1R - 267

REPORTS

DATE:
1999

Tipperary
CORPORATION

633 Seventeenth Street
Suite 1550
Denver, Colorado 80202

April 27, 1999

CERTIFIED MAIL

Mr. William C. Olson
New Mexico Oil Conservation Division
2040 South Pacheco
Santa Fe, NM 87505

RE: April 1999 Progress Report
Tatum Pit Closure Project
Lea County, NM

Dear Mr. Olson:

Please find enclosed additional results from our monitor wells in the subject project area. These results are from water samples taken on April 1, 1999. These samples represent the seventh quarter of monitoring. We will continue to analyze water samples quarterly.

In our January 1999 progress report, we requested final closure for these projects: Vera (pit and monitor well #5) and State NBN (pit and monitor well #7). In your letter dated March 29, 1999, you requested a water table potentiometric map as well as the magnitude of the hydraulic gradient at these sites to complete your review of our request. Please be advised that we are currently constructing this data and it will be forwarded to you as soon as it is completed.

Additional monitor wells were constructed March 15-16 at the following pit sites: Bell A, State NBF, Sohio 1, Sohio A, and GS State. Complete water analyses from these new monitor wells are included in this report. It appears that an additional monitor well will be necessary for the Sohio 1 and Sohio A pit sites. These will be installed accordingly.

If you have any questions, please call me at (303) 293-9379.

Very truly yours,

Larry G. Sugano

Larry G. Sugano
Vice President - Engineering

cc: NMOCD Hobbs Office

Enclosures

Tipperary CORPORATION

TATUM PIT CLOSURE PROJECT
WATER SAMPLING RESULTS
APRIL, 1999

Executive Summary

Iva COM
Having completed six consecutive quarters of sampling monitor wells 1 & 2 with no BTEX component exceeding WQCC standards, we began a sampling program from the source well. The results are presented in this report. We do not plan to continue to sample wells 1 & 2.

Mable COM
Monitor well #3 has passed six consecutive quarters with no BTEX component exceeding WQCC standards. We do not plan to continue monitoring the location, but will provide complete analyses (RCRA 8 metals, BTEX, and major cation / anions) at the conclusion of the sampling program for the source well. Monitor well #4 showed a slight increase in BTEX concentrations reflecting a normal seasonal increase in water table levels. The source well shows moderate benzene and xylene concentrations.

Vera
The analytical results of six consecutive quarterly samplings described in our February 16th summary revealed no BTEX component concentration in excess of WQCC standards. Tipperary requests final closure of this pit.

Bell A
Monitor wells 6, 13 & 14 show normal increases in BTEX concentrations due to seasonal changes within the water table. An additional delineation well (#25) was drilled a distance of 150' southeast of the mid-point of wells 13 & 14. The drilling log is included within this report. The analytical results of water samples obtained from this new well reflect no BTEX, RCRA 8 metals or cation / anion concentrations in excess of WQCC standards. (See Environmental Labs of Texas log no. 17265).

NBF
Monitor wells 8, 15 & 16 show normal increases in BTEX concentrations due to seasonal changes within the water table. An additional delineation well (#26) was drilled at a distance of 150' southeast of the mid-point of wells 15 & 16. The drilling log is included within this report. The analytical results of water samples obtained from this new well reflect no BTEX, RCRA 8 metals or cation / anion concentrations in excess of WQCC standards. (See Environmental Labs of Texas log no. 17266).

NBN
The analytical results of six consecutive quarterly samplings described in our February 16th summary revealed no BTEX component concentration in excess of WQCC standards. Tipperary requests final closure of this pit.

Sohio State #1
Monitor wells 10, 17 & 18 show normal increases in BTEX concentrations due to seasonal changes within the water table. An additional delineation well (#28) was drilled at a distance of 150' southeast of the mid-point of wells 17 & 18. The drilling log is included within this report. The analytical results of water samples obtained from this new wells reflect acceptable RCRA 8 metals and cation / anion concentrations however the BTEX concentrations are in excess of WQCC standards. (See Environmental Labs of Texas log no. 17268). A fifth monitor well will be drilled, cased, developed and tested.

Sohio State A
Monitor wells 10, 19 & 20 show normal increases in BTEX concentrations due to seasonal changes within the water table. An additional delineation well (#27) was drilled at a distance of 150' southeast of the mid-point of wells 19 & 20. The drilling log is included within this report. The analytical results of water samples obtained from this new well reflect acceptable RCRA 8 metals and cation / anion concentrations however the BTEX concentrations are in excess of WQCC standards. (See Environmental Labs of Texas log no. 17267). A fifth monitor well will be drilled, cased, developed and tested.

G.S. State
Monitor wells 21 & 22 show normal increases in BTEX concentrations due to seasonal changes within the water table. An additional delineation well (#29) was drilled at a distance of 150' southeast of the mid-point of wells 21 & 22. The drilling log is included within this report. The analytical results of water samples obtained from this new well reflect no BTEX, RCRA 8 metals or cation / anion concentrations in excess of WQCC standards. (See Environmental Labs of Texas log no. 17269).

Satellite #4
BTEX concentrations within monitor wells 9 & 23 remain essentially unchanged from the January, 1999 sampling round.

ENVIRONMENTAL
LAB OF , INC.
"Don't Treat Your Soil Like Dirt!"

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

Receiving Date: 04/02/99
Sample Type: Water
Project : None Given
Project Location: None Given

Analysis Date: 4/05 & 4/06/99
Sampling Date: 04/01/99
Sample Condition: Intact/Iced

ELT#	FIELD CODE	BENZENE (mg/l)	TOLUENE (mg/l)	ETHYLBENZENE (mg/l)	m,p-XYLENE (mg/l)	o-XYLENE (mg/l)
17428	Iva Com Source Well	2.05	4.15	0.902	5.50	3.80
17429	Mable Com Source Well	0.486	0.432	0.066	1.00	0.713
17430	Mable Com #4	0.012	0.008	0.002	0.010	0.006
17431	Bell A #6	0.139	0.013	0.006	0.011	0.006
17432	Bell A #13	0.021	0.018	0.003	0.009	0.006
17433	Bell A #14	0.108	0.015	0.004	0.009	0.005
17434	NBF #8	0.032	0.002	0.004	0.003	0.001
17435	NBF #15	3.11	1.98	0.214	0.767	0.435
17436	NBF #16	3.15	0.164	0.078	0.219	0.098
17437	Sohio St. #1- #10	2.34	0.067	0.168	0.203	0.100
17438	Sohio St. #1- #17	1.35	0.092	0.079	0.248	0.138
17439	Sohio St. #1- #18	3.35	0.331	0.114	0.469	0.280
17440	Sohio St. #1- #28	0.446	0.065	0.011	0.041	0.058
17441	Sohio St. A - #11	0.048	0.008	0.004	0.014	0.010
17442	Sohio St. A - #19	0.026	0.010	0.006	0.016	0.010
17443	Sohio St. A - #20	0.547	0.011	0.005	0.030	0.009
17444	Sohio St. A - #27	0.056	0.007	0.006	0.007	0.013
17445	G.S. State #21	0.124	0.008	0.042	0.012	0.007
17446	G.S. State #22	0.059	0.010	0.036	0.022	0.014
17447	G.S. State #29	0.004	<0.001	<0.001	0.035	<0.001
17448	Satellite #4 - #9	0.027	0.005	0.004	0.004	0.002
17449	Satellite #4 - #23	0.004	0.004	0.001	0.003	0.002
	% IA	102	99	97	97	99
	% EA	100	97	97	91	95
	BLANK	<0.001	<0.001	<0.001	<0.001	<0.001

METHODS: SW 846-8020,5030

Raland K Tuttle
Raland K. Tuttle

4-7-99
Date

Environmental Lab of Texas, Inc.

12600 West I-20 East Odessa, Texas 79763
(915) 563-1800 FAX (915) 563-1713

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: TIPPERARY OIL & GAS — Phone #: 505-396-6509
Company Name & Address: — FAX #: Mike Bratt
Project #: — Project Name:
Project Location: — Sampler Signature:

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	OTHER	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	OTHER	SAMPLING: DATE	TIME	ANALYSIS REQUEST: BTEX 8021B/5030	TPH 418.1	TCLP Metals Ag As Ba Cd Cr Pb Hg Se	Total Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Volatiles	TCLP Semi Volatiles	TDS	RCI
17428	EVA Com Source Well	2		X							X			4-1		X							
17429	Mable Com Source Well #	2		X							X			4-1		X							
17430	Mable Com # 4	2		X							X			4-1		X							
17431	Bell A #6 #13 #14	2	EA	X							X			4-1		X							
17432	NBF #8 #15 #16	2	EA	X							X			4-1		X							
17433	Sohio ST #1 #10 #17 #18 #28	2	EA	X							X			4-1		X							
17434	Sohio ST #A #11 #19 #20 #27	2	EA	X							X			4-1		X							
17435	GS. STAR # 21 #22 #29	2	EA	X							X			4-1		X							
17436	SATELLITE #4 - Mabell #9 #23															X							

Relinquished by:	Date:	Time:	Received by:
D. A. Vera	4-2-99	1010	
Relinquished by:	Date:	Time:	Received by:
Relinquished by:	Date:	Time:	Received by Laboratory:

REMARKS

Env onmental Lab of Texas, Inc.

12600 West I-2(st Odessa, Texas 79763
(915) 563-1800 FAX (915) 563-1713

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: | **Phone #:** | **FAX #:**

Company Name & Address: Tipperary

Project #: | **Project Name :**

Project Location: | **Sampler Signature:**

ANALYSIS REQUEST

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	OTHER	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	OTHER	SAMPLING: DATE	TIME	BTEX 8020/5030	TPH 418.1	TCLP Metals Ag As Ba Cd Cr Pb Hg Se	Total Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Volatiles	TCLP Semi Volatiles	TDS	RCI
17431	BELLA #6																						
17432	#13																						
17433	#14																						
17434	NBF #8																						
17435	#15																						
17436	#16																						
17437	Sohio St.#1 #10																						
17438	#17																						
17439	#18																						
17440	#28																						
17441	Sohio St. #A #11																						

Relinquished by:	Date:	Times:	Received by:	REMARKS
	04-02-99	1010		
Relinquished by:	Date:	Times:	Received by:	
Relinquished by:	Date:	Times:	Received by Laboratory:	

Env onmental Lab of Texas, Inc.

12600 West I-2(st Odessa, Texas 79763
(915) 563-1800 FAX (915) 563-1713

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager:

Phone #:

FAX #:

Company Name & Address:
Tipperary

Project #:

Project Name :

Project Location:

Sampler Signature:

ANALYSIS REQUEST

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	OTHER	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	OTHER	SAMPLING: DATE	TIME	BTEX 8020/5030	TPH 418.1	TCLP Metals Ag As Ba Cd Cr Pb Hg Se	Total Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Volatiles	TCLP Semi Volatiles	TDS	RCI
17442	SoniSt. #A #19																						
17443	↓ #20																						
17444	↓ #27																						
17445	G.S. State #21																						
17446	↓ #22																						
17447	↓ #29																						
17448	Satellite #4 #9																						
17449	↓ #23																						

Relinquished by:	Date:	Times:	Received by:
Relinquished by:	Date: 04-02-99	Times: 1010	Received by:
Relinquished by:	Date:	Times:	Received by Laboratory:

REMARKS

ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

TIPPERARY OIL & GAS
633 17TH
DENVER, COLORADO 80202
FAX: 281-646-8996 (Mike Griffin)

Receiving Date: 03/17/99
Sample Type: Water
Project : Tatum Dileneation
Project Location: Tatum, New Mexico

Analysis Date: 03/17/99
Sampling Date: 03/17/99
Sample Condition: Intact/Iced

ELT#	FIELD CODE	BENZENE (mg/l)	TOLUENE (mg/l)	ETHYLBENZENE (mg/l)	m,p-XYLENE (mg/l)	o-XYLENE (mg/l)
17265	#25 Bell	0.006	0.004	0.004	0.005	0.004
17266	#26 NBF	0.002	0.003	0.001	0.002	0.001
17267	#27 Sohio A	0.118	0.019	0.005	0.004	0.008
17268	#28 Sohio #1	0.156	0.008	0.003	0.010	0.005
17269	#29 G.S. State	0.012	0.012	0.004	0.021	0.041
	% IA	104	100	99	98	99
	% EA	108	104	101	102	103
	BLANK	<0.001	<0.001	<0.001	<0.001	<0.001

METHODS: SW 846-8020,5030

Raland K. Tuttle

Raland K. Tuttle

3-26-99
Date

ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

TIPPERARY OIL & GAS
633 17TH
DENVER, COLORADO 80202
FAX: 281-646-8996(Mike Griffin)

Receiving Date: 03/17/99
Sample Type: Water
Project : Tatum Dileneation
Project Location: Tatum, N.M.

Analysis Date: See below
Sampling Date: 3/17/99
Sample Condition: Intact/Iced

ELT#	Field Code	Ca (mg/L)	Mg (mg/L)	Na (mg/L)	K (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	CO3 (mg/L)	HCO3 (mg/L)
17265	#25 Bell	189	46	281	8.7	851	300	0	159
17266	#26 NBF	31.4	16	65	6.4	53	175	0	159
17267	#27 Sohio A	144	78	377	16.2	1028	195	0	329
17268	#28 Sohio #1	715	140	4660	20.8	8685	195	0	329
17269	#29 G.S. State	178	44	102	8.1	487	150	0	281
	ANALYSIS DATE	3/24/99	3/24/99	3/24/99	3/24/99	3/18/99	3/18/99	3/18/99	3/18/99
	QUALITY CONTROL	53.9	5.1	55.9	5.2	5140	48	*	*
	TRUE VALUE	50.0	5.0	50.0	5.0	5000	50	*	*
	% PRECISION	108	102	111	104	103	96	*	*

METHODS: EPA 4.1.1, 215.1,242.1, 273.1, 258.1,325.3, 375.4, 310.2.

Raland K. Tuttle

3-26-99
Date

ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

TIPPERARY OIL & GAS
633 17TH
DENVER, COLORADO 80202
FAX: 281-646-8996(Mike Griffin)

Receiving Date: 03/17/99
Sample Type: Water
Project : Tatum Dileneation
Project Location: Tatum, N.M.

Analysis Date: Hg 3/23/99
Analysis Date: 3/25/99
Sampling Date: 3/17/99
Sample Condition: Intact/Iced

TOTAL METALS (mg/L)

ELT#	Field Code	Ag	As	Ba	Cd	Cr	Hg	Pb	Se
17265	#25 Bell	ND	ND	0.250	ND	0.0110	ND	ND	ND
17266	#26 NBF	ND	ND	0.201	ND	0.0060	ND	ND	ND
17267	#27 Sohio A	ND	ND	0.276	ND	0.0110	ND	ND	ND
17268	#28 Sohio #1	ND	0.028	0.709	ND	0.0220	ND	0.0090	ND
17269	#29 G.S. State	ND	ND	0.369	ND	0.0080	ND	ND	ND
	REPORTING LIMIT	0.0050	0.005	0.010	0.0010	0.0050	0.00020	0.0030	0.0050
	% INSTRUMENT ACCURACY	100	106	95	100	94	103	98	112
	% EXTRACTION ACCURACY	96	104	97	100	96	96	99	102

ND = Not detected at the reporting limit.

METHODS: EPA 200.7, 245.2

Raland K. Tuttle

3-26-99
Date

CORE LAB — GULF STATES ANALYTICAL

6310 Rothway, Houston, Texas 77040
(713) 690-4444, Fax (713) 690-5646

Request for Analysis

Company:	Address: Denver, CO 80202 Tele #:
❶ Tipperary O&G	633 17th Fax #:
Reports Sent To:	P O #: Project #:
Whole Earth	
Project Name:	Project Location:
Tatum Dineation	Tatum, NM

Relinquished by: (Signature) — M. Griffin — Date: 3-17-99 — Time: 1345

Relinquished by Sampler: (Signature) — M. Griffin

Received by: (Signature) — Richard Lynch — Date: 3-17-99 — Time: 1345

Received by Laboratory: (Signature)

Sampler(s) Name: (Signature): M. Griffin

Courier:

❷ Field Sample ID	❸ Sampling Date	Time	❶ Matrix: Water	Soil	Sludge	Oil	Other	# of Containers	Haz. Sample (Y/N)	BTEX	RCRA 8 Metals	Mg'an cat & anions	<Chlorides	carb/bicarb	SO_4^{2-}	Ca, Mg, K, Na
1. #25 Bell (17265)	3-17	8:10	✓					3	N	/	/	/				
2. #26 NBF (17266)	3-17	8:26	✓					3	N	/	/	/				
3. #27 Sohio A (17267)	3-17	8:44	✓					3	N	/	/	/				
4. #28 Sohio #1 (17268)	3-17	9:05	✓					3	N	/	/	/	/			
5. #29 GS State (17269)	3-17	9:25	✓					3	N	/	/	/				
6.																
7.																
8.																
9.																
10.																
11.																
12.																
13.																

❻ Remarks:

Requested Turnaround: Minutes?

GSAI Group:

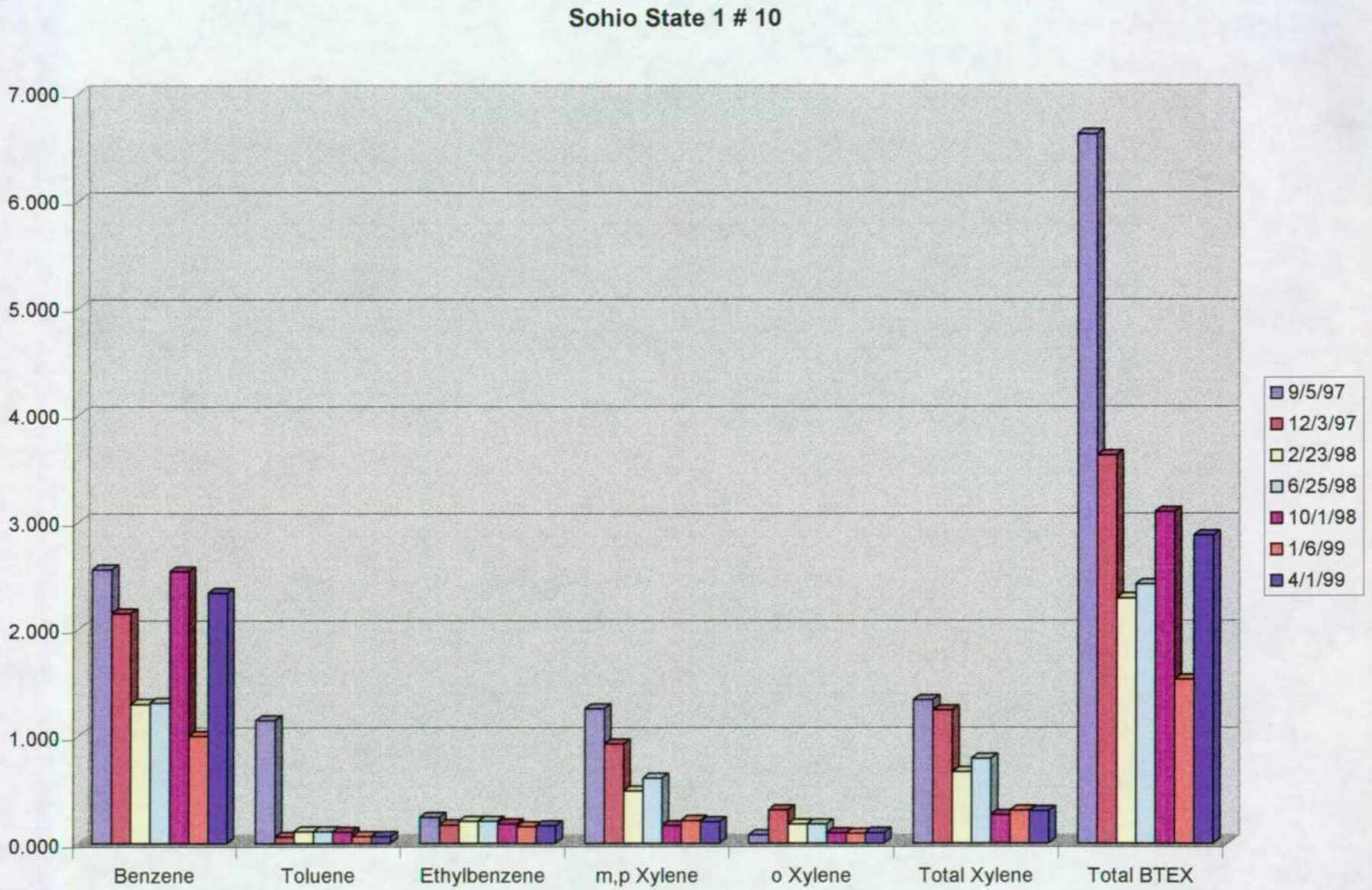
Special Detection Limits

QC Package: (check one)
☐ CLP ☐ Site Specific
☐ Tier 1 ☐ Tier 2 ☐ QC Summary

SOUTHERN LITHOGRAPH, INC. - (713) 780-0400 — White Copy to Accompany Samples to Lab — Yellow Copy Retained by Client — Pink Copy Retained by Sampler

Monitor Well # 10
Sohio State # 1
Sampling Results

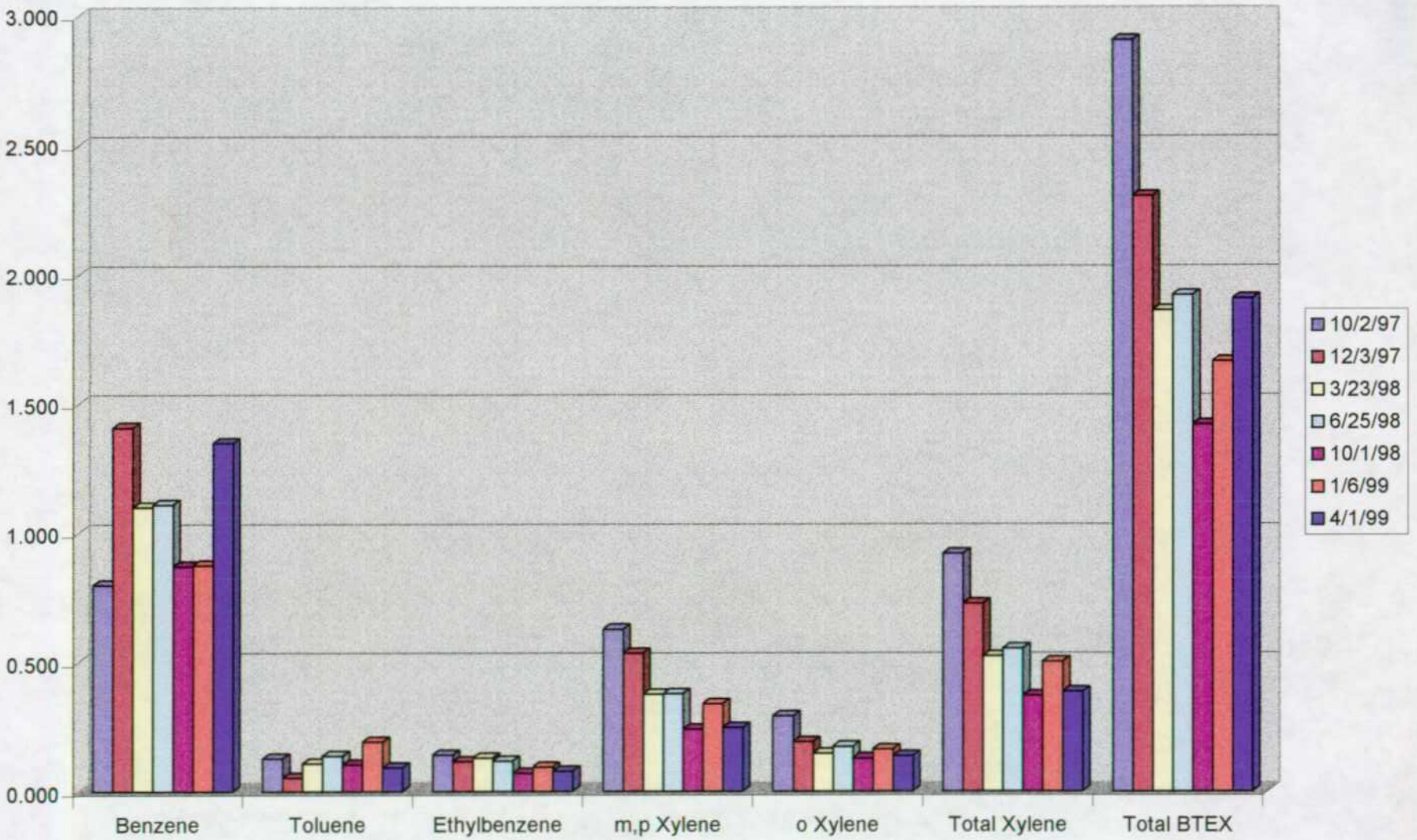
Lab. #	12483	13186	14066	14665	15597	16604	17437
Sample Date	9/5/97	12/3/97	2/23/98	6/25/98	10/1/98	1/6/99	4/1/99
Benzene	2.559	2.148	1.301	1.313	2.541	1.000	2.340
Toluene	1.148	0.062	0.113	0.113	0.108	0.067	0.067
Ethylbenzene	0.243	0.173	0.209	0.206	0.182	0.156	0.168
m,p Xylene	1.257	0.930	0.490	0.611	0.167	0.214	0.203
o Xylene	0.081	0.313	0.179	0.180	0.098	0.095	0.100
Total Xylene	1.338	1.243	0.669	0.791	0.265	0.309	0.303
Total BTEX	6.626	3.626	2.292	2.423	3.096	1.532	2.878


Sohio State 1 # 10
7.000
6.000
5.000
4.000
3.000
2.000
1.000
0.000
Benzene
Toluene
Ethylbenzene
m,p Xylene
o Xylene
Total Xylene
Total BTEX
9/5/97
12/3/97
2/23/98
6/25/98
10/1/98
1/6/99
4/1/99

Monitor Well # 17
Sohio State # 1
Sampling Results

Lab. #	12723	13187	14051	14671	15601	16587	17438
Sample Date	10/2/97	12/3/97	3/23/98	6/25/98	10/1/98	1/6/99	4/1/99
Benzene	0.799	1.409	1.101	1.111	0.872	0.876	1.35
Toluene	0.128	0.053	0.108	0.138	0.105	0.193	0.092
Ethylbenzene	0.141	0.116	0.130	0.118	0.071	0.094	0.079
m,p Xylene	0.628	0.535	0.376	0.379	0.242	0.339	0.248
o Xylene	0.292	0.192	0.148	0.174	0.129	0.163	0.138
Total Xylene	0.920	0.727	0.524	0.553	0.371	0.502	0.386
Total BTEX	2.908	2.305	1.863	1.920	1.419	1.665	1.907

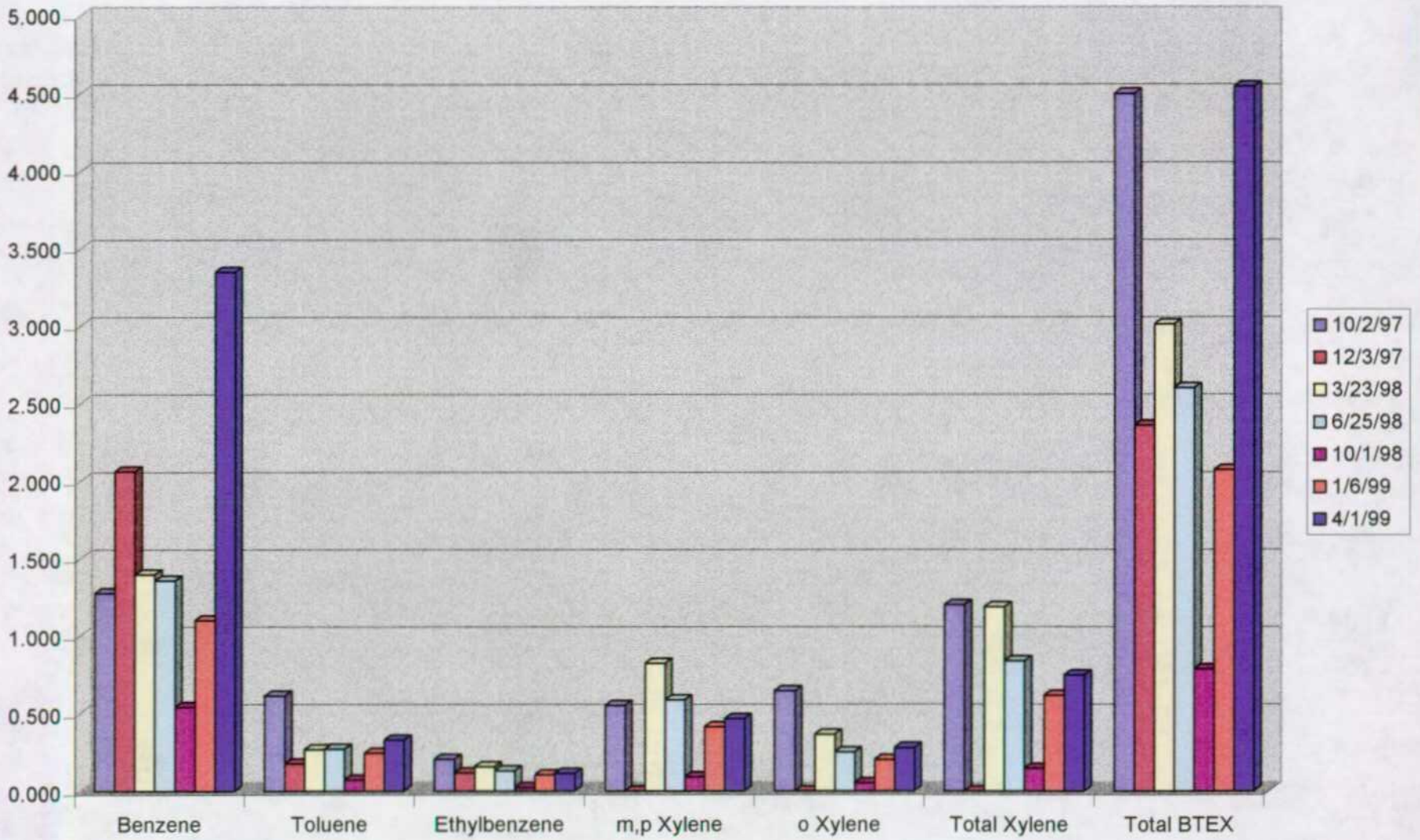
Sohio State 1 # 17



Monitor Well # 18
Sohio State # 1
Sampling Results

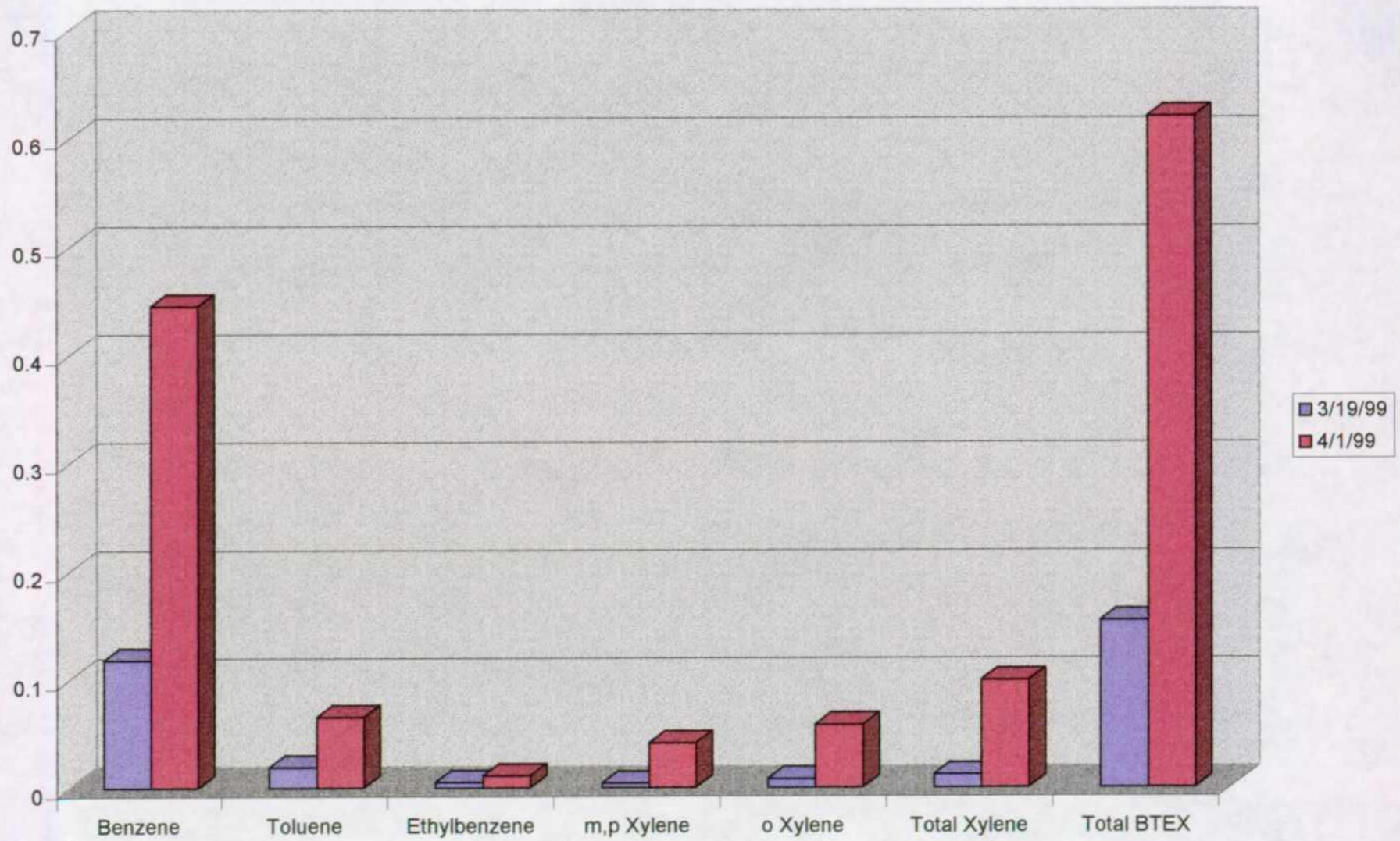
Lab. #	12724	13188	14052	14672	15609	16588	17439
Sample Date	10/2/97	12/3/97	3/23/98	6/25/98	10/1/98	1/6/99	4/1/99
Benzene	1.276	2.063	1.396	1.357	0.542	1.1	3.350
Toluene	0.614	0.178	0.269	0.272	0.072	0.247	0.331
Ethylbenzene	0.206	0.118	0.159	0.131	0.025	0.107	0.114
m,p Xylene	0.553	0.001	0.823	0.589	0.093	0.415	0.469
o Xylene	0.648	0.001	0.366	0.252	0.054	0.203	0.280
Total Xylene	1.201	0.002	1.189	0.841	0.147	0.618	0.749
Total BTEX	4.498	2.361	3.013	2.601	0.786	2.072	4.544

Sohio State 1 # 18



Monitor Well # 28
Sohio State # 1
Sampling Results

Lab. #	17267	17440
Sample Date	3/19/98	4/1/99
Benzene	0.118	0.446
Toluene	0.019	0.065
Ethylbenzene	0.005	0.011
m,p Xylene	0.004	0.041
o Xylene	0.008	0.058
Total Xylene	0.012	0.099
Total BTEX	0.154	0.621


Sohio State 1 # 28
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
Benzene
Toluene
Ethylbenzene
m,p Xylene
o Xylene
Total Xylene
Total BTEX
3/19/99
4/1/99

ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

TIPPERARY OIL & GAS
633 17TH
DENVER, COLORADO 80202
FAX: 281-646-8996 (Mike Griffin)

Receiving Date: 03/17/99
Sample Type: Water
Project : Tatum Dileneation
Project Location: Tatum, New Mexico

Analysis Date: 03/17/99
Sampling Date: 03/17/99
Sample Condition: Intact/Iced

ELT#	FIELD CODE	BENZENE (mg/l)	TOLUENE (mg/l)	ETHYLBENZENE (mg/l)	m,p-XYLENE (mg/l)	o-XYLENE (mg/l)
17265	#25 Bell	0.006	0.004	0.004	0.005	0.004
17266	#26 NBF	0.002	0.003	0.001	0.002	0.001
17267	#27 Sohio A	0.118	0.019	0.005	0.004	0.008
17268	#28 Sohio #1	0.156	0.008	0.003	0.010	0.005
17269	#29 G.S. State	0.012	0.012	0.004	0.021	0.041
	% IA	104	100	99	98	99
	% EA	108	104	101	102	103
	BLANK	<0.001	<0.001	<0.001	<0.001	<0.001

METHODS: SW 846-8020,5030

Raland K. Tuttle

3-26-99
Date

ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

TIPPERARY OIL & GAS
633 17TH
DENVER, COLORADO 80202
FAX: 281-646-8996(Mike Griffin)

Receiving Date: 03/17/99
Sample Type: Water
Project : Tatum Dileneation
Project Location: Tatum, N.M.

Analysis Date: See below
Sampling Date: 3/17/99
Sample Condition: Intact/Iced

ELT#	Field Code	Ca (mg/L)	Mg (mg/L)	Na (mg/L)	K (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	CO3 (mg/L)	HCO3 (mg/L)
17265	#25 Bell	189	46	281	8.7	851	300	0	159
17266	#26 NBF	31.4	16	65	6.4	53	175	0	159
17267	#27 Sohio A	144	78	377	16.2	1028	195	0	329
17268	#28 Sohio #1	715	140	4660	20.8	8685	195	0	329
17269	#29 G.S. State	178	44	102	8.1	487	150	0	281
	ANALYSIS DATE	3/24/99	3/24/99	3/24/99	3/24/99	3/18/99	3/18/99	3/18/99	3/18/99
	QUALITY CONTROL	53.9	5.1	55.9	5.2	5140	48	*	*
	TRUE VALUE	50.0	5.0	50.0	5.0	5000	50	*	*
	% PRECISION	108	102	111	104	103	96	*	*

METHODS: EPA 4.1.1, 215.1,242.1, 273.1, 258.1,325.3, 375.4, 310.2.

Raland K. Tuttle

3-26-99
Date

ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

TIPPERARY OIL & GAS
633 17TH
DENVER, COLORADO 80202
FAX: 281-646-8996(Mike Griffin)

Receiving Date: 03/17/99
Sample Type: Water
Project : Tatum Dileneation
Project Location: Tatum, N.M.

Analysis Date: Hg 3/23/99
Analysis Date: 3/25/99
Sampling Date: 3/17/99
Sample Condition: Intact/Iced

TOTAL METALS (mg/L)

ELT#	Field Code	Ag	As	Ba	Cd	Cr	Hg	Pb	Se
17265	#25 Bell	ND	ND	0.250	ND	0.0110	ND	ND	ND
17266	#26 NBF	ND	ND	0.201	ND	0.0060	ND	ND	ND
17267	#27 Sohio A	ND	ND	0.276	ND	0.0110	ND	ND	ND
17268	#28 Sohio #1	ND	0.028	0.709	ND	0.0220	ND	0.0090	ND
17269	#29 G.S. State	ND	ND	0.369	ND	0.0080	ND	ND	ND
	REPORTING LIMIT	0.0050	0.005	0.010	0.0010	0.0050	0.00020	0.0030	0.0050
	% INSTRUMENT ACCURACY	100	106	95	100	94	103	98	112
	% EXTRACTION ACCURACY	96	104	97	100	96	96	99	102

ND = Not detected at the reporting limit.

METHODS: EPA 200.7, 245.2

Raland K. Tuttle

3-26-99
Date

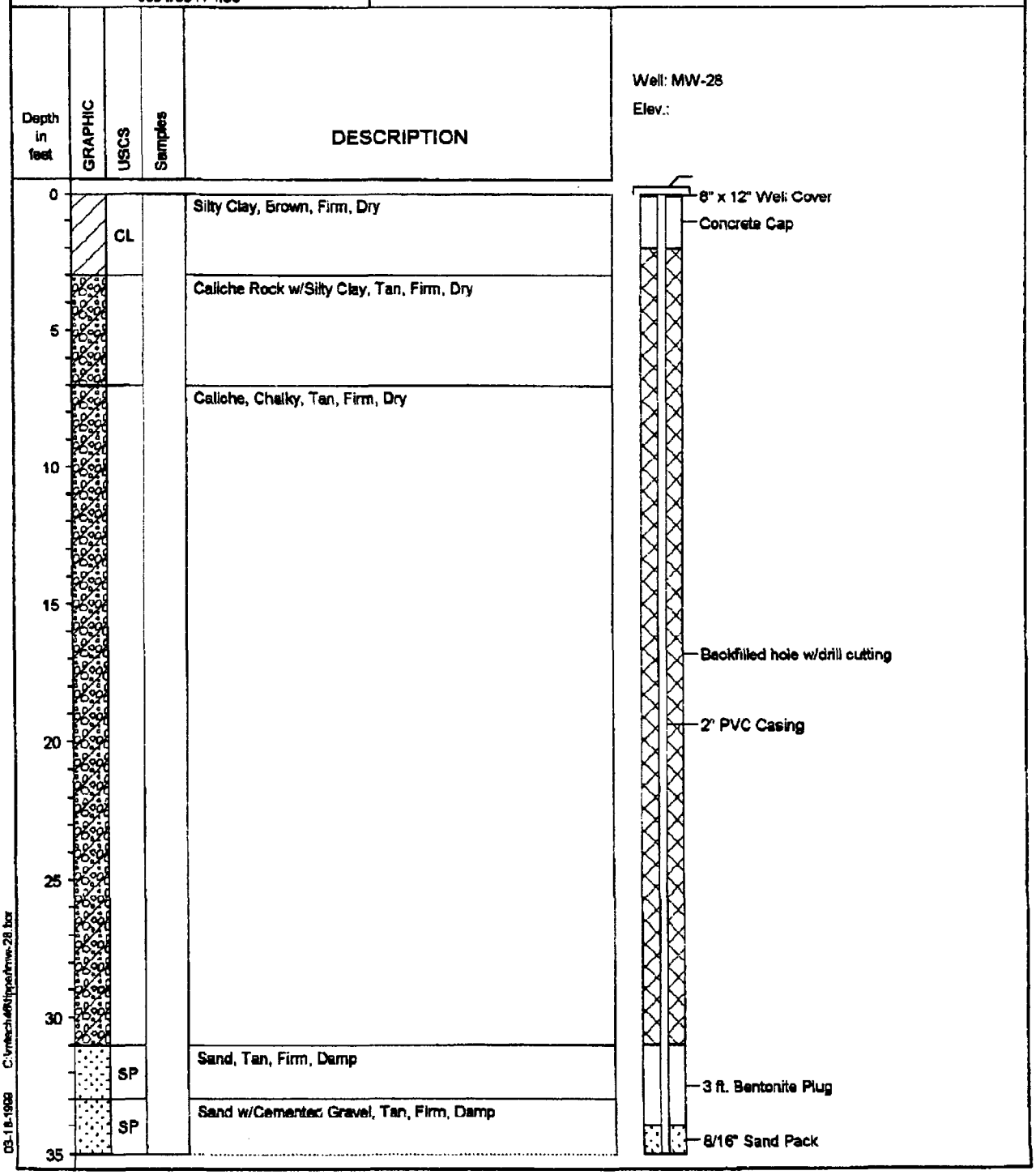
Atkins Engineering Associates, Inc.
P.O. Box 3156
Roswell, New Mexico 88202

LOG OF BORING Sohio State "A" #1 MW-28

(Page 1 of 2)

Tipperary Corporation
633 17th Street, Suite 1550
Denver, CO 80202
Contact: Mike Griffin
Job #99174.00

Date	: 3-18-99	Site Location	: Lea County, NM
Drill Start	: 9:35 A.M.	Auger Type	: Hollow Stem
Drill End	: 12:45 P.M.	Logged By	: Mort Bates
Boring Location	: 100 ft. SE of MW-20		



03-18-1999 C:\mtech\RWtipp\mw-28.bor

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

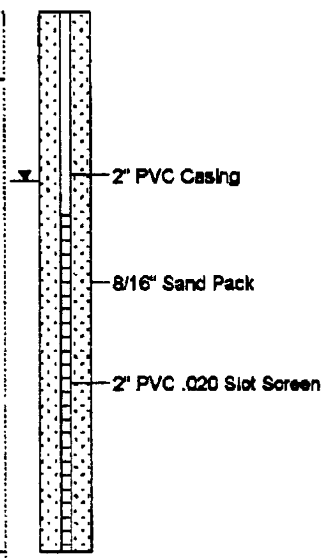
LOG OF BORING Sohio State "A" #1 MW-28

Tipperary Corporation
633 17th Street, Suite 1550
Denver, CO 80202
Contact: Mike Griffin
Job #99174.00

Date	: 3-16-99	Site Location	: Lea County, NM
Drill Start	: 9:35 A.M.	Auger Type	: Hollow Stem
Drill End	: 12:45 P.M.	Logged By	: Mort Bates
Boring Location	: 100 ft. SE of MW-20		

Depth in feet	GRAPHIC	USCS	Samples	DESCRIPTION
35		SP		
		SP		Sand, Tan, Firm, Moist
40				WL @ 40 ft.
45				
50				
51				TD = 51 ft.
55				
60				
65				
70				

Well: MW-28
Elev.:



03-18-1999 C:\ntech48\tipper\mw-28.bor

Tipperary
CORPORATION

633 Seventeenth Street
Suite 1550
Denver, Colorado 80202

RECEIVED
FEB 22 1999

February 16, 1999

CERTIFIED MAIL

Mr. William C. Olson
New Mexico Oil Conservation Division
2040 South Pacheco
Santa Fe, NM 87505

RE: January 1999 Progress Report
Tatum Pit Closure Project
Lea County, NM

Dear Mr. Olson:

Please find enclosed additional results from our monitor wells in the subject project area. These results are from water samples taken on January 8, 1999. These samples represent the sixth quarter of monitoring. The total BTEX concentrations continue to decline. We will continue to analyze water samples quarterly from the subject project.

Because the following wells have had at least four consecutive quarters of acceptable BTEX concentrations, we formally request final closure for these projects: Vera (pit and monitor well #5), State NBN (pit and monitor well #7), Iva Com (monitor wells #1 & #2), Mable Com (monitor well #3). Please advise if this request is acceptable.

In response to your January 15, 1999 correspondence, please be advised that we are scheduling the installation of additional monitor wells in accordance with the conditions set forth in your letter. Additionally, we respectfully request an extension until May 1, 1999 to submit our next progress report rather than the April 1 deadline specified in your letter. This will allow us to stay on our current quarterly monitoring schedule. Please advise if this is not acceptable.

If you have any questions, please call me at (303) 293-9379.

Very truly yours,

Larry G. Sugano

Larry G. Sugano
Vice President - Engineering

cc: NMOCD Hobbs Office

Enclosures

Tipperary
CORPORATION

TATUM PIT CLOSURE PROJECT
WATER SAMPLING RESULTS
JANUARY, 1999

Executive Summary

Iva COM
Monitor Wells # 1, 2
No sample from either Iva COM well has ever revealed a BTEX component concentration in excess of standards. Tipperary may request closure of monitor wells nos. 1 and 2. The source well is still producing free product on occasion and has not been tested for BTEX.

Mable COM
Monitor Wells # 3, 4
Monitor well # 3 has recorded four consecutive quarters of acceptable BTEX concentrations. Tipperary may request closure of this well. Well # 4 has shown two consecutive quarters of acceptable BTEX concentrations. The source well has not been tested for BTEX.

Vera
Monitor Well # 5
Monitor well # 5 has shown six consecutive quarters of acceptable concentrations. Tipperary may request closure of the pit and monitor well.

Bell
Monitor Wells # 6, 13, 14
Monitor well # 13 has gone two quarters with acceptable concentrations. Wells # 6 & 14 continue to show benzene concentrations in excess of standards. Such concentrations are consistently trending lower. A delineation well is required for this site.

NBN
Monitor Well # 7
Monitor well # 7 has shown four consecutive quarters of acceptable concentrations. Tipperary may request closure of the pit and monitor well.

NBF
Monitor Wells # 8, 15, 16
All well BTEX concentrations exceed standards. A delineation well is required for this site.

Sohio State # 1
Monitor Wells # 10
Though trending steadily downward, all well sample concentrations exceed standard. A delineation well is required for this site.

Sohio State "A"
Monitor Well # 11, 19, 20
The benzene concentrations in all three wells are trending sharply downward. At the present rate of decline, wells 19 & 20 will become delineation wells through natural attenuation within six months.

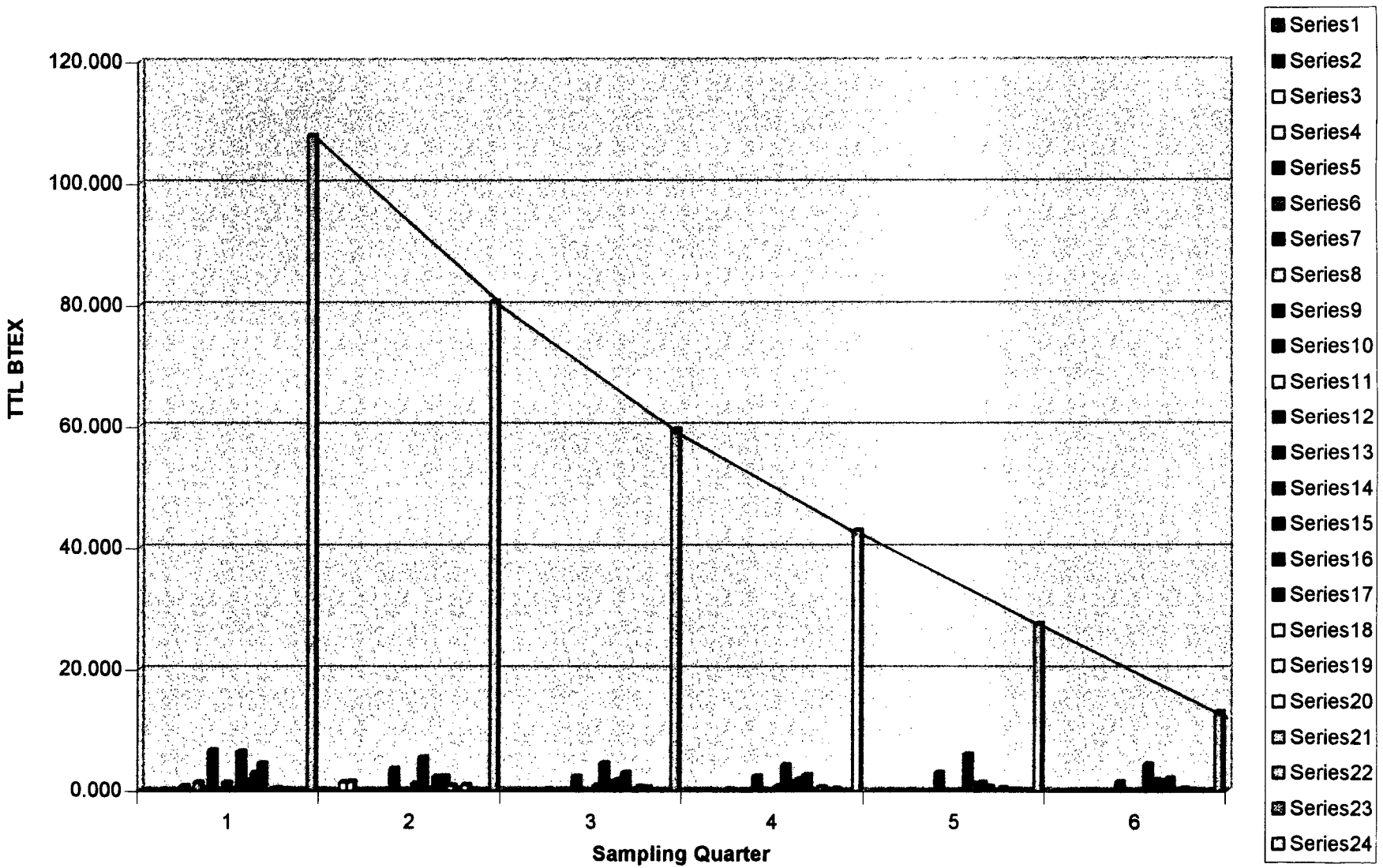
GS State # 1
Monitor Wells # 12, 21, 22
Monitor well # 12 continues to contain free product. BTEX concentrations in wells 21 & 22 are trending downward though not as sharply as similar sites. Well # 12 should be evaluated for potential as a source well. A delineation well is required for this site.

Satellite # 4
Monitor Wells # 9, 23, 24
Well # 24 has shown four quarters of acceptable concentrations. The reported benzene concentrations from Well # 23 have been quite erratic but appear to be generally trending downward. Well # 23 presently shows acceptable concentrations. Well # 9 is steadily trending lower in benzene and should fall within acceptable limits within the next few sampling rounds.

Tipperary Corporation

Tipperary Corporation
Tatum Pit Closure Project
Quarterly Sampling Comparison

Well #	9/5/97	12/3/97	3/23/98	6/25/98	10/1/98	1/6/99
1	0.012	0.025	0.022	0.030	0.023	0.011
2	0.005	0.013	0.011	0.010	0.010	0.010
3	0.200	1.387	0.054	0.071	0.093	0.073
4	0.031	1.501	0.047	0.049	0.013	0.019
5	0.019	0.025	0.011	0.037	0.015	0.011
6	0.790	0.068	0.281	0.249	0.141	0.137
7	0.005	0.023	0.017	0.048	0.023	0.008
8	1.377	0.023	0.146	0.058	0.018	0.036
9	0.285	0.123	0.007	0.081	0.050	0.049
10	6.626	3.626	2.292	2.423	3.096	1.532
11	0.122	0.124	0.184	0.141	0.108	0.105
13	1.346	0.010	0.037	0.056	0.017	0.007
14	0.005	1.183	0.918	0.764	0.184	0.161
15	6.432	5.499	4.588	4.189	6.086	4.380
16	1.662	0.256	1.419	1.446	1.287	1.845
17	2.908	2.305	1.863	1.920	1.419	1.665
18	4.498	2.361	3.013	2.601	0.786	2.072
19	0.011	0.875	0.184	0.079	0.082	0.094
20	0.454	0.345	0.658	0.604	0.539	0.390
21	0.287	0.953	0.554	0.198	0.238	0.259
22	0.152	0.200	0.195	0.344	0.144	0.134
23	0.009	0.122	0.106	0.008	0.078	0.014
24	0.009	0.064	0.007	0.017	0.007	0.011
	107.873	80.628	59.517	42.903	27.480	13.023


Tipperary Quarterly Sampling Comparison
TTL BTEX
120.000
100.000
80.000
60.000
40.000
20.000
0.000
1
2
3
4
5
6
Sampling Quarter
Series1
Series2
Series3
Series4
Series5
Series6
Series7
Series8
Series9
Series10
Series11
Series12
Series13
Series14
Series15
Series16
Series17
Series18
Series19
Series20
Series21
Series22
Series23
Series24

ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

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

Receiving Date: 01/08/99
Sample Type: Water
Project : None Given
Project Location: Tatum, New Mexico 88237

Analysis Date: 01/08/99
Sampling Date: 01/06 & 01/07/99
Sample Condition: Intact/iced/HCl

ELT#	FIELD CODE	BENZENE (mg/l)	TOLUENE (mg/l)	ETHYLBENZENE (mg/l)	m,p-XYLENE (mg/l)	o-XYLENE (mg/l)
16587	Sohio St. #1 - #17	0.876	0.136	0.094	0.339	0.163
16588	Sohio St. #1 - #18	1.10	0.247	0.107	0.415	0.203
16589	Sohio Sta. M/W #19	0.040	0.014	0.006	0.021	0.013
16590	Sohio Sat. M/W #20	0.341	0.010	0.005	0.026	0.008
16591	GS State M/W #21	0.133	0.010	0.054	0.056	0.006
16592	GS State M/W #22	0.039	0.010	0.020	0.048	0.017
16593	Sat. #4 M/W #23	0.004	0.003	0.001	0.004	0.002
16594	Sat. #4 M/W #24	0.004	0.003	<0.001	0.002	<0.001
16595	Ivs Com. M/W #1	0.003	0.001	<0.001	0.002	0.004
16596	Ivs Com. M/W #2	0.004	0.001	<0.001	0.003	0.001
16597	Mable Com. M/W #3	<0.001	0.002	0.012	0.042	0.016
16598	Mable Com. M/W #4	0.007	0.002	0.002	0.006	0.002
16599	Vera M/W #5	0.002	0.002	0.001	0.004	0.002
16600	Bell A M/W #6	0.127	0.001	0.003	0.005	0.001
16601	NBN M/W #7	0.003	<0.001	<0.001	0.002	<0.001
16602	NBF M/W #8	0.026	0.001	0.003	0.003	<0.001
16603	Sat. 4 M/W #9	0.034	0.003	0.008	0.005	0.001
16604	Sohio St. #1 M/W #10	1.00	0.067	0.156	0.214	0.095
16605	Sohio Sta. M/W #11	0.061	0.011	0.005	0.016	0.012
16606	Bell A M/W #13	0.001	<0.001	<0.001	0.003	0.001
16607	Bell A M/W #14	0.154	<0.001	0.002	0.003	0.001
16608	NBF M/W #15	1.63	1.49	0.182	0.728	0.350
16609	NBF M/W #16	1.47	0.122	0.047	0.144	0.062
	% IA	86	85	87	85	87
	% EA	90	90	89	88	90
	BLANK	<0.001	<0.001	<0.001	<0.001	<0.001

METHODS: SW 846-8020,5030

Raland K Tuttle

1-11-99
Date

Environmental Lab of Texas, Inc.

12600 West I-20 East Odessa, Texas 79763
(915) 563-1800 FAX (915) 563-1713

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

V. A. Vice % Whole Earth

Project Manager: Tipperary Oil & Gas

Phone #: 1-800-854-4358

FAX #: 505-398-6509

Company Name & Address: Tatum, N. Mex #88267

Project #: M/W

Project Name:

Project Location: Tatum, N. Mex

Sampler Signature: D. A. Vice

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	OTHER	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	OTHER	SAMPLING: DATE	TIME
16595	IVA Com. M/W #1 #2	2												1/6/99	
16596															
16597	MAble Com. " #3 #4	2												1/6/99	
16598															
16599	VeRA #M/W #5	2												1/6/99	
16600	Bell A M/W #6	2												1/6/99	
16601	NBN M/W #7	2												1/6/99	
16602	NBF M/W #8	2												1/6/99	
16603	SATELITE 4-M/W #9	2												1/6/99	
16604	SOHIO STA 1 — M/W #10	2												1/7/99	
16605	SOHIO STA - M/W #11	2												1/7/99	
16606															
16607	Bell A M/W #13 #14	2												1/6/99	
16608															
16609	NBF M/W # 15-16	2												1/6/99	

ANALYSIS REQUEST

BTEX 8021D/5030	TPH 418.1	TCLP Metals Ag As Ba Cd Cr Pb Hg Se	Total Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Volatiles	TCLP Semi Volatiles	TDS	RCI

Relinquished by:	Date:	Times:	Received by:
	01-08-99	0855	J McMurry
Relinquished by:	Date:	Times:	Received by:
Relinquished by:	Date:	Times:	Received by Laboratory:

REMARKS

Environmental Lab of Texas, Inc.

12600 West I-20 East Odessa, Texas 79763
(915) 563-1800 FAX (915) 563-1713

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: V.A. Vice - Whole Earth "505"-398-6509 Off
Phone #: 1-800-854-4358
Company Name & Address: Tipperary Oil & Gas
FAX #:
Tatum, New Mexico 88267
Project #:
Project Name:
Project Location:
Sampler Signature: Debra A. Vice

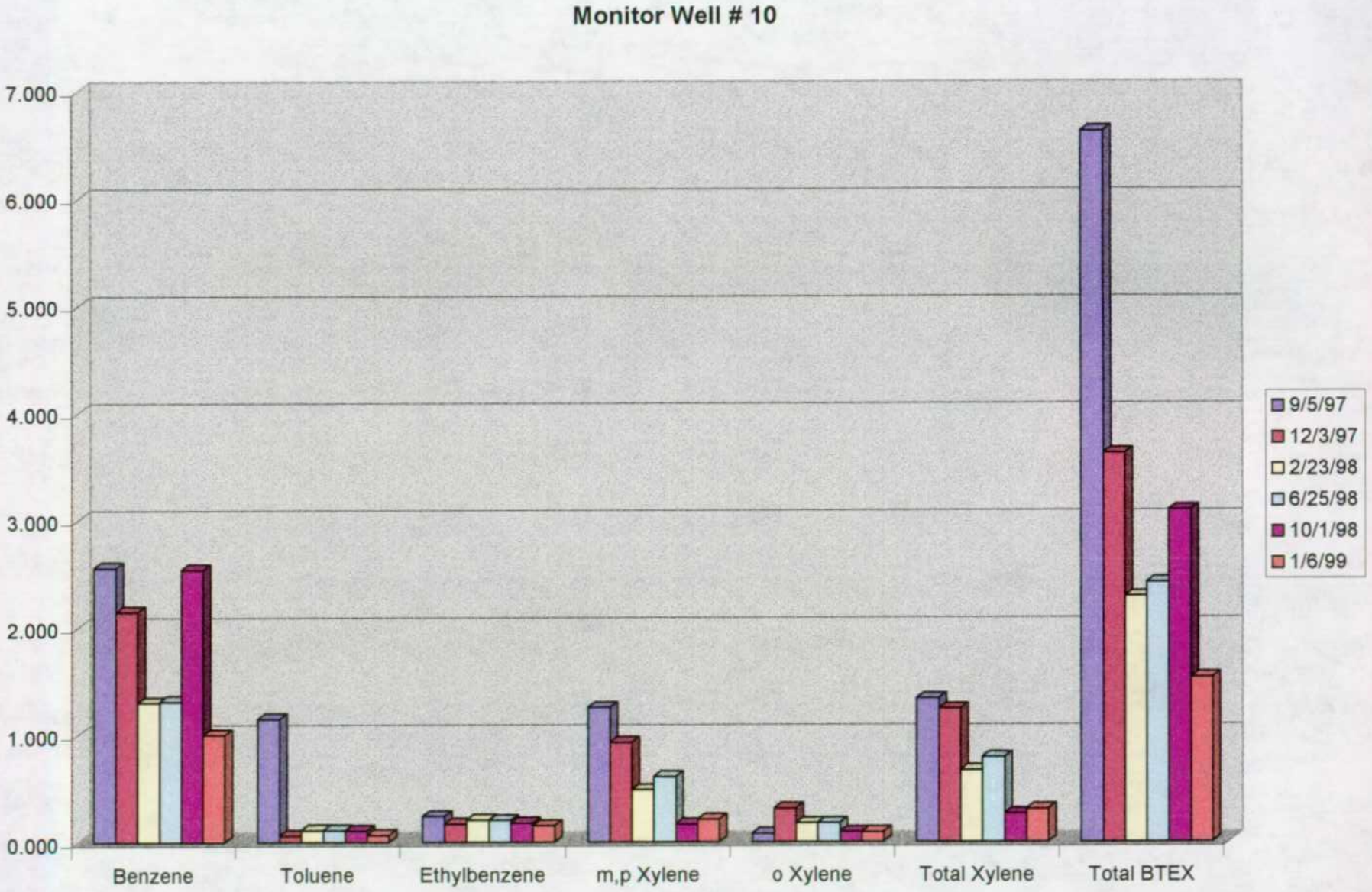
LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	OTHER	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	OTHER	SAMPLING: DATE	TIME	ANALYSIS REQUEST: BTEX 8020/5030	TPH 418.1	TCLP Metals Ag As Ba Cd Cr Pb Hg Se	Total Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Volatiles	TCLP Semi Volatiles	TDS	RCI
16587	Sohio ST #1 #17-18	2		✓							✓			1/1/99		✓							
16588																							
16589	Sohio STA M/U #19-20	2												1/1/99									
16590																							
16591	GS State M/U #21-22	2												1/1/99									
16592																							
16593	Satellite #4 M/U 23 #24	2												1/6/99									
16594																							

Relinquished by:	Date:	Time:	Received by:
	01-08-99	0855	
Relinquished by:	Date:	Time:	Received by:
Relinquished by:	Date:	Time:	Received by Laboratory:

REMARKS

Monitor Well # 10
Sohio State # 1
Sampling Results

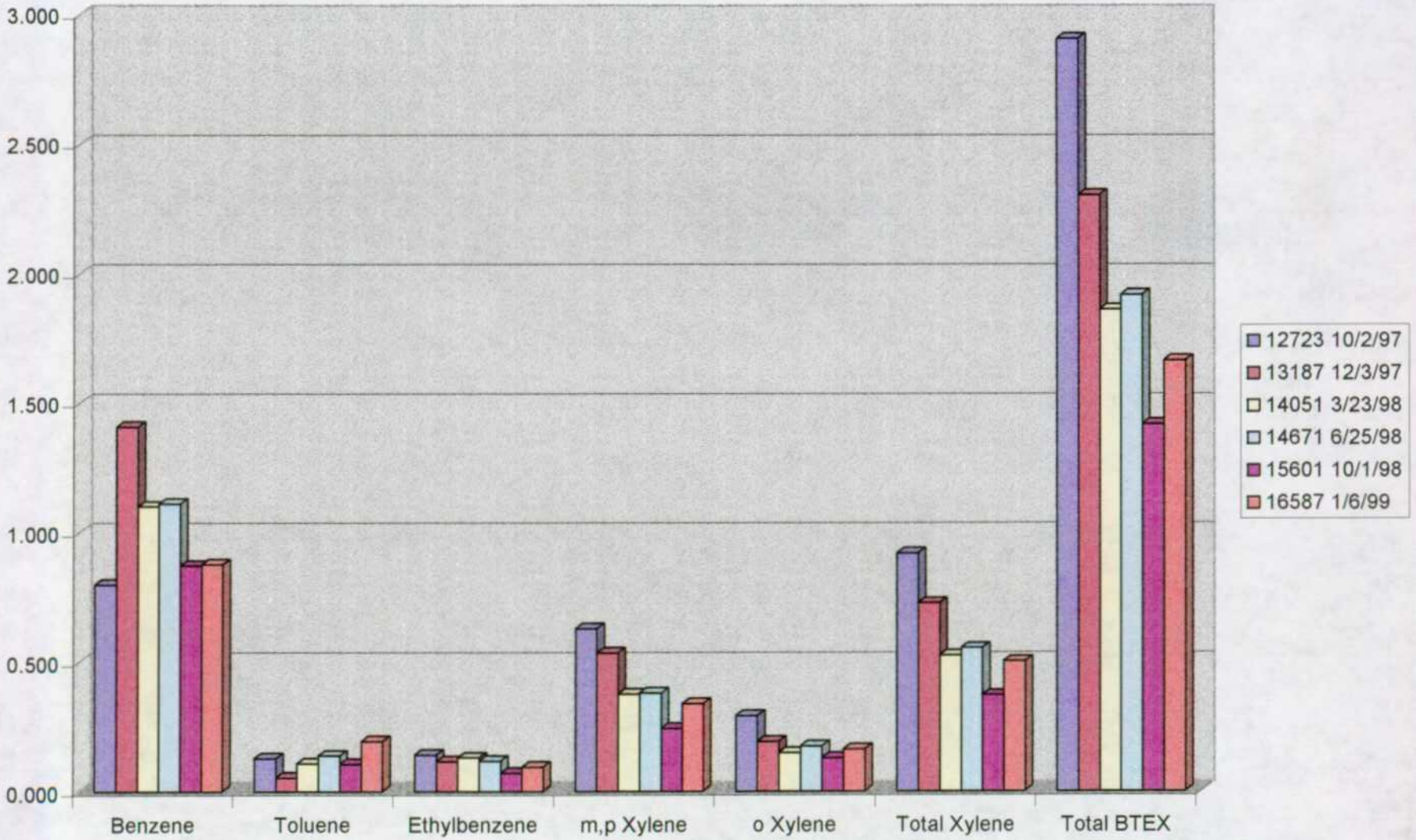
Lab. #	12483	13186	14066	14665	15597	16604
Sample Date	9/5/97	12/3/97	2/23/98	6/25/98	10/1/98	1/6/99
Benzene	2.559	2.148	1.301	1.313	2.541	1.000
Toluene	1.148	0.062	0.113	0.113	0.108	0.067
Ethylbenzene	0.243	0.173	0.209	0.206	0.182	0.156
m,p Xylene	1.257	0.930	0.490	0.611	0.167	0.214
o Xylene	0.081	0.313	0.179	0.180	0.098	0.095
Total Xylene	1.338	1.243	0.669	0.791	0.265	0.309
Total BTEX	6.626	3.626	2.292	2.423	3.096	1.532


Monitor Well # 10
7.000
6.000
5.000
4.000
3.000
2.000
1.000
0.000
Benzene
Toluene
Ethylbenzene
m,p Xylene
o Xylene
Total Xylene
Total BTEX
9/5/97
12/3/97
2/23/98
6/25/98
10/1/98
1/6/99

Monitor Well # 17
Sohio State # 1
Sampling Results

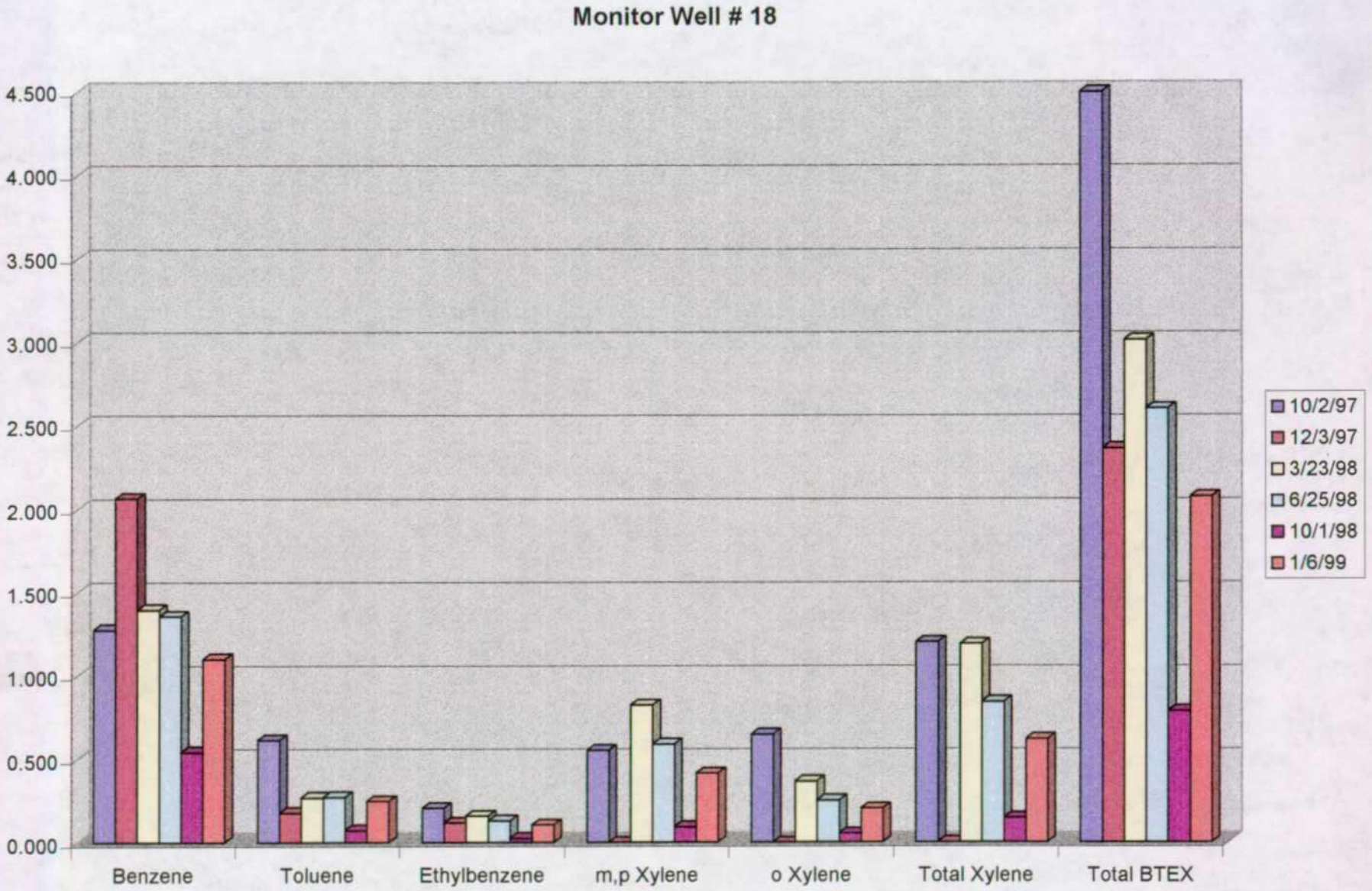
Lab. #	12723	13187	14051	14671	15601	16587
Sample Date	10/2/97	12/3/97	3/23/98	6/25/98	10/1/98	1/6/99
Benzene	0.799	1.409	1.101	1.111	0.872	0.876
Toluene	0.128	0.053	0.108	0.138	0.105	0.193
Ethylbenzene	0.141	0.116	0.130	0.118	0.071	0.094
m,p Xylene	0.628	0.535	0.376	0.379	0.242	0.339
o Xylene	0.292	0.192	0.148	0.174	0.129	0.163
Total Xylene	0.920	0.727	0.524	0.553	0.371	0.502
Total BTEX	2.908	2.305	1.863	1.920	1.419	1.665

Monitor Well # 17



Monitor Well # 18
Sohio State # 1
Sampling Results

Lab. #	12724	13188	14052	14672	15609	16588
Sample Date	10/2/97	12/3/97	3/23/98	6/25/98	10/1/98	1/6/99
Benzene	1.276	2.063	1.396	1.357	0.542	1.1
Toluene	0.614	0.178	0.269	0.272	0.072	0.247
Ethylbenzene	0.206	0.118	0.159	0.131	0.025	0.107
m,p Xylene	0.553	0.001	0.823	0.589	0.093	0.415
o Xylene	0.648	0.001	0.366	0.252	0.054	0.203
Total Xylene	1.201	0.002	1.189	0.841	0.147	0.618
Total BTEX	4.498	2.361	3.013	2.601	0.786	2.072


Monitor Well # 18
4.500
4.000
3.500
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
10/2/97
12/3/97
3/23/98
6/25/98
10/1/98
1/6/99