

GW - 1

MONITORING REPORTS

DATE:

2003

**GROUNDWATER REMEDIATION
MONITORING REPORT
Annual Report 2002**

APRIL 2003

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ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

Submitted To:

**New Mexico Oil Conservation Division
Environmental Bureau
1220 South Francis Drive
Santa Fe, New Mexico 87505**

Prepared by:

**San Juan Refining Company – Bloomfield Refinery
EPA ID# NMD089416416
50 County Road 4990
Bloomfield, New Mexico 87413**

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EXECUTIVE SUMMARY

San Juan Refining Company (SJRC), a wholly owned subsidiary of Giant Industries, Inc., is submitting this Groundwater Remediation Monitoring Report as per the request from NMOCD as stated in their Conditions of Approval letters dated December 30, 2002. This report will provide a summary of soil and groundwater remediation and monitoring activities that occurred in 2002.

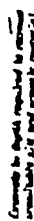
Due to the late date of arrival of the NMOCD conditions of approval, the information provided in this initial report will need to be updated in subsequent reports.

The Hammond Ditch French Drain Recovery System (HDFDRS) was constructed and implemented by the end of February 2002. This system allows for a large volume of contaminants to be captured in the French drain and to then be pumped back to the refinery's wastewater treatment system. Attachment A shows the as-built drawings of the collection system from the Hammond Ditch French Drain to the API Separator. Attachment B shows the monitored flow rates from the French Drain Collection Tank (Tank #37) to the API Separator. Some soil and water analysis associated with HDFDRS are located in Attachments C and F.

SJRC conducted annual groundwater monitoring and sampling in August 2002. Attachments C through F show the pertinent data requested. Throughout 2002 refinery personnel took water level and SPH thickness measurements using the traditional 12" method. That data is referenced in Attachment E. NMOCD in a December 2002 meeting and in the above mentioned letter requested a more specific 1/100 of an inch measurement, which has been implemented as SJRC standard.

The objective of SJRC's abatement plan is to prevent migration and ultimately eliminate the hydrocarbon plume under the refinery. Samples taken from the piezometers located north of the sheet piling and slurry wall, installed between the refinery and the San Juan River show no migration of SPH past this barrier. The pump and treat system that was already in place has been enhanced with the addition of the HDFDRS. Review of sample results indicate that many monitoring and recovery wells are trending toward lower contaminant levels.

Future remedial action will include converting several monitoring wells into recovery wells. Monitoring activities will be improved with the addition of (two) new wells located north of Hammond Ditch, and the re-work of Seep #5. These improvements will take the place of the questionable seep sample points on the bluff.



TYPICAL UNDERDRAIN SECTION
WITH GROUNDWATER SEEPING FROM EXISTING CANAL BANK

NOTES

For Price and Products of new concrete homes, see: Drawings J43-108-819 through 877.
For Special Concrete Lining Systems and Details, see Drawings J43-104-882.

Overhead is by means of personal supervision of flows from existing bank bills are in system.

[illegible]

728 credits at City v. 26. Remains paid to reduce New Orleans Credit, 1943 and 1944.

These various points have not to be considered and not to be taken into account in the same way as the points of the first part of the report.

[illegible]

ALLISON BRIDGES LEWIS

THE UNIVERSITY OF CHICAGO PRESS

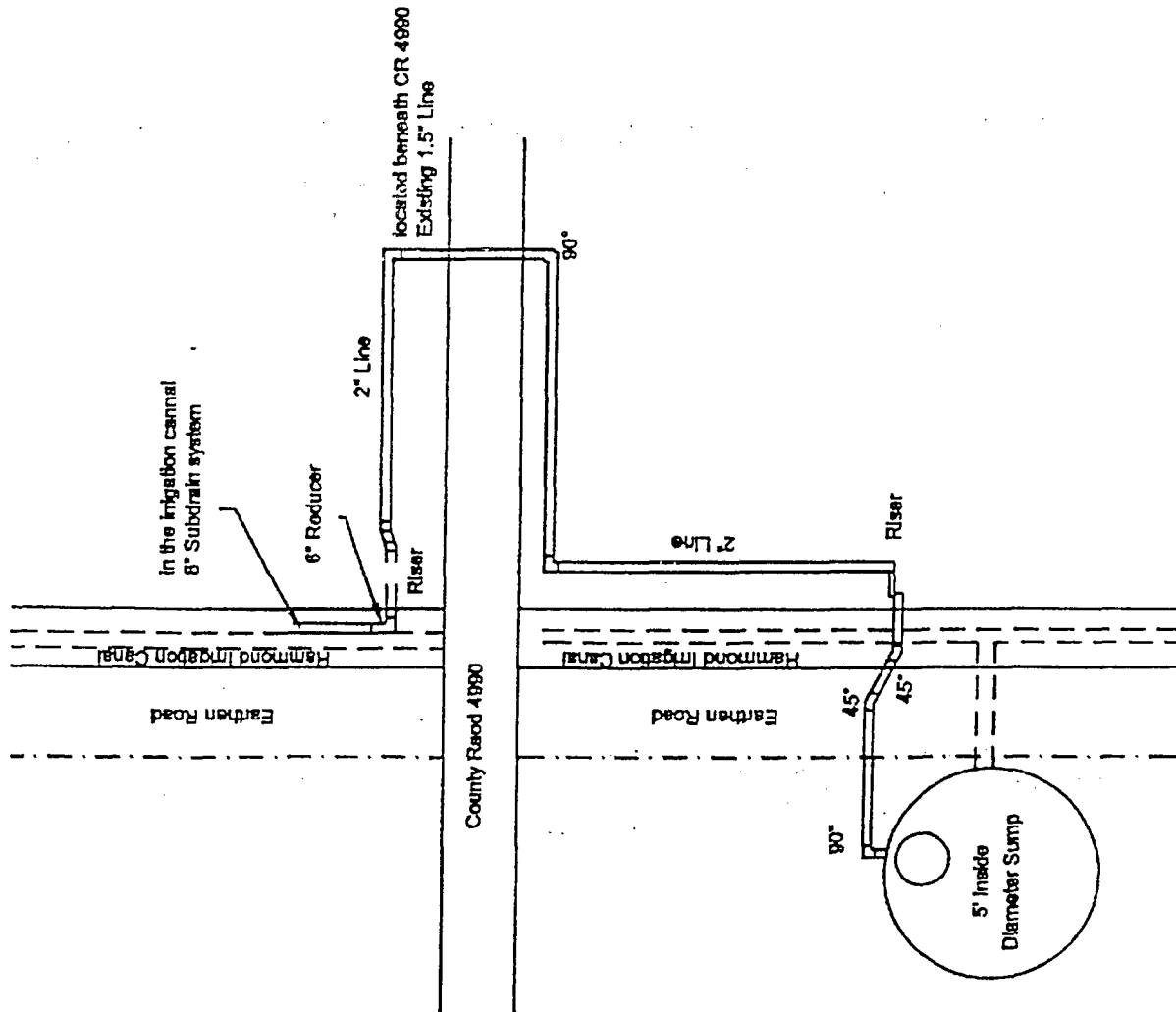
MAIN CANAL (REACH N55/45)

54 587144 4 52 737-01

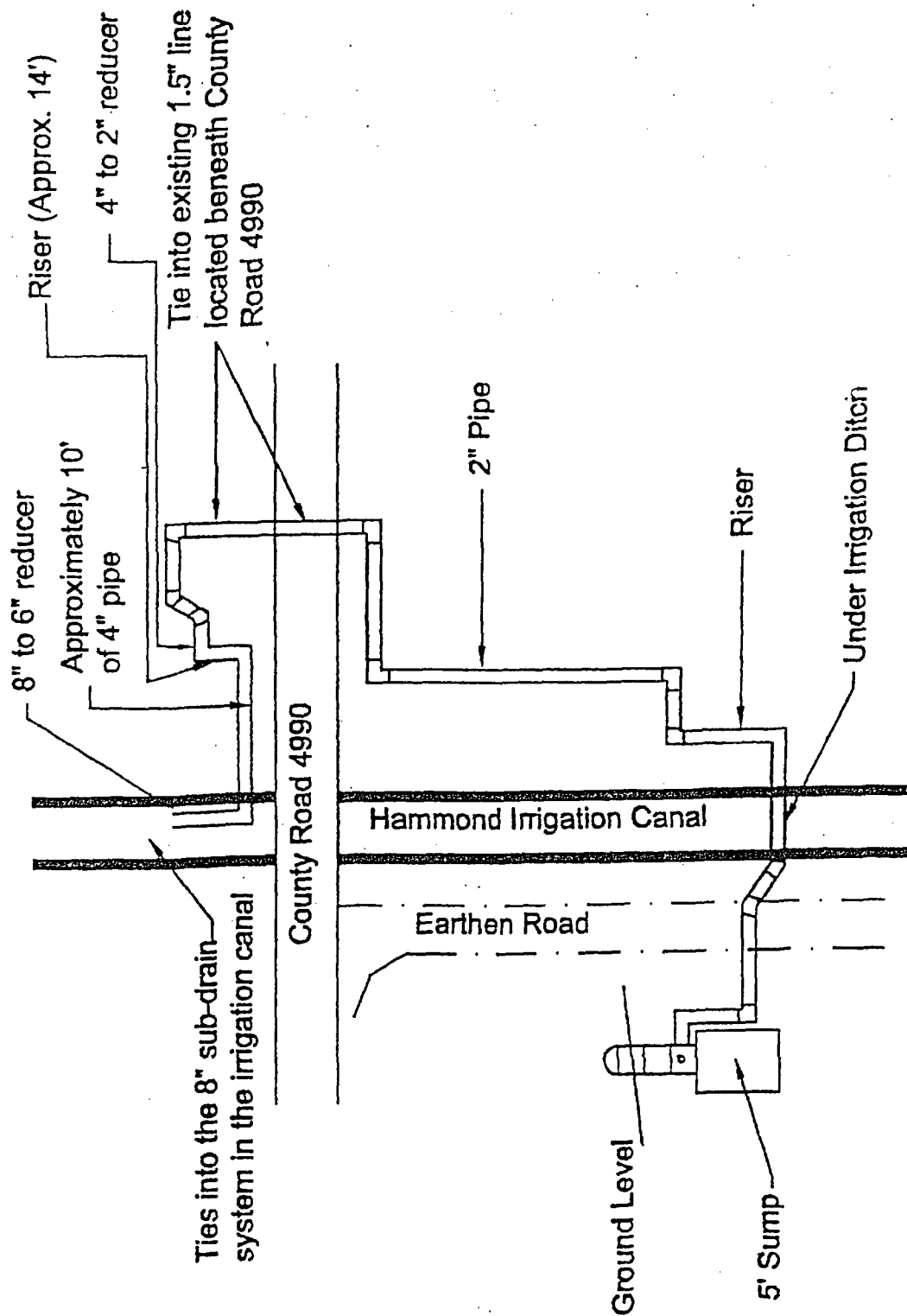
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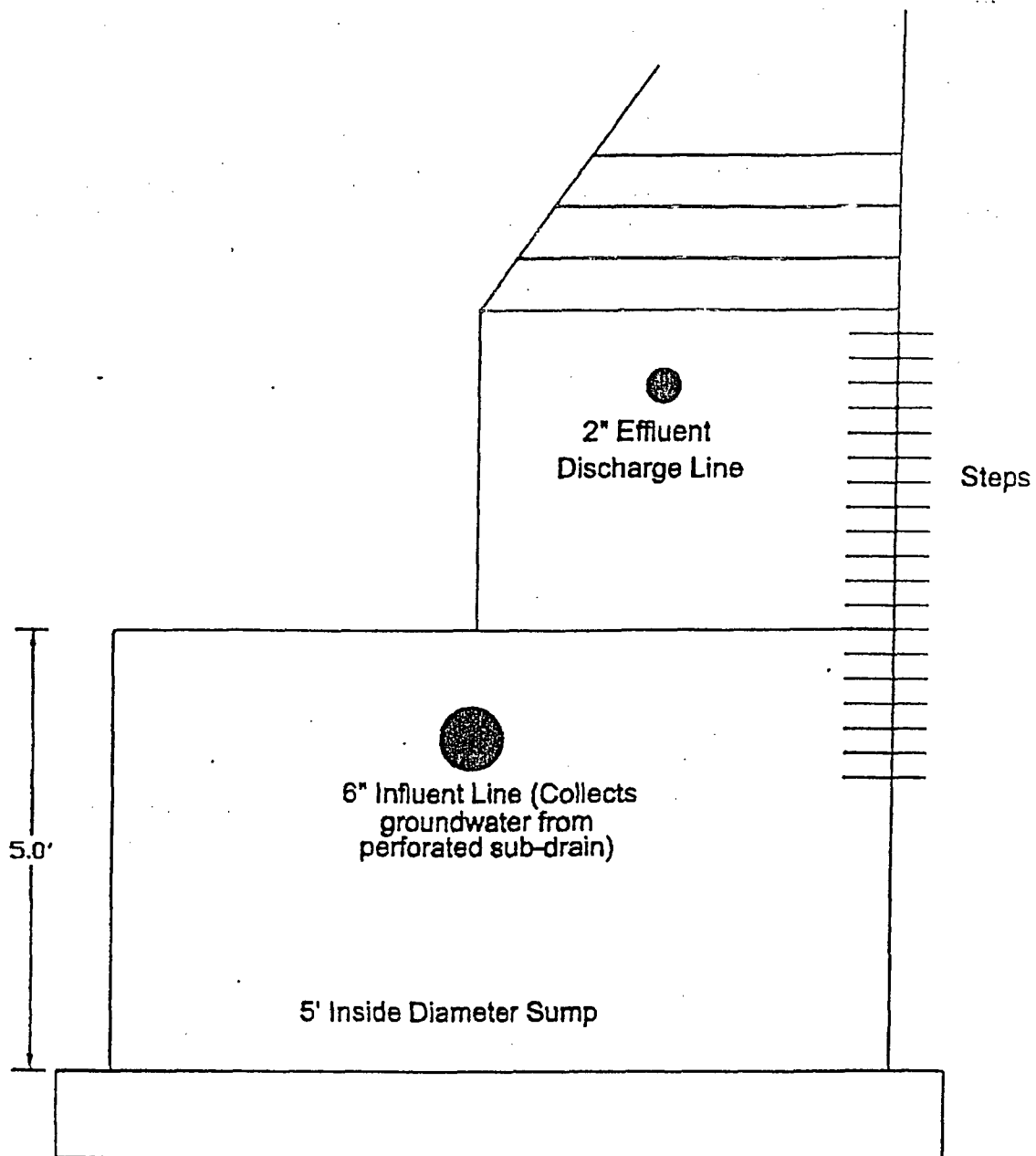
CHARTERED BY THE BOARD OF DIRECTORS OF THE

The 5' I.D. sump collects water from a perforated 6" sub-drain beneath the irrigation canal. The water is pumped from the sump into the 2" line located approximately 2' beneath the irrigation canal and approximately 4' beneath ground surface of the ditch bank on each side of the canal.



The 8" sub-drain north of CR 4990 receives the groundwater from the south collection system. From the sub-drain an 8" to 6" reducer is used. At the next 90° (detailed on the side view) a 6" to 4" reducer followed by a 4" line approximately 10' in length is used. A 4" riser approximately 14' in height brings the line to the elevation needed to connect to the existing 1.5" line. A 4" to 2" reducer followed by a 2" line connects the 4" riser to the 1.5" line beneath the road.





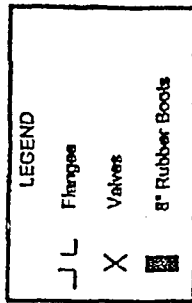
Giant Groundwater
Collection System
Bloomfield, New Mexico
AMEC Project No. 2-517-000001

amec
8519 Jefferson NE
Albuquerque, New Mexico 87113

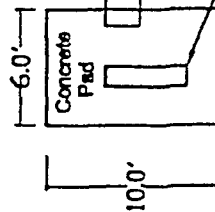
**South Collection
System Tank**

Figure No.
3

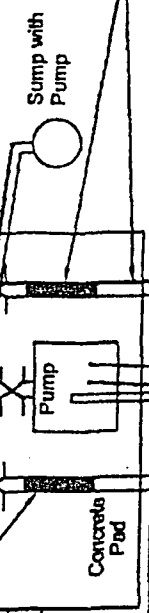
Date Drawn: 8 July 2002 Drawn By: RJT Checked By: LW



8" Influent Line - Collects groundwater from western portion of the perforated subdrain.



8' Steps Inside Berm



8" Influent Line - Collects groundwater from eastern portions of the perforated subdrain.

Roadway

Effluent discharge line

Hammond Irrigation Canal

The tank collects groundwater from the two 8" Influent lines connected to the perforated sub-drain beneath the irrigation canal. The water is pumped to a 4" welded steel line beneath the road canal, and up the embankment south of the tank.

Giant Groundwater Collection System
Bloomfield, New Mexico
AMEC Project No. 2-517-000001

amec
8510 Jefferson NE
Albuquerque, New Mexico 87115

North Collection System

Figure No. 4

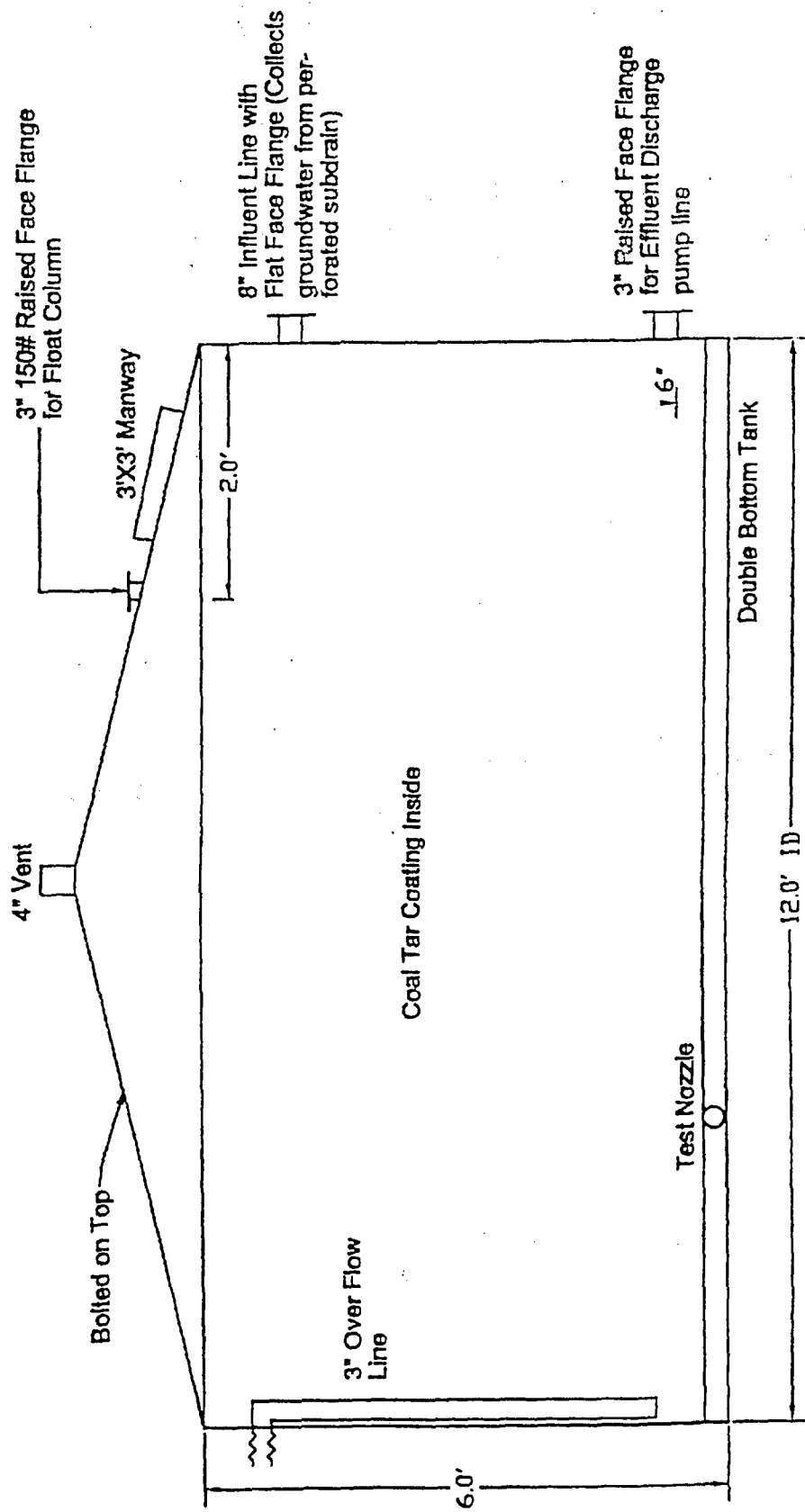
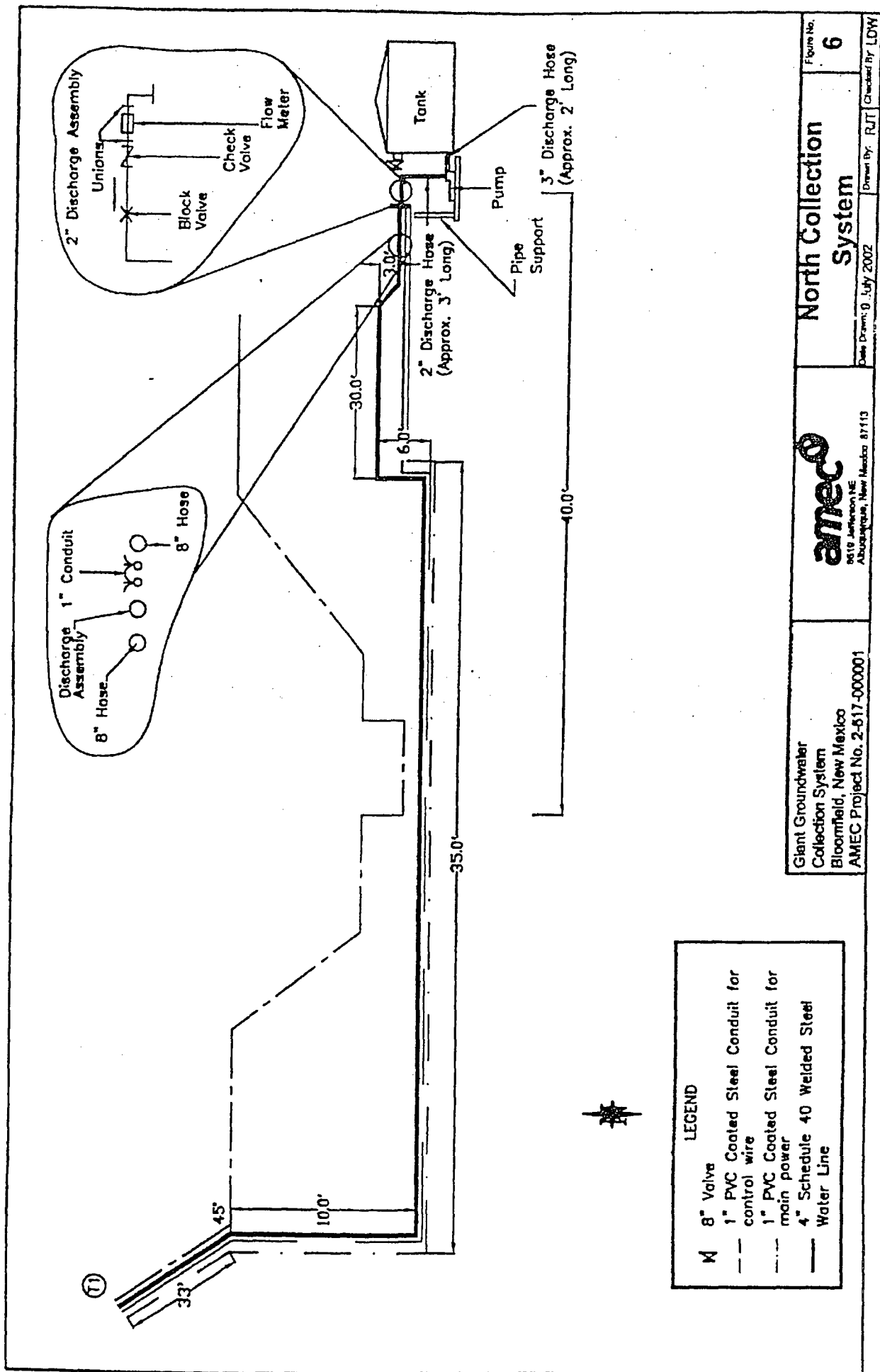
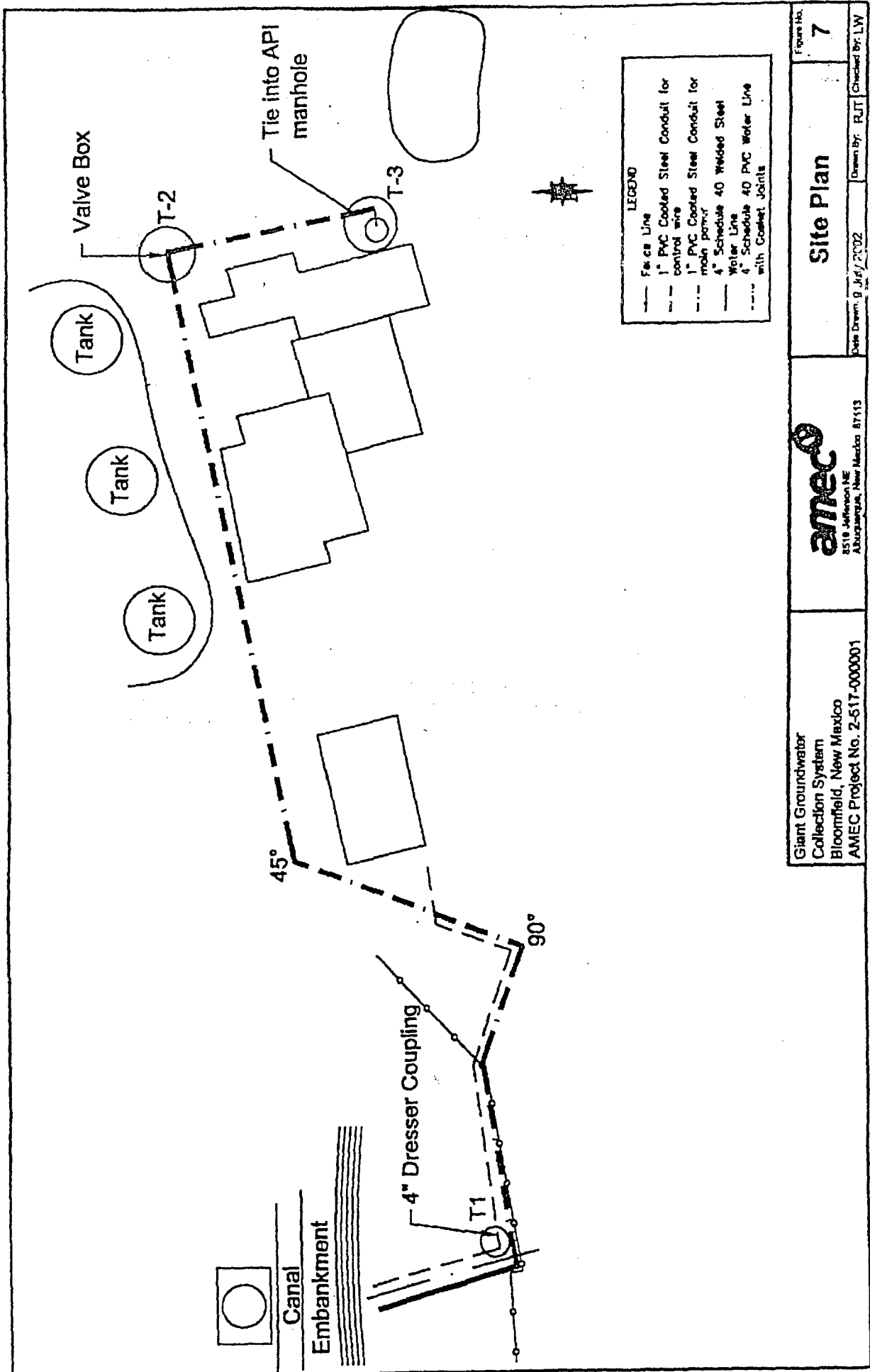
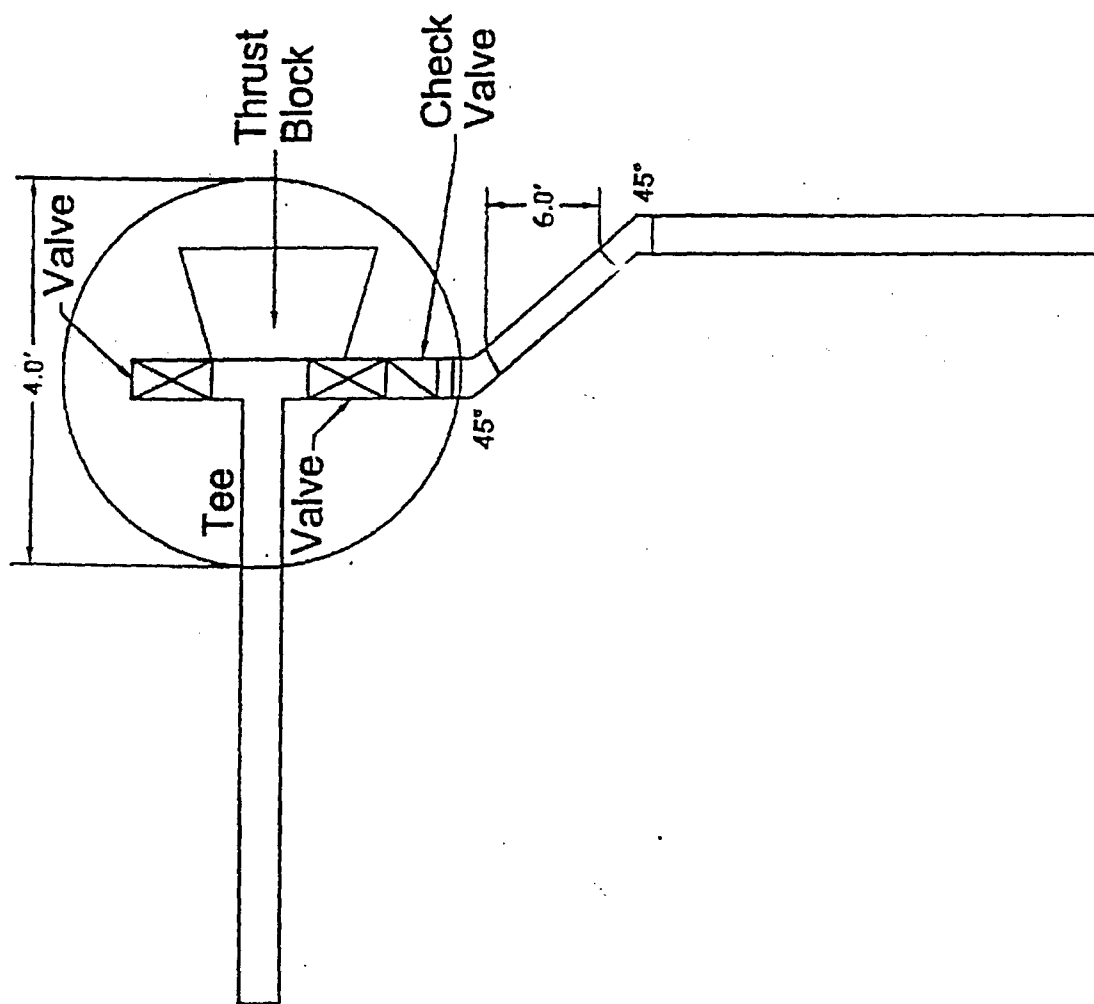


Figure No 5	North Collection System Tank	amec 8518 Jefferson NE Albuquerque, New Mexico 87119	Giant Groundwater Collection System Bloomfield, New Mexico AMEC Project No. 2-517-000001
Drawn By: RUT Checked By: LUT Date: 5 July 2002			



Giant Groundwater Collection System Bloomfield, New Mexico AMEC Project No. 2-617-000001	amec 9619 Jefferson NE Albuquerque, New Mexico 87113	North Collection System	Figure No. 6 Date Drawn: 9 July 2002 Drawn By: RJT Checked By: LDW
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Inside Diameter of valve can
is 4.0'. Height of valve can
is 5.0' with 4.0' beneath
ground surface and 1' above.

Giant Groundwater
Collection System
Bloomfield, New Mexico
AMEC Project No. 2-517-000001

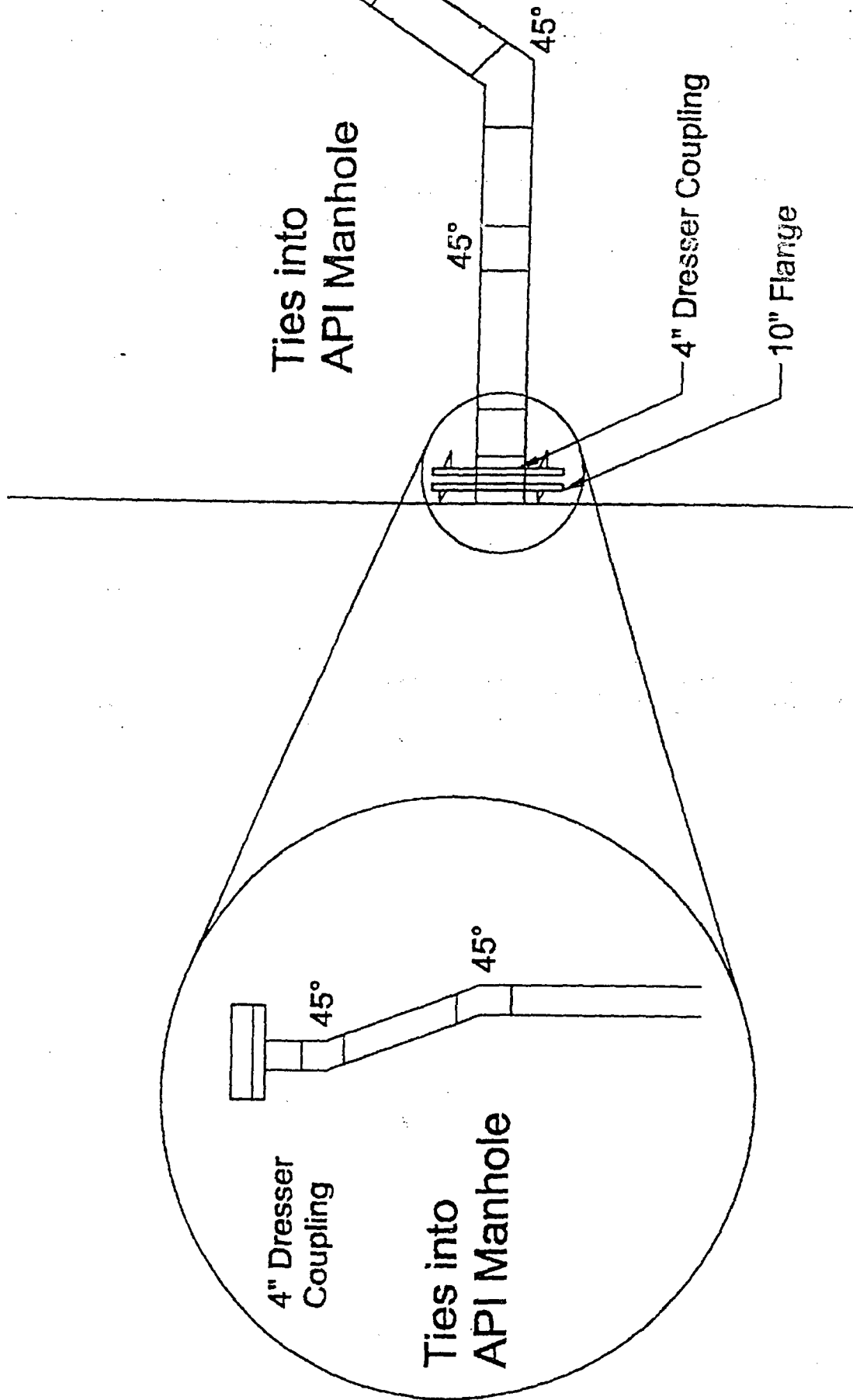
amec
9710 Jefferson NE
Albuquerque, New Mexico 87115

Site Plan - T2

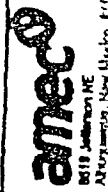
Figure No. 8

Date Drawn: 8 July 2007

Drawn By: [illegible]

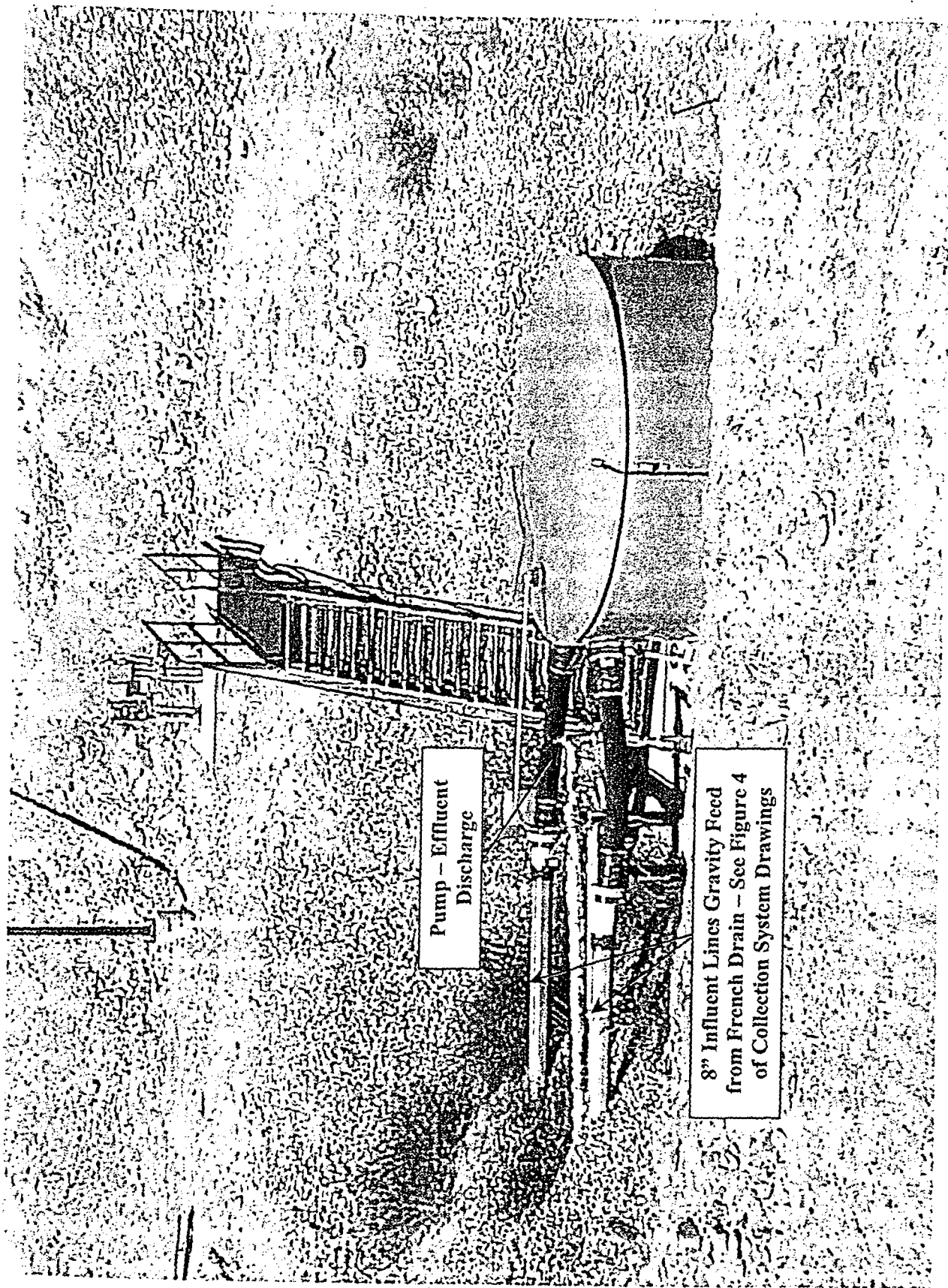


Giant Groundwater
Collection System
Bloomfield, New Mexico
AMEC Project No. 2-517-000001



Site Plan - T3

Form No 9



Recovery Tank 37

TANK #37 METER READINGS 2002					
Date	Time	Hours	Reading	Gallons	Flow Rate(gal/min)
2/26/02	2:40 PM		12600		
2/27/02	7:14 AM	16.50	20900	8300	8.4
2/28/02	7:52 AM	24.50	30500	9600	6.5
3/1/02	6:42 AM	23.00	40200	9700	7.0
3/4/02	7:00 AM	72.00	69100	28900	6.7
3/12/02	1:20 PM	198.50	150700	81600	6.9
3/25/02	9:13 AM	308.00	245800	95100	5.1
4/4/02	9:15 AM	240.00	303900	58100	4.0
4/9/02	7:00 AM	120.00	333200	29300	4.1
4/15/02	11:00 AM	148.00	367400	34200	3.9
4/17/02	11:25 AM	48.50	378100	10700	3.7
4/22/02	9:49 AM	118.00	403900	25800	3.6
4/25/02	9:00 AM	72.00	418500	14600	3.4
4/29/02	7:15 AM	94.00	436300	17800	3.2
5/2/02	8:30 AM	74.00	451000	14700	3.3
5/10/02	8:00 AM	192.00	484400	33400	2.9
5/13/02	12 NOON	76.00	494700	10300	2.3
5/14/02	9:20 AM	21.50	499400	4700	3.6
5/20/02	10:00 AM	143.50	521100	21700	2.5
5/23/02	1:21 PM	75.50	531600	10500	2.3
5/28/02	9:20 AM	116.00	547300	15700	2.3
5/31/02	7:40 AM	70.50	555400	8100	1.9
6/3/02	7:15 AM	71.50	565600	10200	2.4
6/4/02	7:00 AM	24.00	568500	2900	2.0
6/6/02	7:00 AM	24.00	573900	5400	3.8
6/7/02	7:00 AM	24.00	575800	1900	1.3
6/10/02	7:35 AM	72.50	583600	7800	1.8
6/11/02	7:35 AM	24.00	587300	3700	2.6
6/13/02	7:40 AM	48.00	593000	5700	2.0
7/9/02	7:20 AM	624.00	653300	60300	1.6
7/10/02	11:30 AM	28.00	655000	1700	1.0
7/12/02	7:45 AM	44.00	659000	4000	1.5
7/15/02	7:40 AM	72.00	665700	6700	1.6
7/16/02	10:00 AM	26.50	668100	2400	1.5
7/18/02	7:30 AM	45.50	671900	3800	1.4
7/22/02	8:00 AM	96.50	678100	6200	1.1
7/29/02	7:20 AM	167.50	690900	12800	1.3
7/31/02	7:00 AM	47.50	694800	3900	1.4
8/6/02	7:50	144.00	705300	10500	1.2
8/12/02	7:20 AM	144.00	714500	9200	1.1
8/13/02	9:30 AM	26.00	716000	1500	1.0
8/15/02	7:30 AM	46.00	718700	2700	1.0
8/21/02	7:15 AM	144.00	721700	3000	0.3

***CLOSED

***OPEN

**METER
BROKEN

***FLOW METER DETERIORATED THROUGH CONTACT WITH HYDROCARBONS
REPLACED OCTOBER 10,2002

TANK #37 METER READINGS 2002					
Date	Time	Hours	Reading	Gallons	Flow Rate(gal/min)
10/11/02	8:00AM		34.9		
10/16/02	7:30AM	119.50	124.4	3759	0.5
10/22/02	12:30PM	149.00	301.5	7438.2	0.8
10/25/02	9:30AM	69.00	386.9	3586.8	0.9
10/28/02	10:00AM	72.50	478.6	3851.4	0.9
10/31/02	2:30PM	76.50	581.8	4334.4	0.9
11/4/02	10:30AM	92.00	757.4	7375.2	1.3
11/19/02	10:30AM	360.00	1742.7	41382.6	1.9
11/25/02	10:30AM	144.00	2185.1	18580.8	2.2
12/2/02	11:00AM	168.50	2597.6	17325	1.7
12/6/02	9:00AM	94.00	2800.7	8530.2	1.5
12/11/02	9:00AM	125.00	3010.2	8799	1.2
12/16/02	1:00PM	124.00	3190.3	7564.2	1.0
12/23/02	11:00AM	166.00	3500.5	13028.4	1.3
12/30/02	9:45AM	167.00	3661.3	6753.6	0.7

***NEW METER READING IS IN BARRELS - EXCEL CONVERTS TO GALLONS

*****PUMP BROKE DOWN - BACK IN SERVICE ON 1-10-03

SUMMARY TABLES ANNUAL REPORT 2002

MONITORING WELL #1

DATE SAMPLED	ppm benzene	ppm toluene	ppm ethylbenzene	ppm naphthalene	ppm total xylene	mg/L sulfate	mg/L Iron	mg/L NO3	mg/L D.O.	umhos E.C.
Apr-99	0.003	ND	0.003		0.03					
Oct-99	ND	ND	ND	ND	ND			ND		
Sep-00	ND	ND	ND	ND	ND	130		1.4		
Sep-01	ND	ND	ND	ND	ND					
Aug-02	0.001	ND	0.001	0.002	0.012			2.1	2.8	795

MONITORING WELL #3

DATE SAMPLED	ppm benzene	ppm toluene	ppm ethylbenzene	ppm naphthalene	ppm total xylene	mg/L sulfate	mg/L Iron	mg/L NO3	mg/L D.O.	umhos E.C.
Apr-99	0.005	ND	0.005		0.029					
Oct-99	ND	0.001	ND	ND	ND			15.5		
Sep-00	ND	ND	ND	ND	ND	980		41		
Sep-01	ND	ND	ND	ND	ND					
Aug-02	ND	ND	ND	ND	0.003			14.5	4.8	7358

MONITORING WELL #4

DATE SAMPLED	ppm benzene	ppm toluene	ppm ethylbenzene	ppm naphthalene	ppm total xylene	mg/L sulfate	mg/L Iron	mg/L NO3	mg/L D.O.	umhos E.C.
Apr-99	8.9	ND	0.6		0.33					
Oct-99	8.7	ND	0.76	0.18	0.93			ND		
Sep-00	9.1	ND	0.85	ND	ND	ND		ND		
Sep-01	6.5	ND	0.51	0.16	0.52					
Aug-02	6.5	0.088	1.6	0.41	12			ND	2.8	3222

MONITORING WELL #8

DATE SAMPLED	ppm benzene	ppm toluene	ppm ethylbenzene	ppm naphthalene	ppm total xylene	mg/L sulfate	mg/L Iron	mg/L NO3	mg/L D.O.	umhos E.C.
Apr-99	0.002	ND	0.002		0.023					
Oct-99	ND	0.001	ND	ND	ND	286	ND	3.1		
Sep-00	ND	ND	ND	ND	ND	830	0.07	12		
Sep-01	ND	ND	ND	ND	ND	760	0.31	7.5	13.1	1910
Aug-02	ND	ND	ND	ND	0.002	970	1.5	8.2	3.8	3263

MONITORING WELL #9

DATE SAMPLED	ppm benzene	ppm toluene	ppm ethylbenzene	ppm naphthalene	ppm total xylene	mg/L sulfate	mg/L Iron	mg/L NO3	mg/L D.O.	umhos E.C.
Apr-99	18	0.69	1		6.3					
Oct-99	16	0.11	0.87	ND	5.45			0.7		
Sep-00	15	0.26	0.94	0.51	4.74	13.6		ND		
Sep-01	8.3	1.5	0.82	0.15	5					
Aug-02	10	5.2	1.9	0.48	7.5			ND	ND	2716

MONITORING WELL #11

DATE SAMPLED	ppm benzene	ppm toluene	ppm ethylbenzene	ppm naphthalene	ppm total xylene	mg/L sulfate	mg/L Iron	mg/L NO3	mg/L D.O.	umhos E.C.
Apr-99	2.7	ND	0.33		8.9					
Oct-99	0.91	0.002	0.087	0.022	1.3		14	ND		
Sep-00	0.25	ND	0.015	ND	0.16	46	15.3	ND		
Sep-01	4.2	ND	0.22	0.093	2.7	ND	16	14	13.9	2130
Aug-02	9.1	ND	0.23	ND	1.7	ND	10	5.9	1.1	2140

MONITORING WELL #12

DATE SAMPLED	ppm benzene	ppm toluene	ppm ethylbenzene	ppm naphthalene	ppm total xylene	mg/L sulfate	mg/L Iron	mg/L NO3	mg/L D.O.	umhos E.C.
Apr-99	0.023	ND	0.005		0.13					
Oct-99	0.023	0.002	0.004	ND	0.069			ND		
Sep-00	0.01	ND	0.002	0.002	0.031	2100		ND		
Sep-01	ND	ND	ND	ND	ND					
Aug-02	ND	ND	0.001	ND	0.01			0.7	3.4	3010

MONITORING WELL #27

DATE SAMPLED	ppm benzene	ppm toluene	ppm ethylbenzene	ppm naphthalene	ppm total xylene	mg/L sulfate	mg/L Iron	mg/L NO3	mg/L D.O.	umhos E.C.
Apr-99	ND	ND	ND		0.028					
Oct-99	0.056	ND	0.048	ND	0.44			ND		
Sep-00	0.018	ND	0.01	0.05	0.064	49		ND		
Sep-01	0.009	0.002	0.001	0.003	0.005					
Aug-02	ND	ND	ND	ND	0.017			2.8	1.5	2825

MONITORING WELL #34

DATE SAMPLED	ppm benzene	ppm toluene	ppm ethylbenzene	ppm naphthalene	ppm total xylene	mg/L sulfate	mg/L Iron	mg/L NO3	mg/L D.O.	umhos E.C.
Apr-99	0.11	ND	0.006		0.08					
Oct-99	0.071	ND	0.007	0.067	0.12	80.2	0.73	ND		
Sep-00	0.14	ND	0.017	0.047	0.085	55	5.72	ND		
Sep-01	0.077	ND	0.011	0.056	0.076	ND	7.1	6.9	4.2	2020
Aug-02	0.044	ND	ND	0.034	ND	9.1	9.6	8.2	3.8	3263

MONITORING WELL #35

DATE SAMPLED	ppm benzene	ppm toluene	ppm ethylbenzene	ppm naphthalene	ppm total xylene	mg/L sulfate	mg/L Iron	mg/L NO3	mg/L D.O.	umhos E.C.
Apr-99	0.006	ND	ND	ND	0.059					
Oct-99	0.002	ND	ND	ND	0.014	18	0.12	0.8		
Sep-00	0.021	ND	0.005	0.01	0.1	120	2.77	ND		
Sep-01	0.002	ND	ND	0.004	0.015	27	12	10	6.9	2170
Aug-02	0.01	ND	0.002	0.032	0.052	28	9.3	1.1	2.1	1923

MONITORING WELL #36

DATE SAMPLED	ppm benzene	ppm toluene	ppm ethylbenzene	ppm naphthalene	ppm total xylene	mg/L sulfate	mg/L Iron	mg/L NO3	mg/L D.O.	umhos E.C.
Apr-99	ND	ND	ND		0.054					
Oct-99	ND	ND	0.005	0.009	0.075			ND		
Sep-00	0.008	ND	0.015	0.015	0.15	90		ND		
Sep-01	0.002	ND	0.001	0.01	0.052					
Aug-02	ND	ND	ND	0.024	0.08			ND	2.4	1386

RECOVERY WELL #15

Date SAMPLED	ppm benzene	ppm toluene	ppm ethylbenzene	ppm naphthalene	ppm total xylene	mg/L sulfate	mg/L Iron	mg/L NO3	mg/L D.O.	umhos E.C.
Apr-99	14	25	6.9		35.4					
Oct-99	7.4	9.2	2.7	0.59	17.1		23.8	ND		
Sep-00	7.6	14	3.3	0.89	14	2.26	3.42	ND		
Sep-01	9	17	4.4	0.82	25	ND	5.7	4.2	6.3	2900
Aug-02	12	19	3.8	0.58	22	50	5.2	4.9	2	3940

RECOVERY WELL #17

Date SAMPLED	ppm benzene	ppm toluene	ppm ethylbenzene	ppm naphthalene	ppm total xylene	mg/L sulfate	mg/L Iron	mg/L NO3	mg/L D.O.	umhos E.C.
Aug-02	1.9	ND	1.3	1.4	11					

SEEP #2

DATE SAMPLED	ppm benzene	ppm toluene	ppm ethylbenzene	ppm naphthalene	ppm total xylene	mg/L sulfate	mg/L Iron	mg/L NO3	mg/L D.O.	umhos E.C.
Sep-01	0.028	ND	0.003	0.009	0.016					
Aug-02						UNABLE TO SAMPLE - NO WATER (DRY) IN SEEP				

SEEP #3

DATE SAMPLED	ppm benzene	ppm toluene	ppm ethylbenzene	ppm naphthalene	ppm total xylene	mg/L sulfate	mg/L Iron	mg/L NO3	mg/L D.O.	umhos E.C.
8/29/02	0.57	0.33	0.17	0.097	0.87			ND	6.8	2348

SEEP #5

DATE SAMPLED	ppm benzene	ppm toluene	ppm ethylbenzene	ppm naphthalene	ppm total xylene	mg/L sulfate	mg/L Iron	mg/L NO3	mg/L D.O.	umhos E.C.
Apr-99	0.056	ND	0.01		0.33					
Oct-99	0.008	ND	0.002	0.012	0.23					
Sep-00	ND	ND	ND	0.011	0.024					
Sep-01	0.015	ND	0.001	0.029	0.21					
Aug-02						UNABLE TO SAMPLE - NO WATER (DRY) IN SEEP				

PIEZOMETER #4

DATE SAMPLED	ppm benzene	ppm toluene	ppm ethylbenzene	ppm naphthalene	ppm total xylene	mg/L sulfate	mg/L Iron	mg/L NO3	mg/L D.O.	umhos E.C.
Dec-02	5.9	ND	4.3	0.42	13					

PIEZOMETER #5

DATE SAMPLED	ppm benzene	ppm toluene	ppm ethylbenzene	ppm naphthalene	ppm total xylene	mg/L sulfate	mg/L Iron	mg/L NO3	mg/L D.O.	umhos E.C.
Dec-02	1.4	ND	4	0.57	20					

*** FOOTNOTES ***

ND : No Determination of Compounds (No Detection)

HAMMOND DITCH ANALYSIS

HAMMOND - WEST OF CR 4990 - SOIL

LOCATION	DATE SAMPLED	MG/KG benzene	MG/KG toluene	MG/KG ethylbenzene	MG/KG naphthalene	MG/KG total xylene	MG/KG TPH
#1 Hammond Bank	Jan-02	2.6	3.3	11		130	3400
#2 Hammond Bank	Jan-02	ND	0.065	0.22		2.2	250
#1 Ditch	Jan-02	ND	ND	ND		0.056	<20
#2 Ditch	Jan-02	0.038	ND	0.065		1.5	21

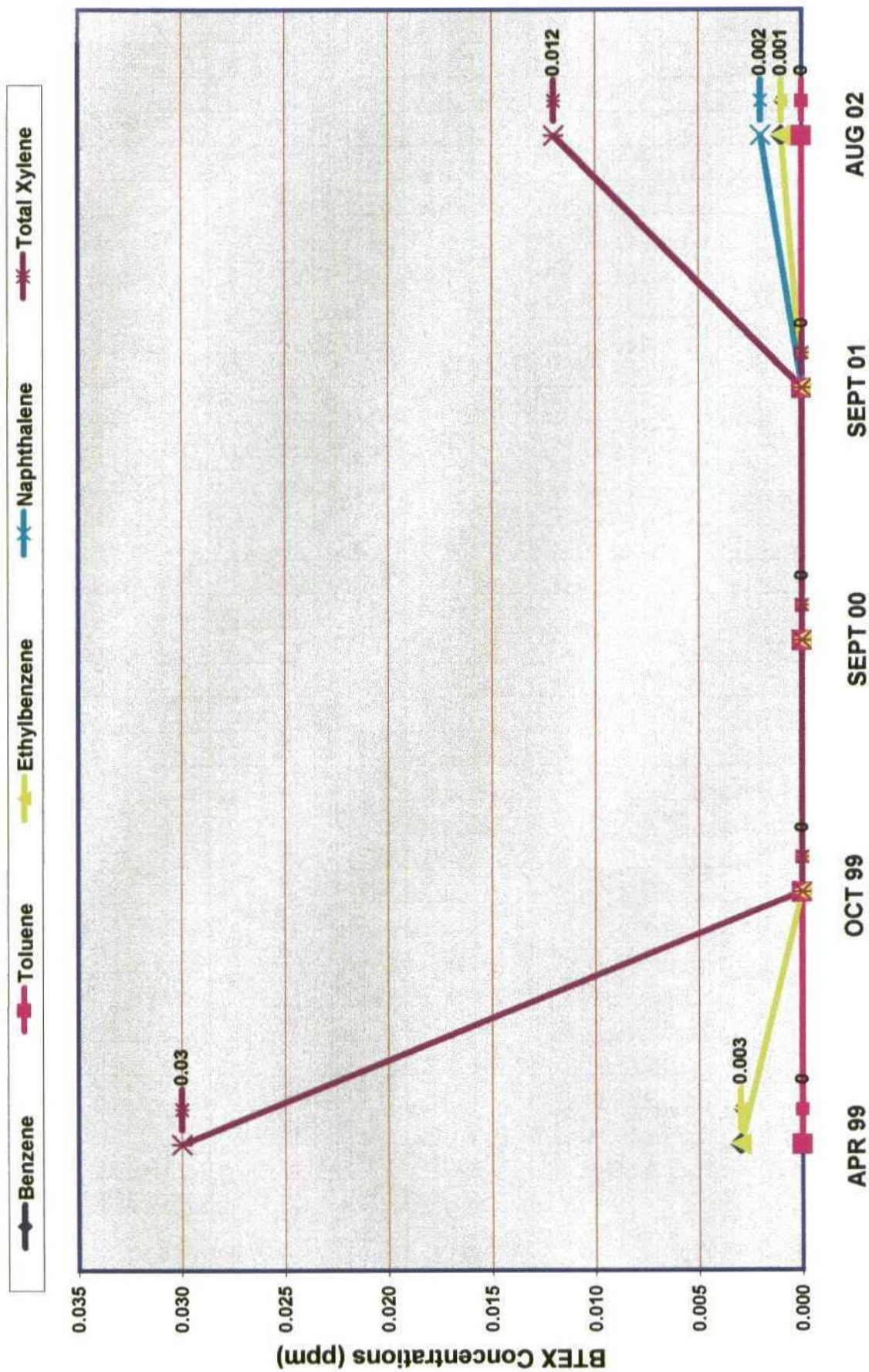
HAMMOND - WEST OF CR 4990 - WATER

LOCATION	DATE SAMPLED	ppm benzene	ppm toluene	ppm ethylbenzene	ppm naphthalene	ppm total xylene	ppm TPH
#1 WATER	Jan-02	0.054	ND	0.022		0.42	
#2 WATER	Jan-02	0.11	ND	0.036		0.7	
#3 WATER (IP#22)	Jan-02	0.44	ND	0.12		2.42	

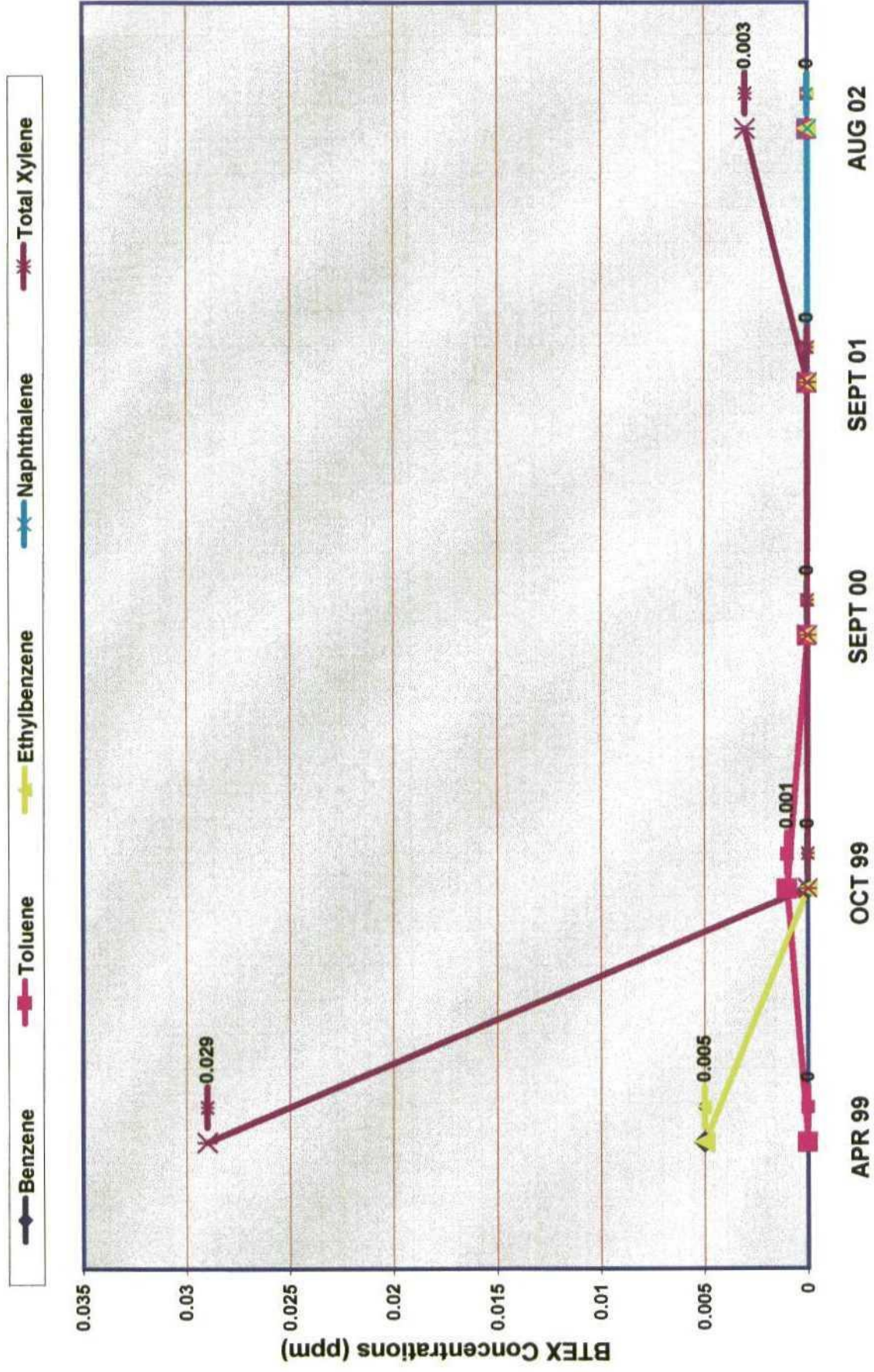
HAMMOND - EAST OUTFALLS - WATER

LOCATION	DATE SAMPLED	ppm benzene	ppm toluene	ppm ethylbenzene	ppm naphthalene	ppm total xylene	ppm TPH
OUTFALL #1	Mar-02	ND	ND	ND		ND	
OUTFALL #2	Mar-02	ND	ND	ND		ND	

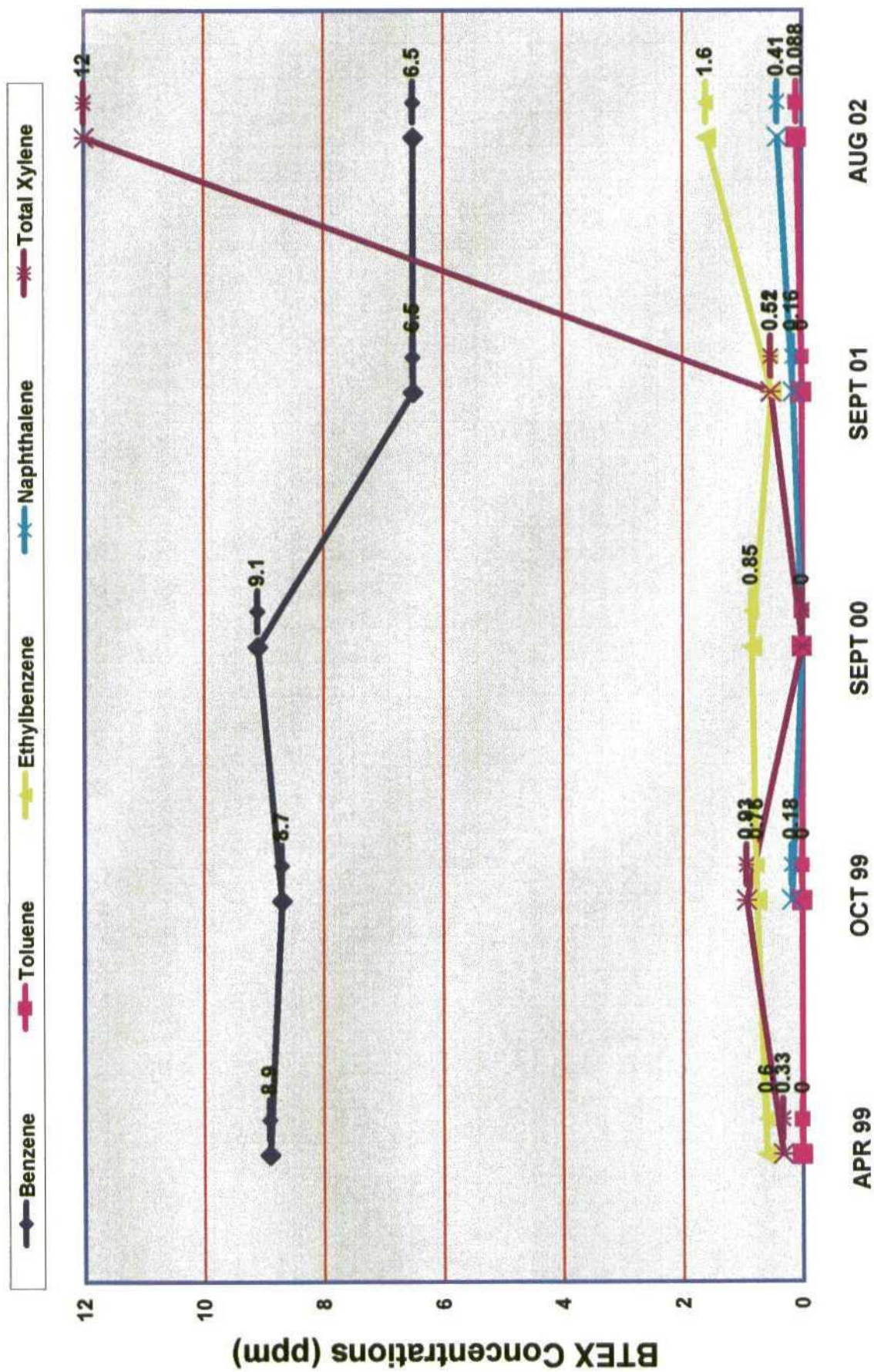
Monitoring Well #1



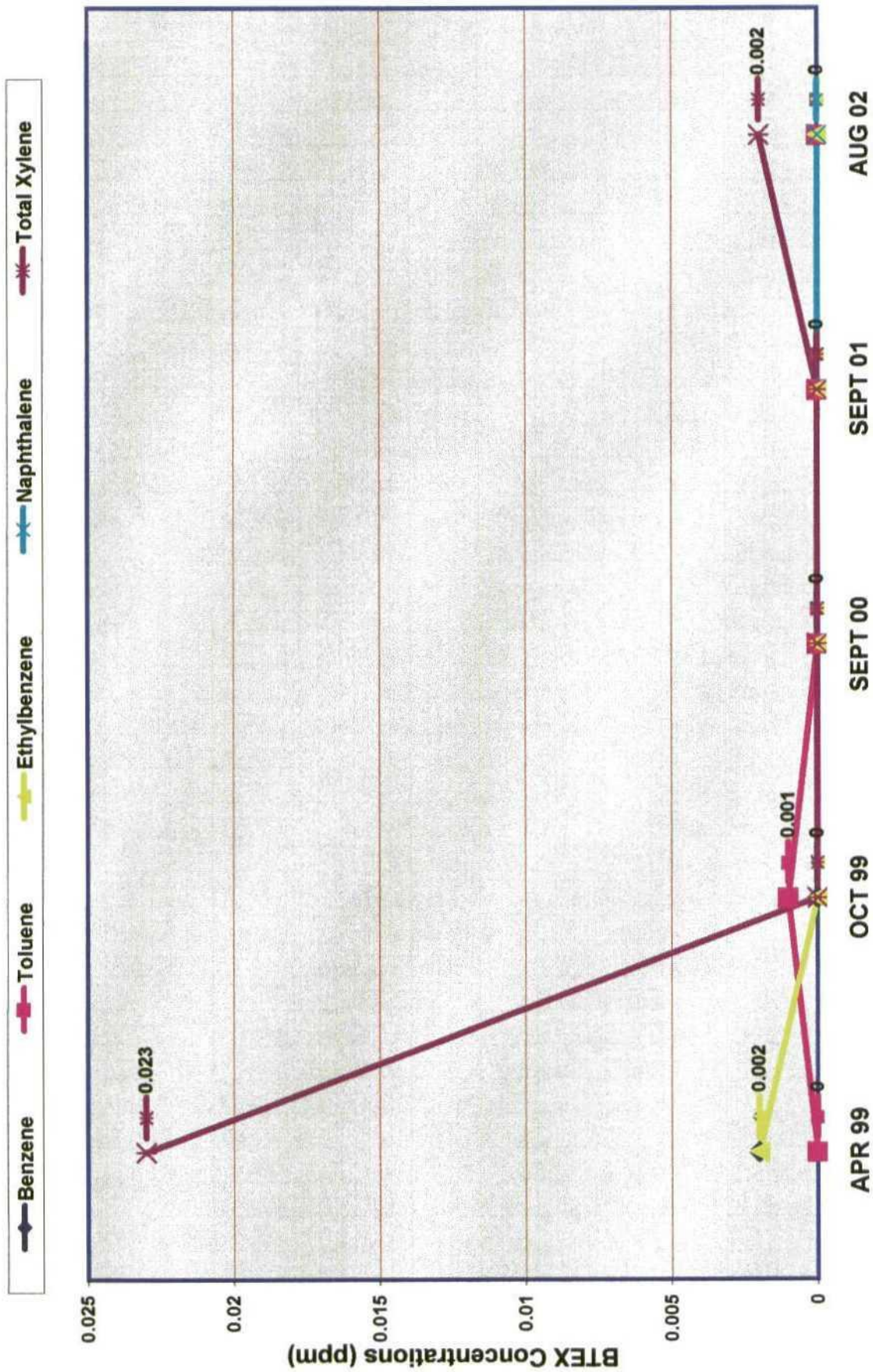
Monitoring Well #3



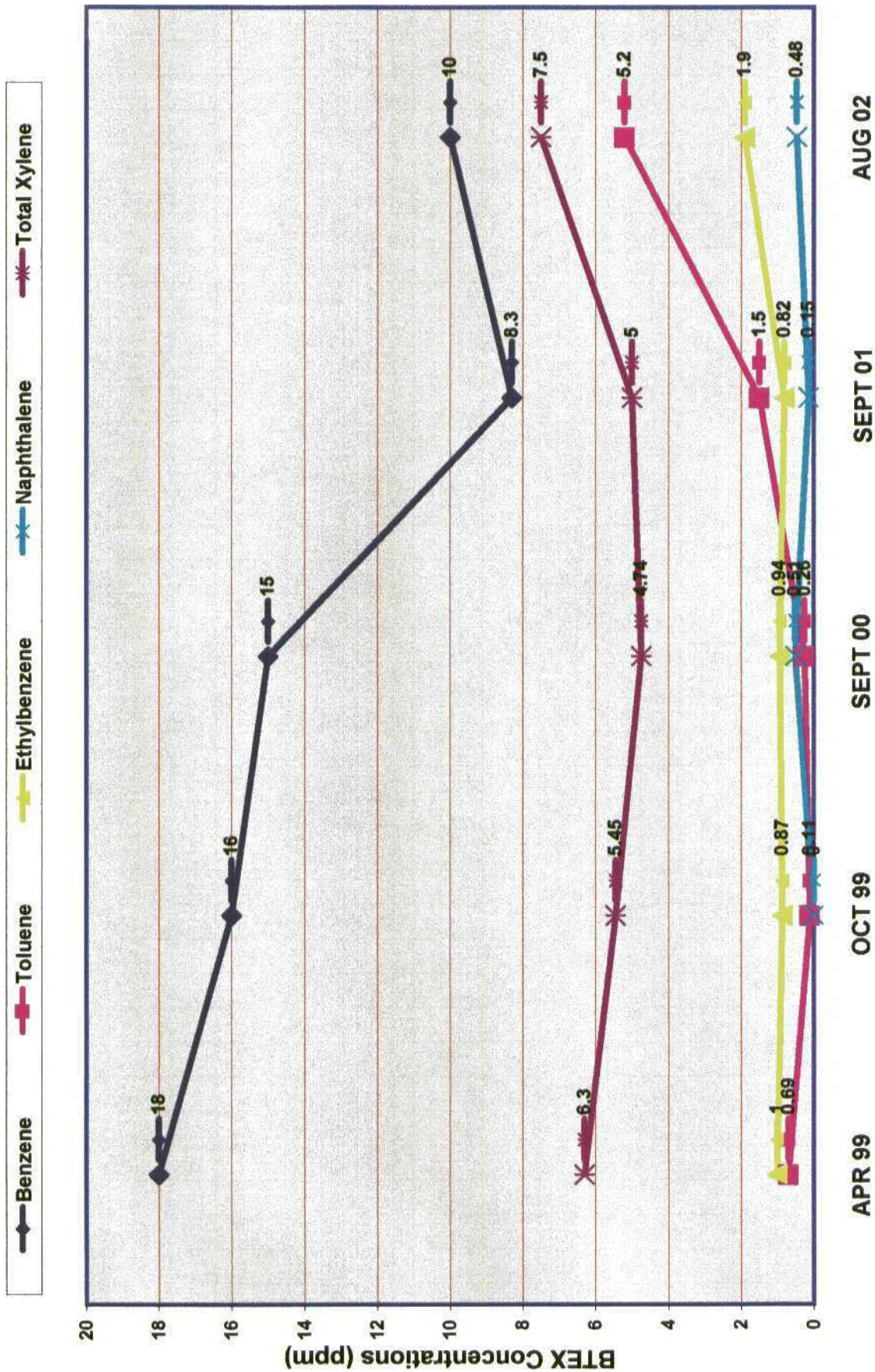
Monitoring Well #4



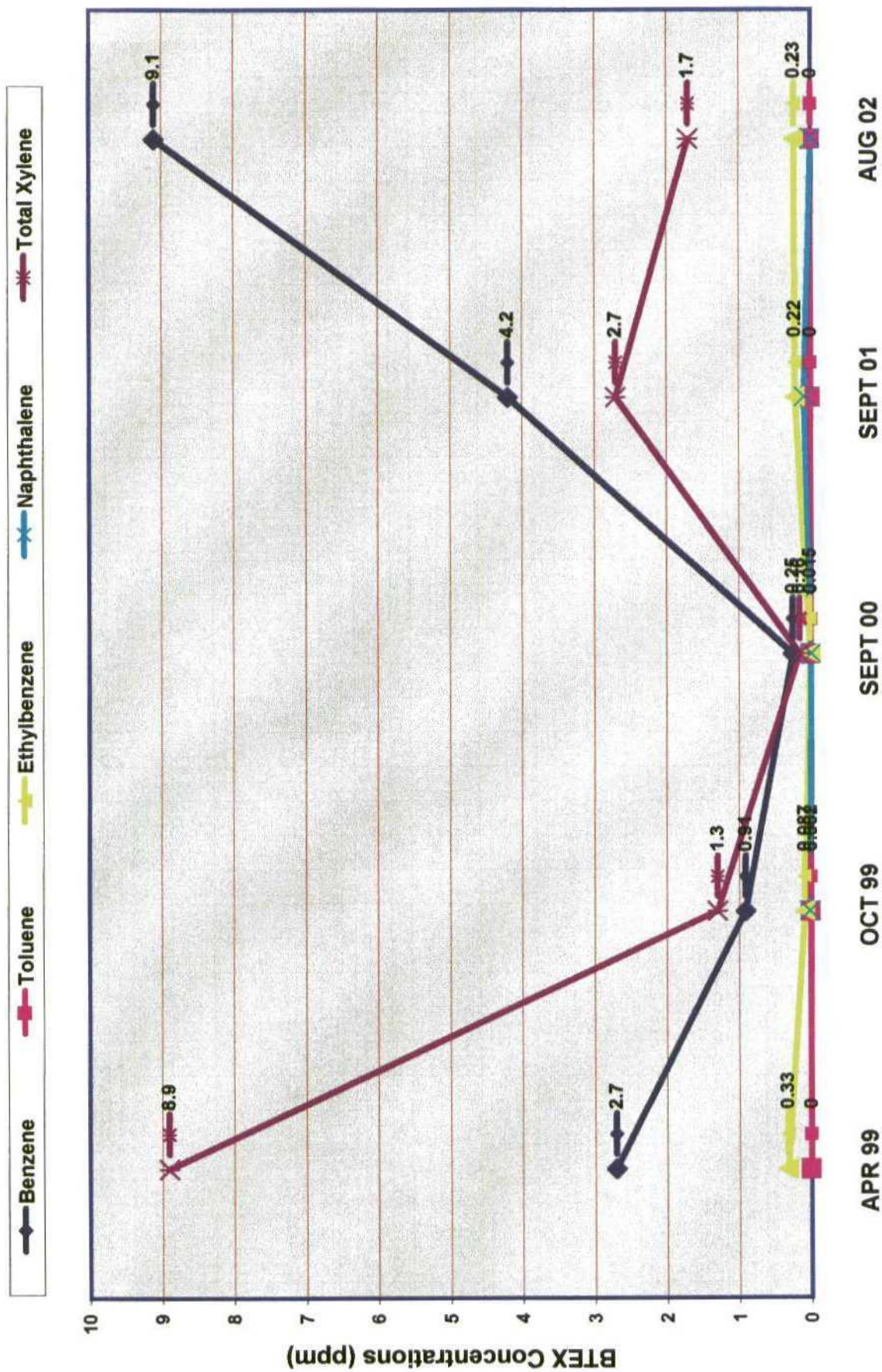
Monitoring Well #8



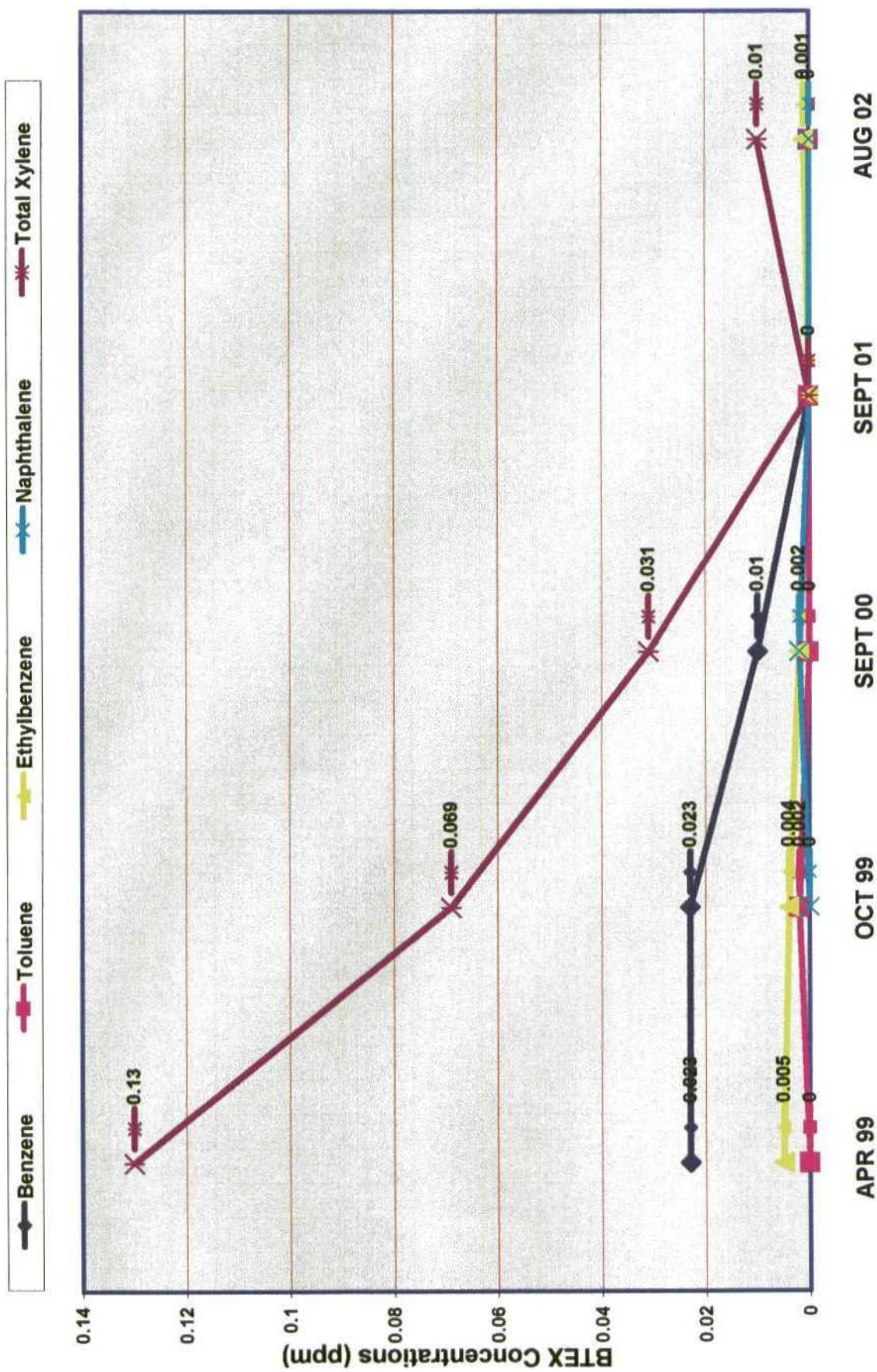
Monitoring Well #9



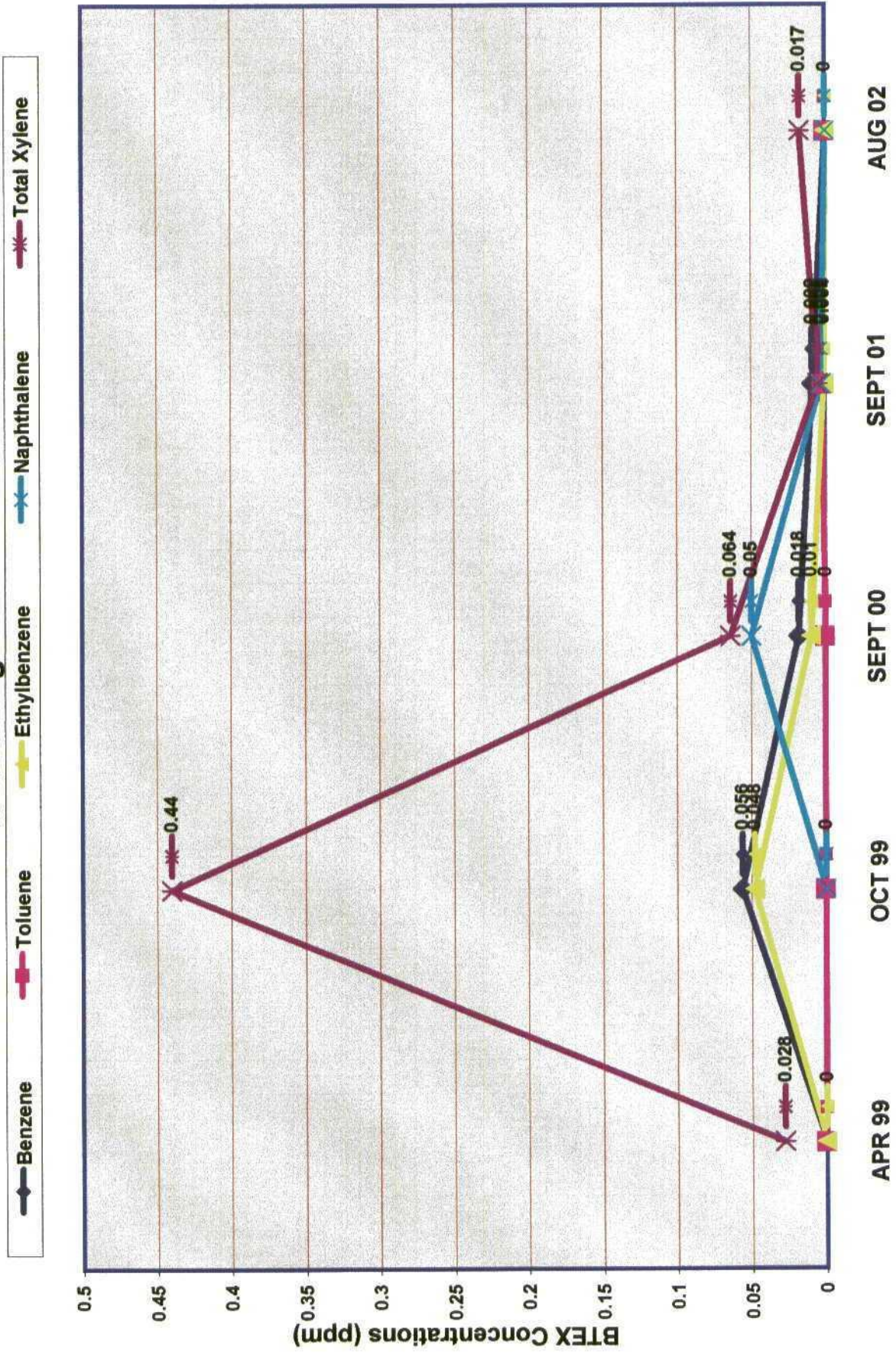
Monitoring Well #11



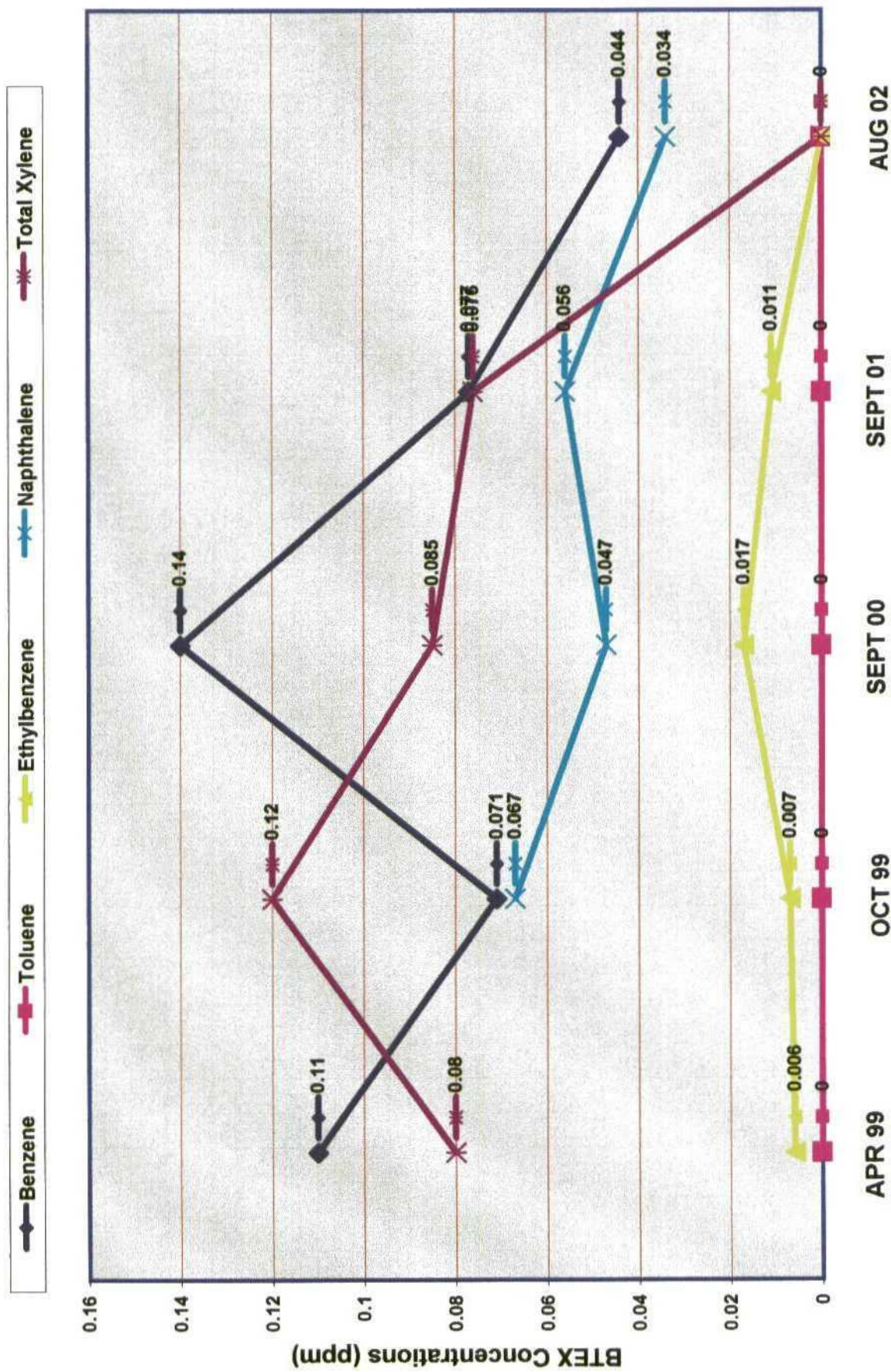
Monitoring Well #12



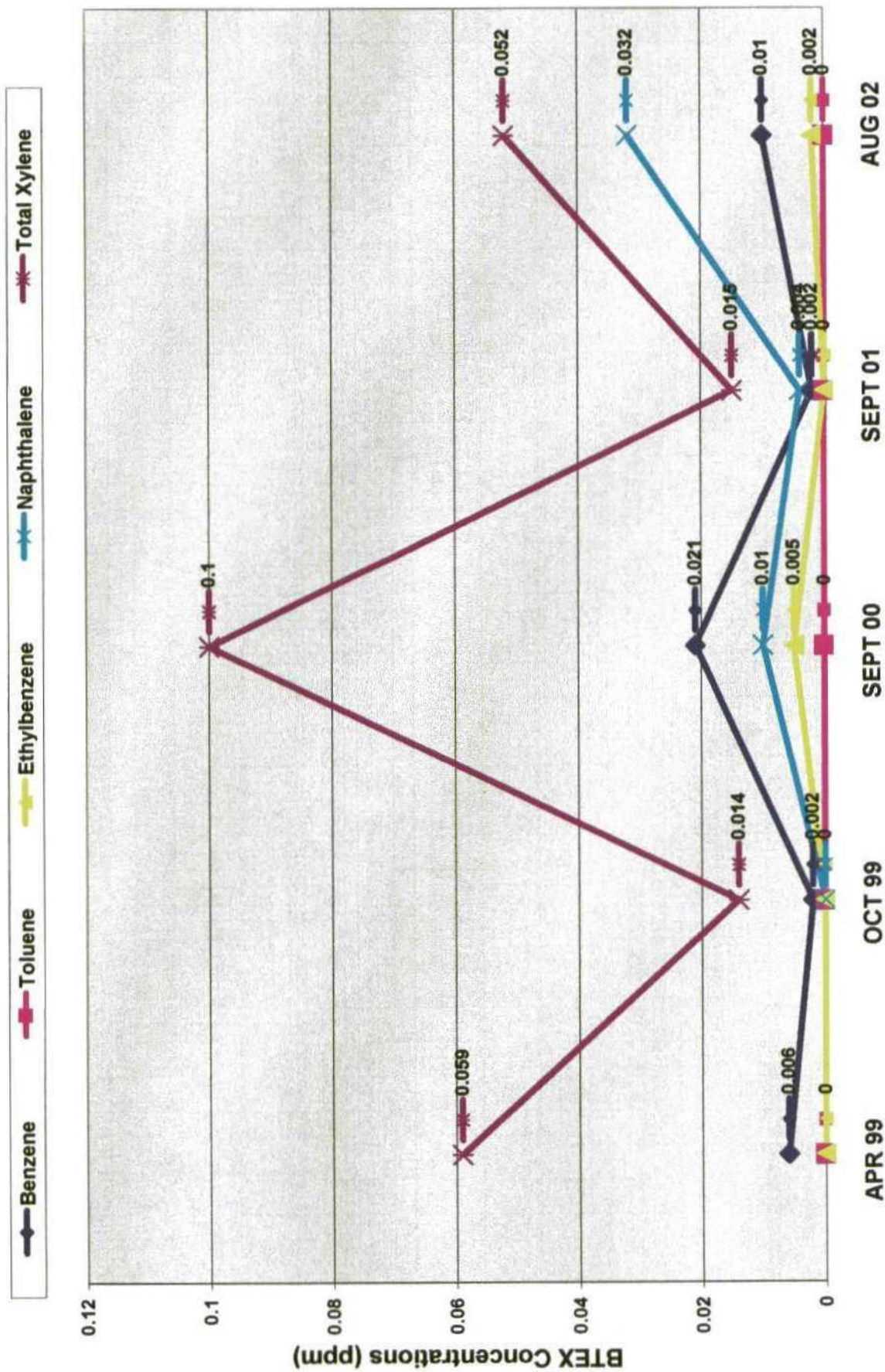
Monitoring Well #27



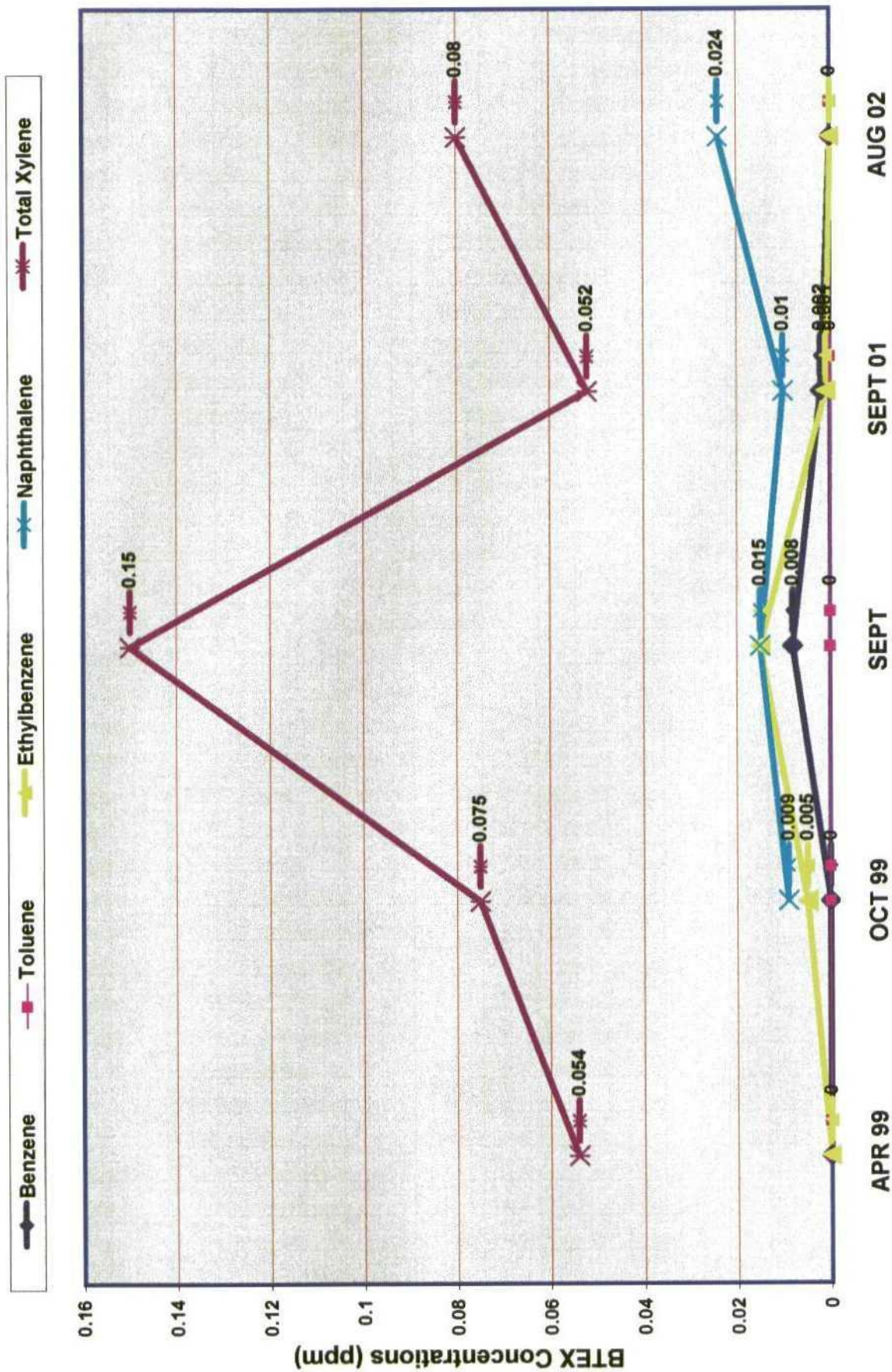
Monitoring Well #34



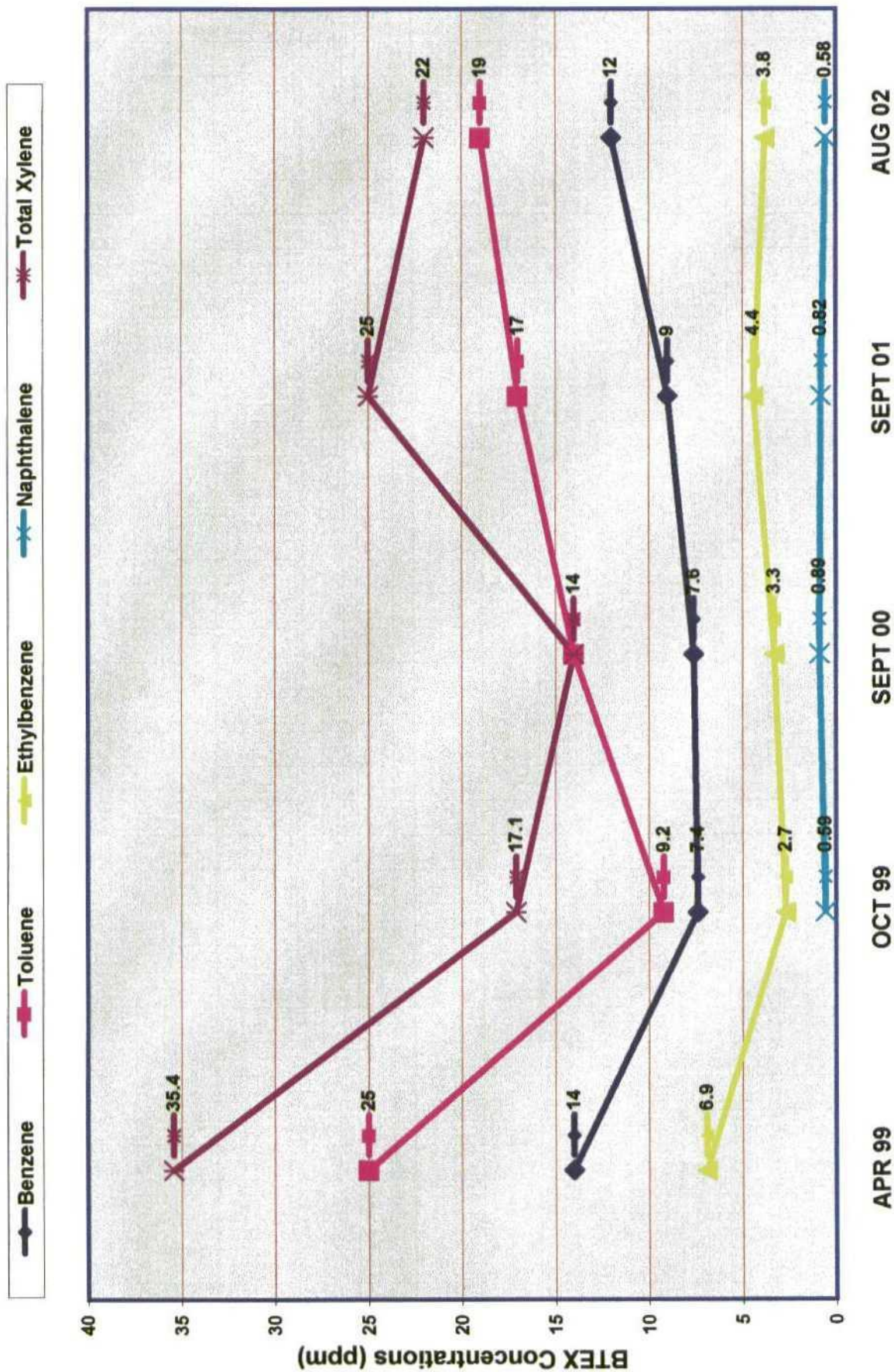
Monitoring Well #35



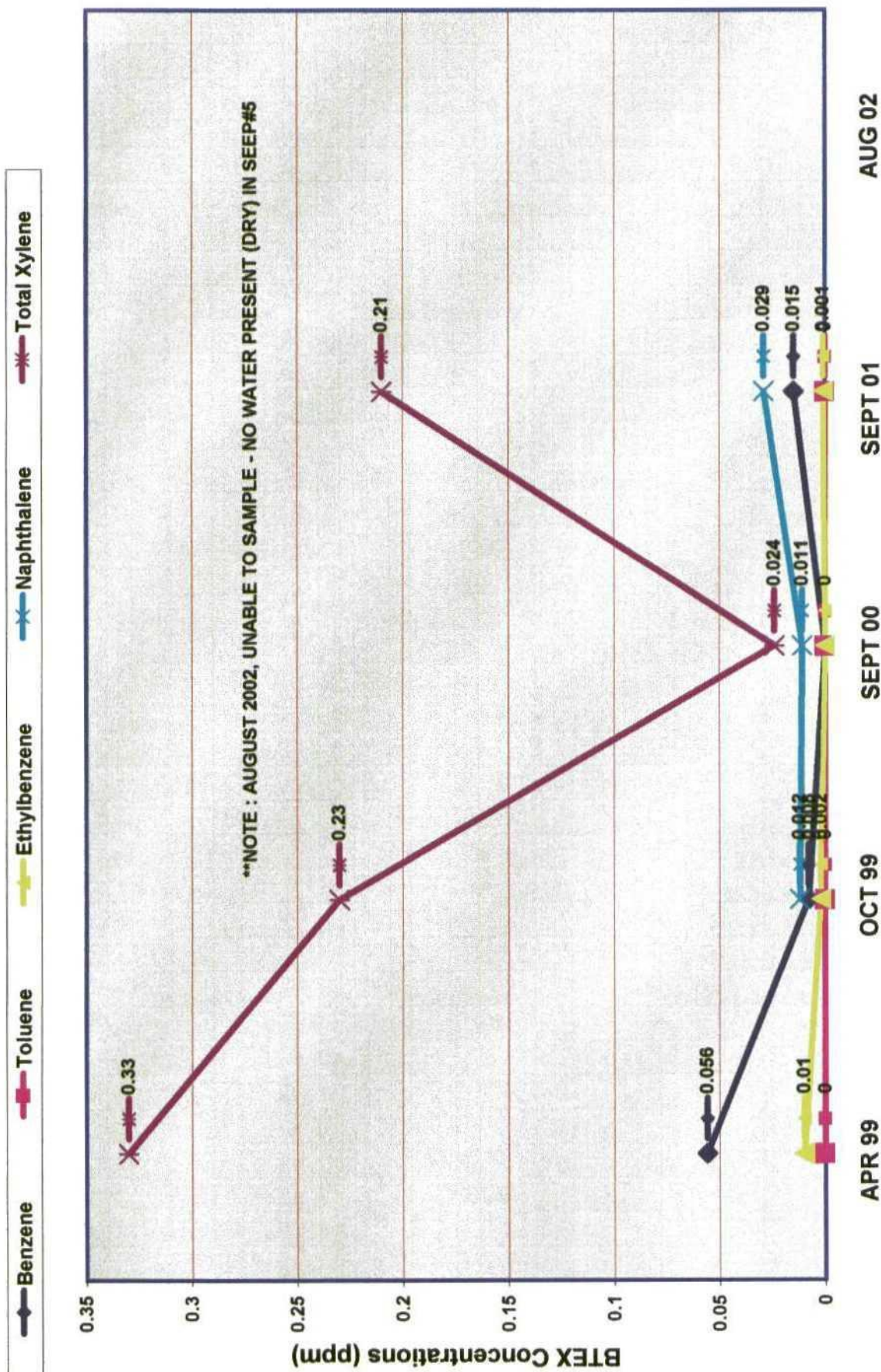
Monitoring Well #36



Recovery Well #15



Seep #5



ANNUAL MW/RW FIELD DATA

DATE	RW/MW	DEPTH TO LIQUID (ft)	SPH	WELL DEPTH	TIME	E.C.	NO3	D.O.	DESCRIPTION	ADDITIONAL TESTING
8/28/02	MW 8	32-9	0	36-0	235PM	3263	8.2	3.8		SO4,FE,BTEX, NAP
8/26/02	MW 11	11'-5"	0	23-0	330PM	2140	5.9	1.1		SO4,FE,BTEX, NAP
8/26/02	MW 34	14-3 1/2	0	21-0	130PM	2130	3.8	2		SO4,FE,BTEX, NAP
8/26/02	MW 35	23-0	0	26-5	4PM	1923	1.1	2.1		SO4,FE,BTEX, NAP
8/29/02	RW 15	35-1	0	43-4	945AM	3940	4.9	2		SO4,FE,BTEX, NAP
8/27/02	MW 1	17-4	0	21-6	430PM	795	2.1	2.8	FILTERED	BTEX, NAP
8/29/02	MW 3	36-2 1/2	0	36-8	10AM	7358	14.5	4.8	FILTERED	BTEX, NAP
8/29/02	MW 4	26-5	12"	30-6	930AM	3222	0	2.8		BTEX, NAP
8/28/02	MW 9	24-8	4"	34-1	4PM	2716	0	0	FILTERED	BTEX, NAP
8/28/02	MW 12	12'-6"	0	15-1	2PM	3010	0.7	3.4		BTEX, NAP
8/28/02	MW 27	22-7	0	24-4	215PM	2825	2.8	1.5	FILTERED	BTEX, NAP
8/27/02	MW 36	21-4	0	23-1	130PM	1386	0	2.4	FILTERED	BTEX, NAP
	RW 1		NOT AVAILABLE FOR TESTING							BTEX, NAP
8/27/02	RW 17	33-4	15"	41-8	245PM	3284	0.9	2.4	KERO,NASTY ICKY	BTEX, NAP

ANNUAL MW/RW FIELD DATA

DATE	RW/MW	DEPTH TO LIQUID (ft)	SPH	WELL DEPTH	TIME	E.C.	NO3	D.O.	DESCRIPTION	ADDITIONAL TESTING
8/29/02	SEEP 2	DRY	DRY	DRY	145PM					BTEX, NAP
8/29/02	SEEP 3	DRIP	DRIP	DRIP	130PM	2348	0	6.8		BTEX, NAP
8/29/02	SEEP 5	5'-0"	0	5'-1"	1PM	NOT ENOUGH TO SAMPLE				BTEX, NAP



MONITOR WELL #4

R.W. #	DATE	DEPTH TO LIQUID (feet)	SPH	WELL DEPTH	LIQUID DESCRIPTION
4	2/22/02	N/A	N/A	N/A	N/A
4	2/27/02	26-0	2"	30-5	SMELLS LIGHT
4	3/4/02	25-9	5"	30-5	SMELLS LIKE GASOLINE
4	3/12/02	25-9	6"	30-7	REFORMATE ODOR
4	3/18/02	26-2	6"	30-9	OILY REFORMATE ODOR
4	3/28/02	26-5	6"	30-9	OILY REFORMATE ODOR
4	4/2/02	26-0	7"	30-6	OILY REFORMATE ODOR
4	4/11/02	26-0	12"	30-8	OILY GASOLINE ODOR
4	4/17/02	26-0	12"	30-8	OILY GASOLINE ODOR
4	4/24/02	26-0	12"	30-8	OILY GASOLINE ODOR
4	4/30/02	26-1	12"	30-8	OILY GASOLINE ODOR
4	5/10/02	26-2	10"	30-8	OILY GASOLINE ODOR
4	5/15/02	26-1	12"	30-8	OILY GASOLINE ODOR
4	5/21/02	26-1	14"	30-7	OILY GASOLINE ODOR
4	5/28/02	N/A	N/A	N/A	N/A
4	6/11/02	26-3	12"	30-7	GASOLINE ODOR
4	6/24/02	26-4	13"	30-7	GASOLINE ODOR
4	7/9/02	26-7	12"	30-7	GASOLINE ODOR
4	7/17/02	26-4	12"	30-6	GASOLINE ODOR
4	7/23/02	26-4	12"	30-6	GASOLINE ODOR
4	7/29/02	26-5	11"	30-6	GASOLINE ODOR
4	8/13/02	26-6	11"	30-6	GASOLINE ODOR



MONITOR WELL #11

R.W. #	DATE	DEPTH TO LIQUID (feet)	SPH	WELL DEPTH	LIQUID DESCRIPTION
11	2/22/02	N/A	N/A	N/A	N/A
11	2/27/02	11'-0'	0	23-0	GOOD
11	3/4/02	10'-8"	0	22-6	GOOD
11	3/12/02	11'-0'	0	22-9	GOOD
11	3/18/02	10'-8"	0	22-7	GOOD
11	3/28/02	10'-8"	0	22-7	GOOD
11	4/2/02	11'-1"	0	23-0	GOOD
11	4/11/02	11'-2"	0	22-9	GOOD
11	4/17/02	10'-9"	0	22-9	GOOD
11	4/24/02	11'-2"	0	22-9	GOOD
11	4/30/02	11'-2"	0	22-9	GOOD
11	5/10/02	11'-3"	0	23-0	GOOD
11	5/15/02	11'-3"	0	23-0	GOOD
11	5/21/02	11'-3"	0	23-0	GOOD
11	5/28/02	N/A	N/A	N/A	N/A
11	6/11/02	11'-3"	0	23-0	GOOD
11	6/24/02	11'-2"	0	22-8	GOOD
11	7/9/02	11'-4"	0	23-0	GOOD
11	7/17/02	11'-1"	0	23-0	GOOD
11	7/23/02	11'-5"	0	23-0	GOOD
11	7/29/02	11'-5"	0	23-0	GOOD
11	8/13/02	11'-5"	0	23-0	GOOD



MONITOR WELL #12

R.W. #	DATE	DEPTH TO LIQUID (feet)	SPH	WELL DEPTH	LIQUID DESCRIPTION
12	2/22/02	11'-4"	0	15-0	GOOD
12	2/27/02	11'-5"	0	15-0	GOOD
12	3/4/02	11'-5"	0	15-0	GOOD
12	3/12/02	11'-4 1/2"	0	15-0	GOOD
12	3/18/02	11'-5"	0	15-0	GOOD
12	3/28/02	11'-5"	0	15-0	GOOD
12	4/2/02	11'-6"	0	15-0	GOOD
12	4/11/02	11'-6"	0	15-0	GOOD
12	4/17/02	11'-7"	0	15-0	GOOD
12	4/24/02	11'-6"	0	15-0	GOOD
12	4/30/02	11'-6"	0	15-0	GOOD
12	5/10/02	11'-8"	0	15-0	GOOD
12	5/15/02	11'-8"	0	15-0	GOOD
12	5/21/02	11'-8"	0	15-0	GOOD
12	5/28/02	N/A	N/A	N/A	N/A
12	6/11/02	12'-0	0	15-0	GOOD
12	6/24/02	12'-1"	0	15-0	GOOD
12	7/9/02	12'-2"	0	15-1	GOOD
12	7/17/02	12'-3"	0	15-0	GOOD
12	7/23/02	12'-2"	0	15-0	GOOD
12	7/29/02	12'-3"	0	15-0	GOOD
12	8/13/02	12'-3"	0	15-0	GOOD



MONITOR WELL #21

R.W. #	DATE	DEPTH TO LIQUID (feet)	SPH	WELL DEPTH	LIQUID DESCRIPTION
21	2/22/02	N/A	N/A	N/A	N/A
21	2/27/02	21-9	0	32-5	SMELLS LIKE DSL
21	3/4/02	22-0	0	32-5	OK
21	3/12/02	24-0	0	32-5	SLIGHT HYDROCARBON ODOR
21	3/18/02	22-0	0	32-5	SLIGHT HYDROCARBON ODOR
21	3/28/02	22-0	0	32-5	SLIGHT HYDROCARBON ODOR
21	4/2/02	22-1	0	30-5	SLIGHT HYDROCARBON ODOR
21	4/11/02	22-1	0	30-4	SLIGHT HYDROCARBON ODOR
21	4/17/02	22-1	0	30-4	SLIGHT HYDROCARBON ODOR
21	4/24/02	22-2	0	30-4	SLIGHT HYDROCARBON ODOR
21	4/30/02	22-1	0	30-4	SLIGHT HYDROCARBON ODOR
21	5/10/02	22-3	0	30-4	SLIGHT HYDROCARBON ODOR
21	5/15/02	22-2	0	30-4	SLIGHT HYDROCARBON ODOR
21	5/21/02	22-2	0	30-3	SLIGHT HYDROCARBON ODOR
21	5/28/02	N/A	N/A	N/A	N/A
21	6/11/02	22-3	0	30-4	SLIGHT HYDROCARBON ODOR
21	6/24/02	22-3	0	30-4	SLIGHT HYDROCARBON ODOR
21	7/9/02	22-3	0	30-4	SLIGHT HYDROCARBON ODOR
21	7/17/02	22-3	0	30-5	SLIGHT HYDROCARBON ODOR
21	7/23/02	22-4	0	30-5	SLIGHT HYDROCARBON ODOR
21	7/29/02	22-3	0	30-5	SLIGHT HYDROCARBON ODOR
21	8/13/02	22-4	0	30-5	SLIGHT HYDROCARBON ODOR



MONITOR WELL #24

R.W. #	DATE	DEPTH TO LIQUID (feet)	SPH	WELL DEPTH	LIQUID DESCRIPTION
24	2/22/02	14-9	0	15-1	SMELLS LIGHT-- API
24	2/27/02	14-9	0	15-1	SMELLS LIGHT-- API
24	3/4/02	15-0	0	15-1	SMELLS LIGHT-- API
24	3/12/02	15-0	0	15-1	SMELLS LIGHT-- API
24	3/18/02	15-0	0	15-1	SMELLS LIGHT-- API
24	3/28/02	15-0	0	15-1	SMELLS LIGHT-- API
24	4/2/02	15-0	0	15-2	SMELLS LIGHT-- API
24	4/11/02	15-0	0	15-1	SMELLS LIGHT-- API
24	4/17/02	15-0	0	15-1	SMELLS LIGHT-- API
24	4/24/02	15-0	0	15-1	SMELLS LIGHT-- API
24	4/30/02	15-0	0	15-1	SMELLS LIGHT-- API
24	5/10/02	15-0	1/2"	15-1	SMELLS LIGHT-- API
24	5/15/02	15-0	1/2"	15-1	SMELLS LIGHT-- API
24	5/21/02	15-0	1/2"	15-1	SMELLS LIGHT-- API
24	5/28/02	N/A	N/A	N/A	N/A
24	6/11/02	15'-1 1/2"	1/2"	15-2	SMELLS LIGHT-- API
24	6/24/02	15'-1 1/2"	1/2"	15-2	SMELLS LIGHT-- API
24	7/9/02	15-1 1/2"	1/2"	15-2	SMELLS LIGHT-- API
24	7/17/02	15-1 1/2"	1/2"	15-2	SMELLS LIGHT-- API
24	7/24/02	15-1 1/2"	1/2"	15-2	SMELLS LIGHT-- API
24	7/29/02	15-0	0	15-1	SMELLS LIGHT-- API
24	8/13/02	15'-0"	1/2"	15-1	SMELLS LIGHT-- API



MONITOR WELL #28

R.W. #	DATE	DEPTH TO LIQUID (feet)	SPH	WELL DEPTH	LIQUID DESCRIPTION
28	2/22/02	27-2	12"	37-0	SMELLS LIKE REFORMATE
28	2/27/02	28-0	9"	37-0	SMELLS LIKE REFORMATE
28	3/4/02	27-9	12"	37-0	SMELLS LIKE REFORMATE
28	3/12/02	28-0	12"	36-9	SMELLS LIKE REFORMATE
28	3/18/02	28- 1/2"	12"	37-0	SMELLS LIKE REFORMATE
28	3/28/02	28-0"	12"	37-0	SMELLS LIKE REFORMATE
28	4/2/02	28-4	11"	37-1	SMELLS LIKE REFORMATE
28	4/11/02	28-3	12"	37-1	SMELLS LIKE REFORMATE
28	4/17/02	28-4	10"	37-1	SMELLS LIKE REFORMATE
28	4/24/02	28-4	10"	37-1	SMELLS LIKE REFORMATE
28	4/30/02	28-5	10"	37-1	SMELLS LIKE REFORMATE
28	5/10/02	28-6	10"	37-0	SMELLS LIKE REFORMATE
28	5/15/02	28-6	10"	37-0	SMELLS LIKE REFORMATE
28	5/21/02	28-6	10"	37-0	SMELLS LIKE REFORMATE
28	5/28/02	N/A	N/A	N/A	N/A
28	6/11/02	28-7	11"	37-0	SMELLS LIKE REFORMATE
28	6/24/02	28-8	10"	37-0	SMELLS LIKE REFORMATE
28	7/9/02	28-9	11"	37-0	SMELLS LIKE REFORMATE
28	7/17/02	28-9	10"	37-0	SMELLS LIKE REFORMATE
28	7/23/02	28-9	10"	37-0	SMELLS LIKE REFORMATE
28	7/29/02	29-0	8"	37-0	SMELLS LIKE REFORMATE
28	8/13/02	29-0	7"	37-0	SMELLS LIKE REFORMATE



MONITOR WELL #29

R.W. #	DATE	DEPTH TO LIQUID (feet)	SPH	WELL DEPTH	LIQUID DESCRIPTION
29	2/22/02	N/A	N/A	N/A	N/A
29	2/27/02	23-0	0	28-6	SMELLS LIKE GASOLINE
29	3/4/02	23-1	0	28-6	OK
29	3/12/02	23-2	0	28-6	SLIGHT HYDROCARBON ODOR
29	3/18/02	23-2	0	28-6	SLIGHT HYDROCARBON ODOR
29	3/28/02	23-2	0	28-6	SLIGHT HYDROCARBON ODOR
29	4/2/02	23-2	0	28-6	SLIGHT HYDROCARBON ODOR
29	4/11/02	23-2	0	28-6	GOOD
29	4/17/02	23-3	0	28-7	GOOD
29	4/24/02	23-3	0	28-7	SLIGHT HYDROCARBON ODOR
29	4/30/02	23-3	0	28-7	SLIGHT HYDROCARBON ODOR
29	5/10/02	23-3	0	28-7	SLIGHT HYDROCARBON ODOR
29	5/15/02	23-2	0	28-7	SLIGHT HYDROCARBON ODOR
29	5/21/02	23-3	0	28-8	SLIGHT HYDROCARBON ODOR
29	5/28/02	N/A	N/A	N/A	N/A
29	6/11/02	23-3	0	22-8	SLIGHT HYDROCARBON ODOR
29	6/24/02	23-3	0	28-7	SLIGHT HYDROCARBON ODOR
29	7/9/02	23-3	0	28-8	SLIGHT HYDROCARBON
29	7/17/02	23-3	0	28-7	SLIGHT HYDROCARBON
29	7/23/02	23-3	0	28-7	SLIGHT HYDROCARBON
29	7/29/02	23-4	0	28-7	SLIGHT HYDROCARBON
29	8/13/02	23-4	0	28-7	SLIGHT HYDROCARBON







SEEP #5

R.W. #	DATE	DEPTH TO LIQUID (feet)	SPH	WELL DEPTH	LIQUID DESCRIPTION
S-5	2/22/02	4'-5"	0	5'-2"	GOOD
S-5	2/27/02	4'-5"	0	5'-2"	GOOD
S-5	3/4/02	4'-5"	0	5'-2"	GOOD
S-5	3/12/02	4'-6"	0	5'-2"	GOOD
S-5	3/18/02	4'-6 1/2"	0	5'-2"	GOOD
S-5	3/28/02	4'-6"	0	5'-2"	GOOD
S-5	4/2/02	4'-8"	0	5'-2"	GOOD
S-5	4/11/02	4'-8"	0	5'-2"	GOOD
S-5	4/17/02	4'-8"	0	5'-2"	GOOD
S-5	4/24/02	4'-9"	0	5'-2"	GOOD
S-5	4/30/02	4'-9"	0	5'-2"	GOOD
S-5	5/10/02	4'-9"	0	5'-2"	GOOD
S-5	5/15/02	4'-9"	0	5'-2"	GOOD
S-5	5/21/02	5'-1"	0	5'-2"	GOOD
S-5	5/28/02	N/A	N/A	N/A	N/A
S-5	6/11/02	5'-0	0	5'-2"	GOOD
S-5	6/24/02	5'-1"	0	5'-2"	GOOD
S-5	7/9/02	5'-0"	0	5'-2"	GOOD
S-5	7/17/02	5'-0"	0	5'-2"	GOOD
S-5	7/23/02	5'-0"	0	5'-2"	GOOD
S-5	7/29/02	5'-0"	0	5'-1"	GOOD
S-5	8/13/02	5'-0"	0	5'-1"	GOOD





RECOVERY WELL #15

R.W. #	DATE	DEPTH TO LIQUID (feet)	SPH	WELL DEPTH	LIQUID DESCRIPTION
15	2/22/02	N/A	N/A	N/A	N/A
15	2/27/02	34-7	0	43-5	B/I & U/P NOT TOO BAD
15	3/4/02	34-6	0	43-4	B/I & U/P NOT TOO BAD
15	3/12/02	34-6	0	43-4	B/I & U/P SLIGHT HYDROCARBON ODOR
15	3/18/02	34-7	0	43-5	B/I & U/P SLIGHT ODOR
15	3/28/02	34-7	0	43-5	B/I & U/P SLIGHT ODOR
15	4/2/02	34-3	0	43-4	B/I & U/P SLIGHT ODOR
15	4/11/02	34-7	0	43-6	B/I & U/P GASOLINE ODOR
15	4/17/02	34-8	0	43-6	B/I & U/P GASOLINE ODOR
15	4/24/02	34-8	0	43-6	B/I & U/P GASOLINE ODOR
15	4/30/02	34-9	0	43-6	IN SERVICE LIGHT ODOR
15	5/10/02	35-0	0	43-6	IN SERVICE LIGHT ODOR
15	5/15/02	34-8	0	43-6	IN SERVICE LIGHT ODOR
15	5/21/02	34-9	0	43-6	IN SERVICE LIGHT ODOR
15	5/28/02	N/A	N/A	N/A	N/A
15	6/11/02	35-0	0	43-5	IN SERVICE LIGHT ODOR
15	6/24/02	34-9	0	43-5	IN SERVICE LIGHT ODOR
15	7/9/02	35-0	0	43-5	IN SERVICE LIGHT ODOR
15	7/17/02	34-9	0	43-5	IN SERVICE LIGHT ODOR
15	7/24/02	35-0	0	43-5	IN SERVICE LIGHT ODOR
15	7/31/02	35-1	0	43-5	IN SERVICE LIGHT ODOR
15	8/13/02	35-2	0	43-5	IN SERVICE LIGHT ODOR



RECOVERY WELL #17

R.W. #	DATE	DEPTH TO LIQUID (feet)	SPH	WELL DEPTH	LIQUID DESCRIPTION
17	2/22/02	N/A	N/A	N/A	N/A
17	2/27/02	N/A	N/A	N/A	B/I & U/P PUMP IS STUCK IN WELL
17	3/4/02	N/A	N/A	N/A	B/I & U/P PUMP IS STUCK IN WELL
17	3/12/02	N/A	N/A	N/A	B/I & U/P PUMP IS STUCK IN WELL
17	3/18/02	N/A	N/A	N/A	B/I & U/P PUMP IS STUCK IN WELL
17	3/28/02	N/A	N/A	N/A	B/I & U/P PUMP IS STUCK IN WELL
17	4/2/02	N/A	N/A	N/A	B/I & U/P PUMP IS STUCK IN WELL
17	4/11/02	N/A	N/A	N/A	B/I & U/P PUMP IS STUCK IN WELL
17	4/17/02	N/A	N/A	N/A	B/I & U/P PUMP IS STUCK IN WELL
17	4/24/02	N/A	N/A	N/A	B/I & U/P PUMP IS STUCK IN WELL
17	4/30/02	N/A	N/A	N/A	B/I & U/P PUMP IS STUCK IN WELL
17	5/10/02	32-2	16"	41-9	PULLED OUT PUMP W.O. #55164
17	5/15/02	36-5	0	41-9	IN SERVICE SOME ODOR
17	5/21/02	36-3	1/2"	41-9	IN SERVICE SOME ODOR
17	5/28/02	N/A	N/A	N/A	N/A
17	6/11/02	36-8	0	41-8	IN SERVICE SOME ODOR
17	6/24/02	37-1	0	41-8	IN SERVICE SOME ODOR
17	7/9/02	37-1	0	41-8	IN SERVICE SOME ODOR
17	7/17/02	37-0	0	41-8	IN SERVICE SOME ODOR
17	7/24/02	37-1	0	41-8	IN SERVICE SOME ODOR
17	7/31/02	37-1	0	41-8	IN SERVICE SOME ODOR
17	8/13/02	37-1	0	41-8	IN SERVICE SOME ODOR



RECOVERY WELL #18

R.W. #	DATE	DEPTH TO LIQUID (feet)	SPH	WELL DEPTH	LIQUID DESCRIPTION
18	2/22/02	N/A	N/A	N/A	N/A
18	2/27/02	30-0	6"	37-7	B/I & U/P SMELLY
18	3/4/02	30-0	6"	37-7	B/I & U/P DSL SMELL
18	3/12/02	30-2	6"	37-7	B/I & U/P DSL SMELL
18	3/18/02	30-1	6.5"	38-1	B/I & U/P DSL SMELL
18	3/28/02	30-2	6"	38-1	B/I & U/P DSL SMELL
18	4/2/02	30-3	5.5"	37-8	B/I & U/P DSL SMELL
18	4/11/02	30-1	7"	37-9	B/I & U/P LIGHT ODOR
18	4/17/02	30-2	7"	37-9	B/I & U/P LIGHT ODOR
18	4/24/02	30-4	6"	37-9	B/I & U/P LIGHT ODOR
18	4/30/02	30-3	4"	37-8	IN SERVICE LIGHT ODOR
18	5/10/02	31-4	0	37-8	IN SERVICE LIGHT ODOR
18	5/15/02	32-6	1/2"	37-9	IN SERVICE LIGHT ODOR
18	5/21/02	32-8	0	37-8	IN SERVICE LIGHT ODOR
18	5/28/02	32-0	0	38-0	IN SERVICE LIGHT ODOR
18	6/11/02	33-0	0	37-9	IN SERVICE LIGHT ODOR
18	6/24/02	33-5	0	37-9	IN SERVICE LIGHT ODOR
18	7/9/02	33-6	0	38-0	IN SERVICE LIGHT ODOR
18	7/17/02	33-5	0	37-8	IN SERVICE LIGHT ODOR
18	7/23/02	33-3	0	37-8	IN SERVICE LIGHT ODOR
18	7/29/02	33-3	0	37-8	IN SERVICE LIGHT ODOR
18	8/13/02	34-0	0	37-8	IN SERVICE LIGHT ODOR



RECOVERY WELL #19

R.W. #	DATE	DEPTH TO LIQUID (feet)	SPH	WELL DEPTH	LIQUID DESCRIPTION
19	2/22/02	N/A	N/A	N/A	N/A
19	2/27/02	28-7	6"	36-7	B/I & U/P SMELLS LIGHT
19	3/4/02	28-9	18-1/2"	36-7	B/I & U/P SMELLS LIGHT
19	3/12/02	28-8	20"	36-6	B/I & U/P OILY
19	3/18/02	28-7	22"	36-7	B/I & U/P OILY
19	3/28/02	28-8	19"	36-7	B/I & U/P OILY
19	4/2/02	29-0	19"	36-6	B/I & U/P OILY
19	4/11/02	29-1	19"	36-6	B/I & U/P GASOLINE ODOR
19	4/17/02	29-2	20"	36-7	B/I & U/P GASOLINE ODOR
19	4/24/02	29-1	18"	36-7	B/I & U/P HEAVY, OILY ODOR
19	4/30/02	29-1	15"	36-7	IN SERVICE OILY
19	5/10/02	29-3	15"	36-7	IN SERVICE OILY
19	5/15/02	29-3	12"	36-7	IN SERVICE OILY
19	5/21/02	29-3	13"	36-7	IN SERVICE OILY
19	5/28/02	N/A	N/A	N/A	N/A
19	6/11/02	28-5	20"	36-4	OILY B / I & U/P WO#55082
19	6/24/02	29-5	12"	36-7	OILY IN SERVICE
19	7/9/02	29-7	10"	36-7	OILY IN SERVICE
19	7/17/02	29-6	10"	36-6	DSL ODOR IN SERVICE
19	7/23/02	29-6	10"	36-6	DSL ODOR IN SERVICE
19	7/29/02	29-6	10"	36-6	DSL ODOR IN SERVICE
19	8/13/02	29-8	8"	36-6	DSL ODOR IN SERVICE



RECOVERY WELL #42

R.W. #	DATE	DEPTH TO LIQUID (feet)	SPH	WELL DEPTH	LIQUID DESCRIPTION
42	2/22/02	N/A	N/A	N/A	N/A
42	2/27/02	26-0	6"	32-0	B/I &U/P, HEAVY ODOR SLIMEY MUD
42	3/4/02	26-1	9-1/2"	32-0	B/I &U/P SMELLS HEAVY
42	3/12/02	26-2	10"	32-0	B/I &U/P OILY
42	3/18/02	26-2	9"	32-0	B/I &U/P OILY
42	3/28/02	26-2	9-1/2"	32-0	B/I &U/P OILY
42	4/2/02	26-2	9"	32-1	B/I &U/P OILY
42	4/11/02	26-4	10"	32-1	B/I &U/P OILY
42	4/17/02	26-5	10"	32-1	B/I &U/P OILY
42	4/24/02	26-5	6"	32-1	B/I &U/P OILY
42	4/30/02	26-4	8"	32-0	IN SERVICE OILY
42	5/10/02	26-6	8"	32-0	IN SERVICE OILY
42	5/15/02	26-6	8"	32-0	IN SERVICE OILY
42	5/21/02	26-6	8"	32-0	IN SERVICE OILY
42	5/28/02	N/A	N/A	N/A	N/A
42	6/11/02	26-6	13"	32-0	IN SERVICE OILY
42	6/24/02	26-6	14"	32-0	IN SERVICE OILY
42	7/9/02	26-9	10"	32-0	IN SERVICE OILY
42	7/17/02	26-6	10"	32-0	IN SERVICE OILY
42	7/23/02	26-6	12"	32-0	IN SERVICE OILY
42	7/29/02	26-5	14"	32-0	IN SERVICE OILY
42	8/13/02	26-9	6"	32-0	IN SERVICE OILY

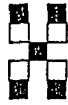
RECOVERY WELL #42

[illegible]

RECOVERY WELL #43

R.W. #	DATE	DEPTH TO LIQUID (feet)	SPH	WELL DEPTH	LIQUID DESCRIPTION
43	2/22/02	N/A	N/A	N/A	N/A
43	2/27/02	21-7	12"	23-9	B/I & U/P SMELLY & BLACK SLIME
43	3/4/02	20-8	8-1/2"	24-0	B/I & U/P SMELLS LIGHT---API
43	3/12/02	20-9	10"	24-0	B/I & U/P SMELLS LIGHT---API
43	3/18/02	20-9	10"	24-0	B/I & U/P SMELLS LIGHT---API
43	3/28/02	20-9	9-1/2"	24-0	B/I & U/P SMELLS LIGHT---API
43	4/2/02	21-0	10"	24-0	B/I & U/P SMELLS LIGHT---API
43	4/11/02	21-1	8"	24-0	B/I & U/P SMELLS LIGHT---API
43	4/17/02	21-1	8"	24-0	B/I & U/P SMELLS LIGHT---API
43	4/24/02	21-1	8"	24-0	B/I & U/P SMELLS LIGHT---API
43	4/30/02	21-1	8"	24-0	IN SERVICE LIGHT ODOR
43	5/10/02	21-1	8"	24-0	IN SERVICE LIGHT ODOR
43	5/15/02	21-1	8"	24-0	IN SERVICE LIGHT ODOR
43	5/21/02	21-2	7"	24-0	IN SERVICE LIGHT ODOR
43	5/28/02	21-2	7"	24-0	IN SERVICE LIGHT ODOR
43	6/11/02	21-2	7"	24-0	IN SERVICE LIGHT ODOR
43	6/24/02	21-3	6"	24-0	IN SERVICE LIGHT ODOR
43	7/9/02	21-6	10"	24-0	IN SERVICE LIGHT ODOR
43	7/17/02	21-3	7"	24-0	IN SERVICE LIGHT ODOR
43	7/23/02	21-4	7"	24-0	IN SERVICE LIGHT ODOR
43	7/29/02	21-3	7"	24-0	IN SERVICE LIGHT ODOR
43	8/13/02	21-4	7"	24-0	IN SERVICE LIGHT ODOR





Hall Environmental Analysis Laboratory

COVER LETTER

September 09, 2002

Cindy Hurtado
San Juan Refining
#50 CR 4990
Bloomfield, NM 87413
TEL: (505) 632-4161
FAX (505) 632-3911

RE: Annual Monitor Wells

Order No.: 0208188

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory received 14 samples on 8/30/02 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,



Andy Freeman, Business Manager
Nancy McDuffie, Laboratory Manager

Hall Environmental Analysis Laboratory

Date: 09-Sep-02

CLIENT: San Juan Refining
Lab Order: 0208188
Project: Annual Monitor Wells
Lab ID: 0208188-01

Client Sample ID: MW#34
Collection Date: 8/26/02 1:30:00 PM
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						
Sulfate	9.1	5.0		mg/L	10	8/30/02
EPA METHOD 8260B: VOLATILES SHORT LIST						
Benzene	44	10		µg/L	10	9/6/02
Toluene	ND	10		µg/L	10	9/6/02
Ethylbenzene	ND	10		µg/L	10	9/6/02
Naphthalene	34	20		µg/L	10	9/6/02
Xylenes, Total	ND	10		µg/L	10	9/6/02
Surr: 1,2-Dichloroethane-d4	105	74.6-123		%REC	10	9/6/02
Surr: 4-Bromofluorobenzene	114	73.5-126		%REC	10	9/6/02
Surr: Dibromofluoromethane	96.3	78.6-115		%REC	10	9/6/02
Surr: Toluene-d8	107	84.2-115		%REC	10	9/6/02
EPA METHOD 6010C: DISSOLVED METALS						
Iron	9.6	0.020		mg/L	1	9/9/02 11:27:09 AM

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 09-Sep-02

CLIENT: San Juan Refining
Lab Order: 0208188
Project: Annual Monitor Wells
Lab ID: 0208188-02

Client Sample ID: MW#11
Collection Date: 8/26/02 3:30:00 PM

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						
Sulfate	ND	5.0		mg/L	10	8/30/02
EPA METHOD 8260B: VOLATILES SHORT LIST						
Benzene	9100	250		µg/L	250	9/9/02
Toluene	ND	50		µg/L	50	9/6/02
Ethylbenzene	230	50		µg/L	50	9/6/02
Naphthalene	ND	100		µg/L	50	9/6/02
Xylenes, Total	1700	50		µg/L	50	9/6/02
Surr: 1,2-Dichloroethane-d4	108	74.6-123		%REC	50	9/6/02
Surr: 4-Bromofluorobenzene	97.5	73.5-126		%REC	50	9/6/02
Surr: Dibromofluoromethane	106	78.6-115		%REC	50	9/6/02
Surr: Toluene-d8	102	84.2-115		%REC	50	9/6/02
EPA METHOD 6010C: DISSOLVED METALS						
Iron	10	0.020		mg/L	1	9/9/02 11:29:19 AM

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 09-Sep-02

CLIENT: San Juan Refining
Lab Order: 0208188
Project: Annual Monitor Wells
Lab ID: 0208188-03

Client Sample ID: MW#35
Collection Date: 8/26/02 4:00:00 PM
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						
Sulfate	28	5.0		mg/L	10	8/30/02
EPA METHOD 8260B: VOLATILES SHORT LIST						
Benzene	10	1.0		µg/L	1	9/5/02
Toluene	ND	1.0		µg/L	1	9/5/02
Ethylbenzene	2.4	1.0		µg/L	1	9/5/02
Naphthalene	32	2.0		µg/L	1	9/5/02
Xylenes, Total	52	10		µg/L	10	9/6/02
Surr: 1,2-Dichloroethane-d4	114	74.6-123		%REC	1	9/5/02
Surr: 4-Bromofluorobenzene	113	73.5-126		%REC	10	9/6/02
Surr: Dibromofluoromethane	108	78.6-115		%REC	1	9/5/02
Surr: Toluene-d8	102	84.2-115		%REC	10	9/6/02
EPA METHOD 6010C: DISSOLVED METALS						
Iron	9.3	0.020		mg/L	1	9/9/02 11:31:28 AM

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 09-Sep-02

CLIENT: San Juan Refining
Lab Order: 0208188
Project: Annual Monitor Wells
Lab ID: 0208188-07

Client Sample ID: MW#8
Collection Date: 8/28/02 2:35:00 PM

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: HVA
Sulfate	970	25		mg/L	50	9/3/02
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: BDH
Benzene	ND	1.0		µg/L	1	9/5/02
Toluene	ND	1.0		µg/L	1	9/5/02
Ethylbenzene	ND	1.0		µg/L	1	9/5/02
Naphthalene	ND	2.0		µg/L	1	9/5/02
Xylenes, Total	1.9	1.0		µg/L	1	9/5/02
Surr: 1,2-Dichloroethane-d4	100	74.6-123		%REC	1	9/5/02
Surr: 4-Bromofluorobenzene	101	73.5-126		%REC	1	9/5/02
Surr: Dibromofluoromethane	96.5	78.6-115		%REC	1	9/5/02
Surr: Toluene-d8	102	84.2-115		%REC	1	9/5/02
EPA METHOD 6010C: DISSOLVED METALS						Analyst: NMO
Iron	1.5	0.020		mg/L	1	9/9/02 11:33:37 AM

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 09-Sep-02

CLIENT: San Juan Refining
Lab Order: 0208188
Project: Annual Monitor Wells
Lab ID: 0208188-11

Client Sample ID: RW#15
Collection Date: 8/29/02 9:45:00 AM

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						
Sulfate	50	5.0		mg/L	10	8/30/02
EPA METHOD 8260B: VOLATILES SHORT LIST						
Benzene	12000	500		µg/L	500	9/6/02
Toluene	19000	500		µg/L	500	9/6/02
Ethylbenzene	3800	500		µg/L	500	9/6/02
Naphthalene	580	100		µg/L	50	9/6/02
Xylenes, Total	22000	500		µg/L	500	9/6/02
Surr: 1,2-Dichloroethane-d4	116	74.6-123		%REC	50	9/6/02
Surr: 4-Bromofluorobenzene	99.0	73.5-126		%REC	50	9/6/02
Surr: Dibromofluoromethane	107	78.6-115		%REC	50	9/6/02
Surr: Toluene-d8	101	84.2-115		%REC	50	9/6/02
EPA METHOD 6010C: DISSOLVED METALS						
Iron	5.2	0.020		mg/L	1	9/9/02 11:35:49 AM

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 09-Sep-02

CLIENT: San Juan Refining
Lab Order: 0208188
Project: Annual Monitor Wells
Lab ID: 0208188-04

Client Sample ID: MW#36
Collection Date: 8/27/02 1:30:00 PM

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: BDH
Benzene	ND	5.0		µg/L	5	9/6/02
Toluene	ND	5.0		µg/L	5	9/6/02
Ethylbenzene	ND	5.0		µg/L	5	9/6/02
Naphthalene	24	10		µg/L	5	9/6/02
Xylenes, Total	80	5.0		µg/L	5	9/6/02
Surr: 1,2-Dichloroethane-d4	109	74.6-123		%REC	5	9/6/02
Surr: 4-Bromofluorobenzene	112	73.5-126		%REC	5	9/6/02
Surr: Dibromofluoromethane	108	78.6-115		%REC	5	9/6/02
Surr: Toluene-d8	118	84.2-115	S	%REC	5	9/6/02

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 09-Sep-02

CLIENT: San Juan Refining
Lab Order: 0208188
Project: Annual Monitor Wells
Lab ID: 0208188-05

Client Sample ID: RW#17
Collection Date: 8/27/02 2:45:00 PM

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: BDH
Benzene	1900	500		µg/L	500	9/5/02
Toluene	ND	500		µg/L	500	9/5/02
Ethylbenzene	1300	500		µg/L	500	9/5/02
Naphthalene	1400	1000		µg/L	500	9/5/02
Xylenes, Total	11000	500		µg/L	500	9/5/02
Surr: 1,2-Dichloroethane-d4	104	74.6-123		%REC	500	9/5/02
Surr: 4-Bromofluorobenzene	113	73.5-126		%REC	500	9/5/02
Surr: Dibromofluoromethane	90.4	78.6-115		%REC	500	9/5/02
Surr: Toluene-d8	100	84.2-115		%REC	500	9/5/02

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 09-Sep-02

CLIENT: San Juan Refining
Lab Order: 0208188
Project: Annual Monitor Wells
Lab ID: 0208188-06

Client Sample ID: MW#1
Collection Date: 8/27/02 4:30:00 PM

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: BDH
Benzene	1.1	1.0		µg/L	1	9/5/02
Toluene	ND	1.0		µg/L	1	9/5/02
Ethylbenzene	1.2	1.0		µg/L	1	9/5/02
Naphthalene	2.2	2.0		µg/L	1	9/5/02
Xylenes, Total	12	1.0		µg/L	1	9/5/02
Surr: 1,2-Dichloroethane-d4	108	74.6-123		%REC	1	9/5/02
Surr: 4-Bromofluorobenzene	98.0	73.5-126		%REC	1	9/5/02
Surr: Dibromofluoromethane	100	78.6-115		%REC	1	9/5/02
Surr: Toluene-d8	98.1	84.2-115		%REC	1	9/5/02

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 09-Sep-02

CLIENT: San Juan Refining
Lab Order: 0208188
Project: Annual Monitor Wells
Lab ID: 0208188-08

Client Sample ID: MW#12
Collection Date: 8/28/02 2:00:00 PM

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: BDH
Benzene	ND	1.0		µg/L	1	9/6/02
Toluene	ND	1.0		µg/L	1	9/6/02
Ethylbenzene	1.3	1.0		µg/L	1	9/6/02
Naphthalene	ND	2.0		µg/L	1	9/6/02
Xylenes, Total	9.8	1.0		µg/L	1	9/6/02
Surr: 1,2-Dichloroethane-d4	103	74.6-123		%REC	1	9/6/02
Surr: 4-Bromofluorobenzene	96.2	73.5-126		%REC	1	9/6/02
Surr: Dibromofluoromethane	96.4	78.6-115		%REC	1	9/6/02
Surr: Toluene-d8	97.5	84.2-115		%REC	1	9/6/02

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 09-Sep-02

CLIENT: San Juan Refining
Lab Order: 0208188
Project: Annual Monitor Wells
Lab ID: 0208188-09

Client Sample ID: MW#27
Collection Date: 8/28/02 2:15:00 PM
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: BDH
Benzene	ND	1.0		µg/L	1	9/6/02
Toluene	ND	1.0		µg/L	1	9/6/02
Ethylbenzene	ND	1.0		µg/L	1	9/6/02
Naphthalene	ND	2.0		µg/L	1	9/6/02
Xylenes, Total	1.7	1.0		µg/L	1	9/6/02
Surr: 1,2-Dichloroethane-d4	103	74.6-123		%REC	1	9/6/02
Surr: 4-Bromofluorobenzene	107	73.5-126		%REC	1	9/6/02
Surr: Dibromofluoromethane	103	78.6-115		%REC	1	9/6/02
Surr: Toluene-d8	101	84.2-115		%REC	1	9/6/02

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 09-Sep-02

CLIENT: San Juan Refining
Lab Order: 0208188
Project: Annual Monitor Wells
Lab ID: 0208188-10

Client Sample ID: MW#9
Collection Date: 8/28/02 4:00:00 PM

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: BDH
Benzene	10000	250		µg/L	250	9/6/02
Toluene	5200	250		µg/L	250	9/6/02
Ethylbenzene	1900	50		µg/L	50	9/6/02
Naphthalene	480	100		µg/L	50	9/6/02
Xylenes, Total	7500	250		µg/L	250	9/6/02
Surr: 1,2-Dichloroethane-d4	115	74.6-123		%REC	50	9/6/02
Surr: 4-Bromofluorobenzene	101	73.5-126		%REC	50	9/6/02
Surr: Dibromofluoromethane	115	78.6-115		%REC	50	9/6/02
Surr: Toluene-d8	104	84.2-115		%REC	50	9/6/02

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 09-Sep-02

CLIENT: San Juan Refining
Lab Order: 0208188
Project: Annual Monitor Wells
Lab ID: 0208188-12

Client Sample ID: MW#4
Collection Date: 8/29/02 9:30:00 AM

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: BDH
Benzene	6500	250		µg/L	250	9/6/02
Toluene	88	50		µg/L	50	9/6/02
Ethylbenzene	1600	50		µg/L	50	9/6/02
Naphthalene	410	100		µg/L	50	9/6/02
Xylenes, Total	12000	250		µg/L	250	9/6/02
Surr: 1,2-Dichloroethane-d4	115	74.6-123		%REC	50	9/6/02
Surr: 4-Bromofluorobenzene	99.9	73.5-126		%REC	50	9/6/02
Surr: Dibromofluoromethane	106	78.6-115		%REC	50	9/6/02
Surr: Toluene-d8	107	84.2-115		%REC	50	9/6/02

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 09-Sep-02

CLIENT: San Juan Refining
Lab Order: 0208188
Project: Annual Monitor Wells
Lab ID: 0208188-13

Client Sample ID: MW#3
Collection Date: 8/29/02 10:00:00 AM

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: BDH
Benzene	ND	1.0		µg/L	1	9/6/02
Toluene	ND	1.0		µg/L	1	9/6/02
Ethylbenzene	ND	1.0		µg/L	1	9/6/02
Naphthalene	ND	2.0		µg/L	1	9/6/02
Xylenes, Total	3.0	1.0		µg/L	1	9/6/02
Surr: 1,2-Dichloroethane-d4	98.1	74.6-123		%REC	1	9/6/02
Surr: 4-Bromofluorobenzene	105	73.5-126		%REC	1	9/6/02
Surr: Dibromofluoromethane	96.8	78.6-115		%REC	1	9/6/02
Surr: Toluene-d8	99.3	84.2-115		%REC	1	9/6/02

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 09-Sep-02

CLIENT: San Juan Refining
Lab Order: 0208188
Project: Annual Monitor Wells
Lab ID: 0208188-14

Client Sample ID: Seep#3
Collection Date: 8/29/02 1:30:00 PM

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: BDH
Benzene	570	20		µg/L	20	9/7/02
Toluene	330	10		µg/L	10	9/6/02
Ethylbenzene	170	10		µg/L	10	9/6/02
Naphthalene	97	20		µg/L	10	9/6/02
Xylenes, Total	870	10		µg/L	10	9/6/02
Surr: 1,2-Dichloroethane-d4	104	74.6-123		%REC	10	9/6/02
Surr: 4-Bromofluorobenzene	98.8	73.5-126		%REC	10	9/6/02
Surr: Dibromofluoromethane	99.2	78.6-115		%REC	10	9/6/02
Surr: Toluene-d8	106	84.2-115		%REC	10	9/6/02

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 09-Sep-02

CLIENT: San Juan Refining
Work Order: 0208188
Project: Annual Monitor Wells

QC SUMMARY REPORT
Method Blank

Sample ID: MBLK Batch ID: R5718 Test Code: E300 Units: mg/L Analysis Date: 8/30/02 Prep Date:
Client ID: Run ID: LC_020830A SeqNo: 128685
Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sulfate ND 0.50

Sample ID: CCB Batch ID: R5718 Test Code: E300 Units: mg/L Analysis Date: 8/30/02 Prep Date:
Client ID: Run ID: LC_020830A SeqNo: 128698
Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sulfate ND 0.50

Sample ID: MBLK Batch ID: R5737 Test Code: E300 Units: mg/L Analysis Date: 9/3/02 Prep Date:
Client ID: Run ID: LC_020904B SeqNo: 129159
Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sulfate ND 0.50

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: San Juan Refining
Work Order: 0208188
Project: Annual Monitor Wells

QC SUMMARY REPORT
Method Blank

Sample ID: 5ml rb	Batch ID: R5759	Test Code: SW8260B	Units: µg/L	Analysis Date: 9/5/02	Prep Date:						
Client ID:	Run ID:	THOR_020905A		SeqNo: 129719							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	1.0									
Toluene	ND	1.0									
Ethylbenzene	ND	1.0									
Methyl tert-butyl ether (MTBE)	ND	1.0									
1,2,4-Trimethylbenzene	ND	1.0									
1,3,5-Trimethylbenzene	ND	1.0									
1,2-Dichloroethane (EDC)	0.474	1.0									J
1,2-Dibromoethane (EDB)	ND	1.0									
Naphthalene	ND	2.0									
1-Methylnaphthalene	1.276	4.0									J
2-Methylnaphthalene	1.122	4.0									J
Bromobenzene	ND	1.0									
Bromochloromethane	ND	1.0									
Bromodichloromethane	ND	1.0									
Bromoform	ND	1.0									
Bromomethane	ND	1.0									
Carbon Tetrachloride	ND	1.0									
Chlorobenzene	ND	1.0									
Chloroethane	ND	2.0									
Chloroform	ND	1.0									
Chloromethane	ND	1.0									
2-Chlorotoluene	ND	1.0									
4-Chlorotoluene	ND	1.0									
cis-1,2-DCE	ND	1.0									
cis-1,3-Dichloropropene	ND	1.0									
1,2-Dibromo-3-chloropropane	ND	2.0									
Dibromochloromethane	ND	1.0									
Dibromomethane	ND	2.0									

QC SUMMARY REPORT

Method Blank

CLIENT: San Juan Refining
Work Order: 0208188
Project: Annual Monitor Wells

1,2-Dichlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
Dichlorodifluoromethane	ND	1.0
1,1-Dichloroethane	ND	1.0
1,1-Dichloroethene	ND	1.0
1,2-Dichloropropane	ND	1.0
1,3-Dichloropropane	ND	1.0
2,2-Dichloropropane	ND	1.0
1,1-Dichloropropene	ND	1.0
Hexachlorobutadiene	ND	1.0
Isopropylbenzene	ND	1.0
4-Isopropyltoluene	ND	1.0
Methylene Chloride	ND	3.0
n-Butylbenzene	ND	1.0
n-Propylbenzene	ND	1.0
sec-Butylbenzene	ND	1.0
Styrene	ND	1.0
tert-Butylbenzene	ND	1.0
Tetrachloroethene (PCE)	ND	1.0
1,1,1,2-Tetrachloroethane	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
trans-1,2-DCE	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
Trichloroethene (TCE)	ND	1.0
Trichlorofluoromethane	ND	1.0
1,2,3-Trichlorobenzene	ND	1.0
1,2,4-Trichlorobenzene	ND	1.0
1,1,1-Trichloroethane	ND	1.0
1,1,2-Trichloroethane	ND	1.0
Vinyl chloride	ND	2.0
1,2,3-Trichloropropane	ND	2.0
Xylenes, Total	ND	1.0

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT:

San Juan Refining

Work Order:

0208188

Project:

Annual Monitor Wells

QC SUMMARY REPORT

Method Blank

Surr: 1,2-Dichloroethane-d4	10.25	0	10	0	103	74.6	123	0
Surr: 4-Bromofluorobenzene	10.58	0	10	0	106	85.6	117	0
Surr: Dibromofluoromethane	9.98	0	10	0	99.8	78.6	115	0
Surr: Toluene-d8	10.41	0	10	0	104	84.2	115	0

CLIENT: San Juan Refining
Work Order: 0208188
Project: Annual Monitor Wells

QC SUMMARY REPORT
 Method Blank

Sample ID: 5ml rb b	Batch ID: R5773	Test Code: SW8260B	Units: µg/L	Analysis Date: 9/6/02	Prep Date:						
Client ID:	Run ID:	THOR_020905B		SeqNo: 130248							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	1.0									J
Toluene	0.422	1.0									
Ethylbenzene	ND	1.0									
Methyl tert-butyl ether (MTBE)	ND	1.0									
1,2,4-Trimethylbenzene	0.322	1.0									J
1,3,5-Trimethylbenzene	0.384	1.0									J
1,2-Dichloroethane (EDC)	0.478	1.0									J
1,2-Dibromoethane (EDB)	ND	1.0									
Naphthalene	ND	2.0									
1-Methylnaphthalene	1.298	4.0									J
2-Methylnaphthalene	1.332	4.0									J
Bromobenzene	ND	1.0									
Bromochloromethane	ND	1.0									
Bromodichloromethane	ND	1.0									
Bromoform	ND	1.0									
Bromomethane	ND	1.0									
Carbon Tetrachloride	ND	1.0									
Chlorobenzene	ND	1.0									
Chloroethane	ND	2.0									
Chloroform	ND	1.0									
Chloromethane	ND	1.0									
2-Chlorotoluene	ND	1.0									
4-Chlorotoluene	ND	1.0									
cis-1,2-DCE	ND	1.0									
cis-1,3-Dichloropropene	ND	1.0									
1,2-Dibromo-3-chloropropane	ND	2.0									
Dibromochloromethane	ND	1.0									
Dibromomethane	ND	2.0									

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Method Blank

CLIENT: San Juan Refining
Work Order: 0208188
Project: Annual Monitor Wells

1,2-Dichlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
Dichlorodifluoromethane	ND	1.0
1,1-Dichloroethane	ND	1.0
1,1-Dichloroethene	ND	1.0
1,2-Dichloropropane	ND	1.0
1,3-Dichloropropane	ND	1.0
2,2-Dichloropropane	ND	1.0
1,1-Dichloropropene	ND	1.0
Hexachlorobutadiene	ND	1.0
Isopropylbenzene	ND	1.0
4-Isopropyltoluene	ND	1.0
Methylene Chloride	ND	3.0
n-Butylbenzene	ND	1.0
n-Propylbenzene	0.258	1.0
sec-Butylbenzene	ND	1.0
Styrene	ND	1.0
tert-Butylbenzene	ND	1.0
Tetrachloroethene (PCE)	ND	1.0
1,1,1,2-Tetrachloroethane	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
trans-1,2-DCE	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
Trichloroethene (TCE)	ND	1.0
Trichlorofluoromethane	ND	1.0
1,2,3-Trichlorobenzene	ND	1.0
1,2,4-Trichlorobenzene	ND	1.0
1,1,1-Trichloroethane	ND	1.0
1,1,2-Trichloroethane	ND	1.0
Vinyl chloride	ND	2.0
1,2,3-Trichloropropane	ND	2.0
Xylenes, Total	0.648	1.0

J

J

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT:

San Juan Refining

Work Order:

0208188

Project:

Annual Monitor Wells

QC SUMMARY REPORT

Method Blank

Surr: 1,2-Dichloroethane-d4	10.1	0	10	0	101	74.6	123	0
Surr: 4-Bromofluorobenzene	10.08	0	10	0	101	85.6	117	0
Surr: Dibromofluoromethane	9.426	0	10	0	94.3	78.6	115	0
Surr: Toluene-d8	10.47	0	10	0	105	84.2	115	0

CLIENT: San Juan Refining
Work Order: 0208188
Project: Annual Monitor Wells

QC SUMMARY REPORT
 Method Blank

Sample ID: 5ml rb	Batch ID: R5781	Test Code: SW8260B	Units: µg/L	Analysis Date: 9/9/02	Prep Date:						
Client ID:		Run ID: THOR_020909A		SeqNo: 130371							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	1.0									
Toluene	ND	1.0									
Ethylbenzene	ND	1.0									
Methyl tert-butyl ether (MTBE)	ND	1.0									
1,2,4-Trimethylbenzene	ND	1.0									
1,3,5-Trimethylbenzene	ND	1.0									
1,2-Dichloroethane (EDC)	0.482	1.0									J
1,2-Dibromoethane (EDB)	ND	1.0									
Naphthalene	ND	2.0									
1-Methylnaphthalene	1.432	4.0									J
2-Methylnaphthalene	1.37	4.0									J
Bromobenzene	ND	1.0									
Bromochloromethane	ND	1.0									
Bromodichloromethane	ND	1.0									
Bromoform	ND	1.0									
Bromomethane	ND	1.0									
Carbon Tetrachloride	ND	1.0									
Chlorobenzene	0.374	1.0									J
Chloroethane	ND	2.0									
Chloroform	ND	1.0									
Chloromethane	ND	1.0									
2-Chlorotoluene	ND	1.0									
4-Chlorotoluene	ND	1.0									
cis-1,2-DCE	ND	1.0									
cis-1,3-Dichloropropene	ND	1.0									
1,2-Dibromo-3-chloropropane	ND	2.0									
Dibromochloromethane	ND	1.0									
Dibromomethane	ND	2.0									

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

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QC SUMMARY REPORT

Method Blank

CLIENT: San Juan Refining

Work Order: 0208188

Project: Annual Monitor Wells

1,2-Dichlorobenzene	0.738	1.0
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
Dichlorodifluoromethane	ND	1.0
1,1-Dichloroethane	ND	1.0
1,1-Dichloroethene	ND	1.0
1,2-Dichloropropane	ND	1.0
1,3-Dichloropropane	ND	1.0
2,2-Dichloropropane	ND	1.0
1,1-Dichloropropene	ND	1.0
Hexachlorobutadiene	ND	1.0
Isopropylbenzene	ND	1.0
4-Isopropyltoluene	ND	1.0
Methylene Chloride	ND	3.0
n-Butylbenzene	ND	1.0
n-Propylbenzene	ND	1.0
sec-Butylbenzene	ND	1.0
Styrene	ND	1.0
tert-Butylbenzene	ND	1.0
Tetrachloroethene (PCE)	ND	1.0
1,1,1,2-Tetrachloroethane	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
trans-1,2-DCE	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
Trichloroethene (TCE)	ND	1.0
Trichlorofluoromethane	ND	1.0
1,2,3-Trichlorobenzene	ND	1.0
1,2,4-Trichlorobenzene	ND	1.0
1,1,1-Trichloroethane	ND	1.0
1,1,2-Trichloroethane	ND	1.0
Vinyl chloride	ND	2.0
1,2,3-Trichloropropane	ND	2.0
Xylenes, Total	0.256	1.0

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank
9

Hall Environmental Analysis Laboratory

Date: 09-Sep-02

CLIENT: San Juan Refining
 Work Order: 0208188
 Project: Annual Monitor Wells

QC SUMMARY REPORT

Sample Duplicate

Sample ID: 0208188-01B	Batch ID: R5718	Test Code: E300	Units: mg/L	Analysis Date: 8/30/02	Prep Date:
Client ID: MW#34	Run ID: LC_020830A	PQL	SPK value	SeqNo: 128700	
Analyte	Result	%REC	LowLimit	HighLimit	RPD Ref Val
Sulfate	9.108	5.0	0	0	0
			SPK Ref Val	RPD Ref Val	RPDLimit
			0	0	0.550
					20

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

Hall Environmental Analysis Laboratory

Date: 09-Sep-02

CLIENT: San Juan Refining

Work Order: 0208188

Project: Annual Monitor Wells

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS	Batch ID: R5718	Test Code: E300	Units: mg/L	Analysis Date: 8/30/02	Prep Date:					
Client ID:		Run ID: LC_020830A		SeqNo: 128686						
Analyte	Result	PQL	SPK value	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.974	0.50	4	0	99.4	90	110	0		

Sample ID: LCS2	Batch ID: R5718	Test Code: E300	Units: mg/L	Analysis Date: 8/30/02	Prep Date:					
Client ID:	Run ID: LC_020830A			SeqNo: 128687						
Analyte	Result	PQL	SPK value	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	30.68	0.50	32	0	95.9	90	110	0		

Sample ID: LCS	Batch ID: R5737	Test Code: E300	Units: mg/L	Analysis Date: 9/3/02	Prep Date:					
Client ID:	Run ID: LC_020904B			SeqNo: 129160						
Analyte	Result	PQL	SPK value	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	4.123	0.50	4	103	90	110	0			

Sample ID: LCS2	Batch ID: R5737	Test Code: E300	Units: mg/L	Analysis Date: 9/3/02	Prep Date:					
Client ID:	Run ID: LC_020904B			SeqNo: 129161						
Analyte	Result	PQL	SPK value	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	30.57	0.50	32	0	95.5	90	110	0		

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: San Juan Refining

Work Order: 0208188

Project: Annual Monitor Wells

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: Icst	Batch ID: R5759	Test Code: SW8260B	Units: µg/L	Analysis Date: 9/5/02	Prep Date:						
Client ID:	Run ID: THOR_020905A	SeqNo: 129720									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.4	1.0	20	0	102	78.7	122	0			
Toluene	20.65	1.0	20	0	103	87.7	122	0			
Chlorobenzene	20.95	1.0	20	0	105	85.6	136	0			
1,1-Dichloroethene	19.72	1.0	20	0	98.6	70.7	117	0			
Trichloroethene (TCE)	21.07	1.0	20	0	105	82.1	125	0			

Sample ID: 100ng Ics b	Batch ID: R5773	Test Code: SW8260B	Units: µg/L	Analysis Date: 9/6/02	Prep Date:						
Client ID:	Run ID: THOR_020905B	SeqNo: 130251									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.54	1.0	20	0	103	78.7	122	0			
Toluene	20.28	1.0	20	0.422	99.3	87.7	122	0			
Chlorobenzene	22.84	1.0	20	0	114	85.6	136	0			
1,1-Dichloroethene	18.03	1.0	20	0	90.1	70.7	117	0			
Trichloroethene (TCE)	19.84	1.0	20	0	99.2	76.9	130	0			

Sample ID: 100ng Ics	Batch ID: R5781	Test Code: SW8260B	Units: µg/L	Analysis Date: 9/9/02	Prep Date:						
Client ID:	Run ID: THOR_020909A	SeqNo: 130373									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	21.29	1.0	20	0	106	78.7	122	0			
Toluene	20.15	1.0	20	0	101	87.7	122	0			
Chlorobenzene	22.5	1.0	20	0.374	111	85.6	136	0			
1,1-Dichloroethene	18.93	1.0	20	0	94.6	70.7	117	0			
Trichloroethene (TCE)	21.05	1.0	20	0	105	76.9	130	0			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank
2

CLIENT: San Juan Refining
Work Order: 0208188
Project: Annual Monitor Wells

QC SUMMARY REPORT
 Laboratory Control Spike - generic

Sample ID: LCS **Batch ID:** R5783 **Test Code:** SW6010A **Units:** mg/L **Analysis Date:** 9/9/02 9:54:59 AM **Prep Date:**
Client ID: **Run ID:** ICP_020909B **SeqNo:** 130395
Analyte **Result** **PQL** **SPK value** **SPK Ref Val** **%REC** **LowLimit** **HighLimit** **RPD Ref Val** **%RPD** **RPDLimit** **Qual**
 Iron 1.128 0.020 1 0 113 76.3 122 0

Sample ID: LCS **Batch ID:** R5783 **Test Code:** SW6010A **Units:** mg/L **Analysis Date:** 9/9/02 11:14:58 AM **Prep Date:**
Client ID: **Run ID:** ICP_020909B **SeqNo:** 130419
Analyte **Result** **PQL** **SPK value** **SPK Ref Val** **%REC** **LowLimit** **HighLimit** **RPD Ref Val** **%RPD** **RPDLimit** **Qual**
 Iron 1.072 0.020 1 0 107 76.3 122 0

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345-3975 Fax 505.345.4107
www.hallenvironmental.com

Client: SAN JUAN Refining

Annual Monitor Wells

Address: #50 CR 4990

87413

Cindy Hurtado

Phone #:	505-632-4161
Sampler:	Cindy Hunsdale, Melvin Lasser

ax #:	505-637-3911	Samples Cold?:	☒ Yes	☐ No
-------	--------------	----------------	---	-----------------------------

Date: 3-29-02	Time: 3pm	Relinquished By: (Signature) <i>Wendy Turitto</i>	Received By: (Signature) <i>[Signature]</i>
Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)

ANALYSIS REQUEST

[illegible]

Remarks:

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345-3975 Fax 505.345.4107
www.hallenvironmental.com

Project Name:

Annual Monitor Wells

Project #:

Bloomfield, NM

87-413

Project Manager:

Cindy Hurtado

Phone #: 505-632-4161
Sampler: Cindy Hurtado Melvin Casler

ax #: SDS-632-3911

[illegible]

Date:	Time:	Relinquished By: (Signature)
-------	-------	------------------------------

20	3pm	Andy Putaro
----	-----	-------------

Received By: (Signature) 8/30/02

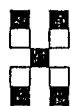
Received By: (Signature)

ANALYSIS REQUEST

[illegible]

Remarks:





Hall Environmental Analysis Laboratory

COVER LETTER

December 09, 2002

Cindy Hurtado
San Juan Refining
#50 CR 4990
Bloomfield, NM 87413
TEL: (505) 632-4161
FAX (505) 632-3911

RE: Annual Monitor Wells

Order No.: 0212034

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory received 2 samples on 12/6/2002 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager
Nancy McDuffie, Laboratory Manager

Hall Environmental Analysis Laboratory

Date: 09-Dec-02

CLIENT: San Juan Refining
Lab Order: 0212034
Project: Annual Monitor Wells
Lab ID: 0212034-01

Client Sample ID: P-#4
Collection Date: 12/5/2002 12:15:00 PM
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: BDH
Benzene	5900	100		µg/L	100	12/6/2002
Toluene	ND	100		µg/L	100	12/6/2002
Ethylbenzene	4300	100		µg/L	100	12/6/2002
Naphthalene	420	200		µg/L	100	12/6/2002
Xylenes, Total	13000	100		µg/L	100	12/6/2002
Surr: 1,2-Dichloroethane-d4	91.2	74.6-123		%REC	100	12/6/2002
Surr: 4-Bromofluorobenzene	96.4	73.5-126		%REC	100	12/6/2002
Surr: Dibromofluoromethane	93.7	78.6-115		%REC	100	12/6/2002
Surr: Toluene-d8	99.8	84.2-115		%REC	100	12/6/2002

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 09-Dec-02

CLIENT: San Juan Refining
Lab Order: 0212034
Project: Annual Monitor Wells
Lab ID: 0212034-02

Client Sample ID: P-#5
Collection Date: 12/5/2002 12:30:00 PM
Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: BDH
Benzene	1400	100		µg/L	100	12/6/2002
Toluene	ND	100		µg/L	100	12/6/2002
Ethylbenzene	4000	100		µg/L	100	12/6/2002
Naphthalene	570	200		µg/L	100	12/6/2002
Xylenes, Total	20000	250		µg/L	250	12/6/2002
Surr: 1,2-Dichloroethane-d4	89.3	74.6-123		%REC	100	12/6/2002
Surr: 4-Bromofluorobenzene	96.1	73.5-126		%REC	100	12/6/2002
Surr: Dibromofluoromethane	90.7	78.6-115		%REC	100	12/6/2002
Surr: Toluene-d8	99.5	84.2-115		%REC	100	12/6/2002

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 09-Dec-02

CLIENT: San Juan Refining
Work Order: 0212034
Project: Annual Monitor Wells

QC SUMMARY REPORT

Method Blank

Sample ID	5ml rb	Batch ID: R6638	Test Code: SW8260B	Units: µg/L	Analysis Date	12/6/2002	Prep Date				
Client ID:		Run ID:	THOR_021206A		SeqNo:	151763					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	1.0									
Toluene	ND	1.0									
Ethylbenzene	0.738	1.0									
Methyl tert-butyl ether (MTBE)	ND	1.0									J
1,2,4-Trimethylbenzene	ND	1.0									
1,3,5-Trimethylbenzene	ND	1.0									
1,2-Dichloroethane (EDC)	0.318	1.0									J
1,2-Dibromoethane (EDB)	ND	1.0									
Naphthalene	ND	2.0									
1-Methylnaphthalene	1.06	4.0									J
2-Methylnaphthalene	1.02	4.0									J
Bromobenzene	ND	1.0									
Bromochloromethane	ND	1.0									
Bromodichloromethane	ND	1.0									
Bromoform	ND	1.0									
Bromomethane	ND	1.0									
Carbon Tetrachloride	ND	1.0									
Chlorobenzene	ND	1.0									
Chloroethane	ND	2.0									
Chloroform	0.916	1.0									J
Chloromethane	ND	1.0									
2-Chlorotoluene	ND	1.0									
4-Chlorotoluene	ND	1.0									
cis-1,2-DCE	ND	1.0									
cis-1,3-Dichloropropene	ND	1.0									
1,2-Dibromo-3-chloropropane	ND	2.0									
Dibromochloromethane	ND	1.0									

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

J

CLIENT: San Juan Refining
Work Order: 0212034
Project: Annual Monitor Wells

QC SUMMARY REPORT
 Method Blank

Dibromomethane	ND	2.0
1,2-Dichlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0
Dichlorodifluoromethane	ND	1.0
1,1-Dichloroethane	ND	1.0
1,1-Dichloroethene	ND	1.0
1,2-Dichloropropane	ND	1.0
1,3-Dichloropropane	ND	1.0
2,2-Dichloropropane	ND	1.0
1,1-Dichloropropene	ND	1.0
Hexachlorobutadiene	ND	1.0
Isopropylbenzene	ND	1.0
4-Isopropyltoluene	ND	1.0
Methylene Chloride	ND	3.0
n-Butylbenzene	ND	1.0
n-Propylbenzene	ND	1.0
sec-Butylbenzene	ND	1.0
Styrene	ND	1.0
tert-Butylbenzene	ND	1.0
Tetrachloroethene (PCE)	ND	1.0
1,1,1,2-Tetrachloroethane	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
trans-1,2-DCE	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
Trichloroethene (TCE)	ND	1.0
Trichlorofluoromethane	ND	1.0
1,2,3-Trichlorobenzene	ND	1.0
1,2,4-Trichlorobenzene	ND	1.0
1,1,1-Trichloroethane	ND	1.0
1,1,2-Trichloroethane	ND	1.0
Vinyl chloride	ND	2.0
1,2,3-Trichloropropane	ND	2.0

Qualifiers: ND - Not Detected at the Reporting Limit
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits

CLIENT: San Juan Refining
Work Order: 0212034
Project: Annual Monitor Wells

QC SUMMARY REPORT
Method Blank

Xylenes, Total	ND	1.0	10	0	87.8	74.6	123	0
Surr: 1,2-Dichloroethane-d4	8.778	0	10	0				0
Surr: 4-Bromofluorobenzene	10.06	0	10	0	101	85.6	117	0
Surr: Dibromofluoromethane	9.032	0	10	0	90.3	78.6	115	0
Surr: Toluene-d8	9.922	0	10	0	99.2	84.2	115	0

Hall Environmental Analysis Laboratory

Date: 09-Dec-02

CLIENT: San Juan Refining
Work Order: 0212034
Project: Annual Monitor Wells

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID	100ng Ics	Batch ID: R6638	Test Code: SW8260B	Units: µg/L	Analysis Date 12/6/2002	Prep Date					
Client ID:		Run ID: THOR_021206A			SeqNo: 151764						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	19.01	1.0	20	0	95.1	78.7	122	0			
Toluene	20.94	1.0	20	0	105	87.7	122	0			
Chlorobenzene	22.41	1.0	20	0	112	85.6	136	0			
1,1-Dichloroethene	15.78	1.0	20	0	78.9	70.7	117	0			
Trichloroethene (TCE)	18.63	1.0	20	0	93.1	76.9	130	0			

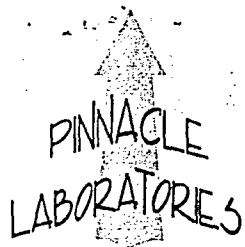
Sample ID	100ng Icsd	Batch ID: R6638	Test Code: SW8260B	Units: µg/L	Analysis Date 12/6/2002		Prep Date				
Client ID:			Run ID: THOR_021206A		SeqNo: 151765						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	18.42	1.0	20	0	92.1	78.7	122	19.01	3.15	11	
Toluene	19.09	1.0	20	0	95.5	87.7	122	20.94	9.24	12.2	
Chlorobenzene	22.47	1.0	20	0	112	85.6	136	22.41	0.285	12	
1,1-Dichloroethene	14.79	1.0	20	0	73.9	70.7	117	15.78	6.47	19.3	
Trichloroethene (TCE)	18.38	1.0	20	0	91.9	76.9	130	18.63	1.35	15.5	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank
 I





2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

Pinnacle Lab ID number **201076**
January 28, 2002

SAN JUAN REFINING CO.
#50 ROAD 4990
BLOOMFIELD, NM 87413

Project Name HAMMOND DITCH WEST
Project Number 021601

Attention: BARRY HOLMAN

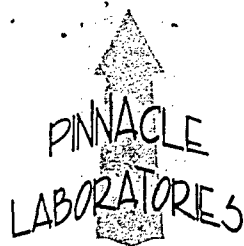
On 01/17/02 Pinnacle Laboratories, Inc., (ADHS License No. AZ0592 pending), received a request to analyze aqueous and non-aq samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

If you have any questions or comments, please do not hesitate to contact us at (505)344-3777.

H. Mitchell Rubenstein, Ph. D.
General Manager

MR: jt

Enclosure



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

CLIENT : SAN JUAN REFINING CO. PINNACLE ID : 201076
PROJECT # : 021601 DATE RECEIVED : 01/17/02
PROJECT NAME : HAMMOND DITCH WEST REPORT DATE : 01/28/02

PINNACLE ID #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
201076 - 01	#1 HAMMOND	NON-AQ	01/15/02
201076 - 02	#2 HAMMOND	NON-AQ	01/15/02
201076 - 03	#1 DITCH	NON-AQ	01/16/02
201076 - 04	#2 DITCH	NON-AQ	01/16/02
201076 - 05	#1 WATER	AQUEOUS	01/18/02
201076 - 06	#2 WATER	AQUEOUS	01/18/02



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Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

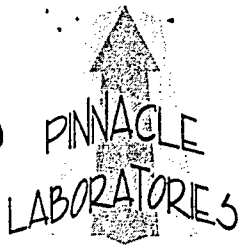
GENERAL CHEMISTRY RESULTS

418.1

CLIENT : SAN JUAN REFINING CO. PINNACLE I.D. : 201076
PROJECT # : 021601 DATE RECEIVED : 01/17/02
PROJECT NAME : HAMMOND DITCH WEST

SAMPLE			DATE	DATE	DATE	DIL.
ID. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	#1 HAMMOND	NON-AQ	01/15/02	01/18/02	01/18/02	10
02	#2 HAMMOND	NON-AQ	01/15/02	01/18/02	01/18/02	1
03	#1 DITCH	NON-AQ	01/16/02	01/18/02	01/18/02	1
PARAMETER		DET. LIMIT	UNITS	#1 HAMMOND	#2 HAMMOND	#1 DITCH
PETROLEUM HYDROCARBONS		20	MG/KG	3400	250	< 20
DRY WEIGHT (%)				89	91	78

CHEMIST NOTES:
N/A



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GENERAL CHEMISTRY RESULTS
418.1

CLIENT : SAN JUAN REFINING CO. PINNACLE I.D. : 201076
PROJECT # : 021601 DATE RECEIVED : 01/17/02
PROJECT NAME : HAMMOND DITCH WEST

SAMPLE		DATE		DATE	DATE	DIL.
ID. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
04	#2 DITCH	NON-AQ	01/16/02	01/18/02	01/18/02	1
PARAMETER		DET. LIMIT	UNITS	#2 DITCH		
PETROLEUM HYDROCARBONS		20	MG/KG	21		

DRY WEIGHT (%) 83

CHEMIST NOTES:

N/A



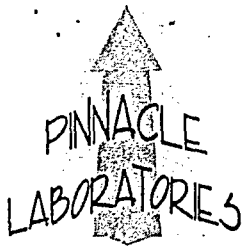
2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GENERAL CHEMISTRY - REAGENT BLANK
418.1

CLIENT	: SAN JUAN REFINING CO.	PINNACLE I.D.	: 201076
PROJECT #	: 021601	SAMPLE MATRIX	: NON-AQ
PROJECT NAME	: HAMMOND DITCH WEST	UNITS	: MG/KG

PARAMETER	REAGENT BLANK I.D.	SAMPLE RESULT
PETROLEUM HYDROCARBONS	011802	<20

CHEMIST NOTES:
N/A



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Albuquerque, New Mexico 87107
Phone (505) 344-3777
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GENERAL CHEMISTRY - QUALITY CONTROL
418.1

CLIENT : SAN JUAN REFINING CO.
PROJECT # : 021601
PROJECT NAME : HAMMOND DITCH WEST

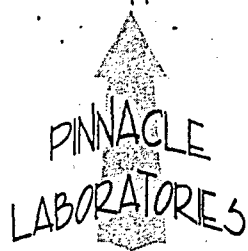
PINNACLE I.D. : 201076
SAMPLE MATRIX : NON-AQ
UNITS : MG/KG

PARAMETER	BLANK I.D.	SAMPLE RESULT	DUP. RESULT	% RPD	SPIKED SAMPLE	SPIKE CONC.	% REC
PETROLEUM HYDROCARBONS	201076-03	<20	<20	N/A	159	154	103%

CHEMIST NOTES:
N/A

$$\text{Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
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GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : SAN JUAN REFINING CO.
PROJECT # : 021601
PROJECT NAME : HAMMOND DITCH WEST

PINNACLE I.D.: 201076

SAMPLE			DATE	DATE	DATE	DIL.
ID. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	#1 HAMMOND	NON-AQ	01/15/02	01/17/02	01/18/02	25
02	#2 HAMMOND	NON-AQ	01/15/02	01/17/02	01/18/02	1
03	#1 DITCH	NON-AQ	01/16/02	01/17/02	01/18/02	1
PARAMETER		DET. LIMIT	UNITS	#1 HAMMOND	#2 HAMMOND	#1 DITCH
BENZENE		0.025	MG/KG	2.6	< 0.025	< 0.025
TOLUENE		0.025	MG/KG	3.3	0.065	< 0.025
ETHYLBENZENE		0.025	MG/KG	11	0.22	< 0.025
TOTAL XYLENES		0.050	MG/KG	130	2.2	0.056

SURROGATE:
BROMOFLUOROBENZENE (%) 100 118 86
SURROGATE LIMITS (65 - 120)

CHEMIST NOTES:
N/A



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : SAN JUAN REFINING CO.
PROJECT # : 021601
PROJECT NAME : HAMMOND DITCH WEST

PINNACLE I.D.: 201076

SAMPLE			DATE	DATE	DATE	DIL.
ID. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
04	#2 DITCH	NON-AQ	01/16/02	01/17/02	01/18/02	1
PARAMETER		DET. LIMIT	UNITS	#2 DITCH		
BENZENE		0.025	MG/KG	0.038		
TOLUENE		0.025	MG/KG	< 0.025		
ETHYLBENZENE		0.025	MG/KG	0.065		
TOTAL XYLENES		0.050	MG/KG	1.5		

SURROGATE:

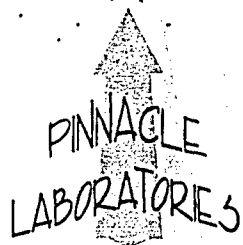
BROMOFLUOROBENZENE (%)

120

SURROGATE LIMITS (65 - 120)

CHEMIST NOTES:

N/A



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Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 201076
BLANK I. D.	: SRB 11702B	DATE EXTRACTED	: 01/17/02
CLIENT	: SAN JUAN REFINING CO.	DATE ANALYZED	: 01/18/02
PROJECT #	: 021601	SAMPLE MATRIX	: NON-AQ
PROJECT NAME	: HAMMOND DITCH WEST		

PARAMETER	UNITS	
BENZENE	MG/KG	<0.025
TOLUENE	MG/KG	<0.025
ETHYLBENZENE	MG/KG	<0.025
TOTAL XYLENES	MG/KG	<0.050

SURROGATE:

BROMOFLUOROBENZENE (%)

104

SURROGATE LIMITS:

(80 - 120)

CHEMIST NOTES:

IA



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

GAS CHROMATOGRAPHY QUALITY CONTROL
LCS/LCSD

TEST : EPA 8021 MODIFIED
BATCH ID# : 011802
CLIENT : SAN JUAN REFINING CO.
PROJECT # : 021601
PROJECT NAME : HAMMOND DITCH WEST

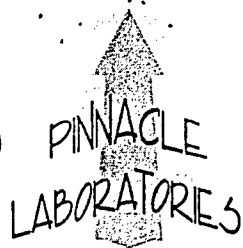
PINNACLE I.D. : 201076
DATE EXTRACTED : 01/17/02
DATE ANALYZED : 01/18/02
SAMPLE MATRIX : NON-AQ
UNITS : MG/KG

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
BENZENE	<0.025	1.00	1.02	103	0.99	99	3	(68 - 120)	20
TOLUENE	<0.025	1.00	1.02	102	0.99	99	3	(64 - 120)	20
ETHYLBENZENE	<0.025	1.00	1.02	103	0.99	100	3	(49 - 127)	20
TOTAL XYLENES	<0.050	3.00	3.13	105	3.03	101	3	(58 - 120)	20
METHYL-t-BUTYL ETHER	<0.13	1.00	1.08	108	1.00	101	8	(66 - 120)	20

CHEMIST NOTES:
N/A

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$



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GAS CHROMATOGRAPHY QUALITY CONTROL
MS/MSD

TEST : EPA 8021 MODIFIED
MSMSD # : 201076-03
CLIENT : SAN JUAN REFINING CO.
PROJECT # : 021601
PROJECT NAME : HAMMOND DITCH WEST

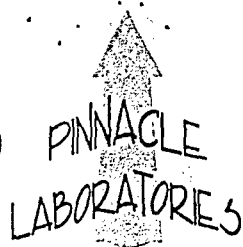
PINNACLE I.D. : 201076
DATE EXTRACTED : 01/17/02
DATE ANALYZED : 01/18/02
SAMPLE MATRIX : NON-AQ
UNITS : MG/KG

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
BENZENE	<0.025	1.00	0.94	94	0.94	94	0	(68 - 120)	20
TOLUENE	<0.025	1.00	0.98	98	0.97	97	1	(64 - 120)	20
ETHYLBENZENE	<0.025	1.00	0.92	92	0.92	92	0	(49 - 127)	20
TOTAL XYLENES	0.056	3.00	2.85	93	2.82	92	1	(58 - 120)	20
METHYL-t-BUTYL ETHER	<0.13	1.00	1.01	101	0.94	94	7	(66 - 120)	20

CHEMIST NOTES:
N/A

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$



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GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED
CLIENT : SAN JUAN REFINING CO.
PROJECT # : 021601
PROJECT NAME : HAMMOND DITCH WEST

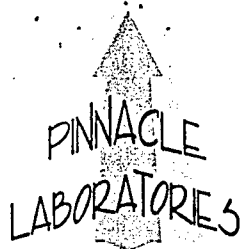
PINNACLE I.D.: 201076

SAMPLE			DATE	DATE	DATE	DIL.
ID. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
05	#1 WATER	AQUEOUS	01/18/02	NA	01/18/02	10
06	#2 WATER	AQUEOUS	01/18/02	NA	01/18/02	10

PARAMETER	DET. LIMIT	UNITS	#1 WATER	#2 WATER
BENZENE	0.5	UG/L	54	110
TOLUENE	0.5	UG/L	< 5.0	< 5.0
ETHYLBENZENE	0.5	UG/L	22	36
TOTAL XYLENES	1.0	UG/L	420	700

PROGATE:
BROMOFLUOROBENZENE (%) 117 108
SURROGATE LIMITS (80 - 120)

CHEMIST NOTES:
N/A



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GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 201076
BLANK I. D.	: 011702	DATE EXTRACTED	: N/A
CLIENT	: SAN JUAN REFINING CO.	DATE ANALYZED	: 01/17/02
PROJECT #	: 021601	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: HAMMOND DITCH WEST		

PARAMETER	UNITS	
BENZENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
ETHYLBENZENE	UG/L	<0.5
TOTAL XYLENES	UG/L	<1.0

SURROGATE:

BROMOFLUOROBENZENE (%)

103

SURROGATE LIMITS:

(80 - 120)

CHEMIST NOTES:



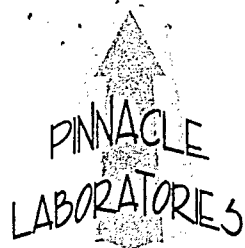
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GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST :	EPA 8021 MODIFIED	PINNACLE I.D. :	201076
BLANK I. D. :	011802	DATE EXTRACTED :	N/A
CLIENT :	SAN JUAN REFINING CO.	DATE ANALYZED :	01/18/02
PROJECT # :	021601	SAMPLE MATRIX :	AQUEOUS
PROJECT NAME :	HAMMOND DITCH WEST		

PARAMETER	UNITS	
BENZENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
ETHYLBENZENE	UG/L	<0.5
TOTAL XYLENES	UG/L	<1.0

SURROGATE:
BROMOFLUOROBENZENE (%) 105
SURROGATE LIMITS: (80 - 120)
CHEMIST NOTES:



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GAS CHROMATOGRAPHY QUALITY CONTROL
LCS/LCSD

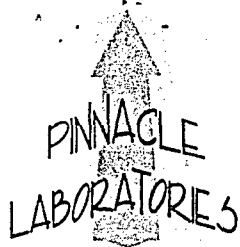
TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 201076
BATCH ID#	: 011702	DATE EXTRACTED	: N/A
CLIENT	: SAN JUAN REFINING CO.	DATE ANALYZED	: 01/17/02
PROJECT #	: 021601	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: HAMMOND DITCH WEST	UNITS	: UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
BENZENE	<0.5	20.0	20.7	104	20.2	101	2	(80 - 120)	20
TOLUENE	<0.5	20.0	20.7	104	20.1	101	3	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	20.8	104	20.3	102	2	(80 - 120)	20
TOTAL XYLENES	<1.0	60.0	63.2	105	62.4	104	1	(80 - 120)	20
METHYL-t-BUTYL ETHER	<2.5	20.0	20.6	103	20.4	102	1	(70 - 133)	20

CHEMIST NOTES:
N/A

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$



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GAS CHROMATOGRAPHY QUALITY CONTROL
LCS/LCSD

TEST : EPA 8021 MODIFIED
BATCH ID# : 011802
CLIENT : SAN JUAN REFINING CO.
PROJECT # : 021601
PROJECT NAME : HAMMOND DITCH WEST

PINNACLE I.D. : 201076
DATE EXTRACTED : N/A
DATE ANALYZED : 01/18/02
SAMPLE MATRIX : AQUEOUS
UNITS : UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
BENZENE	<0.5	20.0	20.5	103	19.8	99	3	(80 - 120)	20
TOLUENE	<0.5	20.0	20.4	102	19.8	99	3	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	20.5	103	19.9	100	3	(80 - 120)	20
TOTAL XYLENES	<1.0	60.0	62.7	105	60.6	101	3	(80 - 120)	20
METHYL-t-BUTYL ETHER	<2.5	20.0	21.6	108	20.1	101	7	(70 - 133)	20

CHEMIST NOTES:
N/A

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$



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GAS CHROMATOGRAPHY QUALITY CONTROL
MSMSD

TEST : EPA 8021 MODIFIED
MSMSD # : 201074-01
CLIENT : SAN JUAN REFINING CO.
PROJECT # : 021601
PROJECT NAME : HAMMOND DITCH WEST

PINNACLE I.D. : 201076
DATE EXTRACTED : N/A
DATE ANALYZED : 01/17/02
SAMPLE MATRIX : AQUEOUS
UNITS : UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
BENZENE	<0.5	20.0	20.8	104	20.4	102	2	(80 - 120)	20
TOLUENE	<0.5	20.0	20.7	104	20.6	103	0	(80 - 120)	20
ETHYLBENZENE	<0.5	20.0	20.7	104	20.7	104	0	(80 - 120)	20
TOTAL XYLENES	<1.0	60.0	63.1	105	62.7	105	1	(80 - 120)	20
METHYL-t-BUTYL ETHER	<2.5	20.0	18.2	91	17.6	88	3	(70 - 133)	20

CHEMIST NOTES:
N/A

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

CHAIN OF CUSTODY

PLI Accession #:

DATE: 1-17-02 PAGE: 1 OF 1

201076

SHADED AREAS ARE FOR LAB USE ONLY.

PLEASE FILL THIS FORM IN COMPLETELY.

ANALYSIS REQUEST			
PROJECT MANAGER: <u>BARRY HOLMAN</u> COMPANY: <u>SAN JUAN Refining Co.</u> ADDRESS: <u>#50 CL 4990</u> <u>Bloomfield NM. 87413</u> PHONE: <u>505-632-4168</u> FAX: <u>505-632-3911</u> BILL TO: <u>Same</u> COMPANY: _____ ADDRESS: _____	SAMPLE ID <u>#1 Hammond</u> <u>#2 Hammond</u> <u>#1 Ditch</u> <u>#2 Ditch</u> <u>#1 Water</u> <u>#2 Water</u>	DATE <u>1-15-02 3:15 pm</u> <u>1-15-02 3:00 pm</u> <u>1-16-02 11:00 pm</u> <u>1-16-02 11:00 pm</u> <u>1-18-02 8:00 am</u> <u>1-18-02 8:55 am</u>	TIME MATRIX LAB ID <u>Soil</u> <u>Soil</u> <u>Soil</u> <u>Soil</u> <u>H₂O</u> <u>H₂O</u>
(MOD. 8015) Diesel/Direct Inject (M8015) Gas/Purge & Trap 8021 (BTEX/8015 (Gasoline) MTBE 8021 (BTEX) ☐ MTBE ☐ TMB ☐ PCE 8021 (TCL) 8021 (EDX) 8021 (HALO) 8021 (CUST) 504.1 EDB ☐ DBCP ☐			
8260 (TCL) Volatile Organics 8260 (CUST) Volatile Organics 8260 (Full) Volatile Organics 8260 (Landfill) Volatile Organics Pesticides /PCB (608/8081/8082) Herbicides (615/8151) Base/Neutral/Acid Compounds GC/MS (625/8270) Polynuclear Aromatics (610/8310/8270-SIMS) General Chemistry: Priority Pollutant Metals (13) Target Analyte List Metals (23) RCRA Metals (8) RCRA Metals by TCLP (Method 1311) Metals: NUMBER OF CONTAINERS			

PROJECT INFORMATION		PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS	
PROJ. NO.: <u>0216 01</u>	(RUSH) ☒ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK	(NORMAL) ☐	
PROJ. NAME: <u>Hammond Ditch</u>	CERTIFICATION REQUIRED: ☐ NM ☐ SDWA ☐ OTHER		
P.O. NO.:	METHANOL PRESERVATION ☐		
SHIPPED VIA:	COMMENTS: ☐ FIXED FEE ☐		
SAMPLE RECEIPT			
NO. CONTAINERS	<u>8</u>		
CUSTODY SEALS	Y/N <u>NA</u>		
RECEIVED INTACT	<u>YES</u>		
BLUE ICE (ICE)	<u>3.50</u>		

RELINQUISHED BY:		RELINQUISHED BY:	
Signature: <u>Barry Holman</u>	Time: <u>9:30 AM</u>	Signature: _____	Time: _____
Printed Name: <u>BARRY HOLMAN</u>	Date: <u>1/18/02</u>	Printed Name: _____	Date: _____
Company: _____	See reverse side (Force Majeure)	Company: _____	
RECEIVED BY:		RECEIVED BY:	
Signature: _____	Time: _____	Signature: <u>Monique Davis</u>	Time: <u>1630</u>
Printed Name: _____	Date: _____	Printed Name: <u>Monique Davis</u>	Date: <u>1/18/02</u>
Company: _____		Company: _____	





2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
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Pinnacle Lab ID number 203052
March 27, 2002

SAN JUAN REFINING CO.
#50 ROAD 4990
BLOOMFIELD, NM 87413

Project Name HD-EAST OUTFALL
Project Number 31402

Attention: CINDY HURTADO

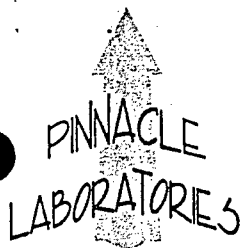
On 03/15/02 Pinnacle Laboratories, Inc., (ADHS License No. AZ0592 pending), received a request to analyze aqueous samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

If you have any questions or comments, please do not hesitate to contact us at (505)344-3777.

H. Mitchell Rubenstein, Ph. D.
General Manager

MR: jt

Enclosure



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

CLIENT	: SAN JUAN REFINING CO.	PINNACLE ID	: 203052
PROJECT #	: 31402	DATE RECEIVED	: 03/15/02
PROJECT NAME	: HD-EAST OUTFALL	REPORT DATE	: 03/27/02

PINNACLE ID #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
203052 - 01	OUTFALL #1-HD	AQUEOUS	03/14/02
203052 - 02	OUTFALL #2-HD	AQUEOUS	03/14/02



2709-D Pan American Freeway NE
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Phone (505) 344-3777
Fax (505) 344-4413

GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : SAN JUAN REFINING CO.
PROJECT # : 31402
PROJECT NAME : HD-EAST OUTFALL

PINNACLE I.D. : 203052
DATE RECEIVED : 03/15/02

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
203052-01	OUTFALL #1-HD	AQUEOUS	03/14/02	N/A	03/20/02	1
PARAMETER (CAS#)	DET. LIMIT	RESULT	UNITS			
Dichlorodifluoromethane (75-71-8)	1.0	< 1.0	ug/L			
Chloromethane (74-87-9)	1.0	< 1.0	ug/L			
Vinyl Chloride (75-01-4)	1.0	< 1.0	ug/L			
Bromomethane (74-83-9)	2.0	< 2.0	ug/L			
Chloroethane (75-00-3)	2.0	< 2.0	ug/L			
Trichlorofluoromethane (75-69-4)	1.0	< 1.0	ug/L			
Acetone (67-64-1)	10	< 10	ug/L			
Acrolein (107-02-8)	5.0	< 5.0	ug/L			
1,1-Dichloroethene (75-35-4)	1.0	< 1.0	ug/L			
Iodomethane (74-88-4)	5.0	< 5.0	ug/L			
Methylene Chloride (75-09-2)	1.0	< 1.0	ug/L			
Acrylonitrile (107-13-1)	5.0	< 5.0	ug/L			
cis-1,2-Dichloroethene (107-06-2)	1.0	< 1.0	ug/L			
tert-butyl-t-butyl Ether (628-28-4)	1.0	< 1.0	ug/L			
1,1,2-Trichlorotrifluoroethane (76-13-1)	5.0	< 5.0	ug/L			
1,1-Dichloroethane (75-34-3)	1.0	< 1.0	ug/L			
trans-1,2-Dichloroethene (156-60-5)	1.0	< 1.0	ug/L			
2-Butanone (78-93-3)	10	< 10	ug/L			
Carbon Disulfide (75-15-0)	1.0	< 1.0	ug/L			
Bromochloromethane (74-97-5)	1.0	< 1.0	ug/L			
Chloroform (67-66-3)	1.0	< 1.0	ug/L			
2,2-Dichloropropane (594-20-7)	1.0	< 1.0	ug/L			
1,2-Dichloroethane (107-06-2)	1.0	< 1.0	ug/L			
Vinyl Acetate (108-05-4)	1.0	< 1.0	ug/L			
1,1,1-Trichloroethane (71-55-6)	1.0	< 1.0	ug/L			
1,1-Dichloropropene (563-58-6)	1.0	< 1.0	ug/L			
Carbon Tetrachloride (56-23-5)	1.0	< 1.0	ug/L			
Benzene (71-43-2)	1.0	< 1.0	ug/L			
1,2-Dichloropropane (78-87-5)	1.0	< 1.0	ug/L			
Trichloroethene (79-01-6)	1.0	< 1.0	ug/L			
Bromodichloromethane (75-27-4)	1.0	< 1.0	ug/L			
2-Chloroethyl Vinyl Ether (110-75-8)	10	< 10	ug/L			
cis-1,3-Dichloropropene (10061-01-5)	1.0	< 1.0	ug/L			
trans-1,3-Dichloropropene (10061-02-6)	1.0	< 1.0	ug/L			
1,1,2-Trichloroethane (79-00-5)	1.0	< 1.0	ug/L			
1,3-Dichloropropane (142-28-9)	1.0	< 1.0	ug/L			
Dibromomethane (74-95-3)	1.0	< 1.0	ug/L			
Toluene (108-88-3)	1.0	< 1.0	ug/L			
1,2-Dibromoethane (106-93-4)	1.0	< 1.0	ug/L			
4-Methyl-2-Pentanone (108-10-1)	10	< 10	ug/L			
2-Hexanone (591-78-6)	10	< 10	ug/L			
Dibromochloromethane (124-48-1)	1.0	< 1.0	ug/L			
Tetrachloroethene (127-18-4)	1.0	< 1.0	ug/L			
Styrene (108-90-7)	1.0	< 1.0	ug/L			
o-Xylene (100-41-4)	1.0	< 1.0	ug/L			

GC/MS RESULTS

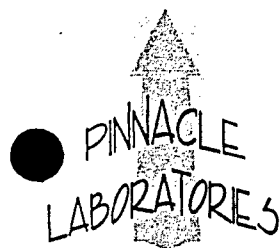
TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : SAN JUAN REFINING CO.
PROJECT # : 31402
PROJECT NAME : HD-EAST OUTFALL

PINNACLE I.D. : 203052
DATE RECEIVED : 03/15/02

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
203052-01	OUTFALL #1-HD	AQUEOUS	03/14/02	N/A	03/20/02	1
PARAMETER (CAS#)	DET. LIMIT	RESULT	UNITS			
1,1,1,2-Tetrachloroethane (630-20-6)	1.0	< 1.0	ug/L			
m&p Xylenes (108-38-3, 106-42-3)	1.0	< 1.0	ug/L			
o-Xylene (95-47-6)	1.0	< 1.0	ug/L			
Styrene (100-42-5)	1.0	< 1.0	ug/L			
Bromoform (75-25-2)	1.0	< 1.0	ug/L			
1,1,2,2-Tetrachloroethane (79-34-5)	1.0	< 1.0	ug/L			
1,2,3-Trichloropropane (96-18-4)	1.0	< 1.0	ug/L			
Isopropyl Benzene (98-82-8)	1.0	< 1.0	ug/L			
Bromobenzene (108-86-1)	1.0	< 1.0	ug/L			
trans-1,4-Dichloro-2-Butene (110-57-6)	1.0	< 1.0	ug/L			
n-Propylbenzene (103-65-1)	1.0	< 1.0	ug/L			
2-Chlorotoluene (95-49-8)	1.0	< 1.0	ug/L			
4-Chlorotoluene (106-43-4)	1.0	< 1.0	ug/L			
1,3,5-Trimethylbenzene (108-67-8)	1.0	< 1.0	ug/L			
Butylbenzene (98-06-6)	1.0	< 1.0	ug/L			
2,4-Trimethylbenzene (95-63-6)	1.0	< 1.0	ug/L			
sec-Butylbenzene (135-98-8)	1.0	< 1.0	ug/L			
1,3-Dichlorobenzene (541-73-1)	1.0	< 1.0	ug/L			
1,4-Dichlorobenzene (106-46-7)	1.0	< 1.0	ug/L			
p-Isopropyltoluene (99-87-6)	1.0	< 1.0	ug/L			
1,2-Dichlorobenzene (95-50-1)	1.0	< 1.0	ug/L			
n-Butylbenzene (104-51-8)	1.0	< 1.0	ug/L			
1,2-Dibromomo-3-chloropropane (96-12-8)	1.0	< 1.0	ug/L			
1,2,4-Trichlorobenzene (120-82-1)	1.0	< 1.0	ug/L			
Naphthalene (91-20-3)	3.0	< 3.0	ug/L			
Hexachlorobutadiene (87-68-3)	1.0	< 1.0	ug/L			
1,2,3-Trichlorobenzene (87-61-6)	1.0	< 1.0	ug/L			

SURROGATE % RECOVERY

1,2-Dichloroethane-d4	101 (80 - 120)
Toluene-d8	101 (88 - 110)
Bromofluorobenzene	101 (86 - 115)



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
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GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : SAN JUAN REFINING CO.
PROJECT # : 31402
PROJECT NAME : HD-EAST OUTFALL

PINNACLE I.D. : 203052
DATE RECEIVED : 03/15/02

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
203052-02	OUTFALL #2-HD	AQUEOUS	03/14/02	N/A	03/20/02	1
PARAMETER (CAS#)	DET. LIMIT	RESULT	UNITS			
Dichlorodifluoromethane (75-71-8)	1.0	< 1.0	ug/L			
Chloromethane (74-87-9)	1.0	< 1.0	ug/L			
Vinyl Chloride (75-01-4)	1.0	< 1.0	ug/L			
Bromomethane (74-83-9)	2.0	< 2.0	ug/L			
Chloroethane (75-00-3)	2.0	< 2.0	ug/L			
Trichlorofluoromethane (75-69-4)	1.0	< 1.0	ug/L			
Acetone (67-64-1)	10	< 10	ug/L			
Acrolein (107-02-8)	5.0	< 5.0	ug/L			
1,1-Dichloroethene (75-35-4)	1.0	< 1.0	ug/L			
Iodomethane (74-88-4)	5.0	< 5.0	ug/L			
Methylene Chloride (75-09-2)	1.0	< 1.0	ug/L			
Acrylonitrile (107-13-1)	5.0	< 5.0	ug/L			
cis-1,2-Dichloroethene (107-06-2)	1.0	< 1.0	ug/L			
n-butyl Ether (628-28-4)	1.0	< 1.0	ug/L			
1,2-Trichlorotrifluoroethane (76-13-1)	5.0	< 5.0	ug/L			
1,1-Dichloroethane (75-34-3)	1.0	< 1.0	ug/L			
trans-1,2-Dichloroethene (156-60-5)	1.0	< 1.0	ug/L			
2-Butanone (78-93-3)	10	< 10	ug/L			
Carbon Disulfide (75-15-0)	1.0	< 1.0	ug/L			
Bromochloromethane (74-97-5)	1.0	< 1.0	ug/L			
Chloroform (67-66-3)	1.0	< 1.0	ug/L			
2,2-Dichloropropane (594-20-7)	1.0	< 1.0	ug/L			
1,2-Dichloroethane (107-06-2)	1.0	< 1.0	ug/L			
Vinyl Acetate (108-05-4)	1.0	< 1.0	ug/L			
1,1,1-Trichloroethane (71-55-6)	1.0	< 1.0	ug/L			
1,1-Dichloropropene (563-58-6)	1.0	< 1.0	ug/L			
Carbon Tetrachloride (56-23-5)	1.0	< 1.0	ug/L			
Benzene (71-43-2)	1.0	< 1.0	ug/L			
1,2-Dichloropropane (78-87-5)	1.0	< 1.0	ug/L			
Trichloroethene (79-01-6)	1.0	< 1.0	ug/L			
Bromodichloromethane (75-27-4)	1.0	< 1.0	ug/L			
2-Chloroethyl Vinyl Ether (110-75-8)	10	< 10	ug/L			
cis-1,3-Dichloropropene (10061-01-5)	1.0	< 1.0	ug/L			
trans-1,3-Dichloropropene (10061-02-6)	1.0	< 1.0	ug/L			
1,1,2-Trichloroethane (79-00-5)	1.0	< 1.0	ug/L			
1,3-Dichloropropane (142-28-9)	1.0	< 1.0	ug/L			
Dibromomethane (74-95-3)	1.0	< 1.0	ug/L			
Toluene (108-88-3)	1.0	< 1.0	ug/L			
1,2-Dibromoethane (106-93-4)	1.0	< 1.0	ug/L			
4-Methyl-2-Pentanone (108-10-1)	10	< 10	ug/L			
2-Hexanone (591-78-6)	10	< 10	ug/L			
Dibromochloromethane (124-48-1)	1.0	< 1.0	ug/L			
Tetrachloroethene (127-18-4)	1.0	< 1.0	ug/L			
Benzene (108-90-7)	1.0	< 1.0	ug/L			
Benzene (100-41-4)	1.0	< 1.0	ug/L			



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GC/MS RESULTS

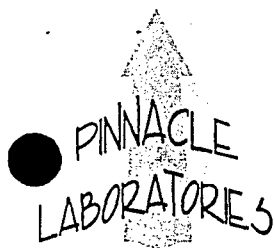
TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : SAN JUAN REFINING CO.
PROJECT # : 31402
PROJECT NAME : HD-EAST OUTFALL

PINNACLE I.D. : 203052
DATE RECEIVED : 03/15/02

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
203052-02	OUTFALL #2-HD	AQUEOUS	03/14/02	N/A	03/20/02	1
PARAMETER (CAS#)	DET. LIMIT	RESULT	UNITS			
1,1,1,2-Tetrachloroethane (630-20-6)	1.0	< 1.0	ug/L			
m&p Xylenes (108-38-3, 106-42-3)	1.0	< 1.0	ug/L			
o-Xylene (95-47-6)	1.0	< 1.0	ug/L			
Styrene (100-42-5)	1.0	< 1.0	ug/L			
Bromoform (75-25-2)	1.0	< 1.0	ug/L			
1,1,2,2-Tetrachloroethane (79-34-5)	1.0	< 1.0	ug/L			
1,2,3-Trichloropropane (96-18-4)	1.0	< 1.0	ug/L			
Isopropyl Benzene (98-82-8)	1.0	< 1.0	ug/L			
Bromobenzene (108-86-1)	1.0	< 1.0	ug/L			
trans-1,4-Dichloro-2-Butene (110-57-6)	1.0	< 1.0	ug/L			
n-Propylbenzene (103-65-1)	1.0	< 1.0	ug/L			
2-Chlorotoluene (95-49-8)	1.0	< 1.0	ug/L			
4-Chlorotoluene (106-43-4)	1.0	< 1.0	ug/L			
1,3,5-Trimethylbenzene (108-67-8)	1.0	< 1.0	ug/L			
Butylbenzene (98-06-6)	1.0	< 1.0	ug/L			
1,4-Trimethylbenzene (95-63-6)	1.0	< 1.0	ug/L			
sec-Butylbenzene (135-98-8)	1.0	< 1.0	ug/L			
1,3-Dichlorobenzene (541-73-1)	1.0	< 1.0	ug/L			
1,4-Dichlorobenzene (106-46-7)	1.0	< 1.0	ug/L			
p-Isopropyltoluene (99-87-6)	1.0	< 1.0	ug/L			
1,2-Dichlorobenzene (95-50-1)	1.0	< 1.0	ug/L			
n-Butylbenzene (104-51-8)	1.0	< 1.0	ug/L			
1,2-Dibromomo-3-chloropropane (96-12-8)	1.0	< 1.0	ug/L			
1,2,4-Trichlorobenzene (120-82-1)	1.0	< 1.0	ug/L			
Naphthalene (91-20-3)	3.0	< 3.0	ug/L			
Hexachlorobutadiene (87-68-3)	1.0	< 1.0	ug/L			
1,2,3-Trichlorobenzene (87-61-6)	1.0	< 1.0	ug/L			

SURROGATE % RECOVERY

1,2-Dichloroethane-d4	102 (80 - 120)
Toluene-d8	102 (88 - 110)
Bromofluorobenzene	102 (86 - 115)



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GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : SAN JUAN REFINING CO.
PROJECT # : 31402
PROJECT NAME : HD-EAST OUTFALL

PINNACLE I.D. : 203052

SAMPLE ID #	BATCH	MATRIX	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
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REAGENT BLANK	032002A	AQUEOUS	N/A	03/20/02	1
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PARAMETER (CAS#)	DET. LIMIT	RESULT	UNITS
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Dichlorodifluoromethane (75-71-8)	1.0	< 1.0	ug/L
Chloromethane (74-87-9)	1.0	< 1.0	ug/L
Vinyl Chloride (75-01-4)	1.0	< 1.0	ug/L
Bromomethane (74-83-9)	2.0	< 2.0	ug/L
Chloroethane (75-00-3)	2.0	< 2.0	ug/L
Trichlorofluoromethane (75-69-4)	1.0	< 1.0	ug/L
Acetone (67-64-1)	10	< 10	ug/L
Acrolein (107-02-8)	5.0	< 5.0	ug/L
1,1-Dichloroethene (75-35-4)	1.0	< 1.0	ug/L
Iodomethane (74-88-4)	5.0	< 5.0	ug/L
Methylene Chloride (75-09-2)	1.0	< 1.0	ug/L
Acrylonitrile (107-13-1)	5.0	< 5.0	ug/L
cis-1,2-Dichloroethene (107-06-2)	1.0	< 1.0	ug/L
Methyl t-butyl Ether (628-28-4)	1.0	< 1.0	ug/L
Trichlorotrifluoroethane (76-13-1)	5.0	< 5.0	ug/L
1,1-Dichloroethane (75-34-3)	1.0	< 1.0	ug/L
trans-1,2-Dichloroethene (156-60-5)	1.0	< 1.0	ug/L
2-Butanone (78-93-3)	10	< 10	ug/L
Carbon Disulfide (75-15-0)	1.0	< 1.0	ug/L
Bromochloromethane (74-97-5)	1.0	< 1.0	ug/L
Chloroform (67-66-3)	1.0	< 1.0	ug/L
2,2-Dichloropropane (594-20-7)	1.0	< 1.0	ug/L
1,2-Dichloroethane (107-06-2)	1.0	< 1.0	ug/L
Vinyl Acetate (108-05-4)	1.0	< 1.0	ug/L
1,1,1-Trichloroethane (71-55-6)	1.0	< 1.0	ug/L
1,1-Dichloropropene (563-58-6)	1.0	< 1.0	ug/L
Carbon Tetrachloride (56-23-5)	1.0	< 1.0	ug/L
Benzene (71-43-2)	1.0	< 1.0	ug/L
1,2-Dichloropropane (78-87-5)	1.0	< 1.0	ug/L
Trichloroethene (79-01-6)	1.0	< 1.0	ug/L
Bromodichloromethane (75-27-4)	1.0	< 1.0	ug/L
2-Chloroethyl Vinyl Ether (110-75-8)	10	< 10	ug/L
cis-1,3-Dichloropropene (10061-01-5)	1.0	< 1.0	ug/L
trans-1,3-Dichloropropene (10061-02-6)	1.0	< 1.0	ug/L
1,1,2-Trichloroethane (79-00-5)	1.0	< 1.0	ug/L
1,3-Dichloropropane (142-28-9)	1.0	< 1.0	ug/L
Dibromomethane (74-95-3)	1.0	< 1.0	ug/L
Toluene (108-88-3)	1.0	< 1.0	ug/L
1,2-Dibromoethane (106-93-4)	1.0	< 1.0	ug/L
4-Methyl-2-Pentanone (108-10-1)	10	< 10	ug/L
2-Hexanone (591-78-6)	10	< 10	ug/L
Dibromochloromethane (124-48-1)	1.0	< 1.0	ug/L
Tetrachloroethene (127-18-4)	1.0	< 1.0	ug/L
Chlorobenzene (108-90-7)	1.0	< 1.0	ug/L
Ethylbenzene (100-41-4)	1.0	< 1.0	ug/L



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GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : SAN JUAN REFINING CO.
PROJECT # : 31402
PROJECT NAME : HD-EAST OUTFALL

PINNACLE I.D. : 203052

SAMPLE ID #	BATCH	MATRIX	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
REAGENT BLANK	032002A	AQUEOUS	N/A	03/20/02	1
PARAMETER (CAS#)	DET. LIMIT	RESULT	UNITS		
1,1,1,2-Tetrachloroethane (630-20-6)	1.0	< 1.0	ug/L		
m&p Xylenes (108-38-3, 106-42-3)	1.0	< 1.0	ug/L		
o-Xylene (95-47-6)	1.0	< 1.0	ug/L		
Styrene (100-42-5)	1.0	< 1.0	ug/L		
Bromoform (75-25-2)	1.0	< 1.0	ug/L		
1,1,2,2-Tetrachloroethane (79-34-5)	1.0	< 1.0	ug/L		
1,2,3-Trichloropropane (96-18-4)	1.0	< 1.0	ug/L		
Isopropyl Benzene (98-82-8)	1.0	< 1.0	ug/L		
Bromobenzene (108-86-1)	1.0	< 1.0	ug/L		
trans-1,4-Dichloro-2-Butene (110-57-6)	1.0	< 1.0	ug/L		
n-Propylbenzene (103-65-1)	1.0	< 1.0	ug/L		
2-Chlorotoluene (95-49-8)	1.0	< 1.0	ug/L		
4-Chlorotoluene (106-43-4)	1.0	< 1.0	ug/L		
1,3,5-Trimethylbenzene (108-67-8)	1.0	< 1.0	ug/L		
n-Butylbenzene (98-06-6)	1.0	< 1.0	ug/L		
2,4-Trimethylbenzene (95-63-6)	1.0	< 1.0	ug/L		
sec-Butylbenzene (135-98-8)	1.0	< 1.0	ug/L		
1,3-Dichlorobenzene (541-73-1)	1.0	< 1.0	ug/L		
1,4-Dichlorobenzene (106-46-7)	1.0	< 1.0	ug/L		
p-Isopropyltoluene (99-87-6)	1.0	< 1.0	ug/L		
1,2-Dichlorobenzene (95-50-1)	1.0	< 1.0	ug/L		
n-Butylbenzene (104-51-8)	1.0	< 1.0	ug/L		
1,2-Dibromo-3-chloropropane (96-12-8)	1.0	< 1.0	ug/L		
1,2,4-Trichlorobenzene (120-82-1)	1.0	< 1.0	ug/L		
Naphthalene (91-20-3)	3.0	< 3.0	ug/L		
Hexachlorobutadiene (87-68-3)	1.0	< 1.0	ug/L		
1,2,3-Trichlorobenzene (87-61-6)	1.0	< 1.0	ug/L		

SURROGATE % RECOVERY

1,2-Dichloroethane-d4 93
(80 - 120)
Toluene-d8 97
(88 - 110)
Bromofluorobenzene 96
(86 - 115)



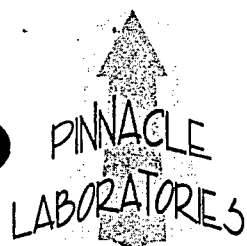
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Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

LABORATORY CONTROL SPIKE RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
BATCH : 032002A
CLIENT : SAN JUAN REFINING CO.
PROJECT # : 31402
PROJECT NAME : HD-EAST OUTFALL

PINNACLE I.D. : 203052
DATE ANALYZED : 03/20/02
UNITS : ug/L (PPB)

COMPOUND	SPIKE ADDED	LCS RESULT	LCS % RECOVERY	QC LIMITS %RECOVERY
1,1-DICHLOROETHENE	50.0	42.4	85	61-145
BENZENE	50.0	49.2	98	76-127
TRICHLOROETHENE	50.0	46.9	94	71-120
TOLUENE	50.0	49.6	99	76-125
CHLOROBENZENE	50.0	52.1	104	75-130



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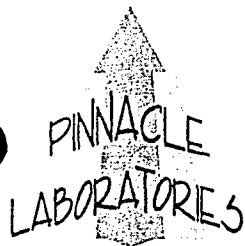
MATRIX SPIKE/MATRIX SPIKE DUPLICATE RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
SPIKED SAMPLE : 203045-01
CLIENT : SAN JUAN REFINING CO.
PROJECT # : 31402
PROJECT NAME : HD-EAST OUTFALL

PINNACLE I.D. : 203052
DATE ANALYZED : 03/20/02
UNITS : ug/L (PPB)

COMPOUND	SAMPLE CONC.	SPIKE ADDED	MS RESULT	MSD RESULT	MS %REC	MSD %REC	RPD	QC LIMITS RPD	QC LIMITS %RECOVERY
1,1-DICHLOROETHENE	<1.0	50.0	43.0	43.5	86	87	1	14	61-145
BENZENE	<1.0	50.0	50.2	50.4	100	101	0	11	76-127
TRICHLOROETHENE	<1.0	50.0	47.9	47.6	96	95	1	14	71-120
TOLUENE	<1.0	50.0	50.1	50.4	100	101	1	13	76-125
CHLOROBENZENE	<1.0	50.0	52.1	52.3	104	105	0	13	75-130





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PL I.D. 201071

February 1, 2002

Giant Refining Co.
#50 CR 4990
Bloomfield, NM 87417

Project Name/Number: HAMMOND DITEL 021401

Attention: Barry Holman

On 01/15/02, Pinnacle Laboratories Inc., (ADHS License No. AZ0592 pending), received a request to analyze aqueous samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

All analyses were performed by EnviroTest Laboratories, LLC. Casper, WY.

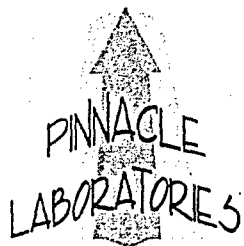
If you have any questions or comments, please do not hesitate to contact us at (505) 344-3777.

H. Mitchell Rubenstein, Ph.D.
General Manager

MR:jt

Enclosure

2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413



CLIENT : GIANT REFINING CO. DATE RECEIVED : 01/15/02
PROJECT # : 021401
PROJECT NAME : HAMMOND DITEL REPORT DATE : 02/01/02

PL ID: 201071

	PINNACLE ID #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	201071-01	IP #22 HAMMOND	AQUEOUS	01/14/02

Hammond Ditch
West of 4990 Bridge

---TOTALS---

MATRIX
AQUEOUS

#SAMPLES
1

Enviro-Test Laboratories LLC.

Chemical Analysis Report

PINNACLE LABORATORIES, INC
Attn: PROJECT MANAGER
2709D PAN AMERICAN FREEWAY NE
ALBUQUERQUE NM 87107

Date: 30 JAN 2002

Lab Work Order #: L4438
Project P.O. #:
Project Reference: GIANT REFINERY
Comments:

Date Received: 15 JAN 2002

APPROVED BY: _____


Dave Demorest
Project Manager



**Enviro • Test
LABORATORIES LLC.**

420 West 1st Street Casper, Wyoming 82601
Phone: (307) 235-5741 Fax: (307) 266-1676
Toll Free 1(800)666-0301

Results are only applicable to samples submitted for analysis.
Limit of Liability: Although care and due diligence is taken in the performance of our services, our liability in all cases is limited to re-analysis at our expense or refunding the analytical costs charged for the work performed.



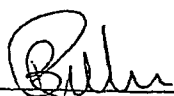
Date: January 29, 2002
Client: Pinnacle Laboratories, Inc.
Job Number: L4438

SAMPLE DELIVERY GROUP NARRATIVE

The following information is relevant to the interpretation of the data for the above job:

8260 VOLATILES:

1,1-Dichloroethylene in the LCS/LCSD showed very high recovery. This would suggest that any 1,1-Dichloroethylene in the samples might be biased high. As there was no 1,1-DCE in any of the samples, however, any potential high bias is not relevant.



Paul Reeks
Organics Lab Supervisor

 **Enviro • Test**
LABORATORIES LLC.

Results are only applicable to samples submitted for analysis.
Limit of Liability: Although care and due diligence is taken in the performance of our services, our liability in all cases is limited to re-analysis at our expense or refunding the analytical costs charged for the work performed.

ACCREDITED IN ACCORDANCE WITH
nelap

Chemical Analysis Report

PINNACLE LABORATORIES, INC
2709D PAN AMERICAN FREEWAY NE
ALBUQUERQUE NM 87107

ATTN: PROJECT MANAGER

Project: GIANT REFINERY
Purchase Order:

Page: 2 of 4

Report Date: 30-JAN-02
Work Order: L4438
Lab Sample ID: L4438-1
Client Sample ID: IP#22
Date Collected: 14-JAN-02
Sampled By: CLIENT
Date Received: 15-JAN-02
Matrix: WATER

Parameter	Result	Qualifier	MDL	PQL	Units	DF	Run ID	Analyzed	By
Misc									
Volatiles By SW-846 8260B									
Dichlorodifluoromethane	<10		10	3	ug/L		R15520	16-JAN-01 21:48	PGR
Chloromethane	<10		10	3	ug/L		R15520	16-JAN-01 21:48	PGR
Vinyl Chloride	<10		10	3	ug/L		R15520	16-JAN-01 21:48	PGR
Bromomethane	<10		10	3	ug/L		R15520	16-JAN-01 21:48	PGR
Chloroethane	<10		10	3	ug/L		R15520	16-JAN-01 21:48	PGR
Trichlorofluoromethane	<10		10	3	ug/L		R15520	16-JAN-01 21:48	PGR
1,1-Dichloroethylene	<10		10	3	ug/L		R15520	16-JAN-01 21:48	PGR
Carbon Disulfide	<10		10	3	ug/L		R15520	16-JAN-01 21:48	PGR
1,1,2-Trichlorotrifluoroethane	<50		50	15	ug/L		R15520	16-JAN-01 21:48	PGR
Iodomethane	<50		50	15	ug/L		R15520	16-JAN-01 21:48	PGR
Acrolein	<50		50	15	ug/L		R15520	16-JAN-01 21:48	PGR
Methylene Chloride	<10		10	3	ug/L		R15520	16-JAN-01 21:48	PGR
Acetone	<100		100	30	ug/L		R15520	16-JAN-01 21:48	PGR
trans-1,2-Dichloroethylene	<10		10	3	ug/L		R15520	16-JAN-01 21:48	PGR
Methyl-tert-Butyl Ether	20		10	3	ug/L		R15520	16-JAN-01 21:48	PGR
1,1-Dichloroethane	<10		10	3	ug/L		R15520	16-JAN-01 21:48	PGR
Acrylonitrile	<50		50	15	ug/L		R15520	16-JAN-01 21:48	PGR
Vinyl Acetate	<10		10	3	ug/L		R15520	16-JAN-01 21:48	PGR
cis-1,2-Dichloroethylene	<10		10	3	ug/L		R15520	16-JAN-01 21:48	PGR
2,2-Dichloropropane	<10		10	3	ug/L		R15520	16-JAN-01 21:48	PGR
Bromochloromethane	<10		10	3	ug/L		R15520	16-JAN-01 21:48	PGR
Chloroform	<10		10	3	ug/L		R15520	16-JAN-01 21:48	PGR
Carbon Tetrachloride	<10		10	3	ug/L		R15520	16-JAN-01 21:48	PGR
1,1,1-Trichloroethane	<10		10	3	ug/L		R15520	16-JAN-01 21:48	PGR
2-Butanone	<100		100	30	ug/L		R15520	16-JAN-01 21:48	PGR
1,1-Dichloropropene	<10		10	3	ug/L		R15520	16-JAN-01 21:48	PGR
Benzene	440		10	3	ug/L		R15520	16-JAN-01 21:48	PGR
1,2-Dichloroethane	<10		10	3	ug/L		R15520	16-JAN-01 21:48	PGR
Trichloroethylene	<10		10	3	ug/L		R15520	16-JAN-01 21:48	PGR
Dibromomethane	<10		10	3	ug/L		R15520	16-JAN-01 21:48	PGR
1,2-Dichloropropane	<10		10	3	ug/L		R15520	16-JAN-01 21:48	PGR
Bromodichloromethane	<10		10	3	ug/L		R15520	16-JAN-01 21:48	PGR
2-Chloroethyl Vinyl Ether	<100		100	30	ug/L		R15520	16-JAN-01 21:48	PGR
cis-1,3-Dichloropropene	<10		10	3	ug/L		R15520	16-JAN-01 21:48	PGR
Toluene	<10		10	3	ug/L		R15520	16-JAN-01 21:48	PGR
4-Methyl-2-pentanone	<100		100	30	ug/L		R15520	16-JAN-01 21:48	PGR
trans-1,3-Dichloropropene	<10		10	3	ug/L		R15520	16-JAN-01 21:48	PGR
Tetrachloroethylene	<10		10	3	ug/L		R15520	16-JAN-01 21:48	PGR
1,1,2-Trichloroethane	<10		10	3	ug/L		R15520	16-JAN-01 21:48	PGR
Dibromochloromethane	<10		10	3	ug/L		R15520	16-JAN-01 21:48	PGR
1,3-Dichloropropane	<10		10	3	ug/L		R15520	16-JAN-01 21:48	PGR



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Chemical Analysis Report

PINNACLE LABORATORIES, INC
2709D PAN AMERICAN FREEWAY NE
ALBUQUERQUE NM 87107

ATTN: PROJECT MANAGER

Project: GIANT REFINERY
Purchase Order:

Page: 3 of 4

Report Date: 30-JAN-02
Work Order: L4438
Lab Sample ID: L4438-1
Client Sample ID: IP#22
Date Collected: 14-JAN-02
Sampled By: CLIENT
Date Received: 15-JAN-02
Matrix: WATER

Parameter	Result	Qualifier	MDL	PQL	Units	DF	Run ID	Analyzed	B
Misc									
Volatiles By SW-846 8260B									
1,2-Dibromoethane	<10		10	3	ug/L		R15520	16-JAN-01 21:48	PG
2-Hexanone	<100		100	30	ug/L		R15520	16-JAN-01 21:48	PG
Ethyl Benzene	120		10	3	ug/L		R15520	16-JAN-01 21:48	PG
Chlorobenzene	<10		10	3	ug/L		R15520	16-JAN-01 21:48	PG
1,1,1,2-Tetrachloroethane	<10		10	3	ug/L		R15520	16-JAN-01 21:48	PG
m+p-Xylenes	2300		10	3	ug/L		R15520	16-JAN-01 21:48	PG
o-Xylene	120		10	3	ug/L		R15520	16-JAN-01 21:48	PG
Styrene	<10		10	3	ug/L		R15520	16-JAN-01 21:48	PG
Bromoform	<10		10	3	ug/L		R15520	16-JAN-01 21:48	PG
Isopropylbenzene	30		10	3	ug/L		R15520	16-JAN-01 21:48	PG
n-Propylbenzene	30		10	3	ug/L		R15520	16-JAN-01 21:48	PG
1,1,2,2-Tetrachloroethane	<10		10	3	ug/L		R15520	16-JAN-01 21:48	PG
Bromobenzene	<10		10	3	ug/L		R15520	16-JAN-01 21:48	PG
1,3,5-Trimethylbenzene	130		10	3	ug/L		R15520	16-JAN-01 21:48	PG
trans-1,4-Dichloro-2-Butene	<10		10	3	ug/L		R15520	16-JAN-01 21:48	PG
2-Chlorotoluene	<10		10	3	ug/L		R15520	16-JAN-01 21:48	PG
1,2,3-Trichloropropane	<10		10	3	ug/L		R15520	16-JAN-01 21:48	PG
4-Chlorotoluene	<10		10	3	ug/L		R15520	16-JAN-01 21:48	PG
tert-Butylbenzene	<10		10	3	ug/L		R15520	16-JAN-01 21:48	PG
1,2,4-Trimethylbenzene	430		10	3	ug/L		R15520	16-JAN-01 21:48	PG
Sec-Butylbenzene	<10		10	3	ug/L		R15520	16-JAN-01 21:48	PG
p-Isopropyltoluene	<10		10	3	ug/L		R15520	16-JAN-01 21:48	PG
1,3-dichlorobenzene	<10		10	3	ug/L		R15520	16-JAN-01 21:48	PG
1,4-Dichlorobenzene	<10		10	3	ug/L		R15520	16-JAN-01 21:48	PG
n-Butylbenzene	<10		10	3	ug/L		R15520	16-JAN-01 21:48	PG
1,2-Dichlorobenzene	<10		10	3	ug/L		R15520	16-JAN-01 21:48	PG
1,2-Dibromo-3-chloropropane	<10		10	3	ug/L		R15520	16-JAN-01 21:48	PG
Hexachlorobutadiene	<10		10	3	ug/L		R15520	16-JAN-01 21:48	PG
1,2,4-Trichlorobenzene	<10		10	3	ug/L		R15520	16-JAN-01 21:48	PG
Naphthalene	20		10	3	ug/L		R15520	16-JAN-01 21:48	PG
1,2,3-Trichlorobenzene	<10		10	3	ug/L		R15520	16-JAN-01 21:48	PG
2-Methylnaphthalene	400		200	60	ug/L		R15520	16-JAN-01 21:48	PG
1-Methylnaphthalene	400		200	60	ug/L		R15520	16-JAN-01 21:48	PG
Surrogate: Dibromofluoromethane (surr)	106		N/A		%		R15520	16-JAN-01 21:48	PG
Surrogate: 1,2-Dichloroethane-d4 (Surr)	110		N/A		%		R15520	16-JAN-01 21:48	PG
Surrogate: Toluene-d8 (surr)	103		N/A		%		R15520	16-JAN-01 21:48	PG
Surrogate: 4-Bromofluorobenzene (surr)	105		N/A		%		R15520	16-JAN-01 21:48	PG



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Reference Information

Page: 4 of 4
Report Date: 30-JAN-02
Work Order: L4438

The following is the Description of sample Qualifiers where applicable:

The following Preparation/Extraction Methods were performed:

ETL Test Code and Matrix	Test Description	Methodology Reference (Based On)
8260-PINNACLE-CA Water	Volatiles By SW-846 8260B	

The following Analytical Methods were performed:

ETL Test Code and Matrix	Test Description	Methodology Reference (Based On)
8260-PINNACLE-CA Water	Volatiles By SW-846 8260B	SW-846 Method 8260B



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ENVIRO-TEST QC REPORT

Client: PINNACLE LABORATORIES, INC
2709D PAN AMERICAN FREEWAY NE
ALBUQUERQUE NM 87107

Page 1 of 4

Report Date: Jan. 30, 2002
Workorder: L4438

Contact: PROJECT MANAGER

Test	Matrix	Reference	Result	Qualifier	Units	Limit	Analyzed
8260-PINNACLE-CA		Water					
Batch	R15520						
WG12223-1	BLANK						
1,1,1,2-Tetrachloroethane			<1		ug/L		15-JAN-01
1,1,1-Trichloroethane			<1		ug/L		15-JAN-01
1,1,2,2-Tetrachloroethane			<1		ug/L		15-JAN-01
1,1,2-Trichloroethane			<1		ug/L		15-JAN-01
1,1,2-Trichlorotrifluoroethane			<5		ug/L		15-JAN-01
1,1-Dichloroethane			<1		ug/L		15-JAN-01
1,1-Dichloroethylene			<1		ug/L		15-JAN-01
1,1-Dichloropropene			<1		ug/L		15-JAN-01
1,2,3-Trichlorobenzene			<1		ug/L		15-JAN-01
1,2,3-Trichloropropane			<1		ug/L		15-JAN-01
1,2,4-Trichlorobenzene			<1		ug/L		15-JAN-01
1,2,4-Trimethylbenzene			<1		ug/L		15-JAN-01
1,2-Dibromo-3-chloropropane			<1		ug/L		15-JAN-01
1,2-Dichlorobenzene			<1		ug/L		15-JAN-01
1,2-Dichloroethane			<1		ug/L		15-JAN-01
1,2-Dichloropropane			<1		ug/L		15-JAN-01
1,3,5-Trimethylbenzene			<1		ug/L		15-JAN-01
1,3-dichlorobenzene			<1		ug/L		15-JAN-01
1,3-Dichloropropane			<1		ug/L		15-JAN-01
1,4-Dichlorobenzene			<1		ug/L		15-JAN-01
1-Methylnaphthalene			<20		ug/L		15-JAN-01
2,2-Dichloropropane			<1		ug/L		15-JAN-01
2-Chloroethyl Vinyl Ether			<10		ug/L		15-JAN-01
2-Chlorotoluene			<1		ug/L		15-JAN-01
2-Hexanone			<10		ug/L		15-JAN-01
2-Methylnaphthalene			<20		ug/L		15-JAN-01
4-Chlorotoluene			<1		ug/L		15-JAN-01
p-Isopropyltoluene			<1		ug/L		15-JAN-01
Acetone			<10		ug/L		15-JAN-01
Acrolein			<5		ug/L		15-JAN-01
Acrylonitrile			<5		ug/L		15-JAN-01
Benzene			<1		ug/L		15-JAN-01
Bromobenzene			<1		ug/L		15-JAN-01
Bromochloromethane			<1		ug/L		15-JAN-01



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ENVIRO-TEST QC REPORT

Client: PINNACLE LABORATORIES, INC
2709D PAN AMERICAN FREEWAY NE
ALBUQUERQUE NM 87107

Page 2 of 4

Report Date: Jan. 30, 2002

Workorder: L4438

Contact: PROJECT MANAGER

Test	Matrix	Reference	Result	Qualifier	Units	Limit	Analyzed
8260-PINNACLE-CA	Water						
Batch	R15520						
WG12223-1	BLANK						
Bromodichloromethane			<1		ug/L		15-JAN-01
Bromoform			<1		ug/L		15-JAN-01
Bromomethane			<1		ug/L		15-JAN-01
Carbon Disulfide			<1		ug/L		15-JAN-01
Carbon Tetrachloride			<1		ug/L		15-JAN-01
Chlorobenzene			<1		ug/L		15-JAN-01
Dibromochloromethane			<1		ug/L		15-JAN-01
Chloroethane			<1		ug/L		15-JAN-01
Chloroform			<1		ug/L		15-JAN-01
Chloromethane			<1		ug/L		15-JAN-01
cis-1,2-Dichloroethylene			<1		ug/L		15-JAN-01
cis-1,3-Dichloropropene			<1		ug/L		15-JAN-01
Dibromomethane			<1		ug/L		15-JAN-01
Dichlorodifluoromethane			<1		ug/L		15-JAN-01
Ethyl Benzene			<1		ug/L		15-JAN-01
1,2-Dibromoethane			<1		ug/L		15-JAN-01
Hexachlorobutadiene			<1		ug/L		15-JAN-01
Iodomethane			<5		ug/L		15-JAN-01
Isopropylbenzene			<1		ug/L		15-JAN-01
m+p-Xylenes			<1		ug/L		15-JAN-01
2-Butanone			<10		ug/L		15-JAN-01
4-Methyl-2-pentanone			<10		ug/L		15-JAN-01
Methyl-tert-Butyl Ether			<1		ug/L		15-JAN-01
Methylene Chloride			<1		ug/L		15-JAN-01
n-Butylbenzene			<1		ug/L		15-JAN-01
n-Propylbenzene			<1		ug/L		15-JAN-01
Naphthalene			<1		ug/L		15-JAN-01
o-Xylene			<1		ug/L		15-JAN-01
Sec-Butylbenzene			<1		ug/L		15-JAN-01
Styrene			<1		ug/L		15-JAN-01
tert-Butylbenzene			<1		ug/L		15-JAN-01
Tetrachloroethylene			<1		ug/L		15-JAN-01
Toluene			<1		ug/L		15-JAN-01
trans-1,2-Dichloroethylene			<1		ug/L		15-JAN-01



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ENVIRO-TEST QC REPORT

Client: PINNACLE LABORATORIES, INC
2709D PAN AMERICAN FREEWAY NE
ALBUQUERQUE NM 87107

Page: 3 of 4
Report Date: Jan. 30, 2002
Workorder: L4438

Contact: PROJECT MANAGER

Test	Matrix	Reference	Result	Qualifier	Units	Limit	Analyzed
<u>8260-PINNACLE-CA</u>		<u>Water</u>					
<u>Batch</u>	<u>R15520</u>						
<u>WG12223-1</u>	<u>BLANK</u>						
trans-1,3-Dichloropropene			<1		ug/L		15-JAN-01
trans-1,4-Dichloro-2-Butene			<1		ug/L		15-JAN-01
Trichloroethylene			<1		ug/L		15-JAN-01
Trichlorofluoromethane			<1		ug/L		15-JAN-01
Vinyl Acetate			<1		ug/L		15-JAN-01
Vinyl Chloride			<1		ug/L		15-JAN-01
<u>WG12223-2</u>	<u>LCS</u>						
1,1-Dichloroethylene			192		%	N/A 70-130	15-JAN-01
Benzene			108		%	N/A 70-130	15-JAN-01
Chlorobenzene			101		%	N/A 70-130	15-JAN-01
Toluene			96		%	N/A 70-130	15-JAN-01
Trichloroethylene			107		%	N/A 70-130	15-JAN-01
<u>WG12223-3</u>	<u>LCSD</u>	<u>WG12223-2</u>					
1,1-Dichloroethylene			210		%	10 20	15-JAN-01
Benzene			110		%	1.8 20	15-JAN-01
Chlorobenzene			110		%	3.9 20	15-JAN-01
Toluene			100		%	5.1 20	15-JAN-01
Trichloroethylene			110		%	1.9 20	15-JAN-01

Product - Batch and Sample Number Relations:

8260-PINNACLE-CA	1	
R15485		L4438-1
8260-PINNACLE-CA	1	
R15520		L4438-1



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Reference Information

Page 4 of 4
Report Date: Jan. 30, 2002
Work Order L4438

The following is a description of Sample types that where applicable:

BLANK	Laboratory Blank
LCS	Laboratory Control Spike
LCSD	Lab Control Spike Duplicate

The following is a description of sample Qualifiers that where applicable:



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Sample Condition Notification Form

Client Pinnacle Date 1/15/02 Job Number L4438

Condition Reported		Explanation
Samples received out of holding time		
Samples not preserved correctly	☒	Samples arrived in 2.83 jars poured off into 3) UBA'S HCl as per protocol JRS 1/15/02
Containers broken/spilled in shipment		
Insufficient sample received		
Incorrect containers used		
Chain of Custody does not match labels		
Samples not chilled to $\pm 2-4^{\circ}\text{C}$		
Volatiles have headspace		
Chain of Custody not received or incomplete		
Other problems as noted		

Comments: _____

Client	<i>Pinnacle Labs</i>	Job Number	<i>L4438</i>
--------	----------------------	------------	--------------

Samples Shipped	<u>UPS</u>	Federal Express	Airborn:
Samples Hand Delivered	Client	ETL Lab Courier	Other:

*Air Bill #: <i>128818390110092041</i>	# of Packages Received: <i>1</i>
--	----------------------------------

	Yes	No	N/A	Comments
1. Chain - of - Custody present?	☒	☐	☐	If no, please fill one out.
2. Are the COC and sample labels legible?	☒	☐	☐	
3. Custody Seal on shipping container?	☐	☒	☐	
If yes, intact on shipping container?	☐	☐	☐	
4. Custody seals on sample containers?	☐	☒	☐	
If yes, intact on sample container?	☐	☐	☐	
5. Samples chilled?	☒	☐	☐	
Is temperature of cooler: $4 \pm 2^{\circ}\text{C}$?	☒	☐	☐	*Record temp: <i>3°C</i>
6. Samples received intact (good condition)?	☒	☐	☐	
If volatiles required, any with headspace?	☐	☐	☐	
7. Adequate sample volume provided?	☒	☐	☐	
8. Samples preserved correctly?	☐	☒	☐	Na ₂ S ₂ O ₃ , ZnAc, HNO ₃ , HCl
Circle preservative types in shipment	☐	☐	☐	H ₂ SO ₄ , NaOH, <u>Plain</u> , Other
9. Correct containers used?	☐	☒	☐	<i>poured off into 3 VOA's</i>
10. Samples received within holding time?	☒	☐	☐	
11. Agreement between COC and sample labels?	☒	☐	☐	
12. Gamma Screen $\mu\text{R}/\text{Hr}$ @ surface within Bkg?	☒	☐	☐	FOR INTERNAL USE ONLY <i>@ Bkg</i>
13. Samples OK to release to Lab/Screening?	☒	☐	☐	

Additional Comments: _____

Sample Container (size/material): *2) 8oz glass jar*

Received and inspected by: *IKS*

Date/Time: *1-15-02 1945*

* = for multiple packages, see attached page(s) for shipping numbers and temperatures.

PROJECT MANAGER: B. G. F. OLMAN

COMPANY: GIATT Refining Co.

ADDRESS: #50 CR 4990

Doomfield Nm. 87413

PHONE: 505-632-4168

FAX: 505 632-3911

BILL TO: Sare

COMPANY:

ADDRESS:

[illegible]

ANALYSIS REQUEST

[illegible]

PROJECT INFORMATION	
PROJ. NO.: 021401	
PROJ. NAME: Hammer & D. Taylor	
P.O. NO.:	
SHIPPED VIA:	
SAMPLE RECEIPT	
NO. CONTAINERS	
CUSTODY SEALS	Y/N/NA
RECEIVED INTACT	
BLUE ICE/CE	

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS			
(RUSH) ☒ 24hr	☐ 48hr	☐ 72hr	☐ 1 WEEK (NORMAL) ☐
CERTIFICATION REQUIRED: ☐ NM ☐ SDWA ☐ OTHER			
METHANOL PRESERVATION ☐			
COMMENTS: FIXED FEE ☐			

RELINQUISHED BY:	1.	RELINQUISHED BY:	2.
Signature:	<i>[Signature]</i>	Signature:	<i>[Signature]</i>
Time:	<i>1 pm</i>	Time:	<i>0945</i>
Date:	<i>11/4/02</i>	Date:	<i>1-15-03</i>
Printed Name:	<i>DARRY HOLMES</i>	Printed Name:	<i>Darryl Holmes</i>
Company:		Company:	<i>Pinnacle Laboratories Inc.</i>
See reverse side (Force Mague)			
RECEIVED BY:	1.	RECEIVED BY: (LAB)	2.
Signature:	<i>[Signature]</i>	Signature:	<i>[Signature]</i>
Time:		Time:	
Date:		Date:	
Printed Name:		Printed Name:	
Company:		Company:	

SHADED AREAS ARE FOR LAB USE ONLY.

PLEASE FILL THIS FORM IN COMPLETELY.

Waste Disposition Summary Tables Year 2002

REGULATED WASTES			
WASTE STREAM	TREATMENT TYPE	TSDF	WEIGHT
K-170, main column bottoms sludge	INCINERATION	PSC Kent, Washington	450 lbs.
K-170, main column bottoms sludge	INCINERATION	Safety Kleen/APTUS Laidlaw Environmental	300 lbs.
D-018, Desalter Sludge	INCINERATION	Safety Kleen/APTUS Laidlaw Environmental	9360 lbs.
K-050, Exchanger Bundle Sludge	INCINERATION	Safety Kleen/APTUS Laidlaw Environmental	4680 lbs.
K-050, Exchanger Bundle Sludge	INCINERATION	Safety Kleen/APTUS Laidlaw Environmental	750 lbs.
K-051, API Separator Sludge	INCINERATION	Safety Kleen/APTUS Laidlaw Environmental	1500 lbs.
K-169, Tank #42 Bottom Sludge	INCINERATION	Safety Kleen/APTUS Laidlaw Environmental	27020 lbs.
K-171, Spent Hydrotreating Catalyst	REGENERATED	Eurecat U.S., Inc. Pasadena, Texas	7000 lbs.
K-171, Spent Hydrotreating Catalyst	INCINERATION	Waste Technologies Industries	1200 lbs.

NON-REGULATED WASTES			
WASTE STREAM	TREATMENT TYPE	TSDF	WEIGHT
Corrosive Solid	LANDFILL	PSC Kent, Washington	600 lbs.
Spent Poly Catalyst	LANDFILL	Safety Kleen Clive, Utah	106760 lbs.

NOTES:

TSDF = Treatment, Storage, and Disposal Facility

OCD FILES

35MM DRAWINGS

GW-1

FILE NUMBER

Monitoring Reports 2003

DOCUMENT TYPE

2 L

NO OF DWGS

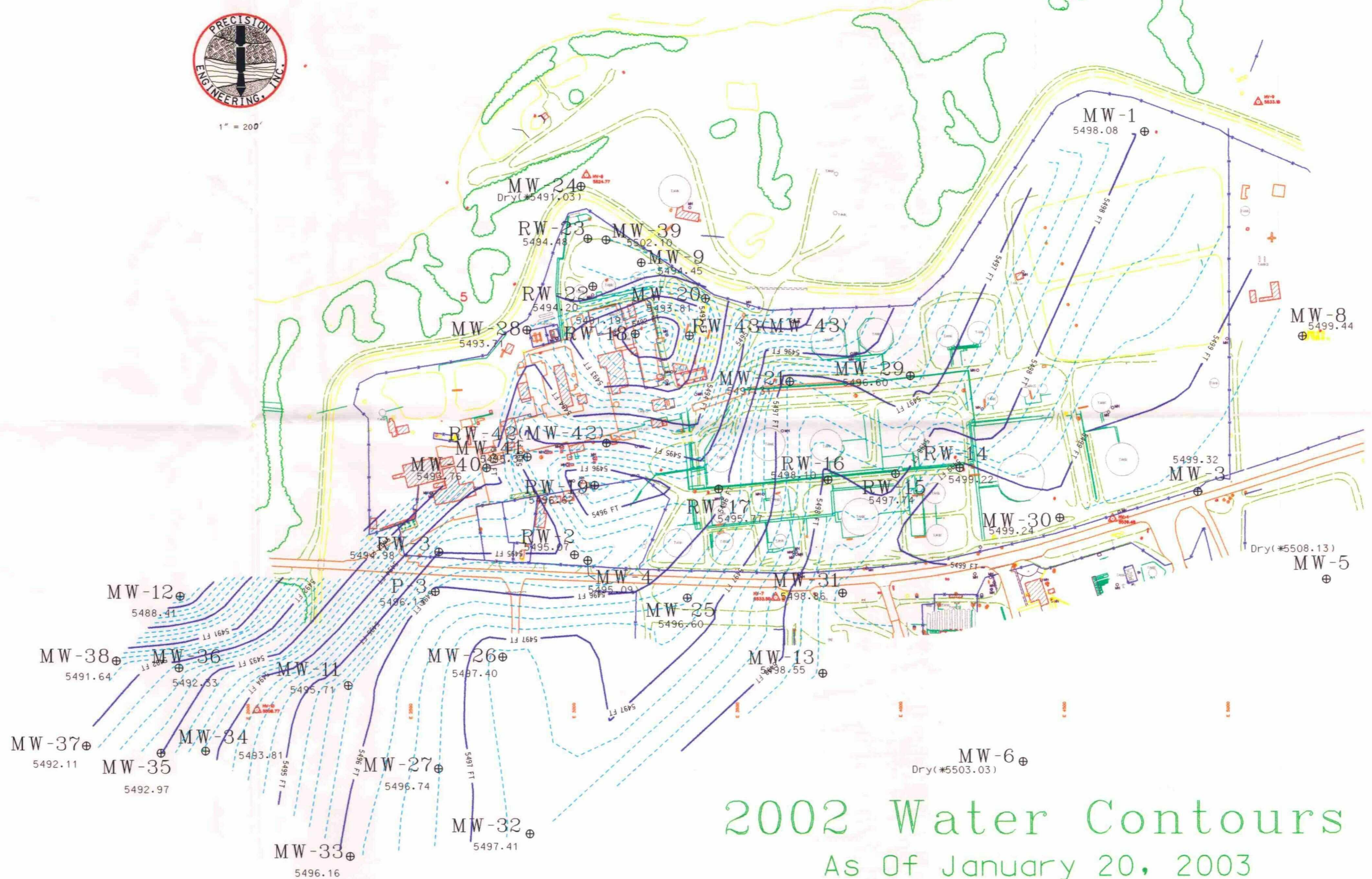
39

BOX

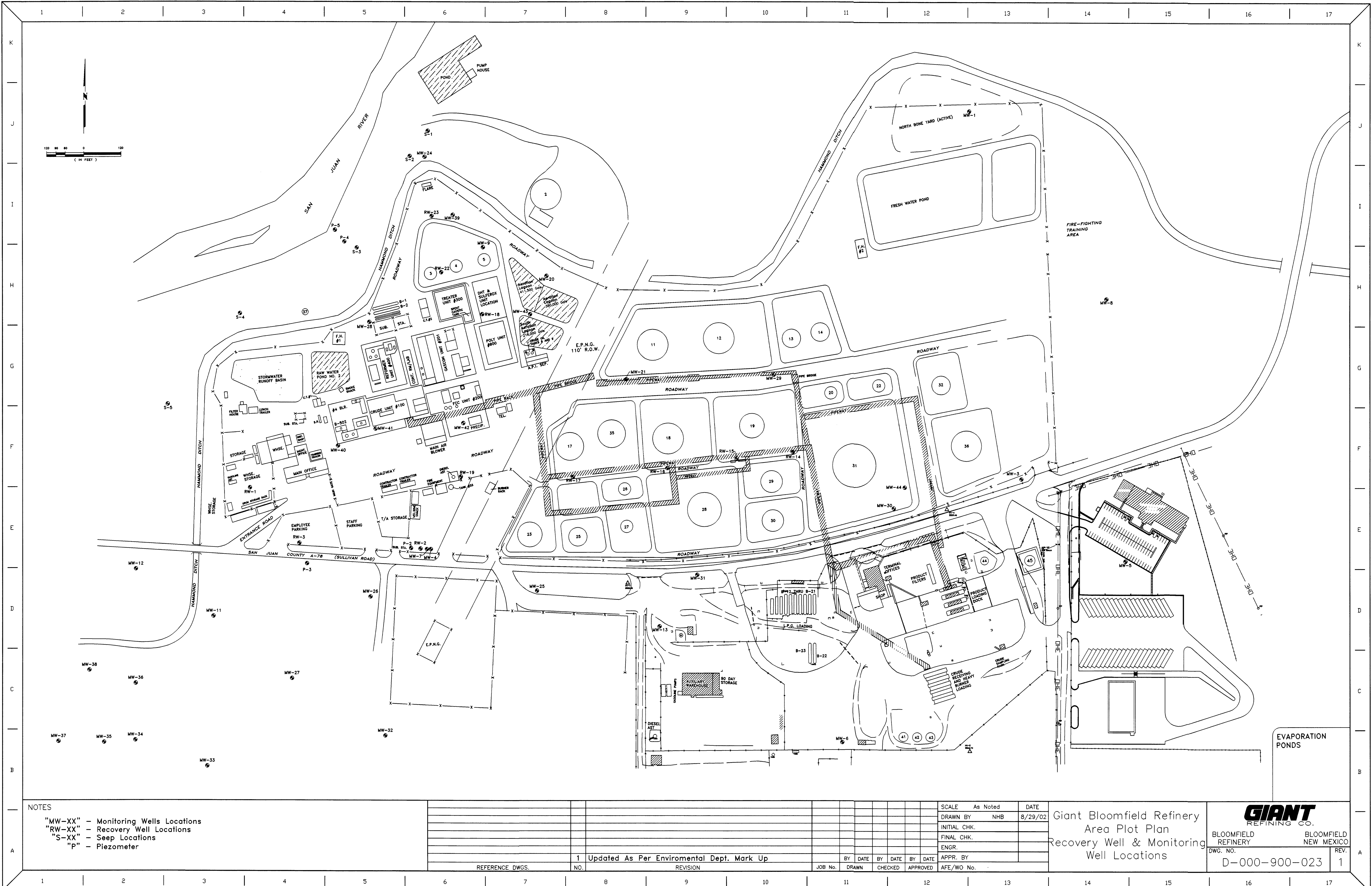
Giant Refining Company Bloomfield Refinery



1" = 200'



2002 Water Contours
As Of January 20, 2003



NOTES

- "MW-XX" - Monitoring Wells Locations
- "RW-XX" - Recovery Well Locations
- "S-XX" - Seep Locations
- "P" - Piezometer

REFERENCE DWGS.

NO.

REVISION

JOB NO.

DRAWN

CHECKED

APPROVED

SCALE	As Noted	DATE
DRAWN BY	NHB	8/29/02
INITIAL CHK.		
FINAL CHK.		
ENGR.		
APPR. BY		
AFE/VO No.		

Giant Bloomfield Refinery
Area Plot Plan
Recovery Well & Monitoring
Well Locations

GIANT REFINING CO.		BLOOMFIELD NEW MEXICO	
BLOOMFIELD REFINERY	DWG. NO.	REV.	
D-000-900-023		1	