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Via Federal Express

October 20, 2004

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OIL CONSERVATION DIVISION

Mr. William C. Olson
New Mexico Oil Conservation Division
1220 St. Francis Dr.
Santa Fe, NM 87504

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

Dear Mr. Olson;

El Paso Field Services (EPFS) hereby submits the enclosed annual report "2004 Blanco North Flare Pit Annual Report". The enclosed report details sparge system operation and maintenance and groundwater sampling for the fourth quarter 2003 through third quarter 2004.

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

Sincerely,

Scott T. Pope

Scott T. Pope, P.G.
Senior Environmental Scientist

Enclosures: as stated

xc: Mr. Denny Foust, NMOCD, Aztec - w / enclosures; **Via Federal Express**

Prepared for:

El Paso Field Services
2 North Nevada
Colorado Springs, Colorado 80903

FINAL
2004 BLANCO NORTH FLARE PIT ANNUAL REPORT

SAN JUAN COUNTY, NEW MEXICO

October 2004

Prepared by:

MWH
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AS	air sparging
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene and total xylenes
cfm	cubic feet per minute
EPFS	El Paso Field Services
mg/L	milligrams per liter
µg/L	micrograms per liter
NMOCD	New Mexico Oil Conservation Division
NMWQCC	New Mexico Water Quality Control Commission
psi	pounds per square inch

1.0 INTRODUCTION

This *2004 Blanco North Flare Pit Annual Report* has been prepared for El Paso Field Services (EPFS) 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 2003 through September 2004. Data collected prior to this period, free-product removal data, and construction details of the AS system are included in the *2003 Blanco North Flare Pit Pilot Air Sparging System Report* (MWH, 2003a) (2003 AS System Report). An evaluation of the AS system and recommendations for future activities are also included in this report.

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

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

2.0 REMEDIAL ACTIVITIES

2.1 AIR SPARGING SYSTEM OPERATION

EPFS is currently operating an AS system in the vicinity of the impacted groundwater to remediate dissolved-phase hydrocarbon contamination and reduce BTEX concentrations to below NMWQCC standards.

In December 2002, an AS well, SW-1, was installed approximately 25 feet upgradient (north) of monitoring well MW-26 as shown on Figure 1, *Blanco Plant Site Layout.* Details of the sparging well construction, including the geologic borelog and monitoring well installation report is included in the 2003 AS System Report. The AS system was instrumented and prepared for operation and testing during January/February 2003. Operation of the AS system was delayed during initiation of free-product removal in MW-26 in April/May 2003, as described further below. The AS system operation was initiated in June 2003, and the system has been continuously operating since start-up, with the exception of minor periods of down-time due to system failures, and scheduled shut-downs for the purpose of groundwater monitoring. Air injection has been conducted on a 12-hour off/on cycle with 5 to 9 cubic feet per minute (cfm) of air injection into the well at 13 to 16 pounds per square inch (psi) of pressure.

During system operation, bi-weekly operation and maintenance visits were made to the Site. Air pressure measurements were collected at each well head using magnehelic gauges, and groundwater field parameters (including water levels, pH, temperature, specific conductance and dissolved oxygen) were monitored. 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 2003 and September 2004 are included in Appendix A, and selected data are summarized in Table 2.1, *AS System Operation and Monitoring Data (February 2003 – September 2004).* As shown in this table, the air pressure and dissolved oxygen content data indicate that there has been good communication between the AS well (SW-1) and wells MW-26 and MW-19, although the amount of influence in terms of both induced air pressures and dissolved oxygen concentrations has decreased in 2004. Effects of the AS system are also observed in wells MW-24 and MW-27.

2.2 FREE-PRODUCT REMOVAL

During drilling and installation of the AS well in December 2002, free-product was discovered in well MW-26. The nearby monitoring wells were checked for the presence of free-product; none was encountered in any of the other existing wells or the new AS well. In December 2002, a total of approximately 4.5 gallons of water/free-product was hand bailed from MW-26. On April 22, 2003, approximately 2 feet of free-product was measured, and in late-April a skimmer pump was installed in MW-26 for free-product removal. Between April and June 2003, the skimmer pump removed an additional 3.1 gallons of free-product. No additional free-product has been measured at the Site since June 2003.

2.3 GROUNDWATER REMEDIATION BY AIR SPARGING

The purpose of the groundwater monitoring program at the Site is to evaluate the effectiveness of the AS system for groundwater hydrocarbon remediation. Since the 2003 AS System Report was submitted, groundwater monitoring has been conducted at the six monitoring wells in the North Flare Pit area (MW-2, MW-19, MW-23, MW-24, MW-26 and MW-27) during December 2003, May 2004 and August 2004. (Groundwater monitoring at the Site during the first quarter of 2004 was inadvertently missed.) Forty-eight hours prior to each sampling event, the AS system was shut–down to ensure natural groundwater conditions were being evaluated. During each sampling event, groundwater levels and field parameters (pH, temperature, specific conductance and dissolved oxygen) were measured, and samples were analyzed for BTEX concentrations. Groundwater sample collection field forms are attached in Appendix B. Samples were not collected from MW-2 or MW-24 during any of the sampling rounds because the wells were either dry or bailed dry. In August 2004, the water level could not be measured in MW-19 because the water level probe could not pass an obstruction in the casing; however, a grab sample was collected from this well using a small-diameter bailer and submitted for analysis.

Analytical results from these three sampling rounds are presented with historic data in Table 2.2, *Groundwater Monitoring Analytical Data (June 1991 – August 2004).* Laboratory analytical reports are attached in Appendix C. Benzene concentrations in groundwater for each of the recent sampling events are presented on site maps in Figures 2 through 4, *Benzene Concentrations in Groundwater.* These maps also present the groundwater flow direction based on water levels measured during the sampling event. Figure 5, *Historic Benzene Concentrations in Groundwater, 1991 – 2004*, presents trends in historic benzene concentrations in wells MW-19, MW-23, MW-26 and MW-27.

As shown in the data table and presented in the figures, groundwater BTEX concentrations in all of the monitoring wells decreased significantly immediately following AS system start-up in June 2003. Concentrations have continued to generally decrease in the wells with some fluctuations in concentrations. The largest decreases in concentrations have occurred in MW-19, where the benzene concentration was reduced from 10,100 micrograms per liter (µg/L) in June 2003 to 2,650 µg/L in August 2004 (an 74% reduction in concentration); and in MW-26, where free-product was present in June 2003, and the benzene concentration has declined to 30 µg/L in August 2004. These wells were also the locations where physical effects of the AS system (induced air pressure and dissolved oxygen concentrations) have been most pronounced. BTEX concentration decreases were also observed at MW-23 and MW-27 over this period. These data results indicate that the AS system continues to be effective for groundwater remediation at the Site.

3.0 RECOMMENDATIONS FOR FUTURE ACTIVITIES

EPFS recommends continued operation of the AS system with monthly operation and monitoring visits. Groundwater sampling will continue on a quarterly basis until four consecutive rounds of groundwater samples indicate BTEX concentrations below NMWQCC standards or until levels reach steady-state values. The groundwater monitoring schedule for 2004/2005 is presented in Table 3.1, *Groundwater Monitoring Schedule*. The next quarterly groundwater sampling event is scheduled for the 4th Quarter 2004. Results of the groundwater monitoring will be transmitted in an annual report, tentatively scheduled for submission to NMOCD in October 2005.

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.

Tables

MWH

TABLE 2.1 (Page 1 of 3)
AS SYSTEM OPERATION AND MONITORING DATA (FEBRUARY 2003 - SEPTEMBER 2004)
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	56.98	67.23	64.69	65.24
4/13/04	dry	64.2	57.075	67.11	65.09	65.47
4/26/04	nm	64.51	57.25	67.11	65.28	65.41
5/10/04	nm	65.50	57.03	67.11	65.17	65.64
5/17/04	dry	65.31	57.14	dry	65.54	65.74
6/1/04	dry	63.42	57.15	67.14	65.23	65.77
6/15/04	dry	64.78	57.07	67.1	65.58	65.85
7/14/04	dry	63.81	57.14	67.11	65.57	66.01
7/28/04	dry	63.75	57.08	67.11	65.59	66.06
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

dry - well was dry
nm - not measured
bgs - below ground surface

TABLE 2.1 (Page 2 of 3)
AS SYSTEM OPERATION AND MONITORING DATA (FEBRUARY 2003 - SEPTEMBER 2004)
BLANCO NORTH FLARE PIT - SAN JUAN COUNTY, NEW MEXICO

Date	Dissolved Oxygen (mg/L)					
	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	1.4	1.57
11/3/03	nm	1.15	1.76	nm	1.32	1.2
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	1.1	1.07	nm	0.98	1.23
2/13/04	nm	1.31	1.57	nm	2.5	0.93
2/27/04	nm	1.11	0.98	nm	2.98	0.79
3/12/04	nm	1.1	1.07	nm	0.62	0.98
3/26/04	nm	1.39	0.9	nm	2.17	0.84
4/13/04	nm	1.2	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	0.9
6/15/04	nm	1.02	0.8	nm	0.65	1.06
7/14/04	nm	0.91	0.66	nm	0.88	0.89
7/28/04	nm	nm	0.8	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

dry - well was dry
nm - not measured
bgs - below ground surface

TABLE 2.1 (Page 3 of 3)
AS SYSTEM OPERATION AND MONITORING DATA (FEBRUARY 2003 - SEPTEMBER 2004)
BLANCO NORTH FLARE PIT - SAN JUAN COUNTY, NEW MEXICO

Date	Induced Air Pressure at Well (inches H2O)					
	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

dry - well was dry
nm - not measured
bgs - below ground surface

TABLE 2.2
GROUNDWATER MONITORING ANALYTICAL DATA (JUNE 1991 - AUGUST 2004)
BLANCO NORTH FLARE PIT - SAN JUAN COUNTY, NEW MEXICO
(Page 1 of 2)

Monitoring Well	Sample Date	Static Water Level (ft BTOC)	Analytical Parameters			
			Benzene (ug/l)	Toluene (ug/l)	Ethylbenzene (ug/l)	Total Xylenes (ug/l)
		NMWQCC Standard:	10	750	750	620
MW-2	6/18/91		<0.5	<0.5	0.7	0.9
	2/23/93		<0.5	<0.5	<0.5	<0.5
	6/8/93		<2.0	<2.0	<2.0	<2.0
	9/29/93		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
	8/22/94		<2.0	<2.0	<2.0	<2.0
	11/9/00	dry	Well Dry - No Sample Collected			
	3/25/01	dry	Well Dry - No Sample Collected			
	6/2/03	dry	Well Dry - No Sample Collected			
	8/4/03	dry	Well Dry - No Sample Collected			
	9/3/03	dry	Well Dry - No Sample Collected			
	12/16/03	dry	Well Dry - No Sample Collected			
	5/17/04	dry	Well Dry - No Sample Collected			
	8/23/04	dry	Well Dry - No Sample Collected			
MW-19	6/19/91		8,600	210	<25.0	4,200
	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
	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
	12/18/03	65.02	8,130	<50	<50	<100
	5/17/04	65.31	7,410	<13	1,160	45
	8/23/04	nm	2,650	<25	303	<50
MW-23	9/26/92		2,770	221	7,690	6,090
	2/1/93		2,900	3,500	190	4,100
	2/25/93		2,900	190	3,500	4,100
	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
	5/13/94		3,530	255	852	2,150
	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
	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
	9/3/03	57.11	3,860	8	208	768
	12/18/03	65.14	5,080	<50	<50	219
	5/17/04	57.14	8,020	<13	208	1,490
	8/23/04	57.04	4,480	<25	160	966
MW-24	9/26/92		2,650	95	<50	1,340
	2/23/93		1,300	71	<12.5	600
	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 - No Sample Collected			
	8/4/03	66.91	Well Bailed Dry - No Sample Collected			
	9/3/03	dry	Well Dry - No Sample Collected			
	12/16/03	57.31	Well Bailed Dry - No Sample Collected			
	5/17/04	dry	Well Dry - No Sample Collected			
	8/23/04	67.11	Well Bailed Dry - No Sample Collected			

TABLE 2.2
GROUNDWATER MONITORING ANALYTICAL DATA (JUNE 1991 - AUGUST 2004)
BLANCO NORTH FLARE PIT - SAN JUAN COUNTY, NEW MEXICO

Monitoring Well	Sample Date	Static Water Level (ft BTOC)	Analytical Parameters: Benzene (ug/l)	Toluene (ug/l)	Ethylbenzene (ug/l)	Total Xylenes (ug/l)
		NMWQCC Standard:	10	750	750	620
MW-26	2/25/93		11,000	860	9,900	10,000
	6/10/93		12,180	470	7,504	4,959
	3/26/01	62.36	6,400	100	280	1,900
	5/30/02	63.68	6,200	50	270	1,300
	6/2/03	NA	Free-Product Recovery Pump in Well - No Sample Collected			
	8/4/03	65.19	Well Bailed Dry - No Sample Collected			
	9/4/03	65.00	538	10	139	466
	12/18/03	65.16	307	<0.5	158	685
	5/17/04	65.54	109	14	87	280
	8/23/04	66.11	30	<5	40	94
MW-27	2/26/93		9,100	470	5,700	4,900
	6/10/93		8,970	376	137	5,406
	9/30/93		13,200	402	420	3,100
	2/2/94		9,740	212	209	1,750
	5/14/94		10,100	358	180	4,500
	11/13/00	63.67	4,400	4,700	12,000	60,000
	3/26/01	63.38	420	27	260	1,600
	5/30/02	63.54	420	13	170	1,100
	6/2/03	64.41	192	<25	328	1,480
	8/4/03	63.72	116	<10	145	697
	9/3/03	64.80	137	17	274	1,240
	12/18/03	61.17	127	17	250	1,060
	5/17/04	65.74	96	28	317	1,600
	8/23/04	66.27	398	<25	<25	4,830

Notes:

1. Shaded data indicate exceedance of New Mexico Water Quality Control Commission's (NMWQCC) standards.
2. All detected concentrations are shown in bold type.

< Analyte detected below the reporting limit (RL). Value shown is the RL.

BTOC = Below Top of Casing
NA = Not Applicable

TABLE 3.1
GROUNDWATER MONITORING SCHEDULE
BLANCO NORTH FLARE PIT - SAN JUAN COUNTY, NEW MEXICO
EL PASO FIELD SERVICES

Monitoring Well	Monitoring Schedule	Analyses
North Flare Pit Area		
MW-2	Quarterly	Field Parameters, BTEX
MW-19	Quarterly	Field Parameters, BTEX
MW-23	Quarterly	Field Parameters, BTEX
MW-24	Quarterly	Field Parameters, BTEX
MW-26	Quarterly	Field Parameters, BTEX
MW-27	Quarterly	Field Parameters, BTEX

Notes:

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

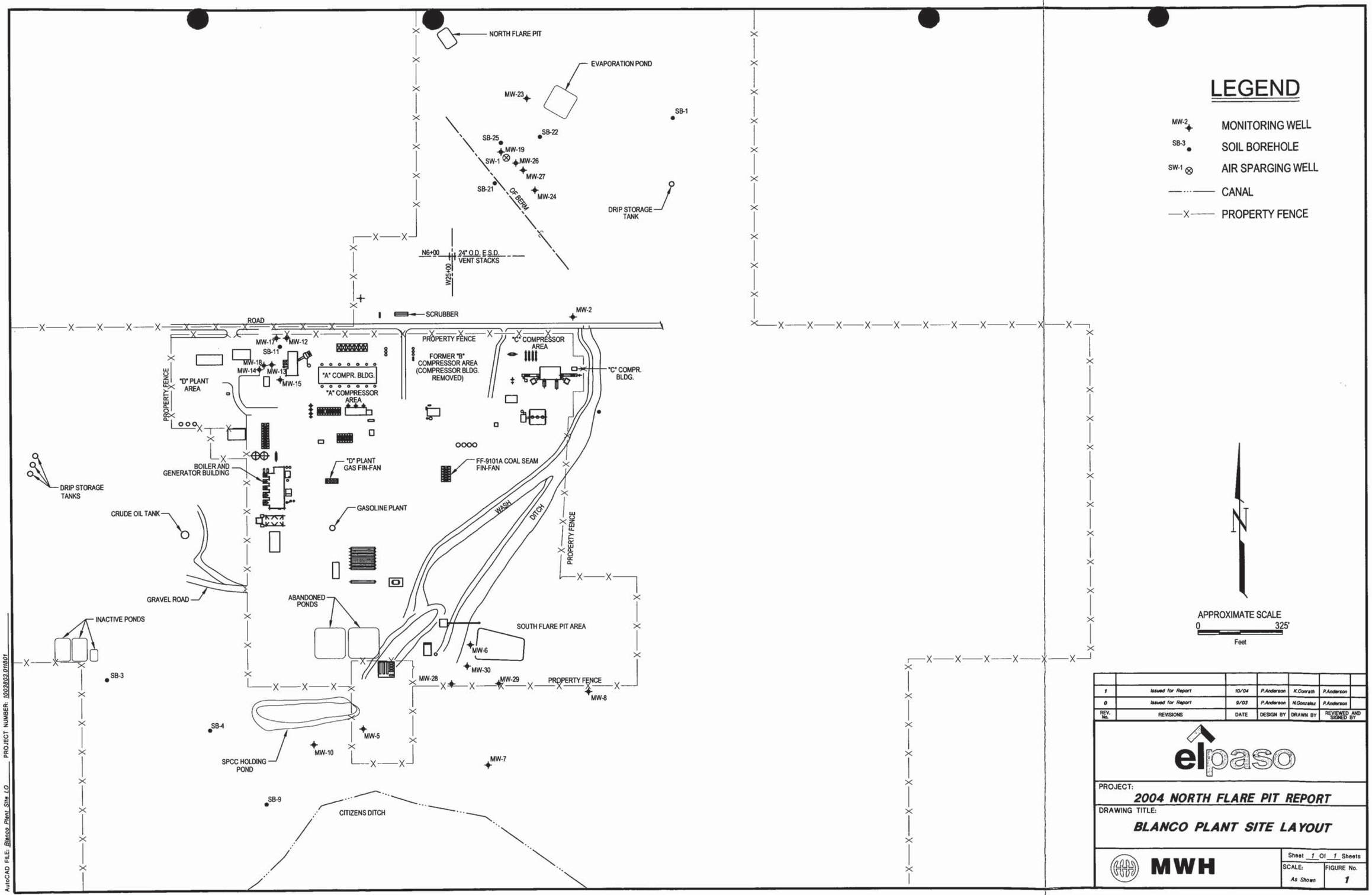
2. The next quarterly sampling event is scheduled for 4th Quarter 2004.

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

BTEX: Benzene, Toluene, Ethylbenzene and Total Xylenes.

Figures

MWH



LEGEND

- MW-2 — MONITORING WELL
- SB-3 — SOIL BOREHOLE
- SW-1 — AIR SPARGING WELL
- CANAL
- PROPERTY FENCE

N

APPROXIMATE SCALE
0 325'
Feet

REV. No.	REVISIONS	DATE	DESIGN BY	DRAWN BY	REVIEWED AND SIGNED BY
1	Issued for Report	10/04	P.Anderson	K.Conrath	P.Anderson
0	Issued for Report	9/03	P.Anderson	N.Gonzalez	P.Anderson

elpaso

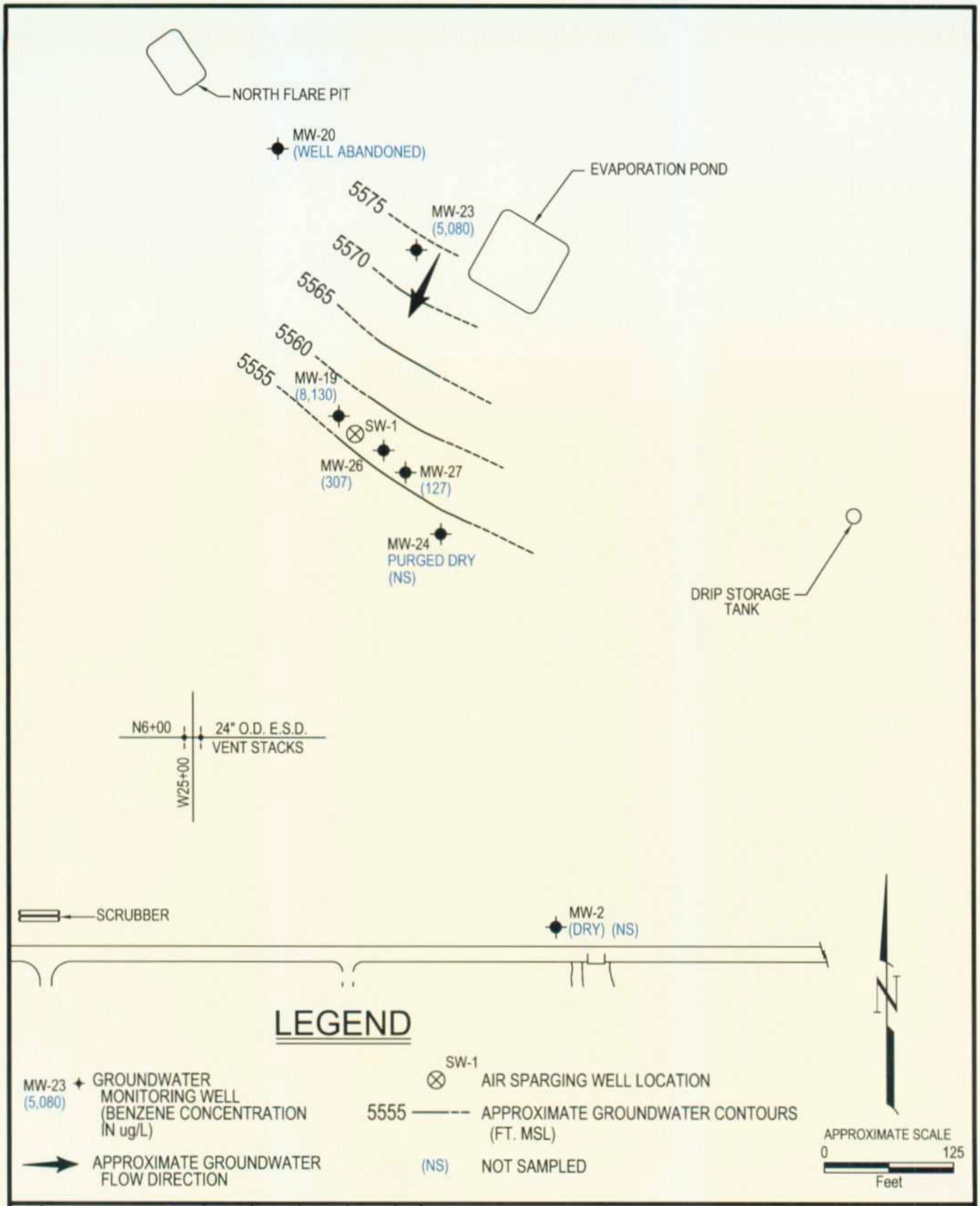
PROJECT:
2004 NORTH FLARE PIT REPORT

DRAWING TITLE:
BLANCO PLANT SITE LAYOUT

MWH

Sheet 1 Of 1 Sheets
SCALE: As Shown
FIGURE No. 1

AutoCAD FILE: Blanco Plant Site LO PROJECT NUMBER: 10038603.019801



REV No.	REVISIONS	REV. DATE	DESIGN BY	DRAWN BY	REVIEWED AND SIGNED BY
0	Issued for Report	9/03	P.Anderson	N.Gonzalez	P.Anderson

MWH

PROJECT No.: 1003803.011801

AutoCAD FILE: Benz conc GW Dec03

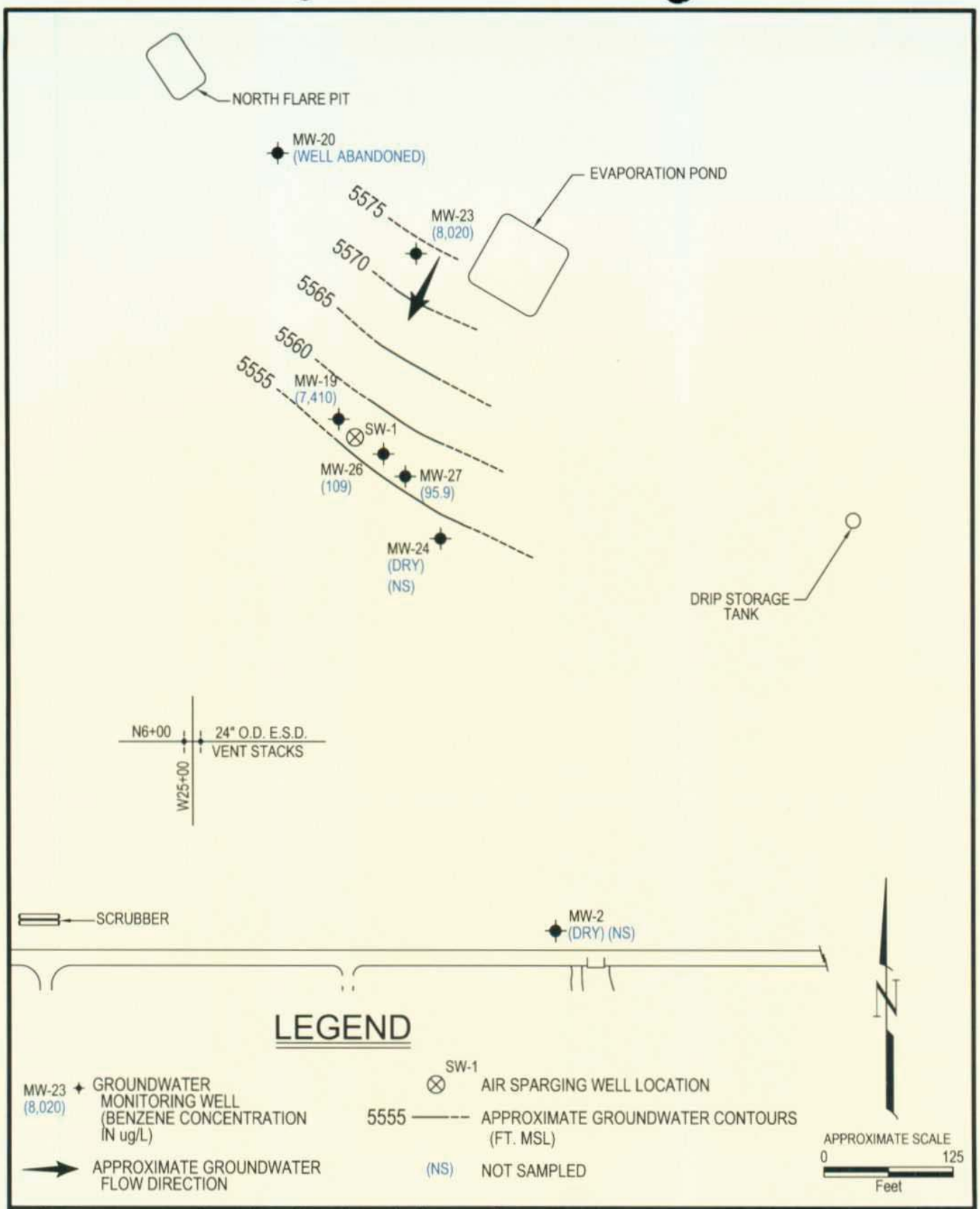
SCALE: As Shown

FIGURE No. 2

elpaso

2004 NORTH FLARE PIT REPORT

BENZENE CONCENTRATIONS IN GROUNDWATER, DECEMBER 2003



REV No.	REVISIONS	REV. DATE	DESIGN BY	DRAWN BY	REVIEWED AND SIGNED BY
0	Issued for Report	6/04	P.Anderson	K.Conrath	P.Anderson

MWH

PROJECT No.: 1003803.010501

AutoCAD FILE: Benz Conc GW May04

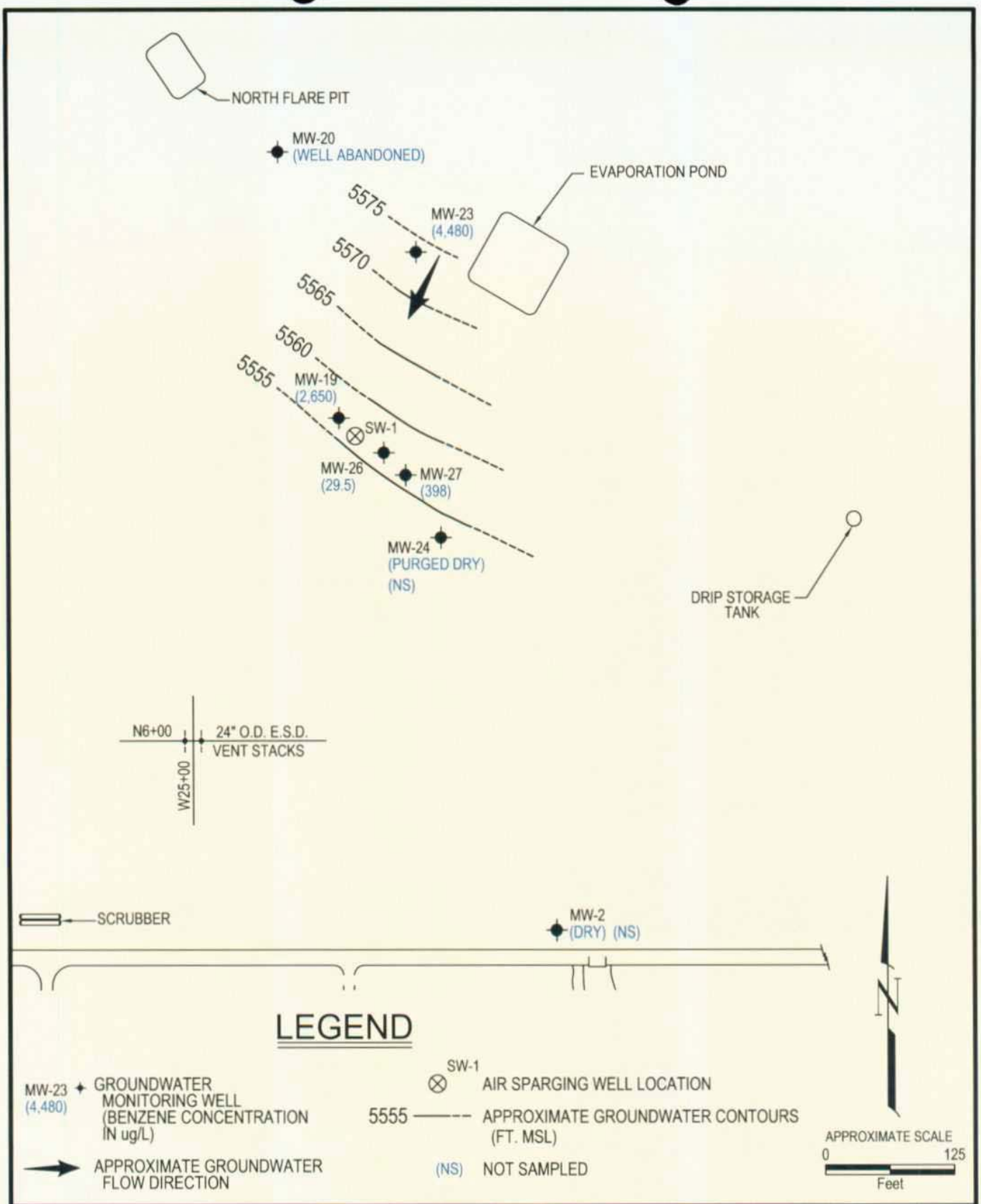
SCALE: As Shown

FIGURE No. 3

elpaso

2004 NORTH FLARE PIT REPORT

BENZENE CONCENTRATIONS IN GROUNDWATER, MAY 2004



REV No.	REVISIONS	REV. DATE	DESIGN BY	DRAWN BY	REVIEWED AND SIGNED BY
1	Issued for August 04 Report	9/04	P.Anderson	K.Conrath	P.Anderson
0	Issued for Report	5/04	P.Anderson	K.Conrath	P.Anderson

MWH

PROJECT No.: 1003803.019801

AutoCAD FILE: Benz Conc GW Aug 04

SCALE: As Shown

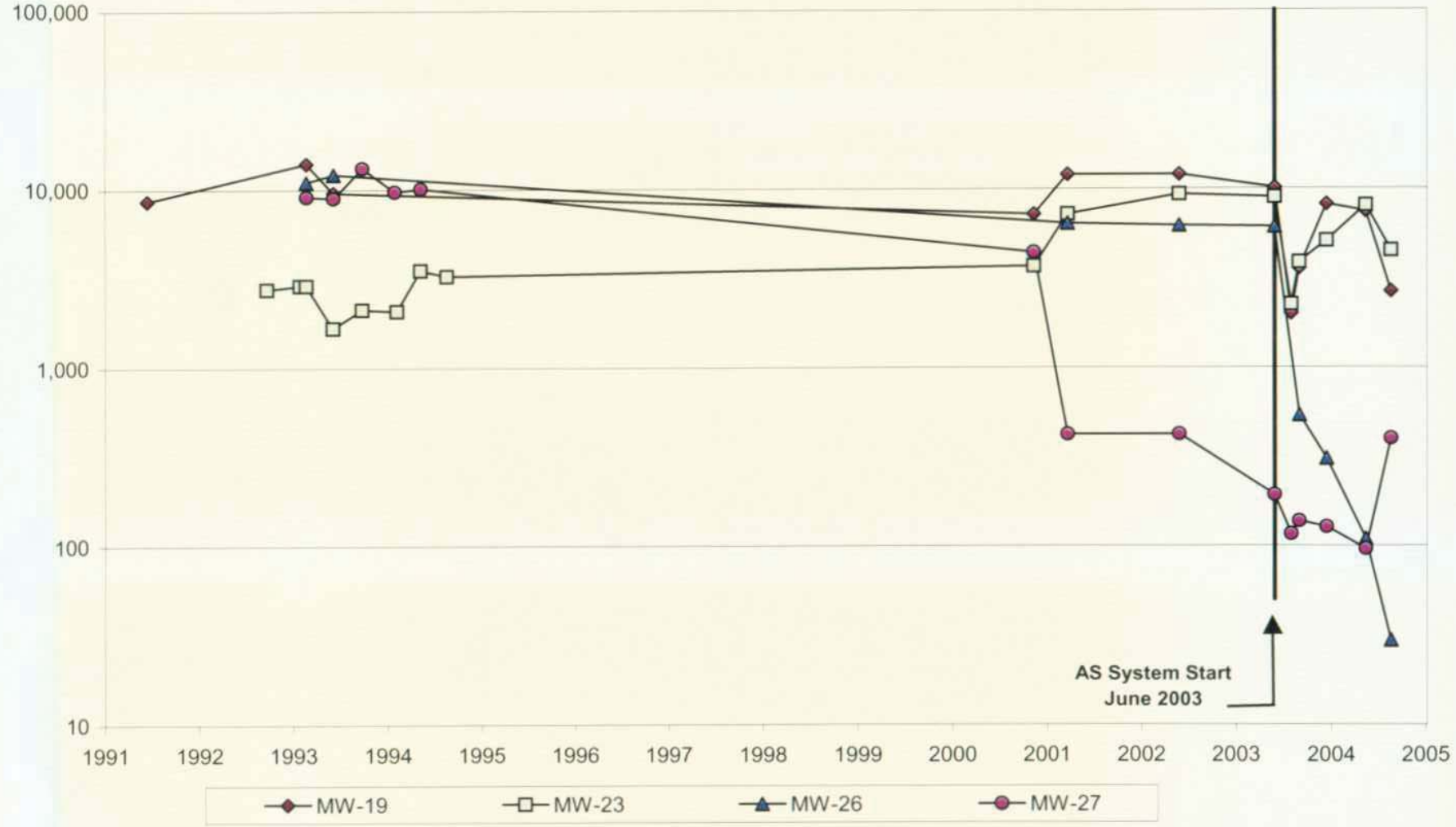
FIGURE No. 4

elpaso

2004 NORTH FLARE PIT REPORT

BENZENE CONCENTRATIONS IN GROUNDWATER, AUGUST 2004

FIGURE 5
Historic Benzene Concentrations in Groundwater, 1991 - 2004
2004 Blanco Plant North Flare Pit Annual Report



Appendix A

MWH

APPENDIX A
AS System Operation and Monitoring Reports

Martin Nee
PO Box 3861
Farmington, NM 87401-3861
(505) 334-2791
mjn@martinnee.com

Memo

To: Pam Anderson

From: Martin Nee

CC: File

Date: October 6, 2003

Re: Blanco North

10/6/03 1300 hrs. O&M site visit.

Well	Depth to Water from TOC Feet	pH	Temp C	Conductivity umhos/cm	Do mg/L	Pressure Inches Water
MW-23	57.07	6.90	21.0	>20,000	1.75	0.0
MW-24	67.11	6.79	22.2	7260	1.02	0.10
MW-27	64.82	6.89	22.0	9790	0.79	0.02
MW-19	64.58	6.97	22.4	>20,000	1.12	0.11
MW-26	64.62	7.56	20.4	14820	1.69	0.085

System is in the off cycle that started at 1200 hrs.

Martin Nee
PO Box 3861
Farmington, NM 87401-3861
(505) 334-2791
mjn@martinnee.com

Memo

To: Pam Anderson

From: Martin Nee

CC: File

Date: October 22, 2003

Re: Blanco North

10/21/03 0743 hrs. O&M site visit.

Well	Depth to Water from TOC Feet	pH	Temp C	Conductivity umhos/cm	Do mg/L	Pressure Inches Water
MW-23	57.16	6.89	15.4	>20,000	1.83	0.0
MW-24	67.15	na	na	na	na	0.0
MW-27	64.95	6.90	15.9	6890	1.57	0.25
MW-19	64.16	7.01	15.7	>20,000	1.07	2.6
MW-26	64.65	7.29	20.4	14010	1.40	3.25

Pressure at the compressor is 14 psi. Flow at the sparge well is 9 scfm. Site appears to have been graded along a pipeline running through the site near MW-24, possibly indicating construction. Could not collect enough water from MW-24 for field parameter measurements.

Martin Nee
PO Box 3861
Farmington, NM 87401-3861
(505) 334-2791
mjn@martinnee.com

Memo

To: Pam Anderson

From: Martin Nee

CC: File

Date: November 3, 2003

Re: Blanco North

11-3-03 1258 hrs. O&M site visit.

Well	Depth to Water from TOC Feet	pH	Temp C	Conductivity umhos/cm	Do mg/L	Pressure Inches Water
MW-23	56.99	7.29	17.1	>20,000	1.76	0
MW-24	67.17	na	na	na		0.03
MW-27	64.90	7.34	16.9	6390	1.20	0.0
MW-19	64.75	7.31	16.8	17950	1.15	0.03
MW-26	64.69	7.80	15.9	10740	1.32	0.07

System was in off cycle during site visit. Could not collect enough water from MW-24 for field parameter measurements.

Martin Nee
PO Box 3861
Farmington, NM 87401-3861
(505) 334-2791
mjn@martinnee.com

Memo

To: Pam Anderson

From: Martin Nee

CC: File

Date: November 17, 2003

Re: Blanco North

11-17-03 0745 hrs. O&M site visit.

Well	Depth to Water from TOC Feet	pH	Temp C	Conductivity umhos/cm	Do mg/L	Pressure Inches Water
MW-23	56.98	7.24	15.6	>20,000	0.91	0.0
MW-24	67.18	na	na	na		0.055
MW-27	64.95	7.36	15.7	10010	1.07	0.11
MW-19	64.07	7.16	16.1	<20,000	1.16	3.0
MW-26	64.63	7.82	14.9	15470	1.07	3.6

System pressure at compressor was 14 psi. Air flow was 9 scfm. Reset timer according to Daylight savings time.

Martin Nee
PO Box 3861
Farmington, NM 87401-3861
(505) 334-2791
mjn@martinnee.com

Memo

To: Pam Anderson

From: Martin Nee

CC: File

Date: December 1, 2003

Re: Blanco North

12-1-03 1027 hrs. O&M site visit.

Well	Depth to Water from TOC Feet	pH	Temp C	Conductivity umhos/cm	Do mg/L	Pressure Inches Water
MW-23	57.18	7.31	16.9	>20,000	1.27	0.0
MW-24	67.17	na	na	na		0.1
MW-27	65.03	7.36	16.7	12460	1.19	0.08
MW-19	64.29	7.21	17.4	<20,000	0.88	2.1
MW-26	64.77	7.87	16.6	19740	1.08	2.1

System pressure at compressor was 16 psi. Air flow was 9 scfm.

Martin Nee
PO Box 3861
Farmington, NM 87401-3861
(505) 334-2791
mjn@martinnee.com

Memo

To: Pam Anderson

From: Martin Nee

CC: File

Date: January 2, 2004

Re: Blanco North

1-2-04 1000 hrs. O&M site visit.

Well	Depth to Water from TOC Feet	pH	Temp C	Conductivity umhos/cm	Do mg/L	Pressure Inches Water
MW-23	57.04	7.42	15.3	>20,000	1.14	0.0
MW-24	67.20	na	na	na		0.06
MW-27	65.10	7.34	15.2	9180	1.07	0.12
MW-19	64.22	7.39	15.9	17910	1.12	3.0
MW-26	64.77	8.11	14.9	12450	1.65	2.1

System pressure at compressor was 16 psi. Air flow was 8.5 scfm.

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

Memo

To: Pam Anderson

From: Martin Nee

CC: File

Date: January 15, 2004

Re: Blanco North

1-15-04 1018 hrs. O&M site visit.

Well	Depth to Water from TOC Feet	pH	Temp C	Conductivity umhos/cm	Do mg/L	Pressure Inches Water
MW-23	55.98	7.37	15.3	>20,000	1.26	0.0
MW-24	67.15	na	na	na	na	0.04
MW-27	65.11	7.28	15.2	7920	1.16	0.06
MW-19	64.23	7.34	15.9	19360	1.04	2.1
MW-26	64.76	7.91	14.9	12680	0.44	3.2

System pressure at compressor was 15 psi. Air flow was 8.5 scfm.

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

Memo

To: Pam Anderson

From: Martin Nee

CC: File

Date: January 30, 2004

Re: Blanco North

1-30-04 0830 hrs. O&M site visit.

Well	Depth to Water from TOC Feet	pH	Temp C	Conductivity umhos/cm	Do mg/L	Pressure Inches Water
MW-23	57.08	6.94	15.3	>20,000	1.07	0.0
MW-24	67.11	na	na	na	na	0.07
MW-27	65.09	7.11	15.2	12120	1.23	0.025
MW-19	64.14	7.09	15.9	<20,000	1.10	2.0
MW-26	64.76	7.83	14.9	13910	0.98	3.1

System pressure at compressor was 13 psi. Air flow was 9 scfm.

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

Memo

To: Pam Anderson

From: Martin Nee

CC: File

Date: February 13, 2004

Re: Blanco North

2-13-04 0953 hrs. O&M site visit.

Well	Depth to Water from TOC Feet	pH	Temp C	Conductivity umhos/cm	Do mg/L	Pressure Inches Water
MW-23	57.09	6.92	16.5	>20,000	1.57	0.0
MW-24	67.12	na	na	na	na	0.085
MW-27	65.22	6.82	16.4	8580	0.93	0.16
MW-19	64.13	6.80	17.2	18110	1.31	3.1
MW-26	64.79	7.61	16.9	12490	2.50	3.5

System pressure at compressor was 13 psi. Air flow was 9 scfm.

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

Memo

To: Pam Anderson

From: Martin Nee

CC: File

Date: February 27, 2004

Re: Blanco North

2-27-04 1059 hrs. O&M site visit.

Well	Depth to Water from TOC Feet	pH	Temp C	Conductivity umhos/cm	Do mg/L	Pressure Inches Water
MW-23	56.99	6.84	16.3	18800	0.98	0.0
MW-24	67.12	na	na	na	na	0.13
MW-27	65.24	6.85	16.8	7780	0.79	0.24
MW-19	64.07	6.81	17.2	16200	1.11	3.0
MW-26	64.76	7.62	15.8	11920	2.98	3.2

System pressure at compressor was 14 psi. Air flow was 9 scfm.

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

Memo

To: Pam Anderson

From: Martin Nee

CC: File

Date: March 12, 2004

Re: Blanco North

3-12-04 1427 hrs. O&M site visit.

Well	Depth to Water from TOC Feet	pH	Temp C	Conductivity umhos/cm	Do mg/L	Pressure Inches Water
MW-23	56.96	6.95	17.3	16550	1.07	0.0
MW-24	67.11	na	na	na	na	0.115
MW-27	65.30	6.84	18.8	8850	0.98	0.08
MW-19	65.01	6.82	18.9	15660	1.10	.165
MW-26	65.06	7.89	17.8	11090	0.62	0.09

System was off during this visit.

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

Memo

To: Pam Anderson

From: Martin Nee

CC: File

Date: March 26, 2004

Re: Blanco North

3-26-04 0843 hrs. O&M site visit.

Well	Depth to Water from TOC Feet	pH	Temp C	Conductivity umhos/cm	Do mg/L	Pressure Inches Water
MW-23	56.98	6.87	16.4	17680	0.90	0
MW-24	67.23	na	na	na	na	.14
MW-27	65.24	6.75	16.7	8760	0.84	.18
MW-19	64.06	6.79	16.8	16100	1.39	3.0
MW-26	64.69	7.41	16.2	11820	2.17	3.2

System Pressure 14 psi, flow 9.0 scfm

Not enough water in mw-26 to gather data

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

Memo

To: Pam Anderson

From: Martin Nee

CC: File

Date: April 13, 2004

Re: Blanco North

4-12-04 0743 hrs. O&M site visit.

Well	Depth to Water from TOC Feet	pH	Temp C	Conductivity umhos/cm	Do mg/L	Pressure Inches Water
MW-23	57.075	6.88	15.0	17560	1.08	0
MW-24	67.11	na	na	na	na	-.02
MW-27	65.47	6.93	14.9	10230	1.07	.13
MW-19	64.20	6.88	15.9	16100	1.20	2.2
MW-26	65.09	7.74	15.4	14070	0.43	4.1

System Pressure 14 psi, flow 9.5scfm

Not enough water in mw-26 to gather data. Negative pressure at MW-23 may be due to atmospheric high pressure cell moving into area.

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

Memo

To: Pam Anderson

From: Martin Nee

CC: File

Date: April 26, 2004

Re: Blanco North

4-26-04 0702 hrs. O&M site visit.

Well	Depth to Water from TOC Feet	pH	Temp C	Conductivity umhos/cm	Do mg/L	Pressure Inches Water
MW-23	57.25	6.99	15.0	<20000	1.15	0
MW-24	67.11	na	na	na	na	-.025
MW-27	65.41	7.03	15.8	10350	0.86	.08
MW-19	64.51	6.93	16.8	<20000	1.03	2.2
MW-26	65.28	7.74	16.4	15010	0.36	1.9

System Pressure 14 psi, flow 8 scfm

Not enough water in mw-26 to gather data. Still negative pressure at MW-23.

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

Memo

To: Pam Anderson

From: Martin Nee

CC: File

Date: May 10, 2004

Re: Blanco North

5-10-04 1034 hrs. O&M site visit.

Well	Depth to Water from TOC Feet	pH	Temp C	Conductivity umhos/cm	Do mg/L	Pressure Inches Water
MW-23	57.03	6.22	17.5	12970	0.92	0
MW-24	67.11	na	na	na	na	0.11
MW-27	65.64	6.28	18.7	7840	1.18	.18
MW-19	64.50	6.11	18.5	17610	0.68	2.4
MW-26	65.17	6.91	15.4	9460	0.80	2.0

System Pressure 14 psi, flow 8 scfm

Not enough water in mw-26 to gather data.

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

Memo

To: Pam Anderson

From: Martin Nee

CC: File

Date: June 1, 2004

Re: Blanco North

6-1-04 953 hrs. O&M site visit.

Well	Depth to Water from TOC Feet	pH	Temp C	Conductivity umhos/cm	Do mg/L	Pressure Inches Water
MW-23	57.15	6.27	19.2	12220	0.81	0
MW-24	67.14	na	na	na	na	0.06
MW-27	65.77	6.20	21.4	5360	0.9	.11
MW-19	63.42	6.48	20.5	12290	1.05	5.6
MW-26	65.23	7.16	20.2	7190	2.22	8.3

System Pressure 14 psi, flow 6 scfm

Not enough water in mw-26 to gather data.

Note: large increases in pressures at MW-19 and MW-26 and lower flow at injection well

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

Memo

To: Pam Anderson

From: Martin Nee

CC: File

Date: June 15, 2004

Re: Blanco North

6-15-04 805 hrs. O&M site visit.

Well	Depth to Water from TOC Feet	pH	Temp C	Conductivity umhos/cm	Do mg/L	Pressure Inches Water
MW-23	57.07	6.29	20.5	8460	0.80	0
MW-24	67.10	na	na	na	na	-0.04
MW-27	65.85	6.21	19.61	4050	1.06	0.0
MW-19	64.78	6.38	19.44	12090	1.02	4.2
MW-26	65.58	6.93	19.56	7350	0.65	6.6

System Pressure 14 psi, flow 7 scfm

Not enough water in mw-26 to gather data. Apparently the electricity to the site was interrupted because the timer clock read 2030 hrs and the system was off. I reset the timer clock and started the system prior to taking readings.

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

Memo

To: Pam Anderson

From: Martin Nee

CC: File

Date: July 14, 2004

Re: Blanco North

7-14-04 805 hrs. O&M site visit.

Well	Depth to Water from TOC Feet	pH	Temp C	Conductivity umhos/cm	Do mg/L	Pressure Inches Water
MW-23	57.14	6.92	20.22	<20000	0.66	0
MW-24	67.11	na	na	na	na	.01
MW-27	66.01	6.78	22.33	6810	0.89	0.12
MW-19	63.81	6.86	21.5	17080	0.91	4.7
MW-26	65.57	7.39	20.50	9870	0.88	7.0

System Pressure 14 psi, flow 7 scfm

Not enough water in mw-26 to gather data.

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

Memo

To: Pam Anderson

From: Martin Nee

CC: File

Date: July 28, 2004

Re: Blanco North

7-14-04 805 hrs. O&M site visit.

Well	Depth to Water from TOC Feet	pH	Temp C	Conductivity umhos/cm	Do mg/L	Pressure Inches Water
MW-23	57.08	7.07	20.22	<20000	0.80	0
MW-24	67.11	na	na	na	na	-.01
MW-27	66.06	6.83	22.33	6810	0.56	0.15
MW-19	63.75	na	na	na	na	4.8
MW-26	65.59	7.46	20.50	9870	3.38	6.0

System Pressure 14 psi, flow 7.5 scfm

Not enough water in mw-26 to gather data. MW-19 is obstructed. Cannot get 1.6-inch bailer past 27.2 feet BTOC. Interface probe will pass but snags at 27.2 '. Tried a new straight bailer but it would not pass. Tried looking down well with a flashlight but could not view far enough. Will bring a more powerful flashlight next visit and examine the well again.

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

Memo

To: Pam Anderson

From: Martin Nee

CC: File

Date: August 17, 2004

Re: Blanco North

8-17-04 0726 hrs. O&M site visit.

Well	Depth to Water from TOC Feet	pH	Temp C	Conductivity umhos/cm	Do mg/L	Pressure Inches Water
MW-23	57.17	6.82	16.51	19040	0.85	0
MW-24	67.05	na	na	na	na	0.02
MW-27	66.22	6.77	17.94	6960	0.78	.07
MW-19	na	na	na	na	na	3.2
MW-26	65.78	7.18	18.00	9740	1.77	6.0

System Pressure 14 psi, flow 7.5 scfm

Not enough water in mw-26 to gather data. MW-19 is obstructed. Cannot get bailer or interface probe into well. Well is bowed and cannot see to obstruction..

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

Memo

To: Pam Anderson

From: Martin Nee

CC: File

Date: September 8, 2004

Re: Blanco North

9-8-04 0830 hrs. O&M site visit.

Well	Depth to Water from TOC Feet	pH	Temp C	Conductivity umhos/cm	Do mg/L	Pressure Inches Water
MW-23	57.18	6.92	16.00	17960	0.87	0
MW-24	67.11	na	na	na	na	-0.01
MW-27	66.30	6.90	17.72	12100	1.23	.03
MW-19	na	7.01	18.94	>20000	1.53	4.2
MW-26	65.65	7.48	19.28	16320	0.71	5.3

System Pressure 14 psi, flow 7.5 scfm

System was off when arrived at site. Clock read 10 pm. The electricity must have been off for some time. Reset clock and started system immediately before collecting data..

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

Memo

To: Pam Anderson

From: Martin Nee

CC: File

Date: September 23, 2004

Re: Blanco North

9-23-04 0800 hrs. O&M site visit.

Well	Depth to Water from TOC Feet	pH	Temp C	Conductivity umhos/cm	Do mg/L	Pressure Inches Water
MW-23	57.23	6.95	14.02	>20000	0.98	0
MW-24	67.12	na	na	na	na	0.02
MW-27	66.32	6.90	14.33	10790	1.22	.0
MW-19	na	7.15	15.06	>20000	1.86	2.2
MW-26	65.77	7.41	18.06	16510	3.35	4.7

System Pressure 14 psi, flow 7.0 scfm

System was off when I arrived at site. The clock read 7 am. The electricity came on at approximately 9:30 just prior to taking the readings at MW-19 and MW-26. Reset clock before leaving.

Appendix B

MWH

APPENDIX B
Groundwater Sampling Field Forms

Groundwater Sampling Field Forms – December 2003

WATER LEVEL DATA

Martin J. Nee
PO Box 3861
Farmington, NM 87499-3861
(505)334-2791 (505)320-9675cell

Project Name San Juan Basin Ground Water **Project No.** 30001.0
Project Manager MJN
Client Company MWH **Date** 12-16-03
Site Name Blanco North Flare Pit

Well	Time	Depth to Product (ft)	Depth to Water (ft)	Comments
MW-2	1117	-	-	well is dry
MW-19		-	65.14	
MW-23		-	57.31	
MW-24		-	67.165	
MW-26		-	65.02	
MW-27		-	65.16	
MW-5		-		
MW-6		-		
MW-7		-		
MW-8		-		
MW-28		-		
MW-29		-		
MW-30		-		
MW-12		-		
MW-13		-		
MW-14		-		
MW-15		-		

Comments

Signature: *Martin J. Nee* Date: December 16, 2003

WELL DEVELOPMENT AND SAMPLING LOG

Project No.: 30001.0 Project Name: Blanco NFP Client: MWH/EL Paso
Location: Blanco NFP Well No: MW-19 Development **Sampling**
Project Manager MJN Date 12/16/03 Start Time 1259 Weather sunny 20s
Depth to Water 65.14 Depth to Product na Product Thickness na Measuring Point TOC
Water Column Height 2.19 Well Dia. 2"

Sampling Method: Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Other ☐
Bottom Valve Bailer x Double Check Valve Bailer ☐ Stainless-Steel Kemmerer ☐

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

Gal/ft x ft of water	Water Volume in Well		Gal/oz to be removed
	Gallons	Ounces	
2.19 x .16	0.35 x 3	44.8 x 3	134.55

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (ounces)	Comments/ Flow rate
1306	7.22	17100	55.8				26	gray, HC odor
	7.27	18320	58.1				36	gray, HC odor
	7.28	18140	58.7				44	gray, HC odor
1317	7.39	19090	57.5		1.77		52	well has bailed dry

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
1317	7.39	19090	57.5		1.77			52	well has bailed dry

COMMENTS: Well bailed dry, returned to sample later

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

Water Disposal Kutz Sample ID Blanco NFP MW-19 Sample Time 1427

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

MS/MSD _____ BD _____ BD Name/Time _____ TB 161203tb02

WELL DEVELOPMENT AND SAMPLING LOG

Project No.: 30001.0 Project Name: Blanco NFP Client: MWH/EL Paso
Location: Blanco NFP Well No: MW-23 Development **Sampling**
Project Manager MJN Date 12/16/03 Start Time 1334 Weather sunny 20s
Depth to Water 57.31 Depth to Product na Product Thickness na Measuring Point TOC
Water Column Height 9.535 Well Dia. 4"

Sampling Method: Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Other ☐
Bottom Valve Bailer x Double Check Valve Bailer ☐ Stainless-Steel Kemmerer ☐

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

Gal/ft x ft of water	Water Volume in Well		Gal/oz to be removed
	Gallons	Ounces	
9.53 x .65	6.2 x 3		18.60

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gallons)	Comments/ Flow rate
1341	**7.30**	**>20,000**	**53.4**				**1**	**clear, sheen**
	7.25	**>20,000**	**55.7**				**2**	**Gray**
	7.26	**>20,000**	**56.9**				**3**	**Gray**
	7.31	**>20,000**	**56.5**				**7.3**	**Gray**
1406	**7.47**	**>20,000**	**55.5**		**1.36**		**8.11**	**Well is dry**

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
1406	**7.47**	**>20,000**	**55.5**		**1.36**			**8.11**	**Well is dry**

COMMENTS:

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

Water Disposal Kutz Sample ID Blanco NFP MW-23 Sample Time 1445

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

*MS/MSD*_____ BD_____ BD Name/Time_____ TB 161203tb02

WELL DEVELOPMENT AND SAMPLING LOG

Project No.: 30001.0 Project Name: Blanco NFP Client: MWH/EL Paso
Location: Blanco NFP Well No: MW-24 Development **Sampling**
Project Manager MJN Date 12/16/03 Start Time 1043 Weather sunny 20s
Depth to Water 67.165 Depth to Product na Product Thickness na Measuring Point TOC
Water Column Height 0.055 Well Dia. 4"

Sampling Method: Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Other ☐
Bottom Valve Bailer x Double Check Valve Bailer ☐ Stainless-Steel Kemmerer ☐

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

Gal/ft x ft of water	Water Volume in Well		Gal/oz to be removed
	gallons	Ounces	
0.055 x .65	0.035 x 3	4.57	

Time (military)	pH (su)	SC (umhos/cm)	Temp (°C)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gallons)	Comments/ Flow rate

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate

COMMENTS: Not enough water in well to purge and sample

INSTRUMENTATION: pH Meter X _____ Temperature Meter x
DO Monitor _____ Other _____
Conductivity Meter X _____
Water Disposal Kutz Sample ID_____ Sample Time_____
BTEX VOCs Alkalinity TDS Cations Anions Nitrate Nitrite Ammonia TKN NMWQCC Metals Total Phosphorus

MS/MSD_____ BD_____ BD Name/Time_____ TB_____

WELL DEVELOPMENT AND SAMPLING LOG

Project No.: 30001.0 Project Name: Blanco NFP Client: MWH/EL Paso
Location: Blanco NFP Well No: MW-26 Development **Sampling**
Project Manager MJN Date 12/16/03 Start Time 1134 Weather clear 20s
Depth to Water 65.02 Depth to Product na Product Thickness na Measuring Point TOC
Water Column Height 2.85 Well Dia. 4"

Sampling Method: Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Other ☐
Bottom Valve Bailer x Double Check Valve Bailer ☐ Stainless-Steel Kemmerer ☐

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

Gal/ft x ft of water	Water Volume in Well		Gal/oz to be removed
	Gallons	Ounces	
2.85 x .65	1.85 x 3	237	5.56

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (ounces)	Comments/ Flow rate
1143	7.94	11960	57.5				0.5	gray translucent, first bailer is not full, strong HC odor
	7.87	12030	58.8				0.83	gray translucent, HC odor
	7.86	12300	59.2				1.08	gray translucent, HC odor
	7.88	12540	59.9				1.25	gray translucent, HC odor
1208	7.99	12760	61.0		0.55		1.55	well bailed dry, will return later to sample

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
1208	7.99	12760	61.0		0.55			1.55	well bailed dry, will return later to sample

COMMENTS: Well bailed dry,well did not recover 3 hrs after bailing will return next day for sample

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

Water Disposal Kutz Sample ID Blanco NFP MW-26 Sample Time _____

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

MS/MSD _____ BD _____ BD Name/Time _____ TB 161203tb02

WELL DEVELOPMENT AND SAMPLING LOG

Project No.: 30001.0 Project Name: Blanco NFP Client: MWH/EL Paso
Location: Blanco NFP Well No: MW-27 Development **Sampling**
Project Manager MJN Date 12/16/03 Start Time 1220 Weather sunny 20s
Depth to Water 65.16 Depth to Product na Product Thickness na Measuring Point TOC
Water Column Height 4.12 Well Dia. 2"

Sampling Method: Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Other ☐
Bottom Valve Bailer x Double Check Valve Bailer ☐ Stainless-Steel Kemmerer ☐

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

Gal/ft x ft of water	Water Volume in Well		Gal/oz to be removed
	Gallons	Ounces	
4.12 x .16	0.66 x 3	84.48 x 3	253.00

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (ounces)	Comments/ Flow rate
1230	7.36	7130	55.5				32	Gray, strong HC odor
	7.29	8120	57.4				64	Gray, strong HC odor
	7.30	8140	58.2				96	Gray, strong HC odor
	7.37	8110	58.0				124	Gray, strong HC odor
	7.39	7920	57.5				144	Gray, strong HC odor
1245	7.48	8080	57.4		1.31		168	well is dry, will return later to sample

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
1245	7.48	8080	57.4		1.31			168	well is dry, will return later to sample

COMMENTS: Well bailed dry, returned to sample 1.5 hrs later.

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

Water Disposal Kutz Sample ID Blanco NFP MW-27 Sample Time 1416
BTEX VOCs Alkalinity TDS Cations Anions Nitrate Nitrite Ammonia TKN NMWQCC Metals Total Phosphorus

MS/MSD _____ BD _____ BD Name/Time _____ TB 161203tb02

Groundwater Sampling Field Forms – May 2004

WELL DEVELOPMENT AND SAMPLING LOG

Project No.:30001.0 Project Name: Blanco NFP Client: MWH/EL Paso
Location: Blanco NFP Well No: MW-19 Development **Sampling**
Project Manager MJN Date 5-17-04 Start Time 1133 Weather sunny 80s
Depth to Water 65.31 Depth to Product na Product Thickness na Measuring Point TOC
Water Column Height 2.02 Well Dia. 2"

Sampling Method: Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Other ☐
Bottom Valve Bailer x Double Check Valve Bailer ☐ Stainless-Steel Kemmerer ☐

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

Gal/ft x ft of water	Water Volume in Well		Gal/**oz** to be removed
	Gallons	Ounces	
2.02 x .16	0.32 x 3	40.96 x 3	122.88 oz

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (ounces)	Comments/ Flow rate
1135	**6.12**	**15640**	**72.4**				**22**	**Grey/ HC Odor**
	6.20	**14760**	**70.5**				**34**	**Grey/ HC Odor**
	6.22	**14480**	**69.7**				**40**	**Well is bailing down**
	6.32	**14050**	**69.8**				**46**	
1148	**6.38**	**13830**	**69.1**				**50**	**Well has bailed dry**

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
1148	**6.38**	**13830**	**69.1**					**50**	**Well has bailed dry**

COMMENTS: Well bailed dry, returned to sample later

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

Water Disposal Kutz Sample ID Blanco NFP MW-19 Sample Time 0728 5/18/04

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

MS/MSD _____ BD _____ BD Name/Time _____ TB 170504tb01

WELL DEVELOPMENT AND SAMPLING LOG

Project No.:30001.0 Project Name: Blanco NFP Client: MWH/EL Paso
Location: Blanco NFP Well No: MW-23 Development **Sampling**
Project Manager MJN Date 5/17/04 Start Time 1105 Weather sunny 80s
Depth to Water 57.14 Depth to Product na Product Thickness na Measuring Point TOC
Water Column Height 9.705 Well Dia. 4"

Sampling Method: Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Other ☐
Bottom Valve Bailer x Double Check Valve Bailer ☐ Stainless-Steel Kemmerer ☐

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

Gal/ft x ft of water	Water Volume in Well		Gal/oz to be removed
	Gallons	Ounces	
9.705 x .65	6.31 x 3	807.456	18.924 gal

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gallons)	Comments/ Flow rate
1106	**6.12**	**15740**	**69.2**				**1**	**Grey sheen**
	6.11	**17040**	**65.9**				**2**	**Grey sheen/ odorous**
	6.12	**17780**	**66.5**				**3**	**Grey sheen/ odorous**
	6.14	**18070**	**65.9**				**4**	
	6.19	**18860**	**66.2**				**9**	
1128	**6.20**	**18710**	**66.7**				**9.25**	**Well has bailed dry**

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
1128	**6.20**	**18710**	**66.7**					**9.25**	**Well has bailed dry, will sample later**

COMMENTS:

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

Water Disposal Kutz Sample ID Blanco NFP MW-23 Sample Time 0716 5/18/04

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

MS/MSD _____ BD _____ BD Name/Time _____ TB 170504tb01

WELL DEVELOPMENT AND SAMPLING LOG

Project No.: 30001.0 Project Name: Blanco NFP Client: MWH/EL Paso
Location: Blanco NFP Well No: MW-26 Development **Sampling**
Project Manager MJN Date 5/17/04 Start Time 1154 Weather Sunny 80s
Depth to Water 65.54 Depth to Product na Product Thickness na Measuring Point TOC
Water Column Height 2.33 Well Dia. 4"

Sampling Method: Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Other ☐
Bottom Valve Bailer x Double Check Valve Bailer ☐ Stainless-Steel Kemmerer ☐

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

Gal/ft x ft of water	Water Volume in Well		Gal/oz to be removed
	Gallons	Ounces	
2.33 x .65	1.515 x 3	193.92 x 3	581.76 oz

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (oz.)	Comments/ Flow rate
1156	6.80	8960	71.6				40	Grey opaque/ HC Odor
	6.64	8740	67.4				92	
	6.71	8810	67.3				142	
	6.79	8610	66.5				158	Well is bailing down
	6.91	8520	65.9				166	Well is bailing down
1210	7.03	8450	66.2				170	Well has bailed dry

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
1210	7.03	8450	66.2					170	Well has bailed dry, will return later to sample

COMMENTS: Well bailed dry. Collected sample 5/18/04

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

Water Disposal Kutz Sample ID Blanco NFP MW-26 Sample Time 0743 5/18/04

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

MS/MSD_____ BD_____ BD Name/Time_____ TB 170504tb01

WELL DEVELOPMENT AND SAMPLING LOG

Project No.: 30001.0 Project Name: Blanco NFP Client: MWH/EL Paso
Location: Blanco NFP Well No: MW-27 Development **Sampling**
Project Manager MJN Date 5/17/04 Start Time 1214 Weather sunny 80s
Depth to Water 65.74 Depth to Product na Product Thickness na Measuring Point TOC
Water Column Height 3.54 Well Dia. 2"

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

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

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

Gal/ft x ft of water	Water Volume in Well		Gal/**oz** to be removed
	Gallons	Ounces	
3.54 x .16	0.5664 x 3	72.50 x 3	217.50

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (ounces)	Comments/ Flow rate
1224	**6.23**	**7000**	**70.6**				**22**	**Clear**
	6.35	**7050**	**68.8**				**46**	
	6.21	**7130**	**68.2**				**78**	**Grey/ HC Odor**
	6.27	**7040**	**68.0**				**95**	**Well is bailing down**
	6.26	**6900**	**6.74**				**111**	
	6.38	**6870**	**67.1**				**121**	
1235	**6.52**	**6820**	**67.0**				**127**	**Well has bailed dry**

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
1235	**6.52**	**6820**	**67.0**					**127**	**well is dry, will return later to sample**

COMMENTS: Well bailed dry, returned to sample 5/18/04

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

Water Disposal Kutz Sample ID Blanco NFP MW-27 Sample Time 0752 5/18/04

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

MS/MSD _____ BD _____ BD Name/Time _____ TB 170504tb01

Groundwater Sampling Field Forms – August 2004

WATER LEVEL DATA

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

Project Name_	**San Juan Basin Ground Water**	**Project No.**	**30001.0**
Project Manager	**MJN**		
Client Company	**MWH**	**Date**	**8/23/04**
Site Name	**Blanco NFP**		

Well	Time	Depth to Product (ft)	Depth to Water (ft)	Comments
MW-2	1159	-	-	Well is dry
MW-19		-	na	well is blocked, cannot get interface probe to groundwater
MW-23		-	57.04	
MW-24		-	67.11	
MW-26		-	66.11	
MW-27		-	66.27	

Comments

Signature: Martin J. Nee Date: August 23, 2004

WELL DEVELOPMENT AND SAMPLING LOG

Project No.:30001.0 Project Name: Blanco NFP Client: MWH/EL Paso
Location: Blanco NFP Well No: MW-19 Development **Sampling**
Project Manager MJN Date 8-23-04 Start Time 1330 Weather sunny 80s
Depth to Water na Depth to Product na Product Thickness na Measuring Point TOC
Water Column Height na Well Dia. 2"

Sampling Method: Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Other ☐
Bottom Valve Bailer x Double Check Valve Bailer ☐ Stainless-Steel Kemmerer ☐

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

Gal/ft x ft of water	Water Volume in Well		Gal/**oz** to be removed
	Gallons	Ounces	
na x .16	nax 3	na x 3	na oz

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (ounces)	Comments/ Flow rate
1356	**6.80**	**16160**	**75.7**				**10**	**clear with black floaters and sediment, hydrocarbon odor**
	6.91	**16930**	**74.3**				**24**	**clear with black floaters and sediment, hydrocarbon odor**
	6.93	**17180**	**74.9**				**38**	**black with very fine black sand, hydrocarbon odor**
1447	**6.91**	**17720**	**74.4**		**0.65**		**52**	**black with very fine black sand, hydrocarbon odor**

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
1447	**6.91**	**17720**	**74.4**		**0.65**			**52**	**black with very fine black sand, hydrocarbon odor**

COMMENTS: could not get bailer or water level probe past 27'. Installed a 30 foot long piece of one inch diameter PVC and purged and collected water with a small bailer. Purged same amount as was purged during the May 04 sampling. Spent 1.5 hrs picking up materials and installing 1" pvc.

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

Water Disposal Kutz Sample ID Blanco NFP MW-19 Sample Time 1500 hrs 8/23/04
BTEX VOCs Alkalinity TDS Cations Anions Nitrate Nitrite Ammonia TKN NMWQCC Metals Total Phosphorus

MS/MSD_____ BD_____ BD Name/Time_____ TB 082304TB01

WELL DEVELOPMENT AND SAMPLING LOG

Project No.: 30001.0 Project Name: Blanco NFP Client: MWH/EL Paso

Location: Blanco NFP Well No: MW-23 Development **Sampling**

Project Manager MJN Date 8/23/04 Start Time 1631 Weather sunny 80s

Depth to Water 57.04 Depth to Product na Product Thickness na Measuring Point TOC

Water Column Height 9.81 Well Dia. 4"

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

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

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

Gal/ft x ft of water	Water Volume in Well		Gal/oz to be removed
	Gallons	Ounces	
9.81 x .65	6.381 x 3		19.13 gal

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (gallons)	Comments/ Flow rate
1636	**6.77**	**>20,000**	**71.3**				**1**	**slight gray, sudsy**
	6.76	**>20,000**	**67.9**				**2**	**slight gray, sudsy, odorous, sheen**
	6.70	**>20,000**	**67.2**				**3**	**slight gray, sudsy**
	6.77	**>20,000**	**67.3**				**7.5**	**well is bailing down**
1656	**6.96**	**>20,000**	**67.5**		**0.88**		**8**	**well has bailed dry**

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
1656	**6.96**	**>20,000**	**67.5**		**0.88**			**8**	**well has bailed dry**

COMMENTS:

INSTRUMENTATION: pH Meter X _____ Temperature Meter x

DO Monitor _____ Other _____

Conductivity Meter X _____

Water Disposal Kutz Sample ID Blanco NFP MW-23 Sample Time 1700 hrs 8/23/04

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

MS/MSD _____ BD _____ BD Name/Time _____ TB 082304tb01

WELL DEVELOPMENT AND SAMPLING LOG

Project No.: 30001.0 Project Name: Blanco NFP Client: MWH/EL Paso
Location: Blanco NFP Well No: MW-26 Development **Sampling**
Project Manager MJN Date 8/23/04 Start Time 1504 Weather Sunny 80s
Depth to Water 66.11 Depth to Product na Product Thickness na Measuring Point TOC
Water Column Height 1.50 Well Dia. 4"

Sampling Method: Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Other ☐
Bottom Valve Bailer x Double Check Valve Bailer ☐ Stainless-Steel Kemmerer ☐

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

Gal/ft x ft of water	Water Volume in Well		Gal/oz to be removed
	Gallons	Ounces	
1.5 x .65	0.98 x 3	124 x 3	374 oz

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (oz.)	Comments/ Flow rate
1515	**7.04**	**11190**	**75.0**				**40**	**black, hydrocarbon odor**
	7.39	**11140**	**71.1**				**64**	
	7.39	**11140**	**68.8**				**80**	
	7.39	**11290**	**69.2**				**90**	**dark gray, hydrocarbon odor, well is bailing down**
1529	**7.42**	**11450**	**70.2**		**0.16**		**130**	**well has bailed dry**

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
1529	**7.42**	**11450**	**70.2**		**0.16**			**130**	**well has bailed dry**

COMMENTS: Well bailed dry. Collected sample 8/24/04 The well had barely recovered enough to sample by the next day.

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

Water Disposal Kutz Sample ID Blanco NFP MW-26 Sample Time 0755 8/24/04

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

MS/MSD _____ BD _____ BD Name/Time _____ TB 082304tb01

WELL DEVELOPMENT AND SAMPLING LOG

Project No.: 30001.0 Project Name: Blanco NFP Client: MWH/EL Paso
Location: Blanco NFP Well No: MW-27 Development **Sampling**
Project Manager MJN Date 8/23/04 Start Time 1540 Weather sunny 80s
Depth to Water 66.20 Depth to Product na Product Thickness na Measuring Point TOC
Water Column Height 3.54 Well Dia. 2"

Sampling Method: Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Other ☐
Bottom Valve Bailer x Double Check Valve Bailer ☐ Stainless-Steel Kemmerer ☐

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

Gal/ft x ft of water	Water Volume in Well		Gal/**oz** to be removed
	Gallons	Ounces	
3.08 x .16	0.49 x 3	63 x 3	189

Time (military)	pH (su)	SC (umhos/cm)	Temp (°F)	ORP (millivolts)	D.O. (mg/L)	Turbidity (NTU)	Vol Evac. (ounces)	Comments/ Flow rate
1550	**6.79**	**9900**	**76.6**				**32**	**clear**
	6.79	**9540**	**71.3**				**60**	**gray, hydrocarbon odor**
	6.89	**9800**	**72.3**				**80**	**gray, hydrocarbon odor**
	6.88	**9050**	**69.9**				**92**	**gray, hydrocarbon odor**
1610	**6.99**	**9050**	**71.0**		**0.77**		**102**	**well has bailed dry, will return later to sample**

Final: Time	pH	SC	Temp	Eh-ORP	D.O.	Turbidity	Ferrous Iron	Vol Evac.	Comments/Flow Rate
1610	**6.99**	**9050**	**71.0**		**0.77**			**102**	**well has bailed dry, will return later to sample**

COMMENTS: Well bailed dry, returned to sample 8/24/04. Bailer and sample containers contained product droplets.

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

Water Disposal Kutz Sample ID Blanco NFP MW-27 Sample Time 0830 8/24//04

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

MS/MSD _____ BD _____ BD Name/Time _____ TB 082304tb01

Appendix C

MWH

APPENDIX C
Groundwater Analytical Laboratory Reports

Groundwater Analytical Report – December 2003

DATA VERIFICATION WORKSHEET

(Page 1 of 3)

Analytical Method/Analytes: SW-846 8021B (BTEX) **Sample Collection Date(s):** 12/16/03

Laboratory: Accutest **MWH Job Number:** EPC-SJRB (Blanco North)

Batch Identification: T6396 **Matrix:** Water

MS/MSD Parent(s)[a]: T6396-04 **Field Replicate Parent(s):** None

Verification Complete: Bryan Buttars 1-8-04 (Date/Signature)

Foot Notes	Site ID	Sample ID	Lab. ID	Hits (Y/N)	Quals.	Comments
1,9, 11,12	Trip Blank	161203TB02	T6396-01	N		
2,10, 13,14	Blanco North	MW-27	T6396-02	Y	J	Benzene @ 127 µg/l
					J	Toluene @ 17.0 µg/l
					J	Ethylbenzene @ 250 µg/l
					J	Xylenes (total) @ 1060 µg/l
					J	o-Xylene @ 222 µg/l
					J	m/p-Xylene @ 834 µg/l
3,4,10, 13,14	Blanco North	MW-19	T6396-03	Y	J	Benzene @ 8130 µg/l
					UJ	Toluene @ <100 µg/l
					UJ	Ethylbenzene @ <100 µg/l
					UJ	Xylenes (total) @ <300 µg/l
					UJ	o-Xylene @ <100 µg/l
					UJ	m/p-Xylene @ <200 µg/l
5,6,10, 13,14, 15,16	Blanco North	MW-23	T6396-04	Y	J	Benzene @ 5080 µg/l
					UJ	Toluene @ <100 µg/l
					UJ	Ethylbenzene @ <100 µg/l
					J	Xylenes (total) @ 219 T µg/l
					UJ	o-Xylene @ <100 µg/l
					J	m/p-Xylene @ 219 µg/l
7,8,10, 13,14	Blanco North	MW-26	T6396-05	Y	J	Benzene @ 307 µg/l
					UJ	Toluene @ <1.0 µg/l
					J	Ethylbenzene @ 158 µg/l
					J	Xylenes (total) @ 685 µg/l
					J	o-Xylene @ 138 µg/l
					J	m/p-Xylene @ 546 µg/l

DATA VERIFICATION WORKSHEET

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

Laboratory: Accutest **Batch Identification:** T6396

Verification Criteria								
Sample ID	161203TB 02	Blanco North MW-27	Blanco North MW-19	Blanco North MW-23	Blanco North MW-26			
Lab ID	T6396-01	T6396-02	T6396-03	T6396-04	T6396-05			
Holding Time	A	A[2]	A[3]	A[5]	A[7]			
Analyte List	A	A	A	A	A			
Reporting Limits	A	A	A	A	A			
Surrogate Spike Recovery	A[1]	A	A[4]	A[6]	A[8]			
Trip Blank	A	A	A	A	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[9]	A[10]	A[10]	A[10]	A[10]			
Laboratory Control Sample (LCS)	A[11,12]	A[13,14]	A[13,14]	A[13,14]	A[13,14]			
Laboratory Control Sample Duplicate (LCSD)	N	N	N	N	N			
Matrix Spike/Matrix Spike Dup. (MS/MSD)	N/A	N/A	N/A	A[15,16]	N/A			
Retention Time Window	N	N	N	N	N			
Injection Time(s)	N	N	N	N	N			
Hardcopy vs. Chain-of-Custody	A	A	A	A	A			
EDD vs. Hardcopy	N	N	N	N	N			
EDD vs. Chain of Custody	N	N	N	N	N			

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

NOTES:

1) Surrogate percent recovery for aaa-Trifluorotoluene outside acceptance criteria @ 131% (71-121), indicating a possible high bias. Only one surrogate outside acceptance criteria, no analytes detected in the sample, no data qualified.

2) Sample was not preserved, holding time reduced from 14 days to 7. Sample analyzed 21 days after sample collection, exceeding holding time by 14 days, introducing a possible low bias. Qualify associated sample hits with "J" flags, indicating the data are estimated and possibly biased low.

3) Sample was not preserved, holding time reduced from 14 days to 7. Sample analyzed 14 days after sample collection, exceeding holding time by 7 days, introducing a possible low bias. Qualify associated sample hits with "J" flags, indicating the data are estimated and possibly biased low. . Qualify associated sample non-detects with "UJ" flags, indicating possible false negatives.

4) Surrogate percent recovery for 4-Bromofluorobenzene outside acceptance criteria @ 122% (64-121), indicating a possible high bias. Only one surrogate outside acceptance criteria, no data qualified.

5) Sample was not preserved, holding time reduced from 14 days to 7. Sample analyzed 14 days after sample collection, exceeding holding time by 7 days, introducing a possible low bias. Qualify associated sample hits with "J" flags, indicating the data are estimated and possibly biased low. Qualify associated sample non-detects with "UJ" flags, indicating possible false negatives.

6) Surrogate percent recovery for 4-Bromofluorobenzene outside acceptance criteria @ 125% (64-121), indicating a possible high bias. Only one surrogate outside acceptance criteria, no data qualified.

7) Sample was not preserved, holding time reduced from 14 days to 7. Sample analyzed 22 days after sample collection, exceeding holding time by 15 days, introducing a possible low bias. Qualify associated sample hits with "J" flags, indicating the data are estimated and possibly biased low. Qualify associated sample non-detects with "UJ" flags, indicating possible false negatives.

8) Surrogate percent recovery outside acceptance criteria for the following compounds:
   a) 4-Bromofluorobenzene @ 122% (64-121), indicating a possible high bias. Qualify associated sample hits with "J" flags, indicating the data are estimated and possibly biased high.
   b) aaa-Trifluorotoluene @ 149% (71-121), indicating a possible high bias. Qualify associated sample hits with "J" flags, indicating the data are estimated and possibly biased high.

9) Surrogate percent recovery for aaa-Trifluorotoluene outside acceptance criteria @ 126% (71-121), indicating a possible high bias. Only one surrogate outside acceptance criteria, no data qualified (GKK338-MB).

10) Surrogate percent recovery outside acceptance criteria for the following compounds (GKK339-MB):
   a) 4-Bromofluorobenzene @ 137% (64-121), indicating a possible high bias. No analytes detected in the sample, no data qualified.
   b) aaa-Trifluorotoluene @ 130% (71-121), indicating a possible high bias No analytes detected in the sample, no data qualified.

11) Surrogate percent recovery for aaa-Trifluorotoluene outside acceptance criteria @ 126% (71-121), indicating a possible high bias. Only one surrogate outside acceptance criteria, no data qualified (GKK338-BS).

12) LCS percent recovery outside acceptance criteria for the following compounds (GKK338-BS):
   a) Ethylbenzene @ 118% (82-115), indicating a possible high bias. Analyte not detected in associated samples, no data qualified.
   b) Toluene @ 119% (77-116), indicating a possible high bias. Analyte not detected in associated samples, no data qualified.
   c) o-Xylene @ 129% (78-114), indicating a possible high bias. Analyte not detected in associated samples, no data qualified.

13) Surrogate percent recovery outside acceptance criteria for the following compounds (GKK339-BS):
   a) 4-Bromofluorobenzene @ 130% (64-121), indicating a possible high bias. This explains the high percent recovery for associated analytes, no data qualified.
   b) aaa-Trifluorotoluene @ 124% (71-121), indicating a possible high bias. This explains the high percent recovery for associated analytes, no data qualified.

14) LCS percent recovery outside acceptance criteria for the following compounds (GKK339-BS):
   a) Ethylbenzene @ 118% (82-115), indicating a possible high bias. Qualify associated sample hits with "J" flags indicating the data are estimated and possibly biased high.
   b) Toluene @ 118% (77-116), indicating a possible high bias. Qualify associated sample hits with "J" flags indicating the data are estimated and possibly biased high.
   c) Xylenes (total) @ 117% (79-115), indicating a possible high bias. Qualify associated sample hits with "J" flags indicating the data are estimated and possibly biased high.
   d) o-Xylene @ 117% (78-114), indicating a possible high bias. Qualify associated sample hits with "J" flags indicating the data are estimated and possibly biased high.
   e) m/p-Xylenes @ 117% (79-116), indicating a possible high bias. Qualify associated sample hits with "J" flags indicating the data are estimated and possibly biased high.

15) Matrix spike (MS) surrogate percent recoveries outside acceptance criteria for the following compounds:
   a) 4-Bromofluorobenzene @ 124% (64-121), indicating a possible high bias. This helps to explain the percent recoveries outside acceptance criteria for associated analytes, no data qualified.
   b) aaa-Trifluorotoluene @ 4% (71-121), indicating a possible low bias. This helps to explain the percent recoveries outside acceptance criteria for associated analytes, no data qualified.

16) Matrix spike and/or matrix spike duplicate (MSD) percent recoveries and/or MS/MSD relative percent differences (RPD) outside acceptance criteria for the following compounds:
   a) Benzene @ 15% & 324% (64-124) and 183% (16), bias unknown. Qualify associated sample hit with a "J" flag indicating the datum is estimated with an unknown bias.
   b) Ethylbenzene @ 131% & 110% (64-123) and 18% (14), indicating a possible high bias. Analyte not detected in associated samples, no data qualified.
   c) Toluene @ 1365% & 111% (64-120) and 170% (13), indicating a possible high bias. Analyte not detected in associated samples, no data qualified.

e-Hardcopy 2.0
Automated Report

Gulf Coast
ACCUTEST.
Laboratories

01/07/04

Technical Report for

Montgomery Watson

Blanco North

161203MN02

Accutest Job Number: T6396

Report to:

Montgomery Watson

brian.buttars@us.mwhglobal.com

ATTN: Brian Buttars

Total number of pages in report: 22

ACCREDITED IN ACCORDANCE WITH nelac

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

Ron Martino
Laboratory Manager

Table of Contents

Sections: 1 2 3 4

-1-

Accutest Laboratories

Sample Summary

Montgomery Watson

Job No: T6396

Blanco North
Project No: 161203MN02

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
T6396-1	12/16/03	07:00	MN	12/18/03	AQ	Ground Water	161203TB02
T6396-2	12/16/03	14:16	MN	12/18/03	AQ	Ground Water	NFPMW-27
T6396-3	12/16/03	14:27	MN	12/18/03	AQ	Ground Water	NFPMW-19
T6396-4	12/16/03	14:45	MN	12/18/03	AQ	Ground Water	NFPMW-23
T6396-5	12/17/03	09:38	MN	12/18/03	AQ	Ground Water	NFPMW-26

Accutest Laboratories

Report of Analysis

Client Sample ID:	161203TB02		
Lab Sample ID:	T6396-1	Date Sampled:	12/16/03
Matrix:	AQ - Ground Water	Date Received:	12/18/03
Method:	SW846 8021B	Percent Solids:	n/a
Project:	Blanco North		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	KK006297.D	1	12/29/03	BC	n/a	n/a	GKK338
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	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	0.50	ug/l	
	m,p-Xylene	ND	2.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	120%		64-121%
98-08-8	aaa-Trifluorotoluene	131% [b]		71-121%

(a) Confirmed by GC/MS
(b) High bia spike.

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	NFPMW-27		
Lab Sample ID:	T6396-2	Date Sampled:	12/16/03
Matrix:	AQ - Ground Water	Date Received:	12/18/03
Method:	SW846 8021B	Percent Solids:	n/a
Project:	Blanco North		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	EE007616.D	10	01/06/04	BC	n/a	n/a	GEE424
Run #2 [b]	KK006317.D	100	12/30/03	BC	n/a	n/a	GKK339

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

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	127	10	5.0	ug/l	
108-88-3	Toluene	17.0	10	5.0	ug/l	
100-41-4	Ethylbenzene	250	10	5.0	ug/l	
1330-20-7	Xylenes (total)	1060	30	10	ug/l	
95-47-6	o-Xylene	222	10	5.0	ug/l	
	m,p-Xylene	834	20	10	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	105%		64-121%
460-00-4	4-Bromofluorobenzene		127% [c]	64-121%
98-08-8	aaa-Trifluorotoluene	119%		71-121%
98-08-8	aaa-Trifluorotoluene		124% [c]	71-121%

(a) Sample reanalyzed beyond hold time; reported results are considered minimum values.
(b) Confirmed by GC/MS. Samples were not preserved.
(c) High bias spike.

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	NFPMW-19		
Lab Sample ID:	T6396-3	Date Sampled:	12/16/03
Matrix:	AQ - Ground Water	Date Received:	12/18/03
Method:	SW846 8021B	Percent Solids:	n/a
Project:	Blanco North		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	KK006318.D	100	12/30/03	BC	n/a	n/a	GKK339
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	8130	100	50	ug/l	
108-88-3	Toluene	ND	100	50	ug/l	
100-41-4	Ethylbenzene	ND	100	50	ug/l	
1330-20-7	Xylenes (total)	ND	300	100	ug/l	
95-47-6	o-Xylene	ND	100	50	ug/l	
	m,p-Xylene	ND	200	100	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	122% [b]		64-121%
98-08-8	aaa-Trifluorotoluene	116%		71-121%

(a) Confirmed by GC/MS. Samples were not preserved.
(b) High bias spike.

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	NFPMW-23		
Lab Sample ID:	T6396-4	Date Sampled:	12/16/03
Matrix:	AQ - Ground Water	Date Received:	12/18/03
Method:	SW846 8021B	Percent Solids:	n/a
Project:	Blanco North		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	KK006319.D	100	12/30/03	BC	n/a	n/a	GKK339
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	5080	100	50	ug/l	
108-88-3	Toluene	ND	100	50	ug/l	
100-41-4	Ethylbenzene	ND	100	50	ug/l	
1330-20-7	Xylenes (total)	219	300	100	ug/l	J
95-47-6	o-Xylene	ND	100	50	ug/l	
	m,p-Xylene	219	200	100	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	125% [b]		64-121%
98-08-8	aaa-Trifluorotoluene	117%		71-121%

(a) Confirmed by GC/MS. Samples were not preserved.
(b) High bias spike.

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	NFPMW-26		
Lab Sample ID:	T6396-5	Date Sampled:	12/17/03
Matrix:	AQ - Ground Water	Date Received:	12/18/03
Method:	SW846 8021B	Percent Solids:	n/a
Project:	Blanco North		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	EE007618.D	1	01/07/04	BC	n/a	n/a	GEE424
Run #2 [a]	EE007619.D	10	01/07/04	BC	n/a	n/a	GEE424
Run #3 [b]	KK006322.D	100	12/30/03	BC	n/a	n/a	GKK339

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml
Run #3	5.0 ml

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	307 [c]	10	5.0	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	158 [c]	10	5.0	ug/l	
1330-20-7	Xylenes (total)	685 [c]	30	10	ug/l	
95-47-6	o-Xylene	138 [c]	10	5.0	ug/l	
	m,p-Xylene	546 [c]	20	10	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Run# 3	Limits
460-00-4	4-Bromofluorobenzene	145% [d]	122% [e]		64-121%
460-00-4	4-Bromofluorobenzene			118%	64-121%
98-08-8	aaa-Trifluorotoluene	222% [d]	149% [f]		71-121%
98-08-8	aaa-Trifluorotoluene			115%	71-121%

(a) Sample reanalyzed beyond hold time; reported results are considered minimum values.
(b) Confirmed by GC/MS. Sample were not preserved.
(c) Result is from Run# 2
(d) Outside control limits due to matrix interference.
(e) Outside control limits due to matrix interference. Confirmed by reanalysis.
(f) Outside of control limits, limits still being evaluated.

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

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

CHAIN OF CUSTODY 161203MN02

ACCUTEST Laboratories

10165 Harwin Drive, Ste. 150, Houston, TX 77036
TEL. 713-271-4700 FAX: 713-271-4770
www.accutest.com

FED-EX Tracking # 864215294535 1 | Bottle Order Control #
Accutest Quote # | Accutest Job # T6396

Client / Reporting Information

Company Name: El Paso
Address: 614 Reilly
City: Farmington State: NM Zip: 87401
Project Contact: Scott Pope E-mail:
Phone #: 505 599 2124
Sampler's Name: MNee

Project Information

Project Name: Bloomfield NFP
Street:
City: State:
Project #:
Fax #: 505 599 2119
Client Purchase Order #:

Requested Analysis

BTEX

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL - Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe

LAB USE ONLY

Accutest Sample #	Field ID / Point of Collection	SUMMA # / MEOH Vial #	Collection Date	Collection Time	Sampled By	Matrix	# of bottles	Number of preserved Bottles: HCl	MeOH	DI Water	H2SO4	NaOH	Ascorbic Acid	NaHSO4	Zn Acetate	None	BTEX
1	161203TB02		12-03-03	0700	MN	WQ	1	1									X
2	NFP MW-27		12-03-03	1416	MN	WG	2									X	X
3	NFP MW-19		12-03-03	1427	MN	WG	2									X	X
4	NFP MW-23		12-03-03	1445	MN	WG	2									X	X
5	NFP MW-26		12-03-03	0938	MN	WG	2	2									X

Turnaround Time (Business Days)

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

Approved By: / Date:

Emergency & Rush T/A data available VIA LabLink

Data Deliverable Information

- [ ] Commercial "A"
- [ ] Commercial "B"
- [ ] Reduced Tier 1
- [ ] Full Tier 1
- [ ] TRRP13
- [ ] EDO Format

unpreserved samples *

Commercial "A" = Results Only

Comments / Remarks

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received by:	Relinquished by	Date Time	Received by
1 1200	12-03-03	1 12-18-03 0930	2		2
Relinquished by:	Date Time	Received by:	Relinquished by:	Date Time	Received by
3		3	4		4
Relinquished by:	Date Time:	Received by:	Custody Seal #	Preserved where applicable	On Ice / Cooler Temp.
5		5		[ ]	[X] / 1°C

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T6396: Chain of Custody
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ACCUTEST.

SAMPLE RECEIPT LOG

JOB #: T6396 DATE/TIME RECEIVED: 12-18-03 0930

CLIENT: El PASO INITIALS: TB

Condition/Variance (Circle "Y" for yes and "N" for no. If "N" is circled, see variance for explanation):
1. Y (N) Sample received in undamaged condition. 2. (Y) N Samples received within temp. range.
3. Y (NA) Sample received with proper pH. 4. (Y) N Sample received in proper containers.
5. (Y) N Sample volume sufficient for analysis. 6. (Y) N Sample received with chain of custody.
7. (Y) N Chain of Custody matches sample IDs on containers.
8. Y (NA) Custody seal received intact and tamper evident on cooler.
9. Y (NA) Custody seal received intact and tamper evident on bottles.

SAMPLE or FIELD ID	BOTTLE #	DATE SAMPLED	MATRIX	VOLUME	LOCATION	PRESERV.	PH
1	1	12-16-03	WTB	40ml	VRef	1(2)3,4,5,6	U, <2, >12, (NA)
~~2-5~~			TB — 12-18-03			1,2,3,4,5,6	U, <2, >12, NA
2-3	1	12-16-03	GW	40ml	VRef	1(2)3,4,5,6	U, <2, >12 (NA)
4-5	1-2	↓	↓	↓	↓	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
						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

12-18-03

LOCATION: WI: Walk-In VR: Volatile Refrig. SUB: Subcontract EF: Encore Freezer
PRESERVATIVES: 1: None 2: HCL 3: HNO3 4: H2SO4 5: NAOH 6: Other

(pH of waters checked excluding volatiles)
pH of soils N/A

Comments: ____

Delivery method: Courier: ____
Tracking#: ____

COOLER TEMP: 1°C COOLER TEMP: ____
COOLER TEMP: ____ COOLER TEMP: ____

Method of sample disposal: (circle one) Accutest disposal Hold Return to Client

Form: SM012

T6396: Chain of Custody
Page 2 of 3

ACCUTEST.

VARIANCE MEMO
SAMPLE LOG-IN

SAMPLE(S) _____ DATE 12-18-03
PROJECT _____
FILED BY _____ LAB NO. T6396

VARIANCE - Check applicable items(s):

_____ Insufficient sample sent for proper analysis; received approx. _____
1 of 2 Sample bottle received broken and/or cap not intact. on SXs #3 & #4 (NFPMW-27 & NFPMW-19)
_____ Samples received without paperwork; paperwork received without samples.
_____ Samples received without proper refrigeration, when it has been deemed necessary. Temperature at receipt: _____
_____ Illegible sample number or label missing from bottle.
_____ 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: _____
_____ Samples received in improper container or lacking proper preservation.
_____ Physical characteristics different than those on sampling sheets; Describe: _____
_____ Rush samples on hold because of incomplete paperwork.
_____ Other (specify) _____

CORRECTIVE ACTION TAKEN

Scott Pope Person Contacted
_____ Client informed verbally.
_____ Client informed by memo/letter.
_____ Samples processed as is.
_____ Samples preserved by lab.
_____ Client will resample and resubmit.
_____ By phone.
_____ Samples processed for information only and noted on report.
_____ Samples processed with higher detection limits accepted.
_____ Samples rejected.

Notes: _____

ROUTING

TITLE	DATE	INITIALS	CORRECTED?
Sample Manager:	12-18-03	TB	
Login:			
Project Manager:			
Comments:			

Form: SM006

3.1

T6396: 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: T6396
Account: MWHSLCUT Montgomery Watson
Project: Blanco North

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GKK338-MB	KK006295.D	1	12/29/03	BC	n/a	n/a	GKK338

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

T6396-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	0.50	ug/l	
	m,p-Xylene	ND	2.0	1.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
460-00-4	4-Bromofluorobenzene	118%	64-121%
98-08-8	aaa-Trifluorotoluene	126%* [a]	71-121%

(a) High bias spike.

Method Blank Summary

Job Number: T6396
Account: MWHSLCUT Montgomery Watson
Project: Blanco North

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GKK339-MB	KK006315.D	1	12/30/03	BC	n/a	n/a	GKK339

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

T6396-2, T6396-3, T6396-4, T6396-5

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	0.50	ug/l	
	m,p-Xylene	ND	2.0	1.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
460-00-4	4-Bromofluorobenzene	137%* [a]	64-121%
98-08-8	aaa-Trifluorotoluene	130%* [a]	71-121%

(a) High bias spike.

Method Blank Summary

Job Number: T6396
Account: MWHSLCUT Montgomery Watson
Project: Blanco North

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GEE424-MB	EE007602.D	1	01/06/04	BC	n/a	n/a	GEE424

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

T6396-2, T6396-5

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	0.50	ug/l	
	m,p-Xylene	ND	2.0	1.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
460-00-4	4-Bromofluorobenzene	98%	64-121%
98-08-8	aaa-Trifluorotoluene	104%	71-121%

Blank Spike Summary

Job Number: T6396
Account: MWHSLCUT Montgomery Watson
Project: Blanco North

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GKK338-BS [a]	KK006294.D	1	12/29/03	BC	n/a	n/a	GKK338

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

T6396-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	20	21.6	108	74-119
100-41-4	Ethylbenzene	20	23.5	118*	82-115
108-88-3	Toluene	20	23.7	119*	77-116
1330-20-7	Xylenes (total)	60	68.7	115	79-115
95-47-6	o-Xylene	20	25.8	129*	78-114
	m,p-Xylene	40	42.9	107	79-116

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	4-Bromofluorobenzene	121%	64-121%
98-08-8	aaa-Trifluorotoluene	126%* [b]	71-121%

(a) High bias spike but no compound were reported with it's associated samples.
(b) High bias spike.

Blank Spike Summary

Job Number: T6396
Account: MWHSLCUT Montgomery Watson
Project: Blanco North

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GKK339-BS [a]	KK006313.D	1	12/30/03	BC	n/a	n/a	GKK339

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

T6396-2, T6396-3, T6396-4, T6396-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	20	23.5	118	74-119
100-41-4	Ethylbenzene	20	23.6	118*	82-115
108-88-3	Toluene	20	23.5	118*	77-116
1330-20-7	Xylenes (total)	60	70.3	117*	79-115
95-47-6	o-Xylene	20	23.4	117*	78-114
	m,p-Xylene	40	46.9	117*	79-116

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	4-Bromofluorobenzene	130%* [a]	64-121%
98-08-8	aaa-Trifluorotoluene	124%* [a]	71-121%

(a) High bias spike.

Blank Spike Summary

Job Number: T6396
Account: MWHSLCUT Montgomery Watson
Project: Blanco North

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GEE424-BS	EE007601.D	1	01/06/04	BC	n/a	n/a	GEE424

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

T6396-2, T6396-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	20	20.6	103	74-119
100-41-4	Ethylbenzene	20	20.8	104	82-115
108-88-3	Toluene	20	20.7	104	77-116
1330-20-7	Xylenes (total)	60	63.0	105	79-115
95-47-6	o-Xylene	20	21.0	105	78-114
	m,p-Xylene	40	42.0	105	79-116

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	4-Bromofluorobenzene	101%	64-121%
98-08-8	aaa-Trifluorotoluene	106%	71-121%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T6396
Account: MWHSLCUT Montgomery Watson
Project: Blanco North

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T6395-4MS	KK006301.D	1	12/30/03	BC	n/a	n/a	GKK338
T6395-4MSD	KK006302.D	1	12/30/03	BC	n/a	n/a	GKK338
T6395-4 [a]	KK006300.D	1	12/30/03	BC	n/a	n/a	GKK338

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

T6396-1

CAS No.	Compound	T6395-4 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND		20	22.6	113	22.4	112	1	64-124/16
100-41-4	Ethylbenzene	ND		20	21.9	110	30.5	153*	33*	64-123/14
108-88-3	Toluene	ND		20	27.5	138*	34.1	171*	21*	64-120/13
1330-20-7	Xylenes (total)	39		60	96.0	94	105	109	9	66-118/18
95-47-6	o-Xylene	39		20	34.2	-26*	37.0	-12*	8	65-119/20
	m,p-Xylene	ND		40	61.8	155*	68.1	170*	10	66-120/14

CAS No.	Surrogate Recoveries	MS	MSD	T6395-4	Limits
460-00-4	4-Bromofluorobenzene	135%* [b]	133%* [b]	125%* [b]	64-121%
98-08-8	aaa-Trifluorotoluene	171%* [b]	168%* [b]	191%* [b]	71-121%

(a) Confirmed by GC/MS
(b) High bias spike.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T6396
Account: MWHSLCUT Montgomery Watson
Project: Blanco North

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T6396-4MS [a]	KK006320.D	100	12/30/03	BC	n/a	n/a	GKK339
T6396-4MSD	KK006321.D	100	12/30/03	BC	n/a	n/a	GKK339
T6396-4 [b]	KK006319.D	100	12/30/03	BC	n/a	n/a	GKK339

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

T6396-2, T6396-3, T6396-4, T6396-5

CAS No.	Compound	T6396-4 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	5080		2000	291	15*	6480	324*	183*	64-124/16
100-41-4	Ethylbenzene	ND		2000	2610	131*	2190	110	18*	64-123/14
108-88-3	Toluene	ND		2000	27300	1365*	2210	111	170*	64-120/13
1330-20-7	Xylenes (total)	219	J	6000	6220	96	6870	107	10	66-118/18
95-47-6	o-Xylene	ND		2000	2010	101	2190	110	9	65-119/20
	m,p-Xylene	219		4000	4220	94	4680	106	10	66-120/14

CAS No.	Surrogate Recoveries	MS	MSD	T6396-4	Limits
460-00-4	4-Bromofluorobenzene	124%*	119%	125%* [c]	64-121%
98-08-8	aaa-Trifluorotoluene	4%*	111%	117%	71-121%

(a) High RPD due to poor purging of the MS.
(b) Confirmed by GC/MS. Samples were not preserved.
(c) High bias spike.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T6396
Account: MWHSLCUT Montgomery Watson
Project: Blanco North

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T6435-4MS	EE007614.D	10	01/06/04	BC	n/a	n/a	GEE424
T6435-4MSD	EE007615.D	10	01/06/04	BC	n/a	n/a	GEE424
T6435-4	EE007611.D	10	01/06/04	BC	n/a	n/a	GEE424

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

T6396-2, T6396-5

CAS No.	Compound	T6435-4 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	50.7		200	312	131*	298	124	5	64-124/16
100-41-4	Ethylbenzene	139		200	328	95	315	88	4	64-123/14
108-88-3	Toluene	ND		200	223	112	208	104	7	64-120/13
1330-20-7	Xylenes (total)	447		600	1010	94	967	87	4	66-118/18
95-47-6	o-Xylene	56.7		200	256	100	247	95	4	65-119/20
	m,p-Xylene	390		400	749	90	720	83	4	66-120/14

CAS No.	Surrogate Recoveries	MS	MSD	T6435-4	Limits
460-00-4	4-Bromofluorobenzene	102%	99%	88%	64-121%
98-08-8	aaa-Trifluorotoluene	113%	108%	76%	71-121%

Groundwater Analytical Report – May 2004

e-Hardcopy 2.0
Automated Report

Gulf Coast
ACCUTEST.
Laboratories

05/28/04

Technical Report for

Montgomery Watson

Blanco North

D-MWH-05-08-03-MSG-01

Accutest Job Number: T7500

Sampling Dates: 05/17/04 - 05/18/04

Report to:

MWH

pamela.j.anderson@us.mwhglobal.com

ATTN: Pam Anderson

Total number of pages in report: 24

ACCREDITED IN ACCORDANCE WITH nelac

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

Ron Martino
Laboratory Manager

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Sample Summary

Montgomery Watson

Job No: T7500

Blanco North
Project No: D-MWH-05-08-03-MSG-01

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
T7500-1	05/18/04	07:16	MJN	05/19/04	AQ	Ground Water	BLANCO MW-23
T7500-2	05/18/04	07:28	MJN	05/19/04	AQ	Ground Water	BLANCO MW-19
T7500-3	05/18/04	07:43	MJN	05/19/04	AQ	Ground Water	BLANCO MW-26
T7500-4	05/18/04	07:52	MJN	05/19/04	AQ	Ground Water	BLANCO MW-27
T7500-5	05/17/04	07:30	MJN	05/19/04	AQ	Trip Blank Water	TRIP BLANK

Accutest Laboratories

Report of Analysis

Client Sample ID:	BLANCO MW-23		
Lab Sample ID:	T7500-1	Date Sampled:	05/18/04
Matrix:	AQ - Ground Water	Date Received:	05/19/04
Method:	SW846 8021B	Percent Solids:	n/a
Project:	Blanco North		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	KK007144.D	25	05/20/04	NS	n/a	n/a	GKK374
Run #2	KK007149.D	100	05/20/04	NS	n/a	n/a	GKK374

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

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	8020 [a]	100	50	ug/l	
108-88-3	Toluene	ND	25	13	ug/l	
100-41-4	Ethylbenzene	208	25	13	ug/l	
1330-20-7	Xylenes (total)	1490	75	25	ug/l	
95-47-6	o-Xylene	ND	25	13	ug/l	
	m,p-Xylene	1490	50	25	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	101%	94%	71-127%
98-08-8	aaa-Trifluorotoluene	94%	89%	66-136%

(a) Result is from Run# 2

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	BLANCO MW-23		
Lab Sample ID:	T7500-1	Date Sampled:	05/18/04
Matrix:	AQ - Ground Water	Date Received:	05/19/04
		Percent Solids:	n/a
Project:	Blanco North		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Nitrogen, Nitrate + Nitrite	0.29	0.10	mg/l	2	05/25/04 13:15	LN	EPA 353.2

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	BLANCO MW-19		
Lab Sample ID:	T7500-2	Date Sampled:	05/18/04
Matrix:	AQ - Ground Water	Date Received:	05/19/04
Method:	SW846 8021B	Percent Solids:	n/a
Project:	Blanco North		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	KK007145.D	25	05/20/04	NS	n/a	n/a	GKK374
Run #2	KK007150.D	100	05/20/04	NS	n/a	n/a	GKK374

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

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	7410 [a]	100	50	ug/l	
108-88-3	Toluene	ND	25	13	ug/l	
100-41-4	Ethylbenzene	1160	25	13	ug/l	
1330-20-7	Xylenes (total)	44.8	75	25	ug/l	J
95-47-6	o-Xylene	ND	25	13	ug/l	
	m,p-Xylene	44.8	50	25	ug/l	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	102%	96%	71-127%
98-08-8	aaa-Trifluorotoluene	95%	91%	66-136%

(a) Result is from Run# 2

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	BLANCO MW-19		
Lab Sample ID:	T7500-2	Date Sampled:	05/18/04
Matrix:	AQ - Ground Water	Date Received:	05/19/04
		Percent Solids:	n/a
Project:	Blanco North		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Nitrogen, Nitrate + Nitrite	0.19	0.10	mg/l	2	05/25/04 13:15	LN	EPA 353.2

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	BLANCO MW-26		
Lab Sample ID:	T7500-3	Date Sampled:	05/18/04
Matrix:	AQ - Ground Water	Date Received:	05/19/04
Method:	SW846 8021B	Percent Solids:	n/a
Project:	Blanco North		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	KK007146.D	25	05/20/04	NS	n/a	n/a	GKK374
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	109	25	13	ug/l	
108-88-3	Toluene	14.3	25	13	ug/l	J
100-41-4	Ethylbenzene	87.1	25	13	ug/l	
1330-20-7	Xylenes (total)	280	75	25	ug/l	
95-47-6	o-Xylene	52.5	25	13	ug/l	
	m,p-Xylene	227	50	25	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	105%		71-127%
98-08-8	aaa-Trifluorotoluene	100%		66-136%

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

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	BLANCO MW-26		
Lab Sample ID:	T7500-3	Date Sampled:	05/18/04
Matrix:	AQ - Ground Water	Date Received:	05/19/04
		Percent Solids:	n/a
Project:	Blanco North		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Nitrogen, Nitrate + Nitrite	0.53	0.10	mg/l	2	05/25/04 13:15	LN	EPA 353.2

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	BLANCO MW-27		
Lab Sample ID:	T7500-4	Date Sampled:	05/18/04
Matrix:	AQ - Ground Water	Date Received:	05/19/04
Method:	SW846 8021B	Percent Solids:	n/a
Project:	Blanco North		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	KK007143.D	25	05/20/04	NS	n/a	n/a	GKK374
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	95.9	25	13	ug/l	
108-88-3	Toluene	27.6	25	13	ug/l	
100-41-4	Ethylbenzene	317	25	13	ug/l	
1330-20-7	Xylenes (total)	1600	75	25	ug/l	
95-47-6	o-Xylene	323	25	13	ug/l	
	m,p-Xylene	1270	50	25	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	104%		71-127%
98-08-8	aaa-Trifluorotoluene	102%		66-136%

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	BLANCO MW-27		
Lab Sample ID:	T7500-4	Date Sampled:	05/18/04
Matrix:	AQ - Ground Water	Date Received:	05/19/04
		Percent Solids:	n/a
Project:	Blanco North		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Nitrogen, Nitrate + Nitrite	0.56	0.10	mg/l	2	05/25/04 13:15	LN	EPA 353.2

RL = Reporting Limit

Accutest Laboratories

Report of Analysis

Client Sample ID:	TRIP BLANK		
Lab Sample ID:	T7500-5	Date Sampled:	05/17/04
Matrix:	AQ - Trip Blank Water	Date Received:	05/19/04
Method:	SW846 8021B	Percent Solids:	n/a
Project:	Blanco North		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	KK007142.D	1	05/20/04	NS	n/a	n/a	GKK374
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	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	0.50	ug/l	
	m,p-Xylene	ND	2.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	93%		71-127%
98-08-8	aaa-Trifluorotoluene	93%		66-136%

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

180504 MN 01

ACCUTEST Laboratories

CHAIN OF CUSTODY

10165 Harwin Drive, Ste. 150, Houston, TX 77036
TEL. 713-271-4700 FAX: 713-271-4770
www.accutest.com

FED-EX Tracking #: 842152756806
Bottle Order Control #:
Accutest Quote #:
Accutest Job #: T7500

Client / Reporting Information

Company Name: El Paso
Address: 614 Reilly Ave
City: Farmington State: NM Zip: 87401
Project Contact: Scott Pope E-mail:
Phone #: 505 599 2124
Sampler's Name: MJNEE

Project Information

Project Name: BLANCO North Flare Pit
Street:
City: State:
Project #:
Fax #: 505 599 2119
Client Purchase Order #:

Requested Analysis: Nitrite / Nitrate

Accutest Sample #	Field ID / Point of Collection	SUMMA # / MEOH Vial #	Date	Time	Sampled By	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MeOH	ENCORE	Nitrite / Nitrate
1	BLANCO MW-23		5/18/04	0716	MJN	WG	1				X					X
2	BLANCO MW-19		5/18/04	0728	MJN	WG	1				X					X
3	BLANCO MW-26		5/18/04	0743	MJN	WG	1				X					X
4	BLANCO MW-27		5/18/04	0752	MJN	WG	1				X					X

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL - Sludge; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe

LAB USE ONLY

Turnaround Time (Business Days)

- ☒ 10 Day STANDARD
- ☐ 5 Day RUSH
- ☐ 3 Day EMERGENCY
- ☐ 2 Day EMERGENCY
- ☐ 1 Day EMERGENCY
- ☐ Other

Approved By: / Date:

Emergency & Rush T/A data available VIA LabLink

Data Deliverable Information

- ☐ Commercial "A"
- ☐ Commercial "B"
- ☐ Reduced Tier 1
- ☐ Full Tier 1
- ☐ TRRP13
- ☐ EDD Format

Commercial "A" = Results Only

Comments / Remarks

EPA 353.2, 354.1 or 4500

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received by:	Relinquished by:	Date Time:	Received by:
1 [signature] 5-18-04	1200	1 [signature]	2	5/19/04	2
Relinquished by: 3	Date Time:	Received by: 3	Relinquished by: 4	Date Time:	Received by: 4
Relinquished by: 5	Date Time:	Received by: 5	Custody Seal #	Preserved where applicable ☐	On Ice ☑ Cooler Temp 3°C

3.1

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T7500: Chain of Custody
Page 1 of 3

ACCUTEST Laboratories

ACCUTEST Laboratories

CHAIN OF CUSTODY

180504MN02

10165 Harwin Drive, Ste. 150, Houston, TX 77036
TEL. 713-271-4700 FAX: 713-271-4770
www.accutest.com

FED-EX Tracking #: 8421 5279 6806
Bottle Order Control #:
Accutest Quote #:
Accutest Job #: T7500

Client / Reporting Information		Project Information	
Company Name: EL PASO		Project Name: BLANKO North Flare Pit	
Address: 614 Reilly Ave		Street:	
City: Farmington	State: NM Zip: 87401	City:	State:
Project Contact: Scott Pope	E-mail:	Project #:	
Phone #: 505 599 2124		Fax #: 505 599 2119	
Sampler's Name: MJ NEE		Client Purchase Order #:	

Accutest Sample #	Field ID / Point of Collection	SUMMA # / MEOH Vial #	Date	Time	Sampled By	Matrix	# of bottles	Cl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	BTEX
1	BLANCO MW-23		5/18/04	0716	MJN	WG	2					X				X
2	BLANCO MW-19		5/18/04	0728	MJN	WG	2					X				X
3	BLANCO MW-28		5/18/04	0743	MJN	WG	2					X				X
4	BLANCO MW-27		5/18/04	0752	MJN	WG	2					X				X
5	BLANCO TRIP BLANK		5/17/04	0730	MJN	WQ	1					X				X

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL - Sludge; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; LAB USE ONLY

Turnaround Time (Business Days) — Approved By: / Date:
- [x] 10 Day STANDARD
- [ ] 5 Day RUSH
- [ ] 3 Day EMERGENCY
- [ ] 2 Day EMERGENCY
- [ ] 1 Day EMERGENCY
- [ ] Other

Emergency & Rush T/A data available VIA LabLink

Data Deliverable Information
- [ ] Commercial "A"
- [ ] Commercial "B"
- [ ] Reduced Tier 1
- [ ] Full Tier 1
- [ ] TRRP13
- [ ] EDD Format ____

Commercial "A" = Results Only

Comments / Remarks: Unpreserved Samples

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received by:	Relinquished by:	Date Time:	Received by:
1 [signature] 5-18-04	1300	1 [signature]	2	5/19/04 11:30	2
Relinquished by: 3	Date Time:	Received by: 3	Relinquished by: 4	Date Time:	Received by: 4
Relinquished by: 5	Date Time:	Received by: 5	Custody Seal #	Preserved where applicable ☐	On Ice ☐ Cooler Temp 3°C

3.1

T7500: Chain of Custody
Page 2 of 3

ACCUTEST.

SAMPLE RECEIPT LOG

JOB #: T7500

DATE/TIME RECEIVED: 5/19/04 11:30am

CLIENT: EL PASO

INITIALS: LJ

Condition/Variance (Circle "Y" for yes and "N" for no. If "N" is circled, see variance for explanation):

1. (Y) N Sample received in undamaged condition.
2. (Y) N Samples received within temp. range.
3. (Y) N Sample received with proper pH.
4. (Y) N Sample received in proper containers.
5. (Y) N Sample volume sufficient for analysis.
6. (Y) N Sample received with chain of custody.
7. (Y) N Chain of Custody matches sample IDs on containers.
8. (Y) N Custody seal received intact and tamper evident on cooler.
9. (Y) N Custody seal received intact and tamper evident on bottles.

SAMPLE or FIELD ID	BOTTLE #	DATE SAMPLED	MATRIX	VOLUME	LOCATION	PRESERV.	PH
1-4	1-2	5/18/04	AQ	40ml	VREF	1,(2),3,4,5,6	U, <2, >12, (NA)
1-4	3	↓	↓	500ml	IT	1,2,3,(4),5,6	U, (<2), >12, NA
5	1	5/17/04	↓	40ml	VREF	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
						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

LJ 5/19/04

LOCATION: WI: Walk-In VR: Volatile Refrig. SUB: Subcontract EF: Encore Freezer

PRESERVATIVES: 1: None 2: HCL 3: HNO3 4: H2SO4 5: NAOH 6: Other

pH of waters checked excluding volatiles

pH of soils N/A

Comments:

Delivery method: Courier: FedEx Tracking#: 842152796806

COOLER TEMP: 3° COOLER TEMP: COOLER TEMP: COOLER TEMP:

Method of sample disposal: (circle one) Accutest disposal Hold Return to Client

Form: SM012

3 3.1

T7500: 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: T7500
Account: MWHSLCUT Montgomery Watson
Project: Blanco North

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GKK374-MB	KK007140.D	1	05/20/04	NS	n/a	n/a	GKK374

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

T7500-1, T7500-2, T7500-3, T7500-4, T7500-5

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	0.50	ug/l	
	m,p-Xylene	ND	2.0	1.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
460-00-4	4-Bromofluorobenzene	96%	71-127%
98-08-8	aaa-Trifluorotoluene	93%	66-136%

Blank Spike Summary

Job Number: T7500
Account: MWHSLCUT Montgomery Watson
Project: Blanco North

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GKK374-BS	KK007141.D	1	05/20/04	NS	n/a	n/a	GKK374

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

T7500-1, T7500-2, T7500-3, T7500-4, T7500-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	20	19.0	95	76-128
100-41-4	Ethylbenzene	20	18.9	95	79-129
108-88-3	Toluene	20	18.9	95	77-126
1330-20-7	Xylenes (total)	60	59.4	99	79-126
95-47-6	o-Xylene	20	19.4	97	78-125
	m,p-Xylene	40	40.0	100	79-127

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	4-Bromofluorobenzene	101%	71-127%
98-08-8	aaa-Trifluorotoluene	92%	66-136%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T7500
Account: MWHSLCUT Montgomery Watson
Project: Blanco North

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T7500-4MS	KK007147.D	25	05/20/04	NS	n/a	n/a	GKK374
T7500-4MSD	KK007148.D	25	05/20/04	NS	n/a	n/a	GKK374
T7500-4	KK007143.D	25	05/20/04	NS	n/a	n/a	GKK374

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

T7500-1, T7500-2, T7500-3, T7500-4, T7500-5

CAS No.	Compound	T7500-4 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	95.9		500	570	95	553	91	3	70-134/21
100-41-4	Ethylbenzene	317		500	776	92	758	88	2	73-132/15
108-88-3	Toluene	27.6		500	485	91	471	89	3	66-137/22
1330-20-7	Xylenes (total)	1600		1500	2820	81	2760	77	2	69-130/19
95-47-6	o-Xylene	323		500	795	94	774	90	3	66-131/20
	m,p-Xylene	1270		1000	2020	75	1990	72	1	68-132/19

CAS No.	Surrogate Recoveries	MS	MSD	T7500-4	Limits
460-00-4	4-Bromofluorobenzene	101%	97%	104%	71-127%
98-08-8	aaa-Trifluorotoluene	88%	86%	102%	66-136%

General Chemistry

QC Data Summaries

Includes the following where applicable:

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

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: T7500
Account: MWHSLCUT - Montgomery Watson
Project: Bianco North

Analyte	Batch ID	RL	MB Result	Units	BSP %Recov	QC Limits
Nitrogen, Nitrate + Nitrite	GN6427				104.0	80-114%
Nitrogen, Nitrate + Nitrite	GN6427	0.050	<0.050	mg/l	107.0	80-114%

Associated Samples:
Batch GN6427: T7500-1, T7500-2, T7500-3, T7500-4

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: T7500
Account: MWHSLCUT - Montgomery Watson
Project: Blanco North

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Nitrogen, Nitrate + Nitrite	GN6427	T7455-1	mg/l	0.52	0.52	0.0	0-5%
Nitrogen, Nitrate + Nitrite	GN6427	T7500-1	mg/l	0.29	0.29	0.0	0-5%
Nitrogen, Nitrate + Nitrite	GN6427	T7502-3	mg/l	7.6	7.7	1.3	0-5%

Associated Samples:
Batch GN6427: T7500-1, T7500-2, T7500-3, T7500-4

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: T7500
Account: MWHSLCUT - Montgomery Watson
Project: Blanco North

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Nitrogen, Nitrate + Nitrite	GN6427	T7455-1	mg/l	0.52	0.200	0.72	100.0	90-115%
Nitrogen, Nitrate + Nitrite	GN6427	T7500-1	mg/l	0.29	0.200	0.49	100.0	90-115%
Nitrogen, Nitrate + Nitrite	GN6427	T7500-1	mg/l	0.29	0.200	0.50	103.0	90-115%
Nitrogen, Nitrate + Nitrite	GN6427	T7502-3	mg/l	7.6	2.00	9.7	105.0	90-115%
Nitrogen, Nitrate + Nitrite	GN6427	T7502-3	mg/l	7.6	2.00	9.7	105.0	90-115%

Associated Samples:
Batch GN6427: T7500-1, T7500-2, T7500-3, T7500-4

5.3

Groundwater Analytical Report – August 2004

DATA VERIFICATION WORKSHEET

Analytical Method/Analytes: SW-846 8021B (BTEX) **Sample Collection Date(s):** 08/23-24/04

Laboratory: Accutest **MWH Job Number:** EPC-SJRB (Blanco North)

Batch Identification: T8100 **Matrix:** Water

MS/MSD Parent(s)[a]: T8100-02 **Field Replicate Parent(s):** None

Verification Complete: [signature] 9-8-04 (Date/Signature)

Foot Notes	Site ID	Sample ID	Lab. ID	Hits (Y/N)	Quals.	Comments
1	Blanco North	MW-19	T8100-01	Y	J	Benzene @ 2650 µg/l
					J	Ethylbenzene @ 303 µg/l
					UJ	Xylenes, total @ <150 µg/l
					UJ	m,p-Xylenes @ <100 µg/l
1,4	Blanco North	MW-23	T8100-02	Y	J	Benzene @ 4480 µg/l
					J	Ethylbenzene @ 160 µg/l
					J	Xylenes, total @ 966 µg/l
					J	o-Xylenes @ 64.4 µg/l
					J	m,p-Xylenes @ 901 µg/l
1,2	Blanco North	MW-26	T8100-03	Y	J	Benzene @ 29.5 µg/l
					UJ	Toluene @ <10 µg/l
					J	Ethylbenzene @ 40.0 µg/l
					J	Xylenes, total @ 93.6 µg/l
					J	o-Xylenes @ 27.2 µg/l
					J	m,p-Xylenes @ 66.3 µg/l
1,3	Blanco North	MW-27	T8100-04	Y	J	Benzene @ 398 µg/l
					UJ	Toluene @ <50 µg/l
					UJ	Ethylbenzene @ <50 µg/l
					J	Xylenes, total @ 4830 µg/l
					J	o-Xylenes @ 1040 µg/l
					J	m,p-Xylenes @ 3790 µg/l
None	Trip Blank	082304TB01	T8100-05	N		

DATA VERIFICATION WORKSHEET
(Page 2 of 3)

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

Laboratory: Accutest **Batch Identification:** T8100

Verification Criteria								
Sample ID	MW-19	MW-23	MW-26	MW-27	082304TB 01			
Lab ID	T8100-01	T8100-02	T8100-03	T8100-04	T8100-05			
Holding Time	A[1]	A[1]	A[1]	A[1]	A			
Analyte List	A	A	A	A	A			
Reporting Limits	A	A	A	A	A			
Surrogate Spike Recovery	A	A	A[2]	A[3]	A			
Trip Blank	A	A	A	A	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	A	A			
Laboratory Control Sample (LCS)	A	A	A	A	A			
Laboratory Control Sample Duplicate (LCSD)	N	N	N	N	N			
Matrix Spike/Matrix Spike Dup. (MS/MSD)	N/A	A[4]	N/A	A	N/A			
Retention Time Window	N	N	N	N	N			
Injection Time(s)	N	N	N	N	N			
Hardcopy vs. Chain-of-Custody	A	A	A	A	A			
EDD vs. Hardcopy	N	N	N	N	N			
EDD vs. Chain of Custody	N	N	N	N	N			

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

NOTES:

1) Sample submitted to laboratory unpreserved; sample holding time reduced from 14 days to seven. Sample analyzed outside of holding time introducing a possible low bias. Qualify associated sample hits with "J" flags indicating the data are estimated and possibly biased low. Qualify associated sample non-detects with "UJ" flags indicating possible false negatives unless the non-detect data is consistent with historical data.

2) Surrogate percent recovery outside acceptance criteria for the following compounds:
   a) aaa-Trifluorotoluene @ 258% (66-136). Only one surrogate outside acceptance criteria; no data qualified. Sample was diluted and reanalyzed; surrogate percent recovery was within acceptance criteria and the target analyte results were comparable to the initial run.

3) Surrogate percent recovery outside acceptance criteria for the following compounds:
   a) 4-Bromofluorobenzene @ 128% (71-127), indicating a possible high bias. Qualify associated sample hits with "J" flags indicating the data are estimated and possibly biased high. Sample was diluted and reanalyzed; surrogate percent recovery was within acceptance criteria and the target analyte results were comparable to the initial run.
   b) aaa-Trifluorotoluene @ 1826% (66-136), indicating a possible high bias. Qualify associated sample hits with "J" flags indicating the data are estimated and possibly biased high. Sample was diluted and reanalyzed; surrogate percent recovery was still outside acceptance criteria and the target analyte results were comparable to the initial run.

4) MS/MSD percent recoveries outside acceptance criteria for the following compounds:
   a) Benzene @ 57% and 48% (70-134). Sample concentration greater than four times the spike amount; analyte recovery not expected, no data qualified.

e-Hardcopy 2.0
Automated Report

Gulf Coast
ACCUTEST.
Laboratories

09/08/04

Technical Report for

Montgomery Watson

Blanco North

D-MWH-05-08-03-MSG-01

Accutest Job Number: T8100

Sampling Dates: 08/23/04 - 08/24/04

Report to:

Montgomery Watson

brian.buttars@us.mwhglobal.com

ATTN: Brian Buttars

Total number of pages in report: 15

ACCREDITED IN ACCORDANCE WITH nelac

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

Ron Martino
Laboratory Manager

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Accutest Laboratories

Sample Summary

Montgomery Watson

Job No: T8100

Blanco North
Project No: D-MWH-05-08-03-MSG-01

Sample Number	Collected Date	Time	By	Received	Matrix Code	Matrix Type	Client Sample ID
T8100-1	08/23/04	15:00	MN	08/25/04	AQ	Ground Water	BLANCO NFP MW-19
T8100-2	08/23/04	17:00	MN	08/25/04	AQ	Ground Water	BLANCO NFP MW-23
T8100-3	08/24/04	07:55	MN	08/25/04	AQ	Ground Water	BLANCO NFP MW-26
T8100-4	08/24/04	08:30	MN	08/25/04	AQ	Ground Water	BLANCO NFP MW-27
T8100-5	08/23/04	10:00	MN	08/25/04	AQ	Ground Water	082304TB01

Accutest Laboratories

Report of Analysis

Client Sample ID:	BLANCO NFP MW-19		
Lab Sample ID:	T8100-1	Date Sampled:	08/23/04
Matrix:	AQ - Ground Water	Date Received:	08/25/04
Method:	SW846 8021B	Percent Solids:	n/a
Project:	Blanco North		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	KK01559.D	50	09/02/04	BC	n/a	n/a	GKK423
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	2650	50	25	ug/l	
108-88-3	Toluene	ND	50	25	ug/l	
100-41-4	Ethylbenzene	303	50	25	ug/l	
1330-20-7	Xylenes (total)	ND	150	50	ug/l	
95-47-6	o-Xylene	ND	50	25	ug/l	
	m,p-Xylene	ND	100	50	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	120%		71-127%
98-08-8	aaa-Trifluorotoluene	110%		66-136%

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

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	BLANCO NFP MW-23		
Lab Sample ID:	T8100-2	Date Sampled:	08/23/04
Matrix:	AQ - Ground Water	Date Received:	08/25/04
Method:	SW846 8021B	Percent Solids:	n/a
Project:	Blanco North		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	KK01560.D	50	09/02/04	BC	n/a	n/a	GKK423
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	4480	50	25	ug/l	
108-88-3	Toluene	ND	50	25	ug/l	
100-41-4	Ethylbenzene	160	50	25	ug/l	
1330-20-7	Xylenes (total)	966	150	50	ug/l	
95-47-6	o-Xylene	64.4	50	25	ug/l	
	m,p-Xylene	901	100	50	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	115%		71-127%
98-08-8	aaa-Trifluorotoluene	109%		66-136%

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

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	BLANCO NFP MW-26		
Lab Sample ID:	T8100-3	Date Sampled:	08/24/04
Matrix:	AQ - Ground Water	Date Received:	08/25/04
Method:	SW846 8021B	Percent Solids:	n/a
Project:	Blanco North		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	KK01555.D	10	09/02/04	BC	n/a	n/a	GKK423
Run #2	KK01556.D	50	09/02/04	BC	n/a	n/a	GKK423

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

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	29.5	10	5.0	ug/l	
108-88-3	Toluene	ND	10	5.0	ug/l	
100-41-4	Ethylbenzene	40.0	10	5.0	ug/l	
1330-20-7	Xylenes (total)	93.6	30	10	ug/l	
95-47-6	o-Xylene	27.2	10	5.0	ug/l	
	m,p-Xylene	66.3	20	10	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	118%	114%	71-127%
98-08-8	aaa-Trifluorotoluene	258% [a]	133%	66-136%

(a) Outside control limits due to matrix interference.

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

Accutest Laboratories

Report of Analysis

Client Sample ID:	BLANCO NFP MW-27		
Lab Sample ID:	T8100-4	Date Sampled:	08/24/04
Matrix:	AQ - Ground Water	Date Received:	08/25/04
Method:	SW846 8021B	Percent Solids:	n/a
Project:	Blanco North		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	KK01557.D	50	09/02/04	BC	n/a	n/a	GKK423
Run #2 [a]	KK01558.D	500	09/02/04	BC	n/a	n/a	GKK423

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

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	398	50	25	ug/l	
108-88-3	Toluene	ND	50	25	ug/l	
100-41-4	Ethylbenzene	ND	50	25	ug/l	
1330-20-7	Xylenes (total)	4830	150	50	ug/l	
95-47-6	o-Xylene	1040	50	25	ug/l	
	m,p-Xylene	3790	100	50	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	128% [b]	119%	71-127%
98-08-8	aaa-Trifluorotoluene	1826% [b]	219% [c]	66-136%

(a) Sample was not preserved to a pH < 2; reported results are considered minimum values.
(b) Outside control limits due to matrix interference.
(c) 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
N = Indicates presumptive evidence of a compound

Accutest Laboratories

Report of Analysis

Client Sample ID:	082304TB01		
Lab Sample ID:	T8100-5	Date Sampled:	08/23/04
Matrix:	AQ - Ground Water	Date Received:	08/25/04
Method:	SW846 8021B	Percent Solids:	n/a
Project:	Blanco North		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	KK01554.D	1	09/02/04	BC	n/a	n/a	GKK423
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	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	0.50	ug/l	
	m,p-Xylene	ND	2.0	1.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	107%		71-127%
98-08-8	aaa-Trifluorotoluene	107%		66-136%

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

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

CHAIN OF CUSTODY 082404MN01

ACCUTEST. Laboratories
10165 Harwin Drive, Ste. 150, Houston, TX 77036
TEL: 713-271-4700 FAX: 713-271-4770
www.accutest.com

FED-EX Tracking # 868152796627 | Bottle Order Control # | Accutest Quote # | Accutest Job # T8800

Client / Reporting Information

Company Name: EL Paso
Address: 2 North Nevada
City: Colorado Springs State: CO Zip: 80903
Project Contact: Scott Pope E-mail:
Phone #: 719 520 4433 Fax #: 719 520 4716
Sampler's Name: Martin Nee

Project Information

Project Name: Blanco North Flare Pit
Street:
City: State:
Project #:
Client Purchase Order #:

Requested Analysis

BTEX

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL - Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
LAB USE ONLY

Accutest Sample #	Field ID / Point of Collection	SUMMA # / MEOH Vial #	Collection Date	Time	Sampled By	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	H2SO4	HNO3	None	MeOH	NaHSO4	Encore	BTEX
1	Blanco NFP MW-19		8/23/04	1500	MW	WG	2					X				✓
2	Blanco NFP MW-23		8/23/04	1700	MW	WG	2					X				✓
3	Blanco NFP MW 26		8/24/04	0755	MW	WG	2					X				✓
4	Blanco NFP MW-27		8/24/04	0830	MW	WG	2					X				✓
5	082304TB01		8/23/04	1000	MW	WG	2					X				✓

Turnaround Time (Business Days)

- [x] 10 Day STANDARD
- [ ] 5 Day RUSH
- [ ] 3 Day EMERGENCY
- [ ] 2 Day EMERGENCY
- [ ] 1 Day EMERGENCY
- [ ] Other

Approved By: / Date:

Emergency & Rush T/A data available VIA LabLink

Data Deliverable Information

- [ ] Commercial "A"
- [ ] Commercial "B"
- [ ] Reduced Tier 1
- [ ] Full Tier 1
- [ ] TRRP13
- [ ] EDO Format

Commercial "A" = Results Only

Comments / Remarks

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received by:	Relinquished by:	Date Time:	Received by:
1 8/24/04	1050	1 Ken Martinez 8/25/04	2		2
Relinquished by:	Date Time	Received by:	Relinquished by:	Date Time:	Received by:
3		3	4		4
Relinquished by:	Date Time	Received by:	Custody Seal #	Preserved where applicable ☐	On Ice ✓	Cooler Temp. 4°C
5		5				

T8100: Chain of Custody
Page 1 of 2

ACCUTEST. SAMPLE RECEIPT LOG

JOB #: T8100 DATE/TIME RECEIVED: 8/25/4 1000

CLIENT: El Paso INITIALS: RM

Condition/Variance (Circle "Y" for yes and "N" for no. If "N" is circled, see variance for explanation):

1. (Y) N Sample received in undamaged condition.
2. (Y) N Samples received within temp. range.
3. (Y) N Sample received with proper pH.
4. (Y) N Sample received in proper containers.
5. (Y) N Sample volume sufficient for analysis.
6. (Y) N Sample received with chain of custody.
7. (Y) N Chain of Custody matches sample IDs and analysis on containers.
8. (Y) N Custody seal received intact and tamper evident on cooler.
9. (Y) N Custody seal received intact and tamper evident on bottles.

SAMPLE or FIELD ID	BOTTLE #	DATE SAMPLED	MATRIX	VOLUME	LOCATION	PRESERV.	PH
1-5	1-2	8/25/4	AQ	2X VOA	VR	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
		RM 8/25/4				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: Encore Freezer

PRESERVATIVES: 1: None 2: HCL 3: HNO3 4: H2SO4 5: NAOH 6: Other

Comments:

pH of waters checked excluding volatiles

pH of soils N/A

Delivery method: Courier: FedEx
Tracking#: 842152794677

COOLER TEMP: 4°C COOLER TEMP:
COOLER TEMP: COOLER TEMP:

Method of sample disposal: (circle one) Accutest disposal Hold Return to Client

Form: SM012, Rev. 6/4/04, QAO

T8100: 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: T8100
Account: MWHSLCUT Montgomery Watson
Project: Blanco North

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GKK423-MB	KK01553.D	1	09/02/04	BC	n/a	n/a	GKK423

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

T8100-1, T8100-2, T8100-3, T8100-4, T8100-5

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.50	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.50	ug/l	
108-88-3	Toluene	ND	1.0	0.50	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	1.0	ug/l	
95-47-6	o-Xylene	ND	1.0	0.50	ug/l	
	m,p-Xylene	ND	2.0	1.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
460-00-4	4-Bromofluorobenzene	106%	71-127%
98-08-8	aaa-Trifluorotoluene	107%	66-136%

Blank Spike Summary

Job Number: T8100
Account: MWHSLCUT Montgomery Watson
Project: Blanco North

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GKK423-BS	KK01552.D	1	09/02/04	BC	n/a	n/a	GKK423

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

T8100-1, T8100-2, T8100-3, T8100-4, T8100-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	20	21.1	106	76-128
100-41-4	Ethylbenzene	20	22.2	111	79-129
108-88-3	Toluene	20	22.0	110	77-126
1330-20-7	Xylenes (total)	60	67.4	112	79-126
95-47-6	o-Xylene	20	22.8	114	78-125
	m,p-Xylene	40	44.6	112	79-127

CAS No.	Surrogate Recoveries	BSP	Limits
460-00-4	4-Bromofluorobenzene	120%	71-127%
98-08-8	aaa-Trifluorotoluene	110%	66-136%

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: T8100
Account: MWHSLCUT Montgomery Watson
Project: Blanco North

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
T8100-2MS [a]	KK01561.D	50	09/02/04	BC	n/a	n/a	GKK423
T8100-2MSD [a]	KK01562.D	50	09/02/04	BC	n/a	n/a	GKK423
T8100-2 [a]	KK01560.D	50	09/02/04	BC	n/a	n/a	GKK423

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

T8100-1, T8100-2, T8100-3, T8100-4, T8100-5

CAS No.	Compound	T8100-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	4480		1000	5050	57* [b]	4960	48* [b]	2	70-134/21
100-41-4	Ethylbenzene	160		1000	1110	95	1090	93	2	73-132/15
108-88-3	Toluene	ND		1000	989	99	969	97	2	66-137/22
1330-20-7	Xylenes (total)	966		3000	4010	101	3930	99	2	69-130/19
95-47-6	o-Xylene	64.4		1000	1090	103	1070	101	2	66-131/20
	m,p-Xylene	901		2000	2920	101	2850	97	2	68-132/19

CAS No.	Surrogate Recoveries	MS	MSD	T8100-2	Limits
460-00-4	4-Bromofluorobenzene	118%	119%	115%	71-127%
98-08-8	aaa-Trifluorotoluene	110%	108%	109%	66-136%

(a) Sample was not preserved to a pH < 2; reported results are considered minimum values.
(b) Outside control limits due to high level in sample relative to spike amount.