

AP - 069

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BUILDING A BETTER WORLD

March 30, 2012

Mr. Glenn von Gonten
New Mexico Oil Conservation Division (NMOCD)
1220 South St., Francis Drive
Santa Fe, New Mexico 87505

RE: 2011 Annual Report for the EPGTR San Juan River Plant Project
NMOCD Reference Number: AP-69-0

Dear Mr. Von Gonten:

MWH Americas, Inc., on behalf of El Paso Gas Transmission Company (EPGTR), is submitting the enclosed *2011 Annual Report* for the San Juan River Plant project. The report presents the 2011 monitoring data and includes recommendations for 2012 activities at the Site.

If you have any questions or comments concerning the enclosed report, please contact Ian Yanagisawa (713-420-7361) or myself (303-291-2276).

Sincerely,

Jed Smith
Project Manager

cc: Brandon Powell – NMOCD, Aztec, NM
Ian Yanagisawa – EPGTR (electronic copy)
MWH Project File (electronic copy)

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EL PASO GAS TRANSMISSION COMPANY

**1001 LOUISIANA STREET
HOUSTON, TX 77002**

2011 ANNUAL REPORT SAN JUAN RIVER PLANT

MARCH 2012



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1801 California Street
Suite 2900
Denver, Colorado 80202
303 291 2222

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LIST OF ACRONYMS

<u>Acronym</u>	<u>Explanation</u>
BTEX	Benzene, toluene, ethylbenzene, and total xylenes
EPGTR	El Paso Gas Transmission Company
EPNG	El Paso Natural Gas Company
mg/L	Milligrams per liter
µg/L	Micrograms per liter
NMOCD	New Mexico Oil Conservation Division
NMWQCC	New Mexico Water Quality Control Commission
ORC	Oxygen-releasing compound
SJRP	San Juan River Plant
TDS	Total dissolved solids
WGR	Western Gas Resources, Inc

EXECUTIVE SUMMARY

The San Juan River Plant (SJRP) is located in San Juan County, near Kirtland, New Mexico. The SJRP processes natural gas collected from production wells located in the San Juan Basin of New Mexico and southern Utah. In June 1992, the SJRP was sold to Western Gas Resources, Inc. (WGR), which is now a wholly owned subsidiary of Anadarko Petroleum Corporation. Closure of evaporation ponds, pits, and other potential source areas within the SJRP occurred from 1992 through 1995. Based on past groundwater, soil, and soil gas investigations, the residual groundwater plume of dissolved phase hydrocarbon impacts is associated with relatively limited soil contamination. Groundwater monitoring has been performed at the SJRP since 1995.

Hydrocarbon impacts to groundwater have been observed primarily in the vicinity of monitor wells MW-8 and MW-9. Samples from these two wells have consistently indicated that benzene is the only hydrocarbon constituent exceeding the New Mexico Water Quality Control Commission (NMWQCC) groundwater standards. El Paso Natural Gas (EPNG), the previous site owner, pursued active groundwater remediation, consisting of chemical oxygen enhancement and air sparging, to reduce the dissolved-phase benzene concentrations in this area. Current site activities are being conducted by El Paso Gas Transmission Company (EPGTR).

Groundwater monitoring suggests that concentrations in monitoring well MW-8 have generally declined through the use of in-well oxygen-releasing compound socks. During the 2011 sampling events there was not enough water in MW-8 to sample. The air sparging system at MW-9 was shut down in February 2004 and remained off throughout 2011 in order to assess groundwater conditions. During this shut-down period, benzene concentrations in MW-9 essentially rebounded to pre-air sparging levels. In 2011, concentrations of benzene ranged from 90.1 µg/L to 113 µg/L. The rebound indicates that the residual saturated zone BTEX impacts are possibly outside the air sparging zone of influence. Further site characterization work has been proposed, as discussed below. Further evaluation of the air sparging system has been suspended until completion of the site characterization work.

The New Mexico Oil Conservation Division (NMOCD) has requested annual monitoring of metals and inorganic parameters in all site monitoring wells as part of the current groundwater monitoring program. Elevated concentrations of some inorganic constituents, including total dissolved solids and sulfate, have historically been detected in various wells. It is possible that these elevated concentrations may be associated with past practices (particularly near the closed ponds); however, past closure activities have addressed any site-related sources and this region is also known to contain elevated total dissolved solids and sulfate concentrations. There are no known affected downgradient users of the groundwater.

In 2005, El Paso Natural Gas Company (EPNG) initiated a Stage I Abatement Plan to investigate hydrocarbon impacts encountered in groundwater near the Praxair lined pond. The results of the initial investigation were discussed in the Stage I Interim Report, submitted to the NMOCD on March 28, 2006. This report included a work plan for additional investigation activities. In September 2006, EPNG made slight revisions to the work plan and re-submitted it. EPGTR is currently awaiting work plan approval from the NMOCD.

1.0 INTRODUCTION

This annual report has been prepared on behalf of El Paso Gas Transmission Company (EPGTR) to present a summary of the 2011 San Juan River Plant site activities and monitoring data. This site is located in San Juan County, Township 29N, Range 15W, Section 1, near Kirtland, New Mexico, as shown on **Figure 1**.

Current remedial action at the SJRP is limited to in-situ oxygen enhancement of groundwater through use of oxygen-releasing compound (ORC) in monitor well MW-8. Dissolved phase groundwater impacts are monitored annually for the entire site and quarterly in the area of MW-8 and MW-9.

Site Description. El Paso Natural Gas (EPNG) owned the SJRP until June 1992. Since that time, the facility has been owned and operated by Western Gas Resources, Inc. (WGR), which is now a wholly owned subsidiary of Anadarko Petroleum Corporation. The plant processes natural gas collected from production wells located in the San Juan Basin of New Mexico and southern Utah. The SJRP is a 630-acre facility that has contained gas processing facilities, two raw water ponds (now closed), three wastewater evaporation ponds (now closed), a sulfur recovery plant, water and hydrocarbon tanks, a pigging station, flare pits, and several 16- to 24-inch-diameter natural gas pipelines that cross the facility. In 2002-2003, the Praxair Nitrogen Plant was built in the area north of the SJRP and south of monitoring wells MW-8 and MW-9. **Figure 2** presents a detailed site map of the SJRP. Closure of the evaporation ponds, flare pits, and other potential contaminant source areas was completed from 1992 through 1995. Groundwater has been monitored at this site since 1995. The current environmental activities are being conducted by EPGTR.

Report Organization. This report is organized into six sections with supporting appendices. Section 2.0 provides a discussion of the SJRP project history. Section 3.0 includes a summary of field activities conducted at the SJRP during 2011, and Section 4.0 provides a discussion of results. Conclusions and recommendations are provided in Section 5.0, and references are listed in Section 6.0.

2.0 PROJECT HISTORY

The SJRP was previously owned by EPNG, but was sold to WGR on June 19, 1992. Investigation and remediation activities conducted at the SJRP have included the following components:

- Several investigations were conducted at the SJRP between 1985 and 1995. As a result, 24 monitoring wells have been installed at various locations at the plant.
- The north and south flare pits were closed in 1992 after removing 18,200 cubic yards (cy) and 3,520 cy of contaminated material from these pits, respectively.
- The former wastewater evaporation ponds were closed during 1995 and early 1996. The pit and pond closure activities included capping the ponds with compacted, low-permeability soils.
- EPNG abandoned 17 monitoring wells, upgraded two wells, installed five new monitoring wells, and conducted a soil gas investigation during the summer of 1995. Results of the soil gas investigation indicated shallow hydrocarbon contamination near monitoring wells MW-8 and MW-9.
- EPNG submitted a groundwater remediation work plan to the NMOCD in January 2001 to address elevated benzene in monitoring wells MW-8 and MW-9, and received approval to begin remedial actions on June 4, 2001. The work plan included provisions to install an air sparging system with two air sparging wells; one injection point located within 10 feet of each monitoring well.
- The air sparging system air injection wells (SW-8 and SW-9) were installed on October 30, 2001. Both wells were developed on November 12, 2001.
- A pre-pilot air sparging test was conducted at both wells on November 13, 2001. Results from this test indicated good communication between SW-9 and MW-9 but poor communication between SW-8 and MW-8.
- Because of poor communication between SW-8 and MW-8, an ORC sock consisting of magnesium peroxide and manufactured by Regenesys, Inc., was recommended for remediation in this area. The ORC sock was installed in MW-8 on November 14, 2001.
- The air sparging pilot test was initiated on November 14, 2001. With the exception of a 48-hour shutdown prior to the four-week sampling event on December 26, 2001, the air sparging system operated continuously from November 14, 2001 to January 18, 2002. The air sparging pilot test culminated with a sampling event on January 25, 2002. An additional sampling event was performed on February 21, 2002, to evaluate the potential for contaminant concentration rebound following a four-week shutdown.
- From February 2002 through December 2002, site activities included continued operation and maintenance (O&M) of the air sparging system, which was placed into continuous operation following the pilot test, and site-wide annual groundwater monitoring.

- During 2003, site activities included periodic O&M of the air sparging system, replacement of ORC socks into MW-8, quarterly sampling of MW-8 and MW-9, and site-wide annual groundwater monitoring.
- Based on benzene, toluene, ethylbenzene and total xylenes (BTEX) concentrations below New Mexico Water Quality Control Commission (NMWQCC) standards, the air sparging system was shut down in February 2004 to assess static groundwater conditions at the site.
- During 2004 through 2006, site activities included replacement of ORC socks into MW-8, quarterly sampling of MW-8 and MW-9, and site-wide annual groundwater monitoring.
- EPNG submitted a Stage I Abatement Plan to NMOCD in November 2005 to investigate hydrocarbon impacts encountered in groundwater near the Praxair evaporation pond at the SJRP. Approval was received on January 23, 2006 to begin investigative actions. Results of this investigation are detailed in the Stage I Interim Report, submitted March 28, 2006, which recommended that further investigation be conducted via hollow-stem auger, as the effectiveness of direct push technology at the site was found to be limited. Minor revisions were made to work plan for the additional investigation; and the revised work plan was submitted to NMOCD in September 2006.
- The air sparge system has remained off since system shut down in 2004. Site activities have primarily consisted of quarterly sampling of MW-8 and MW-9, annual site-wide annual groundwater monitoring, and annual replacement of the ORC socks in MW-8.
- In May 2007, monitoring well MW-7, which was located immediately adjacent to the Praxair facility, was plugged and abandoned at Praxair's request, in order to facilitate new process construction.
- During the May 2008 sampling event, field personnel noted that monitoring well MW-5 had been destroyed in conjunction with subsurface coal mining activities. Destruction of the well is believed to have occurred between February and May 2008.

3.0 SUMMARY OF 2011 ACTIVITIES

The current environmental program at the SJRP consists of dissolved-phase hydrocarbon remediation (oxygen enhancement) and site-wide groundwater monitoring. The following section details site activities conducted at the SJRP during 2011.

3.1 GROUNDWATER MONITORING PROGRAM

The groundwater monitoring program included the following components during 2011:

- Site-Wide Annual Groundwater Sampling and Quarterly Gauging: On August 31, 2011, monitor wells MW-4, MW-6, MW-9, and W-2 were sampled for BTEX compounds, NMWQCC metals, total dissolved solids (TDS), alkalinity, nitrate/nitrite, chloride, and sulfate. Site-wide groundwater elevation measurements were collected quarterly at each well.
- Selected Quarterly Groundwater Sampling for BTEX: Monitor well MW-9 was sampled quarterly in February, May, August, and November 2011 and analyzed for BTEX compounds to evaluate the effectiveness of previous and ongoing hydrocarbon remediation activities in this area. Historically MW-8 is also sampled quarterly, but in 2011 this well was dry.

All groundwater monitoring activities during 2011 were conducted by LT Environmental, Inc. of Durango, Colorado. Laboratory analyses were performed by Accutest Laboratories in Houston, Texas.

3.2 HYDROCARBON REMEDIATION

Since 2002, dissolved phase hydrocarbon remediation activities at the SJRP have included oxygen enhancement using ORC socks in MW-8 (2002-Present) and air sparging in the vicinity of MW-9 (2002-2004). The following paragraphs describe the status of these remediation activities in 2011.

ORC Enhancement. The usage of ORC in MW-8 has been ongoing since 2002. Normally, the ORC socks are exchanged once per year. Dissolved oxygen measurements are recorded quarterly in order to monitor ORC activity. In 2011, MW-8 was dry the entire year and ORC usage was not possible. Groundwater at this site has been dramatically affected by subsurface coal mining activities, and it is currently unknown whether groundwater levels will rebound in the MW-8 area.

Prior to the loss of groundwater in the MW-8 area, monitoring data had indicated that BTEX concentrations had attenuated to below the applicable New Mexico Water Quality Control Commission (NMWQCC) groundwater standards.

Air Sparging System. As described in **Section 2.0**, air sparging has not been conducted at the site since January 2004. Pending additional source material investigation in the vicinity of MW-8 and MW-9, the system will remain off.

4.0 DISCUSSION OF 2011 RESULTS

This section presents and discusses the results of monitoring activities conducted at the SJRP during 2011. The section is divided into two discussions, the first covering the site-wide groundwater monitoring activities; and the second covering the additional quarterly sampling for BTEX that was conducted only at monitor wells MW-8 and MW-9.

Field documentation from the 2011 groundwater monitoring activities is included in **Appendix A**; and the analytical laboratory reports are included in **Appendix B**.

4.1 SITE-WIDE GROUNDWATER MONITORING RESULTS

Groundwater Elevation Monitoring. Site-wide groundwater elevation maps for each quarter are presented in **Figures 3** through **6**. Groundwater flows radially outward from the topographic rise on which the SJRP is located. In the north plant area, groundwater flows towards the northwest. Groundwater beneath the southern portion of the plant generally flows to the southwest.

BTEX Sampling Results. BTEX results from the annual samples collected during August 2011 are presented in **Table 1** and on **Figure 5**. Historic BTEX data are also summarized on **Table 2**. During the annual sampling event, BTEX compounds were detected in monitoring well MW-9 and were not detected in monitoring wells W-2, MW-4, and MW-6. A sample was not collected from MW-8 because there was too little water. The BTEX results were consistent with previous site-wide monitoring data from 2002 through 2010. The BTEX detections in MW-9 are discussed in **Section 4.2** along with the quarterly BTEX results.

Inorganic Sampling Results. The inorganic results from the annual site-wide groundwater sampling are presented in **Table 1**. Historic data are summarized in **Table 3**. Elevated concentrations of general chemistry inorganics were detected in all four wells sampled. TDS and sulfate were elevated above their NMWQCC standards (1,000 mg/L and 600 mg/L, respectively) in all four samples. Isoconcentration maps for TDS and sulfate concentrations in groundwater are presented as **Figures 7** and **8**, respectively. Chloride was also elevated above its standard of 250 mg/L in every well. Regionally, TDS, sulfate, and chloride in groundwater are known to be elevated.

Nitrate/nitrite was elevated above its NMWQCC standard of 10 mg/L in two wells, MW-6 (92.2 mg/L) and W-2 (16.7 mg/L). Alkalinity varied widely among the 4 wells; however, there is no standard established for alkalinity.

With respect to total metals concentrations in the four wells sampled, the NMWQCC groundwater standards were exceeded for: aluminum (3 wells); cadmium (1 well); cobalt (3 wells); iron (4 wells); manganese (3 wells); nickel (3 wells); and selenium (2 wells). The samples were not field filtered, and fines were likely a major contributor to the total metals concentrations. Monitor wells MW-6 and MW-9 had the highest number of metals analytes exceeding standards, with 7 and 5 exceedances, respectively. These two wells also contained the highest concentrations of sulfate and TDS. It is possible that some of these groundwater metals constituents are related to the industrial activity; however, the contributions from fines in the samples have not yet been isolated.

Overall, concentrations of the various general chemistry inorganics and metals were similar to previous years' results.

4.2 QUARTERLY SAMPLING RESULTS

The 2011 quarterly groundwater sampling BTEX results are shown on **Table 1** and on **Figures 3** through **6**. During 2011, only MW-9 was sampled on a quarterly basis. Groundwater quality in the MW-8 area could not be evaluated because MW-8 was too dry for sampling.

Benzene concentrations in MW-9 remained elevated above the NMWQCC standard of 10 µg/L throughout 2011. The quarterly benzene levels were 90.1 µg/L, 99.5 µg/L, 112 µg/L, and 113 µg/L, respectively. These results were in the historical range for benzene concentrations in MW-9. Toluene was non-detect, and concentrations of ethylbenzene and total xylenes ranged from 10.2 µg/L to 37.6 µg/L during 2011, far below their respective standards of 750 µg/L and 620 µg/L, respectively.

Figures 9 and 10 depict long-term trends in the two wells currently monitored quarterly (i.e., MW-8, and MW-9). **Table 2** summarizes these long-term data as well. The trends indicate that: 1) BTEX concentrations in MW-8 have attenuated gradually over the period of monitoring; and 2) air sparging near MW-9 appeared to be locally effective, though it is unclear whether or not sparging would be able to sufficiently remediate the area so as to prevent rebound.

5.0 CONCLUSIONS AND RECOMMENDATIONS

The following conclusions and recommendations are provided based on the information presented in this report.

5.1 GROUNDWATER MONITORING PROGRAM

The 2011 groundwater monitoring activities at the SJRP resulted in the following conclusions and recommendations:

- Groundwater flows radially away from the topographic rise on which SJRP is located. In the north plant area, groundwater flow is towards the northwest; in the south plant area, groundwater flow is primarily towards the southwest.
- The remaining groundwater impacts in excess of BTEX standards appear to be in the area near MW-9. It is noted, however, that samples could not be obtained from MW-8 during 2011 because the well was dry.
- Consistent with historic monitoring, inorganic constituents were measured above NMWQCC standards during the August 2011 sampling event. The elevated concentrations of inorganics, particularly near the closed ponds may result from past site practices; however, regional levels of chloride, sulfate, and TDS are also elevated, and the metals contributions due to sample fines have not yet been isolated. It is recommended that dissolved phase metals be analyzed during the 2012 annual sampling event.
- Monitor well MW-5 was destroyed during the spring of 2008. Due to its location down gradient of MW-8 and MW-9, replacement of this well is recommended, once ground shifting due to underground mining activity has ceased and a clear trend in static groundwater level elevations has been established. Based on the recent water level data, it appears that stability may have been attained. El Paso will check with the mining company regarding future activities and confirm this recommended well replacement with the OCD.

5.2 HYDROCARBON REMEDIATION PROGRAM

The following conclusions and recommendations are provided regarding the hydrocarbon remediation performed near wells MW-8 and MW-9:

- Benzene concentrations in MW-9 have rebounded to pre-sparging levels.
- MW-8 water levels will be monitored, and ORC socks will be replaced when feasible.
- In November 2005, EPNG submitted a Stage I Abatement Plan to NMOCD to investigate hydrocarbon impacts encountered in groundwater near the Praxair evaporation pond at the SJRP. Approval of this abatement plan was received from NMOCD on January 23, 2006, and the investigation was performed in February 2006. Results of the initial investigation were detailed in the Stage I Interim Report submitted by March 28, 2006. This report proposed additional investigation activities; and a revised work plan was submitted on September 28, 2006. In 2011 EPGTR re-submitted the investigation plan for approval, but NMOCD approval is still pending. EPGTR plans to evaluate the MW-9 area during implementation of this work plan.

6.0 REFERENCES

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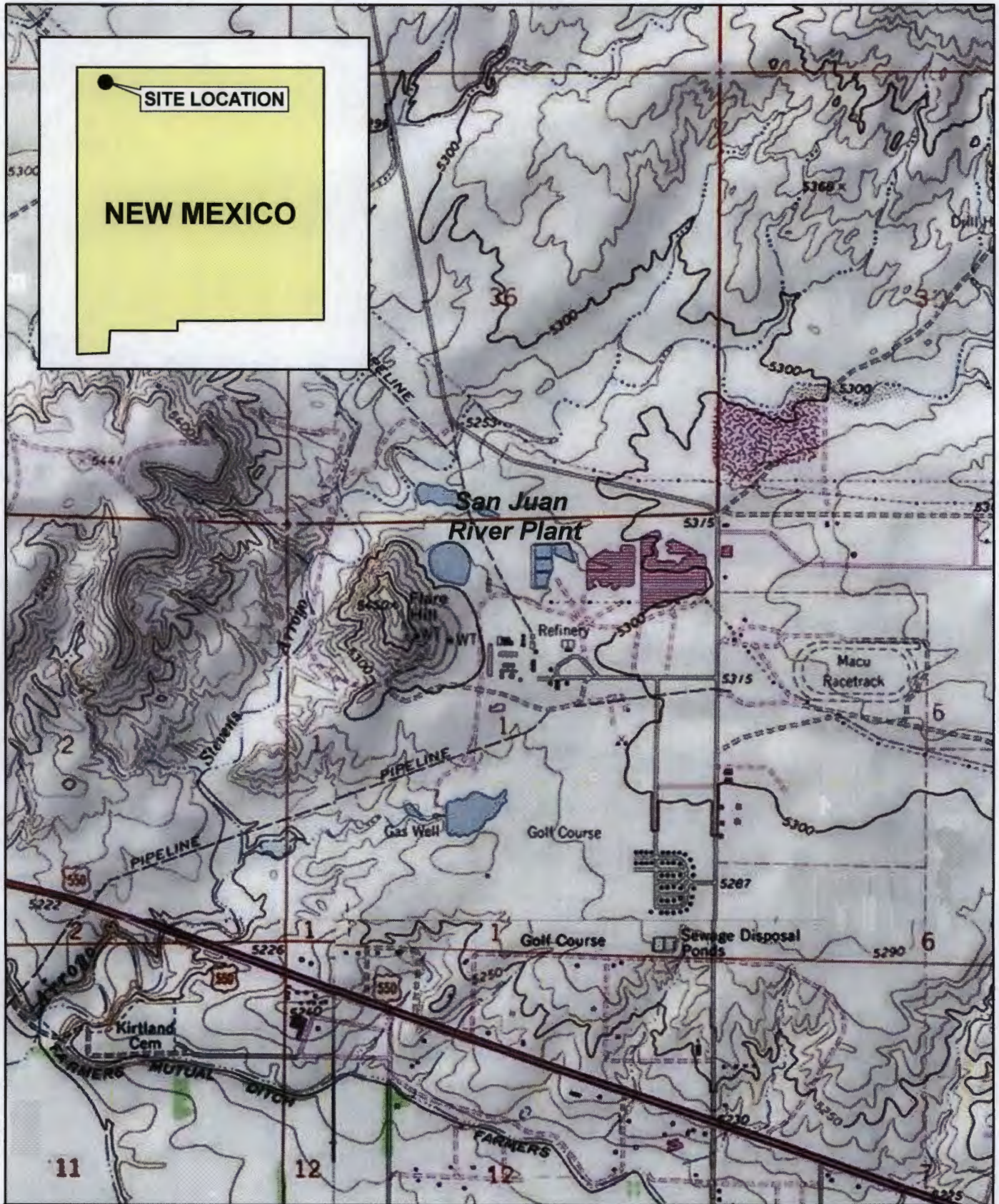
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Philip Environmental, 1995. *Soil-Gas and Soil Survey, San Juan River Plant, Kirtland, New Mexico*, prepared for El Paso Natural Gas Company, Farmington, New Mexico, August 1995.

FIGURES



SOURCE

National Geographic TOPOI, 2009, National Geographic Holdings, Inc.,
USGS Topographic maps, Youngs Lake NM Quad



0 1,000 2,000
Feet



MWH



PROJECT:

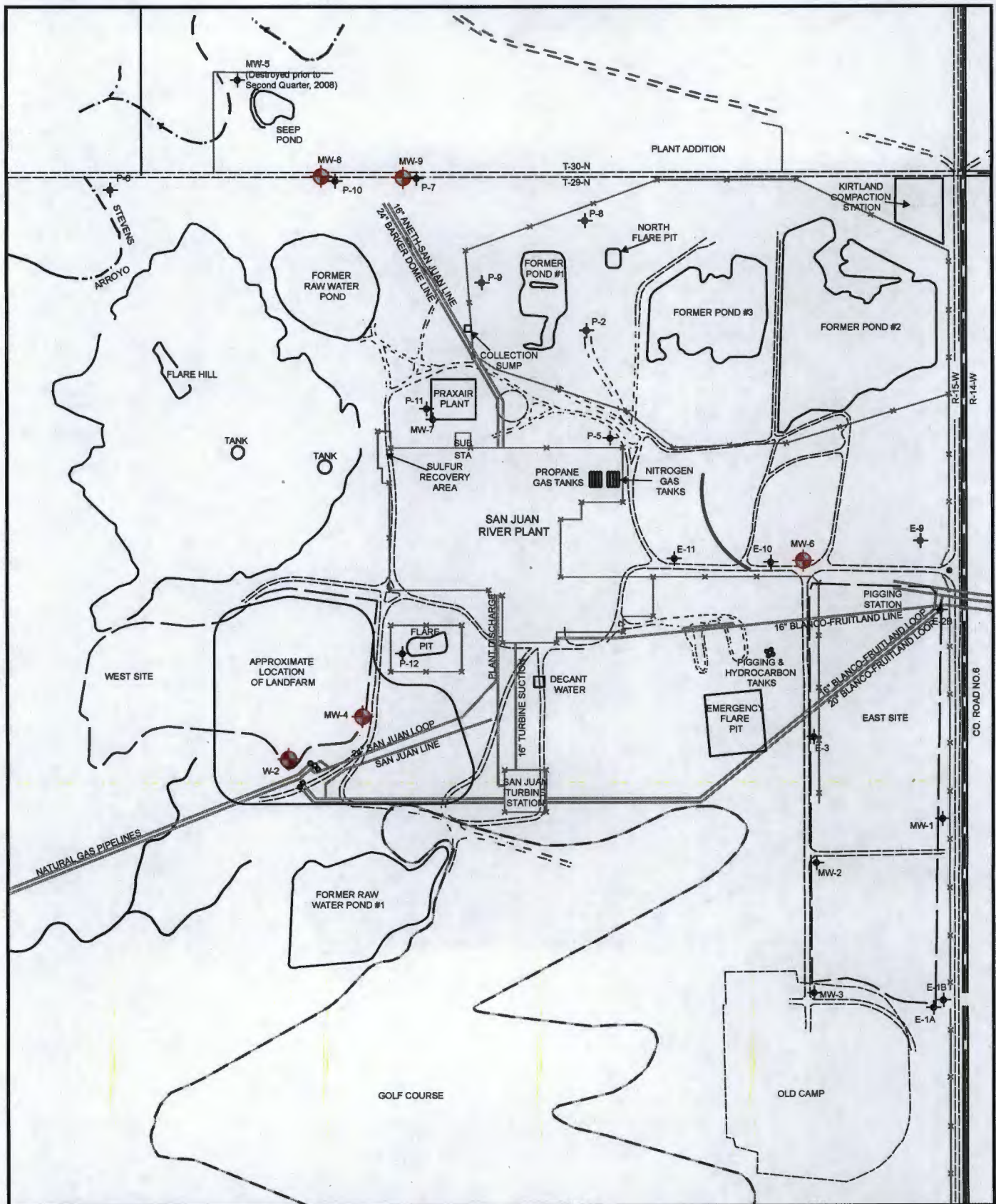
SAN JUAN RIVER PLANT

TITLE:

Site Location Map

FIGURE:

1



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PROJECT:

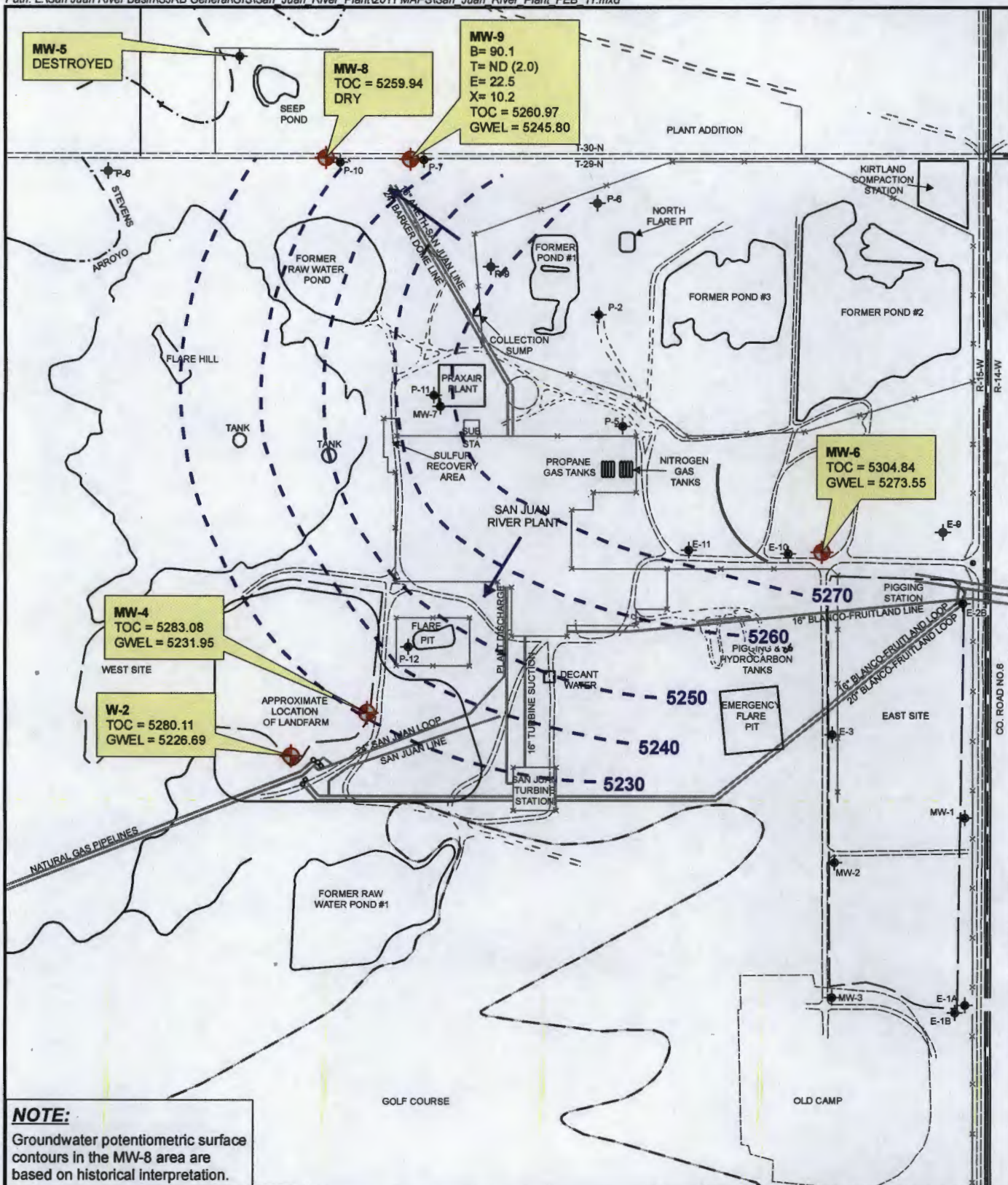
SAN JUAN RIVER PLANT

TITLE:

Site Layout Map

FIGURE:

2



NOTE:

Groundwater potentiometric surface contours in the MW-8 area are based on historical interpretation.

LEGEND

- MW-4 Existing Monitoring / Observation Well
- P-01 Abandoned Monitoring Well
- Groundwater Flow Direction
- Potentiometric Surface Contour (Inferred Where Dashed)
- ND Not Detected; Reporting Limit Shown In Parenthesis

- B Benzene (ug/L)
- T Toluene (ug/L)
- E Ethylbenzene (ug/L)
- X Total Xylenes (ug/L)
- TOC Top of Casing (ft. AMSL)
- GWEL Groundwater Elevation (ft. AMSL)



MWH



PROJECT:

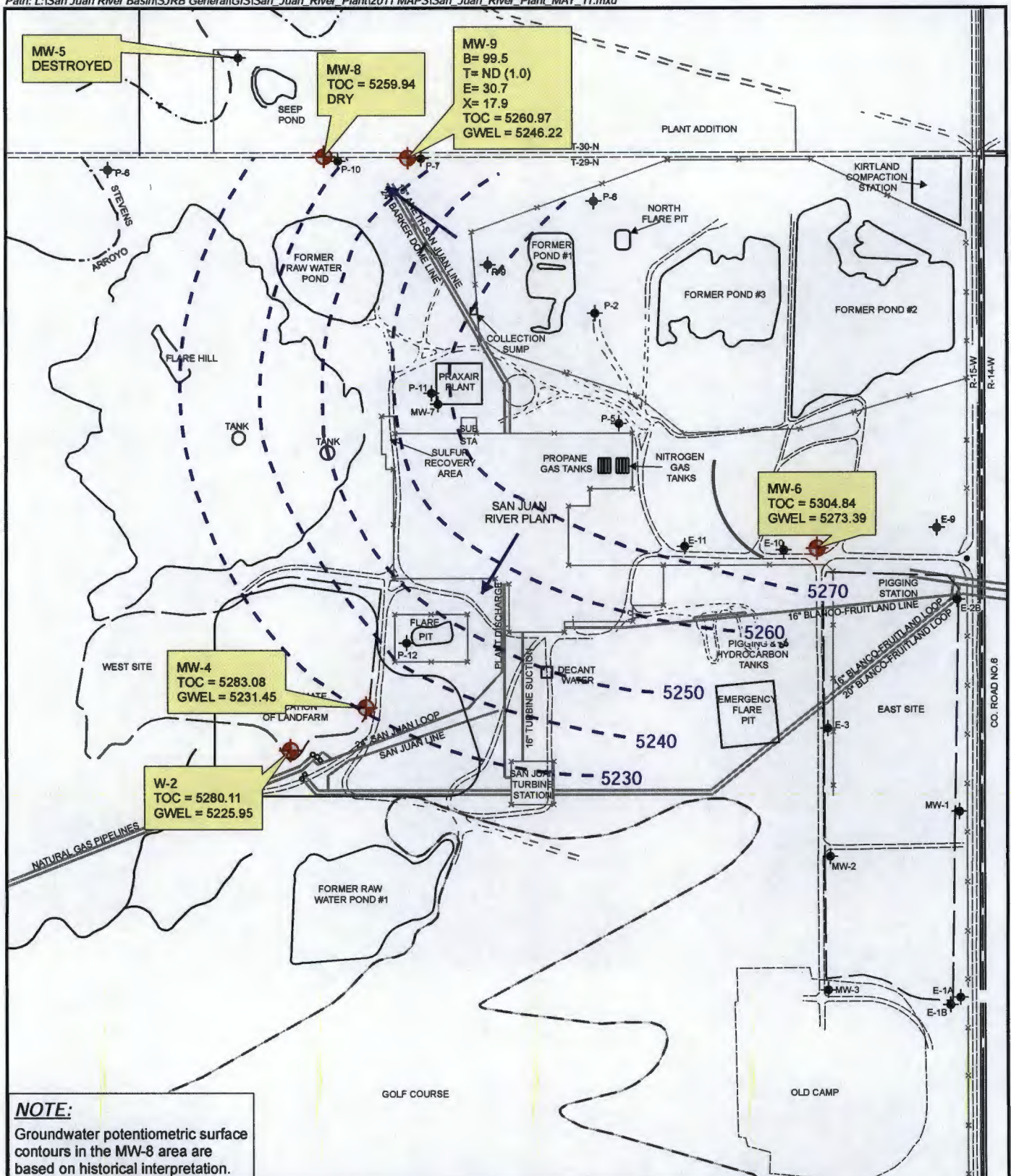
SAN JUAN RIVER PLANT

TITLE:

**Groundwater Potentiometric Surface Map
and BTEX Concentrations - February 7, 2011**

FIGURE:

3



NOTE:

Groundwater potentiometric surface contours in the MW-8 area are based on historical interpretation.

LEGEND

- MW-4 Existing Monitoring / Observation Well
- P-01 Abandoned Monitoring Well
- Groundwater Flow Direction
- Potentiometric Surface Contour (Inferred Where Dashed)
- ND Not Detected; Reporting Limit Shown In Parenthesis

- B Benzene (ug/L)
- T Toluene (ug/L)
- E Ethylbenzene (ug/L)
- X Total Xylenes (ug/L)
- TOC Top of Casing (ft. AMSL)
- GWEL Groundwater Elevation (ft. AMSL)



MWH



PROJECT:

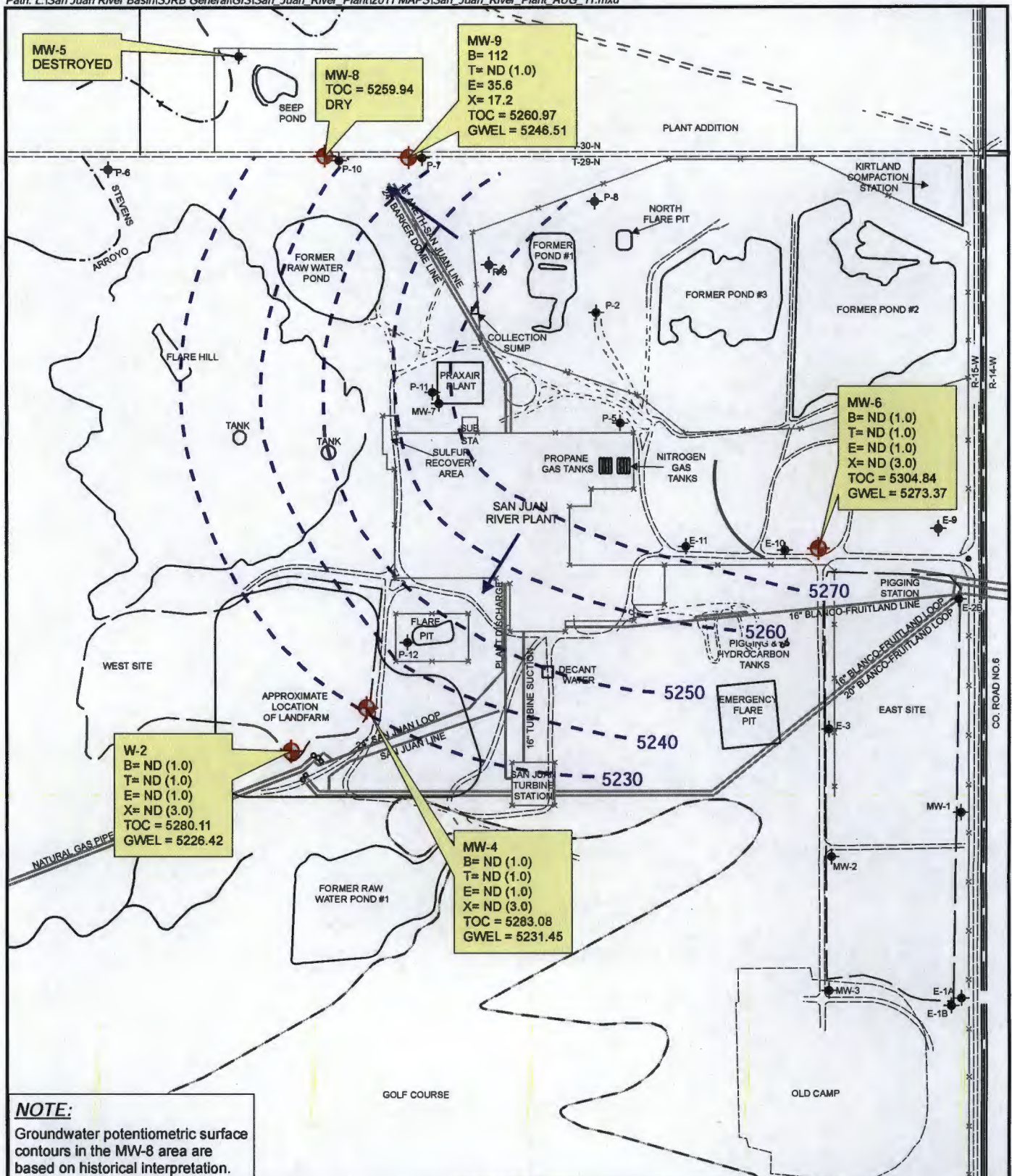
SAN JUAN RIVER PLANT

TITLE:

**Groundwater Potentiometric Surface Map
and BTEX Concentrations - May 16, 2011**

FIGURE:

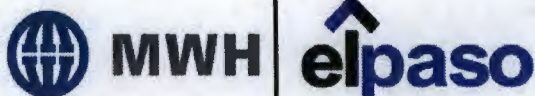
4



LEGEND

MW-4	Existing Monitoring / Observation Well
P-01	Abandoned Monitoring Well
→	Groundwater Flow Direction
-1275-	Potentiometric Surface Contour (Inferred Where Dashed)
ND	Not Detected; Reporting Limit Shown In Parenthesis

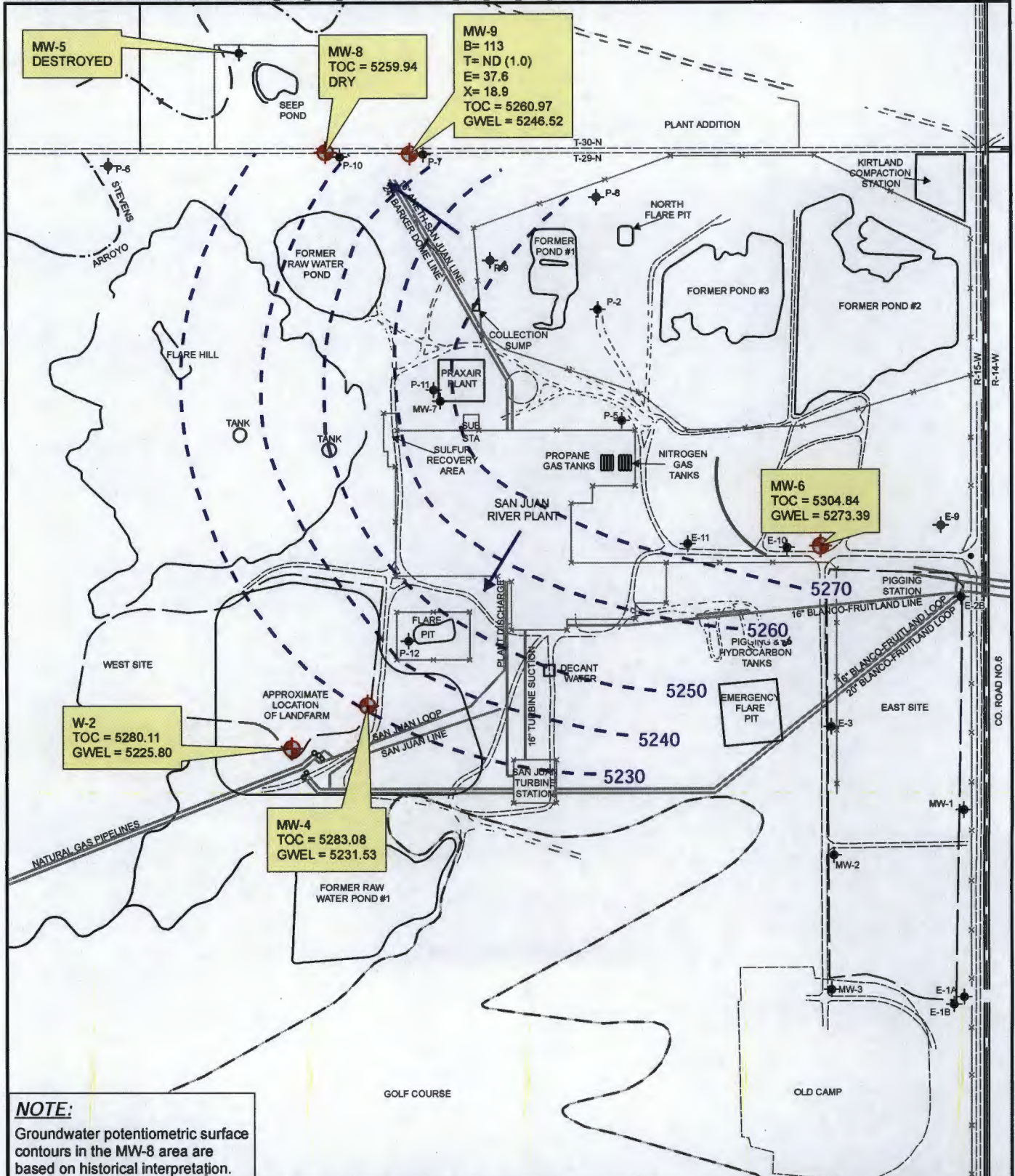
B	Benzene (ug/L)
T	Toluene (ug/L)
E	Ethylbenzene (ug/L)
X	Total Xylenes (ug/L)
TOC	Top of Casing (ft. AMSL)
GWEL	Groundwater Elevation (ft. AMSL)



PROJECT: **SAN JUAN RIVER PLANT**

TITLE: **Groundwater Potentiometric Surface Map and BTEX Concentrations - August 31, 2011**

FIGURE:
5



LEGEND

MW-4	Existing Monitoring / Observation Well
P-01	Abandoned Monitoring Well
→	Groundwater Flow Direction
—1275—	Potentiometric Surface Contour (Inferred Where Dashed)
ND	Not Detected; Reporting Limit Shown In Parenthesis

B	Benzene (ug/L)
T	Toluene (ug/L)
E	Ethylbenzene (ug/L)
X	Total Xylenes (ug/L)
TOC	Top of Casing (ft. AMSL)
GWEL	Groundwater Elevation (ft. AMSL)



PROJECT:

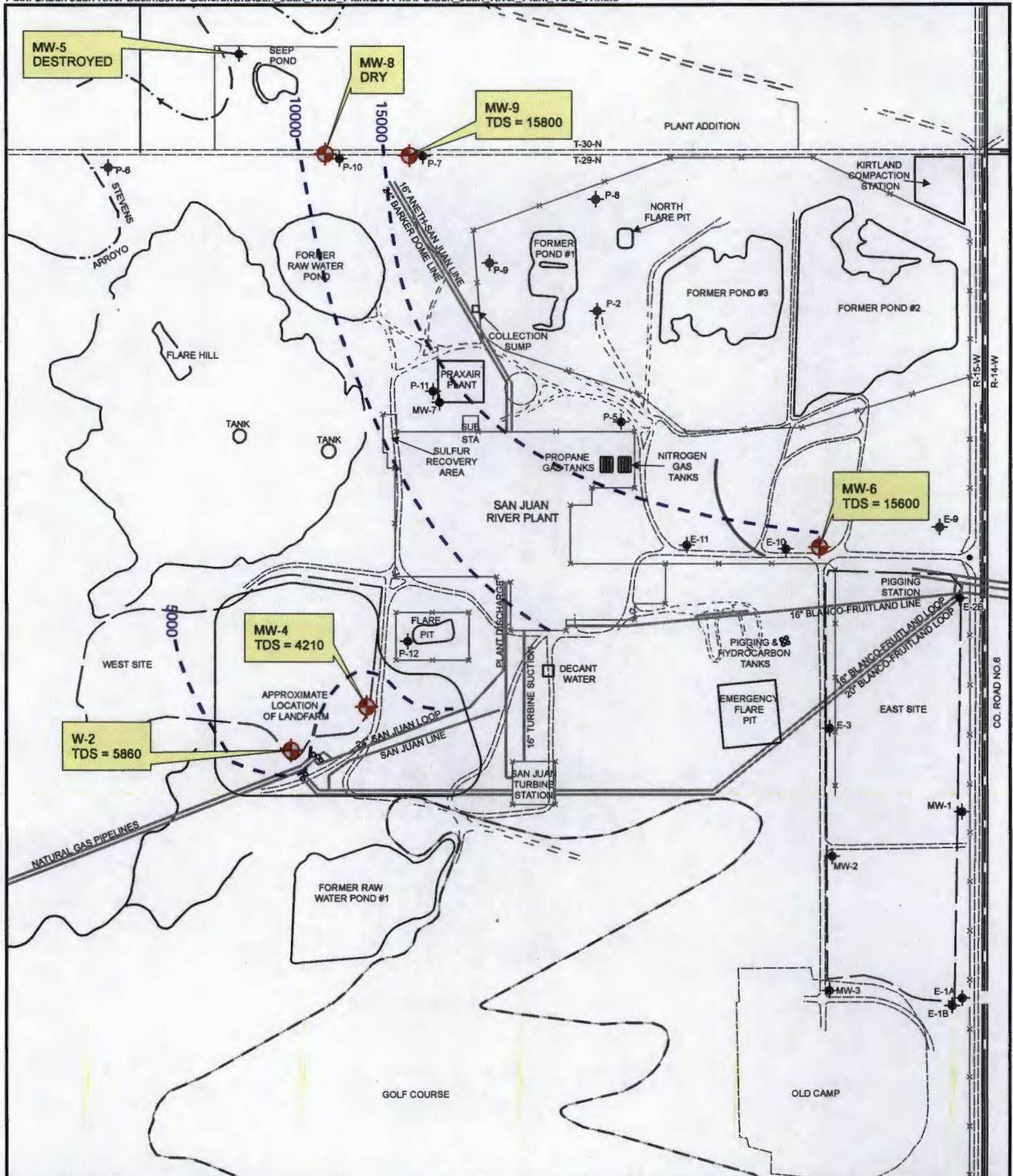
SAN JUAN RIVER PLANT

TITLE:

**Groundwater Potentiometric Surface Map
and BTEX Concentrations - November 8, 2011**

FIGURE:

6



LEGEND

- MW-4 Existing Monitoring / Observation Well
- P-01 Abandoned Monitoring Well
- TDS Total Dissolved Solids Concentration in ppm
- 1275— Total Dissolved Solids Isoconcentrations (Inferred Where Dashed)



MWH



PROJECT:

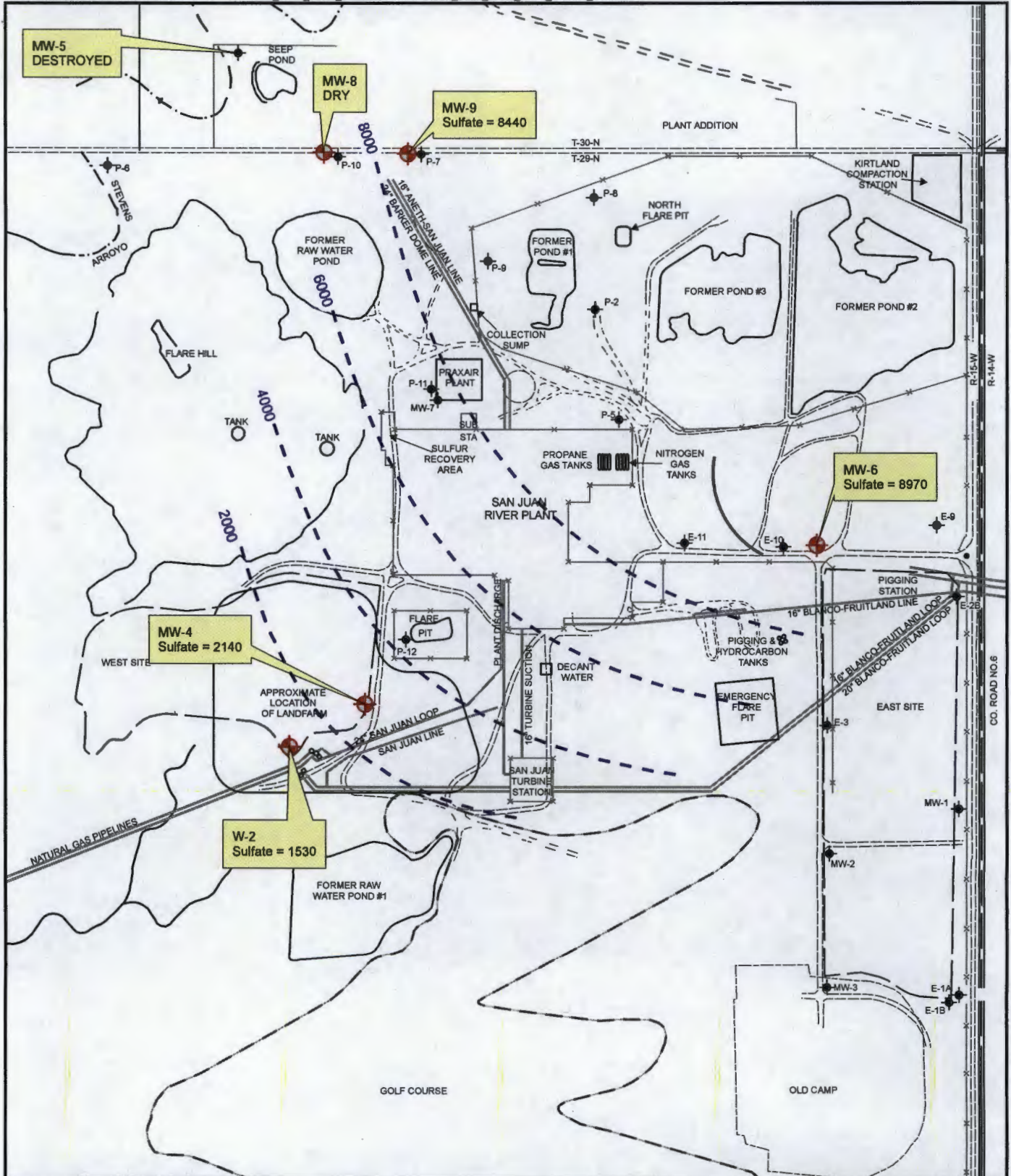
SAN JUAN RIVER PLANT

TITLE:

TDS Isoconcentration Map - August 31, 2011

FIGURE:

7



LEGEND

- MW-4 Existing Monitoring / Observation Well
- P-01 Abandoned Monitoring Well
- Sulfate Sulfate Concentration in ppm
- 1275— Sulfate Isoconcentrations (Inferred Where Dashed)



PROJECT: **SAN JUAN RIVER PLANT**

TITLE: **Sulfate Isoconcentration Map - August 31, 2011**

FIGURE: **8**

FIGURE 9
SUMMARY OF GROUNDWATER BTEX CONCENTRATIONS AND FLUID LEVELS
EL PASO CORPORATION - SAN JUAN RIVER PLANT
MW-8

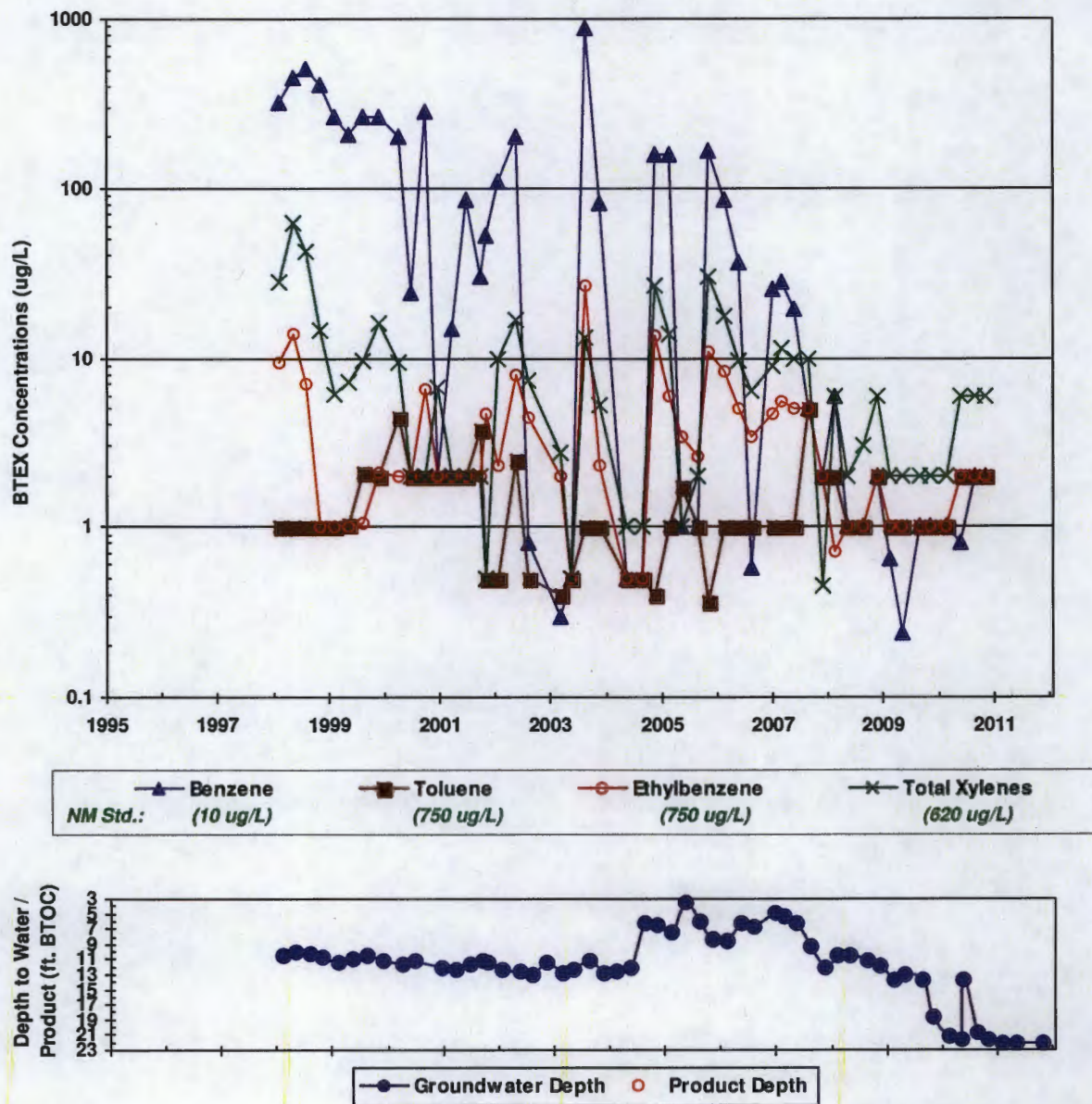
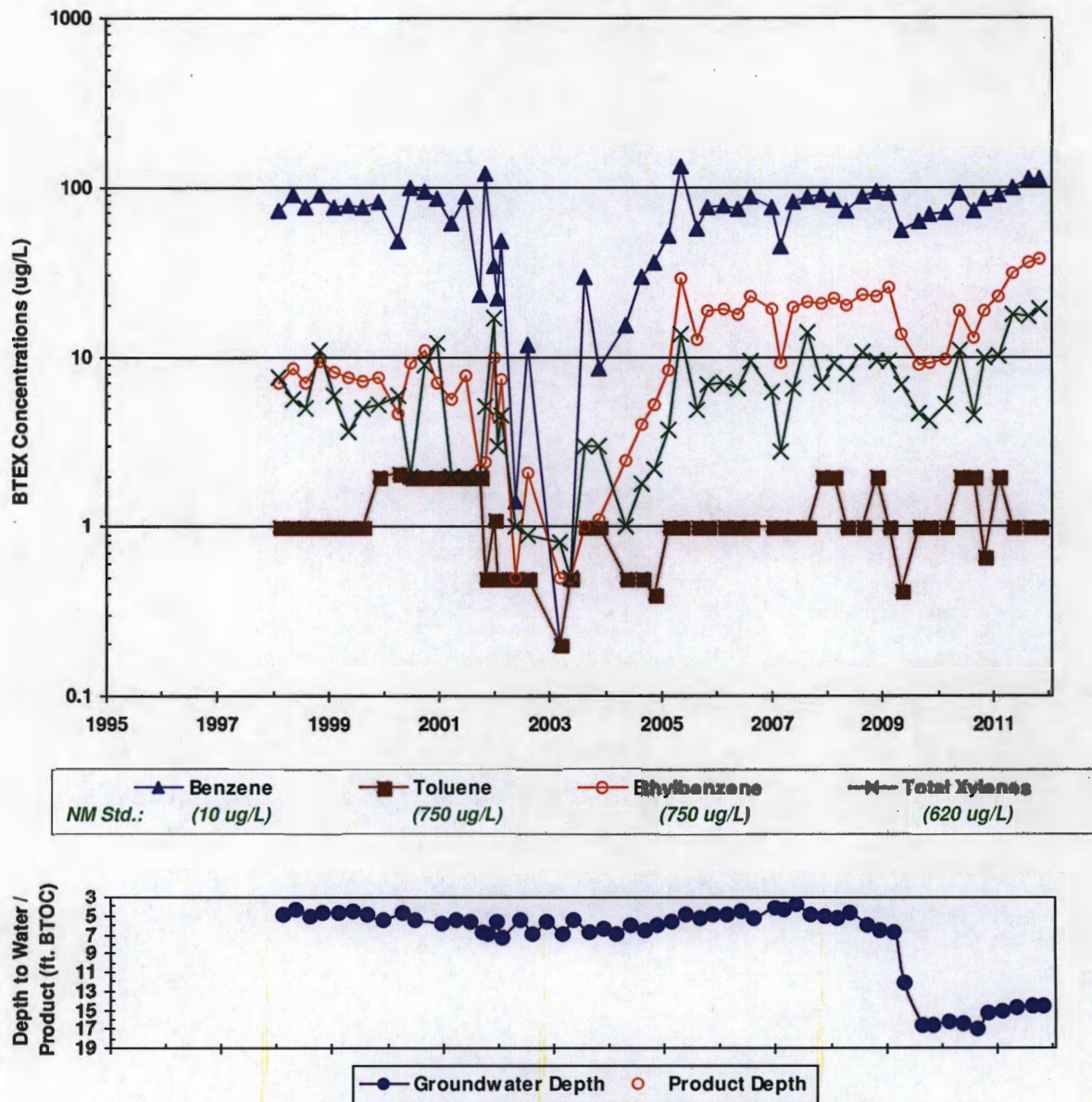


FIGURE 10
SUMMARY OF GROUNDWATER BTEX CONCENTRATIONS AND FLUID LEVELS
EL PASO CORPORATION - SAN JUAN RIVER PLANT
MW-9



TABLES

TABLE 1
SUMMARY OF 2011 GROUNDWATER ANALYTICAL DATA
EL PASO CORPORATION - SAN JUAN RIVER PLANT SITE

Parameter	NMWQCC Standard	W-2	MW-4	MW-6	MW-9	MW-9	MW-9	MW-9
		8/31/2011	8/31/2011	8/31/2011	2/7/2011	5/16/2011	8/31/2011	11/8/2011
Volatile Organics (µg/L)								
Benzene	10	<1.0	<1.0	<1.0	90.1	99.5	112	113
Ethylbenzene	750	<1.0	<1.0	<1.0	22.5	30.7	35.6	37.6
Toluene	750	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0
m,p-Xylene	NE	<2.0	<2.0	<2.0	10.2	16.3	17.2	17.3
o-Xylene	NE	<1.0	<1.0	<1.0	<2.0	1.6	<1.0	1.6
Total Xylenes	620	<3.0	<3.0	<3.0	10.2	17.9	17.2	18.9
Metals (µg/L)								
Aluminum	5,000	6,080	1,380	16,300	-	-	14,000	-
Arsenic	100	<5.0	8.2	<5.0	-	-	<5.0	-
Barium	1,000	<200	<200	<200	-	-	<200	-
Cadmium	10	<4.0	<4.0	13.1	-	-	8.2	-
Calcium	NE	330,000	263,000	350,000	-	-	318,000	-
Chromium	50	<10	<10	<10	-	-	<10	-
Cobalt	50	<50	53.6	227	-	-	187	-
Copper	1,000	<25	26.8	47.9	-	-	68.2	-
Iron	1,000	4,750	5,380	1,040	-	-	7,830	-
Lead	50	14.1	12.8	18.7	-	-	23.9	-
Magnesium	NE	97,300	105,000	326,000	-	-	217,000	-
Manganese	200	178	5,030	8,060	-	-	6,790	-
Mercury	2	<0.20	0.31	<0.20	-	-	<0.20	-
Molybdenum	1,000	<10	<10	<10	-	-	<10	-
Nickel	200	<40	238	333	-	-	328	-
Potassium	NE	<5000	6,750	21,100	-	-	13,100	-
Selenium	50	122	<5.0	351	-	-	<5.0	-
Silver	50	<10	<10	<10	-	-	<10	-
Sodium	NE	1,200,000	1,130,000	3,860,000	-	-	4,080,000	-
Zinc	10,000	55.2	<20	772	-	-	751	-
Inorganics (mg/L)								
Alkalinity	NE	176	34	12	-	-	28	-
Chloride	250	318	1,240	1,190	-	-	576	-
Nitrate+Nitrite	10	16.7	0.14	92.2	-	-	<0.10	-
Sulfate	600	1,530	2,140	8,970	-	-	8,440	-
TDS	1,000	5,860	4,210	15,600	-	-	15,800	-

NE = Not established

Bold = Parameter concentration exceeds the applicable New Mexico Water Quality Control Commission Groundwater Standard

MW-8 not sampled due to low water levels in 2011

TABLE 2

**SUMMARY OF BTEX COMPOUNDS IN GROUNDWATER
EL PASO CORPORATION - SAN JUAN RIVER PLANT**

Monitor Well	Sample Date	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes	Depth to Water (ft BTOC)	Corr. GW Elevation (ft AMSL)
NMWQCC GW Std.:		10	750	750	620		
MW-4	9/25/2001	<2.0	8.2	4.3	17	NA	NA
MW-4	8/15/2002	0.8	0.5	1.1	0.9	52.93	5230.15
MW-4	8/26/2003	<1	<1	<1	<3	53.53	5229.55
MW-4	8/27/2004	<1.0	<1.0	<1.0	<3.0	54.44	5228.64
MW-4	8/24/2005	<1.0	<1.0	<1.0	<2.0	55.29	5227.79
MW-4	8/10/2006	<1.0	<1.0	<1.0	<2.0	55.57	5227.51
MW-4	8/23/2007	0.37J	<1.0	<1.0	<2.0	51.87	5231.21
MW-4	8/27/2008	<1.0	<1.0	<1.0	<3.0	52.24	5230.84
MW-4	8/28/2009	<1.0	<1.0	<1.0	<2.0	58.70	5224.38
MW-4	8/26/2010	<2.0	<2.0	<2.0	<6.0	52.32	5230.76
MW-4	8/31/2011	<1.0	<1.0	<1.0	<3.0	51.63	5231.45
MW-5	2/10/1998	<1.0	<1.0	<1.0	<3.0	16.29	5241.15
MW-5	5/12/1998	<1.0	<1.0	<1.0	<3.0	16.09	5241.35
MW-5	8/7/1998	<1.0	<1.0	<1.0	<3.0	17.69	5239.75
MW-5	11/4/1998	<1	<1	<1	<3	16.76	5240.68
MW-5	2/10/1999	<1	<1	<1	<3	15.51	5241.93
MW-5	5/17/1999	<1	<1	<1	<3	15.49	5241.95
MW-5	8/18/1999	<1	<1	<1	<3	16.67	5240.77
MW-5	11/30/1999	<2.0	<2.0	<2.0	<2.0	16.60	5240.84
MW-5	4/10/2000	<2.0	<2.0	<2.0	<2.0	15.52	5241.92
MW-5	6/29/2000	<2.0	<2.0	<2.0	<2.0	16.83	5240.61
MW-5	9/29/2000	<2.0	<2.0	<2.0	<2.0	17.58	5239.86
MW-5	12/21/2000	2.2	<2	<2	9.1	16.38	5241.06
MW-5	3/27/2001	9.8	<2	<2	<2	15.13	5242.31
MW-5	6/27/2001	<2.0	<2.0	<2.0	<2.0	16.04	5241.40
MW-5	9/25/2001	2.6	<0.5	<0.5	<0.5	17.39	5240.05
MW-5	11/29/2001	<0.5	<0.5	<0.5	<0.5	17.45	5239.99
MW-5	1/25/2002	<0.5	<0.5	<0.5	<0.5	17.73	5239.71
MW-5	8/15/2002	0.4	<0.5	<0.5	1.0	18.61	5238.83
MW-5	8/26/2003	<1	<1	<1	<3	17.33	5240.11
MW-5	8/27/2004	<1.0	<1.0	<1.0	<3.0	16.80	5240.64
MW-5	8/24/2005	<1.0	<1.0	<1.0	<2.0	13.83	5243.61
MW-5	8/10/2006	2.3	<1.0	<1.0	<2.0	NA	NA
MW-5	8/23/2007	3.7	<1.0	<1.0	<2.0	14.42	5243.02

TABLE 2

**SUMMARY OF BTEX COMPOUNDS IN GROUNDWATER
EL PASO CORPORATION - SAN JUAN RIVER PLANT**

Monitor Well	Sample Date	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes	Depth to Water (ft BTOC)	Corr. GW Elevation (ft AMSL)
NMWQCC GW Std.:		10	750	750	620		
MW-6	9/25/2001	2.1	5.3	<2.0	<2.0	NA	NA
MW-6	8/15/2002	0.3	<0.5	<0.5	0.9	31.50	5273.34
MW-6	8/26/2003	<1	<1	<1	<3	31.76	5273.08
MW-6	8/27/2004	<1.0	<1.0	<1.0	<3.0	31.85	5272.99
MW-6	8/24/2005	<1.0	<1.0	<1.0	<2.0	29.93	5274.91
MW-6	8/10/2006	<1.0	<1.0	<1.0	<2.0	30.37	5274.47
MW-6	8/23/2007	<1.0	<1.0	<1.0	<2.0	30.70	5274.14
MW-6	8/27/2008	<1.0	<1.0	<1.0	<3.0	31.27	5273.57
MW-6	8/28/2009	<1.0	<1.0	<1.0	<2.0	31.44	5273.40
MW-6	8/26/2010	<2.0	<2.0	<2.0	<6.0	31.55	5273.29
MW-6	8/31/2011	<1.0	<1.0	<1.0	<3.0	31.47	5273.37
MW-7	9/25/2001	<2.0	<2.0	<2.0	<2.0	NA	NA
MW-7	8/15/2002	0.4	0.4	0.9	1.0	27.07	5266.06
MW-7	8/26/2003	<1	<1	<1	<3	27.00	5266.13
MW-7	8/27/2004	<1.0	<1.0	<1.0	<3.0	23.55	5269.58
MW-7	8/24/2005	<1.0	<1.0	<1.0	<2.0	19.48	5273.65
MW-7	8/10/2006	<1.0	<1.0	<1.0	<2.0	20.33	5272.80
MW-8	2/10/1998	316	<1.0	9.4	28.4	10.39	5249.55
MW-8	5/12/1998	449	<1.0	13.9	62.9	10.02	5249.92
MW-8	8/7/1998	509	<1.0	7.05	42.9	10.13	5249.81
MW-8	11/4/1998	408	<1	<1	14.5	10.75	5249.19
MW-8	2/10/1999	261	<1	<1	6.1	11.31	5248.63
MW-8	5/17/1999	205	1.02	<1	7.25	10.93	5249.01
MW-8	8/18/1999	265	2.09	1.06	9.60	10.44	5249.50
MW-8	11/30/1999	260.0	<2	2.1	16	11.10	5248.84
MW-8	4/10/2000	200	4.4	<2	9.5	11.70	5248.24
MW-8	6/29/2000	24.0	<2.0	<2.0	<2.0	11.16	5248.78
MW-8	9/29/2000	284	<2.0	6.6	<2.0	NA	NA
MW-8	12/21/2000	<2.0	<2	<2.0	6.7	11.96	5247.98
MW-8	3/27/2001	15.0	<2	<2	<2	12.32	5247.62
MW-8	6/27/2001	85.0	<2.0	<2.0	<2.0	11.49	5248.45
MW-8	9/25/2001	30	3.7	<2	<2	11.06	5248.88
MW-8	10/29/2001	53	<0.5	4.7	<0.5	11.31	5248.63
MW-8	1/25/2002	110	<0.5	2.3	9.8	12.35	5247.59

TABLE 2

**SUMMARY OF BTEX COMPOUNDS IN GROUNDWATER
EL PASO CORPORATION - SAN JUAN RIVER PLANT**

Monitor Well	Sample Date	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes	Depth to Water (ft BTOC)	Corr. GW Elevation (ft AMSL)
NMWQCC GW Std.:		10	750	750	620		
MW-8	5/23/2002	200	<2.5	7.9	17	12.60	5247.34
MW-8	8/15/2002	0.8	<0.5	4.4	7.3	12.90	5247.04
MW-8	3/6/2003	0.3	0.4	2.0	2.7	12.79	5247.15
MW-8	5/15/2003	<1.0	<1.0	<1.0	<3.0	12.25	5247.69
MW-8	8/26/2003	891	<1	26.6	13.1	11.16	5248.78
MW-8	11/25/2003	81.9	<1	2.3	5.2	12.79	5247.15
MW-8	5/18/2004	<1.0	<1.0	<1.0	<3.0	12.02	5247.92
MW-8	8/27/2004	<1.0	<1.0	<1.0	<3.0	6.26	5253.68
MW-8	11/17/2004	157	<1.0	13.6	27.0	6.46	5253.48
MW-8	2/17/2005	159	<1.0	5.9	13.8	7.43	5252.51
MW-8	5/19/2005	<1.0	1.7	3.4	1.0J	3.56	5256.38
MW-8	8/24/2005	<1.0	<1.0	2.6	<2.0	6.02	5253.92
MW-8	11/9/2005	164	0.36J	11.0	30.0	8.38	5251.56
MW-8	2/20/2006	85.2	<1.0	8.3	17.6	8.55	5251.39
MW-8	5/24/2006	36.3	<1.0	5.0	9.7	6.31	5253.63
MW-8	8/10/2006	0.57J	<1.0	3.4	6.4	6.80	5253.14
MW-8	12/27/2006	25.6	<1.0	4.6	9.0	4.94	5255.00
MW-8	2/27/2007	28.1	<1.0	5.5	11.4	5.40	5254.54
MW-8	5/25/2007	19.6	<1.0	5.0	9.8	6.28	5253.66
MW-8	8/23/2007	<5.0	<5.0	<5.0	<10	9.25	5250.69
MW-8	11/28/2007	<2.0	<2.0	<2.0	0.45J	12.16	5247.78
MW-8	2/13/2008	6.0	<2.0	0.71J	<6.0	10.41	5249.53
MW-8	5/8/2008	<1.0	<1.0	<1.0	<2.0	10.40	5249.54
MW-8	8/27/2008	<1.0	<1.0	<1.0	<3.0	11.15	5248.79
MW-8	11/18/2008	<2	<2	<2	<6	11.90	5248.04
MW-8	2/18/2009	0.65J	<1.0	<1.0	<2.0	13.60	5246.34
MW-8	5/5/2009	0.24J	<1.0	<1.0	<2.0	13.07	5246.87
MW-8	8/28/2009	<1.0	<1.0	<1.0	<2.0	13.75	5246.19
MW-8	11/4/2009	<1.0	<1.0	<1.0	<2.0	18.58	5241.36
MW-8	2/18/2010	<1.0	<1.0	<1.0	<2.0	21.19	5238.75
MW-8	5/26/2010	0.81J	<2.0	<2.0	<6.0	13.72	5246.22
MW-8	8/26/2010	<2.0	<2.0	<2.0	<6.0	20.64	5239.30
MW-8	11/9/2010	<2.0	<2.0	<2.0	<6.0	21.60	5238.34
MW-9	2/10/1998	73.1	<1.0	7.1	7.5	4.90	5256.07

TABLE 2

**SUMMARY OF BTEX COMPOUNDS IN GROUNDWATER
EL PASO CORPORATION - SAN JUAN RIVER PLANT**

Monitor Well	Sample Date	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes	Depth to Water (ft BTOC)	Corr. GW Elevation (ft AMSL)
NMWQCC GW Std.:		10	750	750	620		
MW-9	5/12/1998	89.5	<1.0	8.51	5.61	4.22	5256.75
MW-9	8/7/1998	77.0	<1.0	7.08	5.0	5.12	5255.85
MW-9	11/4/1998	89.8	<1	9.42	10.9	4.60	5256.37
MW-9	2/10/1999	77.0	<1	8.1	6	4.67	5256.30
MW-9	5/17/1999	78.3	<1	7.54	3.63	4.48	5256.49
MW-9	8/18/1999	76.4	<1	7.21	4.97	4.85	5256.12
MW-9	11/30/1999	82.0	<2	7.5	5.3	5.38	5255.59
MW-9	4/10/2000	48.0	2.1	4.7	5.9	4.74	5256.23
MW-9	6/29/2000	100.0	<2	9.2	<2	5.47	5255.50
MW-9	9/29/2000	95	<2.0	11	9.0	NA	NA
MW-9	12/21/2000	86.0	<2	7.1	12	5.82	5255.15
MW-9	3/27/2001	61.0	<2	5.7	<2	5.34	5255.63
MW-9	6/27/2001	87.0	<2	7.7	<2	5.68	5255.29
MW-9	9/25/2001	23	2.0	2.2	<2.0	6.77	5254.20
MW-9	10/29/2001	120	<0.5	2.4	5.1	6.91	5254.06
MW-9	12/26/2001	34	1.1	9.9	17	5.68	5255.29
MW-9	1/25/2002	22	<0.5	4.4	3.0	7.27	5253.70
MW-9	2/21/2002	48	<0.5	7.4	4.5	NA	NA
MW-9	5/23/2002	1.4	<0.5	<0.5	<1.0	5.45	5255.52
MW-9	8/15/2002	11.7	<0.5	2.1	0.9	6.93	5254.05
MW-9	3/6/2003	0.2	0.2	<1.0	0.8	6.82	5254.15
MW-9	5/15/2003	<1.0	<1.0	<1.0	<3.0	5.45	5255.52
MW-9	8/26/2003	29.3	<1	<1	<3	6.69	5254.28
MW-9	11/25/2003	8.6	<1	1.1	<3	6.42	5254.55
MW-9	5/18/2004	15.2	<1.0	2.5	<3.0	5.97	5255.00
MW-9	8/27/2004	29.5	<1.0	4.0	1.8	6.49	5254.48
MW-9	11/17/2004	35.9	<1.0	5.2	2.2	6.02	5254.95
MW-9	2/17/2005	51.7	<1.0	8.3	3.7	5.69	5255.28
MW-9	5/19/2005	133	<1.0	28.9	13.5	4.78	5256.19
MW-9	8/24/2005	56.5	<1.0	12.6	4.9	5.19	5255.78
MW-9	11/9/2005	76.0	<1.0	18.8	6.9	4.93	5256.04
MW-9	2/20/2006	77.9	<1.0	19.1	7.1	4.83	5256.14
MW-9	5/24/2006	73.4	<1.0	17.7	6.6	4.47	5256.50
MW-9	8/10/2006	88.7	<1.0	22.5	9.3	5.19	5255.78

TABLE 2

**SUMMARY OF BTEX COMPOUNDS IN GROUNDWATER
EL PASO CORPORATION - SAN JUAN RIVER PLANT**

Monitor Well	Sample Date	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes	Depth to Water (ft BTOC)	Corr. GW Elevation (ft AMSL)
NMWQCC GW Std.:		10	750	750	620		
MW-9	12/27/2006	76.9	<1.0	19.0	6.3	4.13	5256.84
MW-9	2/27/2007	44.8	<1.0	9.2	2.8	4.24	5256.73
MW-9	5/25/2007	82.0	<1.0	19.6	6.5	3.81	5257.16
MW-9	8/23/2007	88.1	<1.0	21.2	13.8	4.85	5256.12
MW-9	11/28/2007	90.9	<2.0	20.4	7.0	5.13	5255.84
MW-9	2/13/2008	84.4	<2.0	22.1	9.2	5.28	5255.69
MW-9	5/8/2008	71.8	<1.0	20.2	8.0	4.71	5256.26
MW-9	8/27/2008	87.9	<1.0	23.4	10.7	6.06	5254.91
MW-9	11/18/2008	95.3	<2	22.8	9.5	6.53	5254.44
MW-9	2/18/2009	91.3	<1.0	25.7	9.5	6.69	5254.28
MW-9	5/5/2009	55.4	0.42J	13.7	6.8	12.18	5248.79
MW-9	8/28/2009	63.1	<1.0	9.0	4.6	16.54	5244.43
MW-9	11/4/2009	69.4	<1.0	9.2	4.2	16.63	5244.34
MW-9	2/18/2010	70.7	<1.0	9.7	5.2	16.18	5244.79
MW-9	5/26/2010	91.8	<2.0	18.8	10.9	16.36	5244.61
MW-9	8/26/2010	72.3	<2.0	12.8	4.5J	16.93	5244.04
MW-9	11/9/2010	86.6	0.66J	18.7	9.9	15.28	5245.69
MW-9	2/7/2011	90.1	<2.0	22.5	10.2	15.17	5245.80
MW-9	5/16/2011	99.5	<1.0	30.7	17.9	14.75	5246.22
MW-9	8/31/2011	112	<1.0	35.6	17.2	14.46	5246.51
MW-9	11/8/2011	113	<1.0	37.6	18.9	14.45	5246.52
W-2	9/25/2001	<2.0	<2.0	<2.0	<2.0	NA	NA
W-2	8/15/2002	1.4	0.4	0.8	1.0	57.55	5222.56
W-2	8/26/2003	<1	<1	<1	<3	57.53	5222.58
W-2	8/27/2004	<1.0	<1.0	<1.0	<3.0	57.76	5222.35
W-2	8/24/2005	<1.0	<1.0	<1.0	<2.0	58.50	5221.61
W-2	8/10/2006	<1.0	<1.0	<1.0	<2.0	58.72	5221.39
W-2	8/23/2007	<1.0	<1.0	<1.0	<2.0	52.73	5227.38
W-2	8/27/2008	<1.0	<1.0	<1.0	<3.0	55.53	5224.58
W-2	8/28/2009	<1.0	<1.0	<1.0	<2.0	55.24	5224.87
W-2	8/26/2010	<2.0	<2.0	<2.0	<6.0	52.80	5227.31
W-2	8/31/2011	<1.0	<1.0	<1.0	<3.0	53.69	5226.42

TABLE 2

**SUMMARY OF BTEX COMPOUNDS IN GROUNDWATER
EL PASO CORPORATION - SAN JUAN RIVER PLANT**

Monitor Well	Sample Date	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes	Depth to Water (ft BTOC)	Corr. GW Elevation (ft AMSL)
NMWQCC GW Std.:		10	750	750	620		

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 (some historic data were reported at the detection limit)

Static groundwater elevations have been corrected for product thickness where applicable. Specific gravity of 0.8 used

TABLE 3

**SUMMARY OF HISTORICAL GROUNDWATER METALS AND INORGANICS
EL PASO CORPORATION - SAN JUAN RIVER PLANT SITE**

Page 1 of 7

Parameter	NMWQCC Standard	W-2 9/25/2001	W-2 8/15/2002	W-2 8/21/2002	W-2 8/26/2003	W-2 8/27/2004	W-2 8/24/2005	W-2 8/10/2006	W-2 8/23/2007	W-2 8/27/2008	W-2 8/28/2009	W-2 8/26/2010	W-2 8/31/2011	MW-4 9/25/2001	MW-4 8/15/2002
Metals (µg/L)															
Aluminum	5,000	4,200	1,130	—	2,070	—	1,240	1,540	12,800	—	21,000	5,180	6,080	9,300	1,370
Arsenic	100	ND	4.9	—	5.5	5	<5.0	<5.0	<5.0	—	<5.0	<5.0	<5.0	220	20.7
Barium	1,000	29	32.7	—	200	200	<200	<200	<200	—	<200	<200	<200	110	27.1
Cadmium	10	ND	0.79	—	4	4	<4.0	<4.0	<4.0	—	<4.0	<4.0	<4.0	17	1.2
Calcium	NE	400,000	402,000	—	349,000	—	454,000	399,000	404,000	—	356,000	319,000	330,000	210,000	210,000
Chromium	50	ND	5.6	—	10	10	<10	<10	<10	—	12.7	<10	<10	ND	10.2
Cobalt	50	ND	5.5	—	50	—	<50	<50	<50	—	<50	<50	<50	280	191
Copper	1,000	15	116	—	42.8	—	<25	<25	32.9	—	27.2	<25	<25	820	158
Iron	1,000	4,640	1,760	—	1,480	—	1,580	1,020	10,300	—	16,500	4,300	4,750	31,000	6,500
Lead	50	80	3.1	—	3	3	9	10.2	14	—	8.9	5.1	14.1	170	11.3
Magnesium	NE	120,000	105,000	—	106,000	—	126,000	111,000	133,000	—	110,000	103,000	97,300	81,000	80,100
Manganese	200	230	216	—	43.9	—	163	256	223	—	268	87.1	178	6,100	6,080
Mercury	2	—	0.12	—	0.2	0.2	<0.20	<0.20	<0.20	—	—	<0.20	<0.20	—	0.61
Molybdenum	1,000	ND	2.8	—	10	—	<10	<10	<10	—	<10	<10	<10	ND	2.7
Nickel	200	ND	7.5	—	40	—	<40	<40	<40	—	<40	<40	<40	330	261
Potassium	NE	4,700	13,400	—	5,000	—	5,840	5,630	8,880	—	10,200	5,290	<5000	7,300	8,990
Selenium	50	120	108	—	89.6	115	124	136	143	—	132	111	122	ND	3.4
Silver	50	ND	2.8	—	10	10	<10	<10	<10	—	<10	<10	<10	ND	1.7
Sodium	NE	1,200,000	1,350,000	—	1,030,000	—	1,400,000	1,150,000	1,120,000	—	1,130,000	1,160,000	1,200,000	920,000	1,040,000
Zinc	10,000	ND	73.3	—	58.1	—	45.9	148	169	—	98.1	34.4	55.2	4,200	241
Inorganics (mg/L)															
Alkalinity	NE	—	—	170	196	180	138	163	163	178	174	198	176	—	—
Chloride	250	300	—	296	309	431	265	162	338	308	795	290	318	330	—
Nitrate+Nitrite	10	25	—	—	21.8	25.2	17	18	18	17.2	17.7	19.5	16.7	—	—
Sulfate	600	3,600	—	3,380	3,630	3,160	3,170	3,420	3,410	3,320	3,000	3,200	1,530	2,000	—
TDS	1,000	5,800	—	5,690	5,880	6,170	5,730	4,920	5,710	4,920	5,870	5,970	5,860	3,920	—

NE = Not established

Bold = Parameter concentration exceeds the applicable New Mexico Water Quality Control Commission Groundwater Standard

TABLE 3

**SUMMARY OF HISTORICAL GROUNDWATER METALS AND INORGANICS
EL PASO CORPORATION - SAN JUAN RIVER PLANT SITE**

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Parameter	NMWQCC Standard	MW-4 8/21/2002	MW-4 8/26/2003	MW-4 8/26/2004	MW-4 8/24/2005	MW-4 8/10/2006	MW-4 8/23/2007	MW-4 8/27/2008	MW-4 8/28/2009	MW-4 8/26/2010	MW-4 8/31/2011	MW-5 11/30/1999	MW-5 4/10/2000	MW-5 6/29/2000	MW-5 9/29/2000
Metals (µg/L)															
Aluminum	5,000	--	5,290	--	<200	416	9,290	9,810	1,000	3,310	1,380	--	--	--	--
Arsenic	100	--	81.8	18	26.2	63.6	21.1	34.2	12.5	17.5	8.2	--	--	--	--
Barium	1,000	--	200	200	<200	<200	<200	<200	<200	<200	<200	--	--	--	--
Cadmium	10	--	10	4	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	--	--	--	--
Calcium	NE	--	212,000	--	286,000	245,000	249,000	267,000	234,000	228,000	263,000	--	--	--	--
Chromium	50	--	10	10	<10	<10	<10	<10	<10	<10	<10	--	--	--	--
Cobalt	50	--	156	--	144	103	88.3	94	75.3	57.6	53.6	--	--	--	--
Copper	1,000	--	789	--	62.9	56.7	68.3	150	33.4	58.9	26.8	--	--	--	--
Iron	1,000	--	12,400	--	10,200	31,800	21,700	17,700	8,160	9,930	5,380	160	120	380	240
Lead	50	--	40.1	3	16.5	51	14	51.2	14	19.5	12.8	--	--	--	--
Magnesium	NE	--	88,100	--	111,000	95,300	108,000	113,000	101,000	100,000	105,000	--	--	--	--
Manganese	200	--	6,880	--	8,780	5,800	6,590	7,190	6,400	5,970	5,030	2,500	3,300	3,300	1,800
Mercury	2	--	3.5	0.3	0.26	0.21	0.42	<0.20	--	0.68	0.31	--	--	--	--
Molybdenum	1,000	--	10	--	<10	<10	<10	<10	<10	<10	<10	--	--	--	--
Nickel	200	--	251	--	260	182	268	229	199	203	238	--	--	--	--
Potassium	NE	--	9,390	--	9,620	8,770	10,100	13,100	8,130	7,860	6,750	--	--	--	--
Selenium	50	--	5	5	5.8	<5.0	<5.0	<5.0	<5.0	7.6	<5.0	--	--	--	--
Silver	50	--	10	10	<10	<10	<10	<10	<10	<10	<10	--	--	--	--
Sodium	NE	--	802,000	--	1,190,000	1,050,000	910,000	1,020,000	1,020,000	1,050,000	1,130,000	--	--	--	--
Zinc	10,000	--	1,550	--	159	200	110	50	<20	28.7	<20	--	--	--	--
Inorganics (mg/L)															
Alkalinity	NE	874	446	888	650	870	820	916	428	856	34	--	--	--	--
Chloride	250	234	303	453	321	385	303	16.9	373	345	1240	280	--	--	--
Nitrate+Nitrite	10	--	4	10	0.5	0.2	2.1	0.39	0.64	0.54	0.14	10	5	10	2
Sulfate	600	1,790	2,090	2,000	2,010	2,250	2,000	2,150	2,230	2,150	2,140	17,000	16,000	16,000	--
TDS	1,000	4,060	4,540	4,410	4,330	3,840	4,460	4,120	4,820	4,810	4,210	--	--	--	--

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TABLE 3

**SUMMARY OF HISTORICAL GROUNDWATER METALS AND INORGANICS
EL PASO CORPORATION - SAN JUAN RIVER PLANT SITE**

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Parameter	NMWQCC Standard	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-5	MW-6	MW-6	MW-6
		12/21/2000	3/27/2001	6/27/2001	9/25/2001	8/15/2002	8/21/2002	8/26/2003	8/27/2004	8/24/2005	8/10/2006	8/23/2007	9/25/2001	8/15/2002	8/21/2002
Metals (µg/L)															
Aluminum	5,000	--	--	--	458,000	2,700	--	12,500	--	1,190	3,340	16,900	22,000	13,600	--
Arsenic	100	--	--	--	ND	10.6	--	8.9	5	<5.0	<5.0	<5.0	ND	7.8	--
Barium	1,000	--	--	--	160	17.5	--	200	200	<200	<200	<200	15	13.9	--
Cadmium	10	--	--	--	ND	0.46	--	4	4	<4.0	4	4.8	12	10.9	--
Calcium	NE	--	--	--	400,000	361,000	--	348,000	--	418,000	338,000	342,000	400,000	388,000	--
Chromium	50	--	--	--	22	5	--	10	10	<10	<10	<10	ND	30.3	--
Cobalt	50	--	--	--	35	12.7	--	50	--	<50	50.5	63.7	260	202	--
Copper	1,000	--	--	--	59	14	--	50.2	--	<25	<25	30	46	43.4	--
Iron	1,000	590	3,300	460	63,000	3,380	--	11,800	--	3,180	1,990	12,100	2,900	986	--
Lead	50	--	--	--	150	4.8	--	6.1	3	13.4	9.6	20.5	250	5	--
Magnesium	NE	--	--	--	220,000	168,000	--	200,000	--	245,000	203,000	232,000	420,000	316,000	--
Manganese	200	26	4,200	3,800	3,900	3,260	--	5,870	--	8,650	7,640	8,040	9,600	6,550	--
Mercury	2	--	--	--	--	0.077	--	0.2	0.2	<0.20	<0.20	<0.20	--	0.095	--
Molybdenum	1,000	--	--	--	ND	5	--	10	--	<10	<10	<10	ND	5	--
Nickel	200	--	--	--	59	49.3	--	75.5	--	153	180	183	320	272	--
Potassium	NE	--	--	--	24,000	30,900	--	32,000	--	42,800	44,400	46,400	22,000	29,100	--
Selenium	50	--	--	--	ND	3.2	--	5	7.5	7.3	<5.0	<5.0	300	304	--
Silver	50	--	--	--	ND	2.6	--	10	10	<10	<10	<10	ND	4	--
Sodium	NE	--	--	--	6,300,000	5,980,000	--	4,390,000	--	6,050,000	4,640,000	4,410,000	4,000,000	4,080,000	--
Zinc	10,000	--	--	--	190	49	--	109	--	168	259	304	790	612	--
Inorganics (mg/L)															
Alkalinity	NE	--	--	340	--	--	459	358	393	125	109	35	--	--	145
Chloride	250	--	--	380	290	--	331	488	773	1,150	1,140	1,730	1,300	--	1,040
Nitrate+Nitrite	10	1	5	--	--	--	--	20	20	0.2	0.1	2.6	ND	--	--
Sulfate	600	14,000	16,000	18,000	14,000	--	14,400	14,200	14,500	11,700	10,500	11,400	10,000	--	8,300
TDS	1,000	--	--	19,500	20,300	--	20,300	19,900	21,400	21,700	11,700	18,600	16,500	--	14,900

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TABLE 3

**SUMMARY OF HISTORICAL GROUNDWATER METALS AND INORGANICS
EL PASO CORPORATION - SAN JUAN RIVER PLANT SITE**

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Parameter	NMWQCC Standard	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6	MW-6	MW-7	MW-7	MW-7	MW-7	MW-7
		8/26/2003	8/27/2004	8/24/2005	8/10/2006	8/23/2007	8/27/2008	8/28/2009	8/26/2010	8/31/2011	9/25/2001	8/15/2002	8/21/2002	8/26/2003	8/27/2004
Metals (µg/L)															
Aluminum	5,000	24,500	—	14,500	6,450	12,600	—	16,800	19,200	16,300	14,000	3,210	—	35,600	—
Arsenic	100	5	5	<5.0	<5.0	<5.0	—	<5.0	<5.0	<5.0	ND	7.2	—	14.4	8.9
Barium	1,000	200	200	<200	<200	<200	—	<200	<200	<200	85	44.1	—	302	265
Cadmium	10	13.3	10.2	11.4	6.8	8.1	—	9.5	11.4	13.1	ND	1.3	—	4	4
Calcium	NE	343,000	—	447,000	389,000	325,000	—	359,000	331,000	350,000	450,000	416,000	—	397,000	—
Chromium	50	10	10	<10	<10	<10	—	<10	<10	<10	ND	8.1	—	21.3	18.7
Cobalt	50	236	—	219	123	161	—	176	199	227	29	11.6	—	50	—
Copper	1,000	80.7	—	37.8	<25	38.7	—	38.3	42	47.9	39	23.7	—	92.1	—
Iron	1,000	5,510	—	427	296	3,780	—	3,440	4,600	1,040	14,000	4,240	—	32,700	—
Lead	50	3.9	3	10.3	7.6	11	—	4.4	15.1	18.7	150	5	—	16.8	15.5
Magnesium	NE	360,000	—	376,000	273,000	356,000	—	315,000	326,000	326,000	230,000	173,000	—	229,000	—
Manganese	200	8,630	—	8,250	4,820	5,880	—	6,830	7,200	8,060	8,900	4,570	—	4,850	—
Mercury	2	0.2	0.2	<0.20	<0.20	<0.20	—	—	<0.20	<0.20	—	0.092	—	0.2	0.2
Molybdenum	1,000	10	—	<10	<10	<10	—	<10	<10	<10	ND	2.1	—	10	—
Nickel	200	310	—	275	155	187	—	228	305	333	43	26.7	—	48.3	—
Potassium	NE	29,400	—	37,600	34,200	39,400	—	34,800	27,600	21,100	15,000	26,800	—	25,100	—
Selenium	50	247	331	618	995	893	—	381	335	351	ND	11.4	—	14.1	9.8
Silver	50	10	10	<10	<10	<10	—	<10	<10	<10	ND	3.4	—	10	10
Sodium	NE	3,830,000	—	4,370,000	3,400,000	3,370,000	—	3,470,000	3,620,000	3,860,000	4,800,000	4,810,000	—	4,490,000	—
Zinc	10,000	729	—	764	527	594	—	592	692	772	140	68	—	199	—
Inorganics (mg/L)															
Alkalinity	NE	12	11	25	54	30	17	6	<5.0	12	—	—	900	995	1040
Chloride	250	1,410	1,340	1,150	1,320	1,830	1,150	1,290	1,180	1,190	460	—	367	369	694
Nitrate+Nitrite	10	70.3	88.3	176	314	258	140	97.8	87	92.2	ND	—	—	20	24
Sulfate	600	10,300	9,320	8,490	8,400	8,930	3,780	4,140	9,180	8,970	11,000	—	11,000	11,900	10,800
TDS	1,000	17,100	16,600	17,700	11,600	15,500	16,300	16,000	14,900	15,600	16,500	—	17,500	17,600	16,000

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TABLE 3

**SUMMARY OF HISTORICAL GROUNDWATER METALS AND INORGANICS
EL PASO CORPORATION - SAN JUAN RIVER PLANT SITE**

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Parameter	NMQCC Standard	MW-7 8/24/2005	MW-7 8/10/2006	MW-8 11/30/1999	MW-8 4/10/2000	MW-8 6/29/2000	MW-8 9/29/2000	MW-8 12/21/2000	MW-8 3/27/2001	MW-8 6/27/2001	MW-8 9/25/2001	MW-8 10/29/2001	MW-8 8/15/2002	MW-8 8/21/2002	MW-8 8/26/2003
Metals (µg/L)															
Aluminum	5,000	600	801	--	--	--	--	--	--	--	240	--	508	--	1,620
Arsenic	100	<5.0	<5.0	--	--	--	--	--	--	--	ND	--	23.8	--	8
Barium	1,000	<200	<200	--	--	--	--	--	--	--	19	--	29	--	200
Cadmium	10	<4.0	<4.0	--	--	--	--	--	--	--	ND	--	2	--	4
Calcium	NE	462,000	421,000	--	--	--	--	--	--	--	370,000	310,000	67,200	--	354,000
Chromium	50	<10	<10	--	--	--	--	--	--	--	ND	--	1080	--	10
Cobalt	50	<50	<50	--	--	--	--	--	--	--	ND	--	7	--	50
Copper	1,000	25.6	<25	--	--	--	--	--	--	--	ND	--	14	--	41.4
Iron	1,000	226	295	160	1,800	320	320	160	1,100	1,100	2,500	870	6,890	--	2,390
Lead	50	9	8.9	--	--	--	--	--	--	--	250	--	5	--	3
Magnesium	NE	238,000	231,000	--	--	--	--	--	--	--	370,000	280,000	465,000	--	370,000
Manganese	200	5,340	4,580	4,300	2,400	3,600	1,600	11	1,000	2,900	520	7,500	162	--	1,460
Mercury	2	<0.20	<0.20	--	--	--	--	--	--	--	--	--	0.07	--	0.2
Molybdenum	1,000	<10	<10	--	--	--	--	--	--	--	ND	--	56.8	--	10
Nickel	200	<40	<40	--	--	--	--	--	--	--	ND	--	251	--	40
Potassium	NE	27,700	31,000	--	--	--	--	--	--	--	20,000	36,000	62,900	--	45,400
Selenium	50	18.1	47.7	--	--	--	--	--	--	--	ND	--	2.2	--	5
Silver	50	<10	<10	--	--	--	--	--	--	--	ND	--	10	--	10
Sodium	NE	5,540,000	4,970,000	--	--	--	--	--	--	--	6,200,000	4,500,000	4,720,000	--	4,390,000
Zinc	10,000	79.1	88.9	--	--	--	--	--	--	--	ND	--	14.5	--	74.8
Inorganics (mg/L)															
Alkalinity	NE	925	1140	--	--	--	--	--	--	4200	--	24	--	4420	5030
Chloride	250	307	344	--	--	--	--	--	--	440	610	780	--	318	726
Nitrate+Nitrite	10	22	33	10	5	5	2	1	5	10	ND	0.2	--	--	20
Sulfate	600	11,000	14,200	5,200	5,000	7,500	8,500	12,000	6,300	6,200	9,600	10	--	5,450	8,260
TDS	1,000	19,900	16,500	--	--	--	--	--	--	13,800	18,000	17,000	--	13,200	17,900

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TABLE 3

**SUMMARY OF HISTORICAL GROUNDWATER METALS AND INORGANICS
EL PASO CORPORATION - SAN JUAN RIVER PLANT SITE**

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Parameter	NMWQCC Standard	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-8	MW-9	MW-9	MW-9	MW-9	MW-9	MW-9	MW-9
		8/27/2004	8/24/2005	8/10/2006	8/23/2007	8/27/2008	8/28/2009	8/26/2010	11/30/1999	4/10/2000	6/29/2000	9/29/2000	12/21/2000	3/27/2001	6/27/2001
Metals (µg/L)															
Aluminum	5,000	--	634	219	1,300	3,260	5,340	5,210	--	--	--	--	--	--	--
Arsenic	100	20.7	6.2	7.4	<5.0	5.5	12.2	30	--	--	--	--	--	--	--
Barium	1,000	200	<200	<200	<200	<200	<200	<200	--	--	--	--	--	--	--
Cadmium	10	4	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	--	--	--	--	--	--	--
Calcium	NE	--	155,000	91,600	69,500	101,000	34,300	36,200	--	--	--	--	--	--	--
Chromium	50	10	<10	<10	<10	<10	13	18	--	--	--	--	--	--	--
Cobalt	50	--	<50	<50	<50	<50	<50	<50	--	--	--	--	--	--	--
Copper	1,000	--	<25	<25	<25	<25	<25	<25	--	--	--	--	--	--	--
Iron	1,000	--	831	<100	855	1,970	3,070	1,830	2,200	2,700	850	1,200	--	1,400	3,700
Lead	50	7.4	6.9	5.1	4.8	4.3	3.9	8.7	--	--	--	--	--	--	--
Magnesium	NE	--	274,000	216,000	288,000	264,000	373,000	1,010,000	--	--	--	--	--	--	--
Manganese	200	--	1,230	1,040	590	557	869	367	8,800	9,200	8,500	8,400	110	9,000	9,300
Mercury	2	0.2	<0.20	<0.20	<0.20	<0.20	--	<0.20	--	--	--	--	--	--	--
Molybdenum	1,000	--	29.3	16	16.5	<10	32.1	33.3	--	--	--	--	--	--	--
Nickel	200	--	<40	<40	<40	<40	<40	<200	--	--	--	--	--	--	--
Potassium	NE	--	75,600	73,000	87,400	89,000	85,600	226,000	--	--	--	--	--	--	--
Selenium	50	6.2	<5.0	<5.0	<5.0	<5.0	<5.0	7.5	--	--	--	--	--	--	--
Silver	50	10	<10	<10	<10	<10	<10	<10	--	--	--	--	--	--	--
Sodium	NE	--	2,610,000	2,210,000	2,220,000	2,790,000	2,850,000	2,800,000	--	--	--	--	--	--	--
Zinc	10,000	--	42.1	52.6	132	20.7	23.4	<100	--	--	--	--	--	--	--
Inorganics (mg/L)															
Alkalinity	NE	4920	1880	2150	2580	3380	3860	9250	--	--	--	--	--	--	ND
Chloride	250	806	261	147	165	4	<1.0	<1.0	--	--	--	--	--	--	770
Nitrate+Nitrite	10	20	0.7	0.7	0.6	0.36	1.2	3	10	5	5	2	1	5	10
Sulfate	600	7,760	4,920	4,160	3,980	3,590	4,050	2,150	14,000	12,000	11,000	11,000	3,800	11,000	13,000
TDS	1,000	17,000	11,000	7,820	8,200	9,420	10,700	12,000	--	--	--	--	--	--	16,600

NE = Not established

Bold = Parameter concentration exceeds the applicable New Mexico Water Quality Control Commission Groundwater Standard

TABLE 3

**SUMMARY OF HISTORICAL GROUNDWATER METALS AND INORGANICS
EL PASO CORPORATION - SAN JUAN RIVER PLANT SITE**

Page 7 of 7

Parameter	NMWQCC Standard	MW-9 9/25/2001	MW-9 10/29/2001	MW-9 8/15/2002	MW-9 8/21/2009	MW-9 8/26/2003	MW-9 8/27/2004	MW-9 8/24/2005	MW-9 8/10/2006	MW-9 8/23/2007	MW-9 8/27/2008	MW-9 8/28/2009	MW-9 8/26/2010	MW-9 11/9/2010	MW-9 8/31/2011
Metals (µg/L)															
Aluminum	5,000	7,000	--	8,900	--	43,900	--	13,600	9,770	16,300	14,500	14,700	11,100	--	14,000
Arsenic	100	ND	--	8.8	--	6.1	5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--	<5.0
Barium	1,000	8.8	--	11.9	--	200	200	<200	<200	<200	<200	<200	<200	--	<200
Cadmium	10	ND	--	8.4	--	9.4	8.1	8.9	8.2	<4.0	8.5	6.3	6.1	--	8.2
Calcium	NE	340,000	310,000	358,000	--	319,000	--	385,000	346,000	108,000	361,000	314,000	300,000	--	318,000
Chromium	50	ND	--	7.8	--	16.9	10.4	<10	<10	<10	<10	<10	<10	--	<10
Cobalt	50	180	--	183	--	200	--	212	193	205	197	228	235	--	187
Copper	1,000	31	--	51.2	--	162	--	59	45.8	121	62.9	43	33.5	--	68.2
Iron	1,000	3,300	130	849	--	29,000	--	4,390	1,480	6,330	3,660	8,930	7,400	--	7,830
Lead	50	200	--	5	--	13.5	7	11.1	8.7	8.4	5.1	6.5	14	--	23.9
Magnesium	NE	310,000	270,000	258,000	--	270,000	--	282,000	244,000	289,000	276,000	245,000	244,000	--	217,000
Manganese	200	8,300	540	6,470	--	7,330	--	7,870	7,360	6,420	7,770	8,300	7,900	--	6,790
Mercury	2	--	--	0.13	--	0.2	0.2	<0.20	<0.20	<0.20	<0.20	--	<0.20	--	<0.20
Molybdenum	1,000	ND	--	5	--	10	--	<10	<10	<10	<10	<10	<10	--	<10
Nickel	200	300	--	295	--	335	--	335	307	318	316	336	391	--	328
Potassium	NE	12,000	43,000	25,600	--	23,000	--	25,900	23,800	23,700	28,000	24,600	19,100	--	13,100
Selenium	50	ND	--	6.7	--	5	6.5	6.8	<5.0	<5.0	<5.0	<5.0	9.7	--	<5.0
Silver	50	ND	--	2.9	--	10	10	<10	<10	<10	<10	<10	<10	--	<10
Sodium	NE	3,900,000	4,800,000	4,490,000	--	3,980,000	--	4,650,000	3,720,000	3,590,000	3,760,000	3,930,000	4,080,000	--	4,080,000
Zinc	10,000	530	--	14.5	--	597	--	693	624	732	650	604	608	--	751
Inorganics (mg/L)															
Alkalinity	NE	--	4000	--	<4	13	24.5	19	22	25	18	30	34	--	28
Chloride	250	2,200	530	--	673	752	969	782	674	775	606	1,440	580	--	576
Nitrate+Nitrite	10	ND	0.23	--	--	20	20	<0.050	<0.050	0.4	<0.10	<0.10	<0.10	--	<0.10
Sulfate	600	12,000	2,200	--	11,600	11,800	12,000	10,200	10,700	10,900	4,630	4,030	10,300	--	8,440
TDS	1,000	17,000	16,000	--	17,200	16,800	17,400	18,400	11,000	16,500	16,200	17,700	15,800	--	15,800

NE = Not established

Bold = Parameter concentration exceeds the applicable New Mexico Water Quality Control Commission Groundwater Standard

APPENDIX A



MWH



COMPLIANCE / ENGINEERING / REMEDIATION

LT Environmental Inc.

2243 Main Avenue, Suite 3
Durango, Colorado 81301
T 970-385-1096
F 970.385.1873

Site Visit Memo

To: Jed Smith
From: Ashley Ager
CC: File
Date: January 31, 2011
Re: San Juan River Plant

09:13: pull ORC socks from MW-8. Socks are gray in color and hard. Too little water in well to measure DO. Probe would not submerge. Removed water with bailer, but still could not recover enough water volume.



COMPLIANCE / ENGINEERING / REMEDIATION

LT Environmental Inc.
2243 Main Ave, Ste 3
Durango, Colorado 81301
T 970.385.1096

WATER LEVEL DATA

Project Name: San Juan Basin Groundwater

Date: 2/7/2011

Project Manager: Ashley Ager

Client: MWH

Site Name: San Juan River Plant

Well	Time	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Volume Removed	Comments
MW-4	12:52 PM	-	15.13	-	-	
MW-6		-	31.29	-	-	
MW-8		-	22.12	-	-	Not enough water in well to sample - 0.07' volume in well
MW-9		-	15.28	-	-	Sample BTEX
W-2		-	53.42	-	-	

Comments

Signature: Ashley Ager

Date: 2/7/2011



COMPLIANCE / ENGINEERING / REMEDIATION

LT Environmental Inc.

2243 Main Avenue, Suite 3
Durango, Colorado 81301
T 970-385-1096
F 970.385.1873

Site Visit Memo

To: Jed Smith
From: Ashley Ager
CC: File
Date: May 2, 2011
Re: San Juan River Plant

15:45 - pull ORC socks from MW-8. Socks are blackish gray and hard. Too little water in well to measure DO. Probe would not submerge. DTW = 22.14' TD = 22.20'



COMPLIANCE / ENGINEERING / REMEDIATION

LT Environmental Inc.
2243 Main Ave, Ste 3
Durango, Colorado 81301
T 970.385.1096

WATER LEVEL DATA

Project Name: San Juan Basin Groundwater

Date: 5/16/2011

Project Manager: Ashley Ager

Client: MWH

Site Name: San Juan River Plant

Well	Time	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Volume Removed	Comments
MW-4	8:21 AM	-	51.63	-	-	
MW-6		-	31.45	-	-	
MW-8		-	22.13	-	-	Not enough water in well to sample - 0.08' of water in well
MW-9		-	14.75	-	-	Sample BTEX
W-2		-	54.16	-	-	

Comments

Signature: Ashley L. Ager

Date: 5/16/2011



WELL DEVELOPMENT AND SAMPLING LOG

Project Name: <u>San Juan Basin</u>	Location: <u>San Juan River Plant</u>	Well No: <u>MW-9</u>
Client: <u>MWH</u>	Date: <u>5/16/2011</u>	Time: <u>8:38</u>
Project Manager: <u>Ashley Ager</u>	Sampler's Name: <u>Troy Urban</u>	

Measuring Point: <u>TOC</u>	Depth to Water: <u>14.75</u> ft	Depth to Product: _____ ft
Well Diameter: <u>4"</u>	Total Depth: <u>22.2</u> ft	Product Thickness: _____ ft
Water Column Height: <u>7.45</u> 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 _____

Water Volume in Well			
Gal/ft x ft of water	Gallons	Ounces	Volume to be removed
7.45 x .65	4.84 x 3		14.52 gal

Time (military)	pH (su)	EC (ms)	Temp (°F)	ORP (millivolts)	D.O. (%)	Turbidity (NTU)	Vol Evac. gal	Comments/Flow Rate
8:43	4.26	12.54	57.2				1.25	yellow tint
	4.34	12.38	57.6				2.5	yellow tint
	4.27	12.53	57.2				3.75	yellow tint
	4.30	12.65	57.6				5	yellow tint
	4.88	12.88	28.3				10	yellow tint bailing down
	4.77	12.54	58.3				11.75	yellow tint, bailed dry
Final:								
9:10	4.70	12.60	58.10				12	yellow tint, bailed dry

COMMENTS: Well bailed dry during sampling.

Instrumentation: ☒ pH Meter ☐ DO Monitor ☒ Conductivity Meter ☒ Temperature Meter ☐ Other _____

Water Disposal: Rio Vista

Sample ID: MW-9

Sample Time: 8:59

Analysis Requested: ☒ BTEX ☐ VOCs ☐ Alkalinity ☐ TDS ☐ Cations ☐ Anions ☐ Nitrate ☐ Nitrite ☐ Metals
☐ Other _____

Trip Blank: 160511TB01

Duplicate Sample: _____



WELL DEVELOPMENT AND SAMPLING LOG

Project Name: <u>San Juan Basin</u>	Location: <u>San Juan River Plant</u>	Well No: <u>MW-4</u>
Client: <u>MWH</u>	Date: <u>8/31/2011</u>	Time: <u>15:04</u>
Project Manager: <u>Ashley Ager</u>	Sampler's Name: <u>Troy Urban</u>	

Measuring Point: <u>TOC</u>	Depth to Water: <u>51.63</u> ft	Depth to Product: _____ ft
Well Diameter: <u>2"</u>	Total Depth: <u>56.91</u> ft	Product Thickness: _____ ft
	Water Column Height: <u>5.28</u> 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 _____

Water Volume in Well			
Gal/ft x ft of water	Gallons	Ounces	Volume to be removed
5.28 x .16	0.8 x 3		2.53 gal

Time (military)	pH (su)	EC (ms)	Temp (°F)	ORP (millivolts)	D.O. (%)	Turbidity (NTU)	Vol Evac. gal	Comments/Flow Rate
15:07	6.77	4.00	63.3				0.25	light tan
	6.76	4.28	63.1				0.5	light gray
	6.77	4.37	62.6				0.75	light gray
	6.76	4.23	63.1				1	dark gray, balling down
	6.79	4.51	64.4				1.25	dark gray, dry
Final:								
15:35	6.85	4.68	64.2				1.4	dark gray

COMMENTS:

Instrumentation: ☒ pH Meter ☐ DO Monitor ☒ Conductivity Meter ☒ Temperature Meter ☐ Other _____

Water Disposal: Rio Vista

Sample ID: MW-4

Sample Time: 15:27

Analysis Requested: ☒ BTEX ☐ VOCs ☒ Alkalinity ☒ TDS ☒ Cations ☒ Anions ☒ Nitrate ☒ Nitrite ☒ Metals
☐ Other _____

Trip Blank: 083111TB01

Duplicate Sample: _____



WELL DEVELOPMENT AND SAMPLING LOG

Project Name: <u>San Juan Basin</u>	Location: <u>San Juan River Plant</u>	Well No: <u>MW-6</u>
Client: <u>MWH</u>	Date: <u>8/31/2011</u>	Time: <u>11:47</u>
Project Manager: <u>Ashley Ager</u>	Sampler's Name: <u>Troy Urban</u>	

Measuring Point: <u>TOC</u>	Depth to Water: <u>31.47</u> ft	Depth to Product: _____ ft
Well Diameter: <u>4"</u>	Total Depth: <u>42.13</u> ft	Product Thickness: _____ ft
Water Column Height: <u>10.66</u> 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 _____

Water Volume in Well			
Gal/ft x ft of water	Gallons	Ounces	Volume to be removed
10.66 x .65	6.93 x 3		20.78 gal

Time (military)	pH (su)	EC (ms)	Temp (°F)	ORP (millivolts)	D.O. (%)	Turbidity (NTU)	Vol Evac. gal	Comments/Flow Rate
12:00	5.72	11.70	65.8				1	clear
	6.24	11.88	64.8				2	light gray
	5.86	11.92	64.0				3	light tan
	5.25	12.21	63.9				5	light tan
	4.81	12.35	64.2				10	bailing down, yellow
	4.63	12.23	65.8				15	bailing down, yellow
	4.47	12.22	64.8				19.3	bailing down, yellow
	4.72	12.16	64.2				20.1	bailing down, yellow
	4.81	12.24	63.9				20.9	bailing down, yellow
Final:								
12:35	4.81	12.24	63.9				20.9	bailing down, yellow

COMMENTS:

Instrumentation: ☒ pH Meter ☐ DO Monitor ☒ Conductivity Meter ☒ Temperature Meter ☐ Other _____

Water Disposal: Rio Vista

Sample ID: MW-6

Sample Time: 12:37

Analysis Requested: ☒ BTEX ☐ VOCs ☒ Alkalinity ☒ TDS ☒ Cations ☒ Anions ☒ Nitrate ☒ Nitrite ☒ Metals
☐ Other _____

Trip Blank: 083111TB01

Duplicate Sample: _____



WELL DEVELOPMENT AND SAMPLING LOG

Project Name: <u>San Juan Basin</u>	Location: <u>San Juan River Plant</u>	Well No: <u>MW-9</u>
Client: <u>MWH</u>	Date: <u>8/31/2011</u>	Time: <u>12:58</u>
Project Manager: <u>Ashley Ager</u>	Sampler's Name: <u>Troy Urban</u>	

Measuring Point: <u>TOC</u>	Depth to Water: <u>14.46</u> ft	Depth to Product: _____ ft
Well Diameter: <u>4"</u>	Total Depth: <u>22.2</u> ft	Product Thickness: _____ ft
	Water Column Height: <u>7.74</u> 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 _____

Water Volume in Well			
Gal/ft x ft of water	Gallons	Ounces	Volume to be removed
7.76 x .65	5.03 x 3		15.09 gal

Time (military)	pH (su)	EC (ms)	Temp (°F)	ORP (millivolts)	D.O. (%)	Turbidity (NTU)	Vol Evac. gal	Comments/Flow Rate
13:02	4.25	12.11	62.8				1.25	yellow tint
	4.23	12.26	61.3				2	yellow tint
	4.21	12.25	60.3				3	yellow tint
	4.25	12.24	60.4				5.25	yellow tint
	4.82	12.78	60.7				10	tan, bailing down
	4.63	12.77	60.1				11.75	tan, silty, dry
Final:								
13:35	4.60	11.75	60.2				20.9	tan, silty, dry

COMMENTS:

Instrumentation: ☒ pH Meter ☐ DO Monitor ☒ Conductivity Meter ☒ Temperature Meter ☐ Other _____

Water Disposal: Rio Vista

Sample ID: MW-9

Sample Time: 13:23

Analysis Requested: ☒ BTEX ☐ VOCs ☒ Alkalinity ☒ TDS ☒ Cations ☒ Anions ☒ Nitrate ☒ Nitrite ☒ Metals
☐ Other _____

Trip Blank: 083111TB01

Duplicate Sample: _____



WELL DEVELOPMENT AND SAMPLING LOG

Project Name: <u>San Juan Basin</u>	Location: <u>San Juan River Plant</u>	Well No: <u>W-2</u>
Client: <u>MWH</u>	Date: <u>8/31/2011</u>	Time: <u>3:55</u>
Project Manager: <u>Ashley Ager</u>	Sampler's Name: <u>Troy Urban</u>	

Measuring Point: <u>TOC</u>	Depth to Water: <u>53.69</u> ft	Depth to Product: _____ ft
Well Diameter: <u>4"</u>	Total Depth: <u>64.42</u> ft	Product Thickness: _____ ft
Water Column Height: <u>10.73</u> 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 _____

Water Volume in Well			
Gal/ft x ft of water	Gallons	Ounces	Volume to be removed
10.73 x .16	1.7 x 3		5.15 gal

Time (military)	pH (su)	EC (ms)	Temp (°F)	ORP (millivolts)	D.O. (%)	Turbidity (NTU)	Vol Evac. gal	Comments/Flow Rate
14:20	6.91	4.91	63.1				0.25	clear
	7.21	4.76	63.1				0.5	clear
	7.26	4.73	63.0				0.75	tan, silty
	7.28	4.52	63.1				1	tan, silty
	6.92	4.78	63.7				1.75	tan, silty, dry
Final:								
14:40	6.99	4.80	64.20				1.8	tan, silty, dry

COMMENTS:

Instrumentation: ☒ pH Meter ☐ DO Monitor ☒ Conductivity Meter ☒ Temperature Meter ☐ Other _____

Water Disposal: Rio Vista

Sample ID: W-2 Sample Time: 14:33

Analysis Requested: ☒ BTEX ☐ VOCs ☒ Alkalinity ☒ TDS ☒ Cations ☒ Anions ☒ Nitrate ☒ Nitrite ☒ Metals
☐ Other _____

Trip Blank: 083111TB01

Duplicate Sample: _____



COMPLIANCE / ENGINEERING / REMEDIATION

LT Environmental Inc.

2243 Main Avenue, Suite 3
Durango, Colorado 81301
T 970-385-1096
F 970.385.1873

Site Visit Memo

To: Jed Smith
From: Ashley Ager
CC: File
Date: September 1, 2011
Re: San Juan River Plant

08/24/11

09:36 - pull ORC socks from MW-8. Socks are dark gray and hard. Well is dry. NO dissolved oxygen measured.



WATER LEVEL DATA

Project Name: San Juan Basin Groundwater

Date: 8/31/2011

Project Manager: Ashley Ager

Client: MWH

Site Name: San Juan River Plant

Well	Time	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Volume Removed	Comments
MW-4	11:45 AM	-	51.63	-	-	Sample
MW-6		-	31.47	-	-	Sample
MW-8		-	-	-	-	Dry at 22.2
MW-9		-	14.46	-	-	Sample
W-2		-	53.69	-	-	Sample

Comments

Signature: Ashley Ager

Date: 9/1/2011



COMPLIANCE / ENGINEERING / REMEDIATION

L.T. Environmental Inc.
2243 Main Ave, Ste 3
Durango, Colorado 81301
T 970.385.1096

WATER LEVEL DATA

Project Name: San Juan Basin Groundwater

Date: 11/8/2011

Project Manager: Ashley Ager

Client: MWH

Site Name: San Juan River Plant

Well	Time	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Volume Removed	Comments
MW-4	10:40 AM	-	51.55	-	-	
MW-6		-	31.45	-	-	
MW-8		-	22.17	-	-	ORC sock pulled on 11/1/2011 - replaced socks on 11/8/11
MW-9		-	14.45	-	-	Sample
W-2		-	54.31	-	-	

Comments

Not enough water to measure D.O. in MW-8 on 11/1/2011; not enough water to sample on 11/8/2011.

Signature: Ashley L. Ager

Date: 11/9/2011



WELL DEVELOPMENT AND SAMPLING LOG

Project Name: San Juan Basin Location: San Juan River Plant Well No: MW-9
Client: MWH Date: 11/8/2011 Time: 11:10
Project Manager: Ashley Ager Sampler's Name: Troy Urban

Measuring Point: TOC Depth to Water: 14.45 ft Depth to Product: _____ ft
Well Diameter: 4" Total Depth: 21.92 ft Product Thickness: _____ ft
Water Column Height: 7.47 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
7.47 x .65	4.85 x 3		14.56 gal

Time (military)	pH (su)	EC (ms)	Temp (°F)	ORP (millivolts)	D.O. (%)	Turbidity (NTU)	Vol Evac. gal	Comments/Flow Rate
11:10	4.45	7.35	60.6				1.25	yellow tint
	4.45	7.37	60.8				2.5	yellow tint
	4.44	7.47	59.7				3.75	tan silty
	4.43	7.40	59.7				5	tan silty
	4.88	7.51	59.0				10	bailing down, tan silty
	4.79	7.34	58.5				12.3	bailed dry, tan, silty
Final: 11:40	4.82	7.45	58.7				12.5	bailed dry, tan silty

COMMENTS: Well bailed dry during sampling.

Instrumentation: ☒ pH Meter ☐ DO Monitor ☒ Conductivity Meter ☒ Temperature Meter ☐ Other _____

Water Disposal: Rio Vista

Sample ID: MW-9 Sample Time: 11:34

Analysis Requested: ☒ BTEX ☐ VOCs ☐ Alkalinity ☐ TDS ☐ Cations ☐ Anions ☐ Nitrate ☐ Nitrite ☐ Metals
☐ Other _____

Trip Blank: 081111TB01

Duplicate Sample: NA



COMPLIANCE / ENGINEERING / REMEDIATION

LT Environmental Inc.

2243 Main Avenue, Suite 3
Durango, Colorado 81301
T 970-385-1096
F 970.385.1873

Site Visit Memo

To: Jed Smith
From: Ashley Ager
CC: File
Date: November 2, 2011
Re: San Juan River Plant

11/01/11

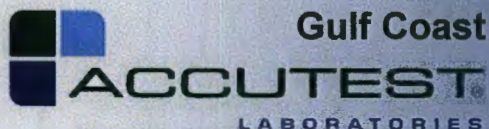
11:03 - pull ORC socks from MW-8. Too little water to measure dissolved oxygen levels.
DTW = 22.18'; TD = 22.20'

New water line has been installed blocking truck access to MW-8, now foot access only.

APPENDIX B



MWH



Gulf Coast

03/30/12

Technical Report for

MWH Americas, Inc.

San Juan Basin River Plant Sites Project (SJRP)

2011

Accutest Job Number: T68596

Sampling Date: 02/07/11

Report to:

MWH Americas, Inc

Sarah.Gardner@us.mwhglobal.com

ATTN: Jed Smith

Total number of pages in report: 14



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 (T104704220-12-6) AR (11-028-0) AZ (AZ0769) FL (E87628) KS (E-10366)
LA (85695/04004) OK (211-035)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.
Test results relate only to samples analyzed.

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Accutest Laboratories



Sample Summary

MWH Americas, Inc.

Job No: T68596

San Juan Basin River Plant Sites Project (SJRP)

Project No: 2011

Sample Number	Collected Date	Time By	Received	Matrix Code Type	Client Sample ID
T68596-1	02/07/11	12:40	02/08/11	AQ Ground Water	SJRP MW-9



SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: MWH Americas, Inc.

Job No T68596

Site: San Juan Basin River Plant Sites Project (SJRP)

Report Date 2/11/2011 2:24:41 PM

1 Sample(s) were collected on 02/07/2011 and were received at Accutest on 02/08/2011 properly preserved, at 3.9 Deg. C and intact. These Samples received an Accutest job number of T68596. 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:	VF4147
--------	----	-----------	--------

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T68091-4MS, T68091-4MSD were used as the QC samples indicated.
- Matrix Spike Recovery(s) for m,p-Xylene, Xylene (total) are outside control limits. Probable cause due to matrix interference.
- Matrix Spike Duplicate Recovery(s) for m,p-Xylene, Xylene (total) are outside control limits. Probable cause due to matrix interference.
- Matrix Spike Recovery(s) for Benzene are outside control limits. Outside control limits due to high level in sample relative to spike amount.

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 Quality Objectives 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

Sample ID	Parameter	Result	Unit	Method
101-101	Asbestos	0.00	mg/l	761-1
101-102	Asbestos	0.00	mg/l	761-1
101-103	Asbestos	0.00	mg/l	761-1
101-104	Asbestos	0.00	mg/l	761-1
101-105	Asbestos	0.00	mg/l	761-1
101-106	Asbestos	0.00	mg/l	761-1
101-107	Asbestos	0.00	mg/l	761-1
101-108	Asbestos	0.00	mg/l	761-1
101-109	Asbestos	0.00	mg/l	761-1
101-110	Asbestos	0.00	mg/l	761-1
101-111	Asbestos	0.00	mg/l	761-1
101-112	Asbestos	0.00	mg/l	761-1
101-113	Asbestos	0.00	mg/l	761-1
101-114	Asbestos	0.00	mg/l	761-1
101-115	Asbestos	0.00	mg/l	761-1
101-116	Asbestos	0.00	mg/l	761-1
101-117	Asbestos	0.00	mg/l	761-1
101-118	Asbestos	0.00	mg/l	761-1
101-119	Asbestos	0.00	mg/l	761-1
101-120	Asbestos	0.00	mg/l	761-1

Report of Analysis

Client Sample ID:	SJRP MW-9	Date Sampled:	02/07/11
Lab Sample ID:	T68596-1	Date Received:	02/08/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	San Juan Basin River Plant Sites Project (SJRP)		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	F031956.D	1	02/09/11	AK	n/a	n/a	VF4147
Run #2							

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

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	90.1	2.0	0.50	ug/l	
108-88-3	Toluene	ND	2.0	0.43	ug/l	
100-41-4	Ethylbenzene	22.5	2.0	0.55	ug/l	
1330-20-7	Xylene (total)	10.2	6.0	1.7	ug/l	
95-47-6	o-Xylene	ND	2.0	0.53	ug/l	
	m,p-Xylene	10.2	4.0	1.1	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	86%		79-122%
17060-07-0	1,2-Dichloroethane-D4	80%		75-121%
2037-26-5	Toluene-D8	102%		87-119%
460-00-4	4-Bromofluorobenzene	92%		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

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

Page 2 of 2

Client / Reporting Information		Project Information		Requested Analysis		Matrix Codes	
Company Name MWH		Project Name / No. San Juan River Plant 2011					
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 State Zip Denver CO 80202		City State Zip Houston TX 77002					
Phone No. 303-291-2276		Phone No.					
Samplers' Name Troy Urban		Client Purchase Order #					
Accutest Sample #		Collection		Number of preserved bottles			
Field ID / Point of Collection		Date	Time	Matrix	# of bottles	ID	NOH
SJR P MW-9		020711	1240 GW	3 X			
SJR P MW-8		020711	GW				
Turnaround Time (Business days)		Data Deliverable Information		Comments / Remarks			
☒ 10 Day STANDARD ☐ 7 Day ☐ 4 Day RUSH ☐ 3 Day EMERGENCY ☐ 2 Day EMERGENCY ☐ 1 Day EMERGENCY ☐ Other _____		☐ Commercial "A" ☒ Commercial "B" ☐ Reduced Tier 1 ☐ Full Data Package Commercial "A" = Results Only Commercial "B" = Results & Standard GC		If samples are received unpreserved, please notify MWH regarding holding time!!! _____ _____ _____			
Real time analytical data available via Lablink							
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY							
Relinquished by:		Date Time:	Received By:	Relinquished by:		Date Time:	Received By:
Troy Urban		1402 2/3/11	1	Felix P		2:11 925	[Signature]
Relinquished by:		Date Time:	Received By:	Relinquished by:		Date Time:	Received By:
			3				4
Relinquished by:		Date Time:	Received By:	Custody Seal #		Preserved where applicable	Cooler Temp.
			5			☐	83 gpc

T68596: Chain of Custody
Page 1 of 3

SAMPLE INSPECTION FORM

Accutest Job Number: T68596 Client: MW14 Date/Time Received: 2-8-11 925

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

Cooler Temperatures (Initial/adjusted): #1: 4.4°/3.9°C #2: _____ #3: _____ #4: _____ #5: _____

#6: _____ #7: _____ #8: _____ #9: _____ #10: _____ #11: _____ #12: _____

Method of Delivery: FEDEX UPS Delivery Other

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: [Signature] 2-8-11

INFORMATION AND SAMPLE LABELING VERIFIED BY: [Signature] ORA 2/8/11

CORRECTIVE ACTIONS

Client Representative Notified: _____ Date: _____

By Accutest Representative: _____ Via: Phone Email

Client Instructions: _____

1:\mwalker\forms\samplemanagement SM023 Revised 8/11/10

T68596: Chain of Custody
Page 2 of 3

SAMPLE RECEIPT LOG

JOB #: T68596 DATE/TIME RECEIVED: 2-8-11 925
CLIENT: MWH INITIALS: SC

[illegible]

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

T68596: Chain of Custody
Page 3 of 3



GC/MS Volatiles

5

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Page 1 of 1

Job Number: T68596
Account: MWHCODE MWH Americas, Inc.
Project: San Juan Basin River Plant Sites Project (SJRP)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VF4147-MB	F031943.D	1	02/09/11	AK	n/a	n/a	VF4147

The QC reported here applies to the following samples:

Method: SW846 8260B

T68596-1

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

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	87% 79-122%
17060-07-0	1,2-Dichloroethane-D4	81% 75-121%
2037-26-5	Toluene-D8	101% 87-119%
460-00-4	4-Bromofluorobenzene	90% 80-133%

Blank Spike Summary

Page 1 of 1

Job Number: T68596

Account: MWHCODE MWH Americas, Inc.

Project: San Juan Basin River Plant Sites Project (SJRP)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VF4147-BS	F031941.D	1	02/09/11	AK	n/a	n/a	VF4147

The QC reported here applies to the following samples:

Method: SW846 8260B

T68596-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	25	22.4	90	76-118
100-41-4	Ethylbenzene	25	22.1	88	75-112
108-88-3	Toluene	25	22.8	91	77-114
1330-20-7	Xylene (total)	75	66.0	88	75-111
	m,p-Xylene	50	44.4	89	75-112
95-47-6	o-Xylene	25	21.5	86	74-110

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	85%	79-122%
17060-07-0	1,2-Dichloroethane-D4	78%	75-121%
2037-26-5	Toluene-D8	98%	87-119%
460-00-4	4-Bromofluorobenzene	84%	80-133%

5.2.1
5

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: T68596

Account: MWHCODE MWH Americas, Inc.

Project: San Juan Basin River Plant Sites Project (SJRP)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T68091-4MS	F031946.D	20	02/09/11	AK	n/a	n/a	VF4147
T68091-4MSD	F031947.D	20	02/09/11	AK	n/a	n/a	VF4147
T68091-4	F031945.D	20	02/09/11	AK	n/a	n/a	VF4147

The QC reported here applies to the following samples:

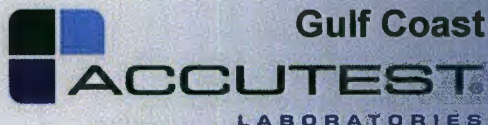
Method: SW846 8260B

T68596-1

CAS No.	Compound	T68091-4 ug/l	Spike Q	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	2300	500	2570	54* a	2510	42* a	2	76-118/16
100-41-4	Ethylbenzene	185	500	612	85	598	83	2	75-112/12
108-88-3	Toluene	40 U	500	448	90	450	90	0	77-114/12
1330-20-7	Xylene (total)	2060	1500	3140	72*	3100	69*	1	75-111/12
	m,p-Xylene	1960	1000	2630	67*	2590	63*	2	75-112/12
95-47-6	o-Xylene	106	500	515	82	505	80	2	74-110/11

CAS No.	Surrogate Recoveries	MS	MSD	T68091-4	Limits
1868-53-7	Dibromofluoromethane	81%	83%	87%	79-122%
17060-07-0	1,2-Dichloroethane-D4	76%	75%	81%	75-121%
2037-26-5	Toluene-D8	94%	98%	102%	87-119%
460-00-4	4-Bromofluorobenzene	84%	85%	89%	80-133%

(a) Outside control limits due to high level in sample relative to spike amount.



03/30/12

Technical Report for

MWH Americas, Inc.

San Juan Basin River Plant Sites Project (SJRP)

Accutest Job Number: T76084

Sampling Date: 05/16/11*

Report to:

MWH Americas, Inc

Sarah.Gardner@us.mwhglobal.com

ATTN: Jed Smith

Total number of pages in report: 21



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 (T104704220-12-6) AR (11-028-0) AZ (AZ0769) FL (E87628) KS (E-10366)
LA (85695/04004) OK (211-035)

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Test results relate only to samples analyzed.

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Accutest Laboratories



Sample Summary

MWH Americas, Inc.

Job No: T76084

San Juan Basin River Plant Sites Project (SJRP)

Sample Number	Collected Date	Time By	Received	Matrix Code Type	Client Sample ID
T76084-1	05/16/11	07:00 TU	05/17/11	AQ Trip Blank Water	160511TB01
T76084-2	05/16/11	08:59 TU	05/17/11	AQ Ground Water	SJRP MW-9



SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: MWH Americas, Inc.

Job No T76084

Site: San Juan Basin River Plant Sites Project (SJRP)

Report Date 6/7/2011 5:52:05 PM

1 Sample(s) and 1 Trip Blank(s) were collected on 05/16/2011 and received at Accutest on 05/17/2011 properly preserved, at 3.5 Deg. C and intact. These Samples received an Accutest job number of T76084. 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: GKK1871
------------------	--------------------------

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T75156-4MS, T75156-4MSD were used as the QC samples indicated.

Matrix AQ	Batch ID: GKK1872
------------------	--------------------------

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- T76084-2: Reported for QC purposes only.

Matrix AQ	Batch ID: GKK1873
------------------	--------------------------

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T76084-2MS, T76084-2MSD were used as the QC samples indicated.
- Matrix Spike Duplicate Recovery(s) for o-Xylene are outside control limits. Probable cause due to matrix interference.
- Matrix Spike Recovery(s) for Benzene are outside control limits. Outside control limits due to high level in sample relative to spike amount.
- T76084-2 for o-Xylene, Xylenes (total): More than 40% RPD for detected concentrations between two GC columns.

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 Quality Objectives 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

Page 1 of 1

Client Sample ID:	160511TB01	Date Sampled:	05/16/11
Lab Sample ID:	T76084-1	Date Received:	05/17/11
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	SW846 8021B		
Project:	San Juan Basin River Plant Sites Project (SJRP)		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	KK039525.D	1	05/18/11	LB	n/a	n/a	GKK1871
Run #2							

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

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.36	ug/l	
108-88-3	Toluene	ND	1.0	0.28	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.25	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	0.93	ug/l	
95-47-6	o-Xylene	ND	1.0	0.36	ug/l	
	m,p-Xylene	ND	2.0	0.57	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	74%		58-125%
98-08-8	aaa-Trifluorotoluene	107%		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:	SJRP MW-9	Date Sampled:	05/16/11
Lab Sample ID:	T76084-2	Date Received:	05/17/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8021B		
Project:	San Juan Basin River Plant Sites Project (SJRP)		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	KK039560.D	1	05/19/11	LB	n/a	n/a	GKK1873
Run #2 ^a	KK039548.D	1	05/19/11	LB	n/a	n/a	GKK1872

Run #	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	99.5	1.0	0.36	ug/l	
108-88-3	Toluene	ND	1.0	0.28	ug/l	
100-41-4	Ethylbenzene	30.7	1.0	0.25	ug/l	
1330-20-7	Xylenes (total) ^b	17.9	3.0	0.93	ug/l	
95-47-6	o-Xylene ^b	1.6	1.0	0.36	ug/l	
	m,p-Xylene	16.3	2.0	0.57	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	83%	72%	58-125%
98-08-8	aaa-Trifluorotoluene	125%	106%	73-139%

(a) Reported for QC purposes only.

(b) More than 40% RPD for detected concentrations between two GC columns.

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

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

Page 1 of 1

Client / Reporting Information		Project Information		Requested Analysis		Matrix Codes	
Company Name MWH	Project Name / No. SJB-PH-OW-Rem-2044 San Juan River Plant	Bill to El Paso Corp	Invoice Attn. Norma Ramos			DW - Drinking Water GW - Ground Water WW - Wastewater SO - Soil SL - Sludge OI - Oil LIQ - Liquid SOL - Other Solid	
Project Contact Jed Smith	E-Mail jed.smith@mwhglobal.com	Address 1001 Louisiana Street, Rm S1904B	City Houston	State TX	Zip 77002		
Address 1801 California Street, Suite 2900	City Denver	State CO	Zip 80202	Phone No. 303-291-2276	Fax No. 303-291-2276		
Samplers Name Troy Urban		Client Purchase Order #					
Accutest Sample #	Field ID / Point of Collection	Date	Time	Matrix	# of bottles	LAB USE ONLY	
1	160511TB01	05/16/11	0700	GW	2	X	
2	SJRP MW-9	05/16/11	0859	PW	3	X	
Turnaround Time (Business days)		Date Deliverable Information		Comments / Remarks			
☒ 10 Day STANDARD	Approved By/ Date:	☐ Commercial "A"	☐ TRRP-13	If samples are received unpreserved, please notify MWH regarding holding time!!!			
☐ 7 Day		☒ Commercial "B"	☐ EDC Format				
☐ 4 Day RUSH		☐ Reduced Tier 1	☐ Other				
☐ 3 Day EMERGENCY		☐ Full OSHA Package					
☐ 2 Day EMERGENCY							
☐ 1 Day EMERGENCY		Commercial "A" = Results Only Commercial "B" = Results & Standard QC					
☐ Other							
Real time analytical data available via LabLink							
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY							
Relinquished by Samples	Date/Time	Received By:	Relinquished By:	Date/Time	Received By:		
1	Taylor 5/16/11 1025	1	Perex	5/17/11 945	2	Belade	Gay
Relinquished by:	Date/Time:	Received By:	Relinquished By:	Date/Time:	Received By:		
3		3			4		
Relinquished by:	Date/Time:	Received By:	Custody Seal #	Preserved where applicable	On Ice	Cooler Temp.	
5		5		☐	☒	3.5	

T76084: Chain of Custody

Page 1 of 3

Accutest Job Number: T76084 Client: MWH Project: SAN JUAN RIVER PLANT
 Date / Time Received: 5/17/2011 Delivery Method: FeoEx Airbill #'s: 8748-3799-3862
 No. Coolers: 1 Therm ID: 110 Temp Adjustment Factor: -0.5
 Cooler Temps (Initial/Adjusted): #1: (4/3.5)

Cooler Security

Y or N

1. Custody Seals Present: ☒ ☐
 2. Custody Seals Intact: ☒ ☐

3. COC Present: ☒ ☐
 4. Smpl Dates/Time OK ☒ ☐

Y or N

Cooler Temperature

Y or N

1. Temp criteria achieved: ☒ ☐
 2. Cooler temp verification: Glass Thermometer
 3. Cooler media: Ice (Bag)

Quality Control Preservation

Y or N

N/A

1. Trip Blank present / cooler: ☒ ☐ ☐
 2. Trip Blank listed on COC: ☒ ☐ ☐
 3. Samples preserved properly: ☒ ☐ ☐
 4. VOCs headspace free: ☒ ☐ ☐

WTB STB

☒ ☐
Sample Integrity - Documentation

Y or N

1. Sample labels present on bottles: ☒ ☐
 2. Container labeling complete: ☒ ☐
 3. Sample container label / COC agree: ☒ ☐

Sample Integrity - Condition

Y or N

1. Sample recvd within HT: ☒ ☐
 2. All containers accounted for: ☒ ☐
 3. Condition of sample: Intact

Sample Integrity - Instructions

Y or N N/A

1. Analysis requested is clear: ☒ ☐
 2. Bottles received for unspecified tests: ☐ ☒
 3. Sufficient volume recvd for analysis: ☒ ☐
 4. Compositing instructions clear: ☐ ☐ ☒
 5. Filtering instructions clear: ☐ ☐ ☒

Comments

Rebecca Ray 5/17/11

Sample Receipt Log

Page 2 of 2

Job #: T76084

Date / Time Received: 5/17/2011 9:45:00 AM

Initials: BG

Client: MWH

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	T76084-1	40 ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	110	4	-0.5	3.5
1	T76084-1	40 ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	110	4	-0.5	3.5
1	T76084-2	40 ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	110	4	-0.5	3.5
1	T76084-2	40 ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	110	4	-0.5	3.5
1	T76084-2	40 ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	110	4	-0.5	3.5

4.1
4

T76084: Chain of Custody
Page 3 of 3



GC Volatiles

5

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Page 1 of 1

Job Number: T76084

Account: MWHCODE MWH Americas, Inc.

Project: San Juan Basin River Plant Sites Project (SJRP)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GKK1871-MB	KK039515.D1		05/18/11	LB	n/a	n/a	GKK1871

The QC reported here applies to the following samples:

Method: SW846 8021B

T76084-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.36	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.25	ug/l	
108-88-3	Toluene	ND	1.0	0.28	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	0.93	ug/l	
95-47-6	o-Xylene	ND	1.0	0.36	ug/l	
	m,p-Xylene	ND	2.0	0.57	ug/l	

CAS No.	Surrogate Recoveries	Limits
460-00-4	4-Bromofluorobenzene	99% 58-125%
98-08-8	aaa-Trifluorotoluene	108% 73-139%

5.1.1
5

Method Blank Summary

Page 1 of 1

Job Number: T76084

Account: MWHCODE MWH Americas, Inc.

Project: San Juan Basin River Plant Sites Project (SJRP)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GKK1872-MB	KK039546.D	1	05/19/11	LB	n/a	n/a	GKK1872

The QC reported here applies to the following samples:

Method: SW846 8021B

T76084-2

CAS No.	Compound	Result	RL	MDL	Units	Q
---------	----------	--------	----	-----	-------	---

CAS No.	Surrogate Recoveries	Limits
460-00-4	4-Bromofluorobenzene	79% 58-125%
98-08-8	aaa-Trifluorotoluene	112% 73-139%

Method Blank Summary

Page 1 of 1

Job Number: T76084
Account: MWHCODE MWH Americas, Inc.
Project: San Juan Basin River Plant Sites Project (SJRP)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GKK1873-MB	KK039557.D1		05/19/11	LB	n/a	n/a	GKK1873

The QC reported here applies to the following samples:

Method: SW846 8021B

T76084-2

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.36	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.25	ug/l	
108-88-3	Toluene	ND	1.0	0.28	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	0.93	ug/l	
95-47-6	o-Xylene	ND	1.0	0.36	ug/l	
	m,p-Xylene	ND	2.0	0.57	ug/l	

CAS No.	Surrogate Recoveries		Limits
460-00-4	4-Bromofluorobenzene	82%	58-125%
98-08-8	aaa-Trifluorotoluene	117%	73-139%

5.1.3
5

Blank Spike Summary

Page 1 of 1

Job Number: T76084

Account: MWHCODE MWH Americas, Inc.

Project: San Juan Basin River Plant Sites Project (SJRP)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GKK1871-BS	KK039514.D1		05/18/11	LB	n/a	n/a	GKK1871

The QC reported here applies to the following samples:

Method: SW846 8021B

T76084-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	20	21.4	107	86-121
100-41-4	Ethylbenzene	20	19.2	96	81-116
108-88-3	Toluene	20	19.5	98	87-117
1330-20-7	Xylenes (total)	60	57.1	95	85-115
95-47-6	o-Xylene	20	19.3	97	87-116
	m,p-Xylene	40	37.8	95	84-116

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	4-Bromofluorobenzene	97%	58-125%
98-08-8	aaa-Trifluorotoluene	105%	73-139%

Blank Spike Summary

Page 1 of 1

Job Number: T76084

Account: MWHCODE MWH Americas, Inc.

Project: San Juan Basin River Plant Sites Project (SJRP)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GKK1872-BS	KK039543.D 1		05/18/11	LB	n/a	n/a	GKK1872

The QC reported here applies to the following samples:

Method: SW846 8021B

T76084-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
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CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	4-Bromofluorobenzene	79%	58-125%
98-08-8	aaa-Trifluorotoluene	114%	73-139%

Blank Spike Summary

Page 1 of 1

Job Number: T76084

Account: MWHCODE MWH Americas, Inc.

Project: San Juan Basin River Plant Sites Project (SJRP)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GKK1873-BS	KK039554.D1		05/19/11	LB	n/a	n/a	GKK1873

The QC reported here applies to the following samples:

Method: SW846 8021B

T76084-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	20	19.1	96	86-121
100-41-4	Ethylbenzene	20	18.3	92	81-116
108-88-3	Toluene	20	18.0	90	87-117
1330-20-7	Xylenes (total)	60	53.8	90	85-115
95-47-6	o-Xylene	20	17.9	90	87-116
	m,p-Xylene	40	35.9	90	84-116

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	4-Bromofluorobenzene	86%	58-125%
98-08-8	aaa-Trifluorotoluene	115%	73-139%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: T76084

Account: MWHCODE MWH Americas, Inc.

Project: San Juan Basin River Plant Sites Project (SJRP)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T75156-4MS	KK039521.D 1		05/18/11	LB	n/a	n/a	GKK1871
T75156-4MSD	KK039522.D 1		05/18/11	LB	n/a	n/a	GKK1871
T75156-4	KK039516.D 1		05/18/11	LB	n/a	n/a	GKK1871

The QC reported here applies to the following samples:

Method: SW846 8021B

T76084-1

CAS No.	Compound	T75156-4 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	0.38	J	20	20.0	98	21.3	105	6	86-121/19
100-41-4	Ethylbenzene	ND		20	19.9	100	19.2	96	4	81-116/14
108-88-3	Toluene	ND		20	19.2	96	19.4	97	1	87-117/16
1330-20-7	Xylenes (total)	ND		60	57.2	95	56.3	94	2	85-115/12
95-47-6	o-Xylene	ND		20	18.9	95	18.9	95	0	87-116/16
	m,p-Xylene	ND		40	38.3	96	37.4	94	2	84-116/13

CAS No.	Surrogate Recoveries	MS	MSD	T75156-4	Limits
460-00-4	4-Bromofluorobenzene	85%	83%	94%	58-125%
98-08-8	aaa-Trifluorotoluene	110%	111%	111%	73-139%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: T76084

Account: MWHCODE MWH Americas, Inc.

Project: San Juan Basin River Plant Sites Project (SJRP)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T76084-2MS	KK039550.D	50	05/19/11	LB	n/a	n/a	GKK1872
T76084-2MSD	KK039551.D	50	05/19/11	LB	n/a	n/a	GKK1872
T76084-2 ^a	KK039548.D	1	05/19/11	LB	n/a	n/a	GKK1872

The QC reported here applies to the following samples:

Method: SW846 8021B

T76084-2

CAS No.	Compound	T76084-2 ug/l	Spike Q	MS ug/l	MS %	MSD ug/l	MSD %	Limits RPD
---------	----------	------------------	------------	------------	---------	-------------	----------	---------------

CAS No.	Surrogate Recoveries	MS	MSD	T76084-2	Limits
460-00-4	4-Bromofluorobenzene	83%	81%	72%	58-125%
98-08-8	aaa-Trifluorotoluene	120%	110%	106%	73-139%

(a) Reported for QC purposes only.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: T76084
Account: MWHCODE MWH Americas, Inc.
Project: San Juan Basin River Plant Sites Project (SJRP)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T76084-2MS	KK039562.D 1		05/19/11	LB	n/a	n/a	GKK1873
T76084-2MSD	KK039563.D 1		05/19/11	LB	n/a	n/a	GKK1873
T76084-2	KK039560.D 1		05/19/11	LB	n/a	n/a	GKK1873

The QC reported here applies to the following samples:

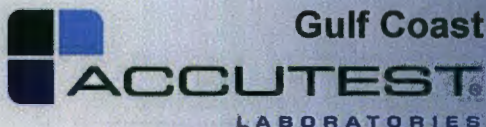
Method: SW846 8021B

T76084-2

CAS No.	Compound	T76084-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	99.5		20	114	73* a	116	83* a	2	86-121/19
100-41-4	Ethylbenzene	30.7		20	50.1	97	48.9	91	2	81-116/14
108-88-3	Toluene	ND		20	18.5	93	18.4	92	1	87-117/16
1330-20-7	Xylenes (total)	17.9		60	70.4	88	71.4	89	1	85-115/12
95-47-6	o-Xylene	1.6		20	19.1	88	18.5	85*	3	87-116/16
	m,p-Xylene	16.3		40	51.3	88	52.9	92	3	84-116/13

CAS No.	Surrogate Recoveries	MS	MSD	T76084-2	Limits
460-00-4	4-Bromofluorobenzene	79%	81%	83%	58-125%
98-08-8	aaa-Trifluorotoluene	138%	126%	125%	73-139%

(a) Outside control limits due to high level in sample relative to spike amount.



03/30/12

Technical Report for

El Paso Corporation

MWHCODE:San Juan Basin River Plant Sites Project (SJRP)

Accutest Job Number: T85959

Sampling Date: 08/31/11

Report to:

MWH Americas, Inc

Sarah.Gardner@us.mwhglobal.com

ATTN: Jed Smith

Total number of pages in report: 48



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 (T104704220-12-6) AR (11-028-0) AZ (AZ0769) FL (E87628) KS (E-10366)
LA (85695/04004) OK (211-035)

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Test results relate only to samples analyzed.

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Accutest Laboratories

Sample Summary

El Paso Corporation

Job No: T85959

MWHCODE:San Juan Basin River Plant Sites Project (SJRP)

Sample Number	Collected Date	Time By	Received	Matrix Code Type	Client Sample ID
T85959-1	08/31/11	07:00	09/01/11	AQ Trip Blank Water	310811TB01
T85959-2	08/31/11	13:23	09/01/11	AQ Ground Water	SJRP MW-9
T85959-3	08/31/11	12:37	09/01/11	AQ Ground Water	SJRP MW-6
T85959-4	08/31/11	14:33	09/01/11	AQ Ground Water	SJRP W-2
T85959-5	08/31/11	15:27	09/01/11	AQ Ground Water	SJRP MW-4



Sample Results

Report of Analysis

Report of Analysis

Page 1 of 1

Client Sample ID: 310811TB01	Date Sampled: 08/31/11
Lab Sample ID: T85959-1	Date Received: 09/01/11
Matrix: AQ - Trip Blank Water	Percent Solids: n/a
Method: SW846 8260B	
Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	K01563.D	1	09/01/11	JL	n/a	n/a	VK84
Run #2							

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

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.25	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.25	ug/l	
108-88-3	Toluene	ND	1.0	0.26	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.71	ug/l	
	m,p-Xylene	ND	2.0	0.48	ug/l	
95-47-6	o-Xylene	ND	1.0	0.23	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	86%		79-122%
17060-07-0	1,2-Dichloroethane-D4	78%		75-121%
2037-26-5	Toluene-D8	87%		87-119%
460-00-4	4-Bromofluorobenzene	109%		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

Report of Analysis

Client Sample ID:	SJRP MW-9	Date Sampled:	08/31/11
Lab Sample ID:	T85959-2	Date Received:	09/01/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	MWHCODE:San Juan Basin River Plant Sites Project (SJRP)		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	G004414.D	1	09/02/11	LT	n/a	n/a	VG184
Run #2							

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

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	112	1.0	0.25	ug/l	
100-41-4	Ethylbenzene	35.6	1.0	0.25	ug/l	
108-88-3	Toluene	ND	1.0	0.26	ug/l	
1330-20-7	Xylene (total)	17.2	3.0	0.71	ug/l	
	m,p-Xylene	17.2	2.0	0.48	ug/l	
95-47-6	o-Xylene	ND	1.0	0.23	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		79-122%
17060-07-0	1,2-Dichloroethane-D4	87%		75-121%
2037-26-5	Toluene-D8	100%		87-119%
460-00-4	4-Bromofluorobenzene	98%		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

Report of Analysis

Client Sample ID: SJRP MW-9

Lab Sample ID: T85959-2

Matrix: AQ - Ground Water

Date Sampled: 08/31/11

Date Received: 09/01/11

Percent Solids: n/a

Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	14000	200	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Arsenic	< 5.0	5.0	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Barium	< 200	200	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Cadmium	8.2	4.0	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Calcium	318000	5000	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Chromium	< 10	10	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Cobalt	187	50	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Copper	68.2	25	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Iron	7830	100	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Lead	23.9	3.0	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Magnesium	217000	5000	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Manganese	6790	15	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Mercury	< 0.20	0.20	ug/l	1	09/12/11	09/12/11 TW	SW846 7470A ²	SW846 7470A ⁷
Molybdenum	< 10	10	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Nickel	328	40	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Potassium	13100	5000	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Selenium	< 5.0	5.0	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Silver	< 10	10	ug/l	1	09/12/11	09/12/11 EG	SW846 6010B ³	SW846 3010A ⁶
Sodium	4080000	50000	ug/l	10	09/02/11	09/13/11 EG	SW846 6010B ⁴	SW846 3010A ⁵
Zinc	751	20	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵

- (1) Instrument QC Batch: MA6107
- (2) Instrument QC Batch: MA6112
- (3) Instrument QC Batch: MA6113
- (4) Instrument QC Batch: MA6117
- (5) Prep QC Batch: MP15666
- (6) Prep QC Batch: MP15712
- (7) Prep QC Batch: MP15717

RL = Reporting Limit

Report of Analysis

Page 1 of 1

Client Sample ID:	SJRP MW-9	Date Sampled:	08/31/11
Lab Sample ID:	T85959-2	Date Received:	09/01/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	MWHCODE:San Juan Basin River Plant Sites Project (SJRP)		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO3	28.0	5.0	mg/l	1	09/10/11 09:00	MC	SM 2320B
Chloride	576	20	mg/l	20	09/12/11 13:30	SS	SM 4500 CL C
Nitrogen, Nitrate + Nitrite	< 0.10	0.10	mg/l	1	09/14/11 15:09	CV	EPA 353.2
Solids, Total Dissolved	15800	200	mg/l	1	09/06/11	RR	SM 2540C
Sulfate	8440	200	mg/l	20	09/15/11 10:30	EB	SM 4500 SO4

RL = Reporting Limit

Report of Analysis

Page 1 of 1

Client Sample ID: SJRP MW-6

Lab Sample ID: T85959-3

Matrix: AQ - Ground Water

Method: SW846 8260B

Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)

Date Sampled: 08/31/11

Date Received: 09/01/11

Percent Solids: n/a

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	G004415.D	1	09/02/11	LT	n/a	n/a	VG184
Run #2							

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

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.25	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.25	ug/l	
108-88-3	Toluene	ND	1.0	0.26	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.71	ug/l	
	m,p-Xylene	ND	2.0	0.48	ug/l	
95-47-6	o-Xylene	ND	1.0	0.23	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		79-122%
17060-07-0	1,2-Dichloroethane-D4	87%		75-121%
2037-26-5	Toluene-D8	100%		87-119%
460-00-4	4-Bromofluorobenzene	99%		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

Report of Analysis

Client Sample ID: SJRP MW-6

Lab Sample ID: T85959-3

Matrix: AQ - Ground Water

Date Sampled: 08/31/11

Date Received: 09/01/11

Percent Solids: n/a

Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	16300	200	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Arsenic	< 5.0	5.0	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Barium	< 200	200	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Cadmium	13.1	4.0	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Calcium	350000	5000	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Chromium	< 10	10	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Cobalt	227	50	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Copper	47.9	25	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Iron	1040	100	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Lead	18.7	3.0	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Magnesium	326000	5000	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Manganese	8060	15	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Mercury	< 0.20	0.20	ug/l	1	09/12/11	09/12/11 TW	SW846 7470A ²	SW846 7470A ⁷
Molybdenum	< 10	10	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Nickel	333	40	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Potassium	21100	5000	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Selenium	351	5.0	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Silver	< 10	10	ug/l	1	09/12/11	09/12/11 EG	SW846 6010B ³	SW846 3010A ⁶
Sodium	3860000	50000	ug/l	10	09/02/11	09/13/11 EG	SW846 6010B ⁴	SW846 3010A ⁵
Zinc	772	20	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵

(1) Instrument QC Batch: MA6107

(2) Instrument QC Batch: MA6112

(3) Instrument QC Batch: MA6113

(4) Instrument QC Batch: MA6117

(5) Prep QC Batch: MP15666

(6) Prep QC Batch: MP15712

(7) Prep QC Batch: MP15717

RL = Reporting Limit

Report of Analysis

Client Sample ID:	SJRP MW-6	Date Sampled:	08/31/11
Lab Sample ID:	T85959-3	Date Received:	09/01/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	MWHCODE:San Juan Basin River Plant Sites Project (SJRP)		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO ₃	12.0	5.0	mg/l	1	09/10/11 09:00	MC	SM 2320B
Chloride	1190	50	mg/l	50	09/12/11 13:30	SS	SM 4500 CL C
Nitrogen, Nitrate + Nitrite	92.2	5.0	mg/l	50	09/14/11 16:48	CV	EPA 353.2
Solids, Total Dissolved	15600	200	mg/l	1	09/06/11	RR	SM 2540C
Sulfate	8970	200	mg/l	20	09/15/11 10:30	EB	SM 4500 SO ₄

RL = Reporting Limit

Report of Analysis

Client Sample ID:	SJRP W-2	Date Sampled:	08/31/11
Lab Sample ID:	T85959-4	Date Received:	09/01/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	MWHCODE:San Juan Basin River Plant Sites Project (SJRP)		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	G004416.D	1	09/02/11	LT	n/a	n/a	VG184
Run #2							

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

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.25	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.25	ug/l	
108-88-3	Toluene	ND	1.0	0.26	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.71	ug/l	
	m,p-Xylene	ND	2.0	0.48	ug/l	
95-47-6	o-Xylene	ND	1.0	0.23	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		79-122%
17060-07-0	1,2-Dichloroethane-D4	87%		75-121%
2037-26-5	Toluene-D8	99%		87-119%
460-00-4	4-Bromofluorobenzene	97%		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

Report of Analysis

Client Sample ID: SJRP W-2

Lab Sample ID: T85959-4

Matrix: AQ - Ground Water

Date Sampled: 08/31/11

Date Received: 09/01/11

Percent Solids: n/a

Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	6080	200	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Arsenic	< 5.0	5.0	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Barium	< 200	200	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Cadmium	< 4.0	4.0	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Calcium	330000	5000	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Chromium	< 10	10	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Cobalt	< 50	50	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Copper	< 25	25	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Iron	4750	100	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Lead	14.1	3.0	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Magnesium	97300	5000	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Manganese	178	15	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Mercury	< 0.20	0.20	ug/l	1	09/12/11	09/12/11 TW	SW846 7470A ²	SW846 7470A ⁷
Molybdenum	< 10	10	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Nickel	< 40	40	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Potassium	< 5000	5000	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Selenium	122	5.0	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Silver	< 10	10	ug/l	1	09/12/11	09/12/11 EG	SW846 6010B ³	SW846 3010A ⁶
Sodium	1200000	25000	ug/l	5	09/02/11	09/13/11 EG	SW846 6010B ⁴	SW846 3010A ⁵
Zinc	55.2	20	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵

(1) Instrument QC Batch: MA6107

(2) Instrument QC Batch: MA6112

(3) Instrument QC Batch: MA6113

(4) Instrument QC Batch: MA6117

(5) Prep QC Batch: MP15666

(6) Prep QC Batch: MP15712

(7) Prep QC Batch: MP15717

RL = Reporting Limit

Report of Analysis

Page 1 of 1

Client Sample ID:	SJRP W-2	Date Sampled:	08/31/11
Lab Sample ID:	T85959-4	Date Received:	09/01/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	MWHCODE:San Juan Basin River Plant Sites Project (SJRP)		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO ₃	176	5.0	mg/l	1	09/10/11 09:00	MC	SM 2320B
Chloride	318	20	mg/l	20	09/12/11 13:30	SS	SM 4500 CL C
Nitrogen, Nitrate + Nitrite	16.7	1.0	mg/l	10	09/14/11 16:09	CV	EPA 353.2
Solids, Total Dissolved	5860	40	mg/l	1	09/06/11	RR	SM 2540C
Sulfate	1530	40	mg/l	4	09/15/11 10:30	EB	SM 4500 SO ₄

RL = Reporting Limit

Report of Analysis

Client Sample ID: SJRP MW-4	Date Sampled: 08/31/11
Lab Sample ID: T85959-5	Date Received: 09/01/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	K01567.D	1	09/02/11	JL	n/a	n/a	VK84
Run #2							

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

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.25	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.25	ug/l	
108-88-3	Toluene	ND	1.0	0.26	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.71	ug/l	
	m,p-Xylene	ND	2.0	0.48	ug/l	
95-47-6	o-Xylene	ND	1.0	0.23	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	84%		79-122%
17060-07-0	1,2-Dichloroethane-D4	78%		75-121%
2037-26-5	Toluene-D8	87%		87-119%
460-00-4	4-Bromofluorobenzene	110%		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

Report of Analysis

Client Sample ID:	SJRP MW-4	Date Sampled:	08/31/11
Lab Sample ID:	T85959-5	Date Received:	09/01/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Project:	MWHCODE:San Juan Basin River Plant Sites Project (SJRP)		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Aluminum	1380	200	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Arsenic	8.2	5.0	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Barium	< 200	200	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Cadmium	< 4.0	4.0	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Calcium	263000	5000	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Chromium	< 10	10	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Cobalt	53.6	50	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Copper	26.8	25	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Iron	5380	100	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Lead	12.8	3.0	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Magnesium	105000	5000	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Manganese	5030	15	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Mercury	0.31	0.20	ug/l	1	09/12/11	09/12/11 TW	SW846 7470A ²	SW846 7470A ⁷
Molybdenum	< 10	10	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Nickel	238	40	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Potassium	6750	5000	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Selenium	< 5.0	5.0	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵
Silver	< 10	10	ug/l	1	09/12/11	09/12/11 EG	SW846 6010B ³	SW846 3010A ⁶
Sodium	1130000	25000	ug/l	5	09/02/11	09/13/11 EG	SW846 6010B ⁴	SW846 3010A ⁵
Zinc	< 20	20	ug/l	1	09/02/11	09/09/11 EG	SW846 6010B ¹	SW846 3010A ⁵

- (1) Instrument QC Batch: MA6107
- (2) Instrument QC Batch: MA6112
- (3) Instrument QC Batch: MA6113
- (4) Instrument QC Batch: MA6117
- (5) Prep QC Batch: MP15666
- (6) Prep QC Batch: MP15712
- (7) Prep QC Batch: MP15717

RL = Reporting Limit

Report of Analysis

Client Sample ID: SJRP MW-4

Lab Sample ID: T85959-5

Matrix: AQ - Ground Water

Date Sampled: 08/31/11

Date Received: 09/01/11

Percent Solids: n/a

Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Total as CaCO ₃	34.0	5.0	mg/l	1	09/10/11 09:00	MC	SM 2320B
Chloride	1240	50	mg/l	50	09/12/11 13:30	SS	SM 4500 CL C
Nitrogen, Nitrate + Nitrite	0.14	0.10	mg/l	1	09/14/11 15:14	CV	EPA 353.2
Solids, Total Dissolved	4210	40	mg/l	1	09/06/11	RR	SM 2540C
Sulfate	2140	40	mg/l	4	09/15/11 10:30	EB	SM 4500 SO4

RL = Reporting Limit



Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody



CHAIN OF CUSTODY

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

Page 1 of 1

Client / Reporting Information		Project Information		Requested Analyses		Matrix Codes	
Company Name MWH	Project Name / No. EPTPC San Juan River Plant 2011	Bill to El Paso Corp		Invoice Attn. Norma Ramos		DW - Drinking Water	
Project Contact Jed Smith	E-Mail jed.smith@mwhglobal.com	Address 1001 Louisiana Street, Rm S1904B		City Houston		GW - Ground Water	
Address 1801 California Street, Suite 2900	City Denver	State CO	Zip 80202	City TX	State TX	Zip 77002	WW - Wastewater
Phone No. 303-291-2276	Fax No.	Phone No.	Fax No.	Matrix Codes		SD - Soil	
Sampler's Name Troy Urban		Client Purchase Order #		Requested Analyses		SL - Sludge	
Accutest Sample #	Field ID / Point of Collection	Date	Time	Matrix	# of bottles	Number of preserved bottles	LAB USE ONLY
1	310811TB01	083111	0700	GW	2	X	
2	SJRP MW-9	083111	1323	GW	6	X X X X X X	
3	SJRP MW-6	083111	1237	GW	6	X X X X X X	
4	SJRP W-2	083111	1433	GW	6	X X X X X X	
5	SJRP MW-4	083111	1527	GW	6	X X X X X X	
Turnaround Time (Business days)		Date Deliverable Information		Comments / Remarks			
☒ 10 Day STANDARD		Approved By/Date:		If samples are received unprocessed, please notify MWH regarding holding time!!			
☐ 7 Day		☐ Commercial "A"		☐ TRRP-13			
☐ 4 Day RUSH		☒ Commercial "B"		☐ EDD Format			
☐ 3 Day EMERGENCY		☐ Reduced Tier 1		☐ Other			
☐ 2 Day EMERGENCY		☐ Full Data Package					
☐ 1 Day EMERGENCY		Commercial "A" = Results Only					
☐ Other		Commercial "B" = Results & Standard QC					
Real time analytical data available via Lablink							
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY							
Relinquished by: <i>[Signature]</i>	Date/Time: 1630	Received By: <i>[Signature]</i>	Date/Time: 8/31/11	Relinquished By: <i>[Signature]</i>	Date/Time: 9/11/11	Received By: <i>[Signature]</i>	Date/Time: 9/11/11
Relinquished by:	Date/Time:	Received By:	Date/Time:	Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished by:	Date/Time:	Received By:	Date/Time:	Custody Seal #	Preserved where applicable	Cooler Temp	3.7

T85959: Chain of Custody

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Accutest Laboratories Sample Receipt Summary

Page 1 of 3

Accutest Job Number: T85959 Client: MWH Project: EPTPC SAN JUAN RIVER PLANT 2011
Date / Time Received: 9/1/2011 Delivery Method: Alrbill #'s: 503110821430
No. Coolers: 1 Therm ID: 110; Temp Adjustment Factor: -0.5;
Cooler Temps (Initial/Adjusted): #1: (4.2/3.7);

Cooler Security

Y or N

1. Custody Seals Present: ☒ ☐ 3. COC Present: ☒ ☐
2. Custody Seals Intact: ☒ ☐ 4. Smpl Dates/Time OK: ☒ ☐

Cooler Temperature

Y or N

1. Temp criteria achieved: ☒ ☐
2. Cooler temp verification: Glass Thermometer
3. Cooler media: Ice (Bag)

Quality Control Preservation

Y or N N/A

1. Trip Blank present / cooler: ☐ ☐ ☒
2. Trip Blank listed on COC: ☐ ☐ ☒
3. Samples preserved properly: ☒ ☐
4. VOCs headspace free: ☐ ☐ ☒

WTB STB

☐ ☐

Sample Integrity - Documentation

Y or N

1. Sample labels present on bottles: ☒ ☐
2. Container labeling complete: ☒ ☐
3. Sample container label / COC agree: ☒ ☐

Sample Integrity - Condition

Y or N

1. Sample recvd within HT: ☒ ☐
2. All containers accounted for: ☒ ☐
3. Condition of sample: Intact

Sample Integrity - Instructions

Y or N N/A

1. Analysis requested is clear: ☒ ☐
2. Bottles received for unspecified tests: ☐ ☒
3. Sufficient volume recvd for analysis: ☒ ☐
4. Compositing instructions clear: ☐ ☐ ☒
5. Filtering instructions clear: ☐ ☐ ☒

Comments

Accutest Laboratories
V: 713.271.4700

10165 Harwin Drive
F: 713.271.4770

Houston, TX 77036
www.accutest.com

T85959: Chain of Custody
Page 2 of 4

Job #: T85959

Date / Time Received: 9/1/2011 9:15:00 AM

Initials: VG

Client: MWH

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	T85959-1	40 ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	110	4.2	-0.5	3.7
1	T85959-1	40 ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	110	4.2	-0.5	3.7
1	T85959-2	1000 ml	1	3L	N/P	Note #2 - Preservative check not applicable.	110	4.2	-0.5	3.7
1	T85959-2	500 ml	2	1M	HNO3	pH < 2	110	4.2	-0.5	3.7
1	T85959-2	250 ml	3	3L	H2SO4	pH < 2	110	4.2	-0.5	3.7
1	T85959-2	40 ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	110	4.2	-0.5	3.7
1	T85959-2	40 ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	110	4.2	-0.5	3.7
1	T85959-2	40 ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	110	4.2	-0.5	3.7
1	T85959-3	1000 ml	1	3L	N/P	Note #2 - Preservative check not applicable.	110	4.2	-0.5	3.7
1	T85959-3	500 ml	2	1M	HNO3	pH < 2	110	4.2	-0.5	3.7
1	T85959-3	250 ml	3	3L	H2SO4	pH < 2	110	4.2	-0.5	3.7
1	T85959-3	40 ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	110	4.2	-0.5	3.7
1	T85959-3	40 ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	110	4.2	-0.5	3.7
1	T85959-3	40 ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	110	4.2	-0.5	3.7
1	T85959-4	1000 ml	1	3L	N/P	Note #2 - Preservative check not applicable.	110	4.2	-0.5	3.7
1	T85959-4	500 ml	2	1M	HNO3	pH < 2	110	4.2	-0.5	3.7
1	T85959-4	250 ml	3	3L	H2SO4	pH < 2	110	4.2	-0.5	3.7
1	T85959-4	40 ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	110	4.2	-0.5	3.7
1	T85959-4	40 ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	110	4.2	-0.5	3.7
1	T85959-4	40 ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	110	4.2	-0.5	3.7
1	T85959-5	1000 ml	1	3L	N/P	Note #2 - Preservative check not applicable.	110	4.2	-0.5	3.7
1	T85959-5	500 ml	2	1M	HNO3	pH < 2	110	4.2	-0.5	3.7
1	T85959-5	250 ml	3	3L	H2SO4	pH < 2	110	4.2	-0.5	3.7

T85959: Chain of Custody

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Sample Receipt Log

Page 3 of 3

Job #: T85959

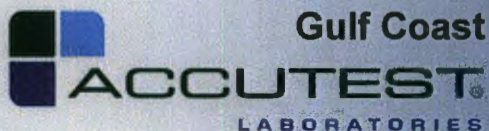
Date / Time Received: 9/1/2011 9:15:00 AM

Initials: VG

Client: MWH

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	T85959-5	40 ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	110	4.2	-0.5	3.7
1	T85959-5	40 ml	5	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	110	4.2	-0.5	3.7
1	T85959-5	40 ml	6	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	110	4.2	-0.5	3.7

T85959: Chain of Custody
Page 4 of 4



Gulf Coast

ACCUTEST

LABORATORIES

4

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

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

Method Blank Summary

Page 1 of 1

Job Number: T85959

Account: ELPASOX El Paso Corporation

Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VK84-MB	K01546.D	1	09/01/11	JL	n/a	n/a	VK84

The QC reported here applies to the following samples:

Method: SW846 8260B

T85959-1, T85959-5

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.25	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.25	ug/l	
108-88-3	Toluene	ND	1.0	0.26	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.71	ug/l	
	m,p-Xylene	ND	2.0	0.48	ug/l	
95-47-6	o-Xylene	ND	1.0	0.23	ug/l	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	84% 79-122%
17060-07-0	1,2-Dichloroethane-D4	79% 75-121%
2037-26-5	Toluene-D8	88% 87-119%
460-00-4	4-Bromofluorobenzene	111% 80-133%

Method Blank Summary

Page 1 of 1

Job Number: T85959

Account: ELPASOX El Paso Corporation

Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VG184-MB	G004405.D	1	09/02/11	LT	n/a	n/a	VG184

The QC reported here applies to the following samples:

Method: SW846 8260B

T85959-2, T85959-3, T85959-4

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.25	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.25	ug/l	
108-88-3	Toluene	ND	1.0	0.26	ug/l	
1330-20-7	Xylene (total)	ND	3.0	0.71	ug/l	
	m,p-Xylene	ND	2.0	0.48	ug/l	
95-47-6	o-Xylene	ND	1.0	0.23	ug/l	

CAS No.	Surrogate Recoveries	Result	Limits
1868-53-7	Dibromofluoromethane	96%	79-122%
17060-07-0	1,2-Dichloroethane-D4	86%	75-121%
2037-26-5	Toluene-D8	96%	87-119%
460-00-4	4-Bromofluorobenzene	94%	80-133%

Blank Spike Summary

Page 1 of 1

Job Number: T85959

Account: ELPASOX El Paso Corporation

Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VK84-BS	K01544.D	1	09/01/11	JL	n/a	n/a	VK84

The QC reported here applies to the following samples:

Method: SW846 8260B

T85959-1, T85959-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	25	26.6	106	76-118
100-41-4	Ethylbenzene	25	26.5	106	75-112
108-88-3	Toluene	25	26.1	104	77-114
1330-20-7	Xylene (total)	75	79.4	106	75-111
	m,p-Xylene	50	52.9	106	75-112
95-47-6	o-Xylene	25	26.5	106	74-110

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	87%	79-122%
17060-07-0	1,2-Dichloroethane-D4	78%	75-121%
2037-26-5	Toluene-D8	88%	87-119%
460-00-4	4-Bromofluorobenzene	111%	80-133%

Blank Spike Summary

Page 1 of 1

Job Number: T85959

Account: ELPASOX El Paso Corporation

Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VG184-BS	G004403.D	1	09/02/11	LT	n/a	n/a	VG184

The QC reported here applies to the following samples:

Method: SW846 8260B

T85959-2, T85959-3, T85959-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	25	26.6	106	76-118
100-41-4	Ethylbenzene	25	26.7	107	75-112
108-88-3	Toluene	25	26.7	107	77-114
1330-20-7	Xylene (total)	75	79.8	106	75-111
	m,p-Xylene	50	53.1	106	75-112
95-47-6	o-Xylene	25	26.7	107	74-110

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	106%	79-122%
17060-07-0	1,2-Dichloroethane-D4	86%	75-121%
2037-26-5	Toluene-D8	97%	87-119%
460-00-4	4-Bromofluorobenzene	95%	80-133%

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: T85959

Account: ELPASOX El Paso Corporation

Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T85847-2MS	K01555.D	1	09/01/11	JL	n/a	n/a	VK84
T85847-2MSD	K01556.D	1	09/01/11	JL	n/a	n/a	VK84
T85847-2	K01554.D	1	09/01/11	JL	n/a	n/a	VK84

The QC reported here applies to the following samples:

Method: SW846 8260B

T85959-1, T85959-5

CAS No.	Compound	T85847-2 ug/l	Spike Q	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	3.2	25	31.0	111	30.5	109	2	76-118/16
100-41-4	Ethylbenzene	1.2	25	28.2	108	27.9	107	1	75-112/12
108-88-3	Toluene	2.6	25	29.6	108	29.1	106	2	77-114/12
1330-20-7	Xylene (total)	4.3	75	86.0	109	84.2	107	2	75-111/12
	m,p-Xylene	3.0	50	57.5	109	56.2	106	2	75-112/12
95-47-6	o-Xylene	1.3	25	28.4	108	28.0	107	1	74-110/11

CAS No.	Surrogate Recoveries	MS	MSD	T85847-2	Limits
1868-53-7	Dibromofluoromethane	87%	87%	87%	79-122%
17060-07-0	1,2-Dichloroethane-D4	80%	80%	80%	75-121%
2037-26-5	Toluene-D8	87%	86%* a	87%	87-119%
460-00-4	4-Bromofluorobenzene	112%	110%	109%	80-133%

(a) Outside control limits biased low.

Matrix Spike/Matrix Spike Duplicate Summary

Page 1 of 1

Job Number: T85959

Account: ELPASOX El Paso Corporation

Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T85974-3MS	G004410.D	1	09/02/11	LT	n/a	n/a	VG184
T85974-3MSD	G004411.D	1	09/02/11	LT	n/a	n/a	VG184
T85974-3 ^a	G004409.D	1	09/02/11	LT	n/a	n/a	VG184

The QC reported here applies to the following samples:

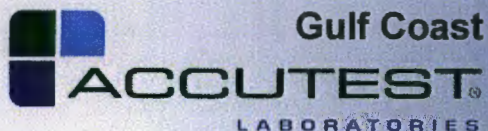
Method: SW846 8260B

T85959-2, T85959-3, T85959-4

CAS No.	Compound	T85974-3 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	1.0 U		25	23.2	93	23.0	92	1	76-118/16
100-41-4	Ethylbenzene	1.0 U		25	21.0	84	21.2	85	1	75-112/12
108-88-3	Toluene	1.0 U		25	21.2	85	21.4	86	1	77-114/12
1330-20-7	Xylene (total)	3.0 U		75	63.4	85	63.7	85	0	75-111/12
	m,p-Xylene	2.0 U		50	42.3	85	42.3	85	0	75-112/12
95-47-6	o-Xylene	1.0 U		25	21.0	84	21.4	86	2	74-110/11

CAS No.	Surrogate Recoveries	MS	MSD	T85974-3	Limits
1868-53-7	Dibromofluoromethane	98%	99%	97%	79-122%
17060-07-0	1,2-Dichloroethane-D4	85%	87%	87%	75-121%
2037-26-5	Toluene-D8	88%	88%	98%	87-119%
460-00-4	4-Bromofluorobenzene	94%	93%	94%	80-133%

(a) Sample was not preserved to a pH < 2



Metals Analysis

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: T85959
Account: ELPASOX - El Paso Corporation
Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)

QC Batch ID: MP15666
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 09/02/11

Metal	RL	IDL	MDL	MB raw	final
Aluminum	200	8.3	12	31.6	<200
Antimony	5.0	1	1		
Arsenic	5.0	1.7	1	-0.14	<5.0
Barium	200	.97	3.4	0.68	<200
Beryllium	5.0	.056	.16		
Boron	100	1.4	7.8		
Cadmium	4.0	.11	.09	0.040	<4.0
Calcium	5000	7.4	25	29.0	<5000
Chromium	10	.23	.27	0.19	<10
Cobalt	50	.15	.22	0.0	<50
Copper	25	1.1	5.9	0.43	<25
Iron	100	1.1	23	2.5	<100
Lead	3.0	1	1.8	-0.070	<3.0
Lithium	300	2	2		
Magnesium	5000	7.7	7.9	-7.0	<5000
Manganese	15	.054	1.9	0.41	<15
Molybdenum	10	.39	.2	0.31	<10
Nickel	40	.69	1.4	0.13	<40
Potassium	5000	39	45	82.3	<5000
Selenium	5.0	1.5	.98	0.39	<5.0
Silver	10	1.2	.24		
Sodium	5000	9.2	100	16.0	<5000
Strontium	10	.061	.4		
Thallium	10	.67	1.2		
Tin	20	.69	2.8		
Titanium	20	.29	.3		
Vanadium	50	.3	.3		
Zinc	20	.51	3.5	3.1	<20

Associated samples MP15666: T85959-2, T85959-3, T85959-4, T85959-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T85959
 Account: ELPASOX - El Paso Corporation
 Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)

QC Batch ID: MP15666
 Matrix Type: AQUEOUS

Methods: SW846 6010B
 Units: ug/l

Prep Date:

09/02/11

09/02/11

Metal	T85959-2		RPD	QC Limits	T85959-2		Spikelot	Rec	QC Limits
	Original	DUP			Original	MS	MPTW4		
Aluminum	14000	15600	10.8	0-20	14000	60300	50000	92.6	80-120
Antimony									
Arsenic	2.9	3.4	15.9	0-20	2.9	397	400	98.5	80-120
Barium	34.0	41.5	19.9	0-20	34.0	431	400	99.3	80-120
Beryllium									
Boron									
Cadmium	8.2	8.4	2.4	0-20	8.2	410	400	100.5	80-120
Calcium	318000	324000	1.9	0-20	318000	345000	50000	54.0 (b)	80-120
Chromium	6.1	6.8	10.9	0-20	6.1	366	400	90.0	80-120
Cobalt	187	191	2.1	0-20	187	523	400	84.0	80-120
Copper	68.2	71.3	4.4	0-20	68.2	487	400	104.7	80-120
Iron	7830	8860	12.3	0-20	7830	49900	50000	84.1	80-120
Lead	23.9	26.5	10.3	0-20	23.9	400	400	94.0	80-120
Lithium									
Magnesium	217000	221000	1.8	0-20	217000	249000	50000	64.0 (b)	80-120
Manganese	6790	6880	1.3	0-20	6790	6800	400	2.5 (b)	80-120
Molybdenum	0.70	0.70	0.0	0-20	0.70	351	400	87.6	80-120
Nickel	328	333	1.5	0-20	328	709	400	95.3	80-120
Potassium	13100	13500	3.0	0-20	13100	60200	50000	94.2	80-120
Selenium	3.8	2.8	30.3 (a)	0-20	3.8	471	400	116.8	80-120
Silver									
Sodium	4080000	4070000	0.2	0-20	4080000	3930000	50000	-300.0 (b)	80-120
Strontium									
Thallium									
Tin									
Titanium									
Vanadium									
Zinc	751	767	2.1	0-20	751	1150	400	99.8	80-120

Associated samples MP15666: T85959-2, T85959-3, T85959-4, T85959-5

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

(a) RPD acceptable due to low duplicate and sample concentrations.

(b) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T85959
 Account: ELPASOX - El Paso Corporation
 Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)

QC Batch ID: MP15666
 Matrix Type: AQUEOUS

Methods: SW846 6010B
 Units: ug/l

Prep Date:

09/02/11

Metal	T85959-2 Original MSD		Spikelot MPTW4	% Rec	MSD RPD	QC Limit
Aluminum	14000	62600	50000	97.2	3.7	20
Antimony						
Arsenic	2.9	405	400	100.5	2.0	20
Barium	34.0	445	400	102.8	3.2	20
Beryllium						
Boron						
Cadmium	8.2	420	400	103.0	2.4	20
Calcium	318000	364000	50000	92.0	5.4	20
Chromium	6.1	367	400	90.2	0.3	20
Cobalt	187	539	400	88.0	3.0	20
Copper	68.2	500	400	108.0	2.6	20
Iron	7830	51300	50000	86.9	2.8	20
Lead	23.9	412	400	97.0	3.0	20
Lithium						
Magnesium	217000	263000	50000	92.0	5.5	20
Manganese	6790	7160	400	92.5	5.2	20
Molybdenum	0.70	357	400	89.1	1.7	20
Nickel	328	739	400	102.8	4.1	20
Potassium	13100	62200	50000	98.2	3.3	20
Selenium	3.8	482	400	119.6	2.3	20
Silver						
Sodium	4080000	3870000	50000	-420.0(a	1.5	20
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc	751	1210	400	114.8	5.1	20

Associated samples MP15666: T85959-2, T85959-3, T85959-4, T85959-5

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: T85959

Account: ELPASOX - El Paso Corporation

Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)

QC Batch ID: MP15666

Methods: SW846 6010B

Matrix Type: AQUEOUS

Units: ug/l

Prep Date:

09/02/11

Metal	BSP Result	Spikelot MPTW4	% Rec	QC Limits
Aluminum	51000	50000	102.0	80-120
Antimony				
Arsenic	396	400	99.0	80-120
Barium	445	400	111.3	80-120
Beryllium				
Boron				
Cadmium	413	400	103.3	80-120
Calcium	51700	50000	103.4	80-120
Chromium	441	400	110.3	80-120
Cobalt	430	400	107.5	80-120
Copper	455	400	113.8	80-120
Iron	49200	50000	98.4	80-120
Lead	401	400	100.3	80-120
Lithium				
Magnesium	48200	50000	96.4	80-120
Manganese	435	400	108.8	80-120
Molybdenum	422	400	105.5	80-120
Nickel	403	400	100.8	80-120
Potassium	50800	50000	101.6	80-120
Selenium	416	400	104.0	80-120
Silver				
Sodium	51400	50000	102.8	80-120
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	437	400	109.3	80-120

Associated samples MP15666: T85959-2, T85959-3, T85959-4, T85959-5

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: T85959
 Account: ELPASOX - El Paso Corporation
 Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)

QC Batch ID: MP15666
 Matrix Type: AQUEOUS

Methods: SW846 6010B
 Units: ug/l

Prep Date:

09/02/11

Metal	T85959-2 Original	SDL 1:5	%DIF	QC Limits
Aluminum	14000	14500	4.0	0-10
Antimony				
Arsenic	2.88	0.00	100.0 (a)	0-10
Barium	34.0	35.4	3.9	0-10
Beryllium				
Boron				
Cadmium	8.19	7.97	2.7	0-10
Calcium	318000	356000	12.0* (b)	0-10
Chromium	6.12	8.44	37.9 (a)	0-10
Cobalt	187	211	12.7* (b)	0-10
Copper	68.2	82.8	21.3* (b)	0-10
Iron	7830	8600	9.9	0-10
Lead	23.9	23.2	3.1	0-10
Lithium				
Magnesium	217000	239000	10.1* (b)	0-10
Manganese	6790	7740	14.1* (b)	0-10
Molybdenum	0.700	0.00	100.0 (a)	0-10
Nickel	328	325	1.0	0-10
Potassium	13100	13500	2.9	0-10
Selenium	3.78	0.00	100.0 (a)	0-10
Silver				
Sodium	4080000	4370000	6.9	0-10
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	751	744	1.0	0-10

Associated samples MP15666: T85959-2, T85959-3, T85959-4, T85959-5

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(anr) Analyte not requested

(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

(b) Serial dilution indicates possible matrix interference.

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: T85959
Account: ELPASOX - El Paso Corporation
Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)

QC Batch ID: MP15712
Matrix Type: AQUEOUS

Methods: SW846 6010B
Units: ug/l

Prep Date: 09/12/11

Metal	RL	IDL	MDL	MB raw	final
Aluminum	200	8.3	12		
Antimony	5.0	1	1		
Arsenic	5.0	1.7	1		
Barium	200	.97	3.4		
Beryllium	5.0	.056	.16		
Boron	100	1.4	7.8		
Cadmium	4.0	.11	.09		
Calcium	5000	7.4	25		
Chromium	10	.23	.27		
Cobalt	50	.15	.22		
Copper	25	1.1	5.9		
Iron	100	1.1	23		
Lead	3.0	1	1.8		
Lithium	300	2	2		
Magnesium	5000	7.7	7.9		
Manganese	15	.054	1.9		
Molybdenum	10	.39	.2		
Nickel	40	.69	1.4		
Potassium	5000	39	45		
Selenium	5.0	1.5	.98		
Silver	10	1.2	.24	0.15	<10
Sodium	5000	9.2	100		
Strontium	10	.061	.4		
Thallium	10	.67	1.2		
Tin	20	.69	2.8		
Titanium	20	.29	.3		
Vanadium	50	.3	.3		
Zinc	20	.51	3.5		

Associated samples MP15712: T85959-2, T85959-3, T85959-4, T85959-5

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T85959
 Account: ELPASOX - El Paso Corporation
 Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)

QC Batch ID: MP15712
 Matrix Type: AQUEOUS

Methods: SW846 6010B
 Units: ug/l

Prep Date:

09/12/11

09/12/11

Metal	T86012-1 Original	DUP	RPD	QC Limits	T86012-1 Original	MS	Spikelot MPTW4	% Rec	QC Limits
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Boron									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead									
Lithium									
Magnesium									
Manganese									
Molybdenum									
Nickel									
Potassium									
Selenium									
Silver	0.0	0.0	NC	0-20	0.0	390	400	97.5	80-120
Sodium									
Strontium									
Thallium									
Tin									
Titanium									
Vanadium									
Zinc									

Associated samples MP15712: T85959-2, T85959-3, T85959-4, T85959-5

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T85959
 Account: ELPASOX - El Paso Corporation
 Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)

QC Batch ID: MP15712
 Matrix Type: AQUEOUS

Methods: SW846 6010B
 Units: ug/l

Prep Date: 09/12/11

Metal	T86012-1 Original MSD	Spikelot MPTW4	% Rec	MSD RPD	QC Limit
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Boron					
Cadmium					
Calcium					
Chromium					
Cobalt					
Copper					
Iron					
Lead					
Lithium					
Magnesium					
Manganese					
Molybdenum					
Nickel					
Potassium					
Selenium					
Silver	0.0	395	400	98.8	1.3 20
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Vanadium					
Zinc					

Associated samples MP15712: T85959-2, T85959-3, T85959-4, T85959-5

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: T85959
 Account: ELPASOX - El Paso Corporation
 Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)

QC Batch ID: MP15712
 Matrix Type: AQUEOUS

Methods: SW846 6010B
 Units: ug/l

Prep Date: 09/12/11

Metal	BSP Result	Spikelot MPTW4	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver	398	400	99.5	80-120
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP15712: T85959-2, T85959-3, T85959-4, T85959-5

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: T85959
 Account: ELPASOX - El Paso Corporation
 Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)

QC Batch ID: MP15712
 Matrix Type: AQUEOUS

Methods: SW846 6010B
 Units: ug/l

Prep Date: 09/12/11

Metal	T86012-1	Original SDL 1:5	%DIF	QC Limits
-------	----------	------------------	------	-----------

Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver	0.00	0.00	NC	0-10
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP15712: T85959-2, T85959-3, T85959-4, T85959-5

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: T85959
Account: ELPASOX - El Paso Corporation
Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)

QC Batch ID: MP15717
Matrix Type: AQUEOUS

Methods: SW846 7470A
Units: ug/l

Prep Date:

09/12/11

Metal	RL	IDL	MDL	MB	
				raw	final
Mercury	0.20	.049	.05	0.0040	<0.20

Associated samples MP15717: T85959-2, T85959-3, T85959-4, T85959-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

5.3.1
5

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T85959
 Account: ELPASOX - El Paso Corporation
 Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)

QC Batch ID: MP15717
 Matrix Type: AQUEOUS

Methods: SW846 7470A
 Units: ug/l

Prep Date: 09/12/11 09/12/11

Metal	T85515-1 Original DUP		RPD	QC Limits	T85515-1 Original MS		Spikelot HGTXAQ40 % Rec		QC Limits
Mercury	0.0	0.0	NC	0-6.6	0.0	3.1	3	103.3	78-118

Associated samples MP15717: T85959-2, T85959-3, T85959-4, T85959-5

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: T85959
 Account: ELPASOX - El Paso Corporation
 Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)

QC Batch ID: MP15717
 Matrix Type: AQUEOUS

Methods: SW846 7470A
 Units: ug/l

Prep Date:

09/12/11

Metal	T85515-1	Spikelot		MSD	QC
	Original MSD	HGTXAQ40	% Rec	RPD	Limit
Mercury	0.0	2.8	3	93.3	10.2

Associated samples MP15717: T85959-2, T85959-3, T85959-4, T85959-5

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

5.3.2
5

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: T85959
 Account: ELPASOX - El Paso Corporation
 Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)

QC Batch ID: MP15717
 Matrix Type: AQUEOUS

Methods: SW846 7470A
 Units: ug/l

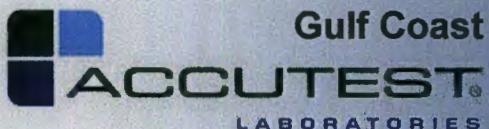
Prep Date: 09/12/11

Metal	BSP	Spikelot	QC	
	Result	HGTXAQ40 % Rec	Limits	
Mercury	3.0	3	100.0	80-120

Associated samples MP15717: T85959-2, T85959-3, T85959-4, T85959-5

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested

5.3.3
 5



General Chemistry

QC Data Summaries

Includes the following where applicable:

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



METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: T85959
Account: ELPASOX - El Paso Corporation
Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Alkalinity, Total as CaCO ₃	GN34764	5.0	0.0	mg/l	2500	2420	97.0	80-120%
Chloride	GP14926/GN34854	1.0	0.0	mg/l	1000	994	99.4	92-107%
Nitrogen, Nitrate + Nitrite	GP14966/GN34919	0.10	0.0	mg/l	1	1.03	103.0	90-110%
Solids, Total Dissolved	GN34666	10	0.0	mg/l	500	514	102.8	80-120%
Sulfate	GP14969/GN34925	10	0.0	mg/l	100	100	100.4	80-120%

Associated Samples:

Batch GN34666: T85959-2, T85959-3, T85959-4, T85959-5
Batch GN34764: T85959-2, T85959-3, T85959-4, T85959-5
Batch GP14926: T85959-2, T85959-3, T85959-4, T85959-5
Batch GP14966: T85959-2, T85959-3, T85959-4, T85959-5
Batch GP14969: T85959-2, T85959-3, T85959-4, T85959-5
(*) Outside of QC limits

6.1
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DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: T85959
Account: ELPASOX - El Paso Corporation
Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRJ)

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Alkalinity, Total as CaCO3	GN34764	T85449-1	mg/l	126	127	0.8	0-10%
Chloride	GP14926/GN34854	T85991-2	mg/l	0.0	0.0	0.0	0-5%
Nitrogen, Nitrate + Nitrite	GP14966/GN34919	T85959-2	mg/l	0.052	0.052	0.0	0-20%
Solids, Total Dissolved	GN34666	T85900-1	mg/l	545	563	3.2	0-5%
Sulfate	GP14969/GN34925	T86998-1	mg/l	637	635	0.3	0-20%

Associated Samples:

Batch GN34666: T85959-2, T85959-3, T85959-4, T85959-5
Batch GN34764: T85959-2, T85959-3, T85959-4, T85959-5
Batch GP14926: T85959-2, T85959-3, T85959-4, T85959-5
Batch GP14966: T85959-2, T85959-3, T85959-4, T85959-5
Batch GP14969: T85959-2, T85959-3, T85959-4, T85959-5
(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: T85959
Account: ELPASOX - El Paso Corporation
Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Alkalinity, Total as CaCO3	GN34764	T85449-1	mg/l	126	25	150	96.0	79-122%
Chloride	GP14926/GN34854	T85991-2	mg/l	0.0	10	9.9	99.0	81-119%
Nitrogen, Nitrate + Nitrite	GP14966/GN34919	T85959-2	mg/l	0.052	1	1.1	104.8	90-110%
Sulfate	GP14969/GN34925	T86998-1	mg/l	637	25	661	95.5	75-125%

Associated Samples:

Batch GN34764: T85959-2, T85959-3, T85959-4, T85959-5

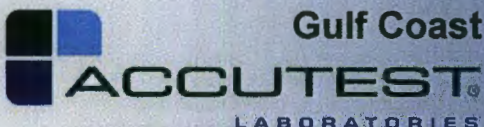
Batch GP14926: T85959-2, T85959-3, T85959-4, T85959-5

Batch GP14966: T85959-2, T85959-3, T85959-4, T85959-5

Batch GP14969: T85959-2, T85959-3, T85959-4, T85959-5

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits



Gulf Coast

03/30/12

Technical Report for

El Paso Corporation

MWHCODE: San Juan Basin River Plant Sites Project (SJRP)

Accutest Job Number: T92201

Sampling Date: 11/08/11

Report to:

MWH Americas, Inc

Sarah.Gardner@us.mwhglobal.com

ATTN: Jed Smith

Total number of pages in report: 15



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 (T104704220-12-6) AR (11-028-0) AZ (AZ0769) FL (E87628) KS (E-10366)
LA (85695/04004) OK (211-035)

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Test results relate only to samples analyzed.

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Sample Summary

El Paso Corporation

Job No: T92201

MWHCODE:San Juan Basin River Plant Sites Project (SJRP)

Sample Number	Collected Date	Time By	Received	Matrix Code Type	Client Sample ID
T92201-1	11/08/11	11:34	11/09/11	AQ Ground Water	SJRP MW-9
T92201-2	11/08/11	07:00	11/09/11	AQ Trip Blank Water	081111TB01



SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: El Paso Corporation

Job No T92201

Site: MWHCODE: San Juan River Basin Program

Report Date 11/15/2011 1:07:38 PM

1 Sample and 1 Trip Blank were collected on 11/08/2011 and received at Accutest on 11/09/2011 properly preserved, at 2.5 Deg. C and intact. These Samples received an Accutest job number of T92201. 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: GTT106
------------------	-------------------------

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T92223-9MS, T92223-9MSD were used as the QC samples indicated.
- Matrix Spike Duplicate Recovery for Benzene is outside control limits. Outside control limits due to high level in sample relative to spike amount.
- T92201-1 for o-Xylene: More than 40% RPD for detected concentrations between two GC columns.

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 Quality Objectives 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

Page 1 of 1

Client Sample ID:	SJRP MW-9	Date Sampled:	11/08/11
Lab Sample ID:	T92201-1	Date Received:	11/09/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8021B		
Project:	MWHCODE:San Juan Basin River Plant Sites Project (SJRP)		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	TT002366.D	1	11/12/11	WV	n/a	n/a	GTT106
Run #2							

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

Purgeable Aromatics

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	113	1.0	ug/l	
100-41-4	Ethylbenzene	37.6	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	18.9	3.0	ug/l	
95-47-6	o-Xylene ^a	1.6	1.0	ug/l	
	m,p-Xylene	17.3	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	108%		58-125%
98-08-8	aaa-Trifluorotoluene	102%		73-139%

(a) More than 40% RPD for detected concentrations between two GC columns.

ND = Not detected
 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:	081111TB01	Date Sampled:	11/08/11
Lab Sample ID:	T92201-2	Date Received:	11/09/11
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	SW846 8021B		
Project:	MWHCODE:San Juan Basin River Plant Sites Project (SJRP)		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	TT002367.D	1	11/12/11	WV	n/a	n/a	GTT106
Run #2							

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

Purgeable Aromatics

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
	m,p-Xylene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	96%		58-125%
98-08-8	aaa-Trifluorotoluene	101%		73-139%

ND = Not detected
 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

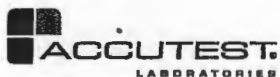


Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody



Accutest Laboratories Sample Receipt Summary

Page 1 of 2

Accutest Job Number: T92201 Client: MWH Project: EPTPC SAN JUAN RIVER PLANT 2011
Date / Time Received: 11/9/2011 Delivery Method: FedEx Airbill #'s: 5100 9001 9550
No. Coolers: 1 Therm ID: 110; Temp Adjustment Factor: 0.1;
Cooler Temps (Initial/Adjusted): #1: (2.4/2.5);

Cooler Security

Y or N

1. Custody Seals Present: ☒ ☐
2. Custody Seals Intact: ☒ ☐

3. COC Present: ☒ ☐
4. Smpl Dates/Time OK ☒ ☐

Cooler Temperature

Y or N

1. Temp criteria achieved: ☒ ☐
2. Cooler temp verification: Glass Thermometer
3. Cooler media: Ice (Bag)

Quality Control Preservation

Y or N

N/A

WTB STB

1. Trip Blank present / cooler: ☒ ☐ ☐
2. Trip Blank listed on COC: ☒ ☐ ☐
3. Samples preserved properly: ☒ ☐ ☐
4. VOCs headspace free: ☒ ☐ ☐

Sample Integrity - Documentation

Y or N

1. Sample labels present on bottles: ☒ ☐
2. Container labeling complete: ☒ ☐
3. Sample container label / COC agree: ☒ ☐

Sample Integrity - Condition

Y or N

1. Sample recvd within HT: ☒ ☐
2. All containers accounted for: ☒ ☐
3. Condition of sample: Intact

Sample Integrity - Instructions

Y or N

N/A

1. Analysis requested is clear: ☒ ☐
2. Bottles received for unspecified tests: ☐ ☒
3. Sufficient volume recvd for analysis: ☒ ☐
4. Compositing instructions clear: ☐ ☐ ☒
5. Filtering instructions clear: ☐ ☐ ☒

Comments

Accutest Laboratories
V: 713.271.4700

10165 Harwin Drive
F: 713.271.4770

Houston, TX 77036
www.accutest.com

Signature 11/9/11

T92201: Chain of Custody
Page 2 of 3

Sample Receipt Log

Page 2 of 2

Job #: T92201

Date / Time Received: 11/9/2011 9:15:00 AM

Initials: TH

Client: MWH

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	T92201-1	40 ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	110	2.4	0.1	2.5
1	T92201-1	40 ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	110	2.4	0.1	2.5
1	T92201-1	40 ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	110	2.4	0.1	2.5
1	T92201-2	40 ml	1	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	110	2.4	0.1	2.5
1	T92201-2	40 ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	110	2.4	0.1	2.5

4.1
4

T92201: Chain of Custody
Page 3 of 3



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

Page 1 of 1

Job Number: T92201

Account: ELPASOX El Paso Corporation

Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GTT106-MB	TT002336.D 1		11/11/11	WV	n/a	n/a	GTT106

The QC reported here applies to the following samples:

Method: SW846 8021B

T92201-1, T92201-2

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
	m,p-Xylene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
460-00-4	4-Bromofluorobenzene	94%	58-125%
98-08-8	aaa-Trifluorotoluene	98%	73-139%

5.1.1
5

Blank Spike Summary

Page 1 of 1

Job Number: T92201

Account: ELPASOX El Paso Corporation

Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GTT106-BS	TT002335.D	1	11/11/11	WV	n/a	n/a	GTT106

The QC reported here applies to the following samples:

Method: SW846 8021B

T92201-1, T92201-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	20	19.2	96	86-121
100-41-4	Ethylbenzene	20	19.5	98	81-116
108-88-3	Toluene	20	19.1	96	87-117
1330-20-7	Xylenes (total)	60	58.8	98	85-115
95-47-6	o-Xylene	20	19.6	98	87-116
	m,p-Xylene	40	39.1	98	84-116

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	4-Bromofluorobenzene	95%	58-125%
98-08-8	aaa-Trifluorotoluene	98%	73-139%

Matrix Spike/Matrix Spike Duplicate Summary

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Job Number: T92201

Account: ELPASOX El Paso Corporation

Project: MWHCODE:San Juan Basin River Plant Sites Project (SJRP)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T92223-9MS	TT002343.D	5	11/11/11	WV	n/a	n/a	GTT106
T92223-9MSD	TT002344.D	5	11/11/11	WV	n/a	n/a	GTT106
T92223-9	TT002340.D	1	11/11/11	WV	n/a	n/a	GTT106
T92223-9	TT002342.D	5	11/11/11	WV	n/a	n/a	GTT106

The QC reported here applies to the following samples:

Method: SW846 8021B

T92201-1, T92201-2

CAS No.	Compound	T92223-9 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	356 ^b		100	443	87	431	75* ^a	3	86-121/19
100-41-4	Ethylbenzene	4.9		100	110	105	106	101	4	81-116/14
108-88-3	Toluene	0.35	J	100	102	102	99.5	99	2	87-117/16
1330-20-7	Xylenes (total)	1.4	J	300	317	105	308	102	3	85-115/12
95-47-6	o-Xylene	ND		100	106	106	103	103	3	87-116/16
	m,p-Xylene	1.1	J	200	211	105	205	102	3	84-116/13

CAS No.	Surrogate Recoveries	MS	MSD	T92223-9	T92223-9	Limits
460-00-4	4-Bromofluorobenzene	109%	108%	168%* ^c	107%	58-125%
98-08-8	aaa-Trifluorotoluene	103%	103%	106%	103%	73-139%

(a) Outside control limits due to high level in sample relative to spike amount.

(b) Result is from Run #2.

(c) Outside control limits due to matrix interference. Confirmed by re-analysis.