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Oil Conservation Division Environmental Bureau

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September 29, 2006

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

# **RE: 2006 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 2006 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 in June 2006 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. for Ian Yanagisawa

Ian Yanagisawa P.E., P.G. Principal Environmental Engineer

Enclosures: as stated

élpaso

El Paso Corporation

1001 Louisiana Street

Houston, Texas

77002

Prepared for:

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EL PASO NATURAL GAS COMPANY

**Contraction** 1001 Louisiana Street Houston, Texas 77002 Oil Conservation Division Environmental Bureau

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# 2006 ANNUAL GROUNDWATER REPORT FOR THE BLANCO PLANT SOUTH FLARE PIT AND D PLANT AREAS

# San Juan County, New Mexico

September 2006

Prepared by:

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

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B Laboratory Analytical Report

# LIST OF ACRONYMS

CHC	Chlorinated Hydrocarbons
DCA	Dichloroethane
DCB	Dichlorobenzene
DCE	Dichloroethene
EPNG	El Paso Natural Gas Company
MWH	MWH Americas, Inc.
NMOCD	New Mexico Oil Conservation Division
NMWQCC	New Mexico Water Quality Control Commission
PCE	Perchloroethene
TCE	Trichloroethene

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# 1.0 INTRODUCTION

This 2006 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 2006 annual groundwater sampling event at the Blanco Plant site, located near Bloomfield, New Mexico. This work has been performed according to the proposed actions outlined in the 2005 Groundwater Report for the Blanco Plant South Flare Pit and D Plant Areas (MWH, 2005), which was submitted to New Mexico Oil Conservation Division (NMOCD) in August 2005. Those proposed actions were as follows:

- All groundwater monitoring wells in the Blanco Plant South Flare Pit and D Plant areas will be sampled annually and analyzed for nitrate+nitrite concentrations.
- Groundwater monitoring wells in the North Flare Pit area (MW-19, MW-23, MW-24, MW-26, and MW-27) will be removed from the annual nitrate+nitrite sampling event.
- Groundwater samples from monitoring wells in the D Plant Area (MW-12, MW-13, MW-14 and MW-15) will be analyzed for chlorinated hydrocarbon compounds (CHCs).
- The results of the nitrate+nitrite and CHC groundwater sampling will be reported to NMOCD in annual groundwater monitoring reports.

This work was initiated, pursuant to a NMOCD letter dated May 3, 2002, regarding remediation activities at EPNG's Blanco Plant. The regulatory driver for groundwater remediation at this site is the New Mexico Water Quality Control Commission's (NMWQCC) nitrate+nitrite standard of 10 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 by NMOCD in a letter dated February 21, 2003.

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 1.1, *Blanco Plant Site Layout*, presents the Blanco Plant site layout and location of the D Plant and South Flare Pit. The map also shows the location of the North Flare Pit area.

Section 2.0 of this report summarizes historic information related to groundwater nitrate concentrations at the site, including a description of previous investigations and a description of the geology/hydrogeology of the area. Section 3.0 presents the results of the groundwater sampling event in 2006, and Section 4.0 discusses continued activities at the site.

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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 1989 (Bechtel, 1989). Six monitoring wells were installed and sampled during this investigation. High nitrate concentrations were identified in wells MW-2 (290 ppm) and MW-6 (51 ppm) at that time. It was concluded in this study 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. A monitoring well, MW-19, was installed upgradient of MW-2. Sampling results from this investigation indicated high 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 source for nitrate contamination.

Historic and recent groundwater nitrate+nitrite data from several rounds of groundwater sampling (1991 - 2006) at the site (including North Flare Pit wells) 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). Based on 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, 1989). 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 1989 (Bechtel, 1989). Based on the information collected during this study, it was concluded that the direction of groundwater flow through the plant area is to the south-southwest through the site. The average hydraulic conductivity was estimated to be  $2.1 \times 10^{-4}$  centimeters per second. Depth to groundwater ranged from 50 feet (at MW-2) to nine feet (at MW-10) below ground surface (5564 to 5552 feet above sea level) (EPNG, 1989). These results were generally consistent with the findings of K.W. Brown (1990).

A potentiometric surface contour map for the site has been prepared based on water level measurements collected in June 2006, and is presented in Figure 2.1. Groundwater is generally flowing to the southeast, with a hydraulic gradient of 0.025 ft/ft in the Blanco D Plant site area and 0.054 ft/ft in the North Flare Pit area. The groundwater flow direction

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in the South Flare Pit area appears to be influenced as well by apparent mounding caused by recharge from Citizens Ditch. These results are consistent with previous years' data.

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# 3.0 2006 ANNUAL GROUNDWATER SAMPLING EVENT

Monitoring wells at the Blanco Plant were sampled on June 8, 2006, and analyzed for nitrate+nitrite concentrations and/or CHCs, as described further below. Monitoring well MW-20 was damaged in 2000 and abandoned in 2002. 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.

# 3.1 GROUNDWATER NITRATE+NITRITE DATA

Groundwater samples were collected on June 8, 2006 from wells MW-8, MW-12, MW-13, MW-14, MW-15, MW-28, MW-29, and MW-30 using standard sampling techniques and analyzed for nitrate+nitrite concentrations. Groundwater sampling was attempted at wells MW-2, MW-5, MW-6, and MW-7; however, these wells were either dry (MW-2, MW-5, MW-7), or did not contain enough water to sample (MW-6). Field data and sampling information are presented on field sampling forms, included in Appendix A.

Analytical data are listed in Table 2.1, and laboratory analytical reports are included in Appendix B. Nitrate+nitrite concentrations were consistent with historic data for these wells. These data indicate that nitrate+nitrite concentrations have consistently exceeded NMWQCC standards in monitoring wells MW-14, MW-15, MW-28, MW-29 and MW-30. Monitoring well MW-2 has not been sampled since 1994 because the well has been dry (although data collected from 1991 through 1994 indicated elevated nitrate+nitrite concentrations at that location).

Groundwater nitrate+nitrite concentrations from the June 2006 sampling event are presented on Figure 3.1. The inferred 10 mg/L isoconcentration contour is also presented on this figure to depict the approximate areas in exceedance of the NMWQCC standard. Since 1994 through 2005, nitrate+nitrite concentrations in all of the wells in the North Flare Pit area have consistently been below the NMWQCC standard.

# 3.2 GROUNDWATER CHLORINATED HYDROCARBON DATA

Samples from the four wells in the D Plant area were also analyzed for a suite of selected 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 2006 are presented in Table 3.1. Nearly all of the 2006 chlorinated hydrocarbon results were below their applicable U.S. Environmental Protection Agency (USEPA) maximum contaminant levels (MCLs) and NMWQCC standards. Exceedances of these standards were only observed in monitoring well MW-13, which had a TCE concentration of 26.9 ug/L (MCL is 5.0 ug/L) and a 1,1-DCA concentration of 48.8 ug/L (NMWQCC standard is 25 ug/L).

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# 4.0 CONCLUSIONS

The following conclusions have been derived based on current and historic sampling and analyses at the site:

### Nitrate+Nitrite Concentrations

• Nitrate+nitrite concentrations in the Blanco Plant area have generally been stable over the previous 5-6 years, displaying no clear increasing or decreasing trends.

## **Chlorinated Hydrocarbons**

- Only the groundwater sample collected from MW-13 exceeded either Federal or NMWQCC standards for CHCs. This is generally consistent with historic results, although TCE exceedances have occasionally been observed in monitoring well MW-12 to the north.
- The PCE and TCE concentrations in MW-13 appear to be naturally attenuating over time. The stable concentrations of cis-1,2-DCE, trans-1,2-DCE, and 1,1-DCE may indicate that reductive dechlorination is occurring within the dissolved phase plume.

# 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.
- Wells MW-2, MW-5 and MW-7 have been dry since 2002. All current evidence suggests it is unlikely these wells will produce sufficient water for sampling in the future. Therefore, pending approval by NMOCD, EPNG will abandon the wells in accordance with NMOCD guidelines.
- 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.

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# 6.0 **REFERENCES**

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- 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.
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- 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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# TABLES

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# TABLE 2.1GROUNDWATER NITRATE+NITRITE ANALYTICAL DATA (1991 - 2006)BLANCO PLANT - SAN JUAN COUNTY, NEW MEXICO

Monitoring Well	Sample Date	Nitrate+Nitrite (mg/l)
	NMOCD	Standard: 10 mg/L
	6/18/91	180
MW-2	2/23/93	256
-	6/8/93	228
	9/29/93	233
	5/29/02	dry
	6/3/03	dry
	5/17/04	dry
	5/30/05	dry
	6/8/06	dry
	6/18/91	0.08
MW-5	2/19/93	<1.0
	6/7/93	- <1.0
	1/2//94 	
-	8/8/00	4.0
-	11/10/00	4
	9/24/02	dry
	6/3/03	dry
	5/17/04	dry
	5/30/05	dry
	6/8/06	dry
	6/19/91	110
MW-6	2/19/93	- 03.5
·	9/28/93	
	10/7/93	94.5
	1/26/94	95.8
	8/20/94	1.7
	12/20/94	94
	2/16/95	90.6
	11/10/00	59
	9/24/02	95.1
	6/3/03	74
	5/1//04	ary not campled
	6/8/06	not sampled
	6/18/91	0.28
MW-7	6/7/93	3
	9/27/93	<2.8
	5/29/02	dry
	9/24/02	dry
	6/3/03	dry
	5/17/04	dry
	6/8/06	dry
	6/18/91	<0.06
MW-8	2/19/93	2.0
	6/7/93	<1.0
	9/27/93	<1.0
	1/27/94	<1.0
	11/10/00	<0.1
	2/22/01	<0.1
	3/23/01	0.21
	8/28/01	0.33
	5/28/02	0.26
	6/3/03	0.13
	5/17/04	0.43
	5/31/05	0.30
	6/8/06	0.30
	6/18/91	0.74
MW-10	2/19/93	1.2
i	0///93	2.2
	9121193	2.1
	5/28/02	
1	5120102	-
	9/24/02	arv
	9/24/02 6/3/03	NS

Monitoring Well	Sample Date	Nitrate+Nitrite (mg/l)
	NMOCD S	tandard: 10 mg/L
	6/19/91	7.8
MW-12	2/25/93	7.8
	6/7/93	8.5
	9/28/93	9.1
	1/27/94	7.3
	8/8/00	<10
	11/9/00	5.7
	3/22/01	8.4
	8/28/01	8.0
	5/28/02	2.0
	6/3/03	6.7
:	5/17/04	7.6
	5/31/05	8.6
	6/8/06	6.5
	6/19/91	6.3
MW-13	2/24/93	10.9
	0/20/93	<u> </u>
	9/28/93	4.1
	8/8/00	
	11/9/00	
	3/22/01	
	8/28/01	- 13
	5/28/02	60
	6/3/03	5.8
	5/17/04	9.8
	5/31/05	8.2
	6/8/06	8.2
	2/25/93	19.2
MW-14	6/8/93	17.5
	9/28/93	11.8 w 11
	1/27/94	15.4
	8/8/00	19
	11/13/00	0.24
	3/22/01	13
· .	8/28/01	20
	5/28/02	15
	6/3/03	15
	5/1//04	16
	6/8/06	
	6/19/91	50
MW-15	2/24/93	5
	6/8/93	48.1
	9/28/93	43
	1/27/94	43.7
	8/8/00	35
	11/9/00	38
	3/22/01	25
	8/28/01	30
	5/28/02	24
	6/3/03	21
	5/17/04	- 20
	5/31/05	35
	6/8/06	17
MW 16	6/19/91	0.07
MW-10	2/23/93	
	6/3/03	
	12/1/03	abandoned
	101105	a autoutou

< Indicates 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.

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# TABLE 2.1GROUNDWATER NITRATE+NITRITE ANALYTICAL DATA (1991 - 2006)BLANCO PLANT - SAN JUAN COUNTY, NEW MEXICO

Monitoring Well	Sample Date	Nitrate+Nitrite (mg/l)
	NMOCD	Standard: 10 mg/L
	2/25/93	. 15.3
MW-17	9/24/02	dry
	6/3/03	NS
	12/1/03	abandoned
	2/25/93	8.19
MW-18	6/8/93	<1.0
	9/28/93	<1.0
	9/24/02	3.1
	6/3/03	NS
	12/1/03	abandoned
	6/19/91	70
MW-19	2/25/93	10.6
	6/10/93	NA
	11/13/00	<0.1
	3/26/01	0.19
	5/30/02	0.13
	6/3/03	<0.10
	5/17/04	0.19
	5/31/05	3.5
	6/8/06	not sampled
	9/26/92	NA
MW-20	2/24/93	<1.0
	6/10/93	<1.0
	9/29/93	<1.0
	1/27/94	<1.0
	5/13/94	NA
	8/22/94	NA
	11/13/00	damaged
_	6/3/03	abandoned
	9/26/92	0.62
MW-23	2/1/93	NA
	2/25/93	0.56
	6/8/93	<1.0
	9/29/93	<1.0
	2/10/94	<1.0
	5/13/94	NA
	8/22/94	NA
	11/13/00	0.12
	3/26/01	0.18
	5/30/02	0.23
	6/3/03	<0.10
	5/17/04	0.29
	5/31/05	0.40
	6/8/06	not sampled
	9/26/92	1.42
MW-24	2/23/93	<1.0
	6/10/93	<1.0
	9/29/93	<1.0
	2/10/94	<1.0
	5/13/94	NA
	8/22/94	NA
	11/13/00	0.1
	3/26/01	0.18
	5/30/02	0.15
	6/3/03	dry
	5/17/04	dry
	5/30/05	not sampled
	5/17/04	dry
	L 5/30/05	not sampled

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Monitoring Well	Sample Date	Nitrate+Nitrite (mg/l)
	NMOCD S	tandard: 10 mg/L
	2/25/93	23
MW-26	6/10/93	8.2
	3/26/01	0.24
	5/30/02	0.26
	6/3/03	NS
	5/17/04	0.53
	5/30/05	not sampled
	6/8/06	not sampled
	2/26/93	<1.0
MW-27	6/10/93	<1.0
	9/30/93	- <1.0
	2/2/94	<1.0
	5/14/94	NA
	11/13/00	0.28
	3/26/01	0.61
	5/30/02	0.21
	6/3/03	<0.10
	5/17/04	0.56
	5/31/05	0.60
	6/8/06	not sampled
	10/7/93	2.1
MW-28	2/2/94	2.8
	8/20/94	2.7
	12/20/94	0.33
	2/16/95	1.6
	8/10/00	25
	11/10/00	53
	3/23/01	34
	8/28/01	63
	5/28/02	83
	6/3/03	87,
	5/17/04	82
	5/31/05	85
	6/8/06	68
	10/7/93	8.3
MW-29	2/2/94	19.6
	8/20/94	28.8
	12/20/94	41
	2/16/95	28.1
	8/10/00	50
	11/10/00	66
	3/26/01	70
	8/28/01	58
	5/28/02	70
	6/3/03	79
	5/17/04	88
	5/31/05	97
	6/8/06	
	10/7/93	28.1
MW-30	2/2/94	57.1
	8/20/94	67.6
	2/16/95	91.3
	8/10/00	84
	11/10/00	
	3/26/01	72
	8/28/01	
	5/28/02	<u>66</u>
	5/3/03	58
	5/1//04	52
	6/8/02	
	0/0/00	50

< Indicates 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.

GROUNDWATER CHLORINATED HYDROCARBON ANALYTICAL DATA (2002 - 2006) **BLANCO PLANT - SAN JUAN COUNTY, NEW MEXICO** TABLE 3.1

	C			Chlo	orinated Hyd	rocarbons by EPA	Method 8260B	; (ug/L)	
Well	Sample Date	Deptn to Water (ft btoc)	1,1-DCA	1,2-DCB	1,1-DCE	trans-1,2-DCE	cis-1,2-DCE	TCE	PCE
OMMN	CC Water Q	uality Standard:	25	NA	5.0	NA	NA	100	20
		US EPA MCL:	NA	NA	7.0	100	70	5.0	5.0
MW-12	5/28/2002	20.95	21.0	5.2	<1.0	1.7	20.0	8.0	3.0
	6/3/2003	16.99	8.2	3.4	<2.0	<2.0	8.2	4.5	3.2
	5/17/2004	16.59	4.6	3.4	<2.0	<2.0	5.1	4.0	2.3
	5/31/2005	15.65	22.3	<2.0	<2.0	<2.0	18.8	20.7	<2.0
	6/8/2006	18.62	8.7	4.5	<2.0	0.87	10.7	4.7	2.5
MW-13	5/28/2002	16.76	61.0	79.0	1.3	8.2	45.0	39.0	1.6
	6/3/2003	14.44	53.8	50.5	1.4	8.2	33.0	35.1	1.4
	5/17/2004	14.12	41.2	29.2	<2.0	4.0	21.2	22.5	<2.0
	5/31/2005	13.43	50.7	<2.0	<2.0	5.7	26.6	21.3	<2.0
	6/8/2006	15.60	48.8	53.1	5.2	5.2	35.8	26.9	<2.0
MW-14	5/28/2002	21.57	8.7	<1.0	<1.0	<1.0	2.9	1.9	· <1.0
	6/3/2003	19.85	9.5	<2.0	<2.0	<2.0	3.3	2.4	<2.0
	5/17/2004	19.78	5.7	<2.0	<2.0	<2.0	2.1	1.6	<2.0
	5/31/2005	18.81	4.7	<2.0	<2.0	<2.0	<2.0	<2.0	1.2
	6/8/2006	20.03	8.9	<2.0	<2.0	<2.0	3.4	1.8	<2.0
MW-15	5/28/2002	20.33	5.3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	6/3/2003	18.85	6.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
	5/17/2004	18.475	6.3	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
	5/31/2005	17.8	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
	6/8/2006	19.68	4.3	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
DCA: Dichlord DCB: Dichlord	bethane bbenzene	DCE: Dichloroet NA: Not applica	hene l	PCE: Perchlo TCE: Trichlo	roethene roethene				

PCE: Perchloroethene TCE: Trichloroethene

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# 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

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.

Nitrate+Nitrite as N by EPA Method 353.2, 354.1, or 4500.

**DCA:** Dichloroethane

100 miles

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**DCB:** Dichlorobenzene

**DCE:** Dichloroethene

PCE: Perchloroethene

TCE: Trichlorøethene

# FIGURES

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AutoCAD FILE: Dianophine 2. GenTOGWD-1.2 Insigoonsid :31/2 DADoug



# APPENDIX A

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# FIELD SAMPLING FORMS

# Lodestar Services, Incorporated

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PO Box 3861 Farmington, NM 87499-3861 Office (505) 334-2791

# WATER LEVEL DATA

Pro	ject Name_	San Jua	n Basin Grou	nd Water	Project No.	30001.0
Project Manager		MJN			-	
Clie	ent Company	MWH			Date 5-18-06 and 5 19-06	
Site	Name	Blanco	<u> </u>		-	
`	Well	Time	Depth to Product (ft)	Depth to Water (ft)	Com	ments
	MW-2	0925	-	-	well is dry T	D 58.76
	MW-19	1047	-	-	no access	
r	MW-23	0942	-	57.37	well purged a 5/19/06, look	and sampled s static
	MW-24	1205	-	67.14	not enough w to sample TE	vater in well 0 67.19
	MW-26	1107	-	65.58	well purged a 5/23/05 not r static	and sampled ecovered not
	MW-27	1142	-	68.07	well purged a 5/23/05 not r static	and sampled ecovered not
	MW-5	1612	-	-	Dry hole TD	21.15
	MW-6	1318	-	30.97	not enough w sample TD 3 not be static	vater to 1.22, may
	MW-7	0810	-	-	Well is dry TD is 21.24	
	MW-8	0821	-	34.61		
	MW-28	0904	-	30.25		
	MW-29	1150	-	32.27		
	MW-30	1238	-	32.19		
	MW-12	1432	-	18.92		
	MW-13	1335	-	15.58		
	MW-14	0730	-	19.86		
	MW-15	1510	-	19.61		

Comments

Signature:

Ashley L. Ager

Date:

May 19, 2006

# Lodestar Services, Incorporated

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PO Box 3861 Farmington, NM 87499-3861 Office (505) 334-2791

# WATER LEVEL DATA

Proj	ject Name_	San Jua	n Basin Grou	nd Water	Project No 30001.0	
Proj	ject Manager				Doto	6 8 2006
Site	Name	Blanco		· · · · · · · · · · · · · · · · · · ·	Date	0-8-2000
-					-	
	Well	Time	Depth to Product (ft)	Depth to Water (ft)	Comm	ents
ſ	MW-2	-	-	-	well is dry TD	58.76
[	MW-19	-	-	-	no access	
Ĩ	MW-23	1205	-	57.44	well purged ar 5/19/06, looks	nd sampled static
	MW-24		-		not enough wa to sample TD	iter in well 67.19
	MW-26	1305	-	66.15	Well had not f recovered sinc sampling on 0 static	<sup>°</sup> ully e previous 5/19/06. Not
	MW-27	1328	-	68.12	Well had not f recovered sinc sampling on 0 static	fully e previous 5/19/06. Not
	MW-5	-	· •	-	Dry hole TD 2	1.15
	MW-6	1045	-	30.94	not enough wa sample TD 31. not be static	ater to .22, may
	MW-7	-	-	-	Well is dry TI	) is 21.24
	MW-8	1137	-	34.69		
	MW-28	0930	-	29.30		
	MW-29	1015	<b>-</b> ·	31.77		
[	MW-30	1028	-	31.74		
	MW-12	0810	-	18.62		
	MW-13	0836	-	15.60		
Ī	MW-14	1053		20.03		
ľ	MW-15	0858	-	19.68		
	MW-30N	0704	-	77.58		

Comments

Signature: Ashley L. Ager

Date:

June 8, 2006

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Project No.:30	001.0		Proiect	Name: Blan	co SFP	Client: M	WH/EL Pas	50
Location: Bla	nco SFF		II No: MV	V-8		D	evelopmen	t Sampling
Project Manac	her	 	<u></u>	Date 06/	08/06	Start Time	• 1137	Weather raining 60s
Depth to Wate	or 34	69 Der		ct na F	<u>Product</u> Ti	hickness no		suring Point TOC
Motor Colum		196 Wo		и"		110K11055 <u>110</u>		
	rneight		II DIa	4				
Sampling Met	hod: Su	Ibmersible Pur	mp 🗌	Centrifugal	Pump 🔲	Peristaltic	Pump 📋	Other
	Bo	ottom Valve Ba	iler x	Double Che	ck Valve I	Bailer 🗆 🛛 St	tainless-St	eel Kemmerer
Criteria: 3 to	5 Casir	ng Volumes of	Water Rem	oval X stabil	lization of	Indicator Par	ameters )	Cother or bail dry
			Collona	Water Volum	ne in Well	0		Coller to be removed
	t of wate	er				Ounces		Gal/oz to be removed
1.00	- CO. X		1.2 X 3			x		5.0
Time		50	Tomp	OPP		Turbidity	Vol Even	Comments/
(military)	(su)	(umhos/cm)	(°F)	(millivolts)	(mg/L)	(NTU)	(ounces)	Flow rate
1139	7.26	4520	62.7				0.25	clear
<u>1142</u>	7.32	4240	61.6			· · · · ·	0.50	Bailing down
			· ·	I			· · ·	
Final:	nН	SC	Temn	Eh-ORP	DO	Turbidity	Vol Evac	Comments/Flow Rate
1145	7.33	4250	61.2			i di bianti	0.65	clear, well has bailed
COMMENTS:	Well ba	iled dry.						
INSTRUMEN	TATION	: pH Meter	x			Tempe	erature Me	ter x
		DO Mo	onitor			Other	<u> </u>	
	Co	onductivity Me	ter X					
Water Dispos	al <u>Rio</u>	<u>o Vista</u> Sam	nple ID <u>Blar</u>	nco SFP MW-	<u>-8</u> Sam	ple Time <u>11</u>	50	
BTEX VOC	s Alkali	nity TDS Cat	ions Anion	s Nitrate I	Nitrite Ar	nmonia TKN	NMWQC	C Metals Total Phosphorus

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Project No.: <u>5</u> Location: <u>Bl</u> Project Man Depth to Wa Water Colum Sampling Ma	30001.0 lanco D P ager ater18 nn Height  ethod: Su Bo to 5 Casin	Plant Area Wel MJN 3.62 Dep t 7.93 Wel ubmersible Pum ottom Valve Bai	Project	Name: <u>Blan</u> V-12 Date <u>06/08/</u> ct <u>na</u> F 2" Centrifugal I Double Che oval X stabil	<u>co D Plar</u> 206_time_ Product T Pump □ ck Valve ization of	ntCI Da W hicknessna hicknessna hickness Peristaltic Bailer [] St Indicator Par	ient: <u>MWH/</u> evelopment 'eather <u>clo</u> <u>a</u> Measu Pump ainless-Stee ameters <b>X</b>	EL Paso <u>Sampling</u> udy, 70s uring Point <u>TOC</u> Other el Kemmerer Other <u>or bail dry</u>
				Water Volum	ie in Well			
Gai/ft ) 7.9	( <u>it of wat</u> )3 x .16	er	Gallons 1.27 x 3			Ounces		3.8
Time (militarv)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (ma/L)	Turbidity (NTU)	Vol Evac. (gallons)	Comments/ Flow rate
0810	5.48	5080	63.2		(	(	0.25	clear
	5.53	5310	62.5				0.50	clear
	5.37	5380	62.2				0.75	clear
	5.42	5420	62.2				1.0	clear
	5.48	5490	62.3				2.0	Cloudy
	5.38	5740	62.9				3.0	Cloudy
	5.39	5730	62.2				3.5	Cloudy
<u>0827</u>	5.38	5720	62.2				3.75	Cloudy
Final: Time	<u>рН</u> 5 39	SC 5720	Temp	Eh-ORP	D.O.	Turbidity	Vol Evac.	Comments/Flow Rate
			<b>****</b>					
COMMENT	S:							
			v			Tomas	proturo Mot-	
	MIATION	DO Mo	nitor			Other		· · ·
14/ h 🙃	С	Conductivity Met	er X					
Water Dispo BTEX VO CHCs	) <b>sal<u>R</u>i</b> Cs Alkal	<u>o Vista</u> Sam inity TDS Cati	ple ID <u>Blar</u> ons Anion	nco D plant M lis <u>Nitrate I</u>	<u>W-12</u> Nitrite Ar	Sample Ti nmonia TKN	me <u>0830</u> NMWQCC	Metals Total Phosphorus
MS/MSD	<u></u>	BD_		BD	Name/Tir	ne		_ TB

Water Colur	nn Height	Wel	l Dia	2"				
Criteria: 3	ethod: Su Bc to 5 Casir	ibmersible Pur ottom Valve Bai ng Volumes of <sup>1</sup>	np ∐ ler <b>x</b> Water Remo	Double Chee Double Chee Doval <b>X</b> stabil	oump ck Valve ∣ ization of	Peristaltic Bailer 🗆 St	Pump ∐ ainless-Stee ameters X	Otner ∐ el Kemmerer □ Other <u>or bail dry</u>
				Water Volum	e in Well			
Gal/ft > 7.4	(ft of wate 15 x .16	<u>ər</u>	Gallons 1.19 x 3	· · · · · · · · · · · · · · · · · · ·		Ounces x 3		3.58
Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gallons)	Comments/ Flow rate
0839	4.95	7810	64.7				0.25	clear
	6.02	7910	64.5				0.50	clear
	6.02	7890	64.1			·	0.75	Cloudy
	6.00	8150	63.5				1.0	Cloudy
	5.99	8070	62.0				2.0	Cloudy
0853	6.00	8150	63.7				3.25	Cloudy
	0.00						0.20	
· · · · · · · · · · · · · · · · · · ·							L	
Final:		66		EL ODD	DO		NI-LE-	
0855	рн 6.02	8200	1 emp 63.7		<u>D.O.</u>		3.75	Cloudy, silty
			New York and the second s					្លាំសំពុំសំពីឆ្នាំសាក់ ស្រាន់ស្នែកទីនិងសម្រេក កម្ពុំ ។ កាត់ ស្រុកស្រុងអ្នកទីសែកសង្កា សម្តែកសង្កាលខ្លាំងការ។ សម្តាការប្រើប្រជាមកការស្នែក កាត់ ស្រុកសង្កែងទីស្វែងទីស្វែងសង្កា សមត្ថការសន្តិសាក
COMMENT	S: unpres	erved due to rx	n of hcl w/ o	gw	-		····	·····
INSTRUME	NTATION	l: pH Meter DO Mo	X nitor			Tempe Other	ature Mete	ir x
			iei <b>A</b> Inle ID, Blar		W-13	- Sample Ti	ime 0856	

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Project No.:	30001.0 anco D P	lant Area W	Projec <sup>.</sup> ell No <sup>.</sup> M\	t Name: <u>Blan</u> N-14	<u>co D Plar</u>	<u>nt</u> C	lient: <u>MWH</u>	/EL Paso Sampling
Project Man	aner	M.IN		Date 06/	08/06	Start Time	≤ 10.53	Weather drizzling
Depth to Wa	ter 20		anth to Produ	uct na	Product T	bickness n	- <u></u>	uring Point TOC
Motor Colum	nel <u>20</u>	<u>5.05</u> De		וכנ <u>וומ</u> ו סיי		nickness <u>na</u>		
water Colum	nn neighi	<u> </u>		<u> </u>				
Sampling Me	ethod: Si	ubmersible Pu	ımp 📋	Centrifugal	Pump 📋	Peristaltic	Pump 📋	Other
	Bo	ottom Valve B	ailer <b>x</b>	Double Che	ck Valve	Bailer 🗋 🛛 S	tainless-Ste	el Kemmerer
	_							
Criteria: 3	to 5 Casii	ng Volumes o	f Water Rem	ioval X stabi	lization of	Indicator Par	rameters X	Other or bail dry
·····		<u> </u>		10/				
Gal/ft v	ft of wat	or	Gallone	vater volun	<u>ie in vveil</u>	Ouncos	· · ·	Calloz to be removed
	$\frac{1101}{4 \times 16}$		1 18			x 3		3.6
	+ X . 10		1.10			× 0		0.0
·								· · · · · · · · · · · · · · · · · · ·
Time	pH	SC	Temp	ORP	D.O.	Turbidity	Vol Evac.	Comments/
(military)	(su)	(umhos/cm)	) (°F)	(millivolts)	(mg/L)	(NTU)	(gallons)	Flow rate
1055	6.83	6950	66.6				0.25	clear
	6.73	7240	65.6		ļ		0.50	clear
					ļ		0.00	
	6.75	7310	65.3				0.75	Clear
<u>1107</u>	6.74	7330	64.9				1	Well is bailing dow
				<u> </u>				
						1		
				· · · · · · · · · · · · · · · · · · ·				
				1	+ <u>.</u>			
		L <u></u>		<u> </u>				,,,,
				1 1.01800 STREAMONT STITUTE		Contraction and the second		
Final:								
	pH	SC	Temp	Eh-ORP	<u>  D.O.</u>	Turbidity	Vol Evac.	Comments/Flow Rat
1108	0.75	7320	05.0				1.3	well has balled dry
COMMENTS	<u></u>		······			······································		•••••
								······································
INSTRUME		l' nH Mete	er X			Temp	erature Met	
			lonitor					51 🔨
	~	onductivity M	otor <b>V</b>			. Outer		
Motor Dian-				noo D plant M		Correle T	ima 4400	
vvater Dispo	sal_ <u>RI</u>	<u>u vista</u> Sa	mpie ID <u>Bla</u>	Dico D plant IV	<u>IVV-14</u>	Sample I	ime <u>1109</u>	
BLEX AO	Us Alkal	inity TDS Ca	ations Anior	ns <u>Nitrate</u>	Nitrite Ar	nmonia TKN	NMWQCC	Metals Total Phospho
0110-								
CHUS								

Project No.:	30001.0		Project	t Name: <u>Blan</u>	co SFP	Client:_M	WH/EL Pasc	<u> </u>
Location: <u>B</u>	lanco SFI	<u>P</u> Wel	l No:M\	N-28		D	evelopment	Sampling
Project Man	ager	MJN		Date <u>06/</u>	08/ <b>06</b>	Start Time	e0930	Weather <u>cloudy</u> , 70
Depth to Wa	ater <u>29</u>	<u>9.60</u> Dep	oth to Produ	uct <u>na</u> F	Product Th	nickness <u>n</u> a	a Meas	uring Point <u>TOC</u>
Water Colur	nn Height	t <u>3.65</u> We	l Dia	_4"				
Sampling M	ethod: Su	ubmersible Pur	n <b>p</b> []	Centrifugal I	Pump 🛛	Peristaltic	Pump 🗌	Other
	Во	ottom Valve Ba	iler <b>x</b>	Double Che	ck Valve I	Bailer 🗆 🛛 S	tainless-Stee	el Kemmerer
Criteria: 3	to 5 Casii	ng Volumes of	Water Rem	oval X stabil	ization of	Indicator Par	ameters X	Other <u>or bail dry</u>
			0	Water Volum	e in Well	0		
Gal/ft	k ft of wate	er	Gallons			Ounces		Gai/oz to be removed
5.0			2.37 × 3					
Time	pH	SC	Temp	ORP	D.O.	Turbidity	Vol Evac.	Comments/
(military)	(su)	(umhos/cm)	(°F)	(millivolts)	(mg/L)	(NTU)	(gallons)	Flow rate
0933	5.99	4010	67.5				0.25	Silty, brown, cloudy
	5.95	3650	66.6				1.0	Silty, not gett enough water bailers; fish for bail in well; retrieve two
	5.94	3890	66.2				1.25	Try fishing aga nothing recovered
	6.42	3940	65.7				1.75	Silty
	6.43	4020	65.4				2.25	Cloudy and silty
	6.46	4070	65.4				3.25	Cloudy
	6.45	3950	65.7				4.25	Cloudy
	6.45	3.96	66.3	· · · · · · · · · · · · · · · · · · ·			5.25	Cloudy
4005	0.47	4030	00.5				0.25	
1005	6.50	4.04	65.5				6.50	
Final:				EL OPP				
<u>1 ime</u> 1007	pH 6.51	4070	1 emp 65.2		D:0:	I Urbialty	7.25	Comments/Flow Rate
COMMENT	S: spent t	time retrieving t	ailers from	bottom of we	II. Recov	ered two, ma	ybe another	one at bottom.
		1	v					
INSTRUME	NTATION	N: pH Meter DO Mo	<b>x</b> onitor	<u></u>		I emp Other	erature Mete	
	C	Conductivity Me	ter X					
Water Disp	osal <u>Ri</u>	<u>io Vista</u> Sam	ple ID <u>Bla</u>	nco SFP MW	<u>-28</u> Samp	ole Time <u>1(</u>	)09	
BTEX VO	Cs Alkal	linity TDS Cat	ions Anior	ns <u>Nitrate</u>	<mark>Nitrite</mark> An	nmonia TKN	I NMWQCC	Metals Total Phosphore

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Sampling Mo	ethod: Su Bo to 5 Casii	ubmersible Pu ottom Valve B ng Volumes o	imp □ ailer x f Water Rem	Centrifugal I Double Che oval X stabil	Pump □ ck Valve I lization of	Peristaltic Bailer 🗆 Si Indicator Par	Pump 🗌 tainless-Stee rameters X	Other  Ot
Gal/ft> 5.3	<u>ft of wate</u> 5 x .65	er	Gallons 3.48 x 3	Water Volum	e in Well	Ounces		Gal/oz to be removed 10.4
Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gallons)	Comments/ Flow rate
<u>10:17</u>	6.77	4150	66.7				1.0	Clear
	6.73	4120	64.8				3.75	Bailing down
10:20	6.80	4080	64.4				3.50	Almost dry
Final: Time 10:22	pH 6:82	SC 4070	Temp 64.0	Eh-ORP	D.O	Turbidity	Vol Evac. 4:0	Comments/Flow Rat
COMMENT	3: Well ba	ailed dry					·	
INSTRUME	NTATION C sal <u>Ri</u>	I: pH Mete DO M conductivity M <u>o Vista</u> Sa	er X onitor eter X mple ID <u>Blar</u>	nco SFP MW	- <u>29</u> Samı	Tempe Other ole Time10	erature Mete	r x

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Project No.: <u>s</u> Location: <u>Bl</u> Project Mana Depth to Wa	30001.0 anco SFF ager ter31	2 We MJN 1.74 Dep	Project II No: <u>MV</u>  oth to Produ	Name: <u>Bla</u> V-30 Date <u>06</u> ct <u>na</u>	nco SFP 6/08/06 Product T	Client:_M D Start Time hicknessn	WH/EL Pas levelopmen e1028 a Mea	t <u>Sampling</u> Weather <u>cloudy, 70s</u> suring Point <u>TOC</u>
Sampling M	ethod: Su Bo	ubmersible Pur	np	Centrifugal Double Ch	Pump	Peristaltic Bailer 🗆 S	Pump	Other
Gal/ft x	to 5 Casir a ft of wate 6 x .65	er	Gallons 3.35 x 3	Water Volu	me in Well	Ounces	rameters >	Gal/oz to be removed 10.0
Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac (gallons)	Comments/ Flow rate
1030	6.65 7.10	3850 3770	65.6 65.0				1 2	clear Silty brown
	6.70 6.66	3880 3870	64.7 64.7				3 3.75	Silty Silty, bailing down
<u>1035</u>	6.70	3900	65.1				4.35	silty
Final: Time 1038	рН <b>4.95</b>	<u>SC</u> 3940	Temp 65:0	Eh-ORP.	D:O:	Turbidity	Vol Evac 4.95	Comments/Flow Rate well has bailed dry
COMMENTS	S: Well ba	ailed dry						
INSTRUME	NTATION	I: pH Meter DO Mo onductivity Me	X onitor ter X			Temp Other	erature Me	ler x
Water Dispo BTEX VO	sal <u>Ri</u> Cs Alkal	<u>o Vista</u> Samp inity TDS Cat	le ID <u>Blanc</u> ions Anion	o SFP MW- as <u>Nitrate</u>	<u>30</u> Sam Nitrite Ar	ple Time <u>1(</u> nmonia TKN	<mark>040</mark> I NMWQC	- C Metals Total Phosphorus
MS/MSD		BD	,	BC	) Name/Tir	ne		TB

**APPENDIX B** 

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LABORATORY ANALYTICAL REPORT



#### 06/15/06

# Technical Report for

# **Montgomery Watson**

**Blanco South Flare Pit** 

D-ALAB-BLANCOPLTN-003

Accutest Job Number: T13775

Sampling Date: 06/08/06

Report to:

MWH Americas, Inc. 1801 California St. Suite 2900 Denver, CO 80202 jennifer.a.hurley@mwhglobal.com

ATTN: Ms. Jennifer Hurley

Total number of pages in report: 34



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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.

Ron Martino Laboratory Manager

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.

Gulf Coast • 10165 Harwin Drive • Suite 150 • Houston, TX 77036 • tel: 713-271-4700 • fax: 713-271-4770 • http://www.accutest.com



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Section 3: Sample Results
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# Sample Summary

# Montgomery Watson

Blanco South Flare Pit Project No: D-ALAB-BLANCOPLTN-003

Sample Number	Collected Date	Time By	Received	Matr Code	ix Type	Client Sample ID
T13775-1	06/08/06	08:30 MN	06/09/06	AQ	Ground Water	MW=12
T13775-2	06/08/06	08:56 MN	06/09/06	AQ	Ground Water	MW-13
T13775-3	06/08/06	09:25 MN	06/09/06	AQ	Ground Water	MW-15
-T13775-4	06/08/06	11:09 MN	06/09/06	AQ	Ground Water	MW-14
T13775-5	06/08/06	11:50 MN	06/09/06	AQ	Ground Water	MW-8
T13775-6	06/08/06	10:09 MN	06/09/06	AQ	Ground Water	MW-28
T13775-7	06/08/06	10:24 MN	06/09/06	AQ	Ground Water	MW-29
T13775-8	06/08/06	10:40 MN	06/09/06	AQ	Ground Water	MW-30
T13775-9	06/08/06	07:00 MN	06/09/06	AQ	Trip Blank Water	080606TB01





## SAMPLE DELIVERY GROUP CASE NARRATIVE

Client:	Montgomery Watson	Job No	T13775
Site:	Blanco South Flare Pit	Report Date	6/15/2006 1:41:53 PM

8 Samples and 1 Trip Blank were collected on 06/08/2006 and were received at Accutest on 06/09/2006 properly preserved, at 3 Deg. C and intact. These Samples received an Accutest job number of T13775. 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

M Al	l samples wer	e analyzed	within the recomme	ended method	bd holding time.	
■ Al	All method blanks for this batch meet method specific criteria.					
₩ Sa	mple(s) T136	587-4MS,	T13687-4MSD were	e used as the	e QC samples indicated.	

Matrix A	AQ	Batch ID:	VF1920

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T13775-4MS, T13775-4MSD were used as the QC samples indicated.

Matrix	AQ	Batch ID:	VZ1240

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

#### Wet Chemistry By Method EPA 353.2

Matrix	AQ	Batch ID:	GN10022	

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) T13693-1DUP, T13693-1MS were used as the QC samples for Nitrogen, Nitrate + Nitrite.

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

Thursday, June 15, 2006




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Sample Results

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		Repo		Page 1 of			
Client Sam Lab Sample Matrix: Method: Project:	ple ID: MW-12 e ID: T13775-1 AQ - Ground Water SW846 8260B Blanco South Flare	Pit		Date S Date I Perce	Sampled Received nt Solids	: 06/08/06 : 06/09/06 : n/a	
Run #1 Run #2	File ID         DF           Z23228.D         1	<b>Analyzed</b> 06/13/06	<b>Ву</b> ЈН	Prep DatePrep Batchn/an/a		Analytical Batch VZ1240	
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	8.7 ND 10.7 4.5 0.87 2.5 4.7	2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0	0.52 0.68 0.83 0.50 0.75 0.74 0.63	ug/l ug/l ug/l ug/l ug/l ug/l	1	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	nits		
1868-53-7 17060-07-0 2037-26-5 460-00-4	Dibromofluoromethane 1,2-Dichloroethane-D4 Toluene-D8 4-Bromofluorobenzene	116% 110% 108% 117%		73-1 66-1 77-1 84-1	39%  39%  48%  50%		

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



Page 1 of 1

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		Page 1 of 1							
Client Sample ID: Lab Sample ID: Matrix:	MW-12 T13775-	AW-12         Date Sampled:         06/08/06           13775-1         Date Received:         06/09/06           AO - Ground Water         Date Received:         06/09/06							
Project:	Blanco	South Flare Pi	t		Perce				
General Chemistry	1								
Analyte		Result	RL	Units	DF	Analyzed	By	Method	
Nitrogen Nitrate +	Nitrite	6 5	1 0	mø/l	20	06/14/06 11:40	LN	EPA 353 2	

RL = Reporting Limit



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	Report of Analysis         Client Sample ID: MW-13         Date Sampled: 06/08/06         Date Sampled:       06/08/06         Matrix:       AQ - Ground Water       Date Received:       06/09/06         Method:       SW846 8260B       Percent Solids:       n/a         Project:       Blanco South Flare Pit       Prep Date       Prep Batch         Kun #1       B119282.D       1       06/12/06       LJ       n/a       n/a											
Client Sam Lab Sampl Matrix: Method: Project:	ple ID: MW-13 e ID: T13775-2 AQ - Ground Water SW846 8260B Blanco South Flare	er Date Sampled: 06/08/06 Date Received: 06/09/06 Percent Solids: n/a				06/08/06 : 06/09/06 : n/a						
Run #1 Run #2	File ID         DF           B119282.D         1	<b>Analyzed</b> 06/12/06	By LJ	Prep D n/a	ate	Prep Batch n/a	<b>Analytical Batch</b> VB1265					
Run #1 Run #2	Purge Volume 5.0 ml			<u> </u>								
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	48.8 5.2 35.8 53.1 5.2 ND 26.9	2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0	0.52 0.68 0.83 0.50 0.75 0.74 0.63	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	93% 94% 92% 86%		73-1 66-1 77-1 84-1	39% 39% 48% 50%							

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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		Page 1 of								
Client Sample ID: Lab Sample ID: Matrix:	MW-13 T13775 AQ - G	······································								
Project:	Blanco	Blanco South Flare Pit								
General Chemistry	7					<u></u>				
Analyte		Result	RL	Units	DF	Analyzed	By	Method		
Nitrogen, Nitrate +	Nitrite	8.2	1.0	mg/l	20	06/14/06 11:40	LN	EPA 353.2		





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Client Sample ID: Lab Sample ID: Matrix: Method: Project: File ID		MW-15 T13775- AQ - Gi SW846 Blanco S	W-1513775-3Date Sampled:Q - Ground WaterDate Received:W846 8260BPercent Solids:anco South Flare Pit					
Run #1 Run #2	<b>File ID</b> B11928	3.D	<b>DF</b> 1	<b>Analyzed</b> 06/12/06	By LJ	<b>Prep Date</b> n/a	<b>Prep Batch</b> n/a	Analytical Batch VB1265
Run #1 Run #2	Purge 5.0 ml	Volume						
Volatile sp	oecial list.							
CAS No.	Comp	ound		Result	RL	MDL Unit	ts Q	

75-34-3	1,1-Dichloroethane	4.3	2.0	0.52	ug/l
75-35-4	1,1-Dichloroethylene	ND	2.0	0.68	ug/l
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	0.83	ug/l
95-50-1	o-Dichlorobenzene	ND	2.0	0.50	ug/l
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	0.75	ug/l
127-18-4	Tetrachloroethylene	ND	2.0	0.74	ug/l
79-01-6	Trichloroethylene	ND	2.0	0.63	ug/l
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lin	nits
1868-53-7	Dibromofluoromethane	96%		73-	139%
17060-07-0	1,2-Dichloroethane-D4	96%		66-	139%
2037-26-5	Toluene-D8	94%		77-	148%
460-00-4	4-Bromofluorobenzene	92%	1 	84-	150%

ND = Not detectedMDL - 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

10 of 34 BACCUTEST. T13775 Catteration

		Page 1 of							
Client Sample ID: Lab Sample ID:	MW-15 T13775								
Matrix:	AQ - Gi	round Water			Date I Perce				
Project:	Blanco	Blanco South Flare Pit							
General Chemistry	7.					anna an a' ann ann an t- Arna tha			
Analyte		Result	RL	Units	ÐF	Analyzed	By	Method	
Nitrogen, Nitrate +	Nitrite	17.0	2.5	mg/l	50	06/14/06 11:40	LN	EPA 353.2	



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	Report of Analysis											
Client Sam Lab Sample Matrix: Method: Project:	ple ID: MW-14 e ID: T13775-4 AQ - Ground Water SW846 8260B Blanco South Flare	Pit		Date S Date I Perce	Sampled Received nt Solids							
Run #1 Run #2	File ID         DF           F0072251.D         1	<b>Analyzed</b> 06/13/06	By LJ	Prep Date Prep n/a n/a		<b>Prep Batch</b> n/a	Analytical Batch VF1920					
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	8.9 ND 3.4 ND ND 1.8	2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0	0.52 0.68 0.83 0.50 0.75 0.74 0.63	ug/l ug/l ug/l ug/l ug/l ug/l	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	98% 94% 95% 92%		73-1 66-1 77-1 84-1	39% 39% 48% 50%							

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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		Page 1 of 1							
Client Sample ID:	MW-14								
Lab Sample ID:	b Sample ID: T13775-4					Sampled: 06/08/0	)6		
Matrix:	round Water			Date Date	Received: 06/09/0 nt Solids: n/a				
Project:	Blanco	Blanco South Flare Pit							
General Chemistry	7.								_
Analyte		Result	RL	Units	DF	Analyzed	By	Method	
Nitrogen, Nitrate +	Nitrite	14.0	1.3	mg/l	25	06/14/06 11:40	LN	EPA 353.2	

RL = Reporting Limit



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	Report of Analysis									
Client Sample ID: Lab Sample ID:	MW-8 T13775	-5			Date	Sampled: 06/08/0	)6			
Matrix:	AQ - G	round Water			Date 2 Perce					
Project:	Blanco	Blanco South Flare Pit								
General Chemistry	Y							,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
Analyte		Result	RL	Units	DF	Analyzed	By	Method		
Nitrogen, Nitrate +	Nitrite	0.30	0.050	mg/l	1	06/14/06 11:40	LN	EPA 353.2		



Page 1 of 1

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	Report of Analysis								
Client Sample ID:	MW-28								
Matrix:	AQ - G	round Water			Date I Date I				
Project:	Blanco	Blanco South Flare Pit							
General Chemistry	7								
Analyte		Result	RL	Units	DF	Analyzed	By	Method	
Nitrogen, Nitrate +	Nitrite	68.0	5.0	mg/l	100	06/14/06 11:40	LN	EPA 353.2	

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Page 1 of 1

		Page 1 of 1							
Client Sample ID: Lab Sample ID: Matrix:	MW-29 T13775- AQ - Gi								
Project:	Blanco S	Blanco South Flare Pit							
General Chemistry	1					· · · · · · · · · · · · · · · · · · ·			
Analyte		Result	RL	Units	ÐF	Analyzed	By	Method	
Nitrogen, Nitrate +	Nitrite	.71.0	5.0	mg/l	100	06/14/06 11:40	LN	EPA 353.2	

RL = Reporting Limit



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Client Sample ID: Lab Sample ID:	MW-30 T13775-	.8			Date S	Sampled: 06/08/0	)6		
Matrix:	AQ - Gr	ound Water			Date I	Received: 06/09/0	)6		
Project:	Blanco S	South Flare Pi	t		Percei	nt Solids: n/a			
General Chemistry									
Analyte		Result	RL	Units	DF	Analyzed	By	Method	·
Nitrogen, Nitrate +	Nitrite	50.0	5.0	<sup>r</sup> mg/l	100	06/14/06 11:40	LN	EPA 353.2	

**Report of Analysis** 





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		Repo	rt of An	alysis			Page 1 of 1
Client Sam Lab Sampl Matrix: Method: Project:	ple ID: 080606TB01 e ID: T13775-9 AQ - Trip Blank Wa SW846 8260B Blanco South Flare 1	nter Pit		Date S Date 1 Perce	Sampled: Received nt Solids	: 06/08/06 : 06/09/06 : n/a	
Run #1 Run #2	File ID         DF           F0072247.D         1	<b>Analyzed</b> 06/13/06	By LJ	<b>Prep D</b> n/a	Pate	<b>Prep Batch</b> n/a	Analytical Batch VF1920
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	1, 1-Dichloroethane	ND	2.0	0.52	ug/l		
156-59-2	cis-1,2-Dichloroethylene	ND ND	2.0	0.83	ug/l ug/l		
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	0.75	ug/l		
79-01-6	Trichloroethylene	ND	2.0	0.74	ug/1 ug/1		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	iits		
1868-53-7 17060-07-0 2037-26-5 460-00-4	Dibromofluoromethane 1,2-Dichloroethane-D4 Toluene-D8 4-Bromofluorobenzene	100% 96% 99% 95%		73-1 66-1 77-1 84-1	39% 39% 48% 50%		

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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Includes the following where applicable:

• Chain of Custody

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T13775: Chain of Custody Page 1 of 2



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SAMPLE or FIELD ID	BOTTLE #	DATE SAMPLED	MATRIX	VOLUME	LOCATION	PRESERV.	Hd
1-4	1-3	L/3 06	cm	4Dmc	VREF	Q3,4,5,6	Q <2, >12, NA
-4	5			2010mg	184	9'5'7'E'Q)	U<2, >12, №
S-8	1	-7	1		T	(1)2,3,4,5,6	<b>G</b> <2, >12, NA
8		۱	Ĩ.B	Juch	VKEC	1(2)3,4,5,6	∭ <2, >12, NA
						4.2,3,4.5.6	11-25-12 No
						1.2,3,4,5,6	U, <2, >12, NA
						1,2,3,4,5,6	U, <2, >12, NA
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						1,2,3,4,5,6	U, <2, >12, NA
		•	Mary			1,2,3,4,5,6	U, <2, >12, NA
		CARON				1,2,3,4,5,6	U, <2, >12, NA
						1,2,3,4,5,6	U, <2, >12, NA
						1,2,3,4,5,6	U, <2, >12, NA
						1,2,3,4,5,6	U, <2, >12, NA
						1,2,3,4,5,6	U, <2, >12, NA
						1,2,3,4,5,6	U, <2, >12, NA
LOCATION: WI: Walk-In PRESERVATIVES: 1: Nor	VR: Volatile Refrigue 2: HCL 3: HNO	1. SUB: Subcontra 3 4: H2SO4 5: NAO	ct EF: Encor H 8: Other Comments:	e Freezer			
pH of waters checked excl pH of soils N/A	luding volatiles						
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T13775: Chain of Custody Page 2 of 2



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Section 5

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 Job Number: T13775

Account: Project:	MWHSLCUT Montgom Blanco South Flare Pit	nery Watson					
Sample VB1265-M	<b>File ID DF</b> B B119266.D 1	<b>Analyzed</b> 06/12/06	By LJ	Prep l n/a	Date	<b>Prep Batch</b> n/a	Analytical Batch VB1265
<b>The QC re</b> T13775-2,	ported here applies to the fo	llowing sam	ples:			Method: SW	7846 8260B
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	0.68	ug/l		
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	0.83	ug/l		
95-50-1	o-Dichlorobenzene	ND	2.0	0.50	ug/l		
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	0.75	ug/l		
127-18-4	Tetrachloroethylene	ND	2.0	0.74	ug/l		
79-01-6	Trichloroethylene	ND	2.0	0.63	ug/l		
CAS No.	Surrogate Recoveries		Limi	ts			

CAS No. Surrogate Recoveries

1868-53-7	Dibromofluoromethane	94%	73-139%
17060-07-0	1,2-Dichloroethane-D4	103%	66-139%
2037-26-5	Toluene-D8	103%	77-148%
460-00-4	4-Bromofluorobenzene	97%	84-150%



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### Method Blank Summary Job Number: T13775

JOD Mumber.	115775
Account:	MWHSLCUT Montgomery Watson
Project:	Blanco South Flare Pit

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
VZ1240-MB	Z23227.D	1	06/13/06	Л	n/a	n/a	VZ1240

### The QC reported here applies to the following samples:

Method: SW846 8260B

T13775-1

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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	1, 1-Dichloroethane 1, 1-Dichloroethylene cis-1, 2-Dichloroethylene o-Dichlorobenzene trans-1, 2-Dichloroethylene Tetrachloroethylene	ND ND ND ND ND ND	2.0 2.0 2.0 2.0 2.0 2.0 2.0	0.52 0.68 0.83 0.50 0.75 0.74	ug/l ug/l ug/l ug/l ug/l ug/l
79-01-6	Trichloroethylene	ND	2.0	0.63	ug/l

CAS No. Surrogate Recoveries

Limits

1868-53-7	Dibromofluoromethane	115%	73-139%
17060-07-0	1,2-Dichloroethane-D4	108%	66-139%
2037-26-5	Toluene-D8	109%	77-148%
460-00-4	4-Bromofluorobenzene	115%	84-150%



# Method Blank Summary Job Number: T13775

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4-Bromofluorobenzene

Account: Project:	MWHSLCUT Montgon Blanco South Flare Pit	nery Watson		·			
Sample VF1920-MI	File ID DF 3 F0072245.D 1	Analyzed 06/13/06	By LJ	Prep 1 n/a	Date	<b>Prep Batch</b> n/a	Analytical Ba VF1920
The QC rej	ported here applies to the fo	bllowing sam	ples:			Method: SW	/846 8260B
T13775-4, 7	Г13775-9						
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	0.68	ug/l		
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	0.83	ug/l		
95-50-1	o-Dichlorobenzene	ND	2.0	0.50	ug/l		
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	0.75	ug/l		
127-18-4	Tetrachloroethylene	ND	2.0	0.74	ug/l		
79-01-6	Trichloroethylene	ND	2.0	0.63	ug/l		
CAS No.	Surrogate Recoveries		Limi	ts			
1868-53-7	Dibromofluoromethane	97%	73-13	39%			
17060-07-0	1,2-Dichloroethane-D4	93%	66-1.	39%			
2037-26-5	Toluene-D8	99%	1011 77-14	48%			

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Account: Project:	MWHSLCUT Montgo Blanco South Flare Pit	MWHSLCUT Montgomery Watson Blanco South Flare Pit									
Sample VB1265-BS	File ID DF B119265.D 1	<b>Analyzed</b> 06/12/06	<b>By</b> LJ	P: n/	<b>rep Date</b> ′a	<b>Prep Batch</b> n/a	Analytical Batch VB1265				
<b>The QC rep</b> T13775-2, 7	ported here applies to the f F13775-3	following sar	nples:		<u></u>	Method: SW	/846 8260B				
CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits						
75-34-3	1,1-Dichloroethane	25	23.6	94	63-125						
75-35-4	1,1-Dichloroethylene	25	23.1	92	52-143						
156-59-2	cis-1,2-Dichloroethylene	25	23.2	93	65-116						
95-50-1	o-Dichlorobenzene	25	24.1	96	72-118						
156-60-5	trans-1,2-Dichloroethylene	25	23.1	92	66-128						
127-18-4	Tetrachloroethylene	25	24.9	100	72-128						
79-01-6	Trichloroethylene	25	24.9	100	69-120						
CAS No.	Surrogate Recoveries	BSP	Li	mits							

1868-53-7	Dibromofluoromethane	90%	73-139%
17060-07-0	1,2-Dichloroethane-D4	91%	66-139%
2037-26-5	Toluene-D8	127%	77-148%
460-00-4	4-Bromofluorobenzene	97%	84-150%

Page 1 of 1

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26 of 34 **CACUTEST** T13775

# **Blank Spike Summary**

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Job Number: Account: Project:	T13775 MWHSLCU' Blanco South	T Montg I Flare P	gomery Watson 'it				
Sample	<b>File ID</b>	<b>DF</b>	<b>Analyzed</b>	By	<b>Prep Date</b>	<b>Prep Batch</b>	<b>Analytical Batch</b>
VF1920-BS	F0072244.D	1	06/13/06	LJ	n/a	n/a	VF1920

# The QC reported here applies to the following samples:

Method: SW846 8260B

T13775-4, T13775-9

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
75-34-3	1,1-Dichloroethane	25	23.1	92	63-125
75-35-4	1,1-Dichloroethylene	25	23.2	93	52-143
156-59-2	cis-1,2-Dichloroethylene	25	22.9	92	65-116
95-50-1	o-Dichlorobenzene	25	29.6	118	72-118
156-60-5	trans-1,2-Dichloroethylene	. 25	22.6	90	66-128
127-18-4	Tetrachloroethylene	25	25.0	100	72-128
79-01-6	Trichloroethylene	25	23.0	92	69-120
CAS No.	Surrogate Recoveries	BSP	Li	mits	
1868-53-7	Dibromofluoromethane	99%	73	-139%	
17060-07-0	1,2-Dichloroethane-D4	96%	66	-139%	
2037-26-5	Toluene-D8	101%	77	-148%	
460-00-4	4-Bromofluorobenzene	96%	84	-150%	



Page 1 of 1

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#### **Blank Spike/Blank Spike Duplicate Summary** Page 1 of 1 Job Number: T13775 MWHSLCUT Montgomery Watson Account: **Project:** Blanco South Flare Pit DF **Prep Batch** Sample File ID Analyzed By **Prep Date Analytical Batch** VZ1240-BS Z23226.D 1 06/13/06 JH n/a n/a VZ1240 VZ1240-BSD Z23231.D 1 06/13/06 JH VZ1240 n/a n/a The QC reported here applies to the following samples: Method: SW846 8260B T13775-1 Spike **BSP** BSP **BSD** BSD Limits CAS No. Compound ug/l ug/l % ug/l % RPD **Rec/RPD** 75-34-3 1,1-Dichloroethane 25 101 25.9 25.2 104 3 63-125/30 75-35-4 1,1-Dichloroethylene 25 92 23.124.3 97 -5 52-143/30 156-59-2 cis-1,2-Dichloroethylene 25 23.3 93 23.3 .93 0 65-116/30 95-50-1 o-Dichlorobenzene 25 24.0 96 23.6 94 2 72-118/30 23.4 156-60-5 trans-1,2-Dichloroethylene 25 24.4 98 94 4 66-128/30 127-18-4 25 25.8 103 Tetrachloroethylene 25.5 102 1 72-128/30 79-01-6 Trichloroethylene 25 23.7 95 24.2 97 2 69-120/30 CAS No. **Surrogate Recoveries** BSP **BSD** Limits 1868-53-7 Dibromofluoromethane 116% 117% 73-139% 17060-07-0 1,2-Dichloroethane-D4 113% 112% 66-139% 2037-26-5 Toluene-D8 111% 109% 77-148% 460-00-4 4-Bromofluorobenzene 84-150% 96% 96% tilian...

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# Matrix Spike/Matrix Spike Duplicate Summary Job Number: T13775

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Account:	MWHSLCUT Montgomery Watson
Project:	Blanco South Flare Pit

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T13687-4MS	B119274.D	1	06/12/06	LJ	n/a	n/a	VB1265
T13687-4MSD	B119275.D	1	06/12/06	LJ	n/a	n/a	VB1265
T13687-4	B119272.D	1	06/12/06	LJ	n/a	n/a	VB1265

The QC reported here applies to the following samples:

Method: SW846 8260B

T13775-2, T13775-3

CAS No.	Compound	T13687-4 ug/l	4 Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
75-34-3 75-35-4	1,1-Dichloroethane 1,1-Dichloroethylene	ND ND		25 25	22.5 22.7	90 91	23.6 21.6	94 86	5 5	65-126/21 55-140/25
156-59-2 95-50-1	cis-1,2-Dichloroethylene o-Dichlorobenzene	1.3 ND	J	25 25	25.1 21.6	95 86	26.2 22.8	100 91	4 5	62-120/24 68-120/20
156-60-5 127-18-4	trans-1,2-Dichloroethylene Tetrachloroethylene	ND ND		25 25	22.7 24.2	91 97	21.6 24.4	86 98	5 1	64-130/22 69-132/21
79-01-6	Trichloroethylene	ND		25	24.3	97	24.8	99	2	70-120/19
CAS No.	Surrogate Recoveries	MS		MSD	<b>T1</b>	3687-4	Limits			
1868-53-7 17060-07-0	Dibromofluoromethane 1,2-Dichloroethane-D4	93% 91%		99% 91%	939 959	% %	73-139% 66-139%	ó ó		
2037-26-5 460-00-4	Toluene-D8 4-Bromofluorobenzene	100% 89%		101% 97%	929 959	% %	77-148% 84-150%	́о о́		

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Page 1 of 1



# Matrix Spike/Matrix Spike Duplicate Summary

Job Number:	T13775	-	-
Account:	MWHSLCUT	Montgomery	Watson

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Project:	Blanco South Flare	Pit	

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T13775-4MS	F0072254.D	1	06/13/06	LJ	n/a	n/a	VF1920
T13775-4MSD	F0072255.D	1	06/13/06	LJ	n/a	n/a	VF1920
T13775-4	F0072251.D	1	06/13/06	LJ	n/a	n/a	VF1920

### The QC reported here applies to the following samples:

Method: SW846 8260B

T13775-4, T13775-9

CAS No.	Compound	T13775-4 ug/l Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
75-34-3	1,1-Dichloroethane	8.9	25	33.8	100	34.3	102	1	65-126/21
75-35-4	1,1-Dichloroethylene	ND	25	25.0	100	25.1	100	0	55-140/25
156-59-2	cis-1,2-Dichloroethylene	3.4	25	27.2	95	27.7	97	2	62-120/24
95-50-1	o-Dichlorobenzene	ND	25	24.0	96	23.8	95	1	68-120/20
156-60-5	trans-1,2-Dichloroethylene	ND	25	26.4	106	24.9	100	6	64-130/22
127-18-4	Tetrachloroethylene	ND	25	26.5	106	24.8	99	7	69-132/21
79-01-6	Trichloroethylene	1.8 J	25	26.6	99	26.3	98	1	70-120/19
CAS No.	Surrogate Recoveries	MS	MSD	T13	3775-4	Limits			
1868-53-7	Dibromofluoromethane	94%	94%	98%	6	73-139%	6		
17060-07-0	1,2-Dichloroethane-D4	94%	97%	94%	6	66-139%	6		
2037-26-5	Toluene-D8	96%	97%	95%	6	77-148%	6		
460-00-4	4-Bromofluorobenzene	92%	95%	92%	6	84-150%	0		



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General Chemistry	
OC Data Summarias	
QC Data Summaries	
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Includes the following where applicable:	
<ul> <li>Method Blank and Blank Spike Summaries</li> <li>Duplicate Summaries</li> </ul>	
Matrix Spike Summaries	

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#### METHOD BLANK AND SPIKE RESULTS SUMMARY GENERAL CHEMISTRY

Login Number: T13775 Account: MWHSLCUT - Montgomery Watson Project: Blanco South Flare Pit

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Nitrogen, Nitrate + Nitrite	GN10022	0.050	<0.050	g mg∕l	0.500	0.49	98.0	89-112%
Accordiated Samples								

Associated Samples: Batch GN10022: T13775-1, T13775-2, T13775-3, T13775-4, T13775-5, T13775-6, T13775-7, T13775-8

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# DUPLICATE RESULTS SUMMARY GENERAL CHEMISTRY

Login Number: T13775 Account: MWHSLCUT - Montgomery Watson Project: Blanco South Flare Pit

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Nitrogen, Nitrate + Nitrite	GN10022	T13693-1	mg/1	3.9	4.0	2.5	0-10%

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Associated Samples: Batch GN10022: T13775-1, T13775-2, T13775-3, T13775-4, T13775-5, T13775-6, T13775-7, T13775-8

### MATRIX SPIKE RESULTS SUMMARY GENERAL CHEMISTRY

### Login Number: T13775 Account: MWHSLCUT - Montgomery Watson Project: Blanco South Flare Pit

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Nitrogen, Nitrate + Nitrite	GN10022	T13693-1	mg/I	3.9	1.00	5.0	110.0	80-119%
Associated Samples:								

Batch GN10022: T13775-1, T13775-2, T13775-3, T13775-4, T13775-5, T13775-6, T13775-7, T13775-8

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Analytical Method/Analytes: Laboratory:		s:SW-8	846 8260B	San	<b></b> Sample Collection Date(s):			
		y: Ad	ccutest		Job Number:	EPC-SJRB		
		<u></u>				_	(Blanco SFP	
	Batch Identification	h Identification: T13775		· · · · · ·		Matrix: _	Water	
MS/MSD Parent(s) <sup>(a)</sup> : No			None	Ione Field Replicate Parent				
Verifi	cation Complete	•		Betty	v Van	Pelt		
				(D.	ate/Signature	)		
Foot Notes	Site ID	Sample ID	Lab. ID	Hits (Y/N)	Quals.	Com	iments	
None	Blanco D Plant SFP	MW-12	T13775-1	Y		1,1-DCA @ 8. cis-1,2-DCE @ o-DCBZ @ 4. trans-1,2-DCE PCE @ 2.5 μg TCE @ 4.7 μg	7 μg/l 2 10.7 μg/l 5 μg/l @ 0.87 J μg/ /l /l	
None	Blanco D Plant SFP	MW-13	T13775-2	Y		1,1-DCA @ 48 1,1-DCE @ 5. cis-1,2-DCE @ o-DCBZ @ 53 trans-1,2-DCE TCE @ 26.9 μ	3.8 μg/l 2 μg/l 9 35.8 μg/l 9.1 μg/l 9 @ 5.2 μg/l g/l	
None	Blanco D Plant SFP	MW-15	T13775-3	Y		1,1-DCA @ 4.	<u>3</u> μg/l	
None	Blanco D Plant SFP	MW-14	T13775-4	Y		1,1-DCA @ 8. cis-1,2-DCE @ TCE @ 1.8 µg	9 μg/l 9 3.4 μg/l /l	
None	Blanco D Plant SFP	080606TB01	T13775-9	N				
				<u></u>				
			1 1		1	1		

DCA = dichloroethane

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DCE = dichloroethene

DCBZ = dichlorobenzene

PCE = tetrachloroethene

TCE = trichloroethene

### **DATA VERIFICATION WORKSHEET**

(Page 2 of 2)

Analytical Method: <u>SW-846 8021B (BTEX)</u> MWH Job Number: <u>EPC-SJRB (Blanco NFP)</u>

 Laboratory:
 Accutest
 Batch Identification:

T13775

Verification Criteria							
Sample ID	BLANCO SFP MW-12	BLANCO SFP MW-13	BLANCO SFP MW-15	BLANCO SFP MW-14	080606TB 01		
Lab ID	T13775-1	T13775-2	T13775-3	T13775-4	T13775-9		
Holding Time	А	А	А	A	А		
Analyte List	А	А	A	A	А		
Reporting Limits	А	А	A	A	А		
Surrogate Spike Recovery	А	А	А	A	А		
Trip Blank	А	А	А	A	А		
Equipment Rinseate Blanks	N/A	N/A	N/A	N/A	N/A		
Field Duplicate/Replicate	N/A	N/A	N/A	N/A	N/A		
Initial Calibration	N	N	N	N	N		
Initial Calibration Verification (ICV)	N	N	N	N	N		
Continuing Calibration Verification (CCV)	N	N	N	N	N		
Method Blank	А	A	A	А	A		
Laboratory Control Sample (LCS)	А	А	А	А	А		
Laboratory Control Sample Duplicate (LCSD)	N	N	N	N	N		
Matrix Spike/Matrix Spike Dup. (MS/MSD)	N/A	N/A	N/A	A	N/A		
Retention Time Window	N	N	N	N .	N		
Injection Time(s)	N	N	N	N	N		
Hardcopy vs. Chain-of-Custody	A	А	А	A	А		
EDD vs. Hardcopy	N	N	N	N	N		
EDD vs. Chain of Custody	N	N	N	N	N		

(a) List QC batch identification if different than Batch ID

A indicates verification criteria were met

A/L indicates verification criteria met based upon Laboratory's QC Summary Form

X indicates verification criteria were not met

N indicates data review were not a project specific requirement

N/A indicates criteria are not applicable for the specified analytical method or sample N/R indicates data not available for review

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# DATA VERIFICATION WORKSHEET

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(Page 1 of 2)

Analytical Method/Analytes:	SW-846 353.2	<b> Sample Collection Date(s):</b>	6/8/06
Laboratory:	Accutest	MWH Job Number:	EPC-SJRB
		_	(Blanco SFP)
Batch Identification:	T13775	Matrix:	Water
MS/MSD Parent(s) <sup>(a)</sup> :	None	Field Replicate Parent(s):	None
Verification Complete:		Betty Van Pelt	

(Date/Signature)

Foot Notes	Site ID	Sample ID	Lah ID	Hits (V/N)	Quals	Comments
None	Blanco D Plant SFP	MW-12	T13775-1	<u>Y</u>	Quais.	Nitrate/nitrite @ 6.5 mg/l
None	Blanco D Plant SFP	MW-13	T13775-2	Y		Nitrate/nitrite @ 8.2 mg/l
None	Blanco D Plant SFP	MW-15	T13775-3	Y		Nitrate/nitrite @ 17.0 mg/l
None	Blanco D Plant SFP	MW-14	T13775-4	Y		Nitrate/nitrite @ 14.0 mg/l
None	Blanco D Plant SFP	MW-8	T13775-5	Y		Nitrate/nitrite @ 0.30 mg/l
None	Blanco D Plant SFP	MW-28	T13775-6	Y		Nitrate/nitrite @ 68.0 mg/l
None	Blanco D Plant SFP	MW-29	T13775-7	Y		Nitrate/nitrite @ 71.0 mg/l
None	Blanco D Plant SFP	MW-30	T13775-8	Y		Nitrate/nitrite @ 50.0 mg/l

## DATA VERIFICATION WORKSHEET

(Page 2 of 2)

Analytical Method:

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: SW-846 8021B (BTEX)

MWH Job Number: EPC-SJRB (Blanco NFP)

Laboratory:

Accutest

Batch Identification:

T13775

Verification Criteria								
Sample ID	BLANCO SFP							
	MW-12	MW-13	MW-15	MW-14	MW-8	MW-28	MW-29	MW-30
Lab ID	T13775-1	T13775-2	T13775-3	T13775-4	T13775-5	T13775-6	T13775-7	T13775-8
Holding Time	А	A	A	A	A			
Analyte List	А	A	A	A	A			
Reporting Limits	А	A	А	А	А			
Surrogate Spike Recovery	N/A	N/A	N/A	N/A	N/A			
Trip Blank	N/A	N/A	N/A	N/A	N/A			
Equipment Rinseate Blanks	N/A	N/A	N/A	N/A	N/A			
Field Duplicate/Replicate	N/A	N/A	N/A	N/A	N/A			
Initial Calibration	N	N	N	N	N			
Initial Calibration Verification (ICV)	N	N	N	N	N			
Continuing Calibration Verification (CCV)	N	N	N	N	N			
Method Blank	А	A	А	А	A			
Laboratory Control Sample (LCS)	А	A	A	A	A			
Laboratory Control Sample Duplicate (LCSD)	N	N	N	N	N			
Matrix Spike/Matrix Spike Dup. (MS/MSD)	N/A	N/A	N/A	N/A	N/A			
Retention Time Window	N	N	N	N	N			
Injection Time(s)	N	N	N	N	N			
Hardcopy vs. Chain-of-Custody	А	A	A	A	A			
EDD vs. Hardcopy	N	N	N	N	N			
EDD vs. Chain of Custody	N	N	N	N	N			

(a) List QC batch identification if different than Batch ID

A indicates verification criteria were met

A/L indicates verification criteria met based upon Laboratory's QC Summary Form

X indicates verification criteria were not met

N indicates data review were not a project specific requirement

N/A indicates criteria are not applicable for the specified analytical method or sample

N/R indicates data not available for review

## NOTES:

- Sample not preserved to a pH <2, reducing the holding time from 14 days to 7. Sample analyzed one day outside of holding time</li>
   @ 8 days. Qualify associated sample hits with "J" flags, indicating the data are estimated and possibly biased low. Qualify associated sample non-detects with "UJ" flags, indicating possible false negatives.
- 2) Surrogate aaa-trifluorotoluene from run #1 outside acceptance criteria @ 0% (50-144), indicating a possible low bias. Qualify associated sample non-detect with "UJ" flags, indicating possible false negatives (toluene only).
- 3) 4-bromofluorobenzene from run #1 outside acceptance criteria @ 159% (56-136), indicating a possible high bias. Surrogate aaa-trifluorotoluene from run #1 outside acceptance criteria @ 0% (50-144), indicating a possible low bias. Qualify associated sample hits with "J" flags, indicating the data are estimated with an unknown bias (benzene and toluene only).



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OCT 24 2006

**Via Federal Express** 

# Oil Conservation Division Environmental Bureau

October 20, 2006

Mr. Glenn von Gonten Senior Hydrologist New Mexico Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505

Ew 49-2

### RE: Annual Groundwater Report for the Blanco North Flare Pit Near Bloomfield, NM

Dear Mr. von Gonten;

El Paso Tennessee Pipeline Company hereby submits the enclosed "2006 Blanco North Flare Pit Annual Report". The enclosed report details sparge system operation and maintenance and groundwater sampling for the fourth quarter 2005 through third quarter 2006, and recommends additional site investigation activities for 2006/2007.

If you have any questions concerning the enclosed report or require additional information, please call me at (719) 520-4433.

Sincerely,

Bat T. Will

Bart T. Wilking Project Manager Environmental Remediation El Paso Corporation

Enclosures: as stated

Prepared for:

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**El Paso Tennessee Pipeline Company** 2 North Nevada Colorado Springs, Colorado 80903 RECEIVED

OCT 24 2006

Oil Conservation Division Environmental Bureau

# 2006 BLANCO NORTH FLARE PIT ANNUAL REPORT

# SAN JUAN COUNTY, NEW MEXICO

October 2006

Prepared by:

MWH 1801 California Street, Suite 2900 Denver, Colorado 80202 (303) 291-2222
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2.0	REMEDIAL ACTIVITIES	. 2
2.1 2.2 2.3	Air Sparging System Operation Free-product Removal Groundwater SAMPLING	. 2 . 2 . 3
3.0	CONCLUSIONS AND RECOMMENDATIONS	. 4
4.0	REFERENCES	. 5

#### TABLES

#### Table No.Description

1	AS System Operation and Monitoring Data (Feb 2003 – September 2006)
2	Groundwater Monitoring Analytical Data (June 1991 – September 2006)
3	Groundwater Monitoring Schedule

#### FIGURES

<u>Figure No.</u>	Description
1	Blanco Plant Site Layout
2	Benzene Concentrations in Groundwater, November 2005
3	Benzene Concentrations in Groundwater, February 2006
4	Benzene Concentrations in Groundwater, June 2006
5	Benzene Concentrations in Groundwater, August 2006
-	

6 Historic Benzene Concentrations in Groundwater, 1991 - 2006

#### **APPENDICES**

<u>Appendix</u> <u>Description</u>

- A AS System Operation and Monitoring Reports
- B Groundwater Sampling Field Forms
- C Groundwater Analytical Laboratory Reports
- D Borehole Logs and Well Completion Diagrams

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#### ACRONYMS

AS	air sparging
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene and total xylenes
EPTPC	El Paso Tennessee Pipeline Company
mg/L	milligrams per liter
µg/L	micrograms per liter
NMOCD	New Mexico Oil Conservation Division
NMWQCC	New Mexico Water Quality Control Commission
O&M	operation and maintenance
psig	pounds per square inch, gauge
scfm	standard cubic feet per minute

#### **1.0** Introduction

This 2006 Blanco North Flare Pit Annual Report has been prepared for El Paso Tennessee Pipeline Company (EPTPC) to document the performance of the air sparging (AS) system and to report groundwater monitoring data at the Blanco Plant North Flare Pit site (Site). This report includes field data reports and groundwater analytical data reports for the period from October 2005 through September 2006 (i.e., the reporting period). Data collected prior to this period, free-product removal data, and construction details of the AS system were included in the 2003 Blanco North Flare Pit Pilot Air Sparging System Report (MWH, 2003a) (2003 AS System Report), the 2004 Blanco North Flare Pit Annual Report (MWH 2004), and the 2005 Blanco North Flare Pit Annual Report (MWH 2005). An evaluation of the AS system and recommendations for future activities are also included in this report.

The purpose of these activities is groundwater remediation downgradient of the North Flare Pit. Constituents of potential concern at the site include free-phase hydrocarbons (i.e., free-product), benzene, ethylbenzene, toluene and total xylenes (BTEX). Regulatory drivers for groundwater remediation at this Site include the New Mexico Oil Conservation Division's (NMOCD) guidelines and the New Mexico Water Quality Control Commission's (NMWQCC) regulations.

Previous remediation activities conducted at the Site are described in the *Work Plan for the Blanco North Flare Pit, July 2002* (Work Plan) (MWH, 2002), the *Blanco North Flare Pit Work Plan Update Technical Memorandum, June 2003* (Work Plan Update) (MWH, 2003b), the 2004 Blanco North Flare Pit Annual Report (MWH 2004), and the 2005 Blanco North Flare Pit Annual Report (MWH 2005). These documents summarize available information related to the Site, including a summary of previous site activities and investigations, a description of the geology/hydrogeology of the area, and historic groundwater quality data. Therefore, these discussions will not be reiterated in this report.

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#### 2.0 Remedial activities

#### 2.1 AIR SPARGING SYSTEM OPERATION

EPTPC is currently operating an AS system in the central area of the Site to remediate dissolved-phase hydrocarbon contamination and reduce BTEX concentrations to below NMWQCC standards. This section discusses system operation and monitoring activities.

In December 2002, an AS well, SW-1, was installed approximately 25 feet upgradient (north) of monitoring well MW-26 as shown on Figure 1, *Blanco Plant Site Layout*. Details of the sparge well construction, including the geologic borelog and monitoring well installation report, are included in the 2003 AS System Report. The AS system was prepared for start-up in January/February 2003. However, operation of the AS system was delayed pending free-product removal efforts in MW-26, which were completed in June 2003. The AS system was placed into operation in June 2003 and has operated since then, with the exceptions of downtime due to electrical supply and maintenance related issues, and quarterly brief shutdowns during groundwater monitoring events. During the reporting period, the AS system was turned off until January 2006 due to power supply issues at the Site.

The AS system operates on a 12-hour on/off cycle in order to periodically break up the developed airflow channels in the formation. While running, the AS system injects approximately 5 to 9 scfm of air at a pressure of 4 to 16 psig. Subsequent to the AS system re-start in January 2006, the system consistently ran between 11 and 12 hours per day, based on the meter readings.

System operation and maintenance (O&M) was conducted generally every two weeks. During each O&M event, air pressure measurements were collected at each wellhead using a magnehelic gauge, and groundwater field parameters, including water levels, pH, temperature, specific conductance and dissolved oxygen, were measured. Following each visit, a field report was prepared to summarize all operation and monitoring data and report any problems. Field operation and monitoring reports for the period between October 2005 and September 2006 are included in Appendix A, and selected data are summarized in Table 1, *AS System Operation and Monitoring Data (February 2003 – September 2006)*. As shown in this table, the air pressure and dissolved oxygen content data indicate that there has been good communication between the AS well (SW-1) and wells MW-26 and MW-19. Minimal-to-no effects were observable in monitoring wells MW-23 (upgradient of system), MW-24 (virtually dry), and MW-27.

#### 2.2 FREE-PRODUCT REMOVAL

During drilling and installation of the AS well in December 2002, free-product was discovered in well MW-26. The nearby monitoring wells were checked for the presence of free-product; none was encountered in any of the other existing wells or the new AS well. In December 2002, a total of approximately 4.5 gallons of water/free-product was hand bailed from MW-26. On April 22, 2003, approximately 2 feet of free-product was measured, and in late-April 2003 a skimmer pump was installed in MW-26 for free-

product removal. Between April and June 2003, the skimmer pump removed an additional 3.1 gallons of free-product.

In May 2006, three new monitoring wells were installed (MW-31, MW-32, and MW-33), shown in Figures 4 and 5, in an effort to more accurately characterize the Site. 11.25 ft of free-product was measured in MW-32 in August 2006, and 8.73 ft of product was measured in the well in September 2006. A pneumatic skimmer has since been installed in MW-32 and is currently recovering free-product. Well installation diagrams and borehole logs are included in Appendix D.

#### 2.3 GROUNDWATER SAMPLING

Quarterly groundwater monitoring has been conducted at five monitoring wells in the North Flare Pit area (MW-19, MW-23, MW-26, MW-27, and MW-33). Sampling events were performed in November 2005, February 2006, May 2006, June 2006, and August 2006. The samples collected during the May 2006 event were ruined during shipment, and the wells were re-sampled in June 2006. Forty-eight hours prior to each sampling event, the AS system was shut–down to ensure natural groundwater conditions were being evaluated. During each sampling event, groundwater levels and field parameters (pH, temperature, specific conductance and dissolved oxygen) were measured, and samples were analyzed for BTEX concentrations. Groundwater sample collection field forms are attached in Appendix B. Samples were not collected from MW-2 or MW-24 during any of the sampling rounds because the wells were either dry or bailed dry. Water levels could not be measured in MW-19 because the water level probe could not pass an obstruction in the casing; however, grab samples were collected from this well using a small-diameter bailer and submitted for analysis.

Analytical results from these four sampling rounds are presented along with the historic data in Table 2, *Groundwater Monitoring Analytical Data (June 1991 – September 2006)*. Laboratory analytical reports are attached in Appendix C. Benzene concentrations in groundwater for each of the recent sampling events are presented on Site maps in Figures 2 through 5, *Benzene Concentrations in Groundwater*. These maps also present the groundwater flow direction based on water levels measured during the respective sampling events. Figure 6, *Historic Benzene Concentrations in Groundwater*, 1991 – 2006, presents trends in historic benzene concentrations in wells MW-19, MW-23, MW-26, MW-27, and MW-33.

As shown in Table 2 and Figure 6, groundwater BTEX concentrations have generally decreased subsequent to product recovery and air sparging activities. The largest decreases have occurred in MW-19, where the benzene concentration was reduced from 10,100 micrograms per liter ( $\mu$ g/L) in June 2003 to 18.6  $\mu$ g/L in June 2006; and in MW-26, where free-product was present in June 2003 and the benzene concentration has since been reduced to 2.7  $\mu$ g/L, as of the August 2006 sampling event. These wells were also the locations where the physical effects of the AS system (induced wellhead air pressure and increased dissolved oxygen concentrations) have been most pronounced. The data indicate that the focused remedial efforts at the Site have been effective.

#### **3.0** Conclusions and Recommendations

Based on the monitoring data from the reporting period, the following conclusions can be drawn:

- 1. Product recovery and air sparging activities have been effective at removing freeproduct and reducing dissolved phase BTEX concentrations.
- 2. The groundwater quality in the area of monitoring well MW-23 does not appear to be improving. Remedial efforts have not been implemented in this area. EPTPC had planned to expand the AS system into this area, but the discovery of free product in new monitoring well MW-32 led to postponement of the expansion plans until additional source material delineation and subsequent Site evaluation can be completed.
- 3. The occurrence of free-product in monitoring well MW-32 indicates that hydrocarbon source material is still present on the Site, and this material may be affecting groundwater quality upgradient from the present AS system.

Therefore, EPTPC has the following recommendations with respect to future Site activities:

- 1. Groundwater monitoring frequency should be modified from quarterly to a semiannual basis. Sampling will return to a quarterly basis at such time when site closure will be contemplated. Table 3 shows the proposed sampling schedule.
- 2. Water and product levels will be gauged on a quarterly basis to provide data to support the current remedial efforts.
- 3. The AS system will continue to be operated approximately 12 hours per day.
- 4. Free-product recovery will continue in monitoring well MW-32.
- 5. Delineation of the area near the former North Flare Pit will be conducted. The intent of the characterization will be identification of the approximate free-product extent and to assess dissolved phase BTEX concentrations in that area.
- 6. Site data will be reported to the NMOCD on an annual basis, typically in October.

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T.S. S. W.

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#### 4.0 **REFERENCES**

- MWH, 2002. Work Plan for the Blanco North Flare Pit. Prepared for El Paso Field Services. July 2002.
- MWH, 2003a. 2003 Blanco North Flare Pit Pilot Air Sparging System Report. Prepared for El Paso Field Services. October 2003.
- MWH, 2003b. Blanco North Flare Pit Work Plan Update Technical Memorandum. Prepared for El Paso Field Services. June 2003.
- MWH, 2004. 2004 Blanco North Flare Pit Annual Report. Prepared for El Paso Field Services. October 2004.
- MWH, 2005. 2005 Blanco North Flare Pit Annual Report. Prepared for El Paso Tennessee Pipeline Company. October 2005.

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TABLES

19 Miller Shi			Depth	to Water (ft bgs)		
Date	MW-2	MW-19	MW-23	MW-24	MW-26	MW-27
2/3/03	drv	63.64	nm	nm	64.55/63.02	64.05
6/2/03	dry	63.90	57.12	66.38	pump in well	64.41
6/5/03	dry	62.42	57.03	66.96	pump in well	64.48
6/6/03	dry	62.34	57.14	66.97	pump in well	64.44
6/9/03	dry	62.31	57.03	66.81	pump in well	64.41
6/16/03	dry	62.47	57.09	66.74	pump in well	64.46
6/23/03	dry	62.31	57.06	66.71	pump in well	64.45
7/10/03	dry	62.75	57.08	66.68		64.50
7/15/03	dry	62.45	57.08	66.81	64 35	64.74
7/29/03	drv	62.71	57.06	66.83	64.46	64.68
8/7/03	dry	65.00	57.13	67.09	65.26	64.75
8/21/03	dry	64.84	57.12	67.09	64.59	64.78
9/10/03	dry	64.79	57.04	67.08	64.55	64.81
9/25/03	dry	63.95	57.12	67.07	64.55	64.89
10/6/03	dry	64.58	57.07	67.11	64.62	64.82
10/22/03	dry	64.16	56.00	67.15	64.65	64.95
11/17/03	nm ury	64.07	56.99	67.18	64 63	64.95
12/1/03	nm	64.29	57.18	67.17	64.77	65.03
12/16/03	dry	65.14	57.31	61.165	65.02	65.16
1/2/04	nm	64.22	57.04	67.20	65.1	65.10
1/15/04	dry	64.23	55.98	67.15	64.76	65.11
1/30/04	dry	64.14	57.08	67.11	64.76	65.09
2/13/04	nm	64.13	57.09	67.12	64.79	65.22
2/27/04	nm	64.07	56.99	67.12	64.76	65.24
3/12/04	<u>n</u> m	65.01	56.96	67.11	65.06	65.3
	nm	64.00	57.075	67.11	65.09	65.47
4/15/04	uy	64.51	57.075	67.11	65.28	65.41
5/10/04	nm	65.50	57.03	67.11	65.17	65.64
5/17/04	dry	65.31	57.14	dry	65.54	65.74
6/1/04	dry	63.42	57.15	67.14	65.23	65.77
6/15/04	dry	64.78	57.07	67.1	65.58	65.85
7/14/04	dry	63.81	57.14	67.11	65.57	66.01
7/28/04	dry	63.75	57.08	67.11	65.59	66.06
0/8/04	dry	nm	57.17	67.03	65.65	66.3
9/23/04	dry	nm	57.23	67.12	65.77	66 32
10/11/04	dry		57.13	67.12	65.92	66.38
10/26/04	dry	nm	57.13	67.11	66.79	66.44
11/17/04	dry	nm	57.19	67.19	65.67	66.55
12/7/04	dry	nm	57.27	67.14	35.67	66.64
12/22/04	dry	nm	57.09	67.12	65.85	66.68
1/10/05	dry	<u></u>	57.15	67.11	65.35	66.71
2/8/05	dry	nm	57.10	67.11	65.2	66.82
2/21/05	drv	nm	57.12	67.11	65.41	66.89
2/23/05	dry	nm	57.13	67.11	66.12	67.15
3/7/05	dry	nm	57.08	67.11	65.51	66.96
3/23/05	dry	nm	57.64	67.12	67.68	67.1
4/6/05	dry	nm	57.37	67.11	67.3	67.2
5/23/05	dry	nm	57.215	nm	66.25	67.41
	ary dry	nm	57.22	67.13	66.08	67.8
11/17/05	drv	nm	57.29	67.12	66.14	67.68
1/31/06	dry	nm	57.13	67.12	65.14	67.64
2/15/06	dry	63.85	57.08	67.11	64.96	67.79
3/1/06	dry	nm	57.3	67.11	65.54	67.77
4/3/06	dry	nm	57.4	67.11	64.67	67.85
4/18/06	dry	nm	57.39	67.1	64.8	67.89
4/28/06	dry	nm	57.24	67.11	64.92	64.9
6/15/06	dry	nm	57.27	67.11	65.59	68.07
7/17/06	dry	nm	57.53	67.11	64.92	67.72
\$/151/00 8/15/06	dry	nm	57.29	67.1	65 20	68.2
9/18/06	drv	nm	57.46	67.13	65 43	68 27
21.20100	<u> </u>		2	~	55.15	100.21

# TABLE 1AS SYSTEM OPERATION AND MONITORING DATA (FEBRUARY 2003 - SEPTEMBER 2006)BLANCO NORTH FLARE PIT - SAN JUAN COUNTY, NEW MEXICO

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SUSTAN	1000年1月1日日	SCHOL K	Dissolved C	Dxygen (mg/L)		T ZEALTR
Date	MW-2	MW-19	MW-23	MW-24	MW-26	MW-27
2/3/03	dry	nm	nm	nm	nm	nm
6/2/03	dry	nm	nm	nm	pump in well	nm
6/5/03	dry	nm	nm	nm	pump in well	nm
6/6/03	dry	nm	nm	nm	pump in well	nm
6/9/03	dry	1.60	1.85	1.51	pump in well	0.88
6/16/03	dry	1.54	1.89	1.34	pump in well	0.80
6/23/03	dry	2.72	0.94	1.54	pump in well	1.44
7/2/03	dry	nm	nm	nm	pump in well	nm
7/10/03	dry	2.98	0.94	1.50	4.44	1.17
7/15/03	dry	1.29	0.75	2.09	6.89	0.96
7/29/03	dry	1.41	0.64	1.55	6.16	0.94
8///03	dry	0.60	1.42	nm	0.49	1.00
8/21/03	ary	0.91	1.11	nm	2.23	0.39
9/10/03	dry	1.10	0.64	nm	2.02	0.86
9/25/05		1.10	1.12	1.71	0.50	0.70
10/0/03	nm hm	1.12	1.75	1.02	1.69	0.79
11/3/03	nm	1.07	1.03	n	1.40	1.37
11/17/03	nm	1.15	0.91	nm	1.52	1.20
12/1/03	nm	0.88	1.27	nm	1.08	1.19
1/2/04	nm	1.12	1.14		1.65	1.07
1/15/04	nm	1.04	1.26	nm	0.44	1.16
1/30/04	nm	1.10	1.07	nm	0.98	1.23
2/13/04	nm	1.31	1.57	nm	2.50	0.93
2/27/04	nm	1.11	0.98	nm	2.98	0.79
3/12/04	nm	1.10	1.07	nm	0.62	0.98
3/26/04	nm	1.39	0.90	nm	2.17	0.84
4/13/04	nm	1.20	1.08	nm	0.43	1.07
4/26/04	nm	1.03	1.15	nm	0.36	0.86
5/10/04	nm	0.68	0.92	nm	0.80	1.18
6/1/04	nm	1.05	0.81	nm	2.22	0.90
6/15/04	nm	1.02	0.80	nm	0.65	1.06
7/14/04	nm	0.91	0.66	nm	0.88	0.89
7/28/04	nm	nm	0.80	nm	3.38	0.56
8/1//04	nm	nm	0.85	nm	0.71	0.78
9/0/04	nm	1.55	0.87	nm	0.71	1.23
10/11/04	nm	1.80	0.98	nm	0.81	0.98
10/26/04	nm	0.95	0.68	nm	0.50	0.50
11/17/04	nm	1.65	0.91	nm	1.78	0.89
12/7/04	nm	1.98	0.92	nm	2.75	0.98
12/22/04	nm	1.67	1.41	nm	1.34	1.16
1/10/05	nm	1.79	1.08	nm	1.86	0.73
1/23/05	nm	2.02	1.00	nm	3.49	0.88
2/8/05	nm	1.93	0.82	nm	1.98	0.94
2/21/05	nm	1.53	0.86	nm	3.43	0.89
3/7/05	nm	2.02	0.53	nm	3.29	0.56
3/23/05	nm	nm	0.51	nm	3.55	0.78
4/6/05	nm	nm	0.77	nm	0.41	0.84
5/23/05	nm	0.96	1.32	nm	0.84	1.60
5/30/05	nm	nm	nm	nm	nm	nm
0/30/05	nm	nm	<u>nm</u>	<u>nm</u>	<u>nm</u>	<u>nm</u>
2/15/06	<u></u> 11(ff	2.47	0.98		3.12 A 19	0.75
3/1/06	nm	2.80	0.72	nm	5 41	1 17
4/3/06	nm	2.00	1.03	nm	4.76	0.89
4/18/06		2.04	0.75	nm	5.66	0.39
4/28/06		2.99	0.92	nm	5.20	0.83
6/15/06	nm	2.10	1.02		4.25	1.07
7/17/06	nm	nm	0.79	nm	5,42	0.68
7/31/06	nm	2,59	0.59	nm	5.33	1.40
8/15/06	nm	2.88	0.67	nm	4.92	1,19
9/18/06	nm	3.90	0.49	nm	5.02	1.80

# TABLE 1 AS SYSTEM OPERATION AND MONITORING DATA (FEBRUARY 2003 - SEPTEMBER 2006) BLANCO NORTH FLARE PIT - SAN JUAN COUNTY, NEW MEXICO

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nm - not measured

bgs - below ground surface

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	1435 - 1989 - 1		luced Air Pressur	e at Well (inches	H2O)	
Date	MW-2	MW-19	MW-23		MW-26	MW-27
2/3/03	dry	3.80	nm	nm	5.50	0.02
6/2/03	dry	NA	nm	<u>nm</u>	pump in well	nm
6/5/03	dry	4.50	0.00	0.00	pump in well	0.00
6/0/03	dry	5.80	0.00	0.00	pump in well	0.00
6/16/03	dry dry	6.00	0.00	0.09	pump in well	0.07
6/23/03	drv	6,15	0.00	0.09	pump in well	0.05
7/2/03	dry	7.40	0.00	0.10	pump in well	0.10
7/10/03	dry	5.20	0.00	0.02	>10	0.04
7/15/03	dry	6.10	0.00	0.04	>10	0.07
7/29/03	dry	6.60	0.00	0.09	>10	0.05
8/7/03	dry	0.00	0.00	0.00	0.00	0.00
8/21/03	dry	3.60	0.00	0.07	6.80	0.06
9/10/03	dry	6.40	0.00	0.03	<10	0.90
9/25/03	dry	3.10	0.00	0.06	3.90	0.04
10/6/03	nm	0.11	0.00	0.10	0.09	0.02
11/22/03	nm	2.60	0.00	0.00	3.25	0.00
11/3/03	<u>nm</u>	0.03	0.00	0.03	0.07	0.00
12/1/03		2.10	0.00	0.00	2 10	0.08
1/2/04	nm	3,00	0.00	0.10	2.10	0.08
1/15/04	nm	2.10	0.00	0.04	3,20	0.06
1/30/04	nm	2.00	0.00	0.07	3.10	0.03
2/13/04	nm	3.10	0.00	0.09	3.50	0.16
2/27/04	nm	3.00	0.00	0.13	3.20	0.24
3/12/04	nm	0.17	0.00	0.12	0.09	0.08
3/26/04	лm	3.00	0.00	0.14	3.20	0.18
4/13/04	nm	2.20	0.00	-0.02	4.10	0.13
4/26/04	nm	2.20	0.00	-0.03	1.90	0.08
5/10/04	nm	2.40	0.00	0.11	2.00	0.18
6/1/04	nm	5.60	0.00	0.06	8.30	0.11
6/15/04	nm	4.20	0.00	-0.04	6.60	0.00
7/14/04	<u>nm</u>	4.70	0.00	0.01	7.00	0.12
8/17/04	000	4.60	0.00	-0.01	6.00	0.15
9/8/04	nm	4 20	0.00	-0.02	5 30	0.07
9/23/04	nm	2,20	0.00	0.02	4,70	0.00
10/11/04	nm	0.01	0.00	0.02	0.02	0.01
10/26/04	nm	nm	nm	nm	nm	nm
11/17/04	nm	nm	nm	nm	nm	nm
12/7/04	nm	nm	nm	nm	nm	nm
12/22/04	nm	2.50	0.00	-0.03	7.30	0.05
1/10/05	nm	3.60	0.00	0.03	7.70	0.06
1/23/05	nm	5.40	0.00	0.03	8.80	0.03
2/21/05	nm nm	4.00	0.00	-0.02	>10	0.08
3/7/05	nm	5.00	0.00	0.02	9.40	0.32
3/23/05	nm	0.00	0.00	-0.03	0.00	-0.01
4/6/05	nm	nm	nm	nm	nm	nm
5/23/05	nm	nm	nm	nm	nm	nm
5/30/05	nm	nm	nm	nm	nm	nm
8/30/05	nm	nm	nm	nm	nm	nm
1/31/06		5.60	0.00	0.06	<10	0.16
2/15/06		5.50	0.00	0.15	<10	0.40
3/1/06	nm	7.00	0.00	0.10	<10	0.21
4/3/00	nm	4.00	0.00	0.05	<10	0.73
4/28/06	nm	6.00	0.00	0.55	9.50	0.04
6/15/06	nm	2,90	0.00	0.05	9,90	0.15
7/17/06	nm	0.15	0.00	0.10	>10	0.23
7/31/06	nm	5.30	0.00	0.05	>10	0.40
8/15/06	nm	4.40	0.00	0.05	6.50	0.06
9/18/06	nm	4.80	0.00	0.03	8.80	0.06

# TABLE 1 AS SYSTEM OPERATION AND MONITORING DATA (FEBRUARY 2003 - SEPTEMBER 2006) BLANCO NORTH FLARE PIT - SAN JUAN COUNTY, NEW MEXICO

dry - well was dry

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nm - not measured

bgs - below ground surface

# TABLE 2GROUNDWATER MONITORING ANALYTICAL DATA (JUNE 1991 - AUGUST 2006)BLANCO NORTH FLARE PIT - SAN JUAN COUNTY, NEW MEXICO

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Neation ing Weil         Sample Date         Static Water Level (0) RTCO:         Betwee (up)         Takete (up)         Ethylkenzee (up)         Takete (up)         Takete (up) <thtakete (up)         Takete (up)        &lt;</thtakete 				Analytical Parameters				
NNVQUE standard:         10         730         6.20         6.27         6.0           NW-2         22303         -0.5	Monitoring Well	Sample Date	Static Water Level (ft BTOC)	Benzene (ug/l)	Toluene (ug/l)	Ethylbenzene (ug/l)	Total Xylenes (ug/l)	
MW-2         071891         0.05         0.05         0.05         0.05         0.05           071973         0.05         0.05         0.05         0.05         0.05         0.05           0719793         0.0         0.20 <td< td=""><td>· · · · · · · · · · · · · · · · · · ·</td><td></td><td>NMWQCC Standard:</td><td>10</td><td>750</td><td>750</td><td>620</td></td<>	· · · · · · · · · · · · · · · · · · ·		NMWQCC Standard:	10	750	750	620	
MW-2         22193         dd13         dd3		6/18/91		<0.5	<0.5	0.7	0.9	
MW-19         6.20         <2.0	MW-2	2/23/93		<0.5	<0.5	<0.5	<0.5	
92093         6.2 <th< td=""><td>-</td><td>6/8/93</td><td></td><td>&lt;2.0</td><td>&lt;2.0</td><td>&lt;2.0</td><td>&lt;2.0</td></th<>	-	6/8/93		<2.0	<2.0	<2.0	<2.0	
21094         -2.0         -2.0         -2.0         -2.0         -2.0           81294         -2.0         -2.0         -2.0         -2.0         -2.0           11/900         dry	-	9/29/93		6.2	<2.0	<2.0	<2.0	
S71394          <2.0	-	2/10/94		<2.0	<2.0	<2.0	<2.0	
82294	_	5/13/94		<2.0	<2.0	<2.0	<2.0	
II 1000         dry         Well Dry - No Sample Collected           3/2501         dry         Well Dry - No Sample Collected           6/203         dry         Well Dry - No Sample Collected           9/303         dry         Well Dry - No Sample Collected           9/303         dry         Well Dry - No Sample Collected           12/2603         dry         Well Dry - No Sample Collected           5/1704         dry         Well Dry - No Sample Collected           5/2304         dry         Well Dry - No Sample Collected           5/2305         dry         Well Dry - No Sample Collected           5/2005         dry         Well Dry - No Sample Collected           5/2006         dry         Well Dry - No Sample Collected           5/2006         dry         Well Dry - No Sample Collected           5/2007         8/300         10           6/1991         8/400         4/20           5/2006         dry         Well Dry - No	-	8/22/94		<2.0	<2.0	<2.0	<2.0	
MW-19         3/25/01         dry         Well Dry - No Sample Collected           6/0.03         dry         Well Dry - No Sample Collected         9/30.3           12/16/03         dry         Well Dry - No Sample Collected           12/204         dry         Well Dry - No Sample Collected           12/205         dry         Well Dry - No Sample Collected           2/23/05         dry         Well Dry - No Sample Collected           5/23/05         dry         Well Dry - No Sample Collected           5/23/05         dry         Well Dry - No Sample Collected           5/23/05         dry         Well Dry - No Sample Collected           11/17/05         dry         Well Dry - No Sample Collected           2/21/06         dry         Well Dry - No Sample Collected           5/25/05         nm	-	11/9/00	dry		Well Dry - No S	ample Collected		
6/203         dry         Well Dy: No Sample Collected           9/3/03         dry         Well Dy: No Sample Collected           9/3/03         dry         Well Dy: No Sample Collected           12/16/03         dry         Well Dy: No Sample Collected           5/17/04         dry         Well Dy: No Sample Collected           5/17/04         dry         Well Dy: No Sample Collected           11/22/04         dry         Well Dy: No Sample Collected           2/23/05         dry         Well Dy: No Sample Collected           5/17/04         dry         Well Dy: No Sample Collected           5/23/05         dry         Well Dy: No Sample Collected           5/23/05         dry         Well Dy: No Sample Collected           5/23/05         dry         Well Dy: No Sample Collected           11/17/05         dry         Well Dy: No Sample Collected           5/19/91         8600         dry           6/19/91         8600         210.0           7/21/06         dry         Well Dy: No Sample Collected           6/19/91         8600         210.0           7/21/06         dry         Well Dy: No Sample Collected           6/19/91         8600         210.0           7/21/	Ļ	3/25/01	dry		Well Dry - No S	ample Collected		
84/03         dry         Well Dry. No Sample Collected           93/03         dry         Well Dry. No Sample Collected           12/1603         dry         Well Dry. No Sample Collected           88/2304         dry         Well Dry. No Sample Collected           11/12204         dry         Well Dry. No Sample Collected           22/305         dry         Well Dry. No Sample Collected           23/305         dry         Well Dry. No Sample Collected           86/3005         dry         Well Dry. No Sample Collected           86/3005         dry         Well Dry. No Sample Collected           22/106         dry         Well Dry. No Sample Collected           68/306         dry         Well Dry. No Sample Collected           68/306         dry         Well Dry. No Sample Collected           68/306         dry         Well Dry. No Sample Collected           8/306         dry         Well Dry. No Sample Collected           8/306         dry         Well Dry. No Sample Collected           8/307         14/000         450.0         3.00           11/1705         am<	ļ	6/2/03	dry		Well Dry - No S	ample Collected		
97/03         dry         Well Dry. No Sample Collected           121/1003         dry         Well Dry. No Sample Collected           5/17/04         dry         Well Dry. No Sample Collected           8/23/04         dry         Well Dry. No Sample Collected           11/22/04         dry         Well Dry. No Sample Collected           2/23/05         dry         Well Dry. No Sample Collected           5/2005         dry         Well Dry. No Sample Collected           5/2005         dry         Well Dry. No Sample Collected           5/2005         dry         Well Dry. No Sample Collected           2/21/06         dry         Well Dry. No Sample Collected           2/21/06         dry         Well Dry. No Sample Collected           6/69/0         Well Dry. No Sample Collected         6/69/0           2/21/06         dry         Well Dry. No Sample Collected           6/19/91         8,600         210         <1.0	_	8/4/03	dry		Well Dry - No Sa	ample Collected		
International system         International system         International system           MW-19         Well Dy: No Sample Collected           8/2304         dy         Well Dy: No Sample Collected           2/2305         dy         Well Dy: No Sample Collected           2/2305         dy         Well Dy: No Sample Collected           5/2305         dy         Well Dy: No Sample Collected           8/0005         dy         Well Dy: No Sample Collected           8/0005         dy         Well Dy: No Sample Collected           11/17/05         dry         Well Dy: No Sample Collected           6/8/06         dry         Sample Collected           6/8/06         mm         4.000	_	9/3/03	dry		Well Dry - No Sa	ample Collected		
S17104         dry         Well Dy - No Sample Collected           822304         dry         Well Dy - No Sample Collected           11/2204         dry         Well Dy - No Sample Collected           223015         dry         Well Dy - No Sample Collected           52305         dry         Well Dry - No Sample Collected           64003         dry         Well Dry - No Sample Collected           11/1705         dry         Well Dry - No Sample Collected           22106         dry         Well Dry - No Sample Collected           66060         dry         Well Dry - No Sample Collected           81/506         dry         Well Dry - No Sample Collected           91/502         mm<<<1.0	_	12/16/03	dry		Well Dry - No Sa	ample Collected		
82304         dry         Well Dy - No Sample Collected           11/12/204         dry         Well Dy - No Sample Collected           27305         dry         Well Dy - No Sample Collected           5/2305         dry         Well Dy - No Sample Collected           5/2305         dry         Well Dy - No Sample Collected           8/6003         dry         Well Dy - No Sample Collected           2/2106         dry         Well Dy - No Sample Collected           6/606         dry         Well Dy - No Sample Collected           6/1991         8,660         210         <25.0		5/17/04	dry		Well Dry - No Sa	ample Collected		
11/2204         dry         Well Dry - No Sample Collected           222305         dry         Well Dry - No Sample Collected           572305         dry         Well Dry - No Sample Collected           572305         dry         Well Dry - No Sample Collected           572305         dry         Well Dry - No Sample Collected           11/1705         dry         Well Dry - No Sample Collected           22106         dry         Well Dry - No Sample Collected           66906         dry         Well Dry - No Sample Collected           8/1506         dry         Well Dry - No Sample Collected           9/1506         dry         Well Dry - No Sample Collected           9/1500         6.10         1.10         <1.0	_	8/23/04	dry	dry Well Dry - No Sample Collected		ample Collected	·····	
J22305         dry         Well Dry : No Sample Collected           5/2305         dry         Well Dry : No Sample Collected           8/0005         dry         Well Dry : No Sample Collected           2/2106         dry         Well Dry : No Sample Collected           2/2106         dry         Well Dry : No Sample Collected           6/806         dry         Well Dry : No Sample Collected           6/807         Well Dry : No Sample Collected         \$2200           8/8000         dry         Well Dry : No Sample Collected           6/1991         8/600         210         <25.0		11/22/04	dry		Well Dry - No Sa	ample Collected		
5/2305         dry         Well Dry - No Sample Collected           8/80005         dry         Well Dry - No Sample Collected           11/1705         dry         Well Dry - No Sample Collected           2/2106         dry         Well Dry - No Sample Collected           6/806         dry         Well Dry - No Sample Collected           8/1506         dry         Well Dry - No Sample Collected           8/1506         dry         Well Dry - No Sample Collected           8/1506         dry         Well Dry - No Sample Collected           9/26/92         am         <1.0	_	2/23/05	dry		Well Dry - No Sa	ample Collected		
83005         dry         Well Dry - No Sample Collected           11/1705         dry         Well Dry - No Sample Collected           2/21/06         dry         Well Dry - No Sample Collected           6/8/06         dry         Well Dry - No Sample Collected           8/15/06         dry         Well Dry - No Sample Collected           8/15/06         dry         Well Dry - No Sample Collected           6/19/91         8/600         210         <25.0	Ļ	5/23/05	dry		Well Dry - No Sa	ample Collected	ple Collected	
III/1705         dry         Well Dry - No Sample Collected           221/06         dry         Well Dry - No Sample Collected           668/06         dry         Well Dry - No Sample Collected           81/506         dry         Well Dry - No Sample Collected           81/506         dry         Well Dry - No Sample Collected           91/26/92         nm         <1.0	Ļ	8/30/05	dry	Well Dry - No Sample Collected				
J21106         dry         Well Dry. No Sample Collected           66806         dry         Well Dry. No Sample Collected           811506         dry         Well Dry. No Sample Collected           6(1991)         8,600         210         <25.0	Ļ	11/17/05	dry		Well Dry - No Sa	ample Collected		
66806         dry         Well Dry No Sample Collected           8/1506         dry         Well Dry No Sample Collected.           6/19/91         8,600         210         <25.0	Ļ	2/21/06	dry		Well Dry - No Sa	ample Collected		
8/15/06         dry         Well Dry, No Sample Collected           MW-19         9/26/92         nm         <1.0         <1.0         <1.0         <1.0           225/93         114,000         450.00         3,900         5100.00           6/10/93         9,580         159         928         1,087           11/13/00         63.45         7,200         <25	Ļ	6/8/06	dry		Well Dry - No Sa	ample Collected		
MW-19         6(1991)         8,600         210         <25.0         4,200           972692         nm         <1.0		8/15/06	dry		Well Dry - No Sa	ample Collected		
MW-19         9/26/92         nm         <1.0         <1.0         <1.0         <1.0         <1.0           2/25/93         14,000         450,00         3,900         5100,00         600,00         3,900         5100,00           6/10/93         9,250         159         9.28         1,687         11/1         300         63,45         7,200         <25	Ļ	6/19/91		8,600	210	<25.0	4,200	
22593         14,000         45.00         3.900         5100.00           6/10/93         9,580         159         928         1,087           11/13/00         63.45         7,200         <25	MW-19	9/26/92	nm	<1.0	<1.0	<1.0	<1.0	
66/10/93         9,580         159         928         1,087           11/13/00         63.45         7,200         <25		2/25/93		14,000	450.00	3,900	5100.00	
III/13/00         63.45         7,200         <25         3,500         88           3/26/01         63.37         12,000         <50		6/10/93		9,580	159	928	1,087	
3/26/01         63.37         12,000         <50         4,500         110           5/30/02         63.54         12,000         <50	Ļ	11/13/00	63.45	7,200	<25	3,500	88	
5/30/02         63.54         12,000         <50         4,300         140           6/2/03         63.90         10,100         <10		3/26/01	63.37	12,000	<50	4,500	110	
6/2/03         63.90         10,100         <10         3,900         <30           8/4/03         62.75         2,000         <10		5/30/02	63.54	12,000	<50	4,300	140	
8/4/03         62.75         2,000         <10         304         <30           9/3/03         65.06         3,580         <1.0		6/2/03	63.90	10,100	<10	3,900	<30	
9/3/03         65.06         3,580         <1.0         1,020         <3.0           12/18/03         65.02         8,130         <50	Γ	8/4/03	62.75	2,000	<10	304	<30	
12/18/03         65.02         8,130         <50         <50         <100           5/17/04         65.31         7,410         <13	-	9/3/03	65.06	3,580	<1.0	1,020	<3.0	
5/17/04         65.31         7,410         <13         1,160         45           8/23/04         nm         2,650         <25	-	12/18/03	65.02	8,130	<50	<50	<100	
8/23/04         nm         2,650         <25         303         <50           11/22/04         nm         4,150         7         <1	F	5/17/04	65.31	7,410	<13	1,160	45	
11/22/04         nm         4,150         7         <1         <2           2/23/05         nm         191         <10	F	8/23/04	nm	2,650	<25	303	<50	
2/23/05         nm         191         <10         <10         <20           5/23/05         nm         8,520         <20	F	11/22/04	nm	4,150	7	<1	<2	
5/23/05         nm         8,520         <20         176         176           8/30/05         nm         2,040         <20		2/23/05	nm	191	<10	<10	<20	
8/30/05         nm         2,040         <20         117         <40           11/17/05         nm         3,730         <20	-	5/23/05	nm	8,520	<20	176	176	
11/17/05         nm         3,730         <20         340         <40           2/21/06         nm         20.1         <5	F	8/30/05	nm	2,040	<20	117	<40	
2/21/06         nm         20.1         <5         9         4.4           6/8/06         nm         18.6         <1	ľ	11/17/05	nm	3,730	<20	340	<40	
6/8/06         nm         18.6         <1         <1         2.9           8/15/06         nm         Well Damaged - No Sample Collected.  <	F	2/21/06	nm	20.1	<5	9	4.4	
8/15/06         nm         Well Damaged - No Sample Collected.           2/24/93         <0.5	F	6/8/06	nm	18.6	<1	<1	2.9	
2/24/93         <0.5         0.5         0.5         <0.5           MW-20         6/10/93         <2.0	F	8/15/06	nm		Well Damaged - No	Sample Collected.		
MW-20         6/10/93         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0		2/24/93		<0.5	<0.5	<0.5	<0.5	
9/29/93         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0         <2.0	MW-20	6/10/93		<2.0	<2.0	<2.0	<2.0	
1/27/94         <2.0         <2.0         <2.0         <2.0           5/13/94         <2.0	F	9/29/93		<2.0	<2.0	<2.0	<2.0	
5/13/94         <2.0         <2.0         <2.0         <2.0           8/22/94         <2.0	F	1/27/94		<2.0	<2.0	<2.0	<2.0	
8/22/94         <2.0         <2.0         <2.0         <2.0         <2.0           11/13/00         41.00         Well Damaged - No Sample Collected. <td>F</td> <td>5/13/94</td> <td></td> <td>&lt;2.0</td> <td>&lt;2.0</td> <td>&lt;2.0</td> <td>&lt;2.0</td>	F	5/13/94		<2.0	<2.0	<2.0	<2.0	
11/13/00     41.00     Well Damaged - No Sample Collected.       6/2/03     NA     Well Damaged and abandoned in 2002.	Г	8/22/94		<2.0	<2.0	<2.0	<2.0	
6/2/03 NA Well Damaged and abandoned in 2002.	Г	11/13/00	41.00		Well Damaged - No	Sample Collected.		
		6/2/03	NA		Well Damaged and a	bandoned in 2002.		

# TABLE 2 GROUNDWATER MONITORING ANALYTICAL DATA (JUNE 1991 - AUGUST 2006) BLANCO NORTH FLARE PIT - SAN JUAN COUNTY, NEW MEXICO

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Monitoring WellSaturgleState, Water Level NUNCCE StandardsFindence (19)Total Xightes (19)Total Xightes (19)97707977072001000000000000020050320050320001903.5001904.1002005030000100010001000000000000000900903000001000100010001000000090090300000100010001000100010009009030000057007.500425058001000900903971103.500400300010001000900903971103.50040030010001000900903971103.500400300010001000900903971103.50040040090010000900903971103.500400400100010000900903971103.500400400100010000900903971103.5004102011000900903971103.5004004004001000900903971003.500400400400100090090397103.500400400400100090090397103.50040040040040090090397103.500400400400400 <t< th=""><th></th><th></th><th></th><th colspan="4">Analytical Parameters</th></t<>				Analytical Parameters			
Matering Weil         Sample Protection         Bater, Water Cont B         Belower B         Display B         Display B <thdisplay B         <thdisplay B         Displ</thdisplay </thdisplay 				_			
With         Dots         NUMPLE Standards         Dots         Page	Monitoring	Sample	Static Water Level	Benzene	Toluene (ug/l)	Ethylbenzene (ug/l)	Total Xylenes
MW-28         29/07         217         720         720         3500         190         4.109           20503         2090         3500         190         4.09         3500         4.09           66501         1.080         2090         190         1.580         2.660           20100         1.033         114         1.040         4.03           20100         2.030         133         114         1.040         4.03           20100         2.030         133         116         1.040         4.03           20100         2.712         3.700         425         530         1.109           50000         2.712         5.700         425         530         1.600           50000         2.712         5.700         425         160         9.04           50001         2.712         5.700         4.00         3.01         1.400           50001         2.714         5.600         4.0         9.0         1.00           50103         2.714         5.600         4.1         3.1         1.400           50201         2.713         3.400         4.1         3.1         1.400	wen	Date	NMWQCC Standard:	10	750	750	620
NW-23         2107         200         3.500         190         4.400           62933         -         2,000         190         3.500         4.400           62937         -         2,000         191         1,100         2,000           62937         -         2,000         151         1,100         2,000           51394         -         2,000         151         1,100         2,000           51394         -         2,000         151         1,100         1,000           37691         5717         7,500         -2,55         3,00         1,600           37030         5712         3,500         -6,00         3,07         1,649           57030         5712         3,500         -6,0         -6,0         2,00           57030         5712         3,500         -6,0         -6,0         -6,0           57180         5718         3,500         -6,1         3,20         1,600           57295         5713         3,500         -6,1         3,20         1,600           57295         5718         3,500         -6,1         3,20         1,600           57295         5729		9/26/92		2,770	221	7,690	6,090
32550         200         190         3.00         4.00           6667	MW-23	2/1/93		2,900	3,500	190	4,100
6603         1.60         39         1.89         2.295           9(2)93         2.433         216         1.57         3.532           9(1)94         2.09         151         1.159         3.632           9(1)93         2.09         151         1.159         3.632           9(1)30         5107         3.50         123         8.83         1.169           9(1)30         5107         3.50         123         8.90         1.90         1.90           9(0)3         57.11         3.890         -0.30         3.90         1.90         3.97           9(0)3         57.11         3.800         -60         3.97         7.64         3.90         1.69           9(0)3         57.11         3.800         -60         -60         2.91         1.99         1.19         9.66           9(2)303         57.13         3.300         -5.3         3.9         1.69         1.19         9.66         1.19         1.69           9(2)305         53.12         7.49         8.00         -6.1         3.91         1.5         -7         9.5         1.19         1.68         1.19         1.66         1.19         1.19         1.69 <th></th> <th>2/25/93</th> <th></th> <th>2,900</th> <th>190</th> <th>3,500</th> <th>4,100</th>		2/25/93		2,900	190	3,500	4,100
02993         1.2.33         210         1.8.9         2.2.69           21044		6/8/93		1,680	30	1,850	2,906
21004         2000         153         153         2460           511054         3550         255         852         1110           612054         3707         212         853         1176           101100         3707         3200         43         853         1176           10100         3707         3200         43         853         1169           10203         3717         8207         46         107         1490         159           10203         5717         8207         46         109         377         1490           9203         5717         3560         63         109         377         1490           9203         5714         520         219         11280         160         96           112201         5713         3300         4         121         128         1200         142         210         1490           110705         512         9000         12         21         1490         141         21         31         191           10105         513         320         20         20         20         133         197         192		9/29/93		2,133	216	1,807	3,823
9/1304         3.20         285         882         2.140           6/2204         3.270         212         333         1.176           1111300         57.02         3.000         4.53         460         1.460           3/2001         57.02         7.03         4.60         3.00         1.460           3/2001         57.05         2.250         4.61         900         3.07           9/201         57.16         3.060         8         2020         7.61           12/2003         67.14         3.060         48         2020         7.61           12/2003         57.14         3.020         4.13         2020         7.61           12/2003         57.14         3.020         4.13         202         4.13         21           2/2045         57.17         7.450         4.1         321         1.580         3.63           11/1705         57.22         9.000         37         2.70         1.680           5/2045         57.23         4.00         4.7         3.7         1.69           6/2056         57.42         3.470         -1         -1         3.7           1111056         57.		2/10/94		2,090	151	1,150	2,660
9/2/03         5/20         2/20         2/21         8/35         1/100           11/1000         57/07         7/200         4/3         8/07         1/00           3/2001         57/07         7/200         4/3         8/07         1/00           9/2001         57/07         7/200         4/3         8/07         1/00           9/2001         57/07         2/250          1/0         3/07           9/2001         57/07         2/250          1/0         3/07         1/00           9/2001         57/14         5/200          5/0         2/9         9/0         9/0         9/0         9/0         9/0         9/0         9/0         9/0         9/0         9/0         9/0         9/0         9/0         9/0         1/0         9/0         9/0         1/0         9/0         9/0         1/0         1/0         9/0         1/0         1/0         9/0         1/0         1/0         9/0         1/0         1/0         9/0         1/0         1/0         9/0         1/0         1/0         1/0         1/0         1/0         1/0         1/0         1/0         1/0         1/0         1/0		5/13/94	· · · · · · · · · · · · · · · · · · ·	3,530	255	. 852	2,150
MW-24         Display         Display         Construction         Construction         Construction           MW-24         State         S		8/22/94	67.00	3,270	212	353	1,170
S0002         9208         9309         530         969         1590           9000         3712         8500         -00         197         1490           9001         3711         360         8         208         78           9001         5711         360         8         208         78           121803         6514         5209         <50         <50         <50         100         96           907794         5744         4.489         <57         100         96         .1490           102204         5713         3.800         <1         <1         -1         <2           22305         5717         7.480         <1         31         1.809         .1690           5206         573         3.800         <5         53         199         .1630           9117.03         57.22         9600         37         27         10         .1630           6005         57.44         3.470         <4         <1         37         .130           92106         57.43         3.400         4.2         20         .130         .130           92106         57.44         3.	-	3/26/01	57.02	7 200	<23	520	1 300
6003         6712         8920         ci0         197         1.490           9003         5716         2250         ci0         100         37           9003         5711         8.400         8         208         78           120873         6514         500         <50         201         201           62704         5714         8.020         <11         228         1.490           62705         5714         8.020         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         1         <1	-	5/30/02	57.08	· 9 300	<50	360	1,500
9401         97.06         -2.250         <10	-	6/2/03	57.12	8,920	<10	337	1,450
9201         97.11         3.860         8         208         778           121803         65.14         5.00         <50         <50         121           9/1704         57.14         5.020         <13         208         1.490           8/2304         57.13         3.360         <1         <1         <1         <2           11/2204         57.13         3.360         <1         31         1.183           5/2305         57.22         9.060         37         270         1.639           8/1006         57.13         3.500         <5         53         199           11/1705         57.23         5.280         2.6         165         1.770           6606         57.44         3.470         <1         <1         373           81556         57.40         6.490         2.6         165.00         1.139           9/2503         1.400         63         8         918         7         95           9/2030         1.400         63         8         918         918         918         918         918         918         918         918         918         918         918         918<	-	8/4/03	57.06	2,250	<10	100	337
12/1803         65.14         5.080         <50	-	9/3/03	57.11	3,860	8	208	768
9/1704         97.14         8.020         <1.3		12/18/03	65.14	5,080	<50	<50	219
82304         97.04         -4.40         -2.5         160         966           11/2204         97.13         3.300         <1         <1         <2           22305         93.17         7.40         <1         3.31         1.380           92005         97.18         3.700         <5         5.3         199           11/1705         57.29         5.230         2.6         20.3         86.3           221/06         97.25         4.900         4.9         57         70           68766         57.44         3.470         <1         <1         37.3           81506         97.40         6.490         2.6         10.30         1.20           920203         2.69         95         <5.0         11.30           920203         1.040         3.0         8         918           21094         1.300         60         <2.0         95           92023         1.040         3.0         8         918           21094         1.300         60         <2.0         95           92033         1.040         <1.30         8         212           93060         63.0		5/17/04	57.14	8,020	<13	208	1,490
11/12/04         57.13         3.360         <1		8/23/04	57.04	4,480	<25	160	966
12/205         53.17         7.49         <1		11/22/04	57.13	3,360	<1	<1	<2
5/2006         57.22         9.00         37         270         1.650           \$8/0005         57.18         3.760         <5         53         199           11/1705         57.29         5.280         2.6         20.3         863           2/21/06         57.25         4.900         4.9         57         710           6606         57.44         3.470         <1         <1         373           \$9/2692         2.669         95         550         1.340           6005         57.4         3.99         15         7         95           61093         59         15         7         95         95           9/2993         1.040         63         8         915           20/04         65.06         200         <1         8         915           3/1394         1.040         63         8         918         32           3/2204         856         60         <2.0         898         35           5/1002         65.65         2.100         18         32         32           6/203         66.61         2.00         18         32         32		2/23/05	53.17	7,450	<1	321	1,380
8/3005         5/18         3/30          33         199           11/1705         55/29         5.280         2.6         203         8.64           2/21.06         57.25         4.000         4.9         57         710           66.00         57.44         3.470         <1         <1         373           8/1506         57.40         6.490         2.66         165.0         1.270           9/2692         2.269         95         <5.9         1.30         71         <12.3         660           6(1093         .92         15         7         95         .92         .92         .92         .92         .92         .92         .92         .93         .		5/23/05	57.22	9,900	37	270	1,650
H11703         37.25         5.260         2.6         203         M85           20106         57.23         4.000         4.9         57         710           66806         57.44         3.470         373           91506         57.44         4.470         373           91692         2.69         95         <50         1.140           91692         2.69         95         <50         1.140           91693         1.90         71         12.5         600           6(1093         99         15         7         95           92093         1.040         63         8         918           21094         .1390         07         5         22           30601         65.00         1.500         5         22           304201         65.30         1.500         13         29           6203         66.31         Well Bailed Dry. No Sample Collected         45           9303         dr         Well Bailed Dry. No Sample Collected         45           9403         d6.91         Well Bailed Dry. No Sample Collected         45      940	-	8/30/05	57.18	5,760	<5	53	199
Datase         J.1.2.         J.0.00         L.3.         J.1.3.           66066         57.44         J.470         -1         -1         -1         -373           81506         57.40         6.490         2.6.6         165.0         1.130           92692         -2.659         95         -50         1.136           9101         -1.13         -7         95           92993         -1.40         63         8         918           201094         -990         -44         -2.0         395           511394         -1.390         69         -2.0         198           820294         836         60         -2.5         154           111100         6530         2100         -30         18         35           51301         6530         1500         -30         18         35           51002         -6565         2100         13         29         -25           6203         66.37         Well Bailed Dry. No Sample Collected         -41         51           9303         dry         Well Bailed Dry. No Sample Collected         -51704         dry         Well Bailed Dry. No Sample Collected         -225 </th <th>i -</th> <th>2/21/05</th> <th>57.29</th> <th>5,280</th> <th>2.0</th> <th>203</th> <th>710</th>	i -	2/21/05	57.29	5,280	2.0	203	710
Bit 100         27.7         6.000         24.6         165.0         1.220           97.092         2.650         95         <50         1.130           MW-24         22.093         1.500         71         <12.5	-	6/8/06	57.44	3,470	4.9	5/	373
MW-24         92692         2.650         95         <50		8/15/06	57.40	6,490	26.6	165.0	1,270
NW-24         22393         1309         71              6/1093         59         15         7         95           9/2993         1.040         63         8         918           2/1094         490         44         <2.0         395           5/1394         1.390         60         <2.0         888           8/2294         836         60         <2.5         154           11/1300         65.06         200         <1         5         22           3/2601         65.06         200         <1         5         22           3/2601         65.06         1.500         <5.0         18         35           6/203         66.38         Well Baled Dy - No Sample Callected          4            9/303         dry         Well Dy - No Sample Callected              12/1603         57.31         Well Dy - No Sample Callected             9/303         dry         Well Dy - No Sample Callected             12/204         66.37         Well Dy - No Sample Callected		9/26/92		2,650	95	<50	1,340
6(1093	MW-24	2/23/93		1,300	71	<12.5	600
92(99)3         1040         63         8         918           21(094         490         44         <2.0         395           51(394         1.390         69         <2.0         898           872294         836         60         <2.5         184           11(1)300         65.06         20°         <1         5         22           326011         65.05         2,100         13         29         <25           6/203         66.58         2,100         13         29         <25           6/203         66.58         2,100         13         29         <25           6/203         66.58         2,100         13         29         <25           6/203         66.57         2,100         13         29         <25           6/203         66.91         Well Bailed Dry. No Sample Collected             121603         57.31         Well Bailed Dry. No Sample Collected            121703         67.11         Well Bailed Dry. No Sample Collected            121705         67.12         Not Enough Wate to Sample - TD 67.19            22106         67.06         nm <th></th> <th>6/10/93</th> <th></th> <th>59</th> <th>15</th> <th>7</th> <th>95</th>		6/10/93		59	15	7	95
210094		9/29/93		1,040	63	8	918
S11394         1,390         69         <2.0		2/10/94		490	44	<2.0	395
882204		5/13/94		1,390	69	<2.0	898
11/13/00         65:00         200'         <1		8/22/94		836	60	<2.5	154
3/2001         65:00         1,300         2,30         18         53           5/3002         66:36         2,100         13         29         <25           6/203         66:38         Well Bailed Dry - No Sample Collected             8/403         66:91         Well Bailed Dry - No Sample Collected             9/3/03         dry         Well Bailed Dry - No Sample Collected             12/16/03         57.31         Well Bailed Dry - No Sample Collected            \$/23/04         67.11         Well Bailed Dry - No Sample Collected            \$/23/04         67.11         Well Bailed Dry - No Sample Collected            \$/23/05         67.11         Well Bailed Dry - No Sample Collected            \$/23/04         67.11         Not Enough Water to Sample - TD 67.19            11/12/05         67.12         Not Enough Water to Sample - TD 67.19            \$/21/06         67.11         Not Enough Water to Sample - TD 67.19            \$/21/06         67.12         Not Enough Water to Sample - TD 67.19            \$/21/06         67.12         Not Enough Water to Sample - TD 67.19		11/13/00	65.06	200	<1	5	22
Sydu2         65.30         2100         129         229         229           64203         66.38         Well Bailed Dry - No Sample Collected           9303         dry         Well Bailed Dry - No Sample Collected           9303         dry         Well Bailed Dry - No Sample Collected           1216/03         57.31         Well Bailed Dry - No Sample Collected           517704         dry         Well Dry - No Sample Collected           823.04         66.11         Well Dry - No Sample Collected           11/2204         66.37         Well Bailed Dry - No Sample Collected           223.05         67.11         Not Enough Water to Sample - D 67.19           830.005         67.12         Not Enough Water to Sample - D 67.19           21/106         67.12         Not Enough Water to Sample - D 67.19           860.0         nm         Not Enough Water to Sample - D 67.19           875.06         67.12         Not Enough Water to Sample - D 67.19           875.06         67.12         Not Enough Water to Sample - D 67.19           875.06         67.12         Not Enough Water to Sample - D 67.19           875.00         64.00         100         280           530.002         63.68         6,200         50         1.300	-	3/26/01	65.00	1,500	<5.0	18	35
Mer Balled Dy - No Sample Collected           9/303         dry           9/303         dry           12/1603         57.31           Well Bailed Dy - No Sample Collected           12/1603         57.31           Well Bailed Dy - No Sample Collected           5/1704         dry           Well Bailed Dry - No Sample Collected           8/2304         67.11           Well Bailed Dry - No Sample Collected           11/2204         66.37           2/2305         67.11           Well Bailed Dry - No Sample Collected           11/2204         66.37           Well Bailed Dry - No Sample Collected           2/2305         67.11           Not Enough Water to Sample - TD 67.19           11/1705         67.12           Not Enough Water to Sample - TD 67.19           2/21/06         67.11           Not Enough Water to Sample - TD 67.19           8/8/00         67.12           Not Enough Water to Sample - TD 67.19           2/21/06         67.12           Not Enough Water to Sample - TD 67.19           8/8/00         6400           9/21/06         63.640           6/10/93         12,180           6/203	-	5/30/02	66.38	2,100	Uall Pailed Dry N	29 Sample Collected	<23
93/03         dry         Weil Dry - No Sample Collected           12/16/03         57.31         Well Bailed Dry - No Sample Collected           5/17/04         dry         Well Dry - No Sample Collected           8/23/04         67.11         Well Bailed Dry - No Sample Collected           11/22/04         66.37         Well Bailed Dry - No Sample Collected           2/23/05         67.11         Well Bailed Dry - No Sample Collected           8/30/05         67.11         Not Enough Water to Sample - TD 67.19           11/17/05         67.12         Not Enough Water to Sample - TD 67.19           2/21/06         67.11         Not Enough Water to Sample - TD 67.19           6/8/06         nm         Not Enough Water to Sample - TD 67.19           8/15/06         67.12         Not Enough Water to Sample - TD 67.19           8/8/03         67.12         Not Enough Water to Sample - TD 67.19           8/8/04         11,000         860         9.900         10,000           5/3/26/01         62.36         6,400         100         280         1,900           5/3/02         63.68         6,200         100         280         1,900           5/3/02         63.68         6,200         100         280         1,900	i -	8/4/03	66.91		Well Bailed Dry - No	a Sample Collected	
12/16/03         57.31         Well Bailed Dry - No Sample Collected           5/17/04         dry         Well Dry - No Sample Collected           8/23/04         67.11         Well Bailed Dry - No Sample Collected           11/22/04         66.37         Well Bailed Dry - No Sample Collected           2/23/05         67.11         Well Bailed Dry - No Sample Collected           8/30/05         67.11         Not Enough Water to Sample - TD 67.19           11/17/05         67.12         Not Enough Water to Sample - TD 67.19           2/21/06         67.12         Not Enough Water to Sample - TD 67.19           8/30/05         67.12         Not Enough Water to Sample - TD 67.19           8/15/06         67.12         Not Enough Water to Sample - TD 67.19           8/15/06         67.12         Not Enough Water to Sample - TD 67.19           8/15/06         67.12         Not Enough Water to Sample - TD 67.19           11/00         860         9.000         10.000           5/30/02         63.68         6,200         100         288         1.900           5/30/02         63.68         6,200         50         270         1.300           6/2/03         NA         Free-Product Recovery Pump in Well - No Sample Collected           9/4/03 <th></th> <td>9/3/03</td> <td>dry</td> <td></td> <td>Well Dry - No Sa</td> <td>mple Collected</td> <td></td>		9/3/03	dry		Well Dry - No Sa	mple Collected	
S/17/04         dry         Well Dry - No Sample Collected $8/23/04$ 67.11         Well Bailed Dry - No Sample Collected $1/122/04$ 66.37         Well Bailed Dry - No Sample Collected $2/23/05$ 67.11         Well Bailed Dry - No Sample Collected $8/30/05$ 67.11         Not Enough Water to Sample - TD 67.19 $11/17/05$ 67.12         Not Enough Water to Sample - TD 67.19 $2/21/06$ 67.11         Not Enough Water to Sample - TD 67.19 $2/21/06$ 67.11         Not Enough Water to Sample - TD 67.19 $6/8/06$ nm         Not Enough Water to Sample - TD 67.19 $8/15/06$ 67.12         Not Enough Water to Sample - TD 67.19 $8/15/06$ 67.12         Not Enough Water to Sample - TD 67.19 $8/15/06$ 67.12         Not Enough Water to Sample - TD 67.19 $8/15/06$ 67.02         Not Enough Water to Sample - TD 67.19 $8/15/06$ 67.12         Not Enough Water to Sample - TD 67.19 $8/15/06$ 67.10         8/00         100 $8/15/06$ 67.10         8/00         100 $8/15/002$ 63.66         6/00         10		12/16/03	57.31		Well Bailed Dry - No	o Sample Collected	
8/23/04         67.11         Well Bailed Dry - No Sample Collected           11/22/04         66.37         Well Bailed Dry - No Sample Collected           2/23/05         67.11         Well Bailed Dry - No Sample Collected           8/3/005         67.11         Not Enough Water to Sample - TD 67.19           11/17/05         67.12         Not Enough Water to Sample - TD 67.19           2/21/06         67.11         Not Enough Water to Sample - TD 67.19           66/8/06         nm         Not Enough Water to Sample - TD 67.19           66/8/06         nm         Not Enough Water to Sample - TD 67.19           66/8/06         nm         Not Enough Water to Sample - TD 67.19           8/15/06         67.12         Not Enough Water to Sample - TD 67.19           2/25/93         11,000         860         9,900           10/093         12,180         470         7,504         4,959           3/26/01         62.36         6,400         100         280         1,900           5/3/0/2         63.88         6,200         50         270         1,300           6/2/03         NA         Free-Product Recovery Pump in Well - No Sample Collected         9/4/03         65.16         307         <0.5         158         685 <tr< th=""><th></th><td>5/17/04</td><td>dry</td><td></td><td>Well Dry - No Sa</td><td>mple Collected</td><td></td></tr<>		5/17/04	dry		Well Dry - No Sa	mple Collected	
International         Interna         International         Internationali		8/23/04	67.11		Well Bailed Dry - No	o Sample Collected	
2/23/05         67.11         Well Bailed Dry - No Sample Collected           8/30/05         67.11         Not Enough Water to Sample - TD 67.19           11/17/05         67.12         Not Enough Water to Sample - TD 67.19           2/21/06         67.11         Not Enough Water to Sample - TD 67.19           6/8/06         nm         Not Enough Water to Sample - TD 67.19           8/15/06         67.12         Not Enough Water to Sample - TD 67.19           8/15/06         67.12         Not Enough Water to Sample - TD 67.19           2/25/93         11,000         860         9,900           2/25/93         12,180         470         7,504         4,959           3/26/01         62.36         6,400         100         280         1,900           5/30/02         63.68         6,200         50         270         1,300           6/2/03         NA         Free-Product Recovery Pump in Well - No Sample Collected         8/4/03         65.19         Well Bailed Dry - No Sample Collected           9/4/03         65.16         307         <0.5         158         685           5/17/04         65.54         109         14.3         87.1         280           8/23/04         66.11         29.5         5 </th <th></th> <td>11/22/04</td> <td>66.37</td> <td></td> <td>Well Bailed Dry - No</td> <td>o Sample Collected</td> <td></td>		11/22/04	66.37		Well Bailed Dry - No	o Sample Collected	
8/3005         67.11         Not Enough Water to Sample - TD 67.19           11/17/05         67.12         Not Enough Water to Sample - TD 67.19           2/21/06         67.11         Not Enough Water to Sample - TD 67.19           6/8/06         nm         Not Enough Water to Sample - TD 67.19           8/15/06         67.12         Not Enough Water to Sample - TD 67.19           8/15/06         67.12         Not Enough Water to Sample - TD 67.19           2/25/93         11,000         860         9.900           2/25/93         11,000         860         9.900           3/26/01         62.36         6,400         100         280           5/30/02         63.68         6,200         50         270         1,300           6/2/03         NA         Free-Product Recovery Pump in Well - No Sample Collected           8/4/03         65.19         Well Bailed Dry - No Sample Collected           9/4/03         65.00         538         9.6         139         466           12/18/03         65.16         307         <0.5         158         685           5/17/04         65.54         109         14.3         87.1         280           8/23/04         66.11         29.5         5		2/23/05	67.11		Well Bailed Dry - No	o Sample Collected	
11/17/05         67.12         Not Enough Water to Sample - TD 67.19           2/21/06         67.11         Not Enough Water to Sample - TD 67.19           6/8/06         nm         Not Enough Water to Sample - TD 67.19           8/15/06         67.12         Not Enough Water to Sample - TD 67.19           2/25/93         11,000         860         9,900         10,000           6/10/93         12,180         470         7,504         4,959           3/26/01         62.36         6,200         50         270         1,300           5/30/02         63.68         6,200         50         270         1,300           6/2/03         NA         Free-Product Recovery Pump in Well - No Sample Collected         8/4/03         65.19         Well Bailed Dry - No Sample Collected           9/4/03         65.00         538         9.6         139         466           12/18/03         65.16         307         <0.5         158         685           5/17/04         65.54         109         14.3         87.1         280           8/23/04         66.11         29.5         <5         40         93.6           11/22/04         66.625         38.0         6.3         62.3 <t< th=""><th></th><td>8/30/05</td><td>67.11</td><td></td><td>Not Enough Water to</td><td>Sample - TD 67.19</td><td></td></t<>		8/30/05	67.11		Not Enough Water to	Sample - TD 67.19	
2/21/06         6/8/06         nm         Not Enough Water to Sample - 1D 67.19           6/8/06         nm         Not Enough Water to Sample - TD 67.19           8/15/06         67.12         Not Enough Water to Sample - TD 67.19           2/25/93         11,000         860         9,900         10,000           6/8/06         6/10/93         12,180         470         7,504         4,959           3/26/01         62.36         6,400         100         280         1,900           5/30/02         63.68         6,200         50         270         1,300           6/2/03         NA         Free-Product Recovery Pump in Well - No Sample Collected         9/4/03         65.19         Well Bailed Dry - No Sample Collected           9/4/03         65.00         538         9.6         139         466           12/18/03         65.16         307         <0.5         158         685           5/17/04         65.54         109         14.3         87.1         280           8/23/05         66.12         22.7         <10         <10         11           5/23/05         66.25         38.0         6.3         62.3         173           8/30/05         66.08		11/17/05	67.12		Not Enough Water to	Sample - TD 67.19	
Bit Not Elongin Water to Sample - 1D 07.19           8/15/06         67.12         Not Enough Water to Sample - 1D 07.19           MW-26         2/25/93         11,000         860         9,900         10,000           MW-26         6/10/93         12,180         470         7,504         4,959           3/26/01         62.36         6,400         100         280         1,900           5/30/02         63.68         6,200         50         270         1,300           6///03         NA         Free-Product Recovery Pump in Well - No Sample Collected           9/4/03         65.19         Well Bailed Dry - No Sample Collected           9/4/03         65.16         307         <0.5	-	2/21/06	07.11		Not Enough Water to	Sample - TD 67.19	
MW-26         2/25/93         11,000         860         9,900         10,000           5/30/02         63.68         6,400         100         280         1,900           5/30/02         63.68         6,200         50         270         1,300           6/2/03         NA         Free-Product Recovery Pump in Well - No Sample Collected         8/4/03         65.19         Well Bailed Dry - No Sample Collected           9/4/03         65.00         538         9.6         139         466           12/18/03         65.16         307         <0.5         158         685           5/17/04         65.54         109         14.3         87.1         280           8/23/04         66.11         29.5         <5         40         93.6           11/22/04         66.37         19.0         <1         3.5         56.8           2/23/05         66.12         22.7         <10         <10         11           5/3/05         66.25         38.0         6.3         62.3         17/3           8/30/05         66.12         22.7         <10         <10         11           5/23/05         66.12         22.7         <10         <11	-	8/15/06	67.12		Not Enough Water to	Sample - TD 67.19	
MW-26         6/10/93         12,180         470         7,504         4,959           3/26/01         62.36         6,400         100         280         1,900           5/30/02         63.68         6,200         50         270         1,300           6/2/03         NA         Free-Product Recovery Pump in Well - No Sample Collected         8/4/03         65.19         Well Bailed Dry - No Sample Collected           9/4/03         65.00         538         9,6         139         466           12/18/03         65.16         307         <0.5         158         685           5/17/04         65.54         109         14.3         87.1         280           8/23/04         66.11         29.5         <5         40         93.6           11/22/04         66.37         19.0         <1         3.5         56.8           2/23/05         66.12         22.7         <10         <10         11           5/23/05         66.25         38.0         6.3         62.3         173           8/30/05         66.08         18.2         <5         3.2         30.4           11/17/05         66.14         41.2         <5         17		2/25/93		11.000	860	9.900	10.000
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	MW-26	6/10/93		12,180	470	7,504	4,959
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		3/26/01	62.36	6,400	100	280	1,900
6/2/03         NA         Free-Product Recovery Pump in Well - No Sample Collected           8/4/03         65.19         Well Bailed Dry - No Sample Collected           9/4/03         65.00         538         9.6         139         466           12/18/03         65.16         307         <0.5         158         685           5/17/04         65.54         109         14.3         87.1         280           8/23/04         66.11         29.5         <5         40         93.6           11/12/04         66.37         19.0         <1         3.5         56.8           2/23/05         66.12         22.7         <10         <10         11           5/23/05         66.25         38.0         6.3         62.3         173           8/30/05         66.08         18.2         <5         3.2         30.4           11/17/05         66.14          42.2         <5         17         34.8           2/21/06         65.21         13.6         <2         <2         2.9           6/8/06         66.15         2.4         <1         1.8         3.6           8/15/06         65.92         2.7         21	l I	5/30/02	63.68	6,200	50	270	1,300
8/4/03         65.19         Well Bailed Dry - No Sample Collected           9/4/03         65.00         538         9.6         139         466           12/18/03         65.16         307         <0.5         158         685           5/17/04         65.54         109         14.3         87.1         280           8/23/04         66.11         29.5         <5         40         93.6           11/22/04         66.37         19.0         <1         3.5         56.8           2/23/05         66.12         22.7         <10         <10         11           5/23/05         66.25         38.0         6.3         62.3         173           8/30/05         66.08         18.2         <5         3.2         30.4           11/17/05         66.14          <42         <5         17         34.8           2/21/06         65.21         13.6         <2         <2         2.9           6/8/06         66.15         2.4         <1         1.8         3.6		6/2/03	NA	Free-P	roduct Recovery Pump in	n Well - No Sample Col	lected
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		8/4/03	65.19		Well Bailed Dry - No	o Sample Collected	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	∦	9/4/03	65.00	538	9.6	139	466
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	₽	12/18/03	05.10	307	<0.5	158	085
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		5/1//04 8/33/04	66.11	20 5	14.3	ð/.1 40	280 02.6
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	∥ ⊦	0/23/04 11/22/04	66 37	10 0	~ ~ ~		56.8
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	∦ ⊦	2/23/05	66.12	22.7	<10	<10	11
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		5/23/05	66.25	38.0	6.3	62.3	173
11/17/05         66.14         2         <5		8/30/05	66.08	18.2	<5	3.2	30.4
2/21/06         65.21         13.6         <2	l f	11/17/05	66.14	····· 14.2	<5	17	34.8
6/8/06         66.15         2.4         <1	l t	2/21/06	65.21	13.6	<2	<2	2.9
8/15/06 65.92 2.7 21 11.1 41	l I	6/8/06	66.15	2.4	<1	1.8	3.6
	ļ [	8/15/06	65.92	2.7	21	11.1	41

# TABLE 2 GROUNDWATER MONITORING ANALYTICAL DATA (JUNE 1991 - AUGUST 2006) BLANCO NORTH FLARE PIT - SAN JUAN COUNTY, NEW MEXICO

				Analytical I	Parameters	
Monitoring Well	Sample Date	Static Water Level (ft BTOC) NMWQCC Standard:	Benzene (ug/l) 10	Toluene (ug/l) 750	Ethylbenzene (ug/l) 750	Total Xylenes (ug/l) 620
	2/26/93		9,100	470	5,700	4,900
MW-27	6/10/93		8,970	376	137	5,406
	9/30/93		13,200	402	420	3,100
	2/2/94		9,740	212	209	1,750
	5/14/94		10,100	358	180	4,500
	11/13/00	63.67	4,400	4,700	12,000	60,000
	3/26/01	63.38	420	27	260	1,600
	5/30/02	63.54	420	13	170	1,100
	6/2/03	64.41	192	<25	328	1,480
	8/4/03	63.72	116	<10	145	697
	9/3/03	64.80	137	17	274	1,240
	12/18/03	61.17	127	17	250	1,060
	5/17/04	65.74	95.9	28	317	1,600
	8/23/04	66.27	398	<25	<25	4,830
	11/22/04	66.63	<1	<1	330	1,520
	2/23/05	67.15	20.7	28	419	2,210
	5/23/05	67.41	<1	<1	<1	<2
	8/30/05	67.80	16.6	14	383	1,860
	11/17/05	67.68	26.3	4	175	1,070
	2/21/06	67.28	41.3	<5	<5	264
	6/8/06	68.12	2.0	<1	3.2	156
	8/15/06	68.57	7.0	<5	<5	<2
MW-33	6/8/06		1.1	4.2	<1	4.5
	8/15/06	71.71	30.1	37.7	<50	24.6

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BTOC = Below Top of Casing

NA = Not Applicable

"<" = Analyte not detected at or above the reporting limit (RL). Value shown is the RL.

1. Shaded data indicate exceedance of New Mexico Water Quality Control Commission's (NMWQCC) standards.

2. All detected concentrations are shown in **bold** type.

# TABLE 3GROUNDWATER MONITORING SCHEDULEBLANCO NORTH FLARE PIT - SAN JUAN COUNTY, NEW MEXICO

Monitoring Well	Monitoring Schedule	Analyses
North Flare Pit Area	<u>.</u>	
MW-2	Semiannually	Field Parameters, BTEX
MW-19	Semiannually	Field Parameters, BTEX
MW-23	Semiannually	Field Parameters, BTEX
MW-24	Semiannually	Field Parameters, BTEX
MW-26	Semiannually	Field Parameters, BTEX
MW-27	Semiannually	Field Parameters, BTEX
MW-33	Semiannually	Field Parameters, BTEX

Notes:

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1. Field Parameters include temperature, pH, dissolved oxygen and specific conductance.

2. The next quarterly sampling event is tenatively scheduled for November 2006.

3. Monitoring well MW-20 was damaged and abandoned in 2002.

BTEX: Benzene, Toluene, Ethylbenzene and Total Xylenes.

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FIGURES



AutoCAD FILE: BIancoPlantGW-SiteLO-10/06 PROJECT NUMBER: 1004918-CC06











2006 NFP Tables.xls, Figure 6

APPENDIX A AS System Operation and Monitoring Reports

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Codestar Services, Incorporated PO Box 3861 Farmington, NM 87499-3861 Office (505) 334-2791

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- To: Pam Anderson
- From:Martin NeeCC:File
- Date: November 2, 2005
- Re: Blanco North Site Visit

I stopped by the Enterprise Blanco Office to introduce myself and speak with Mr. Wesley Von Brommer who was not in. I spoke with Harold Graves. Mr. Graves told me that he has no idea how long it would take to get the electricity back on at the North Flare Pit site. He said he thought they had the wires run but still had to install rectifiers and such. Advised that I would be sampling this month.

PO Box 3861 Farmington, NM 87499-3861 Office (505) 334-2791

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- To: Jennifer Hurley, MWH
- From: Martin Nee, Lodestar Services.
- **CC:** File
- Date: January 16, 2006
- Re: Blanco North

#### 1/16/05 1100 – 1630 hrs Site Visit.

Picked up the compressor and brought it to Western Tool Crib. They advised that the water level did not get high enough to damage the compressor. It didn't get in the controls or in the air filters, and apparently water in the electric motor won't hurt it as long as it is dried. We started the compressor and it appears to run fine. I purchased and replaced 50' of 3/8" 300 PSI air line. The compressor building was emptied and the dried mud shoveled out. The compressor was rewired, started, and ran for 10 minutes at approximately 20 PSI and 7 SCFM.. The compressor was turned off and the clock reset to operate from 2400 hrs to 1200 hrs daily. The meter reads 40785 minutes. I will check on the compressor 1/17/05.

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## Memo

To: Jennifer Hurley, MWH
From: Martin Nee, Lodestar Services.
CC: File
Date: January 18, 2006

**Re:** North Flare Pit

#### 1/18/06 0905 hrs, Site Visit.

Visited site while compressor was running.

Previous meter reading on 011606 at 1600 hrs: 40785

Latest meter reading on 011806 at 0905 hrs: 42009

Compressor is running at 14 psi, and 7 scfm

Sparge system operated 1224 minutes or 20.4 hrs

System appears to be operating properly. Will begin Semi Monthly O&M on 013106.

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- To:Jennifer HurleyFrom:Martin Nee
- **CC:** File
- Date: January 31, 2006
- Re: Blanco North

#### 1/31/05 0841 O&M site visit.

Well	Depth to	pН	Temp	Conductivity	Do	Pressure
	Water from TOC		F	umhos/cm	mg/L	Inches Water
	Feet					vater
MW-23	57.13	6.10	54.8	>15650	0.98	0
MW-24	67.12	NA	NA	NA	na	0.06
MW-27	67.64	6.41	58.2	6770	1.02	0.16
MW-19	NA	6.55	58.2	112470	2.47	5.6
MW-26	65.14	6.42	58.7	6230	3.72	<10

System Pressure 14psi, flow 7.0 scfm

The system operated 152 hrs since 1/18/06, approximately 11 hrs per day.

PO Box 3861 Farmington, NM 87499-3861 Office (505) 334-2791

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- To: Jennifer Hurley
- From:Martin NeeCC:FileDate:February 15, 2006
- Re: Bianco North

#### 1/31/05 0841 O&M site visit.

Pressure Inches Water
0
0.15
0.40
5.5
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System Pressure 10 psi, flow 7.0 scfm

The system operated 178 hrs since 1/31/06, approximately 12 hrs per day.

Codestar Services, Incorporated PO Box 3861 Farmington, NM 87499-3861 Office (505) 334-2791

## Memo

- To: Jennifer Hurley, MWH
- From: Martin Nee, Lodestar Services.

cc: File

Date: February 20, 2006

- Re: North Flare Pit
- 022006 0731 hrs, Site Visit. Turned system off for sampling on 022106

PO Box 3861 Farmington, NM 87499-3861 Office (505) 334-2791

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To: Jennifer Hurley

From:	Martin Nee
CC:	File
Date:	March 1, 2006
Re:	Blanco North

#### 3/1/06 1001 O&M site visit.

Well	Depth to Water from TOC	Depth to pH Temp Condu Water from	Conductivity	Do	Pressure	
		TOC	Ł	umhos/cm	mg/L	Inches Water
	Feet					
MW-23	57.30	6.24	63.3	16240	0.88	0
MW-24	67.11	NA	NA	NA	na	0.10
MW-27	67.77	6.54	68.8	12060	1.17	0.21
MW-19	na	6.65	67.7	17500	2.80	7.0
MW-26	65.54	6.71	67.9	8470	5.41	<10

System Pressure 8 psi, flow 7.5 scfm

The system operated 161 hrs since 2/15/06, approximately 11.5 hrs per day.

Lodestar Services, Incorporated

PO Box 3861 Farmington, NM 87499-3861 Office (505) 334-2791

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To:	Jennifer Hurley		
From:	Martin Nee		

CC:	File
Date:	March 15, 2006
Re:	Blanco North

#### 3/15/06 0900 O&M site visit.

Well	Depth to	Depth to pH Temp C	Conductivity	Do	Pressure	
	Water from TOC		F	umhos/cm	mg/L	Inches Water
	Feet					
MW-23	57.28	6.22	64.1	17160	0.87	0
MW-24	67.11	NA	NA	NA	na	0.15
MW-27	67.75	6.51	67.2	12380	1.49	0.17
MW-19	NA	6.65	67.1	18640	2.11	7.0
MW-26	65.78	6.63	68.1	8740	5.02	<10

System Pressure 8 psi, flow 7.5 scfm

The system operated 175 hrs since 3/1/06, approximately 12 hrs per day.

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To: Jennifer Hurley

From:	Martin Nee
CC:	File
Date:	April 3, 2006
Re:	Blanco North

#### 4/03/06 0900 O&M site visit.

Well	Depth to Water from TOC	Depth to pH Temp Water from F TOC	Conductivity umhos/cm	Do mg/L	Pressure Inches Water	
	Feet					
MW-23	57.40	6.27	58.8	17980	1.03	0
MW-24	67.11	NA	NA	NA	na	0.05
MW-27	67.85	6.56	61.7	13720	089	0.725
MW-19	NA	6.68	60.5	19260	2.04	4.0
MW-26	64.67	6.76	61.2	10130	4.76	<10

System Pressure 10 psi, flow 8 scfm

The system operated 210 hrs since 3/15/06, approximately 12 hrs per day.

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To: Jennifer Hurley

From:	Martin Nee
CC:	File
Date:	April 18, 2006
Re:	Blanco North

#### 4/03/06 0900 O&M site visit.

Well	Depth to	pН	Temp	Conductivity	Do	Pressure
	Water from TOC	Water from F TOC	umhos/cm	mg/L	Inches Water	
	Feet					
MW-23	57.39	6.54	67.2	14420	0.75	0
MW-24	67.10	NA	NA	NA	na	0.08
MW-27	67.89	6.69	69.4	8030	0.79	0.04
MW-19	NA	6.95	71.5	11870	2.70	1.0
MW-26	64.80	7.27	70.2	6900	5.66	0.4

System Pressure Opsi, flow 0 scfm System off for approximately 1 hr.

The system operated 180 hrs since 4/03/06, approximately 12 hrs per day.

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From:	Martin Nee
CC:	File
Date:	April 28, 2006
Re:	Blanco North

#### 4/28/06 1039 O&M site visit.

Well	Depth to Water from TOC	рН	Temp F	Conductivity umhos/cm	Do mg/L	Pressure Inches Water
MW-23	57.24	6.64	67.2	>20,000	0.92	0
MW-24	67.11	NA	NA	NA	na	0.55
MW-27	67.90	6.67	73.4	15,380	0.83	0.04
MW-19	NA	6.64	69.5	>20,000	2.99	6.0
MW-26	64.92	6.91	67.5	1,550	5.20	9.5

System Pressure 10 psi, flow 7.5 scfm.

The system operated 115 hrs since 4/18/06, approximately 11.53 hrs per day.

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To: Jennifer Hurley

From:	Martin Nee			
CC:	File			
Date:	May 16, 2006			
Re:	Blanco North			

#### 5/16/06 0820 O&M site visit.

Well	Depth to Water from TOC Feet	рН	Temp F	Conductivity umhos/cm	Do mg/L	Pressure Inches Water							
							MW-23	57.43	6.58	63.3	>20,000	0.85	0
							MW-24	67.11	NA	NA	NA	na	0.05
MW-27	68.00	6.63	64.6	14390	0.70	0.6							
MW-19	NA	6.70	65.1	>20,000	3.32	5.7							
MW-26	64.94	6.74	63.4	10390	6.03	7.95							

System Pressure 4 psi, flow 7.0 scfm.

The system operated 209 hrs since 4/28/06, approximately 11.66 hrs per day.

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To: Jennifer Hurley

From:	Martin Nee			
CC:	File			
Date:	May 31, 2006			
Re:	Blanco North			

#### 5/31/06 0953 O&M site visit.

Well	Depth to Water from TOC Feet	рН	Temp F	Conductivity umhos/cm	Do mg/L	Pressure Inches Water							
							MW-23	57.44	6.48	66.2	17480	0.96	0
							MW-24	67.11	NA	NA	NA	na	0.21
MW-27	68.05	6.63	68.3	9710	1.05	0.5							
MW-19	NA	6.62	68.8	14040	2.92	4.0							
MW-26	65.71	6.78	65.5	6860	5.41	>10							

#### System Pressure 6 psi, flow 8.0 scfm.

The system operated 160 hrs since 5/16/06, approximately 10.7 hrs per day. Local Enterprise construction may have had power off for some period. There was 0.84 inches of water in MW-24, probably condensate in the end cap. No physical characteristics were measured.
PO Box 3861 Farmington, NM 87499-3861 Office (505) 334-2791

# Memo

To: Jennifer Hurley

From:	Martin Nee		
CC:	File		
Date:	June 15, 2006		
Re:	Blanco North		

#### 6/15/06 0853 O&M site visit.

Well	Depth to	рН	Temp	Conductivity	Do	Pressure
	Water from TOC		F	umhos/cm	mg/L	Inches Water
	Feet					
MW-23	57.27	na	65.2	16830	1.02	0
MW-24	67.11	na	na	na	na	0.05
MW-27	68.07	na	68.3	11820	1.07	0.15
MW-19	NA	na	68.2	15960	2.10	2.9
MW-26	65.59	na	67.1	8050	4.25	9.9

System Pressure 4 psi, flow 8.5 scfm.

The system operated 74 hrs since 5/31/06, an average of 4.93 hrs per day. The system was off from 5/31/06 to 6/9/06 for groundwater sampling. Local Enterprise construction may have had power off for some period as the clock read 2330 hrs during the site visit. The clock was reset. There was not enough water in MW-24 to determine physical characteristics.

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- To: Jennifer Hurley
- From: Martin Nee
  CC: File
- Date: June 30, 2006
- Re: Blanco North

### 6/30/06 0733 O&M site visit.

Depth to	рН	Temp	Conductivity	Do	Pressure
Water from TOC		F	umhos/cm	mg/L	Inches Water
Feet					
57.24	6.64	65.5	17630	0.91	0
67.11	na	na	na	na	0.5
67.90	6.61	67.1	12210	0.86	0.03
NA	6.87	66.9	15970	3.07	6.2
64.92	6.92	66.8	7990	5.42	>10
	Depth to Water from TOC Feet 57.24 67.11 67.90 NA 64.92	Depth to Water from TOC         pH           Feet         -           57.24         6.64           67.11         na           67.90         6.61           NA         6.87           64.92         6.92	Depth to Water from TOC         pH         Temp           Feet         F           57.24         6.64         65.5           67.11         na         na           67.90         6.61         67.1           NA         6.87         66.9           64.92         6.92         66.8	Depth to Water from TOCpHTempConductivity umhos/cmFeetFumhos/cm57.246.6465.51763067.11nanana67.906.6167.112210NA6.8766.91597064.926.9266.87990	Depth to Water from TOCpHTemp FeepConductivity umhos/cmDoFeet $F$ umhos/cmmg/L57.24 $6.64$ $65.5$ $17630$ $0.91$ $67.11$ nananana $67.90$ $6.61$ $67.1$ $12210$ $0.86$ NA $6.87$ $66.9$ $15970$ $3.07$ $64.92$ $6.92$ $66.8$ $7990$ $5.42$

System Pressure 4 psi, flow 8.5 scfm.

The system operated 178 hrs since 6/15/06, an average of 11.84 hrs per day. There was not enough water in MW-24 to determine physical characteristics.

PO Box 3861 Farmington, NM 87499-3861 Office (505) 334-2791

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- To: Jennifer Hurley
- From:Martin NeeCC:FileDate:July 17, 2006Re:Blanco North

#### 7/17/06 1453 O&M site visit.

Well	Depth to	pН	Temp	Conductivity	Do	Pressure
	Water from TOC		F	umhos/cm	mg/L	Inches Water
	Feet					
MW-23	57.53	6.01	69.6	>2000	0.79	0
MW-19	na	6.87	77.2	17090	na	0.15
MW-26	64.92	6.92	66.8	7990	5.42	>10
MW-27	67.72	6.32	. 72.9	11870	0.68	0.23
MW-24	67.11	na	na	na	na	0.10

System Pressure: 0 psi, flow : 0 scfm.

.

The system operated 201 hrs since 6/30/06, an average of 11.82 hrs per day. There was not enough water in MW-24 to determine physical characteristics.

PO Box 3861 Farmington, NM 87499-3861 Office (505) 334-2791

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To: Jennifer Hurley

From:	Martin Nee
CC:	File
Date:	July 31, 2006
Re:	Blanco North

#### 7/31/06 1013 O&M site visit.

Well	Depth to	pН	Temp	Conductivity	Do	Pressure
	Water from TOC		F	umhos/cm	mg/L	Inches Water
	Feet					
MW-23	57.29	6.48	66.5	17350	0.59	0
MW-19	na	6.90	71.3	15510	2.59	5.30
MW-26	65.36	6.87	67.8	7640	5.33	>10
MW-27	68.20	6.69	72.6	6200	1.40	0.4
MW-24	67.13	na	na	na	na	0.05

System Pressure: 7 psi, flow : 8 scfm.

The system operated 162 hours since 7/17/06, an average of 11.57 hrs per day. There was not enough water in MW-24 to determine physical characteristics.

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- To: Jennifer Hurley
- From:Martin NeeCC:FileDate:August 15, 2006Re:Blanco North

### 8/15/06 0903 O&M site visit.

Well	Depth to	pН	Temp	Conductivity	Do	Pressure
	Water from TOC		F	umhos/cm	mg/L	Inches Water
	Feet					
MW-23	57.42	6.53	65.5	18680	0.67	0
MW-19	na	6.87	67.5	15560	2.88	4.4
MW-26	65.39	6.84	66.3	7660	4.92	6.5
MW-27	68.25	6.51	71.5	11020	1.19	0.06
MW-24	67.1	na	na	na	na	0.05

System Pressure: 6 psi, flow : 7.5 scfm.

The system operated 163 hours since 8/31/06, an average of 11.65 hrs per day. There was not enough water in MW-24 to determine physical characteristics. Turned system off for 8/15/06 samping.

PO Box 3861 Farmington, NM 87499-3861 Office (505) 334-2791

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- To: Jennifer Hurley
- From:Martin NeeCC:FileDate:September 18, 2006Re:Blanco North

#### 09/18/06 0921 hrs O&M site visit.

Well	Depth to	pН	Temp	Conductivity	Do	Pressure
	Water from TOC		F	umhos/cm	mg/L	Inches Water
	Feet					
MW-23	57.46	6.87	55.6	14520	0.49	0
MW-19	na	7.39	59.2	15220	3.9	4.8
MW-26	65.43	7.37	65.1	7400	5.02	8.8
MW-27	68.27	6.97	65.1	11100	1.8	0.06
MW-24	67.13	na	na	na	na	0.03

System Pressure: 6 psi, flow : 8 scfm.

The system operated 150 hours since 9/05/06, an average of 11.57 hrs per day. There was not enough water in MW-24 to determine physical characteristics. Recovered 0.98 gallons of product since 9/11/06. Changed pump to cycyle for 10 minutes once per day on 9/19/06.

PO Box 3861 Farmington, NM 87499-3861 Office (505) 334-2791

C

### PRODUCT RECOVERY/WATER LEVEL DATA

Project Name_	San Juan Basin Ground Water	Project No.	30001.0
<b>Project Manager</b>	MJN		
Client Company	MWH	Date	9/11/06
Site Name	Blanco NFP		

Well	Time	Depth to Product (ft)	Depth to Water (ft)	Product Thickness	Volume Removed
MW-32	1405	58.17	66.9	8.73	55.58

#### Comments

DTP in drum is 2.01 BTOD, 0.59 feet of product accumulated since 9/8/06. This is approximately 11.58 gallons. Pump pressure is 55 psi, tank pressure is 2500 psi. Pump time is 1 hr 3 minutes. Pump ran approximately 20 minutes since 9/8/06. Reset controller to pump 10 minutes three times per day.

Signature: Martin J. Nee Date: September 11, 2006

APPENDIX B Groundwater Sampling Field Forms

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Groundwater Sampling Field Forms – November 2005

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## Codestar Services, Incorporated PO Box 3861 Farmington, NM 87499-3861 Office (505) 334-2791

## WATER LEVEL DATA

Project Name_	San Juan Basin Ground Water	Project No.	30001.0
<b>Project Manager</b>	MJN		
<b>Client Company</b>	MWH	Date	November 17, 2005
Site Name	Blanco		

Well	Time	Depth to Product (ft)	Depth to Water (ft)	Comments
MW-2	0913	-		well is dry TD 58.76
MW-19		-		collected grab sample, no water level
MW-23		-	57.29	well purged and sampled
MW-24		-	67.12	not enough water in well to sample TD 67.19
MW-26		-	66.14	well purged and sampled
MW-27		-	67.68	well purged and sampled
		· · · · · · · · · · · · · · · · · · ·		

Comments: The area around compressor house and MW-19, 24, 26, 27 flooded and dried out prior to this visit. Water seeped into the compressor house and partially submerged the two air-sparge compressors as well as the vacuum diaphragm pump. There remains no electricity at the site.

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Martin J. Nee

Date: November 17, 2005

Project Man	ager atern	MJN aDer	oth to Produ	Date11,	- / <u>17/05</u> _ Product T	Start Time hicknessn	e <u>1210</u> a Mea	Weather <u>sunny 50s</u> suring Point <u>TOC</u>
Nater Colur	nn Heigh	t <u>na</u> We	ll Dia	2"			_	
Sampling M	ethod: Si Be	ubmersible Pun ottom Valve Ba	np □ iler x	Centrifugal Double Che	Pump	Peristaltic Bailer 🗆 S	Pump □ tainless-St	Other
Criteria: 3	to 5 Casi	ng Volumes of	Water Rem	Water Volum	lization of	Indicator Pai	rameters >	Contraction of bail dry_
Gal/ft >	<u>t of wat</u>	er	Gallons			Ounces		Gal/ <b>oz</b> to be removed
na	a x .16		na x 3			na x3		na oz
Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac (ounces)	Comments/ Flow rate
1220	6.78	7260	58.7				4	grey with black suspended organic material and sedimen hydrocarbon odor
Final:		C Tomo	EK OPD		il. Altr:	Ferrous		Comments/EleviDote
1220	6.78 7	7260 58.7					<u>4</u>	grey with black suspended organic
								hydrocarbon odor
COMMENT Samples are	S: Collect unprese	ted grab sampl erved.	le without p	ourging due to	o well stru	ictural proble	ems. Could	d not measure water leve
NSTRUME	NTATION	I: pH Meter DO Mo	<b>X</b> nitor			Tempe Other	erature Met	er x
Water Dispo	C sal <u>Ri</u>	Conductivity Me	ter <b>X</b> Iple ID <u>Blar</u>	nco NFP MW	<u>-19</u> Samp	ble Time12	2 <u>35_11/17/0</u>	<u>5</u>
DIEX VO	us Aikal	unity IDS Cat	ions Anion	is initrate N	sitrite Ami	nonia 1 K.N I	NIMWQCC	ivietais 1 otal Phosphorus
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   Project No.: <u>3</u>	30001.0		Projec	t Name: <u>Blan</u>	co NFP		lient: <u>MWH</u>	I/EL Paso	
Location:_BI	anco NFI	P Well	No:M	W-23		_ C	evelopment	t <u>Sampling</u>	
Project Mana	ager	MJN		Date11/	17/05	Start Tim	e0931_	Weathersunny 40s	
Depth to Wa	ter 57	7.29 Dep	th to Produ	uct na	Product T	hickness n	a Meas	suring Point TOC	
Water Colum	n Height	<u></u> Dop	n io i rouc	л" . Л"			<u> </u>		
	mneigni	<u>3.50</u> Ven	Dia						
Sampling Me	ethod: Su	ubmersible Pum		Centrifugal	Pump	Peristaltic	Pump	Other	
Criteria: 3 t	to 5 Casir	ng Volumes of V	Vater Rem	ioval X stabi	lization of	Indicator Pa	rameters X	Other or bail dry	
	4		Callana	Water Volum	ie in well	<u></u>		Calloz to be removed	
		er				Ounces Gal/oz to be removed			
9.5	co. x o		0.21 83	)				18.05 gai	
·		L							
Time	nН	<u>SC</u>	Temn	ORP		Turbidity	Vol Evac	Comments/	
(military)	(su)	(umhos/cm)	(°F)	(millivolts)	(ma/L)	(NTU)	(gallons)	Flow rate	
0027	6.00	14040	<u> </u>		(	(	4		
0937	0.93	14040	00.Ö					Clear, suusy, no odor	
	6.85	14450	57.8				4	grey, HC odor, sheen, sudsy	
	6.93	14700	56.8				7.4	grey, HC odor, sheen, sudsy, well is bailing down	
<u>0957</u>	7.08	14870	57.1				7.71	grey, HC odor, sheen, sudsy, well has bailed down	
<b>Final:</b> Time	i S	C Temp	Eh-ORP	D.O.	rbidity	Ferrous Iron V	ol Evac.	Comments/Flow Rate	
<u>0957</u> 7	<b>'.08</b> 1	4870 57.1			standing and a second sec		7.71 g	irey, HC odor, sheen, sudsy, well has bailed down	
COMMENTS	6: Sample	es are unpreser	ved					· · · · · · · · · · · · · · · · · · ·	
INSTRUMEN	NTATION	I: pH Meter	Х		<u>_</u>	Temp	erature Mete	er x	
		DO Mor	hitor		<u> </u>	Other	<u> </u>		
	С	onductivity Met	er X						
Water Dispo	sal Ri	o Vista Sam	ple ID Bla	nco NFP MW	-23 Sami	ole Time 10	000 11/17/08	5	
BTEX VOC	Cs Alkal	inity TDS Cati	ons Anior	ns Nitrate N	litrite Am	monia TKN	NMWQCC	Metals Total Phosphorus	
MS/MSD		BD_		BD	Name/Tin	ne		TB <u>171105tb01</u>	
		······				<u>i</u>		· · · · · · · · · · · · · · · · · · ·	

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Vater Colur ampling M	nn Height ethod: Si	. <u>1.46</u> Wel	l Dia	_4"				
ampling M	ethod: Si	······································						
riteria: 3		ubmersible Purr	np 🗌	Centrifugal	Pump 🔲	Peristaltic	Pump 🔲	Other
riteria: 3	В	ottom Valve Bai	ler <b>x</b>	Double Che	ck Valve I	Bailer 🗆 🛛 S	tainless-Ste	eel Kemmerer
monu. o	to 5 Casii	ng Volumes of V	Nater Rem	oval X stabil	lization of	Indicator Pa	rameters X	Other_or bail dry_
				Water Volum	ne in Well			
Gal/ft >	tt of wat	er	Gallons			Ounces		Gal/oz to be removed
1.4	6 x <i>.</i> 65		0.95 x 3			121 x 3		364 oz
Time	рН	SC	Temp	ORP	D.O.	Turbidity	Vol Evac	Comments/
(military)	(su)	(umhos/cm)	(°F)	(millivolts)	(mg/L)	(NTU)	(oz.)	Flow rate
143	6.73	5330	62.8				34	grey, hydrocarbon odor
	6.84	4960	63.0				58	grey, hydrocarbon odor, well is bailing down
	6.82	4760	62.3				74	grey, hydrocarbon odor
	6.84	4720	61.3				88	grey, hydrocarbon odor
	6.92	4720	61.5				96	grey, hydrocarbon odor
200	6.93	4730	61.4				104	grey, hydrocarbon odor, well has bailed dry
·								
inal:				D Q F		Ferrous		
<u>200</u>	6.93 4	730 61.4				iiiiii v	104	grey, hydrocarbon odo
								well has bailed dry
OMMENT	S:	· · · · · · · · · · · · · · · · · · ·						
ISTRUME	NTATION	pH Meter	X			Tempe	erature Met	er x
	~	DO Moi	nitor			Other		
later Dispo	usal Ri	onuuctivity Met o Vista Sam	er <b>x</b> ble ID Blar	1co NFP MW	-26 Samr	ole Time	11/17/05 1	205
TEX VO(	ls Alkal	inity TDS Cati	ons Anion	is Nitrate N	itrite Amr	nonia TKN 1	MWQCC	<u>205                                    </u>
		BD		חם	Namo/Ti~			TD 171105+601

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FP         W           MJN         67.68         Date           67.68         Date         Date           ht         1.6         W           Submersible Pu         Bottom Valve B         Bottom Valve B           sing Volumes of         ater         Control           ater         SC         (umhos/cm)           2590         2610         Control	rell INO:M epth to Product fell Dia ailer x of Water Rem Gallons $0.256 \times 3$ Temp ) (°F) 59.8 60.2 59.7	vv-27 Date <u>8/3</u> uct <u>na</u> 2" Centrifugal Double Che noval <b>X</b> stab Water Volur 3 ORP (millivolts)	Product The Pump □ Pump □ eck Valve B lization of the in Well D.O. (mg/L)	Start Time Start Time nicknessn Peristaltic Bailer  S Indicator Pa Ounces 33 x 3 Turbidity (NTU)	Pevelopment e1059 aMeas Pump □ tainless-Stea rameters X Vol Evac. (ounces) 20 30 38	Sampling         Weather_sunny 50s         wring PointTOC         Other □         el Kemmerer □         Other_or bail dry_         Gal/oz to be removed         98         Comments/ Flow rate         dark grey, HC odor, sheen         dark grey, HC odor, sheen, well is bailing down         dark grey, HC odor
MJN           67.68         Data           ht         1.6         W           Submersible Pu         Bottom Valve B         Bottom Valve B           sing Volumes of         ater         C           ater         SC         (umhos/cm)           2590         2610         C	epth to Produ 'ell Dia aump □ Bailer x of Water Rem Gallons 0.256 x 3 0.256 x 3 1 Temp (°F) 59.8 60.2 59.7	Date8/3 uctna 2" Centrifugal Double Che noval X stab Water Volur 3 ORP (millivolts)	0/05_ Product Th Pump □ eck Valve B lization of ne in Well D.O. (mg/L)	Start Time nickness <u>n</u> Peristaltic Bailer S Indicator Pa Ounces 33 x 3 Turbidity (NTU)	e1059 aMeas Pump □ tainless-Stea rameters X Vol Evac. (ounces) 20 30 38	Weather_sunny 50s         uring PointTOC         Other □         el Kemmerer □         Other_or bail dry_         Gal/oz to be removed         98         Comments/ Flow rate         dark grey, HC odor, sheen         dark grey, HC odor, sheen, well is bailing down         dark grey, HC odor
67.68         Diamon constraints           ht         1.6         W           Submersible Pu         Bottom Valve B         Bottom Valve B           sing Volumes of ater         Image: Constraint of the second s	epth to Produ /ell Dia Jump □ Bailer x of Water Rem Gallons 0.256 x 3 0.256 x 3 0.256 x 3 60.2 59.8 60.2 59.7	uct <u>na</u> <u>2</u> " Centrifugal Double Che noval <b>X</b> stab Water Volur 3 ORP (millivolts)	Product The Pump Pump eck Valve Ellization of ne in Well D.O. (mg/L)	Peristaltic Peristaltic Bailer 🗆 S Indicator Pa Ounces 33 x 3 Turbidity (NTU)	a Meas Pump □ tainless-Stea rameters X Vol Evac. (ounces) 20 30 38	Other Other Other Other Other <u>or bail dry</u> Gal/oz to be removed 98 Comments/ Flow rate dark grey, HC odor, sheen dark grey, HC odor, sheen, well is bailing down
ht <u>1.6</u> W Submersible Pu Bottom Valve B sing Volumes o ater (umhos/cm) 2590 2610 2620	rell Dia ump □ Bailer x of Water Rem Gallons 0.256 x 3 0.256 x 3 59.8 60.2 59.7	2" Centrifugal Double Che noval X stab Water Volur 3 ORP (millivolts)	Pump eck Valve E lization of ne in Well D.O. (mg/L)	Peristaltic Bailer 🗆 S Indicator Pa Ounces 33 x 3 Turbidity (NTU)	Pump tainless-Ster rameters X Vol Evac. (ounces) 20 30 30	Other  Other  Other  Other Other  Other or bail dry Other or bail dry Gal/oz to be removed 98 Comments/ Flow rate dark grey, HC odor, sheen dark grey, HC odor, sheen, well is bailing down dark grey, HC odor
Submersible Pu Bottom Valve E sing Volumes o ater (umhos/cm) 2590 2610 2620	ump □ Bailer x of Water Rem Gallons 0.256 x 3 (°F) 59.8 60.2 59.7	Centrifugal Double Che noval X stab Water Volur 3 ORP (millivolts)	Pump eck Valve F lization of ne in Well D.O. (mg/L)	Peristaltic Bailer S Indicator Pa Ounces 33 x 3 Turbidity (NTU)	Pump □ tainless-Ster rameters X Vol Evac. (ounces) 20 30 30	Other el Kemmerer Other_ <u>or bail dry</u> Gal/oz to be removed 98 Comments/ Flow rate dark grey, HC odor, sheen dark grey, HC odor, sheen, well is bailing down
Bottom Valve E sing Volumes c ater SC (umhos/cm) 2590 2610 2620	Bailer x of Water Rem Gallons 0.256 x 3 Temp (°F) 59.8 60.2 59.7	Double Che noval X stab Water Volur 3 ORP (millivolts)	Eck Valve I lization of ne in Well D.O. (mg/L)	Bailer □ S Indicator Pa Ounces 33 x 3 Turbidity (NTU)	tainless-Ster rameters X Vol Evac. (ounces) 20 30 30	el Kemmerer Other <u>or bail dry</u> Gal/oz to be removed 98 Comments/ Flow rate dark grey, HC odor, sheen dark grey, HC odor, sheen, well is bailing down dark grey HC odor
sing Volumes c ater (umhos/cm) 2590 2610 2620	of Water Rem Gallons 0.256 x 3 Temp (°F) 59.8 60.2 59.7	ORP (millivolts)	D.O. (mg/L)	Indicator Pa Ounces 33 x 3 Turbidity (NTU)	Vol Evac. (ounces) 20 30 38	Other <u>or bail dry</u> Gal/oz to be removed 98 Comments/ Flow rate dark grey, HC odor, sheen dark grey, HC odor, sheen, well is bailing down dark grey, HC odor
ater SC (umhos/cm) 2590 2610 2620	Gallons 0.256 x 3 Temp (°F) 59.8 60.2 59.7	Water Volur 3 ORP (millivolts)	D.O. (mg/L)	Ounces 33 x 3 Turbidity (NTU)	Vol Evac. (ounces) 20 30 38	Gal/oz to be removed 98 Comments/ Flow rate dark grey, HC odor, sheen dark grey, HC odor, sheen, well is bailing down dark grey, HC odor
ater SC (umhos/cm) 2590 2610 2620	Gallons 0.256 x 3 Temp (°F) 59.8 60.2 59.7	3 ORP (millivolts)	D.O. (mg/L)	Ounces 33 x 3 Turbidity (NTU)	Vol Evac. (ounces) 20 30 38	Gal/oz to be removed 98 Comments/ Flow rate dark grey, HC odor, sheen dark grey, HC odor, sheen, well is bailing down dark grey, HC odor
SC (umhos/cm) 2590 2610 2620	0.256 x 3 Temp (°F) 59.8 60.2 59.7	3 ORP (millivolts)	D.O. (mg/L)	33 x 3 Turbidity (NTU)	Vol Evac. (ounces) 20 30 38	98 Comments/ Flow rate dark grey, HC odor, sheen dark grey, HC odor, sheen, well is bailing down dark grey, HC odor
SC (umhos/cm) 2590 2610 2620	Temp (°F) 59.8 60.2 59.7	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (ounces) 20 30 38	Comments/ Flow rate dark grey, HC odor, sheen dark grey, HC odor, sheen, well is bailing down dark grey, HC odor
SC (umhos/cm) 2590 2610 2620	Temp (°F) 59.8 60.2 59.7	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (ounces) 20 30 38	Comments/ Flow rate dark grey, HC odor, sheen dark grey, HC odor, sheen, well is bailing down dark grey, HC odor
(umhos/cm) 2590 2610 2620	) (°F) 59.8 60.2 59.7	(millivolts)	(mg/L)	(NTU)	(ounces) 20 30 38	Flow rate dark grey, HC odor, sheen dark grey, HC odor, sheen, well is bailing down dark grey, HC odor
2590 2610 2620	59.8 60.2 59.7				20 30 38	dark grey, HC odor, sheen dark grey, HC odor, sheen, well is bailing down dark grey, HC odor
2610 2620	60.2 59.7				30	dark grey, HC odor, sheen, well is bailing down dark grey, HC odor
2620	59.7				38	dark grev HC odor
						sheen, well has baile down
SC Temp	Eh-OBP		irbidity	Ferrous	ol Evac	omments/Elow Bate
2620 59.7					38 d	ark grey, HC odor,
					S	heen, well has bailed
					d distant	lown
ples are unpre	served. Red	cent flooding	around the	e monitoring	wells was a	above the top of protect
casing is appr	oximately 12	2 inches abov	e ground a	and high wat	er marks on	the guard posts indicate
iches. The anr	nular space v	was tilled with	water as	was the baile	er suspende	d in the well. The water
ras balled out.						
N: pH Mete	er X			Temp	erature Mete	er x
DO N	<i>lonitor</i>			Other		
Conductivity M	leter X	· · · · · · · · · · · · · · · · · · ·				
<u> Rio Vista_</u> Sa	ample ID <u>Bla</u>	Inco NFP MW	<u>-27</u> Samp	ole Time <u>1</u> 1	25 11/17/05	)
alinity TDS C	ations Anios	ns Nitrate I	Nitrite Am	nonia TKN 1	NMWQCC I	Metals Total Phosphorus
BI	D	BD	Name/Tin	ne		_ TB_ <u>171105tb01</u>
	2620       59.7         oles are unprecasing is approximation of the second stress. The annotation of the second stress and the second stress of the seco	2620       59.7         oles are unpreserved. Real casing is approximately 12 iches. The annular space was bailed out.         one of the interest	2620       59.7         oles are unpreserved. Recent flooding casing is approximately 12 inches above inches. The annular space was filled with vas bailed out.         onches. The annular space was filled with vas bailed out.         onches. The annular space was filled with vas bailed out.         onches. The annular space was filled with vas bailed out.         onches. The annular space was filled with vas bailed out.         onches. The annular space was filled with vas bailed out.         onches. The annular space was filled with vas bailed out.         onches. The annular space was filled with vas bailed out.         onches. The annular space was filled with vas bailed out.         onches. The annular space was filled with vas bailed out.         ON:       pH Meter X	2620       59.7         oles are unpreserved. Recent flooding around the casing is approximately 12 inches above ground a taches. The annular space was filled with water as the vas bailed out.         DN:       pH Meter X         DO Monitor         Conductivity Meter X         Rio Vista       Sample ID_Blanco NFP MW-27         Sample ID_Blanco NFP MW-27       Sample alinity TDS Cations         BD	2620       59.7         Oles are unpreserved. Recent flooding around the monitoring casing is approximately 12 inches above ground and high wat inches. The annular space was filled with water as was the baile vas bailed out.         DN:       pH Meter       X         DO Monitor	2620       59.7       38       d         coles are unpreserved. Recent flooding around the monitoring wells was a casing is approximately 12 inches above ground and high water marks on oches. The annular space was filled with water as was the bailer suspender vas bailed out.         DN:       pH Meter       X

**Groundwater Sampling Field Forms – February 2006** 

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PO Box 3861 Farmington, NM 87499-3861 Office (505) 334-2791

### WATER LEVEL DATA

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Project Name_	San Juan Basin Ground Water	Project No.	30001.0
Project Manager	MJN		
Client Company	MWH	Date	February 21, 2006
Site Name	Blanco	-	

Well	Time	Depth to Product (ft)	Depth to Water (ft)	Comments
MW-2	0854	-	-	well is dry TD 58.76
MW-19		-		collected grab sample, no water level
MW-23		-	57.25	well purged and sampled
MW-24		-	67.11	not enough water in well to sample TD 67.19
MW-26		-	65.21	well purged and sampled
MW-27		-	67.28	well purged and sampled

#### **Comments:**

Signature: Martin J. Nee Date:

February 21, 2006

Project No.:3	30001.0		Project	t Name: <u>Bl</u>	lanco NFP	c	lient: <u>MWF</u>	I/EL Paso
Location:_Bl	anco NF	P We	ell No: <u>M</u>	N-19		D	evelopmen	t <u>Sampling</u>
Project Mana	ager	MJN		Date (	022106	Start Time	e <u>1156</u>	Weather <u>sunny 40s</u>
Depth to Wa	ter	<u>a</u> De	pth to Produ	ict <u>na</u>	_ Product T	hickness <u>n</u>	<u>a M</u> ea	suring Point <u>TOC</u>
Water Colum	nn Heigh	t <u>na</u> We	ell Dia	2"				
Sampling Me	ethod: S	ubmersible Pu	mp 🗖	Centrifug	al Pump 📋	Peristaltic	Pump 🔲	Other
0.44-3-0.0	B	ottom Valve Ba	ailer x	Double C	heck Valve	Bailer 🗆 S	tainless-Ste	
		ng Volumes of	Water Rem	oval X sta	abilization of	Indicator Pa	rameters X	Other or bail dry
 Gal/ft v ft	ofwater		Gallons				o	Sal/oz to be removed
	16		na x 3		<u>_</u>			
Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts	D.O. s) (mg/L)	Turbidity (NTU)	Vol Evac. (ounces)	Comments/ Flow rate
1152	6.67	7860	54.3				4	grey with black sediment, hydrocarbo odor
Sipal:						Ferrous		
rillai. Time nt	4 S	C Temp	Eh-ORP	הח	Turbidity		ol Evac	Comments/Flow Bate
1152 6	.67 7	7860 54.3					4	grey with black sedimer hydrocarbon odor
COMMENTS Samples are	S: Collec	ted grab samp erved.	ble without p	ourging due	e to well stru	uctural proble	ems. Could	d not measure water leve
			V		· · · · · · · · · · · · · · · · · · ·			
		DO Mo	n A			Other	erature Met	er <b>x</b>
Water Dispo	C sal <u>Ri</u>	conductivity Me o Vista Sar	eter <b>X</b> nple ID <u>. Blar</u>	nco NFP M	<u>W-19</u> Sam	ple Time <u>1</u>	156 022106	-
<u>btex</u> voo	Cs Alkal	inity TDS Ca	tions Anion	is Nitrate	Nitrite Am	monia TKN I	NMWQCC	Metals Total Phosphorus
MS/MSD		BD		В	Name/Tir	ne		TB 022106TB01

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Name of Street

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Proiect No.:	30001.0		Proiect	t Name: Blan		c	lient: MWH	/EL Paso
Location: Bl	anco NF	P Wel	No: M	N-23		C	evelopment	Sampling
Project Man	ager	MJN		Date 022	2106	–	e 0854	Weather sunny 40s
Depth to Wa	uter 5	7.25 Dep	th to Produ	uct na l	Product T	hickness n	a Meas	suring Point TOC
Water Colun	nn Height	t 9.34 Wel	l Dia.	4"				
Sampling M	ethod: Si	ubmersible Pun	np 🗖	Centrifugal	Pump	] Peristaltic	Pump 📋	Other
	Bo	ottom Valve Bai	ler x	Double Che	ck Valve	Bailer 🗆 S	tainless-Ste	el Kemmerer
Criteria: 3	to 5 Casi	ng Volumes of V	Water Rem	oval X stabi	lization of	f Indicator Pa	rameters X	Other <u>or bail dry</u>
				Water Volum	ne in Well			
Gal/ft x f	t of water		Gallons			Dunces	G	al/oz to be removed
9.34	x .65		6.07 x 3					18.22 gal
		. , <b>I</b>		L	· .·		1	]
Time	pН	SC.	Temp	ORP	D.O.	Turbidity	Vol Evac.	Comments/
(military)	(su)	(umhos/cm)	(°F)	(millivolts)	(mg/L)	(NTU)	(gallons)	Flow rate
0911	6.18	15480	62.3				5	clear, sudsy, HC odor
	6.21	15920	61.1				7.5	grey, HC odor, sheen, sudsy, well is bailing
								down
<u>0922</u>	6.56	15950	60.1				7.75	grey, HC odor, sheen, sudsy, well has bailed down
<b></b>				5 <b>-</b>		<b>F</b>		
Final:	- 5	C Temp	Eh-ORP	DO TI	urhidity		/ol Evac	Comments/Elow Bate
0922 6	6.56 1	5950 60.1					7.75 0	rey, HC odor, sheen,
								udsy, well has bailed
								lown
COMMENTS	S: Sample	es are unoreser	ved					
	c. campi					· · · · · · · · · · · · · · · · · · ·		
INSTRUME	NTATION	I: pH Meter	Х			Temp	erature Mete	er x
		DO Mo	nitor	. <del></del>		Other		
	С	conductivity Met	er X			_		
Water Dispo	sal <u>Ri</u>	<u>o Vista</u> Sam	ple ID <u>Bla</u>	nco NFP MW	<u>-23</u> Sam	ple Time <u>0</u>	940 022106	
BTEX VO	Cs Alkal	inity TDS Cati	ons Anior	ns Nitrate N	Jitrite Am	monia TKN	NMWQCC	Metals Total Phosphorus
MS/MSD		BD_		BD	Name/Tir	me		TB_210206tb01
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Project No.:	<u>30001.0</u> lanco <u></u> NFI	P We	Project	t Name: <u>Bl</u> a <i>N-</i> 26	anco NFP		Client: <u>MW</u> Developmer	H/EL Paso nt <u>Sampling</u>
Project Man Depth to Wa Water Colun	ager iter6 nn Height	<u>MJN</u> 5.21 Der t <u>2.38</u> We	oth to Produ Il Dia	Date <u>0</u> uct <u>na</u>	22106 Product T	Start Tir hickness	me <u>1044</u> <u>na</u> Mea	Weather <u>Sunny 40s</u> asuring Point <u>TOC</u>
Sampling Me	ethod: Si Bi to 5 Casii	ubmersible Pur ottom Valve Ba ng Volumes of	np	Centrifuga Double Cl loval X sta	al Pump heck Valve bilization of	] Peristal Bailer □ <sup>f</sup> Indicator F	tic Pump □ Stainless-St Parameters 2	Other 📋 eel Kemmerer 🛛 K Other <u>or bail dry</u>
		· · · · · · · · · · · · · · · · · · ·		Water Volu	ume in Well			
Gal/ft x f 2.38	t of water x .65		Gallons 1.54 x 3		( 1	Dunces 198 x 3		Gal/oz to be removed 594 oz
Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts	D.O. ) (mg/L)	Turbidity (NTU)	v Vol Evac (oz.)	c. Comments/ Flow rate
1101	6.73	7290	65.3				56	grey, hydrocarbon odor
	6.76	7150	64.5				96	grey, hydrocarbon odor, well is bailing down
	6.63	7050	64.0				128	grey, hydrocarbon odor
	6.65	6970	63.5				150	grey, hydrocarbon odor
	6.64	6950	63.6				168	grey, hydrocarbon odor
	6.67	6900	63.6				172	grey, hydrocarbon odor
	6.62	6830	63.3				182	grey, hydrocarbon odor
<u>1125</u>	6.69	6830	63.7				186	grey, hydrocarbon odor, well has bailed down
Final: Time pl	H S	C Temp	Eh-ORP	D.O	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
A BELLE AND A STATE AND A STAT								well has bailed down
COMMENTS	5: Sample	es are unprese	rved				·	
INSTRUME	NTATION	I: pH Meter DO Mo	<b>X</b> nitor			Tem Othe	nperature Me er	ter x
Water Dispo BTEX VOC	C sal <u>Ri</u> Cs Alkal	onductivity Me <u>o Vista</u> Sarr inity TDS Cat	ter <b>X</b> iple ID <u>Blai</u> ions Anior	nco NFP M ns Nitrate	<u>W-26</u> Sam Nitrite Am	- ple Time monia TKN	<u>1130 022</u> NMWQCC	106 Metals Total Phosphorus
MS/MSD	<u></u>	BD_		В	D Name/Tir	ne		TB_022106tb01

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Project No.:	30001.0		Project	Name: <u>Bla</u>	anco NFP	(	Client: <u>MW</u> F	I/EL Paso	
Location:_Bl	anco NF	P We	II No: <u>MV</u>	N-27		_ [	Developmen	t Sampling	
Project Man	ager	MJN		Date0	22106		e <u>1001</u>	Weather sunny 4s	
Depth to Wa	iter <u>6</u>	7.7 <u>3</u> De	pth to Produ	ict na	Product T	hicknessr	na Mea	suring Point <u>TOC</u>	
Water Colun	nn Heigh	t <u>1.55</u> We	ll Dia	2"	• •			·	
Sampling M	athod: S	ubmersible Du		Centrifuas		Poristalti			
				Centinuge		Fensian			
	B	ottom Valve Ba	iler x	Double Cr	neck Valve	Bailer 📙 S	Stainless-Ste	eel Kemmerer	
Criteria: 3	to 5 Casi	ng Volumes of	Water Rem	oval X sta	bilization of	Indicator Pa	arameters X	Cother <u>or bail dry</u>	
				Water Volu	ime in Well				
Gal/ft x ft	t of water	•	Gallons		(	Dunces	(	Sal/oz to be removed	
1.55	5.16		x 3			32 x 3		95	
Time	pH	SC	Temp	ORP	D.O.	Turbidity	Vol Evac	Comments/	
(military)	(su)	(umhos/cm)	(°F)	(millivolts	) (mg/L)	(NTU)	(ounces)	Flow rate	
1016	6.50	8780	58.7				16	dark grey, HC odor, sheen	
	6.57	8770	59.5				24	dark grey, HC odor, sheen, well is bailing down	
<u>1029</u>	6.62	8560	58.1				28	dark grey, HC odor, sheen, well has bailed down	
Final:						Ferrous		a contraction of the second	
Time pl		C Temp	Eh-ORP	D.O. 1	Turbidity	Iron \	/ol Evac.	Comments/Flow Rate	
<u>1023</u> C	).02 C	SOU - SO.I -					20	sheen, well has bailed down	
COMMENTS	S: Sampl	es are unprese	rved.						
NSTRUME		J: pH Meter	- X			Temp	erature Met	er y	
		DO Mr	onitor			. Other	r		
	C	Conductivity Me	ter X			. 0000			
Water Dispo	sal Ri	o Vista San	nole ID Blar		N-27 Sam	- ple Time 1	032 022106		
vvalei Dianu	· ····				<u> </u>		NIMWOCC		
BTEX VO	Cs Alkal	inity TDS Cat	ions Anion	is Nitrate	Nitrite Am	monia TKN	NAWQUU	Metals Total Phosphorus	

Groundwater Sampling Field Forms – June 2006

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PO Box 3861 Farmington, NM 87499-3861 Office (505) 334-2791

### WATER LEVEL DATA

Project Name_	San Juan Basin Ground Water	Project No.	30001.0
Project Manager	MJN		
Client Company	MWH	Date	6-8-2006
Site Name	Blanco		
		-	

Well	Time	Depth to Product (ft)	Depth to Water (ft)	Comments
MW-2	-	-	-	well is dry TD 58.76
MW-19	-	-	-	no access
MW-23	1205	-	57.44	well purged and sampled 5/19/06, looks static
MW-24		-		not enough water in well to sample TD 67.19
MW-26	1305	-	66.15	Well had not fully recovered since previous sampling on 05/19/06. Not static
MW-27	1328	-	68.12	Well had not fully recovered since previous sampling on 05/19/06. Not static
MW-5	-	-	-	Dry hole TD 21.15
MW-6	1045	-	30.94	not enough water to sample TD 31.22, may not be static
MW-7	-	-	-	Well is dry TD is 21.24
MW-8	1137	-	34.69	
MW-28	0930	-	29.30	
MW-29	1015	-	31.77	
MW-30	1028	-	31.74	
MW-12	0810	-	18.62	
MW-13	0836	-	15.60	
MW-14	1053	-	20.03	
MW-15	0858	-	19.68	
MW-30N	0704	-	77.58	1

Comments

Signature:

Ashley L. Ager

Date:

June 8, 2006

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Project No.:3	30001.0		Project	Name: <u>Blar</u>	ICO NFP	c	lient: <u>MWH/</u>	EL Paso
Location:_Bl	anco N⊦	P We	II NO: <u>MV</u>	<u>v-19</u>		D	evelopment	Sampling
Project Mana	ager	MJN	<u> </u>	Date <u>06</u>	<u> 0806 </u>	Start Time	e <u>1240</u>	Weather sunny 70s
Depth to Wa	ter <u>n</u>	<u>a</u> Dep	oth to Produ	ct <u>na</u>	Product T	hickness <u>n</u>	a Meası	uring Point <u>TOC</u>
Water Colum	n Heigh	t <u>na</u> We	ll Dia	2"				
Sampling Me	ethod: S	ubmersible Pur	np 🗆	Centrifugal	Pump 🗌	Peristaltic	Pump	Other
	В	ottom Valve Ba	iler x	Double Che	eck Valve I	Bailer 🛛 🛛 S	tainless-Stee	el Kemmerer
Criteria: 3 t	o 5 Casi	ing Volumes of	Water Rem	oval X stabi	lization of	Indicator Pa	rameters X	Other or bail dry
				Water Volun	ne in Well			
Gal/ft x ft	of water	r	Gallons		C		Ga	al/oz to be removed
na x	. 10				г 			na oz
Time	pH	SC (umbas/am)	Temp	ORP (millivelte)	D.O.	Turbidity	Vol Evac.	Comments/
(mintary)	(Su)	(unnos/cm)		(minivoits)	(mg/L)		(ounces)	Flow rate
Final:	4 s	C Temp	Eh-OBP		irbidity	Ferrous	(ol Evac	omments/Flow Rate
				<u> </u>				
					V.,			
	Collect	ed grab sampl	e without n	uraina due tr	n well stru	ictural proble	me Could	not measure water leve
Only enough	water in	well to collect	sample. N	ot enough wa	ater to me	asure param	eters. unpres	served due to rxn of hcl
gw		· · · · · · · · · · · · · · · · · · ·						
NSTRUMEN		h nH Meter	X			Temp	oraturo Moto	
			nitor			Other		· •
	Ċ	Conductivity Me	ter X			Uner		
Water Dispo	sal Ri	in Vista Sam	inle ID Blar		-19 Sam	ole Time 11	258	
BTEX VOC	Cs Alkal	linity TDS Cat	ions Anion	s Nitrate N	Jitrite Am	nonia TKN 1	NMWQCC N	fetals Total Phosphorus
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Project No.:	<u>30001.0</u>		Project	Name: Blan	<u>co NFP</u>	C	lient: <u>MWH/</u>	EL Paso
Location:_Bl	anco NFF	ell Well	No: <u>MV</u>	<u>V-23</u>		D	evelopment	<u>Sampling</u>
Project Mana	ager	MJN		Date 060	806	Start Time	<u>   1205  </u>	Weather raining, 60s
Depth to Wa	ter <u>57</u>	<u>'.44</u> Dep	th to Produ	ct <u>na</u> F	Product TI	hickness <u>na</u>	a Meas	uring Point <u>TOC</u>
Water Colum	nn Height	<u>9.41</u> Wel	l Dia					
Sampling Me	ethod: Su	Ibmersible Pur		Centrifugal F				
Criteria: 31	to 5 Casir	ng Volumes of N	Nater Rem	oval X stabil	ization of	Indicator Par	rameters X	Other <u>or bail dry</u>
	<u></u>			Water Volum	e in Well			,
Gal/ft x ft	of water		Gallons		C	Junces	G	al/oz to be removed
9.41	2 dd. X		6.1 X 3					18.3 gai
Time	рН	SC	Temp	ORP	D.O.	Turbidity	Vol Evac.	Comments/
(military)	(SU)	(umhos/cm)	· (°⊦)	(millivolts)	(mg/L)	(NTU)	(gallons)	Flow rate
1205	0.31	10400	03.3				1	grey, sneen, suasy
	4.10	13900	62.5			· · · · · · · · · · · · · · · · · · ·	2	grey, sheen, suasy
	3.84	13620	62.6					grey, sheen, sudsy
<u>1228</u>	3.34	13570	62.2				5	grey, sheen, suds well is bailing down
				, 				. 
Final:								
Time	рН 2.04	SC 42970	Temp	Eh-ORP	D.O.	Turbidity	Vol Evac.	Comments/Flow Rate
1233	3.54	1.30/0	01.7				0.0	well has bailed dry
COMMENTS	3: unprese	erved due to rx	n of hcl w/ ç	gw.				
INSTRUME	NTATION	: pH Meter	X			Tempe	erature Mete	r x
		DO Mor	nitor			Other		
	Co	onductivity Met	er X	<u> </u>				
Water Dispo	sal <u>Ric</u> Ca Alkali	<u>o Vista</u> Sam	ple ID <u>Blan</u>	<u>ico NFP MW-</u>	23 Samp	ole Time <u>12</u>		Matala Tatal Dhoophoma
<u>DIEA</u> VOL	.S Ликан	miy 105 Cau	ons Amon	S INITIALE IN	итие лип	monia i kin i	MWQCC	vietais 10tai Phosphorus
MS/MSD		BD		BD	Name/Tin	ne		TB

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Project No.:	30001.0		Projec	t Name: <u>Blan</u>	co NFP	c	lient: <u>MWH/</u>	EL Paso
Location:_Bl	anco NF	P Wel	l No: <u>M</u>	W-26		D	evelopment	Sampling
Project Mana	ager	MJN		Date <u>06/</u>	<u>08/06</u>	Start Time	e <u>1307</u>	Weather <u>sunny 70s</u>
Depth to Wa	ter6	<u>6.15</u> Dep	th to Produ	uct <u>na</u> f	Product T	hickness <u>n</u>	a Meas	uring Point <u>TOC</u>
Water Colun	nn Heigh	t <u>1.45</u> Wel	l Dia	4"				
Sampling Me	ethod: So	ubmersible Pur	ıp 🗌	Centrifugal I	Pump	Peristaltic	Pump	Other
	B	ottom Valve Bai	iler <b>x</b>	Double Che	ck Valve	Bailer 🗆 🛛 S	tainless-Stee	el Kemmerer
Criteria: 31	o 5 Casi	ng Volumes of V	Water Rem	oval X stabil	lization of	Indicator Pa	rameters X	Other <u>or bail dry</u>
				Water Volum	ne in Well			
Gal/ft x ft	of water	•	Gallons		C	Dunces	Ga	al/oz to be removed
1.45	x .65		0.94 x 3					2.8 gal
Time	pН	SC	Temp	ORP	D.O.	Turbidity	Vol Evac.	Comments/
(military)	(su)	(umhos/cm)	(°F)	(millivolts)	(mg/L)	(NTU)	(oz.)	Flow rate
1310	6.98	7120	68.6				16 oz	dark grey, sheen, HC odor
	6.98	5940	66.6				20	well is bailing down
4040	6.97	5670	65.9				24	dark grey, sheen, HC odor
<u>1312</u>	7.01	5540	66.2				76	dark grey, sheen, HC odor
				-				
			-		L			
Final:		°C	Tomp			Turbidity		Comments/Flow Pote
1315	6 95	5540	65 9		D.O.	TUIDICITY		well is dry
	0.00		00.0				00.02	wenterally
COMMENTS	S: Well ba	ailed dry. unpre	served due	e to rxn of hcl v	w/ gw			
INSTRUME		I: pH Meter	X			Temp	erature Mete	r <b>x</b>
	~	DO Mol	nitor For <b>X</b>			Other		<u> </u>
Water Dispo	sal <u>Ri</u>	<u>o Vista</u> Sam	er <b>x</b> ple ID <u>Bla</u>	nco NFP MW-	- <u>26</u> Sam	ple Time <u>13</u>	317	_
BTEX VOC	Cs Alkal	inity TDS Cati	ons Anior	ns Nitrate N	litrite Am	monia TKN 1	NMWQCC N	letals Total Phosphorus

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	30001.0		Proiect	Name: Blan	ICO NFP	С	lient: MWH/	EL Paso
Location: Bl	anco NF	P Wel	I No: MV	N-27		D	evelopment	Sampling
Project Mana	ager	MJN		Date 06/	08/06	- Start Time	e 1328	Weather sunny 80s
Depth to Wa	ter 6	8.12 Dep	th to Produ	ict na l	Product T	hickness na	a Meas	uring Point TOC
Water Colum	n Heigh	t 1.16 Wel	l Dia	2"				
	in roigh							
Sampling Me	ethod: S	ubmersible Pun	 np □	Centrifugal	Pump 🗆	Peristaltic		Other
camping me	54104. 0			Continugui		i onotanio		
	B	ottom Valve Bai	ler x	Double Che	ck Valve	Bailer 🛛 🛛 St	tainless-Stee	el Kemmerer
Criteria: 3 t	to 5 Casi	ing Volumes of V	Water Rem	oval X stabi	lization of	Indicator Par	rameters X	Other <u>or bail dry</u>
				Water Volum	ne in Well			
Gal/ft x ft	of water	r [	Gallons		C	Dunces	Ga	al/oz to be removed
1.16 :	x .16		0.19 x 3		24	4.78 x 3	-	74.34oz
							[ <del>.</del>	
	pH	SC (umbos/om)		ORP (millivolta)	D.O.	I urbidity	Vol Evac.	Comments/
(mintary)	(SU)	(unnos/cm)		(minvoits)	(IIIg/L)		(ounces)	Flow fale
1328	6.82	8040	71.4				6	grey, product, HC od
				1				
	<u> </u>				+			
					+			
				· · · ·				
				<u>†</u>				
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	<u> </u>			<u> </u>		1		
	6 8:2" · · · · · · · · · · · · · · · · · · ·			<ul> <li>CONSIGNATION CONCINENT CONTROL OF CONTROL</li></ul>	o Managericki kodro	(a) h. a. (100,0000 here) and (100,0000000000000000000000000000000000	Exercite statements	Farman in the second
Final:		<b>6</b> 6	Teen			T. bulk		
Final: Time	pH	SC 8400	Temp	Eh-ORP	D.O.	Turbidity	Vol Evac.	Comments/Flow Rate
Final: Time 1330	рН 6.83	SC 8400	Temp 70.4	Eh-ORP	D.O.	Turbidity	Vol Evac. 10 oz	Comments/Flow Rate well has bailed dry
Final: Time <u>1330</u>	рН 6.83	SC 8400	Temp 70.4	Eh-ORP	D.O.	Turbidity	Vol Evac. 10 oz	Comments/Flow Rate well has bailed dry
Final: Time 1330 COMMENTS	pH 6.83 5: Well b	SC 8400 ailed dry. unpre	Temp 70.4 served due	Eh-ORP	D.O. w/ gw. V	Turbidity Vell had not f	Vol Evac. -10 oz	Comments/Flow Rate well has bailed dry
Final: Time 1330 COMMENTS event on 05/	pH 6.83 5: Well b 19/06.	SC 8400 ailed dry. unpre	Temp 70.4 served due	Eh-ORP	D.O: w/ gw. V	Turbidity Vell had not f	Vol Evac. 10 oz ully recovere	Comments/Flow Rate well has bailed dry ed since previous samp
Final: Time 1330 COMMENTS event on 05/	<b>pH</b> 6.83 5: Well b. 19/06.	SC 8400 ailed dry. unpre	Temp 70.4 served due	Eh-ORP	D.O. w/ gw. V	Turbidity Vell had not f	Vol Evac. 10 oz ully recovere	Comments/Flow Rate well has bailed dry ed since previous samp
Final: Time 1330 COMMENTS event on 05/ INSTRUMEN	pH           6:83           5: Well b.           19/06.           VTATION	SC 8400 ailed dry. unpre	Temp 70.4 served due	Eh-ORP to rxn of hcl	D.O. w/ gw. V	Turbidity Vell had not f	Vol Evac. 10 oz ully recovere erature Mete	Comments/Flow Rate well has bailed dry ed since previous samp
Final: Time 1330 COMMENTS event on 05/ INSTRUMEN	pH           6.83           3: Well b. 19/06.           NTATION	SC 8400 ailed dry. unpre	Temp 70.4 served due X nitor	Eh-ORP to rxn of hcl	D.O. w/ gw. V	Turbidity Vell had not f Tempe Other	Vol Evac. 10 oz ully recovere erature Mete	Comments/Flow Rate well has bailed dry ed since previous samp r x
Final: Time 1330 COMMENTS event on 05/ INSTRUMEN	pH           6.83           5: Well b.           19/06.           VTATION	SC 8400 ailed dry. unpre V: pH Meter DO Mo Conductivity Met	Temp 70.4 served due X nitor er X	Eh-ORP	D.O. w/ gw. V	Turbidity Vell had not f Tempe Other	Vol Evac. 10 oz ully recovere erature Mete	Comments/Flow Rate well has bailed dry ed since previous sampl r x
Final: Time 1330 COMMENTS event on 05/ INSTRUMEN Water Dispos	pH           6:83           3: Well b           19/06.           NTATION           C           salR	SC 8400 ailed dry. unpre N: pH Meter DO Mo Conductivity Met io Vista Sam	Temp 70.4 served due X nitor er X ple ID <u>Blar</u>	to rxn of hcl	D.O. w/ gw. V	Turbidity Vell had not f Tempe Other ple Time13	Vol Evac. 10 oz ully recovere erature Mete 332	Comments/Flow Rate well has bailed dry ed since previous sampl
Final: Time 1330 COMMENTS event on 05/ INSTRUMEN Water Dispos	pH           6.83           5: Well b           19/06.           NTATION           C           salRi           CsRikal	SC 8400 ailed dry. unpre V: pH Meter DO Mo Conductivity Met io Vista Sam linity TDS Cat	Temp 70.4 served due X nitor er X ple ID_Blar ions Anio	to rxn of hcl	D.O. w/ gw. V - <u>-27</u> Sam Nitrite A	Turbidity Vell had not f Tempe Other ple Time13	Vol Evac. 10 oz ully recovere erature Mete 332 N NMWQCO	Comments/Flow Rate well has bailed dry ed since previous sampl r x 
Final: Time 1330 COMMENTS event on 05/ INSTRUMEN Water Dispose VOC BTE	pH           6.83           5: Well b           19/06.           VTATION           C           salRi           .s Alkal           3X	SC 8400 ailed dry. unpre V: pH Meter DO Mo Conductivity Met io Vista Sam linity TDS Cat	Temp 70.4 served due X nitor er X ple ID <u>Blar</u> ions Anio	e to rxn of hcl	D.O. w/ gw. V - <u>27</u> Sam Nitrite A	Turbidity Vell had not f Tempe Other ple Time13	Vol Evac. 10 oz ully recovere erature Mete 332 N NMWQCO	Comments/Flow Rate well has bailed dry ed since previous sampl r x  C Metals Total Phospho
Final: Time 1330 COMMENTS event on 05/ INSTRUMEN Water Dispose VOC BTE	pH           6:83           5: Well b           19/06.           VTATION           C           salRi           2s           2X	SC 8400 ailed dry. unpre V: pH Meter DO Mo Conductivity Met io Vista Sam linity TDS Cat	Temp 70.4 served due X nitor ser X ple ID_Blar ions Anio	Eh-ORP to rxn of hcl	D.O. w/ gw. V -27 Sam Nitrite A	Turbidity Vell had not f Tempe Other ple Time13	Vol Evac. 10 oz ully recovered erature Mete 332 N NMWQCO	Comments/Flow Rate well has bailed dry ed since previous sampl r x  C Metals Total Phospho
Final: Time 1330 COMMENTS event on 05/ INSTRUMEN Water Dispose VOC BTE MS/MSD_	pH           6.83           5: Well b           19/06.           VTATION           C           salRi           Ss Alkal           3X	SC 8400 ailed dry. unpre N: pH Meter DO Mo Conductivity Met io Vista Sam linity TDS Cat	Tiemp 70.4 served due X nitor er X ple ID_Blar ions Anio	Eh-ORP to rxn of hcl	D.O. w/ gw. V -27 Sam Nitrite A Name/Tir	Turbidity Vell had not f Tempe Other ple Time13	Vol Evac. 10 oz ully recovered erature Mete 	Comments/Flow Rate well has bailed dry ed since previous sampl r x  C Metals Total Phospho 

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Project No.:	30001.0		Project	Name: Blan	co NFP	с	lient: <u>MWH/</u>	EL Paso
Location: <u>Bl</u>	anco NF	<u>P</u> Well	No: <u>MV</u>	V-30		. D	evelopment	Sampling
Project Mana	ager	MJN		Date 6/0	<u>8/06</u> _	Start Time	e0704	Weather <u>pc/rain 70s</u>
Depth to Wa	ter7	<u>7.58</u> Dep	th to Produ	ct_ <u>na</u>	Product T	hickness <u>n</u> a	a Measi	uring Point <u>TOC</u>
Water Colun	nn Heigh	t <u>5.05</u> Well	Dia	2"				
Sampling Me	ethod: Si	ubmersible Pum	ір 🗌	Centrifugal	Pump 🗆	] Peristaltic	Pump 🛛	Other
	B	ottom Valve Bai	ler x	Double Che	ck Valve	Bailer 🛛 🛛 S	tainless-Stee	l Kemmerer
Criteria: 31	to 5 Casi	ng Volumes of V	Water Rem	oval <b>X</b> stabi	lization of	f Indicator Pai	rameters X	Other or bail dry
				Water Volum	ne in Well			
Gal/ft x	ft of wat	er	Gallons			Ounces		Gal/oz to be removed
5.0	5 x .65		0.81 x 3			104		2.42 (342 oz)
Time	pH	SC	Temp	ORP	D.O.		Vol Evac.	Comments/
(military)	(su)		( F)	(minivons)	(mg/L)		(galions)	Flow rate
0733	8.36	7280	63.0				32	clear
	0.00	7200	63.3				55 79	clear
	8.38	7440	62.6				/8	
	8.30	/460	62.6				148	down
	8.20	7390	62.5				164	clear
	8.10	7450	62.5				172	clear
	8.10	7530	62.4				180	clear
	8.09	7570	62.4				186	clear
	8.08	7550	62.3				190	clear
	8.09	7590	62.3				194	clear
	8.12	7630	62.4				196	clear
<u>0750</u>	8.10	7530	62.4				200	clear, well has bailed dry
Cipal	and the second secon	ndinin statur (r. 1997).					n menge ber	
Time	рН	SC	Temp	Eh-ORP	D.O.	Turbidity	Vol Evac.	Comments/Flow Rate
<u>0750</u>	8.10	7530	62.4				200	clear, well has baile dry
	S: Well b:	ailed dry and did	1 not recove	er returned la	ater in da	v to sample		
			v	,		T		
INSTRUME	NUTATION		• nitor			_ Tempe	erature Mete	T X
	C	onductivity Mot	or <b>Y</b>			_ Other		· · · ·
Water Diene	eal Di	onductivity Met			0 500	- nla Tima 6/9	/06 124E	
BTEX VO	Cs Alkal	linity TDS Catio	ons Anion	s <u>Nitrate</u> N	<u>o</u> Sam <u>litrite</u> Am	imonia TKN N	VMWQCC N	fetals Total Phosphorus

Groundwater Sampling Field Forms – August 2006

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PO Box 3861 Farmington, NM 87499-3861 Office (505) 334-2791

## WATER LEVEL DATA

Project Name_	San Juan Basin Ground Water	Project No.	30001.0
<b>Project Manager</b>	MJN		
Client Company	MWH	Date	08/15/2006
Site Name	Blanco	-	

Well	Time	Depth to Product (ft)	Depth to Water (ft)	Comments
MW-2	0705	_	-	well is dry TD 58.76
MW-19	0800	-	-	no access
MW-23	0712	-	57.40	
MW-24	0920	-	67.12	probably not static, TD is 67.19
MW-26	0811	-	65.92	
MW-27	0846	_	68.57	
MW-31	1026			well is dry, TD 73.46
MW-32	0928	55.68	66.93	11.25 feet of product
MW-33	1033		71.71	
			ļ	
	<u> </u>			
		-		

#### Comments

Signature:

Martín Nee

Date: 8/15/06

Project No.:	30001.0		Project	t Name: <u>Bla</u>	anco NFP	C	lient: <u>MWH</u>	/EL Paso
Location:_B	lanco NF	P We	ell No: <u>M</u>	N-23	·	D	evelopment	Sampling
Project Man	ager	MJN	<u> </u>	Date 08	81506	Start Time	<u>    0705  </u>	Weather cloudy, 70s
Depth to Wa	ater <u>5</u>	<u>7.70</u> De	pth to Produ	ict <u>na</u>	Product T	hickness <u>n</u> a	a Meas	suring Point <u>TOC</u>
Water Colur	nn Heigh	t <u>9.45</u> We	ell Dia	_4"				
Sampling M	ethod: Si	ubmersible Pu	mp 🗖	Centrifuga	i Pump 📋	] Peristaltic	Pump 🔲	Other
	B	ottom Valve Ba	ailer <b>x</b>	Double Ch	eck Valve	Bailer 🗆 S	tainless-Ste	el Kemmerer
Criteria: 3	to 5 Casi	ng Volumes of	Water Rem	oval X stal	bilization of	f Indicator Pa	rameters X	Other <u>or bail dry</u>
				Water Volu	me in Well			
Gal/ft >	cft of wat	er	Gallons			Ounces		Gal/oz to be removed
9.4	15 x .65		6.14 x 3					18.43 gal
Time	рН	SC	Temp	ORP	D.O.	Turbidity	Vol Evac.	Comments/
(military)	(su)	(umhos/cm)	(°F)	(millivolts)	) (mg/L)	(NTU)	(gallons)	Flow rate
0717	6.22	18540	64.7				1	grey, sheen, sudsy hydrocarbon odor
	6.19	18620	63.4				2	grey, sheen, sudsy hydrocarbon odor
	6.24	18680	63.2				3	grey, sheen, sudsy hydrocarbon odor
	6.23	18760	62.9				5	grey, sheen, sudsy hydrocarbon odor
<u>0755</u>	6.29	18820	63.0				7.75	grey, sheen, sudsy hydrocarbon odor, we has bailed down
Final: Time	рН	SC	Temp	Eh-ORP	D.0	Turbidity	Vol Evac.	Comments/Flow Rate
<u>0755</u>	6.29	18820	63.0				7.75	grey, sheen, sudsy hydrocarbon odor, we
	S. Unnres		xn of hel w/	0.W				
				9				
INSTRUME	NTATION	I: pH Meter	r X		۰. 	Tempe	erature Mete	er x
	~			·		_ Other		
						-		
BTEX VO	osai <u>Ri</u> Cs Alkal	<u>o vista</u> San inity TDS Cat	nple ID <u>Blar</u> tions Anion	is Nitrate	<u>v-23</u> Sam Nitrite Am	pie Time <u>8/</u> monia TKN 1	15/06 0739 VMWQCC I	Metals Total Phosphorus
MS/MSD		RU	)	RI	) Name/Tir	ne	·	TB 150806TP01
		50	I I I I I I I I I I I I I I I I	DL		ne		

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Project No.: <u>30001.0</u>	Project Name: Blanco NFP	Client: <u>MWH/EL Paso</u>
Location:_Blanco NFP	Well No:	Development Sampling
Project Manager MJN	Date <u>08/15/06</u>	Start Time_0811 Weather_cloudy 70s
Depth to Water <u>65.92</u>	Depth to Product na Product Thic	ckness na Measuring Point TOC
Water Column Height <u>1.67</u>	Well Dia4"	

Sampling Method: Submersible Pump

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Centrifugal Pump [] Peristaltic Pump [] Other []

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

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

	Water Volu		
Gal/ft x ft of water	Gallons	Ounces	Gal/oz to be removed
1.67 x .65	1.08 x 3		2.8 gal/416 oz

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (oz.)	Comments/ Flow rate
0822	6.8	7480	65.8				40	grey, hydrocarbon odor
	6.84	7370	64.7				64	grey, hydrocarbon odor, slight sheen, well is bailing down
	6.84	7340	64.5				88	grey, hydrocarbon odor, slight sheen
	6.89	7350	64.7				104	grey, hydrocarbon odor, slight sheen
	6.87	7370	64.8			-	114	grey, hydrocarbon odor, slight sheen
<u>0841</u>	6.80	7360	64.7				124	grey, hydrocarbon odor, slight sheen, well has bailed dry

Final:       pH       SC       Temp       Eh-ORP       D.O       Turbidity       Vol Evac.       Comments/Flow Rate         0841       6.80       7360       64.7       Image: Comments and the second se						
0841 6.80 7360 64.7 124 grey, hydrocarbon odor, slight sheen, well has bailed dry	Final: Time pH SC	Temp	Eh-ORP D.O.	Turbidity	Vol Evac. Cor	nments/Flow Rate
	<u>0841</u> 6.80	7360 64.7			124 gre odc has	y, hydrocarbon r; slight sheen, well bailed dry

COMMENTS: Well bailed dry. unpreserved due to rxn of hcl w/ gw

INSTRUMENTATION:	pH Meter X	Temperature Meter x							
	DO Monitor	Other							
Condu	uctivity Meter X	· · · · · · · · · · · · · · · · · · ·							
Water Disposal Rio Vista Sample ID_Blanco NFP MW-26 Sample Time 8/15/06 0843									
BTEX VOCs Alkalinity	TDS Cations A	nions Nitrate Nitrite Ammonia TKN NMWQCC Metals Total Phosphorus							
MS/MSD	BD	BD Name/Time TB_150806tb01							

Project No. Location:_E Project Mar Depth to W Water Colu	: <u>30001.0</u> Blanco N nager ⁄ater ımn Heig	) FP <u>MJN</u> 68.57 ht <u>0.7</u>	Well Dep <u>1</u> Wel	Project   No: <u>M\</u>  th to Produ   Dia	t Name:_ <u></u> <u>N-27</u> Date Ictna 2"	<u>8/1</u>	<u>co NFP</u> 5/06 Product Th	 Start Tiu nickness	Client: <u>MWH</u> Development me <u>0846</u> na Meas	/EL Paso Sampli Weathe suring Poin	ng rcloudy 80s tTOC
Sampling N	/lethod:	Submers	sible Purr /alve Bai	ıp□ ler x	Centrifu Double	gal I Che	Pump	Peristal Bailer 🗆	tic Pump    □ Stainless-Ste	Other el Kemme	er 🗆
Criteria: 3 Gal/ft	3 to 5 Ca <u>x ft of wa</u> 71 x .16	sing Volu ater	umes of \	Water Rem Gallons 0.11 x 3	oval X s Water Vo	tabil plum	lization of ne in Well (	Indicator F Dunces 14 x 3	Parameters X	Other Gal/oz to I 43.	or bail dry be removed 6 oz
Time (military)	pH (su)	(umh	SC los/cm)	Temp (°F)	ORP (millivol	ts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (ounces)	C	omments/ Flow rate
0906 <u>0910</u>	6.40 6.48	10	)730 )620	70.1 69.8					8	grey, odor grey, odor	hydrocarbo hydrocarbo
			,								
Final: Time <u>0910</u>	oH 6:48	SC 10620	Temp 69.8	Eh-ORP	D:0.	Tu	irbidity	Ferrous Iron	Vol Evac. ( 14	Comments/ grey, hydro	Flow Rate ocarbon odor
COMMEN	rs: Well	bailed dr	ry. unpre	served due	to rxn of	hcl	w/ gw	anninpen anprenaxia			анна жалатын тараларынун тараларын тараларын тараларын тараларын тараларын тараларын тараларын тараларын тарала
INSTRUME Water Disp VC BT	ENTATIC bosal DCs_Alk TEX	DN: p Conduc Rio Vista alinity T	H Meter DO Mo tivity Met <u>a</u> Sam TDS Cat	X nitor er X ple ID <u>Blai</u> ions Anic	nco NFP   ons Nitra	<u>MW</u> ate	<u>-27</u> Samp Nitrite A	Tem Oth Dle Time mmonia T	nperature Mete er <u>8/15/06 0911</u> KN NMWQC	er x	Fotal Phosphor
MS/MSD_			BD_			BD	Name/Tim	ne		TB <u>_150</u>	806tb01

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Project No.: <u>3</u> Location: <u>Bl</u> Project Mana Depth to Wa Water Colum	<u>30001.0</u> anco NF ager ter7 an Heigh	P MJN 1.71 t10.9	Well _ Dep <sup>r</sup> <u>31</u>	Project No: <u>MV</u>  th to Produ Well D	Name: <u>B</u> N-33 Date <u></u> ict <u>na</u> ia. <u>2</u>	8/15 8/15 P	<u>:o NFP</u> / <u>/06</u> roduct Tł	Cl Do Start Time nicknessna	lient:_ <u>M</u> evelopm e0928 aM	WH/I nent leasu	EL Paso Sampling Weather <u>cloudy 80s</u> uring Point <u>TOC</u>
Sampling Me	ethod: Si Bi to 5 Casi	ubmers ottom V ng Volu	ible Pum ′alve Bail ımes of V	lp □ ler <b>x</b> Vater Rem	Centrifug Double C oval X st	gal P Chec abili:	Pump	Peristaltic Bailer □ St Indicator Par	Pump ainless- rameters	□ Stee s <b>X</b>	Other
0-1/6	6 - C - I			0-11	Water Vo	lume	e in Well	<b>`</b>			
Gal/ft x 10.9	Gal/ft x ft of water 10.91 x .65		Gallons 1.75 x 3				Ounces				5.24
Time (military)	pH (su)	S (umh	SC os/cm)	Temp (°F)	ORP (millivolt	s)	D.O. (mg/L)	Turbidity (NTU)	Vol Ev (gallor	ac. ns)	Comments/ Flow rate
0928	7.10	10	810	67.6					.25		clear
	7.11	10	620	64.9					.5		clear
	7.16	10	580	64.4					.75	_	clear
	7.19	10	600	64.5					1		clear
	7.20	10	600	64.9					2		clear
<u>1008</u>	7.19	10	640	65.2					2.347	75	clear, well has bailed dry
×											
Final:								Ferrous			
Time         pl           1008         7	l S .19 1	C 0640	Temp 65.2	Eh-ORP	D.O.	Tur	bidity	Iron V	ol Evac. 2.3475	C(	omments/Flow Rate ear, well has bailed dry
COMMENTS	6: Well ba	ailed dr	y, collect	ed sample	out of last	t bail	ler				· · · · · · · · · · · · · · · · · · ·
INSTRUMEN	NTATION	l: pl	H Meter DO Mor	X nitor	••••			Tempe Other	erature N	/letei	r x
Water Dispose BTEX VOC	sal <u>Ri</u> Cs Alkal	o Vista inity T	<b>Sample</b> DS Catio	e ID <u>Blanc</u> ons Anion	<mark>o NFP MV</mark> s <u>Nitrate</u>	<u>V-33</u> Ni	Samp trite Amr	ole Time <u>8/18</u> nonia TKN N	<u>5/06_101</u> JMWQ0	0 CC M	letals Total Phosphorus
MS/MSD			BD_		E	3D N	lame/Tim	ie			TB_150806tb01

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APPENDIX C Groundwater Analytical Laboratory Reports

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Groundwater Analytical Report – November 2005



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11/21/05

# Technical Report for

**Montgomery Watson** 

Blanco North

D-ALAB-BLANCOPLTN-003

Accutest Job Number: T11913

Sampling Date: 11/17/05

Report to:

MWH Americas, Inc.

pamela.j.anderson@us.mwhglobal.com

ATTN: Pam Anderson

Total number of pages in report: 13



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.

Ron Martino Laboratory Manager

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## Sample Summary

#### Montgomery Watson

Job No: T11913

### Blanco North Project No: D-ALAB-BLANCOPLTN-003

Sample Number	Collected Date	Time By	Received	Matri Code	ix Type	Client Sample ID
T11913-1	11/17/05	07:00 MN	11/18/05	AQ	Trip Blank Water	17/1105TB01
T11913-2	11/17/05	10:00 MN	11/18/05	AQ	Ground Water	MW-23
T11913-3	11/17/05	11:25 MN	11/18/05	AQ	Ground Water	MW-27
T11913-4	11/17/05	12:05 MN	11/18/05	AQ	Ground Water	MW-26
<b>T</b> 11913-5	11/17/05	12:35 MN	11/18/05	AQ	Ground Water	MW-19





#### SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Montgomery Watson

Job No T11913

**Report Date** 

11/21/2005 2:11:08 PM

Site: Blanco North

4 Samples and 1 Trip Blank were collected on 11/17/2005 and were received at Accutest on 11/18/2005 properly preserved, at 2 Deg. C and intact. These Samples received an Accutest job number of T11913. 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:	GKK697
All samples were	e analyz	zed within the recommended method	d holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) T11886-6MS, T11886-6MSD were used as the QC samples indicated.

T11913-5: Sample was not preserved to a pH < 2; reported results are considered minimum values.

T11913-4: Sample was not preserved to a pH < 2; reported results are considered minimum values.

T11913-3: Sample was not preserved to a pH < 2; reported results are considered minimum values.</p>

T11913-2: Sample was not preserved to a pH < 2; reported results are considered minimum values.</li>

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





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			Repo	rt of An	alysis			Page 1 of 1
Client Sam Lab Sampl Matrix: Method: Project:	nple ID: 171105 le ID: T11913 AQ - Ti SW846 Blanco	ID: 171105TB01 D: T11913-1 Date Sampled: 11/17/05 AQ - Trip Blank Water Date Received: 11/18/05 SW846 8021B Percent Solids: n/a Blanco North						
Run #1 Run #2	File ID KK09906.D	DF 1	Analyzed 11/18/05	By JH	Prep D n/a	ate	Prep Batch n/a	Analytical Batch GKK697
Run #1 Run #2	Purge Volume 5.0 ml		· .					
Purgeable	Aromatics							
CAS No.	Compound		Result	RL	MDL	Units	Q	
71-43-2 108-88-3 100-41-4 1330-20-7 95-47-6	Benzene Toluene Ethylbenzene Xylenes (total) o-Xylene m,p-Xylene		ND ND ND ND ND ND	1.0 1.0 2.0 1.0 2.0	0.38 0.36 0.35 0.72 0.42 0.72	ug/l ug/l ug/l ug/l ug/l ug/l		
CAS No.	Surrogate Rec	overies	Run# 1	Run# 2	Lim	its		,
460-00-4 98-08-8	4-Bromofluoro aaa-Trifluoroto	benzene luene	109% 98%		56-1 50-1	36% 44%		

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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Client Sam Lab Sampl Matrix: Method: Project:	ple ID: MW-23 e ID: T11913 AQ - G SW846 Blanco	-2 round Water 8021B North			Date S Date I Perce	Sampled: Received nt Solids	11/17/05 11/18/05 n/a	
	File ID	DF	Analyzed	By	Prep D	ate	Prep Batch	Analytical Batch
Run #1 $a$	KK09907.D	5	11/18/05	JH	n/a		n/a	GKK697
Run #2 ª	KK09908.D	50	11/18/05	JH	n/a		n/a	GKK697
	Purge Volume							· · · · ·
Run #1	5.0 ml							
Run #2	5.0 ml							
Purgeable CAS No.	Aromatics Compound		Result	RL	MDL	Units	Q	
71-13-2	Bonzono		5280 b	50	19	ua/l		
108-88-3	Toluene		2.6	5.0	1.8	ug/1 ug/1	T	
100-41-4	Ethylbenzene		203	5.0	1.8	ug/l	J	
1330-20-7	Xvlenes (total)		863	10	3.6	ug/l		
95-47-6	o-Xylene		22.9	5.0	2.1	ug/l		
	m,p-Xylene		840	10	3.6	ug/l		
CAS No.	Surrogate Rec	overies	Run# 1	Run# 2	Lim	its		
460-00-4	4-Bromofluoro	benzene	133%	101%	56-1	36%		
98-08-8	aaa-Trifluoroto	luene	75%	81%	50-1	44%		

**Report of Analysis** 

(a) Sample was not preserved to a pH < 2; reported results are considered minimum values. (b) Result is from Run# 2

ND = Not detected MDL - Method Detection Limit

**RL** = Reporting Limit

**E** = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound



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		Repor	rt of An	alysis			Page 1 of 1
Client Sam Lab Sampl Matrix: Method: Project:	ple ID: MW-27 e ID: T11913-3 AQ - Ground Wa SW846 8021B Blanco North	ter		Date S Date I Perce	Sampled Received nt Solids	: 11/17/05 : 11/18/05 : n/a	
Run #1 <sup>a</sup> Run #2	File IDDFKK09909.D5	Analyzed 11/18/05	By JH	Prep D n/a	ate	Prep Batch n/a	Analytical Batch GKK697
Run #1 Run #2	Purge Volume 5.0 ml						
Purgeable	Aromatics						
CAS No.	Compound	Result	RL	MDL	Units	Q	
71-43-2 108-88-3 100-41-4 1330-20-7 95-47-6	Benzene Toluene Ethylbenzene Xylenes (total) o-Xylene m,p-Xylene	26:3 4.0 175 1070 130 937	5.0 5.0 10 5.0 10	1.9 1.8 1.8 3.6 2.1 3.6	ug/l ug/l ug/l ug/l ug/l ug/l	J	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	nits		
460-00-4 98-08-8	4-Bromofluorobenzene aaa-Trifluorotoluene	76% 61%		56-1 50-1	1 <b>36%</b> 1 <b>44%</b>		

(a) Sample was not preserved to a pH < 2; reported results are considered minimum values.

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



3.3

Client Sample ID: MW-26 Lab Sample ID: T11913-4 Date Sampled: 11/17/05 Matrix: AQ - Ground Water Date Received: 11/18/05 SW846 8021B Percent Solids: n/a Method: Project: **Blanco North Analytical Batch** File ID DF Analyzed By **Prep Date Prep Batch** KK09910.D 11/18/05 JĤ **GKK697** Run #1<sup>a</sup> 5 n/a n/a Run #2 **Purge Volume** Run #1 5.0 ml Run #2 **Purgeable Aromatics** CAS No. RL MDL Compound Result Units Q 71-43-2 14.2 5.0 Benzene 1.9 ug/l 108-88-3 Toluene ND 5.0 1.8 ug/l 100-41-4 Ethylbenzene 17.0 5.0 1.8 ug/l Xylenes (total) 34.8 10 1330-20-7 3.6 ug/l ND 5.0 2.1 95-47-6 o-Xylene ug/l m,p-Xylene 32.7 10 3.6 ug/l CAS No. **Surrogate Recoveries** Run# 1 Run# 2 Limits 460-00-4 4-Bromofluorobenzene 95% 56-136% 98-08-8 aaa-Trifluorotoluene 66% 50-144%

**Report of Analysis** 

(a) Sample was not preserved to a pH < 2; reported results are considered minimum values.

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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Page 1 of 1

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			Repor	rt of An	alysis			Page 1 of 1
Client Sam Lab Sampl Matrix: Method: Project:	nple ID: MW le ID: T11 AQ SW3 Blar	/-19 913-5 - Ground Wat 846 8021B 1co North	er		Date S Date I Perce	Sampled: Received nt Solids	: 11/17/05 : 11/18/05 : n/a	
Run #1 <sup>a</sup> Run #2	File ID KK09911.D	DF 20	Analyzed 11/18/05	By JH	Prep D n/a	ate	Prep Batch n/a	Analytical Batch GKK697
Run #1 Run #2	Purge Volu 5.0 ml	me						
Purgeable	Aromatics							
CAS No.	Compound	I	Result	RL	MDL	Units	Q	
71-43-2 108-88-3 100-41-4 1330-20-7 95-47-6	Benzene Toluene Ethylbenze Xylenes (to o-Xylene m,p-Xylene	ne tal) e	3730 ND 340 ND ND ND	20 20 20 40 20 40 20 40	7.6 7.2 7.0 14 8.4 14	ug/l ug/l ug/l ug/l ug/l ug/l		
CAS No.	Surrogate	Recoveries	Run# 1	Run# 2	Lim	its		
460-00-4 98-08-8	4-Bromoflu aaa-Trifluo	iorobenzene rotoluene	101% 76%		56-1 50-1	36% 44%		

(a) Sample was not preserved to a pH < 2; reported results are considered minimum values.

**MDL** - Method Detection Limit 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





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## GC Volatiles

## QC Data Summaries

Includes the following where applicable:

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





Method B Job Number: Account: Project:	lank Sumr T11913 MWHSLCU Blanco North	nary T Montg 1	gomery Watson				Page 1 of 1
Sample GKK697-MB	File ID KK09899.D	DF 1	Analyzed 11/18/05	By JH	Prep Date n/a	Prep Batch n/a	Analytical Batch GKK697

The QC reported here applies to the following samples:

Method: SW846 8021B

T11913-1, T11913-2, T11913-3, T11913-4, T11913-5

CAS No.	Compound	Result	RL	MDL	Units Q
71-43-2 100-41-4 108-88-3 1330-20-7 95-47-6	Benzene Ethylbenzene Toluene Xylenes (total) o-Xylene m,p-Xylene	ND ND ND ND ND	1.0 1.0 2.0 1.0 2.0	0.38 0.35 0.36 0.72 0.42 0.72	ug/l ug/l ug/l ug/l ug/l ug/l
CAS No.	Surrogate Recoveries	·	Limi	ts	
460-00-4 98-08-8	4-Bromofluorobenzene aaa-Trifluorotoluene	102% 91%	56-13 50-14	86% 14%	



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Blank Spi	ke Summa	e Summary								
Job Number:	T11913	T11913								
Account:	MWHSLCU	MWHSLCUT Montgomery Watson								
Project:	Blanco Nort	Blanco North								
Sample	File ID	DF	Analyzed	Ву	Prep Date	Prep Batch	Analytical Batch			
GKK697-BS	KK09900.D	1	11/18/05	ЈН	n/a	n/a	GKK697			
The QC repor	rted here appli	es to th	e following sam	ples:		Method: SW	/846 8021B			

T11913-1, T11913-2, T11913-3, T11913-4, T11913-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	20	20.9	105	72-125
100-41-4	Ethylbenzene	20	20.5	103	76-125
108-88-3	Toluene	20	20.7	104	74-125
1330-20-7	Xylenes (total)	60	61.7	103	78-124
95-47-6	o-Xylene	20	20.6	103	78-124
	m,p-Xylene	40	41.1	103	78-125
CAS No.	Surrogate Recoveries	BSP	Li	mits	
460-00-4	4-Bromofluorobenzene	<b>99</b> %	56	-136%	
98-08-8	aaa-Trifluorotoluene	105%	50	-144%	



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Job Number: Account: Project:	T11913 MWHSLCU Blanco Nortl	T Montg 1	gomery Watson		5		C C
Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T11886-6MS	KK09903.D	50	11/18/05	JÅ	n/a	n/a	GKK697
T11886-6MSD	KK09904.D	50	11/18/05	JH	n/a	n/a	GKK697
T11886-6	KK09901.D	1	11/18/05	JH	n/a	n/a	GKK697
T11886-6	KK09902.D	50	11/18/05	JH	n/a	n/a	GKK697

#### T11913-1, T11913-2, T11913-3, T11913-4, T11913-5

CAS No.	Compound	T11886-6 ug/l Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2 100-41-4 108-88-3 1330-20-7 95-47-6	Benzene Ethylbenzene Toluene Xylenes (total) o-Xylene m,p-Xylene	458 <sup>a</sup> 364 <sup>a</sup> 1.7 8.8 1.6 7.2	1000 1000 1000 3000 1000 2000	1470 1380 1030 3190 1080 2110	101 102 103 106 108 105	1430 1340 1010 3080 1030 2050	97 98 101 102 103 102	3 3 2 4 5 3	45-137/21 68-126/15 63-130/22 72-125/19 70-128/20 63-136/19
CAS No.	Surrogate Recoveries	MS	MSD	T11	886-6	T11886-0	6 L	imits	
460-00-4 98-08-8	4-Bromofluorobenzene aaa-Trifluorotoluene	96% 84%	94% 81%	98% 72%		101% 86%	5 5	6-136% 0-144%	

(a) Result is from Run #2.

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Analy	tical Method/Ana	lytes: <u>SW-8</u>	46 8021B (BTE	X) Sam	ple Collec	ction Date(s): _	11/17/05				
	Labora	atory:	Accutest		MWH J	Job Number: _ _	EPC-SJRE (Blanco No				
	Batch Identific	ation:	T11913	Matrix:	Water						
	MS/MSD Paren	t(s) <sup>(a)</sup> :	None	None							
Verification Brian Buttars – 11/21/0. (Date/Signature)											
Foot Notes	Site ID	Sample ID	Lab. ID	Hits (Y/N)	Quals.	Com	ments				
None	Trip Blank	171105TB01	T11913-01	N							
None	Blanco No.	MW-23	T11913-02	Y							
None	Blanco No.	MW-27	T11913-03	Y							
None	Blanco No.	MW-26	T11913-04	Y							
None	Blanco No.	MW-19	T11913-05	Y							
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#### **DATA VERIFICATION WORKSHEET** (Page 2 of 2)

Analytical Method: SW-846 8021B (BTEX) MWH Job Number: EPC-SJRB (Blanco No.)

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 Laboratory:
 Accutest
 Batch Identification:
 T11913

Verification Criteria							
Sample ID	171105TB 01	Blanco No. MW-23	Blanco No. MW-27	Blanco No. MW-26	Blanco No. MW-19		
Lab ID	T11913-01	T11913-02	T11913-03	T11913-04	T11913-05		
Holding Time	А	А	А	А	А		
Analyte List	А	А	А	А	А		
Reporting Limits	А	А	А	А	А		
Surrogate Spike Recovery	А	А	A	А	А		
Trip Blank	А	А	А	А	А		
Equipment Rinseate Blanks	N/A	N/A	N/A	N/A	N/A		
Field Duplicate/Replicate	N/A	N/A	N/A	N/A	N/A		
Initial Calibration	N	N	N	N	N		
Initial Calibration Verification (ICV)	N	N	N	N	N		
Continuing Calibration Verification (CCV)	N	N	N	N	N		
Method Blank	A	А	А	А	А		
Laboratory Control Sample (LCS)	A	A	А	А	А		
Laboratory Control Sample Duplicate (LCSD)	N	N	N	N	N		
Matrix Spike/Matrix Spike Dup. (MS/MSD)	N/A	N/A	N/A	N/A	N/A		
Retention Time Window	N	N	N	N	N		
Injection Time(s)	N	N	N	N	N	<b>n</b>	
Hardcopy vs. Chain-of-Custody	A	A	А	A	А		
EDD vs. Hardcopy	N	N	N	N	N		
EDD vs. Chain of Custody	N	N	N	N	N		

(a) List QC batch identification if different than Batch ID

A indicates verification criteria were met

A/L indicates verification criteria met based upon Laboratory's QC Summary Form

X indicates verification criteria were not met

 ${\bf N}$  indicates data review were not a project specific requirement

N/A indicates criteria are not applicable for the specified analytical method or sample

N/R indicates data not available for review

#### **NOTES:**

Groundwater Analytical Report – February 2006

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Technical Report for

**Montgomery Watson** 

**Blanco North Flare Pit** 

D-ALAB-BLANCOPLTN-003

Accutest Job Number: T12713

Sampling Date: 02/21/06

Report to:

MWH Americas, Inc. 1801 California St. Suite 2900 Denver, CO 80202 jennifer.a.hurley@mwhglobal.com

ATTN: Ms. Jennifer Hurley

Total number of pages in report: 17



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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.

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Ron Martino Laboratory Manager

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# Sample Summary

### Montgomery Watson

Job No: T12713

Blanco North Flare Pit Project No: D-ALAB-BLANCOPLTN-003

Sample Number	Collected Date	Time By	Received	Matı Code	rix e Type	Client Sample ID
T12713-1	02/21/06	07:00 MN	02/22/06	AQ	Water	210206TB01
T12713-2	02/21/06	09:40 MN	02/22/06	AQ	Water	MW-23
T12713-3	02/21/06	10:32 MN	02/22/06	AQ	Water	MW-27
T12713-4	02/21/06	11:30 MN	02/22/06	AQ	Water	MW-26
T12713-5	02/21/06	11:56 MN	02/22/06	AQ	Water	MW-19

**3 of 17 ACCUTEST.** T12713



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Section 2

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Sample Results

**Report of Analysis** 



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**Report of Analysis** 

Client Sam Lab Sampl Matrix: Method: Project:	ple ID: 210206TB01 le ID: T12713-1 AQ - Water SW846 8021B Blanco North Flan	re Pit		Date S Date F Percer	Sampled: Received nt Solids	: 02/21/06 : 02/22/06 : n/a	
Run #1 Run #2	File ID DF KK11501.D 1	Analyzed 02/28/06	By JH	Prep D n/a	ate	Prep Batch n/a	Analytical Batch GKK753
Run #1 Run #2	Purge Volume 5.0 ml						
Purgeable	Aromatics						
CAŚ No.	Compound	Result	RL	MDL	Units	Q	
71-43-2 108-88-3 100-41-4 1330-20-7	Benzene Toluene Ethylbenzene Xvlenes (total)	ND ND ND	1.0 1.0 1.0 2.0	0.38 0.36 0.35 0.72	ug/l ug/l ug/l ug/l		
95-47-6	o-Xylene m,p-Xylene	ND ND	1.0 2.0	0.42 0.72	ug/l ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	its		
460-00-4 98-08-8	4-Bromofluorobenzene aaa-Trifluorotoluene	90% 97%	1	56-1 50-1	36% 44%		

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound



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**Report of Analysis** 

Client Sam Lab Sampl Matrix: Method: Project:	ple ID: MW-23 e ID: T12713-2 AQ - Water SW846 8021B Blanco North Flar	e Pit		Date S Date I Perce	Sampled: Received nt Solids	: 02/21/06 : 02/22/06 : n/a	
Run #1 <sup>a</sup> Run #2 <sup>a</sup>	File IDDFKK11493.D5KK11494.D100	Analyzed 02/28/06 02/28/06	By JH JH	Prep D n/a n/a	ate	Prep Batch n/a n/a	Analytical Batch GKK753 GKK753
Run #1 Run #2	Purge Volume 5.0 ml 5.0 ml						
Purgeable	Aromatics					- -	
CAS No.	Compound	Result	RL	MDL	Units	Q	
71-43-2 108-88-3 100-41-4 1330-20-7 95-47-6	Benzene Toluene Ethylbenzene Xylenes (total) o-Xylene m,p-Xylene	4900 <sup>b</sup> 4.9 56.7 710 73.2 636	100 5.0 5.0 10 5.0 10	38 1.8 1.8 3.6 2.1 3.6	ug/l ug/l ug/l ug/l ug/l ug/l	J	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	uits		
460-00-4 98-08-8	4-Bromofluorobenzene aaa-Trifluorotoluene	118% 85%	97% 111%	56-1 50-1	36% 44%		

(a) Sample was not preserved to a pH < 2; reported results are considered minimum values. (b) Result is from Run# 2

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound



Page 1 of 1

	Report of Analysis											
Client Sam Lab Samp Matrix: Method: Project:	nple ID: MW-27 le ID: T12713 AQ - W SW846 Blanco	-3 /ater 8021B North Fla	re Pit		Date S Date J Perce	Sampled Received nt Solids	02/21/06 : 02/22/06 : n/a					
Run #1 <sup>a</sup> Run #2	File ID KK11495.D	DF 5	Analyzed 02/28/06	By JH	Prep D n/a	ate	Prep Batch n/a	Analytical Batch GKK753				
Run #1 Run #2	Purge Volume 5.0 ml											
Purgeable	Aromatics											
CAS No.	Compound		Result	RL	MDL	Units	Q					
71-43-2 108-88-3 100-41-4 1330-20-7 95-47-6	Benzene Toluene Ethylbenzene Xylenes (total) o-Xylene m,p-Xylene		41.3 ND ND 264 18.7 245	5.0 5.0 5.0 10 5.0 10	1.9 1.8 1.8 3.6 2.1 3.6	ug/l ug/l ug/l ug/l ug/l ug/l						
CAS No.	Surrogate Rec	overies	Run# 1	Run# 2	Lim	its						

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	96%		56-136%
98-08-8	aaa-Trifluorotoluene	75%		50-144%

(a) Sample was not preserved to a pH < 2; reported results are considered minimum values.

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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		Repor	rt of An	alysis			Page 1 of 1
Client Sam Lab Sampl Matrix: Method: Project:	aple ID: MW-26 le ID: T12713-4 AQ - Water SW846 8021B Blanco North Fla	are Pit		Date S Date F Percer	Sampled: Received nt Solids	02/21/06 : 02/22/06 : n/a	
Run #1 <sup>a</sup> Run #2	File ID DF KK11496.D 2	Analyzed 02/28/06	By JH	Prep Da n/a	ate	Prep Batch n/a	Analytical Batch GKK753
Run #1 Run #2	Purge Volume 5.0 ml						
Purgeable	Aromatics						
CAS No.	Compound	Result	RL	MDL	Units	Q	
71-43-2 108-88-3 100-41-4 1330-20-7 95-47-6	Benzene Toluene Ethylbenzene Xylenes (total) o-Xylene m,p-Xylene	13.6 ND ND 2.9 2.2 ND	2.0 2.0 2.0 4.0 2.0 4.0	0.76 0.72 0.70 1.4 0.84 1.4	ug/l ug/l ug/l ug/l ug/l ug/l	J	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	its		
460-00-4 98-08-8	4-Bromofluorobenzene aaa-Trifluorotoluene	88% 62%		56-1 50-1	36% 44%		

(a) Sample was not preserved to a pH < 2; reported results are considered minimum values.

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 Sam Lab Samp Matrix: Method: Project:	nple ID: MW-1 le ID: T1271 AQ - V SW840 Blanco	9 3-5 Water 5 8021B 9 North Flar	e Pit		Date S Date I Percer	Sampled: Received nt Solids	: 02/21/06 : 02/22/06 : n/a					
Run #1 <sup>a</sup> Run #2	File ID KK11497.D	DF 5	Analyzed 02/28/06	Ву ЈН	Prep D n/a	ate	Prep Batch n/a	Analytical Batch GKK753				
Run #1 Run #2	Purge Volume 5.0 ml											
Purgeable	Aromatics											
CAS No.	Compound		Result	RL	MDL	Units	Q					
71-43-2	Benzene		20.1	5.0	1.9	ug/l						
108-88-3	Toluene		ND	5.0	1.8	ug/l						
100-41-4	Ethylbenzene	,	9.4	5.0	1.8	ug/l	_					
1330-20-7	Xylenes (total	)	4.4	10	3.6	ug/l	J					
95-47-6	o-Xylene		4.4	5.0	2.1	ug/l	J					
	m,p-Xylene		ND	10	3.6	ug/I						
CAS No.	Surrogate Re	coveries	Run# 1	Run# 2	Lim	iits						
460-00-4	4-Bromofluor	obenzene	89%		56-1	36%						
98-08-8	aaa-Trifluorot	oluene	58%		50-1	44%						

(a) Sample was not preserved to a pH < 2; reported results are considered minimum values.

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



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Section 3

Misc. Forms

**Custody Documents and Other Forms** 

Includes the following where applicable:

• Chain of Custody

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	Laboratorie	5					w	WW.RCO	cutest.	.com			Accu	est Quote	*		-	Accutes	it Job # 4	TI	27	113_
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T12713: Chain of Custody Page 1 of 3



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400 CO	ince for explar received within eceived in pro eceived with c	LOCATION	vref	-	9															2.0.C
LOG -22-UU NITIALS:	led, see varia N. Samples N. Sample r N. Sample r Alners. oter.	VOLUME	40ml				4				30								3 Freezer	COOLER TEMP COOLER TEMP
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SAMPLE DATE/TIME RECEI	d "N" for no or NA ed condition. SH. Inalysis. mple IDs and ana t and tamper not of ct and tamper not of	DATE SAMPLED	90-1E-E				-+						C						SUB: Subcontrac 4: H2SO4 5: NAOH	90 <u>5</u> 2
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LACCU Los <u>1121</u>	Condition/variance (Ci 1 (YN Sample rece 3 (X) N Sample rece 5 (X) N Sample volu 7 (X) N Chain of Cu 3 (Y) NA Custody ( 3 (Y) NA Custody (	SAMPLE or FIELD ID		С	3	4	Ъ												OCATION: WI: Walk-In RESERVATIVES: 1: Non H of waters checked exclu	Roteons NA Islivery method: Couri Tracking

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T12713: Chain of Custody Page 2 of 3



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> T12713: Chain of Custody Page 3 of 3



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Section 4

# GC Volatiles

QC Data Summaries

Includes the following where applicable:

Method Blank Summaries

• Blank Spike Summaries

• Matrix Spike and Duplicate Summaries



# Method Blank Summary

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Job Number: Account: Project: Sample	MWHSLCU Blanco North	MWHSLCUT Montgomery Watson Blanco North Flare Pit										
Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch					
GKK753-MB	KK11489.D	1	02/28/06	JH	n/a	n/a	GKK753					

The QC reported here applies to the following samples:

Method: SW846 8021B

T12713-1, T12713-2, T12713-3, T12713-4, T12713-5

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2 100-41-4 108-88-3 1330-20-7 95-47-6	Benzene Ethylbenzene Toluene Xylenes (total) o-Xylene m,p-Xylene	ND ND ND ND ND	1.0 1.0 2.0 1.0 2.0	0.38 0.35 0.36 0.72 0.42 0.72	ug/l ug/l ug/l ug/l ug/l ug/l	
CAS No.	Surrogate Recoveries		Limi	ts		
460-00-4 98-08-8	4-Bromofluorobenzene aaa-Trifluorotoluene	82% 77%	56-13 50-14	86% 14%		



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## Blank Spike Summary

Job Number: Account: Project:	T12713 MWHSLO Blanco No	CUT Montg orth Flare F	gomery Watson Pit			
Sample	File ID	DF	Analyzed	By	Prep Date	Prep Ba

Sample File ID DF Analyzed By Prep Date Prep Batch Analytical Batch GKK753-BS KK11490.D 1 02/28/06 JH n/a n/a GKK753

The QC reported here applies to the following samples:

Method: SW846 8021B

T12713-1, T12713-2, T12713-3, T12713-4, T12713-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	20	20.6	103	72-125
100-41-4	Ethylbenzene	20	20.3	102	76-125
108-88-3	Toluene	20	20.1	101	74-125
1330-20-7	Xylenes (total)	60	60.6	101	78-124
95-47-6	o-Xylene	20	20.1	101	78-124
	m,p-Xylene	40	40.5	101	78-125
CAS No.	Surrogate Recoveries	BSP	Li	mits	
460-00-4	4-Bromofluorobenzene	96%	56	-136%	
98-08-8	aaa-Trifluorotoluene	99%	50	-144%	



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# Matrix Spike/Matrix Spike Duplicate Summary

Account: Project:	MWHSLC Blanco No	CUT Montg orth Flare P	omery Watson it			
Sample File ID DE Analyzed B						

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Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T12716-1MS	KK11508.D	1 ·	02/28/06	JH	n/a	n/a	GKK753
T12716-1MSD	KK11509.D	1	02/28/06	JH	n/a	n/a	GKK753
T12716-1	KK11507.D	1	02/28/06	ЈН	n/a	n/a	GKK753

The QC reported here applies to the following samples:

Method: SW846 8021B

#### T12713-1, T12713-2, T12713-3, T12713-4, T12713-5

CAS No.	Compound	T12716 ug/l	-1 Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2 100-41-4 108-88-3 1330-20-7 95-47-6	Benzene Ethylbenzene Toluene Xylenes (total) o-Xylene m,p-Xylene	47.0 6.3 0.48 1.4 0.58 0.84	J J J J	20 20 20 60 20 40	70.4 29.3 22.4 66.9 22.0 44.9	117 115 110 109 107 110	70.5 29.4 22.9 68.1 22.4 45.7	118 116 112 111 109 112	0 0 2 2 2 2 2 2	45-137/21 68-126/15 63-130/22 72-125/19 70-128/20 63-136/19
CAS No.	Surrogate Recoveries	MS		MSD	TI	2716-1	Limits		·	
460-00-4 98-08-8	4-Bromofluorobenzene aaa-Trifluorotoluene	95% 113%		98% 111%	87 99	% %	56-1369 50-1449	% %		



Page 1 of 1

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# DATA VERIFICATION WORKSHEET

(Page 1 of 2)

Analytical Method/Analytes:	SW-846 8021B (BTEX)	Sample Collection Date(s): _	02/21/06
Laboratoru	Acoutost	MW/U Job Number	
Laboratory: _	Accutest	MWH JOD Number:	EPC-SJKB
		_	(BNFP)
Batch Identification:	<u>T12713</u>	Matrix:	Water
MS/MSD Parent(s) <sup>(a)</sup> :	None	Field Replicate Parent(s):	None

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Verification Brian Buttars - 05/25/06

(Date/Signature)

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Notes	Site ID	Sample ID	Lab. ID	(Y/N)	Quals.	Comments
None	BNFP	210206TB01	T12713-01	N		
None	BNFP	MW-23	T12713-02	Y		
None	BNFP	MW-27	T12713-03	Y		
None	BNFP	MW-26	T12713-04	Y		
None	BNFP	MW-19	T12713-05	Y		
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#### **DATA VERIFICATION WORKSHEET** (Page 2 of 2)

Analytical Method: \_\_\_\_\_\_SW-846 8021B (BTEX) MWH Job Number: EPC-SJRB (BNFP)

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Laboratory:AccutestBatch Identification:T12713

Verification Criteria							
Sample ID	210206 TB01	MW-23	MW-27	MW-26	MW-19		
Lab ID	T12713-01	T12713-02	T12713-03	T12713-04	T12713-05		
Holding Time	А	А	А	А	А		
Analyte List	А	А	А	А	А		
Reporting Limits	А	A	A	А	А		
Surrogate Spike Recovery	А	А	· A	А	А		
Trip Blank	А	А	А	А	А		
Equipment Rinseate Blanks	N/A	N/A	N/A	N/A	N/A		
Field Duplicate/Replicate	N/A	N/A	N/A	N/A	N/A		
Initial Calibration	N	N	. N	N	N		
Initial Calibration Verification (ICV)	N	N	N	N	N		
Continuing Calibration Verification (CCV)	N	N	N	N	N		
Method Blank	А	А	А	А	А		
Laboratory Control Sample (LCS)	А	А	А	А	А		
Laboratory Control Sample Duplicate (LCSD)	А	А	А	А	А		
Matrix Spike/Matrix Spike Dup. (MS/MSD)	N/A	N/A	N/A	N/A	N/A	 	
Retention Time Window	N	N	N	N	N		
Injection Time(s)	N	N	N	N	N		
Hardcopy vs. Chain-of-Custody	А	А	А	А	А		
EDD vs. Hardcopy	N	N	N	N	N		
EDD vs. Chain of Custody	N	N	N	N	N		

(a) List QC batch identification if different than Batch ID

A indicates verification criteria were met

A/L indicates verification criteria met based upon Laboratory's QC Summary Form

X indicates verification criteria were not met

 ${\bf N}$  indicates data review were not a project specific requirement N/A indicates criteria are not applicable for the specified analytical method or sample

N/R indicates data not available for review

#### **NOTES:**

Groundwater Analytical Report – June 2006

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06/19/06

## Technical Report for

### **Montgomery Watson**

**Blanco North Flare Pit** 

D-ALAB-BLANCOPLTN-003

Accutest Job Number: T13776

Sampling Date: 06/08/06

Report to:

MWH Americas, Inc. 1801 California St. Suite 2900 Denver, CO 80202 jennifer.a.hurley@mwhglobal.com

ATTN: Ms. Jennifer Hurley

Total number of pages in report: 21



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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.

Ron Martino Laboratory Manager

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Gulf Coast • 10165 Harwin Drive • Suite 150 • Houston, TX 77036 • tel: 713-271-4700 • fax: 713-271-4770 • http://www.accutest.com





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## Sample Summary

#### Montgomery Watson

JUD INU. 115//	Job	NO:	113776
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Blanco North Flare Pit Project No: D-ALAB-BLANCOPLTN-003

Sample Number	Collected Date	Time By	Received	Matr Code	ix Type	Client Sample ID
T13776-1	06/08/06	12:35 MN	06/09/06	AQ	Ground Water	MW-23
T13776-2	06/08/06	12:58 MN	06/09/06	AQ	Ground Water	MW-19
T13776-3	06/08/06	13:17 MN	06/09/06	AQ	Ground Water	MW-26
T13776-4	06/08/06	13:32 MN	06/09/06	AQ	Ground Water	MW-27
T13776-5	06/08/06	13:45 MN	06/09/06	AQ	Ground Water	MW-33
T13776-6	06/08/06	07:00 MN	06/09/06	AQ	Trip Blank Water	080606TB02





### SAMPLE DELIVERY GROUP CASE NARRATIVE

Client:	Montgomery Watson	Job No	T13776
Site:	Blanco North Flare Pit	Report Date	6/19/2006 2:52:44 PM

5 Samples and 1 Trip Blank were collected on 06/08/2006 and were received at Accutest on 06/09/2006 properly preserved, at 3 Deg. C and intact. These Samples received an Accutest job number of T13776. 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:	GKK829	
	All samples were analyzed	within the recommended method	d holding time.	· ·
8	All method blanks for this	batch meet method specific criter	eria.	
<b>A</b> X	Sample(s) T13780-6MS,	T13780-6MSD were used as the	QC samples indicated.	

	Matrix	AQ	Batch ID:	GKK830
				· · · · ·

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

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





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Section 3

Sample Results

Report of Analysis





Client Sar Lab Samp Matrix: Method: Project:	nple ID: MW-2 ole ID: T1377 AQ - SW84 Blance	23 76-1 Ground W 6 8021B 5 North Fla	ater are Pit		Date Sampled Date Received Percent Solids	l: 06/08/06 l: 06/09/06 s: n/a	
	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	KK13608.D	1	06/15/06	ЛН	n/a	n/a	GKK829
Run #2	KK13619.D	50	06/15/06	JH	n/a	n/a	GKK829
	Purge Volum	e					
Run #1	5.0 ml						
Run #2	5.0 ml			·			
Purgeable	e Aromatics						
CAS No.	Compound		Result	RL	MDL Units	Q	

**Report of Analysis** 

71-43-2 108-88-3 100-41-4 1330-20-7 95-47-6	Benzene Toluene Ethylbenzene Xylenes (total) o-Xylene m,p-Xylene	3470 <sup>a</sup> ND 373 16.8 357	50 1.0 2.0 1.0 2.0	19 0.36 0.35 0.72 0.42 0.72	ug/l ug/l ug/l ug/l ug/l ug/l
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	its
460-00-4 98-08-8	4-Bromofluorobenzene aaa-Trifluorotoluene	99% 80%	95% 95%	56-12 50-14	36% 44%

(a) Result is from Run# 2

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound



Page 1 of 1

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	Repo	ort of Ana	alysis		Page 1 of			
Client Sam Lab Sampl Matrix: Method: Project:	aple ID: MW-19 le ID: T13776-2 AQ - Gro SW846 80 Blanco No	und Water 021B orth Flare	Pit		Date S Date I Perce	Sampled: Received nt Solids		
Run #1 Run #2	File ID KK13612.D	<b>DF</b> 1	<b>Analyzed</b> 06/15/06	Bу JH	<b>Prep Date</b> n/a		<b>Prep Batch</b> n/a	Analytical Batch GKK829
Run #1 Run #2	Purge Volume 5.0 ml							
Purgeable	Aromatics							
CAS No.	Compound		Result	RL	MDL	Units	Q	
71-43-2 108-88-3 100-41-4 1330-20-7 95-47-6	Benzene Toluene Ethylbenzene Xylenes (total) o-Xylene m,p-Xylene		18.6 ND ND 2.9 2.9 ND	1.0 1.0 1.0 2.0 1.0 2.0	0.38 0.36 0.35 0.72 0.42 0.72	ug/l ug/l ug/l ug/l ug/l		
CAS No.	Surrogate Recov	veries	Run# 1	Run# 2	Lim	its		

460-00-4	4-Bromofluorobenzene	98%	56-136%
98-08-8	aaa-Trifluorotoluene	97%	50-144%

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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			Repo	rt of A	nalysis		Page 1 of 1	
Client Sam Lab Sampl Matrix: Method: Project:	aple ID: MW- le ID: T137' AQ - SW84 Blanc	26 76-3 Ground Wa 16 8021B o North Fla	ater are Pit		Date S Date I Percer	Sampled: Received nt Solids		
Run #1 Run #2	File ID         DF           KK13614.D         1		<b>Analyzed</b> 06/15/06	By JH	<b>Prep Date</b> n/a		<b>Prep Batch</b> n/a	Analytical Batch GKK829
Run #1 Run #2	<b>Purge Volum</b> 5.0 ml	e						
Purgeable	Aromatics							
CAS No.	Compound		Result	RL	MDL	Units	Q	
71-43-2 108-88-3 100-41-4 1330-20-7 95-47-6	Benzene Toluene Ethylbenzene Xylenes (tota o-Xylene m,p-Xylene	e II)	2.4 ND 1.8 3.6 0.93 2.7	1.0 1.0 2.0 1.0 2.0	0.38 0.36 0.35 0.72 0.42 0.72	ug/l ug/l ug/l ug/l ug/l ug/l	J	

Run# 1 Run# 2 CAS No. **Surrogate Recoveries** Limits 97% 460-00-4 4-Bromofluorobenzene 56-136% 100% 98-08-8 aaa-Trifluorotoluene 50-144%

MDL - Method Detection Limit 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



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			Repo	Page 1 of 1					
Client Sam Lab Sampl Matrix: Method: Project:	aple ID: MW-27 le ID: T13776-4 AQ - Gro SW846 80 Blanco No	: MW-27 T13776-4 Date Sampled: 06/08/06 AQ - Ground Water Date Received: 06/09/06 SW846 8021B Percent Solids: n/a Blanco North Flare Pit							
Run #1 Run #2	File ID KK13616.D KK13662.D	<b>DF</b> 1 10	<b>Analyzed</b> 06/15/06 06/16/06	By JH JH	Prep D n/a n/a	ate	<b>Prep Batch</b> n/a n/a	Analytical Batch GKK829 GKK830	
Run #1 Run #2	Purge Volume 5.0 ml 5.0 ml								
Purgeable	Aromatics								
CAS No.	Compound		Result	RL	MDL	Units	Q		
71-43-2 108-88-3 100-41-4 1330-20-7 95-47-6	Benzene Toluene Ethylbenzene Xylenes (total) o-Xylene m,p-Xylene		2:0 ND 3:2 156 11:1 144	1.0 1.0 1.0 2.0 1.0 2.0	0.38 0.36 0.35 0.72 0.42 0.72	ug/l ug/l ug/l ug/l ug/l ug/l			
CAS No.	Surrogate Recov	eries	Run# 1	Run# 2	Lim	its			
460-00-4 460-00-4 98-08-8	4-Bromofluorobe 4-Bromofluorobe aaa-Trifluorotolu	nzene nzene ene	110% 75%	90%	56-1 56-1 50-1	36% 36% 44%			

102% 50-144%

MDL - Method Detection Limit ND = Not detected

RL = Reporting Limit

98-08-8

E = Indicates value exceeds calibration range

aaa-Trifluorotoluene

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



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<b>Report of Analysis</b>
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Client San Lab Samj Matrix: Method: Project:	mple ID: 1 ple ID: 7	MW-33 F13776-5 AQ - Ground W SW846 8021B Blanco North Fla	ater are Pit		Date Sample Date Receive Percent Solie	d: 06/08/06 ed: 06/09/06 ds: n/a	
Run #1 Run #2	File ID KK13607	<b>DF</b> 7.D 1	<b>Analyzed</b> 06/15/06	<b>Ву</b> ЈН	Prep Date n/a	Prep Batch n/a	Analytical Batch GKK829
Run #1 Run #2	Purge V 5.0 ml	olume					
Purgeable	e Aromatics						

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	1.1	1.0	0.38	ug/l	
108-88-3	Toluene	4.2	1.0	0.36	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.35	ug/l	
1330-20-7	Xylenes (total)	4.5	2.0	0.72	ug/l	
95-47-6	o-Xylene	1.2	1.0	0.42	ug/l	
	m,p-Xylene	3.4	2.0	0.72	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	its	
460-00-4	4-Bromofluorobenzene	86%		56-1	36%	
98-08-8	aaa-Trifluorotoluene	95%		50-1	44%	

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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Page 1 of 1

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			Repo	rt of A	nalysis			Page 1 of 1
Client Sam Lab Samp Matrix: Method: Project:	nple ID: 080606 le ID: T13774 AQ - T SW846 Blanco	5TB02 6-6 Frip Blank 5 8021B 9 North Fla	Water are Pit		Date S Date 1 Perces	Sampled: Received nt Solids	: 06/08/06 : 06/09/06 : n/a	
Run #1 Run #2	File ID KK13606.D	<b>DF</b> 1	<b>Analyzed</b> 06/15/06	<b>В</b> у ЈН	Prep D n/a	ate	Prep Batch n/a	Analytical Batch GKK829
Run #1 Run #2	<b>Purge Volume</b> 5.0 ml							
Purgeable	Aromatics							
CAS No.	Compound		Result	RL	MDL	Units	Q	
71-43-2 108-88-3 100-41-4 1330-20-7 95-47-6	Benzene Toluene Ethylbenzene Xylenes (total o-Xylene m n-Xylene	)	ND ND ND ND ND	1.0 1.0 2.0 1.0 2.0	0.38 0.36 0.35 0.72 0.42 0.72	ug/l ug/l ug/l ug/l ug/l		

Run# 2

Limits

56-136%

50-144%

Run# 1

83%

94%

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

CAS No.

460-00-4

98-08-8

E = Indicates value exceeds calibration range

**Surrogate Recoveries** 

4-Bromofluorobenzene

aaa-Trifluorotoluene

- J = Indicates an estimated value
- B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound





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Section 4

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

• Chain of Custody



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T13776: Chain of Custody Page 1 of 2 4.1

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Section 5

GC Volatiles

QC Data Summaries

Includes the following where applicable:

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



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T13776

#### Method Blank Summary Job Number: T13776

Job Number:	1137/6
Account:	MWHSLCUT Montgomery Watson
Project:	Blanco North Flare Pit

Sample	File ID	<b>DF</b>	<b>Analyzed</b>	<b>Ву</b>	<b>Prep Date</b>	<b>Prep Batch</b>	Analytical Batch
GKK829-MB	KK13599.D	1	06/15/06	ЈН	n/a	n/a	GKK829

#### The QC reported here applies to the following samples:

Method: SW846 8021B

T13776-1, T13776-2, T13776-3, T13776-4, T13776-5, T13776-6

Compound	Result	RL	MDL	Units Q
Benzene Ethylbenzene Toluene Xylenes (total) o-Xylene	ND ND ND ND ND	1.0 1.0 2.0 1.0	0.38 0.35 0.36 0.72 0.42	ug/l ug/l ug/l ug/l ug/l
m,p-Xylene	ND	2.0	0.72	ug/l
	Compound Benzene Ethylbenzene Toluene Xylenes (total) o-Xylene m,p-Xylene	CompoundResultBenzeneNDEthylbenzeneNDTolueneNDXylenes (total)NDo-XyleneNDm,p-XyleneND	CompoundResultRLBenzeneND1.0EthylbenzeneND1.0TolueneND1.0Xylenes (total)ND2.0o-XyleneND1.0m,p-XyleneND2.0Surrogate RecoveriesLimi	CompoundResultRLMDLBenzeneND1.00.38EthylbenzeneND1.00.35TolueneND1.00.36Xylenes (total)ND2.00.72o-XyleneND1.00.42m,p-XyleneND2.00.72

460-00-4	4-Bromofluorobenzene	85%	56-136%
98-08-8	aaa-Trifluorotoluene	91%	50-144%



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Job Numb Account: Project:	er: T13776 MWHSLCU Blanco North	F Montgome	ery Ŵatson					
Sample GKK830-N	File ID 4B KK13633.D	<b>DF</b> 1	<b>Analyzed</b> 06/15/06	By JH	Prep l n/a	Date	<b>Prep Batch</b> n/a	Analytical Batch GKK830
The QC re T13776-4	eported here applie	es to the foll	owing samj	ples:	<u>.</u>		Method: SW	/846 8021B
CAS No.	Compound		Result	RL	MDL	Units	Q	
CAS No.	Surrogate Recov	eries		Limi	ts			
460-00-4 98-08-8	4-Bromofluorobe aaa-Trifluorotoluo	nzene ene	93% 99%	56-13 50-14	6% 4%			

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# Blank Spike Summary

Project:	Blanco North Flare Pit
Account:	MWHSLCUT Montgomery Watson
Job Number:	113770

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GKK829-BS	KK13600.D	1	06/15/06	JH	n/a	n/a	GKK829

#### The QC reported here applies to the following samples:

Method: SW846 8021B

T13776-1, T13776-2, T13776-3, T13776-4, T13776-5, T13776-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	20	20.2	101	72-125
100-41-4	Ethylbenzene	20	19.8	99	76-125
108-88-3	Toluene	20	19.4	97	74-125
1330-20-7	Xylenes (total)	60	57.9	97	78-124
95-47-6	o-Xylene	20	19.1	96	78-124
	m,p-Xylene	40	38.8	97	78-125
CAS No.	Surrogate Recoveries	BSP	Li	mits	
460-00-4	4-Bromofluorobenzene	84%	56	-136%	
98-08-8	aaa-Trifluorotoluene	93%	50	-144%	



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#### Blank Spike Summary Job Number: T13776

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Account: Project:	MWHSLCU' Blanco North	T Montgo 1 Flare Pit	omery Watsor	1				
Sample GKK830-BS	<b>File ID</b> 5 KK13634.D	<b>DF</b> 1	<b>Analyzed</b> 06/15/06	<b>В</b> у ЈН	Pr n/	rep Date ′a	<b>Prep Batch</b> n/a	Analytical Batch GKK830
<b>The QC reg</b> T13776-4	ported here applie	es to the t	following sar	nples:			Method: SW	7846 8021B
CAS No.	Compound		Spike ug/l	BSP ug/l	BSP %	Limits		
CAS No.	Surrogate Recov	veries	BSP	Liı	nits			
460-00-4 98-08-8	4-Bromofluorobe aaa-Trifluorotolu	enzene ene	92% 102%	56- 50-	-136% -144%			

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### Matrix Spike/Matrix Spike Duplicate Summary

	-		
Job	Number:	T13776	

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Account:	MWHSLCUT Montgomery Watson
Project:	Blanco North Flare Pit
	•

Sample	File ID	DF	Analyzed	Ву	Prep Date	Prep Batch	Analytical Batch
T13780-6MS	KK13629.D	1	06/15/06	JH .	n/a	n/a	GKK829
T13780-6MSD	KK13630.D	1	06/15/06	Л	n/a	n/a	GKK829
T13780-6	KK13628.D	1	06/15/06	JH	n/a	n/a	GKK829

The QC reported here applies to the following samples:

Method: SW846 8021B

T13776-1, T13776-2, T13776-3, T13776-4, T13776-5, T13776-6

CAS No.	Compound	T13780-6 ug/l Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND	20	21.1	106	21.1	106	0	45-137/21
100-41-4	Ethylbenzene	ND	20	20.6	103	20.9	105	1	68-126/15
108-88-3	Toluene	ND	20	20.9	105	21.1	106	1	63-130/22
1330-20-7	Xylenes (total)	ND	60	62.7	105	63.9	107	2	72-125/19
95-47-6	o-Xylene	ND	20	20.8	104	21.4	107	3	70-128/20
	m,p-Xylene	ND	40	41.9	105	42.6	107	2	63-136/19
CAS No.	Surrogate Recoveries	MS	MSD	<b>T</b> 1	3780-6	Limits			
460-00-4 98-08-8	4-Bromofluorobenzene aaa-Trifluorotoluene	93% 100%	93% 99%	93 98	% %	56-136 50-144	% %		



5.3

Page 1 of 1

20 of 21 ACCUTEST. T13776

#### Matrix Spike/Matrix Spike Duplicate Summary Page 1 of 1 Job Number: T13776 Account: MWHSLCUT Montgomery Watson Blanco North Flare Pit **Project:** DF **Prep Date** Sample File ID Analyzed Bv **Prep Batch Analytical Batch** T13783-13MS KK13657.D 50 06/16/06 JН GKK830 n/a n/a 06/16/06 JH GKK830 T13783-13MSD KK13658.D 50 n/a n/a T13783-13 KK13656.D 50 06/16/06 JH n/a n/a GKK830 The QC reported here applies to the following samples: Method: SW846 8021B T13776-4 T13783-13 MS MS MSD MSD Limits Spike CAS No. RPD **Rec/RPD** Compound ug/l Q ug/l ug/l % ug/l % MSD CAS No. **Surrogate Recoveries** MS T13783-13 Limits 460-00-4 4-Bromofluorobenzene 90% 92% 94% 56-136%

102%

103%

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100%

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98-08-8

aaa-Trifluorotoluene



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	Analytes:	5 11-04	<u>6 8021B (BT1</u>	EX) Sa	mple Collec	tion Date(s): _	06/08/06	
Laboratory:		Accutest			MWH J	ob Number:	EPC-BNFP (BNFP)	
Batch Ide	ntification:	T13776 None				Matrix:	Water	
MS/MSD P	Parent(s) <sup>(a)</sup> :				ield Replica	te Parent(s): _	None	
cation Co	mplete:	Сі	caig I	_ Mc	ore -	- 09/2	8/06	
				(	Date/Signature)	·		
				Hits				
Site ID	Sample 1	ID .	Lab. ID	(Y/N)	Quals.	Com	iments	
BNFP	MW-23		T13776-1	Y	None			
BNFP	MW-19		T13776-2	Y	None			
BNFP	MW-26	<del></del>	T13776-3	Y	None			
BNFP	MW-27		T13776-4	Y	None			
BNFP	MW-33		<u>T13776-5</u>	Y	None			
BNFP	080606TB02		113776-6	N	None			
					-			
<b>}</b>							······································	
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	L Batch Ider MS/MSD F Cation Co Site ID BNFP BNFP BNFP BNFP BNFP BNFP BNFP BNFP	Laboratory: Batch Identification: MS/MSD Parent(s) <sup>(a)</sup> : cation Complete: cation Complete: site ID Sample 1 BNFP MW-23 BNFP MW-23 BNFP MW-26 BNFP MW-26 BNFP MW-26 BNFP MW-26 BNFP MW-27 BNFP MW-33 BNFP 080606TB02	Laboratory:	Laboratory:         Accutest           Batch Identification:         T13776           MS/MSD Parent(s) <sup>(a)</sup> :         None           cation Complete:         Craig 1           Site ID         Sample ID         Lab. ID           BNFP         MW-23         T13776-1           BNFP         MW-23         T13776-2           BNFP         MW-26         T13776-3           BNFP         MW-27         T13776-4           BNFP         MW-27         T13776-5           BNFP         MW-33         T13776-6           MSPP         MS         MS           MSPP         MW-30         MS           MSP         MW-30         MS           MSP         MW-30         MS           MSP         MW-30         MS           MSP         MS         MS           MS         MS <t< td=""><td>Laboratory: AccutestBatch Identification: T13776MS/MSD Parent(s)<sup>(a)</sup>: NoneFCraig L McCraig L Mccation Complete: Craig L McCraig L Mc(1)Site ID Sample ID Lab. ID (Y/N)BNFPMW-23T13776-1YBNFPMW-26T13776-2YBNFPMW-26T13776-3YBNFPMW-27T13776-4YBNFPMW-33T13776-5YBNFP080606TB02T13776-6NImage: Colspan="2"&gt;Image: Colspan="2"Image: Colspan="2"<th col<="" td=""><td>Laboratory:       Accutest       MWH J         Batch Identification:       T13776         MS/MSD Parent(s)<sup>(a)</sup>:       None       Field Replica         cation Complete:       Craig L       Moore         Site ID       Sample ID       Lab. ID       (Y/N)       Quals.         BNFP       MW-23       T13776-1       Y       None         BNFP       MW-23       T13776-2       Y       None         BNFP       MW-23       T13776-3       Y       None         BNFP       MW-27       T13776-4       Y       None         BNFP       MW-27       T13776-5       Y       None         BNFP       MW-27       T13776-6       N       None         BNFP       MW-27       T13776-6       N       None         BNFP       MW-33       T13776-6       N       None         BNFP       MW-30       T13776-6       N       None         Interview       Interview       Interview       Interview       Interview         Interview       Interview       Interview       Interview       Interview         Interview       Interview       Interview       Interview       Interview</td><td>Laboratory:         Accutest         MWH Job Number:           Batch Identification:         T13776         Matrix:           MS/MSD Parent(s)<sup>(a)</sup>:         None         Field Replicate Parent(s):           cation Complete:         Craig L Moore - 09/2           (Date/Signature)         (Date/Signature)           Site ID         Sample ID         Lab. ID         (V/N)         Quals.         Com           BNFP         MW-23         T13776-1         Y         None         BNFP           BNFP         MW-26         T13776-2         Y         None         BNFP           BNFP         MW-26         T13776-3         Y         None         BNFP           BNFP         MW-27         T13776-4         Y         None         BNFP           BNFP         MW-33         T13776-5         Y         None         D           BNFP         080606TB02         T13776-6         N         None         D         D           D         D         D         D         D         D         D         D           BNFP         MW-33         T13776-6         N         None         D         D         D         D         D         D         D</td></th></td></t<>	Laboratory: AccutestBatch Identification: T13776MS/MSD Parent(s) <sup>(a)</sup> : NoneFCraig L McCraig L Mccation Complete: Craig L McCraig L Mc(1)Site ID Sample ID Lab. ID (Y/N)BNFPMW-23T13776-1YBNFPMW-26T13776-2YBNFPMW-26T13776-3YBNFPMW-27T13776-4YBNFPMW-33T13776-5YBNFP080606TB02T13776-6NImage: Colspan="2">Image: Colspan="2"Image: Colspan="2" <th col<="" td=""><td>Laboratory:       Accutest       MWH J         Batch Identification:       T13776         MS/MSD Parent(s)<sup>(a)</sup>:       None       Field Replica         cation Complete:       Craig L       Moore         Site ID       Sample ID       Lab. ID       (Y/N)       Quals.         BNFP       MW-23       T13776-1       Y       None         BNFP       MW-23       T13776-2       Y       None         BNFP       MW-23       T13776-3       Y       None         BNFP       MW-27       T13776-4       Y       None         BNFP       MW-27       T13776-5       Y       None         BNFP       MW-27       T13776-6       N       None         BNFP       MW-27       T13776-6       N       None         BNFP       MW-33       T13776-6       N       None         BNFP       MW-30       T13776-6       N       None         Interview       Interview       Interview       Interview       Interview         Interview       Interview       Interview       Interview       Interview         Interview       Interview       Interview       Interview       Interview</td><td>Laboratory:         Accutest         MWH Job Number:           Batch Identification:         T13776         Matrix:           MS/MSD Parent(s)<sup>(a)</sup>:         None         Field Replicate Parent(s):           cation Complete:         Craig L Moore - 09/2           (Date/Signature)         (Date/Signature)           Site ID         Sample ID         Lab. ID         (V/N)         Quals.         Com           BNFP         MW-23         T13776-1         Y         None         BNFP           BNFP         MW-26         T13776-2         Y         None         BNFP           BNFP         MW-26         T13776-3         Y         None         BNFP           BNFP         MW-27         T13776-4         Y         None         BNFP           BNFP         MW-33         T13776-5         Y         None         D           BNFP         080606TB02         T13776-6         N         None         D         D           D         D         D         D         D         D         D         D           BNFP         MW-33         T13776-6         N         None         D         D         D         D         D         D         D</td></th>	<td>Laboratory:       Accutest       MWH J         Batch Identification:       T13776         MS/MSD Parent(s)<sup>(a)</sup>:       None       Field Replica         cation Complete:       Craig L       Moore         Site ID       Sample ID       Lab. ID       (Y/N)       Quals.         BNFP       MW-23       T13776-1       Y       None         BNFP       MW-23       T13776-2       Y       None         BNFP       MW-23       T13776-3       Y       None         BNFP       MW-27       T13776-4       Y       None         BNFP       MW-27       T13776-5       Y       None         BNFP       MW-27       T13776-6       N       None         BNFP       MW-27       T13776-6       N       None         BNFP       MW-33       T13776-6       N       None         BNFP       MW-30       T13776-6       N       None         Interview       Interview       Interview       Interview       Interview         Interview       Interview       Interview       Interview       Interview         Interview       Interview       Interview       Interview       Interview</td> <td>Laboratory:         Accutest         MWH Job Number:           Batch Identification:         T13776         Matrix:           MS/MSD Parent(s)<sup>(a)</sup>:         None         Field Replicate Parent(s):           cation Complete:         Craig L Moore - 09/2           (Date/Signature)         (Date/Signature)           Site ID         Sample ID         Lab. ID         (V/N)         Quals.         Com           BNFP         MW-23         T13776-1         Y         None         BNFP           BNFP         MW-26         T13776-2         Y         None         BNFP           BNFP         MW-26         T13776-3         Y         None         BNFP           BNFP         MW-27         T13776-4         Y         None         BNFP           BNFP         MW-33         T13776-5         Y         None         D           BNFP         080606TB02         T13776-6         N         None         D         D           D         D         D         D         D         D         D         D           BNFP         MW-33         T13776-6         N         None         D         D         D         D         D         D         D</td>	Laboratory:       Accutest       MWH J         Batch Identification:       T13776         MS/MSD Parent(s) <sup>(a)</sup> :       None       Field Replica         cation Complete:       Craig L       Moore         Site ID       Sample ID       Lab. ID       (Y/N)       Quals.         BNFP       MW-23       T13776-1       Y       None         BNFP       MW-23       T13776-2       Y       None         BNFP       MW-23       T13776-3       Y       None         BNFP       MW-27       T13776-4       Y       None         BNFP       MW-27       T13776-5       Y       None         BNFP       MW-27       T13776-6       N       None         BNFP       MW-27       T13776-6       N       None         BNFP       MW-33       T13776-6       N       None         BNFP       MW-30       T13776-6       N       None         Interview       Interview       Interview       Interview       Interview         Interview       Interview       Interview       Interview       Interview         Interview       Interview       Interview       Interview       Interview	Laboratory:         Accutest         MWH Job Number:           Batch Identification:         T13776         Matrix:           MS/MSD Parent(s) <sup>(a)</sup> :         None         Field Replicate Parent(s):           cation Complete:         Craig L Moore - 09/2           (Date/Signature)         (Date/Signature)           Site ID         Sample ID         Lab. ID         (V/N)         Quals.         Com           BNFP         MW-23         T13776-1         Y         None         BNFP           BNFP         MW-26         T13776-2         Y         None         BNFP           BNFP         MW-26         T13776-3         Y         None         BNFP           BNFP         MW-27         T13776-4         Y         None         BNFP           BNFP         MW-33         T13776-5         Y         None         D           BNFP         080606TB02         T13776-6         N         None         D         D           D         D         D         D         D         D         D         D           BNFP         MW-33         T13776-6         N         None         D         D         D         D         D         D         D

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#### **DATA VERIFICATION WORKSHEET** (Page 2 of 2)

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

Laboratory:AccutestBatch Identification:

T13776

Verification Criteria							
Sample ID	MW-23	MW-19	MW-26	MW-27	MW-33	060606TB 02	
Lab ID	T13776-1	T13776-2	T13776-3	T13776-4	T13776-5	T13776-6	
Holding Time	А	A	А	А	А	А	
Analyte List	А	A	А	A	А	А	
Reporting Limits	А	A	A ·	А	А	A	
Surrogate Spike Recovery	А	А	А	А	А	A	
Trip Blank	А	А	A	А	A	N/A	
Equipment Rinseate Blanks	N/A	N/A	N/A	N/A	N/A	N/A	
Field Duplicate/Replicate	N/A	N/A	N/A	N/A	N/A	N/A	
Initial Calibration	N	N	N	N	N	N	
Initial Calibration Verification (ICV)	N	N	N	N	N	N	
Continuing Calibration Verification (CCV)	N	N	N	N	N	N	
Method Blank	А	А	А	А	А	A	
Laboratory Control Sample (LCS)	А	A	А	А	А	А	
Laboratory Control Sample Duplicate (LCSD)	N	N	N	N	N	N	
Matrix Spike/Matrix Spike Dup. (MS/MSD)	N/A	N/A	N/A	N/A	N/A	N/A	
Retention Time Window	N	N	N	N	N	N	
Injection Time(s)	N	N	N	N	N	N	
Hardcopy vs. Chain-of-Custody	A	A	A	A	A	А	
EDD vs. Hardcopy	N	N	N	N	N	N	
EDD vs. Chain of Custody	N	N	N	N	N	N	

(a) List QC batch identification if different than Batch ID

A indicates verification criteria were met

A/L indicates verification criteria met based upon Laboratory's QC Summary Form

X indicates verification criteria were not met

N indicates data review were not a project specific requirement

N/A indicates criteria are not applicable for the specified analytical method or sample

N/R indicates data not available for review



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Groundwater Analytical Report – August 2006

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08/22/06

### Technical Report for

#### **Montgomery Watson**

**Blanco North Flare Pit** 

D-ALAB-BLANCOPLTN-004

Accutest Job Number: T14400

Sampling Date: 08/15/06

Report to:

MWH Americas, Inc. 1801 California St. Suite 2900 Denver, CO 80202 jennifer.a.hurley@mwhglobal.com

ATTN: Ms. Jennifer Hurley

Total number of pages in report: 17



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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.

Ron Martino Laboratory Manager

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### Sample Summary

#### **Montgomery Watson**

Job No: T14400

#### Blanco North Flare Pit Project No: D-ALAB-BLANCOPLTN-004

3						,
Sample Number	Collected Date	Time By	Received	Matr Code	ix e Type	Client Sample ID
T14400-1	08/15/06	07:39 MN	08/16/06	AQ	Ground Water	MW-23
T14400-2	08/15/06	08:43 MN	08/16/06	AQ	Ground Water	MW-26
T14400-3	08/15/06	09:11 MN	08/16/06	AQ	Ground Water	MW-27 at a strong before a strong the strong before
T14400-4	08/15/06	10:10 MN	08/16/06	AQ	Ground Water	MW-33
T14400-5	08/15/06	07:00 MN	08/16/06	AQ	Trip Blank Water	150806TB01





#### SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Montgomery Watson

Site: Blanco North Flare Pit

T14400 Job No

8/22/2006 4:54:56 PM

**Report Date** 

4 Samples and 1 Trip Blank were collected on 08/15/2006 and were received at Accutest on 08/16/2006 properly preserved, at 2 Deg. C and intact. These Samples received an Accutest job number of T14400. 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:	GKK8		
All samples wer	e anal	zed within the recommended metho	d holding	e.	

- All method blanks for this batch meet method specific criteria.
- Sample(s) T14400-1MS, T14400-1MSD were used as the QC samples indicated.
- Matrix Spike Recovery(s) for Benzene are outside control limits. Probable cause due to the ratio of spike to sample concentration < 4.
- T14400-2 for aaa-Trifluorotoluene: Outside control limits due to matrix interference.
- T14400-2 for 4-Bromofluorobenzene: Outside control limits due to matrix interference.
- T14400-1 for aaa-Trifluorotoluene: Outside control limits due to matrix interference.
- T14400-1 for aaa-Trifluorotoluene: Outside control limits due to matrix interference.
- T14400-1 for 4-Bromofluorobenzene: Outside control limits due to matrix interference.

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



Tuesday, August 22, 2006



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Section 3

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Sample Results

**Report of Analysis** 



Client Sam Lab Sampl Matrix: Method: Project:	ple ID: MW-23 e ID: T14400-1 AQ - Ground Wat SW846 8021B Blanco North Flat	ter re Pit		Date S Date I Percer	Sampled: Received nt Solids	: 08/15/06 : 08/16/06 : n/a	
	File ID DF	Analyzed	By	Prep D	ate	Prep Batch	Analytical Batch
Run #1	KK14842.D 1	08/17/06	FO	n/a		n/a	GKK882
Run #2	KK14843.D 50	08/17/06	FO	n/a		n/a	GKK882
	Purge Volume					· · · · · · · · · · · · · · · · · · ·	
Run #1	5.0 ml						
Run #2	5.0 ml						
CAS No.	Compound	Result	RL	MDL	Units	Q	
71-43-2	Benzene	6490 a	50	18	ug/l		
108-88-3	Toluene	26.6	1.0	0.20	ug/l		
100-41-4	Ethylbenzene	165	1.0	0.33	ug/l		
1330-20-7	Xylenes (total)	1270 a	100	18	ug/l		
95-47-6	o-Xylene	91.8	1.0	0.14	ug/l		
	m,p-Xylene	1270 a	50	18	ug/l		
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	its		
460-00-4	4-Bromofluorobenzene	297% b	118%	56-1	36%		
98-08-8	aaa-Trifluorotoluene	333% <sup>b</sup>	184% <sup>b</sup>	50-1	44%		

**Report of Analysis** 

(a) Result is from Run# 2

(b) Outside control limits due to matrix interference.

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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		Repo	ort of An	alysis			Page 1 of 1
Client Sam Lab Samp Matrix: Method: Project:	aple ID: MW-26 le ID: T14400-2 AQ - Ground SW846 80211 Blanco North	Water 3 Flare Pit		Date Date Perce	Sampled: Received nt Solids	: 08/15/06 : 08/16/06 : n/a	
Run #1 Run #2	File IDDFKK14846.D1	Analyzed 08/17/06	<b>By</b> FO	Prep D n/a	Date	Prep Batch n/a	Analytical Batch GKK882
Run #1 Run #2	Purge Volume 5.0 ml	· · ·					
Purgeable	Aromatics						
CAS No.	Compound	Result	RL	MDL	Units	Q	
71-43-2	Benzene	2.7	1.0	0.35	ug/l		
108-88-3	Toluene	21.0	1.0	0.20	ug/l		
100-41-4	Ethylbenzene	11.1	1.0	0.33	ug/l		
1330-20-7	Xylenes (total)	41.0	2.0	0.36	ug/l		
95-47-6	o-Xylene m,p-Xylene	7.3 33:8	1.0 1.0	0.14 0.36	ug/l ug/l		
CAS No.	Surrogate Recoverie	es Run#1	Run# 2	Lim	nits		
460-00-4	4-Bromofluorobenze	ne 170% <sup>a</sup>		56-1	136%		

1487% <sup>a</sup>

(a) Outside control limits due to matrix interference.

aaa-Trifluorotoluene

MDL - Method Detection Limit ND = Not detected

RL = Reporting Limit

98-08-8

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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50-144%

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			Repo	ort of A	Analysis		Page 1 of
Client Samp Lab Sample Matrix: Method: Project: Run #1 Run #2 Run #1 Run #2	mple ID: MW ple ID: T14 AQ SW Blar	/-27 400-3 - Ground W 846 8021B 1co North Fla	ater are Pit		Date Sampled: Date Received: Percent Solids:	08/15/06 : 08/16/06 : n/a	
Run #1 Run #2	File ID KK14847.D	DF 1	Analyzed 08/17/06	By FO	Prep Date n/a	Prep Batch n/a	Analytical Batch GKK882
Run #1 Run #2	Purge Volu 5.0 ml	ne					

#### **Purgeable Aromatics**

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	7.0	1.0	0.35	ug/l	
108-88-3	Toluene	ND	1.0	0.20	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.33	ug/l	
1330-20-7	Xylenes (total)	ND	2.0	0.36	ug/l	
95-47-6	o-Xylene	ND	1.0	0.14	ug/l	
	m,p-Xylene	ND	. 1.0	0.36	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	its	
460-00-4	4-Bromofluorobenzene	115%		56-1	36%	
98-08-8	aaa-Trifluorotoluene	137%		50-1	44%	

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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			Repo	rt of A	nalysis			Page 1 of
Client Sam Lab Samp Matrix: Method: Project:	nple ID: MW-33 le ID: T14400 AQ - G SW846 Blanco	3 )-4 Ground W 6 8021B North Fla	ater are Pit		Date S Date I Percer	Sampled: Received nt Solids	08/15/06 : 08/16/06 : n/a	
Run #1 Run #2	File ID KK14838.D	DF 50	Analyzed 08/17/06	By FO	Prep D n/a	ate	Prep Batch n/a	Analytical Batch GKK882
Run #1 Run #2	Purge Volume 5.0 ml							
Purgeable	Aromatics							
CAS No.	Compound		Result	RL	MDL	Units	Q	
71-43-2 108-88-3 100-41-4 1330-20-7 95-47-6	Benzene Toluene Ethylbenzene Xylenes (total) o-Xylene m n-Xylene	)	30.1 37.7 ND 24.6 ND 24.6	50 50 50 100 50 50	18 10 17 18 7.0 18	ug/l ug/l ug/l ug/l ug/l ug/l	] ]	

Run# 2

Limits

56-136%

50-144%

Run# 1

114%

125%

ND = Not detected **MDL** - Method Detection Limit

RL = Reporting Limit

CAS No.

460-00-4

98-08-8

E = Indicates value exceeds calibration range

Surrogate Recoveries

4-Bromofluorobenzene

aaa-Trifluorotoluene

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound



Page 1 of 1

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Client Sample Lab Sample I Matrix: Method: Project: F Run #1 K Run #2 P Run #1 5 Run #2 Purgeable Ar CAS No. 71-43-2 108-88-3		Page 1 of						
Client Sam Lab Samp Matrix: Method: Project:	pple ID: 1508067 le ID: T14400- AQ - Tr SW846 Blanco I	FB01 -5 rip Blank 8021B North Fla	Water are Pit		Date S Date F Percer	Sampled: Received nt Solids	: 08/15/06 : 08/16/06 : n/a	
Run #1 Run #2	File ID KK14833.D	DF 1	Analyzed 08/17/06	<b>By</b> FO	Prep D n/a	ate	Prep Batch n/a	Analytical Batch GKK882
Run #1 Run #2	Purge Volume 5.0 ml							
Purgeable	Aromatics							
CAS No.	Compound		Result	RL	MDL	Units	Q	
71-43-2 108-88-3 100-41-4 1330-20-7 95-47-6	Benzene Toluene Ethylbenzene Xylenes (total) o-Xylene m,p-Xylene		ND ND ND ND ND	1.0 1.0 2.0 1.0 1.0	0.35 0.20 0.33 0.36 0.14 0.36	ug/l ug/l ug/l ug/l ug/l ug/l		
CAS No.	Surrogate Rec	overies	Run# 1	Run#	2 Lim	its		

119%

134%

ND = Not detected **MDL** - Method Detection Limit

4-Bromofluorobenzene

aaa-Trifluorotoluene

RL = Reporting Limit

460-00-4

98-08-8

E = Indicates value exceeds calibration range

J = Indicates an estimated value

56-136%

50-144%

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound



Page 1 of 1



Misc. Forms

**Custody Documents and Other Forms** 

Includes the following where applicable:

• Chain of Custody

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	Client / Reporting Information			Pr	oject in	formatio	00 ]										Re	queste	d Anal	yses	1	Matrix Codes	
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<u> </u>	1 Day EMERGENCY			Comm	wciai "A'	* s Berul	14 Oct																
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T14400: Chain of Custody Page 1 of 2 4.1

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T14400: Chain of Custody Page 2 of 2


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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

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Account:	MWHSLCU	HSLCUT Montgomery Watson										
Project:	Blanco Nort	co North Flare Pit										
Sample	File ID	DF	Analyzed	<b>By</b>	Prep Date	Prep Batch	Analytical Batch					
GKK882-MB	KK14831.D	1	08/17/06	FO	n/a	n/a	GKK882					

The QC reported here applies to the following samples:

Method: SW846 8021B

T14400-1, T14400-2, T14400-3, T14400-4, T14400-5

CAS No.	Compound	Result	RL	MDL	Units Q
71-43-2 100-41-4 108-88-3 1330-20-7 95-47-6	Benzene Ethylbenzene Toluene Xylenes (total) o-Xylene m,p-Xylene	ND ND ND ND ND	1.0 1.0 2.0 1.0 1.0	0.35 0.33 0.20 0.36 0.14 0.36	ug/l ug/l ug/l ug/l ug/l ug/l
CAS No.	Surrogate Recoveries		Limi	ts	

460-00-4	4-Bromofluorobenzene	113%	56-136%
98-08-8	aaa-Trifluorotoluene	131%	50-144%



Page 1 of 1

## Blank Spike Summary

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Job Number: Account: Project:	T14400 MWHSLCU Blanco Nortl	MWHSLCUT Montgomery Watson Blanco North Flare Pit										
Sample GKK882-BS	File ID KK14830.D	DF 1	Analyzed 08/17/06	<b>By</b> FO	Prep Date n/a	Prep Batch n/a	Analytical Batch GKK882					
			•									

The QC reported here applies to the following samples:

Method: SW846 8021B

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T14400-1, T14400-2, T14400-3, T14400-4, T14400-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	20	24.7	124	72-125
100-41-4	Ethylbenzene	20	23.9	120	76-125
108-88-3	Toluene	20	23.6	118	74-125
1330-20-7	Xylenes (total)	60	71.8	120	78-124
95-47-6	o-Xylene	20	23.9	120	78-124
	m,p-Xylene	40	47.9	120	78-125
CAS No.	Surrogate Recoveries	BSP	Li	mits	
460-00-4	4-Bromofluorobenzene	114%	56	-136%	
98-08-8	aaa-Trifluorotoluene	128%	50	-144%	



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Matrix Spike/Matrix Spike Duplicate SummaryJob Number:T14400Account:MWHSLCUT Montgomery WatsonProject:Blanco North Flare Pit								
Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch	
T14400-1MS	KK14844.D	50	08/17/06	FO	n/a	n/a	GKK882	
T14400-1MSD	KK14845.D	50	08/17/06	FO	n/a	n/a	GKK882	
T14400-1	KK14842.D	1	08/17/06	FO	n/a	n/a	GKK882	
T14400-1	KK14843.D	50	08/17/06	FO	n/a	n/a	GKK882	
The QC report	ed here appli	es to the	e following sam	ples:		Method: SW	/846 8021B	
		,	T14400 1	Spike	MS MS	MCD		

CAS No.	Compound	ug/l	Q	ug/l	ug/l	%	ug/l	%	RPD	Rec/RPD
71-43-2	Benzene	6490 <sup>a</sup>		1000	7330	681*	7320	680	* 0	45-137/21
100-41-4	Ethylbenzene	165		1000	1360	120	1380	122	1	68-126/15
108-88-3	Toluene	26.6		1000	1100	107	1110	108	1	63-130/22
1330-20-7	Xylenes (total)	1270 <sup>a</sup>		3000	4430	108	4520	111	2	72-125/19
95-47-6	o-Xylene	91.8		1000	1130	104	1170	108	3	70-128/20
	m,p-Xylene	1270 <sup>a</sup>		2000	3290	109	3350	112	2	63-136/19
CAS No.	Surrogate Recoveries	MS		MSD	T1	4400-1	T14400-	1	Limits	
460-00-4	4-Bromofluorobenzene	114%		115%	29	7%* <sup>b</sup>	118%		56-136%	
98-08-8	aaa-Trifluorotoluene	167%*	¥	150%*	33	3%* <sup>b</sup>	184%* <sup>t</sup>		50-144%	

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(a) Result is from Run #2.

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(b) Outside control limits due to matrix interference.



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Analy	tical Method	d/Analytes:	SW-84	6 8021B (BT)	EX) Sa	mple Collec	ction Date(s):08/15/06
	L	aboratory:	A	Accutest		MWH .	Job Number: <u>EPC-BNFP</u> (BNFP)
<b>Batch Identification:</b>				T14400			Matrix: <u>Water</u>
	MS/MSD I	Parent(s) <sup>(a)</sup> :		None	F	ield Replica	nte Parent(s): <u>None</u>
Verifi	ication Co	omplete:	Сі	raig l	<u> </u>	ore	- 09/28/06
					(	Date/Signature	)
Foot Notes	Site ID	Sample	ID	Lab. ID	Hits (Y/N)	Quals.	Comments
1,3	BNFP	MW-23		T14400-1	Y	] ] ] ] ] ]	Benzene @ 6400 µg/l Toluene @ 26.6 µg/l Ethylbenzene @ 165 µg/l Xylenes (total) @ 1270 µg/l o-Xylene @ 91.8 µg/l m,p-Xylene @ 1270 µg/l
2	BNFP	MW-26		T14400-2	Y	1 1 1 1 1	Benzene @ 2.7 µg/l Toluene @ 21.0 µg/l Ethylbenzene @ 11.1 µg/l Xylenes (total) @ 41.0 µg/l o-Xylene @ 7.3 µg/l m.p.Xylene @ 33.8 µg/l
None	BNFP	MW-27		T14400-3	Y	None	
None	BNFP	MW-33		T14400-4	Y	None	
None	BNFP	080606TB02		T14400-5		None	
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#### **DATA VERIFICATION WORKSHEET** (Page 2 of 2)

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		Cu.	1110			

SW-846 8021B (BTEX) MWH Job Number: EPC-BNRP (BNRP)

 Laboratory:
 Accutest
 Batch Identification:

T14400

Verification Criteria							
Sample ID	MW-23	MW-26	MW-27	MW-33	060606TB 02		
Lab ID	T14400-1	T14400-2	T14400-3	T14400-4	T14400-5		
Holding Time	А	A	Α	A	A		
Analyte List	A	А	A	A	А		
Reporting Limits	А	А	А	А	А		
Surrogate Spike Recovery	A <sup>1</sup>	A <sup>2</sup>	А	А	А		
Trip Blank	А	А	А	А	N/A		
Equipment Rinseate Blanks	N/A	N/A	N/A	N/A	N/A		
Field Duplicate/Replicate	N/A	N/A	N/A	N/A	N/A		
Initial Calibration	N	N	N	N	N		
Initial Calibration Verification (ICV)	N	N	N	N	Ň		
Continuing Calibration Verification (CCV)	N	N	N	N	N		
Method Blank	А	А	А	Α	А		
Laboratory Control Sample (LCS)	Α	A	А	А	A		
Laboratory Control Sample Duplicate (LCSD)	N	N	N	N	N		
Matrix Spike/Matrix Spike Dup. (MS/MSD)	A <sup>3</sup>	N/A	N/A	N/A	N/A		
Retention Time Window	N	N	N	N	N		
Injection Time(s)	N	N	N	N	N		
Hardcopy vs. Chain-of-Custody	A	A	Α	Α	А		
EDD vs. Hardcopy	N	N	N	N	N		
EDD vs. Chain of Custody	N	N	N	N	N		

(a) List QC batch identification if different than Batch ID

A indicates verification criteria were met

A/L indicates verification criteria met based upon Laboratory's QC Summary Form

X indicates verification criteria were not met

N indicates data review were not a project specific requirement

N/A indicates criteria are not applicable for the specified analytical method or sample N/R indicates data not available for review

### **NOTES:**

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Surrogate recovery high for 4-bromofluorobenzene (297% [56-136%]) and aaa-trifluorotoluene (333%/184% [50-144%]). Qualify all detects with a "J" flag 1) indicating that the data are estimated, potentially biased high.

Surrogate recovery high for 4-bromofluorobenzene (170% [56-136%]) and aaa-trifluorotoluene (1487% [50-144%]). Qualify all detects with a "J" flag indicating 2) that the data are estimated, potentially biased high.

MS/MSD recoveries high for benzene (681%/380% [45-137%]). Sample concentration is greater than four times spike concentration. No qualifcation. 3)

APPENDIX D Soil Boring Logs and Monitoring Well Installation Diagrams

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MONITORING	WELL INST	ALLATION RECORE	)			Borehole # Well # Page <u>1</u>	1 MW-31 of 1
PO Box 3861 Farmington, New Me (505) 334-2791	exico 87499			Project Na Project Num Project Locat	me Blanc ber ion Bloon	to North Flare Pi Cost Co nfield, NM	t
Elevation Well Location GWL Depth Installed By Date/Time Starte Date/Time Comp	down gradier na Envirotech, I d 5/18/0 oleted 5/19/0	nt of pond nc. 6 0759 hrs 6 1638 hrs	Cli	On-Site Geolog Personnel On-S Contractors On-S ent Personnel On-S	gist <u>M. Ne</u> Site <u>D. Pa</u> Site <u>Envire</u>	ee dilla, S. Smith, F otech	Chee
Dep	ths in Reference n	e to Ground Surface Material	Depth		Top of	Protective Casin	g <u>2.75</u>
	tine Casina		(feet)		Top of	Riser	2.25
Top of Protec	tive Casing	8" square steel	2.75	i i i L	Ground	I Surface	0.0
Top of C		Quickcrete	0.0				
Bottom of	Concrete	Quickcrete	5				
Top of Be	entonite	3/8" bentonite chips	-0.5				
Bottom of I	Bentonite	3/8" bentonite chips	-4.08				
Top of	Grout	Portland grout w/≈13% bentonite powder	-4.08				
Bottom o	f Grout	Portland grout w/≈13% bentonite powder	-33.6				
Top of We	ell Riser	4" schd. 40 PVC	2.25				
Bottom of V	Vell Riser	4" schd. 40 PVC	-40.54				
Top of We	ll Screen	0.010 " slotted PVC, schd. 40	-40.54	xx xx	Top of	Seal	-33.6
Bottom of W	ell Screen	0.010 " slotted PVC, schd. 40	-70.83				
Top of Pelto	onite Seal	3/8" bentonite chips	-33.6				
Bottom of Pe	Itonite Seal	3/8" bentonite chips	-37.3		Top of	Gravel Pack	<u>-37.3</u>
Top of Gra	vel Pack	10-20 grade Colorado Silica Sand	-37.3		Top of	Screen	-40.54
Bottom of G	ravel Pack	10-20 grade Colorado Silica Sand	-71.5				
Top of Natur	al Cave-In		na				
Bottom of Nat	ural Cave-In		na				
Top of Gro	undwater	Not available due to slow recovery	na		Bottom	of Screen	<u>-70.83</u>
Total Depth o	of Borehole		71.5	ite e	Bottom	of Borehole	<u>-71.5</u>

Comments: <u>18-#50 sand</u>, <u>3-#50 3/8 bent Chips</u>, <u>6-#94 portland</u>, <u>1.5-#50 aqua gel</u>.

Geologist Signature <u>Martin Nee</u>

C:\000\clients\MWH\Data\Blanco\2006\MW-31 completion.doc

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Lodestar Services, Inc.

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PO Box 3861 Farmington, New Mexico 87499 (505) 334-1464

 Elevation

 Borehole Location
 MW-31

 GWL
 Depth
 56' bloc at MW-23

 Logged By
 Lodestar Services

 Drilled By
 Envirotech

 Date/Time
 Started
 05/18/06 0759 hrs

 Date/Time
 Completed
 5/19/06 1737 hrs

Dece	1	of	2
Page	1	01	4

Project Name	Blanco North Flare Pit	_
Project Number	Phase	
Project Location	Bloomfield, NM	
Well Logged By	M. Nee	_
Personnel On-Site		

Contractors On-Site D. Padilla F. Chee, S. Smith Client Personnel On-Site

Drilling Method HSA to 62.5' then rotary to 71.50' Air Monitoring Method PhotoVac 2020 PID

- 4			_	_				_	_		
				Sample			Depth				
	Depth		Sample	Type &	Sample Description	USCS	Lithology	A	ir Monita	ring	Drilling Conditions
	(Feet)		Interval	Recovery	Classification System: USCS	Symbol	Change	i	Jnits: N	DU	& Blow Counts
				(inches)			(feet)	BZ	BH	S	
	0		_								
					0-8' Sandy Clay grading to very fine	cl					
					sand at 8', pale vellowish brown.						
ł					unconsolidated moderately well sorted						}
I					anooniooniaatoa, moaoratoi, non contea,						
I	- <u>-</u>		5-6 5'	17"-				0		6	17 blow counts
I											
I											
I											
I		1									
l		Í			8-28' <b>Sand</b> , pale yellowish brown, very	sp					1
	10		10-11.5	' 18"	fine to medium grained, moderately			0		5.6	12 blow counts
					sorted, subangular, very fine to fine						
I					pebble gravel 3" thick at 20-20.25',						
I					gravel is angular, then to well sorted						
I					medium sand.						
ł	15	•	15-16.5	18"				0		10.2	18 blow counts
ł		- 1									
			-								
I											
I											
I			20-21 5	10"				0		116	20 blow counto
ł		í	20-21.0	10					••••••	11.0	
I		1									
I		1									
I											
I											
I	25		25-26.5	18"				0		10.9	20 blow counts
I											
ł		- 1									
I			1								
t					28-62' Sandy Clay, Pale Yellowish	cl					
ł	30		30-31	18"	brown, mottled with alkali, moderately			0		9.6	25 blow counts
1					consolidated, poorly sorted, cuttings are						
I					balling up.						
I					<b>5</b> 1						
I											
I	- <sub>35</sub>		35-36	16"				n		113	37 blow counts
I				······				· · · · · · · · · · · · · · · · · · ·			hard drilling added 5 g
I											water to outside augest to
I					× .						holp get outtinge ut
											neip get cuttings up.
I		-	40.40	1.4"				•			
I	L 40	ľ	40-40.5	14				U		U	45 DIOW COUNTS
1		- 1									

Comments:

18" split spoon sample collected every 5' beneath ground surface. Rig down 1122 hrs 5/18/06 mobed off site for remainder of day to repair leaking transmission seal. Resumed drilling 0700 hrs 5/19/06, stuck in hole at 53.5' bgs, broke sub, traveled to office for parts, returned 0906, free augers 0937, 1515 hrs drillers mobe to shop for more grout.

Lodestar Services, Inc.

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#### Page 2 of 2

PO Box 3861		
Farmington, New Mexico 87499	Project Name	Blanco North Flare Pit MW-31
(505) 334-1464	Project Number	Phase
	Project Location	Bloomfield, NM
Sample	Depin	

Deb	n		Sample	iype &	Sample Description	บระร	Litnology	A	r Monito	nng	Unilling Conditions
(Fee	et)		Interval	Recovery	Classification System: USCS	Symbol	Change	<b>ι</b> ι	Jnits: N	DU	& Blow Counts
				(inches)			(feet)	BZ	BH	s	
	40									13.1	45 blow counts
				1	unconsolidated sand in sampler from						very difficult drilling
					40,75-41.25 then to stiff clay,noted alkali						
			1	ł	along bedding?surfaces @41.5"					1	1
			1								
<u> </u>	45		1	1.01						10.7	45 blow counts
	45		45-46.5 I	<u>   2</u>				0		12.7	45 DIOW COUNTS
					Aikali stringers @45-46.5, weil						very amount aming
					consolidated						added 10 gal. water to
<b>—</b>											outside of augers
											no more sampling
	50							0			
L											very difficult drilling
			l I	1							
Г											stuck in hole, broke sub
	55							0			added 20 gal. water
											very difficult drilling
-											
			1								drilling appears easier at
H-											57'
-	60							<u> </u>			57
	00						• • • • • • • • • • • • • • • • • • • •				
$\vdash$											refusal, 50 blow counts
			0.05								sampled
<u> </u>			62.5-	4	62-71.5 Sandstone, light grey, well					0	started rotary drilling
			02.0		indurated, cemented, clay to med sand						@62.5
	65				size grains,			0			
L											
	70							0			
-											1150 5/19/06 TD hole
											71.5' bas
	75										
<u> </u>											
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Comments:

4" PVC well completed with 30' of .010 screen , borehole dry on 6/22/06 0645 hrs, well dry 6/31/06 0920 hrs

10.25" OD augers to 62" bgs then 6" diameter rotary bit to 71.5'bgs

### MONITORING WELL INSTALLATION RECORD

Lodestar Services, Inc

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Borehole #	1
Well #	MW-32
Page 1	of 1

PO Box 3861 Farmington, New Me (505) 334-2791 Elevation Well Location GWL Depth	exico 87499 Center of For	mer North Flare Pit	-	Project Name Project Number Project Location On-Site Geologist Personnel On-Site Contractors On-Site	Blanco North Flare Pit Cost Coc Bloomfield, NM M. Nee D. Padilla, H. Rickerho Envirotech	ff, F. Chee
Installed By	Envirotech, Ir	10.	_ Clie	ent Personnel On-Site	B. Breeding	
Date/Time Started5/15/06 1040 hrsDate/Time Completed5/17/06 1638 hrs				a an ing the second second second second		the state of the state
Dept	ths in Reference	to Ground Surface				
Iter	n	Material	Depth (feet)		Top of Protective Casing	<u>3.17</u>
Top of Protect	tive Casing	8" square steel	3.17'		Top of Riser	<u>2.48</u>
Bottom of Prote	ective Casing		-1.33		Ground Surface	<u>0.0</u>
Top of Co	oncrete	Quickcrete	0.0			
Bottom of G	Concrete	Quickcrete	25'			
Top of Be	entonite	3/8" bentonite chips	25'			
Bottom of E	Bentonite	3/8" bentonite chips	-2.92'			
Top of C	Grout	Portland grout w/≈6% bentonite powder	-2.92'			
Bottom of	f Grout	Portland grout w/≈6% bentonite powder	-23.25			
Top of We	ell Riser	4" schd. 40 PVC	2.48			
Bottom of W	Vell Riser	4" schd. 40 PVC	-40.43			
Top of We	ll Screen	0.010 " slotted PVC, schd. 40	-40.43	000 000	Top of Seal	<u>-23.25</u>
Bottom of W	ell Screen	0.010 " slotted PVC, schd. 40	-80.6			
Top of Pelto	onite Seal	3/8" bentonite chips	-2325			
Bottom of Pel	Itonite Seal	3/8" bentonite chips	-26.3		Top of Gravel Pack	<u>-27.9</u>
Top of Gra	vel Pack	10-20 grade Colorado Silica Sand	-27.9		Top of Screen	<u>-40.43</u>
Bottom of Gravel Pack		10-20 grade Colorado Silica Sand	-81.4			
Top of Natura	al Cave-In	silty clay	-26.3			
Bottom of Nati	ural Cave-In	silty clay	-27.9			
Top of Grou	undwater	Not available due to slow recovery			Bottom of Screen	<u>-80.6</u>
Total Depth o		-81.4	т. 1914 г.	Bottom of Borehole	<u>-81.4</u>	

Comments: 21-#50 sand, 3-#50 3/8 bent Chips, 6-#94 portland, 2/3-#50 aqua gel.

Geologist Signature \_\_\_\_\_ Martin Nee

Lodestar Services, Inc.

PO Box 3861 Farmington, New Mexico 87499 (505) 334-1464

Elevation						
Borehole Location MW-32						
GWL Depth						
Logged By Lodestar Services						
Drilled By Envirotech						
Date/Time Started 05/15/06 1048 hrs						
Date/Time Completed 5/17/06 1641 hrs						

Project Name	Blanco North Flare Pit	
Project Number	Phase	
Project Location	Bloomfield, NM	

Page 1 of 2

M. Nee Well Logged By

Personnel On-Site		
Contractors On-Site	D. Padilla H. Rickerhoff	_
Client Personnel On-Site	B. Breeding (MWH)	

Drilling Method HAS to 45' then rotary to 80' Air Monitoring Method PhotoVac 2020 PID

		Sample			Depth				
Denth	Sample	Type &	Sample Description	USCS	Lithology	Ai	r Monito	rina	Drilling Conditions
(Feet)	Interval	Becovery	Classification System: USCS	Symbol	Change		inits: NI	נור	& Blow Counts
(1000)	interrat	(inches)		0,	(feet)	87	RH	s	
	 	(indiricity)			(1001)			Ē	
[ [	 		0-25' grey clay unconsolidated minor	cl					
			nobble gravel backfill material						
			pebble graver, backini matemai	1					
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	05 00 5	10"		i –		_			10 blow equato
2	 25-26.5	- 16				0		<u> </u>	12 DIOW COUNTS
<b>i</b> ⊢ ∣		Í I	25-28 clayey sand, dark yellowish	sc			i i		
			brown, clay to fine pebble gravel,						
			unconsolidated, poorly sorted.	1					
		;	28-81.4' shale, light olive grey,						tough drilling @ 28'
30	30-31	12"	consolidated , parting surfaces visible	ſ		σ	(	279	50 blow counts
						1			Refusal
				1					
				<b>(</b>					[
35	 35-36	12"				0		758	50 blow counts
									Refusal
		1							
40	40-40.5	6"				0		0	50 blow counts
		]	J						

Comments: Started rotary drilling at 1431on 5/15/06 refusal at 56 'bgs, no more sampling, 0720 5/16/06 drill to 80' bgs with 3.25 " rotary bit, 0940-1430 drill down after breaking 2 subs, return with rotary bit large enough to install 4" well, will have to ream out smaller hole. 5/17/06 0815-1100 drillers leave to p/u grout with 30% solids, 1200-1438 hrs pump plugged with mud, drillers leave to clean pump

**Geologist Signature** 

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RECORD OF	SUBSURFACE	EXPLORATION

Lodestar Services, Inc. Page 2 of 2 PO Box 3861 Blanco North Flare Pit MW-32 Farmington, New Mexico 87499 Project Name (505) 334-1464 Project Number Phase Bloomfield, NM Project Location Litnology veptn Sample Type & sample Description ບຮບຮ Air monitoring Uniting Conditions Change (Feet) Classification System: USCS Units: NDU & Blow Counts Symbol Interva Recove (inches) (feet) ΒZ BH s 40 45 45-46.1 0 0 50 blow counts \_\_\_\_ 50 50-51.5 0 0 50 blow counts no more sampling 55 0 started rotary drilling @ 56' bgs \_ \_ 60 65 0 \_ ..... 1437 moist shale blowing 70 0 out of hole at 68' bgs \_ 75 80 1453 hrs on 05/16/06 at 80' bgs with 6" rotary TD 81.4' bgs 85 90

Comments:

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4" PVC well completed with 40' of .010 screen , borehole dry on 6/18/06 0645 hrs

10.25" OD augers to 56" bgs then 6" diameter rotary bit to 81.4'bgs

MONITORING WELL INSTAL         Lodestar Services, Inc         PO Box 3861         Farmington, New Mexico 87499         (505) 334-2791         Elevation         Well Location         GWL Depth         79.61 btoc         Installed By         Envirotech, Inc.         Date/Time Started         5/22/06 0         Date/Time Completed	ILATION RECORI	D 	Project Name Project Number Project Location On-Site Geologist Personnel On-Site Contractors On-Site ent Personnel On-Site	Borehole # 1 Well # <u>MW-33</u> Page <u>1</u> of <u>1</u> Blanco North Flare Pit Cost Code Bloomfield, NM M. Nee D. Padilla, S. Smith, F. Chee Envirotech			
Depths in Reference to	Ground Surface						
Item	Material	Depth (feet)		Top of Protective Casin	g <u>2.46</u>		
Top of Protective Casing	8" square steel	2.46		Top of Riser	<u>2.17</u>		
Bottom of Protective Casing		2.04		Ground Surface	<u>0.0</u>		
Top of Concrete	Quickcrete	0.0					
Bottom of Concrete	Quickcrete	5					
Top of Bentonite	3/8" bentonite chips	5					
Bottom of Bentonite	3/8" bentonite chips	-44.1					
Top of Grout	Portland grout w/≈8% bentonite powder	-2.5					
Bottom of Grout	Portland grout w/≈8% bentonite powder	-44.1					
Top of Well Riser	2" schd. 40 PVC	2.17					
Bottom of Well Riser	2" schd. 40 PVC	-52.08					
Top of Well Screen	0.010 " slotted PVC, schd. 40	-52.08	× ×	Top of Seal	<u>-44.1</u>		
Bottom of Well Screen	0.010 " slotted PVC, schd. 40	-80.08	∞< ∞				
Top of Peltonite Seal	3/8" bentonite chips	-44.1	000 000				
Bottom of Peltonite Seal	3/8" bentonite chips	-46.5		Top of Gravel Pack	<u>-46.5</u>		
Top of Gravel Pack	10-20 grade Colorado Silica Sand	-46.5		Top of Screen	-52.08		
Bottom of Gravel Pack	10-20 grade Colorado Silica Sand	-80.75					
Top of Natural Cave-In		na					
Bottom of Natural Cave-In	··· <u></u>	па					
Top of Groundwater	5/31/06	-77.44	and the second of the second o	Bottom of Screen	<u>-80.08</u>		
		-80.75		Bottom of Borehole	<u>-80.75</u>		

Comments: <u>3-#50 sand</u>, <u>3-#50 3/8 bent Chips</u>, <u>8-#94 portland</u>, <u>1.2-#50 aqua gel</u>.

Geologist Signature <u>Martin Nee</u>

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Lodestar Services, Inc.

PO Box 3861 Farmington, New Mexico 87499 (505) 334-1464

 Elevation
 MW-33

 Borehole Location
 MW-33

 GWL Depth
 56 btoc at MW-23

 Logged By
 Lodestar Services

 Drilled By
 Envirotech

 Date/Time
 Started
 05/22/06 0730 hrs

 Date/Time
 Completed
 5/22/06 1632 hrs

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Project Name	Blanco North Flare Pit	
Project Number	Phase	
Project Location	Bloomfield, NM	

Well Logged By M. Nee

Personnel On-Site Contractors On-Site Client Personnel On-Site

D. Padilla F. Chee, S. Smith

Drilling Method HSA to 53' then rotary to 80.9'\_\_\_\_\_ Air Monitoring Method PhotoVac 2020 PID

			Sample			Depth				
De	epth	Sample	Type &	Sample Description	USCS	Lithology	A	ir Monito	oring	Drilling Conditions
(F	eet)	Interval	Recovery	Classification System: USCS	Symbol	Change		Inits: N	DU	& Blow Counts
		 	(inches)	······	I —	(feet)	BZ	BH	r <u>-</u> s	
l (* ***	····· V_	 		0-10' Sand pale vellowish brown silt to	SW					
				coarse grained sand subrounded		ł				
				poorly sorted, unconsolidated.						
	5				1		0		1	
	10 15			10-27' <b>Sandy clay</b> , pale yellowish brown, unconsolidated, moderately well sorted, sand is subrounded.	SC		0			
	20						0			
	23	 								
	30			27-34', <b>Sand</b> , pale yellowish brown, silt to fine pebble gravel, unconsolidated poorly sorted.	sp		0			
	35			34-36', <b>Gravel</b> , medium pebble gravel in cuttings. 36-38', <b>Clayey Sand</b> , pale yellowish brown, moderately consolidated, poorly sorted silt to fine pebble gravel.	gp sc		0			
	40	40-41.5	18"	38-53 Sandy silty clay, light olive grey, moderately well sorted,	cl		0		4.1	22 blow counts

Comments:

18" split spoon sample collected every 5' beneath ground surface starting at 40' bgs. Rig down 0810 hrs out of fuel, resume drilling 0900 hrs. Drillers to shop for grout and quickgel 1357 hrs, return 1506 hrs

**Geologist Signature** 

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Lodestar Services, Inc.

#### Page 2 of 2

O Box 3861 armington, New 505) 334-1464	Mexico 874	199		Project Project	Name	Blan	co No	rth Flar Pha	e Pit MW-33
דערו דעט (שטע			Project Number Project Location			Bloomfield, NM			
ບອຸກຸກ (Feet)	Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	usus Symbol	Deptn Litnoiogy Change (feet)	BZ	ur Monit Units: N BH	oring IDU S	Drilling Conditions & Blow Counts
40			moderately consolidated, alkali stringers throughout, <5% very fine sand.					4.1	22 blow counts
45	45-46.5		Alkali stringers @45-46.5', well consolidated			0		5.2	31 blow counts difficult drilling
50	50-51.5		olive grey @ 50' bgs, no alkali, minor black organic root?material in sampler @ 51.5' no more sand			0		4.6	44 blow counts
55			53-80.9' <b>Sandstone,</b> light grey, well indurated, cemented, clay to med sand size grains			0			Auger refusal @ 53' bg switch to rotary drilling
60						0			
						0	******		
-									@ 70 feet
75 									
80									TD 80.75' bgs
85									
90									

Comments:

Annual Contraction

2" PVC well completed with 30' of .010 screen , borehole dry on 6/22/06 0645 hrs, depth to water on 6/31/06 0920 hrs 79.61' btoc. 7.25" OD augers to 53' bgs then 3.25" diameter rotary bit to 80.75' bgs