3R - 228

REPORTS

DATE:

April 2003

elpaso Field Services

Certified Mail: #7001 1940 0002 1371 7775

April 15, 2003

RECEIVED

APR 21 2003

ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

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

RE: Closure Request for the Ohio C Government # 3

Dear Mr. Olson:

El Paso Field Services (EPFS) hereby requests written approval of the closure of the Ohio C Government # 3. The attached report details the most recent closure sampling. Documentation supporting previous investigation, remediation and monitoring performed at the site have been submitted in earlier Annual Reports and closure requests.

If you have any questions concerning the enclosed closure request or require additional information please call me at (505) 599-2124.

Sincerely,

Scott T. Pope P.G.
Senior Environmental Scientist

Attachments: as stated

xc: Mr. Denny Foust, NMOCD, Aztec - w / enclosures; **Certified Mail # 7001 1940 0002 1371 7768**
Mr. Bill Liesse, BLM – w / enclosures (federal sites only), **Certified Mail # 7001 1940 0002 1371 7751**

Pit Closure Report
Ohio C Government #3
72890

RECEIVED

APR 21 2003

ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

April 2003

Prepared for

El Paso Field Services
Farmington, New Mexico

elpaso

MWH
MONTGOMERY WATSON HARZA

Ohio C Government #3
Meter Code: 72890

SITE DETAILS

LEGAL DESCRIPTION: **Twn:** 28N **Rng:** 11W **Sec:** 26 **Unit:** P

NMOCD Haz Ranking: 40 **Land Type:** Federal **Operator:** Marathon Oil Co.

PREVIOUS ACTIVITIES

Site Assessment: 9/94	**Excavation:** 9/94 (50 cy)	**Soil Boring:** 9/95
Monitor Well: 5/97	**Geoprobe:** 10/96	**Additional MWs:** 10/99
Downgradient MWs: 10/99	**Replace MW:** NA	**Quarterly Initiated:** 6/97
ORC Nutrient Injection: NA	**Re-Excavation:** 9/95 (1098cy)	**PSH Removal Initiated:** NA
Annual Initiated: NA	**Quarterly Resumed:** 12/00	

Following the initial site assessment in September of 1994 the existing pit was excavated to a depth of 12 feet beneath ground surface (bgs). Approximately 50 cubic yards of source material was removed and disposed of at the Envirotech land farm. The headspace soil reading from the bottom of the excavation was 328 ppm, no groundwater was encountered. Soil analytical for the sample was as follows: Benzene 150 mg/kg, Toluene 930 mg/kg, Ethyl Benzene 61 mg/kg, Total Xylenes 700 mg/kg, Total BTEX 1840 mg/kg, and TPH (418.1) 11800 mg/kg.

A secondary re-excavation was done September 1995 the pit was excavated to a depth of 13-17 feet (bgs) and was approximately 76 feet by 50 feet. Approximately 1098 cubic yards of source material was removed and disposed of at the Envirotech land farm. The headspace soil reading from the bottom of the excavation was 72 ppm. A water sample was taken from pooled water in the pit the sample was as follows: Benzene 200 ppb, Toluene 713 ppb, Ethyl Benzene 713 ppb, Total Xylenes 808 ppb. Soil analytical for the excavation was as follows: Benzene <0.5 mg/kg, Toluene <0.5 mg/kg, Ethyl Benzene <0.5 mg/kg, Total Xylenes <1.5 mg/kg, Total BTEX <3 mg/kg, and TPH (418.1) 66.0 mg/kg.

Geoprobe groundwater data was collected in various locations on the site during October of 1996 and January 1997, the groundwater data indicated groundwater below standards at all locations except PH2, PH6, PH8, PH11, PH12, PH13, PZ3 and PZ4. Geoprobe data was submitted in the March 31, 1999 Annual Report.

One soil boring was drilled on 9/13/1995 and sampled at 15 feet bgs in the center of the EPFS former pit, groundwater not encountered, results as follows: Benzene <0.5 mg/kg, Toluene <0.5 mg/kg, Ethyl Benzene <0.5 mg/kg, Total Xylenes <1.5 mg/kg, and Total BTEX <3 mg/kg, and TPH (418.1) 54.8 mg/kg.

MW-1 was installed on May 21, 1997 at a depth of 20 feet bgs. Quarterly groundwater sampling was initiated on June 26, 1997 and continued through March 27, 1998.

Ohio C Government #3
Meter Code: 72890

MW-1 was submitted for closure based on four consecutive quarters below NMWQCC standards in the "1998 Groundwater Annual Report" submitted on March 31, 1999. After review of the data for MW-1, NMOCD on July 28, 1999, denied closure and requested installation of downgradient wells to assess extent of contamination.

On October 1999, Marathon Oil in cooperation with EPFS installed MW-2 to MW-5 in response to the July 28, 1999 NMOCD denial letter.

Quarterly groundwater sampling was resumed on June 2000 through December 2000, at which point a request for closure was submitted in the "2000 Annual Report" dated February 26, 2001.

After review of the closure request NMOCD responded with a request letter dated July 18, 2001, asking for additional information included a pit remediation and closure form and soil remediation actions including BTEX results, before a decision on closure could be determined.

On August 1, 2001 EPFS submitted the requested information to NMOCD for their review. In a response back to EPFS dated January 4, 2002, NMOCD denied closure for the site based on elevated bezene levels in MW-5. In NMOCD's response letter they requested quarterly sampling until four consecutive clean quarters below NMWQCC standards for MW-5 were reached.

Quarterly closure sampling was resumed for MW-5 on December 2000 until March 2003 when four consecutive clean quarters below NMWQCC standards were achieved.

SUMMARY OF 2003 ACTIVITIES

First quarter samples for MW-5 were taken on March 1, 2003, Benzene was 3.5 ppb, Toluene was 0.4 ppb, Ethyl Benzene was 14.0 ppb, and Total Xylenes was 53.8 ppb.

Closure samples for MW-1 through MW-4 were taken on February 26 and March 7, 2003, 2002, MW-1 as follows Benzene was 0.08 ppb, Toluene was 0.2 ppb, Ethyl Benzene was <0.5 ppb, and Total Xylenes was 1.5 ppb, MW-2 as follows Benzene was 0.6 ppb, Toluene was 0.6 ppb, Ethyl Benzene was 1.2 ppb, and Total Xylenes was 2.9 ppb, MW-3 as follows Benzene was 0.1 ppb, Toluene was 0.9 ppb, Ethyl Benzene was 1.4 ppb, and Total Xylenes was 3.8 ppb, MW-4 as follows Benzene was 2.1 ppb, Toluene was 0.4 ppb, Ethyl Benzene was 9.3 ppb, and Total Xylenes was 8.1 ppb.

Closure samples collected during 2002 were detailed in the 2002 Annual Groundwater Report submitted in March of 2003. A table presenting the final four consecutive quarters below NMWQCC standards is presented as Appendix A.

Appendix B contains the NMOCD pit remediation closure report form and Appendix C contains the laboratory reports for the four consecutive quarters reported in Table 1. All other supporting data has been submitted in previous closure reports or Annual Reports.

Ohio C Government #3
Meter Code: 72890

CONCLUSIONS

EPFS previously excavated approximately 1150 cubic yards of source material from the former pit, soils samples collected from the first excavation had benzene, TPH and Total BTEX above remediation goals. During the second re-excavation, all soils samples were below remediation goals but laboratory groundwaterwater analysis taken during the second excavation had an elevated benzene level of 200 ppm. The installation of MW-1 and subsequent sampling indicated levels below NMWQCC standards. Additional monitoring wells 2 to 5 were installed and all were below NMWQCC standards for four quarters except MW-5.

The beginning of four clean consecutive quarters for MW-5 began with the March 2002 quarterly sample and ended with the fourth clean quarter in March 2003.

MW-1 through MW-4 were also sampled for closure on February 26 and March 7, 2003, MW-1 as follows Benzene was 0.08 ppb, Toluene was 0.2 ppb, Ethyl Benzene was <0.5 ppb, and Total Xylenes was 1.5 ppb, MW-2 as follows Benzene was 0.6 ppb, Toluene was 0.6 ppb, Ethyl Benzene was 1.2 ppb, and Total Xylenes was 2.9 ppb, MW-3 as follows Benzene was 0.1 ppb, Toluene was 0.9 ppb, Ethyl Benzene was 1.4 ppb, and Total Xylenes was 3.8 ppb, MW-4 as follows Benzene was 2.1 ppb, Toluene was 0.4 ppb, Ethyl Benzene was 9.3 ppb, and Total Xylenes was 8.1 ppb. Results of the closure sampling are provided in Table 1.

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

RECOMMENDATIONS

- EPFS requests closure of this site, based on four consecutive quarters below NMWQCC standards in Monitoring Wells MW-1 through MW-5.

- Following NMOCD approval for closure, all monitoring wells installed by EPFS will be abandoned in accordance with the approved Monitoring Well Abandonment Plan.

Table 1

Ohio C Government #3

Meter Code: 72890

Sample #	Meter Line #	Site Name	Sample Date	MW#	Benzene	Ethyl Benzene	Toluene	m,p-Xylene	o-Xylene	Total Xylenes
OHI-0203-MW5	72890	Ohio C Government #3	3/19/2002	5	6.6	15	<5.0	*NA*	*NA*	97
02-4813-2	72890	Ohio C Government #3	9/9/2002	5	1.1	2.7	0.5	7.8	4.0	11.8
02-6831-4	72890	Ohio C Government #3	12/23/2002	5	5.6	15.4	0.7	59	18.6	71.6
03-01972-1	72890	Ohio C Government #3	3/1/2003	5	3.5	14	0.4	39	14.8	53.8

April 2003 Closure Samples for MW-2 through MW-5

Sample #	Meter Line #	Site Name	Sample Date	MW#	Benzene	Ethyl Benzene	Toluene	m,p-Xylene	o-Xylene	Total Xylenes
03-01960-2	72890	Ohio C Government #3	2/26/2003	1	0.08	<0.5	0.2	1	<0.5	1.5
03-02085-2	72890	Ohio C Government #3	3/7/2003	2	0.6	1.2	0.6	2.3	0.6	2.9
03-02085-3	72890	Ohio C Government #3	3/7/2003	3	0.1	1.4	0.9	3.1	0.7	3.8
03-02085-4	72890	Ohio C Government #3	3/7/2003	4	2.1	9.3	0.4	6.3	1.8	8.1

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Submit 1 copy to appropriate District Office and 1 copy to the Santa Fe Office

(Revised 3/9/94)

PIT REMEDIATION AND CLOSURE REPORT

Operator: Marathon Oil Company (*Site Closed by EL Paso Field Services*) Telephone: NA

Address: NA

Facility Or: Ohio C Government #3 Meter Line Number 72890
Well Name

Location: Unit or Qtr/Qtr Sec P Sec 26 T 28N R 11W County San Juan County, New Mexico

Pit Type: Separator_____ Dehydrator _____ Other Drip

Land Type: BLM X, State _____, Fee _____ Other _____

Pit Location: Pit dimensions: length 76 feet, width 56 feet, depth 13-17 feet
(Attach diagram)

Reference: wellhead X, other _____

Footage from reference: 192 feet

Direction from reference: 172 Degrees _____East North X
of
_____West South_____

Depth To Ground Water (Vertical distance from contaminants to seasonal high water elevation of ground water.)	Less than 50 feet 50 feet to 99 feet Greater than 100 feet	(20 points) (10 points) (0 points) 20
Wellhead Protection Area: (Less than 200 feet from a private domestic water source, or; less than 1000 feet from all other water sources.)	Yes No	(20 points) (0 points) 0
Distance To Surface Water: (Horizontal distance to perennial lakes, ponds, rivers, streams, creeks, irrigation canals and ditches.)	Less than 200 feet 200 feet to 1000 feet Greater than 1000 feet	(20 points) (10 points) (0 points) 20

RANKING SCORE (TOTAL POINTS): 40

Date Remediation Started: 9/6/1995 Date completed: 9/12/1995

Remediation Method: (Check all appropriate sections.) Excavation X Approx. cubic yards 1098

Landfarmed X Insitu Bioremediation _____

Other _____

Remediation Location: (i.e. landfarmed onsite, name and location of offsite facility) Onsite _____ Offsite Envirotech

Hilltop, New Mexico

General Description of Remedial Action: Phase II, used 100 lbs of fertilizer, dug to 17 feet hit groundwater on west side, hit water at 13 feet on east side. Took water sample, took PID on south wall was 005 ppm, west wall was 5 ppm, bottom was 3 ppm, East wall was 236 ppm, no north wall it was backfill from previous pit. East wall contaminated starts at approx. 7 feet and is approx. 3 feet thick. Bottom sample are 13-17 feet. Due to surface ground slope.

Ground Water Encountered: No X Yes _____ Depth _____

Final Pit: Closure Sampling: (if multiple samples, attach sample results and diagram of sample locations and depths)

Sample location Composite from all four sides and center of pit

Sample depth 13 to 17 feet

Sample Date 9/7/1995 Sample time 1510

Sample Results

Benzene(ppm) <0.5 mg/kg

Total BTEX(ppm) <3 mg/kg

Field headspace(ppm) 72 ppm

TPH 66.0 mg/kg

Ground Water Sample: Yes X No _____ (If yes, attach sample results)

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

Date

Signature

Printed Name and Title Scott Pope, Senior Environmental Scientist

El Paso Natural Gas Company

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT - Water

SAMPLE IDENTIFICATION

SAMPLE NUMBER:	947428
FIELD ID:	JP 58
MTR CODE:	72890
SAMPLE DATE:	09-07-95
SAMPLE TYPE:	WG (Excavation) Pit #1
SITE NAME:	Ohio C. Gout #3 ~~Pit #2~~, South Pit
PROJECT:	~~Phase III Excavation~~ RLB 10/19/95 II Excavation
DATE OF BTEX ANALYSIS:	9/11/95

FIELD COMMENTS: _____

EPA Method 8020 (BTEX) RESULTS

PARAMETER	RESULT	QUALIFIER	WQCC LIMIT PPB
TDS - TOTAL DISSOLVED SOLIDS (PPM)	NA		None
BENZENE (PPB)	200	D (x5)	10
TOLUENE (PPB)	713	D (x5)	740
ETHYL BENZENE (PPB)	< 10	D (x5)	750
TOTAL XYLENES (PPB)	808	D (x5)	620
SURROGATE % RECOVERY	99%	Allowed Range 80 to 120 %	

NOTES:

Approved By: John Hardy 9-11-95

El Paso Natural Gas Company

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

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	JP59	947427 (Pit #1)
MTR CODE | SITE NAME:	72890	Ohio C Gout #3 Pit ~~#2~~ South Pit
SAMPLE DATE | TIME (Hrs):	09-07-95 RLB 10/4/95	1510
PROJECT:	~~Phase III Excavation~~ II Excavation	
DATE OF TPH EXT. | ANAL.:	9-8-95	9/12/95 Smdr 7-5-96
DATE OF BTEX EXT. | ANAL.:	9/8/95	9/12/95
TYPE | DESCRIPTION:	VC	LIGHT BROWN SAND & CLAY

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q	M(g)	V(ml)
BENZENE	< 0.5	MG/KG				
TOLUENE	< 0.5	MG/KG				
ETHYL BENZENE	< 0.5	MG/KG				
TOTAL XYLENES	< 1.5	MG/KG				
TOTAL BTEX	< 3	MG/KG				
TPH (418.1)	~~65~~ 66.0 RLB 9-11-95	MG/KG			2.02	28
HEADSPACE PID	76	PPM				
PERCENT SOLIDS	90.3	%				

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

The Surrogate Recovery was at 94% for this sample All QA/QC was acceptable.

Narrative:

DF = Dilution Factor Used

Approved By: _____ Date: 9-13-95

DATA VALIDATION WORKSHEET

(Page 1 of 2)

Analytical Method/Analytes: SW-846 8021B (BTEX) **Sample Collection Date(s):** 03/01/03

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

Batch Identification: 03-01972 **Matrix:** Water

MS/MSD Parent(s)[a]: None **Field Replicate Parent(s):** None

Validation Complete: Brian Buttars 3-31-03
(Date/Signature)

Foot Notes	Site ID	Sample ID	Lab. ID	Hits (Y/N)	Quals.	Comments
1	GW	Ohio C Govt 3 MW-5	03-01972-01	Y	UB B	Toluene @ 0.4 T µg/l m/p-Xylene @ 39 µg/l
1	GW	TB 010303-1	03-01972-02	Y		Toluene @ 0.1 T µg/l m/p-Xylene @ 0.9 T µg/l

DATA VALIDATION WORKSHEET
(Page 2 of 2)

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

Laboratory: APCL **Batch Identification:** 03-01972

Validation Criteria								
Sample ID	Ohio C Govt 3 MW-5	TB 010303-1						
Lab ID	03-01972-01	03-01972-02						
Holding Time	A	A						
Analyte List	A	A						
Reporting Limits	A	A						
Trip Blank	A[1]	A[1]						
Equipment Rinseate Blanks	N/A	N/A						
Field Duplicate/Replicate	N/A	N/A						
Initial Calibration	N	N						
Initial Calibration Verification (ICV)	N	N						
Continuing Calibration Verification (CCV)	A	A						
Method Blank	A	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						
Surrogate Spike Recovery	A	A						
Retention Time Window	N	N						
Injection Time(s)	N	N						
Hardcopy vs. Chain-of-Custody	A	A						
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 compounds were detected in the trip blank (TB 010303-1):
   a) Toluene @ 0.1 T µg/l, qualify associated sample concentrations greater than 0.5 µg/l with "B" flags and associated sample concentrations less than 0.5 µg/l with "UB" flags.
   b) m/p-Xylene @ 0.9 T µg/l, qualify associated sample concentrations greater than 4.5 µg/l with "B" flags and associated sample concentrations less than 4.5 µg/l with "UB" flags.

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 #: 801-031972
Collected by: M.J. Nee
Collected on: 03/01/03

Received: 03/04/03
Extracted: N/A
Tested: 03/04/03
Reported: 03/13/03

Sample Description: Water
Project Description: San Juan River Basin

Analysis of Water Samples

Component Analyzed	Method	Unit	PQL	Analysis Result MW-5 03-01972-1	Analysis Result TB 03-01972-2
BTXE					
Dilution Factor				1	1
BENZENE	8021B	µg/L	0.5	3.5	<0.5
ETHYLBENZENE	8021B	µg/L	0.5	14.0	<0.5
TOLUENE	8021B	µg/L	0.5	0.4J	0.1J
O-XYLENE	8021B	µg/L	0.5	14.8	<0.5
M,P-XYLENE	8021B	µg/L	1	39	0.9J

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

CHAIN OF CUSTODY RECORD/LAB WORK REQUEST

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

Chain of Custody ID 030303MN01
Page 1 of 1
Air Bill No. 836381674356

MWH
Phone (801) 617-3200 FAX (801) 617-4200
MWH Contact Brian Buttars
Project San Juan Basin
Project Number 22001.3
Date Due Standard
Sampler's Name MJ Nee (print clearly)

Location ID	Sample ID	Depth Interval (ft)	Date Collected	Time Collected	Matrix (a)	Sampling Technique (b)	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 Ohio "C" Com No 3	MW-5		3-1-03	0925	WG	B	X											
GW 010303-1	TB		3-1-03	0700	WQ		X											

1972

(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
[signature]	Paul C	3-3-03	1300
	Paul C	3/4/03	0930

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:

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 #: 801-031972
Collected by: M.J. Nee
Collected on: 03/01/03
Sample description:
Water
Project: San Juan River Basin

Received: 03/04/03
Tested: 03/04/03
Reported: 03/24/03

Analysis of Water

801-031972QC

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	03G1623	100	95	N.D.	µg/L	18.0	93	89	89	0	71-126	28
Toluene	03G1623	100	100	N.D.	µg/L	70.0	94	90	90	0	70-117	24
Ethylbenzene	03G1623	100	101	N.D.	µg/L	18.0	104	95	96	0	65-131	33
m/p-Xylene	03G1623	200	96	N.D.	µg/L	70.0	98	88	88	0	66-122	28
o-Xylene	03G1623	100	95	N.D.	µg/L	25.0	95	88	88	0	65-130	33

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:	031972
Project ID:	San Juan River Basin	Project No:	1166121.061609	Sample Matrix:	Water
		Batch No:	03G1623		

#	Client Sample No	Lab Sample ID	S1 %	#	TOT OUT
1		03G1623-LCS-01	90		0
2		03G1623-LSD-01	89		0
3		03G1623-MB-01	89		0
4	TB	03-1972-2	94		0
5	MW-5	03-1972-1	99		0
6	LF793	03-1969-2MS	89		0
7	LF793	03-1969-2MSD	89		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) 66-133

Column to be used to flag recovery values:

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

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

APCL INVOICE 03-01972

Samples from
Montgomery Watson Harza
10619 South Jordan Gateway
Salt Lake City, UT 84095

Invoice to
Montgomery Watson Harza
10619 South Jordan Gateway
Salt Lake City, UT 84095
Tel. (801)617-3200
Fax (801)617-4200

Project Manager:
Technical Contact: Brian Buttars
Purchase Order No:
Prime Contract No:

Subcontract No:
Project No: 220013
Project Name: San Juan River Basin

SDG Number: 03-01972
SDG Receive Date: 03/04/03

Remit Payment to
Applied P & Ch Laboratory
13760 Magnolia Ave.
Chino CA 91710

Invoice No. 03-01972
Invoice Date: 03/28/2003
Due Date: 04/27/2003
Printed Date: 03/28/2003
Past Due Interest:
1.5% per month

Catalog No.	Test Description	Method Code	Sample Matrix	Unit Price, $	Sample Quant.	Subtotal $
002316	BTXE	8021B	Water	40.00	2	80.00
Analytical Service Subtotal						80.00
Total Service Charge:						80.00
Please Remit This Amount:						**80.00**

ACCOUNTS PAYABLE
Job # 4270099
C/Code 011803 C/Type
CC: Acct #
Approved by Brian Buttars
Date 4-1-03
PO/Sub #

Copy A: ORIGINAL INVOICE

***** APCL Invoice Control ID 1999-0746 APCL-00284 0984-0001 APCL Invoice Control ID*****

APCL

APCL Financial Department

DATA VALIDATION WORKSHEET

(Page 1 of 2)

Analytical Method/Analytes: SW-846 8021B (BTEX) **Sample Collection Date(s):** 02/26/03

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

Batch Identification: 03-01960 **Matrix:** Water

MS/MSD Parent(s)[a]: None **Field Replicate Parent(s):** None

Validation Complete: Brian Buttars 3-27-03 (Date/Signature)

Foot Notes	Site ID	Sample ID	Lab. ID	Hits (Y/N)	Quals.	Comments
1	GW	Lindrith No. 24 MW-1	03-01960-01	Y	UB	Toluene @ 0.8 µg/l
1	GW	Ohio C Govt 3 MW-1	03-01960-02	Y	UB	Toluene @ 0.2 T µg/l
1	GW	TB 260203-1	03-01960-06			Toluene @ 0.2 T µg/l

DATA VALIDATION WORKSHEET
(Page 2 of 2)

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

Laboratory: APCL **Batch Identification:** 03-01960

Validation Criteria								
Sample ID	**Lindrith No. 24 MW-1**	**Ohio C Govt 3 MW-1**	**TB 260203-1**					
Lab ID	**03-01960-01**	**03-01960-02**	**03-01960-03**					
Holding Time	A	A	A					
Analyte List	A	A	A					
Reporting Limits	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					
Method Blank	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					
Hardcopy vs. Chain-of-Custody	A	A	A					
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 compounds were detected in the trip blank (TB 270203-1):
   a) Toluene @ 0.2 T µg/l, qualify associated sample concentrations greater than 1.0 µg/l with "B" flags and associated sample concentrations less than 1.0 µg/l with "UB" flags.

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 #: 801-031960
Collected by: M.J. Nee.
Collected on: 02/26/03

Received: 03/01/03
Extracted: N/A
Tested: 03/03-05/03
Reported: 03/05/03

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

Analysis of Water Samples

Component Analyzed	Method	Unit	PQL	Analysis Result MW-1 Lindrith No. 24 03-01960-1
BTXE				
Dilution Factor				1
BENZENE	8021B	µg/L	0.5	4.3
ETHYLBENZENE	8021B	µg/L	0.5	4.7
TOLUENE	8021B	µg/L	0.5	0.8
O-XYLENE	8021B	µg/L	0.5	2.5
M,P-XYLENE	8021B	µg/L	1	20

Component Analyzed	Method	Unit	PQL	Analysis Result MW-1 Ohio C Govt 3 03-01960-2	Analysis Result TB 260203-1 03-01960-3
BTXE					
Dilution Factor				1	1
BENZENE	8021B	µg/L	0.5	0.08J	<0.5
ETHYLBENZENE	8021B	µg/L	0.5	<0.5	<0.5
TOLUENE	8021B	µg/L	0.5	0.2J	0.2J
O-XYLENE	8021B	µg/L	0.5	<0.5	<0.5
M,P-XYLENE	8021B	µg/L	1	1	<1

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

CHAIN OF CUSTODY RECORD/LAB WORK REQUEST

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

Chain of Custody ID 260203MW01
Page 1 of 1
Air Bill No. 8363 8167 4367

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

Project San Juan Basin
Project Number 220013
Date Due Standard
Sampler's Name MJ Nee
(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				
Lindrith B No. 24	MW-1		2-26-03	1151	WG	B	X											
Ohio "C" Govt 3	MW-1		2-26-03	1514	WG	B	X											
TB 260203-1	TB		2-26-03	0800	WQ		X											

1960

[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
/ABSE		2-28-03	1500
	/APCL	3/1/03	1200P

LABORATORY USE ONLY

SAMPLES WERE:

1 Shipped or hand delivered
Notes: Fed-Ex

2 Ambient or Chilled
Notes:

3 Temperature 3.9°C

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:

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 #: 801-031960
Collected by: M.J. Nee.
Collected on: 02/26/03
Sample description:
Water
Project: San Juan River Basin /220013

Received: 03/01/03
Tested: 03/03-05/03
Reported: 03/10/03

Analysis of Water

801-031960QC

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	03G1615	100	97	N.D.	µg/L	18.0	87	91	91	0	71-126	28
Toluene	03G1615	100	101	N.D.	µg/L	70.0	89	91	92	1	70-117	24
Ethylbenzene	03G1615	100	104	N.D.	µg/L	18.0	95	97	98	1	65-131	33
m/p-Xylene	03G1615	200	98	N.D.	µg/L	70.0	90	89	91	2	66-122	28
o-Xylene	03G1615	100	96	N.D.	µg/L	25.0	87	89	90	1	65-130	33

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	03G1636	100	94	N.D.	µg/L	180	100	81	91	12	71-126	28
Toluene	03G1636	100	97	N.D.	µg/L	700	102	81	95	15	70-117	24
Ethylbenzene	03G1636	100	100	N.D.	µg/L	180	103	84	103	20	65-131	33
m/p-Xylene	03G1636	200	93	N.D.	µg/L	700	99	84	101	19	66-122	28
o-Xylene	03G1636	100	93	N.D.	µg/L	250	94	89	108	19	65-130	33

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:	031960
Project ID:	San Juan River Basin	Project No:	220013	Sample Matrix:	Water
		Batch No:	03G1615		

#	Client Sample No	Lab Sample ID	S1 % #	TOT OUT
1		03G1615-LCS-01	89	0
2		03G1615-LSD-01	90	0
3		03G1615-MB-01	84	0
4	MW-1 LINDRITH NO. 24	03-1960-1	97	0
5	MW-1 OHIO C GOVT 3	03-1960-2	96	0
6	MW-1 JAQUEZ	03-1958-1MS	88	0
7	MW-1 JAQUEZ	03-1958-1MSD	89	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)	66-133

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:	031960
Project ID:	San Juan River Basin	Project No:	220013	Sample Matrix:	Water
		Batch No:	03G1636		

#	Client Sample No	Lab Sample ID	S1 %	#	TOT OUT
1		03G1636-MB-02	91		0
2	TB 260203-1	03-1960-3	94		0
3	03-0395-01	03-1981-1MS	90		0
4	03-0395-01	03-1981-1MSD	94		0
5		03G1636-LCS-01	88		0
6		03G1636-LSD-01	87		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) 66-133

Column to be used to flag recovery values:

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

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

APCL INVOICE 03-01960

Samples from
Montgomery Watson Harza
10619 South Jordan Gateway
Salt Lake City, UT 84095

Invoice to
Montgomery Watson Harza
10619 South Jordan Gateway
Salt Lake City, UT 84095
Tel. (801)617-3200
Fax (801)617-4200

Project Manager:
Technical Contact: Brian Buttars
Purchase Order No:
Prime Contract No:

Subcontract No:
Project No: 220013
Project Name: San Juan River Basin

SDG Number: 03-01960
SDG Receive Date: 03/01/03

Remit Payment to
Applied P & Ch Laboratory
13760 Magnolia Ave.
Chino CA 91710

Invoice No. 03-01960
Invoice Date: 03/14/2003
Due Date: 04/13/2003
Printed Date: 03/14/2003
Past Due Interest:
1.5% per month

Catalog No.	Test Description	Method Code	Sample Matrix	Unit Price, $	Sample Quant.	Subtotal $
002316	BTXE	8021B	Water	40.00	3	120.00
Analytical Service Subtotal						120.00
Total Service Charge						120.00
Please Remit This Amount:						**120.00**

Received on
MAR 20 2003
at Montgomery Watson

ACCOUNTS PAYABLE
Job # 4270099
C/Code 011803 C/Type
CC: Acct #
Approved by Brian Buttars
Date 3-27-03
PO/Sub #

Copy A: ORIGINAL INVOICE

DATA VALIDATION WORKSHEET

(Page 1 of 2)

Analytical Method/Analytes: SW-846 8021B (BTEX) **Sample Collection Date(s):** 03/07/03

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

Batch Identification: 03-02085 **Matrix:** Water

MS/MSD Parent(s)[a]: None **Field Replicate Parent(s):** None

Validation Complete: Brian Buttars 3-31-03 (Date/Signature)

Foot Notes	Site ID	Sample ID	Lab. ID	Hits (Y/N)	Quals.	Comments
1	GW	GCU A 142E	03-02085-01	Y	B	Toluene @ 36.8 µg/l
1	GW	Ohio C Govt 3 MW-2	03-02085-02	Y	UB	Toluene @ 0.6 µg/l
1	GW	Ohio C Govt 3 MW-3	03-02085-03	Y	UB	Toluene @ 0.9 µg/l
1	GW	Ohio C Govt 3 MW-4	03-02085-04	Y	UB	Toluene @ 0.4 T µg/l
1	GW	TB 260203-1	03-02085-05	Y		Toluene @ 0.3 T µg/l

DATA VALIDATION WORKSHEET

(Page 2 of 2)

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

Laboratory: APCL **Batch Identification:** 03-02085

Validation Criteria								
Sample ID	**GCU A 142E MW-1**	**Ohio C Govt 3 MW-2**	**Ohio C Govt 3 MW-3**	**Ohio C Govt 3 MW-4**	**TB 260203-1**			
Lab ID	**03-02085-01**	**03-02085-02**	**03-02085-03**	**03-02085-04**	**03-02085-05**			
Holding Time	A	A	A	A	A			
Analyte List	A	A	A	A	A			
Reporting Limits	A	A	A	A	A			
Trip Blank	A[1]	A[1]	A[1]	A[1]	A[1]			
Equipment Rinseate Blanks	N/A	N/A	N/A	N/A	N/A			
Field Duplicate/Replicate	N/A	N/A	N/A	N/A	N/A			
Initial Calibration	N	N	N	N	N			
Initial Calibration Verification (ICV)	N	N	N	N	N			
Continuing Calibration Verification (CCV)	A	A	A	A	A			
Method Blank	A	A	A	A	A			
Laboratory Control Sample (LCS)	A	A	A	A	A			
Laboratory Control Sample Duplicate (LCSD)	N	N	N	N	N			
Matrix Spike/Matrix Spike Dup. (MS/MSD)	N/A	N/A	N/A	N/A	N/A			
Surrogate Spike Recovery	A	A	A	A	A			
Retention Time Window	N	N	N	N	N			
Injection Time(s)	N	N	N	N	N			
Hardcopy vs. Chain-of-Custody	A	A	A	A	A			
EDD vs. Hardcopy	N	N	N	N	N			
EDD vs. Chain of Custody	N	N	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 compounds were detected in the trip blank (TB 270203-1):
   a) Toluene @ 0.3 T µg/l, qualify associated sample concentrations greater than 1.5 µg/l with "B" flags and associated sample concentrations less than 1.5 µg/l with "UB" flags.

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 #: 801-032085
Collected by: M.J Nee
Collected on: 03/07/03
Received: 03/10/03
Extracted: N/A
Tested: 03/11/03
Reported: 03/14/03
Sample Description: Water
Project Description: 220013 San Juan River Basin

Analysis of Water Samples

Component Analyzed	Method	Unit	PQL	Analysis Result MW-1 03-02085-1	MW-2 03-02085-2
BTXE					
Dilution Factor				1	1
BENZENE	8021B	µg/L	0.5	270	0.6
ETHYLBENZENE	8021B	µg/L	0.5	8.3	1.2
TOLUENE	8021B	µg/L	0.5	36.8	0.6
O-XYLENE	8021B	µg/L	0.5	5.1	0.6
M,P-XYLENE	8021B	µg/L	1	16	2.3

Component Analyzed	Method	Unit	PQL	Analysis Result MW-3 03-02085-3	MW-4 03-02085-4	TB 03-02085-5
BTXE						
Dilution Factor				1	1	1
BENZENE	8021B	µg/L	0.5	0.1J	2.1	<0.5
ETHYLBENZENE	8021B	µg/L	0.5	1.4	9.3	<0.5
TOLUENE	8021B	µg/L	0.5	0.9	0.4J	0.3J
O-XYLENE	8021B	µg/L	0.5	0.7	1.8	<0.5
M,P-XYLENE	8021B	µg/L	1	3.1	6.3	<1

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

CADHS ELAP No.: 1431

CHAIN OF CUSTODY RECORD/LAB WORK REQUEST

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

Chain of Custody ID 070303 MN-1
Page 1 of 1
Air Bill No. 836381674323

MWH
Phone (801) 617-3200 FAX (801) 617-4200
MWH Contact Brian Buttars
Project San Juan Basin
Project Number 22003
Date Due Standard
Sampler's Name MJ Nee
(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 Ohio C Govt 3	MW3		3-7-03	0837	WG	B	X											
GW Ohio C Govt 3	MW2		3-7-03	0949	WG	B	X											
GW Ohio C Govt 3	MW-4		3-7-03	1036	WG	B	X											
GW GCU A 142E	MW-1		3-7-03	1141	WG	B	X											
TB070303-1	TB		3-7-03	0700	WQ		X											

2085

[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
MJ Nee	Paul C	3-7-03	1500
		3/10/03	1000

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:

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 #: 801-032085
Collected by: M.J Nee
Collected on: 03/07/03
Sample description:
Water
Project: San Juan River Basin /220013

Received: 03/10/03
Tested: 03/11/03
Reported: 03/26/03

Analysis of Water

801-032085QC

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	03G1682	100	105	N.D.	µg/L	18.0	103	96	96	0	71-126	28
Toluene	03G1682	100	110	N.D.	µg/L	70.0	104	96	96	0	70-117	24
Ethylbenzene	03G1682	100	114	N.D.	µg/L	18.0	107	96	96	1	65-131	33
m/p-Xylene	03G1682	200	107	N.D.	µg/L	70.0	102	94	94	0	66-122	28
o-Xylene	03G1682	100	105	N.D.	µg/L	25.0	97	95	94	0	65-130	33

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:	032085
Project ID:	San Juan River Basin	Project No:	*220013*	Sample Matrix:	Water
		Batch No:	03G1682		

#	Client Sample No	Lab Sample ID	S1 %	#	TOT OUT
1		*03G1682-LCS-01*	94		*0*
2		03G1682-LSD-01	90		0
3		03G1682-MB-01	96		0
4	TB	03-2085-5	97		0
5	MW-1	03-2085-1	94		0
6	MW-2	03-2085-2	99		0
7	MW-3	03-2085-3	100		0
8	MW-4	03-2085-4	100		0
9	842092-0052	03-2086-1MS	90		0
10	842092-0052	03-2086-1MSD	90		0
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

QC Control Limit

S1 = 4-BROMO-FLUOROBENZENE (PID) 66-133

Column to be used to flag recovery values:

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

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

APCL INVOICE 03-02085

Samples from
Montgomery Watson Harza
10619 South Jordan Gateway
Salt Lake City, UT 84095

Invoice to
Montgomery Watson Harza
10619 South Jordan Gateway
Salt Lake City, UT 84095
Tel. (801)617-3200
Fax (801)617-4200

Project Manager:
Technical Contact: Brian Buttars
Purchase Order No:
Prime Contract No:

Subcontract No:
Project No: 220013
Project Name: San Juan River Basin

SDG Number: 03-02085
SDG Receive Date: 03/10/03

Remit Payment to
Applied P & Ch Laboratory
13760 Magnolia Ave.
Chino CA 91710

Invoice No. 03-02085
Invoice Date: 03/28/2003
Due Date: 04/27/2003
Printed Date: 03/28/2003
Past Due Interest:
1.5% per month

Catalog No.	Test Description	Method Code	Sample Matrix	Unit Price, $	Sample Quant.	Subtotal $
002316	BTXE	8021B	Water	40.00	5	200.00
Analytical Service Subtotal						200.00
Total Service Charge						200.00
Please Remit This Amount:						**200.00**

ACCOUNTS PAYABLE
Job # 4270099
C/Code 011823 C/Type
CC: Acct #
Approved by Brian Buttars
Date 4-1-03
PO/Sub #

Copy A: ORIGINAL INVOICE

***** APCL Invoice Control ID 1999_0746 APCL_00284 0984_0001 APCL Invoice Control ID*****

APCL

APCL Financial Department

DATA VALIDATION WORKSHEET

(Page 1 of 2)

Analytical Method/Analytes: SW-846 8021B (BTEX) **Sample Collection Date(s):** 12/23-24/02

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

Batch Identification: 02-06831 **Matrix:** Water

MS/MSD Parent(s)[a]: 02-06831-05 **Field Replicate Parent(s):** None

Validation Complete: Bryan Buttars 1-16-03 (Date/Signature)

Foot Notes	Site ID	Sample ID	Lab. ID	Hits (Y/N)	Quals.	Comments
1	GW	Jennepah MW-1	02-06831-01	Y	B	Benzene @ 27.4 µg/l
					B	Ethylbenzene @ 62.5 µg/l
					B	Toluene @ 67.1 µg/l
					B	o-Xylene @ 210 µg/l
					B	m/p-Xylene @ 128 µg/l
1	GW	Canada Mesa MW-2	02-06831-02	Y	B	Benzene @ 12.1 µg/l
					B	Ethylbenzene @ 129 µg/l
					UB	Toluene @ 2.1 µg/l
					UB	o-Xylene @ 2.4 µg/l
					B	m/p-Xylene @ 14 µg/l
1	GW	Canada Mesa MW-3	02-06831-03	Y	B	Benzene @ 1,430 µg/l
					B	Ethylbenzene @ 483 µg/l
					B	Toluene @ 95 µg/l
					B	o-Xylene @ 169 µg/l
					B	m/p-Xylene @ 2,190 µg/l
1	GW	Ohio "C" Govt #3 MW-5	02-06831-04	Y	B	Benzene @ 5.6 µg/l
					B	Ethylbenzene @ 15.4 µg/l
					UB	Toluene @ 0.7 µg/l
					B	o-Xylene @ 18.6 µg/l
					B	m/p-Xylene @ 59 µg/l
1	QC	TB02101501	02-06831-05	Y		Benzene @ 0.3T µg/l
						Ethylbenzene @ 1.5 µg/l
						Toluene @ 0.5 µg/l
						o-Xylene @ 0.5 µg/l
						m/p-Xylene @ 2.4 µg/l

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 #: 801-026831
Collected by: Delbert Belcis.
Collected on: 10/15-12/24/02

Received: 12/26/02
Extracted: N/A
Tested: 12/26-31/02
Reported: 01/03/03

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

Analysis of Water Samples

Component Analyzed	Method	Unit	PQL	Analysis Result MW-1 (Jennepah) 02-06831-1	MW-2 (Canada Mesa) 02-06831-2
BTXE					
Dilution Factor				1	1
BENZENE	8021B	µg/L	0.5	27.4	12.1
ETHYLBENZENE	8021B	µg/L	0.5	62.5	129
TOLUENE	8021B	µg/L	0.5	67.1	2.1
O-XYLENE	8021B	µg/L	0.5	210	2.4
M,P-XYLENE	8021B	µg/L	1	128	14

Component Analyzed	Method	Unit	PQL	Analysis Result MW-3 (Canada Mesa) 02-06831-3	MW-5 (Ohio "C" GCYF #3) 02-06831-4	TB02101501 02-06831-5
BTXE						
Dilution Factor				5	1	1
BENZENE	8021B	µg/L	0.5	1,430	5.6	0.3J
ETHYLBENZENE	8021B	µg/L	0.5	483	15.4	1.5
TOLUENE	8021B	µg/L	0.5	95	0.7	0.5
O-XYLENE	8021B	µg/L	0.5	169	18.6	0.5
M,P-XYLENE	8021B	µg/L	1	2,190	59	2.4

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

DATA VALIDATION WORKSHEET
(Page 2 of 2)

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

Laboratory: APCL **Batch Identification:** 02-06831

Validation Criteria								
Sample ID	**Jennepah MW-1**	**Canada Mesa MW-2**	**Canada Mesa MW-3**	**Ohio "C" Govt #3 MW-5**	**TB 02101501**			
Lab ID	**02-06831-01**	**02-06831-02**	**02-06831-03**	**02-06831-04**	**02-06831-05**			
Holding Time	A	A	A	A	A			
Analyte List	A	A	A	A	A			
Reporting Limits	A	A	A	A	A			
Method Blank	A	A	A	A	A			
Trip Blank	A[1]	A[1]	A[1]	A[1]	A[1]			
Equipment Rinseate Blanks	N/A	N/A	N/A	N/A	N/A			
Field Duplicate/Replicate	N/A	N/A	N/A	N/A	N/A			
Initial Calibration	N	N	N	N	N			
Initial Calibration Verification (ICV)	N	N	N	N	N			
Continuing Calibration Verification (CCV)	A	A	A	A	A			
Laboratory Control Sample (LCS)	A	A	A	A	A			
Laboratory Control Sample Duplicate (LCSD)	N	N	N	N	N			
Matrix Spike/Matrix Spike Dup. (MS/MSD)	N/A	N/A	N/A	N/A	A			
Surrogate Spike Recovery	A	A	A	A	A			
Retention Time Window	N	N	N	N	N			
Injection Time(s)	N	N	N	N	N			
Hardcopy vs. Chain-of-Custody	A	A	A	A	A			
EDD vs. Hardcopy	N	N	N	N	N			
EDD vs. Chain of Custody	N	N	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) Benzene @ 0.3T 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.
   b) Ethylbenzene @ 1.5 µg/L, qualify all sample concentrations less than or equal to 7.5 µg/L with a "UB" flag and all sample concentrations greater than 7.5 µg/l with a "B" flag.
   c) Toluene @ 0.5 µg/L, qualify all sample concentrations less than or equal to 2.5 µg/L with a "UB" flag and all sample concentrations greater than 2.5 µg/l with a "B" flag.
   d) o-Xylene @ 0.5 µg/L, qualify all sample concentrations less than or equal to 2.5 µg/L with a "UB" flag and all sample concentrations greater than 2.5 µg/l with a "B" flag.
   e) m/p-Xylene @ 2.4 µg/L, qualify all sample concentrations less than or equal to 12 µg/L with a "UB" flag and all sample concentrations greater than 12 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 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 #: 801-026831 Received: 12/26/02
Collected by: Delbert Belcis. Tested: 12/26-31/02
Collected on: 10/15-12/24/02 Reported: 01/09/03
Sample description:
Water
Project: San Juan River Basin /220013

Analysis of Water

801-026831QC

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	02G5133	100	97	N.D.	µg/L	18.0	86	80	80	1	68-130	31
Toluene	02G5133	100	103	N.D.	µg/L	70.0	88	80	80	0	66-133	33
Ethylbenzene	02G5133	100	105	N.D.	µg/L	18.0	95	78	78	0	65-134	35
m/p-Xylene	02G5133	200	98	N.D.	µg/L	70.0	91	79	79	0	65-134	35
o-Xylene	02G5133	100	99	N.D.	µg/L	25.0	89	79	80	1	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	02G5174	100	98	N.D.	µg/L	18.0	76	79	78	1	68-130	31
Toluene	02G5174	100	105	N.D.	µg/L	70.0	77	79	80	1	66-133	33
Ethylbenzene	02G5174	100	107	N.D.	µg/L	18.0	83	77	77	1	65-134	35
m/p-Xylene	02G5174	200	100	N.D.	µg/L	70.0	79	79	78	1	65-134	35
o-Xylene	02G5174	100	100	N.D.	µg/L	25.0	78	76	76	0	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,

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:	026831
Project ID:	San Juan River Basin	Project No:	220013	Sample Matrix:	Water
		Batch No:	02G5133		

#	Client Sample No	Lab Sample ID	S1 % #	TOT OUT
1		02G5133-LCS-01	85	0
2		02G5133-LSD-01	82	0
3		02G5133-MB-02	87	0
4	MW-1	02-6831-1	120	0
5	MW-2	02-6831-2	105	0
6	MW-5	02-6831-4	96	0
7	TB02101501	02-6831-5	89	0
8	TB02101501	02-6831-5MS	89	0
9	TB02101501	02-6831-5MSD	88	0
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:	026831
Project ID:	San Juan River Basin	Project No:	220013	Sample Matrix:	Water
		Batch No:	02G5174		

#	Client Sample No	Lab Sample ID	S1 % #	TOT OUT
1		02G5174-LCS-01	82	0
2		02G5174-LSD-01	80	0
3		02G5174-MB-02	85	0
4	MW-3	02-6831-3	106	0
5	333-MW01-WG3	02-6870-1MS	82	0
6	333-MW01-WG3	02-6870-1MSD	83	0
7				
8				
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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 Jaun River Basin

Chain of Custody ID 021224 DB
Page 1 of 1
Air Bill No. 836381676760

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 Delbert Belas
(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- Jennepah	MW-1		12/23/02	1125	WG	B	✓											
GW- OHIC "C" Gov't #3	MW-5		12/23/12	1530	WG	B	✓											
GW-Canada Mesa	MW-2		12/24/02	1205	WG	B	✓											
GW-Canada Mesa	MW-3		12/24/02	1125	WG	B	✓											
			10/15/02				✓											
TB02101501																		

6831

[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
Delbert Belas / QESE		12/24/02	1410
	Paul K	12/26/12	1030

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:

DATA VALIDATION WORKSHEET

Analytical Method/Analytes: SW-846 8021B (BTEX) **Sample Collection Date(s):** 09/09-10/02

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

Batch Identification: 02-04813 **Matrix:** Water

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

Validation Complete: Brian Buttars 9-27-02
(Date/Signature)

Site ID	Sample ID	Lab. ID	Hits (Y/N)	Quals.	Comments
GW	Horton 1E MW-1	02-04813-01	Y	UB B B	Ethylbenzene @ 2.4 µg/l Toluene @ 49.9 µg/l m/p-Xylene @ 11 µg/l
GW	Ohio Gov. MW-5	02-04813-02	Y	UB UB B	Ethylbenzene @ 2.7 µg/l Toluene @ 0.5 µg/l m/p-Xylene @ 7.8 µg/l
QC	TB02090901	02-04813-04	Y		Ethylbenzene @ 0.9 µg/l Toluene @ 0.4T µg/l m/p-Xylene @ 0.9T µg/l

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 #: 801-024813
Collected by: Ashley Lowe
Collected on: 09/09/02

Received: 09/11/02
Extracted: N/A
Tested: 09/13/02
Reported: 09/16/02

Sample Description: Water
Project Description: 4270032-020105 San Juan River Basin

Analysis of Water Samples

Component Analyzed	Method	Unit	PQL	Analysis Result MW-1 GW Horton 1E 02-04813-1	MW-5 GW Ohio Gov 02-04813-2	TB02090901 02-04813-3
BTXE						
Dilution Factor				1	1	1
BENZENE	8021B	µg/L	0.5	167	1.1	<0.5
ETHYLBENZENE	8021B	µg/L	0.5	2.4	2.7	0.9
TOLUENE	8021B	µg/L	0.5	49.9	0.5	0.4J
O-XYLENE	8021B	µg/L	0.5	1.7	4.0	<0.5
M,P-XYLENE	8021B	µg/L	1	11	7.8	0.9J

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

DATA VALIDATION WORKSHEET

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

Laboratory: APCL **Batch Identification:** 02-04813

Validation Criteria								
Sample ID	**Horton 1E MW-1**	**Ohio Gov. MW-5**						
Lab ID	**02-04813-01**	**02-04813-02**						
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						
Initial Calibration	N	N						
Initial Calibration Verification (ICV)	N	N						
Continuing Calibration Verification (CCV)	A	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						
Surrogate Spike Recovery	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 @ 0.4T µg/L, qualify all sample concentrations less than or equal to 2.0 µg/L with a "UB" flag and all sample concentrations greater than 2.0 µg/l with a "B" flag.
   c) m/p-Xylene @ 0.9T 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.

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 #: 801-024813
Collected by: Ashley Lowe
Collected on: 09/09/02
Sample description:
Water
Project: San Juan River Basin /4270032-020105

Received: 09/11/02
Tested: 09/13/02
Reported: 09/17/02

Analysis of Water

801-024813QC

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	02G3843	100	99	N.D.	µg/L	18.0	85	85*	86*	2	65-129	31
Toluene	02G3843	100	100	N.D.	µg/L	7000	89	90	90	0	66-133	33
Ethylbenzene	02G3843	100	101	N.D.	µg/L	1800	97	96	94	2	65-134	35
m/p-Xylene	02G3843	200	94	N.D.	µg/L	7000	92	88	88	0	65-134	35
o-Xylene	02G3843	100	96	N.D.	µg/L	2500	91	97	94	4	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,

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

CHAIN OF CUSTODY RECORD/LAB WORK REQUEST

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

Chain of Custody ID 020910AL01
Page 1 of 1
Air Bill No. 8349152097 48

MWH
Phone (801) 617-3200 FAX (801) 617-4200
MWH Contact Brian Buttars
Project San Juan River Basin
Project Number 427032-020105
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	No Preservative
GW Ohio C Government #3	MW-5		09/09/02	16:29	WG	B	✓								✓
GW Horton 1E	MW-1		09/10/02	12:16	WG	B	✓								
TB020909 01			9/9/02		WG		✓								
								4818							

[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 L Lowe / AESE 14:00	/ APCL	09/10/02	14:00
		9/11/02	0934

LABORATORY USE ONLY

SAMPLES WERE:

1 Shipped or hand delivered
Notes: Fed-Ex

2 Ambient or Chilled
Notes:

3 Temperature 4.4°C

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:

PINNACLE LABORATORIES

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

Pinnacle Lab ID number **203085**
April 10, 2002

AMEC EARTH & ENVIRONMENTAL
2060 AFTON PLACE
FARMINGTON, NM 87401

EL PASO FIELD SERVICES
614 RIELLY STREET
FARMINGTON, NM 87401

Project Name OHIO C GOVT. #3
Project Number 1517000121

Attention: LISA WINN/SCOTT POPE

On 03/22/02 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	: 203085
PROJECT #	: 1517000121	DATE RECEIVED	: 03/22/02
PROJECT NAME	: OHIO C GOVT. #3	REPORT DATE	: 04/10/02

PINNACLE ID #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
203085 - 01	OHI-0203-MW5	AQUEOUS	03/19/02
203085 - 02	TRIP BLANK	AQUEOUS	03/20/02

PINNACLE LABORATORIES

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

GAS CHROMATOGRAPHY RESULTS

:ST : EPA 8021 MODIFIED
.IENT : AMEC EARTH & ENVIRONMENTAL PINNACLE I.D.: 203085
ROJECT # : 1517000121
ROJECT NAME : OHIO C GOVT. #3

AMPLE . #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
	OHI-0203-MW5	AQUEOUS	03/19/02	NA	03/25/02	1
!	TRIP BLANK	AQUEOUS	03/20/02	NA	03/25/02	1

ARAMETER	DET. LIMIT	UNITS	OHI-0203-MW5	TRIP BLANK
ENZENE	0.5	UG/L	6.6	< 0.5
OLUENE	0.5	UG/L	< 0.5	< 0.5
THYLBENZENE	0.5	UG/L	15	< 0.5
OTAL XYLENES	1.0	UG/L	97	< 1.0
URROGATE:				
ROMOFLUOROBENZENE (%)			97	90
URROGATE LIMITS	(80 - 120)			

HEMIST NOTES:
/A

PINNACLE LABORATORIES

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

GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

:ST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 203085
.ANK I. D.	: 032502	DATE EXTRACTED	: N/A
.IENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 03/25/02
ROJECT #	: 1517000121	SAMPLE MATRIX	: AQUEOUS
ROJECT NAME	: OHIO C GOVT. #3		

ARAMETER	UNITS	
ENZENE	UG/L	<0.5
OLUENE	UG/L	<0.5
THYLBENZENE	UG/L	<0.5
OTAL XYLENES	UG/L	<1.0
URROGATE:		
ROMOFLUOROBENZENE (%)		86
UR GATE LIMITS:	(80 - 120)	

H NOTES:
/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

'EST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 203085
¡ATCH #	: 032502	DATE EXTRACTED	: N/A
;LIENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 03/25/02
'ROJECT #	: 1517000121	SAMPLE MATRIX	: AQUEOUS
'ROJECT NAME	: OHIO C GOVT. #3	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	18.2	91	17.9	90	2	(80 - 120)	20
'OLUENE	<0.5	20.0	18.2	91	17.1	86	6	(80 - 120)	20
;THYLBENZENE	<0.5	20.0	17.9	90	16.8	84	6	(80 - 120)	20
'OTAL XYLENES	<1.0	60.0	55.6	93	52.3	87	6	(80 - 120)	20

C[illegible]ST 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

:ST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 203085
3MSD #	: 203085-01	DATE EXTRACTED	: N/A
.IENT	: AMEC EARTH & ENVIRONMENTAL	DATE ANALYZED	: 03/25/02
ROJECT #	: 1517000121	SAMPLE MATRIX	: AQUEOUS
ROJECT NAME	: OHIO C GOVT. #3	UNITS	: UG/L

ARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
ENZENE	6.63	20.0	23.9	86	24.4	89	2	(80 - 120)	20
OLUENE	<0.5	20.0	17.3	87	17.8	89	3	(80 - 120)	20
THYLBENZENE	15.2	20.0	31.4	81	32.6	87	4	(80 - 120)	20
OTAL XYLENES	96.8	60.0	144	79	149	87	3	(80 - 120)	20

NOTES:
Je to concentration of Xylenes, recovery limits not applicable. LCS/LCSD data indicates sample data acceptable.

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

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

Pinnacle Laboratories Inc.

CHAIN OF CUSTODY

DATE: 3-20-02 PAGE: 1 OF 1

PLI Accession #: 203085

SHADED AREAS ARE FOR LAB USE ONLY.

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

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:		NUMBER CONTAINERS
OHC-0203-MW 5	3-19-02	1410	H2O	01					X																					2
Trip Blank	3-20-02	1320	H2O	02					X																					1

PROJECT INFORMATION	
PROJ. NO.	517000121
PROJ. NAME	GPFS GW. project
P.O. NO.:	
SHIPPED VIA	Greyhound

SAMPLE RECEIPT	
NO. CONTAINERS	3
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 ☐

OHIO C GOVT. #3
meter # (12980)

RELINQUISHED BY: 1.	RELINQUISHED BY: 2.
Signature: Time: 1600	Signature: Time:
Printed Name: Chris A. Mercer Date: 3-20-02	Printed Name: Date:
Company: See reverse side (Force Majeure)	Company:
RECEIVED BY: 1.	**RECEIVED BY: (LAB) 2.**
Signature: Time:	Signature: Time: 0945
Printed Name: Date:	Printed Name: Francine Tinvo Date: 3/22/02
Company:	Pinnacle Laboratories Inc.

8796 Pan American Freeway NE • Albuquerque, New Mexico 87107 • (505) 344-3777 • Fax (505) 344-4413 • E-mail: PINLAB@WORLDNET.ATT.NET

DISTRIBUTION: White - PLI, Canary - Originator

ATTACHMENT 2

FIELD DOCUMENTATION

WELL DEVELOPMENT AND SAMPLING LOG

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

Location: Ohio Cyon #3 Well No: MW-5 Development ☐ Sampling ☒

Project Manager Delbert Beck Date 12-23-02 Start Time 1400 Weather cloudy

Depth to Water 16.040 Depth to Product NA Product Thickness NA Measuring Point TOC

Water Column Height 5.58 Well Dia. 4" ~~TD= 21.618~~ TD= 21.620

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 _____

Gal/ft x ft of water	Water Volume In Well		Gal/oz to be removed
	Gallons	Ounces	

Time (military)	pH	SC (umhos/cm)	Temp (°C)	Eh-ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gal.)	Comments/ Flow rate
1425	7.5	2730	16.6				.5	grayish black, oily
	7.64	2720	15.0				1 gal	film on top. odor
	7.50	2740	14.6				1.5	
	7.57	2680	13.9				2.0	
	7.53	2690	13.1				2.5	
	7.52	2650	12.8				3.0	
	7.49	2650	12.3					
	7.44	2800	13.1					
	7.49	2770	13.3					
	7.44	2806	13.1					
	7.44	2850	12.8					
	7.41	2870	12.5					
	7.43	2880	12.6					
	7.39	2950	12.5					
	7.37	2980	13.2					Continue on
	7.38	2960	12.3					next sheet

Final:

Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow rate

COMMENTS: * Sheet 1 of 2.
Continue on next sheet.

INSTRUMENTATION: pH Meter ☐ _____ Temperature Meter ☐ _____

DO Monitor ☐ _____ Other ☐ _____

Conductivity Meter ☐ _____

Water Disposal _____

Sample ID _____ Sample Time _____ BTEX ☐ VOCs ☐ Alkilinity ☐

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

Total Phosphorus ☐ _____ ☐ _____ ☐ _____ ☐ _____ ☐

MS/MSD _____ BD _____ BD Name/Time _____ TB _____

WELL DEVELOPMENT AND SAMPLING LOG

Project No: _____ Project Name: _____ Client: _____

Location: _____ Well No: _____ Development ☐ Sampling ☐

Project Manager _____ Date _____ Start Time _____ Weather _____

Depth to Water _____ Depth to Product _____ Product Thickness _____ Measuring Point _____

Water Column Height _____ Well Dia. _____

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 _____

Gal/ft x ft of water	Water Volume In Well		Gal/oz to be removed
	Gallons	Ounces	

Time (military)	pH	SC (umhos/cm)	Temp (°C)	Eh-ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gal.)	Comments/ Flow rate
	7.36	2950	11.6				8.5	Black, silty
	7.36	3050	12.4				9.0	odor
	7.40	3030	~~[illegible]~~	127			9.5	
	7.35	3030	12.4				10.0	grey / cloudy
1530	7.34	3050	12.9				10.5	Sample.

Final:

Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow rate
1530	7.34	3050	12.9	/	/	/		10.5	Sample.

COMMENTS: at sample, color was grey to cloudy almost clear.

INSTRUMENTATION: pH Meter ☑ _____ Temperature Meter ☑ _____

DO Monitor ☐ _____ Other ☐ _____

Conductivity Meter ☑ _____

Water Disposal KUTZ PLANT

Sample ID Ohio Govt #3 MW-5 Sample Time 1530 BTEX ☑ VOCs ☐ Alkilinity ☐

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

Total Phosphorus ☐ _____ ☐ _____ ☐ _____ ☐ _____ ☐

MS/MSD _____ BD _____ BD Name/Time _____ TB _____

Product Recovery and Well Observation Data

Project Name: San Juan River Basin
Project Manager: Delbert Bekis
Client Company: MWH
Site Name: OHIO C Government #3

Project No: 220013
Date: 12/24/02

Well	Time	Depth to Water (ft)	Depth to Product (ft)	Total Well Depth (ft)	Product Thickness (ft)	Volume Removed	Comments
mw-1	1400	13.11	—	21.620	—	—	
mw-4	1405	10.73	—	20.90	—	—	
mw-2	1410	10.59	—	16.62	—	—	
mw-3	1415	14.33	—	21.44	—	—	
mw-5	1425	16.040	—	21.620	—	—	collected Sample.

COMMENTS:

Signature: Delbert Bekis Date: 12/24/02

CHAIN OF CUSTODY RECORD/LAB WORK REQUEST

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

Chain of Custody ID C21224DB
Page 1 of 1
Air Bill No. 836381676760

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 Delbert Belin
(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- Jennoah	MW-1		12/13/12	1125	WG	B	✓											
GW- OHIC "C" Gov't # 3	MW-5		12/13/12	1530	WG	B	✓											
GW-Canada Mesa	MW-2		12/14/12	1205	WG	B	✓											
GW-Canada Mesa	MW-3		12/14/12	1125	WG	B	✓											
			12/18/12				✓											
TB-121015N																		

[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
Delbert Belin / ESE		12-11-12	1410

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* 8[illegible]81676760

[illegible]nder's Copy

1 From Please print and press hard

Date 12/24/02 Sender's FedEx Account Number 220929116

Sender's Name Delbert Bebis Phone (505) 566-9116

Company AESE

Address 906 San Juan Blvd Suite D Dept./Floor/Suite/Room

City Farmington State N.M. ZIP 87401

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

3 To

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

Company APCL

Address 13760 Magnolia Ave

To "HOLD" at FedEx location, print FedEx address. We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address Dept./Floor/Suite/Room

City Chino State CA ZIP 91710

Try online shipping at fedex.com

By using this Airbill you agree to the service conditions on the back of this Airbill and in our current Service Guide, including terms that limit our liability.

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or call 1.800.Go.FedEx® 800.463.3339.

4a Express Package Service *Packages up to 150 lbs.* Delivery commitment 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:

5 Packaging * Declared value limit $500

- [ ] 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

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

- [ ] Cargo Aircraft Only

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. 142-27-695 Exp. Date

Total Packages	Total Weight	Total Declared Value†
1	16	$ .00

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

FedEx Use Only

8 Release Signature Sign to authorize delivery without obtaining signature.

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

446

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Product Recovery and Well Observation Data

Project Name: San Juan River Basin
Project Manager: Ashley Lowe
Client Company: MWH
Site Name: Ohio C Government #3

Project No: 220013
Date: 9/9/02

Well	Time	Depth to Water (ft)	Depth to Product (ft)	Total Well Depth (ft)	Product Thickness (ft)	Volume Removed	Comments
MW-1	15:47	13.212	—	21.620	—	—	
MW-4	15:56	10.948	—	20.895	—	—	
MW-2	16:00	10.742	—	16.645	—	—	
MW-5	16:08	16.330	—	21.645	—	—	sample collected
MW-3	16:45	14.443	—	21.465	—	—	

COMMENTS:

Signature: Ashley L Lowe
Date: 09/09/02

WELL DEVELOPMENT AND SAMPLING LOG

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

Location: Ohio C Gov't #3 Well No: MW-5 Development ☐ Sampling ☑

Project Manager Ashley Lowe Date 9/9/02 Start Time 16:08 Weather 79°; Cloudy

Depth to Water 16.330 Depth to Product NA Product Thickness NA Measuring Point TOC

Water Column Height 5.345' Well Dia. 4" TD 21.645

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 or bail dry

Gal/ft x ft of water	Water Volume In Well		Gal/oz to be removed
	Gallons	Ounces	
0.65 x 5.345	3.5 x 3		10.42 gal

Time (military)	pH	SC (umhos/cm)	Temp (°C)	Eh-ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gal.)	Comments/ Flow rate
16:12	5.20	2800	29.4				0.5	light yellow-tan color
	5.14	2640	27.0				1.5	moderate odor, dirt
	5.11	2580	25.7				2.5	particles
	5.25	2680	23.2				3.5	dark brown, cloudy
	5.22	2600	21.7				4.5	some grass in water
	5.24	2580	21.2				5.5	
	5.26	2530	20.8				6.5	
	5.29	2550	20.2				7.5	
	5.29	2540	20.1				8.5	
	5.31	2550	20.2				9.5	
	5.31	2560	20.1				10.5	"

Final:

Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow rate
16:29	5.31	2560	20.1					10.5gal	No preservative

COMMENTS: HCl preservative reacted w/CO_3 in water. Rinsed vials before filling.

INSTRUMENTATION: pH Meter ☑ _____ Temperature Meter ☑ _____

DO Monitor ☐ _____ Other ☐ _____

Conductivity Meter ☑ _____

Water Disposal Kutz Plant

Sample ID Ohio C Government #3 MW-5 Sample Time 16:29 BTEX ☑ VOCs ☐ Alkilinity ☐

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

Total Phosphorus ☐ _____ ☐ _____ ☐ _____ ☐ _____ ☐

MS/MSD _____ BD _____ BD Name/Time _____ TB TB09-090901

CHAIN OF CUSTODY RECORD/LAB WORK REQUEST

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

MWH
Phone (801) 617-3209 FAX (801) 617-4260
MWH Contact Brian Butlers
Project San Juan River Basin
Project Number 427032-020105
Date Due 21 Days
Sampler's Name Ashley Lowe
(print clearly)

Chain of Custody ID 020910AL01
Page 1 of 1
Air Bill No. 834715209748

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	No Preservative			
GW Ohio C Government #3	MW-5		09/09/02	16:29	WG	B	✓								✓			
GW Horton 1E	MW-1		09/10/02	12:16	WG	B	✓											
TB02090901			9/9/02		WG		✓											

4813

[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
Blank=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 L Lowe/AESE 14:00	/APCL	09/10/02	14:00
		9/11/02	0930

LABORATORY USE ONLY

SAMPLES WERE:

1 Shipped or hand delivered
Notes: Fed-Ex

2 Ambient or Chilled
Notes:

3 Temperature 4.4°C

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:

CHAIN OF CUSTODY RECORD/LAB WORK REQUEST

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

Chain of Custody ID 020910AL01
Page 1 of 1
Air Bill No. 834715209748

MWH
Phone (801) 617-3200 FAX (801) 617-4200
MWH Contact Brian Buttars
Project San Juan River Basin
Project Number 427003 2-020105
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	No Preservative			
GW Ohio C Government #3	MW-5		09/09/02	16:29	WG	B	✓								✓			
GW Horton 1E	MW-1		09/10/02	12:16	WG	B	✓											
TB02090901			9/9/02		WG		✓											

[a] Matrix:
SO – Soil
WS – Surface Water
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[b] Sampling Technique:
Composite=C
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Hand Auger=HA
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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 L Lowe / AESE 14:00		09/10/02	14:00

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 Pack
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:

Express USA Airbill

FedEx Tracking Number 834715209748

From Please print and press hard.

Date

Sender's FedEx Account Number 220929116

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

Company A.E. Schmidt Environmental

Address 906 San Juan Blvd, Suite, D

Dept./Floor/Suite/Room

City Farmington State NM ZIP 87401

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

To

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

Company APCL

Address 13760 Magnolia Ave

"HOLD" at FedEx location, print FedEx address.

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address

Dept./Floor/Suite/Room

City Chino State CA ZIP 91710

Try online shipping at fedex.com

By using this Airbill you agree to the service conditions on the back of this Airbill and in our current Service Guide, including terms that limit our liability.

Questions? Visit our Web site at fedex.com
or call 1.800.Go.FedEx® 800.463.3339.

Form ID No. [redacted] Sender's Copy

4a Express Package Service — *Packages up to 150 lbs.* Delivery commitment 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:

5 Packaging — *Declared value limit $500

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

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

- [ ] Cargo Aircraft Only

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. 1421-27-695 Exp. Date

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

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

FedEx Use Only

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

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

446

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RETAIN THIS COPY FOR YOUR RECORDS.

☐ Development
☑ Purging

WELL DEVELOPMENT AND PURGING DATA FORM

Well Number MW 5

Page 1 of 1

Project Name EpFS GW project Project Manager Lisa Wilson Project No. 151200121

Client Company El Paso Field Services

Site Name OHIO C GOVT #3 (72980) 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	Bailer
☐ Centrifugal	☐ Bottom Valve
☐ Submersible	☐ Double Check Valve
☐ Peristaltic	☐ Stainless-steel Kemmerer

☐ Other _____

Water Volume Calculation

Initial Depth of Well (feet) 21.7
Initial Depth to Water (feet) 16.06
Height of Water Column in Well (feet) 5.64
Diameter (inches): Well 4" Gravel Pack ____

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing	5.64	3.69x3	11.07
Gravel Pack			
Drilling Fluids			
Total			11.07

Instruments

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

Water Disposal

Knight Separator Bloomfield NM.

Water Removal Data

Date	Time	Development Method		Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gallons)		Product Volume Removed (gallons)		Temperature (°C)	pH	Conductivity (mmhos/cm)	Dissolved Oxygen (mg/L)	Comments
		Pump	Bailer				Increment	Cumulative	Increment	Cumulative					
3-19-02	1319		X				2.25	2.25			14.7	7.32	2344		Slowly, Greenish Tint Sulfur odor
	1323		X				2.25	4.5			13.4	7.36	2293		" "
	1328		X				2.25	6.75			13.1	7.39	2336		" "
	1331		X			20.76	2.25	9			13.1	7.38	2434	5.99	no Change

Comments AFTER Bailing approximately 9 gal. Bailed well Dry, LET Recover Sample for BTEX 1410

Developer Signature(s) [signature] Date 3-19-02 Reviewed [signature] Date 3/28/[illegible]

WELL OBSERVATION DATA

amec

Project Name: EPFS G.W. project

Project No.: 1517000121

Project Mngr: LISA winn

Task: 2

Client Co.: El paso Field Services

Date: 3-19-02

Site Name: OHIO C GOVT. #3 (72980)

Well or Piezometer	Time	Reason Not Measured	Depth to Floating Product (Feet)	Depth to Water (Feet)	Depth to Sinking Product (Feet)	Total Well Depth (Feet)	[redacted]	[redacted]	Comments
MW 1	1345			13.06					
MW 2	1351			10.62					
MW 3	1354			14.09					
MW 4	1348			10.74					

Reason Not Measured: D = Dry; O = Obstructed; N = Not Accessible

Comments:

Signature: Chris A. May

Date: 3-19-02

Pinnacle Laboratories Inc.

CHAIN OF CUSTODY

DATE: 3-20-02 PAGE: 1 OF 1

SHADED AREAS FOR LAB USE ONLY

PLEASE FILL THIS FORM IN COMPLETELY.

PROJECT MANAGER: Lisa Winn

COMPANY: AMEC
ADDRESS: 2060 AFTON place
Farmington N.M. 87401
PHONE: (505) 327-2928
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	# CONT.	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
OHI-0203-MW 5	3-19-02	1410	H2O						X																					
Trip Blank	3-20-02	1320	H2O						X																					

PROJECT INFORMATION

PROJ. NO.: 51200012.1
PROJ. NAME: EPFS GW. project
P.O. NO.:
SHIPPED VIA: Greyhound

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 ☐

OHIO C GOVT #3
meter # (12980)

RELINQUISHED BY: 1

Signature: Chris Mez Time: 1600
Printed Name: Chris J. Mez Date: 3-20-02
Company:
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: