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REPORTS

DATE:

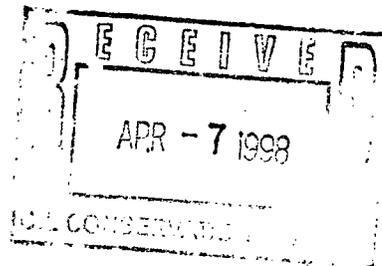
1998



Tipperary

CORPORATION

633 Seventeenth Street
Suite 1550
Denver, Colorado 80202



April 2, 1998

CERTIFIED MAIL

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

**RE: 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 March 23, 1998. The total BTEX concentrations have declined significantly from the December 1997 sample results. We are currently planning to analyze water samples quarterly from the project monitor wells.

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

Very truly yours,

Larry G. Sugano
Vice President - Engineering

cc: Wayne Price, NMOCD Hobbs Office

Enclosure



**Executive Summary
Tipperary Corporation
Tatum Pit Closure Project
March, 1998 Well Sampling**

Procedures

On March 23, 1998, Mr. Vic Vice, Tipperary Production Foreman, sampled the fluid contents of twenty-three monitoring wells in accordance with WEQP-76. The samples were delivered the next day to Environmental Labs of Texas and results provided to Whole Earth Environmental on March 26, 1998. Analysis methods and QA / QC data are provided on the laboratory report.

Whole Earth prepared various spreadsheets and graphs comparing the results to those of two prior sampling events.

Results

The total BTEX concentrations within the monitoring wells are shown to decline by an average of 20% per quarter. There was a 39% increase in the number of wells having all individual BTEX compound concentrations within WQCC standards. Though benzene remains the principal contaminant, the benzene concentrations were reduced by an average of 31% from the December sampling indicating that the "slug" resultant from the closure activities is now passing the monitoring perimeter.

Conclusions

The process of natural attenuation is demonstrated to be working. In June one and possibly two pit sites should be considered for final closure as it is expected that they will have shown four consecutive quarters of BTEX concentrations falling below New Mexico WQCC standards.

The construction of any additional delineation wells is not recommended at this time. One additional sampling round should provide us with enough statistical data to forecast which wells (if any) will require further testing.



**Tipperary Corporation
Sampling Instructions
June 1, 1998 Sampling Round**

1. Sample Monitor Wells # 1-24 as performed on 3/23/98 sampling round.
2. Sample Iva COM source well for BTEX. If results are acceptable, we will then immediately test for PAH's. If PAH results are acceptable, we will request formal closure from the State. *(The State may require additional witnessed sampling for final closure).*
3. Sample Vera for PAH's. Use 1 liter amber jar with no preservatives for PAH and 1 liter clear jar with H₂SO₄ preservative for metals in addition to your normal BTEX sample vial. If PAH's are acceptable, we will request immediate closure. *(PAH & RCRA 8 metals were all within limits on 9/5/97 sampling).*
4. Save G.S. State monitor well # 12 for last. Pump well bore for at least 30 minutes in an attempt to remove all of the free product from the sample. If free product is still present, forward the sample to the lab anyway with instructions to additionally run TPH analysis.

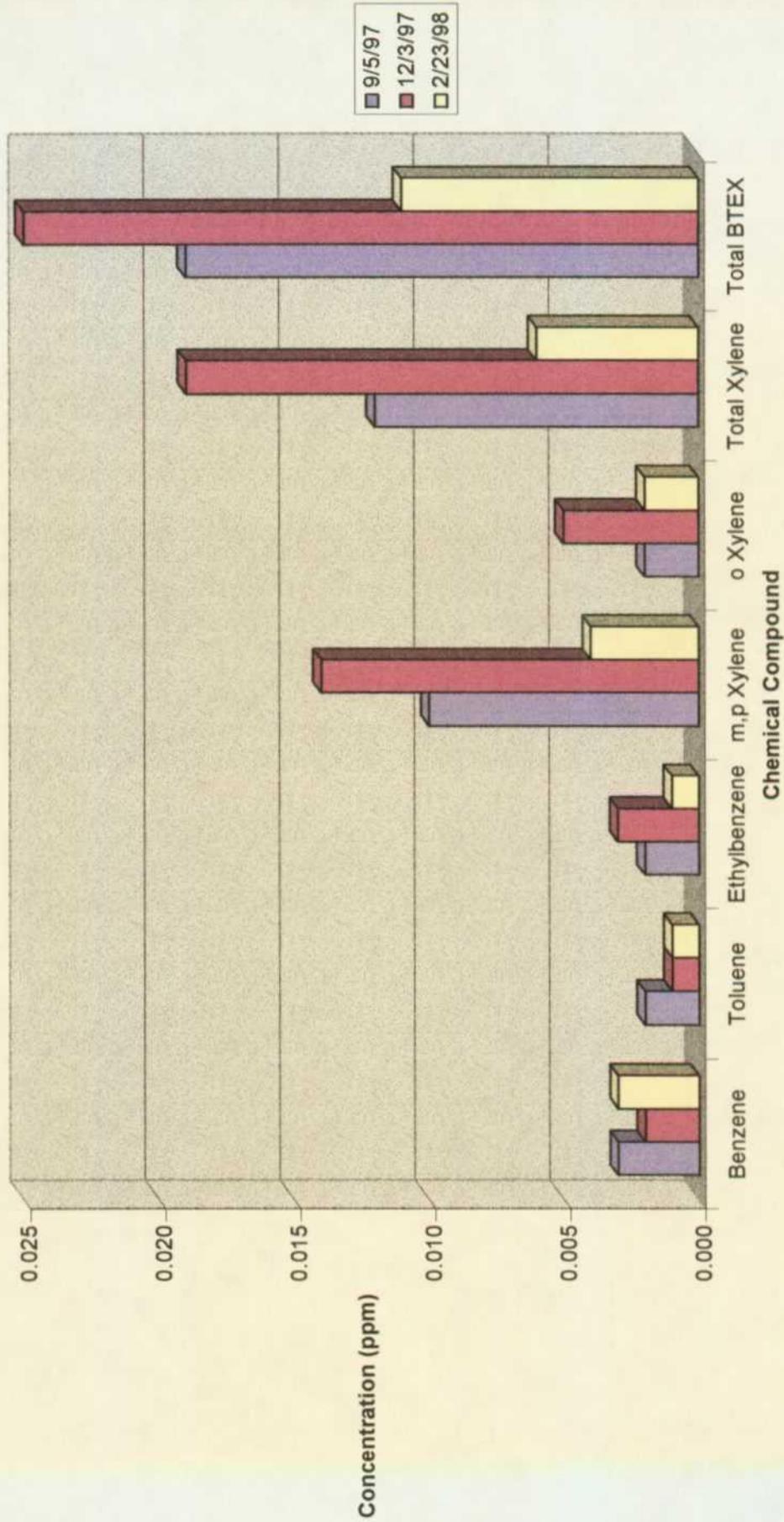
Monitor Well # 5

Vera # 1

Sampling Results

Lab. #	12487	13184	14061
Sample Date	9/5/97	12/3/97	2/23/98
Benzene	0.003	0.002	0.003
Toluene	0.002	0.001	0.001
Ethylbenzene	0.002	0.003	0.001
m,p Xylene	0.010	0.014	0.004
o Xylene	0.002	0.005	0.002
Total Xylene	0.012	0.019	0.006
Total BTEX	0.019	0.025	0.011

Monitor Well # 5





STATE OF
 NEW MEXICO
 OIL
 CONSERVATION
 DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

<input checked="" type="checkbox"/> Telephone	<input type="checkbox"/> Personal	Time 1530	Date 9/22/97
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<u>Originating Party</u>	<u>Other Parties</u>
Bill Olson - Environmental Bureau	Bob Fehlmann - Tipperary Corp. (303) 293-9379

Subject
 Tipperary Pit Closures - Tatum, NM

Discussion
 Gave verbal approval of 9/22/97 fax from Mike Griffin with following conditions:
 1.) Monitor well construction, water quality sampling and waste disposal will be conducted according to OCD's June 4, 1997 approval conditions.
 2.) Wayne Price at OCD Hobbs will be contacted about the drilling and sampling schedule.
 Also expressed concern about source well located 60' from pit instead of directly adjacent to pit area as required in OCD's 6/4/97 approval.

Conclusions or Agreements
 I will fax copy of verbal approval to Tipperary at (303) 291-0398

<u>Distribution</u> file Bob Fehlmann - Tipperary (fax copy) Wayne Price - OCD, Hobbs	Signed
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**Whole Earth
Environmental**

19606 S. Gabriel
Houston, TX 77084
Phone: (281) 492-7077
Fax: (281) 646-8996

FAX COVER PAGE

To: Bill Olsen

From: Mike Griffin

Company: NM OCD

Company: Whole Earth Environmental, Inc.

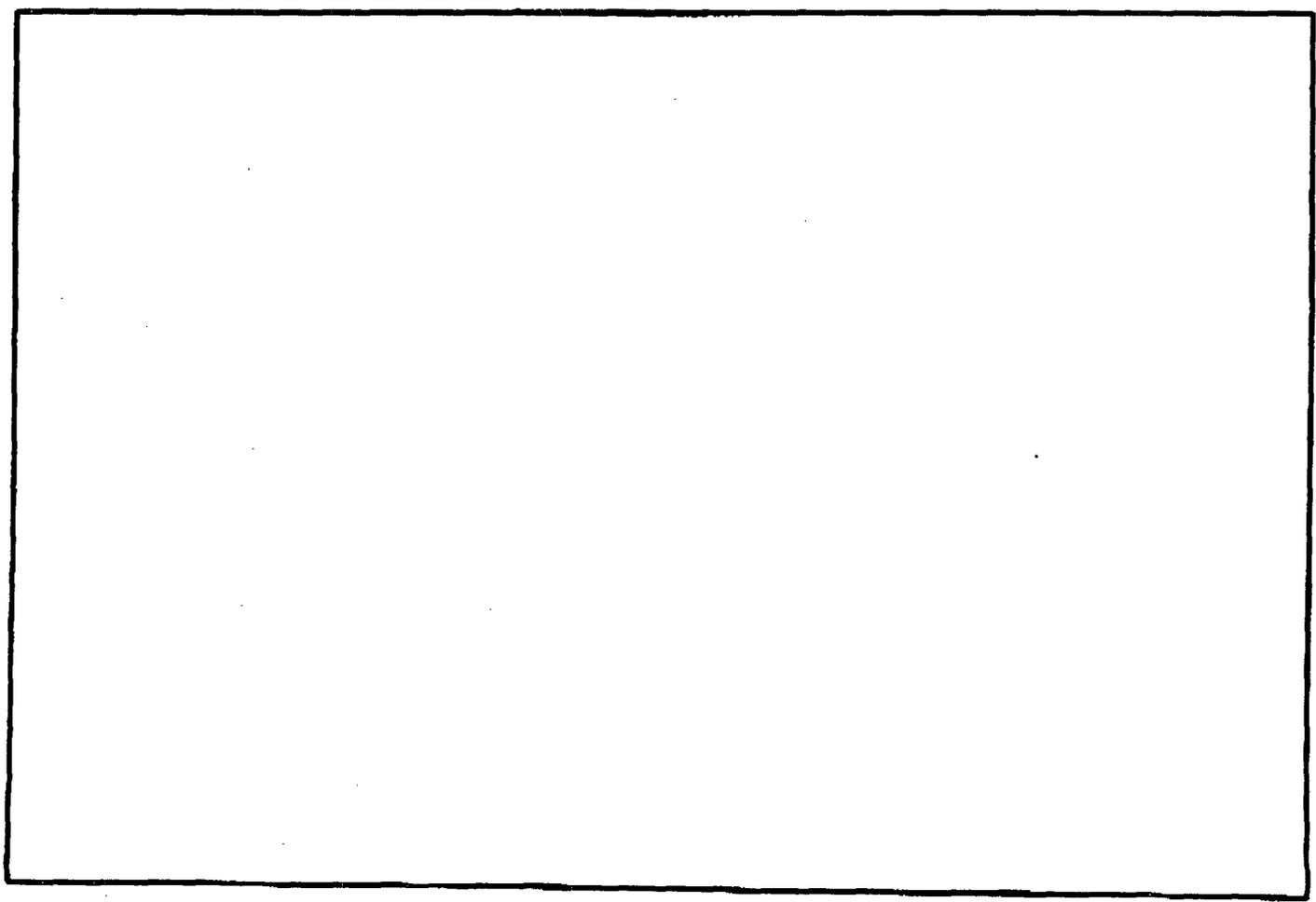
Fax No.: (505) 827-8177

Pages including cover sheet: 3

Subject: Extension Request

Message:

Date: 9/22/97





To: Bill Olsen

From: Mike Griffin ²²

Date: September 9, 1997

Subject: Extension Request

Sent by FAX to: (505) 827-8177

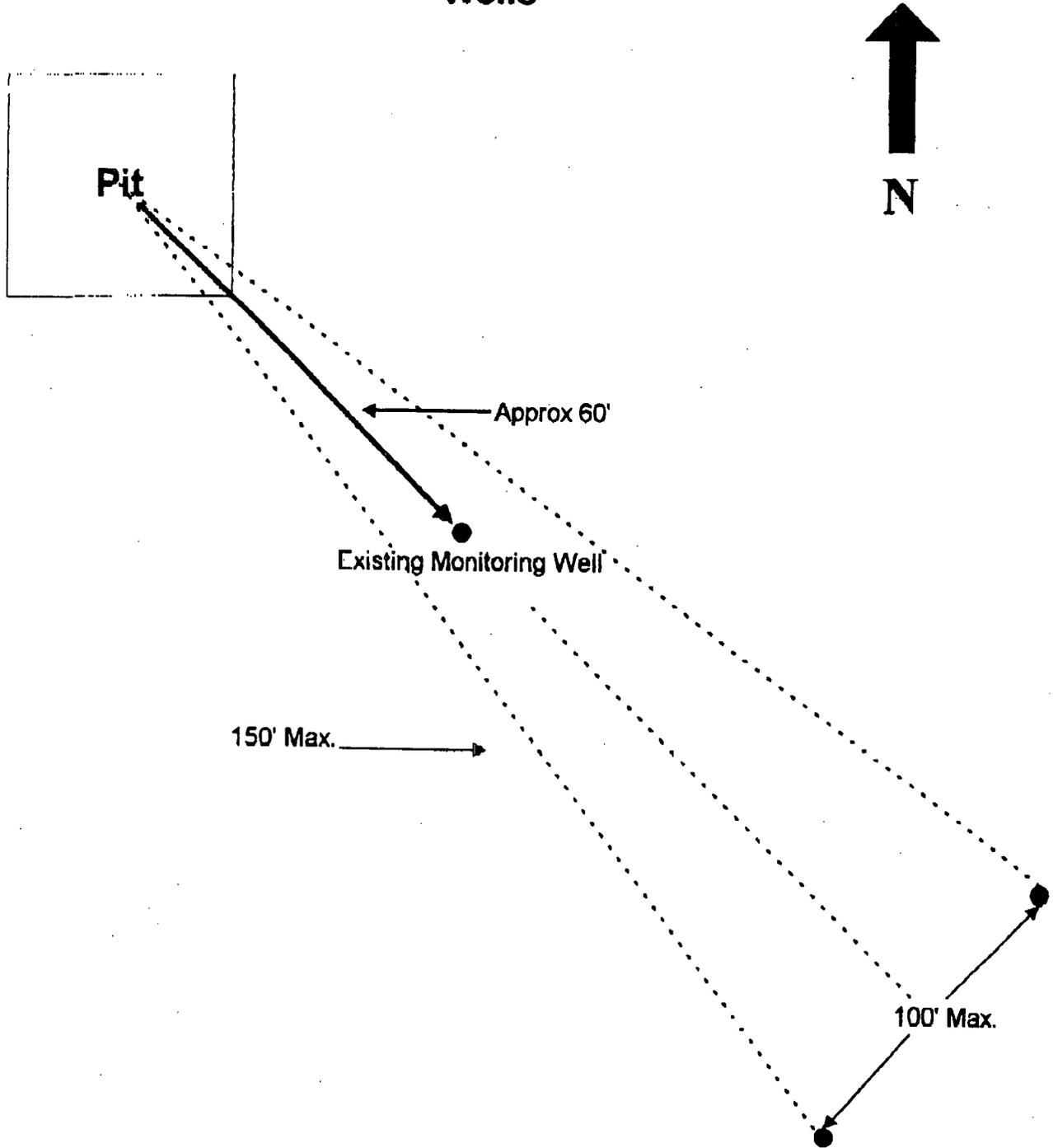
Bill, as you know we experienced an unforeseen delay in completing the Tipperary Tatum Pit Closure Project due to the discovery of detectable BTEX concentrations on five pit locations and the presence of free product in the G.S. State monitoring well. (Reference two letters Bob Fehlmann of Tipperary to you dated Sept. 11).

The new monitoring and recovery wells will be drilled beginning the morning of the 25th and will be sampled as soon as possible thereafter. We request an additional extension for project completion to the end of October.

By copy of this memorandum, I'm notifying Mr. Wayne Price of your Hobbe office as to the new schedule and will further advise him telephonically in advance of the final sampling events so as to allow him to witness.

Please advise if this causes any problems for you.

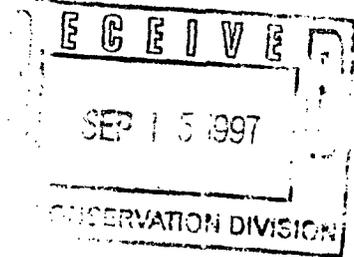
Typical Location of Monitoring Wells





Tipperary
CORPORATION

633 Seventeenth Street
Suite 1550
Denver, Colorado 80202



September 11, 1997

Mr. William C. Olson
Hydrogeologist – Environmental Bureau
New Mexico Energy And Natural Resources Dept.
Oil Conservation Division
2040 South Pacheco
Santa Fe, New Mexico 87504

Subject: Tatum, New Mexico Area “Pit Closure Project”.

Dear Mr. Olson:

Enclosed is a copy of the laboratory analyses of the first water samples taken from the new monitoring wells at our Tatum, New Mexico “Pit Closure Project”. The data indicates BTEX concentrations below allowable maximums for pit closures, but higher than maximums allowed for the more stringent WQCC standards that here apply to the Ogalla Aquifer. Pits with monitor well water samples exceeding the WQCC BTEX maximums include the: Bell State “A” #1, Sohio State “A”, Sohio State #1, Satellite #4, and the State NBF#1.

We have already removed the BTEX source (pit sludge) at these locations, and believe that through time, the processes of natural attenuation will remediate the minor amounts detected. Therefore, as a continuation of our pit closure project, in an effort to establish the extent of the plume we intend to set one new monitor well 150 feet down the ground-water gradient from each of the pits listed above. Tipperary believes these new monitor wells will define the lateral extent of the BTEX at these sites. We intend to sample these wells quarterly.

Please indicate your approval of the above modification to Tipperary’s pit closure plan so that we may proceed with the work. Let me know if you have questions or need more information.

Sincerely,

Robert H. Fehlmann
Environmental Coordinator

WPWIN \ TIP \ LETTERS \ NMPClose.L09

ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

WHOLE EARTH ENVIRONMENTAL
ATTN: MR. MIKE GRIFFIN
19606 SAN GABRIEL
HOUSTON, TEXAS 77064
FAX: 1-281-846-8996

Receiving Date: 08/08/97
Sample Type: WATER
Project: TIPPERARY
Project Location: NONE GIVEN

Analysis Date: 08/09/97
Sampling Date: 08/06/97, 08/06/97
Sample Condition: Intact/ice

ELTW	FIELD CODE	BENZENE mg/l	TOLUENE mg/l	ETHYLBENZENE mg/l	m,p-XYLENE mg/l	o-XYLENE mg/l
12475	VA COM MW#1	<.001	<.001	<.001	0.002	0.007
12476	VA COM MW#2	<.001	<.001	<.001	<.001	<.001
12477	VA COM SW	3.129	2.551	0.209	1.182	0.094
12478	GB #12	1.834	0.055	0.061	3.085	0.084
12481	BELL #8	0.887	0.013	0.024	0.060	0.008
12482	NBN #7	<.001	<.001	<.001	<.001	<.001
12483	SOHIO 1 #10	2.558	1.148	0.243	1.257	0.081
12484	SOHIO A #11	0.096	0.004	0.002	0.068	0.012
12485	SAT 4 #9	0.092	0.010	0.015	0.082	0.002
12486	NBF #8	0.302	0.208	0.089	0.753	0.161
12487	VERA #5	0.008	0.003	0.005	0.021	0.028
12488	MABLE MW #3	0.010	0.008	0.001	0.139	0.012
12489	MABLE MW #4	0.015	0.002	0.002	0.010	0.002
	% IA	111	111	112	111	113
	% EA	113	112	114	112	111
	BLANK	<0.001	<0.001	<0.001	<0.001	<0.001

METHODS: SW 846-8020, 5030


Michael R. Fowler

9-10-97
Date