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## Oil Conservation Division Environmental Bureau

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July 31, 2007

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

RE: 2007 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 **2007** Annual Groundwater Report for the Blanco Plant South Flare Pit and D Plant Areas. The enclosed report details results from the annual groundwater sampling event, conducted in June 2007 at the South Flare Pit and D Plant areas.

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

Sincerely,

Ian Yanagisawa P.E., P.G.

Principal Environmental Engineer

Enclosures: as stated

cc: Denny Foust, New Mexico Oil Conservation Division

Jed Smith, MWH El Paso File Copy Prepared for:

#### EL PASO NATURAL GAS COMPANY



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## 2007 ANNUAL GROUNDWATER REPORT FOR THE BLANCO PLANT SOUTH FLARE PIT AND D PLANT AREAS

San Juan County, New Mexico

July 2007

Prepared by:

**MWH** 

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

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#### LIST OF ACRONYMS

CHC Chlorinated Hydrocarbons

DCA Dichloroethane
DCB Dichlorobenzene
DCE Dichloroethene

EPNG El Paso Natural Gas Company

MWH Americas, Inc.

NMOCD New Mexico Oil Conservation Division

NMWQCC New Mexico Water Quality Control Commission

PCE Perchloroethene TCE Trichloroethene

#### 1.0 INTRODUCTION

This 2007 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 2007 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 2006 Groundwater Report for the Blanco Plant South Flare Pit and D Plant Areas (MWH, 2006), which was submitted to New Mexico Oil Conservation Division (NMOCD) in September 2006. 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 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).
- Pending NMOCD approval, EPNG is requesting to abandon monitoring well MW 2.
- 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 2007, Section 4.0 summarizes the results of the sampling event, and Section 5.0 discusses recommendations for continued activities at the site.

#### 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; therefore, 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 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-southeast through the site. The average hydraulic conductivity was estimated to be 2.1 x 10<sup>-4</sup> 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 2007, 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. The groundwater flow direction 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.

#### 3.0 2007 ANNUAL GROUNDWATER SAMPLING EVENT

Monitoring wells at the Blanco Plant were sampled on June 20 and 21, 2007, and analyzed for nitrate+nitrite concentrations and/or CHCs, as described 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. Groundwater monitoring wells in the North Flare Pit area (MW-19, MW-23, MW-24, MW-26, and MW-27) were removed from the annual nitrate+nitrite sampling event as discussed in the 2006 Groundwater Report for the Blanco Plant South Flare Pit and D Plant Areas (MWH, 2006).

#### 3.1 GROUNDWATER NITRATE+NITRITE DATA

Groundwater samples were collected on June 20 and 21, 2007 from wells MW-5, MW-6, 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 and MW-7; however, these wells were dry. 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-6, MW-14, MW-15, MW-28, MW-29, and MW-30. Monitoring well MW-5 had not been sampled since November of 2000 due to dry conditions; however, during the June 2007 sampling event the well yielded nitrate+nitrite concentrations exceeding NMWQCC standards at a concentration of 15 milligram per liter (mg/L). Monitoring well MW-2 has not been sampled since 1994 because the well has been dry. Historical groundwater data collected from well MW-2 indicated elevated nitrate+nitrite concentrations above NMWQCC standards. Additionally, monitoring well MW-7 has not been sampled since 2002 because the well has been dry. Historical groundwater data collected from well MW-7 indicated nitrate+nitrite concentrations below NMWQCC standards.

Groundwater nitrate+nitrite concentrations from the June 2007 sampling event are presented on Figure 3.1. A comparison of nitrate+nitrite concentrations versus groundwater elevations over time was performed for monitoring wells MW-8, MW-12, MW-13, MW-14, MW-15, MW-28, MW-29, and MW-30 and are presented in Appendix C. Due to insufficient data, hydrographs were not generated for wells MW-2, MW-5, MW-6, and MW-7. The inferred 10 mg/L isoconcentration contour is also presented on this figure to depict the approximate areas in exceedance of the NMWQCC standard. Between 1994 through 2005, nitrate+nitrite concentrations in all of the wells in the North Flare Pit area have consistently been below the NMWQCC standard; therefore, these wells have not been sampled for nitrate+nitrite since 2005.

#### 3.2 GROUNDWATER CHLORINATED HYDROCARBON DATA

Groundwater samples from the four wells in the D Plant area were also analyzed for a suite of selected 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 2007 are presented in Table 3.1.

Exceedance of applicable U.S. Environmental Protection Agency (USEPA) maximum contaminant levels (MCLs) and NMWQCC standards were only observed in monitoring wells MW-13 and MW-14. Well MW-13 had a TCE concentration of 29.6 ug/L (MCL is 5.0 ug/L) and a 1,1-DCA concentration of 58.8 ug/L (NMWQCC standard is 25 ug/L). Well MW-14 had a TCE concentration of 11.0 ug/L and a 1,1-DCA concentration of 24.2 ug/L, slightly below the NMWQCC standard. Groundwater chlorinated hydrocarbon concentrations from the June 2007 sampling event are presented on Figure 3.2. Comparisons of selected CHCs concentrations versus groundwater elevations over time was performed for monitoring wells MW-12, MW-13, MW-14, and MW-15 and are presented in Appendix D.

#### 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 5-7 years, displaying no clear increasing or decreasing trends.
- Monitoring well MW-5 had not been sampled since November of 2000 due to dry conditions; however, during the June 2007 sampling event the well yielded nitrate+nitrite concentrations exceeding NMWQCC standard of 10 mg/L at a concentration of 15 mg/L.

#### **Chlorinated Hydrocarbons**

- Monitoring wells MW-12 and MW-15 have been below USEPA or NMWQCC standards for CHCs since the June 8, 2006 sampling event.
- Groundwater samples collected from MW-13 exceeded the 1,1-DCA NMWQCC standard of 25 ug/L at a concentration of 58.8 ug/L. Currently, the USEPA does not have a standard for 1,1-DCA. Additionally, the groundwater sample from MW-13 exceeded the TCE USEPA standard of 5.0 ug/L at a concentration of 29.6 ug/L; however, it did not exceed the NMWQCC standard of 100 ug/L. This is generally consistent with historic results. The stable concentrations in MW-13 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.
- Groundwater samples collected from well MW-14 exceeded the TCE USEPA standard of 5.0 ug/L at a concentration of 11.0 ug/L; however, it did not exceed the NMWQCC standard of 100 ug/L. Additionally, there was an increase in 1,1-DCA, 1,2-DCB, and cis-1,2-DCE in well MW-14; however, these concentrations remain below USEPA and NMWOCC standards for CHCs.

#### 5.0 RECOMMENDATIONS

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

- All groundwater monitoring wells in the South Flare Pit and D Plant areas of the Blanco Plant will be sampled annually and analyzed for nitrate+nitrite concentrations.
- Groundwater samples from monitoring wells in the D Plant Area (MW-12, MW-13, MW-14 and MW-15) will continue to be analyzed annually for CHC concentrations, as listed in Table 4.1.
- Well MW-2 has been dry since 2002. All current evidence suggests it is unlikely
  this well will produce sufficient water for sampling in the future. Therefore,
  pending approval by NMOCD, EPNG will abandon the well 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).
- As stated in the 2006 Groundwater Report for the Blanco Plant South Flare Pit and D Plant Areas (September 2006), beginning in 2008, groundwater monitoring wells in the North Flare Pit area (MW-19, MW-23, MW-24, MW-26, and MW-27) will no longer be sampled or reported since these wells are not associated with the South Flare Pit investigation.

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

#### 6.0 REFERENCES

- Bechtel Environmental, 1989. Groundwater Investigation Report, El Paso Natural Gas Company's Blanco Plant, San Juan County, New Mexico. January 1989.
- K.W. Brown and Associates, Inc, 1990. *Site Investigation of the Blanco Plant, San Juan County, New Mexico*. Prepared for El Paso Natural Gas Company. February 1990.
- MWH, 2002. Groundwater Nitrate Work Plan for Blanco South Flare Pit and D Plant Areas. July 2002.
- MWH, 2003. Groundwater Nitrate Report for the Blanco Plant South Flare Pit and D Plant Areas. April, 2003
- MWH, 2003. 2003 Groundwater Report for the Blanco Plant south Flare Pit and D Plant Areas. August 2003.
- MWH, 2004. 2004 Groundwater Report for the Blanco Plant South Flare Pit and D Plant Areas. August 2004.
- MWH, 2005. 2005 Groundwater Report for the Blanco Plant South Flare Pit and D Plant Areas. August 2005.
- MWH, 2006. 2006 Groundwater Report for the Blanco Plant South Flare Pit and D Plant Areas. September 2006.

## **TABLES**

**(1)** N

MWH

#### TABLE 2.1 GROUNDWATER NITRATE+NITRITE ANALYTICAL DATA (1991 - 2007) 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
ļ	6/8/93	228
	9/29/93 2/10/94	233
	5/29/02	dry
	6/3/03	dry
	5/17/04	dry .
. [	5/30/05	dry .
	6/8/06	dry
	6/20/07	dry
24377.5	6/18/91	0.08
MW-5	2/19/93 . 6/7/93	<1.0 <1.0
į	1/27/94	<1.0
	8/8/00	4.6
	8/8/00	4.6
. [	11/10/00	4
	9/24/02	dry
	6/3/03	dry
	5/17/04	dry
	5/30/05 6/8/06	dry
	6/20/07	dry
	6/19/91	110
MW-6	2/19/93	63.5
1.2	6/7/93	76.4
	9/28/93	85.9
	10/7/93	94.5
	1/26/94	95.8
	8/20/94	1.7
	12/20/94	94
	2/16/95	90.6
•	9/24/02	95.1
	6/3/03	74
	5/17/04	dry
ii.	5/30/05	not sampled
	6/8/06	not sampled
	6/20/07	92
	6/18/91	0.28
MW-7	6/7/93	3 <2.8
	9/27/93 5/29/02	dry
	9/24/02	dry
	6/3/03	dry
	5/17/04	dry
	5/30/05	dry
ļ	6/8/06	dry
	6/20/07	dry
MINO	6/18/91	<0.06
MW-8	2/19/93 6/7/93	2.0 <1.0
-	9/27/93	<1.0
	1/27/94	<1.0
	11/10/00	<0.1
	11/10/00	<0.1
	3/23/01	0.21
.	3/23/01	0.21
-	8/28/01 5/28/02	0.33
-	6/3/03	0.13
	5/17/04	0.43
	5/31/05	0.30
	6/8/06	0.30
	6/20/07	0.50
	6/18/91	0.74
MW-10	2/19/93	1.2
	6/7/93	2.2
,	9/27/93	2.1
	1/27/94 5/28/02	2.0 dry
ļ	9/24/02	dry
ŀ	6/3/03	NS
I-	12/1/03	abandoned

Monitoring Well	Sample Date	Nitrate+Nitrite (mg/l)
	NMOCD	Standard: 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 8/28/01	8.4
	5/28/02	8.0
	6/3/03	6.7
	5/17/04	7.6
	5/31/05	8.6
	6/8/06	6.5
	6/20/07	7.6
	6/19/91	6.3
MW-13	2/24/93	10.9
172 77 -13	6/8/93	8.1
	9/28/93	4.1
	1/27/94	5.4
	8/8/00	<12.5
Ì	11/9/00	9.8
	3/22/01	13
	8/28/01	7.9
	5/28/02	6.0
٠,	6/3/03	5.8
	5/17/04	9.8
,	5/31/05	8.2
,	6/8/06	8.2
	6/20/07	6.1
	2/25/93	19.2
MW-14	6/8/93	17.5
	9/28/93	11.8
	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
	5/17/04	16
	5/31/05	24
•	6/8/06	14
	6/20/07	15
	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
ŀ	5/17/04	20
-	5/31/05	35
	6/8/06	17
	6/20/07 6/19/91	18
MW-16	2/25/93	0.07
IAT AA - TO	6/8/93	3.7
		<1.0
	6/3/03	NS.
, f	12/1/03	abandoned

<sup>&</sup>lt; 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.

#### TABLE 2.1 GROUNDWATER NITRATE+NITRITE ANALYTICAL DATA (1991 - 2007) BLANCO PLANT - SAN JUAN COUNTY, NEW MEXICO

Monitoring Well	Sample Date	Nitrate+Nitrite (mg/l)
	NMOCD S	tandard: 10 mg/L
	2/25/93	153
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
1111-12	6/10/93	NA 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	1
	6/8/06	not sampled
	6/20/07	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
	6/20/07	not sampled
	0.024.002	
MW-24	9/26/92 2/23/93	1.42 <1.0
141 44 -2-4	6/10/93	<1.0
,	9/29/93	<1.0
	2/10/94	<1.0
	5/13/94	NA NA
	8/22/94	·NA
}	11/13/00	0.1
. }	3/26/01	0.18
		0.15
	5/30/02	·
	6/3/03	dry
	5/17/04	dry
	5/30/05	not sampled
`	5/17/04	dry
	5/30/05	not sampled
	6/20/07	not sampled

Monitoring Well	Sample Date   Nitrate+Nitrite (mg/l)   NMOCD Standard: 10 mg/L				
· · · · · · · · · · · · · · · · · · ·	2/25/93	23			
MW-26		8.2			
IVI VV -20	6/10/93	0.24			
	3/26/01				
	5/30/02	0.26			
	6/3/03	NS NS			
	5/17/04	0.53			
	5/30/05	not sampled			
	6/8/06	not sampled			
	6/20/07	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 NA			
·		0.28			
	11/13/00				
	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			
	6/20/07	not sampled			
	10/7/93	2.1			
MW-28	2/2/94	2.8			
. 1/1 // -20	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			
		- I management of the last of			
	6/8/06	68			
. · · ·	6/20/07	42			
	10/7/93	8.3			
MW-29	2/2/94	19.6			
	8/20/94	28.8			
	12/20/94	41			
. 1	2/16/95	28.1			
	8/10/00	50			
	11/10/00	66			
	3/26/01	70			
.		History Company Company Company Company Company			
	8/28/01	- 58			
	5/28/02	70			
	6/3/03	79			
	5/17/04	88			
eri ja	5/31/05	97			
' · · · · · · · · · · · · · · · · · · ·	6/8/06	71			
•	6/20/07	79			
	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	70			
14.		www.words.deartheyddirtirtaribad (f. 1920)			
	3/26/01	72			
	8/28/01	76			
	5/28/02	66			
	6/3/03	58			
	5/17/04				
	. 5/31/05	58			
	6/20/07	57			

<sup>&</sup>lt; 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 - 2007)
BLANCO PLANT - SAN JUAN COUNTY, NEW MEXICO TABLE 3.1

					Chi	orinated Hvd	Chlorinated Hydrocarbons by EPA Method 8260B (ug/L)	Method 8260B	(ug/L)	
Monitoring Well	Sample Date	Groundwater Elevation (ft.   Depth to Water absl.) (ft btoc)	Depth to Water (ft btoc)	1,1-DCA	1,2-DCB	1,1-DCE	trans-1,2-DCE	cis-1,2-DCE	TCE	PCE
		NMWQCC Water Quality Standard:	nality Standard:	25	NA	5.0	NA	NA	.100	20
A STATE OF			US EPA MCL:	NA	NA	7.0,	100	7.0	5.0	5.0 *
MW-12	5/28/2002	5580.73	20.95	21.0	5.2	<1.0	1.7	20.0	8.0	3.0
	6/3/2003	5584.69	16.99	8.2	3.4	<2.0	<2.0	8.2	4.5	3.2
	5/17/2004	5585.09	16.59	4.6	3.4	<2.0	<2.0	5.1	4.0	2.3
	5/31/2005	5586.03	15.65	22.3	<2.0	<2.0	<2.0	18.8	20.7	<2.0
	9/8/2006	5583.06	18.62	8.7	4.5	<2.0	0.87	10.7	4.7	2.5
	6/20/2007	5585.13	16.55	3.6	3.0	<2.0	<2.0	4.4	3.0	1.9
MW-13	5/28/2002	5580.79	16.76	61.0	79.0	1.3	8.2	45.0	39.0	1.6
	6/3/2003	5583.11	14.44	53.8	50.5	1.4	8.2	33.0	35.1	. 1.4
	5/17/2004	5583.43	14.12	41.2	29.2	<2.0	4.0	21.2	22.5	<2.0
	5/31/2005	5584.12	13:43	50.7	<2.0	<2.0	5.7	. 50.6	21.3	<2.0
	9/8/2006	5581.95	. 15.60	48.8	53.1	5.2	5.2	35.8	26.9	<2.0
	6/20/2007	5583.22	14.33	58.8	63.9	1.2	7.8	43.6	29.6	1.1
MW-14	5/28/2002	5576.62	21.57	8.7	<1.0	<1.0	<1.0	2.9	1.9	<1.0
	6/3/2003	5578.34	19.85	9.5	<2.0	<2.0	<2.0	3.3	2.4	<2.0
	5/17/2004	5578.41	19.78	5.7	<2.0	<2.0	<2.0	2.1	1.6	<2.0
	5/31/2005	5579.38	18.81	4.7	<2.0	<2.0	<2.0	<2.0	<2.0	1.2
	9/8/2006	5578.16	20.03	8.9	<2.0	<2.0	<2.0	3.4	1.8	<2.0
	6/20/2007	5579.76	18.43	24.2	23.8	<2.0	2.7	14.2	11.0	<2.0
MW-15	5/28/2002	5576.25	20.33	5.3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	6/3/2003	5577.73	18.85	6.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
	5/17/2004	5578.11	18.475	6.3	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
	5/31/2005	5578.78	17.8	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
	9/2006	5576.90	19.68	4.3	<2.0	<2.0	<2.0	<2.0	<2.0	. <2.0
	6/20/2007	5577.75	18.83	4.8	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0

DCA: Dichloroethane DCB: Dichlorobenzene

DCE: Dichloroethene NA: Not applicable

PCE: Perchloroethene TCE: Trichloroethene

#### 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

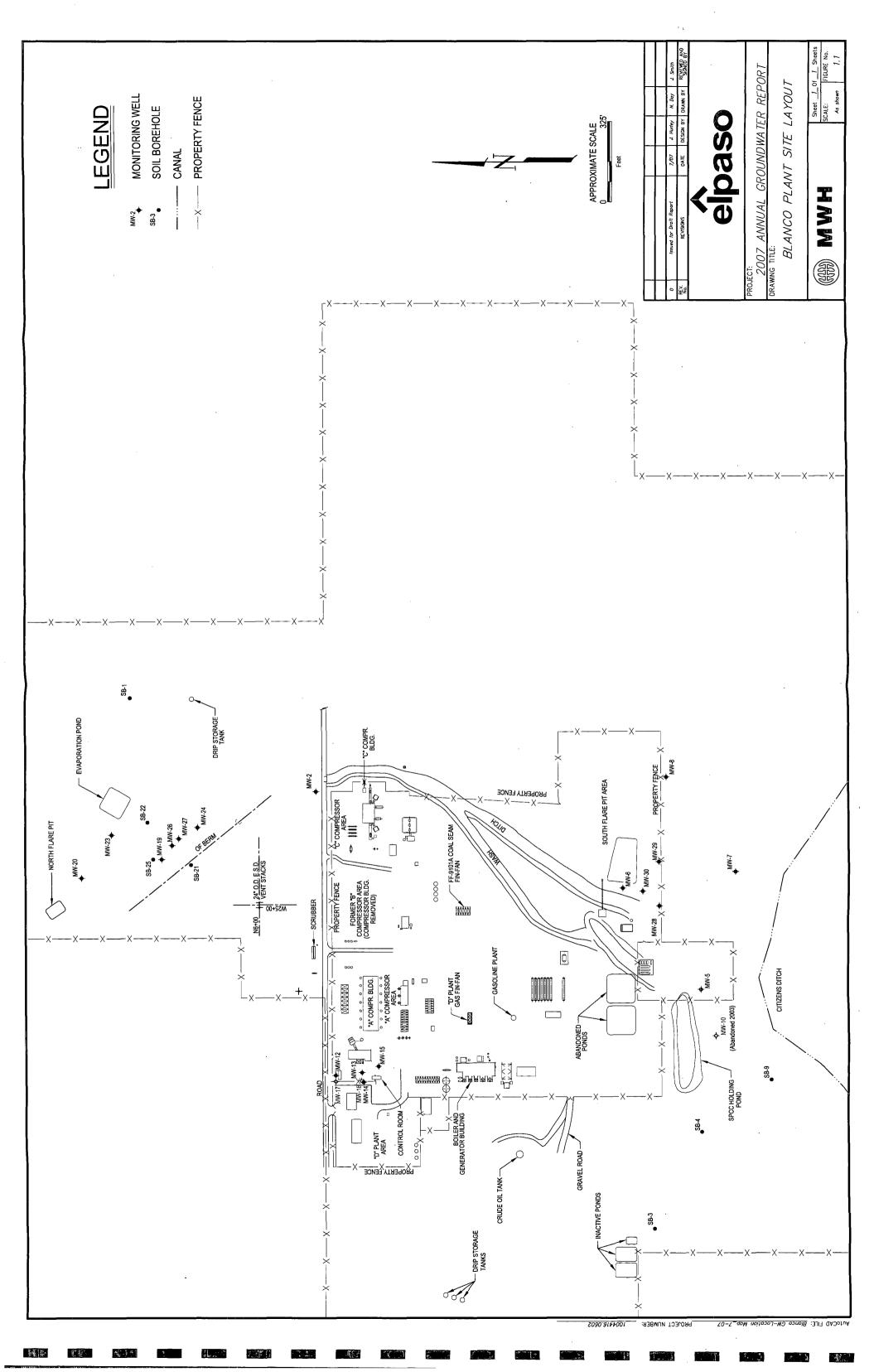
CHCs: Chlorinated Hydrocarbons by EPA Method 8260B: 1,1-DCA, 1,1-DCE, 1,2-DCB, cis-1,2-DCE, trans-1,2-DCE, TCE, and PCE.

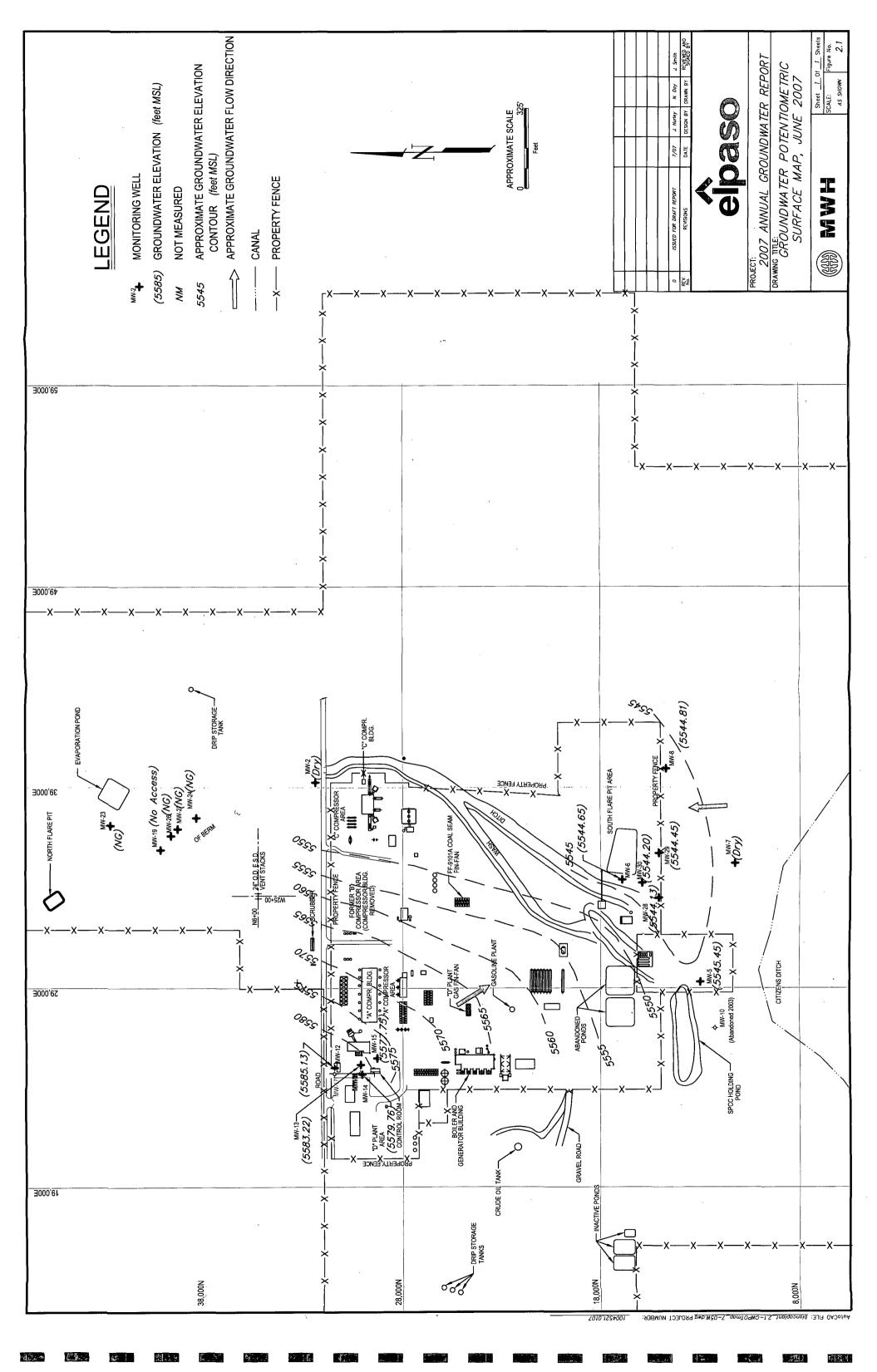
Nitrate+Nitrite as N by EPA Method 353.2, 354.1, or 4500.

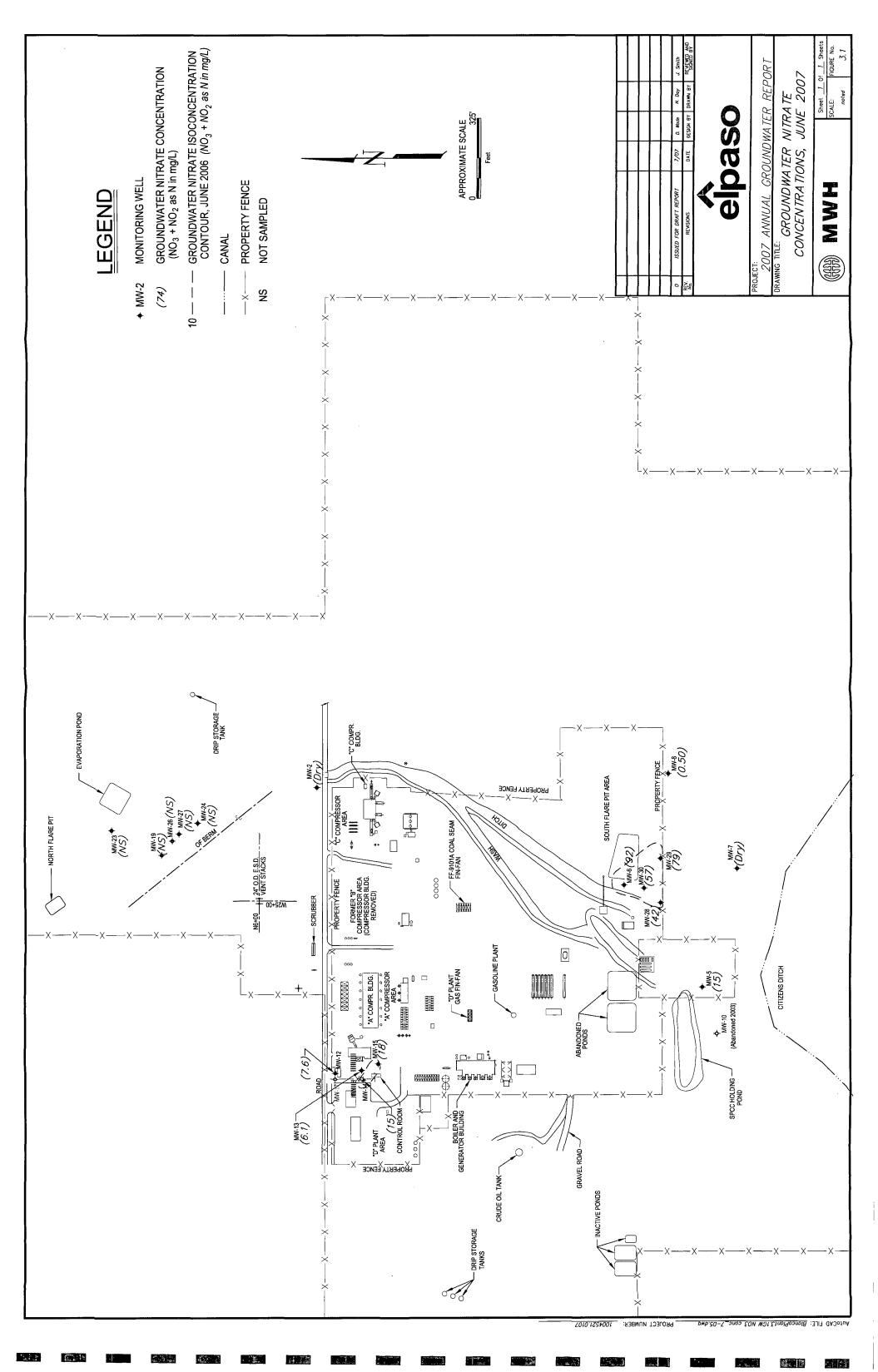
DCA: Dichloroethane
DCB: Dichlorobenzene
DCE: Dichloroethene
PCE: Perchloroethene
TCE: Trichloroethene

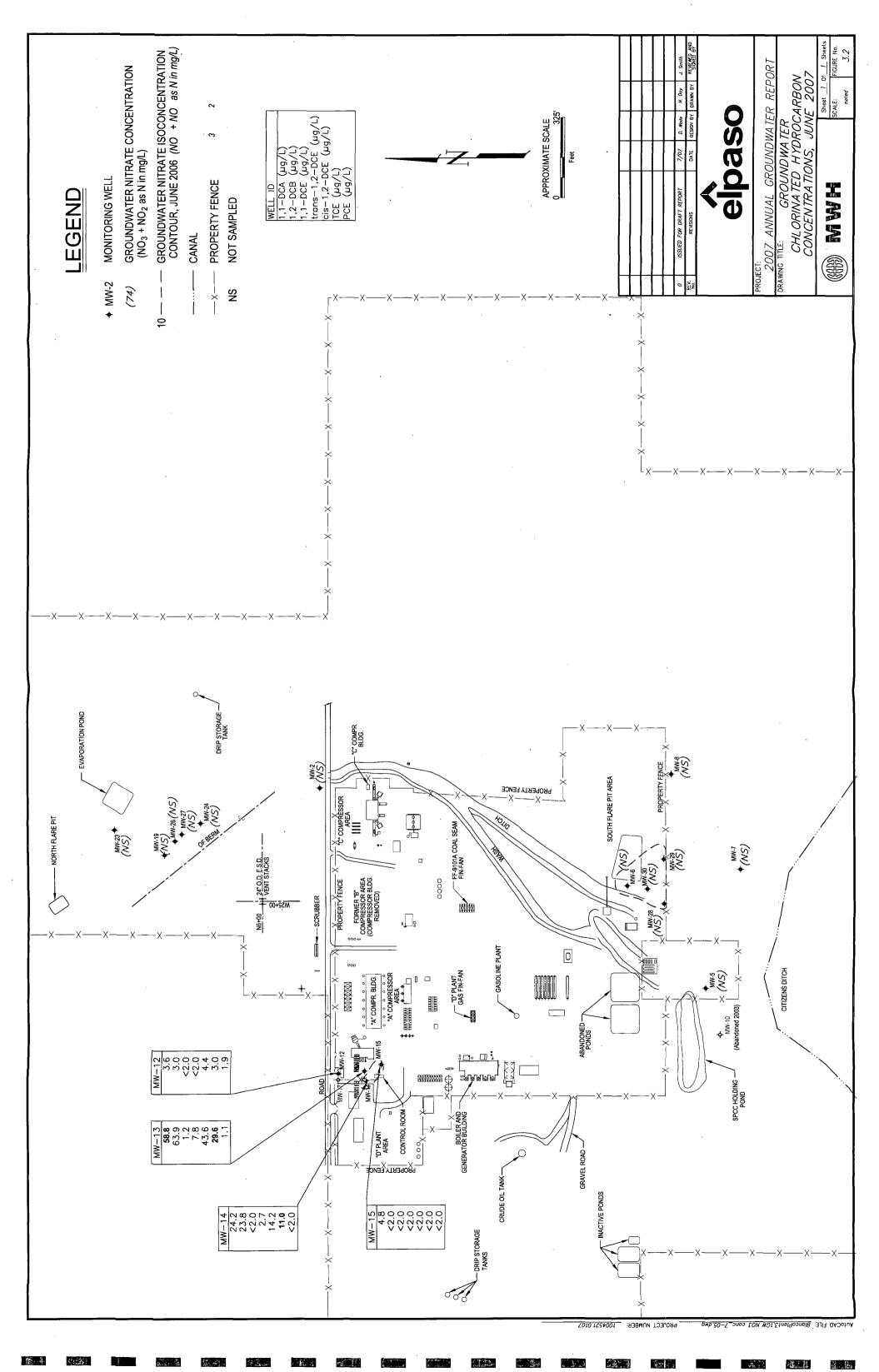
## FIGURES

(II) MV









## APPENDIX A



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	6-20-2007
Site Name	Blanco D Plant and SFP	-	

Well	Time	Depth to Product (ft)	Depth to Water (ft)	Comments
MW-2	0648	- ` .	-	well is dry TD 58.76
MW-5	<b>-</b>	-	20.40	
MW-6		-	29.64	·
MW-7		•	-	Well is dry TD is 21.23
MW-8			33.60	
MW-28			28.58	
MW-29			30.86	
MW-30		<b>-</b>	31.01	
MW-12		<u> </u>	16.55	· ·
MW-13		-	14.33	
MW-14		-	18.43	
MW-15		-	18.83	
MW-30N		-		

Comments

Signature:	Martin Nee	Date:	June 20, 2007	

Location: BI Project Man Depth to Wa Water Colun Sampling Man Criteria: 3	lanco SFF ager ater20 mn Height ethod: Su	ubmersible Pumottom Valve Bai	th to Produ	Date 06/ lot na 1 4"  Centrifugal  Double Che oval X stabii  Water Volum	21/07_Product T Pump  ck Valve lization of	Start Time hicknessna Peristaltic Bailer □ Start	evelopme  e 0628  a Mea  Pump   tainless-S	nt <u>Sampling</u> Weather sunny 70s asuring Point <u>TOC</u>
Time (military)	pH (su)	SC (umhos/cm)	Temp (°C)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (mls)	Comments/ Flow rate
0639	7.05	2190	16.9				200	clear
	7.10	2070	15.8			·	400	clear
	7.10	2090	15.6				700	clear
	7.09	2070	15.6				1000	clear, well is bailing down
	7.08	2050	15.6				1500	clear
0658	7.06	2110	15.6				1800	clear, well has bailed down
			•		•	·		·
Final: Time 0658	рН <b>7.06</b>	SC 2110	Temp 15.6	Eh-ORP	D.O.	Furbidity	Vol Evad	c. Comments/Flow Rate clear, well has bailed down
		as sunk down ir ed before using				offset. Had t	o use one	1.6" bailer. This well should
INSTRUME	C	DO Mor onductivity Met	er X	O SED MIN 5		Other	erature Me	· 
-	-	<u>o Vista</u> Sampl inity TDS Cati				Sample Ti nmonia TKN		U CC Metals Total Phosphorus
MS/MSD		BD_		BD	Name/Tir	ne	;	TB_180607tb01

					•			
Project No.::	30001.0		Proiect	t Name: Blan	co SFP	Client: M	WH/EL Pa	9 <u>50</u>
•		P Wel						nt <u>Sampling</u>
Project Man	aner			Date 06/	20/07	Start Time		Weather sunny 90s
								asuring Point TOC
		t <u>1.56</u> Wel		· · · · · · · · · · · · · · · · · · ·	TOGGCC T	mekness <u>ne</u>	<u>a</u> IVIC	asumg rome
Water Colui	iiii i leigii	( vvei	DIa	<del></del>				
Sampling M	ethod: S	ubmersible Pum	ıp 🗆	Centrifugal I	Pump 🗆	Peristaltic	Pump	Other
	Bi	ottom Valve Bai	ler <b>v</b>	Double Che	ck Valve	Bailer □ S	tainless-S	teel Kemmerer
		ottom varvo bar	ioi x	Double one	on varvo		annood C	teer reminerer ==
Criteria: 3	to 5 Casi	ng Volumes of \	Nater Rem	oval <b>X</b> stabil	ization of	Indicator Par	rameters	X Other <u>or bail dry</u>
				Water Volum				
	x ft of wat	er n	nilliliters (m	1)		Ounces		ml /ozto be removed
1.5	56 x .65		3818 x 3					11435
				<u>_</u>				
Time	рН	SC	Temp	ORP	D.O.	Turbidity	Vol	Comments/
(military)	(su)	(umhos/cm)	(°C)	(millivolts)	(mg/L)	(NTU)	Evac.	Flow rate
(			( - /	(		(,	(mls)	
1124	6.83	10260	21.1				600	clear
	6.82	7540	19.3				1150	clear, well is bailing down
	6.85	5540	19.3				1450	clear
1138	6.85	5560	19.2			·	1800	clear, well has bailed
	1							down
	ļ							
· · · · · · · · · · · · · · · · · · ·								
	ļ							
	1				•		<u> </u>	
Final:								
Time	рН	SC	Temp	Eh-ORP	D.O.	Turbidity	Vol Eva	
<u>1138</u>	6.85	5560	19.2				1800	clear, well has bailed
		######################################						down
001414515	0.14							40"1"
COMMENT	5: May be	e some bailer in	to morroa	well spent 20	minutes t	isning. Could	only get	one 1.6 " bailer to bottom.
INSTRUME	NTATION	l: pH Meter	Х			Temp	erature Me	oter v
		DO Moi				Other	•	7.0. X
		onductivity Met		-		Other		
Mater Diese		-		o SED MAN O		Comple T	ima 111	0
		o Vista Sample				Sample T		
RIEX AO	Cs Alkal	unity TDS Cati	ons Anion	is <u>Nitrate</u> I	<b>Nitrite</b> Ar	nmonia TKN	NMWQ(	CC Metals Total Phosphorus
MS/MSD		BD_		BD	Name/Tir	ne		TB_180607tb01

Project No.:3	30001.0			Project	Name: Blar	nco SFP	Client: M	WH/EL P	aso
Location: Bl				-					ent Sampling
Project Mana								•	Weather sunny 90s
1									easuring PointTOC
1	-					i roduct ri	iickiiess <u>iie</u>	<u>a</u>	sasuring Form
Water Colum	ппевуп	3.00	_ vveii	Dia	4		,		
Sampling Me	ethod: Su	ubmersible	e Pump	p 🔲	Centrifugal	Pump 🔲	Peristaltic	Pump [	Other
	Во	ottom Valv	e Baile	er <b>x</b>	Double Che	eck Valve I	Bailer □ S	tainless-S	Steel Kemmerer   □
Criteria: 3 t	to 5 Casir	ng Volume	es of W	/ater Remo	oval <b>X</b> stab	ilization of	Indicator Par	rameters	X Other or bail dry
					Water Volur	ne in Well			•
	ft of water	er		Gallons		(	Dunces		Gal/ <b>oz</b> to be removed
3.0	0 x .65			1.95 x 3			x 3		5.85
			···,			· · · ·		·	
T:	m11	SC	· · · · · · · · · · · · · · · · · · ·	Toma	ORP		. مانام الماس ا	\/al =	Commontel
Time (military)	pH (su)	(umhos/		Temp (°C)	(millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Eva	
	` '	· · · · · · · · · · · · · · · · · · ·			(IIIIIIVOIIS)	(1119/12)	(1410)	<u> </u>	<u> </u>
1235	7.44	8160	'	19.2				.5	Clear
	7.56	6730	)	17.7				.75	Clear
	7.43	6640	)	17.8				1	Clear, well is bailing down
1258	7.41	6680	)	17.8				1.75	
								· .	
							an anganga managa	n pálita mendálá	
Final:	рН	SC		Temp	Eh-ORP	D.O.	Turbidity	Vol Eva	c. Comments/Flow Rate
<u>1258</u>	7.41	6680		17.8		222		1.75	
3.44-84-Y 1-848-1-41-1-1-44-1								1111 1111 1111 1111	
COMMENTS	5: Well ba	alled dry.							
INSTRUMEN	NOITATION	l: pH N	/leter	Х			Tempe	erature M	leter x
		D	O Mon	itor ·			Other		
	С	onductivit	y Mete	er <b>X</b>					
Water Dispo	sal_ Ri	o Vista	Samp	ole ID_Blan	co SFP MW	/-8 Samr	ole Time 13	300	
1	-		-			<del></del>			CC Metals Total Phosphorus
MS/MSD			BD_		BD	Name/Tim	ne		TB_180607tb01

Location: BI Project Mana Depth to Wa	anco D F ager ter16	MJN 6.55 Dep 9.64 Wel	No: <u>MV</u> th to Produ	V-12 Date <u>06/20/</u> ct <u>na</u> F	07_time_	D _07 <u>07</u> W	/eath <b>er</b> su	<u>Sampling</u>
Sampling Me	ethod: Si	ubmersible Pun	пр 🗆	Centrifugal I	oump 🗆	Peristaltic	Pump 🗆	Other
	В	ottom Valve Bai	ler <b>x</b>	Double Che	ck Valve I	Bailer □ St	tainless-Ste	el Kemmerer
Criteria: 3	to 5 Casi	ng Volumes of V	Water Rem	oval <b>X</b> stabil	ization of	Indicator Par	rameters X	Other or bail dry
				Water Volum	e in Well			·
<del></del>	x ft of wa	ter	Gallons	· · ·		unces	G	al/oz to be removed
7.	93 x .16 		1.54 x 3					4.63
Time	рН	SC	Temp	ORP	D.O.	Turbidity	Vol Evac.	Comments/
(military)	(su)	(umhos/cm)	(°C)	(millivolts)	(mg/L)	(NTU)	(gallons)	Flow rate
0707	7.77	7690	16.5				.25	clear
	7.74	7760	15.5				1	clear
	7.42	8010	15.3				2	clear
	7.44	8140	15.2				3	clear
-	7.52	8130	15.4				4	clear
0734	7.47	8140	15.4				4.75	clear
			<del></del>			·		
						·		
								·
	l			I			<b></b>	
Final:	рН	SC	Temp.	Eh-ORP	D.O.	Turbidity	Vol Evac.	Comments/Flow Rate
0734	7.47	8140	15.4		ان ان	ruiblaity	4.75	clear
COMMENTS	S:							
INSTRUMEN	NOITATION	l: pH Meter	Х			Tempe	erature Mete	er <b>x</b>
		DO Mo				Other		·
		onductivity Met						
Water Dispo		<u>o Vista       Sam</u> inity  TDS <i>Cat</i> i					ime <u>0735</u> NMWOCC	Metals Total Phosphorus
CHCs	JULINAL	mmy 100 Cau	0110 1 HHOH	o <u>initate l</u>		mioma TISIN	14111WQCC	Trictais Total Filosphorus
MS/MSD		BD_		BD	Name/Tin	ne	•	TB_180607tb01

Location: BI Project Mana Depth to Wa Water Colum Sampling Mo	anco D Pageragerater14 nn Height ethod: Su	ubmersible Pun ottom Valve Bai	th to Produ I Dia.  I Dia.  I Dia.  Water Remo	V-13  Date 06/2  ct na F 2"  Centrifugal I  Double Che	20/07 Product Ti Pump □ ck Valve i lization of	Start Time  Start Time  nickness na  Peristaltic  Bailer  St	evelopment  2 0746  Meas  Pump  cainless-Stee	Sampling Weather sunny 80s uring Point TOC
					· · · · · · · · · · · · · · · · · · ·			
Time (military)	pH (su)	SC (umhos/cm)	Temp (°C)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gallons)	Comments/ Flow rate
0750	7.07	7970	16.7				.25	clear
<del></del>	7.00	8240	16.6				1	clear
	7.00	10840	16.4			,	2	clear
	6.97	11520	16.6				3	clear
	6.99	11520	16.6				4	clear
0812	6.98	11890	16.6				4.25	clear
Final: Time 0812	pH 6.98	SC 1890	internal III de la California i resistente de la california de la californ	Eh-ORP	D.O.	Turbidity	Vol Evac	Comments/Flow Rate
COMMENTS	S:			<u> </u>	· · · · · · · · · · · · · · · · · · ·			·
	C sal <u>Ri</u>	DO Mo conductivity Met o Vista Sam	nitor er <b>X</b> ple ID <u>Blar</u>			Other Sample Ti	me <u>0814</u>	
CHCs MS/MSD		BD_		BD	Name/Tin	ne		_ TB_160607tb01

-		Plant Area Wel		N-14		- D	evelopment	Sampling		
Project Mana	ager	MJN		Date 06/2	<u> 20/07_</u>	Start Time	<u> 1150 </u>	Weather sunny 90s		
Depth to Wa	ter18	8.43 Dep	th to Produ	ıct <u>na</u> F	Product T	hickness <u>na</u>	a Meas	uring Point <u>TOC</u>		
Water Colum	nn Heigh	t <u>9.0</u> Wel	l Dia	2"						
Sampling Me		ubmersible Pum		_			, -	Other		
Criteria: 3 t		ottom Valve Bai				i i	•	el Kemmerer □ Other <u>or bail dry</u>		
				Water Volum	e in Well					
	ft of wat	er	Gallons			Ounces		Gal/oz to be removed		
9.0	0 x .16		1.44			x 3		4.32		
		<u>.</u>								
Time (military)	pH (su)	SC (umhos/cm)	Temp (°C)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gallons)	1		
1150	7.12	6930	21.6				.25	clear		
	6.94	9640	19.3				1	clear, well is bailing down		
	7.01	11330	19.5				1.5			
1209	7.02	11460	19.8				1.764	ċlear, well has bailed down		
			· · · · · · · · · · · · · · · · · · ·							
Final: Time 1209	pH 7.02	SC 11460	Temp 19.8	Eh-ORP	D.O.	Turbidity	Vol Evac. 1.764	Comments/Flow Rate clear, well has bailed down		
COMMENTS	3:	The contract of the contract o	••••		Samuel Community Com					
33,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,										
INSTRUMEN	MOITATION	l: pH Meter DO Moi				Tempe Other	erature Mete	r x		
	· C	Conductivity Met				·	· · · · · · · · · · · · · · · · · · ·	<del></del>		
Water Dispo		<u>io Vista</u> Sam		nco D plant M	W-14	Sample Ti	me 1210			
								Metals Total Phosphorus		
CHCs		, =====								
MS/MSD		BD_	<del></del>	BD 1	Name/Tin	ne		_ TB_180607tb01		

Desired New C	00004.0		Dunional	Nome Dien	. D nlon		:	El Dono	
_	Project No.:30001.0 Project Name: Blanco D plant Client: MWH/EL Paso  Location: Blanco D Plant Area Well No: MW-15 Development Sampling								
		MJN					•	Weather clear 80s	
1								uring Point	
]		7.94 Wel			TOUGOT I		· · · · · · · · · · · · · · · · · · ·	- 100 - 100	
Traisi Solaii				<del>-</del>				•	
Sampling Me	ethod: Su	ubmersible Pum	р 🗆	Centrifugal I	Pump 🔲	Peristaltic	Pump 🗆	Other 🗆	
*	Во	ottom Valve Bai	ler x	Double Che	ck Valve I	Bail <b>er</b> □ St	ainless-Stee	el Kemmerer   □	
Criteria: 3 t	o 5 Casir	ng Volumes of \	Water Rem	oval <b>X</b> stabil	ization of	Indicator Par	ameters X	Other <u>or bail dry</u>	
				Water Volum	ne in Well				
	ft of water	er	Gallons		. (	<u> Dunces</u>		Gal/oz to be removed	
7.9	4 x .16		1.27 x 3			x 3		3.8	
			·						
Time (military)	pH (su)	SC (umhos/cm)	Temp (°C)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gallons)	Comments/ Flow rate	
0824	4.34	17200	18		·		.25	clear, yellow	
	4.57	15510	18				1	clear, yellow	
	4.31	15930	18				2	clear, yellow	
	4.26	16330	17.9				3	clear, yellow, well is bailing down	
<u>0855</u>	4.38	16980	17.9				3.1625	clear, yellow, well has bailed down	
				. **					
			· · · · · · · · · · · · · · · · · · ·						
		**************************************							
							:		
Final:	The state of the s	entre innin American Marin de la compa	nerentalitaring i Allestanis, tax			392			
Time	рН	SC	Temp	Eh-ORP	D.O.	Turbidity	Vol Evac.	Comments/Flow Rate	
<u>0855</u>	4.38	16980	17.9				3.1625	clear, yellow, well has	
	NI (L							bailed down	
COMMENTS	S:								
INSTRUMEN	NOITATI	•	<b>X</b>			•	erature Mete	r <b>x</b>	
	^	DO Moi				Other	•		
\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		onductivity Met		المسلمان المسلم	\\\ 45	C	0000		
· ·	-	o Vista Sam	·			Sample Ti		Matala Tay 1 DI	
	zs Aikali	iiiity 1DS Cati	ons Anion	is <u>initrate l</u>	vitrite An	nmonia IKN	NMWQCC	Metals Total Phosphorus	
CHCs MS/MSD		חם		פר	Namo/Tin			_ TB_180607tb01	
WO/WOU		bD_			· · · · · · · · · · · · · · · · · · ·	IE		_ 10_1000071001	

1244

Location: BI Project Man Depth to Wa Water Colun Sampling Ma Criteria: 3	anco SFF ager ater _ 28 nn Height ethod: Su Bo to 5 Casir	ubmersible Pumenttom Valve Bai	th to Produ I Dia. □ □ □	Date 06/2  oct na F 4"  Centrifugal F  Double Che	20/07 Product Ti Pump □ ck Valve i ization of	D Start Time hicknessna Peristaltic Bailer □ Stallic	evelopment  2 0911  Measi  Pump  tainless-Stee	Sampling Weather sunny 80s uring Point TOC
	ft of wate 4 x .65		3.34 x 3			Carioes		10.02
Time (military)	pH (su)	SC (umhos/cm)	Temp (°C)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gallons)	Comments/ Flow rate
0911	6.68	4780	18.3				.75	clear
	6.76	5310	18.1				1.25	clear
	6.75	5530	17.8				1.75	clear
	6.76	5200	17.5				2.25	clear
]	6.75	5210	17.4				3.25	clear
	6.78	5110	17.6				5.25	clear
	6.73	5170	17.7				7.25	clear
	6.74	5180	17.7			•	9.25	clear
<u>1000</u>	6.75	5120	17.7				10.25	clear
Final:					cke B	net a		
Time		SC	Temp	Eh-ORP	D.O.	Turbidity	Vol Evac.	Comments/Flow Rate
1000	6.75	5120	17.7				10.25	clear
COMMENTS	S:							
INSTRUME		l: pH Meter DO Moi				Tempe Other	erature Mete	r <b>x</b>
Water Dispo	salRi	<u>o Vista</u> Sam	ple ID <u>Blar</u>					_ Metals Total Phosphorus
MS/MSD		BD_		BD	Name/Tin	ne	;	_ TB_180607tb01

D ' 111 6					OFD	Ol: 4 BA	MILIEL D.	-
-			-	t Name: <u>Blan</u>				
		<u>P</u> Wel					•	<u>Sampling</u>
-		MJN						Weather sunny 90s
Depth to Wa	ter30	<u>).86                                    </u>	th to Produ	ıct <u>na</u> F	Product T	hickness <u>na</u>	a Meas	uring Point <u>TOC</u>
Water Colum	nn Height	<u>6.26</u> Wel	I Dia	4"				
Sampling Me	ethod: Su	ıbmersible Pum	np 🗆	Centrifugal I	Pump 🗆	Peristaltic	Pump 🗌	Other 🗆
	Во	ottom Valve Bai	ler <b>x</b>	Double Che	ck Valve	Bailer 🗆 🛮 St	tainless-Stee	el Kemmerer 🛚
Criteria: 3 t	to 5 Casir	ng Volumes of \	Water Rem	oval <b>X</b> stabil	ization of	Indicator Par	ameters X	Other <u>or bail dry</u>
				Water Volum	e in Well			
	ft of water	er	Gallons			Ounces		Gal/oz to be removed
6.2	6 x .65		4.06 x 3			· .		12.21
Time (military)	pH (su)	SC (umhos/cm)	Temp (°C)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gallons)	ľ
<u>1010</u>	6.85	5860	17.7				.75	clear
	6.87	5780	17.4				3	clear
	6.93	6070	17.4				5	clear, well is bailing
	6.94	5840	17.4				5.25	clear
1023	6.98	5780	17.4	·		·	5.375	clear, well has bailed down
							÷	
	,							
				·				
					I		anisaga .	I make the second of the secon
Final: Time	рН	SC	Temp	Eh-ORP	D.O.	Turbidity	Vol Evac.	Comments/Flow Rate
1023	6.98	5780	17.4	LITOIN	.0.0	raiblaity	5.375	clear, well has bailed
						Section 1997		down
COMMENTS	S: Well ba	ailed dry						
INSTRUMEN	NOITATION	: pH Meter	Х			Tempe	erature Mete	er Y
		DO Moi	•			Other		
		onductivity Met				•		
Water Dispos	sal <u>Ri</u>	<u>o Vista</u> Sam	ple ID <u>Blaı</u>	nco SFP MW-	<u>29</u> Sam <sub>l</sub>	ple Time <u>10</u>	25	
BTEX VOC	Cs Alkal	inity TDS Cati	ons Anior	ns <u>Nitrate I</u>	<mark>Vitrite</mark> Ar	nmonia TKN	NMWQCC	Metals Total Phosphorus
MS/MSD		BD_		BD	Name/Tin	ne		_ TB_180607tb01

· ·

Location: BI Project Mana Depth to Wa Water Colum Sampling Me Criteria: 3	anco SFF ager ter31 nn Height ethod: Su	ubmersible Pumottom Valve Bai	th to Produ	V-30  Date  Ictna 4"  Centrifug  Double (	06/2 Fal F	Product TI Pump □ ck Valve I ization of e in Well	Start Time  nickness na  Peristaltic  Bailer	evelopm e 1031 a M Pump [ tainless-	ent easu Stee	Sampling Weather sunny 90s  tring Point TOC  Other   Other  Other or bail dry  Sal/oz to be removed  11.5
	····					<del> </del>			-	
Time (military)	pH (su)	SC (umhos/cm)	Temp (°C)	ORP (millivolt	1	D.O. (mg/L)	Turbidity (NTU)	Vol Evallor		Comments/ Flow rate
1031	6.82	5580	18.7					1		clear
	6.78	5530	18.1					3		clear
	6.89	5700	17.8					4.75		clear, well is bailing down
	6.88	5300	17.8					5.25		clear
1048	6.90	5650	17.7					5.5		clear, well has bailed down
							·			<u> </u>
			·						· _	· · · · · · · · · · · · · · · · · · ·
Final: Time 1048	pH 6.90	SC 5650	Temp17.7	Eh-ORP		.D.O.	-Turbidity	Vol Ev:	ac.	Comments/Flow Rate clear, well has bailed down
COMMENTS	S: Well ba	ailed dry								
INSTRUME	NTATION	l: pH Meter DO Mo					Tempe Other	erature N	/lete	×
=	salRi	onductivity Met <u>o Vista</u> Sampl	er <b>X</b> e ID <u>Blanc</u>	o SFP MV	V-30	<u>)</u> Samp	ole Time10		QCC	Metals Total Phosphorus
MS/MSD	·	BD_		1	BD I	Name/Tin	ne			_ TB_180607tb01

## APPENDIX B



#### DATA VERIFICATION WORKSHEET Page 1 of 3

EPA 353.2 NO2/NO3	_ Sample Collection	<b>Date</b> (s):	06/20/07
Accutest	_ EL Paso Site:	Blanco Sou	th Flare Pit
T17882	_	Matrix:	Water
Eraig Toore _	<u> </u>		
	Accutest T17882	Accutest EL Paso Site:	Accutest EL Paso Site: Blanco Sour  T17882 Matrix:  -07/16/07

Foot	Sample	Laboratory	Hits		
Notes	ID	ID	(Y/N)	Quals.	Comments
None	MW-12	T17882-1	Y	None	
None	MW-13	T17882-2	Y	None	
None	MW-14	T17882-3	Y	None	
None	MW-15	T17882-4	Y	None	
None	MW-5	T17882-5	Y	None	
None	MW-6	T17882-6	Y	None	
None	MW-8	T17882-7	Y	None	
None	MW-28	T17882-8	Y	None	
None	MW-29	T17882-9	Y	None	
None	MW-30	T17882-10	Y	None	·
	·				
		<u> </u>			

# DATA VERIFICATION WORKSHEET Page 2 of 3

Blanco South Flare Pit T17882 EL Paso Site: Batch Identification: EPA 353.2 NO2/NO3 Accutest Laboratory: Analytical Method:

Validation Criteria		i								
Sample ID	MW-12	MW-13	MW-14	MW-15	s-mm	9-MM	WW-8	MW-28	MW-29	MW-30
Lab ID	T17882-1	T17882-2	T17882-3	T17882-4	T17882-5	T17882-6	T17882-7	T17882-8	T17882-9	T17882-10
Method Blank (all methods)	A	A	A	V	Y	A	A	A	¥	А
Holding Time	A	A	A	A	Y	A	A	A	Y	A
Analyte List	A	Α	A	¥	Y	A	A	A	Y	A
Reporting Limits	A	A	A	A	Y	A	A	A	V	A
Matrix Spike/Matrix Spike Dup. (MS/MSD)	N/A	N/A	N/A	N/A	N/A	A	N/A	N/A	N/A	N/A
Matrix Duplicate	N/A	N/A	N/A	N/A	N/A	A	N/A	N/A	N/A	N/A
Laboratory Control Sample (LCS)	A	A	A	Y	Y	Α	A	A	V	A
Hardcopy vs. Chain-of-Custody	A	A	Α	A	A	A	A	A	V	A

(a) List QC batch identification if different than Batch ID
A indicates validation criteria were met
AL indicates validation criteria met based upon Laboratory's QC Summary Form
X indicates validation criteria were not met
N indicates data review were not a project specific requirement
N/A indicates criteria are not applicable for the specified analytical method
N/R indicates data not available for review

# NOTES:

### DATA VERIFICATION WORKSHEET

(Page 1 of 2)

Analytical Method/Analytes:	SW-846 8260B (VOCs)	Sample Collection	Date(s): _	06/20/07
Laboratory:	Accutest	EL Paso Site:	Blanco So	outh Flare Pit
Batch Identification:	T17882		Matrix: _	Water
Verification Complete:	Graig Moore -07	/16/07		
		(Date/Signature)		

Foot		1	Hits		
Notes	Sample ID	Lab. ID	(Y/N)	Quals.	Comments
None	MW-12	T17882-1	Y	None	
None	MW-13	T17882-2	Y	None	
None	MW-14	T17882-3	Y	None	
None	MW-15	T17882-4	Y	None	
	·				
	·				
				•	
					·
		<u></u>	j		<u> </u>
	·				

## DATA VERIFICATION WORKSHEET (Page 2 of 2)

Analytical Method:	SW-846 8260B (VOCs)	EL Paso Site:	Blanco South Flare Pit
Laboratory:	Accutest	Batch Identification:	T17882

Verification Criteria						
Sample ID	MW-12	MW-13	MW-14	MW-15		
Lab ID	T17882-1	T17882-2	T17882-3	T17882-4		
Holding Time	. A	A	Α	Α		
Analyte List	·A	A	A	A		
Reporting Limits	А	A	A	A		
Surrogate Spike Recovery	Α '	A	А	. A		
Method Blank	A	A	A	A		
Laboratory Control Sample (LCS)	A	A	A	Α .		
Matrix Spike/Matrix Spike Dup. (MS/MSD)	N/A	N/A	N/A	N/A	·	
Hardcopy vs. Chain-of-Custody	А	A	Α .	A		

<sup>(</sup>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

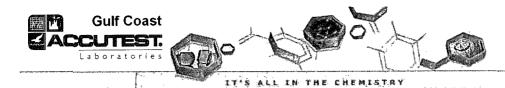
X indicates verification criteria were not met

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:**



06/29/07



#### **Technical Report for**

**Montgomery Watson** 

Blanco South Flare Pit

D-ALAB-BLANCOPLTN-004

Accutest Job Number: T17882

Sampling Date: 06/20/07

Report to:

MWH Americas, Inc.

jed.Smith@us.mwhglobal.com

ATTN: Mr. Jed Smith

Total number of pages in report: 31



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

Client Service contact: Agnes Vicknair 713-271-4700

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



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J J	













#### Sample Summary

**Montgomery Watson** 

Job No:

T17882

Blanco South Flare Pit Project No: D-ALAB-BLANCOPLTN-004

Sample Number	Collected Date	Time By	Received	Mata		Client Sample ID	
T17882-1	06/20/07	07:35 MN	06/22/07	AQ	Ground Water	MW-12	
T17882-2	06/20/07	08:14 MN	06/22/07	AQ	Ground Water	MW-13	
T17882-3	06/20/07	12:10 MN	06/22/07	AQ	Ground Water	MW-14	
T17882-4	06/20/07	09:00 MN	06/22/07	AQ	Ground Water	MW-15	
T17882-5	06/20/07	07:00 MN	06/22/07	AQ	Ground Water	MW-5	
T17882-6	06/20/07	11:40 MN	06/22/07	AQ	Ground Water	MW-6	
T17882-7	06/20/07	13:00 MN	06/22/07	AQ	Ground Water	MW-8	:
T17882-8	06/20/07	10:02 MN	06/22/07	AQ	Ground Water	MW-28	
T17882-9	06/20/07	10:25 MN	06/22/07	AQ	Ground Water	MW-29	
T17882-10	06/20/07	10:50 MN	06/22/07	AQ	Ground Water	MW-30	





#### SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Montgomery Watson Job No T17882

Site: Blanco South Flare Pit Report Date 6/29/2007 4:40:31 PM

10 Samples were collected on 06/20/2007 and were received at Accutest on 06/22/2007 properly preserved, at 2.2 Deg. C and intact. These Samples received an Accutest job number of T17882. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

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

#### Volatiles by GCMS By Method SW846 8260B

Matrix AQ Batch ID: VY1299

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T17948-3MS, T17948-3MSD were used as the QC samples indicated.
- Matrix Spike Recovery(s) for 1,1-Dichloroethylene are outside control limits. Outside control limits due to matrix interference.
- Matrix Spike Duplicate Recovery(s) for 1,1-Dichloroethylene, trans-1,2-Dichloroethylene are outside control limits. Outside control limits due to matrix interference.
- RPD(s) for MSD for trans-1,2-Dichloroethylene are outside control limits for sample T17948-3MSD. Probable cause due to sample homogeneity.

#### Wet Chemistry By Method EPA 353.2

Matrix AQ Batch ID: GN11993

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T17882-6DUP, T17882-6MS 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





Section 3



Sample	Results
--------	---------

Report of Analysis



#### Report of Analysis

Page 1 of 1

Client Sample ID: Lab Sample ID:

MW-12

T17882-1

By

ZLH

Analyzed

06/28/07

Date Sampled:

06/20/07

Matrix:

File ID

AQ - Ground Water SW846 8260B

Date Received:

06/22/07

Method:

Percent Solids: n/a

n/a

Project:

Blanco South Flare Pit

DF

1

Prep Date

n/a

Prep Batch

**Analytical Batch** VY1299

Run #1 Run #2

Purge Volume

Y0013685.D

Run #1

5.0 ml

Run #2

Volatile special list.

CAS No.	Compound	Result	RL	MDL	Units	Q
75-34-3	1,1-Dichloroethane	3.6	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	4.4	2.0	0.83	ug/l	
95-50-1	o-Dichlorobenzene	3.0	2.0	0.50	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	0.75	ug/l	
127-18-4	Tetrachloroethylene	1.9	2.0	0.74	ug/l	J
79-01-6	Trichloroethylene	3.0	2.0	0.63	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	its	
1868-53-7	Dibromofluoromethane	92%		73-1	39%	
17060-07-0	1,2-Dichloroethane-D4	86%		66-1	39%	
2037-26-5	Toluene-D8	100%		77-1	48%	
460-00-4	4-Bromofluorobenzene	115%		84-1	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



#### **Accutest Laboratories**

#### Report of Analysis

Page 1 of 1

Client Sample ID: MW-12

Lab Sample ID:

Matrix:

Project:

T17882-1

AQ - Ground Water

Date Sampled: 06/20/07

06/22/07

Blanco South Flare Pit

Date Received: Percent Solids: n/a

General Chemistry

RL Analyte Result Units DF Analyzed Method

Nitrogen, Nitrate + Nitrite 7.6 1.0 mg/l 20 06/26/07 13:12 LN EPA 353.2

#### Report of Analysis

Ву

Client Sample ID: MW-13

Lab Sample ID: Matrix:

T17882-2

Method: Project:

AO - Ground Water

SW846 8260B Blanco South Flare Pit

DF

1

Date Sampled:

06/20/07 06/22/07

Date Received:

Percent Solids:

Prep Date Prep Batch Analytical Batch ZLH VY1299 n/a n/a

Run #1 Run #2

Purge Volume

Y0013686.D

File ID

5.0 ml

Run #1

Run #2

Volatile special list.

CAS No.	Compound	Result	RL	MDL	Units	Q
75-34-3	1,1-Dichloroethane	58.8	2.0	0.52	ug/l	
75-35-4	1,1-Dichloroethylene	1.2	2.0	0.68	ug/l	J
156-59-2	cis-1,2-Dichloroethylene	43.6	2.0	0.83	ug/l	
95-50-1	o-Dichlorobenzene	63.9	2.0	0.50	ug/l	
156-60-5	trans-1,2-Dichloroethylene	7.8	2.0	0.75	ug/l	
127-18-4	Tetrachloroethylene	1.1	2.0	0.74	· ug/l	J
79-01-6	Trichloroethylene	29.6	2.0	0.63	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	its	•
1868-53-7	Dibromofluoromethane	99%		73-1	39%	
17060-07-0	1,2-Dichloroethane-D4	95%		66-1	39%	
2037-26-5	Toluene-D8	110%		77-1	48%	
460-00-4	4-Bromofluorobenzene	130%		84-1	50%	

Analyzed

06/28/07

ND = Not detected

MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound





#### **Accutest Laboratories**

#### Report of Analysis

mg/l

Page 1 of 1

Client Sample ID: MW-13

Lab Sample ID:

T17882-2

Date Sampled: Date Received:

06/20/07

AQ - Ground Water

06/22/07

Project:

Matrix:

Blanco South Flare Pit

6.1

Percent Solids: n/a

General Chemistry

Nitrogen, Nitrate + Nitrite

RLResult Units DF Analyzed Analyte

1.0

20

06/26/07 13:12 LN

Ву

EPA 353.2

Method



Ву

**ZLH** 

Analyzed

06/28/07

Client Sample ID: MW-14 Lab Sample ID: T17882-3

File ID

AQ - Ground Water

Date Sampled:

Date Received:

Prep Date

n/a

06/20/07 06/22/07

Matrix: Method:

SW846 8260B

Percent Solids: n/a

Project:

Blanco South Flare Pit

DF

Prep Batch Analytical Batch n/a VY1299

Run #1 Run #2

Purge Volume

Y0013687.D

Run #1 5.0 ml

Run #2

Volatile special list.

CAS No.	Compound	Result	RL	MDL	Units	Q
75-34-3	1,1-Dichloroethane	24.2	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	14.2	2.0	0.83	ug/l	
95-50-1	o-Dichlorobenzene	23.8	2.0	0.50	ug/l	
156-60-5	trans-1,2-Dichloroethylene	2.7	2.0	0.75	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	0.74	ug/l	
79-01-6	Trichloroethylene	11.0	2.0	0.63	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	its	
1868-53-7	Dibromofluoromethane	98%		73-1	39%	
17060-07-0	1,2-Dichloroethane-D4	77%		66-1	<b>39</b> %	
2037-26-5	Toluene-D8	112%		77-1	48%	
460-00-4	4-Bromofluorobenzene	128%		84-1	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



ယ

Client Sample ID: MW-14

Lab Sample ID: T17882-3

Matrix:

AQ - Ground Water

Date Sampled: 06/20/07 Date Received: 06/22/07

Percent Solids: n/a

Project:

Blanco South Flare Pit

General Chemistry

Analyte Result RL Units DF Analyzed By Method

Nitrogen, Nitrate + Nitrite 15.0 1.3 mg/l 25 06/26/07 13:12 LN EPA 353.2

Client Sample ID: MW-15

Lab Sample ID:

T17882-4

Matrix: Method:

Project:

AQ - Ground Water

DF

1

SW846 8260B Blanco South Flare Pit Date Sampled:

06/20/07 06/22/07

Prep Batch

Date Received:

Percent Solids: n/a

Prep Date

n/a

By

**ZLH** 

Analyzed

06/28/07

Analytical Batch

VY1299 n/a

Run #1 Run #2

Purge Volume

Y0013688.D

File ID

Run #1 5.0 ml

Run #2

Volatile special list.

CAS No.	Compound	Result	RL	MDL	Units	Q
75-34-3	1,1-Dichloroethane	4.8	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	Lim	its	
1868-53-7	Dibromofluoromethane	93%		73-1	39%	
17060-07-0	1,2-Dichloroethane-D4	87%		66-1	39%	
2037-26-5	Toluene-D8	101%		77-1	48%	
460-00-4	4-Bromofluorobenzene	117%		84-1	<b>50</b> %	

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



Client Sample ID: MW-15

Lab Sample ID:

Matrix:

Project:

T17882-4

AQ - Ground Water

Blanco South Flare Pit

18.0

Date Sampled: Date Received:

06/20/07 06/22/07

Percent Solids: n/a

Analyzed

General Chemistry

Nitrogen, Nitrate + Nitrite

Result Analyte

RL

2.0

Units

mg/l

DF 40

06/26/07 13:12 LN

EPA 353.2

Ву

Method



Client Sample ID: MW-5

Lab Sample ID:

T17882-5

Matrix:

AQ - Ground Water

Date Sampled:

06/20/07

Date Received:

06/22/07

Project:

Blanco South Flare Pit

Analyzed

Percent Solids: n/a

General Chemistry

Nitrogen, Nitrate + Nitrite

Analyte

Result

15.0

RL

1.3

Units

mg/l

DF 25

06/26/07 13:12 LN

EPA 353.2

Method

Ву



#### **Accutest Laboratories**

#### Report of Analysis

Page 1 of 1

Client Sample ID: MW-6

Lab Sample ID:

T17882-6

Matrix:

AQ - Ground Water

Date Sampled:

06/20/07

Percent Solids:

Project:

Blanco South Flare Pit

Date Received: 06/22/07

General Chemistry

Analyte

Result

RL

DF Units

mg/l

Analyzed

Method By

Nitrogen, Nitrate + Nitrite

92.0

10

200

06/26/07 13:12 LN

EPA 353.2

#### **Accutest Laboratories**

#### Report of Analysis

Page 1 of 1

Client Sample ID: MW-8

Lab Sample ID:

T17882-7

Matrix:

Project:

AQ - Ground Water

Blanco South Flare Pit

Date Sampled: Date Received: 06/22/07

06/20/07

Percent Solids:

General Chemistry

Analyte

Nitrogen, Nitrate + Nitrite

Result

0.50

RL

0.10

Units

mg/l

DF 2

Analyzed 06/26/07 13:12 LN

EPA 353.2

Method

Units

mg/l

Client Sample ID: MW-28

Lab Sample ID:

T17882-8

Matrix:

AQ - Ground Water

Date Sampled: Date Received:

06/20/07

Percent Solids: n/a

06/22/07

Project:

Analyte

Blanco South Flare Pit

General Chemistry

Result

RL

DF

Analyzed

By Method

Nitrogen, Nitrate + Nitrite

42.0

5.0

100

06/26/07 13:12 LN

EPA 353.2

#### **Accutest Laboratories**

#### Report of Analysis

Page 1 of 1

Client Sample ID: MW-29

Lab Sample ID:

T17882-9

Matrix:

AQ - Ground Water

Date Sampled: 06/20/07

Date Received:

06/22/07

Project:

Blanco South Flare Pit

Percent Solids: n/a

General Chemistry

Nitrogen, Nitrate + Nitrite

Analyte

Result

79.0

RL

5.0

Units

mg/l

DF 100

06/26/07 13:12 LN

Analyzed

EPA 353.2

Method



#### Report of Analysis

Page 1 of 1

Client Sample ID: MW-30

Lab Sample ID:

T17882-10

Matrix:

Project:

AQ - Ground Water

Blanco South Flare Pit

Date Sampled: Date Received:

06/20/07 06/22/07

Percent Solids:

Analyzed

General Chemistry

Analyte

Nitrogen, Nitrate + Nitrite

Result

57.0

RL

5.0

Units

mg/l

DF 100

06/26/07 13:12 LN

EPA 353.2

Method





Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

• Chain of Custody



ZACCUTES	T.				0165 H 3-271-							851	Tracking &	14 2	Z Z	28	Bottle C	rder Contro	al \$		-05
Laboratori	e s										Į								$\mathcal{I}$	17	882
Client / Reporting Information	THE THE PARTIES	(1986) 983 (198	97 Pro	ect Infor	mation	,	Ka, 74	d Color	Jan Cir	2012	0.00	64.0			200 E	Requ	ested A	nalysis	709 je s	A TOTAL	Matrix Codes
Ompany Name		Project N	lame:	Blanco S	SFP						1				٠,					T	DW- Drinking Water
MWH Americas, Inc.	·	Street												İ	į	1					GW- Ground Water WW- Water
1801 California St. Sulte 2900														1							SW- Surface Water
y State	Ζlp	City	Sorinas				State Co														SO- Soil SL-Sludge
Denver CO ofect Contact:	80202	Project #				•									Ì						010
Jonnifer Hurley		Fax#											<u> 5</u>								LIQ- Other Liquid
303-291-2231			·										Nitrite (353.2)			ł				1	AIR- Air
mplers's Name Mortin Nec			rchase Orde		TWO D							(JSBL)	E E							.	SOL-Other Solid
ccutest	-	Collect	ion		# of	Nur	nber of	1	erved	хI	es E	VOC (8260S	t et l							į	WP-Wipe
Field ID / Point of Collection	Date	Time	Sampled b		bottles		F S	10g2 12g2	Š	ME OF SECOND	ğ	ğ	Mitrate			_	$\sqcup$			1	LAB USE ONLY
1 MW-12	6206	7 0735	MN	MG	4	3	$\perp$	Ш		_	$\sqcup$	V	<u> </u>				$\sqcup$			$\perp$	
3 mw-13	6200	10814	MN	WG	4	3		1	1	_		/									
3 mw -14	6206	1210	mn	Wo	4	3		1				$\checkmark$	/				<u> </u>			L	
4 mw-15	6200	000	MN	W	4	3		1		Ι.		<	~								
5 mw-5	6210	0700	mN	Ws	1			1		T						,					
6 mw-6	(200	7 1140	MN	Ws	١	П		II		Т			/								
7 mw-8	6200	1300	mN	WG	l			11			П		~								
8 MW- 28	6200	1002	mN	W	1	П		III	T		П		~								
9 mw-29	6200	7 1025	mu	WG	ı			i		T			1			1				$\Box$	
10 mw-30	6200	1 1050	MN	w6	1	П		1		П	П		V		-						
Turnaround Time ( Business days)	5.00m	Bes River	野の場合に		hverable			******	200	EMP)	H.	500	Epope A	States in	5/3 <b>.</b>	C	mmenus	Remarks		SPACE	( <b>382) 10</b> (3) (2) (3)
XX 9td. 15 Business Days 10 Day RUSH	Approved By:/ Date:		Level :				FULL O		orv A												
5 Day RUSH		_	Lavel	3		_	NYASE	Categ													
3 Day EMERGENCY 2 Day EMERGENCY			Lavel -	ı		H	State F														
1 Day EMERGENCY					_							ĺ									
Other		_	Comm	ercial "A"	= Rasu	its Onl	y					ĺ									
Emergency T/A data available VIA Lab	ody must be docum	ented belo	w each time	sample	s chan	ge po	ssessi	on, inc	cludio	a con	rier d	eliyerv					No.	(Carlos de la	0.66	Barrie I	1. 2. 27. 22. 21
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	170		15 0			$\vdash$	<u> </u>	1													
						$\cup$	'														

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T17882: Chain of Custody Page 1 of 3



i		see variance for explanation); Samples received within temp. range. Sample received in proper containers. Sample received with chain of custody. ers.	PRESERV.   PH	C,	1,2,3 \$5.6 U. \$7-12, NA	1,2,3,4,5,6 U, (2, >12, NA	1,2,3,4,5,6 U, <2, >12, NA			COOLER TEMP:	Form: SM012, Rev.07728/05, QAD												
	x x	ince for expla s received wil received in pr received with	LOCATION   PRESERY.	VREF	18	_	6													1		1 7 E	
90	NITTIALS:	olicied, see variance for explanation);  N Samples received within term N Sample received with chain containers.	ootties.	Honl.	1,750	1		\$	-											re Freezer		COOLER TEMP: 2.2	
SAMPLE RECEIPT LOG	/Λ :σω	if "N" is circled, and the second in the sec	t evident on t	AQ		<b>-</b> \		PCC-	7					,						act EF: Encore Freezer OH 6: Other Comments:			
SAMPLE	DATE/TIME RECEIVED: U/22/07- 97.45	Ariance (Circle "\"" for yes and "\"" for no or NA. if "\"" is circled, see Sample received in undamaged condition.  Sample received with proper pH. Sample volume sufficient for analysis.  Ghain of Custody matchens sample IDs and analysis on containers. Samples Headspace acceptable  A. Custody seal received infact and tamper not evident on cooler.	(A) Custody seal received intact and tamper not evident on bottles.	06/17																g. SUB: Subcontract 13 4: H2SO4 5: NAOH Co			
SCUTEST.	$\mathcal{Q}$	Variance (Circie "\r" for yes and "\r" for no or Sample received in undamaged condition. Sample received with proper pH. Sample received with proper pH. Sample volume sufficient for analysis. Chain of Custody matches sample IDs an Samples Headspace acceptable A. Custody seai received infact and tamps A. Custody seai received infact and tamps	seal received inta	1-3	†															VR: Volatile Refrig.	cluding volatiles	rier.	
ACCU	JOB #: T17883	Condition/Variance (Circle "Y" for yes and "N" for no or NA. #"N" is  N Sample received in undamaged condition.  N Sample received with proper pH.  Sample volume sufficient for analysis.  N Sample volume sufficient for analysis.  N Chain of Custody maches sample IDs and analysis on to an analysis on to samples Headspace acceptable  NA_ Custody seal received intact and tamper not evident or	10. Y N (NA) Custody	7-	1	6-10													)	LOCATION: WI: Walk-In VR: Volatile Refrig. PRESERVATIVES: 1: None 2: HCL 3: HNO3	pH of waters checked excluding volafiles of of soils N/A	Delivery method: Courier.	
	, -, U	10 + 0 th 1 th th th	<u>:</u> l																		N 7.		

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T17882: Chain of Custody Page 2 of 3

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B. Santa

Charles.

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CUSTODY SEAL ACCUTEST LAB DATE / TIME SEA

ORATORIES CUSTODY SEAL

ACCUTEST LABORATORIES CUSTODY SEAL CUSTODY SEAL

LED: 62107 1630 My INITIALS: M

T17882: Chain of Custody Page 3 of 3



GC/MS Volatiles

**QC Data Summaries** 

Includes the following where applicable:

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



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Account:

**MWHSLCUT Montgomery Watson** 

Project:

Blanco South Flare Pit

- 1	Sample VY1299-MB	File ID Y0013679.D	DF 1	<b>Analyzed</b> 06/28/07	<b>By</b> ZLH	Prep Date n/a	Prep Batch n/a	Analytical Batch VY1299
ļ								

The QC reported here applies to the following samples:

Method: SW846 8260B

T17882-1, T17882-2, T17882-3, T17882-4

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		Limits	•		
1868-53-7	Dibromofluoromethane	100%	73-139	%		
17060-07-0	1,2-Dichloroethane-D4	97%	66-139	%		
2037-26-5	Toluene-D8	113%	77-1489	%		
460-00-4	4-Bromofluorobenzene	132%	84-150	%		



Page 1 of 1

Account:

**MWHSLCUT Montgomery Watson** 

Project:

Blanco South Flare Pit

- 1	Sample VY1299-BS	File ID Y0013677.D	DF 1	 <b>By</b> ZLH	Prep Date n/a	Prep Batch n/a	Analytical Batch VY1299
۱							

The QC reported here applies to the following samples:

Method: SW846 8260B

T17882-1, T17882-2, T17882-3, T17882-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
75-34-3	1,1-Dichloroethane	25	23.3	93	63-125
75-35-4	1,1-Dichloroethylene	25	22.5	90	52-143
156-59-2	cis-1,2-Dichloroethylene	25	21.8	87	65-116
95-50-1	o-Dichlorobenzene	25	21.5	86	72-118
156-60-5	trans-1,2-Dichloroethylene	25	21.2	85	66-128
127-18-4	Tetrachloroethylene	25	22.4	90	72-128
79-01-6	Trichloroethylene	25	22.6	90	69-120
CAS No.	Surrogate Recoveries	BSP	Li	mits	
1868-53-7	Dibromofluoromethane	102%	73	-139%	
17060-07-0	1,2-Dichloroethane-D4	96%	66	-139%	
2037-26-5	Toluene-D8	110%	77	-148%	
460-00-4	4-Bromofluorobenzene	126%	84	-150%	



Account:

**MWHSLCUT Montgomery Watson** 

Project:

Blanco South Flare Pit

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T17948-3MS	Y0013689.D	1	06/28/07	ZLH	n/a	n/a	VY1299
T17948-3MSD	Y0013690.D	1	06/28/07	ZLH	n/a	n/a	VY1299
T17948-3	Y0013684.D	1	06/28/07	ZLH	n/a	n/a	VY1299

The QC reported here applies to the following samples:

Method: SW846 8260B

T17882-1, T17882-2, T17882-3, T17882-4

CAS No.	Compound	T17948-3 ug/l Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
75-34-3 75-35-4 156-59-2 95-50-1 156-60-5 127-18-4 79-01-6	1,1-Dichloroethane 1,1-Dichloroethylene cis-1,2-Dichloroethylene o-Dichlorobenzene trans-1,2-Dichloroethylene Tetrachloroethylene Trichloroethylene	ND ND ND ND ND ND ND	25 25 25 25 25 25 25 25	24.7 42.8 21.9 22.0 24.2 23.2 23.4	99 171* a 88 88 97 93 94	24.6 45.4 21.4 21.3 40.6 23.1 23.4	98 182* <sup>a</sup> 86 85 162* <sup>a</sup> 92 94	0 6 2 3 51* a 0	65-126/21 55-140/25 62-120/24 68-120/20 64-130/22 69-132/21 70-120/19
CAS No.  1868-53-7 17060-07-0 2037-26-5 460-00-4	Surrogate Recoveries  Dibromofluoromethane 1,2-Dichloroethane-D4 Toluene-D8 4-Bromofluorobenzene	MS 99% 96% 107% 120%	MSD 96% 91% 103% 113%	T17 101 969 115 135	%	Limits 73-1399 66-1399 77-1489 84-1509	6 6		v.

<sup>(</sup>a) Outside control limits due to matrix interference.



**General Chemistry** 

**QC Data Summaries** 

Includes the following where applicable:

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



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#### 

Login Number: T17882 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 Nitrogen, Nitrate + Nitrite	GN11993 GN11993	0.050	<0.050	mg/l mg/l	0.500 0.500	0.51 0.51	102.0 102.0	89-112% 89-112%

Associated Samples:
Batch GN11993: T17882-1, T17882-10, T17882-2, T17882-3, T17882-4, T17882-5, T17882-6, T17882-7, T17882-8, T17882-9
(\*) Outside of QC limits



#### DUPLICATE RESULTS SUMMARY GENERAL CHEMISTRY

Login Number: T17882 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	GN11993	T17882-6	mg/l	92.0	89.0	3.3	0-10%	

Associated Samples:
Batch GN11993: T17882-1, T17882-10, T17882-2, T17882-3, T17882-4, T17882-5, T17882-6, T17882-7, T17882-8, T17882-9
(\*) Outside of QC limits

#### MATRIX SPIKE RESULTS SUMMARY GENERAL CHEMISTRY

Login Number: T17882
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	GN11993	T17882-6	mg/l	92.0	20.0	109	85.0	80-119%

Associated Samples:
Batch GN11993: T17882-1, T17882-10, T17882-2, T17882-3, T17882-4, T17882-5, T17882-6, T17882-7, T17882-8, T17882-9
(\*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

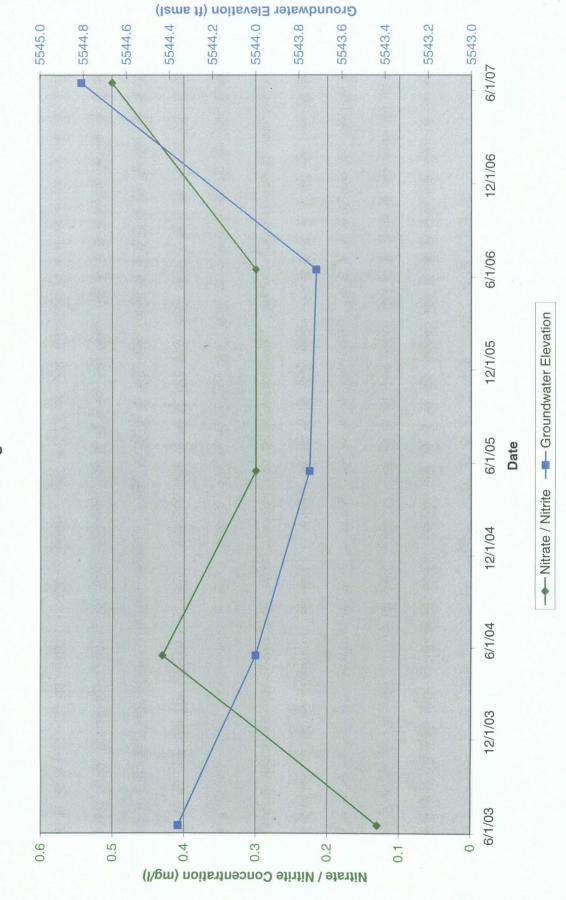


# APPENDIX C

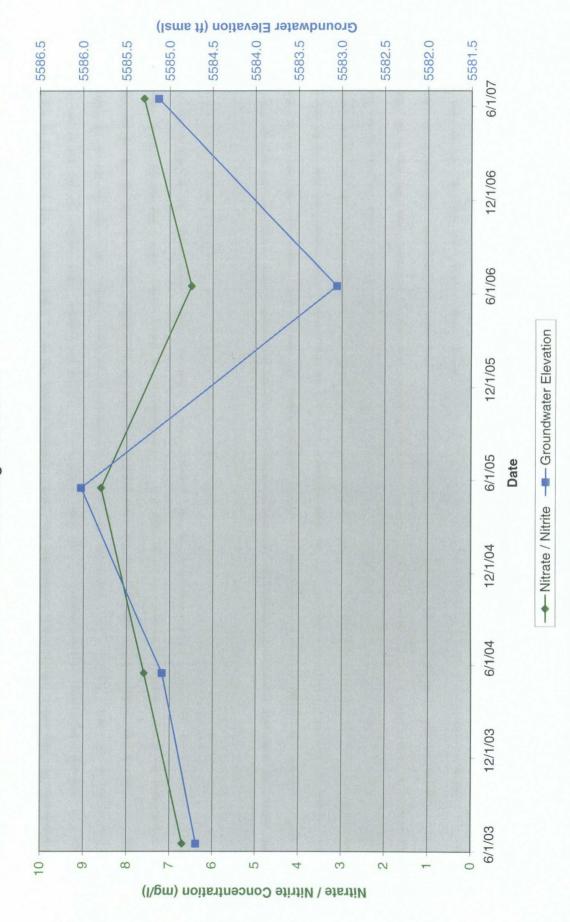


MWH

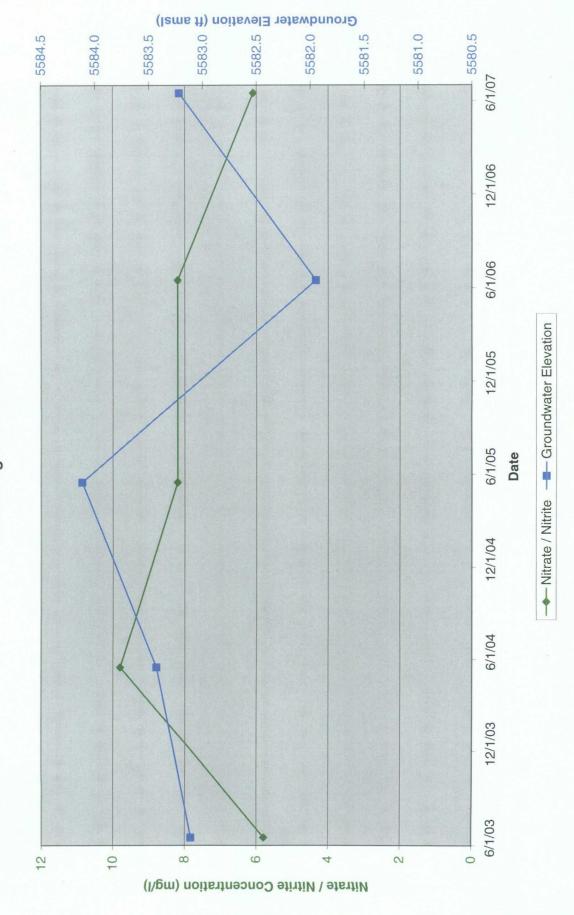
Historic Nitrate / Nitrite Concentrations and Groundwater Elevations Monitoring Well MW-8



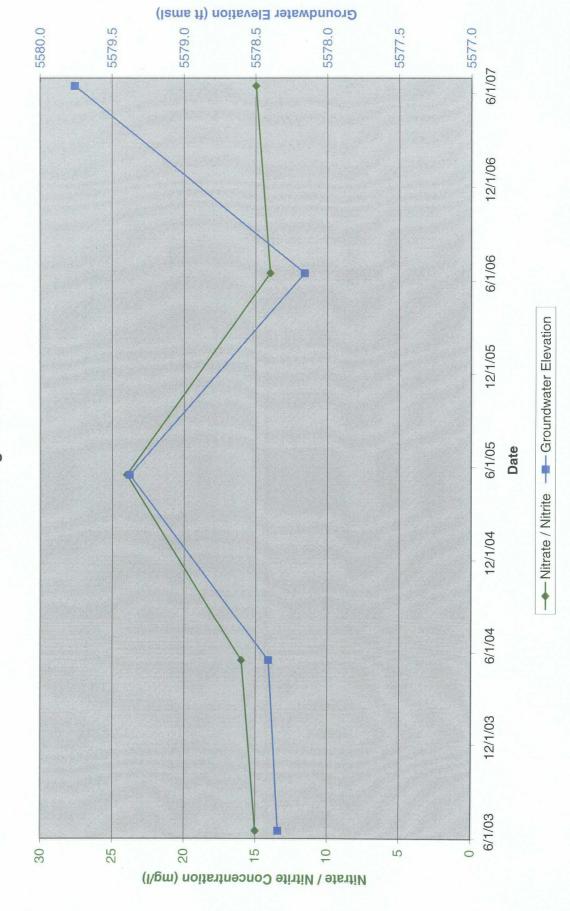
Historic Nitrate / Nitrite Concentrations and Groundwater Elevations Monitoring Well MW-12



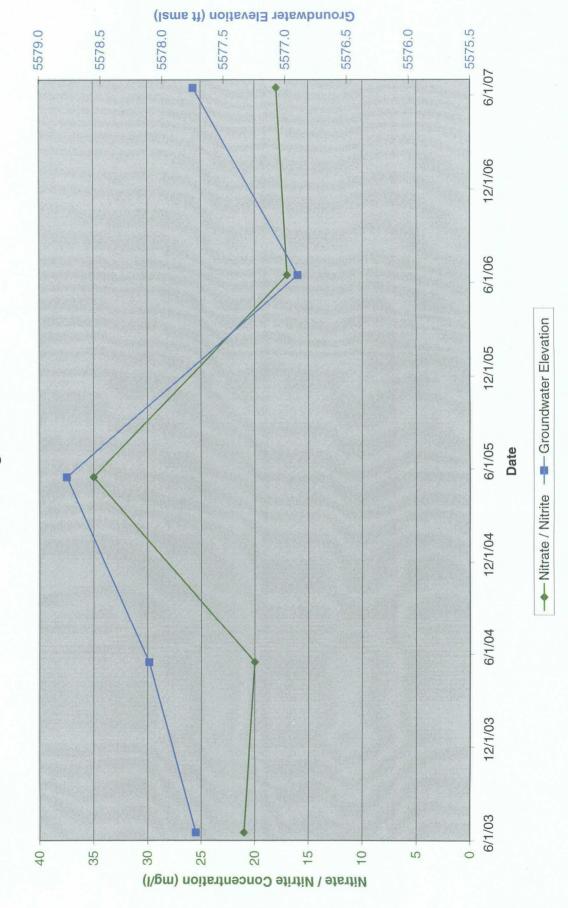
Historic Nitrate / Nitrite Concentrations and Groundwater Elevations Monitoring Well MW-13



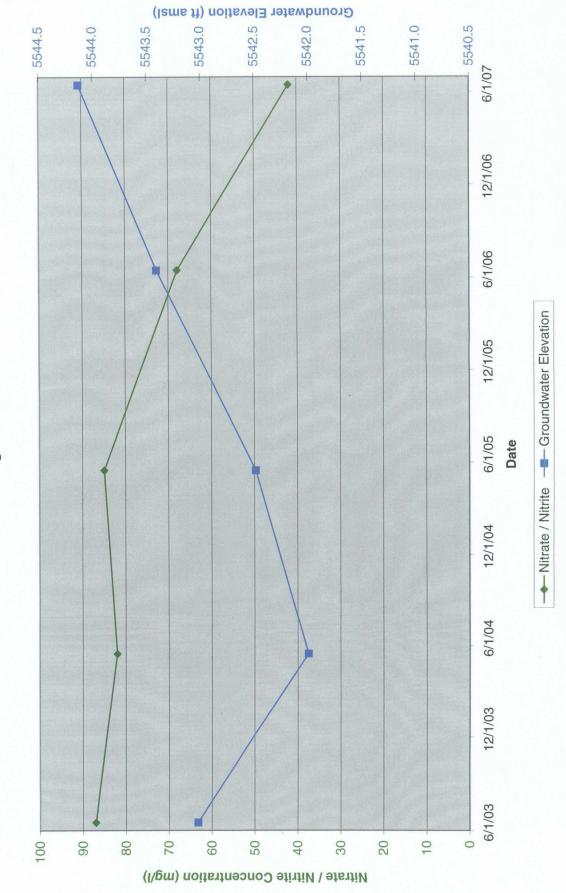
Historic Nitrate / Nitrite Concentrations and Groundwater Elevations Monitoring Well MW-14



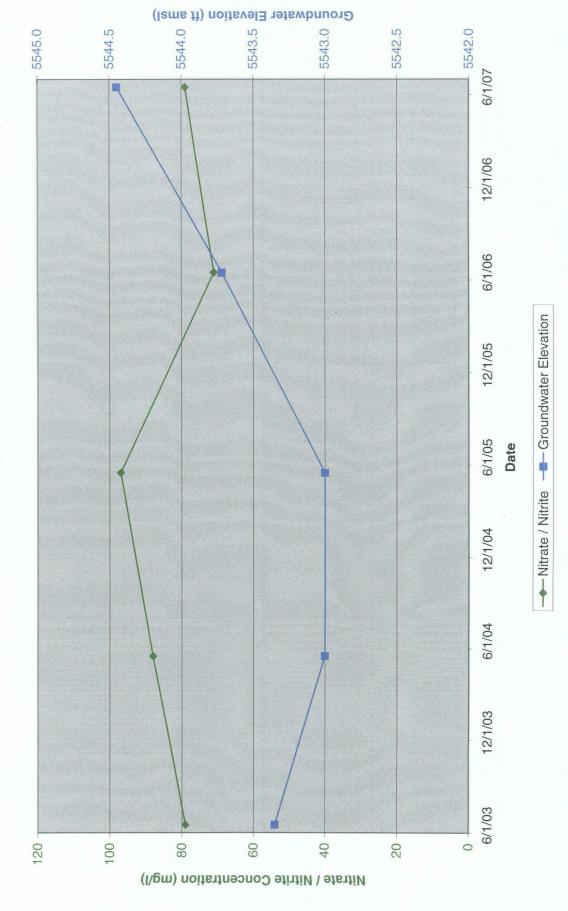
Historic Nitrate / Nitrite Concentrations and Groundwater Elevations Monitoring Well MW-15



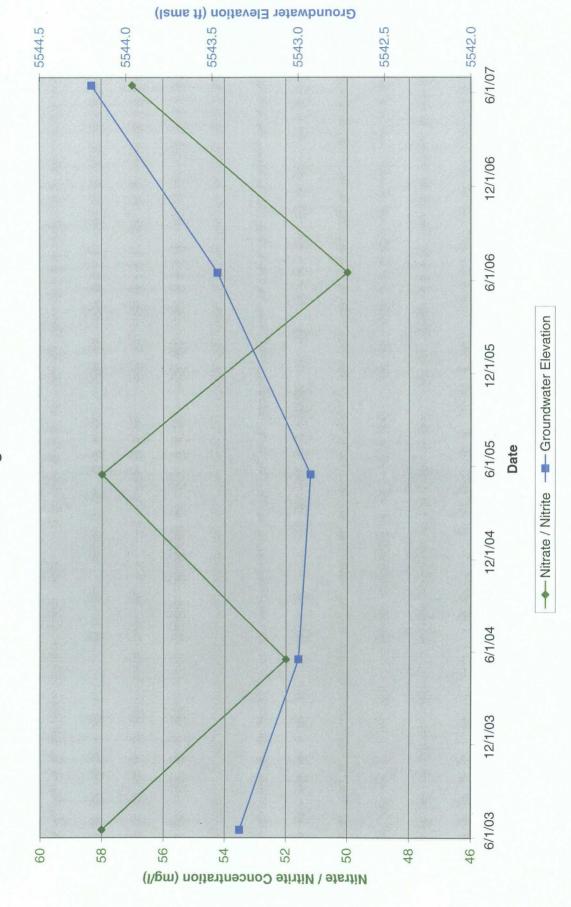
Historic Nitrate / Nitrite Concentrations and Groundwater Elevations Monitoring Well MW-28



Historic Nitrate / Nitrite Concentrations and Groundwater Elevations Monitoring Well MW-29



Historic Nitrate / Nitrite Concentrations and Groundwater Elevations Monitoring Well MW-30

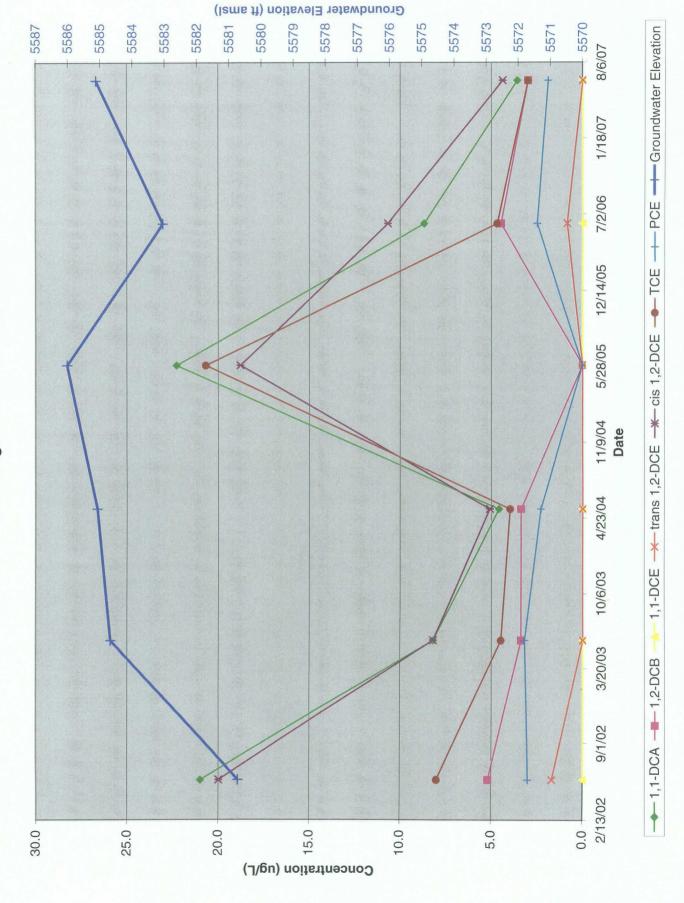


# APPENDIX D

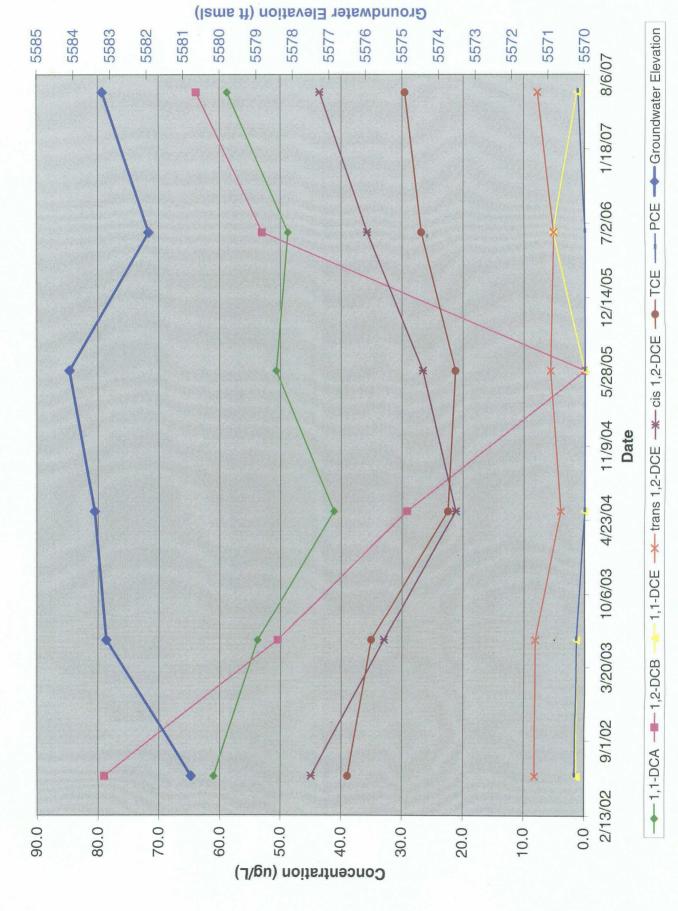


MWH

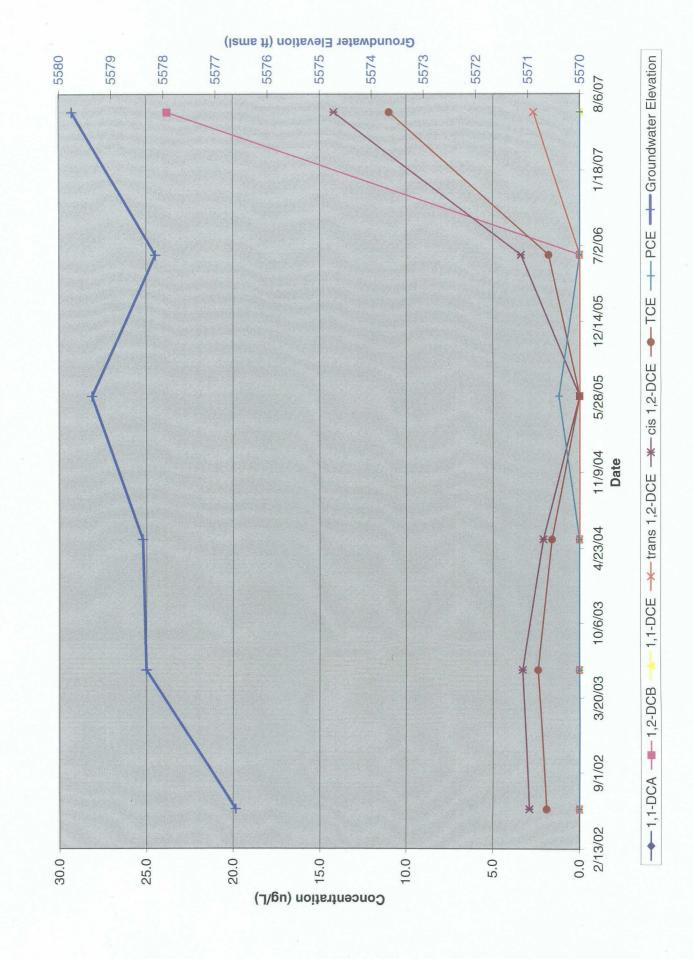
Historic Chlorinated Hydrocarbon Concentrations and Groundwater Elevations Monitoring Well MW-12



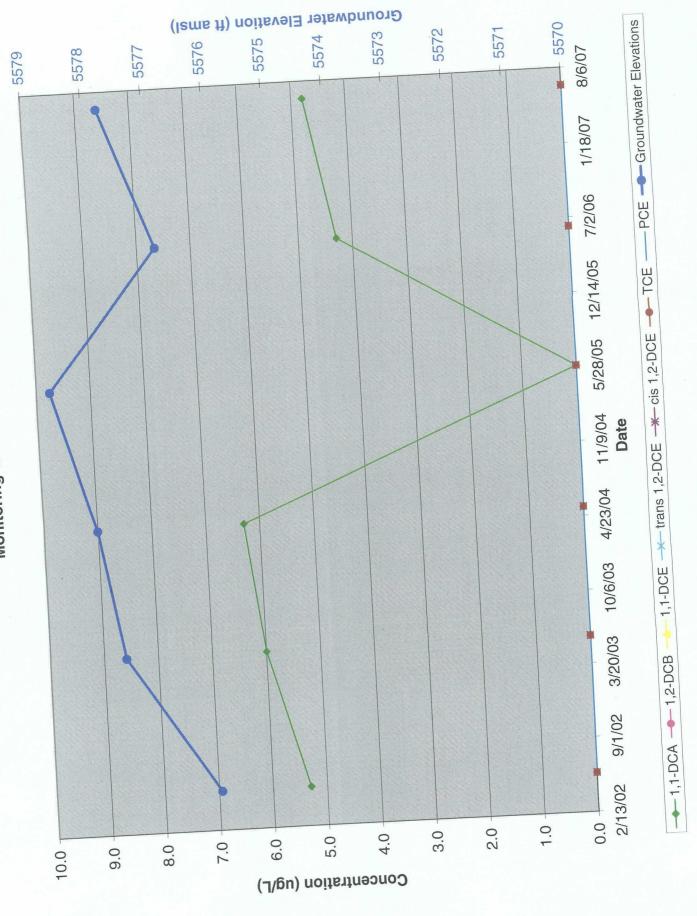
Historic Chlorinated Hydrocarbon Concentrations and Groundwater Elevations Monitoring Well MW-13



Historic Chlorinated Hydrocarbon Concentrations and Groundwater Elevations Monitoring Well MW-14



Historic Chlorinated Hydrocarbon Concentrations and Groundwater Elevations Monitoring Well MW-15



### RECEIVED



CCT 17 2007

Oil Conservation Division Environmental Bureau Via Federal Express

October 12, 2007

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

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 "2007 Blanco North Flare Pit Annual Report." The enclosed report details groundwater sampling and sparge system operation activities between October 2006 and September 2007. This report also includes recommended additional site activities for 2007/2008 period.

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

Sincerely,

**Nancy Prince** 

Project Manager

Environmental Remediation

El Paso Corporation

· Nancy & Prince

Encl.

cc: Blanco North Flare Pit General File w/ enclosure Jed Smith – MWH w/ enclosure Prepared for:

RECEIVED

CCT 17 2007.



Oil Conservation Division Environmental Bureau

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

### 2007 BLANCO NORTH FLARE PIT ANNUAL REPORT

SAN JUAN COUNTY, NEW MEXICO

October 2007

Prepared by:

**MWH** 

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

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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

 $\begin{array}{ll} mg/L & milligrams \ per \ liter \\ \mu g/L & micrograms \ per \ liter \end{array}$ 

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 2007 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 2006 through September 2007 (i.e., the reporting period). An evaluation of the AS system and recommendations for future activities are also presented.

The purpose of the Site activities is to monitor and remediate hydrocarbon impacts associated with the former Blanco 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) groundwater quality standards.

Section 4 includes a listing of previous reports that provide recent historical project information and data.

#### 2.0 REMEDIAL ACTIVITIES

#### 2.1 AIR SPARGING SYSTEM OPERATION

EPTPC operates 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.

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. During the October 2006 to September 2007 monitoring period the system consistently ran between 11 and 12 hours per day. Based on the meter readings, the AS system ran for approximately 3,829 hours during the monitoring period.

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 2006 to September 2007 are included in **Appendix A**, and selected data are summarized in **Tables 1, 2, and 3.** Monitoring data indicates that there has been good communication between the AS well (SW-1) and wells MW-19, MW-26, and MW-27. Minimal-to-no effects were observable in monitoring wells MW-23 (upgradient of system), MW-24 (virtually dry).

#### 2.2 FREE-PRODUCT REMOVAL

In May 2006, three new monitoring wells were installed (MW-31, MW-32, and MW-33), 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 was installed in MW-32 and free-product recovery was initiated in September 2006. As of the August 17, 2007 O&M event, the free product had been fully removed from MW-32. Therefore the decision was made to pull the recovery pump and place absorbent socks in the well. Between October 2006 and August 2007 monitoring period, approximately 14.6 gallons of free-product was removed from monitoring well MW-32, as measured from quantities in the storage drums.

#### 2.3 GROUNDWATER SAMPLING

Quarterly groundwater monitoring has been conducted at six monitoring wells in the North Flare Pit area (MW-19, MW-23, MW-26, MW-27, MW-31, and MW-33). Sampling events were performed in November 2006, February 2007, May 2007, and August 2007. Forty-eight hours prior to each sampling event, the AS system was shutdown 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 during the November 2006 and February 2007 sampling events. This well is currently not accessible due to apparent casing damage.

Analytical results from these four sampling events are presented along with the historic data (June 1991 to present) in **Table 4**. Laboratory analytical reports are included in **Appendix C**. Benzene concentrations in groundwater for each of the recent sampling events are presented on Site maps in **Figures 2** through **5**. These maps also present the inferred groundwater gradient direction based on measured static water levels. **Figure 6**, presents trends in historic benzene concentrations in wells MW-19, MW-23, MW-26, MW-27, MW-31, and MW-33.

As shown in **Table 4** and **Figure 6**, groundwater BTEX concentrations have generally decreased subsequent to air sparging activities. The largest decreases have occurred in MW-19, where the benzene concentration was reduced from 10,100 micrograms per liter (µg/L) in June 2003 to the laboratory reporting limit in November 2006; and in MW-26, where free-product was present in June 2003 and the benzene concentration has since been reduced below the laboratory reporting limit, as of the August 2007 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.

Also as shown in Table 4 and Figure 6, groundwater concentrations have not varied significantly between sampling events except the decreases noted above.

#### 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 free-product 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 June 2006 discovery of free-product in monitoring well MW-32 led to postponement of the expansion plans until additional source material delineation and subsequent Site evaluation could be completed.
- 3. The pneumatic pump installed at monitoring well MW-32 was successful in the removal of free-product from the well. The addition of absorbent socks appears to be effective as well, with the removal of one saturated sock to date.

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 BTEX concentrations approach the applicable closure criteria. **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 utilizing absorbent socks will continue in monitoring well MW-32.
- 5. A proposal for additional delineation of the area near the former North Flare Pit will be prepared for submission to NMOCD, with the intent of supporting decisions regarding potential future remedial approaches.
- 6. Site data will be reported to the NMOCD on an annual basis, typically in October.
- 7. Damaged monitoring well MW-19 will be plugged and abandoned.

#### 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.
- MWH, 2006. 2006 Blanco North Flare Pit Annual Report. Prepared for El Paso Tennessee Pipeline Company. October 2006.

**TABLES** 

TABLE 1
AS SYSTEM OPERATION AND MONITORING DATA (FEBRUARY 2003 - SEPTEMBER 2007)
BLANCO NORTH FLARE PIT - SAN JUAN COUNTY, NEW MEXICO

	Depth to Water (ft bgs)						
Date	MW-2	MW-19	MW-23	MW-24	MW-26	MW-27	
2/3/03	dry	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	56.99	66.71	pump in well	64.45	
7/2/03	dry	62.75	57.06	66.68	pump in well	64.50	
7/10/03	_ dry	62.45	57.08	66.68	65.38	64.50	
7/15/03	dry	62.75	57.08	66.81	64.35	64.74	
7/29/03	dry	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	57.16	67.15	64.65	64.95	
11/3/03	dry	64.75	56.99	67.17	64.69	64.9	
11/17/03	nm	64.07	56.98	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	nm	65.01	56.96	67.11	65.06	65.3	
3/26/04	nm	64.06 64.2	56.98	67.23 67.11	64.69 65.09	65.24	
4/13/04 4/26/04	dry	64.51	57.075 57.25	67.11	65.28	65.47 65.41	
5/10/04	nm	65.50	57.03	67.11	65.17	65.64	
5/17/04	nm 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	
8/17/04	dry	nm	57.17	67.05	65.78	66.22	
9/8/04	dry	nm	57.18	67.11	65.65	66.3	
9/23/04	dry	nm	57.23	67.12	65.77	66.32	
10/11/04	dry	nm	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	nm	57.15	67.11	65.35	66.71	
1/23/05	dry	nm	57.16	67.12	65.32	66.76	
2/8/05	dry	nm	57.12	67.11	65.2	66.82	
2/21/05	dry	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	ņm	57.08	67.11	65.51	66.96	

TABLE 1
AS SYSTEM OPERATION AND MONITORING DATA (FEBRUARY 2003 - SEPTEMBER 2007)
BLANCO NORTH FLARE PIT - SAN JUAN COUNTY, NEW MEXICO

	Depth to Water (ft bgs)								
Date	MW-2	MW-19	MW-23	MW-24	MW-26	MW-27			
3/23/05	dry	nm	57.64	67.12	67.68	67.1			
4/6/05	dry	nm	57.37	67.11	67.30	67.20			
5/23/05	dry	nm	57.22	nm	66.25	67.41			
5/30/05	dry	nm	57.22	67.13	67.16	67.58			
8/30/05	dry	nm	57.22	67.11	66.08	67.80			
11/17/05	dry	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	57.30	67.11	65.54	67.77			
4/3/06	dry	nm	57.40	67.11	64.67	67.85			
4/18/06	dry	nm	57.39	67.10	64.80	67.89			
4/28/06	dry	nm	57.24	67.11	64.92	64.90			
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			
7/31/06	dry	nm	57.29 '	67.13	65.36	68.20			
8/15/06	dry	nm	57.42	67.10	65.39	68.25			
9/18/06	dry	nm	57.46	67.13	65.43	68.27			
10/10/06	dry	nm	57.40	67.12	64.97	66.23			
10/25/06	dry	nm	57.31	67.13	65.20	68.19			
11/10/06	dry	nm	57.49	67.13	66.60	68.42			
11/30/06	dry	nm	57.59	67.14	65.61	68.43			
12/22/06	dry	nm	57.43	68.14	65.29	68.42			
1/9/07	dry	nm	57.49	68.14	65.31	68.45			
1/26/07	dry	nm	57.46	68.13	65.35	68.47			
2/13/07	dry	nm	57.36	68.14	65.10	68.46			
2/28/07	dry	nm	57.32	68.14	67.00	68.81			
3/16/07	dry	nm	57.58	68.14	65.79	68.53			
3/30/07	dry	nm	57.52	68.13	65.20	68.56			
4/18/07	dry	nm	57.42	68.12	65.41	68.59			
4/27/07	dry	nm	57.53	67.13	65.58	68.68			
5/16/07	dry	nm	57.56	67.13	65.42	68.68			
5/31/07	dry	nm	57.58	67.13	67.06	68.92			
6/15/07	dry	nm	57.50	67.13	65.57	68.71			
6/29/07	dry	nm	57.53	67.13	66.39	68.79			
7/18/07	dry	nm	57.52	67.12	66.32	68.91			
7/30/07	dry	nm	57.52	67.12	66.49	68.94			
8/17/07	dry	nm	57.54	67.12	66.40	69.02			
8/31/07	dry	nm	57.61	67.12	66.93	69.08			
9/14/07	dry	nm	57.55	67.14	66.90	68.71			

TABLE 2
AS SYSTEM OPERATION AND MONITORING DATA (FEBRUARY 2003 - SEPTEMBER 2007)
BLANCO NORTH FLARE PIT - SAN JUAN COUNTY, NEW MEXICO

	Dissolved Oxygen (mg/L)								
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			
8/7/03	dry	0.60	1.42	nm	0.49	1.00			
8/21/03	dry	0.91	1.11	nm	2.23	0.59			
9/10/03	dry	1.10	0.64	nm	2.02	0.86			
9/25/03	dry	1.10	1.12	1.71	0.50	1.01			
10/6/03	nm	1.12	1.75	1.02	1.69	0.79			
10/22/03	nm	1.07	1.83	nm	1.40	1.57			
11/3/03	nm	1.15	1.76	nm	1.32	1.20			
11/17/03	nm	1.16	0.91	nm	1.07	1.07			
12/1/03	nm	0.88	1.27	nm	1.08	1.19			
1/2/04	nm	1.12	1.14	nm	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			
8/17/04	nm	nm	0.85	nm	1.77	0.78			
9/8/04	nm	1.53	0.87	nm	0.71	1.23			
9/23/04	nm	1.86	0.98	nm	3.35	1.22			
10/11/04	nm	1.07	0.88	nm	0.81	0.98			
10/26/04	nm	0.95	0.68	nm	0.50	0.61			
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			

TABLE 2
AS SYSTEM OPERATION AND MONITORING DATA (FEBRUARY 2003 - SEPTEMBER 2007)
BLANCO NORTH FLARE PIT - SAN JUAN COUNTY, NEW MEXICO

	Dissolved Oxygen (mg/L)								
Date	MW-2	MW-19	MW-23	MW-24	MW-26	MW-27			
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			
8/30/05	nm	nm	nm	· nm	nm	nm			
1/31/06	nm	2.47	0.98	nm	. 3.72	1.02			
2/15/06	nm .	1.85	0.72	nm	4.18	0.75			
3/1/06	nm	2.80	0.88	nm	5.41	1.17			
4/3/06	nm	2.04	1.03	nm	4.76	0.89			
4/18/06	nm	2.70	0.75	nm	5.66	0.79			
4/28/06	nm	2.99	0.92	nm	5.20	0.83			
6/15/06	nm	2.10	1.02	nm	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			
10/10/06	nm	3.20	0.54	nm	4.00	0.98			
10/25/06	nm	nm	nm	nm	nm	nm			
11/10/06	nm	nm	0.78	nm	3.23	0.13			
11/30/06	nm	nm	0.71	nm	4.54	3.41			
12/22/06	nm	nm	0.69	nm	4.48	0.96			
1/9/07	nm	nm	0.43	nm	3.82	3.51			
1/26/07	nm	nm	0.58	nm	3.61	0.92			
2/13/07	nm	nm	0.82	nm	3.94	2.00			
2/28/07	nm	nm	1.07	nm	2.35	3.11			
3/16/07	nm	nm	1.07	nm	2.35	3.11			
3/30/07	nm	nm	0.84	nm	4.25	2.08			
4/18/07	nm	nm	0.64	nm	4.23	1.70			
4/27/07	nm	nm	0.49	nm	4.55	1.76			
5/16/07	nm	nm	0.75	nm	4.33	2.18			
5/31/07	nm	nm	0.85	nm	2.88	3.84			
6/15/07	nm	nm .	0.70	nm	1.53	2.32			
6/29/07	nm	nm	0.71	nm	1.85	2.68			
7/18/07	nm	nm	0.82	nm	2.11	2.52			
7/30/07	nm	nm	0.78	nm	1.59	2.68			
8/17/07	nm	nm	0.40	nm	1.32	2.93			
8/31/07	nm	nm	0.22	nm	2.52	3.87			
9/14/07	nm	nm	0.78	nm	2.40	3.63			

dry - well was dry

nm - not measured

bgs - below ground surface

TABLE 3
AS SYSTEM OPERATION AND MONITORING DATA (FEBRUARY 2003 - SEPTEMBER 2006)
BLANCO NORTH FLARE PIT - SAN JUAN COUNTY, NEW MEXICO

	Induced Air Pressure at Well (inches H2O)							
Date	MW-2	MW-19	MW-23	MW-24	MW-26	MW-27		
2/3/03	dry	3.80	nm	nm	5.50	0.02		
6/2/03	dry	NA	nm	nm	pump in well	nm		
6/5/03	dry	4.50	0.00	0.00	pump in well	0.00		
6/6/03	dry	5.80	0.00	0.00	pump in well	0.00		
6/9/03	dry	6.10	0.00	0.09	pump in well	0.07		
6/16/03	dry	6.00	0.00	0.10	pump in well	0.07		
6/23/03	dry	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		
10/22/03	nm	2.60	0.00	0.00	3.25	0.25		
11/3/03	nm	0.03	0.00	0.03	0.07	0.00		
11/17/03	nm	3.00	0.00	0.06	3.60	0.11		
12/1/03	nm	2.10	0.00	0.10	2.10	0.08		
1/2/04	nm	3.00	0.00	0.06	2.10	0.12		
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	nm	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	nm	4.70	0.00	0.01	7.00	0.12		
7/28/04	nm	4.80	0.00	-0.01	6.00	0.15		
8/17/04	nm	3.20	0.00	0.02	6.00	0.07		
9/8/04	nm	4.20	0.00	-0.01	5.30	0.03		
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		
2/8/05	nm	4.00	0.00	-0.02	>10	0.08		
2/21/05	nm	5.30	0.00	0.00	9.40	0.02		
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		

TABLE 3
AS SYSTEM OPERATION AND MONITORING DATA (FEBRUARY 2003 - SEPTEMBER 2006)
BLANCO NORTH FLARE PIT - SAN JUAN COUNTY, NEW MEXICO

Date         MW-2         MW-19         MW-23         MW-24         MW-26         MW-27           4/6/05         nm		Induced Air Pressure at Well (inches H2O)								
5/23/05         nm         nm <t< th=""><th>Date</th><th>MW-2</th><th>MW-19</th><th>MW-23</th><th>MW-24</th><th>MW-26</th><th>MW-27</th></t<>	Date	MW-2	MW-19	MW-23	MW-24	MW-26	MW-27			
5/30/05         nm         nm <t< th=""><th>4/6/05</th><th>nm</th><th>nm</th><th>nm</th><th>nm</th><th>nm</th><th>nm</th></t<>	4/6/05	nm	nm	nm	nm	nm	nm			
8/30/05   nm	5/23/05	nm	nm	nm	nm	nm	nm			
1/31/06	5/30/05	nm	nm	nm	nm	nm	nm			
2/15/06   nm   5.50   0.00   0.15   < 10   0.40	8/30/05	nm	nm	nm	nm	nm	nm			
3/1/06   nm	1/31/06	nm	5.60	0.00	0.06	<10	. 0.16			
4/3/06         nm         4.00         0.00         0.05         <10	2/15/06	nm	5.50	0.00	0.15	<10	0.40			
4/18/06         nm         1.00         0.00         0.08         0.40         0.04           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         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           9/18/06         nm         4.80         0.00         0.03         8.80         0.06           10/10/06         nm         0.02         0.00         0.01         0.04         0.01           10/25/06         nm         0.10         0.00         0.05         0.05         0.05           11/10/06         nm         0.10         0.00         0.05 <t< th=""><th>3/1/06</th><td>nm</td><td>7.00</td><td>0.00</td><td>0.10</td><td>&lt;10</td><td>0.21</td></t<>	3/1/06	nm	7.00	0.00	0.10	<10	0.21			
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           9/18/06         nm         4.80         0.00         0.03         8.80         0.06           10/10/06         nm         0.02         0.00         0.01         0.04         0.01           10/15/506         nm         0.10         0.00         0.05         0.05         0.05           11/10/06         nm         4.10         0.00         0.05         0.05         0.05           11/10/06         nm         4.10         0.00         0.05         0.05         0.05           11/10/06         nm         4.10         0.00         0.05	4/3/06	nm	4.00	0.00	0.05	<10	0.73			
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           9/18/06         nm         4.80         0.00         0.01         0.04         0.01           10/10/06         nm         0.02         0.00         0.01         0.04         0.01           10/25/06         nm         0.10         0.00         0.05         0.05         0.05           11/10/06         nm         4.10         0.00         0.05         0.05         0.05           11/10/06         nm         0.05         0.00         0.05         0.05         0.05           11/10/06         nm         0.05         0.00         0.05         0.05         0.06           12/22/06         nm         3.60         0.00         0.01	4/18/06	nm	1.00	0.00	0.08	0.40	0.04			
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           10/10/06         nm         4.80         0.00         0.01         0.04         0.01           10/12/5/06         nm         0.10         0.00         0.05         0.05         0.05           11/10/06         nm         0.10         0.00         0.05         0.05         0.05           11/10/06         nm         4.10         0.00         0.00         3.23         0.13           11/20/06         nm         3.60         0.00         0.05         0.05         0.05           12/22/06         nm         3.60         0.00         0.01         9.00         0.03           1/9/07         nm         0.15         0.00         0.13         0.11         0.15           1/26/07         nm         4.60         0.00         0.03	4/28/06	nm	6.00	0.00	0.55	9.50	0.04			
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           10/10/06         nm         0.02         0.00         0.01         0.04         0.01           10/25/06         nm         0.10         0.00         0.05         0.05         0.05           11/10/06         nm         0.10         0.00         0.05         0.05         0.05           11/10/06         nm         0.05         0.00         0.00         3.23         0.13           11/10/06         nm         0.05         0.00         0.05         0.05         0.05           11/10/06         nm         0.05         0.00         0.05         0.05         0.05           11/10/06         nm         0.05         0.00         0.05         0.05         0.05           11/10/06         nm         0.05         0.00         0.01         3.23         0.13           11/10/07         nm         0.15         0.00         0.01	6/15/06	nm	2.90	0.00	0.05	9.90	0.15			
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           10/10/06         nm         0.02         0.00         0.01         0.04         0.01           10/25/06         nm         0.10         0.00         0.05         0.05         0.05           11/10/06         nm         4.10         0.00         0.00         0.05         0.05           11/10/06         nm         4.10         0.00         0.05         0.05         0.05           11/20/06         nm         0.05         0.00         0.05         0.05         0.06           12/22/06         nm         3.60         0.00         0.01         9.00         0.03           1/9/07         nm         0.15         0.00         0.01         9.00         0.03           1/26/07         nm         4.60         0.00         0.03         8.20         0.06           2/13/07         nm         5.00         0.00         0.03         8.20         0.06           2/28/07         nm         0.35         0.00         0.00	7/17/06	nm	0.15	0.00	0.10	>10	0.23			
9/18/06         nm         4.80         0.00         0.03         8.80         0.06           10/10/06         nm         0.02         0.00         0.01         0.04         0.01           10/25/06         nm         0.10         0.00         0.05         0.05         0.05           11/10/06         nm         4.10         0.00         0.00         0.05         0.05           11/30/06         nm         0.05         0.00         0.05         0.05         0.06           12/22/06         nm         3.60         0.00         0.01         9.00         0.03           1/9/07         nm         0.15         0.00         0.01         9.00         0.03           1/26/07         nm         4.60         0.00         0.03         8.20         0.06           2/13/07         nm         5.00         0.00         0.03         8.60         0.40           2/28/07         nm         0.35         0.00         0.03         8.60         0.44           2/28/07         nm         0.45         0.00         0.06         4.60         0.65           3/30/07         nm         0.35         0.00         0.06	7/31/06	nm	5.30	0.00	0.05	>10	0.40			
10/10/06   nm   0.02   0.00   0.01   0.04   0.01     10/25/06   nm   0.10   0.00   0.05   0.05   0.05     11/10/06   nm   4.10   0.00   0.00   0.00   3.23   0.13     11/30/06   nm   0.05   0.00   0.05   0.05   0.06     12/22/06   nm   3.60   0.00   0.01   9.00   0.03     1/9/07   nm   0.15   0.00   0.13   0.11   0.15     1/26/07   nm   4.60   0.00   0.03   8.20   0.06     2/13/07   nm   5.00   0.00   0.03   8.60   0.40     2/28/07   nm   0.35   0.00   0.00   7.20   0.14     3/16/07   nm   0.45   0.00   0.06   4.60   0.65     3/30/07   nm   0.39   0.00   0.09   4.70   0.34     4/18/07   nm   0.38   0.00   0.03   4.50   0.40     4/27/07   nm   0.31   0.00   0.06   6.00   0.12     5/16/07   nm   0.34   0.00   0.04   8.00   0.30     6/15/07   nm   0.38   0.00   0.03   8.11   0.35     6/29/07   nm   0.38   0.00   0.00   8.00   0.24     7/18/07   nm   0.38   0.00   0.00   8.00   0.24     7/18/07   nm   0.38   0.00   0.00   8.00   0.24     7/18/07   nm   0.38   0.00   0.02   8.30   0.32     8/17/07   nm   0.33   0.00   0.02   6.80   0.05     8/31/07   nm   0.31   0.00   0.02   6.80   0.05     8/31/07   nm   0.31   0.00   0.02   6.50   0.38     8/17/07   nm   0.31   0.00   0.02   6.50   0.38	8/15/06	nm	4.40	0.00	0.05	6.50	0.06			
10/25/06   nm	9/18/06	nm	4.80	0.00	0.03	8.80	0.06			
11/10/06         nm         4.10         0.00         0.00         3.23         0.13           11/30/06         nm         0.05         0.00         0.05         0.05         0.06           12/22/06         nm         3.60         0.00         0.01         9.00         0.03           1/9/07         nm         0.15         0.00         0.13         0.11         0.15           1/26/07         nm         4.60         0.00         0.03         8.20         0.06           2/13/07         nm         5.00         0.00         0.03         8.60         0.40           2/28/07         nm         0.35         0.00         0.03         8.60         0.40           2/28/07         nm         0.35         0.00         0.00         7.20         0.14           3/16/07         nm         0.45         0.00         0.06         4.60         0.65           3/30/07         nm         0.39         0.00         0.09         4.70         0.34           4/18/07         nm         0.38         0.00         0.03         4.50         0.40           4/27/07         nm         0.31         0.00         0.03	10/10/06	nm	0.02	0.00	0.01	0.04	0.01			
11/30/06         nm         0.05         0.00         0.05         0.05         0.06           12/22/06         nm         3.60         0.00         0.01         9.00         0.03           1/9/07         nm         0.15         0.00         0.13         0.11         0.15           1/26/07         nm         4.60         0.00         0.03         8.20         0.06           2/13/07         nm         5.00         0.00         0.03         8.60         0.40           2/28/07         nm         0.35         0.00         0.00         7.20         0.14           3/16/07         nm         0.45         0.00         0.06         4.60         0.65           3/30/07         nm         0.39         0.00         0.09         4.70         0.34           4/18/07         nm         0.38         0.00         0.03         4.50         0.40           4/27/07         nm         0.31         0.00         0.03         4.50         0.40           4/27/07         nm         0.31         0.00         0.06         6.00         0.12           5/16/07         nm         0.34         0.00         0.06         <	10/25/06	nm	0.10	0.00	0.05	0.05	0.05			
12/22/06         nm         3.60         0.00         0.01         9.00         0.03           1/9/07         nm         0.15         0.00         0.13         0.11         0.15           1/26/07         nm         4.60         0.00         0.03         8.20         0.06           2/13/07         nm         5.00         0.00         0.03         8.60         0.40           2/28/07         nm         0.35         0.00         0.00         7.20         0.14           3/16/07         nm         0.45         0.00         0.06         4.60         0.65           3/30/07         nm         0.39         0.00         0.09         4.70         0.34           4/18/07         nm         0.38         0.00         0.03         4.50         0.40           4/27/07         nm         0.31         0.00         0.03         4.90         0.25           5/16/07         nm         0.40         0.00         0.06         6.00         0.12           5/31/07         nm         0.34         0.00         0.04         8.00         0.30           6/15/07         nm         0.38         0.00         0.03 <t< th=""><th>11/10/06</th><td>nm</td><td>4.10</td><td>0.00</td><td>0.00</td><td>3.23</td><td>0.13</td></t<>	11/10/06	nm	4.10	0.00	0.00	3.23	0.13			
1/9/07         nm         0.15         0.00         0.13         0.11         0.15           1/26/07         nm         4.60         0.00         0.03         8.20         0.06           2/13/07         nm         5.00         0.00         0.03         8.60         0.40           2/28/07         nm         0.35         0.00         0.00         7.20         0.14           3/16/07         nm         0.45         0.00         0.06         4.60         0.65           3/30/07         nm         0.39         0.00         0.09         4.70         0.34           4/18/07         nm         0.38         0.00         0.03         4.50         0.40           4/27/07         nm         0.31         0.00         0.03         4.90         0.25           5/16/07         nm         0.40         0.00         0.06         6.00         0.12           5/31/07         nm         0.34         0.00         0.04         8.00         0.30           6/15/07         nm         0.38         0.00         0.03         8.11         0.35           6/29/07         nm         0.38         0.00         0.03 <td< th=""><th>11/30/06</th><td>nm</td><td>0.05</td><td>0.00</td><td>0.05</td><td>0.05</td><td>0.06</td></td<>	11/30/06	nm	0.05	0.00	0.05	0.05	0.06			
1/26/07         nm         4.60         0.00         0.03         8.20         0.06           2/13/07         nm         5.00         0.00         0.03         8.60         0.40           2/28/07         nm         0.35         0.00         0.00         7.20         0.14           3/16/07         nm         0.45         0.00         0.06         4.60         0.65           3/30/07         nm         0.39         0.00         0.09         4.70         0.34           4/18/07         nm         0.38         0.00         0.03         4.50         0.40           4/27/07         nm         0.31         0.00         0.03         4.90         0.25           5/16/07         nm         0.40         0.00         0.06         6.00         0.12           5/31/07         nm         0.34         0.00         0.04         8.00         0.30           6/15/07         nm         0.38         0.00         0.03         8.11         0.35           6/29/07         nm         0.37         0.00         0.00         8.00         0.24           7/18/07         nm         0.38         0.00         0.20 <t< th=""><th>12/22/06</th><td>nm</td><td>3.60</td><td>0.00</td><td>0.01</td><td>9.00</td><td>0.03</td></t<>	12/22/06	nm	3.60	0.00	0.01	9.00	0.03			
2/13/07         nm         5.00         0.00         0.03         8.60         0.40           2/28/07         nm         0.35         0.00         0.00         7.20         0.14           3/16/07         nm         0.45         0.00         0.06         4.60         0.65           3/30/07         nm         0.39         0.00         0.09         4.70         0.34           4/18/07         nm         0.38         0.00         0.03         4.50         0.40           4/27/07         nm         0.31         0.00         0.03         4.90         0.25           5/16/07         nm         0.40         0.00         0.06         6.00         0.12           5/31/07         nm         0.34         0.00         0.04         8.00         0.30           6/15/07         nm         0.34         0.00         0.03         8.11         0.35           6/29/07         nm         0.38         0.00         0.03         8.00         0.24           7/18/07         nm         0.38         0.00         0.20         3.80         1.80           7/30/07         nm         0.40         0.00         0.02 <t< th=""><th>1/9/07</th><td>nm</td><td>0.15</td><td>0.00</td><td>0.13</td><td>0.11</td><td>0.15</td></t<>	1/9/07	nm	0.15	0.00	0.13	0.11	0.15			
2/28/07         nm         0.35         0.00         0.00         7.20         0.14           3/16/07         nm         0.45         0.00         0.06         4.60         0.65           3/30/07         nm         0.39         0.00         0.09         4.70         0.34           4/18/07         nm         0.38         0.00         0.03         4.50         0.40           4/27/07         nm         0.31         0.00         0.03         4.90         0.25           5/16/07         nm         0.40         0.00         0.06         6.00         0.12           5/31/07         nm         0.34         0.00         0.04         8.00         0.30           6/15/07         nm         0.38         0.00         0.03         8.11         0.35           6/29/07         nm         0.38         0.00         0.03         8.11         0.35           6/29/07         nm         0.38         0.00         0.20         3.80         1.80           7/30/07         nm         0.33         0.00         0.02         8.30         0.32           8/17/07         nm         0.40         0.00         0.02 <t< th=""><th>1/26/07</th><td>nm</td><td>4.60</td><td>0.00</td><td>0.03</td><td>8.20</td><td>0.06</td></t<>	1/26/07	nm	4.60	0.00	0.03	8.20	0.06			
3/16/07         nm         0.45         0.00         0.06         4.60         0.65           3/30/07         nm         0.39         0.00         0.09         4.70         0.34           4/18/07         nm         0.38         0.00         0.03         4.50         0.40           4/27/07         nm         0.31         0.00         0.03         4.90         0.25           5/16/07         nm         0.40         0.00         0.06         6.00         0.12           5/31/07         nm         0.34         0.00         0.04         8.00         0.30           6/15/07         nm         0.38         0.00         0.03         8.11         0.35           6/29/07         nm         0.37         0.00         0.00         8.00         0.24           7/18/07         nm         0.38         0.00         0.20         3.80         1.80           7/30/07         nm         0.33         0.00         0.02         8.30         0.32           8/17/07         nm         0.40         0.00         0.02         6.80         0.05           8/31/07         nm         0.31         0.00         0.02 <t< th=""><th>2/13/07</th><td>nm</td><td>5.00</td><td>0.00</td><td>0.03</td><td>8.60</td><td>0,40</td></t<>	2/13/07	nm	5.00	0.00	0.03	8.60	0,40			
3/30/07         nm         0.39         0.00         0.09         4.70         0.34           4/18/07         nm         0.38         0.00         0.03         4.50         0.40           4/27/07         nm         0.31         0.00         0.03         4.90         0.25           5/16/07         nm         0.40         0.00         0.06         6.00         0.12           5/31/07         nm         0.34         0.00         0.04         8.00         0.30           6/15/07         nm         0.38         0.00         0.03         8.11         0.35           6/29/07         nm         0.37         0.00         0.00         8.00         0.24           7/18/07         nm         0.38         0.00         0.20         3.80         1.80           7/30/07         nm         0.33         0.00         0.02         8.30         0.32           8/17/07         nm         0.40         0.00         0.02         6.80         0.05           8/31/07         nm         0.31         0.00         0.02         6.50         0.38	2/28/07	nm	0.35	0.00	0.00	7.20	0.14			
4/18/07         nm         0.38         0.00         0.03         4.50         0.40           4/27/07         nm         0.31         0.00         0.03         4.90         0.25           5/16/07         nm         0.40         0.00         0.06         6.00         0.12           5/31/07         nm         0.34         0.00         0.04         8.00         0.30           6/15/07         nm         0.38         0.00         0.03         8.11         0.35           6/29/07         nm         0.37         0.00         0.00         8.00         0.24           7/18/07         nm         0.38         0.00         0.20         3.80         1.80           7/30/07         nm         0.33         0.00         0.02         8.30         0.32           8/17/07         nm         0.40         0.00         0.02         6.80         0.05           8/31/07         nm         0.31         0.00         0.02         6.50         0.38	3/16/07	nm	0.45	0.00		4.60	0.65			
4/27/07         nm         0.31         0.00         0.03         4.90         0.25           5/16/07         nm         0.40         0.00         0.06         6.00         0.12           5/31/07         nm         0.34         0.00         0.04         8.00         0.30           6/15/07         nm         0.38         0.00         0.03         8.11         0.35           6/29/07         nm         0.37         0.00         0.00         8.00         0.24           7/18/07         nm         0.38         0.00         0.20         3.80         1.80           7/30/07         nm         0.33         0.00         0.02         8.30         0.32           8/17/07         nm         0.40         0.00         0.02         6.80         0.05           8/31/07         nm         0.31         0.00         0.02         6.50         0.38	3/30/07	nm	0.39	0.00		4.70	0.34			
5/16/07         nm         0.40         0.00         0.06         6.00         0.12           5/31/07         nm         0.34         0.00         0.04         8.00         0.30           6/15/07         nm         0.38         0.00         0.03         8.11         0.35           6/29/07         nm         0.37         0.00         0.00         8.00         0.24           7/18/07         nm         0.38         0.00         0.20         3.80         1.80           7/30/07         nm         0.33         0.00         0.02         8.30         0.32           8/17/07         nm         0.40         0.00         0.02         6.80         0.05           8/31/07         nm         0.31         0.00         0.02         6.50         0.38	4/18/07	nm	0.38		0.03	4.50	0.40			
5/31/07         nm         0.34         0.00         0.04         8.00         0.30           6/15/07         nm         0.38         0.00         0.03         8.11         0.35           6/29/07         nm         0.37         0.00         0.00         8.00         0.24           7/18/07         nm         0.38         0.00         0.20         3.80         1.80           7/30/07         nm         0.33         0.00         0.02         8.30         0.32           8/17/07         nm         0.40         0.00         0.02         6.80         0.05           8/31/07         nm         0.31         0.00         0.02         6.50         0.38	4/27/07	nm	0.31	0.00	0.03	4.90	0.25			
6/15/07         nm         0.38         0.00         0.03         8.11         0.35           6/29/07         nm         0.37         0.00         0.00         8.00         0.24           7/18/07         nm         0.38         0.00         0.20         3.80         1.80           7/30/07         nm         0.33         0.00         0.02         8.30         0.32           8/17/07         nm         0.40         0.00         0.02         6.80         0.05           8/31/07         nm         0.31         0.00         0.02         6.50         0.38	5/16/07	nm	0.40	0.00	0.06	6.00	0.12			
6/29/07         nm         0.37         0.00         0.00         8.00         0.24           7/18/07         nm         0.38         0.00         0.20         3.80         1.80           7/30/07         nm         0.33         0.00         0.02         8.30         0.32           8/17/07         nm         0.40         0.00         0.02         6.80         0.05           8/31/07         nm         0.31         0.00         0.02         6.50         0.38	5/31/07	nm	0.34	0.00	0.04	8.00	0.30			
7/18/07         nm         0.38         0.00         0.20         3.80         1.80           7/30/07         nm         0.33         0.00         0.02         8.30         0.32           8/17/07         nm         0.40         0.00         0.02         6.80         0.05           8/31/07         nm         0.31         0.00         0.02         6.50         0.38	6/15/07	nm	0.38	0.00		8.11	0.35			
7/30/07         nm         0.33         0.00         0.02         8.30         0.32           8/17/07         nm         0.40         0.00         0.02         6.80         0.05           8/31/07         nm         0.31         0.00         0.02         6.50         0.38	6/29/07	nm			<del></del>					
8/17/07         nm         0.40         0.00         0.02         6.80         0.05           8/31/07         nm         0.31         0.00         0.02         6.50         0.38	7/18/07	nm	0.38	0.00			1.80			
<b>8/31/07</b> nm 0.31 0.00 0.02 6.50 0.38	7/30/07	nm	0.33	0.00		8.30	0.32			
		nm	<del> </del>	<del></del>	<del></del>		0.05			
<b>9/14/07</b>   nm   0.08   0.00   0.02   0.17   0.08		nm					0.38			
0.00	9/14/07	nm	0.08	0.00	0.02	0.17	0.08			

dry - well was dry

nm - not measured

bgs - below ground surface

## TABLE 4 GROUNDWATER MONITORING ANALYTICAL DATA (JUNE 1991 - AUGUST 2007) BLANCO NORTH FLARE PIT - SAN JUAN COUNTY, NEW MEXICO

			Analytical Parameters					
Monitoring Well	Sample Date	Static Water Level (ft BTOC) NMWQCC Standard:	Benzene (ug/l)	Toluene (ug/l) 750	Ethylbenzene (ug/l) 750	Total Xyle (ug/l) 620		
————		NWWQCC Standard.			0.7	0.9		
	6/18/91		<0.5	<0.5				
MW-2	2/23/93		<0.5	<0.5	<0.5	<0.5		
<u> </u>	6/8/93		<2.0	<2.0	<2.0	<2.0		
-	9/29/93	<del></del>	6.2	<2.0	<2.0	<2.0		
-	2/10/94		<2.0	<2.0	<2.0	<2.0		
-	5/13/94		<2.0	<2.0	<2.0	<2.0		
<u> </u>	8/22/94	<del></del>	<2.0	<2.0	<2.0	<2.0		
	11/9/00	dry		Well Dry - No Sa		······································		
-	3/25/01	dry		Well Dry - No S				
<u> </u>	6/2/03	dry		Well Dry - No S	<u> </u>			
-	8/4/03	dry		Well Dry - No Sa				
-	9/3/03	dry		Well Dry - No Sa				
`	12/16/03	dry		Well Dry - No Sa				
-	5/17/04	dry		Well Dry - No Sa				
	8/23/04	dry		Well Dry - No Sa				
-	11/22/04	dry		Well Dry - No Sa				
-	2/23/05	dry		Well Dry - No Sa				
<u> </u>	5/23/05	dry		Well Dry - No Sa				
-	8/30/05	dry		Well Dry - No Sa				
-	11/17/05	dry	Well Dry - No Sample Collected					
F	2/21/06	dry		Well Dry - No Sa				
-	6/8/06	dry		Well Dry - No Sa				
- ⊦	8/15/06	dry .	Well Dry - No Sample Collected					
-	11/3/06	dry	Well Dry - No Sample Collected  Well Dry - No Sample Collected					
-	2/26/07	dry						
<u> </u>	5/29/06	dry		Well Dry - No Sa				
	8/22/06	dry		Well Dry - No Sa	<del>, · · · · · </del>			
	6/19/91		8,600	210	. <25.0	4,200		
MW-19	9/26/92	nm	<1.0	<1.0	<1.0	<1.0		
-	2/25/93		14,000	450.00	3,900	5100.00		
·	6/10/93		9,580	159	928	1,087		
-	11/13/00	63.45	7,200	<25	3,500	88		
}	3/26/01	63.37	12,000	<50	4,500	110		
L	5/30/02	63.54	12,000	<50	4,300	140		
	6/2/03	63.90	10,100	<10	3,900	<30		
	8/4/03	62.75	2,000	<10	304	<30		
	9/3/03	65.06	3,580	<1.0	1,020	<3.0		
<b> </b>		65.02	8,130	<50	<50			
-	12/18/03			1		<100		
-	5/17/04	65.31	7,410	<13	1,160	45		
-	8/23/04	nm	2,650	<25	303	<5()		
Ļ	11/22/04	nm	4,150	7	<1 .	<2		
1	2/23/05	nm	191	<10	<10	<20		
F	5/23/05	nm	8,520_	<20	176	176		
-	8/30/05	nm	2,040	<20	117	<40		
-	11/17/05	nm	3,730	<20	340	<40		
F	2/21/06	nm	20.1	<5<1	9	4.4		
-	6/8/06	nm	18.6	<del></del>	Samula Collected	2.9		
F	8/15/06 11/3/06	nm	<1.0	Well Damaged - No		-2.0		
-		nm	<1.0	<1.0	<1.0	<2.0		
-	2/26/07 5/29/07	nm	<1.0		<1.0	<2.0		
ŀ	8/22/07	nm nm		Well Damaged - No Well Damaged - No				
		THE	<0.5			-0.7		
MW 20	2/24/93	<del>-</del>	<0.5	<0.5 <2.0	<0.5	<0.5		
MW-20	6/10/93				<2.0	<2.0		
F	9/29/93	<del>                                     </del>	<2.0	<2.0	<2.0	<2.0		
J	1/27/94		<2.0	<2.0	<2.0	<2.0		
-		1	<2.0	<2.0	<2.0	< 2.0		
-	5/13/94	<del></del>						
	8/22/94 11/13/00	41.00	<2.0	<2.0 Well Damaged - No	<2.0	<2.0		

## TABLE 4 GROUNDWATER MONITORING ANALYTICAL DATA (JUNE 1991 - AUGUST 2007) BLANCO NORTH FLARE PIT - SAN JUAN COUNTY, NEW MEXICO

			Analytical Parameters				
Monitoring Well	Sample Date	Static Water Level (ft BTOC)	Benzene (ug/l)	Toluene (ug/l)	Ethylbenzene (ug/l)	Total Xylene (ug/l)	
		NMWQCC Standard:	10	750	750	620	
	9/26/92		2,770	221	7,690	6,090	
MW-23	2/1/93		2,900	3,500 .	190	4,100	
_	2/25/93		2,900	190	3,500	4,100	
L	6/8/93		1,680	30	1,850	2,906	
	9/29/93		2,133	216	1,807	3,823	
	2/10/94		2,090	151	1,150	2,660	
<u>_</u>	5/13/94		3,530	255	852	2,150	
L	8/22/94		3,270	212	353	1,176	
	11/13/00	57.02	3,700	<25	840	1,400	
_	3/26/01	57.07	7,200	<25	520	1,300	
<u> </u>	5/30/02	57.08	9,300	<50	360	1,500	
	6/2/03	57.12	8,920	<10	337	1,450	
	8/4/03	57.06	2,250	<10	100	337	
<u> </u>	9/3/03	57.11	3,860	8	208	768	
L	12/18/03	65.14	5,080	<50	<50	219	
<u> </u>	5/17/04	57.14	8,020	<13	208	1,490	
	8/23/04	57.04	4,480	<25	160	966	
L	11/22/04	57.13	3,360	<1	<1	<2 -	
_	2/23/05	53.17	7,450	<1	321	1,380	
<u> </u>	5/23/05	57.22	2,200	37	270	1,650	
_	8/30/05	57.18	3,760	<5	53	199	
	11/17/05	57.29	5,280	2.6	203	863	
	2/21/06	57.25	4,900	4.9	57		
<u> </u>	6/8/06	57.44	3,470	, <1 , <1	<1		
-	8/15/06	57.40 57.41	6,490	26.6 26.3	165 103	1,270 735	
_	11/3/06	<del></del>	3,920	30.7	276	1,600	
_	2/26/07	57.44 57.47	8,910 6,410	<11	276	1,240	
	5/29/07 8/22/07	57.49	5,110	14.5	172	855	
	9/26/92	37.49	2,650	95	<50	1,340	
MW-24	2/23/93		1,300	71	<12.5	600	
W1 W-24	6/10/93		59	15	7	95	
_	9/29/93		1,040	63	8	918	
	2/10/94		490	44	<2.0	395	
	5/13/94		1,390	69	<2.0	898	
-	8/22/94		836	60	<2.5	154	
_	11/13/00	65.06	. 200	<1	5	22	
-	3/26/01	65.00	1,500	<5.0	18	35	
	5/30/02	65.65	2,100	13	29	<25	
	6/2/03	66.38		Well Bailed Dry - N	o Sample Collected	-	
-	8/4/03	66.91		Well Bailed Dry - N			
	9/3/03	dry		Well Dry - No S	<del></del>		
	12/16/03	57.31		Well Bailed Dry - N	o Sample Collected		
	5/17/04	dry		Well Dry - No S			
	8/23/04	67.11		Well Bailed Dry - N	<del></del>		
	11/22/04	66.37		Well Bailed Dry - N			
Γ	2/23/05	67.11		Well Bailed Dry - N			
	8/30/05	67.11		Not Enough Water to			
	11/17/05	67.12		Not Enough Water to			
	2/21/06	67.11		Not Enough Water to			
	6/8/06	nm		Not Enough Water to	<del></del>		
	8/15/06	67.12		Not Enough Water to			
	11/3/06	67.13		Well Bailed Dry - N	<del></del>		
<u> </u> _	2/26/07	67.16		Well Bailed Dry - N			
<u> </u> _	5/29/07	67.13		Well Bailed Dry - N			
1	8/22/07	67.14		Well Bailed Dry - N	o Sample Collected		

## TABLE 4 GROUNDWATER MONITORING ANALYTICAL DATA (JUNE 1991 - AUGUST 2007) BLANCO NORTH FLARE PIT - SAN JUAN COUNTY, NEW MEXICO

			Analytical Parameters				
Monitoring	Sample	Static Water Level (ft BTOC)	Benzene	Toluene	Ethylbenzene	Total Xylen	
Well	Date	NMWQCC Standard:	(ug/l) 10	(ug/l) 750	(ug/l) 750	(ug/l) 620	
	2/25/93	NATA QUE SILINGIA G	11,000	860	9,900	10,000	
MW-26	6/10/93		12,180	470	7,504	4,959	
W1 VV - 20	3/26/01	62.36	6,400	100	280	1,900	
-		63.68	6,200	50	270	1,300	
-	5/30/02 6/2/03	NA NA		roduct Recovery Pump is			
-	8/4/03	65.19	1100-1	Well Bailed Dry - No		ecteu	
<u> </u>	9/4/03	65.00	-538	9.6	139	466	
<b>⊢</b>	12/18/03	65.16	307	<0.5	158	685	
-		65.54	109	14.3	87.1	280	
-	5/17/04	66.11	<del></del>	<5			
<b>├</b> -	8/23/04		27.0		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	
<u> </u>	8/30/05	66.08	18.2	<5	3.2	30.4	
	11/17/05	66.14	14,2	<5	17	34.8	
1	2/21/06	65.21	13.6	<2	<2	2.9	
<u> </u>	6/8/06	66.15	2.4	<l< td=""><td>1.8</td><td>3.6</td></l<>	1.8	3.6	
	8/15/06	65.92	2.7	21	11.1	41	
	11/3/06	65.46	1.3	<1.0	<1.0	<2.0	
	2/26/07	65.94	1.4	<1.0	<1.0	<2.0	
	5/29/07	66.25	2.7	<1.0	<1.0	<2.0	
	8/22/07	66.61	, <1.0	<1.0	<1.0	<2.0	
	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	
<u> </u>	3/26/01	63.38	420	27	260	1,600	
ļ	5/30/02	63.54	420	13	170	1,100	
<u> </u>	6/2/03	64.41	192 116	<25 <10	328 145	1,480	
-	8/4/03	63.72 64.80	137	17	274	1,240	
_	9/3/03	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	
<del> </del>	11/22/04	66.63	<1	<1	330	1,520	
-	2/23/05	67.15	20.7	28	419	2,210	
<del></del>	5/23/05	67.41	<1	<u></u>	<li>&lt;1</li>	<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	
	11/3/06	68.38	1.7	2.5	2.8	13	
	2/26/07	68.56	<1.0	<1.0	<1.0	<2.0	
	5/29/07	68.73	1.1	<1.0	<1.0	<2.0	
	8/22/07	69.73	<1.0	<1.0	<1.0	<2.0	
MW-31	5/29/07	72.85	4.6	<1.0	<1.0	<2.0 -	
	8/22/07	72.97	4.8	<1.0	<1.0	<2.0	
	6/8/06		1.1	4.2	<1	4.5	
MW-33	8/15/06	71.71	30.1	37.7	<50	24,6	
<u> </u>	11/3/06	71.07	<1.0	1.3	<1.0	<2.0	
	2/26/07 5/29/07	70.33	<1.0 <1.0	<1.0 <1.0	<1.0 <1.0	<2.0 <2.0	

BTOC = Below Top of Casing

NA = Not Applicable

<sup>&</sup>quot;<" = Analyte not detected at or above the reporting limit (RL). Value shown is the RL.

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

<sup>2.</sup> All detected concentrations are shown in bold type.

# TABLE 5 GROUNDWATER MONITORING SCHEDULE BLANCO NORTH FLARE PIT - SAN JUAN COUNTY, NEW MEXICO

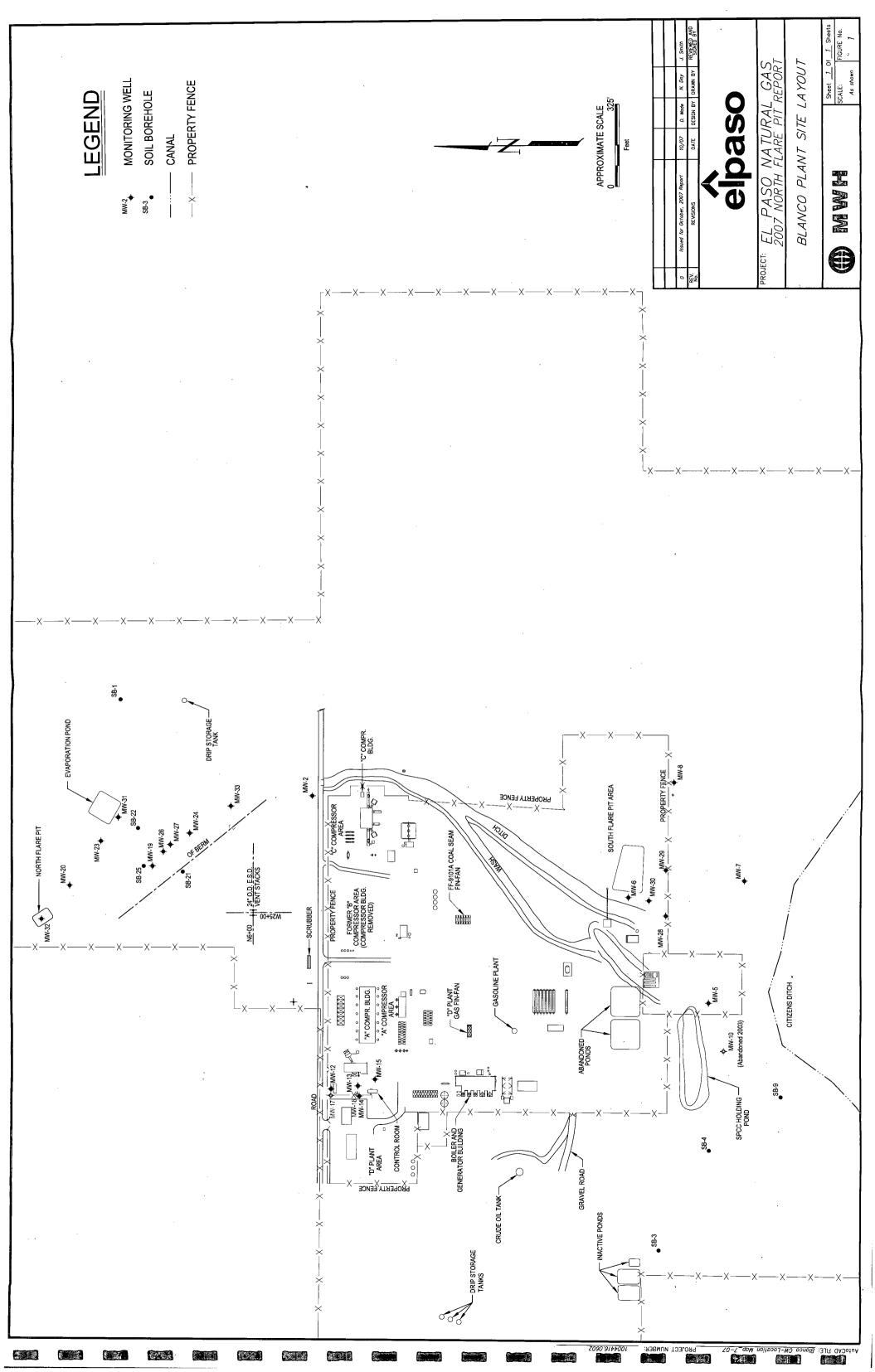
<b>Monitoring Well</b>	Monitoring Schedule	Analyses					
North Flare Pit Area							
MW-2	Semiannually	Field Parameters, BTEX					
MW-23	Semiannually	Field Parameters, BTEX					
MW-24	Semiannually	Field Parameters, BTEX					
MW-26	Semiannually	Field Parameters, BTEX					
MW-27	Semiannually	Field Parameters, BTEX					
MW-31	Semiannually	Field Parameters, BTEX					
MW-32	Semiannually	Field Parameters, BTEX					
MW-33	Semiannually	Field Parameters, BTEX					

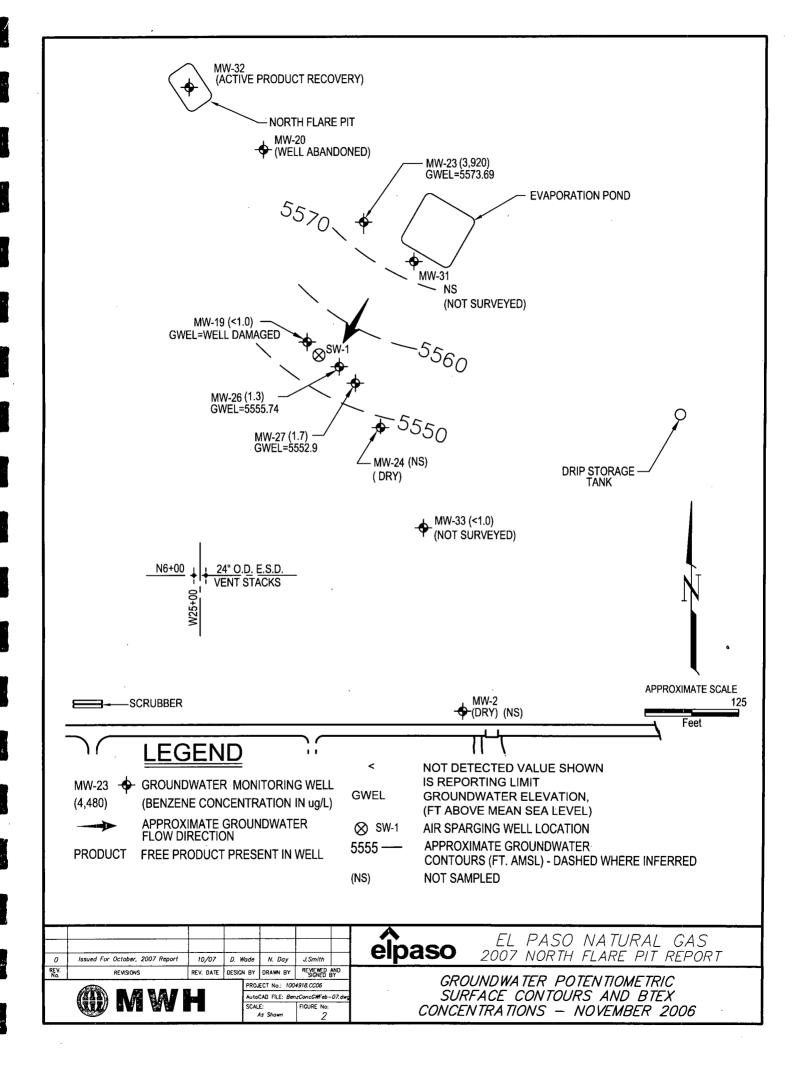
#### **Notes:**

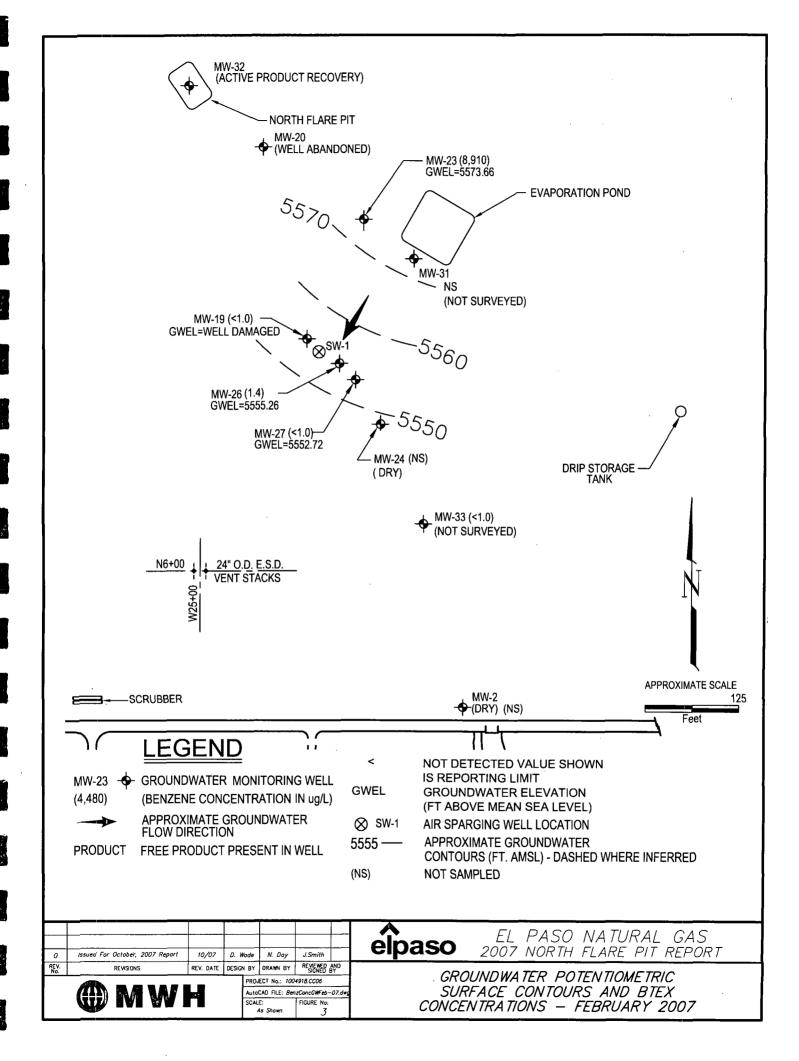
- 1. Field Parameters include temperature, pH, dissolved oxygen and specific conductance.
- 2. The next sampling event is tenatively scheduled for November 2007.
- 3. Monitoring well MW-24 typically only has a small quantity of water in the cap below the well screen. This well will only be sampled if the static water level is within the screened interval.
- 4. Monitoring well MW-32 will be sampled semiannually once LNAPL recovery in this well is completed, as indicated by a repeatedly observed lack of LNAPL accumulation.

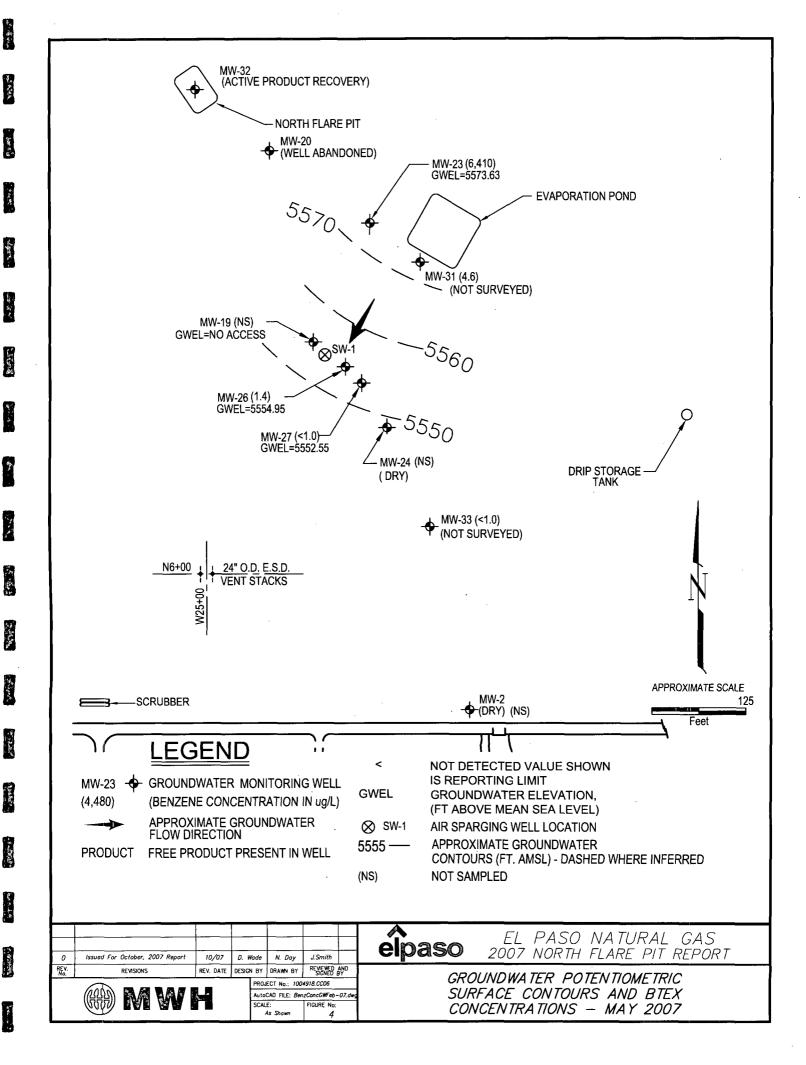
BTEX: Benzene, Toluene, Ethylbenzene and Total Xylenes.

**FIGURES** 









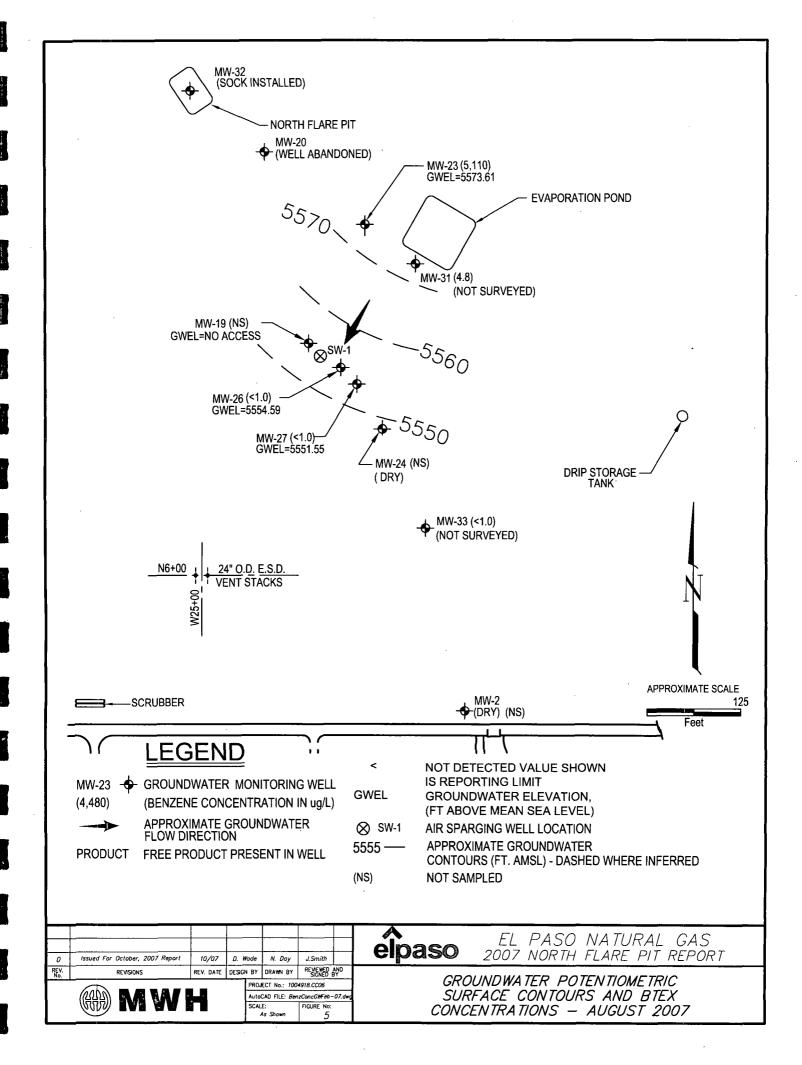
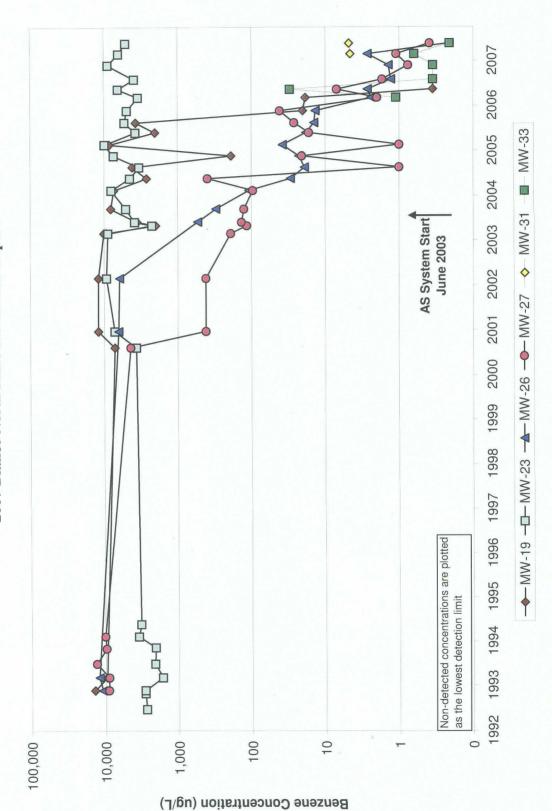


FIGURE 6
Historic Benzene Concentrations in Groundwater, 1991 - 2007
2007 Blanco North Flare Pit Annual Report



APPENDIX A
AS System Operation and Monitoring Reports

### Memo

To: Jennifer Hurley

From: Martin Nee

cc: File

**Date:** October 10, 2006

Re: Blanco North

10/10/06 1157 O&M site visit.

Well	Depth to	pН	Temp	Conductivity	Do	Pressure
	Water from TOC		C	umhos/cm	mg/L	Inches Water
	Feet					*
MW-23	57.40	6.25	17.4	>20000	0.54	0
MW-19	NA	6.55	17.8	17420	3.2	.02
MW-26	64.97	6.67	17.5	5570	4.0	.04
MW-27	66.23	6.41	17.6	10740	0.98	0.01
MW-24	67.12	NA	NA	NA	na	0.01

System was off.

The system operated 198 hrs since 9/18/06, approximately 8.65 hrs per day. The electricity must have been off for about one week.

MW-32: depth to product 53.28 feet BTOC, depth to water 64.44 feet BTOC. Recovered approximately 0.2 feet of product in drum, approximately 3.93 gallons. Tank pressure 1500 psi., pump pressure 60 phi. Accumulated pump time is 8 hrs 56 minutes, 4 hrs 19 minutes since 9/18/06.

The site had flooded during recent rains and there was approximately 1 foot of standing water around MW-26, 27, and 24. Water got into the compressor building but was not high enough to damage the compressor.

There was 0.08 feet of water in MW-24. No physical characteristics were measured.

### Memo

To: Jennifer Hurley

From: Martin Nee

cc: File

Date: October 25, 2006

Re: Blanco North

10/25/06 1358 O&M site visit.

Well	Depth to	pН	Temp	Conductivity	Do .	Pressure
	Water from TOC		C	umhos/cm	mg/L	Inches Water
	Feet					
MW-23	57.31	6.51	17.1	>20000	na	0
MW-19	na	na	na	na	na	.1
MW-26	65.20	7.56	18.5	8040	na	.05
MW-27	68.19	6.6	20.2	6640	na	0.05
MW-24	67.13	NA	NA	NA	na	0.05

System was off.

The system operated 176 hrs since 10/10/06, approximately 11.74 hrs per day.

Recovered approximately 0.01 feet of product in drum, approximately 1.77 gallons since last visit. Tank pressure 1100 psi. pump pressure 60 psi. Accumulated pump time is 8 hrs 56 minutes, 2 hrs 43 minutes since 10/10/06.

The site had flooded during recent rains and is drying out. Could not drive to lower wells.

There was 0.06 feet of water in MW-24. No physical characteristics were measured.

## Memo

To: Jennifer Hurley

From: Martin Nee

CC: File

Date: November 10, 2006

Re: Blanco North

11/10/06 0829 O&M site visit.

Well	Depth to	pН	Temp	Conductivity	Do	Pressure
	Water from TOC		C	umhos/cm	mg/L	Inches Water
	Feet					
MW-23	57.49	6.76	14.0	>20000	0.78	0
MW-19	na	na	na	na	na	4.1
MW-26	66.6	6.75	14.6	10800	3.23	3.23
MW-27	68.42	6.42	16.1	8620	0.13	0.13
MW-24	67.13	na	na	na	na	0.0

Sparge system is on. Water levels may not have fully recovered after last weeks sampling.

The system operated 182 hrs since 10/25/06, approximately 11.42 hrs per day.

Recovered approximately 0.07 feet of product in drum, approximately 1.37 gallons since last visit. Tank pressure 800 psi. pump pressure 60 psi. Accumulated pump time is 14 hrs 13 minutes, 2 hrs 34 minutes since 10/25/06.

There was 0.06 feet of water in MW-24. No physical characteristics were measured.

### Memo

To: Jennifer Hurley

From: Martin Nee

cc: File

Date: November 30, 2006

Re: Blanco North

11/30/06 1443 O&M site visit.

Well	Depth to	pН	Temp	Conductivity	Do	Pressure
	Water from TOC		C	umhos/cm	mg/L	Inches Water
	Feet					
MW-23	57.59	6.34	16.2	>20000	0.71	0
MW-19	na	na	na	na	na	0.05
MW-26	65.61	6.67	15.1	6520	4.54	0.05
MW-27	68.43	6.39	14.9	7530	3.41	0.06
MW-24	67.14	na	na	na	na	0.05

Sparge system is off. DO reading at MW-27 looks suspiciously high

The system operated 238.6 hrs since 11/10/06, approximately 11.93 hrs per day.

Recovered approximately 0.09 feet of product in drum, approximately 1.77 gallons since last visit. Tank pressure 400 psi. pump pressure 60 psi. Accumulated pump time is 17 hrs 48 minutes, 3 hrs 35 minutes since 11/10/06.

There was 0.05 feet of water in MW-24. No physical characteristics were measured.

### Memo

To: Jennifer Hurley

From: Martin Nee

CC: File

Date: December 22, 2006

Re: Blanco North

12/22/06 0910 O&M site visit.

Well	Depth to	pН	Temp	Conductivity	Do	Pressure
	Water from TOC		C	umhos/cm	mg/L	Inches Water
	Feet					
MW-23	57.43	6.62	15.2	>20000	0.69	0
MW-19	na	na	na	na	na	3.6
MW-26	65.29	6.65	14.6	7380	4.48	9.0
MW-27	68.42	6.39	14.2	7590	0.96	0.025
MW-24	68.14	na	na	na	na	0.01

The system operated 255 hrs since 11/30/06, approximately 11.59 hrs per day.

Recovered approximately 0.05feet of product in drum, approximately 0.98 gallons since last visit. Tank pressure 0 psi. pump pressure 0 psi. Accumulated pump time is 20 hrs 15 minutes, 2 hrs 27 minutes since 11/30/06.

There was 0.05 feet of water in MW-24. No physical characteristics were measured..

The nitrogen bottle is empty and will be changed on 12/26.

MW-32 DTP 58.14, DTW 61.49, PT is 3.35

The pump was left out of the well for static product level on 12/26

### Memo

To: Jennifer Hurley

From: Martin Nee

**CC:** File

Date: January 9, 2007

Re: Blanco North

010907 1245 O&M site visit.

Well	Depth to Water from TOC Feet	рН	Temp C	Conductivity umhos/cm	Do mg/L	Pressure Inches Water
MW-23	57.49	6.68	21.4	>20000	0.43	0
MW-19	na	na	na	na	na	0.15
MW-26	65.31	6.48	16.3	5830	3.82	0.11
MW-27	68.45	6.49	14.3	8190	3.51	0.15
MW-24	68.14	na	na	na	na	0.13

The system operated 164 hrs since 12/22/06, approximately 11.89 hrs per day.

No product was recovered because the system off until the nitrogen bottle was replaced today. The over-pac drum was open and there was a poly line left hanging out of the bung on the drum. Apparently, someone was interested in what was in the drum and siphoned 0.33 gallons. Installed the new nitrogen bottle, Tank pressure 2400 psi. pump pressure 60 psi. Accumulated pump time is 20 hrs 15 minutes, no pumping time since last visit on 12/22/06.

There was 0.05 feet of water in MW-24. No physical characteristics were measured...

2.5 hrs tech time to change out nitrogen bottle

MW-32; DTP 57.83, DTW 61.39, PT is 3.54 Pump has been out since 12/22/06

## Memo

To: Jennifer Hurley

From: Martin Nee

CC: File

Date: January 26, 2007

Re: Blanco North

012607 1030 O&M site visit.

Well	Depth to Water from TOC Feet	рН	Temp C	Conductivity umhos/cm	Do mg/L	Pressure Inches Water
MW-23	57.46	6.65	19.3	>20000	0.58	0
MW-19	na	na	na	na	na	4.6
MW-26	65.35	6.62	15.8	5920	3.61	8.2
MW-27	68.47	6.71	14.7	7670	0.92	.06
MW-24	68.13	na	na	na	na	.03

The sparge system operated 198 hrs since 1/9/07, approximately 11.66 hrs per day.

Depth to product in drum was 1.46 ft., recovered approximately .2 gallons

Tank pressure at MW-32 was 1800 psi.; pump pressure 60 psi. Accumulated pump time is 23 hrs 12 minutes.

There was 0.05 feet of water in MW-24. No physical characteristics were measured..

### Memo

To: Jennifer Hurley

From: Martin Nee

CC: File

Date: February 13, 2007

Re: Blanco North

021307 0909 O&M site visit.

Well	Depth to	pН	Temp	Conductivity	Do	Pressure
	Water from TOC		C	umhos/cm	mg/L	Inches Water
	Feet					,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
MW-23	57.36	6.84	15	>20000	0.82	0
MW-19	na	na	na	na	na	5.0
MW-26	65.10	7.30	15.5	6250	3.94	8.6
MW-27	68.46	7.35	14.5	11690	2.00	0.4
MW-24	68.14	na	na	na	na	0.03

The system operated 210 hrs since 01/26/07, approximately 11.68 hrs per day.

No additional product accumulated in drum. Tank pressure 1150 psi. pump pressure 60 psi. Accumulated pump time is 26 hrs 24 minutes, pump ran 3 hrs 12 minutes since 1/26/07, approximately 10.66 min/day.

There was 0.05 feet of water in MW-24. No physical characteristics were measured..

MW-32; DTP 57.86, DTW 61.46, PT is 3.6. There may be a problem with the pump as no product appeared to accumulate in the drum and the product thickness in the well increased slightly. We may want to try manual product removal with a sock due to the slow accumulation. We could bail all of the existing product off the well then install a sock.

## Memo

To: Jennifer Hurley

From: Martin Nee

CC: File

Date: February 28, 2007

Re: Blanco North

0228507 0845 O&M site visit.

Well	Depth to	pН	Temp	Conductivity	Do	Pressure
	Water from TOC		C	umhos/cm	mg/L	Inches Water
	Feet					
MW-23	57.32	6.82	14.6	>20000	1.07	0
MW-19	na	na	na	na	na	0.35
MW-26	67.00	7.13	13.2	6350	2.35	7.2
MW-27	68.81	7.40	11.9	12350	3.11	0.14
MW-24	68.14	na	na	na	na	0.0

System was off following sampling on 2/26/07, restarted air sparge system 0900 hrs. The system operated 118 hrs since 2/13/07 an average of 7.88 hrs per day.

There was 0.05 feet of water in MW-24. No physical characteristics were measured..

MW-32: Pump time unchanged, no product recovered. Worked with Xitech trouble shooting pump. Will send back pump head for repairs. Three hrs tech time to for trouble shooting pump problems and shipping pump. \$19.09 to ship pump to manufacturer.

## Memo

To: Jennifer Hurley

From: Martin Nee

cc: File

Date: March 16, 2007

Re: Blanco North

031607 1117 O&M site visit.

Well	Depth to Water from TOC	pН	Temp C	Conductivity umhos/cm	Do mg/L	Pressure Inches Water
	Feet					
MW-23	57.58	6.82	14.6	>20000	1.07	0
MW-19	na	na	na	na	na	0.45
MW-26	65.79	7.13	13.2	6350	2.35	4.6
MW-27	68.53	7.40	11.9	12350	3.11	0.65
MW-24	68.14	na	na	na	na	0.06

Air Sparge System: Air flow 9 scfm, pressure 4 psi. The system operated 189 hrs since 2/28/07 an average of 11.82 hrs per day.

There was 0.05 feet of water in MW-24. No physical characteristics were measured..

Product Recovery MW-32: Pump time unchanged, no product recovered since last visit. Installed new pump head. Reset pump. Center of 3' screen is 58' BTOC. DTP 57.83, DTW 61.43. Cycled pump, works great. Tank pressure 800 psi, pump pressure 65 psi. Tech time 2 hrs.

### Memo

To: Jennifer Hurley

From: Martin Nee

cc: File

Date: March 30, 2007

Re: Blanco North

033007 0931 O&M site visit.

Well	Depth to Water from	pН	Temp C	Conductivity umhos/cm	Do mg/L	Pressure Inches
	TOC				<b>6</b>	Water
	Feet					
MW-23	57.52	6.76	15.9	>20000	0.84	0
MW-19	na	na	na	na	na	0.39
MW-26	65.20	7.13	15.8	5910	4.25	4.7
MW-27	68.56	7.16	16.3	18460	2.08	0.34
MW-24	68.13	na	na	na	na	0.09

Air Sparge System: Air flow 11 scfm, pressure 4 psi. The system operated 163 hrs since 3/16/07 an average of 11.63 hrs per day.

There was 0.05 feet of water in MW-24. No physical characteristics were measured.

Product Recovery MW-32: Pump time 2 hr 53 minutes, system pumped 2 hr 23 minutes since 3/16/07, approximately 10 min per day. Tank pressure 500 psi, pump pressure 70 psi. Depth to product in drum 1.3 ft, a change in 0.16 feet or approximately 3.14 gallons recovered.

### Memo

To: Jennifer Hurley

From: Martin Nee

cc: File

**Date:** April 18, 2007

Re: Blanco North

041607 0758 O&M site visit.

Well	Depth to Water from	pН	Temp	Conductivity	Do	Pressure
	TOC		C	umhos/cm	mg/L	Inches Water
	Feet					
MW-23	57.42	6.62	14.8	>20000	0.64	0
MW-19	na	na	na	na	na	0.38
MW-26	65.41	7.35	14.4	6270	4.23	4.5
MW-27	68.59	6.98	15.1	14590	1.70	0.4
MW-24	68.12	na	na	na	na	0.025
MW-32	59.54 (de <sub>1</sub>	pth to product	is 59.36)			

Air Sparge System: Air flow 9.5 scfm, pressure 5 psi. The system operated 198 hrs since 3/30/07 an average of 11.67 hrs per day.

There was 0.05 feet of water in MW-24. No physical characteristics were measured.

Product Recovery MW-32: Pump time 3 hr 32 minutes, system pumped 0 hr 39 minutes since 3/30/07, approximately 10 min per day for four days since the last visit. Tank pressure 400 psi, pump pressure 70 psi. Depth to product in drum 1.26 ft, a change in 0.04 feet or approximately 0.79 gallons recovered. The high level shut off in the drum has the system off. We need to empty the drum or add a new drum.

### Memo

To: Jennifer Hurley

From: Martin Nee

cc: File

**Date:** April 27, 2007

Re: Blanco North

042707 0724 O&M site visit.

Well	Depth to Water from TOC Feet	pН	Temp C	Conductivity umhos/cm	Do mg/L	Pressure Inches Water
MW-23	57.53	6.72	15.4	>20000	0.49	0
MW-19	na	na	na	na	na	0.31
MW-26	65.58	7.21	15.2	6240	4.55	4.9
MW-27	68.68	7.17	16.1	14590	1.76	0.25
MW-24	67.13	na	na	na	na	0.025

Air Sparge System: Air flow 9.5 scfm, pressure 4 psi. The system operated 129 hrs since 4/16/07 an average of 11.7 hrs per day.

There was 0.06 feet of water in MW-24. No physical characteristics were measured.

Product Recovery MW-32: System had not pumped since last visit because the drum was full. A new drum was set in the over-pack container. Pump time 3 hr 32 minutes, system pumped 0 hr 0 minutes since 4/16/07, approximately 0 min per day since the last visit. Tank pressure 375 psi, pump pressure 70 psi. Depth to product in new drum 2.89 ft.

### Memo

To: Jennifer Hurley

From: Martin Nee

CC: File

**Date:** May 16, 2007

Re: Blanco North

051607 0724 O&M site visit.

Well	Depth to Water from TOC	pН	Temp C	Conductivity umhos/cm	Do mg/L	Pressure Inches Water	
	Feet						
MW-23	57.56	6.72	17.7	>20000	0.75	0	
MW-19	na	na	na	na	na	0.4	
MW-26	65.42	7.31	17.8	7760	4.33	6.0	
MW-27	68.68	7.24	18.2	>20000	2.18	0.12	
MW-24	67.13	na	na	na	na	0.06	
	DTW	DTP	Product Thickness				
MW-32	59.5	59.25	0.25				

Air Sparge System: Air flow 11 scfm, pressure 2 psi. The system operated 225 hrs since 4/27/07 an average of 11.86 hrs per day.

There was 0.06 feet of water in MW-24. No physical characteristics were measured.

Product Recovery MW-32: The nitrogen bottle is empty. Pump time 5 hr 44 minutes, system pumped 2 hr 12 minutes since 4/27/07, approximately 7 min per day since the last visit. Tank pressure 0 psi, pump pressure 0 psi. Depth to product in drum 2.88 ft. Recovered approximately .2 gallons of product. Pulled pump for product thickness measurement. Left pump out to gage recovery next site visit to replace nitrogen bottle.

Will change nitrogen bottle next week when system is turned off for sampling.

# **Site Visit Report**

To: Jennifer Hurley, MWH

From: Martin Nee

**CC:** File

Date: May 21, 2007

Re: Blanco North

052107 1400 Site Visit.

Traveled to North Flare Pit and removed empty nitrogen bottle. Drove to Farmington and exchanged empty bottle for full bottle and installed at NFP.

Dept to product at MW-32: 59.00 feet beneath top of casing

Depth to water at MW-32: 59.38 feet beneath top of casing

Replaced pump in well and started.. Pressure in bottle: 2600 psi, pressure on pump: 60 psi, time on clock:

5 hr 44 min. System is pumping product.

Fueled truck and returned to office.

### Memo

To: Jennifer Hurley

From: Martin Nee

cc: File

Date: May 31, 2007

Re: Blanco North

053107 0820 O&M site visit.

Well	Depth to Water from TOC Feet	pН	Temp C	Conductivity umhos/cm	Do mg/L	Pressure Inches Water
MW-23 MW-19	57.58 na	6.87 na	16.8 na	>20000 na	0.85 na	0 0.34
MW-26	67.06	7.34	18.0	11350	2.88	8.0
MW-27	68.92	7.56	18.3	>20000	3.84	0.30
MW-24	67.13	na	na	na	na	0.04

Air Sparge System: Air flow 11 scfm, pressure 3psi. The system operated 82 hrs since 5/16/07 an average of 5.46 hrs per day.

There was 0.06 feet of water in MW-24. No physical characteristics were measured.

Product Recovery MW-32: The nitrogen bottle is empty. Pump time 5 hr 44 minutes, system pumped 2 hr 18 minutes since 5/16/07, approximately 9 min per day since the last visit. Tank pressure 2300 psi, pump pressure 60 psi. Depth to product in drum 2.87 ft. Recovered approximately .2 gallons of product.

## NFP O&M Site Visit Report

To: Jennifer Hurley

From: Martin Nee

**CC:** File

**Date:** June 15, 2007

Re: Blanco North

061507 0929 O&M site visit.

Well	Depth to Water from TOC	рН	Temp C	Conductivity umhos/cm	Do mg/L	Pressure Inches Water
	Feet					
MW-23	57.50	6.90	17.8	>20000	0.70	0
MW-19	na	na	na	na	na	0.38
MW-26	65.57	7.38	18.9	6170	1.53	8.11
MW-27	68.71	7.43	19.8	13670	2.32	0.35
MW-24	67.13	na	na	na	na	0.03
	DTW	DTP				
MW-32	59.34	59.26				

Air Sparge System: Air flow 9.5 scfm, pressure 2psi. The system operated 177 hrs since 5/31/07 an average of 11.79 hrs per day.

There was 0.06 feet of water in MW-24. No physical characteristics were measured.

Product Recovery MW-32: Pump time 9 hr 57 minutes, system pumped 2 hr 31 minutes since 5/31/07, approximately 10 min per day since the last visit. Tank pressure 2000 psi, pump pressure 60 psi. Depth to product in drum 2.88 ft. No apparent recovery based on depth to product in drum.

To:

Jed Smith

From:

Martin Nee

CC:

File

Date:

e: June 29, 2007

Re:

Blanco North

062907

0721 O&M site visit.

Well	Depth to Water from TOC	pН	Temp C	Conductivity umhos/cm	Do mg/L	Pressure Inches Water	
	Feet					774101	
MW-23	57.53	6.79	18.2	>20000	0.71	0	
MW-19	na	na	na	na	na	0.37	
MW-26	66.39	7.37	18.2	5980	1.85	8.00	
MW-27	68.79	7.39	18.5	13190	2.68	0.24	
MW-24	67.13	na	na	na	na	0.00	

Air Sparge System: Air flow 9.5 scfm, pressure 2psi. The system operated 162 hrs since 6/15/07 an average of 11.59 hrs per day.

There was 0.06 feet of water in MW-24. No physical characteristics were measured.

Product Recovery MW-32: Pump time 12 hr 19 minutes, system pumped 2 hr 22 minutes since 6/15/07, approximately 10 min per day since the last visit. Tank pressure 1650 psi, pump pressure 60 psi. Depth to product in drum 2.875 ft. Recovered approximately .1 gallons of product.

To: Jed Smith

From: Martin Nee

cc: File

**Date:** July 18, 2007

Re: Blanco North

071807 1047 O&M site visit.

Well	Depth to Water from TOC Feet	рН	Temp C	Conductivity umhos/cm	Do mg/L	Pressure Inches Water
MW-23	57.52	6.78	20.6	>20000	0.82	0
MW-19	na	na	na	na	na	0.38
MW-26	66.32	7.32	19.9	5580	2.11	3.8
MW-27	68.91	7.43	22.7	14110	2.52	1.8
MW-24	67.12	na	na	na	na	0.2
	DTW	DTP				
MW-32	59.28	59.27				

Air Sparge System: Air flow 10 scfm, pressure 2psi. The system operated 166 hrs since 6/29/07 an average of 9.2 hrs per day.

There was 0.06 feet of water in MW-24. No physical characteristics were measured.

Product Recovery MW-32: Pump time 15 hr 42 minutes, system pumped 3 hr 23 minutes since 6/29/07, approximately 10.6 min per day since the last visit. Tank pressure 1300 psi., pump pressure 60 psi. Depth to product in drum 2.875 ft. No measurable product recovered. There may be losses from the drum due to temperature changes as the drum is not airtight.

To: Jed Smith

From: Martin Nee

CC: File

**Date:** July 30, 2007

Re: Blanco North

073007 0726 O&M site visit.

Well	Depth to	pН	Temp	Conductivity	Do	Pressure
	Water from TOC		C	umhos/cm	mg/L	Inches Water
	Feet					
MW-23	57.52	6.81	18	>20000	0.78	0
MW-19	na	na	na	na	na	0.33
MW-26	66.49	7.27	18.1	5500	1.59	8.3
MW-27	68.94	7.62	18.7	12290	2.68	.32
MW-24	67.12	na	na	na	na	0.02
	DTW	DTP	Product Thickness			
MW-32	59.25	59.19	.06' (5 oz)	•		

Air Sparge System: Air flow 10 scfm, pressure 2 psi. The system operated 137 hrs since 7/18/07 an average of 11.41 hrs per day.

There was 0.06 feet of water in MW-24. No physical characteristics were measured.

Product Recovery MW-32: Pump time 17 hr 34 minutes, system pumped 1 hr 51 minutes since 7/18/07, approximately 9.25 min per day since the last visit. Tank pressure 1000 psi., pump pressure 60 psi. Depth to product in drum 2.88 ft. No measurable product recovered. There may be losses from the drum due to temperature changes as the drum is not airtight.

To: Jed Smith

From: Martin Nee

cc: File

**Date:** August 17, 2007

Re: Blanco North

081707 0720 O&M site visit.

Well	Depth to	pН	Temp	Conductivity	Do	Pressure
	Water from TOC		C	umhos/cm	mg/L	Inches Water
	Feet					v v deci
MW-23	57.54	6.79	18.2	>20000	0.40	0
MW-19	na	na	na	na	na	0.40
MW-26	66.40	7.23	19.5	5760	1.32	6.8
MW-27	69.02	7.54	20.2	12740	2.93	.05
MW-24	67.12	na	na	na	na	0.02

Air Sparge System: Air flow 10 scfm, pressure 2 psi. The system operated 212 hrs since 7/18/07 an average of 11.75 hrs per day.

There was 0.08 feet of water in MW-24. No physical characteristics were measured.

Product Recovery MW-32: Pump time 20 hr 31 minutes, system pumped 2 hr 57 minutes since 7/30/07, approximately 10 min per day since the last visit. Tank pressure 600 psi., pump pressure 60 psi. Depth to product in drum 2.87 ft. Approximately 0.19 gal. recovered. Volumes are estimated from product levels in a 55 gallon drum that is subject to some evaporative loss and temperature fluctuations.

## NFP O&M Site Visit Report

To: Jed Smith

From: Martin Nee

CC: File

**Date:** August 31, 2007

Re: Blanco North

083107 0710 O&M site visit.

Well	Depth to	pН	Temp	Conductivity	Do	Pressure
	Water from TOC		<b>C</b>	umhos/cm	mg/L	Inches Water
	Feet					
MW-23	57.61	7.62	17.3	>20000	0.22	0
MW-19	na	na	na	na	na	0.31
MW-26	66.93	7.40	18.1	5310	2.25	6.5
MW-27	69.08	7.64	20.1	11620	3.87	.38
MW-24	67.12	na	na	na	na	0.02

Air Sparge System: Air flow 10 scfm, pressure 2 psi. The system operated 139 hrs since 7/18/07 an average of 9.91 hrs per day.

There was 0.08 feet of water in MW-24. No physical characteristics were measured.

Product Recovery MW-32: The pump was left out of mw-32 following 8/17/07 site visit as no product was measured in the well. 0.16 feet of product was measured during this visit so a absorbent sock as installed

# NFP O&M Site Visit Report

To: Jed Smith

From: Martin Nee

CC: File

Date: September 14, 2007

Re: Blanco North

091407 1207 O&M site visit.

Well	Depth to	pН	Temp	Conductivity	Do	Pressure
	Water from TOC		C	umhos/cm	mg/L	Inches Water
	Feet					Water
MW-23	57.55	6.80	20.5	>20000	0.78	0
MW-19	na	na	na	na	na	0.08
MW-26	66.90	7.63	19.9	7940	2.40	0.17
MW-27	68.71	7.42	22.3	14160	3.63	.08
MW-24	67.14	na	na	na	na	0.02

Air Sparge System: System is off. The system operated 110 hrs since 8/31/07 an average of 7.9 hrs per day.

There was 0.08 feet of water in MW-24. No physical characteristics were measured.

Product Recovery MW-32: Pulled saturated sock. Installed new sock. DTP:58.98 DTW:58.99

APPENDIX B
Groundwater Sampling Field Forms

**Groundwater Sampling Field Forms – November 2006** 

	Project No.:30001.0 Project Name: Blanco NFP Client: MWH/EL Paso Location: Blanco NFP Well No: MW-19 Development Sampling										
_									•		
Project Man											her_sunny 70s
Depth to Wa	_		-			'	Product I	hickness <u>r</u>	na Me	easuring Po	oint
Water Colur	nn Heigh	t <u>na</u>	Wel	l Dia	2"						
Sampling M	ethod: S	ubmer	sible Pun	np 🔲	Centrifu	gal	Pump 🗀	Peristalti	c 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											
	<del></del>				Water Vo	olum	ne in Well		7		
Gal/ft	k ft of wat	ter		Gallons				Ounces		Gal/oz t	be removed
na	a x .16			na x 3				na x3			na oz
	· · · · · · · · · · · · · · · · · · ·					l					
Time	pН	1	SC	Temp	ORP		D.O.	Turbidity	Vol Eva	1	Comments/
(military)	(su)	(uml	nos/cm)	(°F)	(millivol	ts)	(mg/L)	(NTU)	(ounce	s)	Flow rate
ĺ							[			ĺ	
		ļ							<del> </del>		·
]	-										
<b>]</b>	<del> </del>	-									
<b>Final:</b> Time pl	H S	Ċ	Temp	Eh-ORP	D.O.	Tu	rbidity	Ferrous Iron \	/ol Evac.	Commen	s/Flow Rate
		lea IP e Marste ea									
				1 - 23 - 1 - 1				132.55			
COMMENTS Only enough											sure water levels.
				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					p =		
INSTRUME	OITATION	<b>1</b> : r	H Meter	X				Temp	erature M	eter x	
			DO Moi					Other			
	C	onduc	tivity Met								
Water Dispo			-					ole Time 1	145		
								•		– C Metals To	otal Phosphorus
											,
MS/MSD			ВD		ĺ	BD I	Name/Tim	ne		TB	
<del></del>			~ <b>~</b> _		··			<del></del>		, <u></u>	
<u></u>	· · · · · · · · · · · · · · · · · · ·				<u>-</u>						

Location:_Bl Project Man Depth to Wa Water Colun Sampling Mo	lanco NFI ager ater5 nn Height ethod: St Bo to 5 Casi	7.41_ Dep t66.85 Wel ubmersible Pun ottom Valve Bai	I No:MV Date th to Produ I Dia np □ ler x Water Rem	11/03/06  actna F 4"  Centrifugal I  Double Che	Product T  Pump   ck Valve  ization of	_ D StartTime hickness_n   Peristaltic   Bailer □ S   Indicator Pa	e0843_aMeas Pump □ tainless-Stee	Sampling Weathersunny, 50s uring PointTOC  Other el Kemmerer Otheror bail dry_
	t of water x .65		Gallons 6.13 x 3			Dunces	G	al/oz to be removed 18.4 gal
Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gallons)	Comments/ Flow rate
0845	6.75 6.96	>20,000	64.1 62.7				1 2	Grey, strong odor, sheen, sudsy grey, sheen, sudsy
	6.44	>20,000	59.9				3	grey, sheen, sudsy
	6.30	>20,000	58.2		1.	·	5	grey, sheen, sudsy, well is bailing down
	6.63	>20,000	57.9				7.25	
Final:								
Time 0906	рН <b>6.99</b>	SC >20,000	Temp 56.6	Eh-ORP	D.O.	Turbidity	Vol Evac. 7.50	Comments/Flow Rate grey, sheen, sudsy, well has bailed dry
COMMENTS	S: unpres	erved due to rx	n of hcl w/ (	gw.		<u> </u>		men nas paned di y
•	C sal <u>Ri</u>	DO Mo conductivity Met o Vista Sam	nitor er <b>X</b> ple ID <u>Blar</u>		<u>23</u> Samı	Other		r <b>x</b> ——  Metals Total Phosphorus
MS/MSD		BD_	<del> </del>	BD i	Name/Tin	ne		TB_031106TB01

The state of

Casing Vo		er <b>x</b>	· ·	• —		Pump  tainless-Stee	Other   Black of the state of t
	lumes of V	Vater Remo	oval <b>X</b> stabil	ization of	Indicator Pa	rameters X	Other or bail dry
ater		Gallons 1.4 x 3	Vater Volume		Ounces	Gá	al/ <b>oz</b> to be removed 531.6
	SC hos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac.	Comments/ Flow rate
37	8340	61.7				48	Gray, silty
8	8610	62.1				88	
		62.3					
			· · · · · · · · · · · · · · · · · · ·	,			Bailing down
		Temp	Eh-ORP	D.O.	Turbidity	Vol Evac	Comments/Flow Rate
	8240	6U./				140	well has balled down
Condu <u>Rio Vis</u> Ikalinity	DO Mor ctivity Meto ta Sam TDS Catio	nitor er <b>X</b> ole ID <u>Blan</u> ons Anions	co NFP MW- s Nitrate N	26 Samı itrite Amı	Other ble Time <u>10</u> monia TKN N	129 NMWQCC M	Metals Total Phosphorus
	(um   17   168   175	SC	1.4 x 3    SC   Temp (°F)	1.4 x 3    SC   Temp   ORP     (willivolts)   (°F)   (millivolts)     R	SC   Temp   Check   D.O. (mg/L)	SC   Temp   ORP   (NTU)	1.4 x 3

Location:_Bl Project Mana Depth to Wa	lanco NFF ager ater68		l No: <u>MV</u> Date oth to Produ	11/03/06 lct <u>na</u>		 StartTime	e0951_	
	Вс		iler <b>x</b>	Double Che	ck Valve	Bailer □ S	Stainless-Ste	Other   el Kemmerer   Other or bail dry
	t of water x .65		Gallons 0.9 x 3	Water Volume		Dunces	G	ial/ <b>oz</b> to be removed 55.3
Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac.	Comments/ Flow rate
0955	5.96	7840	56.2				8	Black, sheen, strong odor
Final: Time 0955	рН 5.96	SC 7840	Temp 5 <b>6.2</b>	Eh-ORP 🍻	D:O.	Turbidity	Vol Evac.	Comments/Flow Rate Well has bailed down
INSTRUMEI	NTATION C osalRi	DO Mo Conductivity Me o Vista_ Sam	X enitor ter X nple ID_Blar		<u>-27</u> Sam	Other	006	
MS/MSD		BD_		BD	Name/Tir	me	· ·	TB_031106TB01

Location:_Bl Project Mana Depth to Wa	anco NFI ager ter7		No: MV Date th to Produ	11/03/06 ct <u>na</u> I		D StartTime	0920	/EL Paso Sampling Weathersunny, 50s uring PointTOC	
, -	Во	ubmersible Punottom Valve Bai	ler <b>x</b> Water Rem		ck Valve	Bailer □ S	tainless-Stee	Other   el Kemmerer   Other or bail dry	
	Gal/ft x ft of water 11.18 x .16					Dunces	G	Gal/oz to be removed 5.37 gal	
Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gallons)	Comments/ Flow rate	
0925	7.72	14320	55.5				.25	Clear	
	6.55	13970	65.7				.5		
	6.63	14010	57.5				.75		
	6.51	13970	58.5				1		
	6.65	13710	56.0				2	Mallia bailian dawa	
	6.75 6.82	13340 13850	55.7 57.1				2.75	Well is bailing down  Clear, bailing down	
Final:	Hq		Temp	Eh-ORP	D.O.	Turbidity	Vol Evac	Comments/Flow Rate	
0940	6.83	SC 13730	57.2	EII-ONF	D.O.:	ruibling	3.15	Well has bailed down, clear water	
COMMENTS	3:							· · · · · · · · · · · · · · · · · · ·	
{	C sal <u>Ri</u>	DO Mo onductivity Met o Vista_ Sam	nitor er <b>X</b> ple ID <u>Blar</u>		<u>-33</u> Sam∣	Other			
MS/MSD	·····	BD_		BD	Name/Tin	ne		TB_031106TB01	

**Groundwater Sampling Field Forms – February 2007** 

Location: BI Project Mana Depth to Wa Water Colum	anco NF ager terNA nn Heigh	Depth to Pro t <u>NA</u> Wel	No: M\ Date  oduct na  l Dia.	02/26/07 Product 2"	Thicknes	D StartTime sna M	e_0900_ leasuring Po	Sampling Weather_sunny, 40s pint _TOC	
Sampling Me		ubmersible Pum	, —	,	•	_			
Criteria: 3 t								el Kemmerer   Other or bail dry	
				Nater Volume	e in Well				
Gal/ft x ft	of water	-	Gallons			Dunces	G	Gal/oz to be removed	
Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac.	Comments/ Flow rate	
Final	r West		e a graffich		Since well	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1			
* * * * * * * * * * * * * * * * * * *	pΉ	SC	Temp	Eh-ORP	D.O.	Turbidity .	Vol Evac.	Comments/Flow Rate	
		ough water in v ne voa, and una				s. Just enou	gh water to	collect grab sample. Only	
INSTRUMEN		l: pH Meter DO Mor	nitor			Tempe Other	erature Mete	r <b>x</b>	
1	salRi	<u>o Vista</u> Sam	ole ID <u>Blar</u>					 Ietals Total Phosphorus	
MS/MSD		BD_		BD i	Name/Tin	ne		TB	

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51.3

Location: B Project Man Depth to Wa Water Colur Sampling M Criteria: 3	lanco NF ager ater57 nn Heigh ethod: S	t 9.4 Dep t 9.4 Wel ubmersible Pun ottom Valve Ba	I No:	02/26/07 uctna4"  Centrifugal  Double Che	Product T Pump   eck Valve ilization of e in Well	StartTime hickness_n  Peristaltic Bailer S	e1146_aMeas c Pump □ tainless-Steer	Sampling Weathersunny, 40s suring PointTOC		
9.4	x .65		6.02 x 3					18.05		
Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (g)	Comments/ Flow rate		
1150	6.53	8210	15.4				1	Gray, HC odor, sudsy		
	6.37	8350	15.4				2			
	6.29	8050	14.9				3			
	6.35	5760	14.9				4			
	6.32	8390	14.7				5			
	6.35		8120 14.5 6							
	6.34	8270	14.6				7	Bailing down		
	la Maria	John Charles	Le ray and	La de la casa de	ologo " e y co	ing the second	From London State Control Control	In the companyon was spaced to the second		
Final: Time 1220	pH 6.34	SC 8220	Temp 14.5	Eh-ORP	D.O.	Turbidity	Vol Evac. 7.25 g	Comments/Flow Rate Well has bailed down		
COMMENTS	S:				. —					
INSTRUME	C	DO Mo Conductivity Met	nitor er <b>X</b>			Other	erature Mete	•		
Water Dispo		i <u>o Vista</u> Sam linity TDS Cati						 Metals Total Phosphorus		
MS/MSD	MS/MSD BD BD Name/Time TB									

Location:_B Project Man Depth to Wa Water Colur Sampling M Criteria: 3	lanco NF ager ater65 nn Height ethod: Si	5.94 Dep t 1.65 Well ubmersible Pum ottom Valve Bai	No: MVDate th to Produ Dia  PP□ ler x  Water Rem	02/26/07 ctna _4"  Centrifugal  Double Che	Product T Pump   eck Valve lization of	StartTime hicknessn  Peristaltic Bailer \( \sigma \) S	e0926_aMeas  Pump □  Itainless-Ste	Sampling Weathersunny, 40s suring PointTOC
Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac.	Comments/ Flow rate
0935	6.65	5950	14.0	(minite and)	(9/ =/	(**************************************	32	Dark gray, silty, sheen, HC odor
	6.62	6220	14.5	:			56	110 0001
	6.61	6430	14.9				76	Bailing down
	6.60	6770	15.1				92	
Final:	Hq	SC		EK ODD	D.O.	Turbidity		
<u>0950</u>	ρη <b>6.60</b>	6870	Temp 15.3	Eh-ORP	) <u>D</u> .O.	Lutbidity	Vol Evac. 98 oz	Comments/Flow Rate Well has bailed down
COMMENTS INSTRUME! Water Dispo	NTATION C	l: pH Meter DO Mo onductivity Met o Vista_ Sam	nitor er <b>X</b>	nco NFP MW		Other	erature Mete	r x
	Cs Alkali	inity TDS Cati	•	s Nitrate N	Vitrite Amr	nonia TKN N	NMWQCC N	Metals Total Phosphorus  TB

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Location: BI Project Mana Depth to Wa Water Colun Sampling Me	anco NFI ager ater 68. nn Height ethod: St	t <u>0.73</u> Wel ubmersible Pum ottom Valve Bai	I No:M\Date th to Produ I Dia  pp □ ler x  Water Rem	contrifugal  Double Che	Product T Pump   ck Valve	StartTime hickness n  Peristaltic	0958_a Meas Pump  tainless-Stee	/EL Paso Sampling Weathersunny, 40s uring Point _TOC  Other □ el Kemmerer □ Otheror bail dry_
	t of water		Gallons	Water Volume	C	Ounces	G	al/ <b>oz</b> to be removed
0.743	3 x .16				14	4.95 x 3		44.9
Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac.	Comments/ Flow rate
1002	6.93	11,110	13.0		, ,		20	Gray, HC odor, sheen
	6.96	10,870	13.6				36	
								·
			Lights of the	The state of the s				
Final: Time	рН	SC	Temp.	Eh-ORP	D.O.	Turbidity	Vol Evac.⊹	
1012	6.95	10,660	13.5				44 oz	Well has bailed down
COMMENTS	S:							
INSTRUMEI  Water Dispo	C	I: pH Meter DO Mo Conductivity Met to Vista_ Sam	nitor er <b>X</b>	nco NFP MW		Other	erature Mete	r <b>x</b>
MS/MSD		,	ons Anior			nonia TKN N	-	Metals Total Phosphorus TB

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Location:_B Project Man Depth to Wa Water Colun Sampling Man Criteria: 3	anco NFF ager iter70. nn Height ethod: St	ubmersible Pumottom Valve Bai	I No:MV Date_ th to Produ I Dia np □ iler x	02/26/07  ctna I 2"  Centrifugal I  Double Che	Product T Pump  ck Valve ization of	D StartTime hicknessna Peristaltic Bailer □ S	1105_aMeas Pump □ tainless-Ster	/EL Paso Sampling Weathersunny, 40s suring PointTOC  Other □ el Kemmerer □ Otheror bail dry  al/oz to be removed
12.29	x .16		1.97 x 3					5.9
Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac.	Comments/ Flow rate
1108	6.92	17,350	13.7				0.5	Clear
	6.54	16,880	15.0				1	
	6.59	17,220	15.3				2	
	6.55	16,250	17.2				3	Bailing down
Final: Time 1135	рН 6.56	SC 16,110	Temp.	Eh-ORP	D.O.	Turbidity	Vol Evac. 3.25 g	Comments/Flow Rate Well has bailed down
COMMENTS	3:							
INSTRUME	NTATION C	DO Mo onductivity Met o Vista_ Sam	nitor er <b>X</b> ple ID <u>Blar</u>		33 Sam	Other ple Time 11		er <b>x</b> —— Metals Total Phosphorus
MS/MSD		BD_		BD	Name/Tir	me		TB

Groundwater Sampling Field Forms – May 2007

Location:_B Project Man Depth to Wa	lanco NF ager ater57	MJN	l No: <u>M\</u> Date oth to Produ	N-23 05/29/07	Product T	_	9_0906_	/EL Paso Sampling Weather sunny, 70s suring Point TOC
	В	ubmersible Pun	iler <b>x</b>		ck Valve	Bailer □ S	Stainless-Ste	el Kemmerer 🔲
Gal/ft x f	to 5 Casi t of water x .65			Water Volume	in Well	Indicator Pa		Other <u>or bail dry</u> al/oz to be removed  18.27
Time	рН	SC	Temp	ORP	D.O.	Turbidity	Vol Evac.	Comments/
(military)	(su)	(umhos/cm)	(°C)	(millivolts)	(mg/L)	(NTU)	(g)	Flow rate
0915	6.84	>20,000	16.5				1	clear, HC odor, sudsy
	6.87	>20,000	17.1				4	grey, HC odor, sudsy, well is bailing down
0927	7.02	>20,000	17.3				7.25	grey, HC odor, sudsy, well has bailed down
Final: Time 0927	рН 7.02	SC >20,000	Temp.	Eh-ORP	D.O.	Turbidity	Vol Evac. 7.25	Comments/Flow Rate grey, HC odor, sudsy; well has bailed down
1	NTATION C osal <u>Ri</u>	DO Mo Conductivity Met o Vista Sam	nitor er <b>X</b> ple ID <u>Blar</u>		<u>23</u> Samr	Other	30	
MS/MSD		BD_		BD	Name/Tim	ne		

Location: Bi Project Man Depth to Wa Water Colur	lanco NF ager ater6 nn Heigh		l No: <u>M</u> Date oth to Prode I Dia	W-26 e 05/29/ uct na 4"	07 _ Product	StartTim StartTim Thicknessr	e <u>1119</u> na Meas	Sampling Weather sunny, 80s suring Point TOC
Criteria: 3  Gal/ft x f	to 5 Casi		Water Rem	noval <b>X</b> st		of Indicator Pa	arameters X	Other_or bail dry_
	x .65		0.87 x 3			111 x 3		333
Time (military)	pH (su)	SC (umhos/cm)	Temp (°C)	ORP (millivolt	I	,	Vol Evac. (oz)	Flow rate
1128	7.45	6590 6700	19.6				56	Dark gray, silty, sheen, HC odor  Dark gray, silty, sheen, HC odor, well is bailing
	7.49	6730	19.2				74	down,  Dark gray, silty, sheen,  HC odor
<u>1141</u> 7.47 6540 19.2							95	Dark gray, silty, sheen, HC odor, well has bailed dry
Final: Time 1141	рН 7.47	SC 6540	Temp 19.2	Eh-ORP	D.O	Turbidity:	Vol Evac.	Comments/Flow Rate Dark gray, silty, sheen, HC odor, well has bailed dry
COMMENTS	3:				· · · · · · · · · · · · · · · · · · ·			
1	C sal <u>Ri</u>	DO Mo conductivity Met o Vista_ Sam	nitor er <b>X</b> ple ID <u>Bla</u>	nco NFP M		Other	145	Tetals Total Phosphorus
MS/MSD		BD_		E	BD Name/T	ime		_ TB

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Location: Bl	anco NFI ager		No: MV Date	05/29/0	7	 StartTime	1100_	/EL Paso Sampling Weather_sunny, 80s suring Point _TOC
Water Colun	nn Height	: <u>0.56</u> Wel	l Dia	2"				
	Во	ubmersible Pun ottom Valve Bai ng Volumes of V	ler <b>x</b>	Double Ch	neck Valve	Bailer □ S	stainless-Ste	Other   el Kemmerer   Other or bail dry
<u> </u>				Vater Volun				
Gal/ft x ft 0.56	t of water x .16		Gallons			Ounces 11 x 3	G	al/oz to be removed 33
Time (military)	pH (su)	SC (umhos/cm)	Temp (°C)	ORP (millivolts	D.O. ) (mg/L)	Turbidity (NTU)	Vol Evac. (oz)	Comments/ Flow rate
1108	7.44	14150	19.2				10	clear, HC odor, sheen, well has bailed dry
								·.
Final: Time	рH	SC	Temp	Eh-ORP	D.O.	Turbidity	Vol-Evac	
1108	7:44	14150	19.2.				10	clear, HC odor, sheen, well has bailed dry
COMMENTS	6: pulled	sample before	ohysical pa	rameter rea	dings			
INSTRUME		l: pH Meter DO Mo onductivity Met	nitor			Tempo	erature Mete	er x
	salRi	o Vista_ Sam	ple ID <u>Blar</u>					Metals Total Phosphorus
MS/MSD		BD_	, a p 1, and	BI	) Name/Tir	ne		TB

Location:_BI Project Man Depth to Wa Water Colum Sampling Mo	lanco NFF ager ater 72.8 nn Height ethod: Su	0.62 Wellubmersible Pum	No:M\Date th to Produ Dia  PD□ ler x  Water Rem	contrifugal  Double Che	Product T Pump  ck Valve lization of	StartTime hickness na Peristaltic Bailer S	aMeas Pump □ tainless-Stee	Sampling Weathersunny, 70s uring PointTOC
	x .16		0.4 x 3					1.2
Time (military)	pH (su)	SC (umhos/cm)	Temp (°C)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac.	Flow rate
1000	6.72	1458	18.9 18.6				.25	clear clear, well has bailed
								dry
Final: Time 1000	pH 6.90 ⊾	SC 1633	Temp 18.6	Eh-ORP	D.O.	Turbidity	Vol Evac.	Comments/Flow Rate clear, well has bailed dry
L		the first time wa		en observed	in this we	.,,		
·	Co sal <u>Ric</u> Cs Alkali	DO Moronductivity Metronductivity Metronductivity Samurity TDS Cation	nitor er <b>X</b> ple ID <u>Bla</u>	ns Nitrate N	-31 Samı litrite Amı	Other ole Time <u>10</u> monia TKN N	NMWQCC N	·

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Development   Sampling   Development   Developm	-		D Wol	•	t Name: <u>Bla</u>			Client: <u>MWH</u>	
Depth to Water 70.71 Depth to Product na Product Thickness na Measuring Point TOC    Nater Column Height 11.91   Well Dia. 2"								•	
Sampling Method: Submersible Pump   Centrifugal Pump   Peristaltic Pump   Other     Bottom Valve Bailer x   Double Check Valve Bailer   Stainless-Steel Kemmerer									
Bottom Valve Bailer x Double Check Valve Bailer  Stainless-Steel Kemmerer    Bottom Valve Bailer x Double Check Valve Bailer  Stainless-Steel Kemmerer    Criteria: 3 to 5 Casing Volumes of Water Removal X stabilization of Indicator Parameters X Other or bail dry  Water Volume in Well						Product	nickness <u>n</u>	awileas	suring Point
Time pH SC ("C) (millivolts) ("C) (millivolts) ("T) 16400 17.4 SC Temp DH SC Temp DH SC Cloudy, well has balle solded as a stable solded as a sta	Water Colur	nn Heigh	t <u>11.91</u> Wel	l Dia	_2"				
Time pH SC ("C) (millivolts) ("C) (millivolts) ("T) 16400 17.4 SC Temp DH SC Temp DH SC Cloudy, well has balle solded as a stable solded as a sta									
Criteria: 3 to 5 Casing Volumes of Water Removal X   Stabilization of Indicator Parameters X   Otheror bail dry	Sampling M	ethod: S	ubmersible Pun	np 🗀	Centrifugal	Pump [	] Peristaltic	Pump 🗌	Other
Criteria: 3 to 5 Casing Volumes of Water Removal X   Stabilization of Indicator Parameters X   Otheror bail dry		R	ottom Valve Ra	ilor <b>v</b>	Double Ch	eck Valve	Bailer □ S	tainless-Ste	el Kemmerer 🔲
Comments		D	olloni valve ba	HEI X	Double On	eck valve	Daller Li C	rian ness-ote	er Kemmerer 🗖
Time	Criteria: 3	to 5 Casi	ing Volumes of	Water Rem	oval X stab	ilization of	Indicator Pa	rameters X	Other or bail dry
Time	·								
Time					Water Volum	e in Well	<u>.</u>		
Time (military) (su) (umhos/cm) (°C) (millivolts) (mg/L) (NTU) (g) Comments/ Flow rate (military) (su) (umhos/cm) (°C) (millivolts) (mg/L) (NTU) (g) Flow rate (number of the property of the			r				Dunces	G	
(military)   (su)   (umhos/cm)   (°C)   (millivolts)   (mg/L)   (NTU)   (g)   Flow rate     1	11.91	x .16		1.9 x 3					5.71
(military)   (su)   (umhos/cm)   (°C)   (millivolts)   (mg/L)   (NTU)   (g)   Flow rate     1									
(military)   (su)   (umhos/cm)   (°C)   (millivolts)   (mg/L)   (NTU)   (g)   Flow rate     1	Time	l mil	00	Toman	ODD	TDO	Turkidita	Vol Evon	Commonto/
1014 7.81 16980 17.9 17.3 2 cloudy  1038 7.19 16400 17.4 2.25 cloudy, well has baile down  1018 ph SC Temp Eh-ORP D.O. Turbidity Vol Evac Comments/Flow-Rate 1038 7.19 16400 17.4 2.25 cloudy, well has baile		1 '	_	1	1	1			
7.89 17440 17.3 2 cloudy  1038 7.19 16400 17.4 2.25 cloudy, well has baile down  Final:    pH   SC   Temp   En-ORP   D.O.   Turbidity   Voi Evac   Comments/Flow Rate   Comments   Comments			<del></del>		(minvoits)	\(\(\mathref{I}\) \(\mathref{I}\)	(1110)		
1038	1014	7.81	16980	17.9				'	cloudy
Final:   ime	· · · · · · · · · · · · · · · · · · ·	7.89	17440	17.3				2	cloudy
Final:   ime	1000	7 10	16400	17.4				2.05	aloudy wall has baile
Final:   ime	1038	7.19	16400	17.4				2.25	1
Fime pH SC Temp Eh-ORP D.O. Turbidity Vol Evac Comments/Flow Rate  1038 7.19 16400 17:4 2.25 cloudy, well has baile		<del>}</del> -				+		1	down
Fime pH SC Temp Eh-ORP D.O. Turbidity Vol Evac Comments/Flow Rate  1038 7.19 16400 17:4 2.25 cloudy, well has baile									
Fime pH SC Temp Eh-ORP D.O. Turbidity Vol Evac Comments/Flow Rate  1038 7.19 16400 17:4 2.25 cloudy, well has baile									
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Fime pH SC Temp Eh-ORP D.O. Turbidity Vol Evac Comments/Flow Rate  1038 7.19 16400 17:4 2.25 cloudy, well has baile							}		
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Fime pH SC Temp Eh-ORP D.O. Turbidity Vol Evac Comments/Flow Rate  1038 7.19 16400 17:4 2.25 cloudy, well has baile									
Fime pH SC Temp Eh-ORP D.O. Turbidity Vol Evac Comments/Flow Rate  1038 7.19 16400 17:4 2.25 cloudy, well has baile									
Fime pH SC Temp Eh-ORP D.O. Turbidity Vol Evac Comments/Flow Rate  1038 7.19 16400 17:4 2.25 cloudy, well has baile		L		<u> </u>	<u> </u>	<u> </u>			<u></u>
Fime pH SC Temp Eh-ORP D.O. Turbidity Vol Evac Comments/Flow Rate  1038 7.19 16400 17:4 2.25 cloudy, well has baile									
038 7.19 16400 17.4 2.25 cloudy, well has baile	가는데 가장된 6시 6시 11시 11 11 11					Markey !			
	Time				Eh-ORP	/ D.O.	Turbidity		
性性性性,但是我们的人的对于"人"的人的人的人的人的人的人的人,他们的人的人,这个人就是一个人的人的人的人的人的人的人的人,他们也 <b>从</b> 他就是是这个人的人的人的人	<u>1038</u>	7.19	, 16400	17.4				2.25	
				Charles and Section		april Opening		The second of the	Lacktite Control
	COMMENTS	S:							
COMMENTS:									· · · · · · · · · · · · · · · · · · ·
	NSTRUME	NTATIO	N: pH Meter	X			Tempe	erature Mete	r <b>x</b>
NSTRUMENTATION: pH Meter X Temperature Meter x			DO Mo	nitor			Other		
		C	Conductivity Met	er X					
NSTRUMENTATION: pH Meter X Temperature Meter x  DO Monitor Other	Water Dispo		•		nco NFP MW	/-33 Sami	ole Time 10	)40	•
NSTRUMENTATION: pH Meter X Temperature Meter x  DO Monitor Other  Conductivity Meter X									Metals Total Phasphares
NSTRUMENTATION: pH Meter X Temperature Meter x  DO Monitor Other  Conductivity Meter X  Water Disposal Rio Vista Sample ID Blanco NFP MW-33 Sample Time 1040	DIEV AO	Cs Aika	minty 1108 Cati	ions vinoi	19 INITIATE I	NILLIC AM	плотна ТІУЛУ І	. MIM W QCC IN	actais 10tai rnospnorus
NSTRUMENTATION: pH Meter X Temperature Meter x  DO Monitor Other  Conductivity Meter X					_				
NSTRUMENTATION: pH Meter X Temperature Meter x  DO Monitor Other  Conductivity Meter X  Water Disposal Rio Vista Sample ID Blanco NFP MW-33 Sample Time 1040  3TEX VOCs Alkalinity TDS Cations Anions Nitrate Nitrite Ammonia TKN NMWQCC Metals Total Phosphorus	MS/MSD		BD_		BD	Name/Tin	ne		
NSTRUMENTATION: pH Meter X Temperature Meter x  DO Monitor Other  Conductivity Meter X  Water Disposal Rio Vista Sample ID Blanco NFP MW-33 Sample Time 1040									·

**Groundwater Sampling Field Forms – August 2007** 

44 74

Location: BI Project Man Depth to Wa Water Colun Sampling Mo Criteria: 3	anco NF ager ter _ 57, nn Height ethod: Si Bo to 5 Casi	t 9.36 Well D  ubmersible Pun  ottom Valve Bai  ng Volumes of V	I No:M\Date oth to Produtia4  np□ iller x  Water Rem	c 08/22/07  uct na  " Centrifugal  Double Che	Product T  Pump   eck Valve  ilization of  e in Well	StartTime hickness n  Peristaltic  Bailer S	e_0749 aMeasi c Pump □ stainless-Stee rameters X	Sampling Weathersunny, 80s uring PointTOC
Time	рН	SC	Temp	ORP	D.O.	Turbidity	Vol Evac.	Comments/
(military) <b>0750</b>	(su) <b>6.87</b>	(umhos/cm) <20000	(°F) 17.2	(millivolts)	(mg/L)	(NTU)	(g)	Flow rate  Gray, HC odor, sudsy
0750	6.86	19260	17.2				2	Gray, HC odor, sudsy
	6.86	<20000	17.0				3	Gray, HC odor, sudsy
	6.89	<20000	17.0		<u>-</u>		5	Gray, HC odor, sudsy
	7.0	<20000	17.0				8.25	Gray, HC odor, sudsy, well is bailing down
0808	7.17	<20000	17.0				8.5	Gray, HC odor, sudsy, well has bailed down
Final: Time: .0808	pH. 7.17	SC <20000	Temp 17.0	Eh-ORP	D.O.	Turbidity	Vol Evac.	Comments/Flow Rate Gray, HC odor, sudsy, well has bailed down
COMMENTS	S:					, .		
	C sal <u>Ri</u>	DO Mo Conductivity Met io Vista Sam	nitor :er <b>X</b> :ple ID <u>Bla</u>			Other	809	r <b>x</b> —— Metals Total Phosphorus
MS/MSD		BD_		BD	Name/Tin	ne		_ TB_220807tb01_

Project No.:	30001.0		Projec	t Name:_E	Blanco NFP		lient: MWH	/EL Paso
Location: Bl	anco NFI	Wel						Sampling
		MJN		08/22/	/07	 StartTime	•	Weather sunny, 80s
1								uring Point TOC
1		Wel			_			
Sampling Mo		ubmersible Pun	•		• •	] Peristaltio		· .
		ottom Valve Bai						el Kemmerer
Criteria: 3	to 5 Casir 	ng Volumes of V					rameters X	Other or bail dry
				Water Volu	ume in Well			
	t of water x .65		Gallons			Ounces	G	al/oz to be removed  1.91
0.96	X .05		0.63 x 3		· · · · · · · · · · · · · · · · · · ·	111 x3	<u> </u>	1.91
Time	рН	SC	Temp	ORP		Turbidity	Vol Evac.	Comments/
(military)	(su)	(umhos/cm)	(°C)	(millivol	ts) (mg/L)	(NTU)	(ml)	Flow rate
1009	7.3	5310	20.2				620	grey, hydrocarbon odor, cloudy
	7.3	5100	19.1				1040	well is bailing down
	7.36	5800	18.6				1260	grey, hydrocarbon odor, cloudy
1023	7.40	5040	19.0			·	1490	well has bailed down
Final:								ALAA
	A. Print Spranicals	SC		Eh-ORP	D.O.	Turbidity		Comments/Flow Rate
<u>1023</u>	7.40	5040	19.0				1490	well has bailed down
COMMENTS	S:							
INSTRUMEN	NOITATION	: pH Meter	X			Tempe	erature Mete	r x
		DO Mo	nitor			Other		
Water Dispo		onductivity Met <u>o Vista</u> - Sam		nco NFP N	<u>//W-26</u> Sam	_ ple Time <u>    10</u>	25	
BTEX VO	Cs Alkali	inity TDS Cati	ons Anior	ns Nitrate	Nitrite Am	monia TKN I	NMWQCC M	Metals Total Phosphorus
MS/MSD		BD_		. <u></u>	BD Name/Tii	me		_ TB_220807tb01
L								

Location: BI Project Mana Depth to Wa Water Colum Sampling Ma	anco NF ager ter69 nn Heigh ethod: S	t <u>0.20</u> We ubmersible Pul ottom Valve Ba	II No: M\Date oth to Produ II Dia mp □	W-27  08/22/0  uct na 2"  Centrifug  Double C	D7 Product - al Pump [ Check Valve	StartTim Thickness <u>r</u> Peristalti Bailer □ S	Developmer e0952 naMea c Pump   Stainless-Sta	eel Kemmerer
Cinteria. 3		ng volumes of				i indicator ra	arameters A	C Other or bail dry
0.145				Water Volu	me in Well			
Gal/ft x ft 0.20			Gallons			Ounces 26 x 3		Gal/ <b>oz</b> to be removed 77
Time (military)	pH (su)	SC (umhos/cm)	Temp (°C)	ORP (millivolt	D.O. s) (mg/L)	Turbidity (NTU)	Vol Evac (oz)	Comments/ Flow rate
Final: Time	рН	SC	Temp	Eh-ORP	D.O.	Turbidity	Vol Evac.	Comments/Flow Rate
COMMENTS	5: well wo	ould only produ	ct 40 ml wa	ter, no phy	sical param	eter readings		
Water Dispose BTEX VOC	C sal <u>Ri</u>	DO Mo conductivity Me o Vista_ San	nitor ter <b>X</b> nple ID <u>Blar</u>	nco NFP M		Other - ple Time1(	002	Pr X  Metals Total Phosphorus
MS/MSD		BD		В	D Name/Tir	me		TB 220807tb01

_			-		anco NFP	<del></del>	Client: MWH	
1		P Wel					•	Sampling Weather supply 80s
								Weather sunny, 80s uring Point TOC
		. <u>97                                    </u>			_ F10000C1	HIUNHESS 11	d ivicas	dillig Foint
Water Cora	пистовы	( <u> </u>	1 Dia					
Sampling M		ubmersible Pum	• —		•			
	В	ottom Valve Bai	ler x	Double C	heck Valve	Bailer ⊔ S	Stainless-Ste	el Kemmerer 🛚
Criteria: 3	to 5 Casi	ng Volumes of V				f Indicator Pa	rameters X	Other <u>or bail dry</u>
				Vater Volu	me in Well	· ————		
	ft of water		Gallons		(	Dunces	G	al/oz to be removed
0.61	x .16		0.39 x 3	1				1.18
<u> </u>	···							
Time (military)	pH (su)	SC (umhos/cm)	Temp (℃)	ORP (millivolts	D.O. s) (mg/L)	Turbidity (NTU)	Vol Evac. (g)	Comments/ Flow rate
0824	6.75	1109	21.3	(minivoite	, (g, _)	(,,,,,,,	.25	cloudy
	<u> </u>							
			**********	1			<u> </u>	
	<u> </u>							
	-							
						<u></u>		
Final:	IS A(\$2%) (\$1.0)	Marina de Calabra de C	s was a service	the second		1772-1538-823/AC.2		
Time	Hq	SC 3	Temp	Eh-ORP	D.O.	Turbidity	Vol Evac.	Comments/Flow Rate
0824	6.75	1109	21.3				.25	cloudy
COMMENT recovery	S: unpres	served do to R	(N of water	and HCL,	PVC partic	les from well	installation of	causing bailer to leak, poor
INSTRUME	NITATION	l	V			Tomp	aratura Mata	
INOTHUME	HIAHON	l: pH Meter DO Mo				Other	erature Mete	:
	C	Conductivity Met			-	_		
Water Dispo		o Vista Sam		nco NFP M	<u>W-31</u> Sam	ple Time <u>08</u>	345	
	_		•					Metals Total Phosphorus
MS/MSD		BD_		В	D Name/Tir	me		TB_220807tb01
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Location: B Project Man Depth to Wa Water Colur Sampling M Criteria: 3	lanco NFI ager ater71. nn Height ethod: St	ubmersible Pum ottom Valve Bai	No: <u>MV</u> Date_ th to Product Dia  pp □  Iler x  Water Remo	08/22/07  ct na F 2"  Centrifugal I  Double Che	Product T Pump □ ck Valve ization of	StartTime hickness na Peristaltic Bailer S	0859  Meas  Pump  tainless-Steementers X	Sampling Weather sunny, 80s uring Point TOC  Other □
Time	Hq	SC	Temp	ORP	D.O.	Turbidity	Vol Evac.	Comments/
(military)	(su)	(umhos/cm)	(°F)	(millivolts)	(mg/L)	(NTU)	(g)	Flow rate
0900	7.75	12100	18.6				.25	cloudy, cement chips
	7.70	12790	17.7				.5	cloudy, cement chips
	7.71	12820	17.2				.75	cloudy, cement chips
	7.71	11930	17.2				1	cloudy, cement chips
,	7.69	11720	17.2				2	cloudy, cement chips
	7.76	11930	17.2				2.4	well is bailing down
0934	7.85	13380	17.2				2.5	well has bailed down
Final								
Time		sc	Temp	Eh-ORP	D.O.	Turbidity	Vol Evac.	
0934	7.85	13380	17.2				2.5	well has bailed down
COMMENT	S:		Laws of May 1		, , , , , , , , , , , , , , , , , , ,		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
	C sal <u>Ri</u>	DO Mo onductivity Me o Vista Sam	nitor ter <b>X</b> iple ID <u>Blar</u>		<u>33</u> Samı	Other ole Time 09		r <b>x</b> —— Aetals Total Phosphorus
MS/MSD		BD_		BD	Name/Tin	ne		_ TB_220807tb01_

APPENDIX C
Groundwater Analytical Laboratory Reports

**Groundwater Analytical Report – November 2006** 



11/10/06



### **Technical Report for**

**Montgomery Watson** 

Blanco North Flare Pit

D-ALAB-BLANCOPLTN-004

Accutest Job Number: T15282

Sampling Date: 11/03/06

### 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: 22





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.

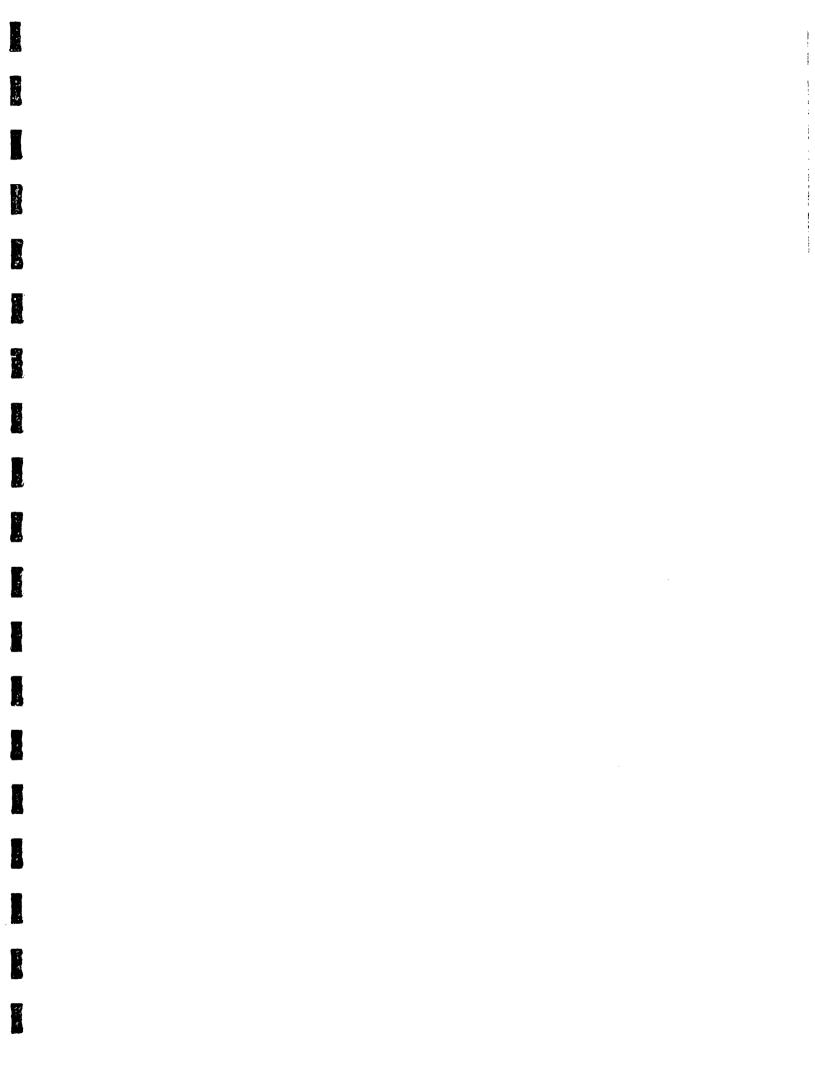
Ron Martino
Laboratory Manager

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## Sample Summary

**Montgomery Watson** 

Job No:

T15282

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

Sample Number	Collected Date	Time By	Received	Mati		Client Sample ID	
T15282-1	11/03/06	13:45 MN	11/04/06	AQ	Ground Water	MW-19	
T15282-2	11/03/06	09:12 MN	11/04/06	AQ	Ground Water	MW-23	
T15282-3	11/03/06	10:29 MN	11/04/06	AQ	Ground Water	MW-26	
T15282-4	11/03/06	10:06 MN	11/04/06	AQ	Ground Water	MW-27	
T15282-5	11/03/06	09:44 MN	11/04/06	AQ	Ground Water	MW-33	
T15282-6	11/03/06	07:00 MN	11/04/06	AQ	Trip Blank Water	031106TB01	



#### SAMPLE DELIVERY GROUP CASE NARRATIVE

Client:

Montgomery Watson

Job No

T15282

Site:

Blanco North Flare Pit

Report Date

11/10/2006 1:34:40 PM

5 Samples and 1 Trip Blank were collected on 11/03/2006 and were received at Accutest on 11/04/2006 properly preserved, at 4 Deg. C and intact. These Samples received an Accutest job number of T15282. 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 OC summary pages.

#### Volatiles by GC By Method SW846 8021B

Matrix AQ

Batch ID: GKK934

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T15282-2MS, T15282-2MSD were used as the QC samples indicated.
- RPD(s) for MSD for Ethylbenzene are outside control limits for sample T15282-2MSD. Probable cause due to sample homogeneity.
- T15282-2: Sample pH did not meet field preservation criteria.

Matrix AQ

Batch ID: GKK935

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

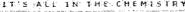
Accutest Laboratories Gulf Coast (ALGC) certifies that this report meets the project requirements for analytical data produced for the samples as received at ALGC and as stated on the COC. ALGC certifies that the data meets the Data QualityObjectives for precision, accuracy and completeness as specified 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











Sample Results

Report of Analysis



Client Sample ID: MW-19

Lab Sample ID:

T15282-1

Matrix: Method: Project:

AQ - Ground Water

SW846 8021B

Blanco North Flare Pit

Date Sampled:

11/03/06 11/04/06

Date Received:

Percent Solids: n/a

File ID DF Analyzed Prep Date Prep Batch Analytical Batch By Run #1 KK16076.D 11/08/06 **ZLH GKK935** 1 n/a n/a

Run #2

Purge Volume

Run #1 5.0 ml

Run #2

#### Purgeable Aromatics

J

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



Client Sample ID: MW-23

T15282-2

Lab Sample ID:

AQ - Ground Water

Matrix: Method: Project:

SW846 8021B

Blanco North Flare Pit

Date Sampled:

Date Received:

11/03/06 11/04/06

Percent Solids:

n/a

	File ID	DF	Analyzed	Ву	Prep Date	Prep Batch	Analytical Batch
Run #1 a	KK16053.D	20	11/07/06	ZLH	n/a	n/a	GKK934

Run #2

Purge Volume

5.0 ml

Run #1

Run #2

#### Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2 108-88-3	Benzene Toluene	3920 26.3	20 20	7.0 4.0	ug/l ug/l	
100-41-4	Ethylbenzene	103	20	6.6	ug/l	
1330-20-7	Xylenes (total)	735	40	7.2	ug/l	
95-47-6	o-Xylene	17.5	20	2.8	ug/l	J
	m,p-Xylene	717	20	7.2	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	its	
460-00-4	4-Bromofluorobenzene	107%	٠.	56-1	36%	
98-08-8	aaa-Trifluorotoluene	114%		50-1	44%	

<sup>(</sup>a) Sample pH did not meet field preservation criteria.

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



Client Sample ID: MW-26

Lab Sample ID:

T15282-3

Matrix: Method: Project:

AQ - Ground Water

SW846 8021B Blanco North Flare Pit Date Sampled: Date Received:

11/03/06 11/04/06

Percent Solids: n/a

File ID DF Analyzed Ву Prep Date Prep Batch Analytical Batch Run #1 KK16057.D 1 11/07/06 **ZLH** n/a n/a **GKK934** 

Run #2

Purge Volume

Run #1 5.0 ml

Run #2

#### Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2 108-88-3	Benzene Toluene	1.3 ND	1.0	0.35 0.20	ug/l ug/l	_
100-41-4 1330-20-7 95-47-6	Ethylbenzene Xylenes (total) o-Xylene	0.99 1.3 ND	1.0 2.0 1.0	0.33 0.36 0.14	ug/l ug/l ug/l	J J
33-47-0	m,p-Xylene	1.3	1.0	0.14	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	its	
460-00-4	4-Bromofluorobenzene	110%		56-1	36%	
98-08-8	aaa-Trifluorotoluene	112%		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



Page 1 of 1

### Report of Analysis

Ву

**ZLH** 

n/a

Client Sample ID: MW-27 Lab Sample ID:

T15282-4

AQ - Ground Water

Date Sampled: Date Received:

11/03/06 11/04/06

n/a

Matrix: Method:

SW846 8021B

Percent Solids:

n/a

Project:

Blanco North Flare Pit

DF

1

Prep Date Prep Batch Analytical Batch

**GKK935** 

Run #1 Run #2

Purge Volume

File ID

KK16077.D

Run #1

5.0 ml

Run #2

#### Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	1.7	1.0	0.35	ug/l	
108-88-3	Toluene	2.5	1.0	0.20	ug/l	
100-41-4	Ethylbenzene	2.8	1.0	0.33	ug/l	
1330-20-7	Xylenes (total)	13.2	2.0	0.36	ug/l	
95-47-6	o-Xylene	6.6	1.0	0.14	ug/l	
	m,p-Xylene	6.6	1.0	0.36	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	its	
460-00-4	4-Bromofluorobenzene	90%		56-1	36%	
98-08-8	aaa-Trifluorotoluene	136%		50-1	44%	

Analyzed

11/08/06

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



Ву

ZLH

Client Sample ID: MW-33

Lab Sample ID:

T15282-5

Matrix: Method: AQ - Ground Water

Date Sampled: Date Received:

11/03/06

SW846 8021B

Percent Solids:

11/04/06 n/a

Project:

Blanco North Flare Pit

DF

1

Prep Date n/a

Prep Batch n/a

Analytical Batch **GKK935** 

Run #1 Run #2

Purge Volume

File ID

KK16078.D

Run #1

Run #2

 $5.0 \, ml$ 

#### Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.35	ug/l	
108-88-3	Toluene	1.3	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	110%		56-1	36%	
98-08-8	aaa-Trifluorotoluene	123%			44%	

Analyzed

11/08/06

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



### Report of Analysis

Ву

**ZLH** 

11/07/06

Page 1 of 1

Client Sample ID: 031106TB01

Lab Sample ID: T15282-6

Matrix: Method: AQ - Trip Blank Water

Date Received: 11/04/06

Date Sampled: 11/03/06

Blanco North Flare Pit

Percent Solids: n/a

Project:

File ID	DF	Analyzed

SW846 8021B

Prep Date n/a

Prep Batch n/a

Analytical Batch **GKK934** 

Run #1 Run #2

Purge Volume

KK16051.D

Run #1 5.0 ml

Run #2

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.35	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	107%		56-1	36%	
98-08-8	aaa-Trifluorotoluene	111%		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











Misc. Forms

**Custody Documents and Other Forms** 

Includes the following where applicable:

• Chain of Custody



T15282: Chain of Custody Page 1 of 4

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T15282: Chain of Custody Page 2 of 4

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T15282: Chain of Custody Page 3 of 4

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T15282: Chain of Custody

Page 4 of 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

Job Number:

T15282

Account:

**MWHSLCUT Montgomery Watson** 

Project:

Blanco North Flare Pit

Sample	File ID	DF	Analyzed	Ву	Prep Date	Prep Batch	Analytical Batch
GKK934-MB	KK16047.D	1	11/07/06	ZLH	n/a	n/a	GKK934

The QC reported here applies to the following samples:

Method: SW846 8021B

T15282-2, T15282-3, T15282-6

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 ND	1.0 1.0 1.0 2.0 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 4-Bromofluorobenzene	109%	Limi <sup>*</sup> 56-13	86%	Ü	
98-08-8	aaa-Trifluorotoluene	105%	50-14	4%		

Method Blank Summary

Job Number:
Account:

T15282

AUDICE OF

**MWHSLCUT Montgomery Watson** 

Project:

Blanco North Flare Pit

Sample File ID DF Analyzed By Prep Date Prep Batch Analytical Batch GKK935-MB KK16074.D 1 11/08/06 ZLH n/a n/a GKK935

The QC reported here applies to the following samples:

Method: SW846 8021B

T15282-1, T15282-4, T15282-5

CAS No.	Compound	Result	RL	MDL	Units Q
71-43-2 100-41-4	Benzene Ethylbenzene	ND ND	1.0 1.0	0.35 0.33	ug/l ug/l
108-88-3	Toluene	ND	1.0	0.20	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		Limi	ts .	
460-00-4	4-Bromofluorobenzene	106%	56-13	86%	
98-08-8	aaa-Trifluorotoluene	112%	50-14	14%	



Account:

MWHSLCUT Montgomery Watson Blanco North Flare Pit

Project:

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GKK934-BS	KK16048.D	1	11/07/06	ZLH	n/a	n/a	GKK934
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The QC reported here applies to the following samples:

Method: SW846 8021B

T15282-2, T15282-3, T15282-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	20	18.9	95	72-125
100-41-4	Ethylbenzene	20	20.5	103:	76-125
108-88-3	Toluene	20	20.3	102	74-125
1330-20-7	Xylenes (total)	60	62.8	105	78-124
95-47-6	o-Xylene	20	20.9	105	78-124
	m,p-Xylene	40	41.9	105	78-125
CAS No.	Surrogate Recoveries	BSP	Limits		
460-00-4	4-Bromofluorobenzene	109%	56	-136%	
98-08-8	aaa-Trifluorotoluene	111%	50	-144%	

# Blank Spike/Blank Spike Duplicate Summary Job Number: T15282

Account:

**MWHSLCUT Montgomery Watson** 

Project:

Blanco North Flare Pit

Sample	File ID	-	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GKK935-BS	KK16075.D		11/08/06	ZLH	n/a	n/a	GKK935
GKK935-BSD	KK16080.D		11/08/06	ZLH	n/a	n/a	GKK935

The QC reported here applies to the following samples:

Method: SW846 8021B

T15282-1, T15282-4, T15282-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	20	19.4	97	18.4	92	5	72-125/30
100-41-4	Ethylbenzene	20	20.8	104	20.9	105	0	76-125/30
108-88-3	Toluene	20	20.9	105	20.7	104	13	74-125/30
1330-20-7	Xylenes (total)	60	64.6	108	63.6	106	2	78-124/30
95-47-6	o-Xylene	20	22.1	111	21.5	108	3	78-124/30
	m,p-Xylene	40	42.5	106	42.1	105	1	78-125/30
CAS No.	Surrogate Recoveries	BSP	BS	D	Limits			
460-00-4	4-Bromofluorobenzene	112%	104		56-136%			
98-08-8	aaa-Trifluorotoluene	110%	113	70	. 50-144%	)		



## Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T15282

Account:

**MWHSLCUT Montgomery Watson** 

Project:

Blanco North Flare Pit

Sample T15282-2MS <sup>a</sup> T15282-2MSD T15282-2 <sup>a</sup>	20	Analyzed 11/07/06 11/07/06 11/07/06	By ZLH ZLH ZLH	Prep Date n/a n/a n/a	Prep Batch n/a n/a n/a	Analytical Batch GKK934 GKK934 GKK934
					*	

The QC reported here applies to the following samples:

Method: SW846 8021B

T15282-2, T15282-3, T15282-6

CAS No.	Compound	T15282-2 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	3920 103 26.3 735 17.5 J	400 400 400 1200 400 800	4220 587 435 1990 429 1560	75 121 102 105 103 105	4120 483 431 1950 415 1540	50 95 101 101 99 103	2 19* 1 2 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	T15	282-2	Limits			
460-00-4 98-08-8	4-Bromofluorobenzene aaa-Trifluorotoluene	108% 106%	107% 102%	107 114		56-136% 50-144%			

<sup>(</sup>a) Sample pH did not meet field preservation criteria.

## DATA VERIFICATION WORKSHEET (Page 1 of 2)

.

Analytical Method/Analytes:	SW-846 8021B (BTEX)	Sample Collection Date(s):	11/03/06
Laboratory: _	Accutest	MWH Job Number:	SJRB
Batch Identification: _	T15282	Matrix:	Water
MS/MSD Parent(s) <sup>(a)</sup> : _	•	Field Replicate Parent(s):	None
Verification Complete: _	Essing Moore -09	0/28/07 (Date/Signature)	

Foot			T	Hits		
Notes	Site ID	Sample ID	Lab. ID	(Y/N)	Quals.	Comments
None	SJRB	MW-19	T15282-1	Y	None	
1,2	SJRB	MW-23	T15282-2	Y	J	Ethylbenzene @ 103 μg/l
None	SJRB	MW-26	T15282-3	Y	None	
None	SJRB	MW-27	T15282-4	Y	None	
None	SJRB	MW-33	T15282-5	Y	None	
None	SJRB	031106TB01	T15282-6	N	None	
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## DATA VERIFICATION WORKSHEET (Page 2 of 2)

Analytical Method:	SW-846 8021B (BTEX)	MWH Job Number:	SJRB	
Laboratory:	Accutest	Batch Identification:	T15282	

Verification Criteria							
Sample ID	MW-19	MW-23	MW-26	MW-27	MW-33	ТВ	
Lab ID	T15282-1	T15282-2	T15282-3	T15282-4	T15282-5	T15282-6	
Holding Time	A	A <sup>1</sup>	A	A	А	A	
Analyte List	А	А	Α -	А	А	A	
Reporting Limits	А	А	A	A	A	A	
Surrogate Spike Recovery	А	A	A	A	A	Α	
Trip Blank	A	A	A	Α	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	Α	A	A	A	A	A	
Laboratory Control Sample (LCS)	Α	А	А	A	A	А	
Laboratory Control Sample Duplicate (LCSD)	N	N	N	N	N	N	
Matrix Spike/Matrix Spike Dup. (MS/MSD)	N/A	A <sup>2</sup>	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	Α	Α	A	. А	
EDD vs. Hardcopy	N	N	N	N	N	N	
EDD vs. Chain of Custody	N	. N	N	N	N	N	

<sup>(</sup>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:**

- 1) Sample pH at time of analysis was greater than two, thus reducing the holding time from 14 days to seven. Sample analyzed within seven days.
- 2) MS/MSD RPD outside acceptance criteria for ethylbenzene (19%[15]). Qualify parent sample result with "J" indicating that the data are estimated.

Groundwater Analytical Report – February 2007







03/07/07



## **Technical Report for**

**Montgomery Watson** 

Blanco North Flare Pit

**D-ALAB-BLANCOPITN-004** 

Accutest Job Number: T16475

Sampling Date: 02/26/07

### 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: 22





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:

T16475

Blanco North Flare Pit Project No: D-ALAB-BLANCOPITN-004

Sample Number	Collected Date	Time By	Received	Matr Code		Client Sample ID
T16475-1	02/26/07	11:03 AA	02/28/07	AQ	Water	MW-19
T16475-2	02/26/07	12:25 AA	02/28/07	AQ	Water	MW-23
T16475-3	02/26/07	09:26 AA	02/28/07	AQ	Water	MW-26
T16475-4	02/26/07	10:14 AA	02/28/07	AQ	Water	MW-27
T16475-5	02/26/07	11:28 AA	02/28/07	AQ	Water	MW-33
T16475-6	02/26/07	07:00 AA	02/28/07	AQ	Trip Blank Water	260207TB01



#### SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Montgomery Watson

Job No

T16475

Site:

Blanco North Flare Pit

Report Date

3/7/2007 2:58:03 PM

5 Samples and 1 Trip Blank were collected on 02/26/2007 and were received at Accutest on 02/28/2007 properly preserved, at 2 Deg. C and intact. These Samples received an Accutest job number of T16475. 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 AO

Batch ID: GKK1021

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T16491-2MS, T16491-2MSD were used as the OC samples indicated.
- T16475-4: Sample was not preserved to a pH < 2; reported results are considered minimum values.
- T16475-2: Sample was not preserved to a pH < 2; reported results are considered minimum values.
- T16475-1: Sample was not preserved to a pH < 2; reported results are considered minimum values.

Matrix AO

Batch ID: GKK1023

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T16527-2MS, T16527-2MSD were used as the QC samples indicated.
- T16475-2: Sample was not preserved to a pH < 2; reported results are considered minimum values.

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





Sample Results

Report of Analysis



### Report of Analysis

Ву

ZLH

n/a

Analyzed

03/02/07

Page 1 of 1

GKK1021

Client Sample ID: MW-19

Lab Sample ID:

T16475-1

Matrix: Method:

Project:

AQ - Water

SW846 8021B

Blanco North Flare Pit

DF

1

Date Sampled:

02/26/07 Date Received: 02/28/07

n/a

Percent Solids: n/a

Prep Date Prep Batch **Analytical Batch** 

Run #1 a Run #2

Purge Volume

KK018303.D

File ID

Run #1 5.0 ml

Run #2

#### Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.35	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	105%	105%		56-136%	
98-08-8	aaa-Trifluorotoluene	100%		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



## Report of Analysis

Page 1 of 1

Client Sample ID: MW-23

Lab Sample ID: Matrix:

T16475-2

AQ - Water SW846 8021B

Method: Project:

Blanco North Flare Pit

Date Sampled: 02/26/07

Date Received: 02/28/07

Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 a	KK018323.D	20	03/02/07	ZLH	n/a	n/a	GKK1021
Run #2 a	KK018379.D	200	03/06/07	JH	n/a	n/a	GKK1023

Purge Volume

Run #1 5.0 ml Run #2 5.0 ml

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2 108-88-3 100-41-4 1330-20-7 95-47-6	Benzene Toluene Ethylbenzene Xylenes (total) o-Xylene m,p-Xylene	8910 b 30.7 276 1600 16.8 1580	200 20 20 40 20 20	70 4.0 6.6 7.2 2.8 7.2	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	90% 99%	100% 110%		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



Client Sample ID: MW-26

Lab Sample ID:

T16475-3

Matrix: Method: AQ - Water SW846 8021B

Project:

Blanco North Flare Pit

Date Sampled: 02/26/07

Date Received: 02/28/07

Percent Solids: n/a

Analytical Batch File ID DF Analyzed By Prep Date Prep Batch Run #1 KK018378.D 03/06/07 GKK1023 1 JH n/a n/a

Run #2

Purge Volume

Run #1 Run #2

5.0 ml

#### Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2 108-88-3	Benzene Toluene	1.4 ND	1.0 1.0	0.35 0.20	ug/l ug/l	
100-41-4 1330-20-7 95-47-6	Ethylbenzene Xylenes (total) o-Xylene	ND ND ND	1.0 2.0 1.0	0.33 0.36 0.14	ug/l ug/l ug/l	
<b></b>	m,p-Xylene	ND 	1.0	0.36	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim		
460-00-4 98-08-8	4-Bromofluorobenzene aaa-Trifluorotoluene	97% 102%			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



By

ZLH

Client Sample ID: MW-27

Lab Sample ID:

T16475-4

Matrix:

AQ - Water

Method: Project:

SW846 8021B

Blanco North Flare Pit

DF

1

Date Sampled: 02/26/07

Date Received: 02/28/07

Percent Solids: n/a

**Analytical Batch** Prep Date Prep Batch

n/a n/a GKK1021

Run #1 a Run #2

Purge Volume

KK018325.D

Run #1

5.0 ml

File ID

Run #2

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	1.0 1.0 1.0 2.0 1.0	0.35 0.20 0.33 0.36 0.14 0.36	ug/l ug/l ug/l ug/l ug/l	J
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	ts	
460-00-4 98-08-8	4-Bromofluorobenzene aaa-Trifluorotoluene	85% 91%		56-13 50-14		

Analyzed

03/02/07

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



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

Analytical Batch

GKK1021

Client Sample ID: MW-33 Lab Sample ID:

T16475-5

Matrix: Method: AQ - Water SW846 8021B

Project:

Blanco North Flare Pit

Date Sampled:

02/26/07

Date Received:

02/28/07

Percent Solids: n/a

Prep Date Prep Batch File ID DF Analyzed By Run #1 KK018326.D 1 03/02/07 ZLH n/a n/a

Run #2

Purge Volume

Run #1

5.0 ml

Run #2

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.35	ug/l	
108-88-3 100-41-4	Toluene Ethylbenzene	ND ND	1.0 1.0	0.20 0.33	ug/l ug/l	
1330-20-7 95-47-6	Xylenes (total) o-Xylene	ND ND	2.0 1.0	0.36 0.14	ug/l ug/l	
33-47-0	m,p-Xylene	ND ND	1.0	0.14	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	its	
460-00-4	4-Bromofluorobenzene	89%			36%	
98-08-8	aaa-Trifluorotoluene	94%		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



Client Sample ID: 260207TB01

Lab Sample ID:

T16475-6

Matrix: Method:

Project:

AQ - Trip Blank Water

SW846 8021B Blanco North Flare Pit

DF

1

Date Sampled:

02/26/07 02/28/07

Date Received:

Percent Solids: n/a

Pren	Date	Pren Bate	ch Ana	lytical Batch

Run #1

File ID KK018319.D Analyzed 03/02/07

By ZLH

Report of Analysis

n/a

GKK1021

Run #2

Purge Volume

Run #1

5.0 ml

Run #2

#### 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 0.75 ND ND ND ND	1.0 1.0 1.0 2.0 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	J
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	its	
460-00-4 98-08-8	4-Bromofluorobenzene aaa-Trifluorotoluene	89% 94%			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



Misc. Forms

**Custody Documents and Other Forms** 

Includes the following where applicable:

• Chain of Custody



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Water P.

T16475: Chain of Custody Page 1 of 3

The MUM CAMECI CLES  INTITIALS: The Sample received within temp, rational states and "If" for no or NA. II"" is citized, see variance for explanation).  No Sample received with chain of customers and sample received with chain of customers are afficient to per Put.  A Sample received with chain of customers are afficient to contain or sample received with chain of customers are afficient to per Put.  No Sample received with chain of customers are afficient to contain or sample received with chain of customers are afficient to per Put.  No Sample received with chain of customers are afficient to contain or sample received with chain of customers are afficient to per Put.  No Sample received with chain of customers are afficient to contain or sample received with chain of customers are afficient to contain or contain or contain or contain of customers are afficient to contain or c	INITIALS:  (A) Samples received within temp. range.  (B) N. Sample received with temp range.  (CCOLER TEMP: 21.23.4.5.6 U. CCOLER TEMP:	35 th 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	اير	DATE/TIME RECEIVED: 2/05/04	WED: 2/0X		0:10		
M. Sample received with famp, rat.  A. Sample received with famp, rat.  A. Sample received with chain of ousi.  A. Sample received with chain of ousi.  A. Sample received with chain of ousi.  A. Sample received with chain of ousi.  A. Sample received with chain of ousi.  A. Sample received with chain of ousi.  A. Cample received with chain of ousi.  A. Cample volume sufficient or analysis.  A. Cample volume sufficient or analysis.  A. Sample received with chain of ousi.  A. Sample	M. Sample received with family and TW for no or NA. If TW is circled, see variance for explanation).  A. Sample received with ratio or NA. Sample received with chain of cust with proper pit.  A. Sample received with chain of custom with proper pit.  A. Carton of custom watches sample in and analysis on correliners.  A. Carton of custom watches sample in and tamper not evident on bottles.  N. Nample received with analysis on correliners.  A. Carton of custom watches sample in Ba and analysis on correliners.  N. Nample received with chain of custom watches sample in Ba and analysis on correliners.  N. Nample received with and tamper not evident on bottles.  N. Nample received with chain of custom watches sample in Ba and analysis on correliners.  N. Nample received with chain of custom watches and temper not evident on bottles.  N. Nample received with chain of custom watches and temper not evident on correliners.  N. Nample received with chain of custom watches and temper not evident on correliners.  A. Carton of custom watches and temper not evident on correliners.  A. Carton of custom watches watches watches watched watches watched excluding voluties.  A. Carton of custom watches watched excluding voluties.  A. Carton of custom watches watched excluding voluties.  A. Carton of custom watched excluding voluties.  A. Carton of custom watched excluding voluties.  A. Carton of custom watched excluding voluties.  Coolers temp.  Coolers temp.  Coolers temp.  Coolers temp.		- 1	24.8		INITIALS:	*		
No Chain of Couloup matches sample IDs and analysis on containers.  No Chain of Couloup matches sample IDs and analysis on containers.  No Custody seal received intent and temper not evident on bottles.  No Custody seal received intent and temper not evident on bottles.  Part of Custody seal received intent and temper not evident on bottles.  Part of Custody seal received intent and temper not evident on bottles.  Part of Custody seal received intent and temper not evident on bottles.  Part of Custody seal received intent and temper not evident on bottles.  Part of Custody seal received intent and temper not evident on bottles.  Part of Custody seal received intent and temper not evident on bottles.  Part of Custody seal received intent and temper not evident on temper not evident not evident on temper not evident not eviden	No. Totals of Cuclody matches sample IDs and analysis on containers.  No. Totals of Cuclody seal received intact and amper not evident on bottles.  No. M. Custody seal received intact and amper not evident on bottles.  No. M. Custody seal received intact and amper not evident on bottles.  PLEASE INTER INTER WATRACT VOLUME LICOATION PRESERV.  A 4 5 1-3 1-3 4.56  2 1-3 1-3 4.56  1.2.3.4.56	Condition/Variance (Ci N Sample reci Y (M) Sample reci	ircle "Y" for yes an eived in undamag eived with proper ume sufficient for a	rd "N" for no or NA ed condition. pH. analysis.	is ci 4	led, see varis	ance for explaise received with preceived with preceived with	nation): thin temp. ra oper contair chain of cus	nge. iers.
VOLUME LOCATION PRESERV.  40ml, VRFF 1634.5.6  12.34.5.6  12.34.5.6  12.34.5.6  12.34.5.6  12.34.5.6  12.34.5.6  12.34.5.6  12.34.5.6  12.34.5.6  12.34.5.6  12.34.5.6	UDMA, VREF 1634.5.6 1234.5.6	2	istody matches sa badspace accepta seal received inta y seal received int	mple IDs and ans ble ct and tamper not act and tamper no	alysis on cont evident on co ot evident on b	ainers. oler. ottles.			
123456 123456 123456 123456 123456 123456 123456 123456 123456 123456 123456 123456 123456	COOLER TEMP.  (12,3,4,5,6)  (12,3,4,5,6)  (12,3,4,5,6)  (12,3,4,5,6)  (12,3,4,5,6)  (12,3,4,5,6)  (12,3,4,5,6)  (12,3,4,5,6)  (12,3,4,5,6)  (12,3,4,5,6)  (12,3,4,5,6)  (12,3,4,5,6)  (12,3,4,5,6)  (12,3,4,5,6)  (12,3,4,5,6)  (12,3,4,5,6)  (12,3,4,5,6)  (12,3,4,5,6)	SAMPLE or FIELD ID	BOTTLE #	DATE SAMPLED	MATRIX	VOLUME	LOCATION	PRESERV.	PH
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12.3.4.5.6 12.3.4.5.6 12.3.4.5.6 12.3.4.5.6 12.3.4.5.6 12.3.4.5.6 12.3.4.5.6 12.3.4.5.6 12.3.4.5.6 12.3.4.5.6	123,4,5,6 123,4,5,6 123,4,5,6 12,3,4,5,6 12,3,4,5,6 12,3,4,5,6 12,3,4,5,6 12,3,4,5,6 12,3,4,5,6 12,3,4,5,6 12,3,4,5,6 12,3,4,5,6 12,3,4,5,6 12,3,4,5,6 12,3,4,5,6	3	<u>ئ</u>					1,2,3,4,5,6	1, 0, >12, 1
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1,2,3,4,5,6 1,2,3,4,5,6 1,2,3,4,5,6	1,2,3,4,5,6  1,2,3,4,5,6  core Freezer  COOLER TEMP: 2, 0 COOLER TEA							1,2,3,4,5,6	U, Q, Y12,
1,2,3,4,5,6 0.00 Freezer	1,2,3,4,5,6  1,2,3,4,5,6  1,2,3,4,5,6  1,2,3,4,5,6  COOLER TEMP: 2, 0  COOLER TEMP: COOLER TER							1,2,3,4,5,6	U, C2, >12,
1,2,3,4,5,6 core Freezer	1,2,3,4,5,6  core Freezer  COOLER TEMP: 2, 0 COOLER TEA							1,2,3,4,5,6	U, <2, >12,
1,2,3,4,5,6	COOLER TEMP: 2, 0 COOLER TEN							1,2,3,4,5,6	
core Freezer	COOLER TEMP:							1,2,3,4,5,6	
Comments	COOLER TEMP. COOLER TEMP.	OCATION: WI: Walk-in PRESERVATIVES: 1: N	NR: Volatile Refri	g. SUB: Subcontra 33 4: H2SO4 5: NAC	act EF: Encor OH 6: Other	e Freezer			
	od: Courier: (FC COOLER TEMP: C	pH of waters checked ex	ctuding volatiles	-	Comments				
	COOLER TEMP:	or or soils NA	j.				- 1		

A section

T16475: Chain of Custody Page 2 of 3



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T16475: Chain of Custody Page 3 of 3



**GC** 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:

T16475

Account:

MWHSLCUT Montgomery Watson

Project:

Blanco North Flare Pit

Sample	File ID	DF	Analyzed	Ву	Prep Date	Prep Batch	Analytical Batch
GKK1021-M	B KK018299	.D1	03/02/07	ZLH	n/a	n/a	GKK1021

The QC reported here applies to the following samples:

Method: SW846 8021B

T16475-1, T16475-2, T16475-4, T16475-5, T16475-6

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2 100-41-4	Benzene Ethylbenzene	ND ND	1.0 1.0	0.35 0.33	ug/l ug/l	
108-88-3	Toluene	ND	1.0	0.20	ug/l	
1330-20-7	Xylenes (total)	- ;-	2.0	0.36	ug/l	
95-47-6	o-Xylene		1.0	0.14	ug/l	
	m,p-Xylene	ND	1.0	0.36	ug/l	
CAS No.	Surrogate Recoveries		Limi	ts		
460-00-4	4-Bromofluorobenzene	85%	56-13	86%		
98-08-8	aaa-Trifluorotoluene	89%	50-14	4%		



## Method Blank Summary

Job Number:

T16475

MWHSLCUT Montgomery Watson

Account: Project:

Blanco North Flare Pit

Sample File ID DF Analyzed By Prep Date Prep Batch Analytical Batch GKK1023-MB KK018370.D1 03/06/07 JH n/a n/a GKK1023

The QC reported here applies to the following samples:

Method: SW846 8021B

T16475-2, T16475-3

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.35	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.33	ug/l	
108-88-3	Toluene	ND	1.0	0.20	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		Limi	ts		
460-00-4	4-Bromofluorobenzene	99%	56-13	86%		
98-08-8	aaa-Trifluorotoluene	107%	50-14	14%		



Blank Spike Summary Job Number: T16475

Account:

**MWHSLCUT Montgomery Watson** 

Project:

Blanco North Flare Pit

Sample	File ID	<b>DF</b>	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GKK1021-BS	KK018300	0.D 1	03/02/07	ZLH	n/a	n/a	GKK1021
				•	·		

The QC reported here applies to the following samples:

Method: SW846 8021B

T16475-1, T16475-2, T16475-4, T16475-5, T16475-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	20	20.5	103	72-125
100-41-4	Ethylbenzene	20	19.7	99	76-125
108-88-3	Toluene	20	20.4	102	74-125
1330-20-7	Xylenes (total)	60	59.3	99	78-124
95-47-6	o-Xylene	20	19.1	96	78-124
	m,p-Xylene	40	40.2	101	78-125
CAS No.	Surrogate Recoveries	BSP	Liı	nits	
460-00-4	4-Bromofluorobenzene	88%	- 56-	136%	
98-08-8	aaa-Trifluorotoluene	90%	50	144%	



# Blank Spike Summary Job Number: T16475

Account:

MWHSLCUT Montgomery Watson

Project:

Blanco North Flare Pit

Sample	File ID	<b>DF</b>	Analyzed 03/06/07	By	Prep Date	Prep Batch	Analytical Batch
GKK1023-BS	KK018371.	D1		JH	n/a	n/a	GKK1023

The QC reported here applies to the following samples:

Method: SW846 8021B

T16475-2, T16475-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	20	22.3	112	72-125
100-41-4	Ethylbenzene	20	21.7	109	76-125
108-88-3	Toluene	20	22.5	113	74-125
1330-20-7	Xylenes (total)	60	65.6	109	78-124
95-47-6	o-Xylene	20	21.3	107	78-124
	m,p-Xylene	40	44.3	111	78-125
CAS No.	Surrogate Recoveries	BSP	Lir	nits	
460-00-4	4-Bromofluorobenzene	98%	56-	136%	
98-08-8	aaa-Trifluorotoluene	109%		144%	



# Matrix Spike/Matrix Spike Duplicate Summary Job Number: T16475

Account:

MWHSLCUT Montgomery Watson

Project:

Blanco North Flare Pit

Sample	File ID	DF	Analyzed	Ву	Prep Date	Prep Batch	Analytical Batch
T16491-2MS	KK018306.D	1	03/02/07	ZĽH	n/a	n/a	GKK1021
T16491-2MSD	KK018307.D	1	03/02/07	ZLH	n/a	n/a	GKK1021
T16491-2	KK018305.D	1	03/02/07	ZLH	n/a	n/a	GKK1021
110431-2	MM010303.L	<b>,</b> 1	03/02/01	2111	11/α	IV a	OKKIOLI

The QC reported here applies to the following samples:

Method: SW846 8021B

T16475-1, T16475-2, T16475-4, T16475-5, T16475-6

CAS No.	Compound	T16491-2 ug/l	2 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	2.8 ND 0.30 ND ND ND	J	20 20 20 60 20 40	23.4 19.3 19.9 56.7 18.2 38.5	103 97 98 95 91 96	23.2 19.2 19.5 56.5 18.2 38.3	102 96 96 94 91 96	1 1 2 0 0	45-137/21 68-126/15 63-130/22 72-125/19 70-128/20 63-136/19
CAS No.	Surrogate Recoveries	MS		MSD	T16	6491-2	Limits			
460-00-4 98-08-8	4-Bromofluorobenzene aaa-Trifluorotoluene	92% 101%		92% 100%	91% 97%	_	56-136% 50-144%			



## Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T16475

MWHSLCUT Montgomery Watson Account:

Project: Blanco North Flare Pit

Sample	File ID		Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T16527-2MS	KK018390		03/06/07	JH	n/a	n/a	GKK1023
T16527-2MSD	KK018391		03/06/07	JH	n/a	n/a	GKK1023
T16527-2	KK018389.	.D1	03/06/07	JH	n/a	n/a	GKK1023

The QC reported here applies to the following samples:

Method: SW846 8021B

T16475-2, T16475-3

CAS No.	Compound	T16527-2 ug/l Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2 100-41-4	Benzene Ethylbenzene	ND ND	20 20	25.3 24.4	127 122	24.7 24.4	124 122	2	45-137/21 68-126/15
108-88-3	Toluene	ND	20	25.1	126	25.8	129	3	63-130/22
1330-20-7 95-47-6	Xylenes (total) o-Xylene	ND ND	60 20	71.5 23.0	119 115	71.1 22.8	119 114	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	72-125/19 70-128/20
	m,p-Xylene	ND	40	48.5	121	48.2	121	1	63-136/19
CAS No.	Surrogate Recoveries	MS	MSD	T16	527-2	Limits			
460-00-4 98-08-8	4-Bromofluorobenzene aaa-Trifluorotoluene	99% 109%	101% 111%	99% 1059	- X - X	56-136% 50-144%			



## DATA VERIFICATION WORKSHEET (Page 1 of 2)

Analytical Method/Analytes: _	SW-846 8021B (BTEX)	Sample Collection Date(s):	02/26/07
Laboratory: _	Accutest	MWH Job Number:	SJRB
Batch Identification: _	T16475	Matrix:	Water
MS/MSD Parent(s) <sup>(a)</sup> :	MW-26	Field Replicate Parent(s):	None
Verification Complete: _	Caig To	Date/Signature)	07

Foot Notes	Site ID	Sample ID	Lab. ID	Hits (Y/N)	Quals.	Comments
. 1	SJRB	MW-19	T16475-1	N	None	
1,2.3	SJRB	MW-23	T16475-2	Y	J B	Benzene @ 8910 μg/l Toluene @ 30.7 μg/l
2	SJRB	MW-26	T16475-3	Y	None	
1	SJRB	MW-27	T16475-4	Y	None	
2	SJRB	MW-33	T16475-5	N	None	
None	SJRB	260207TB01	T16475-6	Y	None	
			<u> </u>			
					i 	

### DATA VERIFICATION WORKSHEET

(Page 2 of 2)

Analytical Method:	SW-846 8021B (BTEX)	MWH Job Number:	SJRB	
Laboratory: _	Accutest	Batch Identification:	T16475	

Verification Criteria								
Sample ID	MW-19	MW-23	MW-26	MW-27	MW-33	260207TB01		
Lab ID	T16475-1	T16475-2	T16475-3	T16475-4	T16475-5	T16475-6	•	
Holding Time	. A	A	À	А	A	Α		
Analyte List	$A^1$	A <sup>1,3</sup>	A	A <sup>1</sup>	A	. A		
Reporting Limits	A	A	A	A <sub>1</sub>	A	A		
Surrogate Spike Recovery	A	. A	A	Α	A	A		
Trip Blank	A <sup>2</sup>	A <sup>2</sup>	A <sup>2</sup>	A <sup>2</sup>	$A^2$	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	A	Α	Α	А	Α	A		
Laboratory Control Sample (LCS)	• A	A	A	A	A	. A		
Laboratory Control Sample Duplicate (LCSD)	N	N	N	N,	, N	N		
Matrix Spike/Matrix Spike Dup. (MS/MSD)	· A	N/A	А	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	А	. А	Α	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

#### **NOTES:**

- 1) Sample pH at time of analysis was greater than two, thus reducing the holding time from 14 days to seven. Samples were analyzed within seven days; therefore now data are qualified.
- 2) Toluene detected in trip blank (TB), 260207TB01 at 0.75 J µg/l. Sample ND for toluene are not qualified. Sample with concentrations greater than five times the TB concentration are qualified with a "B" flag indicating that the analyte was detected in an associated blank. However, the TB concentration when compared to the sample concentrations has no affect on the data.
- 3) Sample pH at time of analysis was greater than two, thus reducing the holding time from 14 days to seven. Sample analyzed eight days after sample collection for benzene only or one day outside of holding time, introducing a possible low bias. Benzene result is qualified with a "J" flags, indicating the datum is estimated and possibly biased low.

**Groundwater Sampling Field Forms – May 2007** 



06/04/07

## **Technical Report for**

**Montgomery Watson** 





Blanco North Flare Pit

**D-ALAB-BLANCOPITN-004** 

Accutest Job Number: T17626

Sampling Date: 05/29/07

### 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



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

Client Service contact: Agnes Vicknair 713-271-4700

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



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### Sample Summary

**Montgomery Watson** 

Job No:

T17626

Blanco North Flare Pit Project No: D-ALAB-BLANCOPITN-004

Sample Number	Collected Date	Time By	Received	Matr Code		Client Sample ID
T17626-1	05/29/07	10:02 MN	05/30/07	AQ	Ground Water	MW-31
T17626-2	05/29/07	09:30 MN	05/30/07	AQ	Ground Water	MW-23
T17626-3	05/29/07	11:45 MN	05/30/07	AQ	Ground Water	MW-26
T17626-4	05/29/07	11:10 MN	05/30/07	AQ	Ground Water	MW-27
T17626-5	05/29/07	10:40 MN	05/30/07	_	Ground Water	<b>MW-33</b>





### SAMPLE DELIVERY GROUP CASE NARRATIVE

Client:

Montgomery Watson

Job No

T17626

Site:

Blanco North Flare Pit

Report Date

6/4/2007 3:22:17 PM

5 Samples were collected on 05/29/2007 and were received at Accutest on 05/30/2007 properly preserved, at 2.2 Deg. C and intact. These Samples received an Accutest job number of T17626. 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:

GKK1088

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T17634-1MS, T17634-1MSD were used as the QC samples indicated.

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









Sample Results

Report of Analysis



Page 1 of 1

Client Sample ID: MW-31

Lab Sample ID:

T17626-1

Matrix: Method: AQ - Ground Water SW846 8021B

Date Sampled:
Date Received:

Date Received: 05/3
Percent Solids: n/a

05/29/07 05/30/07

Project:

Blanco North Flare Pit

DF

1

- --

Run #1

File ID KK019984.D Analyzed 06/01/07

By P ZLH n

Prep Date n/a

Prep Batch n/a Analytical Batch

. (

Run #2

Purge Volume

Run #1

5.0 ml

Run #2

### 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	4.6 ND ND 1.1 ND 1.1	1.0 1.0 1.0 2.0 1.0	0.21 0.23 0.35 0.55 0.55 0.66	ug/l ug/l ug/l ug/l ug/l ug/l	J
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	its	
460-00-4 98-08-8	4-Bromofluorobenzene aaa-Trifluorotoluene	88% 105%		56-13 50-1		

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



3.2

### Report of Analysis

Page 1 of 1

Client Sample ID: MW-23

Lab Sample ID: T17626-2

Matrix:

AQ - Ground Water

Method:

SW846 8021B

Project:

Blanco North Flare Pit

Date Sampled: 05/29/07

Date Received: 05/30/07

Percent Solids: n/a

Prep Batch **Analytical Batch** File ID DF Analyzed By Prep Date **GKK1088** Run #1 KK019985.D 50 06/01/07 **ZLH** n/a n/a

Run #2

Purge Volume

Run #1

5.0 ml

Run #2

### 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	6410 ND 276 1240 ND 1240	50 50 50 100 50	10 11 17 28 28 33	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	91% 95%		56-13 50-1		

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



By

ZLH

Client Sample ID: MW-26

Lab Sample ID: T17626-3

Matrix: Method:

Project:

AQ - Ground Water

SW846 8021B

Blanco North Flare Pit

DF

1

Date Sampled:

Prep Date

n/a

05/29/07 05/30/07

Date Received: Percent Solids:

n/a

n/a

Analytical Batch Prep Batch

GKK1088

Run #1 Run #2

Purge Volume

KK019986.D

Run #1

5.0 ml

File ID

Run #2

#### 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			0.21 0.23 0.35 0.55 0.66	ug/l ug/l ug/l ug/l ug/l ug/l	J J
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limi	ts	
460-00-4 98-08-8	4-Bromofluorobenzene aaa-Trifluorotoluene	90% 99%		56-13 50-14		

Analyzed

06/01/07

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

Client Sample ID: MW-27

Lab Sample ID:

T17626-4

Matrix:

AQ - Ground Water

Method:

SW846 8021B

Date Sampled:

05/29/07 05/30/07

Date Received:

Percent Solids: n/a

Project:

Blanco North Flare Pit

File ID KK019987.D

DF 1

Analyzed 06/01/07

By ZLH Prep Date n/a

Prep Batch n/a

Analytical Batch GKK1088

Run #1 Run #2

Purge Volume

Run #1

5.0 ml

Run #2

#### Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	1.1		0.21	ug/l	
108-88-3	Toluene	ND	1.0	0.23	ug/l	
100-41-4	Ethylbenzene	ND	· 1.0	0.35	ug/l	
1330-20-7	Xylenes (total)	1.8	2.0	0.55	ug/l	J
95-47-6	o-Xylene	ND	1.0	0.55	ug/l	
	m,p-Xylene	1.8	1.0	0.66	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	its	
460-00-4	4-Bromofluorobenzene	91%		56-1	36%	
98-08-8	aaa-Trifluorotoluene	99%		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



Client Sample ID: MW-33

Lab Sample ID:

T17626-5

Matrix:

AQ - Ground Water

Method: Project:

SW846 8021B Blanco North Flare Pit Date Sampled:

05/29/07

Date Received:

05/30/07 Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	KK019988 D	1	06/01/07	ZLH	n/a	n/a	GKK1088

Run #2

Purge Volume

Run #1 Run #2

5.0 ml

### Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2 108-88-3	Benzene Toluene	0.63 ND	1.0 1.0	0.21 0.23	ug/l ug/l	J
100-41-4	Ethylbenzene	ND	1.0	0.35	ug/l	
1330-20-7	Xylenes (total)	0.64	2.0	0.55	ug/l	J
95-47-6	o-Xylene	ND	1.0	0.55	ug/l	
	m,p-Xylene	ND	1.0	0.66	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	its	
460-00-4	4-Bromofluorobenzene	89%		56-1	36%	
98-08-8	aaa-Trifluorotoluene	97%		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







Misc. Forms

**Custody Documents and Other Forms** 

Includes the following where applicable:

• Chain of Custody



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T17626: Chain of Custody Page 1 of 2



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SAMPLE RECEIPT LOG

T17626: Chain of Custody Page 2 of 2







GC 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: T17626

Account:

MWHSLCUT Montgomery Watson

Project:

Blanco North Flare Pit

Sample GKK1088-MB	DF 1	Analyzed 06/01/07	By ZLH	Prep Date n/a	Prep Batch n/a	Analytical Batch GKK1088

The QC reported here applies to the following samples:

Method: SW846 8021B

T17626-1, T17626-2, T17626-3, T17626-4, T17626-5

71-43-2       Benzene       ND       1.0       0.21         100-41-4       Ethylbenzene       ND       1.0       0.35         108-88-3       Toluene       ND       1.0       0.23         1330-20-7       Xylenes (total)       ND       2.0       0.55         95-47-6       o-Xylene       ND       1.0       0.55         m,p-Xylene       ND       1.0       0.66     CAS No. Surrogate Recoveries  Limits  460-00-4  4-Bromofluorobenzene  92%  56-136%	CAS No.	Compound	Result	RL	MDL	Units Q
460-00-4 4-Bromofluorobenzene 92% 56-136%	100-41-4 108-88-3 1330-20-7	Ethylbenzene Toluene Xylenes (total) o-Xylene	ND ND ND ND	1.0 1.0 2.0 1.0	0.35 0.23 0.55 0.55	ug/l ug/l ug/l ug/l ug/l ug/l
		Surrogate Recoveries		Limi	ts	
98-08-8 aaa-Trifluorotoluene 98% 50-144%	460-00-4 98-08-8	4-Bromofluorobenzene aaa-Trifluorotoluene	92% 98%			



Page 1 of 1

Blank Spike Summary

Job Number:

T17626

Account:

**MWHSLCUT Montgomery Watson** 

Project:

Blanco North Flare Pit

Sample File ID DF Analyzed By Prep Date Prep Batch Analytical Batch GKK1088-BS KK019963.D1 06/01/07 ZLH n/a n/a GKK1088

The QC reported here applies to the following samples:

Method: SW846 8021B

T17626-1, T17626-2, T17626-3, T17626-4, T17626-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	20	18.4	92	72-125
100-41-4	Ethylbenzene	20	19.9	100	76-125
108-88-3	Toluene	- 20	19.2	96	74-125
1330-20-7	Xylenes (total)	60	59.6	99	78-124
95-47-6	o-Xylene	20	20.1	101	78-124
	m,p-Xylene	40	39.6	99	78-125
CAS No.	Surrogate Recoveries	BSP	Li	mits	
460-00-4	4-Bromofluorobenzene	91%	56	-136%	
98-08-8	aaa-Trifluorotoluene	98%	50	-144%	



Page 1 of 1

# Matrix Spike/Matrix Spike Duplicate Summary Job Number: T17626

Account:

**MWHSLCUT Montgomery Watson** 

Project:

Blanco North Flare Pit

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch	
T17634-1MS	KK019966.	D1	06/01/07	ZLH	n/a	n/a	GKK1088	
T17634-1MSD	KK019967.	D1	06/01/07	ZLH	n/a	n/a	GKK1088	
T17634-1	KK019965.	D1	06/01/07	ZLH	n/a	n/a	GKK1088	

The QC reported here applies to the following samples:

Method: SW846 8021B

T17626-1, T17626-2, T17626-3, T17626-4, T17626-5

CAS No.	Compound	T17634-1 ug/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	ND ND ND ND ND ND	20 20 20 60 20 40	18.5 19.3 18.5 58.0 19.5 38.5	93 97 93 97 98 96	18.4 18.9 18.7 57.3 19.4 37.9	92 1 95 2 94 1 96 1 97 1 95 2	45-137/21 68-126/15 63-130/22 72-125/19 70-128/20 63-136/19
CAS No. 460-00-4 98-08-8	Surrogate Recoveries  4-Bromofluorobenzene aaa-Trifluorotoluene	MS 91% 99%	MSD 94% 102%	T17 92% 98%		Limits 56-136% 50-144%	•	



## DATA VERIFICATION WORKSHEET (Page 1 of 2)

Analytical Method/Analytes: _	SW-846 8021B (BTEX)	Sample Collection Date(s):	5/29/07
Laboratory:	Accutest	MWH Job Number:	SJRB
Batch Identification: _	T17626	Matrix:	Water
MS/MSD Parent(s) <sup>(a)</sup> : _	None	Field Replicate Parent(s):	None
Verification Complete: _	(Sing ?)	Porce - 06/27/1	27

Foot				Hits		
Notes	Site ID	Sample ID	Lab. ID	(Y/N)	Quals.	Comments
None	SJRB	MW-31	T17626-1	Y	None	<u> </u>
None	SJRB	MW-23	T17626-2	Y	None	
None	SJRB	MW-26	T17626-3	Y	None	·
None	SJRB	MW-27	T17626-4	Y	None	·
None	SJRB	MW-33	T17626-5	Y	None	
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	L				<u> </u>	

## DATA VERIFICATION WORKSHEET (Page 2 of 2)

Analytical Method:	SW-846 8021B (BTEX)	MWH Job Number:	SJRB
Laboratory: _	Accutest	Batch Identification:	T17626

Verification Criteria		٠	٠			•	
Sample ID	MW-31	MW-23	MW-26	MW-27	MW-33		
Lab ID	T17626-1	T17626-2	T17626-3	T17626-4	T17626-5		
Holding Time	A	Α	A	А	А		
Analyte List	A	. A	А	Α	A		
Reporting Limits	А	. A	A	Α	A		
Surrogate Spike Recovery	Α,	A	А	A	· 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	A	A	A	Α	Α		
Laboratory Control Sample (LCS)	Α	A	Α	Α	A		
Laboratory Control Sample Duplicate (LCSD)	N .	N	N	. N	N		
Matrix Spike/Matrix Spike Dup. (MS/MSD)	Α	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	Α	A	А	Α	Α		
EDD vs. Hardcopy	N	N	N	N	N		
EDD vs. Chain of Custody	N	N	N	N	N		

<sup>(</sup>a) List QC batch identification if different than Batch ID

A indicates verification criteria were met

### NOTES:

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

Groundwater Analytical Report – August 2007

09/04/07



### **Technical Report for**

**Montgomery Watson** 

Blanco North Flare Pit

D-ALAB-BLANCOPITN-004

Accutest Job Number: T18592

Sampling Date: 08/22/07

Report to:

MWH Americas, Inc.

jed.Smith@us.mwhglobal.com

ATTN: Mr. Jed Smith

Total number of pages in report: 19





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

Client Service contact: Agnes Vicknair 713-271-4700

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

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## Sample Summary

**Montgomery Watson** 

Job No:

T18592

Blanco North Flare Pit Project No: D-ALAB-BLANCOPITN-004

Sample Number	Collected Date	Time By	Received	Matr Code		Client Sample ID
T18592-1	08/22/07	07:00 MN	08/23/07	AQ	Trip Blank Water	220807TB01
T18592-2	08/22/07	08:09 MN	08/23/07	AQ	Ground Water	MW-23
T18592-3	08/22/07	08:45 MN	08/23/07	AQ	Ground Water	MW-31
T18592-4	08/22/07	09:35 MN	08/23/07	AQ	Ground Water	MW-33
T18592-5	08/22/07	10:02 MN	08/23/07	AQ	Ground Water	MW-27
T18592-6	08/22/07	10:25 MN	08/23/07	AQ	Ground Water	MW-26







### SAMPLE DELIVERY GROUP CASE NARRATIVE

Client:

Montgomery Watson

Job No

T18592

Site:

Blanco North Flare Pit

Report Date

9/4/2007 2:45:43 PM

5 Samples and 1 Trip Blank were collected on 08/22/2007 and were received at Accutest on 08/23/2007 properly preserved, at 2.9 Deg. C and intact. These Samples received an Accutest job number of T18592. 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 AO

Batch ID: GKK1173

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) T18592-4MS, T18592-4MSD were used as the QC samples indicated.
- T18592-2 for aaa-Trifluorotoluene: Outside control limits due to matrix interference. Confirmed by reanalysis.
- T18592-2 for 4-Bromofluorobenzene: Outside control limits due to matrix interference. Confirmed by reanalysis.

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













## Sample Results

Report of Analysis

Page 1 of 1

### Report of Analysis

Client Sample ID:

220807TB01 Lab Sample ID: T18592-1

Matrix:

AQ - Trip Blank Water

Blanco North Flare Pit

Method: Project:

SW846 8021B

Date Sampled:

08/22/07

Date Received:

08/23/07

Percent Solids:

n/a

	File ID	DF	Analyzed	Ву	Prep Date	Prep Batch	Analytical Batch
Run #1	KK022347.D	1	09/02/07	LĴ	n/a	n/a	GKK1173
l							

Run #2

Purge Volume

5.0 ml Run #1

Run #2

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2 108-88-3	Benzene Toluene	ND ND	1.0 1.0	0.21 0.23	ug/l	
100-66-3	Ethylbenzene	ND ND	1.0	0.35	ug/l ug/l	
1330-20-7 95-47-6	Xylenes (total) o-Xylene	ND ND	2.0 1.0	0.55 0.55	ug/l ug/l	
33-47-0	m,p-Xylene	ND	1.0	0.66	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	its	
460-00-4	4-Bromofluorobenzene	80%		61-1	25%	
98-08-8	aaa-Trifluorotoluene	90%		50-1	<b>39</b> %	

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





#### Page 1 of 1

**GKK1173** 

### Report of Analysis

Client Sample ID: MW-23 Lab Sample ID:

Matrix:

Method:

Project:

Run #1

Run #2

T18592-2

File ID

KK022354.D

KK022360.D

AQ - Ground Water SW846 8021B

Blanco North Flare Pit

DF

5

50

Date Sampled:

08/22/07

Date Received: 08/23/07

Percent Solids: n/a

Prep Date	Prep Batch	Analytical Batch
n/a	n/a	GKK1173

n/a

n/a

By

LJ

LJ

#### Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	5110 a	50	10	ug/l	
108-88-3	Toluene	14.5	5.0	1.1	ug/l	
100-41-4	Ethylbenzene	172	5.0	1.7	ug/l	
1330-20-7	Xylenes (total)	855	10	2.8	ug/l	
95-47-6	o-Xylene	36.9	5.0	2.8	ug/l	
	m,p-Xylene	818	5.0	3.3	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	its	
460-00-4	4-Bromofluorobenzene	131% b	93%	61-1	25%	
98-08-8	aaa-Trifluorotoluene	155% <sup>b</sup>	103%	50-1	<b>39</b> %	

Analyzed

09/02/07

09/02/07

(a) Result is from Run# 2

(b) Outside control limits due to matrix interference. Confirmed by reanalysis.

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



Client Sample ID: MW-31

Lab Sample ID:

T18592-3

08/22/07 Date Sampled:

Matrix: Method:

SW846 8021B

Date Received:

08/23/07

Project:

Blanco North Flare Pit

AQ - Ground Water

Percent Solids: n/a

	<del></del>						
	File ID	DF	Analyzed	Ву	Prep Date	Prep Batch	Analytical Batch
Run #1	KK022348.D	1	09/02/07	LJ	n/a	n/a	GKK1173
in un							

Run #2

Purge Volume

Run #1

5.0 ml

Run #2

#### 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	4.8 ND ND ND ND ND	1.0 1.0 1.0 2.0 1.0	0.21 0.23 0.35 0.55 0.55 0.66	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-Bromofluorobenzene aaa-Trifluorotoluene	82% 102%		61-1 50-1		

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



Client Sample ID: Lab Sample ID:

MW-33

Matrix:

T18592-4

Method:

AQ - Ground Water

Project:

SW846 8021B

Blanco North Flare Pit

Date Sampled:

08/22/07

Date Received: 08/23/07

Percent Solids: n/a

		File ID	DF	Analyzed	Ву	Prep Date	Prep Batch	Analytical Batch
١	Run #1	KK022349.D	1	09/02/07	LJ ′	n/a	n/a	GKK1173

Run #2

Purge Volume

5.0 ml

Run #1

Run #2

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2 108-88-3	Benzene Toluene	ND ND	1.0	0.21 0.23	ug/l	
100-41-4	Ethylbenzene	ND	1.0 1.0	0.35	ug/l ug/l	
1330-20-7 95-47-6	Xylenes (total) o-Xylene	ND ND	2.0 1.0	0.55 0.55	ug/l ug/l	
	m,p-Xylene	ND	1.0	0.66	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	its	
460-00-4	4-Bromofluorobenzene	82%			25%	
98-08-8	aaa-Trifluorotoluene	90%		50-1	<b>39</b> %	

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





Page 1 of 1

Client Sample ID: MW-27

Lab Sample ID: T18592-5

Matrix:

Project:

AO - Ground Water

Method:

SW846 8021B

Blanco North Flare Pit

Date Sampled:

08/22/07

Date Received:

08/23/07

61-125%

50-139%

Percent Solids:

n/a

Analytical Batch

Run #1 Run #2 File ID KK022350.D

DF 1

Analyzed 09/02/07

By LJ

Prep Date n/a

Prep Batch

**GKK1173** 

Purge Volume

4-Bromofluorobenzene

aaa-Trifluorotoluene

Run #1

5.0 ml

Run #2

460-00-4

98-08-8

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	0.39 ND ND ND ND ND	1.0 1.0 1.0 2.0 1.0	0.21 0.23 0.35 0.55 0.55 0.66	ug/l ug/l ug/l ug/l ug/l ug/l	J
CAS No.	Surrogate Recoveries	Run# 1	Run#	2 Lim	its	

88%

100%

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





Client Sample ID:

Lab Sample ID:

MW-26 T18592-6

Matrix:

AQ - Ground Water

Method: Project:

SW846 8021B

Blanco North Flare Pit

Date Sampled:

08/22/07

Date Received:

08/23/07

Percent Solids: n/a

	File ID	DF	Analyzed	$\mathbf{B}\mathbf{y}$	Prep Date	Prep Batch	Analytical Batch
Run #1	KK022351.D	1	09/02/07	LI	n/a	n/a	GKK1173

Run #2

Run #1

Purge Volume 5.0 ml

Run #2

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2 108-88-3	Benzene Toluene	ND ND	1.0 1.0	0.21 0.23	ug/l ug/l	
100-41-4	Ethylbenzene	ND ND	1.0	0.35	ug/l	
1330-20-7 95-47-6	Xylenes (total) o-Xylene	ND ND	2.0 1.0	$0.55 \\ 0.55$	ug/l ug/l	
	m,p-Xylene	ND	1.0	0.66	ug/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Lim	its	
460-00-4	4-Bromofluorobenzene	89%		61-1	25%	
98-08-8	aaa-Trifluorotoluene	100%		50-1	39%	

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







Misc. Forms

**Custody Documents and Other Forms** 

Includes the following where applicable:

• Chain of Custody



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Accutest Field ID / Point of Collection Sample #	SUMMA#	-	Collection				Ц	Num	ber of p	eserv	ed Bottl	es	8	1					İ					WP - Wipe
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T18592: Chain of Custody Page 1 of 3

MACUTEST: SAMPLE LOG-IN
SAMPLE(S) #5- MW-27 (3 W.S.) PROJECT BLANCO NORTH FLORE PH FILED BY ALE
VARIANCE - Check applicable items(s):  Insufficient sample sent for proper analysis; received approx.
Sample bottle received broken and/or cap not intact.  Samples received without paperwork; paperwork received without samples.  Samples received without proper refrigeration, when it has been
deemed necessary. Temperature at receipt:
Numbers on sample not the same as numbers on paper work. Incomplete instructions received with sample(s) ie.,no request
for analysis, no chain of custody, incomplete billing instructions, no due date, etc. Temperature at reciept:
received in ii characteristic
Rush samples on hold because of incomplete paperwork.  Other (specify) All Solumold's exclost at the work.
1/10/
Person Contacted By phone.
letter.
Samples processed as is. Samples processed with higher Samples preserved by lab.
submit.
TITLE DATE INITIALS CORRECTED?
Sample Manager. Login: Project Manager: 8/23/47/
Comments: 1 CANTED ST POTONE ON SK #S

-

407

4 3 to

T18592: Chain of Custody Page 2 of 3

Z ACCUTEST.		SAMPLE	SAMPLE RECEIPT LOG	90-	·		
JOB#: T18592	1	DATE/TIME RECEIVED: $8/33/97/4130$	NED: 8/0	3/60/8	4:30		
CLIENT: MWH	Americad	9	-	INITIALS:	¥		
(\$\frac{1}{2}\rangle \rangle \@(\frac{1}{2}\rangle \rangle \@(\frac{1}{2}\rangle \rangle \rangle \@(\frac{1}{2}\rangle \rangle \rangle \@(\frac{1}{2}\rangle \rangle \rangle \empty \rangle \@(\frac{1}{2}\rangle \rangle \rangle \empty \rangle \@(\frac{1}{2}\rangle \rangle \rangle \empty \rangle \@(\frac{1}{2}\rangle \rangle \rangle \empty \rangle \empty \rangle \empty \rangle \empty \rangle \@(\frac{1}{2}\rangle \rangle \rangle \rangle \empty \rangle \e	ittion/Variance (Circle "Y" for yes and "N" for no or NA. If "N" is circled, see variance for explanation).  2 (X) N Samples received within term of the proper ph. Sample received with proper ph. Sample received with chain of Sample volume sufficient for analysis.  6 (Y) N Sample received with chain of Custody matches sample IDs and analysis on containers.	d "N" for no or NA ed condition. bH. analysis. mple IDs and ana	If "N" is cire	ed, see varie N Sample N Sample N Sample	see variance for explanation). Samples received within temp. range. Sample received in proper containers. Sample received with chain of custody,	ination): thin temp. ra roper contair i chain of cus	nge. ners. stody.
9 Y N Samples He	Samples Headspace acceptable  NA Custody seal received intact and tamper not evident on cooler.  (AA) Custody seal received intact and tamper not evident on bottles.	ble ct and tamper not act and tamper no	evident on co it evident on b	oler. vottles.			
SAMPLE OFFIELD ID	BOTTLE#	DATE SAMPLED	MATRIX	NOTOME	LOCATION	PRESERV.	Ħ
	1-2	8/33	Az	40ml.	WEEF	16,3,4,5,6	U, <2, >12, NA
2-3	1.3	)	_		<b>-</b>	A2,3,4,5,6	U, <2, >12, NA
7	1-3					1(2)3,4,5,6	U, <2, >12, NA
. 2	_				_	( <mark>0</mark> ,2,3,4,5,6	U, <2, >12, NA
5	1-3		T			(D2,3,4,5,6	U, <2, >12, NA
		(		7		1,2,3,4,5,6	U, <2, >12, NA
		RIV	35			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
				/		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 VR: Volatile Refrig. SUB: Subcontract EF: En-PRESERVATIVES: 1: None 2: HCL 3: HN03 4: H2SO4 5: NAOH 6: Other Comments:	one 2: HCL 3: HN03	3. 4: H2SO4. 5: NAOH	ct EF: Encore Freezer NH 6: Other Comments:	e Freezer			
pH of waters checked excluding volatiles pH of soils N/A	cluding volatiles	,					
Delivery method: Courier.	rier:	اندا		COOLER TEMP:	6	COOLER TEMP:	MP:
					Form: S	M012, Rev.07/2	8/06, QAO

T18592: Chain of Custody Page 3 of 3





**GC** Volatiles

5

QC Data Summaries

### Includes the following where applicable:

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

Account:

MWHSLCUT Montgomery Watson

Project:

Blanco North Flare Pit

Sample	File ID	DF	Analyzed	Ву	Prep Date	Prep Batch	Analytical Batch
GKK1173-MB	KK022345.	D 1	09/02/07	LJ	n/a	n/a	GKK1173
ŀ							•

The QC reported here applies to the following samples:

Method: SW846 8021B

T18592-1, T18592-2, T18592-3, T18592-4, T18592-5, T18592-6

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 1.0 2.0 1.0	0.21 0.35 0.23 0.55 0.55 0.66	ug/l ug/l ug/l ug/l ug/l ug/l
CAS No.	Surrogate Recoveries		Limit	ts	
460-00-4 98-08-8	4-Bromofluorobenzene aaa-Trifluorotoluene	83% 86%	61-12 50-13		•



Blank Spike Summary Job Number: T18592

Account:

**MWHSLCUT Montgomery Watson** 

Project:

Blanco North Flare Pit

Sample	File ID	<b>DF</b>	<b>Analyzed</b> 09/02/07	By	Prep Date	Prep Batch	Analytical Batch
GKK1173-BS	KK022346	5.D 1		LJ	n/a	n/a	GKK1173

The QC reported here applies to the following samples:

Method: SW846 8021B

T18592-1, T18592-2, T18592-3, T18592-4, T18592-5, T18592-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	20	20.1	101	79-122
100-41-4	Ethylbenzene	20	17.3	87	80-118
108-88-3	Toluene	20	18.5	93	78-120
1330-20-7	Xylenes (total)	60	54.2	90	80-120
95-47-6	o-Xylene	20	18.6	93	80-121
	m,p-Xylene	40	35.6	89	79-120
CAS No.	Surrogate Recoveries	BSP	Liı	mits	
460-00-4	4-Bromofluorobenzene	103%	61-	-125%	
98-08-8	aaa-Trifluorotoluene	109%	50	-139%	



Account:

MWHSLCUT Montgomery Watson

Project:

Blanco North Flare Pit

Sample	File ID DI	F Analyzed	Ву	Prep Date	Prep Batch	Analytical Batch
T18592-4MS	KK022356.D1	09/02/07	LĴ	n/a	n/a	GKK1173
T18592-4MSD	KK022357.D1	09/02/07	LJ	n/a	n/a	GKK1173
T18592-4	KK022349.D1	09/02/07	LJ	n/a	n/a	GKK1173

The QC reported here applies to the following samples:

Method: SW846 8021B

T18592-1, T18592-2, T18592-3, T18592-4, T18592-5, T18592-6

CAS No.	Compound	T18592-4 ug/l Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2 100-41-4	Benzene Ethylbenzene	ND ND	20 20	21.7 19.7	109 99	22.4 19.7	112 99	3	63-140/20 74-130/20
108-88-3 1330-20-7 95-47-6	Toluene Xylenes (total) o-Xylene	ND ND ND	20 60 20	20.5 61.5 20.6	103 103 103	21.2 61.2 20.7	106 102 104	3 0 0	76-129/20 75-130/20 78-128/20
	m,p-Xylene	ND	40	40.9	102	40.4	101	1	75-129/20
CAS No.	Surrogate Recoveries	MS	MSD	<b>T</b> 1	8592-4	Limits			
460-00-4 98-08-8	4-Bromofluorobenzene aaa-Trifluorotoluene	119% 114%	108% 110%	829 909		61-1259 50-1399	-		



# DATA VERIFICATION WORKSHEET (Page 1 of 2)

Analytical Method/Analytes: _	SW-846 8021B (BTEX)	Sample Collection Date(s):	08/22/07
Laboratory: _	Accutest	MWH Job Number:	SJRB
	·		
Batch Identification:	T18592	Matrix:	Water
MS/MSD Parent(s) <sup>(a)</sup> : _		Field Replicate Parent(s):	None
Verification Complete:	Ciaig Moore _ 09	/28/07	
vermeation complete.		(Date/Signature)	

Foot Notes	Site ID	Sample ID	Lab. ID	Hits (Y/N)	Quals.	Comments
None	SJRB	220807TB01	T18592-1	N	None	
1	SJRB	MW-23	T18592-2	Y	] ] ] ]	Toluene @ 14.5 μg/l Ethylbenzene @ 172 μg/l Xylenes (total) @ 855 μg/l o-Xylene @ 36.9 μg/l m.p-Xylene @ 818 μg/l
None	SJRB	MW-31	T18592-3	Y	None	
None	SJRB	MW-33	T18592-4	N	None	
None	SJRB	MW-27	T18592-5	Y	None	
None	SJRB	MW-26	T18592-6	N	None	
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## DATA VERIFICATION WORKSHEET (Page 2 of 2)

Analytical Method:	SW-846 8021B (BTEX)	MWH Job Number:	SJRB	_
Laboratory: _	Accutest	Batch Identification:	T18592	

Verification Criteria								•
Sample ID	ТВ	MW-23	MW-31	MW-33	MW-27	MW-26	Ī	
Lab ID	T18592-1	T18592-2	T18592-3	T18592-4	T18592-5	T18592-6		
Holding Time	A	A	A	A	A	Α		
Analyte List	А	A	Α	Α	A	A		
Reporting Limits	А	A	A	A	A	А		
Surrogate Spike Recovery	A	A <sup>1</sup>	Α	A	A	A		
Trip Blank	N/A	A	Α	A	A	Α		
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		_
lnitial 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	A	Α	A	Α	A	Α.		
Laboratory Control Sample (LCS)	A	A	Α	Α	A	A		
Laboratory Control Sample Duplicate (LCSD)	N	N	N	N	N	N		
Matrix Spike/Matrix Spike Dup. (MS/MSD)	N/A	N/A	N/A	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	A		
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

### **NOTES:**

1) Surrogate recoveries high for 4-bromofluorobenzene (131%[61-125%]) and aaa-trifluorotoluene (155% [50-139]). Qualify associated detected analytes with "J" indicating that the data are estimated with a potential high bias.