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REPORTS

DATE:

9/2001

Tipperary
CORPORATION

Tipperary Corporation
September 2001
Sampling Results
Annual Report

RECEIVED
NOV 16 2001
ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

Whole Earth Environmental
19606 San Gabriel
Houston, Tx. 77084

Executive Summary
Tipperary Corporation
Water Monitoring Program

Site History

In response to a request by a 1996 request by the NMOCD, Tipperary Corporation began a program to close a series of ten surface impoundments located within their Bagley Field west of Tatum, New Mexico. The closure program consisted of excavating the impoundments and encapsulating the contaminant plume within high-density polyethylene. As part of the closure program, a groundwater investigation was conducted at each site. The investigation concluded that due to the relatively shallow depth to the surface of the aquifer, each site impacted the Ogallala Aquifer to varying degrees.

The remediation plan included passive monitoring of those sites showing no free product on the water table and active fluid removal by means of the erection of windmills at three sites found to have more significant concentrations. A series of water monitoring wells were placed down gradient of each location. Each such well has been sampled and tested on a quarterly basis with the results of each laboratory analyses provided to the NMOCD on an annual basis. To date, two sites have been remediated to closure and a third is pending final approval.

Individual Site Descriptions

Iva COM

The Iva site includes a recovery well. Criteria contaminant concentrations within the well have shown a 94% reduction since installation and a 48% reduction over the past year. A review of the test results over the past three years indicates that the contaminant concentrations appear to be reduced at the rate of approximately 50% per year. If the trend continues, the concentrations will be within NMWQCC standards within the next two years. Two down gradient monitor wells at the site have never shown concentrations in excess of standards.

Mable COM

The Mable site includes a recovery well. Criteria contaminant concentrations within the well have shown a 73% reduction since installation and a 50% reduction over the past year. The primary contaminant compounds within this well are benzene and xylene. Only the xylene and ethylbenzene fractions have shown any significant improvement over previous sampling periods within the source well. Both down-gradient monitor wells generally fall within NMWQCC standards but are subject to periodic spikes in all tested fractions. LNAPL's are present within both monitor wells but appear to have

the viscous appearance and odor characteristics of fatty acids resulting from the aerobic degradation of hydrocarbons.

Bell State "A"
This site has no active recovery well but does contain a series of four monitor wells. The criteria contaminant concentrations within these wells have collectively dropped 92% from the initial concentrations however have shown no significant improvement over the past year. Benzene is the only fraction falling outside of NMWQCC standards.

NBF
This site has no active recovery well but does contain a series of four monitor wells. The criteria contaminant concentrations within these wells have collectively dropped 16% from the initial concentrations however have shown no significant improvement over the past year. Monitor wells nos. 15 and 16 continue to show elevated benzene concentrations and occasional spikes of xylene.

G.S. State
The G.S. site has an active recovery well and four down gradient monitor wells. The contaminant concentrations within the recovery well have been reduced by 78% over the life of the installation however the concentrations within the monitor wells have remained somewhat static. We introduced a program last year of installing absorbent socks within those wells having LNAPL's. The program did show significant reductions within those bores in which they were used however the BTEX concentrations came back to previous levels when their use was discontinued.

Sohio # 1
This site has no active recovery well but does contain a series of five monitor wells. The general trend within these wells is for an overall reduction in BTEX values-especially if the most recent results within Monitor Well # 18 are ignored due to our inability to bail a sufficient volume of fluids as a result of silting. Once again the absorbent sock program introduced last year proved effective until discontinued.

Sohio "A"
This site has no active recovery well but does contain a series of five monitor wells. The site has a gradient of .58' per 100' distance and may be considered quite static hydrologically. The BTEX concentrations have once again increased with the cessation of the absorbent sock program.

QP-78

WHOLE EARTH ENVIRONMENTAL
QUALITY PROCEDURE

Procedure for Obtaining Water Samples (Cased Wells) Using Enviro-Tech ES-60 Pump

Completed By: Approved By: Effective Date: / /

1.0 Purpose

This procedure outlines the methods to be employed in obtaining water samples from cased monitoring wells.

2.0 Scope

This procedure shall be used for developed, cased water monitoring wells. It is not to be used for standing water samples such as ponds or streams.

3.0 Preliminary

3.1 Obtain sterile sampling containers from the testing laboratory designated to conduct analyses of the water. The shipment should include a Certificate of Compliance from the manufacturer of the collection bottle or vial and a Serial Number for the lot of containers. Retain this Certificate for future documentation purposes.

3.2 The following table shall be used to select the appropriate sampling container, preservative method and holding times for the various elements and compounds to be analyzed.

Compound to be Analyzed	Sample Container Size	Sample Container Description	Cap Requirements	Preservative	Maximum Hold Time
BTEX	40 ml.	VOA Container	Teflon Lined	HCl	7 days
TPH	1 liter	clear glass	Teflon Lined	HCl	28 days
PAH	1 liter	clear glass	Teflon Lined	Ice	7 days
Cation / Anion	1 liter	clear glass	Teflon Lined	None	48 Hrs.
Metals	1 liter	HD polyethylene	Any Plastic	Ice / HNO_3	28 Days
TDS	300 ml.	clear glass	Any Plastic	Ice	7 Days

4.0 Chain of Custody

4.1 Prepare a Sample Plan. The plan will list the well identification and the individual tests to be performed at that location. The sampler will check the list against the available inventory of appropriate sample collection bottles to insure against shortage.

4.2 Transfer the data to the Laboratory Chain of Custody Form. Complete all sections of the form except those that relate to the time of delivery of the samples to the laboratory.

4.3 Pre-label the sample collection jars. Include all requested information except time of collection. (Use a fine point Sharpie to insure that the ink remains on the label). Affix the labels to the jars.

5.0 Bailing Procedure

5.1 Identify the well from the site schematics. Place pre-labeled jar(s) next to the well. Remove the bolts from the well cover and place the cover with the bolts nearby. Remove the plastic cap from the well bore by first lifting the metal lever and then unscrewing the entire assembly.

5.2 Lower the ES-60 pump into the monitor well bore taking care to insure that the pump and first 10' of hose and cable does not touch the ground or become cross-contaminated by contact with anything containing hydrocarbon residues. When the pump reaches the bottom of the well bore you will feel the hose and cable assembly go slack. Lift the pump a minimum distance of 18" above the bottom of the well bore and clamp the hose assembly to the top of the well bore by means of vice grips. (Take care to insure that the vice grips are adjusted so as not to "choke" the hose.

5.3 Attach the electrical cable leads to an automobile battery and begin pumping the well bore. If the pump does not bring fluid to the surface within one minute, disconnect the electrical leads, and re-connect for four seconds three times to remove air cavitation.

5.4 The pump has a minimum volume of 2.8 gallons per minute at 60'. Purge the well by pumping for a minimum of 10 minutes before taking a sample.

6.0 Sampling Procedure

6.1 Once the well has been bailed in accordance with 5.2 of this procedure, a sample may be decanted into the appropriate sample collection jar directly from the bailer. The collection jar should be filled to the brim. Once the jar is sealed, turn the jar over to detect any bubbles that may be present. Add additional water to remove all bubbles from the sample container.

6.2 Note the time of collection on the sample collection jar with a fine Sharpie.

6.3 Place the sample directly on ice for transport to the laboratory. The preceding table shows the maximum hold times between collection and testing for the various analyses.

6.4 Complete the Chain of Custody form to include the collection times for each sample. Deliver all samples to the laboratory.

7.0 Decontamination

7.1 After removing the pump from the well, use an aerosol spray pump bottle filled with denatured isopropyl alcohol to clean the pump and first 10' of the cable and hose assembly. Rinse the sprayed portion with distilled water to remove the alcohol and dry with a clean rag. Discard the rag after each use. During transport, the pump assembly should be carried in a 2" PVC protective sleeve.

8.0 Documentation

8.1 The testing laboratory shall provide the following minimum information:

A. Client, Project and sample name.
B. Signed copy of the original Chain of Custody Form including data on the time the sample was received by the lab.
C. Results of the requested analyses
D. Test Methods employed
E. Quality Control methods and results

Tipperary Corporation

Tatum Bagley Field

Monitor Well Depth to Water Chart

Well Name	Well No.	Water Depth 8/9/99	Water Depth 10/21/99	Water Depth 1/8/00	Water Depth 4/13/00	Water Depth 7/20/00	Water Depth 9/26/00	Water Depth 1/5/01	Water Depth 4/5/01	Water Depth 7/5/01	Water Depth 9/26/01
Iva COM	Source Well										
	1	48.8	51.8	51.7	51.6	51.7	51.8	51.8	51.7	51.8	51.7
	2	49.2	51.5	51.4	51.5	51.6	51.7	51.8	51.7	51.8	51.8
Mable COM	Source Well										
	3	48.8	52.5	52.4	53.7	53.7	53.7	51.6	51.7	51.8	51.9
	4	48.6	51.8	51.6	52.8	51.8	51.8	51.8	51.7	51.6	51.6
Bell State	6	42.1	43.0	51.6	44.3	44.4	44.5	44.6	44.5	44.4	44.3
	13	40.8	43.7	43.7	44.0	43.9	44.0	44.1	44.0	44.0	43.9
	14	43.0	43.5	44.2	44.2	44.3	44.2	44.3	44.2	44.1	44.1
	25	43.5	43.5	43.9	44.0	44.0	44.0	44.2	44.0	43.9	43.8
NBF	8	35.8	35.8	36.1	37.1	35.6	35.9	36.1	36.1	36.1	36.0
	15	34.8	37.0	37.1	37.9	37.5	36.3	36.3	36.1	36.2	36.0
	16	36.0	36.1	36.2	36.2	36.2	36.2	36.2	36.1	36.2	36.0
	26	34.8	34.6	34.9	35.9	35.1	35.2	35.2	35.4	35.6	35.8
Sohio A	11	38.3	38.5	37.8	38.3	38.3	38.8	38.7	37.5	36.8	35.6
	19	32.5	35.2	37.9	38.2	38.3	38.4	38.4	38.4	38.4	38.3
	20	38.0	38.7	38.0	38.4	38.5	38.4	38.5	38.5	38.6	38.6
	27	36.8	38.2	37.9	38.2	38.1	38.6	38.7	38.5	38.3	38.1
	31	37.5	38.9	39.7	38.5	38.5	38.1	38.4	38.6	38.6	38.8
Sohio # 1	10	44.5	44.9	43.9	44.2	45.0	44.9	45.1	45.0	45.0	44.9
	17	44.0	44.5	44.4	44.7	44.5	44.7	44.8	44.6	44.5	44.4
	18	43.8	44.1	45.4	46.4	45.7	45.4	45.8	46.0	45.9	46.6
	28	35.0	44.2	45.8	44.9	44.9	45.1	45.1	45.1	45.2	45.0
	30	45.3	44.1	44.2	44.8	44.3	44.3	44.3	44.2	44.3	44.2
G.S. State	Source Well										
	12	42.8	42.9	44.1	43.2	44.7	44.2	44.2	44.6	44.8	45.1
	21	43.3	43.7	43.9	44.0	44.2	44.3	44.3	44.2	44.3	44.2
	22	43.5	43.9	44.0	44.0	44.0	44.1	44.2	44.2	44.2	44.1
	29	44.0	44.3	44.2	44.3	44.7	44.7	44.7	44.5	44.6	44.4

Tipperary Corporation

Tatum Bagley Field

Monitor Well Gradient Chart

Well Name	Well No.	Surface Elevation	Water Elevation	Distance to Pit Center	Gradient (Ft. / Ft.)	Gradient (Ft. / 100Ft.)
Iva COM	Source Well	4,298.42	4,246.42			
	1	4,292.10	4,237.20	115.00	0.080174	8.02
	2	4,291.93	4,238.93	140.00	0.053500	5.35
Mable COM	Source Well	4,290.55	4,238.55			
	3	4,287.22	4,235.22	148.00	0.022500	2.25
	4	4,287.86	4,235.46	160.00	0.019313	1.93
Bell State	6	4,281.12	4,230.12	93.00	0.021183	2.12
	13	4,280.84	4,233.04	51.00	0.044118	4.41
	14	4,280.80	4,232.50	47.00	0.048723	4.87
	25	4,280.37	4,232.97	154.00	0.017662	1.77
NBF	8	4,259.41	4,211.41	165.00	0.045152	4.52
	15	4,259.68	4,212.68	198.00	0.036263	3.63
	16	4,259.06	4,211.96	247.00	0.031579	3.16
	26	4,258.04	4,215.04	387.00	0.022791	2.28
Sohio A	11	4,285.88	4,235.88	115.00	0.011835	0.83
	19	4,285.97	4,237.27	164.00	0.005305	0.53
	20	4,285.96	4,236.46	151.00	0.005822	0.58
	27	4,285.61	4,245.61	264.00	0.004659	0.47
	31	4,283.54	4,246.09	624.00	0.005288	0.53
Sohio # 1	10	4,283.63	4,233.63	110.00	0.016273	1.63
	17	4,283.31	4,233.91	262.00	0.000805	0.81
	18	4,283.59	4,234.99	176.00	0.010398	1.04
	28	4,283.21	4,236.96	552.00	0.004004	0.40
	30	4,281.13	4,235.82	776.00	0.005528	0.55
G.S. State	Source Well	4,307.00	4,259.00			
	12	4,303.27	4,255.27	52.00	0.071731	7.17
	21	4,303.08	4,255.08	151.00	0.025960	2.60
	22	4,302.77	4,255.27	148.00	0.025203	2.52
	29	4,303.20	4,254.14	295.00	0.016475	1.65

Calculation for Determining the Minimum Bailing Volume for Monitor Wells

Formula $V = (\pi r^2 h)$

V= volume
π= pi
r= inside radius of the well bore
h= maximum height of well bore in water table

π	r^2	h (in)	V (cu. in)	V (gal)	X 3 Volumes	Actual
3.1416	1	180	565.488	2.448	7.344	>10

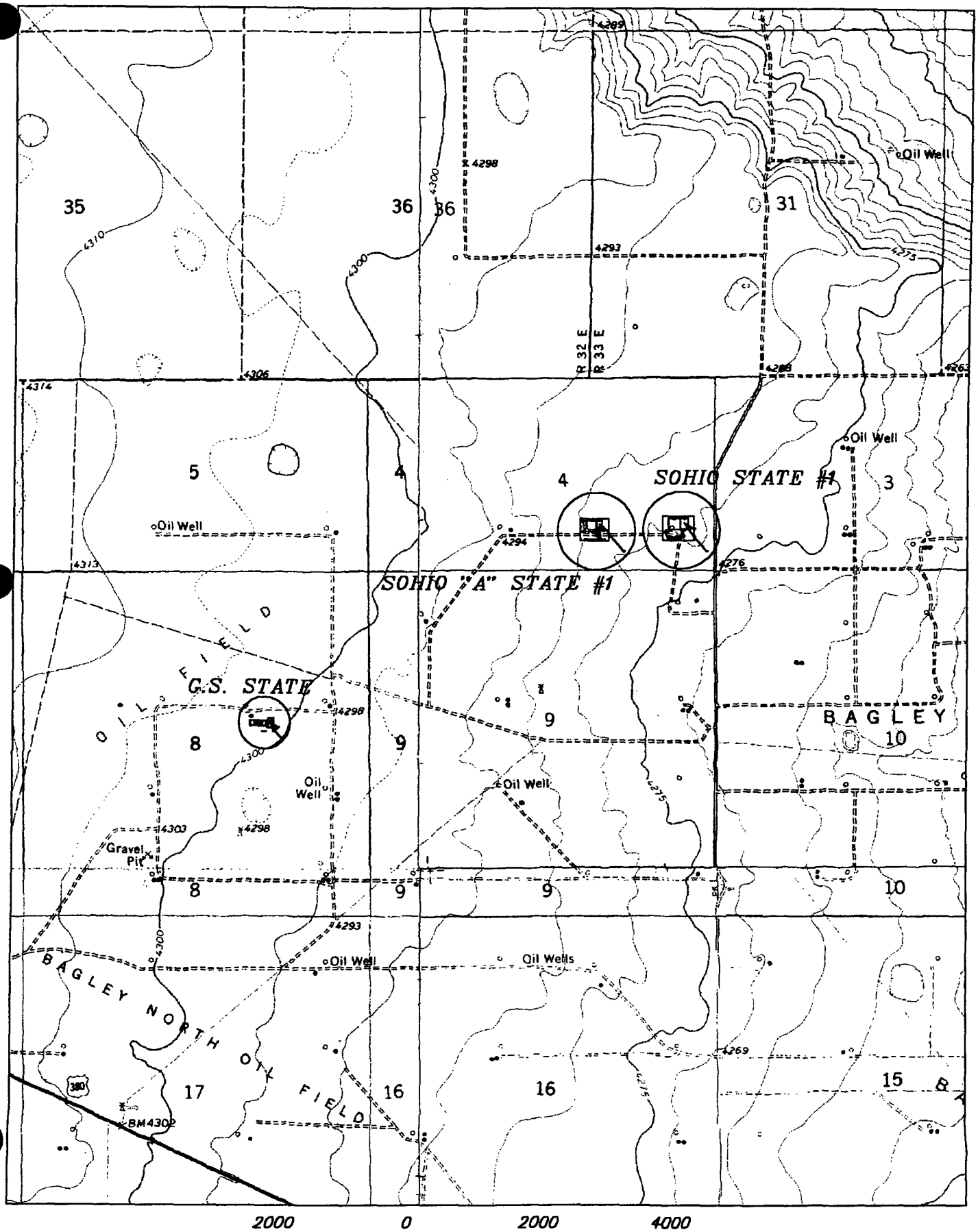
Tipperary Corporation

Tatum Bagley Field

LPNAL / DNAPL Depth Chart

Well Name	Well No.	LNAPL Top	LNAPL Bottom	LNAPL Thickness	DNAPL Top	DNAPL Bottom
Iva COM	Source Well					
	1	N / A	N / A	N / A	N / A	N / A
	2	N / A	N / A	N / A	N / A	N / A
Mable COM	Source Well					
	3	51.90	52.60	0.70	N / A	N / A
	4	51.60	51.90	0.30	N / A	N / A
Bell State	6	N / A	N / A	N / A	N / A	N / A
	13	N / A	N / A	N / A	N / A	N / A
	14	N / A	N / A	N / A	N / A	N / A
	25	N / A	N / A	N / A	N / A	N / A
NBF	8	N / A	N / A	N / A	N / A	N / A
	15	36.00	36.15	0.15	N / A	N / A
	16	36.00	36.15	0.15	N / A	N / A
	26	N / A	N / A	N / A	N / A	N / A
Sohio A	11	35.60	36.20	0.60	N / A	N / A
	19	38.30	38.70	0.40	N / A	N / A
	20	38.60	38.70	0.10	N / A	N / A
	27	N / A	N / A	N / A	N / A	N / A
	31	N / A	N / A	N / A	N / A	N / A
Sohio # 1	10	44.90	45.00	0.10	N / A	N / A
	17	44.40	44.55	0.15	N / A	N / A
	18	46.60	46.70	0.10	N / A	N / A
	28	N / A	N / A	N / A	N / A	N / A
	30	N / A	N / A	N / A	N / A	N / A
G.S. State	Source Well					
	12	45.10	46.20	1.10	N / A	N / A
	21	44.20	45.10	0.90	N / A	N / A
	22	44.10	44.90	0.80	N / A	N / A
	29	44.40	44.55	0.15	N / A	N / A

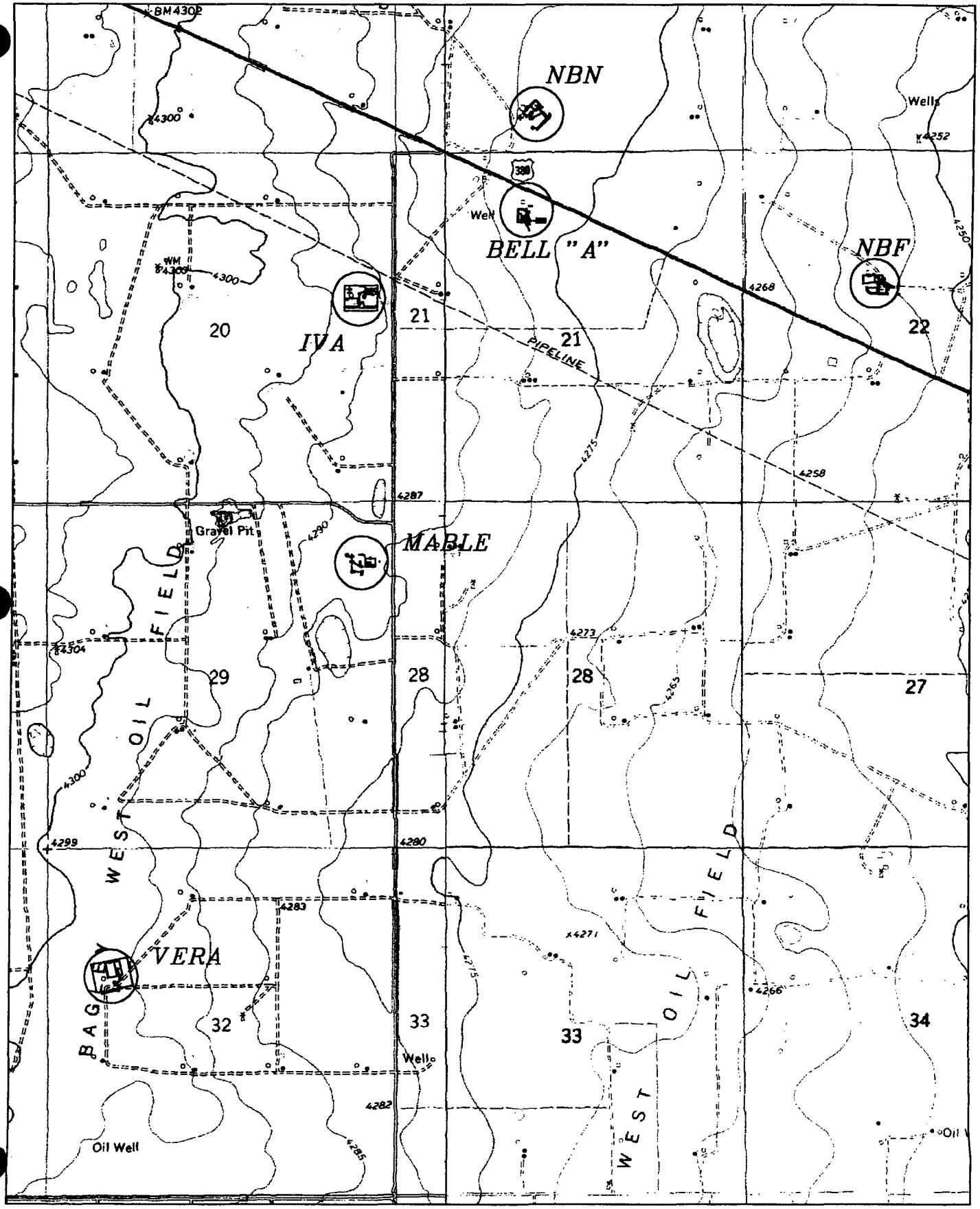
WHOLE EARTH ENVIROMENTAL, INC.



BASIN SURVEYS P.O. BOX 1786 – HOBBS, NEW MEXICO

W.O. Number: 9352	Drawn By: K. GOAD
Date: 10-21-99	Disk: KJG #122 – WE9352.DWG

WHOLE EARTH ENVIROMENTAL, INC.



BASIN SURVEYS P.O. BOX 1786 – HOBBS, NEW MEXICO	W.O. Number: 9352	Drawn By: K. GOAD
	Date: 10–21–99	Disk: KJG #122 – WE9352.DWG

Environmental Lab of Texas, Inc.

12600 West I-20 East
Odessa, Texas 79763
Phone: 915-563-1800
Fax: 915-563-1713

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Elliot Werner
Company Name: Whole Earth
Company Address:
City/State/Zip:
Telephone No: (800) 854-4358
Fax No:
Sampler Signature:

Project Name: Tipperary
Project #: Quarterly Sampling
Project Loc:
PO #:

LAB # (lab use only)	FIELD CODE	Date Sampled	Time Sampled	No. of Containers	Preservative: Ice	HNO_3	HCl	NaOH	H_2SO_4	None	Other (Specify)	Matrix: Water	Sludge	Soil	Other (specify)	Analyze For: TCLP: TDS / CL / SAR / EC	TPH 418.1	TPH TX 1005/1006	TPH 8015M GRO/DRO	TOTAL: Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030	RUSH TAT (Pre-Schedule)
36195	IUA Com. Source Well	1-10-01	4:PM	2	X		X					X											X	

Special Instructions:

Sample Containers Intact? (Y) N
Temperature Upon Receipt: 4.0°C
Laboratory Comments:

Relinquished by:	Date	Time	Received by:	Date	Time
Elliot Werner	1/11/01	9:45AM			
Relinquished by:	Date	Time	Received by ELOT: Jeanne McMurrey	Date: 01-11-01	Time: 0945

Environmental Lab of Texas, Inc.

12600 West I-20 East
Odessa, Texas 79763
Phone: 915-563-1800
Fax: 915-563-1713

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: ELLIOT WERNER
Company Name: Whole Earth ENV
Company Address:
City/State/Zip:
Telephone No:
Fax No:
Sampler Signature:

Project Name: TIPPERARY
Project #:
Project Loc:
PO #:

LAB # (lab use only)	FIELD CODE	Date Sampled	Time Sampled	No. of Containers	Preservative: Ice	Preservative: HNO_3	Preservative: HCl	Preservative: NaOH	Preservative: H_2SO_4	Preservative: None	Preservative: Other (Specify)	Matrix: Water	Matrix: Sludge	Matrix: Soil	Matrix: Other (specify):	Analyze For: TCLP: / TOTAL: TDS / CL / SAR / EC	TPH 418.1	TPH TX 1005/1006	TPH 8015M GRO/DRO	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030	RUSH TAT (Pre-Schedule)
36132	MW 3	1/5	8:25	2	✓		✓					✓											✓	
36133	MW 1	1/5	9:00am	2	✓		✓					✓											✓	
36134	MW 2	1/5	9:00am	2	✓		✓					✓											✓	
36135	MW 4	1/5	8:45am	2	✓		✓					✓											✓	
36136	MW 11	1/5	10:10am	2	✓		✓					✓											✓	
36137	Mable Source	1/5	9:00am	2	✓		✓					✓											✓	
36138	MW 9	1/5	3:00pm	2	✓		✓					✓											✓	
36139	MW 12	1/5	11:25am	2	✓		✓					✓											✓	
36140	MW 13	1/5	9:50am	2	✓		✓					✓											✓	
36141	MW 14	1/5	10:00am	2	✓		✓					✓											✓	

Special Instructions:

Sample Containers Intact? (Y) N
Temperature Upon Receipt: 2.5 °C
Laboratory Comments:

Relinquished by:	Date	Time	Received by:	Date	Time
	1/10/01	11:00am			
Relinquished by:	Date	Time	Received by ELOT:	Date	Time
				01-10-01	1120

Environmental Lab of Texas, Inc.

12600 West I-20 East
Odessa, Texas 79763
Phone: 915-563-1800
Fax: 915-563-1713

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: ELLIOT WERNER
Company Name: Whole Earth Environmental
Company Address:
City/State/Zip:
Telephone No:
Fax No:
Sampler Signature:

Project Name: TIPPERARY
Project #:
Project Loc:
PO #:

LAB # (lab use only)	FIELD CODE	Date Sampled	Time Sampled	No. of Containers	Preservative: Ice	Preservative: HNO_3	Preservative: HCl	Preservative: NaOH	Preservative: H_2SO_4	Preservative: None	Preservative: Other (Specify)	Matrix: Water	Matrix: Sludge	Matrix: Soil	Matrix: Other (specify):	Analyze For: TCLP: / TOTAL: TDS / CL / SAR / EC	TPH 418.1	TPH TX 1005/1006	TPH 8015M GRO/DRO	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030	RUSH TAT (Pre-Schedule)
36142	MW 11	1/5	12:40	2	✓		✓					✓											✓	
36143	MW 10	1/5	1:30	2	✓		✓					✓											✓	
36144	MW 24	1/5	2:10	2	✓		✓					✓											✓	
36145	MW 15	1/5	10:30	2	✓		✓					✓											✓	
36146	MW 24	1/5	10:45	2	✓		✓					✓											✓	
36147	MW 8	1/5	10:20	2	✓		✓					✓											✓	
36148	MW 20	1/5	12:30	2	✓		✓					✓											✓	
36149	MW 18	1/5	2:00	2	✓		✓					✓											✓	
36150	MW 21	1/5	11:55	2	✓		✓					✓											✓	
36151	MW 23	1/5	3:10	2	✓		✓					✓											✓	

Special Instructions:

Relinquished by:	Date	Time	Received by:	Date	Time
	1/10/01	11:20am			
Relinquished by:	Date	Time	Received by ELOT:	Date	Time
			Jaime Montemayor	01-10-01	1120

Sample Containers Intact? (Y) N
Temperature Upon Receipt: 2.5 °C
Laboratory Comments:

Environmental Lab of Texas, Inc.

12600 West I-20 East
Odessa, Texas 79763
Phone: 915-563-1800
Fax: 915-563-1713

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: ELLIOT WERNER
Company Name: Whole Earth ENV
Company Address:
City/State/Zip:
Telephone No:
Fax No:
Sampler Signature:

Project Name: TIPPERARY
Project #:
Project Loc:
PO #:

LAB # (lab use only)	FIELD CODE	Date Sampled	Time Sampled	No. of Containers	Preservative: Ice	Preservative: HNO_3	Preservative: HCl	Preservative: NaOH	Preservative: H_2SO_4	Preservative: None	Preservative: Other (Specify)	Matrix: Water	Matrix: Sludge	Matrix: Soil	Matrix: Other (specify):	Analyze For: TCLP: / TOTAL: TDS / CL / SAR / EC	TPH 418.1	TPH TX 1005/1006	TPH 8015M GRO/DRO	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030	RUSH TAT (Pre-Schedule)
36152	MW 25	1/5/01	9:40	2	✓		✓					✓											✓	
36153	MW 27	1/5	1:00	2	✓		✓					✓											✓	
36154	MW 19	1/5	12:50	2	✓		✓					✓											✓	
36155	MW 17	1/5	1:45	2	✓		✓					✓											✓	
36156	MW 16	1/5	10:35	2	✓		✓					✓											✓	
36157	MW 24	1/5	9:15	2	✓		✓					✓											✓	
36158	MW 22	1/5	11:30	2	✓		✓					✓											✓	
36159	MW 29	1/5	11:45	2	✓		✓					✓											✓	
36160	GS SOURLE	1/5	11:15	2	✓		✓					✓											✓	
36161	MW 30	1/5	2:20	✓	✓		✓					✓											✓	

Special Instructions:

Sample Containers Intact? (Y) N
Temperature Upon Receipt: 3.5 °C
Laboratory Comments:

Relinquished by:	Date	Time	Received by:	Date	Time
	01/10/01	11:20			
Relinquished by:	**Date**	**Time**	**Received by ELOT:**	**Date**	**Time**
			Jane McMurrey	01-10-01	1120

Environmental Lab of Texas, Inc.

12600 West I-20 East
Odessa, Texas 79763
Phone: 915-563-1800
Fax: 915-563-1713

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: ELLIOT WERNER
Company Name: WHOLE EARTH ENV.
Company Address:
City/State/Zip:
Telephone No:
Fax No:
Sampler Signature:

Project Name: TIPPERARY
Project #:
Project Loc:
PO #:

LAB # (lab use only)	FIELD CODE	Date Sampled	Time Sampled	No. of Containers	Preservative: Ice	Preservative: HNO3	Preservative: HCl	Preservative: NaOH	Preservative: H2SO4	Preservative: None	Preservative: Other (Specify)	Matrix: Water	Matrix: Sludge	Matrix: Soil	Matrix: Other (specify)	Analyze For: TCLP: TDS / CL / SAR / EC	TPH 418.1	TPH TX 1005/1006	TPH 8015M GRO/DRO	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030	RUSH TAT (Pre-Schedule)	Standard TAT
36162	MW 31	1/5	1:15	2	✓		✓					✓											✓		

Special Instructions:

Sample Containers Intact? Y (N)
Temperature Upon Receipt: 2.5°C
Laboratory Comments:

Relinquished by:	Date	Time	Received by:	Date	Time
	1/10	11:35			
Relinquished by:	Date	Time	Received by ELOT:	Date	Time
			Jamie McInerney	01-10-01	1135

LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

TIPPERARY
ATTN: MR. VICTOR A. VICE
P.O. BOX 857
TATUM, N.M. 88267
FAX: 505-398-6510
FAX: 281-646-8996

Sample Type: Water
Sample Condition: Intact/ Iced/ HCl/ 4.0 deg. C
Project #: Quarterly Sampling
Project Name: Tipperary
Project Location: None Given

Sampling Date: 01/10/01
Receiving Date: 01/11/01
Analysis Date: 01/11/01

ELT#	FIELD CODE	BENZENE mg/L	TOLUENE mg/L	ETHYLBENZENE mg/L	m,p-XYLENE mg/L	o-XYLENE mg/L
36195	IUA Com. Source Well	0.533	0.168	0.015	0.067	0.044
	%IA	87	87	86	91	88
	%EA	86	87	87	93	91
	BLANK	<0.001	<0.001	<0.001	<0.001	<0.001

METHODS: EPA SW 846-8021B ,5030

Raland K. Tuttle

1-11-01
Date

LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

TIPPERARY
ATTN: MR. VICTOR A. VICE
P.O. BOX 857
TATUM, N.M. 88267
FAX: 505-398-6510
FAX: 281-646-8996

Sample Type: Water
Sample Condition: Intact/ Iced/ HCl/ 2.5 deg. C
Project #: None Given
Project Name: Tipperary
Project Location: None Given

Sampling Date: 01/05/01
Receiving Date: 01/10/01
Analysis Date: 01/11/01

ELT#	FIELD CODE	BENZENE mg/L	TOLUENE mg/L	ETHYLBENZENE mg/L	m,p-XYLENE mg/L	o-XYLENE mg/L
36132	MW 3	<0.010	1.21	1.21	5.50	0.894
%IA		87	87	86	91	88
%EA		86	87	87	93	91
BLANK		<0.001	<0.001	<0.001	<0.001	<0.001

METHODS: EPA SW 846-8021B ,5030

Armando O. Gomez

Armando O. Gomez

1-16-01
Date

LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

TIPPERARY
ATTN: MR. VICTOR A. VICE
P.O. BOX 857
TATUM, N.M. 88267
FAX: 505-398-6510
FAX: 281-646-8996

Sample Type: Water
Sample Condition: Intact/ Iced/ HCl/ 2.5 deg. C
Project #: None Given
Project Name: Tipperary
Project Location: None Given

Sampling Date: 01/05/01
Receiving Date: 01/10/01
Analysis Date: 01/12/01

ELT#	FIELD CODE	BENZENE mg/L	TOLUENE mg/L	ETHYLBENZENE mg/L	m,p-XYLENE mg/L	o-XYLENE mg/L
36133	MW 1	<0.001	0.004	0.006	0.014	0.007
36134	MW 2	<0.001	0.003	0.005	0.011	0.005
36135	MW 4	<0.010	0.038	0.020	0.063	0.021
36136	MW 6	0.014	<0.001	0.005	0.007	0.003
36137	Mable Source	0.590	0.475	0.127	0.927	0.768
36138	MW 9	0.037	0.032	0.014	0.051	0.037
36139	MW 12	1.07	1.71	0.945	5.66	1.58
36140	MW 13	<0.001	0.002	0.004	0.009	0.004
36141	MW 14	0.024	<0.001	0.004	0.007	0.003
36142	MW 11	0.043	0.005	0.004	0.013	0.008
36143	MW 10	2.43	0.011	0.153	0.251	0.089
36144	MW 28	0.156	0.115	0.034	0.175	0.120
36145	MW 15	2.79	1.36	0.249	0.612	0.493
36146	MW 26	0.044	0.016	0.006	0.012	0.009
36147	MW 8	0.001	0.001	0.002	0.005	0.002
36148	MW 20	0.009	0.006	0.005	0.016	0.008
36149	MW 18	2.95	1.84	0.364	1.54	1.22
36150	MW 21	0.019	0.010	0.019	0.027	0.013
36151	MW 23	0.031	0.032	0.013	0.050	0.034
36152	MW 25	<0.001	<0.001	<0.001	<0.001	<0.001
	%IA	103	100	101	96	101
	%EA	105	98	100	97	103
	BLANK	<0.001	<0.001	<0.001	<0.001	<0.001

METHODS: EPA SW 846-8021B ,5030

Armando O. Gomez

1-16-01
Date

LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

TIPPERARY
ATTN: MR. VICTOR A. VICE
P.O. BOX 857
TATUM, N.M. 88267
FAX: 505-398-6510
FAX: 281-646-8996

Sample Type: Water
Sample Condition: Intact/ Iced/ HCl/ 2.5 deg. C
Project #: None Given
Project Name: Tipperary
Project Location: None Given

Sampling Date: 01/05/01
Receiving Date: 01/10/01
Analysis Date: 01/13/01

ELT#	FIELD CODE	BENZENE mg/L	TOLUENE mg/L	ETHYLBENZENE mg/L	m,p-XYLENE mg/L	o-XYLENE mg/L
36153	MW 27	0.355	0.004	0.003	0.020	0.009
36154	MW 19	0.248	0.002	0.002	0.006	0.003
36155	MW 17	1.42	0.036	0.140	0.428	0.287
36156	MW 16	1.32	0.023	0.083	0.110	0.055
36157	MW 24	0.004	0.004	0.002	0.008	0.005
36158	MW 22	0.140	0.036	0.057	0.092	0.085
36159	MW 29	0.019	0.010	0.010	0.034	0.014
36160	GS Source	0.805	0.292	0.136	0.692	0.414
36161	MW 30	0.036	0.030	0.009	0.036	0.026
36162	MW 31	0.130	0.004	0.003	0.010	0.005
%IA		93	90	89	86	90
%EA		100	98	98	95	100
BLANK		<0.001	<0.001	<0.001	<0.001	<0.001

METHODS: EPA SW 846-8021B ,5030

Armando O. Gomez

1-16-01
Date

Environmental Lab of Texas, Inc.

12600 West I-20 East
Odessa, Texas 79763
Phone: 915-563-1800
Fax: 915-563-1713

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager:

Company Name Whole Earth Environmental, Inc.

Company Address: 19606 San Gabriel

City/State/Zip: Houston, Tx. 77084

Telephone No: (800) 854-4358 **Fax No:** (281) 646-8996

Sampler Signature:

Project Name: Quarterly Sampling

Project #:

Project Loc: Tatum, New Mexico

PO #:

LAB # (lab use only)	FIELD CODE	Date Sampled	Time Sampled	No. of Containers	Preservative: Ice	Preservative: HNO_3	Preservative: HCl	Preservative: NaOH	Preservative: H_2SO_4	Preservative: None	Preservative: Other (Specify)	Matrix: Water	Matrix: Sludge	Matrix: Soil	Matrix: Other (specify):	Analyze For: TCLP: TOS / CL / SAR / EC	TPH 418.1	TPH TX 1005/1006	TPH 8015M GRO/DRO	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030							IRUSH TAT (Pre-Schedule)	Standard TAT
38917	Iva Source Well	4-5	10:40		X		X					X											X								
38918	Iva MW 1		10:45		X		X					X											X								
38919	Iva MW 2		11:09		X		X					X											X								
38920	Mable Source Well		11:12		X		X					X											X								
38921	Mable MW 3		11:15		X		X					X											X								
38922	Mable MW 4		11:26		X		X					X											X								
38923	Bell MW 6		10:20		X		X					X											X								
38924	Bell MW 13		9:59		X		X					X											X								
38925	Bell MW 14		10:10		X		X					X											X								
38926	Bell MW 25		9:44		X		X					X											X								

Special Instructions:

Sample Containers Intact? (Y) N
Temperature Upon Receipt: 2.5°C
Laboratory Comments: IN Tepcam

Relinquished by:	Date	Time	Received by:	Date	Time
M. Ch. Hi:-	4-6-01	9:25			
Relinquished by:	Date	Time	Received by ELOT:	Date	Time
			Jaime Monroy	4-6-01	0925

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p.5

Environmental Lab of Texas, Inc.

12600 West I-20 East
Odessa, Texas 79763

Phone: 915-563-1800
Fax: 915-563-1713

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: ____________

Company Name Whole Earth Environmental, Inc.

Company Address: 19606 San Gabriel

City/State/Zip: Houston, Tx. 77084

Telephone No: (800) 854-4358

Fax No: (281) 848-8996

Sampler Signature: ____________

Project Name: Quarterly Sampling

Project #: ____________

Project Loc: Tatum, New Mexico

PO #: ____________

LAB # (lab use only)	FIELD CODE	Date Sampled	Time Sampled	No. of Containers	Ice	HNO_3	HCl	NaOH	H_2SO_4	None	Other (Specify)	Water	Sludge	Soil	Other (specify):	TDS / CL / SAR / EC	TPH 418.1	TPH TX 1005/1006	TPH 8015M GRO/DRO	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030							RUSH TAT (Pre-Schedule)	Standard TAT
38927	NBF MW 8	4-5	11:58		X		X					X											X								
38928	NBF MW 15	↓	12:20		X		X					X											X								
38929	NBF MW 16		12:12		X		X					X											X								
38930	NBF MW 26		11:45		X		X					X											X								
38931	Sohio #1 MW 10		1:50		X		X					X											X								
38932	Sohio #1 MW 17		1:37		X		X					X											X								
38933	Sohio # 1 MW 18		1:22		X		X					X											X								
38934	Sohio # 1 MW 28		1:10		X		X					X											X								
38935	Sohio # 1 MW 30		12:55		X		X					X											X								
38936	Sohio "A" MW 11	↓	2:20		X		X					X											X								

Analyze For: TCLP: / TOTAL:

Special Instructions:

Sample Containers Intact? (Y) N
Temperature Upon Receipt: [illegible]
Laboratory Comments: INV Tipped?

Relinquished by:	Date	Time	Received by:	Date	Time
M. [signature]	4-6-01	9:25			
Relinquished by:	Date	Time	Received by ELOT: [signature]	4-6-01	0929

Apr 11 01 08:07a

Environmental Lab of Texas, Inc.

12600 West I-20 East
Odessa, Texas 79763
Phone: 915-563-1800
Fax: 915-563-1713

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: _____
Company Name: Whole Earth Environmental, Inc.
Company Address: 19606 San Gabriel
City/State/Zip: Houston, Tx. 77084
Telephone No: (800) 854-4368 Fax No: (281) 648-8998
Sampler Signature: _____

Project Name: Quarterly Sampling – Tippetary
Project #: _____
Project Loc: Tatum, New Mexico
PO #: _____

LAB # (lab use only)	FIELD CODE	Date Sampled	Time Sampled	No. of Containers	Preservative: Ice	HNO3	HCl	NaOH	H2SO4	None	Other (Specify)	Matrix: Water	Sludge	Soil	Other (specify):	Analyze For: TDS / Cl / SAR / EC	TPH 418.1	TPH TX 1005/1006	TPH 8015M GRO/DRO	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030	RUSH TAT (Pre-Schedule)	Standard TAT
38937	Sohio "A" MW 19	4-5	2:30		X		X					X											X		
38938	Sohio "A" MW 20		2:20		X		X					X											X		
38939	Sohio "A" MW 27		2:10		X		X					X											X		
38940	Sohio "A" MW 31		2:00		X		X					X											X		
38941	GS Source Well		2:40		X		X					X											X		
38942	GS MW 12		2:57		X		X					X											X		
38943	GS MW 21		3:10		X		X					X											X		
38944	GS MW 22		3:25		X		X					X											X		
38945	GS MW 29		3:45		X		X					X											X		
38946	Sat. 4 MW 9		9:55		X		X					X											X		

Special Instructions:

Sample Containers Intact? Y / N
Temperature Upon Receipt: 2.5°C
Laboratory Comments: INV. Tippetary

Relinquished by:	Date	Time	Received by:	Date	Time
Mark Hall	4-6-01	9:25			
Relinquished by:	Date	Time	Received by ELOT:	Date	Time
			[signature]	4-6-01	0925

PG 4 of 1

Environmental Lab of Texas, Inc.

12600 West I-20 East
Odessa, Texas 79763

Phone: 915-563-1800
Fax: 915-563-1713

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager:

Company Name: Whole Earth Environmental

Company Address: 19606 San Gabriel

City/State/Zip: Houston, Tx. 77084

Telephone No: (800) 854-4358

Fax No: (281) 646-8996

Sampler Signature:

Project Name: Quarterly Sampling

Project #:

Project Loc: Tatum, NM

PO #:

LAB # (lab use only)	FIELD CODE	Date Sampled	Time Sampled	No. of Containers	Preservative: Ice	HNO_3	HCl	NaOH	H_2SO_4	None	Other (Specify)	Matrix: Water	Sludge	Soil	Other (specify):	Analyze For (TCLP / TOTAL): TDS / CL / SAR / EC	TPH 418.1	TPH TX 1005/1006	TPH 8015M GRO/DRO	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030							RUSH TAT (Pre-Schedule)	Standard TAT
38947	23	4-5	9:10	2	✓		✓																✓								
38948	24	4-5	9:20	2	✓		✓																✓								

Special Instructions:

Sample Containers Intact? (Y) N
Temperature Upon Receipt: 2.5°C
Laboratory Comments:
NV Tigers

Relinquished by:	Date	Time	Received by:	Date	Time
M. J. [signature]	4-6-01	9:25			
Relinquished by:	Date	Time	Received by ELOT: [signature] McManus	4-6-01	0925

ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

WHOLE EARTH ENVIRONMENTAL INC.
ATTN: MR. MIKE GRIFFIN
19606 SAN GABRIEL
HOUSTON, TEXAS 77084
FAX: 281-646-8996

Sample Type: Water
Sample Condition: Intact/ Iced/ HCl/ 2.5 deg. C
Project #: None Given
Project Name: Quarterly Sampling
Project Location: Tatum, New Mexico

Sampling Date: 04/05/01
Receiving Date: 04/06/01
Analysis Date: 04/06/01

ELT#	FIELD CODE	BENZENE mg/L	TOLUENE mg/L	ETHYLBENZENE mg/L	m,p-XYLENE mg/L	o-XYLENE mg/L
38917	Iva Source Well	0.666	0.599	0.141	1.05	0.824
38918	Iva MW 1	<0.001	<0.001	<0.001	<0.001	<0.001
38919	Iva MW 2	<0.001	<0.001	<0.001	<0.001	<0.001
38920	Mable Source Well	0.509	0.435	0.128	1.09	0.816
38921	Mable MW 3	<0.010	0.047	0.088	0.270	0.049
38922	Mable MW 4	<0.001	<0.001	0.006	0.015	0.004
38923	Bell MW 6	0.024	<0.001	0.002	0.001	<0.001
38924	Bell MW 13	<0.001	<0.001	<0.001	<0.001	<0.001
38925	Bell MW 14	0.047	<0.001	0.006	0.001	<0.001
38926	Bell MW 25	<0.001	<0.001	<0.001	<0.001	<0.001
38927	NBF MW 8	<0.001	<0.001	0.003	0.007	0.002
%IA		99	102	102	100	101
%EA		88	93	97	95	97
BLANK		<0.001	<0.001	<0.001	<0.001	<0.001

METHODS: EPA SW 846-8021B ,5030

Raland K. Tuttle

4-10-01
Date

ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

WHOLE EARTH ENVIRONMENTAL INC.
ATTN: MR. MIKE GRIFFIN
19606 SAN GABRIEL
HOUSTON, TEXAS 77084
FAX: 281-646-8996

Sample Type: Water
Sample Condition: Intact/ Iced/ HCl/ 2.5 deg. C
Project #: None Given
Project Name: Quarterly Sampling
Project Location: Tatum, New Mexico

Sampling Date: 04/05/01
Receiving Date: 04/06/01
Analysis Date: 04/08/01

ELT#	FIELD CODE	BENZENE mg/L	TOLUENE mg/L	ETHYLBENZENE mg/L	m,p-XYLENE mg/L	o-XYLENE mg/L
38928	NBF MW 15	2.57	1.46	0.308	0.821	0.481
38929	NBF MW 16	1.55	<0.005	0.101	0.104	0.039
38930	NBF MW 26	<0.001	<0.001	0.003	0.009	0.003
38931	Sohio #1 MW 10	2.08	0.031	0.179	0.342	0.074
38932	Sohio #1 MW 17	1.49	0.038	0.199	0.606	0.348
38933	Sohio #1 MW 18	1.41	0.179	0.095	0.449	0.306
38934	Sohio #1 MW 28	0.014	0.010	0.007	0.016	0.006
38935	Sohio #1 MW 30	0.007	0.008	0.005	0.010	0.004
38936	Sohio "A" MW 11	0.033	0.006	0.007	0.024	0.013
38937	Sohio "A" MW 19	0.325	0.007	0.009	0.030	0.016
38938	Sohio "A" MW 20	0.020	0.006	0.009	0.029	0.016
38939	Sohio "A" MW 27	0.324	0.012	0.016	0.069	0.035
%IA		90	93	94	93	93
%EA		88	92	91	89	94
BLANK		<0.001	<0.001	<0.001	<0.001	<0.001

METHODS: EPA SW 846-8021B ,5030

R.K. Tuttle

Raland K. Tuttle

4-11-01
Date

ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

WHOLE EARTH ENVIRONMENTAL INC.
ATTN: MR. MIKE GRIFFIN
19606 SAN GABRIEL
HOUSTON, TEXAS 77084
FAX: 281-646-8996

Sample Type: Water
Sample Condition: Intact/ Iced/ HCl/ 2.5 deg. C
Project #: None Given
Project Name: Quarterly Sampling
Project Location: Tatum, New Mexico

Sampling Date: 04/05/01
Receiving Date: 04/06/01
Analysis Date: 04/09/01

ELT#	FIELD CODE	BENZENE mg/L	TOLUENE mg/L	ETHYLBENZENE mg/L	m,p-XYLENE mg/L	o-XYLENE mg/L
38940	Sohio "A" MW 31	0.105	0.008	0.013	0.042	0.023
38941	GS Source Well	0.417	0.148	0.091	0.582	0.254
38942	GS MW 12	0.394	0.022	0.180	0.767	0.200
38943	GS MW 21	0.014	0.011	0.012	0.021	0.009
38944	GS MW 22	0.085	0.038	0.060	0.076	0.099
38945	GS MW 29	0.009	0.007	0.007	0.022	0.011
38946	Sat 4 MW 9	<0.001	<0.001	<0.001	<0.001	<0.001
38947	23	<0.001	<0.001	<0.001	<0.001	<0.001
38948	24	<0.001	<0.001	<0.001	<0.001	<0.001
%IA		93	98	100	99	100
%EA		102	106	106	104	105
BLANK		<0.001	<0.001	<0.001	<0.001	<0.001

METHODS: EPA SW 846-8021B ,5030

Raland K. Tuttle

4-11-01
Date

ıviro…ental Lab of Texas, Inc.

) West I-20 East
sa, Texas 79763
Phone: 915-563-1800
Fax: 915-563-1713

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: _____

Company Name: Whole Earth Environmental, Inc.

Company Address: 19606 San Gabriel

City/State/Zip: Houston, Tx. 77084

Telephone No: (800) 864-4358 Fax No: (281) 646-8998

Sampler Signature: M. Gallo.

Project Name: Quarterly Sampling

Project #: _____

Project Loc: Tatum, New Mexico

PO #: _____

Lab I.D.	FIELD CODE	Date Sampled	Time Sampled	No. of Containers	Preservative: Ice	HNO_3	HCl	NaOH	H_2SO_4	None	Other (Specify)	Matrix: Water	Sludge	Soil	Other (specify):	Analyze For: TDS / CL / SAR / EC	TPH 418.1	TPH TX 1005/1006	TPH 8015M GRO/DRO	TCLP: Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	TOTAL: BTEX 8021B/5030	RUSH TAT (Pre-Schedule)	Standard TAT
	Iva Source Well	6/6/01		2	X		X					X											X		
	Iva MW 1	6/5/01		2	X		X					X											X		
	Iva MW 2	6/5/01		2	X		X					X											X		
	Mable Source Well	6/5/01		2	X		X					X											X		
	Mable MW 3	6/5/01		2	X		X					X											X		
	Mable MW 4	6/5/01		2	X		X					X											X		
	Bell MW 6	6/5/01		2	X		X					X											X		
	Bell MW 13	6/5/01		2	X		X					X											X		
	Bell MW 14	6/5/01		2	X		X					X											X		
	Bell MW 25	6/5/01		2	X		X					X											X		

Instructions:

Relinquished by:	Date	Time	Received by:	Date	Time
M. Gallo.	7-7-01	11:30			
Relinquished by:	Date	Time	Received by:	Date	Time

Sample Conditions Upon Receipt / Temperature Upon Receipt / Laboratory Comments:

ıviro…ntal Lab of Texas, Inc.

West I-20 East
a, Texas 79763

Phone: 915-563-1800
Fax: 915-563-1713

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager:

Company Name: Whole Earth Environmental, Inc.

Company Address: 19608 San Gabriel

City/State/Zip: Houston, Tx. 77084

Telephone No: (800) 854-4358   Fax No: (281) 646-8996

Sampler Signature: [signature]

Project Name: Quarterly Sampling

Project #:

Project Loc: Tatum, New Mexico

PO #:

FIELD CODE	Date Sampled	Time Sampled	No. of Containers	Preservative: Ice	HNO_3	HCl	NaOH	H_2SO_4	None	Other (Specify)	Matrix: Water	Sludge	Soil	Other (specify):	Analyze For: TDS / CL / SAR / EC	TPH 418.1	TPH TX 1005/1006	TPH 8015M GRO/DRO	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030							RUSH TAT (Pre-Schedule)	Standard TAT
NBF MW 8	6/5/01			X		X					X											X								
NBF MW 15	6/5/01			X		X					X											X								
NBF MW 16	6/5/01			X		X					X											X								
NBF MW 26	6/5/01			X		X					X											X								
Sohio #1 MW 10	6/6/01			X		X					X											X								
Sohio #1 MW 17	6/6/01			X		X					X											X								
Sohio # 1 MW 18	6/6/01			X		X					X											X								
Sohio # 1 MW 28	6/6/01			X		X					X											X								
Sohio # 1 MW 30	6/6/01			X		X					X											X								
Sohio "A" MW 11	6/6/01			X		X					X											X								

…l Instructions:

…uished by:	Date	Time	Received by:	Date	Time
[signature]	7-7-01	11:30			
…uished by:	Date	Time	Received by ELOT: [signature]	Date	Time

Sample Containers Intact?
Temperature Upon Receipt:
Laboratory Comments:

viro[illegible]ntal Lab of Texas, Inc.

West I-20 East
a, Texas 79763

Phone: 915-563-1800
Fax: 915-563-1713

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager:

Company Name: Whole Earth Environmental, Inc.

Company Address: 19606 San Gabriel

City/State/Zip: Houston, Tx. 77084

Telephone No: (800) 854-4358 Fax No: (281) 646-8996

Sampler Signature: [signature]

Project Name: Quarterly Sampling

Project #:

Project Loc: Tatum, New Mexico

PO #:

FIELD CODE	Date Sampled	Time Sampled	No. of Containers	Preservative: Ice	HNO_3	HCl	NaOH	H_2SO_4	None	Other (Specify)	Matrix: Water	Sludge	Soil	Other (specify):	TDS / CL / SAR / EC	TPH 418.1	TPH TX 1005/1006	TPH 8015M GRO/DRO	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030	RUSH TAT (Pre-Schedule)	Standard TAT
Sohio "A" MW 19	6/6/01			X		X					X											X		
Sohio "A" MW 20	6/6/01			X		X					X											X		
Sohio "A" MW 27	6/6/01			X		X					X											X		
Sohio "A" MW 31	6/6/01			X		X					X											X		
GS Source Well	6/6/01			X		X					X											X		
GS MW 12	6/6/01			X		X					X											X		
GS MW 21	6/6/01			X		X					X											X		
GS MW 22	6/6/01			X		X					X											X		
GS MW 29	6/6/01			X		X					X											X		
Sat. 4 MW 9	6/6/01			X		X					X											X		

Analyze For: TCLP: / TOTAL:

[Specia]l Instructions:

[Relinqu]ished by:	Date	Time	Received by:	Date	Time
[signature]	7-7-01	11:30			
[Relinqu]ished by:	Date	Time	Received by ELOT: [signature]	Date	Time

Sample Containers Intact? Y N
Temperature Upon Receipt:
Laboratory Comments:

...vironmental Lab of Texas, Inc.

0 West I-20 East
...sa, Texas 79763

Phone: 915-563-1800
Fax: 915-563-1713

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager:

Company Name Whole Earth Environmental, Inc.

Company Address: 19606 San Gabriel

City/State/Zip: Houston, Tx. 77084

Telephone No: (800) 864-4358

Fax No: (281) 646-8996

Sampler Signature: [signature]

Project Name: Quarterly Sampling

Project #:

Project Loc: Tatum, New Mexico

PO #:

Lab #	FIELD CODE	Date Sampled	Time Sampled	No. of Containers	Preservative: Ice	HNO_3	HCl	NaOH	H_2SO_4	None	Other (Specify)	Matrix: Water	Sludge	Soil	Other (specify):	Analyze For (TCLP: / TOTAL:): TDS / CL / SAR / EC	TPH 418.1	TPH TX 1005/1006	TPH 8015M GRO/DRO	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030	Cations / Anions						RUSH TAT (Pre-Schedule)	Standard TAT
	Satellite # 4 MW 23	6/6/01		2	X		X					X											X								
	Satellite # 4 MW24	6/6/01		2	X		X					X											X								
	Collier MW 32	6/6/01		4	X		X					X				X							X	X							
	CollierMW 33	6/6/01		4	X		X					X				X							X	X							

Instructions:

...shed by:	Date	Time	Received by:	Date	Time
[signature]	7-7-01	11:30			
...shed by:	**Date**	**Time**	[illegible]	[illegible]	[illegible]

Laboratory Comments: [illegible]

ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

WHOLE EARTH ENVIRONMENTAL
ATTN: MR. MIKE GRIFFIN
19606 SAN GABRIEL
HOUSTON, TEXAS 77084
FAX: 281-646-8996
FAX: 505-397-3591 (motel)

Sample Type: Water
Sample Condition: Intact/ Iced/ HCl 2 deg C
Project #: None Given
Project Name: Quarterly Sampling
Project Location: Tatum, N.M.

Sampling Date:See Below
Receiving Date: 07/07/01
Analysis Date: 07/07/01

ELT#	FIELD CODE	BENZENE mg/L	TOLUENE mg/L	ETHYLBENZENE mg/L	m,p-XYLENE mg/L	o-XYLENE mg/L	SAMPLE DATE
0101098-01	Iva Source Well	0.371	0.252	0.075	0.574	0.474	07/06/01
0101098-02	Iva MW 1	<0.001	<0.001	0.003	0.008	0.002	07/05/01
0101098-03	Iva MW 2	<0.001	<0.001	0.002	0.006	<0.001	07/05/01
0101098-04	Mable Source Well	0.459	0.343	0.118	0.928	0.735	07/05/01
0101098-05	Mable MW 3	0.003	0.007	0.025	0.057	0.021	07/05/01
0101098-06	Mable MW 4	0.004	0.014	0.006	0.014	0.005	07/05/01
0101098-07	Bell MW 6	0.056	<0.001	0.002	0.005	<0.001	07/05/01
0101098-08	Bell MW 13	0.001	<0.001	0.002	0.005	0.002	07/05/01
0101098-09	Bell MW 14	0.034	0.001	0.005	0.007	0.002	07/05/01
0101098-10	Bell MW 25	<0.001	<0.001	0.003	0.006	0.002	07/05/01
0101098-11	NBF MW 8	<0.001	<0.001	0.001	0.004	0.001	07/05/01
0101098-12	NBF MW 15	1.80	0.948	0.250	0.598	0.409	07/05/01
0101098-13	NBF MW 16	1.65	0.026	0.097	0.159	0.069	07/05/01
0101098-14	NBF MW 26	<0.001	<0.001	0.002	0.004	<0.001	07/05/01
0101098-15	Sohio #1 MW 10	2.20	<0.010	0.190	0.455	0.052	07/06/01
0101098-16	Sohio #1 MW 17	1.22	0.017	0.166	0.583	0.303	07/06/01
0101098-17	Sohio #1 MW 18	1.10	0.077	0.082	0.364	0.257	07/06/01
	QUALITY CONTROL	0.110	0.108	0.112	0.224	0.114	
	TRUE VALUE	0.100	0.100	0.100	0.200	0.100	
	% INSTRUMENT ACCURACY	110	108	112	112	114	
	SPIKED AMOUNT	0.100	0.100	0.100	0.200	0.100	
	ORIGINAL SAMPLE	<0.001	<0.001	<0.001	<0.001	<0.001	
	SPIKE	0.092	0.088	0.087	0.171	0.089	
	SPIKE DUP	0.088	0.084	0.085	0.167	0.086	
	% EXTRACTION ACCURACY	92	88	87	86	89	
	BLANK	<0.001	<0.001	<0.001	<0.001	<0.001	
	RPD	4	4	2	2	3	

METHODS: EPA SW 846-8021B ,5030

Raland K. Tuttle

7-13-01
Date

ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

WHOLE EARTH ENVIRONMENTAL
ATTN: MR. MIKE GRIFFIN
19606 SAN GABRIEL
HOUSTON, TEXAS 77084
FAX: 281-646-8996
FAX: 505-397-3591 (motel)

Sample Type: Water
Sample Condition: Intact/ Iced/ HCl 2 deg C
Project #: None Given
Project Name: Quarterly Sampling
Project Location: Tatum, N.M.

Sampling Date: 07/06/01
Receiving Date: 07/07/01
Analysis Date: 07/09/01

ELT#	FIELD CODE	BENZENE mg/L	TOLUENE mg/L	ETHYLBENZENE mg/L	m,p-XYLENE mg/L	o-XYLENE mg/L
0101098-18	Sohio #1 MW 28	0.009	0.002	0.006	0.025	0.007
0101098-19	Sohio #1 MW 30	0.005	0.001	0.004	0.017	0.005
0101098-20	Sohio "A" MW 11	0.035	0.002	0.005	0.018	0.007
0101098-21	Sohio "A" MW 19	0.307	0.001	0.004	0.017	0.005
0101098-22	Sohio "A" MW 20	0.005	<0.001	0.004	0.014	0.004
0101098-23	Sohio "A" MW 27	0.073	<0.001	0.004	0.012	0.004
0101098-24	Sohio "A" MW 31	0.275	0.003	0.007	0.039	0.014
0101098-25	GS Source Well	0.318	0.180	0.133	0.722	0.368
0101098-26	GS MW 12	0.350	0.026	0.150	0.483	0.150
0101098-27	GS MW 21	0.009	0.002	0.007	0.004	0.002
0101098-28	GS MW 22	0.062	0.020	0.046	0.047	0.069
0101098-29	GS MW 29	0.005	0.002	0.004	0.005	0.004
0101098-30	Sat. 4 MW 9	<0.001	<0.001	0.001	0.003	<0.001
0101098-31	Satellite #4 MW 23	<0.001	<0.001	<0.001	<0.001	<0.001
0101098-32	Satellite #4 MW 24	<0.001	<0.001	<0.001	<0.001	<0.001
0101098-33	Collier MW 32	0.537	0.054	0.073	0.077	0.078
0101098-34	Collier MW 33	0.043	0.003	0.005	0.007	0.005
	QUALITY CONTROL	0.092	0.098	0.095	0.186	0.097
	TRUE VALUE	0.100	0.100	0.100	0.200	0.100
	% INSTRUMENT ACCURACY	92	90	95	93	97
	SPIKED AMOUNT	0.100	0.100	0.100	0.200	0.100
	ORIGINAL SAMPLE	0.005	0.001	0.004	0.017	0.005
	SPIKE	0.097	0.090	0.098	0.202	0.101
	SPIKE DUP	0.097	0.091	0.090	0.185	0.090
	% EXTRACTION ACCURACY	92	89	94	93	96
	BLANK	<0.001	<0.001	<0.001	<0.001	<0.001
	RPD	0	1	8	9	11

METHODS: EPA SW 846-8021B ,5030

Raland K. Tuttle

7-13-01
Date

P. 1

P6 1 of 3

Environmental Lab of Texas, Inc.

12600 West I-20 East
Odessa, Texas 79763

Phone: 915-563-1800
Fax: 915-563-1713

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager:

Company Name Whole Earth Environmental, Inc.

Company Address: 19606 San Gabriel

City/State/Zip: Houston, Tx. 77084

Telephone No: (800) 854-4358 **Fax No:** (281) 646-8996

Sampler Signature:

Project Name: Quarterly Sampling

Project #:

Project Loc: Tatum, New Mexico

PO #:

LAB # (lab use only)	FIELD CODE	Date Sampled	Time Sampled	No. of Containers	Preservative: Ice	HNO$_3$ (JMM)	HCl as per M. Griffin 9/24	NaOH	H_2SO_4	None	Other (Specify)	Matrix: Water	Sludge	Soil	Other (specify):	Analyze For (TCLP: / TOTAL:): TDS / CL / SAR / EC	TPH 418.1	TPH TX 1005/1006	TPH 8015M GRO/DRO	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030							RUSH TAT (Pre-Schedule)	Standard TAT
[illegible]	Iva Source Well	9/24/01		2	X	X	X					X											X								
[illegible]	Iva MW 1	9/24/01		2	X	X	X					X											X								
[illegible]	Iva MW 2	9/24/01		2	X	X	X					X											X								
[illegible]	Mable Source Well	9/24/01		2	X	X	X					X											X								
[illegible]	Mable MW 3	9/24/01		2	X	X	X					X											X								
[illegible]	Mable MW 4	9/24/01		2	X	X	X					X											X								
[illegible]	Bell MW 8	9/24/01		2	X	X	X					X											X								
[illegible]	Bell MW 13	9/24/01		2	X	X	X					X											X								
[illegible]	Bell MW 14	9/24/01		2	X	X	X					X											X								
[illegible]	Bell MW 25	9/24/01		2	X	X	X					X											X								

Special Instructions:

Sample Containers Intact? Y N
Temperature Upon Receipt: [illegible]
Laboratory Comments:

Relinquished by:	Date	Time	Received by:	Date	Time
M. [signature]	9-26	8:18			
Relinquished by:	Date	Time	Received by ELOT: [signature]	[illegible]	[illegible]

Oct 05 01 04:05p

Environmental Lab of Texas, Inc.

12600 West I-20 East
Odessa, Texas 79763
Phone: 915-563-1800
Fax: 915-563-1713

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager:

Company Name: Whole Earth Environmental, Inc.

Company Address: 19606 San Gabriel

City/State/Zip: Houston, Tx. 77084

Telephone No: (800) 854-4358

Fax No: (281) 646-6996

Sampler Signature:

Project Name: Quarterly Sampling

Project #:

Project Loc: Tatum, New Mexico

PO #:

LAB # (lab use only)	FIELD CODE	Date Sampled	Time Sampled	No. of Containers	Preservative: Ice	Preservative: HNO_3 (circled)	Preservative: HCl as per M. Griffin 9/26	Preservative: NaOH	Preservative: H_2SO_4	Preservative: None	Preservative: Other (Specify)	Matrix: Water	Matrix: Sludge	Matrix: Soil	Matrix: Other (specify)	Analyze For: TDS / Cl / SAR / EC	TPH 418.1	TPH TX 1005/1006	TPH 8015M GRO/DRO	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030							RUSH TAT (Pre-Schedule)	Standard TAT
	NBF MW 8	9/24/01		2	X	X	X					X											X								
	NBF MW 15	9/24/01		2	X	X	X					X											X								
	NBF MW 16	9/24/01		2	X	X	X					X											X								
	NBF MW 26	9/24/01		2	X	X	X					X											X								
	Sohio #1 MW 10	9/24/01		2	X	X	X					X											X								
	Sohio #1 MW 17	9/24/01		2	X	X	X					X											X								
	Sohio # 1 MW 18	9/24/01		2	X	X	X					X											X								
	Sohio # 1 MW 28	9/24/01		2	X	X	X					X											X								
	Sohio # 1 MW 30	9/24/01		2	X	X	X					X											X								
	Sohio "A" MW 11	9/24/01		2	X	X	X					X											X								

Special Instructions:

Sample Containers Intact? (Y) N
Temperature Upon Receipt:
Laboratory Comments:

Relinquished by:	Date	Time	Received by:	Date	Time
M. Griffin (signature)	9-26-01	8:18			
Relinquished by:	Date	Time	Received by ELOT: (signature)	[illegible]	[illegible]

PG 3of

p.5

Environmental Lab of Texas, Inc.

12600 West I-20 East
Odessa, Texas 79763
Phone: 915-563-1800
Fax: 915-563-1713

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager:

Company Name: Whole Earth Environmental, Inc.

Company Address: 19606 San Gabriel

City/State/Zip: Houston, Tx. 77084

Telephone No: (800) 854-4358   Fax No: (281) 646-8996

Sampler Signature:

Project Name: Quarterly Sampling

Project #:

Project Loc: Tatum, New Mexico

PO #:

LAB # (lab use only)	FIELD CODE	Date Sampled	Time Sampled	No. of Containers	Preservative: Ice	HNO_3 JPM	HCl 4s per M.Griffin 9/26	NaOH	H_2SO_4	None	Other (Specify)	Matrix: Water	Sludge	Soil	Other (specify):	Analyze For (TCLP: / TOTAL:): TDS / CL / SAR / EC	TPH 418.1	TPH TX 1005/1006	TPH 8015M GRO/DRO	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030	RUSH TAT (Pre-Schedule)	Standard TAT
[illegible] 21	Sohio "A" MW 19	9/24/01		2	X	X	X					X											X		
22	Sohio "A" MW 20	9/24/01		2	X	X	X					X											X		
23	Sohio "A" MW 27	9/24/01		2	X	X	X					X											X		
24	Sohio "A" MW 31	9/24/01		2	X	X	X					X											X		
25	GS Source Well	9/24/01		2	X	X	X					X											X		
26	GS MW 12	9/24/01		2	X	X	X					X											X		
27	GS MW 21	9/24/01		2	X	X	X					X											X		
28	GS MW 22	9/24/01		2	X	X	X					X											X		
29	GS MW 29	9/24/01		2	X	X	X					X											X		
[illegible]	~~Collier MW-32~~	~~9/24/01~~		2	X	X	X					X											X		

Special Instructions: [illegible] on Tipperary Begley Field COC 9/26

Sample Containers Intact?
Temperature Upon Receipt:
Laboratory Comments:

Relinquished by:	Date	Time	Received by:	Date	Time
M. Griff.	9-26-01	8:18			
Relinquished by:	Date	Time	Received by ELOT: [signature]	9/26/01	08:18

Oct 05 01 03:08p

ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

WHOLE EARTH ENVIRONMENATL
ATTN: MR. MIKE GRIFFIN
19606 SAN GABRIEL
HOUSTON, TEXAS 77084
FAX: 281-646-8996

Sample Type: Water
Sample Condition: Intact/ Iced/ HCl/ 0.0 deg C
Project Name: Quarterly Sampling
Project #: None Given
Project Location: Tatum, NM

Sampling Date: 09/24/01
Receiving Date: 09/26/01
Analysis Date: 10/04/01

ELT#	FIELD CODE	BENZENE mg/L	TOLUENE mg/L	ETHYLBENZENE mg/L	m,p-XYLENE mg/L	o-XYLENE mg/L
0101642-01	Iva Source Well	0.430	0.204	0.048	0.486	0.359
0101642-02	Iva MW 1	<0.001	<0.001	<0.001	0.003	<0.001
0101642-03	Iva MW 2	0.004	0.003	0.001	0.006	0.004
0101642-04	Mable Source Well	0.550	0.425	0.148	1.36	0.904
0101642-05	Mable MW 3	0.053	0.163	0.173	0.826	0.154
0101642-06	Mable MW 4	0.039	0.038	0.102	0.273	0.091
0101642-07	Bell MW 6	0.038	<0.001	<0.001	<0.001	<0.001
0101642-08	Bell MW 13	0.002	0.002	0.003	0.009	0.003
0101642-09	Bell MW 14	0.054	0.001	0.005	0.011	0.004

QUALITY CONTROL	0.091	0.090	0.088	0.170	0.087
TRUE VALUE	0.100	0.100	0.100	0.200	0.100
% IA	91	90	88	85	87
SPIKED AMOUNT	0.100	0.100	0.100	0.200	0.100
ORIGINAL SAMPLE	<0.001	<0.001	<0.001	<0.001	<0.001
SPIKE	0.093	0.089	0.082	0.160	0.077
SPIKE DUP	0.086	0.104	0.090	0.171	0.087
%EA	86	104	90	86	87
BLANK	<0.001	<0.001	<0.001	<0.001	<0.001
RPD	4.51	0.79	2.97	1.26	1.69

METHODS: SW 846-8021B, 5030

Raland K. Tuttle

10-05-01
Date

ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

WHOLE EARTH ENVIRONMENATL
ATTN: MR. MIKE GRIFFIN
19606 SAN GABRIEL
HOUSTON, TEXAS 77084
FAX: 281-646-8996

Sample Type: Water
Sample Condition: Intact/ Iced/ HCl/ 0.0 deg C
Project Name: Quarterly Sampling
Project #: None Given
Project Location: Tatum, NM

Sampling Date: 09/24/01
Receiving Date: 09/26/01
Analysis Date: 10/04/01

ELT#	FIELD CODE	BENZENE mg/L	TOLUENE mg/L	ETHYLBENZENE mg/L	m,p-XYLENE mg/L	o-XYLENE mg/L
0101642-10	Bell MW 25	<0.001	<0.001	0.005	0.016	0.006
0101642-11	NBF MW 8	0.041	0.044	0.018	0.040	0.026
0101642-12	NBF MW 15	2.52	1.34	0.331	0.960	0.562
0101642-13	NBF MW 16	1.39	0.001	0.058	0.041	0.005
0101642-14	NBF MW 26	0.027	0.002	0.003	0.008	0.003
0101642-15	Sohio #1 MW 10	2.15	0.131	0.189	0.510	0.137
0101642-16	Sohio #1 MW 17	1.03	0.035	0.035	0.381	0.108
0101642-17	Sohio #1 MW 18	2.81	2.22	0.554	3.15	1.65
0101642-18	Sohio #1 MW 28	<0.005	0.031	0.010	0.020	0.014

QUALITY CONTROL	0.099	0.099	0.092	0.179	0.086
TRUE VALUE	0.100	0.100	0.100	0.200	0.100
% IA	99	99	92	90	86
SPIKED AMOUNT	0.100	0.100	0.100	0.200	0.100
ORIGINAL SAMPLE	<0.001	<0.001	0.005	0.016	0.006
SPIKE	0.093	0.092	0.089	0.181	0.087
SPIKE DUP	0.090	0.089	0.086	0.173	0.083
%EA	93	90	84	83	81
BLANK	<0.001	<0.001	<0.001	<0.001	<0.001
RPD	4	4	4	5	5

METHODS: SW 846-8021B, 5030

Raland K. Tuttle

10-5-01
Date

ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

WHOLE EARTH ENVIRONMENATL
ATTN: MR. MIKE GRIFFIN
19606 SAN GABRIEL
HOUSTON, TEXAS 77084
FAX: 281-646-8996

Sample Type: Water
Sample Condition: Intact/ Iced/ HCl/ 0.0 deg C
Project Name: Quarterly Sampling
Project #: None Given
Project Location: Tatum, NM

Sampling Date: 09/24/01
Receiving Date: 09/26/01
Analysis Date: 10/04/01

ELT#	FIELD CODE	BENZENE mg/L	TOLUENE mg/L	ETHYLBENZENE mg/L	m,p-XYLENE mg/L	o-XYLENE mg/L
0101642-19	Sohio #1 MW 30	0.040	0.033	0.007	0.045	0.010
0101642-20	Sohio "A" MW 11	0.045	0.015	0.007	0.034	0.020
0101642-21	Sohio "A" MW 19	0.250	0.013	0.006	0.032	0.016
0101642-22	Sohio "A" MW 20	0.037	0.025	0.011	0.052	0.026
0101642-23	Sohio "A" MW 27	0.123	0.036	0.018	0.082	0.039
0101642-24	Sohio "A" MW 31	0.406	0.038	0.014	0.083	0.040
0101642-25	GS Source Well	0.350	0.141	0.097	0.430	0.226
0101642-26	GS MW 12	0.533	0.078	0.267	1.12	0.309
0101642-27	GS MW 21	0.016	0.009	0.012	0.015	0.006
0101642-28	GS MW 22	0.041	0.019	0.038	0.032	0.042
0101642-29	GS MW 29	0.016	0.007	0.007	0.015	0.007
QUALITY CONTROL		0.104	0.100	0.092	0.185	0.088
TRUE VALUE		0.100	0.100	0.100	0.200	0.100
% IA		104	100	92	92	88
SPIKED AMOUNT		0.100	0.100	0.100	0.200	0.100
ORIGINAL SAMPLE		0.037	0.025	0.011	0.052	0.026
SPIKE		0.155	0.130	0.111	0.270	0.126
SPIKE DUP		0.129	0.114	0.098	0.236	0.113
%EA		92	89	87	92	86
BLANK		<0.001	<0.001	<0.001	<0.001	<0.001
RPD		25	16	14	17	15

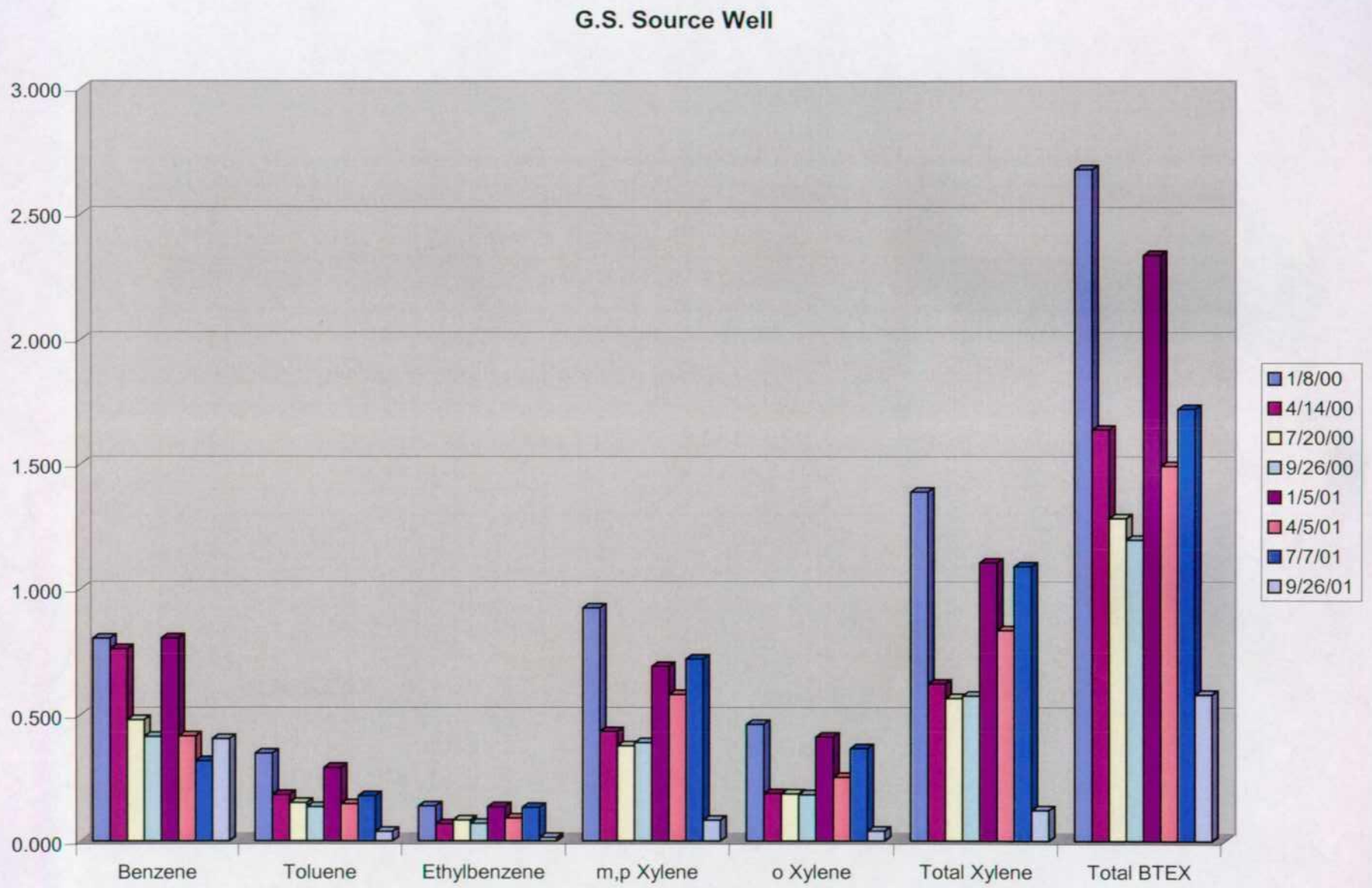
METHODS: SW 846-8021B, 5030

Raland K. Tuttle

10-5-01
Date

Source Well
G.S. State # 1

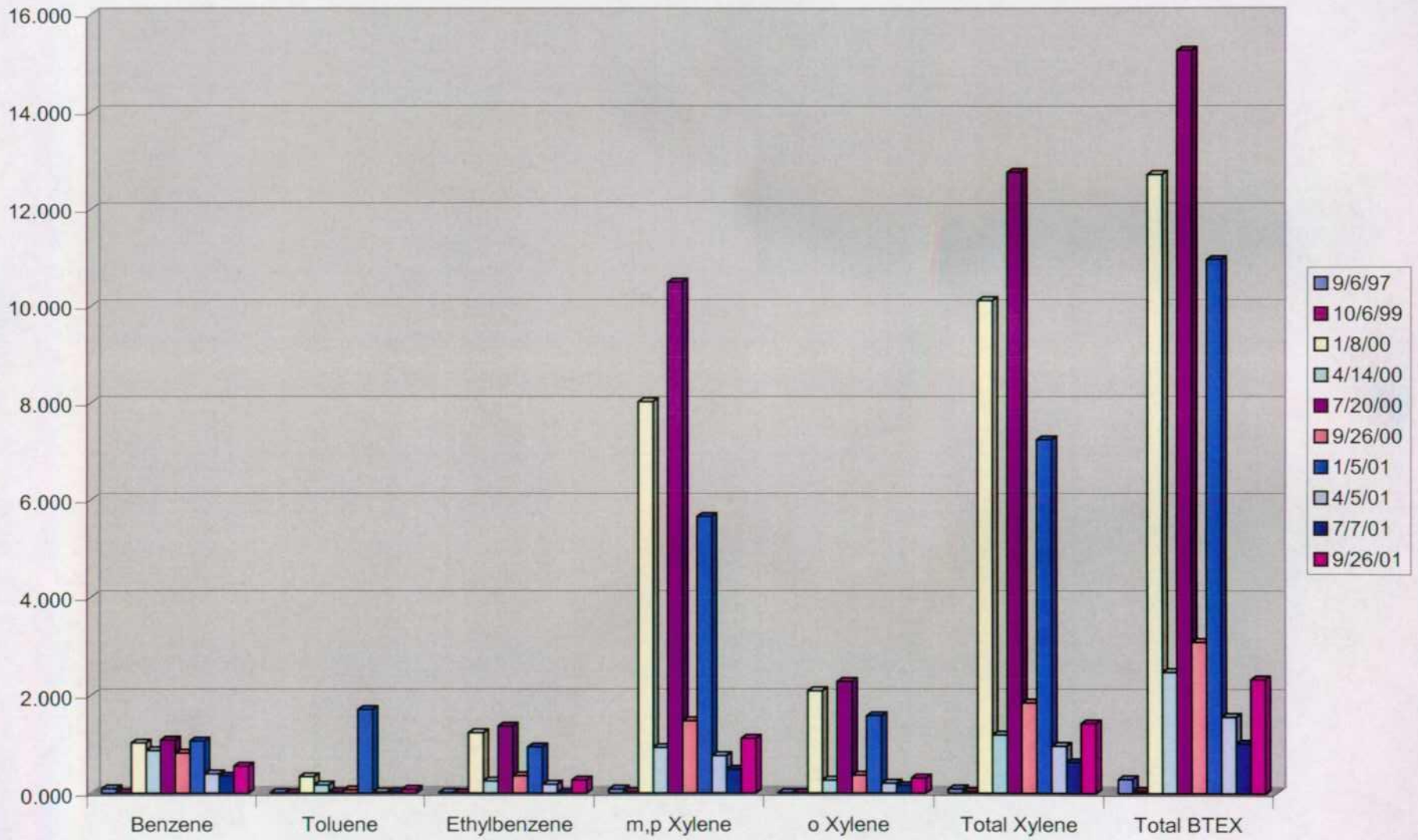
Lab. #	22782	25146	28461	31496	36160	38941	0101098-25	0101642-24
Sample Date	1/8/00	4/14/00	7/20/00	9/26/00	1/5/01	4/5/01	7/7/01	9/26/01
Benzene	0.804	0.763	0.481	0.415	0.805	0.417	0.318	0.406
Toluene	0.348	0.184	0.153	0.136	0.292	0.148	0.180	0.038
Ethylbenzene	0.139	0.068	0.083	0.070	0.136	0.091	0.133	0.014
m,p Xylene	0.925	0.434	0.378	0.391	0.692	0.582	0.722	0.083
o Xylene	0.464	0.189	0.188	0.185	0.414	0.254	0.368	0.040
Total Xylene	1.389	0.623	0.566	0.576	1.106	0.836	1.090	0.123
Total BTEX	2.680	1.638	1.283	1.197	2.339	1.492	1.721	0.581


G.S. Source Well
3.000
2.500
2.000
1.500
1.000
0.500
0.000
Benzene
Toluene
Ethylbenzene
m,p Xylene
o Xylene
Total Xylene
Total BTEX
1/8/00
4/14/00
7/20/00
9/26/00
1/5/01
4/5/01
7/7/01
9/26/01

Monitor Well # 12
G.S. State # 1

Lab. #	12478	20625	22764	25147	28462	31518	36169	38942	0101098-26	0101642-26
Sample Date	9/6/97	10/6/99	1/8/00	4/14/00	7/20/00	9/26/00	1/5/01	4/5/01	7/7/01	9/26/01
Benzene	0.092	0.008	1.030	0.871	1.090	0.820	1.070	0.394	0.350	0.553
Toluene	0.010	0.007	0.336	0.162	0.025	0.066	1.710	0.022	0.026	0.078
Ethylbenzene	0.015	0.006	1.240	0.246	1.370	0.354	0.945	0.180	0.010	0.267
m,p Xylene	0.082	0.024	8.030	0.932	10.500	1.480	5.660	0.767	0.483	1.120
o Xylene	0.002	0.007	2.090	0.261	2.280	0.365	1.580	0.200	0.150	0.309
Total Xylene	0.084	0.031	10.120	1.193	12.780	1.845	7.240	0.967	0.633	1.429
Total BTEX	0.285	0.052	12.726	2.472	15.265	3.085	10.965	1.563	1.019	2.327

Monitor Well # 12

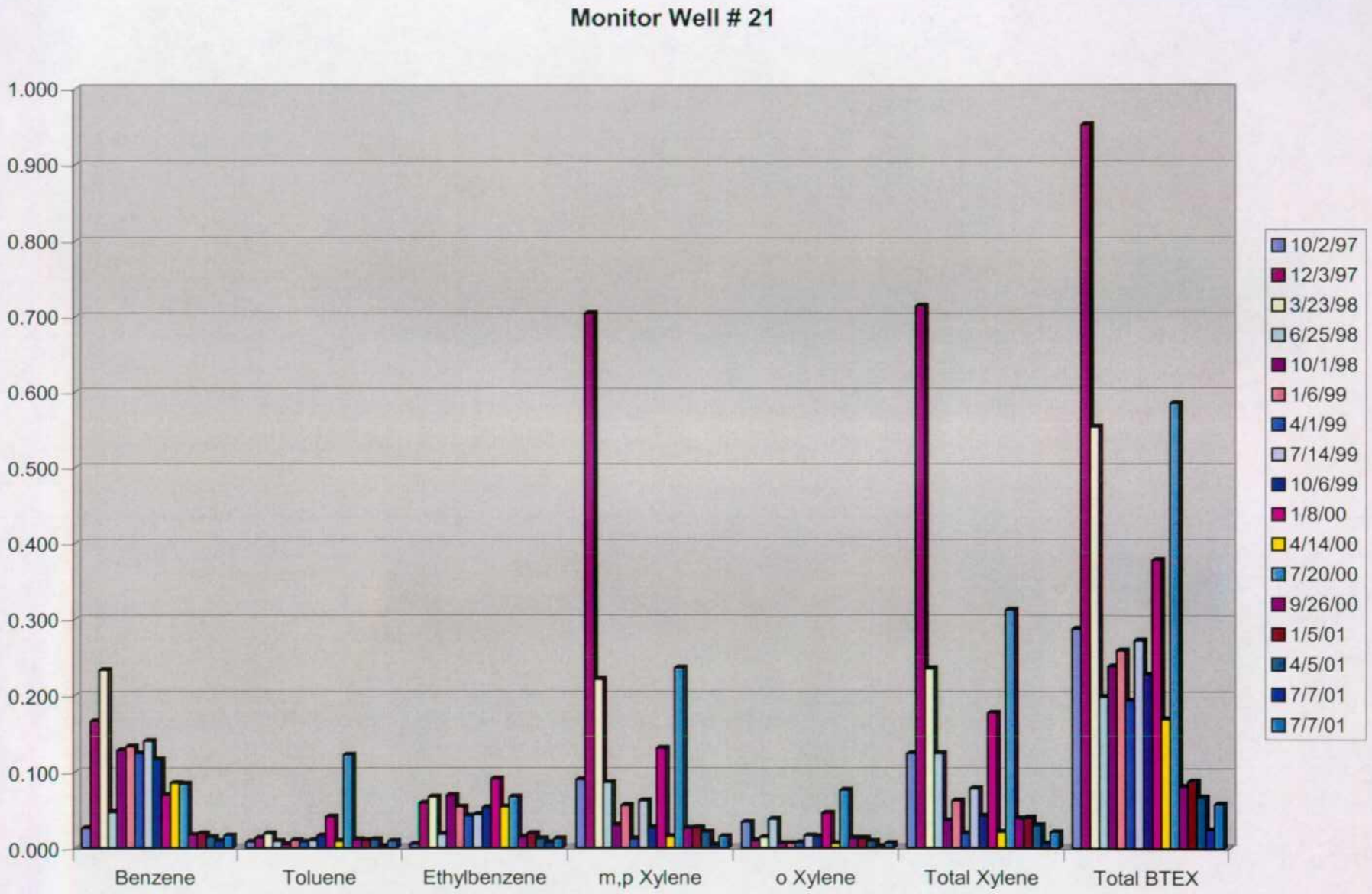


Monitor Well # 21
G.S. State # 1
Sampling Results

Lab. #	12721	13185	14055	14675	15603	16591	17445	18597	20603	22785	25148	28450	31497	36150	38943	0101098-27	0101098-27
Sample Date	10/2/97	12/3/97	3/23/98	6/25/98	10/1/98	1/6/99	4/1/99	7/14/99	10/6/99	1/8/00	4/14/00	7/20/00	9/26/00	1/5/01	4/5/01	7/7/01	7/7/01
Benzene	0.026	0.166	0.233	0.047	0.128	0.133	0.124	0.140	0.116	0.069	0.085	0.084	0.017	0.019	0.014	0.009	0.009
Toluene	0.008	0.013	0.019	0.009	0.005	0.010	0.008	0.010	0.016	0.041	0.009	0.122	0.011	0.010	0.011	0.002	0.002
Ethylbenzene	0.005	0.059	0.067	0.018	0.069	0.054	0.042	0.044	0.053	0.091	0.054	0.067	0.014	0.019	0.012	0.007	0.007
m,p Xylene	0.090	0.705	0.221	0.086	0.030	0.056	0.012	0.062	0.027	0.131	0.015	0.236	0.026	0.027	0.021	0.004	0.004
o Xylene	0.034	0.01	0.014	0.038	0.006	0.006	0.007	0.016	0.015	0.046	0.006	0.076	0.013	0.013	0.009	0.002	0.002
Total Xylene	0.124	0.715	0.235	0.124	0.036	0.062	0.019	0.078	0.042	0.177	0.021	0.312	0.039	0.040	0.030	0.006	0.006
Total BTEX	0.287	0.953	0.554	0.198	0.238	0.259	0.193	0.272	0.227	0.378	0.169	0.585	0.081	0.088	0.067	0.024	0.024

Monitor Well # 21
G.S. State # 1
Sampling Results

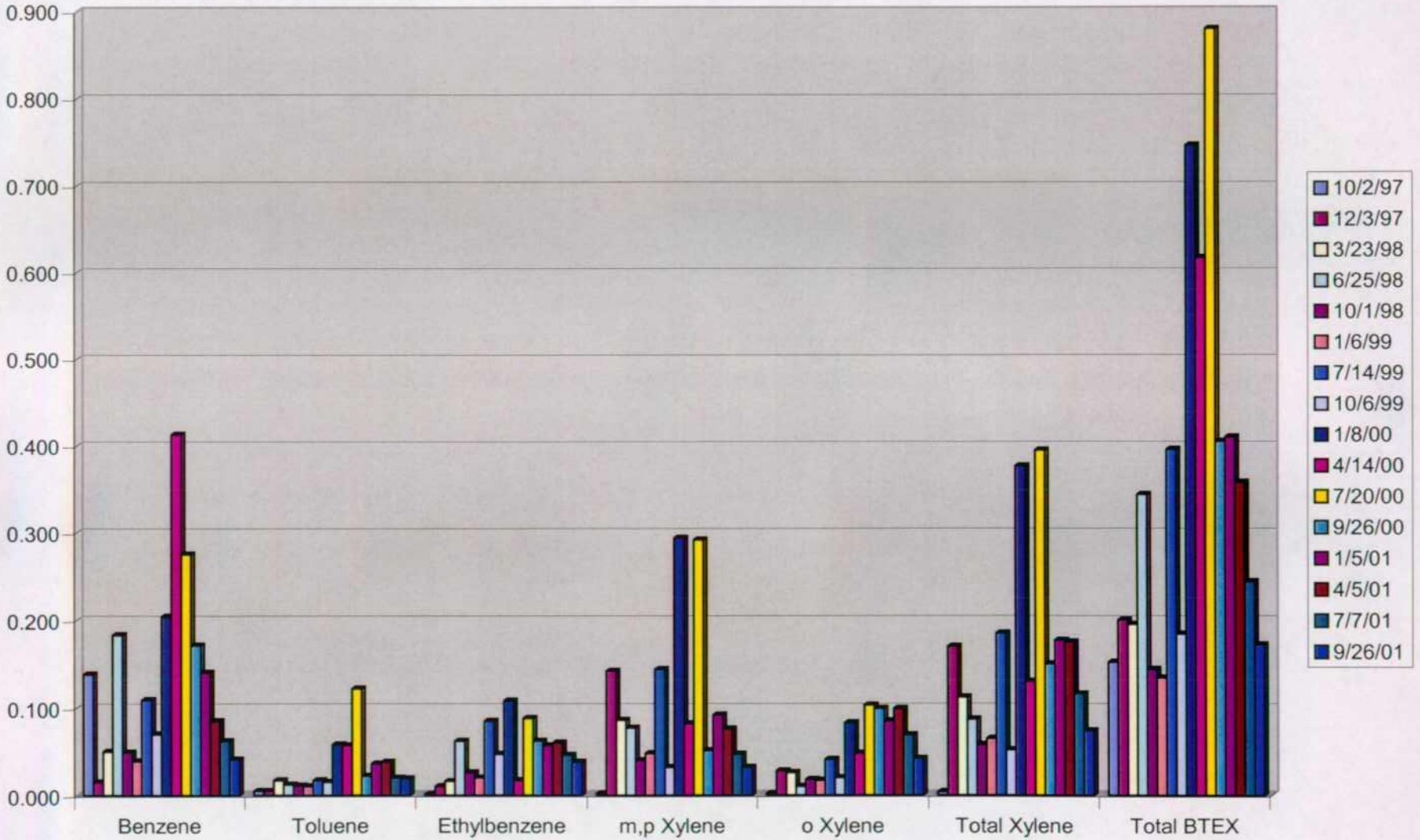
Lab. #	12721	13185	14055	14675	15603	16591	17445	18597	20603	22785	25148	28450	31497	36150	38943	0101098-27	0101642-27
Sample Date	10/2/97	12/3/97	3/23/98	6/25/98	10/1/98	1/6/99	4/1/99	7/14/99	10/6/99	1/8/00	4/14/00	7/20/00	9/26/00	1/5/01	4/5/01	7/7/01	9/26/01
Benzene	0.026	0.166	0.233	0.047	0.128	0.133	0.124	0.140	0.116	0.069	0.085	0.084	0.017	0.019	0.014	0.009	0.016
Toluene	0.008	0.013	0.019	0.009	0.005	0.010	0.008	0.010	0.016	0.041	0.009	0.122	0.011	0.010	0.011	0.002	0.009
Ethylbenzene	0.005	0.059	0.067	0.018	0.069	0.054	0.042	0.044	0.053	0.091	0.054	0.067	0.014	0.019	0.012	0.007	0.012
m,p Xylene	0.090	0.705	0.221	0.086	0.030	0.056	0.012	0.062	0.027	0.131	0.015	0.236	0.026	0.027	0.021	0.004	0.015
o Xylene	0.034	0.01	0.014	0.038	0.006	0.006	0.007	0.016	0.015	0.046	0.006	0.076	0.013	0.013	0.009	0.002	0.006
Total Xylene	0.124	0.715	0.235	0.124	0.036	0.062	0.019	0.078	0.042	0.177	0.021	0.312	0.039	0.040	0.030	0.006	0.021
Total BTEX	0.287	0.953	0.554	0.198	0.238	0.259	0.193	0.272	0.227	0.378	0.169	0.585	0.081	0.088	0.067	0.024	0.058


Monitor Well # 21
1.000
0.900
0.800
0.700
0.600
0.500
0.400
0.300
0.200
0.100
0.000
Benzene
Toluene
Ethylbenzene
m,p Xylene
o Xylene
Total Xylene
Total BTEX
10/2/97
12/3/97
3/23/98
6/25/98
10/1/98
1/6/99
4/1/99
7/14/99
10/6/99
1/8/00
4/14/00
7/20/00
9/26/00
1/5/01
4/5/01
7/7/01
7/7/01

Monitor Well # 22
G.S. State # 1
Sampling Results

Lab. #	12722	13134	14056	14676	15611	16592	18611	20623	22783	25149	28451	31498	36158	38944	0101098-28	0101642-28
Sample Date	10/2/97	12/3/97	3/23/98	6/25/98	10/1/98	1/6/99	7/14/99	10/6/99	1/8/00	4/14/00	7/20/00	9/26/00	1/5/01	4/5/01	7/7/01	9/26/01
Benzene	0.138	0.015	0.05	0.183	0.049	0.039	0.109	0.070	0.204	0.413	0.275	0.171	0.140	0.085	0.062	0.041
Toluene	0.005	0.005	0.017	0.012	0.011	0.01	0.017	0.015	0.058	0.057	0.122	0.022	0.036	0.038	0.02	0.019
Ethylbenzene	0.001	0.010	0.016	0.062	0.026	0.020	0.085	0.047	0.108	0.017	0.088	0.062	0.057	0.060	0.046	0.038
m,p Xylene	0.002	0.142	0.086	0.077	0.040	0.048	0.144	0.032	0.294	0.082	0.292	0.051	0.092	0.076	0.047	0.032
o Xylene	0.002	0.028	0.026	0.010	0.018	0.017	0.041	0.020	0.083	0.048	0.103	0.099	0.085	0.099	0.069	0.042
Total Xylene	0.004	0.170	0.112	0.087	0.058	0.065	0.185	0.052	0.377	0.130	0.395	0.150	0.177	0.175	0.116	0.074
Total BTEX	0.152	0.200	0.195	0.344	0.144	0.134	0.396	0.184	0.747	0.617	0.880	0.405	0.410	0.358	0.244	0.172

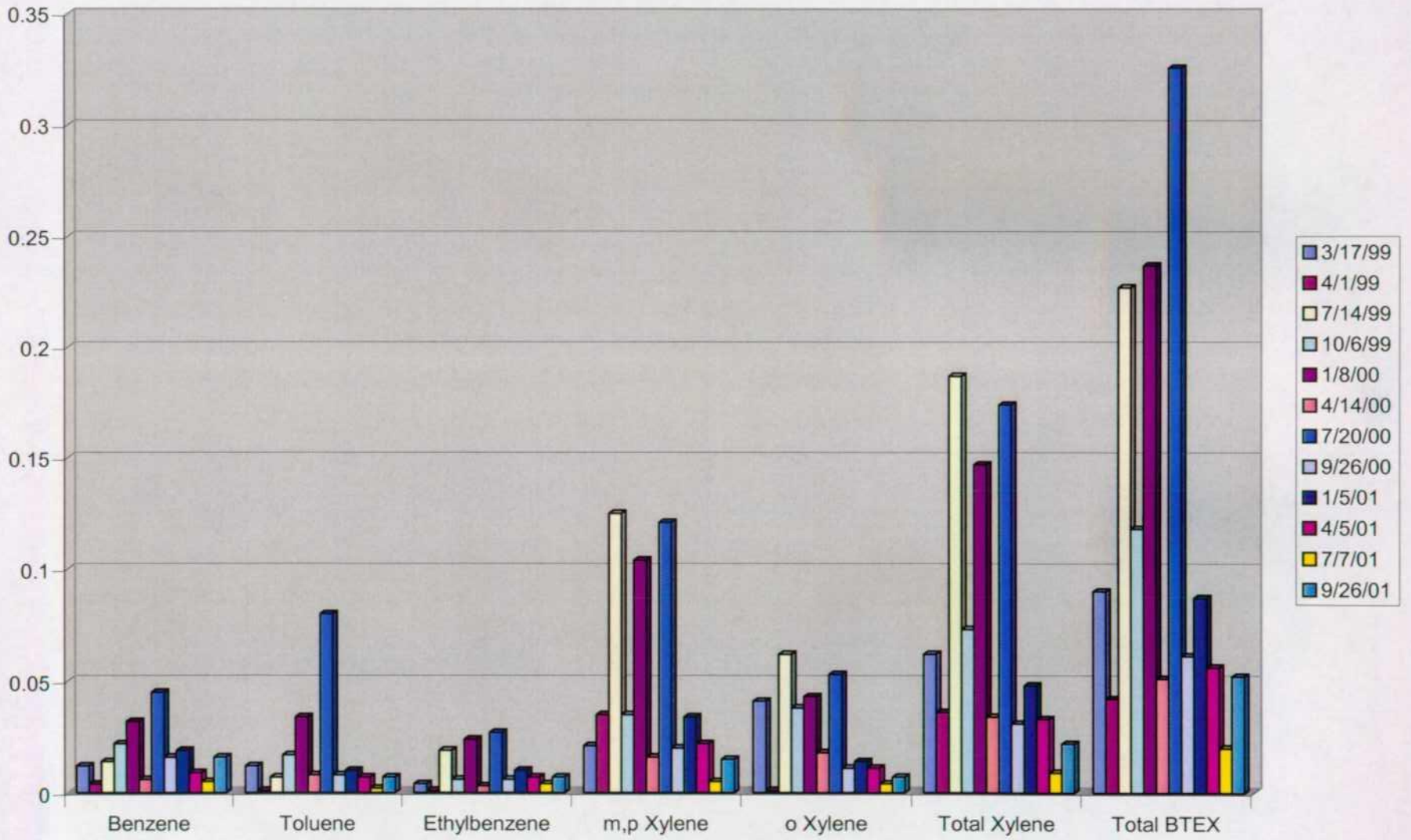
Monitor Well # 22



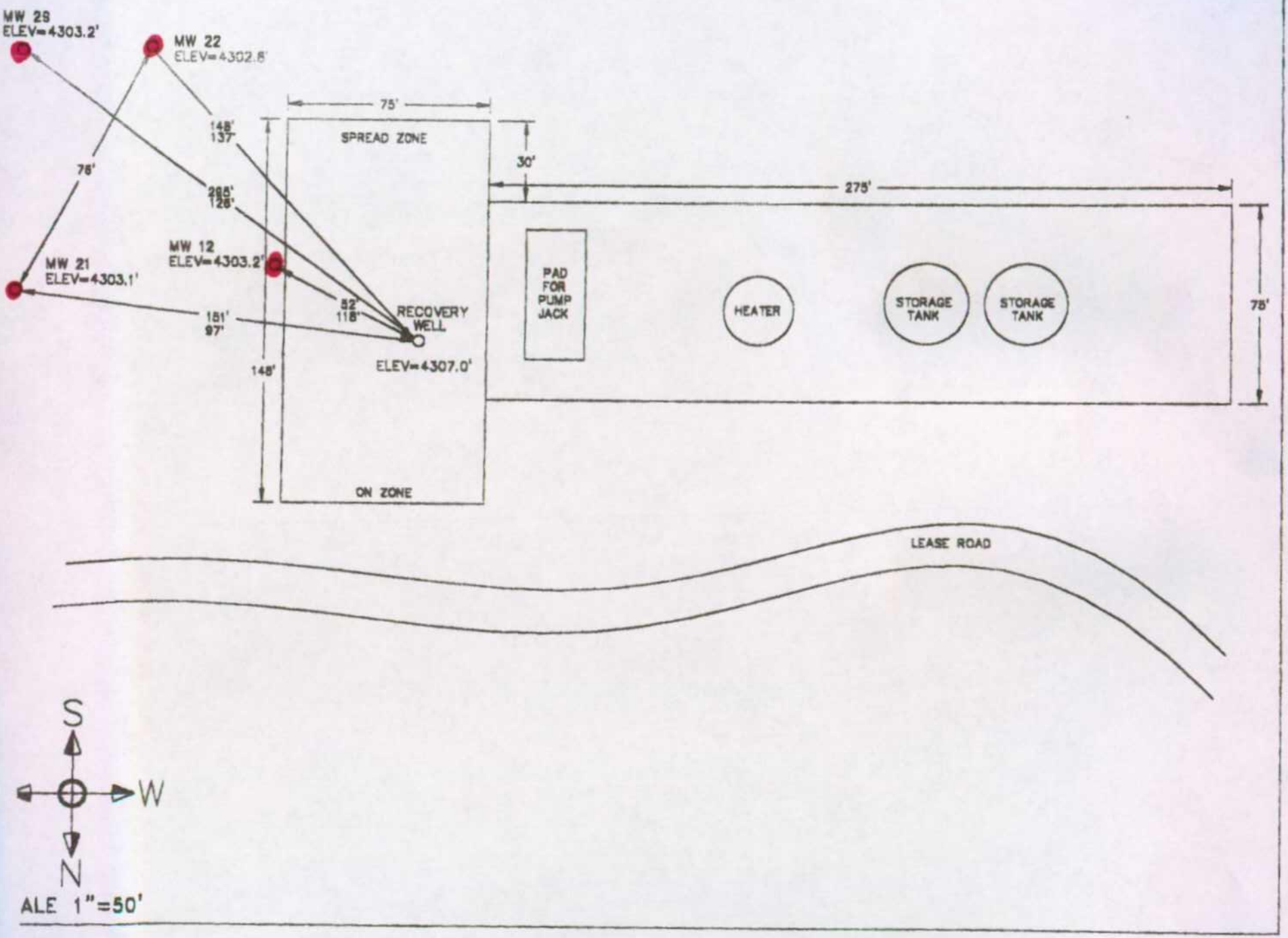
Monitor Well # 29
G.S. State # 1
Sampling Results

Lab. #	17269	17447	18612	20624	22771	25150	28458	31499	36159	38945	0101098-29	0101642-29
Sample Date	3/17/99	4/1/99	7/14/99	10/6/99	1/8/00	4/14/00	7/20/00	9/26/00	1/5/01	4/5/01	7/7/01	9/26/01
Benzene	0.012	0.004	0.014	0.022	0.032	0.006	0.045	0.016	0.019	0.009	0.005	0.016
Toluene	0.012	0.001	0.007	0.017	0.034	0.008	0.080	0.008	0.010	0.007	0.002	0.007
Ethylbenzene	0.004	0.001	0.019	0.006	0.024	0.003	0.027	0.006	0.010	0.007	0.004	0.007
m,p Xylene	0.021	0.035	0.125	0.035	0.104	0.016	0.121	0.020	0.034	0.022	0.005	0.015
o Xylene	0.041	0.001	0.062	0.038	0.043	0.018	0.053	0.011	0.014	0.011	0.004	0.007
Total Xylene	0.062	0.036	0.187	0.073	0.147	0.034	0.174	0.031	0.048	0.033	0.009	0.022
Total BTEX	0.090	0.042	0.227	0.118	0.237	0.051	0.326	0.061	0.087	0.056	0.020	0.052

Monitor Well # 29



G.S. STATE


MW 28
ELEV=4303.2'
MW 22
ELEV=4302.8'
75'
148'
137'
SPREAD ZONE
30'
275'
76'
285'
128'
MW 12
ELEV=4303.2'
MW 21
ELEV=4303.1'
PAD FOR PUMP JACK
HEATER
STORAGE TANK
STORAGE TANK
75'
52'
118'
RECOVERY WELL
151'
97'
148'
ELEV=4307.0'
ON ZONE
LEASE ROAD
S
W
N
ALE 1"=50'

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON
Governor
Jennifer A. Salisbury
Cabinet Secretary

Lori Wrotenbery
Director
Oil Conservation Division

November 2, 2001

CERTIFIED MAIL
RETURN RECEIPT NO. 5357-8024

Mr. Larry Sugano
Tipperary Corporation
633 Seventeenth St., Suite 1550
Denver, Colorado 80202

RE: TATUM PIT CLOSURE PROJECT
LEA COUNTY, NEW MEXICO

Dear Mr. Sugano:

The New Mexico Oil Conservation Division (OCD) has completed a review of Tipperary Corporation's (TC) April 19, 2001 correspondence, December 7, 2000 "PROGRESS REPORT FOR YEAR 2000, TATUM PIT CLOSURE PROJECT, LEA COUNTY, NEW MEXICO" and November 29, 1999 "JULY 1999 PROGRESS REPORT, OCTOBER 1999 PROGRESS REPORT, TATUM PIT CLOSURE PROJECT, LEA COUNTY, NEW MEXICO". These documents contains the results of monitoring of ground water contamination related to the closure of unlined pits west of Tatum, New Mexico during the prior 2 years.

The remediation and monitoring actions conducted to date are satisfactory. However, a review of the monitoring data shows that the downgradient extent of ground water contamination at the following sites has not been determined:

- Bell State "A" (Case #1R260)
- Gulf State #1 (Case #1R262)
- Iva Com #1 (Case #1R263)
- Mabel Com #1 (Case #1R264)
- Satellite #4 (Case #1R266)
- Sohio State #1 (Case # 1R267)
- Sohio State "A" (Case #1R268)
- State NBF #1 (Case #1R269)

Therefore, the OCD requires that TC submit a work plan to complete the investigation of the extent of contamination at these sites. The work plan shall be submitted to the OCD Santa Fe Office by December 7, 2001 with copy provided to the OCD Hobbs District Office and shall include:

1. A contoured ground water potentiometric map of each site showing proposed monitor well locations and the location of the former pit, excavated areas, existing monitor wells and other relevant site information.

2. Proposed monitor well construction details.

3. A proposed ground water sampling plan.

4. A schedule for implementation of the plan and submission of an investigation report.

If you have any questions, please call me at (505) 476-3491.

Sincerely,

William C. Olson
Hydrologist
Environmental Bureau

xc: Chris Williams, OCD Hobbs District Office
Mike Griffin, Whole Earth Environmental, Inc.

WHOLE EARTH

Whole Earth Environmental, Inc.
19606 San Gabriel, Houston, Texas 77084
281/492-7077 • Fax: 281/646-8996

April 19, 2001

New Mexico Oil Conservation Division
1220 South St. Francis Drive
Sante Fe, NM 87505

Attn: Bill Olson

Dear Bill:
We are in receipt of your letter dated March 15, 2001 concerning the Tatum pit closure project and have prepared the following response:

Request # 1
A review of the OCD's files shows that TC has never responded to the OCD's August 6, 1999 correspondence requiring information related to the remediation and monitoring of contaminated ground water at TC's Tatum Pit closure sites.

Response
Tipperary Corporation did indeed respond to your request and sent copies to both Sante Fe and Hobbs in October, 1999. We duplicated the Hobbs office copy yesterday and re-sent it to you via UPS.

Request # 2
The report does not contain a water potentiometric map for each sampling event at each site which shows the location of the pit and excavated areas, the surveyed locations of all monitor wells and recovery wells and any other pertinent site features as well as the direction and magnitude of the hydraulic gradient created using the water table elevation in each monitoring well.

Response
Though the requested information is contained within the afore mentioned report, we are including it once again in this transmittal.

Request # 3
The report does not contain information on the quarterly volume of ground water and product recovered at each site nor the total volume recovered at each site to date.

Response
As stated in our October 1999 response, our collection and disposal system does not allow us to accurately measure either the total volume of water produced by the windmills or the oil / water ratio. We propose to install flow meters between the collection tanks and the downstream check valves leading into the Burro Pipeline disposal system at each location so as to capture total fluid volumes. We

further propose to collect samples directly from the lines coming from the windmills into a large graduated cylinder in order to determine the oil / water ratios. These results will be collected quarterly and reported annually.

Request # 4
The report does not contain information on the free product thickness in all wells containing products.

Response
We've not been asked to provide such information in the past. We do however plan to provide you with the information in the future and have resultantly purchased a new Waterra ultrasonic oil / water LNAPL / DNAPL interface meter expressly for this purpose.

Thank you again for your interest in this project. We will continue to strive to provide you with accurate information for your future evaluations.

Warmest regards,

Mike Griffin
President
Whole Earth Environmental, Inc.

COORDINATE FILE : TIPARARY.CRD

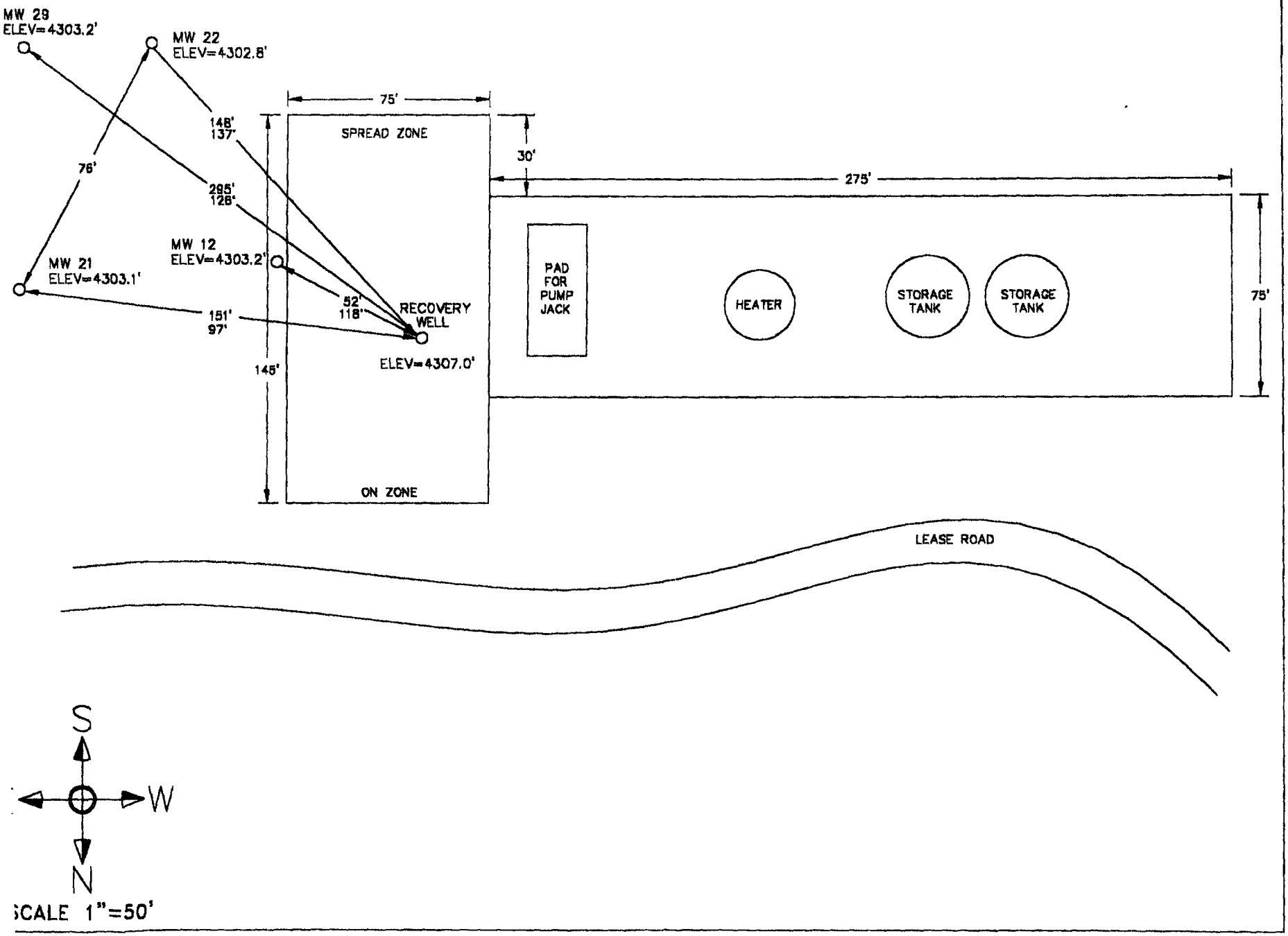
F COORDINATES

	PT#	NORTH	EAST	ELEV
SOHIO A STATE 1 PIT	253	870084.293	760084.206	4286.84
SOHIO A STATE 1 MW11	254	869981.125	760134.902	4285.88
SOHIO A STATE 1 MW19	255	869974.033	760205.397	4285.97
SOHIO A STATE 1 MW28	256	869892.771	760255.240	4285.61
SOHIO A STATE 1 MW31	257	869667.200	760452.460	4283.54
SOHIO STATE 1 PIT	258	870105.632	761381.498	4285.42
SOHIO STATE 1 MW10	259	870027.049	761459.334	4283.63
SOHIO STATE 1 MW17	260	869969.168	761443.837	4283.31
SOHIO STATE 1 MW18	261	870017.865	761533.683	4283.59
SOHIO STATE 1 MW28	262	869892.594	761534.416	4283.21
SOHIO STATE 1 MW30	263	869677.360	761728.469	4281.13
VERA 1 PIT	264	846366.089	752525.766	4289.49
VERA #1 MW5	265	846217.026	752582.067	4298.90
STATE NBF 1 PIT	266	856893.939	764024.682	4266.86
STATE NBF 1 MW8	267	856806.388	764165.403	4259.41
STATE NBF 1 MW15	268	856747.667	764157.788	4259.68
STATE NBF 1 MW16	269	856774.041	764241.604	4259.06
STATE NBF 1 MW26	270	856658.728	764331.675	4258.04
BELL A 1 PIT	271	857796.692	758625.535	4279.64
BELL A 1 MW6	272	857857.556	758583.503	4281.12
BELL A 1 MW13	273	857754.617	758597.054	4280.84
BELL A 1 MW14	274	857821.944	758664.690	4280.80
BELL A 1 MW25	275	857614.080	758714.518	4280.37
GS STATE 1 SOURCE	276	867037.530	755087.975	4307.00
GS STATE 1 MW21	277	866953.249	755213.712	4303.08
GS STATE 1 MW22	278	866905.186	755154.733	4302.77
GS STATE 1 MW29	279	866798.038	755260.271	4303.20
GS STATE 1 MW?	280	867001.862	755131.639	4303.27
MABEL COM 1 SOURCE	281	852659.555	756329.277	4290.55
MABEL COM 1 MW3	282	852517.536	756370.356	4287.22
MABEL COM 1 MW4	283	852592.288	756473.774	4287.46
STATE NBN 1 PIT	284	859499.318	758793.854	4282.45
STATE NBN 1 MW7	285	859397.517	758825.203	4281.59
SATELLITE 4 MW9	286	866587.512	775890.421	4208.66
SATELLITE 4 MW23	287	866507.846	775901.105	4209.03
SATELLITE 4 MW24	288	866562.481	775964.699	4208.64
IVA COM 1 SOURCE	289	856721.216	756252.189	4298.42
IVA COM 1 MW1	290	856654.035	756344.507	4292.10
IVA COM 1 MW2	291	856695.146	756388.036	4291.93

HORIZONTAL DATUM NAD 83

VERTICAL DATUM NAVD 88

G.S. STATE


MW 29
ELEV=4303.2'
MW 22
ELEV=4302.8'
MW 21
ELEV=4303.1'
MW 12
ELEV=4303.2'
RECOVERY WELL
ELEV=4307.0'
76'
148'
137'
295'
128'
52'
118'
151'
97'
145'
75'
SPREAD ZONE
ON ZONE
30'
275'
75'
PAD FOR PUMP JACK
HEATER
STORAGE TANK
STORAGE TANK
LEASE ROAD
S
W
N
SCALE 1"=50'

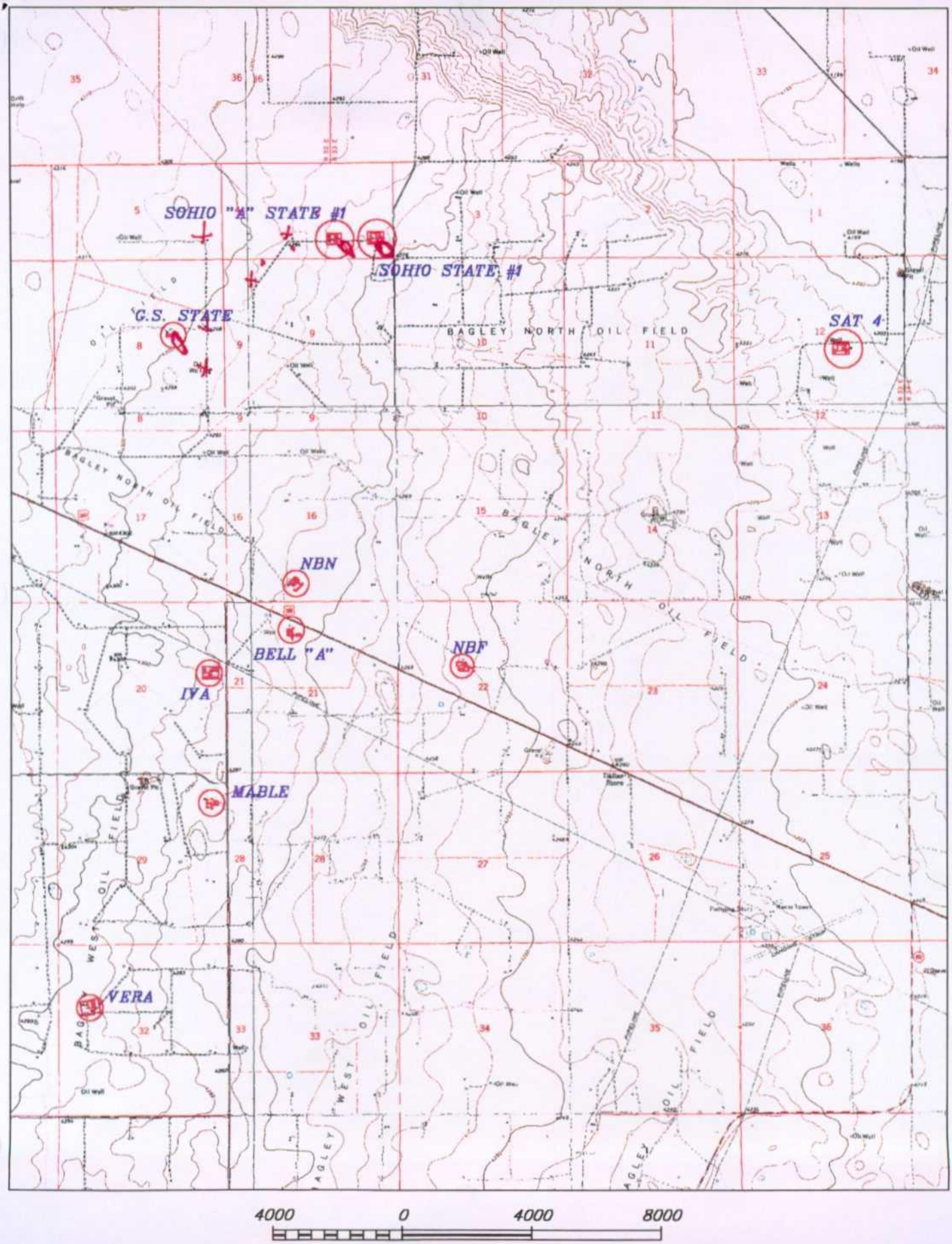
Tipperary

Tipperary Corporation
Tatum Pit Closure Project
Monitor Well Water Elevation Table

Well Name	Monitor Well No.	Surface Elevation	Date Well Drilled	Water Depth @ Drill Date	Water Elevation	Water Depth @ 8/9/99	Water Elev. @ 8/9/99	Water Depth @ 10/21/99	Water Elev. @ 10/21/99	Depth Change Aug. / Oct. '99	Distance to Pit Center (ft)	Gradient (Ft. / Ft.)	Gradient (Ft. /100 Ft.)
Iva	Recovery Well	4,298.42	Aug-97	52.0	4,246.42								
	1	4,292.10	Aug-97	54.9	4,237.20	48.83	4,243.27	51.75	4,240.35	2.92	115	0.080174	8.02
	2	4,291.93	Aug-97	53.0	4,238.93	49.17	4,242.76	51.50	4,240.43	2.33	140	0.053500	5.35
Mable	Recovery Well	4,290.55	Aug-97	52.0	4,238.55								
	3	4,287.22	Aug-97	52.0	4,235.22	48.75	4,238.47	52.50	4,234.72	3.75	148	0.022500	2.25
	4	4,287.46	Aug-97	52.0	4,235.46	48.58	4,238.88	51.75	4,235.71	3.17	160	0.019313	1.93
Vera	Pit Center	4,292.98			4,289.50								
	5	4,298.90	Aug-97	63.0	4,235.90	61.50	4,237.40				159	-0.037233	-3.72
Bell	Pit Center	4,283.09			4,279.60								
	6	4,281.12	Aug-97	51.0	4,230.12	42.13	4,238.99	43.01	4,238.11	0.88	93	0.021183	2.12
	13	4,280.84	Oct-97	47.8	4,233.04	40.83	4,240.01	43.66	4,237.18	2.83	51	0.044118	4.41
	14	4,280.80	Oct-97	48.3	4,232.50	43.00	4,237.80	43.50	4,237.30	0.50	47	0.048723	4.87
	25	4,280.37	Mar-99	47.4	4,232.97	43.50	4,236.87	43.50	4,236.87	0.00	154	0.017662	1.77
NBN	Pit Center	4,282.45			4,282.45								
	7	4,281.59	Aug-97	50.0	4,231.59	43.50	4,238.09				107	0.008037	0.80
NBF	Pit Center	4,266.86			4,266.86								
	8	4,259.41	Aug-97	48.0	4,211.41	35.75	4,223.66	35.75	4,223.66	0.00	165	0.045152	4.52
	15	4,259.68	Oct-97	47.0	4,212.68	34.75	4,224.93	37.00	4,222.68	2.25	198	0.036263	3.63
	16	4,259.06	Oct-97	47.1	4,211.96	36.00	4,223.06	36.10	4,222.96	0.10	247	0.031579	3.16
	26	4,258.04	Mar-99	43.0	4,215.04	34.75	4,223.29	34.60	4,223.44	-0.15	387	0.022791	2.28
Sohio # 1	Pit Center	4,285.42			4,285.42								
	10	4,283.63	Aug-97	50.0	4,233.63	44.50	4,239.13	44.90	4,238.73	0.40	110	0.016273	1.63
	17	4,283.31	Oct-97	49.4	4,233.91	44.00	4,239.31	44.50	4,238.81	0.50	262	0.008053	0.81
	18	4,283.59	Oct-97	48.6	4,234.99	43.75	4,239.84	44.10	4,239.49	0.35	176	0.010398	1.04
	28	4,283.21	Mar-99	46.3	4,236.96	35.00	4,248.21	44.15	4,239.06	9.15	552	0.004004	0.40
	30	4,281.13	Aug-99	45.3	4,235.82	45.31	4,235.82	44.10	4,237.03	-1.21	776	0.006528	0.65
Sohio "A"	Pit Center	4,286.84			4,286.84								
	11	4,285.88	Aug-97	50.0	4,235.88	38.25	4,247.63	38.50	4,247.38	0.25	115	0.008348	0.83
	19	4,285.97	Sep-97	48.7	4,237.27	32.50	4,253.47	35.15	4,250.82	2.65	164	0.005305	0.53
	20	4,285.96	Sep-97	49.5	4,236.46	38.00	4,247.96	38.66	4,247.30	0.66	151	0.005828	0.58
	27	4,285.61	Mar-99	40.0	4,245.61	36.83	4,248.78	38.20	4,247.41	1.37	264	0.004659	0.47
	31	4,283.54	Aug-99	37.5	4,246.09	37.45	4,246.09	38.90	4,244.64	1.45	624	0.005288	0.53
G.S. State	Source Well	4,307.00	Sep-97	48.0	4,259.00								
	12	4,303.27	Aug-97	48.0	4,255.27	42.75	4,260.52	42.90	4,260.37	0.15	52	0.071731	7.17
	21	4,303.08	Oct-97	48.0	4,255.08	43.25	4,259.83	43.66	4,259.42	0.41	151	0.025960	2.60
	22	4,302.77	Oct-97	47.5	4,255.27	43.50	4,259.27	43.90	4,258.87	0.40	148	0.025203	2.52
	29	4,303.20	Mar-99	49.1	4,254.14	44.00	4,259.20	44.25	4,258.95	0.25	295	0.016475	1.65
Sat. # 4	Pit Center	4,211.49			4,208.00								
	9	4,208.66	Aug-97	31.0	4,177.66	26.17	4,182.49	26.75	4,181.91	0.58	80	0.035375	3.54
	23	4,209.03	Oct-97	28.0	4,181.03	26.25	4,182.78	27.15	4,181.88	0.90	158	0.015570	1.56
	24	4,208.64	Oct-97	28.9	4,179.74	26.08	4,182.56	26.45	4,182.19	0.37	150	0.019000	1.90

Note: Vera, Bell and Satellite 4 had significant subsidance within the pit area.
The red elevations include an added 3.49' (Ave. of seven other sites)
Correct elevations noted in column 6.

WHOLE EARTH ENVIROMENTAL, INC.



BASIN SURVEYS P.O. BOX 1786 – HOBBS, NEW MEXICO	W.O. Number: 9352	Drawn By: K. GOAD
	Date: 10–21–99	Disk: KJG #122 – WE9352.DWG