A #1	REPORT DATE	: 01/23/02

PINNACLE ID #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
201015 - 01	COL-0201-MW1	AQUEOUS	01/03/02
201015 - 02	TRIP BLANK	AQUEOUS	11/26/01

PINNACLE LABORATORIES

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

GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : AMEC EARTH & ENVIRONMENTAL PINNACLE I.D.: 201015
PROJECT # : 1517000121
PROJECT NAME : COLD IRON A #1

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED		DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR	
01	COL-0201-MW1	AQUEOUS	01/03/02		NA	01/11/02	10	**
02	TRIP BLANK	AQUEOUS	11/26/01	*	NA	01/11/02	1	

PARAMETER	DET. LIMIT	UNITS	COL-0201-MW1	TRIP BLANK	
BENZENE	0.5	**UG/L**	**40**	< 0.5	
TOLUENE	0.5	UG/L	< 5.0	< 0.5	
ETHYLBENZENE	0.5	**UG/L**	**13**	< 0.5	
TOTAL XYLENES	0.5	**UG/L**	**97**	< 0.5	
METHYL-t-BUTYL ETHER	2.5	UG/L	< 25	< 2.5	D1
1,3,5-TRIMETHYLBENZENE	0.5	**UG/L**	**21**	< 0.5	
1,2,4-TRIMETHYLBENZENE	0.5	**UG/L**	**69**	< 0.5	

SURROGATE:

BROMOFLUOROBENZENE (%)		108	104
SURROGATE LIMITS	(80 - 120)		

CHEMIST NOTES:

*** The Trip Blank was received out of hold time.**

**** The dilution on this sample was due to matrix interference with surrogate recovery.**

D1 - Methyl-t-Butyl Ether value obtained from analysis on 01.07.02.

PINNACLE LABORATORIES

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Albuquerque, New Mexico 87107
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Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

EST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 201015
LANK I. D.	: 011002B	DATE EXTRACTED	: N/A
LIENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 01/10/02
ROJECT #	: 1517000121	SAMPLE MATRIX	: AQUEOUS
ROJECT NAME	: COLD IRON A #1		

ARAMETER	UNITS	
ENZENE	UG/L	<0.5
OLUENE	UG/L	<0.5
THYLBENZENE	UG/L	<0.5
OTAL XYLENES	UG/L	<0.5
IETHYL-t-BUTYL ETHER	UG/L	<2.5
,3,5-TRIMETHYLBENZENE	UG/L	<0.5
,2,4-TRIMETHYLBENZENE	UG/L	<0.5

URROGATE:		
BROMOFLUOROBENZENE (%)		103
URROGATE LIMITS:	(80 - 120)	

CHEMIST NOTES:
N/A

PINNACLE LABORATORIES

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Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY QUALITY CONTROL
LCS/LCSD

:ST	: EPA 8021 MODIFIED		
\TCH ID#	: 011002B	PINNACLE I.D.	: 201015
.IENT	: AMEC EARTH & ENVIRONMENTAL	DATE EXTRACTED	: N/A
ROJECT #	: 1517000121	DATE ANALYZED	: 01/10/02
ROJECT NAME	: COLD IRON A #1	SAMPLE MATRIX	: AQUEOUS
		UNITS	: UG/L

ARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
ENZENE	<0.5	20.0	21.0	105	21.0	105	0	(80 - 120)	20
OLUENE	<0.5	20.0	20.8	104	20.6	103	1	(80 - 120)	20
THYLBENZENE	<0.5	20.0	21.0	105	20.8	104	1	(80 - 120)	20
OTAL XYLENES	<0.5	60.0	63.6	106	62.6	104	2	(80 - 120)	20
ETHYL-t-BUTYL ETHER	<2.5	20.0	22.7	114	22.8	114	0	(70 - 133)	20

HEMIST NOTES:
/A

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

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

PINNACLE LABORATORIES

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

GAS CHROMATOGRAPHY QUALITY CONTROL
MSMSD

EST	: EPA 8021 MODIFIED		
ISMSD #	: 201020-09	PINNACLE I.D.	: 201015
LIENT	: AMEC EARTH & ENVIRONMENTAL	DATE EXRACTED	: N/A
ROJECT #	: 1517000121	DATE ANALYZED	: 01/11/02
ROJECT NAME	: COLD IRON A #1	SAMPLE MATRIX	: AQUEOUS
		UNITS	: UG/L

'ARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
;ENZENE	<0.5	20.0	21.2	106	20.8	104	2	(80 - 120)	20
'OLUENE	<0.5	20.0	21.0	105	20.6	103	2	(80 - 120)	20
:THYLBENZENE	<0.5	20.0	21.4	107	20.8	104	3	(80 - 120)	20
'OTAL XYLENES	<0.5	60.0	64.7	108	62.7	105	3	(80 - 120)	20
/IETHYL-t-BUTYL ETHER	<2.5	20.0	20.4	102	19.0	95	7	(70 - 133)	20

;HEMIST NOTES:
N/A

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

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

Pinnacle Laboratories Inc.

CHAIN OF CUSTODY

DATE: 1-3-02 PAGE: 1 OF 1

PLI Accession #: 2010

SHADED AREAS ARE FOR LAB USE ONLY.

PLEASE FILL THIS FORM IN COMPLETELY.

PROJECT MANAGER: Lisa Winn

COMPANY: AMEC
ADDRESS: 2060 IFTON Place
Farmington NM. 87401
PHONE: (505) 327-7928
FAX: (505) 326 5721

BILL TO: SCOTT Pope
COMPANY: El Paso Field Services
ADDRESS: 614 Reilly AVE
Farmington NM. 87401

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB I.D.	Petroleum Hydrocarbons (418.1) TRPH	(MOD.8015) Diesel/Direct Inject		(M8015) Gas/Purge & Trap	8021 (BTEX)/8015 (Gasoline) MTBE	8021 (BTEX) ☐ MTBE ☐ TMB ☐ PCE	8021 (TCL)	8021 (EDX)	8021 (HALO)	8021 (CUST)	504.1 EDB ☐ / DBCP ☐	8260 (TCL) Volatile Organics	8260 (Full) Volatile Organics	8260 (CUST) Volatile Organics	8260 (Landfill) Volatile Organics	Pesticides /PCB (608/8081/8082)	Herbicides (615/8151)	Base/Neutral/Acid Compounds GC/MS (625/8270)	Polynuclear Aromatics (610/8310/8270-SIMS)	General Chemistry:		Priority Pollutant Metals (13)	Target Analyte List Metals (23)	RCRA Metals (8)	RCRA Metals by TCLP (Method 1311)	Metals:		NO. OF CONTAINERS
C01-0201-MW1	1-3-02	1400	H2O	01						X																						2
TRIP BLANK	11-26-01	1495	H2O	02						X																						1

PROJECT INFORMATION

PROJ. NO.: 517000121
PROJ. NAME: EPFS G.W. Project
P.O. NO.:
SHIPPED VIA: Grey Hound

SAMPLE RECEIPT

NO. CONTAINERS	3
CUSTODY SEALS	Y / N (NA)
RECEIVED INTACT	Y / N
BLUE ICE	Y / N 6.2°

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) ☑

CERTIFICATION REQUIRED: ☐ NM ☐ SDWA ☐ OTHER

METHANOL PRESERVATION ☐

COMMENTS: FIXED FEE ☐

COLDIRON A#1 (73551)
motor #

RELINQUISHED BY: 1.

Signature: Time: 1636
Printed Name: Chris L. Mac Date: 1-3-02
Company: AMEC
See reverse side (Force Majeure)

RECEIVED BY: 1.

Signature: Time:
Printed Name: Date:
Company:

RELINQUISHED BY:

Signature: Time:
Printed Name: Date:
Company:

RECEIVED BY: (LAB) 2.

Signature: Time: 0915
Printed Name: Date: 1/4/02
Pinnacle Laboratories Inc.

ATTACHMENT 2

FIELD DOCUMENTATION

WELL DEVELOPMENT AND SAMPLING LOG

Project No: 220013 Project Name: San Juan River Basin Client: MWH

Location: Coldiron Com Well No: MW-1 Development ☐ Sampling ☑

Project Manager Ashley Lowe Date 10/01/02 Start Time 8:20 Weather 42°, partly cloudy

Depth to Water 36.35 Depth to Product NA Product Thickness NA Measuring Point TOC

Water Column Height 8.78 Well Dia. 4" TD 45.125

Sampling Method: Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Other ☐

Bottom Valve Bailer ☑ Double Check Valve Bailer ☐ Stainless-Steel Kemmerer ☐

Criteria: 3 to 5 Casing Volumes of Water Removal ☑ Sabilization of Indicator Parameters ☐ Other er bail/dry

Gal/ft x ft of water	Water Volume In Well		Gal/oz to be removed
	Gallons	Ounces	
0.65 × 8.78	5.7 × 3		17 gal

Time (military)	pH	SC (umhos/cm)	Temp (°C)	Eh-ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gal.)	Comments/ Flow rate
8:32	4.62	2100	10.5				½ gal	strong odor, gray, slightly cloudy
	4.55	2430	13.5				2	clear sheen on water
	4.58	2690	14.2				4	dark gray - stains
	4.53	2550	14.1				6	
	4.50	2700	14.1				8	v. black
	4.55	2700	14.2				10	
	4.73	2820	14.3				12	
	4.84	2760	14.1				14	
	4.92	2840	14.2				15	
	4.95	2840	14.1				16	
	4.95	2870	14.1				17	

Final:

Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow rate
9:29	4.95	2870	14.1					17 gal	

COMMENTS: _____

INSTRUMENTATION: pH Meter ☑ _____ Temperature Meter ☑ _____

DO Monitor ☐ _____ Other ☐ _____

Conductivity Meter ☑ _____

Water Disposal Kutz Plant

Sample ID Coldiron Com MW-1 Sample Time 9:29 BTEX ☑ VOCs ☐ Alkilinity ☐

TDS ☐ Cations ☐ Anions ☐ Nitrate ☐ Nitrite ☐ Ammonia ☐ TKN ☐ NM WQCC Metals ☐

Total Phosphorus ☐ _____ ☐ _____ ☐ _____ ☐ _____ ☐

MS/MSD _____ BD _____ BD Name/Time _____ TB [redacted] TB021001O1

CHAIN OF CUSTODY RECORD/LAB WORK REQUEST

LABORATORY APCL
Contract El Paso Corp., San Jaun River Basin

Chain of Custody ID 021001AL01
Page 1 of 1
Air Bill No. 836557901544

MWH
Phone (801) 617-3200 FAX (801) 617-4200
MWH Contact Brian Buttars

Project San Juan River Basin
Project Number 220013
Date Due 21 Days
Sampler's Name Ashley Lowe
(print clearly)

Location ID	Sample ID	Depth Interval (ft)	Date Collected	Time Collected	Matrix [a]	Sampling Technique [b]	ANALYSES REQUESTED: BTEX SW-846 8021B	Alkalinity SM 2320B	TDS USEPA 160.1	NM WQCC Metals SW-846 6010B & 7470A	Cations SW-846 6010B	Anions USEPA 300.0	Nitrate USEPA 300.0	Nitrite USEPA 300.0				
GW Coldiron Com	MW-1		10-01-02	9:29	WG	B	✓											
GW Lat 3B 39	MW-1		10-01-02	12:35	WG	B	✓											

[a] Matrix:
SO – Soil
WS – Surface Water
WG – Ground Water
AA – Air
WQ – Trip Blank/ Equipment Blanks
WW – Wastewater

[b] Sampling Technique:
Composite=C
Grab=G
Hand Auger=HA
Submersible Pump=SP
Bladder Pump=BP
Bailer=B
Wellhead Faucet=WF
Hydropunch=HP

Location IDs:
Groundwater Sites=GW
Bisti=BI
Jaquez=JA
North Flare Pit=NF
South Flare Pit=SF
San Juan River Plant=SJ

Relinquished by/Affiliation	Received by/Affiliation	Date	Time
Ashley Lowe/AESE		10-01-02	15:00

LABORATORY USE ONLY

SAMPLES WERE:

1 Shipped or hand delivered
Notes:

2 Ambient or Chilled
Notes:

3 Temperature _____

4 Received Broken/Leaking (Improperly Sealed)
Y N
Notes:

5 Properly Preserved
Y N
Notes:

6 Received Within Holding Times
Y N
Notes:

COC Tape Was:

1 Present on Outer Package
Y N NA

2 Unbroken on Outer Package
Y N NA

3 Present on Sample
Y N NA

4 Unbroken on Sample
Y N NA
Notes:

Discrepancies Between Sample Labels and COC Record?
Y N
Notes:

FedEx Express **USA Airbill** FedEx Tracking Number **836557901544**

Form ID No. 0200 **Sender's Copy**

1 From Please print and press hard.

Date 10-01-02 Sender's FedEx Account Number 236245993

Sender's Name Ashley Lowe Phone (505) 566-9116

Company AESE

Address 906 San Juan Blvd, Ste D Dept/Floor/Suite/Room

City Farmington State NM ZIP 87401

2 Your Internal Billing Reference First 24 characters will appear on invoice.

Recipient's Name Eric Wendland Phone (909) 590-1828

Company APCL

Address 13760 Magnolia Ave We cannot deliver to P.O. boxes or P.O. ZIP codes.

To "HOLD" at FedEx location, print FedEx address.

Address Dept/Floor/Suite/Room

City Chino State CA ZIP 91710

4a Express Package Service *Packages up to 150 lbs.* Delivery commitments may be later in some areas.

- [x] FedEx Priority Overnight — Next business morning
- [ ] FedEx Standard Overnight — Next business afternoon
- [ ] FedEx First Overnight — Earliest next business morning delivery to select locations
- [ ] FedEx 2Day — Second business day
- [ ] FedEx Express Saver — Third business day

FedEx Envelope rate not available. Minimum charge: One-pound rate

4b Express Freight Service *Packages over 150 lbs.* Delivery commitment may be later in some areas.

- [ ] FedEx 1Day Freight* — Next business day
- [ ] FedEx 2Day Freight — Second business day
- [ ] FedEx 3Day Freight — Third business day

* Call for Confirmation: * Declared value limit $500

5 Packaging

- [ ] FedEx Envelope*
- [ ] FedEx Pak* — Includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak
- [x] Other

6 Special Handling Include FedEx address in Section 3.

- [ ] SATURDAY Delivery — Available ONLY for FedEx Priority Overnight and FedEx 2Day to select ZIP codes
- [ ] HOLD Weekday at FedEx Location — Not Available for FedEx First Overnight
- [ ] HOLD Saturday at FedEx Location — Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations

Does this shipment contain dangerous goods? One box must be checked.

- [x] No
- [ ] Yes — As per attached Shipper's Declaration
- [ ] Yes — Shipper's Declaration not required
- [ ] Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg
- [ ] Cargo Aircraft Only

Dangerous Goods (including Dry Ice) cannot be shipped in FedEx packaging.

7 Payment *Bill to:* Enter FedEx Acct. No. or Credit Card No. below.

- [ ] Sender — Acct. No. in Section 1 will be billed.
- [x] Recipient
- [ ] Third Party
- [ ] Credit Card
- [ ] Cash/Check

FedEx Acct. No. / Credit Card No. Exp. Date

Total Packages	Total Weight	Total Declared Value†	
1	10 lbs	$ .00	FedEx Use Only

†Our liability is limited to $100 unless you declare a higher value. See back for details.

8 Release Signature *Sign to authorize delivery without obtaining signature.*

I authorize you to deliver this shipment without obtaining a signature and agree to indemnify and hold you harmless from any resulting claims.

446

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AESE

906 San Juan Blvd.Ste.D
Farmington, NM 87401
505.566.9116(9120fax)

Well Number Coldiron Com MW-1

Development / Purging

WELL DEVELOPMENT AND PURGING DATA

Serial No. WDPD-

Project Name San Juan River Basin Field Prog Project Manager Ashley Lowe Project No.

Client Company Montgomery Watson Harza Phase.Task No.

Site Name Coldiron Com Site Address

Development Criteria
- ☑ 3 to 5 Casing Volumes of Water Removal
- ☐ Stabilization of Indicator Parameters
- ☐ Other

Water Volume Calculation
- Initial Depth of Well (feet) 45.189' BTOC
- Initial Depth to Water (feet) 38.860'
- Height of Water Column in Well (feet) 6.329'
- Diameter (inches): Well 4' Gravel Pack

Gal/ft * water column	Water Volume in Well Gallons	Water Volume in Well Ounces	Gal/Oz to be Removed
6.33 x 0.16 =	4.1 x 3 =		

Instruments — Serial No. (if applicable)
- ☑ PH Meter
- ☑ DO Monitor
- ☑ Conductivity Meter
- ☑ Temperature Meter
- ☐ Other

Methods of Development

Pump
- ☐ Centrifugal
- ☐ Submersible
- ☐ Peristaltic

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

☐ Other

Water Disposal

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
07/16/02	10:16		✓		½ gal	24.0	5.28	1870		very strong odor
					1	22.5	5.24	1880		light gray in color
					1.5	21.9	5.23	1840		
					3.0	20.6	5.24	1900		light brown color
					3.9	20.7	5.26	2040		
		d(in)	gal/ft		5.9	21.8	5.33	2190		still getting good recovery - double bailer
		2	0.16		7.8	21.2	5.32	2290		
		4	0.65		9.9	21.1	5.34	2310		
		6	1.47		11.9	20.9	5.34	2310		

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

Comments

Developer's Signature (s) Ashley L Lowe Date 07/16/02 Reviewer Date

AESE

906 San Juan Blvd. Ste. D
Farmington, NM 87401
505.566.9116(9120fax)

Well Number Coldiron Com MW-1

Development / Purging

WELL DEVELOPMENT AND PURGING DATA

Serial No. WDPD-

Project Name San Juan River Basin Field Prog Project Manager Ashley Lowe Project No.

Client Company MWH Phase.Task No.

Site Name Coldiron Com Site Address

Development Criteria
- ☑ 3 to 5 Casing Volumes of Water Removal
- ☐ Stabilization of Indicator Parameters
- ☐ Other

Water Volume Calculation
- Initial Depth of Well (feet) see pg 1 of 2
- Initial Depth to Water (feet)
- Height of Water Column in Well (feet)
- Diameter (inches): Well Gravel Pack

Gal/ft * water column	Water Volume in Well		Gal/Oz to be Removed
	Gallons	Ounces	

Instruments — Serial No. (if applicable)
- ☑ PH Meter
- ☐ DO Monitor
- ☑ Conductivity Meter
- ☑ Temperature Meter
- ☐ Other

Methods of Development

Pump
- ☐ Centrifugal
- ☐ Submersible
- ☐ Peristaltic

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

☐ Other

Water Disposal

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
					132	20.9	5.33	2310		
	10:55									sample - contains some dirt, strong smell, packed on ice DO= 0.65 mg/L
		d(in)	gal/ft							
		2	0.16							
		4	0.65							
		6	1.47							

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

Comments

Developer's Signature (s) Ashley L Lowe Date 07/16/02 Reviewer Date

☐ Development
☑ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number MW1 Page 1 of 1

Project Name EPFS GW. project Project Manager LISA WINN Project No. 151200121

Client Company El paso Field Services

Site Name COLDIRON #1 (73551) Site Address AZTEC N.M.

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) 45.21
Initial Depth to Water (feet) 36.30
Height of Water Column in Well (feet) 8.91
Diameter (inches): Well 4" Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	8.91	5.81 X 3	17.43
Gravel Pack			
Drilling Fluids			
Total			17.43

Instruments

	Serial No. (If applicable)
☑ pH Meter	YSI 63
☑ DO Monitor	YSI 95
☑ Conductivity Meter	YSI 63
☑ Temperature Meter	YSI 63
☐ Other	

Water Disposal

KWI Seperator Bloomfield N.M.

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
4-2-02	1229		X				3.5	3.5			17.2	7.08	2234		Clear, light Sheen product odor
	1233		X				3.5	7			15.7	7.20	2471		" "
	1236		X				3.5	10.5			15.4	7.21	2860		" "
	1245		X				3.5	14			15.3	7.22	3201		" "
	1251		X			38.36	3.5	17.5			15.3	7.23	3413	0.15	No Change

Comments Sampled for BTEX 1300, 20TH SAMPLE Duplicate Sample MW 51

Developer's Signature(s) Chris A. May Date 4-2-02 Reviewer Lisa Winn Date 4/4/02

Pinnacle Laboratories Inc.

CHAIN OF CUSTODY

DATE: 4-2-02 PAGE: 1 OF 1

PLI Accession #:

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PLEASE FILL THIS FORM IN COMPLETELY.

PROJECT MANAGER:	Lisa Winn
COMPANY:	AMEC
ADDRESS:	2060 AFTON place Farmington N.M. 87401
PHONE:	(505) 327-7928
FAX:	(505) 326-5721
BILL TO:	Scott Pope
COMPANY:	El Paso Field Services
ADDRESS:	614 Reilly AVE Farmington N.M. 87401

SAMPLE ID	DATE	TIME	MATRIX	LAB I.D.	Petroleum Hydrocarbons (418.1) TRPH	(MOD.8015) Diesel/Direct Inject	(M8015) Gas/Purge & Trap	8021 (BTEX)/8015 (Gasoline) MTBE	8021 (BTEX) ☐ MTBE ☐ TMB ☐ PCE	8021 (TCL)	8021 (EDX)	8021 (HALO)	8021 (CUST)	504.1 EDB ☐ / DBCP ☐	8260 (TCL) Volatile Organics	8260 (Full) Volatile Organics	8260 (CUST) Volatile Organics	8260 (Landfill) Volatile Organics	Pesticides /PCB (608/8081/8082)	Herbicides (615/8151)	Base/Neutral/Acid Compounds GC/MS (625/8270)	Polynuclear Aromatics (610/8310/8270-SIMS)	General Chemistry:		Priority Pollutant Metals (13)	Target Analyte List Metals (23)	RCRA Metals (8)	RCRA Metals by TCLP (Method 1311)	Metals:		NUMBER OF CONTAINERS
COL-0204-MW1	4-2-02	1300	H_2O						X																					2
COL-0204-MW51	4-2-02	1300	H_2O						X																					2

PROJECT INFORMATION

PROJ. NO.: 61200121

PROJ. NAME: EPFS GW. project

P.O. NO.:

SHIPPED VIA: Greyhound

SAMPLE RECEIPT

NO. CONTAINERS	
CUSTODY SEALS	Y/N/NA
RECEIVED INTACT	
BLUE ICE/ICE	

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

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

CERTIFICATION REQUIRED: ☐ NM ☐ SDWA ☐ OTHER

METHANOL PRESERVATION ☐

COMMENTS: FIXED FEE ☐

COLDIRON A#1

meter # (73551)

RELINQUISHED BY: 1

Signature: Time: 1630

Printed Name: Date:

Company: AMEC

See reverse side (Force Majeure)

RECEIVED BY: 1

Signature: Time:

Printed Name: Date:

Company:

RELINQUISHED BY: 2

Signature: Time:

Printed Name: Date:

Company:

RECEIVED BY (LAB): 2

Signature: Time:

Printed Name: Date:

Pinnacle Laboratories Inc.

1SJU 1410

amec

☐ Development
☑ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number MW 1 | Page 1 of 1

Project Name EPFS GW project | Project Manager List Winn | Project No. 517000121

Client Company El Paso Field Services

Site Name Coldiron A#1 73551 | Site Address Rural San Juan Co.

Development Criteria
☑ (3) to 5 Casing Volumes of Water Removal
☑ Stabilization of Indicator Parameters
☐ Other ______

Methods of Development
Pump
☐ Centrifugal
☐ Submersible
☐ Peristaltic

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

☐ Other ______

Water Volume Calculation
Initial Depth of Well (feet) 45.21
Initial Depth to Water (feet) 35.87
Height of Water Column in Well (feet) 9.34
Diameter (inches): Well 4" Gravel Pack ____

Item	Water Volume in Well: Cubic Feet	Water Volume in Well: Gallons	Gallons to be Removed
Well Casing	9.34	6.09 x 3	18.29
Gravel Pack			
Drilling Fluids			
Total			

Instruments

Instrument	Serial No. (If applicable)
☑ pH Meter	YSI 63
☐ DO Monitor	
☑ Conductivity Meter	YSI 63
☑ Temperature Meter	YSI 63
☐ Other	

Water Disposal
Kutz Seperator Bloomfield N.M.

Water Removal Data

Date	Time	Development Method: Pump	Development Method: Bailer	Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons): Increment	Water Volume Removed (gallons): Cumulative	Product Volume Removed (gallons): Increment	Product Volume Removed (gallons): Cumulative	Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
1-3-02	1329		X				4.0	4.0			14.8	7.10	2181		CLOUDY GREY ROTTEN EGG ODOR, SHEEN
	1334		X				4.0	8.0			14.8	7.23	2630		"
	1337		X				4.0	12.0			14.9	7.25	3011		"
	1342		X				4.0	16.0			14.5	7.28	3186		"
			X			37.91	4.0	20.0			14.6	7.24	3396		NO CHANGE

Comments SAMPLED @ 1400

Developer Signature(s) [signature] Date 1-3-02 Reviewer [signature] Date 1/9/02

Pinnacle Laboratories Inc.

CHAIN OF CUSTODY

DATE: 1-3-02 PAGE: 1 OF 1

PLI Accession #:

SHADED AREAS ARE FOR LAB USE ONLY.

PLEASE FILL THIS FORM IN COMPLETELY.

PROJECT MANAGER: Lisa Lynn

COMPANY: AMEC
ADDRESS: 2060 IFTON Place
Farmington N.M. 87401
PHONE: (505) 327-7928
FAX: (505) 326 5721

BILL TO: SCOTT POPE
COMPANY: El Paso Field Services
ADDRESS: 614 Reilly AVE
Farmington N.M. 87401

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	Petroleum Hydrocarbons (418.1) TRPH	(MOD.8015) Diesel/Direct Inject	(M8015) Gas/Purge & Trap	8021 (BTEX)/8015 (Gasoline) MTBE	8021 (BTEX) ☐ MTBE ☐ TMB ☐ PCE	8021 (TCL)	8021 (EDX)	8021 (HALO)	8021 (CUST)	504.1 EDB ☐ / DBCP ☐	8260 (TCL) Volatile Organics	8260 (Full) Volatile Organics	8260 (CUST) Volatile Organics	8260 (Landfill) Volatile Organics	Pesticides /PCB (608/8081/8082)	Herbicides (615/8151)	Base/Neutral/Acid Compounds GC/MS (625/8270)	Polynuclear Aromatics (610/8310/8270-SIMS)	General Chemistry:		Priority Pollutant Metals (13)	Target Analyte List Metals (23)	RCRA Metals (8)	RCRA Metals by TCLP (Method 1311)	Metals:		NUMBER OF CONTAINERS
COI-0201-MW1	1-3-02	1400	H2O						X																					
TRIP BLANK	11-26-01	1445	H2O						X																					

PROJECT INFORMATION

PROJ. NO.: 517000121
PROJ. NAME: EPFS G.W. Project
P.O. NO.:
SHIPPED VIA: Grey Hound

SAMPLE RECEIPT

NO. CONTAINERS	
CUSTODY SEALS	Y / N / NA
RECEIVED INTACT	
BLUE ICE	

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) ☑

CERTIFICATION REQUIRED: ☐ NM ☐ SDWA ☐ OTHER

METHANOL PRESERVATION ☐

COMMENTS: FIXED FEE ☐

COLDIRON A#1
meter # (73551)

RELINQUISHED BY: 1	RELINQUISHED BY: 2
Signature: Time: 1630	Signature: Time:
Printed Name: Chris Mac Date: 1-3-02	Printed Name: Date:
Company: AMEC	Company:
See reverse side (Force Majeure)	
RECEIVED BY: 1	**RECEIVED BY: (LAB) 2**
Signature: Time:	Signature: Time:
Printed Name: Date:	Printed Name: Date:
Company:	Pinnacle Laboratories Inc.