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269

# **REPORTS**

**DATE:**

2004

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# Tipperary CORPORATION

633 Seventeenth Street  
Suite 1550  
Denver, Colorado 80202-3622

March 23, 2004

VIA OVERNIGHT MAIL

Mr. Roger C. Anderson  
New Mexico Oil Conservation Division  
1220 S. St. Francis Drive  
Santa Fe, NM 87505

**RE: Progress Report for Year 2003  
Bagley Field  
Pit Closure Project  
Lea County, NM**

Dear Mr. Anderson:

Please find enclosed the 2003 results from our monitor wells in the subject project area. This report summarizes the results from water samples taken on January 4, April 17, June 20, and October 30, 2003. These results represent 25 quarters of monitoring. In general, we are continuing to observe decreasing levels of BTEX in the monitor wells.

The Executive Summary section contains a general discussion and the following data:

- Map of pit reclamation locations.
- Survey coordinates of ten new monitor well locations.
- Cross reference listing of revised monitor well numbers.

A summary of investigation work and results to date for each pit closure site is included. The following data is presented for each site:

- Well site plat with monitor well locations.
- Ground water potentiometric map for each sampling event with the direction and magnitude of the hydraulic gradient.
- Table of ground water recovery volumes (where applicable).
- Well bailing log for each well.
- Summary table and chart of water quality results for each well.
- Geologic/lithologic log and well construction diagram for each well.

RECEIVED

MAR 24 2004

Oil Conservation Division  
Environmental Bureau

2003 Annual Report  
Page 2.

A CD is enclosed and contains all of the laboratory analytical and quality assurance information for 2003. We will continue to sample the project quarterly and report the results to your office on an annual basis. If you have any questions, please call me at (303) 293-9379.

Very truly yours,

Tipperary Oil & Gas Corporation



Larry G. Sugano  
Vice President - Engineering

Enclosures

cc: NMOCD Hobbs Office  
Whole Earth Environmental

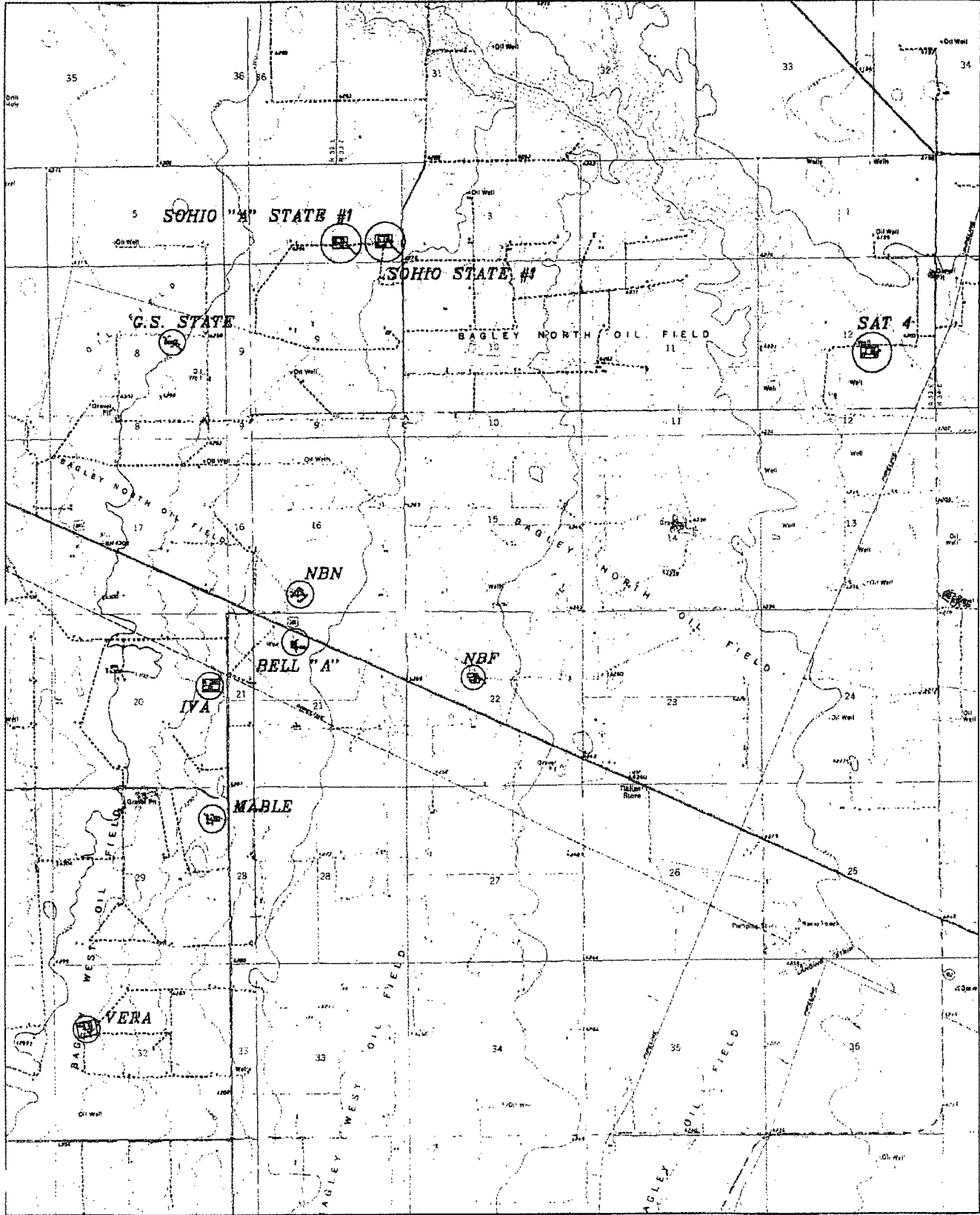
**Tipperary Oil & Gas Corporation  
Bagley Field  
2003 Annual Report**

**Executive Summary**

The 2003 Bagley Field monitor well survey project was especially busy. In addition to the installation of ten additional wells within the field, we made great strides in perfecting our bailing procedures to minimize any potential for cross contamination. Each well now has its own dedicated bailer used to obtain water samples after pumping an average of ten well volumes from each bore. New decontamination procedures and equipment blank analyses were instituted to insure the accuracy of the reported results.

We believe that all sites have been completely delineated. The outer ring of wells on each site have BTEX concentrations falling within NMOC standards. A table of monitor well number revisions is attached for your reference. A table listing the surveyed locations of all recently installed monitor wells is attached. The following sections present the investigation work and results to date for each of the sites.

# WHOLE EARTH ENVIROMENTAL, INC.



**EXHIBIT 9**

**BASIN SURVEYS** P.O. BOX 1786 - HOBBS, NEW MEXICO

W.O. Number: 9352

Drawn By: K. GOAD

Date: 10-21-99

Diak: KJG #122 - WE9352.DWG

WHOLEEARTH

SOHIO STATE 1

WELL	LATITUDE	LONGITUDE	ELEVATION
MW4	N 33 23' 22.56781"	W 103 36' 38.95930"	4282.71
MW8	N 33 23' 17.11074"	W 103 36' 42.59112"	4280.10

SOHIO A STATE 1

WELL	LATITUDE	LONGITUDE	ELEVATION
MW4	N 33 23' 22.80984"	W 103 36' 55.56751"	4285.06
MW6	N 33 23' 21.21826"	W 103 36' 54.49003"	4284.50
MW8	N 33 23' 16.75221"	W 103 36' 56.54969"	4283.84
MW10	N 33 23' 16.78983"	W 103 36' 49.48521"	4281.32
MW11	N 33 23' 14.05096"	W 103 36' 49.64146"	4280.55

COLLIER WELLS

WELL	LATITUDE	LONGITUDE	ELEVATION
MW1	N 33 22' 55.89915"	W 103 37' 14.87439"	4290.13
MW2	N 33 22' 56.31201"	W 103 37' 10.72284"	4286.90
MW5	N 33 22' 51.16167"	W 103 37' 15.53811"	4290.58

BELL A 1

WELL	LATITUDE	LONGITUDE	ELEVATION
MW6	N 33 21' 21.90236"	W 103 37' 14.63097"	4280.64

STATE NBF 1

WELL	LATITUDE	LONGITUDE	ELEVATION
MW6	N 33 21' 10.65698"	W 103 36' 08.88434"	4258.24

GS STATE 1

WELL	LATITUDE	LONGITUDE	ELEVATION
MW5	N 33 22' 50.08279"	W 103 37' 55.56043"	4302.52

HORIZONTAL DATUM NAD-83  
 VERTICAL DATUM NAVD-88

## Tipperary - Bagley Field Well Number Revisions

	Original No.	New No.		Original No.	New No.
Iva COM	Source	Source	Sohio 1	10	1
	1	1		17	2
	2	2		18	3
Mable	Source	Source	East	28	4
	3	1		30	5
	4	2		40	6
	35	3			7
Bell	6	1	Sohio A		8
	13	2		11	1
	14	3		20	2
	25	4		19	3
	36	5		44	4
	41	6		27	5
NBF	8	1	45	6	
	15	2	31	7	
	16	3	46	8	
	26	4	39	9	
	37	5	47	10	
	42	6		11	
GS	Source	Source			
	12	1			
	22	2			
	21	3			
	29	4			
38	5				
Collier	Source	Source			
	37	1			
	36	2			
	32	3			
	33	4			
	35	5			
34	6				

NBF



**Tipperary Oil & Gas Corporation  
Bagley Field  
2003 Annual Report**

**State NBF #1  
Section 22F-T11S-R33E**

The NBF Site consists of six monitor wells. The well nearest the pit. (MW #1), continues to show fluctuating BTEX concentrations over the monitoring period – two quarters with acceptable results and two over state standards.

Monitor well no. 2 is now consistently showing 3-4” of free product within the bailer along with a black sulfide.

Monitor well no. 3 is quite variable in BTEX concentrations but shows an increase in sulfides.

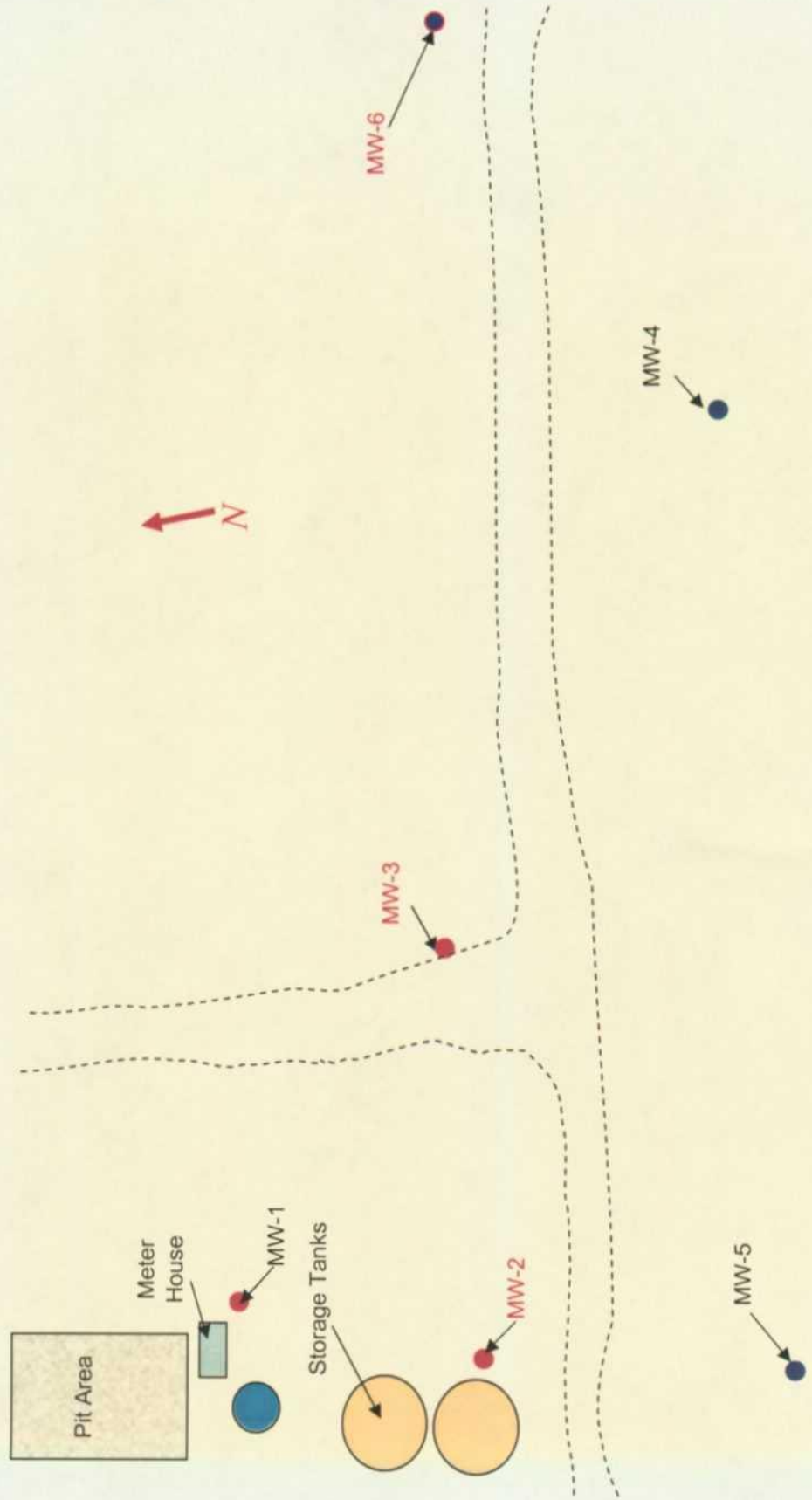
Monitor wells 4 and 5 continue to show acceptable results and fully delineate the southern edge of the plume.

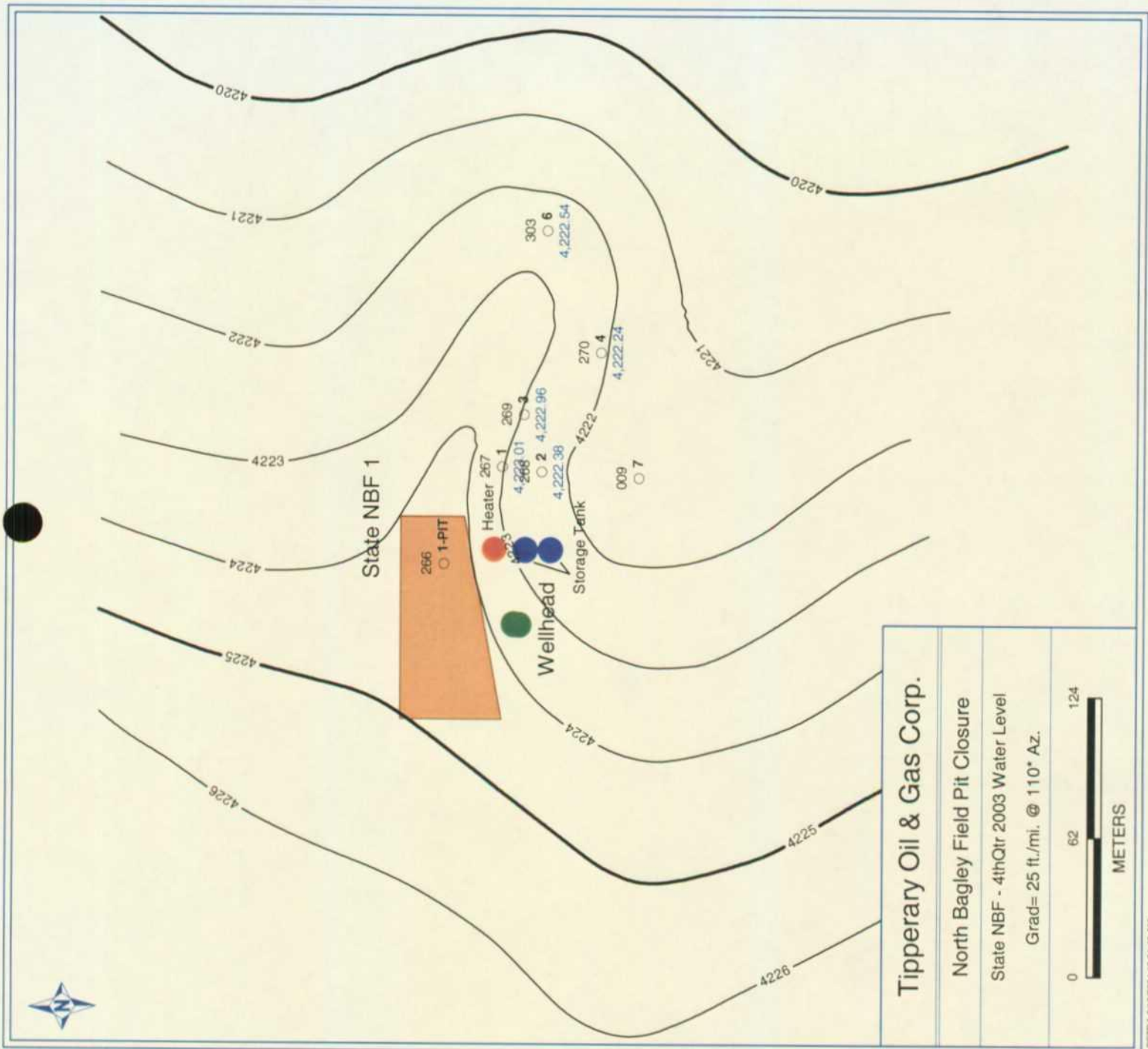
Monitor well no. 6, drilled in June, 2003 shows negligible BTEX concentrations and effectively delineates the eastern edge of the plume.

Please find the following data:

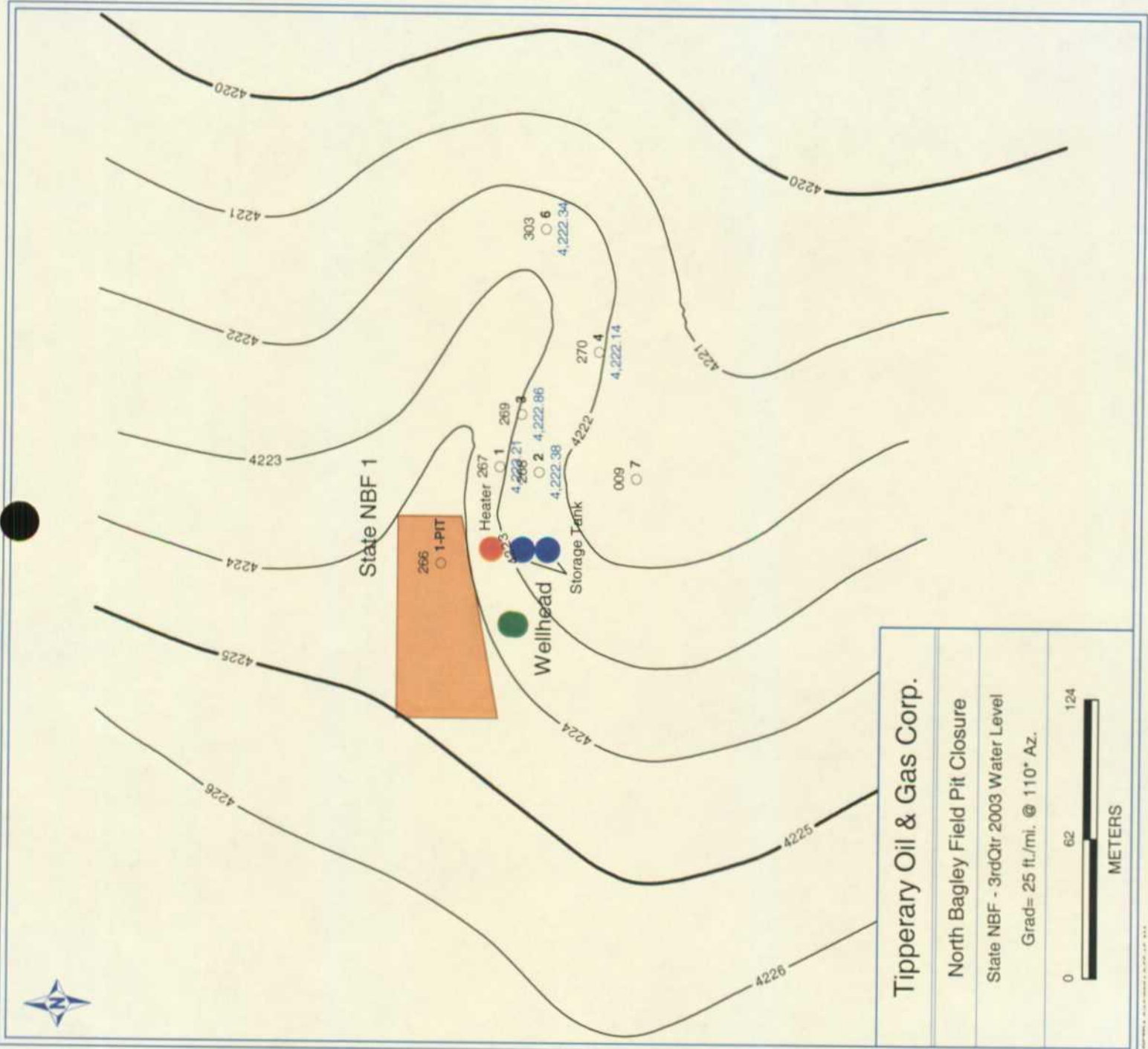
- Well-site plat with monitor well locations.
- Ground water potentiometric map for each sampling event with direction and magnitude of the hydraulic gradient.
- Well bailing log for each well.
- Summary table and chart of ground water quality results for each well.
- Well completion diagram for each well.

Tipperary Corporation  
State NBF #1  
Monitor Well Locations



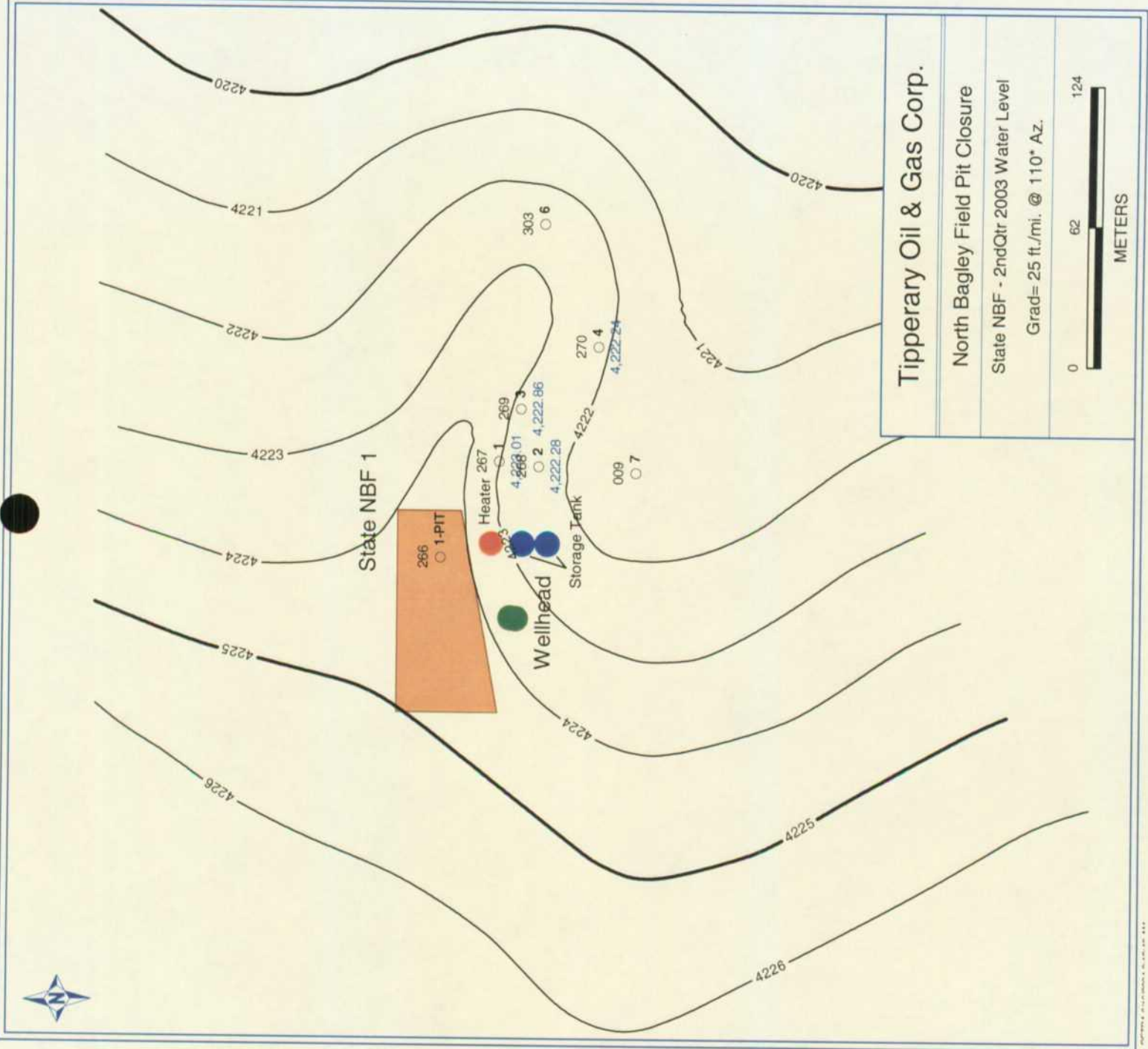


<b>Tipperary Oil &amp; Gas Corp.</b>
North Bagley Field Pit Closure
State NBF - 4thQtr 2003 Water Level
Grad= 25 ft./mi. @ 110° Az.
0 62 124 METERS



<b>Tipperary Oil &amp; Gas Corp.</b>
North Bagley Field Pit Closure
State NBF - 3rdQtr 2003 Water Level
Grad= 25 ft./mi. @ 110° Az.
0 62 124
METERS

DATE: 11/10/03 BY: J. J. J.



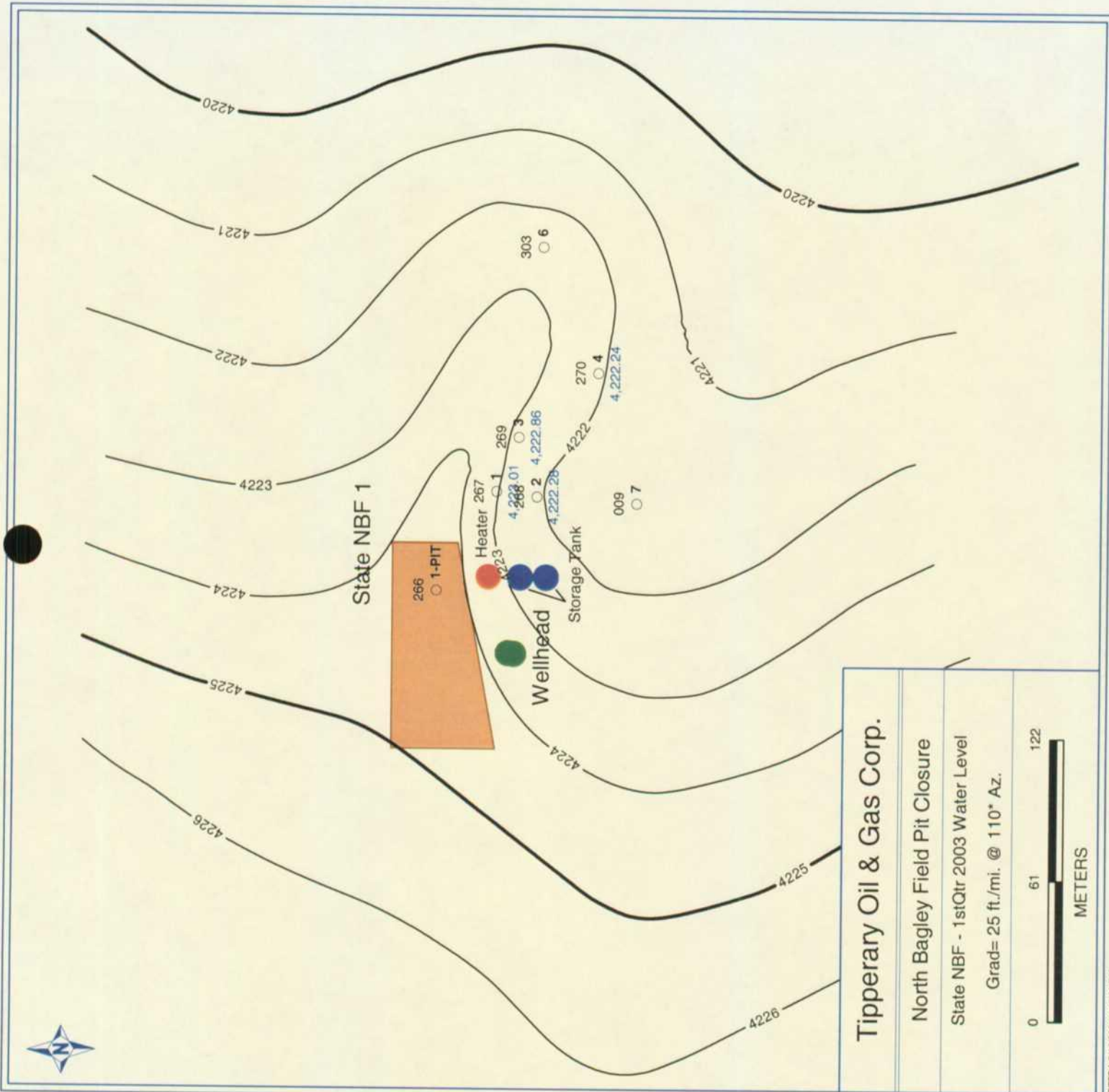
**Tipperary Oil & Gas Corp.**

North Bagley Field Pit Closure

State NBF - 2ndQtr 2003 Water Level

Grad= 25 ft./mi. @ 110° Az.





<b>Tipperary Oil &amp; Gas Corp.</b>
North Bagley Field Pit Closure
State NBF - 1stQtr 2003 Water Level Grad= 25 ft./mi. @ 110° AZ.
0 61 122 METERS

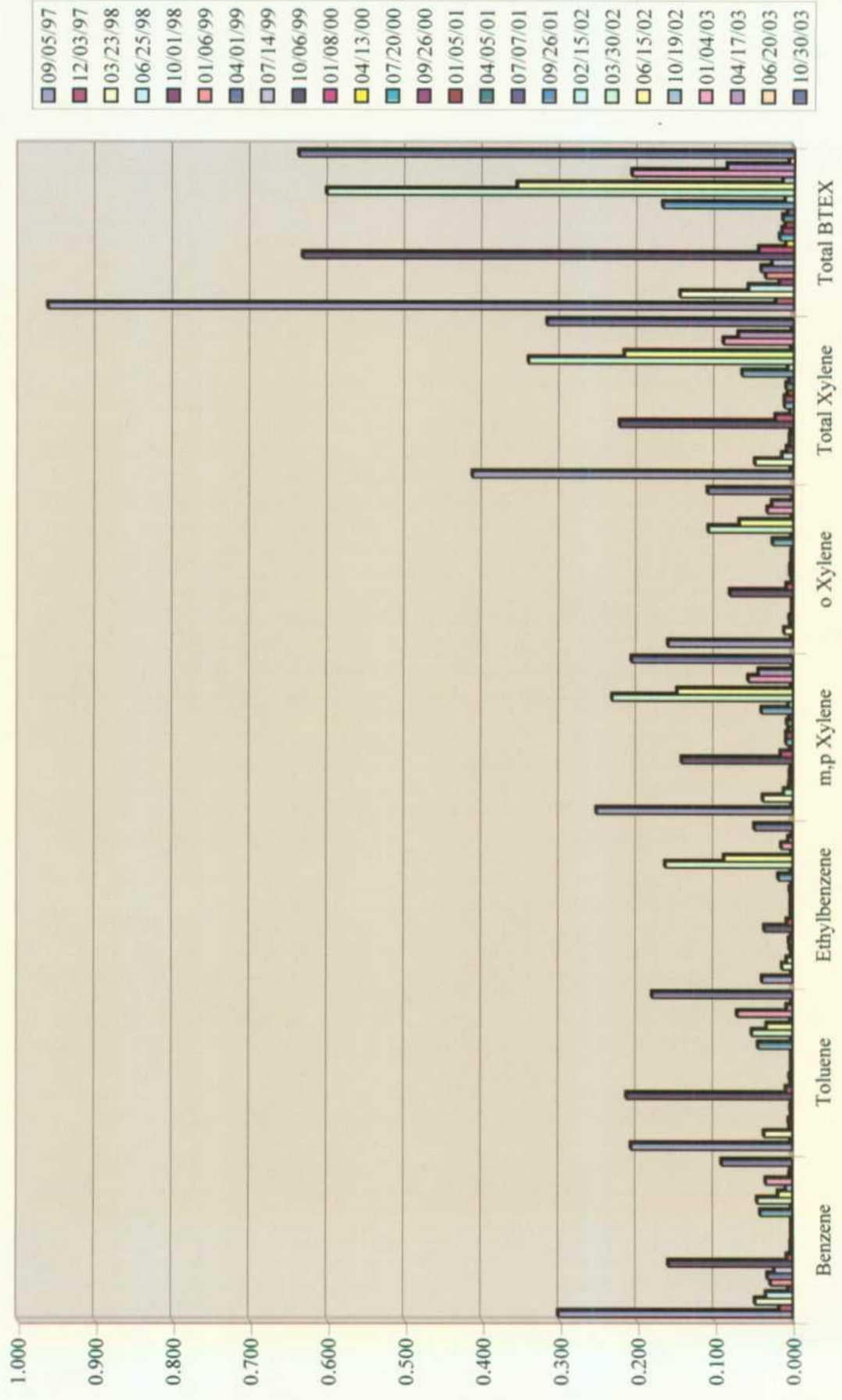


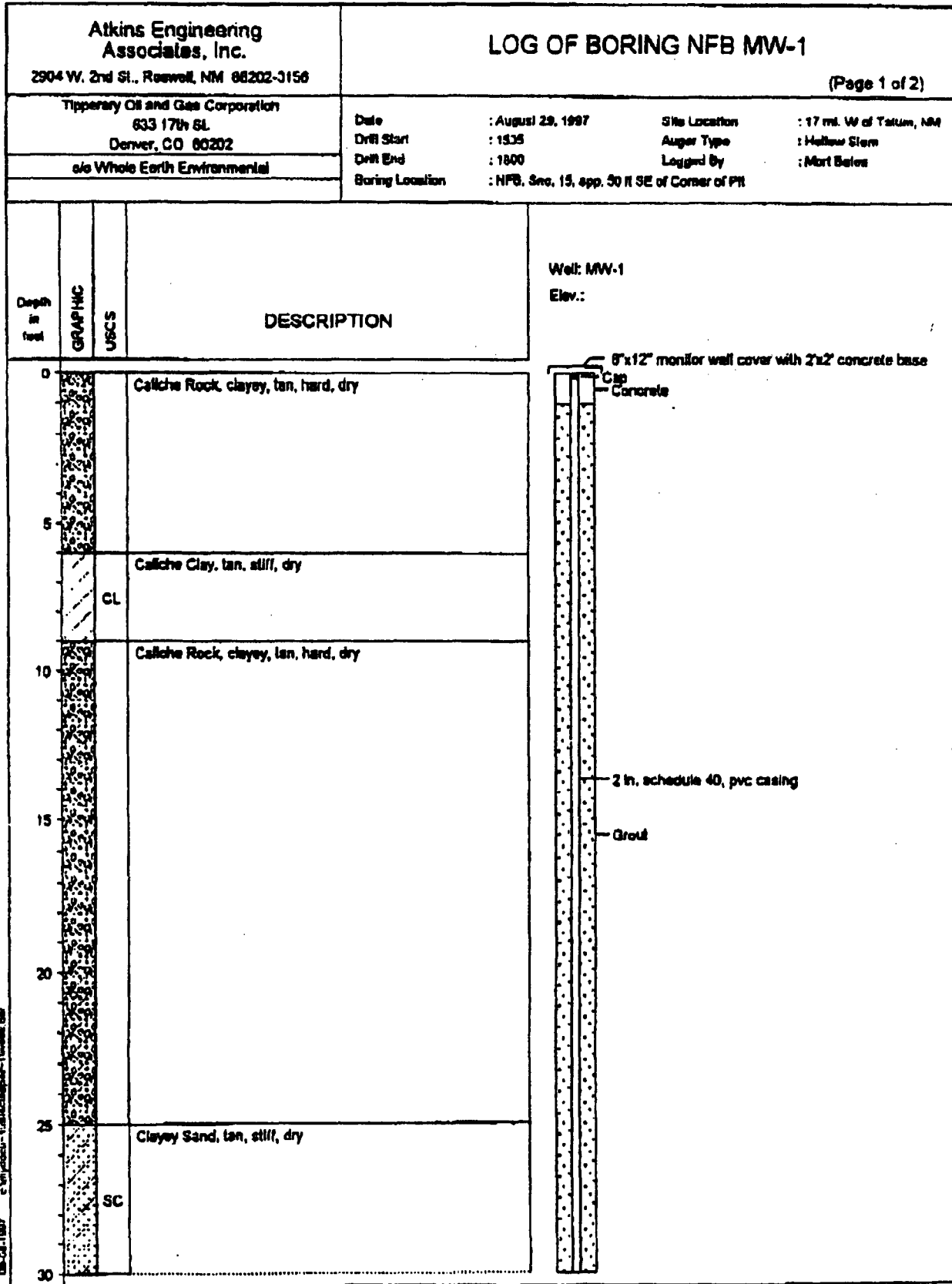
**Monitor Well # 1  
State NBF # 1**

Lab. #	Sample Date	Benzene	Toluene	Ethylbenzene	m,p Xylene	o Xylene	Total Xylene	Total BTEX
12486	09/05/97	0.302	0.208	0.039	0.253	0.161	0.414	0.963
13175	12/03/97	0.017	0.002	0.001	0.001	0.002	0.003	0.023
14064	03/23/98	0.048	0.036	0.013	0.038	0.011	0.049	0.146
14663	06/25/98	0.034	0.003	0.007	0.011	0.003	0.014	0.058
15595	10/01/98	0.005	0.004	0.001	0.004	0.004	0.008	0.018
16602	01/06/99	0.028	0.001	0.003	0.003	0.001	0.004	0.036
17431	04/01/99	0.032	0.002	0.004	0.003	0.001	0.004	0.042
18594	07/14/99	0.023	0.001	0.001	0.002	0.001	0.003	0.028
20600	10/06/99	0.160	0.214	0.036	0.143	0.081	0.224	0.634
22761	01/08/00	0.007	0.008	0.007	0.015	0.008	0.023	0.045
25171	04/13/00	0.002	0.002	0.002	0.003	0.001	0.004	0.010
28463	07/20/00	0.002	0.003	0.002	0.008	0.003	0.011	0.018
31490	09/26/00	0.001	0.001	0.002	0.008	0.003	0.011	0.015
36147	01/05/01	0.001	0.001	0.002	0.005	0.002	0.007	0.011
38927	04/05/01	0.001	0.001	0.003	0.007	0.002	0.009	0.014
0101098-11	07/07/01	0.001	0.001	0.001	0.004	0.001	0.005	0.008
0101642-11	09/26/01	0.041	0.044	0.018	0.040	0.026	0.066	0.169
0202619-11	02/15/02	0.001	0.001	0.002	0.005	0.002	0.007	0.011
0203001-11	03/30/02	0.045	0.052	0.164	0.233	0.109	0.342	0.603
0203602-10	06/15/02	0.018	0.033	0.088	0.149	0.069	0.218	0.357
0204815-08	10/19/02	0.008	0.002	0.001	0.002	0.001	0.003	0.014
0205349-12	01/04/03	0.034	0.071	0.014	0.057	0.033	0.090	0.209
0306249-13	04/17/03	0.003	0.007	0.005	0.044	0.027	0.071	0.086
0306733-29	06/20/03	0.002	0.001	0.001	0.001	0.001	0.002	0.006
0307790-27	10/30/03	0.091	0.181	0.049	0.208	0.110	0.318	0.639



NBF MW #1





09-04-11007 c:\mydocuments\1\atkins\logbook\roswell\bor

<b>Atkins Engineering Associates, Inc.</b> 2904 W. 2nd St., Roswell, NM 86202-3158		<b>LOG OF BORING NFB MW-1</b> (Page 2 of 2)	
Tipperary Oil and Gas Corporation 633 17th St. Denver, CO 80202 c/o Whole Earth Environmental		Date : August 29, 1987 Drill Start : 1535 Drill End : 1800 Boring Location : NFB, Sec. 15, app. 50 ft SE of Corner of PR	Site Location : 17 mi. W of Tatum, NM Auger Type : Hollow Stem Logged By : Mort Bates
Depth in feet	GRAPHIC USCS	DESCRIPTION	Well: MW-1 Elev.:
30	SC		Grout 2 in. schedule 40, pvc casing  Bentonite Seal
35			
40			
45	SC	Sandy Clay, tan, stiff, moist	Sand Pack .020 slot screen, 2 in. ID
50	SC	Sandy Clay, tan, loose, saturated Water Level = 45 ft.	
55	SC		
60		TD=60 ft.	

09-08-1987 c:\mp\pawc\2\m\sc\boring\1\roswell\_1.nst



NBF

### Monitor Well Bailing Log

NBF MW #2

Lat: N33° 21.17948'  
Long. W103° 36.21721'  
Surf. Elev. 4259.68 Ft.

As Drilled	As Measured
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Date: 10/1/1997  
Top of Water 47 Ft.  
Bottom of Bore 58 Ft.

Date:	12/28/02	4/12/03	6/12/03	10/25/03	
Top of Water	37.40	37.20	37.30	37.30	Ft.
Bottom of Bore	54.00	53.90	54.00	54.00	Ft.
Bore Volumn	2.68	2.69	2.69	2.69	Gal.
LPNL Top					Ft.
LPNL Bottom					Ft.
DPNL Top	NA	NA	NA	NA	Ft.
DPNL Bottom	NA	NA	NA	NA	Ft.
Min. Bailing Vol.	8.03	8.08	8.08	8.08	Gal.
Actual Bailing Vol.	20.00	20.00	30.00	20.00	Gal.

### Comments

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**Monitor Well # 2  
State NBF # 1  
Sampling Results**

Lab. #	Sample Date	Benzene	Toluene	Ethylbenzene	m,p Xylene	o Xylene	Total Xylene	Total BTEX
12729	10/02/97	1.9500	1.823	0.381	1.506	0.772	2.278	6.432
13133	12/03/97	2.2890	1.176	0.338	1.285	0.411	1.696	5.499
14049	03/23/98	1.4700	1.230	0.364	1.058	0.466	1.524	4.588
14669	06/25/98	1.4150	1.165	0.270	0.927	0.412	1.339	4.189
15600	10/01/98	3.0270	1.630	0.225	0.811	0.393	1.204	6.086
16608	01/06/99	1.6300	1.490	0.182	0.728	0.350	1.078	4.380
17435	04/01/99	3.1100	1.980	0.214	0.767	0.435	1.202	6.506
18602	07/14/99	3.9700	3.070	0.436	1.610	0.886	2.496	9.972
20612	10/06/99	2.8500	1.850	0.303	1.050	0.612	1.662	6.665
22759	01/08/00	3.2500	2.550	0.335	1.240	0.654	1.894	8.029
25140	04/13/00	2.4000	1.780	0.254	1.080	0.540	1.620	6.054
28445	07/20/00	2.6300	4.320	0.655	3.680	6.660	10.340	17.945
31491	09/26/00	2.8900	1.550	0.239	0.750	2.400	3.150	7.829
36145	01/05/01	2.7900	1.360	0.249	0.612	0.493	1.105	5.504
38928	04/05/01	2.5700	1.460	0.308	0.821	0.481	1.302	5.640
0101098-12	07/07/01	1.8000	0.948	0.250	0.598	0.409	1.007	4.005
0101642-12	09/26/01	2.5200	1.340	0.331	0.960	0.562	1.522	5.713
0202619-12	02/15/02	1.3100	1.070	1.060	3.920	2.100	6.020	9.460
0203001-12	03/30/02	6.820	0.770	1.590	2.280	1.330	3.610	12.790
0203602-11	06/15/02	5.050	0.822	5.340	3.590	1.790	5.380	16.592
0204815-14	10/19/02	1.930	0.569	2.280	2.210	1.220	3.430	8.209
0205349-13	01/04/03	1.440	1.360	0.281	1.000	0.587	1.587	4.668
0306249-14	04/17/03	1.690	1.580	0.504	1.880	0.993	2.873	6.647
0306733-30	06/20/03	3.900	5.140	1.150	4.740	2.380	7.120	17.310
0307790-28	10/30/03	816.000	1790.000	393.000	1170.000	446.000	1616.000	4615.000

NBF MW #2



Atkins Engineering Associates, Inc.  
 P.O. Box 3156  
 Roswell, New Mexico 88202

# LOG OF BORING State NBF, MW #2

(Page 1 of 1)

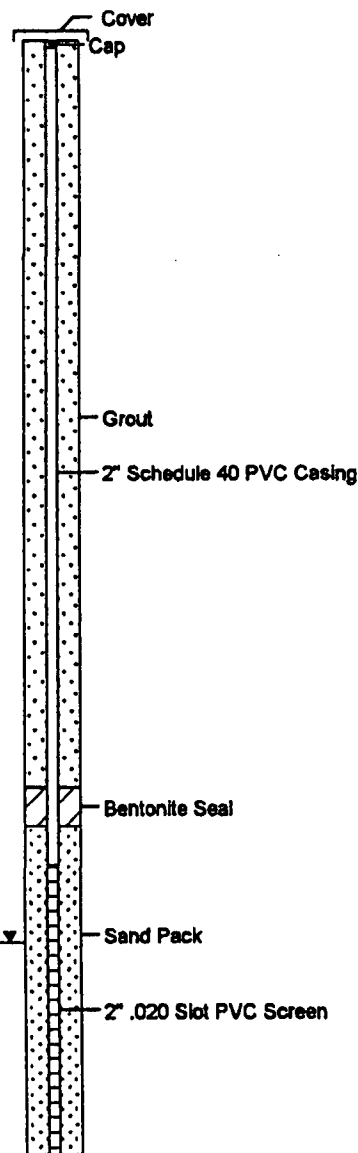
Tipperary Corp. (Whole Earth Environmental)  
 633 17th Street  
 Denver, CO 80202

Date Completed : 10-1-87 Site Location : 17 miles W. of Tatum  
 Drill Start : 12:00 noon Auger Type : Hollow Stem  
 Drill End : 1:45 p.m. Logged By : Mort Bates  
 Boring Location : State NBF, Sec. 22; 150 ft. S. SE. of Center of Plt

Job #97260

Depth in feet	GRAPHIC	USCS	DESCRIPTION
0	[Diagonal hatching]	CL	Caliche Rock w/Silty Clay, Brown, Hard, Dry
5			Caliche Rock w/Silty Clay, Tan, Hard, Dry
10	[Diagonal hatching]	CL	Clay w/Caliche, Tan, Stiff, Dry
15			
20			
25	[Diagonal hatching]	CL	Sandy Clay, Tan, Soft, Damp
30			
35	[Diagonal hatching]	CL	WL = 47 ft.
40			Sandy Clay, Tan, Soft, Wet to Saturated
45	[Diagonal hatching]	CL	
50			
55	[Diagonal hatching]	CL	TD = 58 ft.
60			Bailed and Developed well
65			

Well: MW #2  
 Elev.:



10-03-18 c:\gpc\6\Tipperary\97260\#2.bor

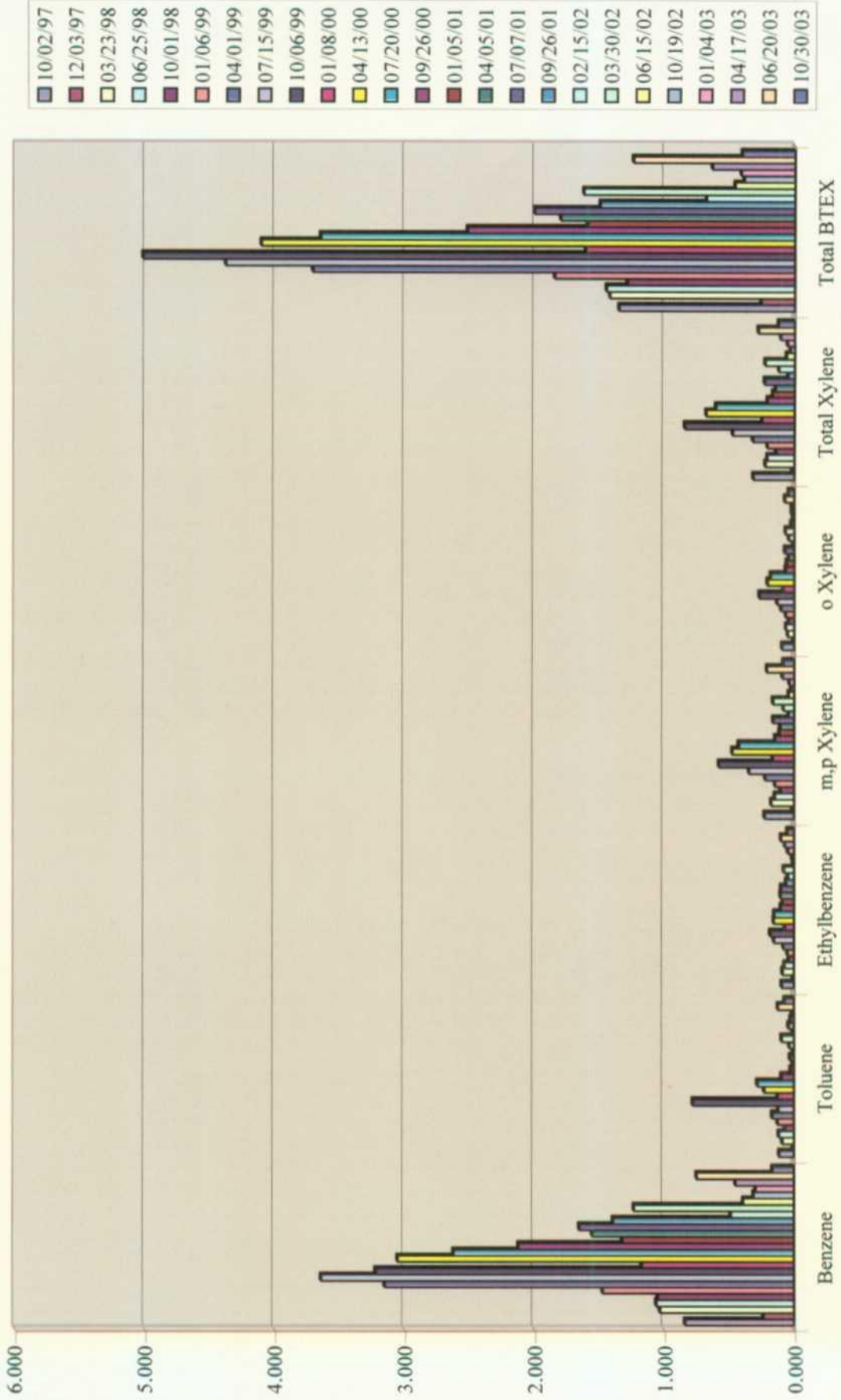




**Monitor Well # 3  
State NBF # 1  
Sampling Results**

Lab. #	Sample Date	Benzene	Toluene	Ethylbenzene	m,p Xylene	o Xylene	Total Xylene	Total BTEX
12730	10/02/97	0.836	0.111	0.090	0.224	0.089	0.313	1.350
13176	12/03/97	0.234	0.003	0.004	0.012	0.003	0.015	0.256
14050	03/23/98	1.029	0.086	0.084	0.173	0.047	0.220	1.419
14670	06/25/98	1.058	0.113	0.070	0.145	0.060	0.205	1.446
15608	10/01/98	1.046	0.065	0.037	0.100	0.039	0.139	1.287
16609	01/06/99	1.470	0.122	0.047	0.144	0.062	0.206	1.845
17436	04/01/99	3.150	0.164	0.078	0.219	0.098	0.317	3.709
18603	07/15/99	3.640	0.116	0.151	0.343	0.129	0.472	4.379
20613	10/06/99	3.220	0.776	0.179	0.576	0.265	0.841	5.016
22772	01/08/00	1.170	0.122	0.068	0.163	0.083	0.246	1.606
25141	04/13/00	3.050	0.226	0.153	0.473	0.203	0.676	4.105
28437	07/20/00	2.620	0.278	0.149	0.424	0.178	0.602	3.649
31492	09/26/00	2.120	0.092	0.099	0.143	0.063	0.206	2.517
36156	01/05/01	1.320	0.023	0.083	0.110	0.055	0.165	1.591
38929	04/05/01	1.550	0.005	0.101	0.104	0.039	0.143	1.799
0101098-13	07/07/01	1.650	0.026	0.097	0.159	0.069	0.228	2.001
0101642-13	09/26/01	1.390	0.001	0.058	0.041	0.005	0.046	1.495
0202619-13	02/15/02	0.484	0.032	0.043	0.080	0.038	0.118	0.677
0203001-13	03/30/02	1.230	0.092	0.075	0.160	0.064	0.224	1.621
0203602-12	06/15/02	0.388	0.005	0.006	0.039	0.020	0.059	0.458
0204815-15	10/19/02	0.308	0.038	0.013	0.021	0.008	0.029	0.388
0205349-14	01/04/03	0.293	0.023	0.044	0.034	0.017	0.051	0.411
0306249-15	04/17/03	0.448	0.014	0.068	0.086	0.017	0.103	0.633
0306733-31	06/20/03	0.747	0.120	0.097	0.207	0.069	0.276	1.240
0307790-29	10/30/03	0.163	0.070	0.048	0.081	0.041	0.122	0.403

NBF MW #3



Atkins Engineering Associates, Inc.  
P.O. Box 3156  
Roswell, New Mexico 88202

# LOG OF BORING State NBF, MW #3

(Page 1 of 1)

Tipperary Corp. (Whole Earth Environmental)  
633 17th Street  
Denver, CO 80202

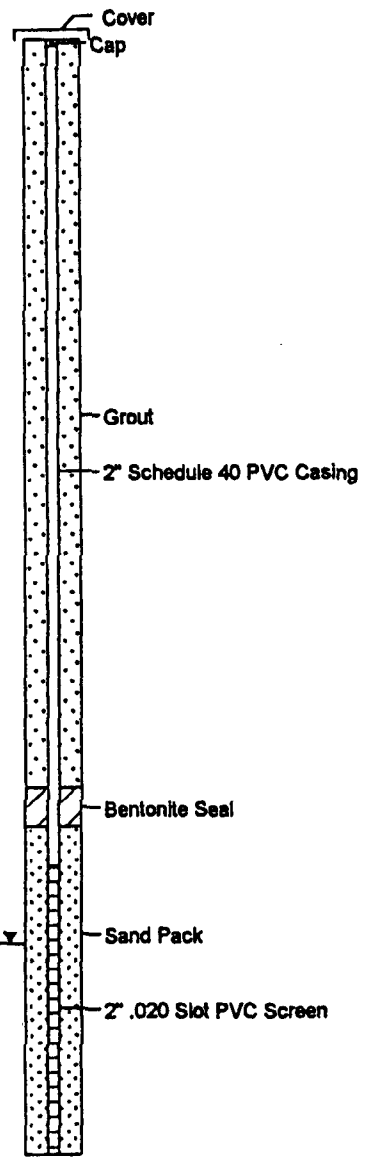
Date Completed : 10-1-97  
Drill Start : 1:50 p.m.  
Drill End : 3:30 p.m.  
Boring Location : State NBF, Sec. 22; 150 ft. E. SE. of Center of PII

Site Location : 17 miles W. of Tatum  
Auger Type : Hollow Stem  
Logged By : Mori Bates

Job #97260

Depth in feet	GRAPHIC	USCS	DESCRIPTION
0	[Stippled pattern]		Caliche Rock w/Silty Clay, Tan, Hard, Dry
5			
5	[Diagonal hatching]		Clay w/Caliche, Tan, Stiff, Dry
10			
15		CL	
20			
25			
30		CL	Sandy Clay w/Caliche, Tan, Stiff, Dry
35			Sandy Clay, Tan, Stiff, Moist
40		CL	
45			
50		CL	Sandy Clay, Tan, Loose, Wet to Saturated WL = 47.08 ft.
55			
60			TD = 58 ft.
65			Bailed and Developed well

Well: MW #2  
Elev.:



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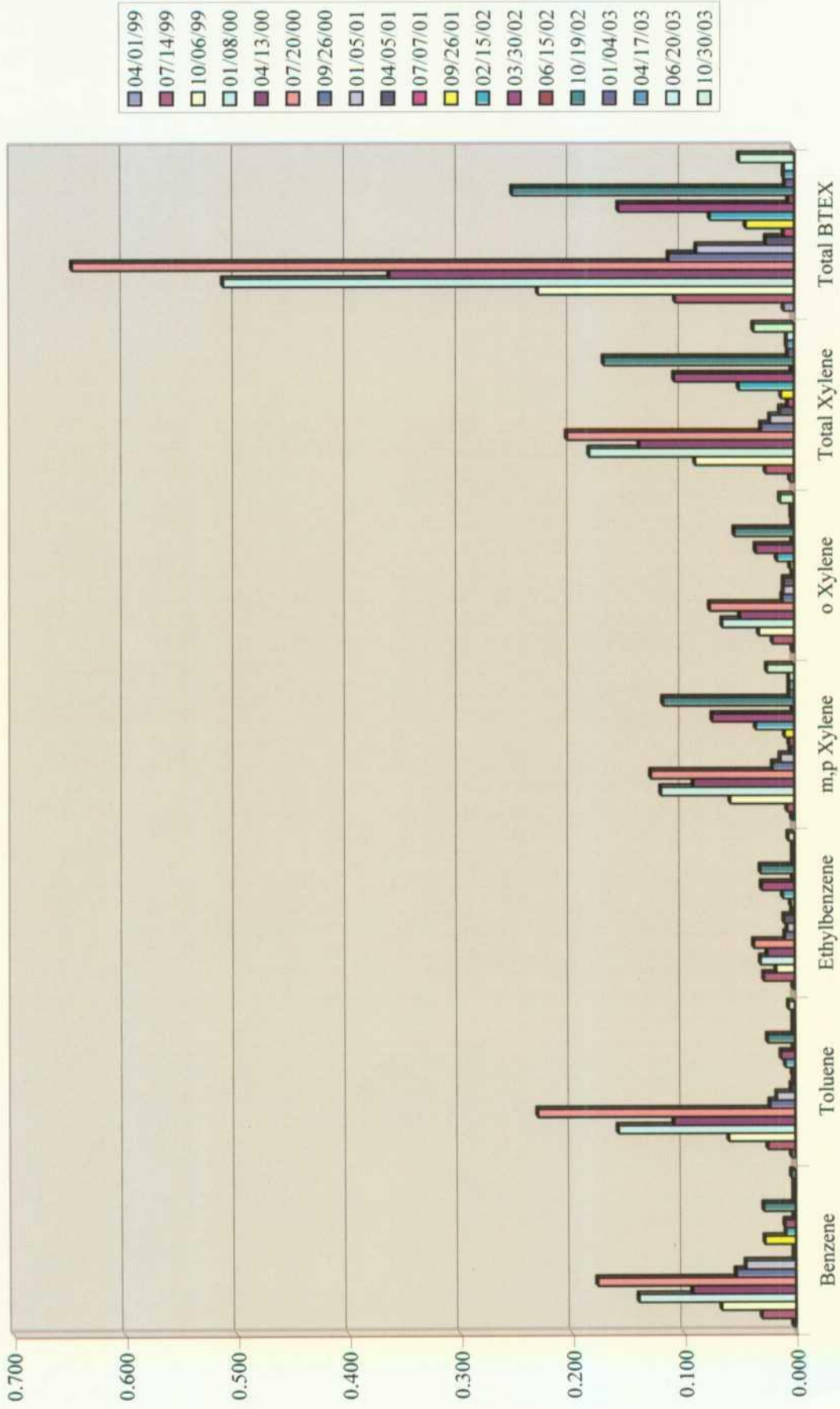
10-03-1



**Monitor Well # 4  
State NBF # 1  
Sampling Results**

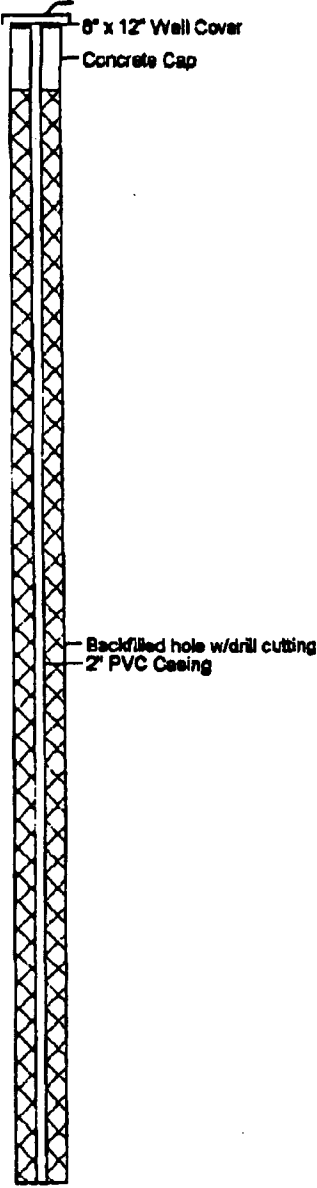
Lab. #	Sample Date	Benzene	Toluene	Ethylbenzene	m,p Xylene	o Xylene	Total Xylene	Total BTEX
17266	04/01/99	0.002	0.003	0.001	0.002	0.001	0.003	0.009
18610	07/14/99	0.030	0.024	0.027	0.006	0.019	0.025	0.106
20614	10/06/99	0.066	0.059	0.016	0.057	0.031	0.088	0.229
22788	01/08/00	0.140	0.158	0.030	0.119	0.064	0.183	0.511
25142	04/13/00	0.092	0.108	0.024	0.090	0.048	0.138	0.362
28455	07/20/00	0.177	0.230	0.036	0.128	0.075	0.203	0.646
31493	09/26/00	0.053	0.022	0.008	0.019	0.010	0.029	0.112
36146	01/05/01	0.044	0.016	0.006	0.012	0.009	0.021	0.087
38930	04/05/01	0.001	0.003	0.009	0.003	0.009	0.012	0.025
0101098-14	07/07/01	0.001	0.001	0.002	0.004	0.001	0.005	0.009
0101098-14	09/26/01	0.027	0.002	0.003	0.008	0.003	0.011	0.043
0202619-14	02/15/02	0.008	0.008	0.010	0.034	0.015	0.049	0.075
0203001-14	03/30/02	0.009	0.012	0.029	0.073	0.034	0.107	0.157
0203602-13	06/15/02	0.001	0.001	0.001	0.001	0.001	0.002	0.005
0204815-12	10/19/02	0.028	0.024	0.030	0.117	0.053	0.170	0.252
0205349-15	01/04/03	0.001	0.001	0.001	0.004	0.001	0.005	0.008
0306249-16	04/17/03	0.001	0.001	0.001	0.004	0.002	0.006	0.009
0306733-32	06/20/03	0.001	0.001	0.001	0.004	0.002	0.006	0.009
0307790-30	10/30/03	0.003	0.005	0.005	0.024	0.012	0.036	0.049

NBF MW #4



Atkins Engineering Associates, Inc. P.O. Box 3156 Roswell, New Mexico 88202		<b>LOG OF BORING State MBF MW-4</b> Formerly MW 26 <span style="float: right;">(Page 1 of 2)</span>		
Tipperary Corporation 633 17th Street, Suite 1550 Denver, CO 80202 Contact: Mike Griffin Job #99174.00		Date : 3-15-99 Drill Start : 1:18 P.M. Drill End : 4:00 P.M. Boring Location : 110 ft. SE of Center Line of Tank	Site Location : Lee County, NM Auger Type : Hollow Stem Logged By : Mort Bates	

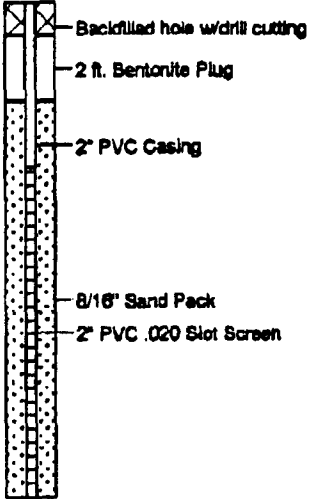
  

Depth ft	GRAPHIC	USCS	Samples	DESCRIPTION	
0	CL			Silty Clay, Brown, Firm, Dry	 <p>8" x 12" Well Cover Concrete Cap Backfilled hole w/drill cutting 2" PVC Casing</p>
	CL			Caliche Rock, White, Hard, Dry	
5				Caliche w/Silty Clay, Tan, Chalky, Firm, Dry	
10					
15					
20				Silty Clay w/Caliche, Pinkish-Tan, Firm, Dry	
25	CL				
30				Silty Clayey Sand, Tan, Firm, Damp	
35	SC				
36					

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Atkins Engineering Associates, Inc. P.O. Box 3158 Roswell, New Mexico 88202		<b>LOG OF BORING State MBF MW- 4</b> Formerly MW 26 <span style="float: right;">(Page 2 of 2)</span>	
Tipperary Corporation 833 17th Street, Suite 1550 Denver, CO 80202 Contact: Mike Griffin Job #99174.00		Date : 3-15-99 Drill Start : 1:15 P.M. Drill End : 4:00 P.M. Boring Location : 110 ft. SE of Center Line of Tank	Site Location : Lee County, NM Auger Type : Hollow Stem Logged By : Mort Bates

Depth in feet	GRAPHIC	USCS	Samples	DESCRIPTION	
36	[Hatched Pattern]				Well: MW- 4 Elev.: 
40		SC			
45		SC		Silty Clayey Sand, Tan, Firm, Moist	
50		SP		Silty Sand, Tan, Loose, Wet to Saturated	
50				TD = 50 ft.	
55					
60					
65					
70					

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NBF

## Monitor Well Bailing Log

NBF MW #5

Lat: \_\_\_\_\_  
 Long. \_\_\_\_\_  
 Surf. Elev. \_\_\_\_\_ Ft.

As Drilled	As Measured
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Date: 6/4/2002  
 Top of Water 39 Ft.  
 Bottom of Bore 55 Ft.

	Date: 12/28/02	4/12/03	6/12/03	10/25/03	
Top of Water	35.30	35.20	35.20	35.30	Ft.
Bottom of Bore	48.40	48.60	48.60	49.00	Ft.
Bore Volumn	2.11	2.16	2.16	2.21	Gal.
LPNL Top					Ft.
LPNL Bottom					Ft.
DPNL Top	NA	NA	NA	NA	Ft.
DPNL Bottom	NA	NA	NA	NA	Ft.
Min. Bailing Vol.	6.34	6.48	6.48	6.63	Gal.
Actual Bailing Vol.	20.00	15.00	20.00	10.00	Gal.

### Comments

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**Monitor Well # 5  
State NBF # 1  
Sampling Results**

<b>Lab. #</b>	<b>Sample Date</b>	<b>Benzene</b>	<b>Toluene</b>	<b>Ethylbenzene</b>	<b>m,p Xylene</b>	<b>o Xylene</b>	<b>Total Xylene</b>	<b>Total BTEX</b>
0203602-14	06/15/02	0.001	0.001	0.001	0.001	0.001	0.002	0.005
0204815-17	10/19/02	0.001	0.001	0.001	0.001	0.001	0.002	0.005
0205349-16	01/04/03	0.001	0.001	0.002	0.005	0.002	0.007	0.011
0306249-17	04/17/03	0.001	0.001	0.002	0.005	0.002	0.007	0.011
0306733-33	06/20/03	0.001	0.001	0.001	0.003	0.002	0.005	0.008
0307790-31	10/30/03	0.001	0.001	0.001	0.004	0.001	0.005	0.008



**Atkins Engineering Associates, Inc.**

2904 W. 2nd St., Roswell, NM 88202-3156

**LOG OF BORING NBF MW 5**  
Formerly MW 37

(Page 1 of 1)

Whole Earth Environmental  
19606 San Gabriel  
Houston, Texas 77084

Contact Mike Griffin

Project # CALLIER.MWD.02

Date : 6/04/02  
Drill Start : 0730  
Drill End : 1530  
Boring Location : SE of Location

Site Location : Caprock, NM  
Auger Type : Hollow Stem  
Logged By : Mort Bates

Depth in feet	GRAPHIC	USCS	Samples	DESCRIPTION	Lab mg/kg	Well: MW 5
0		CL		Clay, brown, loose, dry		<p>8"x12" monitor well cover</p> <p>Cement grout</p> <p>2" PVC Casing</p> <p>Bentonite Seal</p> <p>8/16 Silica Sand pack</p> <p>2" .020" slot screen</p> <p>Backfill w/drill cuttings</p>
0-1		CL		Clay w/caliche, tan, firm, dry		
1-5		SP		Poorly graded sand w/caliche, tan, firm, dry		
5-10		SP		Poorly graded sand w/caliche, tan, firm, dry		
10-15		SP		Broken caliche, tan, hard, dry		
15-20		SP		Poorly graded sand w/caliche, tan, firm, dry		
20-25		SP		Poorly graded sand w/ broken sandstone, tan, loose, dry		
25-30		SP		Poorly graded sand, tan, loose, dry		
30-45		SP		Poorly graded sand, tan, loose, damp and moist		
45-50		SP		Poorly graded sand, tan, loose, damp and moist		
50-55		SS		Sandstone, tan, hard, wet		
55						
55				TD = 55 feet		
55				WL = 39 feet		

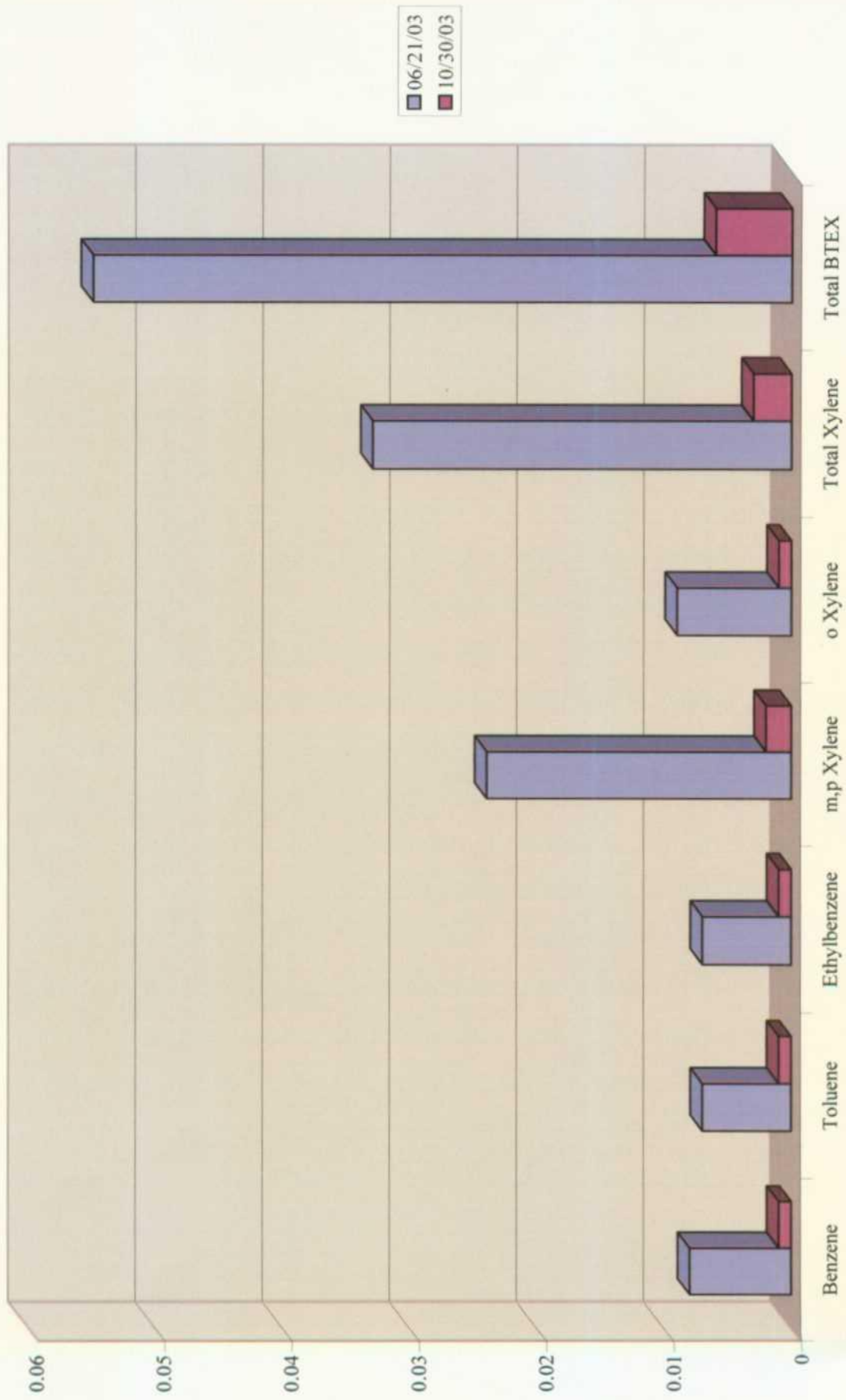
06-20-2002 C:\MTECH46\CALLIER\mw#7.bor



**Monitor Well # 6  
State NBF # 1  
Sampling Results**

<b>Lab. #</b>	<b>Sample Date</b>	<b>Benzene</b>	<b>Toluene</b>	<b>Ethylbenzene</b>	<b>m,p Xylene</b>	<b>o Xylene</b>	<b>Total Xylene</b>	<b>Total BTEX</b>
<b>0306748-01</b>	<b>06/21/03</b>	<b>0.008</b>	<b>0.007</b>	<b>0.007</b>	<b>0.024</b>	<b>0.009</b>	<b>0.033</b>	<b>0.055</b>
<b>0307790-32</b>	<b>10/30/03</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.002</b>	<b>0.001</b>	<b>0.003</b>	<b>0.006</b>

NBF MW #6



Atkins Engineering Associates, Inc.

2904 W. 2nd St., Roswell, NM 88202-3156

LOG OF BORING MW-6  
Formerly MW 42

(Page 1 of 1)

Whole Earth Environmental  
19606 San Gabriel  
Houston, TX 77084

Contact: Mike Griffin

Job#: WHOLENV.DRL.03

Date : 6/16/03

Drill Start/Drill End :

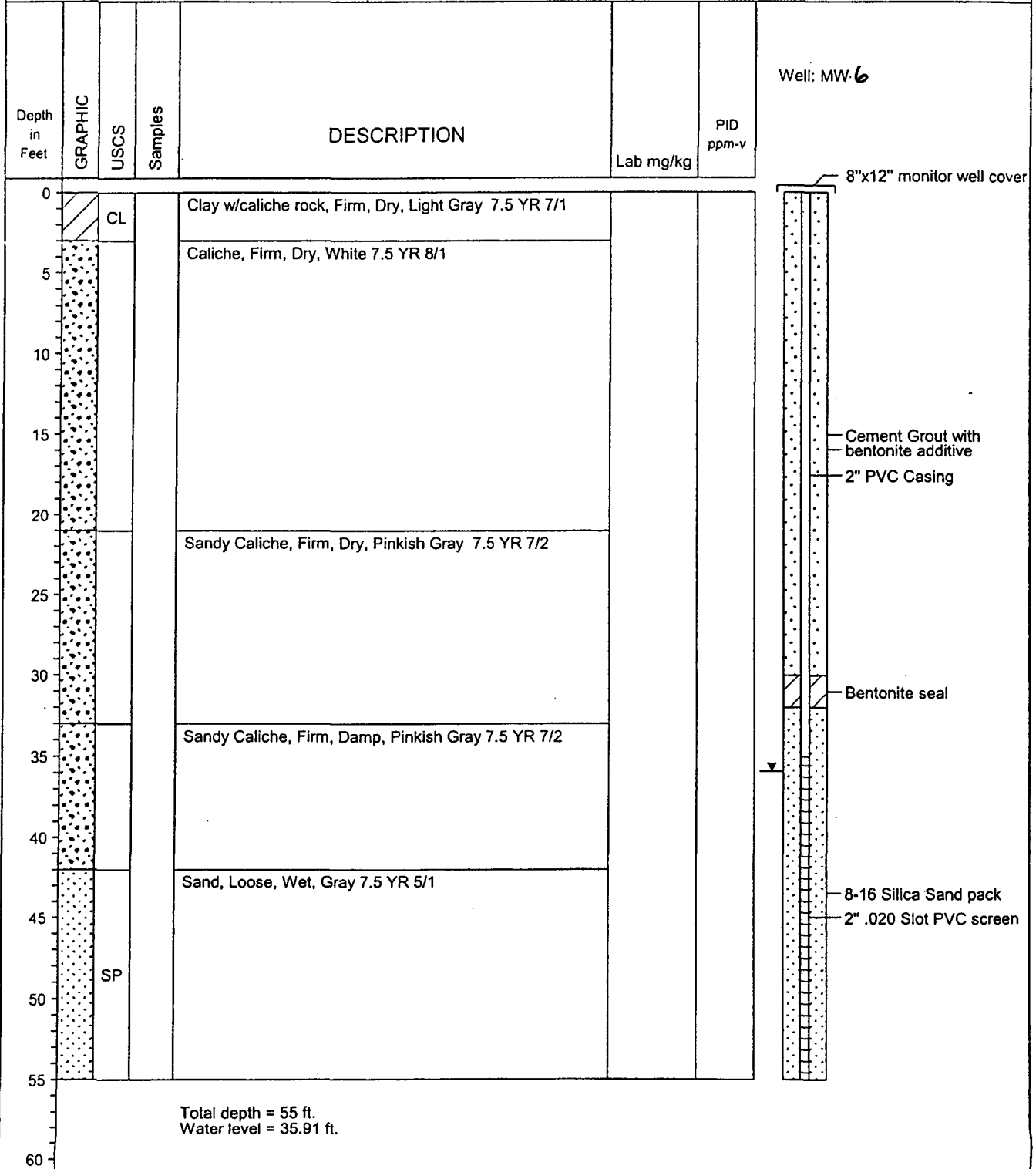
Boring Location :

Site Location : State NBF #1 SE, NW

: Sec. 22, T11S.,R33E.

Auger Type : Hollow stem

Logged By : Mort Bates



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