

3R - 315

**GENERAL
CORRESPONDENCE**

YEAR(S):
2000 - 1997

Olson, William

From: m. harvey [SMTP:markh@ditell.com]
Sent: Tuesday, September 05, 2000 1:46 PM
To: Olson, William
Subject: Annual Groundwater Report (PNM)

As a follow-up to our telephone conversation last week, this serves to acknowledge the extension of time that NMOCD has granted Williams in order to submit the annual groundwater report for former PNM sites.

It is agreed that the report will be submitted by September 15, 2000 and include data from PNM efforts during 1999 and 2000. Williams appreciates the time extension and NMOCD's understanding of the complications associated with inheriting a project of this magnitude.

After submitting the report and allowing review time, Williams intends to schedule a meeting with you to discuss its' plan to effect mitigation of groundwater impacts. Your feedback will be helpful in finalizing a program strategy.

Thank you for your consideration.

From: Deklau, Ingrid [SMTP:Ingrid.Deklau@Williams.com]
Sent: Friday, July 07, 2000 1:35 PM
To: Olson, William
Cc: 'mark'; 'mgannon@pnm.com'
Subject: Groundwater Report Extension

Per our discussion today, this note is to confirm extension of the Annual Groundwater Report submittal from July 15, 2000 to August 31, 2000.

On March 4, 2000, Maureen Gannon of PNM emailed you and requested the April 1, 2000 deadline for the report submittal be postponed to July 15, 2000 so that PNM could incorporate all information gathered through June 30, 2000 into the report. Since then, PNM and Williams have entered into a Settlement Agreement transferring certain responsibilities to Williams. The responsibility of the preparation of this report is currently under discussion between PNM and Williams. Regardless of the responsibility, it is clear to me that this report will not be ready by the July 15, 2000 deadline.

Thank you for your assistance in this matter.

Ingrid Deklau

307-872-2880

Olson, William

From: Olson, William
Sent: Monday, March 06, 2000 8:13 AM
To: 'Gannon, Maureen'
Subject: RE: Request for Extension on Annual Groundwater Report

The below requested extension is approved.

From: Gannon, Maureen [SMTP:MGannon@pnm.com]
Sent: Saturday, March 04, 2000 3:31 PM
To: Olson, William
Cc: Sikelianos, Mark; 'Ingrid Deklau'; Johnson, Ronald
Subject: Request for Extension on Annual Groundwater Report

As a follow-up to our phone conversation on Thursday, March 2, 2000, PNM herein requests an extension of the date for submittal of our San Juan Basin Annual Groundwater Report. The report is normally due on April 1st of each year. However, since PNM's environmental obligations associated with the purchase and sale of our former gas assets in the San Juan Basin will terminate on June 30, 2000 (with the exception of retained liabilities), we would like to file our annual report by July 15, 2000 so that the data and information contained in the annual report is current through the June 30th date.

Please let me know if this extension is acceptable to you. You may email me or call me at (505) 241-2974. Thank you for your time and consideration of this matter.

Maureen Gannon
Environmental Services
241-2974

April 3, 1998

Certified Mail - P 293 938 750

Bill Olson
Hydrogeologist, Environmental Bureau
New Mexico Oil Conservation Division
2040 South Pacheco
Santa Fe, NM 87505

RE: Florance Z 40 Site
Free Product and Groundwater Contamination

PNM

RECEIVED

APR 06 1998

ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

Dear Bill:

PNM herein submits an update of ongoing activities at the Florance Z 40 well site. We have documented groundwater contamination and wish to update you on the latest results since the 1997 Annual Groundwater report of Unlined Surface Impoundments in the San Juan Basin, dated April 15, 1997, and our letter report of September 10, 1997. Since that time, we have conducted further investigation and monitoring.

I. Well Locations, Groundwater Gradient and Analytical Results

Figures 1 and 2 show the direction of groundwater flow beneath the site for the months of November 1997 and January 1998. Groundwater generally flows towards the south beneath the site. Attachment A provides a hydrograph of water levels in MW-1 through MW-4. There has been little seasonal change in groundwater elevation and flow direction at this site.

The Florance Z 40 site lies in Gobernador Canyon and is surrounded in three directions, north, east, and west, by sandstone outcrops. Figure 3 is a site map of the Florance Z 40 well site. The map includes the locations of the groundwater monitoring wells, wellheads, equipment, and pits found onsite. It also provides a summary of the groundwater analytical results collected to date from wells at the site. Analytical results are provided in Attachment B.

II. Summary of Events (since our report of September 10, 1997)

November 25, 1997

PNM performed quarterly sampling. Monitoring well MW-2 was not sampled due to well collapse first noted in August 1997; MW-3 was not sampled due to the presence of 0.65 feet of free hydrocarbons. Samples were obtained from MW-1 and MW-4 and analyzed for BTEX by EPA Method 8020. BTEX concentrations in MW-1 exceed WQCC standards, with benzene present at 3942 ppb; the presence of visible sheen was also observed in this well. BTEX concentrations in MW-4 were below analytical laboratory detection limits.

January 23, 1998

PNM performed quarterly sampling. Monitoring well MW-2 was not sampled due to well collapse first noted in August 1997; MW-3 was not sampled due to the presence of 0.65 feet of free hydrocarbons. Samples were obtained from MW-1 and MW-4 and analyzed for BTEX by EPA Method 8020.

BTEX concentrations in MW-1 exceed WQCC standards, with benzene present at 4421 ppb; a visible sheen was also observed in this well. BTEX concentrations in MW-4 were below analytical laboratory detection limits.

On January 23, 1998, Blagg Engineering was also onsite performing an investigation in the area of Amoco's former pit, upgradient from the former PNM drip pit. Blagg detected a band of hydrocarbon contamination extending from 18 to 25 feet below grade, as indicated by soil staining observed in auger cuttings. Due to the small diameter of the auger, refusal was encountered at 35 feet and no further samples were collected on behalf of Amoco.

On or about February 17, 1998, Mark Sikelianos (PNM) discussed Blagg Engineering's investigation of the former Amoco pit upgradient from the former PNM drip pit. Jeff Blagg indicated that he had recovered free product in a clear bailer upon sampling the test boring advanced in the location of the former Amoco pit.

III. Free Product Occurrence

With regard to the presence and remediation of free product beneath the well pad, PNM, by contract with producers, is not responsible for the discharge of free product. Free product belongs to the producers, even when it is discharged under conditions of system upset. Therefore, free product contamination, regardless of where it occurs, is not the responsibility of PNM, but that of the producer.

MW-1, an upgradient well with visible sheen, is adjacent to the location of a former Amoco pit. The wells with measurable free product (MW-2 and MW-3) are downgradient of both Amoco and former PNM equipment. When first installed, MW-2 (former PNM pit source well) had only dissolved phase hydrocarbons detected, with benzene at 357 ppb and BTEX at 11,510 ppb. When first installed, and during the first two quarters of sampling (February and May 1997), MW-3 did not have measurable free product. Over 0.65 feet of free product was detected in MW-3 during the last two quarters of sampling. Free product thickness appears to be increasing over time in both MW-2 and MW-3.

PNM will be placing Amoco and Williams Field Services on notice regarding the discovery of free product and groundwater contamination at this site. PNM will be seeking cost recovery from the responsible party for actions concerning free product and groundwater investigation and remediation activities performed to date at this site.

If you have any questions related to the Florance Z 40 site or other project-related activities, please contact me at 505.241.2974.

Sincerely,



Maureen Gannon
Project Manager

cc: Roger Anderson, NMOCD
Ingrid Deklau, Williams Field Services
Colin Adams, PNM
Denny Foust, NMOCD-Aztec
Buddy Shaw, Amoco

FIGURE 1. Florance Z 40 Groundwater Contour Map (November 25, 1997)

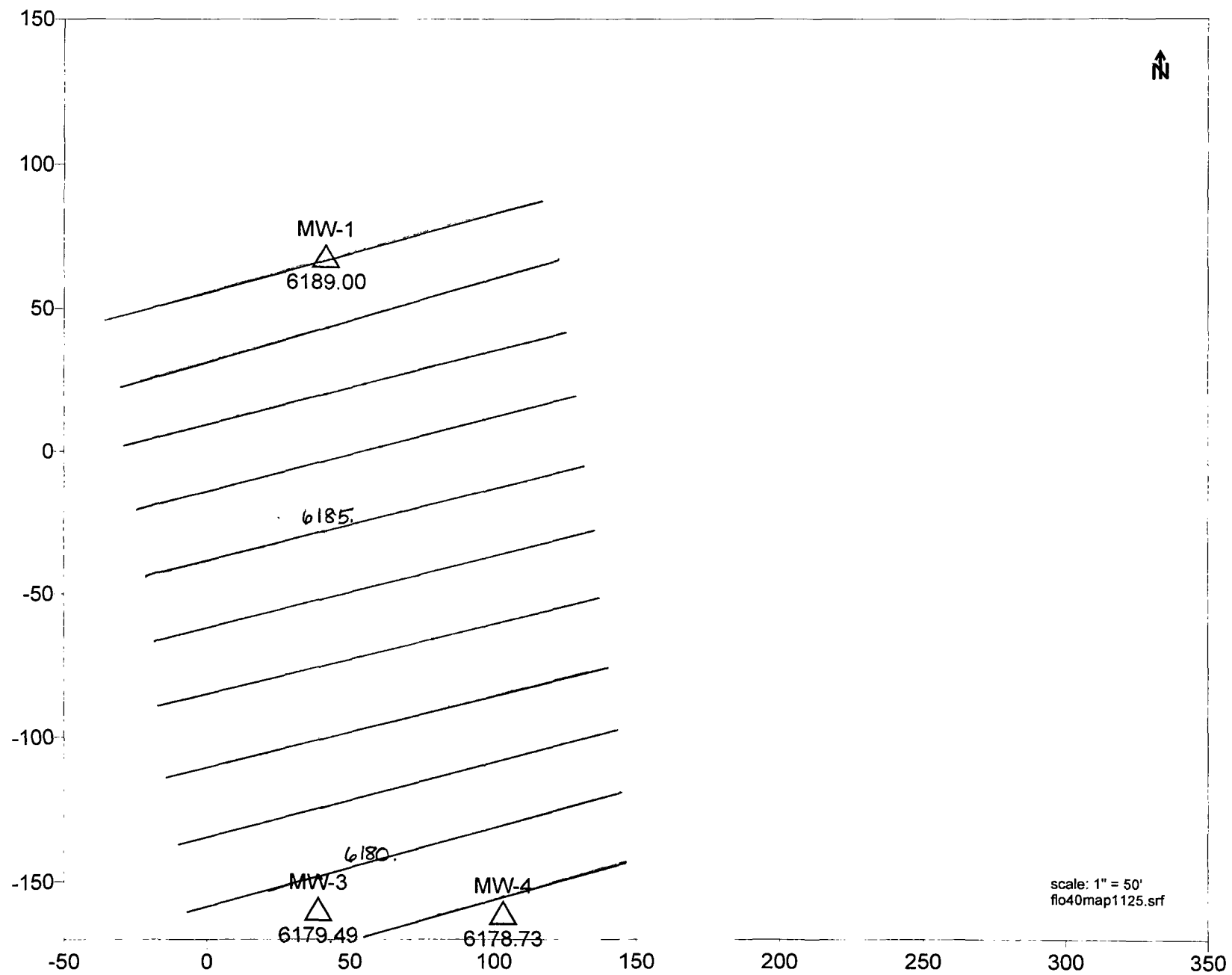


FIGURE 2.

Florance Z 40 Groundwater Contour Map (January 23, 1998)

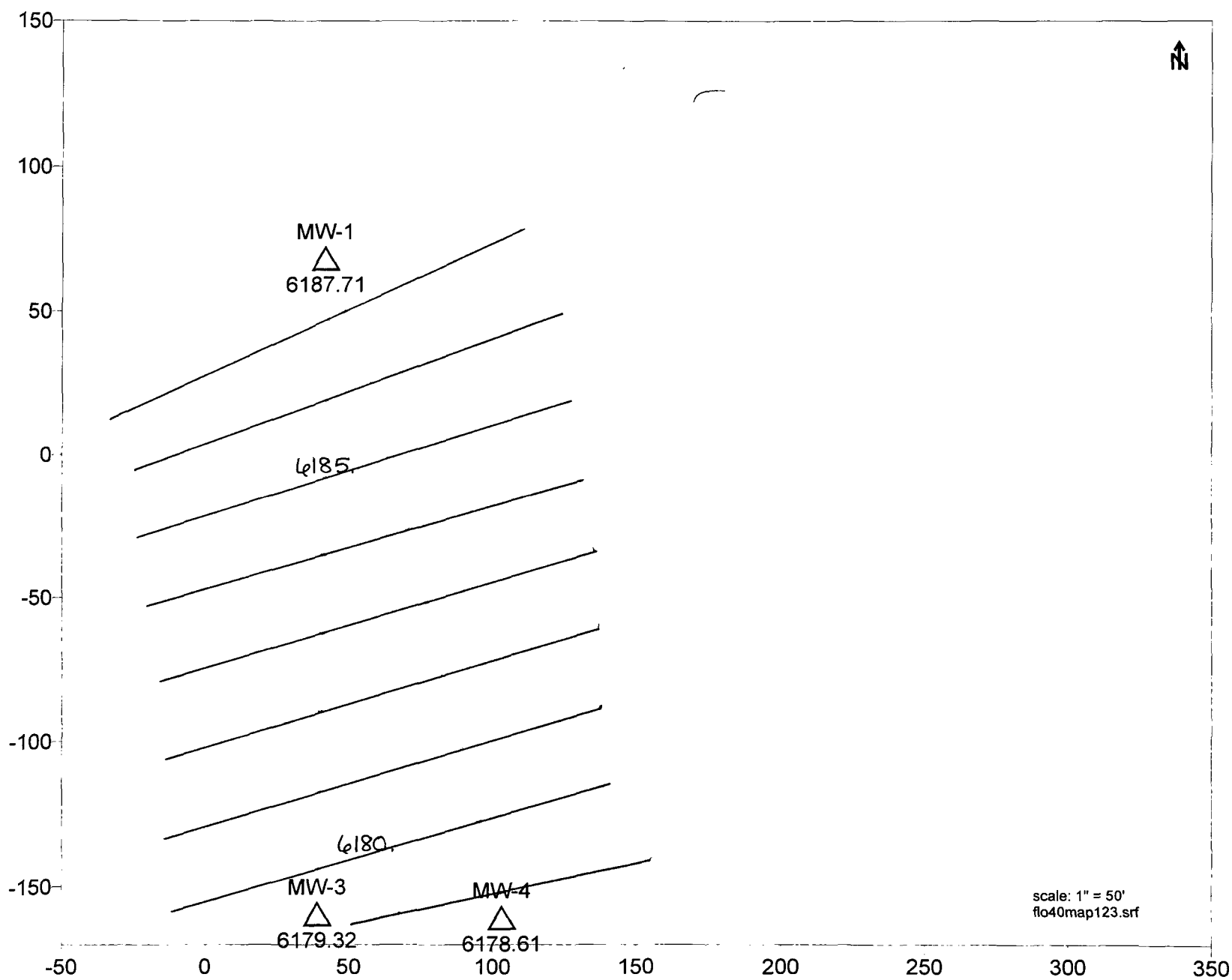
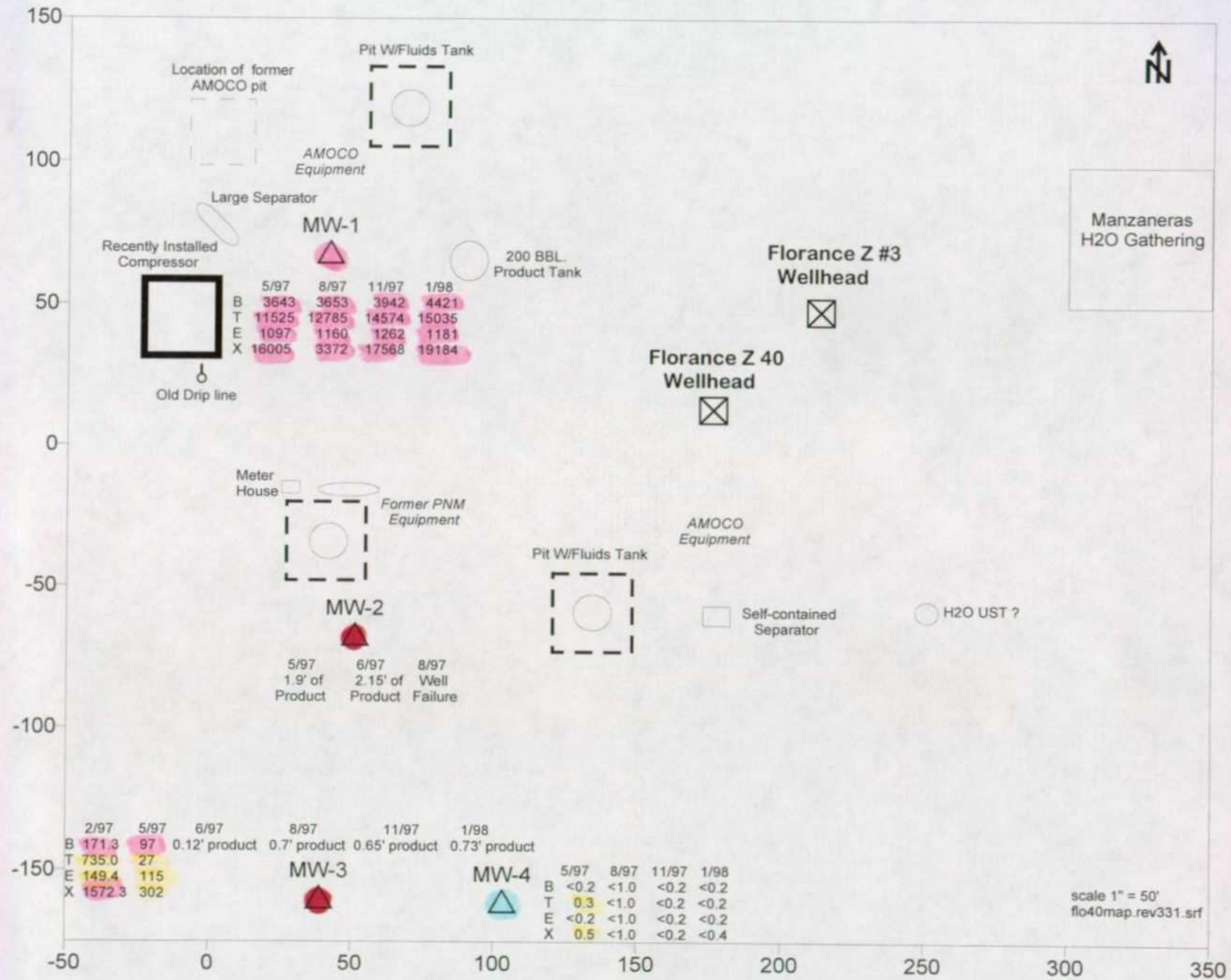


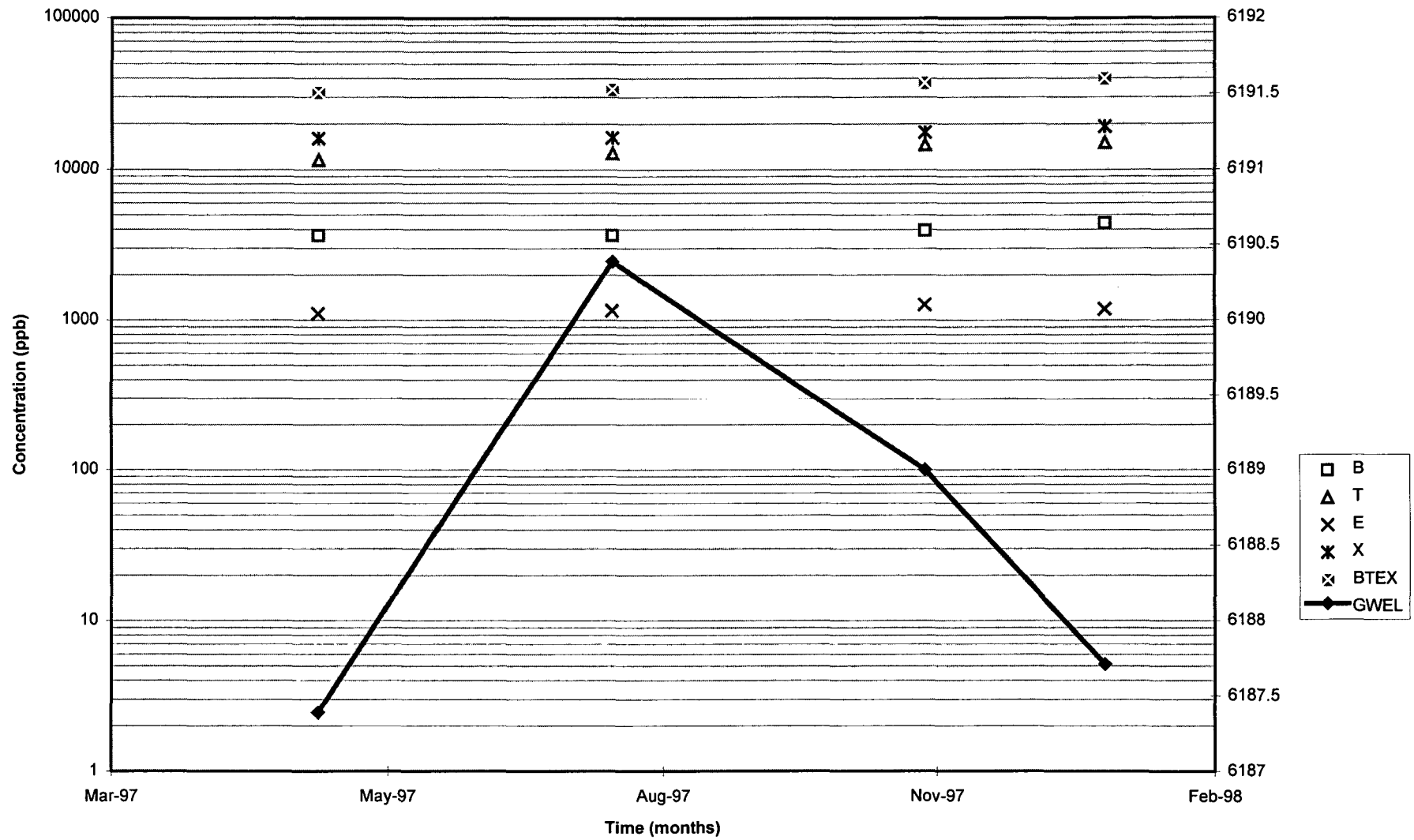
FIGURE 3. Florance Z 40 Site Map and Analytical Results
(concentrations in ppb)



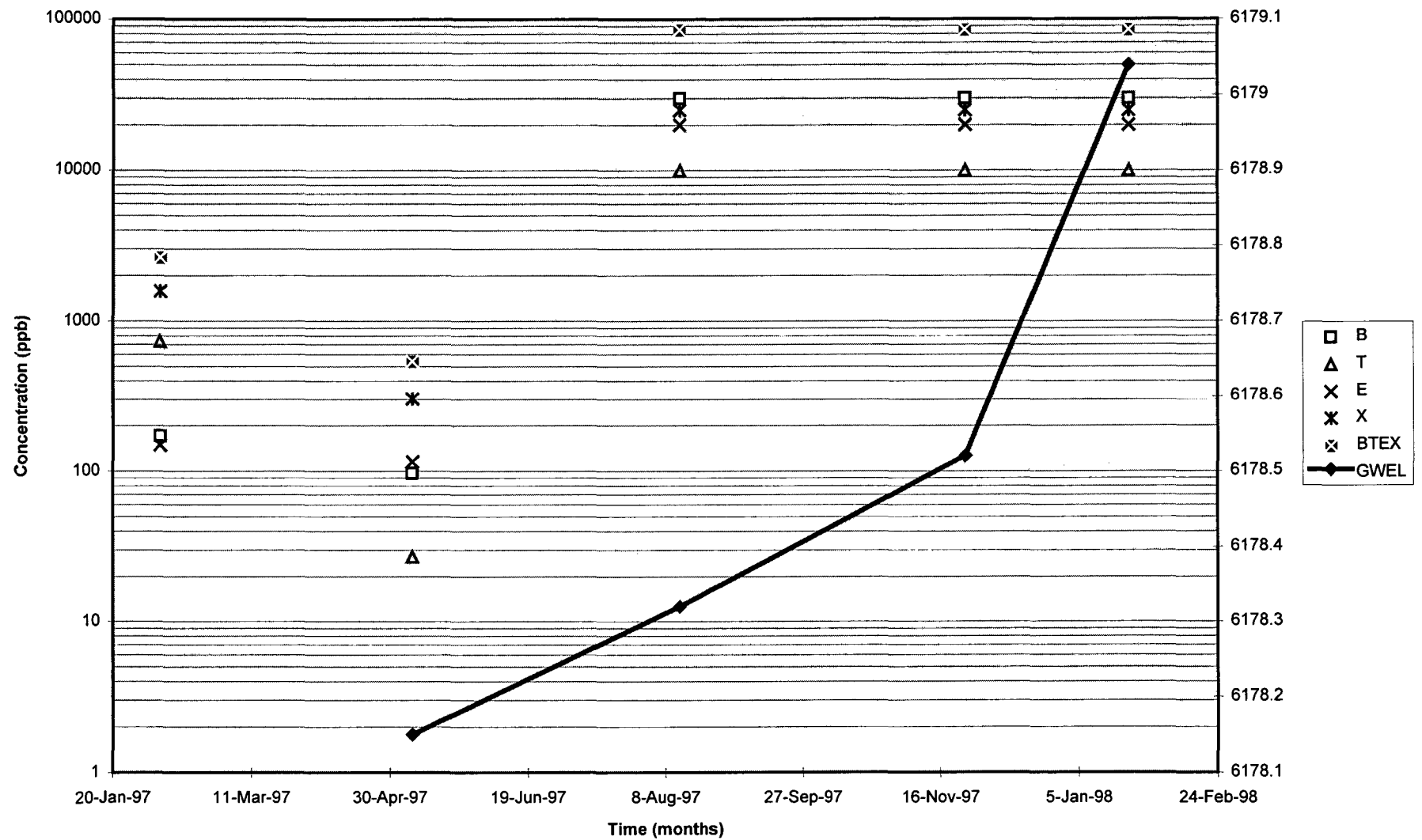
Attachment A

Hydrographs and Concentrations versus Time

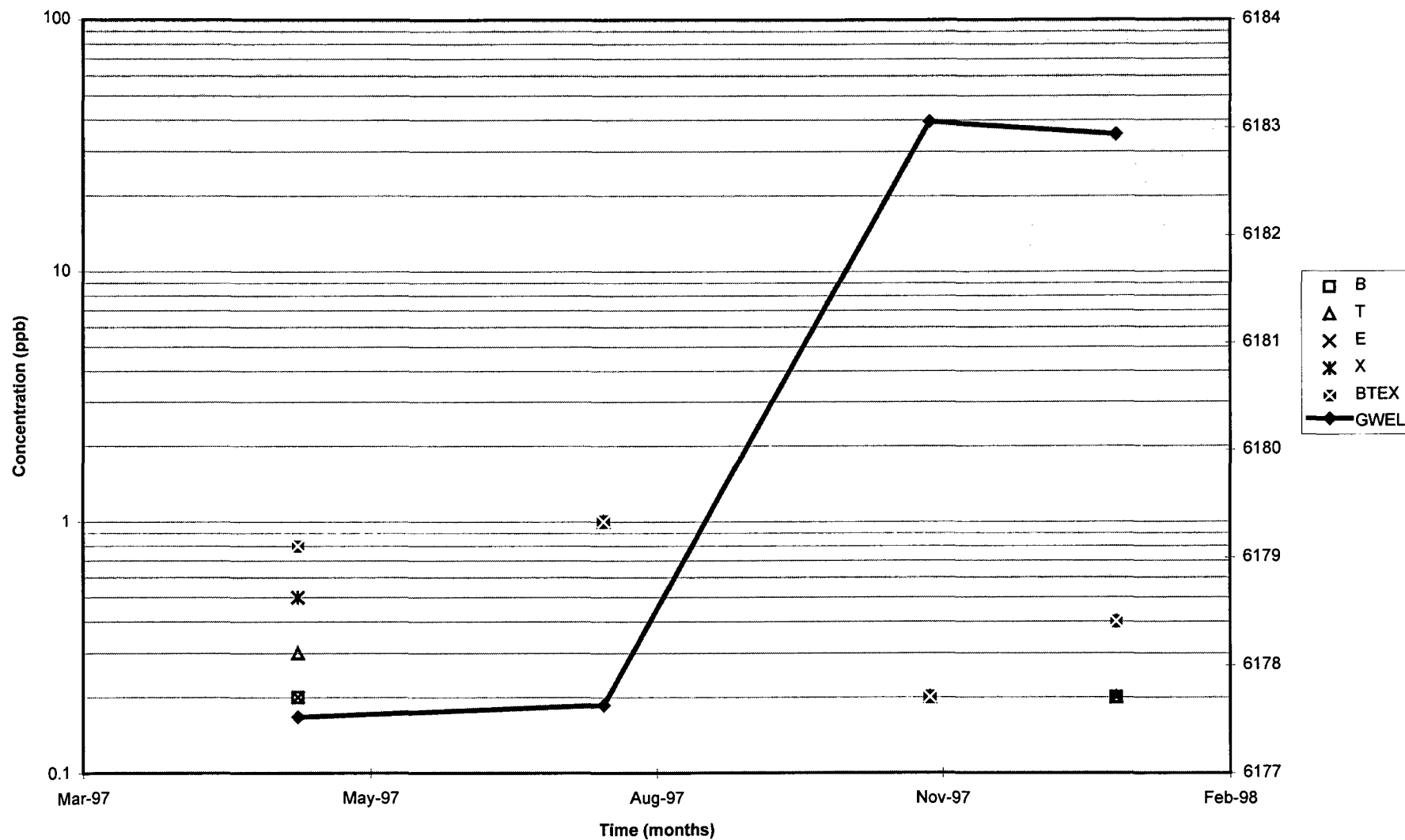
MW-1: Trends with Time



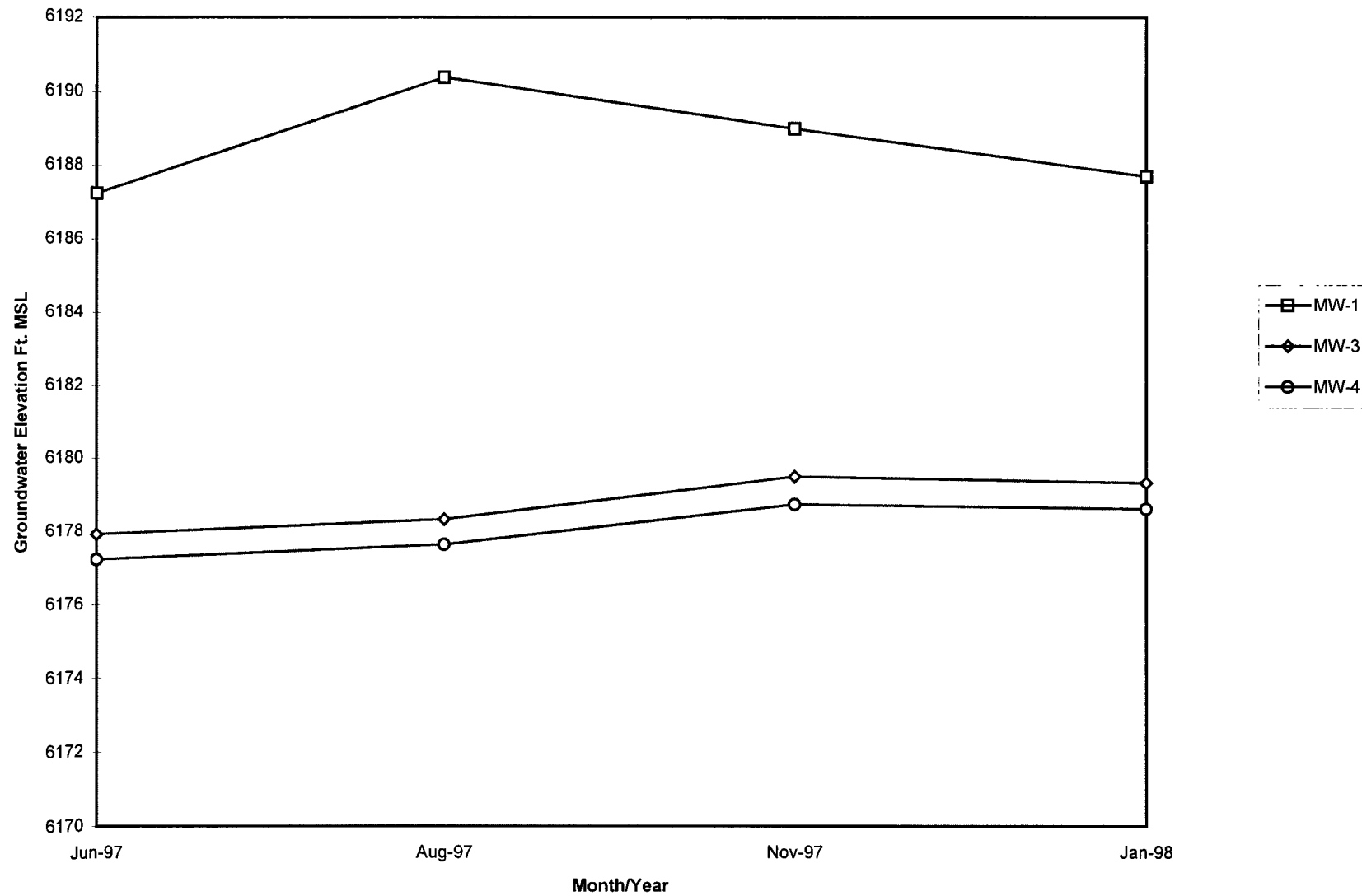
MW-3: Trends with Time



MW-4: Trends with Time



Florance Z 40 Hydrograph



Attachment B
Analytical Data

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Attn: *Denver Bearden*
Company: *PNM Gas Services*
Address: *603 W. Elm*
City, State: *Farmington, NM 87401*

Date: *5-Dec-97*
COC No.: *7084*
Sample No.: *16979*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Florance Z 40*
Project Location: *9711251330; MW-1*
Sampled by: *MG/MS*
Analyzed by: *HR*
Sample Matrix: *Liquid*

Date: *25-Nov-97* Time: *13:30*
Date: *3-Dec-97*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>3942</i>	<i>ug/L</i>	<i>40</i>	<i>ug/L</i>
<i>Toluene</i>	<i>14574</i>	<i>ug/L</i>	<i>40</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>1262</i>	<i>ug/L</i>	<i>40</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>13903</i>	<i>ug/L</i>	<i>40</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>3665</i>	<i>ug/L</i>	<i>40</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>37345</i>	<i>ug/L</i>		

ND - Not Detected at Limit of Quantitation

Method - *SW-846 EPA Method 8020A Aromatic Volatile Organics by Gas Chromatography*

Approved By: *[Signature]*
Date: *12/5/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

• TRUTH IN LENDING INDUSTRIAL CREDIT CORP. •

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Attn: *Denver Bearden*
Company: *PNM Gas Services*
Address: *603 W. Elm*
City, State: *Farmington, NM 87401*

Date: *5-Dec-97*
COC No.: *7084*
Sample No.: *16980*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Florance Z 40*
Project Location: *9711251400; MW-4*
Sampled by: *MG/MS*
Analyzed by: *HR*
Sample Matrix: *Liquid*

Date: *25-Nov-97* Time: *14:00*
Date: *3-Dec-97*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	ND	ug/L	0.2	ug/L
<i>Toluene</i>	ND	ug/L	0.2	ug/L
<i>Ethylbenzene</i>	ND	ug/L	0.2	ug/L
<i>m,p-Xylene</i>	ND	ug/L	0.2	ug/L
<i>o-Xylene</i>	ND	ug/L	0.2	ug/L
<i>TOTAL</i>	ND	ug/L		

ND - Not Detected at Limit of Quantitation

Method - *SW-846 EPA Method 8020A Aromatic Volatile Organics by Gas Chromatography*

Approved By: *[Signature]*
Date: *12/5/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Attn: *Denver Bearden*
Company: *PNM Gas Services*
Address: *603 W. Elm*
City, State: *Farmington, NM 87401*

Date: *5-Dec-97*
COC No.: *7084*
Sample No.: *16981*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Florance Z 40*
Project Location: *9711251430; MW-5*
Sampled by: *MG/MS*
Analyzed by: *HR*
Sample Matrix: *Liquid*

Date: *25-Nov-97* Time: *14:30*
Date: *3-Dec-97*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	ND	ug/L	0.2	ug/L
<i>Toluene</i>	ND	ug/L	0.2	ug/L
<i>Ethylbenzene</i>	ND	ug/L	0.2	ug/L
<i>m,p-Xylene</i>	ND	ug/L	0.2	ug/L
<i>o-Xylene</i>	ND	ug/L	0.2	ug/L
<i>TOTAL</i>	ND	ug/L		

ND - Not Detected at Limit of Quantitation

Method - *SW-846 EPA Method 8020A Aromatic Volatile Organics by Gas Chromatography*

Approved By: *[Signature]*
Date: *12/5/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNICAL BLENDING INDUSTRIES, LTD. -



ON SITE
TECHNOLOGIES, LTD.

QUALITY ASSURANCE REPORT *for EPA Method 8020*

Internal QC No.: 0559-STD
Surrogate QC No.: 0556-STD
Reference Standard QC No.: 0529/30-QC

Parameter	Result	Unit of Measure
Average Amount of All Analytes In Blank	<0.2	ppb

<i>Parameter</i>	<i>Unit of Measure</i>	<i>True Value</i>	<i>Analyzed Value</i>	<i>RPD</i>	<i>Limit</i>
<i>Benzene</i>	ppb	20.0	19.3	3	15%
<i>Toluene</i>	ppb	20.0	20.2	1	15%
<i>Ethylbenzene</i>	ppb	20.0	20.4	2	15%
<i>m,p-Xylene</i>	ppb	40.0	39.6	1	15%
<i>o-Xylene</i>	ppb	20.0	20.3	1	15%

<i>Parameter</i>	<i>1 - Percent Recovered</i>	<i>2 - Percent Recovered</i>	<i>Limit</i>	<i>RPD</i>	<i>Limit</i>
<i>Benzene</i>	131	100	(39-150)	2	20%
<i>Toluene</i>	106	101	(46-148)	2	20%
<i>Ethylbenzene</i>	102	91	(32-160)	2	20%
<i>m,p-Xylene</i>	93	89	(35-145)	2	20%
<i>o-Xylene</i>	98	95	(35-145)	2	20%

Safegate Recoveries					
	S1 Percent Recovered	S2 Percent Recovered		S1 Percent Recovered	S2 Percent Recovered
Laboratory Identification			Laboratory Identification		
Limit Percent Recovered	(70-130)		Limit Percent Recovered	(70-130)	
16979-7084	94				
16980-7084	94				
16981-7084	94				
				JM 12/8/97	(DE) 12/5/97

P.O. BOX 2606 • FARMINGTON, NM 87499
- TECHNOLOGICAL BLENDING INDUSTRY WITH THE FARMINGTON P.

Distribution: White - On Site Yellow - LAB Pink - Sampler Goldenrod - Client

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Attn: *Denver Bearden*
Company: *PNM Gas Services*
Address: *603 W. Elm*
City, State: *Farmington, NM 87401*

Date: *2-Feb-98*
COC No.: *7137*
Sample No.: *17405*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Florance 40*
Project Location: *9801231230; MW-1*
Sampled by: *MS/RD*
Analyzed by: *DC*
Sample Matrix: *Liquid*

Date: *23-Jan-98* Time: *12:30*
Date: *27-Jan-98*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>4421</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>Toluene</i>	<i>15035</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>1181</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>15143</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>4041</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>39821</i>	<i>ug/L</i>		

ND - Not Detected at Limit of Quantitation

Method - *SW-846 EPA Method 8020A Aromatic Volatile Organics by Gas Chromatography*

Approved By: *[Signature]*
Date: *2/2/98*

P.O. BOX 2606 • FARMINGTON, NM 87499

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Attn: *Denver Bearden*
Company: *PNM Gas Services*
Address: *603 W. Elm*
City, State: *Farmington, NM 87401*

Date: *2-Feb-98*
COC No.: *7137*
Sample No.: *17406*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Florance 40*
Project Location: *9801231300; MW-4*
Sampled by: *MS/RD* Date: *23-Jan-98* Time: *13:00*
Analyzed by: *DC* Date: *27-Jan-98*
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	ND	ug/L	0.2	ug/L
<i>Toluene</i>	ND	ug/L	0.2	ug/L
<i>Ethylbenzene</i>	ND	ug/L	0.2	ug/L
<i>m,p-Xylene</i>	ND	ug/L	0.2	ug/L
<i>o-Xylene</i>	ND	ug/L	0.2	ug/L
<i>TOTAL</i>	ND	ug/L		

ND - Not Detected at Limit of Quantitation

Method - SW-846 EPA Method 8020A Aromatic Volatile Organics by Gas Chromatography

Approved By: *[Signature]*
Date: *2/4/98*

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Attn: *Denver Bearden*
Company: *PNM Gas Services*
Address: *603 W. Elm*
City, State: *Farmington, NM 87401*

Date: *2-Feb-98*
COC No.: *7137*
Sample No.: *17407*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Florance 40*
Project Location: *9801231330; MW-5*
Sampled by: *MS/RD*
Analyzed by: *DC*
Sample Matrix: *Liquid*

Date: *23-Jan-98* Time: *13:30*
Date: *27-Jan-98*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>4299</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>Toluene</i>	<i>14477</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>1120</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>14399</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>3882</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>38178</i>	<i>ug/L</i>		

ND - Not Detected at Limit of Quantitation

Method - SW-846 EPA Method 8020A Aromatic Volatile Organics by Gas Chromatography

Approved By: *Jag*
Date: *2/2/98*

P.O. BOX 2606 • FARMINGTON, NM 87499

Distribution: White - On Site Yellow - LAB Pink - Sampler Goldenrod - Client



STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 S. PACHECO
SANTA FE, NEW MEXICO 87505
(505) 827-7131

December 30, 1997

Ms. Maureen Gannon
PNM
Alvarado Square, MS 0408
Albuquerque, New Mexico 87158

**RE: GROUND WATER CONTAMINATION
FLORANCE Z 40 WELL SITE**

Dear Ms. Gannon:

The New Mexico Oil Conservation Division (OCD) has reviewed Public Service Company of New Mexico's (PNM) September 10, 1997 "UPDATE OF THE FLORANCE Z 40 CONTAMINATED GROUNDWATER SITE". This document contains the results of PNM's recent investigation of ground water contamination related to PNM's dehydrator pit at the Florance Z 40 well site. The document also requests guidance concerning contamination upgradient of PNM's dehydration pit.

A review of the above referenced document shows that ground water contamination upgradient of PNM's former dehydration pit appears to be a result of production disposal activities related to Amoco's Florance Z 40 former separator pit. However, free phase product contamination of ground water in the vicinity of the dehy unit appears to be the result of disposal practices at PNM's former unlined dehy pit.

Therefore, the OCD requires that PNM address soil and ground water contamination at PNM's former dehy pit and downgradient of the dehy pit under PNM's "GROUNDWATER MANAGEMENT PROGRAM FOR UNLINED SURFACE IMPOUNDMENT CLOSURES". Ground water contamination upgradient of PNM's dehy pit is the responsibility of Amoco.

If you have any questions, please call me at (505) 827-7154.

Sincerely,

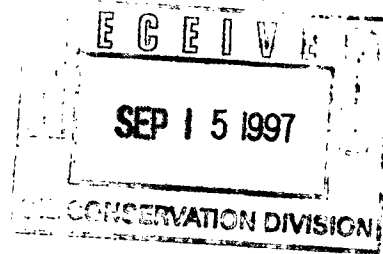
William C. Olson
Hydrogeologist
Environmental Bureau

xc: Denny Foust, OCD Aztec District Office
Buddy Shaw, Amoco
Bill Liess, BLM Farmington Office

Public Service Company
of New Mexico
Alvarado Square MS 0408
Albuquerque, NM 87158

September 10, 1997

Mr. William Olson
Hydrogeologist
Oil Conservation Division
2040 So. Pacheco
Santa Fe, New Mexico 87505



RE: UPDATE OF THE FLORANCE Z 40 CONTAMINATED GROUNDWATER SITE

Dear Bill:

PNM herein submits an update of ongoing activities at the Florance Z 40 well site where groundwater contamination exists. Our most recent reporting to you on this site was in the 1997 Annual Groundwater Report of Unlined Surface Impoundments in the San Juan Basin, dated April 15, 1997. Since that time we have conducted further investigation and monitoring at these sites and wish to update you on the latest results.

Well Locations, Groundwater Gradient and Analytical Results

Figures 1 and 2 show the direction of groundwater flow beneath the site for the months of May and August, respectively. Groundwater generally travels in a southeasterly direction beneath the site. Figure 3 presents a hydrograph of water levels in monitoring wells versus time over the past two quarters of sampling. The water level rose 3 feet in MW-1 and saw little change in either MW-3 (-0.7') and MW-4 (0.1').

The Florance Z 40 well site lies in Gobernador Canyon and is surrounded in three directions, north, east and west, by a sandstone outcrop. Figure 4 is a site map of the Florance Z 40 well site. The map includes the locations of the four groundwater monitoring wells, and wellheads, equipment, and pits found onsite. It also provides a summary of all groundwater analytical results collected to date from wells at the site. A hardcopy of the analytical results is attached as appendix A.

Summary of Events

See figure 5 for a historical progression of events.

July 28, 1996 - PNM excavated contaminated soil from the former pit area. The final depth of the excavation was 17 feet with a PID reading of 981 ppm. Excavation was halted due to cave-ins from the sidewalls of the pit. The total number of cubic yards removed was 646 yards. The excavated soil was landfarmed onsite and at two other locations within the lease. The pit was backfilled with clean native soil.

January 2, 1997 - PNM encountered groundwater at 40' during vertical extent determination. A groundwater sample was taken from the borehole for analysis of BTEX using EPA method 8020.

January 27, 1997 - Analytical results indicated a benzene concentration of 357 ppb and BTEX results of 11,510 ppb in groundwater at the site. PNM notified the OCD of an impact to groundwater at the Florance Z 40.

January 29, 1997 - PNM installed four groundwater monitoring wells, MW-1, MW-2, MW-3 and MW-4 at the site.

February 6, 1997 - PNM sampled the groundwater in MW-3 to determine if the lateral extent of the plume had been sufficiently defined. MW-3 was sampled for BTEX using EPA method 8020. Benzene contamination was found in MW-3 at 171.3 ppb. The concentration of xylenes was also above the standard of 620 ppb.

May 8, 1997 - PNM took water level measurements and performed quarterly sampling of groundwater. We were unable to sample the groundwater in MW-2 because of the presence of 1.9 feet of free-phase floating product on the water table. All other wells were sampled for the BTEX using EPA Method 8020.

June 30, 1997 - PNM conducted a survey of the monitoring wells. Water level measurements were taken in each well. At that time, over 2 feet of free product was detected in MW-2. For the first time, free-phase floating product was detected in MW-3 (0.12 feet of product)

August 13, 1997 - PNM took water level measurements and conducted quarterly sampling at the site. We were unable to sample MW-2 because of what appeared to be a collapsed well casing due to the well pad washing out from recent heavy rains in the area. No groundwater sample was collected in MW-3 due to the 0.7 foot layer of free product on the water table. We did sample groundwater in MW-1 and 4 for BTEX using EPA method 8020.

Conclusions and Recommendations

Based upon the results of our investigation at the site, PNM believes that, in addition to our pit area, there are other sources upgradient of our former activities which are contributing to ongoing groundwater contamination at the site. We ask for guidance concerning this site and direction for planning future activities to successfully remediate groundwater contamination beneath the location. If you have any questions, please call me at (505) 241-2974. Thank you for your attention to this matter.

Sincerely,
PNM



Maureen D. Gannon
Technical Project Manager

doc\flor4olson01.ltr

Attachments

cc: Colin Adams, PNM
Denny Foust, OCD-Aztec
Ron Johnson, PNM
Robin Prisk, WFS
Buddy Shaw, Amoco

Figure 1. Florance Z 40 Groundwater Contour Map, May 1997

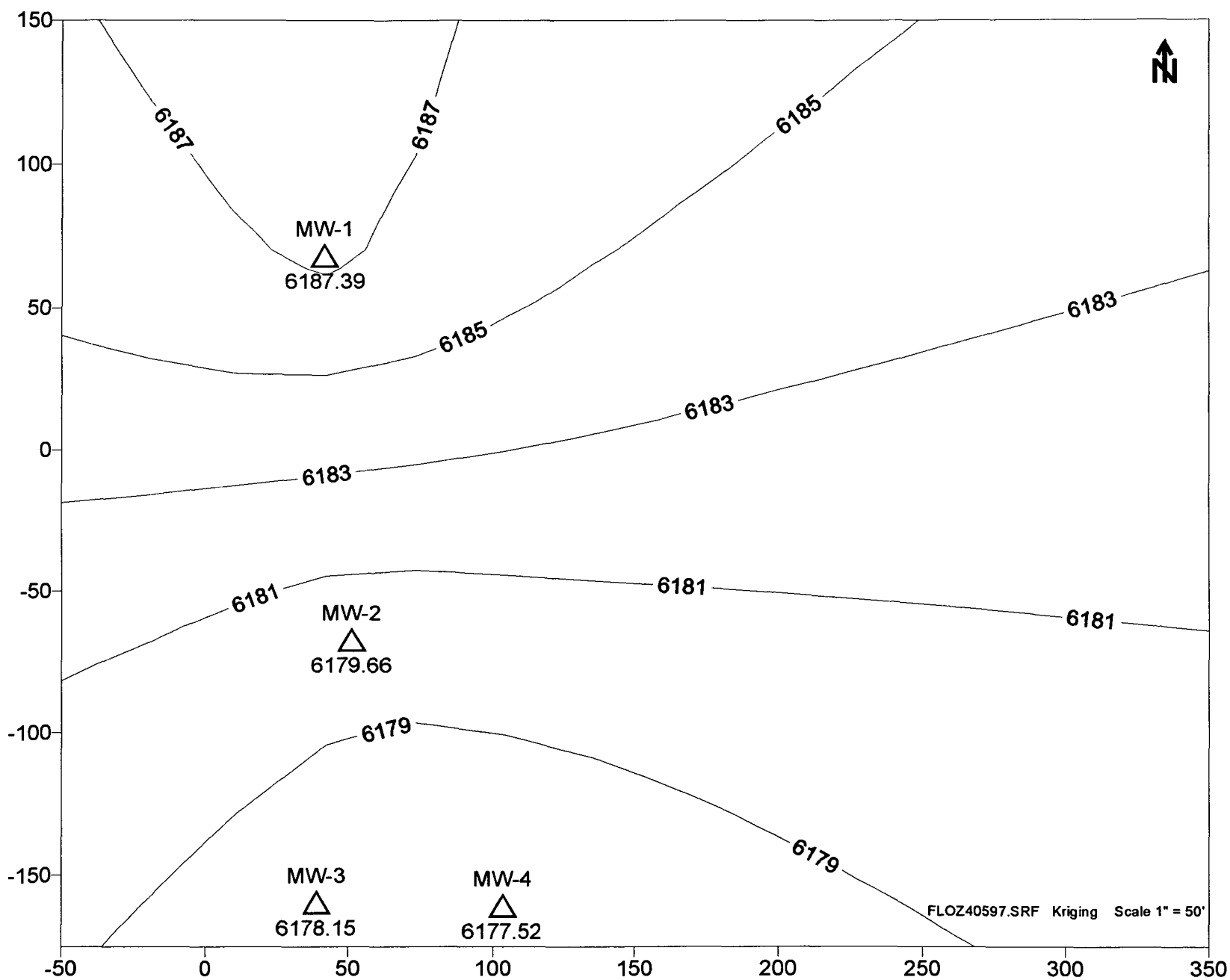


Figure 2. Florance Z 40 Groundwater Contour Map, August 1997

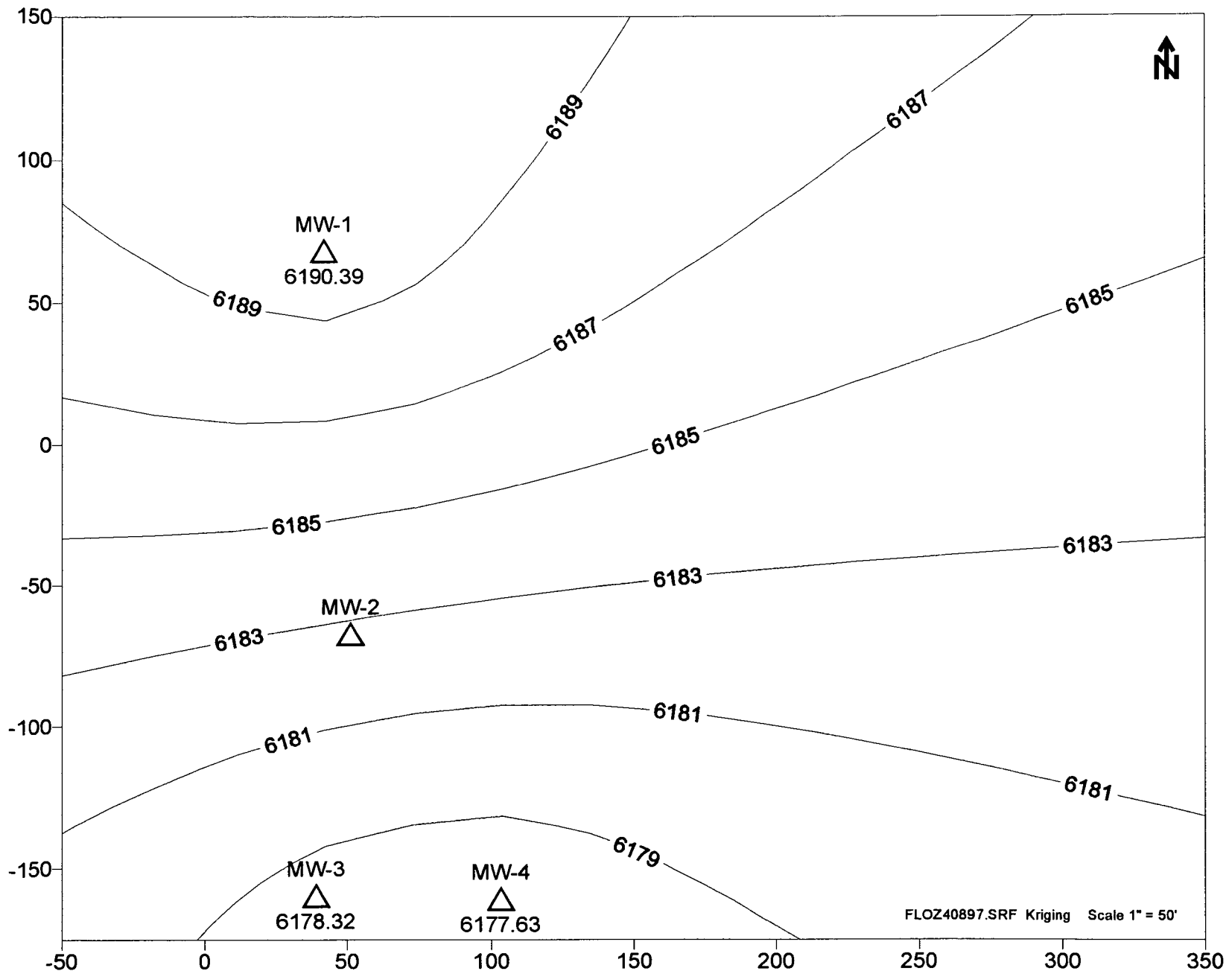


Figure 3. Florance Z 40 Hydrograph
(month/year vs. groundwater elevation)

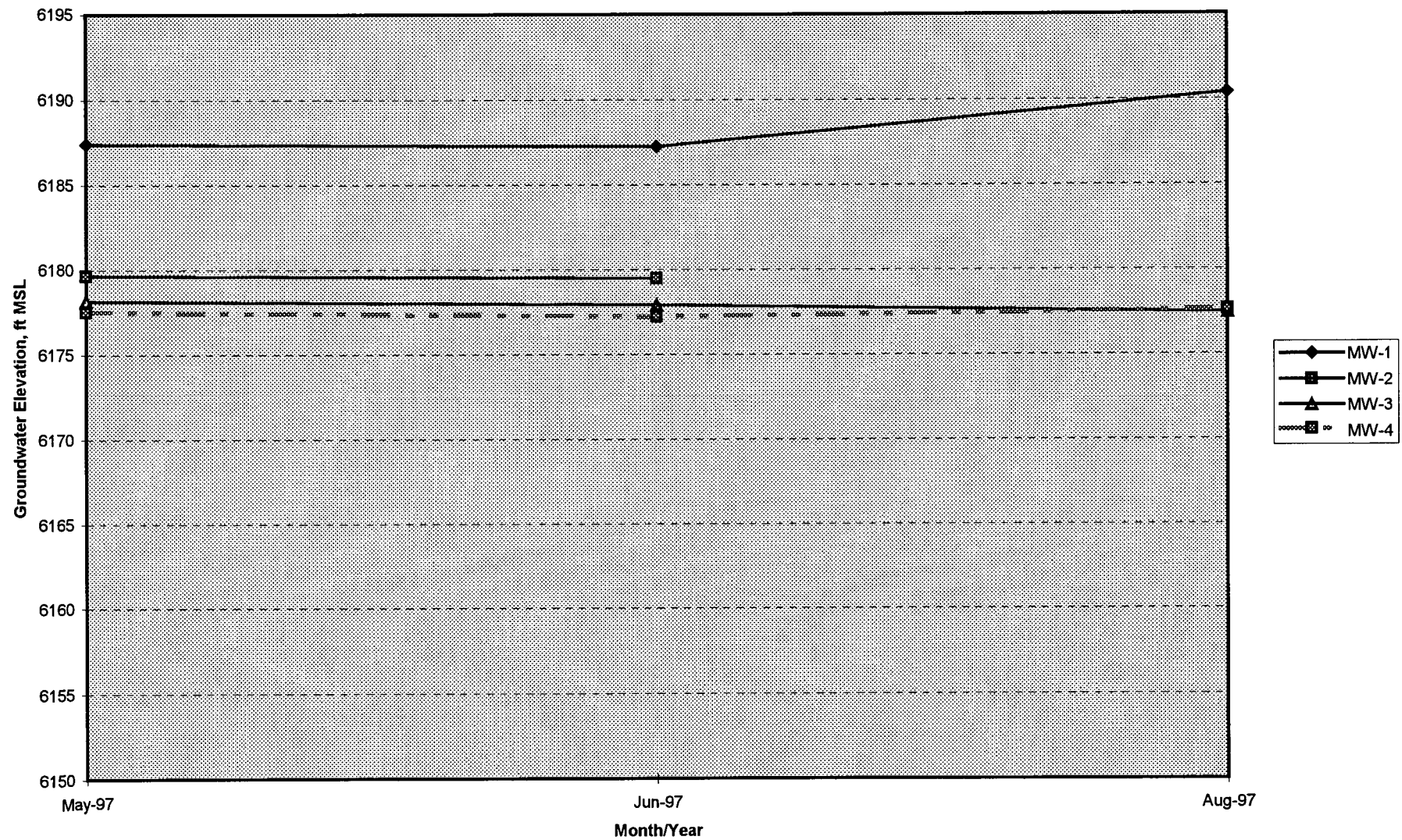


Figure 4. Florance Z 40 Site Map, August 1997
(concentrations in ppb)

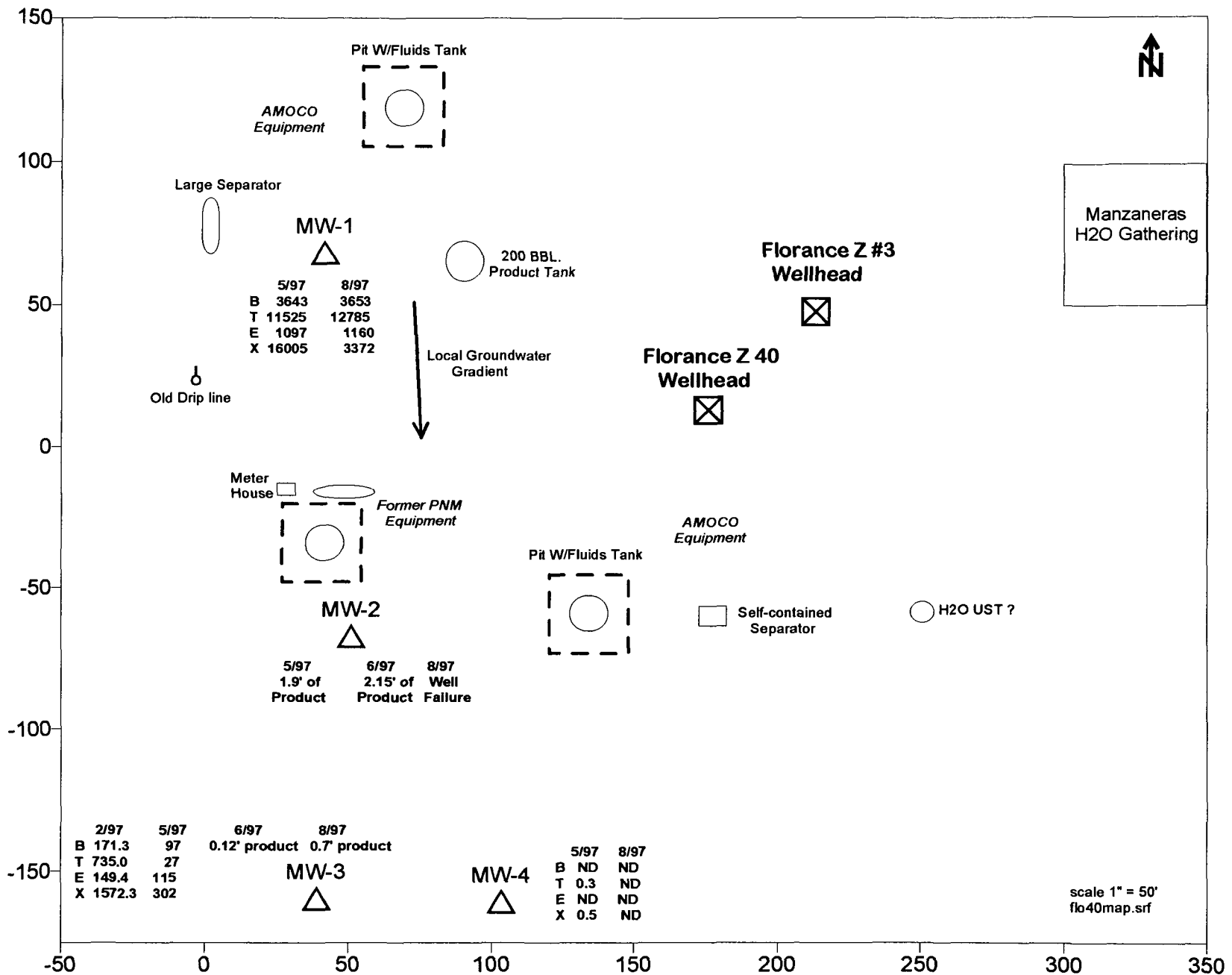


Figure 5. Florance Z 40 Calendar of Activities to Date

ID	Task Name	Duration	Start	Finish	96												1997							
					Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug						
1	Pit Excavated to 17' (PID- 981 ppm)	1d	Mon 7/29/96	Mon 7/29/96	⬢																			
2	Groundwater (GW) encountered at 40'	1d	Thu 1/2/97	Thu 1/2/97							⬢													
3	Reported GW contamination to the OCD	1d	Mon 1/27/97	Mon 1/27/97								⬢												
4	Installed MW-1, MW-2, MW-3 and MW-4	1d	Wed 1/29/97	Wed 1/29/97								⬢												
5	Sampled MW-3	1d	Thu 2/6/97	Thu 2/6/97								⬢												
6	Reported progress to OCD in annual GW report	1d	Tue 4/15/97	Tue 4/15/97									⬢											
7	1st Quarterly Sampling: free-phase in MW-2	1d	Thu 5/8/97	Thu 5/8/97										⬢										
8	Survey of site: free-phase in MW-2 and MW-3	1d	Mon 6/30/97	Mon 6/30/97											⬢									
9	2nd Quarterly Sampling: free-phase in MW-2 and MW-3	1d	Wed 8/13/97	Wed 8/13/97												⬢								

Wed 9/10/97

Appendix A. Florance Z 40 Groundwater Analytical Results

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Attn: *Denver Bearden*
Company: *PNM Gas Services*
Address: *603 W. Elm*
City, State: *Farmington, NM 87401*

Date: *27-Aug-97*
COC No.: *5648*
Sample No.: *15771*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Florance Z 40*
Project Location: *9708131330; MW-1*
Sampled by: *MG/MS* Date: *13-Aug-97* Time: *13:30*
Analyzed by: *DC* Date: *22-Aug-97*
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>3653</i>	<i>ug/L</i>	<i>100</i>	<i>ug/L</i>
<i>Toluene</i>	<i>12785</i>	<i>ug/L</i>	<i>100</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>1160</i>	<i>ug/L</i>	<i>100</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>12819</i>	<i>ug/L</i>	<i>100</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>3372</i>	<i>ug/L</i>	<i>100</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>33789</i>	<i>ug/L</i>		

ND - Not Detected at Limit of Quantitation

Method - *SW-846 EPA Method 8020A Aromatic Volatile Organics by Gas Chromatography*

Approved By: *[Signature]*
Date: *8/26/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Attn: *Denver Bearden*
Company: *PNM Gas Services*
Address: *603 W. Elm*
City, State: *Farmington, NM 87401*

Date: *27-Aug-97*
COC No.: *5648*
Sample No.: *15810*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Florance Z 40*
Project Location: *9708131400; MW-4*
Sampled by: *MG/MS* Date: *13-Aug-97* Time: *14:00*
Analyzed by: *DC* Date: *22-Aug-97*
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	ND	ug/L	1.0	ug/L
<i>Toluene</i>	ND	ug/L	1.0	ug/L
<i>Ethylbenzene</i>	ND	ug/L	1.0	ug/L
<i>m,p-Xylene</i>	ND	ug/L	1.0	ug/L
<i>o-Xylene</i>	ND	ug/L	1.0	ug/L
<i>TOTAL</i>	ND	ug/L		

ND - Not Detected at Limit of Quantitation

Method - *SW-846 EPA Method 8020A Aromatic Volatile Organics by Gas Chromatography*

Approved By: *[Signature]*
Date: *8/28/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Attn: *Denver Bearden*
Company: *PNM Gas Services*
Address: *603 W. Elm*
City, State: *Farmington, NM 87401*

Date: *27-Aug-97*
COC No.: *5648*
Sample No.: *15811*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Florance Z 40*
Project Location: *9708131430; MW-5*
Sampled by: *MG/MS* Date: *13-Aug-97* Time: *14:30*
Analyzed by: *DC* Date: *22-Aug-97*
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>3683</i>	<i>ug/L</i>	<i>100</i>	<i>ug/L</i>
<i>Toluene</i>	<i>12739</i>	<i>ug/L</i>	<i>100</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>1143</i>	<i>ug/L</i>	<i>100</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>12695</i>	<i>ug/L</i>	<i>100</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>3391</i>	<i>ug/L</i>	<i>100</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>33651</i>	<i>ug/L</i>		

ND - Not Detected at Limit of Quantitation

Method - *SW-846 EPA Method 8020A Aromatic Volatile Organics by Gas Chromatography*

Approved By: *[Signature]*
Date: *8/28/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-1556

12 June 1997

Denver Bearden
PNM Gas Services
603 W. Elm Street
Farmington, NM 87401

Reference:

Project Name: Florance 40
Project Loc.: 970508: MW-1, MW-3, MW-4, MW-5
On Site ID: COC Record No.5553

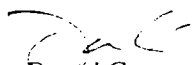
Dear Denver,

Enclosed please find the analytical results for your project referenced above. Please note that the PAH EPA 8310 analysis for MW-1 was not performed due to a shipping error. Attached you will find a Sample Protocol Nonconformance Worksheet from Southern Petroleum Laboratory (SPL) stating sample condition upon receipt. UPS did not deliver via next day service and subsequently by the time the samples arrived at SPL all ice had been spent. On Site Technologies will cover all costs incurred for the re-analysis of PAH EPA 8310 for MW-1.

We trust you will find all in order and should you have any questions regarding these results please contact me at any time. (505) 325-2432.

Thank you once again for your consideration.

Sincerely,


David Cox
Laboratory Manager

cc: Maureen Gannon, PNM Gas Services

OFF: (505) 325-5667

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn: *Denver Bearden*
Company: *PNM Gas Services*
Address: *603 W. Elm*
City, State: *Farmington, NM 87401*

Date: *20-May-97*
COC No.: *5553*
Sample No.: *14646*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Florance 40*
Project Location: *Trip Blank*
Sampled by: *MG/MS* Date: NR Time: NR
Analyzed by: *DC* Date: *16-May-97*
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	ND	ug/L	0.2	ug/L
<i>Toluene</i>	ND	ug/L	0.2	ug/L
<i>Ethylbenzene</i>	ND	ug/L	0.2	ug/L
<i>m,p-Xylene</i>	ND	ug/L	0.2	ug/L
<i>o-Xylene</i>	ND	ug/L	0.2	ug/L
<i>TOTAL</i>	ND	ug/L		

ND - Not Detected at Limit of Quantitation

Method - *SW-846 EPA Method 8020A Aromatic Volatile Organics by Gas Chromatography*

Approved By: *[Signature]*
Date: *5/20/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Attn: *Denver Bearden*
Company: *PNM Gas Services*
Address: *603 W. Elm*
City, State: *Farmington, NM 87401*

Date: *20-May-97*
COC No.: *5553*
Sample No.: *14501*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Florance 40*
Project Location: *9705081330; MW-1*
Sampled by: *MG/MS* Date: *8-May-97* Time: *13:30*
Analyzed by: *DC* Date: *16-May-97*
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>3643</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>Toluene</i>	<i>11525</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>1097</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>12661</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>3344</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>32270</i>	<i>ug/L</i>		

ND - Not Detected at Limit of Quantitation

Method - *SW-846 EPA Method 8020A Aromatic Volatile Organics by Gas Chromatography*

Approved By: *[Signature]*
Date: *5/20/97*

OFF: (505) 325-5667

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn: *Denver Bearden*
Company: *PNM Gas Services*
Address: *603 W. Elm*
City, State: *Farmington, NM 87401*

Date: *20-May-97*
COC No.: *5553*
Sample No.: *14502*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Florance 40*
Project Location: *9705081430; MW-3*
Sampled by: *MG/MS*
Analyzed by: *DC*
Sample Matrix: *Liquid*

Date: *8-May-97* Time: *14:30*
Date: *16-May-97*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>97</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>Toluene</i>	<i>27</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>115</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>266</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>36</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>542</i>	<i>ug/L</i>		

ND - Not Detected at Limit of Quantitation

Method - *SW-846 EPA Method 8020A Aromatic Volatile Organics by Gas Chromatography*

Approved By: *[Signature]*
Date: *5/20/97*

OFF: (505) 325-5667

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn: *Denver Bearden*
Company: *PNM Gas Services*
Address: *603 W. Elm*
City, State: *Farmington, NM 87401*

Date: *20-May-97*
COC No.: *5553*
Sample No.: *14503*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Florance 40*
Project Location: *9705081500; MW-4*
Sampled by: *MG/MS*
Analyzed by: *DC*
Sample Matrix: *Liquid*

Date: *8-May-97* Time: *15:00*
Date: *16-May-97*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	ND	ug/L	0.2	ug/L
<i>Toluene</i>	0.3	ug/L	0.2	ug/L
<i>Ethylbenzene</i>	ND	ug/L	0.2	ug/L
<i>m,p-Xylene</i>	0.5	ug/L	0.2	ug/L
<i>o-Xylene</i>	ND	ug/L	0.2	ug/L
<i>TOTAL</i>	0.8	ug/L		

ND - Not Detected at Limit of Quantitation

Method - *SW-846 EPA Method 8020A Aromatic Volatile Organics by Gas Chromatography*

Approved By: *[Signature]*

Date: *5/20/97*

OFF: (505) 325-5667

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn: *Denver Bearden*
Company: *PNM Gas Services*
Address: *603 W. Elm*
City, State: *Farmington, NM 87401*

Date: *20-May-97*
COC No.: *5553*
Sample No.: *14504*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Florance 40*
Project Location: *9705081530; MW-5*
Sampled by: *MG/MS* Date: *8-May-97* Time: *15:30*
Analyzed by: *DC* Date: *16-May-97*
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	ND	ug/L	0.2	ug/L
<i>Toluene</i>	0.3	ug/L	0.2	ug/L
<i>Ethylbenzene</i>	ND	ug/L	0.2	ug/L
<i>m,p-Xylene</i>	0.4	ug/L	0.2	ug/L
<i>o-Xylene</i>	ND	ug/L	0.2	ug/L
<i>TOTAL</i>	0.6	ug/L		

ND - Not Detected at Limit of Quantitation

Method - *SW-846 EPA Method 8020A Aromatic Volatile Organics by Gas Chromatography*

Approved By: *[Signature]*
Date: *5/20/97*

QUALITY ASSURANCE REPORT
for EPA Method 8020

Date Analyzed: 16-May-97

Internal QC No.: 0527-STD

Surrogate QC No.: 0528-STD

Reference Standard QC No.: 0529/30-QC

Method Blank

Parameter	Result	Unit of Measure
Average Amount of All Analytes In Blank	<0.2	ppb

Calibration Check

Parameter	Unit of Measure	True Value	Analyzed Value	% Diff	Limit
Benzene	ppb	20.0	18.3	9	15%
Toluene	ppb	20.0	19.0	5	15%
Ethylbenzene	ppb	20.0	19.3	4	15%
m,p-Xylene	ppb	40.0	37.1	7	15%
o-Xylene	ppb	20.0	19.3	4	15%

Matrix Spike

Parameter	1 - Percent Recovered	2 - Percent Recovered	Limit	%RSD	Limit
Benzene	90	87	(39-150)	2	20%
Toluene	93	90	(46-148)	2	20%
Ethylbenzene	92	89	(32-160)	2	20%
m,p-Xylene	90	87	(35-145)	2	20%
o-Xylene	93	90	(35-145)	2	20%

Surrogate Recoveries

Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered	Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered
Limit Percent Recovered	(70-130)		Limit Percent Recovered	(70-130)	
14646-5553	95				
14501-5553	94				
14502-5553	94				
14503-5553	95				
14504-5553	95				<i>me</i> 5/20/97

S1: Fluorobenzene

Prepared by: <u>S. West</u>	Date/Time:
Client: <u>On Site Analytical</u>	SPL W/O #:
Submitted to: <u>EF</u>	Samples Logged In? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO

Matrix: ☐ SOIL ☒ WATER ☐ AIR ☐ OTHER
Samples Affected: ☒ ALL ☐ Partial (See description)

Description of non-conformance: Sample were in login at 9:00am 5/13/97
@ ambient temperature

Condition	Information	Container
<input checked="" type="checkbox"/> Temp > 6C	<input type="checkbox"/> No collected date	<input type="checkbox"/> Damaged containers
<input type="checkbox"/> Expired Hold Time	<input type="checkbox"/> No COC	<input type="checkbox"/> Improper containers
<input type="checkbox"/> Headspace	<input type="checkbox"/> Samples not labeled	<input type="checkbox"/> Non-SPL containers
<input type="checkbox"/> Unpreserved	<input type="checkbox"/> Sample v. COC ID disagreement	<input type="checkbox"/> Insufficient containers
<input type="checkbox"/> Improperly preserved	<input type="checkbox"/> Container v. COC disagreement	<input type="checkbox"/> Sample not on COC
<input type="checkbox"/> Insufficient Sample	<input type="checkbox"/> Method not specified or not listed	<input type="checkbox"/> Sample not received

Client Name Contacted:	Date / Time:
Phone:	Action: <input type="checkbox"/> Complete Login <input type="checkbox"/> HOLD

Client Instructions: Dave - Here is the COC' you
requested

Comments:

Project Manager Signature

Date / Time

COPIES TO:



File



Project Manager



Area Supervisor



QA

rev. 3/95 jpa

CHAIN OF CUSTODY RECORD

ON SITE

TECHNOLOGIES, LTD.

657 W. Maple • P. O. Box 2606 • Farmington NM 87499
LAB: (505) 325-5667 • FAX: (505) 325-6256

Date: _____

Page _____ of _____

Purchase Order No.:		Job No.:		Name <u>DAYE COX</u>		Title	
SEND INVOICE TO	Name		Company <u>ON SITE TECH.</u>		Mailing Address <u>612 E. MURRAY DR.</u>		
	Company		City, State, Zip <u>FARMINGTON, NM 87401</u>		Telephone No. <u>505-325-5667</u>		Telefax No. <u>505-325-6256</u>
	Address		ANALYSIS REQUESTED				
	City, State, Zip						
Sampling Location: <u>FLORANCE 4D / JACQUES 2A</u>				REPORT RESULTS TO	Number of Containers		
Sampler:							
SAMPLE IDENTIFICATION		SAMPLE				LAB ID	
		DATE	TIME				
FLORANCE 4D, 14501-5553		5/8/97	13:30				
JACQUES 2A, 14506-5554		"	11:00				
<p>* SAMPLES RECEIVED BY SPL, HOUSTON ON MONDAY 5/12/97 PAH-BIGAIT TEAM</p> <p>SAMPLES SHIPPED 5/8/97 VIA UPS NEXT DAY AIR F.M. 5/9/97 DELIVERY</p> <p>DID NOT MAKE IT DUE TO COOLER SETTING IN KENTUCKY WAREHOUSE</p> <p>FRIDAY. UPS RESPONSIBLE FOR ALL COSTS INCURRED. (B)</p> <p>5/13/97</p>							
Relinquished by: <u>Heidi Rees</u>		Date/Time <u>5/8/97 17:20</u>		Received by:		Date/Time	
Relinquished by:		Date/Time		Received by:		Date/Time	
Relinquished by:		Date/Time		Received by:		Date/Time	
Method of Shipment:				Rush		24-48 Hours	10 Working Days
Authorized by:		Date				Special Instructions:	
		(Client Signature Must Accompany Request)					

000000

Date: _____

Page _____ of _____

657 W. Maple • P. O. Box 2606 • Farmington NM 87499

LAB: (505) 325-5667 • FAX: (505) 325-6256

Distribution	White - On Site	Yellow	LAB	Pink	Sampler	Goldenrod	Client
--------------	-----------------	--------	-----	------	---------	-----------	--------



CHAIN OF CUSTODY RECORD

5553

Date: 5/08/97

Page 1 of 1

657 W. Maple • P. O. Box 2606 • Farmington NM 87499
LAB: (505) 325-5667 • FAX: (505) 325-6256

Purchase Order No.:		Job No.:		Name: Maureen Gannon		Title:																		
SEND INVOICE TO	Name: Denver Bearden			REPORT RESULTS TO	Company: PNM Gas Services																			
	Company: PNM Gas Services		Dept. 324-3763		Mailing Address: Alverado Square, Mail Stop 0408																			
	Address: 603 W. Elm Street				City, State, Zip: Albuquerque, NM 87158																			
	City, State, Zip: Farmington, NM 87401				Telephone No. 505-848-2974		Telefax No.:																	
Sampling Location: FLORENCE 40					ANALYSIS REQUESTED																			
Sampler: <i>Maureen Gannon / Mark Skekano</i>					Number of Containers																			
SAMPLE IDENTIFICATION			SAMPLE DATE TIME MATRIX PRES.			LAB ID																		
9705081330 <i>mucl *</i>						3	X	(X)								14501-5553								
140 <i>mucl</i>																								
9705081430 <i>mucl 3</i>						2	X									14502-5553								
9705081500 <i>mucl 4</i>						2	X									14503								
9705081530 <i>mucl 5</i>						2	X									14504								
TRIP BLANK			<i>AIR NR</i>			1	X									14646-5557								
⊗ SAMPLE INVALID DUE TO SHIPPING ERROR BY UPS. SEE COX #6356 TO SPL @ 5/13/97																								
Relinquished by: <i>M/Gannon</i>					Date/Time: <i>5/08/97</i>					Received by: <i>[Signature]</i>					Date/Time: <i>5/8/97 1625</i>									
Relinquished by:					Date/Time:					Received by:					Date/Time:									
Relinquished by:					Date/Time:					Received by:					Date/Time:									
Method of Shipment:					Rush					24-48 Hours					10 Working Days					Special Instructions: Results to be sent to both parties.				
Authorized by: _____					Date: _____																			
(Client Signature <u>Must</u> Accompany Request)																								

Distribution: White - On Site Yellow - LAB Pink - Sampler Goldenrod - Client

* "HkA" Sample

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Attn: *Denver Bearden*
Company: *PNM Gas Services*
Address: *603 W. Elm*
City, State: *Farmington, NM 87401*

Date: *12-Feb-97*
COC No.: *5739*
Sample No.: *13647*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Florance 40*
Project Location: *9702061530; MW-3*
Sampled by: *MS*
Analyzed by: *DC*
Sample Matrix: *Liquid*

Date: *6-Feb-97* Time: *15:30*
Date: *12-Feb-97*

Laboratory Analysis

Parameter	Result	Unit of Measure	Detection Limit	Unit of Measure
Benzene	171.3	ug/L	0.2	ug/L
Toluene	735.0	ug/L	0.2	ug/L
Ethylbenzene	149.4	ug/L	0.2	ug/L
m,p-Xylene	1245.4	ug/L	0.2	ug/L
o-Xylene	326.9	ug/L	0.2	ug/L
TOTAL		2628.0		ug/L

Method - SW-846 EPA Method 8020 Aromatic Volatile Organics by Gas Chromatography

Approved by: *[Signature]*
Date: *2/12/97*

OFF: (505) 325-5667

ON SITE

TECHNOLOGIES, LTD.

LAB: (505) 325-1556

QUALITY ASSURANCE REPORT

for EPA Method 8020

Date Analyzed: 12-Feb-97

Internal QC No.: 0527-STD

Surrogate QC No.: 0528-STD

Reference Standard QC No.: 0417-QC

Method Blank

Parameter	Result	Unit of Measure
Average Amount of All Analytes In Blank	<0.2	ppb

Calibration Check

Parameter	Unit of Measure	True Value	Analyzed Value	% Diff	Limit
Benzene	ppb	20.0	19.6	2	15%
Toluene	ppb	20.0	20.7	3	15%
Ethylbenzene	ppb	20.0	21.2	6	15%
m,p-Xylene	ppb	40.0	40.9	2	15%
o-Xylene	ppb	20.0	20.9	5	15%

Matrix Spike

Parameter	1- Percent Recovered	2 - Percent Recovered	Limit	%RSD	Limit
Benzene	95	93	(39-150)	1	20%
Toluene	99	98	(46-148)	1	20%
Ethylbenzene	102	100	(32-160)	1	20%
m,p-Xylene	98	96	(35-145)	1	20%
o-Xylene	100	98	(35-145)	1	20%

Surrogate Recoveries

Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered	Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered
Limit Percent Recovered	(70-130)		Limit Percent Recovered	(70-130)	
13647-5739	95				

S1: Fluorobenzene



CHAIN OF CUSTODY RECORD

5139

Date: 2/7/97

Page 1 of 1

TECHNOLOGIES, LTD.

657 W. Maple • P. O. Box 2606 • Farmington NM 87499
LAB: (505) 325-5667 • FAX: (505) 325-6256

Purchase Order No.:		Job No.:		REPORT RESULTS TO	Name Maureen Gannon		Title												
SEND INVOICE TO	Name Denver Bearden				Company PNM Gas Services														
	Company PNM Gas Services		Dept. 324-3763		Mailing Address Alverado Square, Mail Stop 0408														
	Address 603 W. Elm Street				City, State, Zip Albuquerque, NM 87158														
	City, State, Zip Farmington, NM 87401				Telephone No. 505-848-2974		Telefax No.												
Sampling Location: Flora 40				Number of Containers	ANALYSIS REQUESTED														
Sampler: Mark Sikelianos					<div>BTX</div>														
SAMPLE IDENTIFICATION			SAMPLE										MATRIX		PRES.		LAB ID		
			DATE										TIME						
MW-3 9702061530																		130.7.2	
Relinquished by:			Date/Time 2/7/97 1515		Received by:		Date/Time 2/7/97 1515												
Relinquished by:			Date/Time		Received by:		Date/Time												
Relinquished by:			Date/Time		Received by:		Date/Time												
Method of Shipment:			Date 2/7/97		Rush		24-48 Hours		10 Working Days										
Authorized by:			(Client Signature Must Accompany Request)						Special Instructions: Results to be sent to both parties.										

Public Service Company
of New Mexico
Alvarado Square MS. 0408
Albuquerque, NM 87158

April 15, 1997

Mr. William Olson
Hydrogeologist
Oil Conservation Division
2040 So. Pacheco
Santa Fe, New Mexico 87505



RE: 1997 SAN JUAN BASIN ANNUAL GROUNDWATER REPORT

Dear Bill:

PNM is pleased to submit the 1997 Annual Groundwater Report on Unlined Surface Impoundments in the San Juan Basin. Pursuant to PNM's Groundwater Management Program for Unlined Surface Impoundment Closures, the report details the ongoing investigation/remedial activities at unlined surface impoundments having groundwater contamination as identified by PNM. A list of groundwater sites reported in this document is provided below.

Cozzens B1
Florance 32A
Florance 40
Florance 44
Florance 47X
Florance 124
Hampton 4M
Honolulu Loop-Line Drip
Jacques 2A
Kaufmann 1
Mangum 1E
McClanahan A2E
McClanahan 22
McCoy A1A
Reid 16 Drip
Templeton 1E
Zachry 18E

RECEIVED

APR 16 1997

Environmental Bureau
Oil Conservation Division

PNM plans to request closure of two of the above sites, the Florance 124 and the Templeton 1E, in our April 30, 1997 filing of the San Juan Pit Closure Reports to the OCD Santa Fe office. We did not report on our newest groundwater site, the Sammons 2, since this was discovered in the second quarter of 1997. If you have any questions regarding the contents of the report, please contact me at (505) 241-2974.

Sincerely,

A handwritten signature in cursive script, appearing to read "Maureen Gannon".

Maureen Gannon
Project Manager

Attachment

cc: Denver Bearden, PNMGS
Denny Foust, OCD-Aztec Office
Robin Prisk, WFS

**PNM 1997 San Juan Basin Groundwater Report
April 15, 1997**

Prepared for:

**New Mexico Oil Conservation Division
2040 South Pacheco
Santa Fe, New Mexico 87505**

Prepared by:

**Public Service Company of New Mexico
Environmental Services Department
Alvarado Square - MS 0408
Albuquerque, New Mexico 87158**

PNMGS Well Site: **Florance 40**

Groundwater Site Summary Report

Copies: WFS(1)
Operator (1)
NMOCD District Office (1)
NMOCD Santa Fe (1)

Quarter/Year: 1/97

Operator: Amoco
Sec: 21 Twn: 30N Rng: 08W Unit: G
Canyon: Gobernador

Vulnerable Class: Original
OCD Ranking: 20
Lead Agency: NMOCD

Topo Map: previously submitted
Well Completion Diagram: Figure 1
Site Map with Analytical Results: NA
Groundwater Contour Map: NA
Groundwater Contour Map: NA
Hydrograph: NA
Full-Suite Groundwater Sampling Results: NA
Analytical Results: NA

Activities for First Quarter 1997:

PNM installed groundwater monitoring wells at the Florance 40 on January 29, 1997. No other activities were performed during the first quarter of 1997.

Results:

NA

Future Actions:

PNM will commence quarterly monitoring at the Florance 40 during the second quarter of 1997.

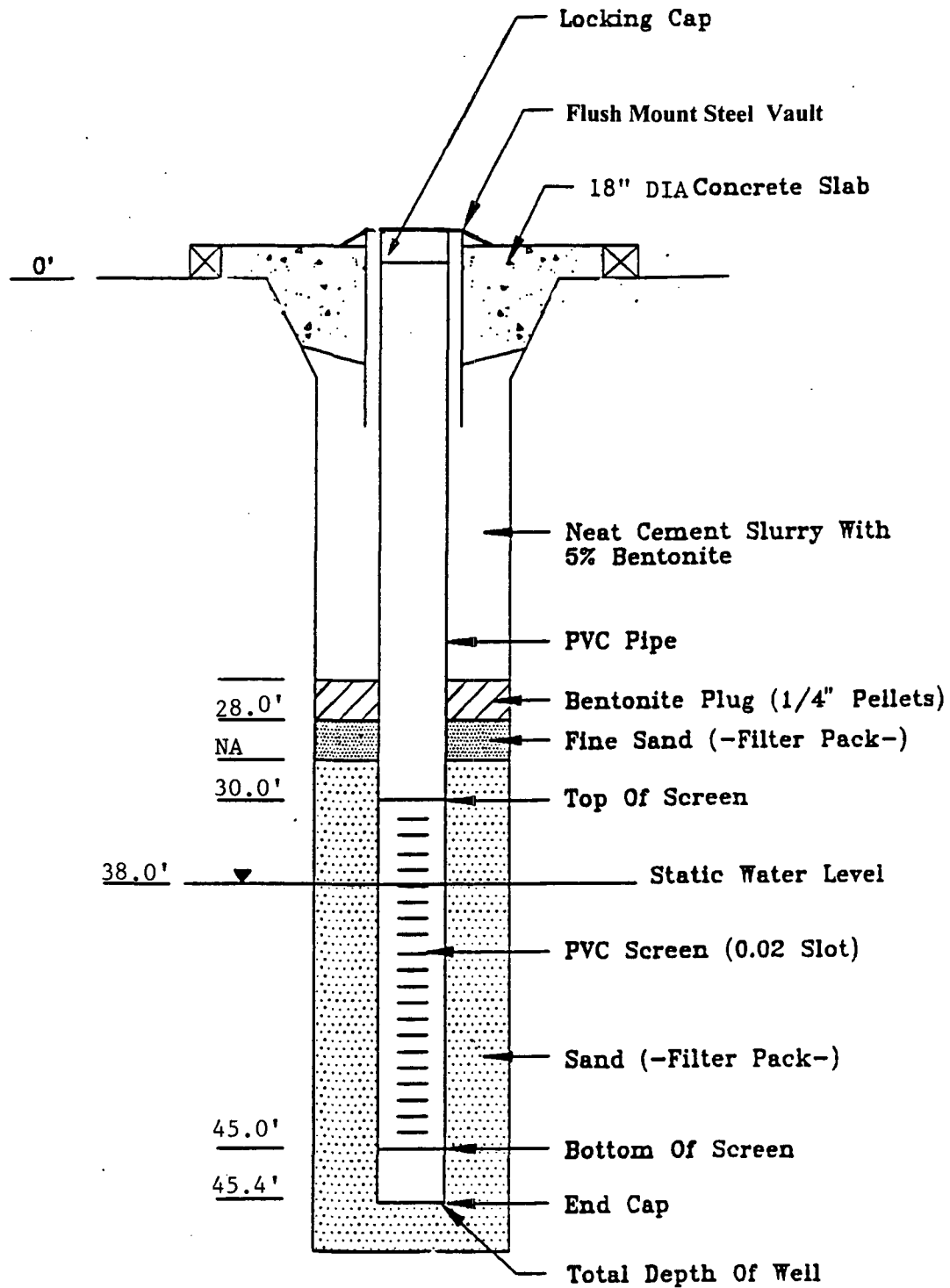
PNMGS Well Site: **Reid 16 Drip**

Public Service Company of New Mexico - Gas Services

Environmental Services Division - Alvarado Square, MS-0408
Albuquerque, NM 87158

Contact: **Maureen Gannon**

Telephone: **505-241-2974**



CLIENT: PNM	
DATE:	REV. NO.: 0
AUTHOR: M.D.G.	DRAWN BY: M.P.
CK'D BY: M.D.G.	FILE: DWG

Figure 1
Well Completion Diagram

RECEIVED
JAN 30 1997



January 27, 1997

Mr. William Olson
Hydrogeologist
Oil Conservation Division
2040 So. Pacheco
Santa Fe, New Mexico 87505

RE: NOTIFICATION OF GROUNDWATER CONTAMINATION AT THE FLORANCE 40 WELL SITE

Dear Bill:

Pursuant to New Mexico Water Quality Control Commission (WQCC) Regulations, section 1-203, PNM hereby provides written notification of groundwater contamination at the Florance 40 well site, located in section 21, township 30 North, range 8 West, unit letter G. A topographic map showing the location of the site is provided as an attachment. The operator is Amoco. This letter follows verbal notification provided to you on Monday, January 27, 1997 (M. Gannon, PNM to B. Olson, OCD).

On January 2, 1997, PNM encountered groundwater at approximately 40 feet while conducting vertical extent soil boring. A 2-inch, schedule 40, PVC monitoring well with 15 feet of 0.01 inch screen was placed in the annulus 10 feet below and 5 feet above the soil/water interface. The annulus was backfilled with 10-12 silica sand 1 foot above the screened interval with a 1 foot bentonite seal. The annular space was then backfilled to surface using clean fill material. After purging three casing volumes, field personnel collected a groundwater sample for BTEX 8020 analysis. The groundwater sample was delivered to Envirotech Labs, in Farmington, New Mexico, for laboratory analysis. A hardcopy of the laboratory report is attached. A summary of the analytical results is provided below:

Component	Units	WQCC Stds.	Groundwater Sample
Benzene	ppb	10	357
Toluene	ppb	750	1,550
Ethylbenzene	ppb	750	1,060
Xylenes	ppb	620	8,540
Total BTEX	ppb		11,510

Bold type indicates a WQCC exceedance.

Florance 40
1/27/97
Page 2

This letter serves as written notification of groundwater impact at the Florance 40. PNM will conduct future activities at the site pursuant to PNM's Groundwater Management Plan. If you have any questions, please call me at (505) 241-2974. Thank you.

Sincerely,
PNM

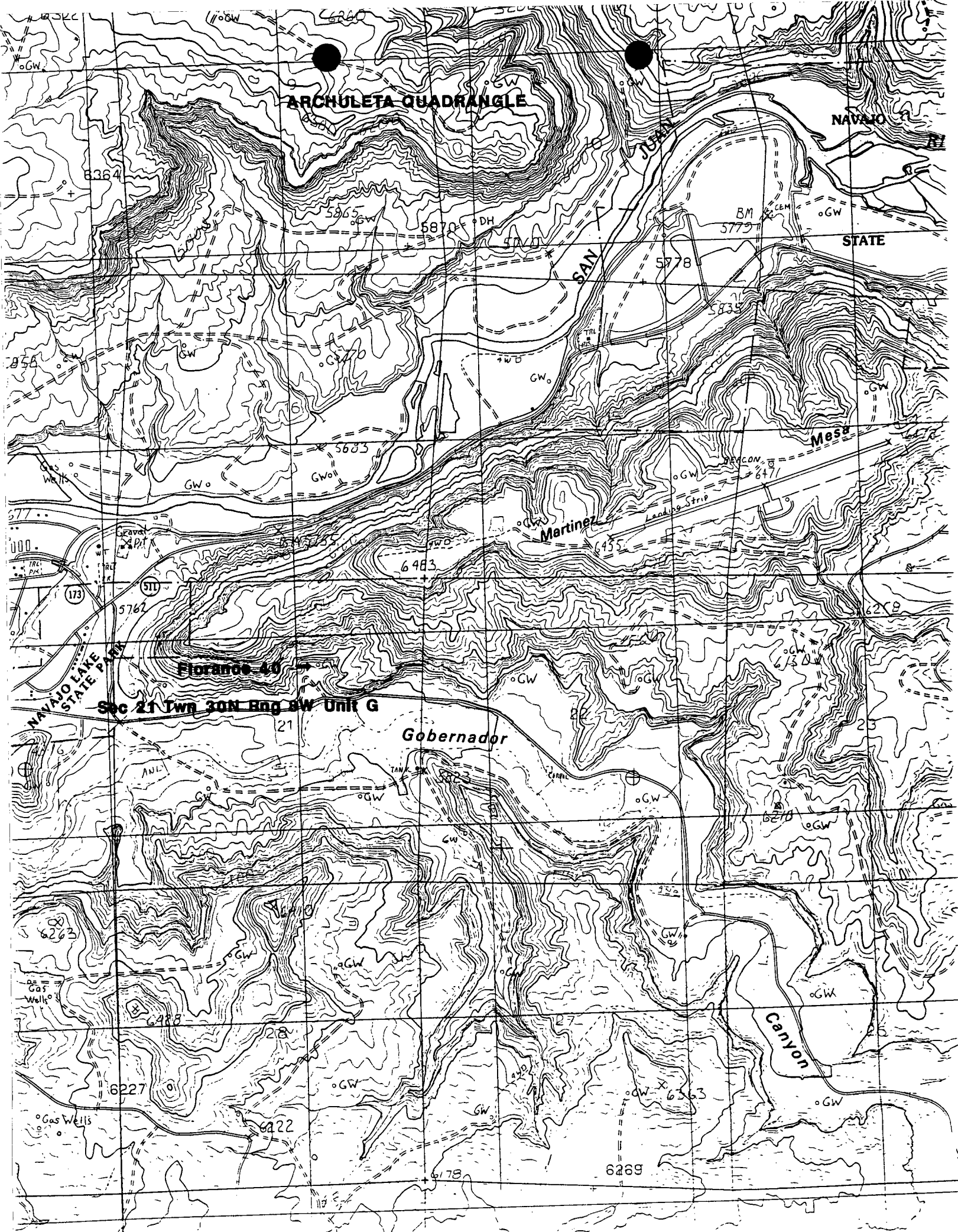


Maureen Gannon
Project Manager

s/gaspits/flo40.doc

Attachment

cc: Colin Adams, PNM
Denver Bearden, PNMGS
Denny Foust, OCD-Aztec Office
Leigh Gooding, WFS
Toni Ristau, PNM
Buddy Shaw, Amoco



ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8020 AROMATIC VOLATILE ORGANICS

Client:	Public Service Co. of NM.	Project #:	93108-02
Sample ID:	MW - 1 @ 42'	Date Reported:	01-08-97
Chain of Custody:	5050	Date Sampled:	01-02-97
Laboratory Number:	A891	Date Received:	01-02-97
Sample Matrix:	Water	Date Analyzed:	01-07-97
Preservative:	HgCl ₂ & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	357	10	1.8
Toluene	1,550	10	1.7
Ethylbenzene	1,060	10	1.5
p,m-Xylene	5,830	10	2.2
o-Xylene	2,710	10	1.0
Total BTEX	11,510		

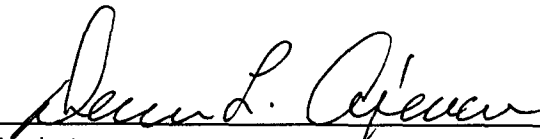
ND - Parameter not detected at the stated detection limit.

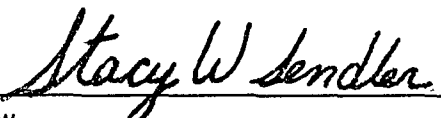
Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	101 %
	Bromofluorobenzene	96 %

References: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1994.

Comments: Florance #40.


Analyst


Review



State of New Mexico
ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT
Santa Fe, New Mexico 87505

STATE OF
NEW MEXICO
OIL
CONSERVATION
DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

☒ Telephone

☐ Personal

Time 1500

Date 1/27/97

Originating Party

Other Parties

M. Susan Gannon - PNM

Bill Olson - Envir. Bureau

Subject

① Florence #40 - Notice of GW Contamination
Unit G, sec 21, T30N, R8W

Discussion

PNM deny at Amoco ① Florence #40 well site

GW = 40'

benzene = 357 ppb

BTEX = 11,500 "

Conclusions or Agreements

Distribution

Signed

Bill Olson

File

Danny Faust - OCD Asten