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August 12, 2010

Mr. Glenn von Gonten New Mexico Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87504

RE: 2010 Annual Groundwater Report for the Blanco Plant South Flare Pit and D Plant Areas

Dear Mr. von Gonten

El Paso Natural Gas Company (EPNG) hereby submits the 2010 Annual Groundwater Report for the Blanco Plant South Flare Pit and D Plant Areas. The enclosed report details results of the annual groundwater sampling event, conducted on May 25, 2010 at the South Flare Pit and D Plant areas.

If you have any questions concerning the enclosed report or require additional information, please call me at (713) 420-7361.

Sincerely,

Ian Yanagisawa, P.E., P.G. Environmental Representative

Enclosures: as stated

El Paso Corporation

1001 Louisiana Street

Houston, Texas

77002

Prepared for:

EL PASO NATURAL GAS COMPANY



2010 ANNUAL GROUNDWATER REPORT FOR THE BLANCO PLANT SOUTH FLARE PIT AND D PLANT AREAS

San Juan County, New Mexico

August 2010

Prepared by:

MWH 1801 California Street, Suite 2900 Denver, Colorado 80202 (303) 291-2222

TABLE OF CONTENTS

	Section No.										
	TABL	E OF CONTENTS		· I							
1.0 INT		INTRODUCTION		· 1							
	2.0	SITE BACKGROUND	· .	2							
	2.1 2.2	PREVIOUS INVESTIGATIONS OF GROUNDWATER NITRATE SITE GEOLOGY/HYDROGEOLOGY	· · · · · · · · · · · · · · · · · · ·	2							
	3.0	2009 ANNUAL GROUNDWATER SAMPLING EVENT	•	3							
•	3.1 3.2	GROUNDWATER NITRATE+NITRITE DATA GROUNDWATER CHLORINATED HYDROCARBON DATA		· 3 4							
	4.0	CONCLUSIONS	· ·	5							
	5.0	RECOMMENDATIONS		6							
	6.0	REFERENCES	· · ·	7							

LIST OF TABLES

Table No.Description

2.1	Groundwater N	Nitrate+Nitrite Anal	ytical Data (1988 – 2010)

- 3.1 Groundwater Chlorinated Hydrocarbon Analytical Data (2002 2010)
- 4.1 Groundwater Sampling Schedule

LIST OF FIGURES

Figure No. Descri	ption
-------------------	-------

1 2

3

4

В

С

D

- Blanco Plant Site Layout
- Groundwater Potentiometric Surface Map May 2010
- Groundwater Nitrate Data May 2010
 - Groundwater Chlorinated Hydrocarbon Data May 2010

LIST OF APPENDICES

- A Field Sampling Forms
 - Laboratory Analytical Report
 - Nitrate+Nitrite Concentration and Groundwater Elevation Graphs
 - Chlorinated Hydrocarbon Concentration and Groundwater Elevation Graphs

LIST OF ACRONYMS

CHC DCA DCB DCE EPNG MCL MWH NMOCD NMWQCC PCE TCE USEPA Chlorinated Hydrocarbons Dichloroethane Dichlorobenzene Dichloroethene El Paso Natural Gas Company Maximum Contaminant Level MWH Americas, Inc. New Mexico Oil Conservation Division New Mexico Water Quality Control Commission Perchloroethene Trichloroethene United States Environmental Protection Agency

1.0 INTRODUCTION

This 2010 Annual Groundwater Report for the Blanco Plant South Flare Pit and D Plant Areas (Report) has been prepared on behalf of El Paso Natural Gas Company (EPNG) to report the results of the May 25, 2010 annual groundwater sampling event at the Blanco Plant site. The Blanco Plant is located northeast of Bloomfield, New Mexico. This work has been performed according to the proposed actions outlined in the 2009 Groundwater Report for the Blanco Plant South Flare Pit and D Plant Areas (MWH, 2009). The 2009 Groundwater Report was submitted to the New Mexico Oil Conservation Division (NMOCD) on August 28, 2009.

The current sampling program was initiated pursuant to a NMOCD letter dated May 3, 2002, regarding remediation activities at EPNG's Blanco Plant. At the time, the primary regulatory driver for groundwater monitoring at this site was the New Mexico Water Quality Control Commission (NMWQCC) nitrate+nitrite standard of 10 milligrams per liter (mg/L). The *Groundwater Nitrate Work Plan for Blanco South Flare Pit and D Plant Areas* (the Work Plan) (MWH, 2002) was submitted to NMOCD in July 2002 and was conditionally approved in a NMOCD letter dated February 21, 2003. The ensuing groundwater nitrate report (MWH, 2003) concluded that two localized "hot spots" were present at the Blanco Plant, and annual monitoring was recommended.

The Blanco Plant is located in San Juan County, New Mexico, approximately 1.5 miles northeast of the town of Bloomfield, New Mexico on San Juan County Road 4900. Figure 1, *Blanco Plant Site Layout*, presents the Blanco Plant site layout and the locations of the D Plant and the former South Flare Pit.

Section 2.0 of this report summarizes historic information related to groundwater nitrate concentrations at the site, including a description of previous investigations and information regarding the geology/hydrogeology of the site. Section 3.0 presents the results of the groundwater sampling event in 2010, and Section 4.0 presents conclusions drawn from the results of the sampling event. Section 5.0 includes recommendations for ongoing site activities.

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2.0 SITE BACKGROUND

2.1 PREVIOUS INVESTIGATIONS OF GROUNDWATER NITRATE

An initial assessment of site hydrogeology of the Blanco Plant area was conducted by Bechtel Environmental in 1988 (Bechtel, 1989). Six monitoring wells were installed and sampled during this investigation. Elevated nitrate concentrations were identified in wells MW-2 (290 parts per million [ppm]) and MW-6 (51 ppm) at that time. This report concluded that "the high concentration of nitrate in the upgradient well (MW-2) could not have been due to plant operations".

As part of a groundwater study by K.W. Brown & Associates, Inc (K.W. Brown, 1990) to investigate the extent of contamination resulting from a leaking underground storage tank in the D Plant Area, the source of elevated nitrate in groundwater was further investigated. Monitoring well MW-19 was installed upgradient of MW-2. Sampling results from this investigation indicated elevated nitrate concentrations in MW-2 (200 ppm), MW-19 (90 ppm), MW-14 (210 ppm) and MW-15 (89 ppm). Inspection of the plant area at that time did not find a potential nitrate source.

In 2003, MWH conducted a study of area background nitrate data and potential onsite sources of nitrate. The report found that evaporites present at the site were capable of causing elevated nitrate concentrations in leachate. In addition, a number of products used in plant operations contained nitrates or nitrites, but no significant releases were identified. The report recommended that annual monitoring be conducted.

Historic and recent groundwater nitrate+nitrite data at the site are presented in Table 2.1.

2.2 SITE GEOLOGY/HYDROGEOLOGY

The geologic framework of the site has been summarized by Bechtel Environmental (Bechtel, 1989) and K.W. Brown and Associates (K.W. Brown, 1990). According to these assessments, the plant area is located on Quaternary alluvium consisting of sand, silt, clay and gravel. At the plant site, the thickness of the alluvium varies from less than three feet to more than 75 feet (Bechtel, 1989). Underlying the alluvium is the Tertiary Nacimiento Formation consisting of interbedded coarse to medium-grained arkosic sandstone, siltstone and shale which were deposited as both channel fill and floodplain deposits (Bechtel, 1988). Orientation of the channel-fill sandstone deposits may locally control groundwater flow due to higher hydraulic conductivities through these features.

An assessment of site hydrogeology of the Blanco Plant area was conducted by Bechtel Environmental in 1988 (Bechtel, 1989). Based on the information collected during this study, it was concluded that the direction of groundwater flow is to the south, toward the San Juan River, which is located approximately 1.5 miles south of the site. The average hydraulic conductivity was estimated to be 2.1×10^{-4} centimeters per second. Depth to groundwater ranged from 50 feet (at MW-2), among wells situated within a buried relict channel, to nine feet (at MW-10) below ground surface, typical of wells completed in the Nacimiento Formation itself. These results were generally consistent with the subsequent findings of K.W. Brown (1990).

3.0 2010 ANNUAL GROUNDWATER SAMPLING EVENT

Monitoring wells at the Blanco Plant were sampled on May 25, 2010 and analyzed for nitrate+nitrite concentrations and chlorinated hydrocarbons (CHCs), as described below. In accordance with the approval letter from NMOCD, EPNG plugged and abandoned monitoring wells MW-10, MW-16, MW-17 and MW-18 in December 2003; therefore, these wells are no longer monitored.

Figure 2 depicts the groundwater potentiometric surface contours, based on water level measurements collected during the May 25, 2010 annual groundwater sampling event. The groundwater generally flows toward the south, toward the San Juan River.

3.1 GROUNDWATER NITRATE+NITRITE DATA

Groundwater samples were collected on May 25, 2010 from monitoring wells MW-5, MW-6, MW-8, MW-12, MW-13, MW-14, MW-15, MW-28, MW-29 and MW-30. Sampling was attempted at monitoring wells MW-2 and MW-7; however, these wells were dry. Purging and sampling activities were conducted in accordance with the NMOCD guidance document entitled *Guidelines for Remediation of Leaks, Spills and Releases* (NMOCD, 1993). The groundwater samples were submitted to Accutest Laboratories, Houston, Texas for analysis of nitrate+nitrite concentrations. Field data and additional sampling details are presented on the field forms in Appendix A.

The nitrate+nitrite analytical results are presented in Table 2.1, along with the historical nitrate+nitrite data for each well. The 2010 nitrate+nitrite analytical results are also presented on Figure 3. The laboratory analytical reports are included in Appendix B. Nitrate+nitrite concentrations were generally consistent with those observed in recent years. Nitrate+nitrite concentrations currently exceed the NMWQCC groundwater standard of 10 mg/L in South Flare Pit area monitoring wells MW-5 (16.7 mg/L), MW-6 (103 mg/L), MW-28 (51.4 mg/L), MW-29 (79.9 mg/L), and MW-30 (34.8 mg/L) and in D Plant area monitoring well MW-15 (22.9 mg/L).

Trend graphs depicting nitrate+nitrite concentrations versus groundwater elevations over time are presented in Appendix C for monitoring wells MW-5, MW-6, MW-8, MW-12, MW-13, MW-14, MW-15, MW-28, MW-29, and MW-30. Due to insufficient data, trend graphs were not generated for dry monitoring wells MW-2 and MW-7. In most wells, the nitrate+nitrite concentrations currently exhibit a decreasing trend. The primary exceptions appear to be MW-5, MW-6, and MW-29. Nitrate+nitrite concentrations in MW-5 increased starting in 2007, following years of the well being dry. However, the water samples since 2007 have all been during periods when the water level was below the bottom-of-screen elevation. The apparent increase in nitrate is potentially due to ongoing evaporation following occasional high groundwater periods. The field logs indicate that MW-5 has settled; and the well condition needs further evaluation.

In monitoring well MW-6, nitrate+nitrite concentrations have been relatively stable, ranging from 59 to 110 mg/L since the initial sampling in 1988.

Monitoring well MW-2 has not been sampled since 1994 because the well has been dry. Historical groundwater data collected from this well indicated elevated nitrate+nitrite

concentrations (e.g., 249 mg/L in 1994). A nearby upgradient monitoring well, MW-19, was installed in 1992 and sampled for nitrate until May 2005 (MWH, 2007). Between 1992 and 2005, the nitrate concentrations in MW-19 decreased from 70 mg/L to 3.5 mg/L; therefore, if shallow groundwater is even present in the MW-2 area, the nitrate concentrations have likely attenuated significantly since 1994.

Monitoring well MW-7 has not been sampled since 1993 because this well has also been dry. The historical groundwater data collected from MW-7 indicated nitrate+nitrite concentrations well below the NMWQCC standard.

3.2 GROUNDWATER CHLORINATED HYDROCARBON DATA

Groundwater samples from the four wells in the D Plant area were also analyzed for a suite of selected chlorinated hydrocarbon compounds (CHCs), in accordance with the site monitoring requirements. The CHCs include perchloroethene (PCE), trichloroethene (TCE), 1,1-dichloroethane (DCA), 1,2-dichlorobenzene (DCB), 1,1-dichloroethene (DCE), trans-1,2-DCE, and cis-1,2-DCE. These compounds were targeted because they had been detected during previous site characterization work. Annual sampling data from 2002 through 2009 are presented in Table 3.1. The 2009 annual sampling data are also presented on Figure 4.

Exceedances of applicable NMWQCC groundwater standards were observed only in monitoring well MW-13. The 1,1-DCA concentration in MW-13 (49.0 ug/L) exceeded the NMWQCC groundwater standard of 25 ug/L. It is also noted that although the TCE concentration in MW-13 (18.8 ug/L) did not exceed its NMWQCC groundwater standard of 100 ug/L, it did exceed the corresponding U.S. Environmental Protection Agency (USEPA) Primary Drinking Water Standard – Maximum Contaminant Level of 5 ug/L.

Trend graphs of CHC concentrations versus groundwater elevations over time are presented in Appendix D for monitoring wells MW-12, MW-13, MW-14 and MW-15. Key observations from these graphs include the following:

- Since 2002, the 1,1-DCA concentrations in monitoring well MW-13 have decreased from 61.0 ug/L to 49.0 ug/L.
- The TCE concentrations in monitoring well MW-13 are also attenuating over time, possibly including degradation via reductive dechlorination, which is suggested by the stable concentrations of daughter products such as 1,1-DCE; cis-1,2-DCE; and trans-1,2,-DCE.
- The concentrations of PCE, TCE, cis-1,2-DCE, and 1,1-DCA in monitoring well MW-12 (which appears to be located hydraulically upgradient from the other wells in the D Plant area) have all clearly attenuated since 2002.

4.0 CONCLUSIONS

The following conclusions are based on current and historic sampling and analyses at the site:

Nitrate+Nitrite Concentrations

- Nitrate+nitrite concentrations in the Blanco Plant area are generally decreasing; however, concentrations in monitoring well MW-6 appear to be stable.
- Previous investigations have determined that nitrate-containing evaporites are present within the regional hydrogeology, and these compounds are likely contributors to the observed nitrate concentrations in groundwater (Bechtel, 1988; Brown, 1990; MWH, 2003). The same three investigations also reported historical usage of various nitrate-containing products at the site; however, there have not been any documented releases.

Chlorinated Hydrocarbons

- The groundwater sample collected from MW-13 exceeded the 1,1-DCA NMWQCC standard (25 ug/L) with a concentration of 49.0 ug/L. In addition, the groundwater sample from MW-13 exceeded the TCE USEPA MCL (5.0 ug/L), but not the NMWQCC groundwater standard (100 ug/L), with a concentration of 18.8 ug/L. The stable concentrations of cis-1,2-DCE, trans-1,2-DCE, and 1,1-DCE in MW-13 indicate that reductive dechlorination is potentially occurring. The 1,1-DCA and TCE concentrations in this well are clearly decreasing over time.
- Monitoring wells MW-12, MW-14 and MW-15 remain below the MMWQCC groundwater standards and/or USEPA MCLs for the chlorinated hydrocarbons of potential concern at the Blanco Plant.

5.0 **RECOMMENDATIONS**

As shown in Table 4.1, *Groundwater Sampling Schedule*, the following actions will be performed by EPNG to monitor groundwater nitrate+nitrite and CHC concentrations at the site:

- All groundwater monitoring wells in the South Flare Pit and D Plant areas of the Blanco Plant will be sampled annually and analyzed for nitrate+nitrite concentrations.
- Groundwater samples from monitoring wells in the D Plant Area (MW-12, MW-13, MW-14 and MW-15) will continue to be analyzed annually for CHC concentrations, as listed in Table 4.1.
- Well MW-2 has been dry since at least 2002. All current evidence suggests it is unlikely that this well will produce sufficient water for sampling going forward. Therefore, pending approval by NMOCD, this well should be plugged and abandoned.
- Well MW-7 has been dry since at least 2002. Groundwater samples obtained from MW-7 in 1991 and 1993 were below the NMWQCC groundwater standard of 10 mg/L for nitrate+nitrite. Well construction data from 1988 indicates that the bottom of the screen in MW-7 is almost four feet above the current static water table in nearby wells MW-8 and MW-29. Given this information it seems unlikely that MW-7 will produce sufficient water for sampling in the future. Therefore, pending approval by NMOCD, this well should be plugged and abandoned.
- The results of the nitrate+nitrite and CHC groundwater sampling will be reported to NMOCD in annual groundwater monitoring reports (typically submitted in August of each year).

EPNG will notify NMOCD at least 48 hours in advance of all scheduled sampling activities, such that NMOCD has the opportunity to witness the events and split samples, if desired.

6.0 **REFERENCES**

- Bechtel Environmental, 1988. Groundwater Investigation Report, El Paso Natural Gas Company's Blanco Plant, San Juan County, New Mexico. January 1989.
- K.W. Brown and Associates, Inc, 1990. *Site Investigation of the Blanco Plant, San Juan County, New Mexico*. Prepared for El Paso Natural Gas Company. February 1990.
- MWH, 2002. Groundwater Nitrate Work Plan for Blanco South Flare Pit and D Plant Areas. July 2002.
- MWH, 2003. Groundwater Nitrate Report for the Blanco Plant South Flare Pit and D Plant Areas. April, 2003
- MWH, 2003. 2003 Groundwater Report for the Blanco Plant south Flare Pit and D Plant Areas. August 2003.
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- MWH, 2005. 2005 Groundwater Report for the Blanco Plant South Flare Pit and D Plant Areas. August 2005.
- MWH, 2006. 2006 Groundwater Report for the Blanco Plant South Flare Pit and D Plant Areas. September 2006.
- MWH, 2007. 2007 Groundwater Report for the Blanco Plant South Flare Pit and D Plant Areas. July 2007.
- MWH, 2008. 2008 Groundwater Report for the Blanco Plant South Flare Pit and D Plant Areas. August 2008.

NMOCD, 1993. Guidelines for Remediation of Leaks, Spills and Releases. August 1993.

Tables

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TABLE 2.1

GROUNDWATER NITRATE+NITRITE ANALYTICAL DATA (1988 - 2010) BLANCO PLANT - SAN JUAN COUNTY, NEW MEXICO

Monitoring Well	Sample Date	Nitrate+Nitrite (mg/l)		Monitoring Well	Sample Date	Nitrate+Nitrite (mg/l)
~	NMOCD Sta	ndard: 10 mg/L	,		NMOCD Sta	andard: 10 mg/L
	9/21/1988				10/7/1993	94.5
MW-2	6/18/1991	180.	•	MW-6	1/26/1994	95.8
	2/23/1993	256		(cont'd)	8/20/1994	1.7
	6/8/1993	228			8/27/2001	NS
	9/29/1993	233			12/20/1994	94
	2/10/1994	249			2/16/1995	90.6
	5/29/2002	dry			11/10/2000	59
	6/3/2003	dry			9/24/2002	95.1
	5/17/2004	dry			6/3/2003	74
	5/30/2005	dry			5/17/2004	dry
	6/8/2006	dry			5/30/2005	not sampled
· · · ·	6/20/2007	dry			6/8/2006	not sampled
	5/22/2008	dry		,	6/20/2007	92
	5/28/2009	dry		/	5/22/2008	100
	5/25/2010	dry		· .	5/28/2009	71.2
•	9/23/1988	0.02			5/25/2010	103
MW-5	6/18/1991	0.08			9/22/1988	0.3
	2/19/1993	<1.0		· MW-7	6/18/1991	0.28
	6/7/1993	<1.0		· .	6/7/1993	3
	8/27/2001	NS (9/27/1993	<2.8
	1/27/1994	<1.0			5/29/2002	dry
	8/8/2000	4.6			9/24/2002	dry
	8/8/2000	4.6	÷ .		6/3/2003	dry
	11/10/2000	4.0			5/17/2004	dry
	9/24/2002	dry			5/30/2005	dry
. •	6/3/2003	dry			6/8/2006	dry
	5/17/2004	dry			6/20/2007	dry
	5/30/2005	dry			5/22/2008	dry
	6/8/2006	dry			5/28/2009	dry
	6/20/2007	15			5/25/2010	dry
,	5/22/2008	9.2			9/23/1988	· <0.1
	5/28/2009	10.0		MW-8	6/18/1991	<0.06
	5/25/2010	16.7			2/19/1993	2.0
	9/21/1988	51.0			6/7/1993	<1.0
MW-6	6/19/1991	110			9/27/1993	<1.0
	2/19/1993	63.5			1/27/1994	<1.0
	6/7/1993	76.4			11/10/2000	<0.1
	9/28/1993	85.9			3/23/2001	0.21

TABLE 2.1

GROUNDWATER NITRATE+NITRITE ANALYTICAL DATA (1988 - 2010) BLANCO PLANT - SAN JUAN COUNTY, NEW MEXICO

Monitoring	g Sample Date Nitrate+Nitrite			Monitoring	Sample Date Nitrate+Nitr		
	NMOCD Sta	ndard: 10 mg/L			NMOCD Sta	andard: 10 mg/L	
	8/28/2001	0.33			9/28/1993	4.1	
MW-8	5/28/2002	0.26		MW-13	1/27/1994	5.4	
(cont'd)	6/3/2003	0.13	Í	(cont'd)	8/8/2000	<12.5	
	5/17/2004	0.43			11/9/2000	9.8	
	5/31/2005	0.30			3/22/2001	13	
	6/8/2006	0.30			8/28/2001	7.9	
	6/20/2007	0.50			5/28/2002	6.0	
	5/22/2008	0.16			6/3/2003	5.8	
	5/28/2009	<2.0			5/17/2004	9.8	
	5/25/2010	0.19			5/31/2005	8.2	
	9/24/1988	1.0			6/8/2006	8.2	
MW-10	6/18/1991	0.74			6/20/2007	6.1	
	2/19/1993	1.2			5/22/2008	3.9	
· ·	6/7/1993	2.2			5/28/2009	4.8	
	9/27/1993	2.1			5/25/2010	4.6	
	1/27/1994	2.0			1/15/1990	.210	
	5/28/2002	dry		MW-14	2/25/1993	19.2	
, · ·	9/24/2002	dry			6/8/1993	17.5	
	6/3/2003	NS			9/28/1993	11.8	
	12/1/2003	abandoned	·		1/27/1994	15:4	
	1/15/1990	9.6			8/8/2000		
MW-12	6/19/1991	7.8			11/13/2000	0.24	
· ·	2/25/1993	7.8			3/22/2001	13	
	6/7/1993	8.5			8/28/2001	20	
	9/28/1993	9.1			5/28/2002	15	
	1/27/1994	7.3			6/3/2003	15	
,	8/8/2000	<10		· · · ·	5/17/2004	16	
	11/9/2000	5.7			5/31/2005	24	
	3/22/2001	8.4			6/8/2006	14	
	8/28/2001	8.0			6/20/2007	15	
	5/28/2002	2.0			5/22/2008	13.3	
	6/3/2003	6.7	,		5/28/2009	7.8	
	5/17/2004	7.6			5/25/2010	15.5	
	5/31/2005	8.6			1/15/1990		
	6/8/2006	6.5		[°] MW-15	6/19/1991	50	
	6/20/2007	7.6			2/24/1993	5	
	5/22/2008	6.7			6/8/1993	48.1	
	5/28/2009	4.3			9/28/1993	43	
	5/25/2010	7.2			1/27/1994	43.7	
	1/15/1990	16.4			8/8/2000	35	
MW-13	6/19/1991	6.3			11/9/2000	38	
N	2/24/1993	10.9			3/22/2001	25	
	6/8/1993	8.1			8/28/2001	30	

Page 2 of 3

TABLE 2.1

GROUNDWATER NITRATE+NITRITE ANALYTICAL DATA (1988 - 2010) BLANCO PLANT - SAN JUAN COUNTY, NEW MEXICO

Monitoring	Sample Date Nitrate+Nitrite			Monitoring	Sample Date	Nitrate+Nitrite
	NMOCD Sta	ndard: 10 mg/L			NMOCD Sta	andard: 10 mg/L
	5/28/2002	24		· ·	.6/20/2007	42
MW-15	6/3/2003	21		۸W-28 ،	5/22/2008	38.5
(cont'd)	5/17/2004	20		· (cont'd)	5/28/2009	22.7
	5/31/2005	35			5/25/2010	51.4
	6/8/2006	-17			10/7/1993	8.3
	6/20/2007	18		MW-29	2/2/1994	19.6
	5/22/2008	21.6			8/20/1994	28.8
	5/28/2009	12.0 ×			12/20/1994	41
	5/25/2010	22.9			2/16/1995	28.1
	6/19/1991	0.07			8/10/2000	50
MW-16	2/25/1993	3.7			11/10/2000	- 66
	6/8/1993	<1.0			3/26/2001	70
	6/3/2003	NS			8/28/2001	58
	12/1/2003	abandoned			5/28/2002	70
	2/25/1993	15.3			6/3/2003	79
MW-17	9/24/2002	dry		,	5/17/2004	88
	6/3/2003	NS			5/31/2005	97
	12/1/2003	abandoned			6/8/2006	71
	2/25/1993	8.19			6/20/2007	79
MW-18	6/8/1993	<1.0			5/22/2008	,72.5
,	9/28/1993	<1.0	•		5/28/2009	46.2
	9/24/2002	3.1			5/25/2010	79.9
	6/3/2003	NS -			10/7/1993	28.1
	12/1/2003	abandoned		MW-30	2/2/1994	57.1
	10/7/1993	2.1			8/20/1994	67.6
MW-28	2/2/1994	2.8			2/16/1995	91.3
	8/20/1994	2.7			8/10/2000	84
	12/20/1994	0.33			11/10/2000	70
	2/16/1995	1.6			3/26/2001	72
	8/10/2000	25		· .	8/28/2001	76
	11/10/2000	53		· .	5/28/2002	66
	3/23/2001	. 34			6/3/2003	58
	8/28/2001	63			5/17/2004	52
	5/28/2002	83			5/31/2005	58
	6/3/2003	87			6/20/07	57
	5/17/2004	82			5/22/08	43.2
	5/31/2005	85			5/28/09	16.9
	6/8/2006	68			I 5/25/10	34 8

Notes:

"<" = analyte not detected at the method detection limit (MDL). Value shown is the MDL. Shaded values indicate exceedances of the NMWQCC Nitrate+Nitrite (as N) standard of 10 mg/L.

TABLE 3.1

GROUNDWATER CHLORINATED HYDROCARBON ANALYTICAL DATA (2002 - 2010) BLANCO PLANT - SAN JUAN COUNTY, NEW MEXICO

		GW Depth to Chlorinated Hydrocarbons by EPA Method 8260B (ug/l								Ĺ)
Monitor	Sample	Elevation	Water				trans-	cis-		ľ –
Well	Date	(ft. amsl)	(ft. btoc)	1,1-DCA	1,2-DCB	1,1-DCE	1,2-DCE	1,2-DCE	TCE	PCE
Ň	MWQCC G	roundwater	Standard:	25	NA ···	5.0	NA	NA	100	20-
and the second day		US F	PA MCL:	NA	NA	7.0	100	70	5.0	5.0
MW-12	5/28/2002	5580.73	20.95	21.0	5.2	<1.0	1.7	20.0	8.0	3.0
	6/3/2003	5584.69	16.99	8.2	. 3.4	<2.0	<2.0	8.2	4.5	3.2
	5/17/2004	5585.09	16.59	4.6	3.4	· <2.0	<2.0	5:1	4.0	2.3
	5/31/2005	5586.03	15.65	22.3	<2.0	<2.0	<2.0	18.8	20.7	<2.0
	6/8/2006	5583.06	18.62	8.7	4.5	<2.0	0.87	10.7	4.7	2.5
	6/20/2007	5585.13	16.55	. 3.6	3.0	<2.0	<2.0	4.4	3.0	1.9
	5/22/2008	5585.64	16.04	6.1	5.3	<2.0	0.69	8.2	3.1	2.4
	5/28/2009	5584.48	17.20	4.2	4.1	<2.0	<2.0	5.0	2.6	2.0
	5/25/2010	5585.7 <u>8</u>	15.90	2.9	3.9	<2.0	0.52	4.9	2.5	1.9
MW-13	5/28/2002	5580.79	16.76	61.0	79.0	1.3	8.2	45.0	39.0	1.6
	6/3/2003	5583.11	14.44	53.8	50.5	1.4	8.2	33.0	35.1	1.4
	5/17/2004	5583.43	14.12	41.2	29.2	<2.0	4.0	21.2	22.5	<2.0
	5/31/2005	5584.12	13.43	50.7	<2.0	<2.0	5.7	26.6	21.3	<2.0
	6/8/2006	5581.95	15.60	48.8	53.1	5.2	5.2	35.8	26.9	<2.0
	6/20/2007	5583.22	14.33	58.8	63.9	1.2	7.8	43.6	29.6	1.1
	5/22/2008	5583.64	13.91	44.9	69.9	0.9	5.0	32.3	24.5	1.0
	5/28/2009	5583.00	14.55	49.0	57.2	0.88	5.9	34.3	18.8	1.2
	5/25/2010	5582.95	14.60	48.7	48.2	1.1	6.2	41.5	18.6	1.2
MW-14	5/28/2002	5576.62	21.57	8.7	<1.0	<1.0	<1.0	2.9	1.9	<1.0
	6/3/2003	5578.34	19.85	9.5	<2.0	<2.0	<2.0	3.3	2.4	<2.0
	5/17/2004	5578.41	19.78	5.7	<2.0	<2.0	<2.0	2.1	1.6	<2.0
	5/31/2005	5579.38	18.81	4.7	<2.0	<2.0	<2.0	<2.0	<2.0	1.2
	6/8/2006	5578.16	20.03	8.9	<2.0	<2.0	<2.0	. 3.4	1.8	<2.0
	6/20/2007	5579.76	18.43	24.2	23.8	<2.0	2.7	14.2	11.0	<2.0
	5/22/2008	5581.99	16.20	9.3	4.7	<2.0	<2.0	3.4	3.0	<2.0
	_5/28/2009	5581.89	16.30	6.4	2.1	<2.0	<2.0	1.4	1.5	<2.0
	5/25/2010	5582.64	15.55	7.2	3.5	<2.0	<2.0	2.6	2.1	<2.0
MW-15	5/28/2002	5576.25	20.33	5.3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
,	6/3/2003	5577.73	18.85	6.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
	5/17/2004	5578.11	18.475	6.3	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
•	5/31/2005	5578.78	17.8	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
	6/8/2006	5576.90	19.68	4.3	<2.0	<2.0	<2.0 .	<2.0	<2.0	<2.0
	6/20/2007	5577.75	18.83	4.8	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
	5/22/2008	5578.46	18.12	3.6	<2.0	<2.0	<2.0	0.6	<2.0	<2.0
	5/28/2009	5577.75	18.83	3.3	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
	5/25/2010	5578.05	18.53	2.7	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0

DCA: Dichloroethane DCB: Dichlorobenzene DCE: Dichloroethene NA: Not applicable PCE: Perchloroethene TCE: Trichloroethene

Values appearing in bold type exceed either the relevant MCL or New Mexico Water Quality Control Commission GW Standard

TABLE 4.1

GROUNDWATER SAMPLING SCHEDULE BLANCO PLANT - SAN JUAN COUNTY, NEW MEXICO

Monitoring Well	Analyses	Sampling Frequency		
Blanco Plant Area				
MW-2	Nitrate+Nitrite	Annual		
MW-5	Nitrate+Nitrite	Annual		
MW-6	Nitrate+Nitrite	Annual		
MW-7	Nitrate+Nitrite	Annual		
MW-8	Nitrate+Nitrite	Annual		
MW-28	Nitrate+Nitrite	Annual		
MW-29	Nitrate+Nitrite	Annual		
MW-30	Nitrate+Nitrite	Annual		
D Plant Area				
MW-12	Nitrate+Nitrite, CHCs	Annual		
MW-13	Nitrate+Nitrite, CHCs	Annual		
MW-14	Nitrate+Nitrite, CHCs	Annual		
MW-15	Nitrate+Nitrite, CHCs	Annual		

Nitrate+Nitrite as N by EPA Method 353.2 or Standard Methods (SM) Method 4500.

CHCs: Chlorinated Hydrocarbons by EPA Method 8260B: 1,1-DCA, 1,1-DCE, 1,2-DCB, cis-1,2-DCE, trans-1,2-DCE, TCE, and PCE.

- **DCA:** Dichloroethane
- **DCB:** Dichlorobenzene
- **DCE:** Dichloroethene
- **PCE:** Perchloroethene
- TCE: Trichloroethene

Figures

.









APPENDIX A

Field Sampling Forms



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WATER LEVEL DATA

 Project Name:
 San Juan Basin Groundwater

 Project Manager:
 Ashley Ager

 Client:
 MWH

Site Name: Blanco Plant

Well	Time	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Volume Removed	Comments
MW-2	7:55 AM	-	-	-	-	Dry at 58.76
MW-5		-	20.44		-	Sample Nitrates/Nitrites
MW-6		- .	29.67		-	Sample Nitrates/Nitrites
MW-7	r,	- '	-	-	-	Dry at 21.30
MW-8		-	34.40	··· _	-	Sample Nitrates/Nitrites
MW-12		- ·	15.90	-	-	Sample CHCs/Nitrates/Nitrites
MW-13		-	14.60	-	- -	Sample CHCs/Nitrates/Nitrites
MW-14		-	15.55	-	_ ·	Sample CHCs/Nitrates/Nitrites
MW-15		-	18.53	-	-	Sample CHCs/Nitrates/Nitrites
MW-28		-:	29.79	. –	-	Sample Nitrates/Nitrites
MW-29		-	31.97	-	-	Sample Nitrates/Nitrites
MW-30		<i>′</i> _	31.91	· · -		Sample Nitrates/Nitrites

Comments

Signature: Ashley L. Ager

Date: 5/31/2010

.

Date:

5/25/2010



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Project Name: Client: Project Manager:	San Juan B MWH Ashley Age	asin er	- Samp	Location: Date: ler's Name:	Blanco Pla 5/25/2010 Troy Urbai	nt,) 1	Well No: Time:	<u>MW-5</u> 10:22
Measuring Point: Well Diameter:	TOC 4" Wa	Depth To ater Colum	to Water: tal Depth: nn Height:	20.44 20.74 0.3	ft ft ft	Depth Product	to Product: Thickness:	ft ft
Sampling Method: Criteria:	☐ Submersib ☑ Bottom Va ☑ 3 to 5 Cas	ile Pump Ilve Bailer ing Volumes	Centrifug Double C Of Water Rep	al Pump 🗌 Pe heck Valve Baik noval 🖸 Stabili	ristaltic Pump er zation of India	Other	ers 🖸 Other	bail dry
				Water Volun	ne in Well			
Gal/ft x ft of w	vater	Gal	loins	Oun	ices		Volume	to be removed
0.3 x .65		0.19	5 x 3			1	· 0.	585 gal
Time (military)	pH (su)	SC (ms)	Temp (°F)	ORP (millivolts)	D.O.	Turbidity	Vol Evac.	Comments/Flow Rate
((04)	((115)	(. ,	(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	((gal	
10:22	6.96	1.68	62.8				0.065	clear
	/.11	1.71	59.5				0.24	clear
· ·	7.10	1.70	59.7			·	0.2	clear
		· · · · · · · · · · · · · · · · · · ·			· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·		
Final: 10:42	7.19	1.80	58.1				0.3	Bailed dry
COMMENTS:	Well bailed	l dry durin	g purging					
Instrumentation:	🗹 pH Meter	DO Mor	nitor 🗹 C	onductivity Met	er 🗹 Tem ्	perature Mete	r 🗌 Other	· <u>·</u> ····
Water Disposal:	Rio Vista		•				•	
Sample ID:	MW-12		. Sa	mple Time: .	10:39			
Analysis Requested:	BTEX Dther		Alkalini	ty □ˈTDS	Cations [Anions	Nitrate 🗹 I	Nitrite 🗌 Metals
Trip Blank:	052520	10TB01	•	· .		Duplica	ite Sample:	
				• .				



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Project Name: Client: Project Manager: Measuring Point: Well Diameter:	San Juan B MWH Ashley Age TOC 4" Wa	asin r Depth Tot ater Colum	Samp to Water: al Depth: n Height:	Location: Date: ler's Name: 29.67 31.22 1.55	Blanco Pla 5/25/2010 Troy Urbar ft ft ft	nt Depth 1 Product	Well No: Time: to Product: Thickness:	MW-6 12:28 ft ft		
Sampling Method: Criteria:	 □ Submersib ☑ Bottom Va ☑ 3 to 5 Casi 	le Pump [lve Bailer [ng Volumes c	Centrifug	al Pump 🗌 Pe heck Valve Baik noval 🗹 Stabili	ristaltic Pump er zation of Indic	Other	ers 🗹 Other	bail dry		
			<u> </u>	Water Volun	ne in Well					
Gal/ft x ft of w	ater	Gall	ons	Oun	ces		Volume t	to be removed		
1.55 x .65		1	· ·	1	t			3 gal		
1										
Time	рH	SC	Temp	ORP	D.Q.	Turbidity	Vol Evac.	Comments/Flow Rate		
(military)	(su)	(ms)	(°F)	(millivolts)	(mg/L)	(NTU)	gal	,		
12:26	6.88	3.62	65.3				0.2	clear		
	6.91	3.60	64.8				5	clear		
	6.94	3.64 ·	64.2				0.75	clear		
· · · · · · · · · · · · · · · · · · ·	6.93	3.70	63.0				1	clear		
			<u> </u>			·				
· · · · · · · · · · · · · · · · · · ·		. /								
					· · ·					
· · · · · ·										
Final: 12:35	£. 6.97	.3.63	64.0		ter and second and second			bailed dry		
COMMENTS:	Well bailed	dry during	g purging.							
Instrumentation:	☑ pH'Meter	DO Mon	itor 🗹 Ca	onductivity Met	er 🗹 Temi	perature Meter	C Other			
Water Disposal:	Rio Vista									
Sample ID:	MW-6		Sa	mple Time:	12:32					
Analysis Requested:	BTEX Other		🗌 Alkalinit	y 🗌 tos	Cations [Anions 🗹	Nitrate 🗹 N	litrite 🗌 Metals `		
Trip Blank:	Trip Blank: 05252010TB01 Duplicate Sample:									



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WELL DEVELOPMENT AND SAMPLING LOG

J

Project Name: Client:	San Juan B MWH	asin		Location: Date:	Blanco Pla 5/25/2010	nt	Well No: Time:	MW-8 13:24	
Project Manager:	Ashley Age	er	Samp	ler's Name:	Troy Urbar	1			
Measuring Point: Well Diameter:	<u>TOC</u> <u>4"</u> Wa	Depth To ater Colum	to Water: tal Depth: 1n Height:	34.4 36.5 2.1	ft ft	Depth Product	to Product: Thickness:	ft ft	
Sampling Method:	☐ Submersib ☑ Bottom Va ☑ 3 to 5 Cas	ole Pump Ilve Bailer ing Volumes	Centrifug	al Pump 🗌 Pe heck Valve Bail moval 🖸 Stabili	eristaltic Pump er ization of India	🗌 Other	ers 🗹 Other	bail dry	
			Ì	Water Volur	ne in Well				
Gal/ft x ft of v	vater	Gal	lons	[\] Our	nces		Volume	to be removed	
2.1 x .65		' 1.37	7 x 3					4.1 gal	
Time . (military)	pH (su)	SC (ms)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. gal	Comments/Flow Rate	
13:28	7.26	4.81	62.6				0.25	clear	
	7.26	4.88	61.2				0.5	clear	
	7.46	4.97	62.2				0.75	, clear	
	7.48	4.94	61.2				1	clear	
	7.36	4.96	60.6				1.5	clear	
				· · · ·					
Final: 13:40	7:36	4.937	60.8			and a first state of the second	1.75	bailed dry	
COMMENTS:	Well bailed	l dry durin	g purging	•			× ,		
Instrumentation:	☑ pH Meter	DO Mor	iitor 🗹 O	onductivity Met	er 🗹 Tem	perature Meter	r 🗌 Other	- · · · · · · · · · · · · · · · · · · ·	
Water Disposal: <u>Rio Vista</u>								. · ·	
Sample ID: <u>MW-8</u> Sample Time: <u>13:36</u>									
Analysis Requested:	BTEX Other		Alkalini	ry □ tds	Cations [Anions 🛛	Nitrate 🖸	Nitrite Detals	
Trip Blank:	052520	10TB01	• • •	Duplicate Sample:					
								. *	



`

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Project Name: Client: Project Manager:	San Juan B MWH Ashley Age	asin er	Samp	Location: Date: ler's Name:	Blanco Pla 5/25/2010 Troy Urbar	nt) 1	Well No: Time:	MW-12 9:45
Measuring Point: Well Diameter:	TOC 2" Wa	Depth To ater Colum	to Water: tal Depth: In Height:	15.9 24.48 8.58	ft ft ft	Depth Product	to Product: Thickness:	ft ft
Sampling Method: Criteria:	☐ Submersib ☑ Bottom Va ☑ 3 to 5 Cas	le Pump Ive Bailer ing Volumes	Centrifug Double C of Water Rer	al Pump 🗌 Pe heck Valve Bail noval 🗹 Stabili	ristaltic Pump er zation of India	Other	ers 🗹 Other	bail dry
			1	Water Volun	ne in Well			
Gal/ft x ft of w	/ater	Gal	lons	Oun	ces		Volume	to be removed
8.58 x .16		1.37	7 x 3				4	.11 ga
			-			·		· · · · · · · · · · · · · · · · · · ·
Time (military)	pH (su)	SC (ms)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. gal	Comments/Flow Rate
9:47	8.32	3.81	59.4				0.5	clear
	8.46	3.94	58.8				1	clear
	8.09	4.21	59.2				1.5	clear
	7.94	4.80	58.9				2	clear .
	7.82	5.19	59.0		*		3	clear
J	7.80	5.37	59.4			•	4	bailing down, clear
	7.78	* 5.40	59.1		i		4.5	bailing down, clear
	7.67) 5.40	59.3				4.75	
					• .			· · · · · · · · · · · · · · · · · · ·
Final: 9:12	7.68	, 5.42	59.00.		augusta Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Santa Sant		4.9 4.9	Bailed dry
COMMENTS:	Well bailed	l dry durin	g purging.		•			
Instrumentation:	D pH Meter	DO Mor	nitor 🗹 C	onductivity Met	er 🗹 Tem	perature Meter	Other	
Water Disposal:	Rio Vista						• .	
Sample ID;	MW-12		. Sa	mple Time:	9:45			1
Analysis Requested:	BTEX Other		🗌 Alkalinit	y 🗆 TDS	Cations [(Anions Z CHCs] Nitrate 🗹 N	Nitrite 🗌 Metals
Trip Blank:	052520	10TB01				Duplica	ite Sample:	
		•			•			

COMPLIANCE / ENGINEERING / REMEDIATION LT Environmental Inc. 2243 Main Avenue, Suite 3 Durango, Colorado 81301 T 970.385.1096 WELL DEVELOPMENT AND SAMPLING LOG Project Name: San Juan Basin . Location: Blanco Plant Well No: MW-13 Client: MWH Date: 5/25/2010 Time: 9:17 Project Manager: Ashley Ager Sampler's Name: Troy Urban Measuring Point: TOC Depth to Water: 13.6 ft Depth to Product: ft 2 Well Diameter: 2" Total Depth: 23.05 ft Product Thickness: ft Water Column Height: 9.45 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 9.45 x .16 1.51 x 3 4.54 gal . Time SC ORP D.O. Turbidity Vol Evac. pН Temp Comments/Flow Rate (military) (°F) (millivolts) (mg/L) (NTU) (su) (ms) gal 9:20 7.11 6.21 59.7 clear 0.5 7.00 7.53 59.7 clear 1 7.05 8.26 60.8 1.5 clear 7.14 7.89 60.4 2 clear 7.13 8.10 60.8 2.5 clear 7.06 8.30 61.2 3 bailing down, clear 7.11 8.47 60.4 3.75 bailing down, clear 7.03 8.52 60.4 4 Final: 4.5 Bailed dry, 7.09 8.48 60.6 9:12 COMMENTS: Well bailed dry during purging. Instrumentation: 🗹 pH Meter 🔲 DO Monitor 🗹 Conductivity Meter 🗹 Temperature Meter 🗌 Other Water Disposal: Rio Vista Sample ID: MW-13 Sample Time: 9:35 Analysis Requested: 🔲 BTEX 🗋 VOCs 🔄 Alkalinity 🗋 TDS · 💭 Cations 🗋 Anions 🖾 Nitrate 🖾 Nitrite 🗔 Metals CHCs C Other Trip Blank: 05252010TB01 Duplicate Sample:



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Measuring Point: <u>T</u> Well Diameter: <u>2</u> Sampling Method:	OC "Wa] Submersibl] Bottom Val	Depth 1 Tot ater Colum le Pump [Ive Bailer]	:o Water: al Depth: n Height:	<u>15.55</u> 27.43 11.88	ft ft ft	Depth t Product	to Product: Thickness:	ft ft
Sampling Method: Criteriou] Submersibl] Bottom Val	le Pump [lve Bailer [Centrifua				;	
			Double C	al Pump . Pe heck Valve Baile	eristaltic Pump	Other		bail day
	1 5 W 5 Casi	ng volumes c				cator Paramete	rs 🖸 Other	
			1	Water Volun	ne in Well			· · · · · · · · · · · · · · · · · · ·
Gal/ft x ft of wat	ter	Gall	ons	Oun	ices	1	Volume t	to be removed
11.88 x .16		1.9	х З	4 A				5.7 gal
Time (military)	pH (su)	SC (ms)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. gal	Comments/Flow Rate
12:58	7.25 ´	5.91	65.3				0.25	clear
	7.30	5.53	64.0				0.5 [°] :	clear
	7.29	5.92	62.4				0.75	. clear
	7.24	5.92	63.3				1	slightly yellow
	7.20	8.12	64.3	• •			2	bailing down
·····	7.25	8.28	64.6	·			2.5	bailing down
·		•						· · ·
					•			
inal: 13:10	7.33	8.29	64.6				2.75	bailed dry
COMMENTS: W	Vell bailed	dry during	g purging.	· · · · ·			·	· · · · · · · · · · · · · · · · · · ·
Instrumentation: 🖸] pH Meter	DO Mon	itor 🖸 G	onductivity Mete	er 🗹 Tem	perature Meter	Other	
Water Disposal: <u>R</u> i	io Vista			· · ·				·
Sample ID: <u>N</u>	/W-14		· Sa	mple Time:	13:05	•		
Analysis Requested: (BTEX		Alkalini	ly □ TDS	Cations [Anions 🗹 CHCs	Nitrate 🗹 N	Nitrite 🗆 Metals
Trip Blank:	0525201	LOTBO1				Duplica	te Sample:	· · · · · · · · · · · · · · · · ·
·				, .		:		



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Project Name: Client: Project Manager:	San Juan B MWH Ashley Age	asin(r	Samp	Location: Date: ler's Name:	Blanco Pla 5/25/2010 Troy Urbar	nt I	Well No: Time:	MW-15. 8:43
Measuring Point: Well Diameter:	TOC 2"	Depth Tot	to Water: tal Depth:	18.53 36.75	ft	Depth Product	to Product: Thickness:	
Sampling Method:	Wa □ Submersib ☑ Bottom Va	le Pump [.] (Centrifug	al Pump 🗌 Pe	ristaltic Pump er	C Other	· · ·	· · · · · · · · · · · · · · · · · · ·
Criteria:	☑ 3 to 5 Casi	ng Volumes (of Water Rer	noval 🗹 Stabili:	zation of Indic	cator Paramete	ers 🗹 Other	bail dry
		.		Water Volum	ne in Well			
Gal/ft x ft of w	/ater	Gall	ons	. Oun	ces		Volume	to be removed
18.22 x .10	5.	. 2.92	2 x 3				3	3.75
Time	pH *	sc	Temp	ORP	D.O.	Turbidity	Vol Evac.	Comments/Flow Rate
(military)	(su)	(ms)	(**)	(millivoits)	(mg/L)	(NTU)	gal	
8:50	5.52	7.66	62.4				0.5	yellow
	5.54	8.38	62.8				1	yellow
	5.23	8.89	63.7				· 1.5	yellow
	5.30	8.75	63.5				2	yellow
	4.71	10.11	62.4		,		2.5	yellow
	4.62	10.07	62.6				3	bailing down, yellow
•	4.60	10.13	62.8				3.1	f bailing down, yellow
ial: 9:12	4.55	.10.14	62:9				313	Bailed dry
MMENTS:	Well bailed	dry durin	g purging.	•				,
Instrumentation:	☑ pH Meter	DO Mor	nitor 🗹 C	onductivity Mete	er 🗹 Tem	perature Mete	r 🗌 Other	
Water Disposal:	Rio Vista		•			· .	-	
Sample ID:	MW-15	÷	. Sa	mple Time:	9:10	•		
nalysis Requested:	BTEX	VOCs	🗌 Alkalinii	ay □ tos	Cations [Anions CHCs	Nitrate 🖸 I	Nitrite D Metals
Trip Blank:	0525201	LOTB01		' .		Duplica	ate Sample:	· · · · ·
. · · · ·								



LT Environmental Inc. 2243 Main Avenue, Suite 3 Durango, Colorado 81301 T 970.385.1096

Project Name: Client: Project Manager:	San Juan B MWH Ashley Age	asin r	Samp	Location: Date: bler's Name:	Blanco Pla 5/25/2010 Troy Urbar	nt) n	Well No: Time:	MW-28 10:51
Measuring Point: Well Diameter:	TOC 4" Wa	Depth Tot ater Colum	to Water: al Depth: in Height:	29.79 33.24 3.45	ft ft ft	Depth Product	to Product: Thickness:	دft ft
Sampling Method: Criteria:	□ Submersib ☑ Bottom Va ☑ 3 to 5 Casi	le Pump [lve Bailer ing Volumes d	Centrifug Double C of Water Rei	al Pump 🗌 Pe Theck Valve Baile moval 🗹 Stabili	eristaltic Pump er zation of India	Other	ers 🗹 Other	bail dry
				Water Volun	ne in Well			
Gal/ft x ft of w	vater	Gall	ons	Oun	ices		Volume	to be removed
3.45 x .65		2.24	х 3				. 6	.72 gal
				1	· · · · · · · · · · · · · · · · · · ·		-	
Time (military)	pH (su)	SC (ms)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac.	Comments/Flow Rate
10:55	6 77	2 91	64.4				0.25	clear
10.55	6.84	3 18	63.1				0.25	clear
	6.94	3 30	64.0				0.5	clear
	6.97	3.50	63 1				0.75	clear
, , ,	6.86	3.56	62.6				15	cloudier
	6.92	3.50	62.0				1.5	tan, cloudy
	6.97	3 40	62.4				2.75	tan, cloudy
	6.76	3.40	61.9				22	tan, cloudy
	6.87	3.47	62.4				23	tan. cloudy
•	7.04	3 43	62.1				2.5	recovering very slowly
	6.93	3.5	62.5	· · · ·			2.5	tan
Final: 10:42	6.96	3.52	,63.9				3:75	bailed dry
COMMENTS:	Well bailed	l dry durin	g purging					
Instrumentation:	🖸 pH Meter	DO Mon	itor 🗹 C	onductivity Met	er 🗹 Tem	perature Meter	r 🗌 Other	
Water Disposal:	Rio Vista							
Sample ID:	MW-28		Sa	mple Time:	11:26		•	
Analysis Requested:	BTEX		🗌 Alkalini	ty 🗌 TDS	Cations [Anions 🗹] Nitrate 🗹 M	Nitrite 🗋 Metals
Trip Blank:	052520	LOTB01				Duplica	ite Sample:	



LT Environmental Inc. 2243 Main Avenue, Suite 3 Durango, Colorado 81301 T 970.385.1096

WELL DEVELOPMENT AND SAMPLING LOG

Project Name: Client: Project Manager:	San Juan B MWH Ashley Age	asin 	Samp	Location: Date: ler's Name:	Blanco Pla 5/25/2010 Troy Urbai	nt) n	Well No: Time:	MW-29 11:36
Measuring Point: Well Diameter:	TOC 4" Wa	Depth Tot ater Colum	to Water: al Depth: In Height:	31.97 37.11 5.14	ft ft ft	C Depth Product	to Product: Thickness:	ft ft
Sampling Method: Criteria:	□ Submersib ☑ Bottom Va ☑ 3 to 5 Cas	le Pump [lve Bailer [ng Volumes c	Centrifug	al Pump 🗌 Pe heck Valve Baile noval 🗹 Stabilia	ristaltic Pump er zation of India	Other	ers 🖸 Other	bail dry
	•		1	Water Volum	ne in Well			
Gal/ft x ft of w	vater	Gall	ons	Oun	ces		Volume	to be removed
5.14 x .65		3.35	x 3			7		10 ga
Time (military)	pH (su)	SC (ms)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. gal	Comments/Flow Rate
11:38	7.05	4.01	63.5				0.75	clear
	7.08	3.97	63.1				1.5	clear
	7.17	4.08	61.5				2.5	clear
-	7.17	3.98	62.8				3	clear
	7.24	4.07	61.7				4	cloudier
	7.25	4.04	62.2				4.25	tan, cloudy
inal: 11:55	7.32	4.06	61-9				5	bailed dry
OMMENTS:	Well bailed	l dry during	g purging.					
Instrumentation:	J pH Meter	DO Mon	itor 🗹 C	onductivity Mete	er 🗹 Tem	perature Meter	r 🗍 Other	
Water Disposal:	Rio Vista							
Sample ID:	MW-29		Sa	mple Time:	11:26			
Analysis Requested:	BTEX Other		🗌 Alkalini	ty 🗋 tds	Cations [Anions 🗹) Nitrate 🗹 M	Nitrite 🗌 Metals
Trip Blank:	052520	LOTBO1				Duplica	ite Sample:	<i>.</i>
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LT Environmental Inc. 2243 Main Avenue, Suite 3 Durango, Colorado 81301 T 970,385.1096

Project Manager	Ashley Age	5.L	Samp	oler's Name:	Troy Urba	n	-	12.05	<u>1 * 3</u> 7 * *
Measuring Point Well Diameter	: <u>TOC</u> : <u>4"</u> W	Depth To ater Colum	to Water tal Depth in Height	31.91 36.9 4.99	ft ft ft	Depth Product	to Product: Thickness:		ft ft
ampling Method Criteria	□ Submersib □ Bottom Va □ 3 to 5 Cas	ile Pump Ilve Bailer ing Volumes	Centrifug Double C of Water Re	ial Pump 🗌 Pe Check Valve Baik moval 🗹 Stabili	eristaltic Pump er zation of Indi	Other	ers 🖸 Other	bail dry	<u> </u>
				Water Volun	ne in Well				
Gal/ft x ft of y	vater	Gal	lons		ices	1	Volume	to be removed	
<u></u> <u></u> <u></u> <u></u> <u>_</u> <u>_</u> <u>_</u> <u>_</u> <u>_</u> <u>_</u> <u>_</u>	5	3 2/	1 x 3				volume (9 7	
4.JJ X.U.		1 3.24		· ·		Ļ			5ai
Time (military)	pH (su)	SC (ms)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac.	Comments/Flov	v Rate
12:05	6.97	3.53	64.4				0.5	clear	
	6.73	3.62	633.0				1	clear	· · · · ·
	6.91	3.57	63.7				1.5	clear	
	6.80	3.56	63.5			+	2	clear	·. ·
	6.93	3.60	63.5				2.5	clear	• •
	6.84	3.63	63.0				3	clear	· ·
· · · · · ·	6.97	3.56	64.0				3.5		
	7.03	3.62	63.0				3.75		· · · · · ·
	7.05	3.58	63.3				4		· · ·
	· ·								
······································									
ial:	7.03	3.63	62.8			Talaya a na kata tanga Talaya a na kata tanga Talaya ang kata ta	4.25	bailed dry	
.12:20			Take a Pr						
MMENTS:	Well bailed	dry durin	g purging	• '					
									•
Instrumentation	D pH Meter	DO Mor	nitor 🗹 C	Conductivity Met	er 🗹 Tem	perature Meter	r 🗌 Other		<u></u>
Water Disposal	Rio Vista								ti Vita
Sample ID	MW-30		- Sa	imple Time:	11:26				
alveis Roquestod	ВТЕХ		🗌 Alkalini	ty 🗌 TDS	Cations [Anions 🗹	Nitrate 🗹 N	Nitrite 🗌 Metals	
alysis nequested	. Cher					· · · ·			

APPENDIX B

Laboratory Analytical Report
e-Hardcopy 2.0 **Automated Report**

Paul K Canévan

Laboratory Director

1 of 35

T53403

Paul Canevaro

06/11/10



Gulf Coast

Technical Report for

ALLINSTHE

Montgomery Watson

Blanco Plant South Flare Pit

1008640.0101

Accutest Job Number: T53403

Sampling Date: 05/25/10

Report to:

1801 California St. Suite 2900 DENVER, CO 80202 jed.smith@mwhglobal.com; daniel.a.wade@mwhglobal.com; craig.moore@mwhglobal.com ATTN: JED SMITH

Total number of pages in report: 35



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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.

Client Service contact: Georgia Jones 713-271-4700

Certifications: TX (T104704220-09C-TX) AR (88-0756) FL (E87628) KS (E-10366) LA (85695/04004) OK (9103) UT(7132714700)

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Table of Contents

' -1-	
Section 1: Sample Summary	3
Section 2: Sample Results	4 ^t
2.1: T53403-1: MW-15	5
2.2: T53403-2: MW-13	7 .
2.3: T53403-3: MW-12	9
2.4: T53403-4: MW-5	11
2.5: T53403-5: MW-28	12
2.6: T53403-6: MW-29	13
2.7: T53403-7: MW-30	14
2.8: T53403-8: MW-6	15
2.9: T53403-9: MW-14	16
2.10: T53403-10: MW-8	18
2.11: T53403-11: 250510TB01	19
Section 3: Misc. Forms	20 °
3.1: Chain of Custody	21
Section 4: GC/MS Volatiles - OC Data Summaries	25
4.1: Method Blank Summary	26
4.2: Blank Spike Summary	28
4.3: Matrix Spike/Matrix Spike Duplicate Summary	30
Section 5: General Chemistry - OC Data Summaries	32
5.1: Method Blank and Spike Results Summary	33
5.2: Duplicate Results Summary	34
5.3: Matrix Spike Results Summary	35

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Sample Summary

Montgomery Watson

Job No:

No: T53403

Blanco Plant South Flare Pit Project No: 1008640.0101

Sample Number	Collected Date	Time By	Received	Matri Code	іх Туре	Client Sample ID
T53403-1	05/25/10	09:10	05/27/10	AQ	Ground Water	MW-15
T53403-2	05/25/10	09:35	05/27/10	AQ	Ground Water	MW:13
T53403-3	05/25/10	10:02	05/27/10	AQ	Ground Water	MW-12
T53403-4	05/25/10	10:39	05/27/10	AQ	Ground Water	MW-5
T53403-5	05/25/10	11:26	05/27/10	AQ	Ground Water	MW-28
T53403-6	05/25/10	11:53	05/27/10	AQ	Ground Water	MW-29
T53403-7	05/25/10	12:18	05/27/10	AQ	Ground Water	MW-30
T53403-8	05/25/10	12:32	05/27/10	AQ	Ground Water	MW-6
T53403-9	05/25/10	13:05	05/27/10	AQ	Ground Water	MW-14
T53403-10	05/25/10	13:36	05/27/10	AQ	Ground Water	MW-8
T53403-11	05/25/10	07:00	05/27/10	AQ	Trip Blank Water	250510TB01





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Sample Results

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Report of Analysis

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4 of 35 **ACCUTEST.** T53403

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Client Samj Lab Sample Matrix: Method: Project:	ple ID: MW-15 e ID: T53403-1 AQ - Ground Water SW846 8260B Blanco Plant South I	Flare Pit		Date S Date I Perces	Sampled: Received nt Solids	05/25/10 : 05/27/10 : n/a	
Run #1 Run #2	File ID DF C0009454.D 1	Analyzed 05/29/10	By JL	Prep D n/a	ate	Prep Batch n/a	Analytical Batch VC427
Run #1 Run #2	Purge Volume 5.0 ml	· .	· · ·				
Volatile spe	cial list.			•		. ;	
CAS No.	Compound	Result	RL	MDL	Units	Q	X
75-34-3 75-35-4 156-59-2 95-50-1 156-60-5 127-18-4 79-01-6	1,1-Dichloroethane 1,1-Dichloroethylene cis-1,2-Dichloroethylene o-Dichlorobenzene trans-1,2-Dichloroethylene Tetrachloroethylene Trichloroethylene	2-7 ND ND ND ND ND ND	2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0	0.52 0.50 0.56 0.69 0.45 0.91 0.52	ug/l ug/l ug/l ug/l ug/l ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	its		
1868-53-7 17060-07-0 2037-26-5 460-00-4	Dibromofluoromethane 1,2-Dichloroethane-D4 Toluene-D8 4-Bromofluorobenzene	95% 88% 93% 89%		79-1 75-1 87-1 80-1	22% 21% 19% 33%		

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

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



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			Reno	rt of And	llveie	1		Dor	zelof 1
			тер(ury 818	J		Pa	
Chent Sample ID: Lab Sample ID: Matrix:	MW-15 T53403 AQ - G1	-1 round Water			Date Date	Sampled: 05/25/1 Received: 05/27/1	10 0		
Project:	Blanco l	Plant South Flar	re Pit		Perc	ent Solids: n/a	_		1
General Chemistry	1				<u> </u>		•		J
Analyte		Result	RL	Units	DF	Analyzed	By	Method	
Nitrogen, Nitrate +	· Nitrite	22.9	1.0	mg/l	10	06/08/10 12:23	CV	EPA 353.2	
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Report of Analysis

14.

Client Sam Lab Sampl Matrix: Method: Project:	ple ID: MW-13 e ID: T53403-2 AQ - Ground Wate SW846 8260B Blanco Plant South	r Flare Pit	· · ·	Date Samı Date Rece Percent Sc	oled: 05/25/10 ived: 05/27/10 olids: n/a	
Run #1 Run #2	File ID DF F026181.D 1	Analyzed 05/29/10	By JL	Prep Date n/a	Prep Batch n/a	Analytical Batch VF3871
Run #1 Run #2	Purge Volume 5.0 ml	· .				8
Volatile spe	ecial list.					
CAS No.	Compound	Result	RL	MDL U	nits Q	
75-34-3 75-35-4 156-59-2 95-50-1 156-60-5 127-18-4	1,1-Dichloroethane 1,1-Dichloroethylene cis-1,2-Dichloroethylene o-Dichlorobenzene trans-1,2-Dichloroethylene	48.7 1*1 41.5 48.2 6.2	2.0 2.0 2.0 2.0 2.0 2.0	0.52 ug 0.50 ug 0.56 ug 0.69 ug 0.45 ug	/1 J /1 J /1 /1 /1 /1 J	
79-01-6	Trichloroethylene	18:6	2.0	0.51 ug	/1 .J	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
1868-53-7 17060-07-0 2037-26-5 460-00-4	Dibromofluoromethane 1,2 ⁻ Dichloroethane-D4 Toluene-D8 4-Bromofluorobenzene	109% 102% 111% 100%		79-122% 75-121% 87-119% 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



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Report of Analysis

Client Sample ID: MW-13 T53403-2 Lab Sample ID: Date Sampled: 05/25/10 AQ - Ground Water Date Received: 05/27/10 Matrix: Percent Solids: n/a Blanco Plant South Flare Pit Project: General Chemistry Analyte Result RL Únits DF Analyzed Вý Method Nitrogen, Nitrate + Nitrite 4.6 0.20 mg/l 2 06/08/10 12:21 CV EPA 353.2

RL = Reporting Limit



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Page 1 of 1

	Page 1 of 1						
Client Samp Lab Sample Matrix: Method: Project:	ole ID: MW-12 DI: T53403-3 AQ - Ground Water SW846 8260B Blanco Plant South	Flare Pit	· · · ,	Date S Date I Percer	Sampled: Received nt Solids:	05/25/10 : 05/27/10 : n/a	· · ·
Run #1 Run #2	File IDDFF026182.D1	Analyzed 05/29/10	By JL	Prep D n/a	ate	Prep Batch n/a	Analytical Batch VF3871)
Run #1 Run #2	Purge Volume 5.0 ml						
Volatile spe	cial list.						
CAS No.	Compound	Result	RL	MDL	Units	Q	
75-34-3 75-35-4 156-59-2 95-50-1 156-60-5 127-18-4 79-01-6	1,1-Dichloroethane 1,1-Dichloroethylene cis-1,2-Dichloroethylene o-Dichlorobenzene trans-1,2-Dichloroethylene Tetrachloroethylene Trichloroethylene	2.9 ND 4.9 3.9 0.52 1.9 2.5	2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0	0.52 0.50 0.56 0.69 0.45 0.91 0.52	ug/l ug/l ug/l ug/l ug/l ug/l	J J	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	its		•
1868-53-7 17060-07-0 2037-26-5 460-00-4	Dibromofluoromethane 1,2-Dichloroethane-D4 Toluene-D8 4-Bromofluorobenzene	1119% 104% 115% 106%		79-1 75-1 87-1 80-1	22% 21% 19% 33%		

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

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



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	:		Repo	rt of A	nalysis		Page 1 of 1
Client Sample ID: Lab Sample ID: Matrix: Project:	MW-12 T53403-3 AQ - Gro Blanco P	3 ound Water lant South Flar	e Pit		Date S Date I Percei	Sampled: 05/25/10 Received: 05/27/10 nt Solids: n/a	
General Chemistry	7				· (· · · · · ·
Analyte		Result	RL	Units	DF	Analyzed By	Method
Nitrogen, Nitrate +	Nitrite	7:2	0.20	mg/l	· 2	06/08/10 12:24 CV	EPA 353.2
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	·			J			
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					ţ		

RL = Reporting Limit

10 of 35 CACCUTEST. T53403

2.3

Client Sample ID: Lab Sample ID: Matrix: Project:	MW-5 T53403 AQ - G	-4 round Water Plant South Fla	re Pit		Date Sa Date R Percent	ampled: 05 eceived: 05 t Solids: n/	5/25/10 5/27/10 ′a	,	
General Chemistry								···	
Analyta		D14	DT.	T T., 14 .	DF	A 1	, Du		
Allalyte		Kesun		Units	Dr	Analyzed	Ву	Niethod	
Nitrogen, Nitrate +	Nitrite	16.7	1.0	mg/l	10	06/08/10	12:29 CV	EPA 353.2	
	. `		•						•
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RL = Reporting Limit



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Report of Analysis

Page 1 of 1

2.5

Client Sample ID:	MW-28	•	•	 ·	
Lab Sample ID:	T53403-5	Date Sampled:	05/25/10	· .	. •
Matrix:	AQ - Ground Water	 Date Received:	05/27/10		
		Percent Solids:	n/a		
Project:	Blanco Plant South Flare Pit		ھ		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	Ву	Method
Nitrogen, Nitrate + Nitrite	51.4	2.0	mg/l	20	06/09/10 16:09	cv	EPA 353.2

RL = Reporting Limit



Report of Analysis	

Page 1 of 1

2.6

MW-29			
T53403-6	Date Sampled:	05/25/10	
AQ - Ground Water	Date Received:	05/27/10	: `
- · · ·	Percent Solids:	n/a	,
Blanco Plant South Flare Pit			· · · ·
	MW-29 T53403-6 AQ - Ground Water Blanco Plant South Flare Pit	MW-29Date Sampled:T53403-6Date Sampled:AQ - Ground WaterDate Received:Percent Solids:Percent Solids:Blanco Plant South Flare PitImage: Solid Science Scie	MW-29Date Sampled:05/25/10T53403-6Date Sampled:05/25/10AQ - Ground WaterDate Received:05/27/10Percent Solids:n/an/a

Analyte	Result	RL.	Units	DF	Analyzed	By	Method
Nitrogen, Nitrate + Nitrite	79.9	2.0	mg/l	20	06/09/10 16:1	4 CV	EPA 353.2

RL = Reporting Limit



				Page 1 of 1					
Client Sample ID: Lab Sample ID:	MW-30 T53403-	7			Date	Sampled: 05/25/1	10		
Matrix:	AQ - Gr	ound Water			Date Date	Received: 05/27/1 nt Solids: n/a	10		
Project:	Blanco F	Plant South F	are Pit						
General Chemistry	1			· .				· · ·	•
Analyte		Result	RL	Units	DF	Analyzed	By	Method	
Nitrogen Nitrate +	Nitrite	34 8	1 0	ma	10	06/08/10 12:34	CV	FPA 353 2	



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Client Sample ID: Lab Sample ID: Matrix:	MW-6 T53403-8 AQ - Ground Wa	ter	•	· .	Date S Date R Percen	ampled: 05/ leceived: 05/ t Solids: n/2	25/10 27/10	, , ,	. ,
Project:	Blanco Plant Sou	th Flare 1	Pit		_,	II/ a			
General Chemistry							· .		• •
Analyte	Result	· ·	RL	Units	DF	Analyzed	By	Method	
Nitrogen, Nitrate +	Nitrite 103		5.0	mg/l	,50	06/09/10 16	3:15 CV	EPA 353.2	9 -
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Client Sam Lab Sampl Matrix: Method: Project:	ple ID: MW-14 e ID: T53403-9 AQ - Ground Water SW846 8260B Blanco Plant South	Flare Pit	· · · ·	Date S Date I Percer	Sampled: Received: nt Solids:	05/25/10 05/27/10 n/a	
Run #1 Run #2	File ID DF F026183.D 1	Analyzed 05/29/10	By JL	Prep D n/a	Date	Prep Batch n/a	Analytical Batch VF3871
Run #1 Run #2	Purge Volume 5.0 ml		· · · .				
Volatile spe	ecial list.						,,,,,,,,,
CAS No.	Compound	Result	RL	MDL	Units	Q	
75-34-3 75-35-4 156-59-2 95-50-1 156-60-5 127-18-4 79-01-6	1,1-Dichloroethane 1,1-Dichloroethylene cis-1,2-Dichloroethylene o-Dichlorobenzene trans-1,2-Dichloroethylene Tetrachloroethylene Trichloroethylene	7-2 ND 2.6 3.5 ND ND 2.1	2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0	0.52 0.50 0.56 0.69 0.45 0.91 0.52	ug/l ug/l ug/l ug/l ug/l ug/l		1
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	its		
1868-53-7 17060-07-0 2037-26-5 460-00-4	Dibromofluoromethane 1,2-Dichloroethane-D4 Toluene-D8 4-Bromofluorobenzene	110% 105% 113% 105%		79-1 75-1 87-1 80-1	22% 21% 19% 33%		

ND = Not detected MDL - Method Detection Limit RL = Reporting Limit

- E = Indicates value exceeds calibration range
- J = Indicates an estimated value
- B = Indicates analyte found in associated method blank N = Indicates presumptive evidence of a compound
 - · · · · ·



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Report of Analysis

Client Sample ID: MW-14 T53403-9 Lab Sample ID: Date Sampled: 05/25/10 Matrix: AQ - Ground Water Date Received: 05/27/10 Percent Solids: n/a Blanco Plant South Flare Pit Project: General Chemistry Analyte Result RĹ Units DF Analyzed Method By

mg/l

10

06/08/10 12:38 CV

Nitrogen, Nitrate + Nitrite

15.5

EPA 353.2

Page 1 of 1

RL = Reporting Limit



·			alysis		Page 1 of 1			
Client Sample ID:	MW-8	1		· · ·				
Lab Sample ID:	T53403	-10			Date	Sampled: 05/25/1	.0	$(x,t) \in \mathcal{F}(M)$
Matrix:	AQ - G	round Water			Date I Perce	Received: 05/27/1 nt Solids: n/a	0	
Project:	Blanco	Plant South Fl	are Pit					
General Chemistry	y							· . :
Analyte	· ·	Result	RL	Units	DF	Analyzed	By	Method
Nitrogen, Nitrate +	- Nitrite	0.19	0.10	mg/l	1	06/08/10 12:39	cv	EPA 353.2

RL = Reporting Limit



N

2.10

•	•		•	Repo	rt of A	nalysis			Page 1 of 1
Client Sam Lab Samp Matrix: Method: Project:	nple ID: le ID:	250510 T5340 AQ - 7 SW840 Blanco	DTB01 3-11 Frip Blank Wa 5 8260B 9 Plant South	ater Flare Pit		Date S Date I Percer	Sampled: Received: nt Solids:	05/25/10 : 05/27/10 : n/a	
Run #1 Run #2	File ID F02617	2.D	DF 1	Analyzed 05/29/10	By . JL	Prep D n/a	ate	Prep Batch n/a	n Analytical Batch VF3871
Run #1 Run #2	Purge V 5.0 ml	/olume			· · · · · · · · · · · · · · · · · · ·	•	•		
Volatile sp	ecial list.	-							- -
CAS No.	Comp	ound		Result	RL	MDL	Units	Q	
75-34-3 75-35-4 156-59-2 95-50-1 156-60-5	1,1-Di 1,1-Di cis-1,2 o-Dich trans-1	chloroe chloroe -Dichlo loroben ,2-Dich	thane thylene proethylene izene iloroethylene	ND ND ND ND ND	2.0 2.0 2.0 2.0 2.0 2.0	0.52 0.50 0.56 0.69 0.45	ug/l ug/l ug/l ug/l ug/l		

127-18-4 79-01-6	Tetrachloroethylene Trichloroethylene	ND ND	2.0 2.0	0.91 0.52	ug/l ug/l
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	its
1868-53-7	Dibromofluoromethane	111%		79-12	22%
17060-07-0	1,2-Dichloroethane-D4	103%	•	75-12	21%
2037-26-5	Toluene-D8	115%		87-1	19%
460-00-4	4-Bromofluorobenzene	105%		80-1	33%

MDL - Method Detection Limit ND = Not detectedRL = 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

20 of 35 ACCUTEST. T53403 Experies

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10105 narwin, Suite 150 - Houston	I, I,A //030	1,5-2/1-4/0	J lax:	/13-2	:/1-4	//0	Acc	utesi Quote	i #		Acculast	Job 8 7	エイ	402	<u>,</u>
							50 A				MARCE	SNICH			
Client / Reporting Information	- Andreas -	海洋線 Project Info	rmation			No. AND	建建 得勢		(SCII)	Reg	uosted An	alyses	62192	3693 B	Matrix Codes
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Project Contact	Bill to	an oour raier	12010 0	-involce	Attr.	+0.0101									_WW - Wastewater
Jed Smith jed.smith@mwhglobal.c	om EPNG F	Vipeline	lan	Yanag	isawa										SO - Soil
Address	Address												ŀ I		Si Sludga
1801 California Street, Suite 2900	P.O. Bo	x 2511	•												01-04
Denver CO	80202 Houston		Stat TX			Zip 7729									SOL - Diber Solid
Phone No. Fax No	Phone No.	•				Fax No.	-								
303-291-2276	713 420	-736			•			32)						· .	
Samplers's Name	Client Pur	chase Order#						35			.				
roy Urban / Julie Linn	Wo.	<u>94291</u>						3 2							
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4 Day RUSH		Reduced Tier 1		Other_			•								
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2 Day EMERGENCY															
1 Day EMERGENCY		Commercial "A" =	Results On	ly											
Real time analytical data available via Lablink		Commercial "B" =	Hosuils & S	itendard	uC										
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T53403: Chain of Custody Page 1 of 4



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Address		Address						ugio	ana				·							ľ				SL - Sludge	
1801 California Street, Suite 2900		P.O. Bo	x 2511						·									!	i -					0i - Ci	
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Sample #		Date	·Time	Matrix	bottles	Ŧ	¥	ž	ă ă	HEN		ĝ	8	ž										LAB USE ONLY	
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T53403: Chain of Custody Page 2 of 4

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3.1

	Client:MWH	Date/Time Received: $\frac{5}{3 + 1/6} \frac{6936}{5}$	
of Coolers Received: The	ermometer #: Ten	nperature Adjustment Factor: -0.5	
ooler Temps: #1: <u>(، المعند</u> #2:	#3: #4: #5:	#6: #7: #8:	
lethod of Delivery: FEDEX UPS	Accutest Courler Greyhound	Delivery Other	
irbill Numbers:			
COOLER INFORMATION Custody seal missing or not intact Temperature criteria not met Wet ice received in cooler CHAIN OF CUSTODY Chain of Custody not received Sample D/T unclear or missing Analyses unclear or missing COC not properly executed	SAMPLE INFORMATION Sample containers received broken VOC vials have headspace Sample labels missing or illegible ID on COC does not match label(s) D/T on COC does not match label(s) Sample/Bottles revd but no analysis on COC Sample listed on COC, but not received Bottles missing for requested analysis Insufficient volume for analysis	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?	· . :
ECHNICIAN SIGNATURE/DATE:	Sample received improperty preserved	Number of lab-filtered metals?	
FORMATION AND SAMPLE LABELING VE	• • CORRECTIVE ACTION	XIS • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • • •	
		T53403: Chain of Custody Page 3 of 4	y 1
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23 of 35 CACCUTEST. T53403 Fabratories ---

SAMPLE RECEIPT LOG

153403 JOB #:

CLIENT: MWH

DATE/TIME RECEIVED: 5/27/10 0930

CLIENT:	MWH				· · · · · ·		INITIALS:	15				
COOLER#	SAMPLE ID	FIELD ID	DA	TE	MATR	lix	VOL.	BOTTLE #	LOCATION	PRESERV	P	H
<u>l</u> ¹	I	MW-15	5h5/10	0910	ω		asomi	}	ЗN	1 2 3 <u>4</u> 5 5 7 8		>12
			<u> </u>	11	1		40m1.	2-4	VR	1 (2) 3 4 5 6 7 8) ^v	>12
	2	MW-13		0935			asoml		3N	1 2 3 (4) 5 5 7 8	\bigcirc	>12
	11 ·	IC		Ц			40ml	2-4	VR.	1 (2) 3 4 5 6 7 8	<2	>12
	3	MW-12		1002		÷ ,	asum	. }	3N	1 2 3 <u>4</u> 5 6 7 8	Q	>12
	0	11 ,		ú			40m1	2-4	VR	1 (2) 3 4 5 6 7 8	<2	>12
	Ч	MW-5		1039			250ml)	3N	1 2 3 (4) 5 6 7 8		>12
	5.	MW-28		1126				1	1	1 2 3 4 5 6 7 8		>12
	6	MW-29		1153				1		1 2 3 (4) 5 6 7 8	<u>`@</u>	>12 .
	7	MW-30		1218				1		1 2 3 4	Q	>12
	8	Mu)-6		1230					,]	1 2 3 (4) 5 5 7 8		>12
· [· .	9	Mu)-14		1305			A	• }	₽ .	1 2 3 4 5 6 7 8	(c)	>12
	- q	11		11			40ml	2-4'	VR	1 (2) 3 4 5 6 7 8	<2	>12
	10	Mu)-8	V	133			250ml		3N	1 2 3 4 5 6 7 8		>12
₩.	11	TRIP BLANK			A		40ml	1-2	VR	1 2 3 4	<2	>12
										<u> 1 2 3 4 </u> 5 6 7 8	<2	> >12
·		. , ,								<u>1 2 3 4</u> 5 8 7 8	<2	>12
						5	1.	.		1 2 3 4 5 8 7 8	<2	>12
				15	510	1	0			1 2 3 4	<2	>12
										1 2 3 4	<2	>12
					·			·	-	5 6 7 8 1 2 3 4	<2	>12
\sim							<u> </u>			<u>5678</u> 1234	<2	>12

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

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

Rev 8/13/01 ewp

T53403: Chain of Custody Page 4 of 4



GC/MS Volatiles

SALLIN

THECHEMISTRY

Gulf Coast

JTEST.

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QC Data Summaries

Includes the following where applicable:

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



Section 4

Method Blank Summary

Job Number: Account: Project:	T53403 MWHCODE M Blanco Plant Sc	Iontgom outh Flar	ery Watson e Pit				,				
Sample VF3871-MB	File ID F026171.D	DF 1	Analyzed 05/29/10	By JL	Prep Date n/a	Prep Batch n/a	Analytical Batch VF3871	.1.1 4			
The QC repor	ted here applies	to the fo	ollowing sample	s:	· ·]	Method: SW84	 6 8260B	,			

Limits .

79-122% 75-121% 87-119% 80-133%

T53403-2, T53403-3, T53403-9, T53403-11

CAS No.	Compound	Result	RL	MDL	Units Q
75-34-3	1,1-Dichloroethane	ND	2.0	0.52	ug/l
75-35-4	1,1-Dichloroethylene	ND	2.0	0.50	ug/l
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	0.56	ug/l
95-50-1	o-Dichlorobenzene	ND	2.0	0.69	ug/l
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	0.45	ug/l
127-18-4	Tetrachloroethylene	ND	2.0	0.91	ug/l
79-01-6	Trichloroethylene	ND	2.0	0.52	ug/l

CAS NO.	Surrogate Recoveries	
1868-53-7 17060-07-0 2037-26-5	Dibromofluoromethane 1,2-Dichloroethane-D4 Toluene-D8	112% 101% 116%
400-00-4	4-bromonuoropenzene	107%



Page 1 of 1

Method Bl	lank Summa	ry	· · ·				Page 1 of 1
Job Number:	T53403						
Account:	MWHCODE M						
Project:	Blanco Plant So	uth Flare I	Pit				· · ·
Sample VC427-MB	File ID C0009440.D	DF 1	Analyzed 05/29/10	By JL	Prep Date n/a	Prep Batch n/a	Analytical Batch VC427
		•	· .				
					•	•	

79-122% 75-121% 87-119% 80-133%

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The QC reported here applies to the following samples:

Method: SW846 8260B

T53403-1

CAS No.	Compound	Result	RL	MDL	Units Q.
75-34-3 75-35-4 156-59-2 95-50-1 156-60-5 127-18-4 79-01-6	1,1-Dichloroethane 1,1-Dichloroethylene cis-1,2-Dichloroethylene o-Dichlorobenzene trans-1,2-Dichloroethylene Tetrachloroethylene Trichloroethylene	ND ND ND ND ND ND	2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0	0.52 0.50 0.56 0.69 0.45 0.91 0.52	ug/l ug/l ug/l ug/l ug/l ug/l ug/l
CAS No.	Surrogate Recoveries		Limi	ts	· ·

96% 87% 98% **87**%

1868-53-7	Dibromofluoromethane
17060-07-0	1,2-Dichloroethane-D4
2037-26-5	Toluene-D8
460-00-4	4-Bromofluorobenzene

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Blank Spike Summary

Blank Spil	ke Summary	у					Page 1 of 1		
Job Number:	T53403								
Account:	MWHCODE N	Iontgome	ry Watson			•			
Project:	Blanco Plant So	outh Flar	e Pit						
Sample VF3871-BS	File ID F026169.D	DF 1	Analyzed 05/29/10	By JL	Prep Date n/a	Prep Batch n/a	Analytical Batch VF3871		
			·						

The QC reported here applies to the following samples:

Method: SW846 8260B -

T53403-2, T53403-3, T53403-9, T53403-11

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
75-34-3	1,1-Dichloroethane	25	25.1	100	76-121
75-35-4	1,1-Dichloroethylene	25	25.2	101	71-128
156-59-2	cis-1,2-Dichloroethylene	25	26.1	104	68-113
95-50-1	o-Dichlorobenzene	25	24.3	97	72-108
156-60-5	trans-1,2-Dichloroethylene	25	25.1	100	70-125
127-18-4	Tetrachloroethylene	25	\25.3	101	77-120
79-01-6	Trichloroethylene	25	24.0	96	74-117
CAS No.	Surrogate Recoveries	BSP	Li	mits	
1868-53-7	Dibromofluoromethane	109%	79	-122%	
17060-07-0	1,2-Dichloroethane-D4	99%	75	-121%	
2037-26-5	Toluene-D8	114%	87	-119%	
460-00-4	4-Bromofluorobenzene	102%	* 🖉 80	-133%	



Blank Spike Summary

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Job Numbe Account: Project:	er: T53403 MWHCODE Montgome Blanco Plant South Flare	ry Watson Pit					
Sample VC427-BS	File ID DF C0009438.D 1	Analy 05/29/	zed E 10 J	By L	Prep Date n/a	Prep Batch n/a	Analytical Batch VC427
						,	
The QC rej	ported here applies to the fol	lowing sa	mples:		•	Method: SW8	46 8260B
T53403-1			• •				·
	·	a 1	DOD	/		,	
CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits		
75-34-3	1,1-Dichloroethane	25	21.5	86	76-121		· · ·
75-35-4	1,1-Dichloroethylene	25	19.4	78	71-128		
156-59-2	cis-1,2-Dichloroethylene	25	23.8	95	68-113		
95-50-1	o-Dichlorobenzene	25	23.9	96	72-108		
156-60-5	trans-1,2-Dichloroethylene	25	18.6	74	70-125		
127-18-4	Tetrachloroethylene	25	21.8	87	77-120		
79-01-6	Trichloroethylene	25	22.7	91	74-117		
CAS No.	Surrogate Recoveries	BSP	Li	mits	·		
1868-53-7 17060-07-0 2037-26-5 460-00-4	Dibromofluoromethane 1,2-Dichloroethane-D4 Toluene-D8 4-Bromofluorobenzene	96% 85% 98% 86%	79 75 87 80)-122%)-121% -119% -133%	.*		



Page 1 of 1

4.2.2

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Matrix Spike/Matrix Spike Duplicate Summary Job Number: T53403

Account: Project:	MWHCODE M Blanco Plant Sc	lontgom outh Fla	iery Watson re Pit		:		
Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T53401-2MS	F026178.D	1	_05/29/10	JL	n/a	n/a	VF3871
T53401-2MSD	F026179.D	1 '	05/29/10	JL	n/a	n/a	VF3871
T53401-2	F026175.D	1	05/29/10	JL	n/a	n/a .	VF3871

The QC reported here applies to the following samples:

T53403-2, T53403-3, T53403-9, T53403-11

CAS No.	Compound	T53401-2 ug/l Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
75-34-3 75-35-4 156-59-2 95-50-1 156-60-5 127-18-4 79-01-6	1,1-Dichloroethane 1,1-Dichloroethylene cis-1,2-Dichloroethylene o-Dichlorobenzene trans-1,2-Dichloroethylene Tetrachloroethylene Trichloroethylene	ND ND ND ND ND ND	25 25 25 25 25 25 25 25	26.3 25.0 26.3 24.2 25.4 32.4 24.8	105 100 105 97 102 130* 99	26.3 26.4 26.4 24.4 25.7 32.9 24.9	105 106 106 98 103 132* 100	0 5 0 1 1 2 0	76-121/13 71-128/19 68-113/13 72-108/12 70-125/14 77-120/13 74-117/12
CAS No.	Surrogate Recoveries	MS	MSD	Т53	3401-2	Limits		· ·	
1868-53-7 17060-07-0 2037-26-5 460-00-4	Dibromofluoromethane 1,2-Dichloroethane-D4 Toluene-D8 4-Bromofluorobenzene	107% 104% 107% 101%	107% 103% 108% 99%	111 106 113 106	% % % %	79-122% 75-121% 87-119% 80-133%		·	



Page 1 of 1

Method: SW846 8260B

4.3.1

Matrix Job Numb Account: Project:	Matrix Spike/Matrix Spike Duplicate Summary ob Number: T53403 ccount: MWHCODE Montgomery Watson roject: Blanco Plant South Flare Pit						Ρ	age 1 of 1	· · · · ·	
Sample T53523-5M T53523-5M T53523-5	File ID DF 1S C0009449.D 1 1SD C0009450.D 1 C0009446.D 1	Analyzed 05/29/10 05/29/10 05/29/10	By JL JL JL	Pre n/a n/a n/a	p Date	Prep I n/a n/a n/a	Batch	Analytie VC427 VC427 VC427 VC427	cal Batch	
The QC re	ported here applies to the fol	llowing sample	S:	• •		Method:	SW846	8260B		
T53403-1		· · ·						· · · ,	: •	• .
CAS No.	Compound	T53523-5 ug/l Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD	. *
75-34-3 75-35-4 156-59-2 95-50-1 156-60-5 127-18-4 79-01-6	1,1-Dichloroethane 1,1-Dichloroethylene cis-1,2-Dichloroethylene o-Dichlorobenzene trans-1,2-Dichloroethylene Tetrachloroethylene Trichloroethylene	2.0 U 2.0 U 2.0 U 2.0 U 2.0 U 2.0 U 2.0 U 2.0 U	25 25 25 25 25 25 25 25	22.3 21.5 25.0 23.6 19.8 22.9 23.5	89 86 100 94 79 92 94	20.8 19.1 23.3 23.2 18.4 20.5 21.7	83 76 93 93 74 82 87	7 12 7 2 7 11 8	76-121/13 71-128/19 68-113/13 72-108/12 70-125/14 77-120/13 74-117/12	
CAS No.	Surrogate Recoveries	MS	MSD	Т5	3523-5	Limits				
1868-53-7 17060-07-0 2037-26-5 460-00-4	Dibromofluoromethane 1,2-Dichloroethane-D4 Toluene-D8 4-Bromofluorobenzene	94% 87% 97% 87%	95% 88% 97% 86%	97 ⁹ 90 ⁰ 97 ⁹ 88 ⁹	% % % %	79-1229 75-1219 87-1199 80-1339	% % %			

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Section 5

General Chemistry

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QC Data Summaries

Includes the following where applicable:

Method Blank and Blank Spike SummariesDuplicate Summaries

• Matrix Spike Summaries

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METHOD BLANK AND SPIKE RESULTS SUMMARY GENERAL CHEMISTRY

Login Number: T53403 Account: MWHCODE - Montgomery Watson Project: Blanco Plant South Flare Pit

Analyte	Batch ID .	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits	
Nitrogen, Nitrate + Nitrite Nitrogen, Nitrate + Nitrite	GP9130/GN23363 GP9161/GN23426	0.10 0.10	0:0 0:0	mg/l mg/l	1 ` 1	0.931 1.03	93.1 103.0	90-110% 90-110%	, 5.1
Associated Samples: Batch GP9130: T53403-1, T5340 Batch GP9161: T53403-5, T5340 (*) Outside of QC limits	3-10, T53403-2, T5 3-6, T53403-8	3403-3,	T53403-4, T5340.	3-7, T53	3403-9				ப

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Page 1

33 of 35

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T53403

DUPLICATE RESULTS SUMMARY , GENERAL CHEMISTRY

Login Number: T53403 Account: MWHCODE - Montgomery Watson Project: Blanco Plant South Flare Pit

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits	
Nitrogen, Nitrate + Nitrite	GP9130/GN23363	т53403-2	mg/l	4.6	4.5	2.2	0-20%	
Nitrogen, Nitrate + Nitrite	GP9161/GN23426	T54163-1	mg/l	0.59	0.57	3.4	0-20%	
Associated Samples:								

Batch GP9130: T53403-1, T53403-10, T53403-2, T53403-3, T53403-4, T53403-7, T53403-9 Batch GP9161: T53403-5, T53403-6, T53403-8 (*) Outside of QC limits

Page 1



MATRIX SPIKE RESULTS SUMMARY GENERAL CHEMISTRY

Login Number: T53403 Account: MWHCODE - Montgomery Watson Project: Blanco Plant South Flare Pit

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits	
Nitrogen, Nitrate + Nitrite Nitrogen, Nitrate + Nitrite	GP9130/GN23363 GP9161/GN23426	T53403-2 T54163-1	mg/l mg/l	4.6 0.59	2 , 1	6.4 ~1.6	90.0× 101.0	90-110% 90-110%	5.3
Associated Samples: Batch GP9130: T53403-1, T5340 Batch GP9161: T53403-5, T5340 (*) Outside of QC limits (N) Matrix Spike Rec. outside	3-10, T53403-2, T5 3-6, T53403-8 of QC limits	3403-3, T534	03-4, T5340 \)3-7, T53403-	9		: • .		ଁ
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	v						2	,	•
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35 of 35 ACCUTEST. T53403

Page 1

APPENDIX C

Nitrate+Nitrite Concentration and Groundwater Elevation Graphs


Groundwater Elevation (ft amsl)

Historic Nitrate / Nitrite Concentrations and Groundwater Elevations Monitoring Well MW-5 El Paso Corporation Blanco Plant, Bloomfield, NM

Nitrate / Nitrite Concentration (mg/l)



Nitrate / Nitrite

Historic Nitrate / Nitrite Concentrations and Groundwater Elevations Monitoring Well MW-8 El Paso Corporation Blanco Plant, Bloomfield, NM





Nitrate / Nitrite

Groundwater Elevation (ft amsl)

Nitrate / Nitrite Concentration (mg/l)



Nitrate / Nitrite

Historic Nitrate / Nitrite Concentrations and Groundwater Elevations Monitoring Well MW-13

Nitrate / Nitrite Concentration (mg/l)

Historic Nitrate / Nitrite Concentrations and Groundwater Elevations Monitoring Well MW-14 El Paso Corporation Blanco Plant, Bloomfield, NM



Nitrate / Nitrite







Nitrate / Nitrite Concentration (mg/l)

Historic Nitrate / Nitrite Concentrations and Groundwater Elevations Monitoring Well MW-28 El Paso Corporation Blanco Plant, Bloomfield, NM Groundwater Elevation (ft amsl)

- 5541

Sep-10

Sep-08

Sep-06

Sep-04

Sep-02

Sep-00

Sep-98

Sep-96

Sep-94

Sep-92

Sep-90

0 + Sep-88

10

Date

Nitrate / Nitrite

5542





Historic Nitrate / Nitrite Concentrations and Groundwater Elevations Monitoring Well MW-30 Groundwater Elevation (ft amsl)

Nitrate / Nitrite
Groundwater Elevation

APPENDIX D

Chlorinated Hydrocarbon Concentration and Groundwater Elevation Graphs







Groundwater Elevation (ft amsl)

Historic Chlorinated Hydrocarbon Concentrations and Groundwater Elevations









Concentration (ug/L)