3R - 407

AGWMR

2009

elpaso

El Paso Tennessee
Pipeline Company

San Juan Basin Pit Program
Groundwater Sites Project

Final 2009 Annual Report
Navajo Sites (Volume 3)

April 2010

MWH

1801 California Street, Suite 2900
Denver, Colorado 80202

2009 ANNUAL GROUNDWATER REPORT
NAVAJO SITES VOLUME III

EL PASO TENNESSEE PIPELINE COMPANY

TABLE OF CONTENTS

METER or LINE ID	NMOCD CASE NO.	SITE NAME	TOWNSHIP	RANGE	SECTION	UNIT
95608	3RP-407-0	Gallegos Canyon Unit #124E	28N	12W	35	N

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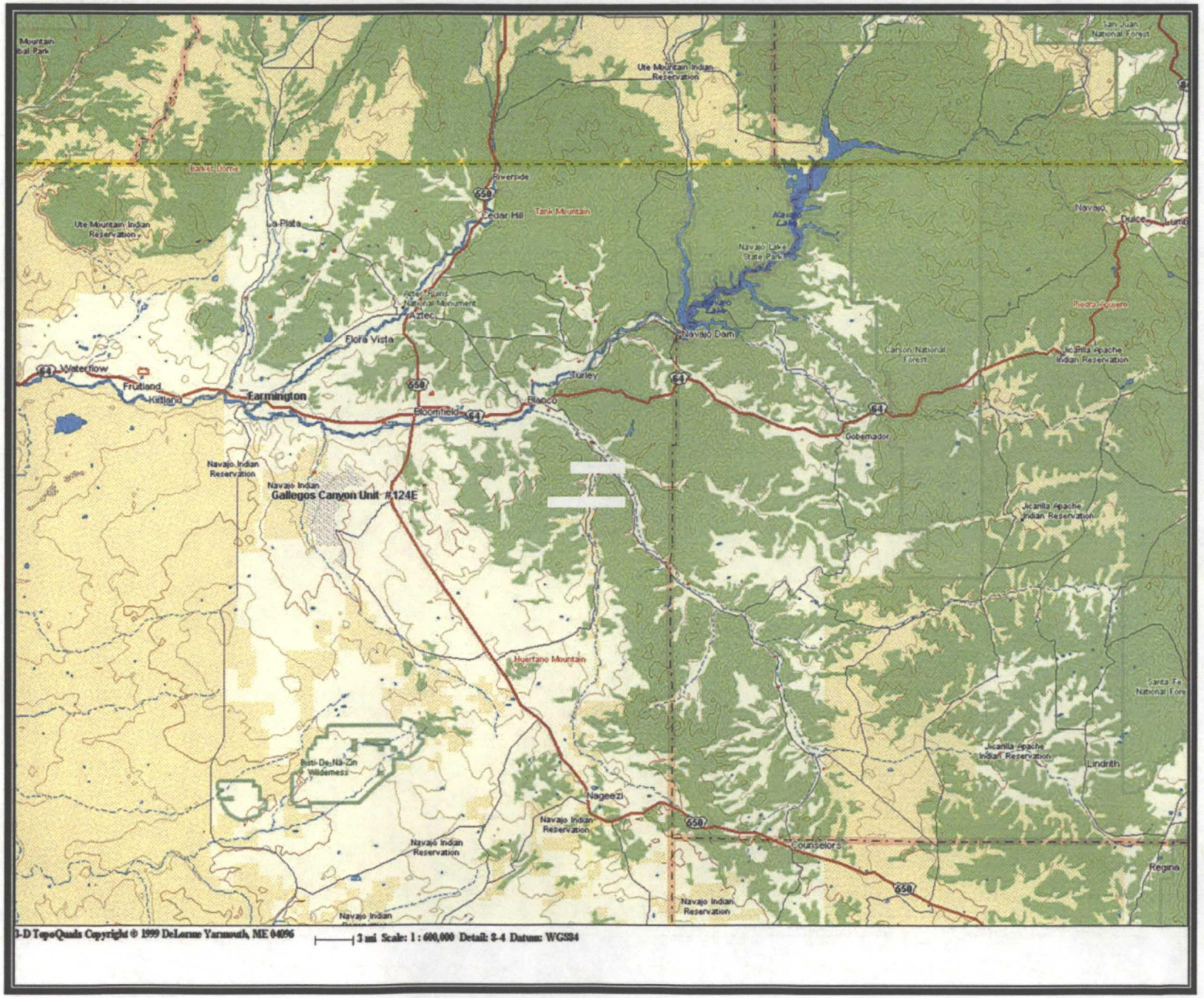
LIST OF ACRONYMS

AMSL	above mean sea level
B	benzene
btoc	below top of casing
E	ethylbenzene
EPTPC	El Paso Tennessee Pipeline Company
ft	foot/feet
GWEL	groundwater elevation
ID	identification
MW	monitor well
NMWQCC	New Mexico Water Quality Control Commission
T	toluene
TOC	top of casing
NA	not applicable
NMOCD	New Mexico Oil Conservation Division
NS	not sampled
ORC	oxygen-releasing compound
µg/L	micrograms per liter
X	total xylenes

Navajo Groundwater Site Map



EPTPC GROUNDWATER SITES
2009 ANNUAL GROUNDWATER REPORT

GCU #124E
Meter Code: 95608

SITE DETAILS

Legal Description:	**Town:**	28N	**Range:**	12W	**Sec:** 35	**Unit:**	N
NMOCD Haz Ranking:	20	**Land Type:**	Navajo	**Operator:**	BP / Amoco Production		

PREVIOUS ACTIVITIES

Site Assessment:	Jan/95	**Excavation:**	Oct/95 (196 cy)	**Soil Boring:**	Mar/98
Monitor Well:	Jun/98	**Geoprobe:**	NA	**Additional MWs:**	*
Downgradient MWs:	*	**Replace MW:**	NA	**Quarterly Initiated:**	Jun/98
ORC Nutrient Injection:	NA	**Re-Excavation:**	NA	**PSH Removal Initiated:**	Apr/99
Annual Initiated:	NA	**Quarterly Resumed:**	NA	**PSH Removal in 2009?**	No

* Attempts were made in November 2000 to install additional wells that resulted in dry holes.

SUMMARY OF 2009 ACTIVITIES

MW-1: Semiannual groundwater sampling (January and August) was performed in 2009. An additional water level monitoring event was conducted in November 2009.

Site-Wide Activities: No other activities were performed at this Site during 2009.

SITE MAP

Site maps (January and August) are attached as Figures 1 and 2.

SUMMARY TABLES AND GRAPHS

- Historic analytical and water level data are summarized in Table 1 and presented graphically in Figure 3.
- Historic free-product recovery data are summarized in Table 2 and presented graphically in Figure 3.
- The 2009 laboratory reports are presented in Attachment 1 (included on CD).
- The 2009 field documentation is presented in Attachment 2 (included on CD).

EPTPC GROUNDWATER SITES
2009 ANNUAL GROUNDWATER REPORT

GCU #124E
Meter Code: 95608

GEOLOGIC LOGS AND WELL COMPLETION DIAGRAMS

No subsurface activities were performed at this Site during 2009.

DISPOSITION OF GENERATED WASTES

All purge water was taken to the El Paso Natural Gas Rio Vista Compressor Station.

ISOCONCENTRATION MAPS

No isoconcentration maps were generated for this Site; however, the attached Site maps present the analytical data collected during 2009.

RESULTS

- Benzene concentrations decreased during 2009, apparently related to the decrease in water level elevations. The semiannual benzene results were 281 µg/L and 57.9 µg/L for January and August 2009, respectively. As a long-term trend, the benzene concentrations appear to be attenuating steadily from a high of 2,960 µg/L observed in 1999.

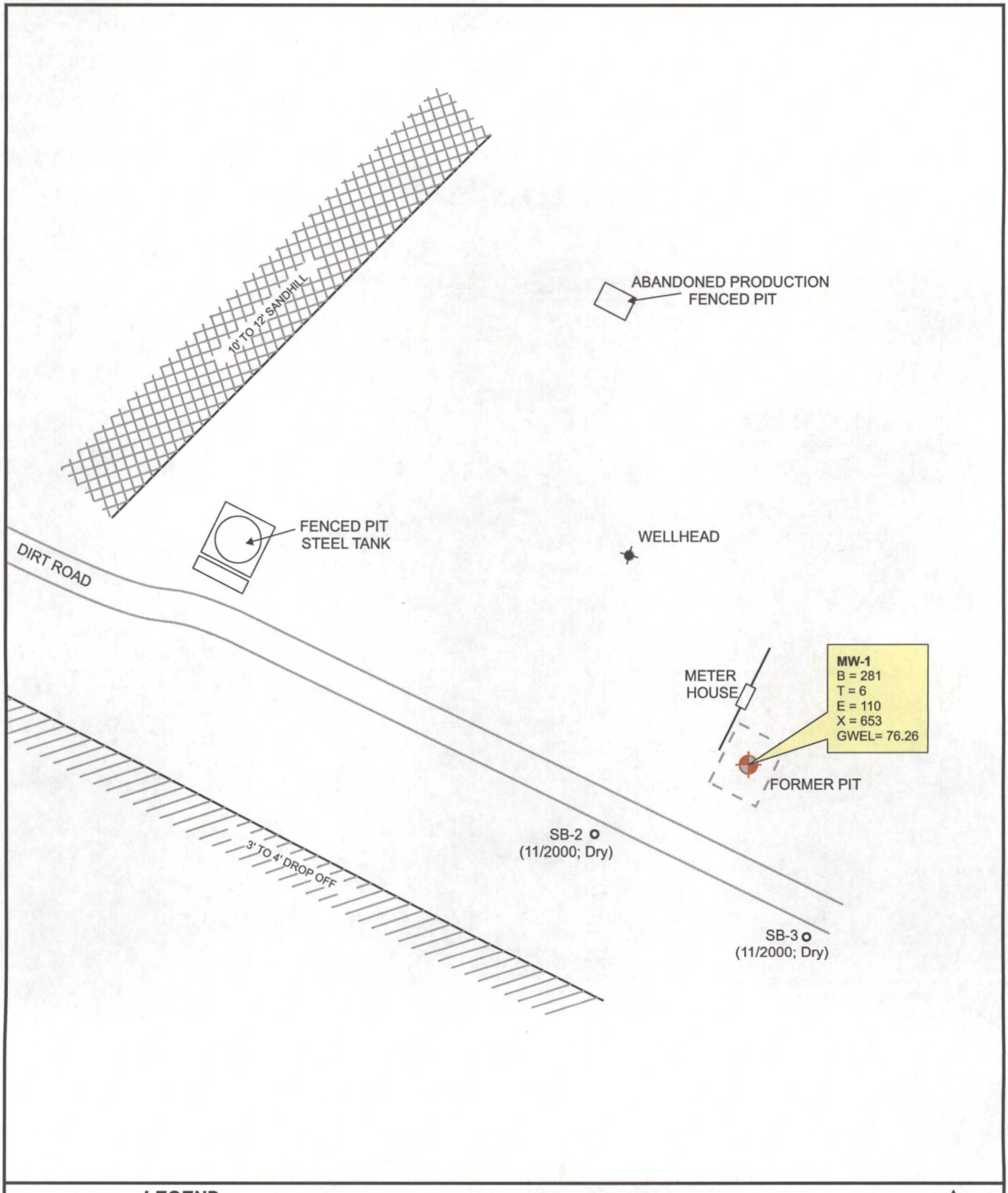
- With the exception of the January concentration of total xylenes (653 µg/L), the other BTEX constituent concentrations were below all applicable standards during 2009. While concentrations of total xylenes still fluctuate with static water level, they are well below the historical highs, indicating continued attenuation.

- Gauging at MW-1 did not detect any free-product in 2009. Measurable free-product has not been detected in the well since 2003. Virtually all of the free-product recovery was completed by the end of 2002 (approximately 19 gallons). At times, a sheen is still observed on the water during bailing activities.

RECOMMENDATIONS

- EPTPC recommends continued semiannual sampling at MW-1, along with quarterly water level gauging.

- Once the benzene concentrations again approach the standard, sampling will return to a quarterly frequency until BTEX concentrations are below the applicable NNEPA/USEPA standards for three consecutive quarters and NMWQCC standards for four consecutive quarters.



LEGEND

MW-4	Existing Monitoring / Observation Well	GWEL	Groundwater Elevation (ft. *)
B	Benzene (ug/L)	* = Elevations in feet relative to a 100 ft benchmark.	
T	Toluene (ug/L)	ND	Not Detected; Reporting Limit Shown in Parentheses
E	Ethylbenzene (ug/L)		
X	Total Xylenes (ug/L)		

N

0 10 20 40 60 80 Feet

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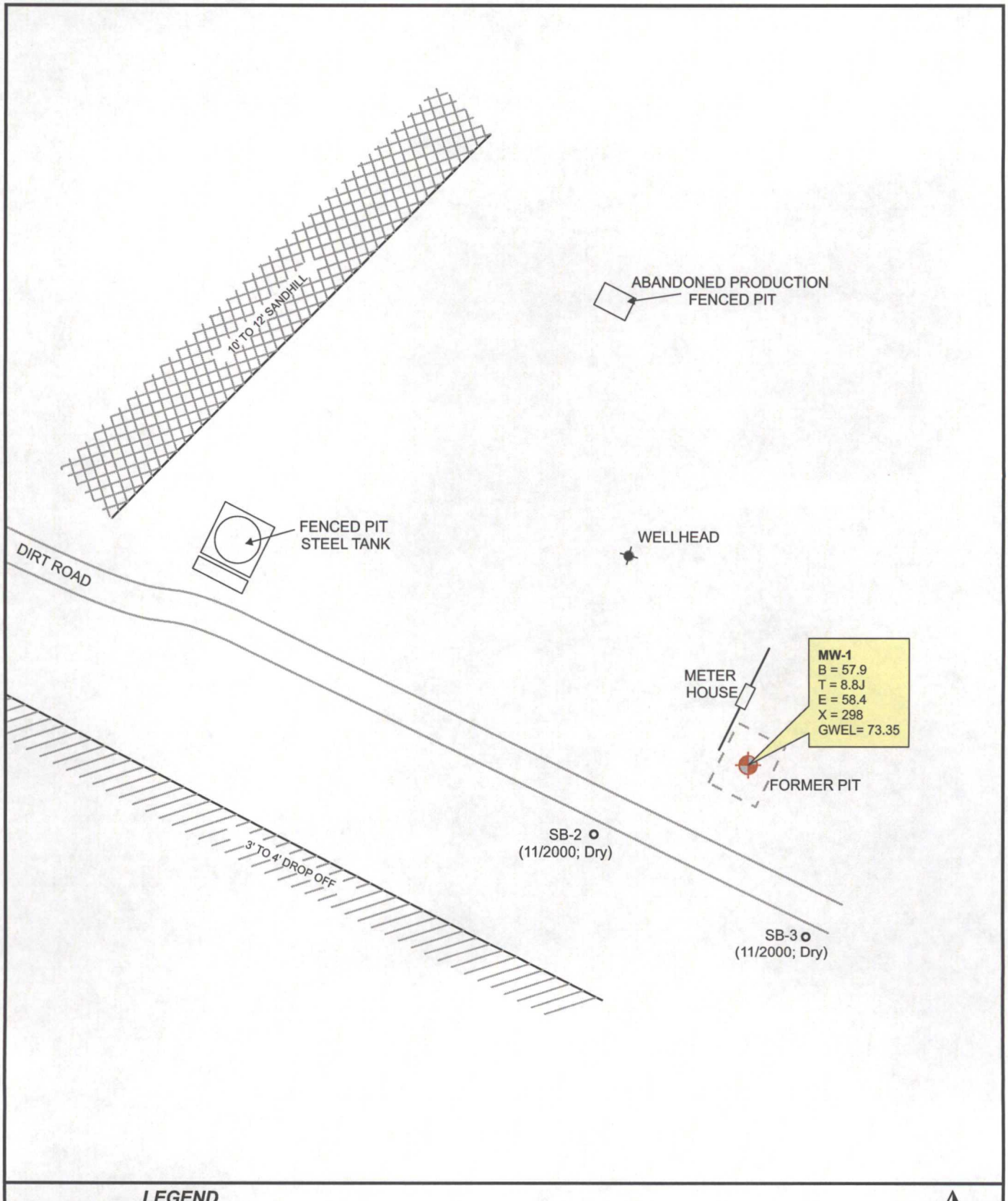
PROJECT: GALLEGOS CANYON UNIT #124E

TITLE: Groundwater Potentiometric Surface Map, and BTEX Concentrations - January 7, 2009

FIGURE: 1



LEGEND

MW-4	Existing Monitoring / Observation Well
B	Benzene (ug/L)
T	Toluene (ug/L)
E	Ethylbenzene (ug/L)
X	Total Xylenes (ug/L)
GWEL	Groundwater Elevation (ft. *)
*	= Elevations in feet relative to a 100 ft benchmark.
ND	Not Detected; Reporting Limit Shown in Parentheses
J	Result Flagged as Estimated

0 10 20 40 60 80 Feet

MWH

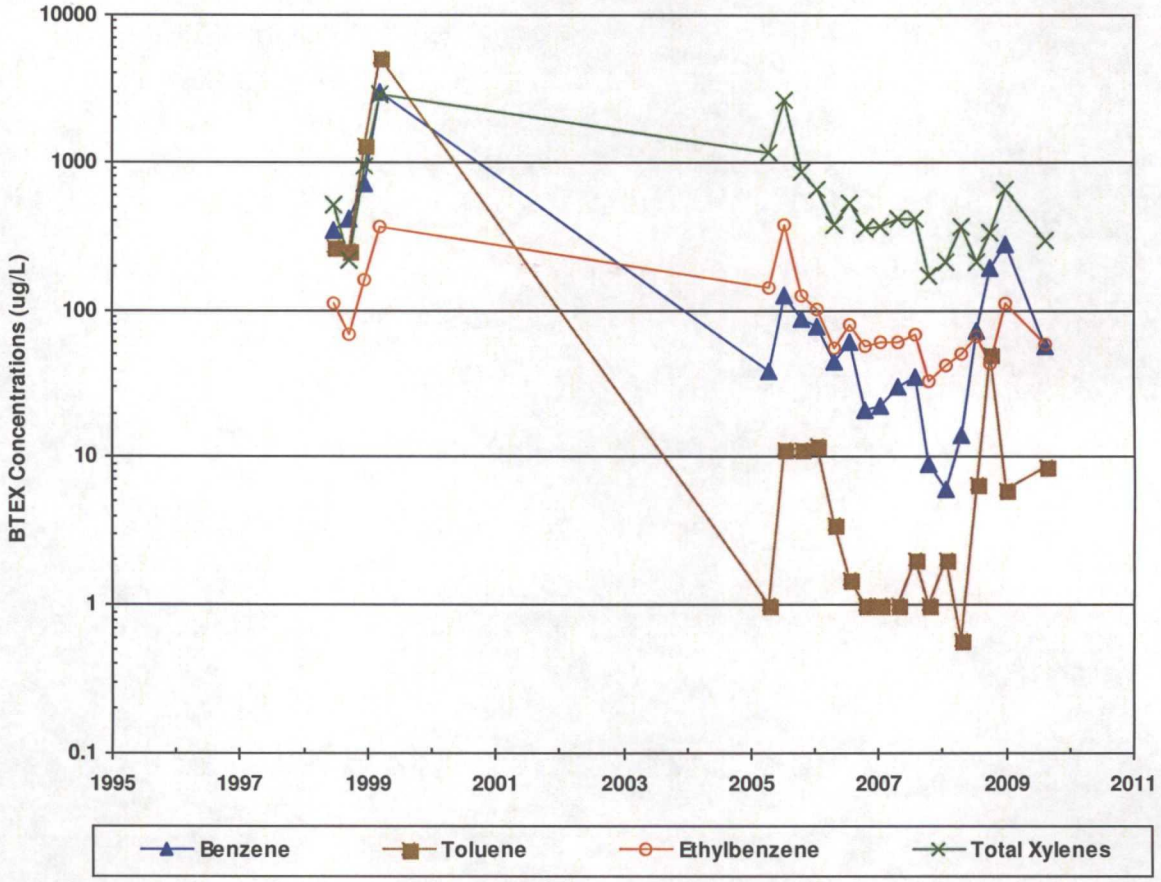
elpaso

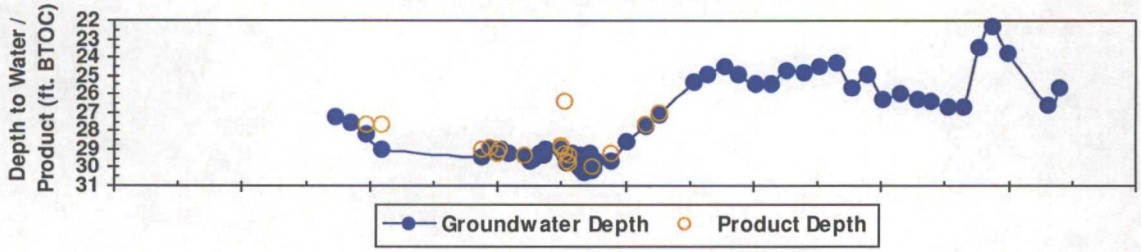
PROJECT: GALLEGOS CANYON UNIT #124E

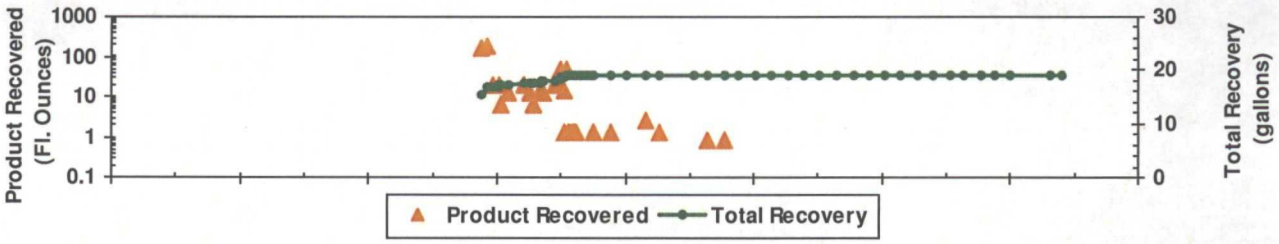
TITLE: Groundwater Potentiometric Surface Map, and BTEX Concentrations - August 25, 2009

FIGURE: 2

FIGURE 3
SUMMARY OF GROUNDWATER BTEX CONCENTRATIONS, FLUID LEVELS, AND PRODUCT RECOVERY
GCU #124E (METER #95608)
MW01







**In some cases, older recovery event data are not available. However, the cumulative totals still include all historic recovery.*

TABLE 1

SUMMARY OF BTEX COMPOUNDS IN GROUNDWATER SAMPLES
GCU #124E (METER #95608)

Monitor Well	Sample Date	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	Depth to Water (ft BTOC)	Corrected GW Elevation (Feet*)
NMWQCC GW Std.:		10	750	750	620		
MW01	6/25/1998	**340**	271	111	510	27.21	72.79
MW01	9/14/1998	**410**	251	68.3	220	27.50	72.50
MW01	12/15/1998	**710**	**1300**	160	**940**	28.16	72.28
MW01	3/16/1999	**2960**	**5130**	367	**2890**	29.02	72.12
MW01	4/19/2005	**38.8**	<1.0	142	**1160**	25.45	74.55
MW01	7/20/2005	**125**	11.4	371	**2640**	24.73	75.27
MW01	10/20/2005	**86.8**	11.3	125	**864**	24.85	75.15
MW01	1/19/2006	**77.9**	12.0	101	**656**	24.53	75.47
MW01	4/24/2006	**45.1**	3.5J	56.1	377	24.25	75.75
MW01	7/31/2006	**60.8**	1.5J	79.3	524	25.68	74.32
MW01	10/24/2006	**21.1**	<1.0	56.6	349	24.94	75.06
MW01	1/19/2007	**22.4**	<1.0	60.0	367	26.33	73.67
MW01	4/24/2007	**30.3**	<1.0	60.6	407	25.97	74.03
MW01	7/31/2007	**35.3**	<2.0	68.4	416	26.26	73.74
MW01	10/25/2007	9.0	<1.0	33.2	173	26.44	73.56
MW01	1/28/2008	6.0	<2.0	41.6	210	26.67	73.33
MW01	4/23/2008	**14.1**	0.59J	50.1	360	26.67	73.33
MW01	7/23/2008	**72.7**	6.7	65.8	210	23.49	76.51
MW01	10/8/2008	**194**	<50	43.6J	328	22.30	77.70
MW01	1/7/2009	**281**	6J	110	**653**	23.74	76.26
MW01	8/25/2009	**57.9**	8.8J	58.4	298	26.65	73.35

Notes:

Results shown in bold typeface exceed their respective New Mexico Water Quality Control Commission standards.

"J" = result is qualified as estimated. See laboratory report and/or supplemental data validation report for further detail.
"<" = analyte was not detected at the indicated reporting limit.
Static groundwater elevations have been corrected for product thickness where applicable. Specific gravity of 0.8 used.

*This site has a benchmark elevation of 100 feet rather than mean sea level.

TABLE 2

SUMMARY OF FREE-PRODUCT REMOVAL
GCU #124E (METER #95608)

Monitor Well	Removal Date	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Product Thickness (feet)	Volume Removed (gallons)	Cumulative Removal (gallons)	Corrected GW Elevation (Feet*)
MW01	12/15/1998	27.61	28.16	0.55	NA	NA	72.28
MW01	3/16/1999	27.60	29.02	1.42	NA	NA	72.12
MW01	10/5/2000	29.04	29.46	0.42	1.25	15.30	70.88
MW01	11/15/2000	28.93	28.93	0.00	1.50	16.80	71.07
MW01	12/20/2000	--	28.98	0.00	0.15	16.95	71.02
MW01	1/9/2001	29.18	29.21	0.03	--	16.95	70.81
MW01	1/15/2001	29.04	29.07	0.03	--	16.95	70.95
MW01	1/22/2001	--	28.99	0.00	0.15	17.10	71.01
MW01	1/30/2001	--	29.09	0.00	0.05	17.15	70.91
MW01	3/12/2001	--	29.26	0.00	0.10	17.25	70.74
MW01	6/5/2001	29.28	29.32	0.04	0.15	17.40	70.71
MW01	7/13/2001	--	29.65	0.00	0.10	17.50	70.35
MW01	8/2/2001	--	29.53	0.00	0.05	17.55	70.47
MW01	8/31/2001	--	29.27	0.00	0.10	17.65	70.73
MW01	9/21/2001	--	29.33	0.00	0.10	17.75	70.67
MW01	10/2/2001	--	28.98	0.00	0.10	17.85	71.02
MW01	12/5/2001	NA	NA	NA	0.16	18.01	NA
MW01	1/2/2002	28.85	28.96	0.11	0.16	18.16	71.13
MW01	1/7/2002	28.94	28.99	0.05	0.38	18.54	71.05
MW01	1/23/2002	26.35	29.35	3.00	0.11	18.65	73.05
MW01	1/30/2002	29.22	29.24	0.02	0.01	18.66	70.78
MW01	2/7/2002	29.66	29.70	0.04	0.38	19.04	70.33
MW01	2/14/2002	29.28	29.29	0.01	0.01	19.05	70.72
MW01	2/20/2002	29.75	29.76	0.01	0.01	19.06	70.25
MW01	3/4/2002	--	29.30	0.00	0.01	19.07	70.70
MW01	3/11/2002	--	29.17	0.00	0.01	19.08	70.83
MW01	3/21/2002	--	29.47	0.00	0.01	19.09	70.53
MW01	3/28/2002	--	29.33	0.00	0.01	19.10	70.67
MW01	4/3/2002	--	29.33	0.00	0.01	19.11	70.67
MW01	7/2/2002	29.98	29.99	0.01	--	19.11	70.02
MW01	7/15/2002	--	29.63	0.00	0.01	19.12	70.37
MW01	10/16/2002	29.24	29.65	0.41	0.01	19.13	70.68
MW01	5/5/2003	27.69	27.72	0.03	0.02	19.15	72.30
MW01	7/18/2003	27.06	27.08	0.02	0.01	19.16	72.94

TABLE 2

SUMMARY OF FREE-PRODUCT REMOVAL
GCU #124E (METER #95608)

Monitor Well	Removal Date	Depth to Product (ft BTOC)	Depth to Water (ft BTOC)	Product Thickness (feet)	Volume Removed (gallons)	Cumulative Removal (gallons)	Corrected GW Elevation (Feet*)
MW01	4/15/2004	--	24.98	0.00	0.01	19.17	75.02
MW01	7/26/2004	--	24.50	0.00	0.01	19.18	75.50

Notes:

"--" indicates either that product was not measurably detected or that product was not recovered.

"NA" indicates that the respective data point is not available.

Groundwater elevations may not be static due to removal of equipment. Corrections for product thickness utilize SG of 0.8.

*This site has a benchmark elevation of 100 feet rather than mean sea level.

Lodestar Services, Incorporated
PO Box 4465, Durango, CO 81302 Office (970) 946-1093

WATER LEVEL DATA

Project Name: San Juan Basin Groundwater **Date:** 11/03/2009
Project Manager: Ashley Ager
Client: MWH
Site Name: GCU #124E

Well	Time	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Volume Removed	Comments
MW-1	8:18 AM	-	25.62	-	-	

Comments

Signature: *Ashley L. Ager* Date: 11/06/2009

Lodestar Services, Incorporated
PO Box 4465, Durango, CO 81302 Office (970) 946-1093

WELL DEVELOPMENT AND SAMPLING LOG

Project Name: San Juan Basin | Location: GCU #124E | Well No: MW-1
Client: MWH | Date: 8/25/2009 | Time: 16:00
Project Manager: Ashley Ager | Sampler's Name: Troy Urban

Measuring Point: TOC | Depth to Water: 26.65 ft | Depth to Product: ____ ft
Well Diameter: 4" | Total Depth: 36.66 ft | Product Thickness: ____ ft
Water Column Height: 10.01 ft

Sampling Method: ☐ Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Other ____
☑ Bottom Valve Bailer ☐ Double Check Valve Bailer

Criteria: ☑ 3 to 5 Casing Volumes of Water Removal ☑ Stabilization of Indicator Parameters ☑ Other bail dry

Water Volume in Well			
Gal/ft x ft of water	Gallons	Ounces	Volume to be removed
10.01 x .65	6.51 x 3		19.53 gal

Time (military)	pH (su)	SC (us)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. gal	Comments/Flow Rate
16:05	6.56	886	62.1				1.25	clear, HC odor
	6.65	887	61.2				2.5	gray, HC odor
	6.63	901	61.0				3.75	gray, HC odor, sheen
	6.64	897	60.6				5	gray, HC odor, sheen
	6.73	933	60.8				10	gray, HC odor, sheen
	6.85	935	60.1				15	dark gray
	6.81	948	60.3				17.75	dark gray, sheen
	6.87	943	60.3				19	dark gray, sheen
Final: 16:25	6.84	950	60				20.25	dark gray, sheen, silty

COMMENTS:

Instrumentation: ☑ pH Meter ☐ DO Monitor ☑ Conductivity Meter ☑ Temperature Meter ☐ Other ____

Water Disposal: Rio Vista

Sample ID: MW-1 | Sample Time: 16:28

Analysis Requested: ☑ BTEX ☐ VOCs ☐ Alkalinity ☐ TDS ☐ Cations ☐ Anions ☐ Nitrate ☐ Nitrite ☐ Metals
☐ Other ____

Trip Blank: 25082009TB02 | Duplicate Sample: ____

Gulf Coast ACCUTEST Laboratories

IT'S ALL IN THE CHEMISTRY

09/18/09

Technical Report for

Montgomery Watson

San Juan Basin Pit Groundwater Remediation

2009-2010 West-ALAB-Ground Rem-007

Accutest Job Number: T36563

Sampling Dates: 08/25/09 - 08/27/09

Report to:

MWH Americas

jed.smith@mwhglobal.com

ATTN: Jed Smith

Total number of pages in report: 22

ACCUTEST LABORATORIES 50 YEARS 1956-2006

ACCREDITED IN ACCORDANCE WITH nelac

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Paul K Canevaro

Paul Canevaro
Laboratory Director

Client Service contact: Georgia Jones 713-271-4700

Certifications: TX (T104704220-06-TX) AR (88-0756) FL (E87628) KS (E-10366) LA (85695/04004) OK (9103) UT(7132714700)

Test results relate only to samples analyzed.

Sections: 1 2 3 4

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Sample Summary

Montgomery Watson

Job No: T36563

San Juan Basin Pit Groundwater Remediation
Project No: 2009-2010 West-ALAB-Ground Rem-007

Sample Number	Collected Date	Time By	Received	Matrix Code	Matrix Type	Client Sample ID
T36563-1	08/25/09	16:27 TU	08/28/09	AQ	Ground Water	GCU 124E MW-1
T36563-2	08/26/09	14:02 TU	08/28/09	AQ	Ground Water	STATE GAS COM MW-7
T36563-3	08/26/09	14:45 TU	08/28/09	AQ	Ground Water	STATE GAS COM MW-1
T36563-4	08/26/09	15:40 TU	08/28/09	AQ	Ground Water	STATE GAS COM MW-3
T36563-5	08/26/09	16:26 TU	08/28/09	AQ	Ground Water	STATE GAS COM MW-4
T36563-6	08/26/09	17:22 TU	08/28/09	AQ	Ground Water	STATE GAS COM MW-5
T36563-7	08/26/09	17:58 TU	08/28/09	AQ	Ground Water	STATE GAS COM MW-9
T36563-8	08/27/09	10:18 TU	08/28/09	AQ	Ground Water	KNIGHT MW-1
T36563-9	08/27/09	11:03 TU	08/28/09	AQ	Ground Water	KNIGHT MW-3
T36563-10	08/27/09	12:03 TU	08/28/09	AQ	Ground Water	KNIGHT MW-2
T36563-11	08/25/09	07:00 TU	08/28/09	AQ	Trip Blank Water	250809TB03

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client:	Montgomery Watson	**Job No**	T36563
Site:	San Juan Basin Pit Groundwater Remediation 2008-2009	**Report Date**	9/10/2009 4:32:21 PM

10 Sample(s), 1 Trip Blank(s) and 0 Field Blank(s) were collected on between 08/25/2009 and 08/27/2009 and were received at Accutest on 08/28/2009 properly preserved, at 0.8 Deg. C and intact. These Samples received an Accutest job number of T36563. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GCMS By Method SW846 8260B

Matrix AQ **Batch ID:** VF3540

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T36890-11MS, T36890-11MSD were used as the QC samples indicated.

Volatiles by GC By Method SW846 8021B

Matrix AQ **Batch ID:** GKK1547

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T36641-2MS, T36641-2MSD were used as the QC samples indicated.
- Matrix Spike Recovery(s) for m,p-Xylene, o-Xylene, Xylenes (total) are outside control limits. Probable cause due to matrix interference.

Matrix AQ **Batch ID:** GKK1548

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T36548-2MS, T36548-2MSD were used as the QC samples indicated.

Accutest Laboratories Gulf Coast (ALGC) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALGC and as stated on the COC. ALGC certifies that the data meets the Data QualityObjectives for precision, accuracy and completeness as specified in the ALGC Quality Manual except as noted above. This report is to be used in its entirety. ALGC is not responsible for any assumptions of data quality if partial data packages are used

Sample Results

Report of Analysis

Accutest Laboratories

Report of Analysis

Client Sample ID:	GCU 124E MW-1		
Lab Sample ID:	T36563-1	Date Sampled:	08/25/09
Matrix:	AQ - Ground Water	Date Received:	08/28/09
Method:	SW846 8021B	Percent Solids:	n/a
Project:	San Juan Basin Pit Groundwater Remediation		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	KK032351.D	10	09/02/09	FI	n/a	n/a	GKK1548
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	57.9	10	3.6	ug/l	
108-88-3	Toluene	8.8	10	2.8	ug/l	J
100-41-4	Ethylbenzene	58.4	10	2.5	ug/l	
1330-20-7	Xylenes (total)	298	20	9.3	ug/l	
95-47-6	o-Xylene	91.7	10	3.6	ug/l	
	m,p-Xylene	206	10	5.7	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	105%		58-125%
98-08-8	aaa-Trifluorotoluene	123%		73-139%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	STATE GAS COM MW-7		
Lab Sample ID:	T36563-2	Date Sampled:	08/26/09
Matrix:	AQ - Ground Water	Date Received:	08/28/09
Method:	SW846 8021B	Percent Solids:	n/a
Project:	San Juan Basin Pit Groundwater Remediation		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	KK032322.D	100	09/01/09	FI	n/a	n/a	GKK1547
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	11200	100	36	ug/l	
108-88-3	Toluene	4930	100	28	ug/l	
100-41-4	Ethylbenzene	916	100	25	ug/l	
1330-20-7	Xylenes (total)	5760	200	93	ug/l	
95-47-6	o-Xylene	1670	100	36	ug/l	
	m,p-Xylene	4090	100	57	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	117%		58-125%
98-08-8	aaa-Trifluorotoluene	119%		73-139%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	STATE GAS COM MW-1		
Lab Sample ID:	T36563-3	Date Sampled:	08/26/09
Matrix:	AQ - Ground Water	Date Received:	08/28/09
Method:	SW846 8021B	Percent Solids:	n/a
Project:	San Juan Basin Pit Groundwater Remediation		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	KK032323.D	100	09/01/09	FI	n/a	n/a	GKK1547
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	12600	100	36	ug/l	
108-88-3	Toluene	8470	100	28	ug/l	
100-41-4	Ethylbenzene	973	100	25	ug/l	
1330-20-7	Xylenes (total)	8670	200	93	ug/l	
95-47-6	o-Xylene	1900	100	36	ug/l	
	m,p-Xylene	6770	100	57	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	119%		58-125%
98-08-8	aaa-Trifluorotoluene	118%		73-139%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	STATE GAS COM MW-3		
Lab Sample ID:	T36563-4	Date Sampled:	08/26/09
Matrix:	AQ - Ground Water	Date Received:	08/28/09
Method:	SW846 8021B	Percent Solids:	n/a
Project:	San Juan Basin Pit Groundwater Remediation		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	KK032321.D	200	09/01/09	FI	n/a	n/a	GKK1547
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	20100	200	72	ug/l	
108-88-3	Toluene	434	200	56	ug/l	
100-41-4	Ethylbenzene	936	200	50	ug/l	
1330-20-7	Xylenes (total)	4690	400	190	ug/l	
95-47-6	o-Xylene	817	200	71	ug/l	
	m,p-Xylene	3870	200	110	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	116%		58-125%
98-08-8	aaa-Trifluorotoluene	121%		73-139%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	STATE GAS COM MW-4		
Lab Sample ID:	T36563-5	Date Sampled:	08/26/09
Matrix:	AQ - Ground Water	Date Received:	08/28/09
Method:	SW846 8021B	Percent Solids:	n/a
Project:	San Juan Basin Pit Groundwater Remediation		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	KK032325.D	200	09/02/09	FI	n/a	n/a	GKK1547
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	17000	200	72	ug/l	
108-88-3	Toluene	14400	200	56	ug/l	
100-41-4	Ethylbenzene	934	200	50	ug/l	
1330-20-7	Xylenes (total)	11000	400	190	ug/l	
95-47-6	o-Xylene	2300	200	71	ug/l	
	m,p-Xylene	8650	200	110	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	118%		58-125%
98-08-8	aaa-Trifluorotoluene	116%		73-139%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	STATE GAS COM MW-5		
Lab Sample ID:	T36563-6	Date Sampled:	08/26/09
Matrix:	AQ - Ground Water	Date Received:	08/28/09
Method:	SW846 8021B	Percent Solids:	n/a
Project:	San Juan Basin Pit Groundwater Remediation		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	KK032324.D	100	09/01/09	FI	n/a	n/a	GKK1547
Run #2	KK032341.D	200	09/02/09	FI	n/a	n/a	GKK1548

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	19800 [a]	200	72	ug/l	
108-88-3	Toluene	63.2	100	28	ug/l	J
100-41-4	Ethylbenzene	1280	100	25	ug/l	
1330-20-7	Xylenes (total)	2470	200	93	ug/l	
95-47-6	o-Xylene	59.5	100	36	ug/l	J
	m,p-Xylene	2410	100	57	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	118%	115%	58-125%
98-08-8	aaa-Trifluorotoluene	105%	115%	73-139%

(a) Result is from Run# 2

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	STATE GAS COM MW-9		
Lab Sample ID:	T36563-7	Date Sampled:	08/26/09
Matrix:	AQ - Ground Water	Date Received:	08/28/09
Method:	SW846 8021B	Percent Solids:	n/a
Project:	San Juan Basin Pit Groundwater Remediation		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	KK032339.D	1	09/02/09	FI	n/a	n/a	GKK1548
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	1.2	1.0	0.36	ug/l	
108-88-3	Toluene	0.69	1.0	0.28	ug/l	J
100-41-4	Ethylbenzene	0.35	1.0	0.25	ug/l	J
1330-20-7	Xylenes (total)	2.7	2.0	0.93	ug/l	
95-47-6	o-Xylene	0.47	1.0	0.36	ug/l	J
	m,p-Xylene	2.2	1.0	0.57	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	106%		58-125%
98-08-8	aaa-Trifluorotoluene	110%		73-139%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	KNIGHT MW-1		
Lab Sample ID:	T36563-8	Date Sampled:	08/27/09
Matrix:	AQ - Ground Water	Date Received:	08/28/09
Method:	SW846 8021B	Percent Solids:	n/a
Project:	San Juan Basin Pit Groundwater Remediation		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	KK032328.D	25	09/02/09	FI	n/a	n/a	GKK1547
Run #2	KK032348.D	500	09/02/09	FI	n/a	n/a	GKK1548

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	2790	25	9.0	ug/l	
108-88-3	Toluene	8.3	25	7.1	ug/l	J
100-41-4	Ethylbenzene	1190	25	6.3	ug/l	
1330-20-7	Xylenes (total)	12500 [a]	1000	460	ug/l	
95-47-6	o-Xylene	29.8	25	8.9	ug/l	
	m,p-Xylene	12500 [a]	500	280	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	121%	105%	58-125%
98-08-8	aaa-Trifluorotoluene	119%	114%	73-139%

(a) Result is from Run# 2

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	KNIGHT MW-3		
Lab Sample ID:	T36563-9	Date Sampled:	08/27/09
Matrix:	AQ - Ground Water	Date Received:	08/28/09
Method:	SW846 8021B	Percent Solids:	n/a
Project:	San Juan Basin Pit Groundwater Remediation		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	KK032329.D	25	09/02/09	FI	n/a	n/a	GKK1547
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	2490	25	9.0	ug/l	
108-88-3	Toluene	ND	25	7.1	ug/l	
100-41-4	Ethylbenzene	842	25	6.3	ug/l	
1330-20-7	Xylenes (total)	6560	50	23	ug/l	
95-47-6	o-Xylene	13.0	25	8.9	ug/l	J
	m,p-Xylene	6550	25	14	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	119%		58-125%
98-08-8	aaa-Trifluorotoluene	110%		73-139%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	KNIGHT MW-2		
Lab Sample ID:	T36563-10	Date Sampled:	08/27/09
Matrix:	AQ - Ground Water	Date Received:	08/28/09
Method:	SW846 8021B	Percent Solids:	n/a
Project:	San Juan Basin Pit Groundwater Remediation		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	KK032340.D	1	09/02/09	FI	n/a	n/a	GKK1548
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	26.6	1.0	0.36	ug/l	
108-88-3	Toluene	1.3	1.0	0.28	ug/l	
100-41-4	Ethylbenzene	1.6	1.0	0.25	ug/l	
1330-20-7	Xylenes (total)	9.0	2.0	0.93	ug/l	
95-47-6	o-Xylene	0.40	1.0	0.36	ug/l	J
	m,p-Xylene	8.6	1.0	0.57	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	103%		58-125%
98-08-8	aaa-Trifluorotoluene	118%		73-139%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	250809TB03		
Lab Sample ID:	T36563-11	Date Sampled:	08/25/09
Matrix:	AQ - Trip Blank Water	Date Received:	08/28/09
Method:	SW846 8260B	Percent Solids:	n/a
Project:	San Juan Basin Pit Groundwater Remediation		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F019528.D	1	09/05/09	AP	n/a	n/a	VF3540
Run #2							

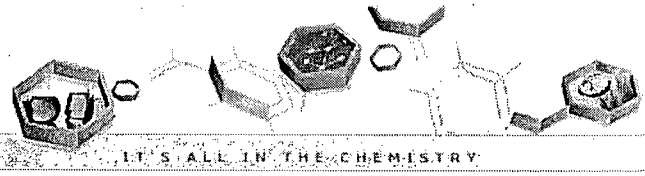
	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	2.0	0.50	ug/l	
108-88-3	Toluene	ND	2.0	0.43	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.55	ug/l	
1330-20-7	Xylene (total)	ND	6.0	1.7	ug/l	
95-47-6	o-Xylene	ND	2.0	0.53	ug/l	
	m,p-Xylene	ND	4.0	1.1	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	101%		79-122%
17060-07-0	1,2-Dichloroethane-D4	98%		75-121%
2037-26-5	Toluene-D8	100%		87-119%
460-00-4	4-Bromofluorobenzene	93%		80-133%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound



Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

CHAIN OF CUSTODY

ACCUTEST Laboratories

10165 Harwin, Suite 150 - Houston, TX 77036 - 713-271-4700 fax: 713-271-4770

Page 1 of 3

FED-EX Tracking # 8706 6705 8890 | Bottle Order Control # | Accutest Quote # | Accutest Job # T36563

Client / Reporting Information

Company Name: MWH
Project Contact: Jed Smith | E-Mail: jed.smith@mwhglobal.com
Address: 1801 California Street, Suite 2900
City: Denver | State: CO | Zip: 80202
Phone No.: 303-291-2276 | Fax No.:
Samplers's Name: Troy Urban

Project Information

Project Name / No.: EPTPC San Juan Basin Pit GW Remediation 2009-2010
Bill to: El Paso Corp | Invoice Attn.: Norma Ramos
Address: 1001 Louisiana Street, Rm S1904B
City: Hou | State: TX | Zip: 77002
Phone No.: | Fax No.:
Client Purchase Order #: West-ALAB-Ground Ren-007

Requested Analyses

BTEX (8021B) include m, p, & o-xylene

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Wastewater
SO - Soil
SL - Sludge
OI - Oil
LIQ - Liquid
SOL - Other Solid

Accutest Sample #	Field ID / Point of Collection	Collection Date	Collection Time	Matrix	# of bottles	Number of preserved bottles: HCl	BTEX (8021B) include m, p, & o-xylene	LAB USE ONLY
1	GCU 124E MW-1	082509	1627	GW	3	X	X	
	~~DP~~ 250809TB03	082509	0700	GW	2	X	X	

Turnaround Time (Business days)

- [X] 10 Day STANDARD — Approved By / Date:
- [ ] 7 Day
- [ ] 4 Day RUSH
- [ ] 3 Day EMERGENCY
- [ ] 2 Day EMERGENCY
- [ ] 1 Day EMERGENCY
- [ ] Other

Real time analytical data available via Lablink

Data Deliverable Information

- [ ] Commercial "A"
- [X] Commercial "B"
- [ ] Reduced Tier 1
- [ ] Full Data Package
- [ ] TRRP-13
- [ ] EDD Format
- [ ] Other

Commercial "A" = Results Only
Commercial "B" = Results & Standard QC

Comments / Remarks

If samples are received unpreserved, please notify MWH regarding holding times!!

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

	Relinquished by Sampler	Date Time	Received By	Relinquished By	Date Time	Received By
1	Troy Urban	9/27/09 1330	1	2 Fed Ex	9/25/09 0930	2
3	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
5	Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved where applicable ☐	On Ice ☐ Cooler Temp. 0.8

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T36563: Chain of Custody
Page 1 of 5

CHAIN OF CUSTODY

ACCUTEST Laboratories

10165 Harwin, Suite 150 - Houston, TX 77036 - 713-271-4700 fax: 713-271-4770

FED-EX Tracking # 8706 6705 8890 | Bottle Order Control #

Accutest Quote # | Accutest Job # T36563

Client / Reporting Information

Company Name: MWH

Project Contact: Jed Smith | E-Mail: jed.smith@mwhglobal.com

Address: 1801 California Street, Suite 2900

City: Denver | State: CO | Zip: 80202

Phone No.: 303-291-2276 | Fax No.:

Samplers's Name: Troy Urban

Project Information

Project Name / No.: EPTPC San Juan Basin Pit GW Remediation 2009-2010

Bill to: El Paso Corp | Invoice Attn.: Norma Ramos

Address: 1001 Louisiana Street, Rm S1904B

City: Hou | State: TX | Zip: 77002

Phone No.: | Fax No.:

Client Purchase Order #: WOT-ALAB-Ground Rem-007

Requested Analyses

Matrix Codes

DW - Drinking Water; GW - Ground Water; WW - Wastewater; SO - Soil; SL - Sludge; OI - Oil; LIQ - Liquid; SOL - Other Solid

Accutest Sample #	Field ID / Point of Collection	Collection Date	Collection Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH	H2SO4	HNO3	ENCORE	NaHSO4	MEOH	None	BTEX (8021B) include m, p, & o-xylene	LAB USE ONLY
2	State Gas Com MW-7	082609	1402	GW	3								X	X	
3	State Gas Com MW-1	082609	1445	GW	3	X								X	
4	State Gas Com MW-3	082609	1540	GW	3								X	X	
5	State Gas Com MW-4	082609	1626	GW	3								X	X	
6	State Gas Com MW-5	082609	1722	GW	3	X								X	
7	State Gas Com MW-9	082609	1758	GW	3	X								X	

Turnaround Time (Business days)

- [X] 10 Day STANDARD
- [ ] 7 Day
- [ ] 4 Day RUSH
- [ ] 3 Day EMERGENCY
- [ ] 2 Day EMERGENCY
- [ ] 1 Day EMERGENCY
- [ ] Other

Approved By/ Date:

Real time analytical data available via Lablink

Data Deliverable Information

- [ ] Commercial "A"
- [X] Commercial "B"
- [ ] Reduced Tier 1
- [ ] Full Data Package
- [ ] TRRP-13
- [ ] EDD Format
- [ ] Other

Commercial "A" = Results Only

Commercial "B" = Results & Standard QC

Comments / Remarks

If samples are received unpreserved, please notify MWH regarding holding time!!!

possible product in several samples

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	Troy Urban 9/27/09	1330	1			2
3	Relinquished by:	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
5	Relinquished by:	Date Time:	Received By: 5	Custody Seal #	Preserved where applicable ☐	On Ice ☐ Cooler Temp.

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CHAIN OF CUSTODY

ACCUTEST Laboratories
10165 Harwin, Suite 150 - Houston, TX 77036 - 713-271-4700 fax: 713-271-4770

FED-EX Tracking # 8706 6705 8890 | Bottle Order Control #
Accutest Quote # | Accutest Job # T36563

Client / Reporting Information

Company Name: MWH
Project Contact: Jed Smith | E-Mail: jed.smith@mwhglobal.com
Address: 1801 California Street, Suite 2900
City: Denver | State: CO | Zip: 80202
Phone No.: 303-291-2276 | Fax No.:
Samplers's Name: Troy Urban

Project Information

Project Name / No.: EPTPC San Juan Basin Plt GW Remediation 2009-2010
Bill to: El Paso Corp | Invoice Attn.: Norma Ramos
Address: 1001 Louisiana Street, Rm S1904B
City: Hou | State: TX | Zip: 77002
Phone No.: | Fax No.:
Client Purchase Order #: West - ALAB-Ground Rem - 007

Requested Analyses

BTEX (8021B) Include m, p, & o-xylene

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Wastewater
SO - Soil
SL - Sludge
OI - Oil
LIQ - Liquid
SOL - Other Solid

Accutest Sample #	Field ID / Point of Collection	Collection Date	Collection Time	Matrix	# of bottles	Number of preserved bottles: HCl	H2SO4	HNO3	NaOH	ZnOAc/NaOH	MeOH	NONE	BTEX (8021B) Include m, p, & o-xylene	LAB USE ONLY
8	Knight MW-1	082709	1018	GW	3	X							X	
	~~Knight MW-~~	~~082709~~	~~1103~~	~~GW~~										
9	Knight MW-3	082709	1103	GW	3	X							X	
10	Knight MW-2	082709	1203	GW	3	X							X	

Turnaround Time (Business days)

- [X] 10 Day STANDARD — Approved By/ Date:
- [ ] 7 Day
- [ ] 4 Day RUSH
- [ ] 3 Day EMERGENCY
- [ ] 2 Day EMERGENCY
- [ ] 1 Day EMERGENCY
- [ ] Other

Real time analytical data available via Lablink

Data Deliverable Information

- [ ] Commercial "A"
- [X] Commercial "B"
- [ ] Reduced Tier 1
- [ ] Full Data Package
- [ ] TRRP-13
- [ ] EDD Format
- [ ] Other

Commercial "A" = Results Only
Commercial "B" = Results & Standard QC

Comments / Remarks

If samples are received unpreserved, please notify MWH regarding holding time!!!

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	Troy Urban 8/27/09	1330	1	2		2
	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
3			3	4		4
	Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved where applicable	On Ice / Cooler Temp.
5			5		☐	☐

4.1

T36563: Chain of Custody
Page 3 of 5

SAMPLE INSPECTION FORM

Accutest Job Number: T36563 Client: MWH Date/Time Received: 8/20/04 0940

# of Coolers Received: 1 Thermometer #: IR-1 Temperature Adjustment Factor: +0.4

Cooler Temps: #1: 0.8 #2: _____ #3: _____ #4: _____ #5: _____ #6: _____ #7: _____ #8: _____

Method of Delivery: FEDEX UPS Accutest Courier Greyhound Delivery Other

Airbill Numbers: _____

COOLER INFORMATION

- [ ] Custody seal missing or not intact
- [ ] Temperature criteria not met
- [ ] Wet ice received in cooler

CHAIN OF CUSTODY

- [ ] Chain of Custody not received
- [ ] Sample D/T unclear or missing
- [ ] Analyses unclear or missing
- [ ] COC not properly executed

SAMPLE INFORMATION

- [ ] Sample containers received broken
- [ ] VOC vials have headspace
- [ ] Sample labels missing or illegible
- [ ] ID on COC does not match label(s)
- [ ] D/T on COC does not match label(s)
- [ ] Sample/Bottles rcvd but no analysis on COC
- [ ] Sample listed on COC, but not received
- [ ] Bottles missing for requested analysis
- [ ] Insufficient volume for analysis
- [ ] Sample received improperly preserved

TRIP BLANK INFORMATION

- [ ] Trip Blank on COC but not received
- [ ] Trip Blank received but not on COC
- [ ] Trip Blank not intact
- [ ] Received Water Trip Blank
- [ ] Received Soil TB

Number of Encores? _____
Number of 5035 kits? _____
Number of lab-filtered metals? _____

Summary of Discrepancies:

TECHNICIAN SIGNATURE/DATE: _____

INFORMATION AND SAMPLE LABELING VERIFIED BY: _____

CORRECTIVE ACTIONS

Client Representative Notified: _____ **Date:** _____

By Accutest Representative: _____ **Via:** Phone Email

Client Instructions:

i:\mwalker\forms\samplemanagement

4.1 4

SAMPLE RECEIPT LOG

JOB #: T36563 DATE/TIME RECEIVED: 08/28/09 0930

CLIENT: MWH INITIALS: CP

COOLER#	SAMPLE ID	FIELD ID	DATE	MATRIX	VOL	BOTTLE #	LOCATION	PRESERV	PH	
1	1	GCU 12E MW-1	8/25/09 1627	W	40ml	1-3	VR	1 (2) 3 4 5 6 7 8	<2	>12
	2	State Gas Com MW-7	8/26/09 1402					(1) 2 3 4 5 6 7 8	<2	>12
	3	MW-1	1445					1 (2) 3 4 5 6 7 8	<2	>12
	4	MW-3	1540					1 (2) 3 4 5 6 7 8	<2	>12
	5	MW-4	1626					(1) 2 3 4 5 6 7 8	<2	>12
	6	MW-5	1725					(1) 2 3 4 5 6 7 8	<2	>12
	7	MW-9	1758					1 (2) 3 4 5 6 7 8	<2	>12
	8	Knight MW-1	8/27/09 1019					1 (2) 3 4 5 6 7 8	<2	>12
	9	MW-3	1103					1 (2) 3 4 5 6 7 8	<2	>12
	10	MW-2	1213					1 (2) 3 4 5 6 7 8	<2	>12
	11	Trip Blank				1-2		1 (2) 3 4 5 6 7 8	<2	>12
								1 2 3 4 5 6 7 8	<2	>12
								1 2 3 4 5 6 7 8	<2	>12
								1 2 3 4 5 6 7 8	<2	>12
								1 2 3 4 5 6 7 8	<2	>12
				8/28/09				1 2 3 4 5 6 7 8	<2	>12
			FF					1 2 3 4 5 6 7 8	<2	>12
								1 2 3 4 5 6 7 8	<2	>12
								1 2 3 4 5 6 7 8	<2	>12
								1 2 3 4 5 6 7 8	<2	>12
								1 2 3 4 5 6 7 8	<2	>12
								1 2 3 4 5 6 7 8	<2	>12
								1 2 3 4 5 6 7 8	<2	>12

PRESERVATIVES: 1: None 2: HCL 3: HNO3 4: H2SO4 5: NAOH 6: DI 7: MeOH 8: Other

LOCATION: 1: Walk-In #1 (Waters) 2: Walk-In #2 (Soils) VR: Volatile Fridge M: Metals SUB: Subcontract EF: Encore Freezer

Rev 8/13/01 ewp

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T36563: Chain of Custody
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ACCUTEST Laboratories T36563

WELL DEVELOPMENT AND SAMPLING LOG

Project No.:30001.0 Project Name: SJB Groundwater Client: MWH/EL Paso
Location: GCU 124 Well No: MW-1 Development **Sampling**
Project Manager ALA Date 01/07/09 Start Time 1125 Weather foggy, 30
Depth to Water 23.74 Depth to Product na Product Thickness na Measuring Point TOC
Water Column Height 12.92 Well Dia. 4"

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

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

Criteria: 3 to 5 Casing Volumes of Water Removal **X** stabilization of Indicator Parameters **X** Other or bail dry

	Water Volume in Well		
Gal/ft x ft of water	Gallons	Ounces	**Gal**/oz to be removed
12.92 x .65	8.39 x 3		25.19

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gal)	Comments/ Flow rate
1132	**6.73**	**1088**	**57.4**				**1.25**	**Light yellow**
	6.76	**1125**	**58.3**				**2.5**	**Light gray, HC odor**
	6.76	**1168**	**59.5**				**3.75**	
	6.74	**1185**	**59.6**				**5**	
	6.75	**1182**	**58.7**				**10**	**Light gray, dark film, HC odor**
	6.98	**1210**	**58.9**				**15**	
	6.99	**1180**	**59.1**				**20**	
	6.83	**1192**	**60.5**				**23.75**	
	6.80	**1166**	**60.2**				**25**	**Light gray, sheen, HC odor**
	6.82	**1170**	**60.1**				**26**	

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
1202	**6.83**	**1135**	**60.5**					**26.25 g**	**Light gray, sheen, HC odor**

COMMENTS:

INSTRUMENTATION: pH Meter **X** _____ Temperature Meter **x**
DO Monitor _____ Other _____
Conductivity Meter **X** _____

Water Disposal Rio Vista Sample ID GCU 124 MW-1 Sample Time 1207

BTEX VOCs Alkalinity TDS Cations Anions Nitrate Nitrite Ammonia TKN NMWQCC Metals Total Phosphorus

MS/MSD _____ BD _____ BD Name/Time _____ TB 010709TB01

Gulf Coast ACCUTEST Laboratories

IT'S ALL IN THE CHEMISTRY

01/19/09

Technical Report for

Montgomery Watson

San Juan Basin Pit Groundwater Remediation 2008-2009

Accutest Job Number: T25285

Sampling Date: 01/07/09

Report to:

MWH Americas
1801 California St. Suite 2900
Denver, CO 80202
jed.smith@mwhglobal.com; daniel.a.wade@mwhglobal.com;
craig.moore@mwhglobal.com
ATTN: Jed Smith

Total number of pages in report: **15**

ACCREDITED IN ACCORDANCE WITH nelac

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Paul K Canevaro

Paul Canevaro
Laboratory Director

ACCUTEST LABORATORIES 50 YEARS 1956-2006

Client Service contact: William Reeves 713-271-4700

Certifications: TX (T104704220-06-TX) AR (88-0756) FL (E87628) KS (E-10366) LA (85695/04004) OK (9103) UT(7132714700)

Test results relate only to samples analyzed.

Sections: 1 2 3 4 5

Table of Contents

Sample Summary

Montgomery Watson

Job No: T25285

San Juan Basin Pit Groundwater Remediation 2008-2009

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
T25285-1	01/07/09	07:00	TU	01/08/09	AQ	Trip Blank Water	070109TB02
T25285-2	01/07/09	12:07	TU	01/08/09	AQ	Ground Water	GCU 124E MW-1

ACCUTEST Laboratories

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SAMPLE DELIVERY GROUP CASE NARRATIVE

Client:	Montgomery Watson	**Job No**	T25285
Site:	San Juan Basin Pit Groundwater Remediation 2008-2009	**Report Date**	1/19/2009 10:46:51 AM

1 Sample(s), 1 Trip Blank(s) and 0 Field Blank(s) were collected on 01/07/2009 and were received at Accutest on 01/08/2009 properly preserved, at 2 Deg. C and intact. These Samples received an Accutest job number of T25285. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

Volatiles by GC By Method SW846 8021B

Matrix AQ **Batch ID:** GKK1406

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T25284-4MS, T25284-4MSD were used as the QC samples indicated.
- Matrix Spike Recovery(s) for Benzene are outside control limits. Probable cause due to matrix interference.

Accutest Laboratories Gulf Coast (ALGC) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALGC and as stated on the COC. ALGC certifies that the data meets the Data QualityObjectives for precision, accuracy and completeness as specified in the ALGC Quality Manual except as noted above. This report is to be used in its entirety. ALGC is not responsible for any assumptions of data quality if partial data packages are used

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	070109TB02		
Lab Sample ID:	T25285-1	Date Sampled:	01/07/09
Matrix:	AQ - Trip Blank Water	Date Received:	01/08/09
Method:	SW846 8021B	Percent Solids:	n/a
Project:	San Juan Basin Pit Groundwater Remediation 2008-2009		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	KK028675.D	1	01/09/09	FI	n/a	n/a	GKK1406
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.0010	0.00021	mg/l	
108-88-3	Toluene	ND	0.0010	0.00023	mg/l	
100-41-4	Ethylbenzene	ND	0.0010	0.00035	mg/l	
1330-20-7	Xylenes (total)	ND	0.0020	0.00055	mg/l	
95-47-6	o-Xylene	ND	0.0010	0.00055	mg/l	
	m,p-Xylene	ND	0.0010	0.00066	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	106%		58-125%
98-08-8	aaa-Trifluorotoluene	77%		73-139%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	GCU 124E MW-1		
Lab Sample ID:	T25285-2	Date Sampled:	01/07/09
Matrix:	AQ - Ground Water	Date Received:	01/08/09
Method:	SW846 8021B	Percent Solids:	n/a
Project:	San Juan Basin Pit Groundwater Remediation 2008-2009		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	KK028679.D	10	01/09/09	FI	n/a	n/a	GKK1406
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	0.281	0.010	0.0021	mg/l	
108-88-3	Toluene	0.0060	0.010	0.0023	mg/l	J
100-41-4	Ethylbenzene	0.110	0.010	0.0035	mg/l	
1330-20-7	Xylenes (total)	0.653	0.020	0.0055	mg/l	
95-47-6	o-Xylene	0.286	0.010	0.0055	mg/l	
	m,p-Xylene	0.368	0.010	0.0066	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	107%		58-125%
98-08-8	aaa-Trifluorotoluene	81%		73-139%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

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Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

CHAIN OF CUSTODY

ACCUTEST Laboratories
10165 Harwin, Suite 150 - Houston, TX 77036 - 713-271-4700 fax: 713-271-4770

Page ___ of

FED-EX Tracking # 8663 2309 4085 | Bottle Order Control #
Accutest Quote # | Accutest Job # T25285

Client / Reporting Information | **Project Information** | **Requested Analyses** | **Matrix Codes**

Company Name: MWH	Project Name / No.: EPTPC San Juan Basin Pit GW Remediation 2008-2009
Project Contact: Jed Smith	E-Mail: jed.smith@mwhglobal.com
Bill to: El Paso Corp	Invoice Attn.: Norma Ramos
Address: 1801 California Street, Suite 2900	Address: 1001 Louisiana Street, Rm S1904B
City: Denver	State: CO	Zip: 80202
City: Houstor	State: TX	Zip: 77002
Phone No.: 303-291-2276	Fax No.:
Phone No.:	Fax No.:
Samplers's Name: Troy Urban	Client Purchase Order #: West-ALAB-Ground Rem-007

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Wastewater; SO - Soil; SL - Sludge; OI - Oil; LIQ - Liquid; SOL - Other Solid

Accutest Sample #	Field ID / Point of Collection	Collection Date	Collection Time	Matrix	# of bottles	Number of preserved bottles: NO	HCl	H2SO4	NaOH	ZnOAc/NaOH	MeOH	HONE	BTEX (8021B)	LAB USE ONLY
1	070109TBB2	010709	0700	GW	2	X							X	
2	GCU 124E MW-1	010709	1207	GW	3	X							X	

Turnaround Time (Business days)

- [X] 10 Day *STANDARD*
- [ ] 7 Day
- [ ] 4 Day *RUSH*
- [ ] 3 Day *EMERGENCY*
- [ ] 2 Day *EMERGENCY*
- [ ] 1 Day *EMERGENCY*
- [ ] Other

Approved By:/ Date:

Real time analytical data available via Lablink

Data Deliverable Information

- [ ] Commercial "A"
- [X] Commercial "B"
- [ ] Reduced Tier 1
- [ ] Full Data Package
- [ ] TRRP-13
- [ ] EDD Format
- [ ] Other

Commercial "A" = Results Only
Commercial "B" = Results & Standard QC

Comments / Remarks

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	Troy Urban	1/7/09 1650	1	2		2
3	Relinquished By:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
			3	4		4
5	Relinquished by:	Date Time: 1-8-09 1015	Received By: 5 Vanfed	Custody Seal #	Preserved where applicable ☐	On Ice ☐ Cooler Temp. 2.0

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T25285: Chain of Custody
Page 1 of 3

SAMPLE INSPECTION FORM

Accutest Job Number: T25285 Client: MWH Date/Time Received: 1.8.09 1015

# of Coolers Received: 1 Thermometer #: 110 Temperature Adjustment Factor: -.5

Cooler Temps: #1: 2.0 #2: _____ #3: _____ #4: _____ #5: _____ #6: _____ #7: _____ #8: _____

Method of Delivery: (FEDEX) UPS Accutest Courier Greyhound Delivery Other

Airbill Numbers: 8663-2305-4675

COOLER INFORMATION

- [ ] Custody seal missing or not intact
- [ ] Temperature criteria not met
- [ ] Wet ice received in cooler

CHAIN OF CUSTODY

- [ ] Chain of Custody not received
- [ ] Sample D/T unclear or missing
- [ ] Analyses unclear or missing
- [ ] COC not properly executed

SAMPLE INFORMATION

- [ ] Sample containers received broken
- [ ] VOC vials have headspace
- [ ] Sample labels missing or illegible
- [ ] ID on COC does not match label(s)
- [ ] D/T on COC does not match label(s)
- [ ] Sample/Bottles rcvd but no analysis on COC
- [ ] Sample listed on COC, but not received
- [ ] Bottles missing for requested analysis
- [ ] Insufficient volume for analysis
- [ ] Sample received improperly preserved

TRIP BLANK INFORMATION

- [ ] Trip Blank on COC but not received
- [ ] Trip Blank received but not on COC
- [ ] Trip Blank not intact
- [✓] Received Water Trip Blank
- [ ] Received Soil TB

Number of Encores? _____
Number of 5035 kits? _____
Number of lab-filtered metals? _____

Summary of Discrepancies:

TECHNICIAN SIGNATURE/DATE: 1.8.09

INFORMATION AND SAMPLE LABELING VERIFIED BY: GH 1.9.9

CORRECTIVE ACTIONS

Client Representative Notified: _____ **Date:** _____

By Accutest Representative: _____ **Via:** Phone Email

Client Instructions:

I:\mwalker\forms\samplemanagement

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SAMPLE RECEIPT LOG

JOB #: T25285 DATE/TIME RECEIVED: 1.8.09 1015

CLIENT: MWH INITIALS: IT

COOLER#	SAMPLE ID	FIELD ID	DATE	MATRIX	VOL	BOTTLE #	LOCATION	PRESERV	PH
1	1	TRIP Blank	–	DI	40ml	1-2	VR	1 (2) 3 4 5 6 7 8	<2 >12
↓	2	MW-1	1.7.09 1207	GW	↓	1-3	↓	1 (2) 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
	15	1.8.09						1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12
								1 2 3 4 5 6 7 8	<2 >12

PRESERVATIVES: 1: None 2: HCL 3: HNO3 4: H2SO4 5: NAOH 6: DI 7: MeOH 8: Other

LOCATION: 1: Walk-In #1 (Waters) 2: Walk-In #2 (Soils) VR: Volatile Fridge M: Metals SUB: Subcontract EF: Encore Freezer

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T25285: Chain of Custody

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GC Volatiles

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: T25285
Account: MWHCODE Montgomery Watson
Project: San Juan Basin Pit Groundwater Remediation 2008-2009

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GKK1406-MB	KK028670.D	1	01/09/09	FI	n/a	n/a	GKK1406

The QC reported here applies to the following samples: Method: SW846 8021B

T25285-1, T25285-2

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.21	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.35	ug/l	
108-88-3	Toluene	ND	1.0	0.23	ug/l	
1330-20-7	Xylenes (total)	ND	2.0	0.55	ug/l	
95-47-6	o-Xylene	ND	1.0	0.55	ug/l	
	m,p-Xylene	ND	1.0	0.66	ug/l	

CAS No.	Surrogate Recoveries		Limits
460-00-4	4-Bromofluorobenzene	105%	58-125%
98-08-8	aaa-Trifluorotoluene	76%	73-139%

Blank Spike Summary

Job Number: T25285
Account: MWHCODE Montgomery Watson
Project: San Juan Basin Pit Groundwater Remediation 2008-2009

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GKK1406-BS	KK028667.D	1	01/09/09	FI	n/a	n/a	GKK1406

The QC reported here applies to the following samples: Method: SW846 8021B

T25285-1, T25285-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	20	22.1	111	86-121
100-41-4	Ethylbenzene	20	20.7	104	81-116
108-88-3	Toluene	20	21.1	106	87-117
1330-20-7	Xylenes (total)	60	62.1	104	85-115
95-47-6	o-Xylene	20	20.7	104	87-116
	m,p-Xylene	40	41.4	104	84-116

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	4-Bromofluorobenzene	109%	58-125%
98-08-8	aaa-Trifluorotoluene	79%	73-139%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T25285
Account: MWHCODE Montgomery Watson
Project: San Juan Basin Pit Groundwater Remediation 2008-2009

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T25284-4MS	KK028677.D	1	01/09/09	FI	n/a	n/a	GKK1406
T25284-4MSD	KK028678.D	1	01/09/09	FI	n/a	n/a	GKK1406
T25284-4	KK028674.D	1	01/09/09	FI	n/a	n/a	GKK1406

The QC reported here applies to the following samples: Method: SW846 8021B

T25285-1, T25285-2

CAS No.	Compound	T25284-4 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		20	24.3	122* [a]	23.4	117	4	86-121/19
100-41-4	Ethylbenzene	0.44	J	20	22.9	112	21.9	107	4	81-116/14
108-88-3	Toluene	ND		20	23.0	115	21.9	110	5	87-117/16
1330-20-7	Xylenes (total)	2.2		60	69.4	112	66.4	107	4	85-115/12
95-47-6	o-Xylene	1.4		20	23.6	111	22.7	107	4	87-116/16
	m,p-Xylene	0.78	J	40	45.8	113	43.6	107	5	84-116/13

CAS No.	Surrogate Recoveries	MS	MSD	T25284-4	Limits
460-00-4	4-Bromofluorobenzene	107%	107%	106%	58-125%
98-08-8	aaa-Trifluorotoluene	75%	77%	77%	73-139%

(a) Outside control limits, biased high.