

3R - 310

REPORTS

DATE:

1998

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

April 2, 1998

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

RECEIVED
APR 2 03 1998
William Olson
Oil Conservation Division



RE: 1998 SAN JUAN BASIN ANNUAL GROUNDWATER REPORT

Dear Bill:

PNM is pleased to submit the 1998 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
Dogie Compressor Station East Pit
Dogie Compressor Station North Pit
Florance 32A
Florance Z 40 M
Florance 44
Florance 47X
Florance 124
Hampton 4M
Honolulu Loop Line Drip
Ice Canyon Drip
Jacques 2A
Mangum 1E
McClanahan 22
McClanahan A2E
McCoy Gas Com A1
Miles Federal 1E
Miles Federal 1E Drip
Randleman 1
Reid 16 Drip
Sammons 2
Turner 1A
Turner 3
Zachry 18E

PNM plans to request closure of two of the above sites, the Cozzens B1 and the Sammons 2, in our April 30, 1998 filing of the San Juan Pit Closure Reports to the OCD Santa Fe office. If you have any questions regarding the contents of the report, please contact me at (505) 241-2974.

Sincerely,



Maureen Gannon
Project Manager

Attachment

cc: Ingrid Deklau, WFS
Denny Foust, OCD-Aztec Office
Bill VonDrehle, WFS

PNM 1998 Groundwater Report

bcc: Colin Adams (w/o analytical results)
Kathy Juckes
Ron Johnson (w/o analytical results)
Mark Sikelianos

Groundwater Site Summary ReportQuarter/Year: 2nd/97, 3rd/97, 4th/97 & 1st/98Operator: Burlington Resources
Sec: 19 Twn: 29 Rng: 11 Unit: L
Canyon: San JuanVulnerable Class: Original
OCD Ranking: 60
Lead Agency: NMOCDTopo Map: previously submitted
Well Completion Diagram: previously submitted
Site Map with Analysis: Figure 1
Groundwater Contour Maps: Figure 2 (May 1997) & Figure 3 (August 1997)
Groundwater Hydrograph: Figure 4
Analytical Results: attached**Activities for Previous Year:**

On May 29 and August 28, 1997, PNM conducted quarterly groundwater sampling at the Cozzens B1 well site. Prior to sampling, water level measurements were taken in MW-1, -2, -3, -4 and -5.

During the August sampling event, free phase product was discovered in monitor well MW-3. This well is located in a southwesterly direction downgradient of Burlington Resources' (BR) 300 bbl product storage tank. PNM immediately notified BR of a potential leak in their tank. PNM and BR visited the site on September 24, 1997, and discovered that a flange located near the bottom of the tank was leaking.

In a November 12, 1997 letter to OCD, PNM proposed to install a groundwater monitoring well in a true downgradient direction from our former pit and monitor MW-1, MW-2 and the new downgradient well to demonstrate successful remediation of groundwater beneath our former pit. OCD provided approval of our recommendations in a March 3, 1998 letter to PNM.

On January 27, 1998, two monitor wells, MW-7 and MW-8, were installed immediately downgradient of our former pit. The wells were developed. Water levels were not taken in the new wells and therefore a groundwater contour map is not provided for January 1998. PNM performed sampling in MW-1, -2, -7 and -8.

All groundwater sampling at the Cozzens B1 well site was conducted in strict compliance with EPA protocol. PNM delivered groundwater samples to OnSite Technologies, Farmington, New Mexico, for chemical analyses of benzene, toluene, ethylbenzene, and xylenes (BTEX) using EPA Method 8020.

Results:

Figure 1 is a site map of the Cozzens B1 well site and includes the groundwater analytical results. Figure(s) 2, 3 and 4 are groundwater contour maps for the months of May and August 1997. The groundwater gradient flows in a southwesterly direction beneath the site and is dependent on discharge from the Citizens Ditch which flows in a northwesterly direction above the well site. Figure 4 is the hydrograph (water level versus time) for the site. Since June of 1996, water levels have held fairly constant except for MW-5. This well may not be completed within the same permeable layer as the other wells. We believe MW-5 receives groundwater from the canyon located to the northeast of the site.

Results of all sampling events show that BTEX concentrations in MW-1 and MW-2 have been below WQCC standards or non-detectable for seven quarters of monitoring. BTEX concentrations in the newest wells, MW-7 and MW-8, are also below WQCC standards or non-detectable.

Further Action:

Consistent with PNM's San Juan Basin Groundwater Management Plan, PNM will request closure of the Cozzens B1 pit in our April 30, 1998 filing of San Juan Basin Pit Closure Reports to the OCD Santa Fe office. This

Public Service Company of New Mexico - Gas ServicesEnvironmental Services Division - Alvarado Square, MS-0408
Albuquerque, NM 87158**Contact: Maureen Gannon****Telephone: 505-241-2974**

request is based upon the analytical data collected over the last two years at the site. BTEX concentrations in upgradient and source wells at our former pit have been consistently below WQCC standards for over four calendar quarters. Sampling of MW-7 and MW-8 also indicated that BTEX concentrations in groundwater downgradient of our former pit area are non-detectable or below WQCC standards.

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

Figure 1. Cozzens B1 Site Map With Analytical Results (Concentrations in ppb)

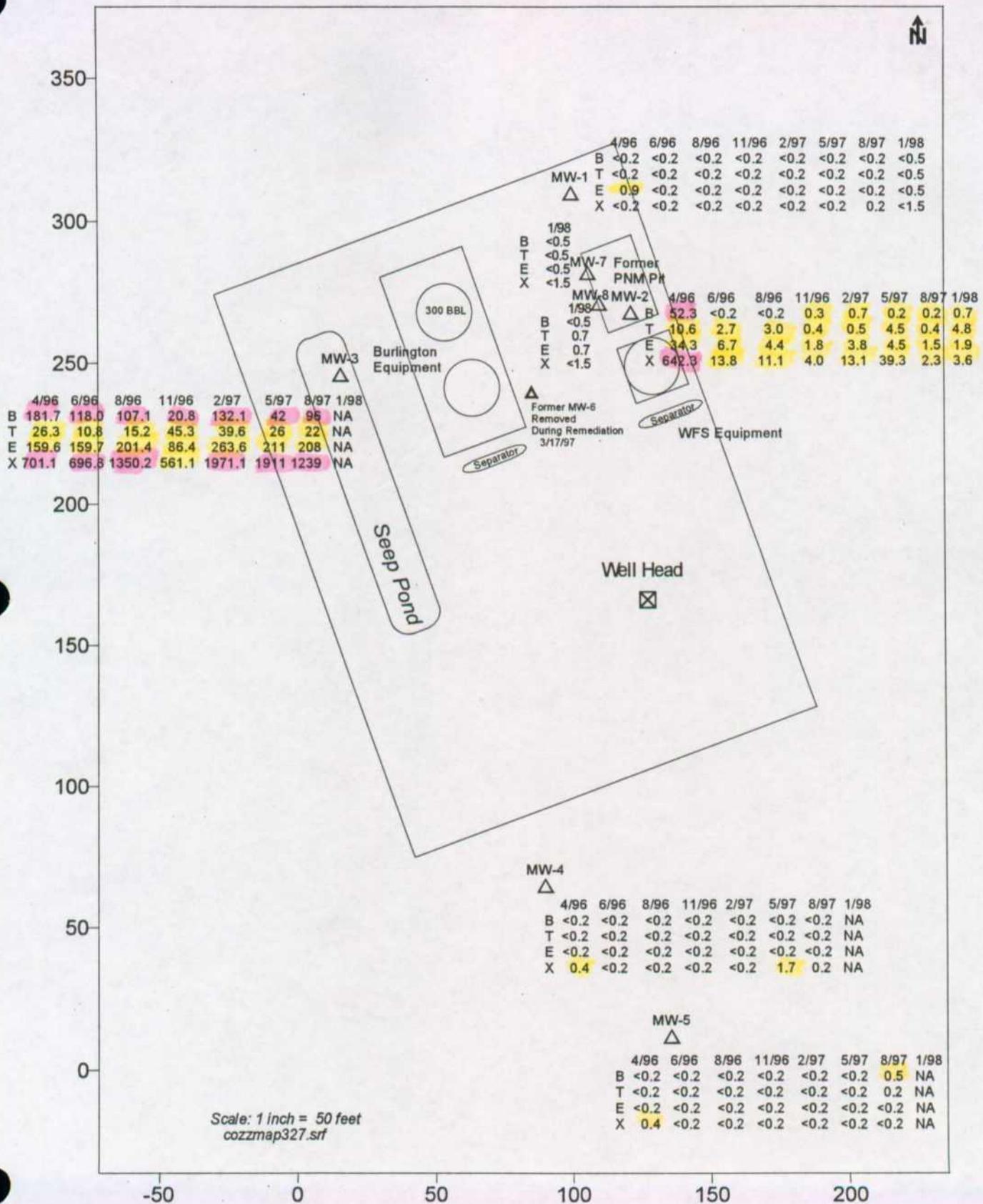


Figure 2. Cozzen B1 Groundwater Contour Map (May 29, 1997)

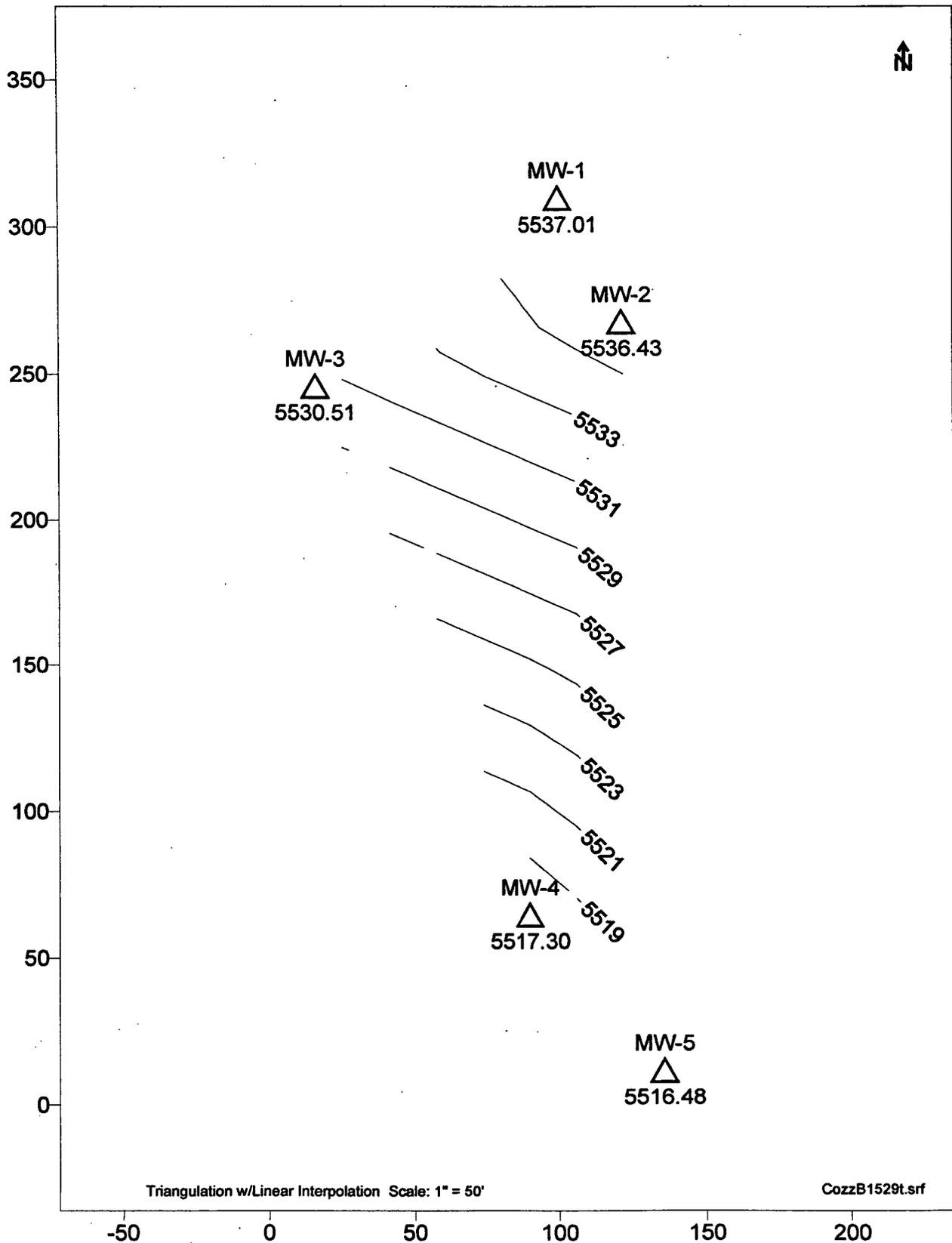


Figure 3. Cozzen B Groundwater Contour Map (August 28, 1997)

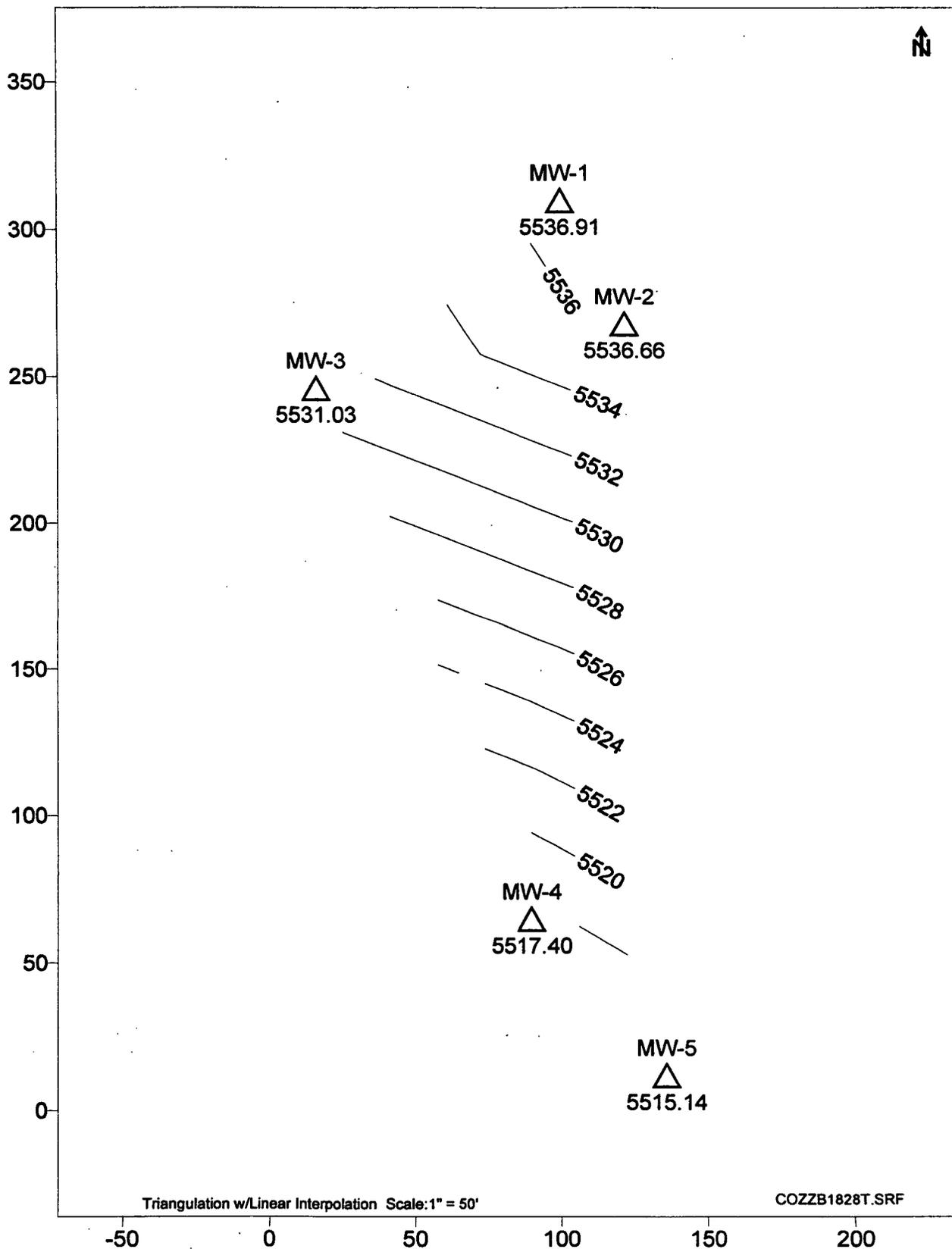
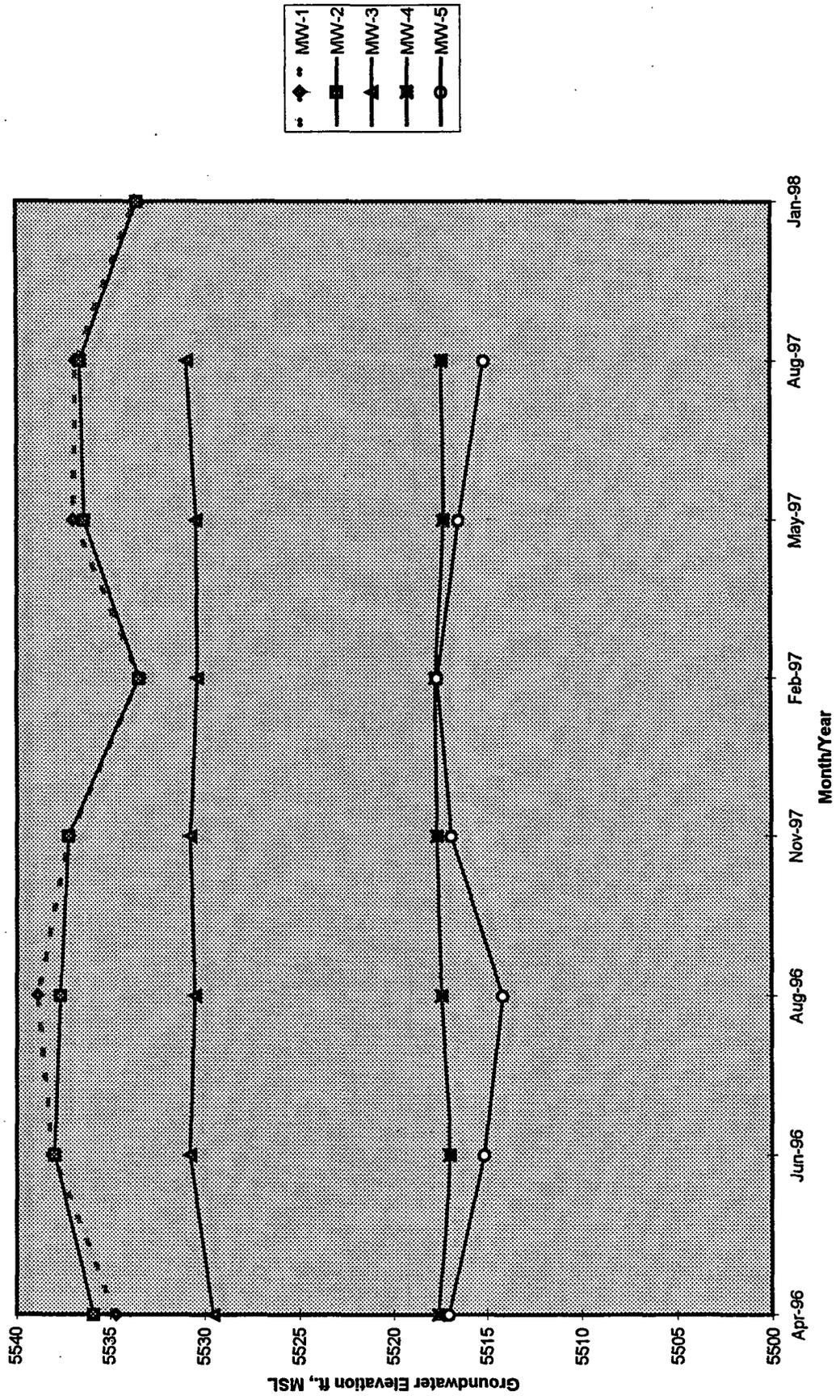


Figure 4. Cozen B1 Hydrograph
(Water Level vs. Time)



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: 10-Jun-97
 COC No.: 5560
 Sample No.: 14778
 Job No.: 2-1000

Project Name: *PNM Gas Services - Cozzens B1*
 Project Location: *9705291300; MW-1*
 Sampled by: *MG/MS* Date: 29-May-97 Time: 13:00
 Analyzed by: *DC* Date: 4-Jun-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: *6/11/97*

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: *11-Jun-97*
 COC No.: *5560*
 Sample No.: *14779*
 Job No.: *2-1000*

Project Name: *PNM Gas Services - Cozzens B1*
 Project Location: *9705291330; MW-2*
 Sampled by: *MG/MS* Date: *29-May-97* Time: *13:30*
 Analyzed by: *DC* Date: *4-Jun-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>	4.5	ug/L	0.2	ug/L
<i>Ethylbenzene</i>	4.5	ug/L	0.2	ug/L
<i>m,p-Xylene</i>	30.7	ug/L	0.2	ug/L
<i>o-Xylene</i>	8.6	ug/L	0.2	ug/L
<i>TOTAL</i>	48.3	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: *6/11/97*

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: *10-Jun-97*
 COC No.: *5560*
 Sample No.: *14780*
 Job No.: *2-1000*

Project Name: *PNM Gas Services - Cozzens B1*
 Project Location: *9705291400; MW-3*
 Sampled by: *MG/MS* Date: *29-May-97* Time: *14:00*
 Analyzed by: *DC* Date: *3-Jun-97*
 Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	42	ug/L	2	ug/L
<i>Toluene</i>	26	ug/L	2	ug/L
<i>Ethylbenzene</i>	211	ug/L	2	ug/L
<i>m,p-Xylene</i>	1906	ug/L	2	ug/L
<i>o-Xylene</i>	5	ug/L	2	ug/L
<i>TOTAL</i>	2191	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: *6/11/97*

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: *10-Jun-97*
 COC No.: *5560*
 Sample No.: *14781*
 Job No.: *2-1000*

Project Name: *PNM Gas Services - Cozzens B1*
 Project Location: *9705291430; MW-4*
 Sampled by: *MG/MS* Date: *29-May-97* Time: *14:30*
 Analyzed by: *DC* Date: *4-Jun-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>	1.7	ug/L	0.2	ug/L
<i>o-Xylene</i>	ND	ug/L	0.2	ug/L
<i>TOTAL</i>	1.7	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: *6/11/97*

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: *10-Jun-97*
 COC No.: *5560*
 Sample No.: *14782*
 Job No.: *2-1000*

Project Name: *PNM Gas Services - Cozzens B1*
 Project Location: *9705291500; MW-5*
 Sampled by: *MG/MS* Date: *29-May-97* Time: *15:00*
 Analyzed by: *DC* Date: *3-Jun-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: *6/11/97*

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: *11-Jun-97*
 COC No.: *5560*
 Sample No.: *14783*
 Job No.: *2-1000*

Project Name: *PNM Gas Services - Cozzens B1*
 Project Location: *9705291530; MW-6*
 Sampled by: *MG/MS* Date: *29-May-97* Time: *15:30*
 Analyzed by: *DC* Date: *4-Jun-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>	4.8	ug/L	0.2	ug/L
<i>Ethylbenzene</i>	4.6	ug/L	0.2	ug/L
<i>m,p-Xylene</i>	31.4	ug/L	0.2	ug/L
<i>o-Xylene</i>	8.7	ug/L	0.2	ug/L
<i>TOTAL</i>	49.5	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: *6/11/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

TECHNICAL BLENDING INDUSTRIES WITH THE GOVERNMENT



QUALITY ASSURANCE REPORT
for EPA Method 8020

Date Analyzed: 4-Jun-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	21.4	7	15%
Toluene	ppb	20.0	22.2	11	15%
Ethylbenzene	ppb	20.0	22.7	14	15%
m,p-Xylene	ppb	40.0	43.2	8	15%
o-Xylene	ppb	20.0	22.5	12	15%

Matrix Spike

Parameter	1 - Percent Recovered	2 - Percent Recovered	Limit	%RSD	Limit
Benzene	90	81	(39-150)	3	20%
Toluene	99	94	(46-148)	3	20%
Ethylbenzene	100	96	(32-160)	3	20%
m,p-Xylene	95	91	(35-145)	3	20%
o-Xylene	98	94	(35-145)	3	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)	
14778-5560	96				
14779-5560	98				
14781-5560	96				
14783-5560	98				
				JLC 6/11/97	[Signature] 6/11/97

S1: Fluorobenzene



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

Date: 5/14/11

Purchase Order No.:		Job No.:		Name: Maureen Gannon		Title:	
Name: Denver Bearden		Company: PNM Gas Services		Company: PNM Gas Services		Title:	
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: CORRIDOR BL				ANALYSIS REQUESTED			
Sampler: <i>Goldenrod</i>							
SEND INVOICE TO	SAMPLE IDENTIFICATION	SAMPLE		MATRIX	PRES.	Number of Containers	LAB ID
		DATE	TIME				
	1105211500 11001	-	-	H2O	IKL	2 x	11771-550
	1105291530 0102	↓	↓	↓	↓	2 x	11771
	1105291400 0103*	↓	↓	↓	↓	2 x	11780
	1105291430 0104	↓	↓	↓	↓	2 x	11781
	1105291400 0105	↓	↓	↓	↓	2 x	11782
	1105291530 0106	-	-	H2O	IKL	2 x	11783
RESULTS TO							
Received by: <i>[Signature]</i>				Date/Time: 5/14/11 15:15		Date/Time: 5/17/11 15:15	
Received by:				Date/Time:		Date/Time:	
Received by:				Date/Time:		Date/Time:	
Rush				24-48 Hours		10 Working Days	
Special Instructions:				Results to be sent to both parties.			
Method of Shipment:							
Authorized by: <i>[Signature]</i>				Date:			
* HOT				(Client Signature Must Accompany Request)			

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: *5-Sep-97*
COC No.: *5680*
Sample No.: *15998*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Cozzens B1*
Project Location: *9708281330; MW-1*
Sampled by: *MG/MS* Date: *28-Aug-97* Time: *13:30*
Analyzed by: *DC* Date: *3-Sep-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>	0.2	ug/L	0.2	ug/L
<i>o-Xylene</i>	ND	ug/L	0.2	ug/L
<i>TOTAL</i>	0.2	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: *9/5/97*

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-Sep-97*
COC No.: *5680*
Sample No.: *15999*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Cozzens B1*
Project Location: *9708281400; MW-2*
Sampled by: *MG/MS* Date: *28-Aug-97* Time: *14:00*
Analyzed by: *DC* Date: *3-Sep-97*
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	0.2	ug/L	0.2	ug/L
<i>Toluene</i>	0.4	ug/L	0.2	ug/L
<i>Ethylbenzene</i>	1.5	ug/L	0.2	ug/L
<i>m,p-Xylene</i>	2.0	ug/L	0.2	ug/L
<i>o-Xylene</i>	0.3	ug/L	0.2	ug/L
<i>TOTAL</i>	4.5	ug/L		

5/29
ND
4.5
4.5
30.7
0.6

40.3

ND - Not Detected at Limit of Quantitation

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

Approved By: *DC*
Date: *9/5/97*

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-Sep-97*
 COC No.: *5680*
 Sample No.: *16000*
 Job No.: *2-1000*

Project Name: ***PNM Gas Services - Cozzens B1***
 Project Location: ***9708281430; MW-3***
 Sampled by: *MG/MS* Date: *28-Aug-97* Time: *14:30*
 Analyzed by: *DC* Date: *3-Sep-97*
 Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	96	ug/L	2	ug/L
<i>Toluene</i>	22	ug/L	2	ug/L
<i>Ethylbenzene</i>	208	ug/L	2	ug/L
<i>m,p-Xylene</i>	1233	ug/L	2	ug/L
<i>o-Xylene</i>	6	ug/L	2	ug/L
<i>TOTAL</i>	1565	ug/L		

5/29
42
26
211
1906
5

2191

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*
 Date: *9/5/97*

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-Sep-97*
 COC No.: *5680*
 Sample No.: *16001*
 Job No.: *2-1000*

Project Name: *PNM Gas Services - Cozzens B1*
 Project Location: *9708281500; MW-4*
 Sampled by: *MG/MS* Date: *28-Aug-97* Time: *15:00*
 Analyzed by: *DC* Date: *3-Sep-97*
 Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure	
<i>Benzene</i>	<i>ND</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>	<i>ND</i>
<i>Toluene</i>	<i>ND</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>	<i>ND</i>
<i>Ethylbenzene</i>	<i>ND</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>	<i>ND</i>
<i>m,p-Xylene</i>	<i>0.4</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>	<i>1.7</i>
<i>o-Xylene</i>	<i>ND</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>	<i>ND</i>
<i>TOTAL</i>	<i>0.4</i>	<i>ug/L</i>			<i>1.7</i>

ND - Not Detected at Limit of Quantitation

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

Approved By: *Jack*
 Date: *9/5/97*

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-Sep-97*
 COC No.: *5680*
 Sample No.: *16002*
 Job No.: *2-1000*

Project Name: *PNM Gas Services - Cozzens B1*
 Project Location: *9708281530; MW-6*
 Sampled by: *MG/MS* Date: *28-Aug-97* Time: *15:30*
 Analyzed by: *DC* Date: *3-Sep-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>	0.2	ug/L	0.2	ug/L
<i>Ethylbenzene</i>	1.7	ug/L	0.2	ug/L
<i>m,p-Xylene</i>	3.0	ug/L	0.2	ug/L
<i>o-Xylene</i>	0.2	ug/L	0.2	ug/L
<i>TOTAL</i>	5.1	ug/L		

ND - Not Detected at Limit of Quantitation

Dup of MW-2

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

Approved By: *[Signature]*
 Date: *9/5/97*

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-Sep-97*
 COC No.: *5680*
 Sample No.: *16003*
 Job No.: *2-1000*

Project Name: *PNM Gas Services - Cozzens B1*
 Project Location: *9708281600; MW-5*
 Sampled by: *MG/MS* Date: *28-Aug-97* Time: *16:00*
 Analyzed by: *DC* Date: *3-Sep-97*
 Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	0.5	ug/L	0.2	ug/L
<i>Toluene</i>	0.2	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>	0.7	ug/L		

ND - Not Detected at Limit of Quantitation

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

Approved By: *Jack*
 Date: *9/5/97*

P.O. BOX 2606 • FARMINGTON, NM 87499



QUALITY ASSURANCE REPORT
for EPA Method 8020

Date Analyzed: 3-Sep-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	RPD	Limit
Benzene	ppb	20.0	19.4	3	15%
Toluene	ppb	20.0	20.3	1	15%
Ethylbenzene	ppb	20.0	20.4	2	15%
m,p-Xylene	ppb	40.0	39.6	1	15%
o-Xylene	ppb	20.0	20.4	2	15%

Matrix Spike

Parameter	1 - Percent Recovered	2 - Percent Recovered	Limit	RPD	Limit
Benzene	93	88	(39-150)	5	20%
Toluene	97	92	(46-148)	5	20%
Ethylbenzene	97	93	(32-160)	4	20%
m,p-Xylene	94	90	(35-145)	5	20%
o-Xylene	96	92	(35-145)	4	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)	
15998-5680	97				
15999-5680	95				
16000-5680	96				
16001-5680	97				
16002-5680	95				
16003-5680	97			JK 9/5/97	(100) 9/5/97

S1: Fluorobenzene



CHAIN OF CUSTODY RECORD

680

Page 1 of 1

Date: 8/28/97

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

Purchase Order No.:		Job No.	
Name	Denver Bearden	Name	Maureen Gannon
Company	PNM Gas Services	Company	PNM Gas Services
Address	603 W. Elm Street	Mailing Address	Alverado Square, Mail Stop 0408
City, State, Zip	Farmington, NM 87401	City, State, Zip	Albuquerque, NM 87158
Sampling Location:		Telephone No.	505-848-2974
		Telefax No.	
Title		Title	

REPORT RESULTS TO

ANALYSIS REQUESTED

Number of Containers

SAMPLE IDENTIFICATION	SAMPLE DATE		MATRIX	PRES.	LAB ID
	DATE	TIME			
9708281330 MW1	8-28-97		H2O	HCL	15998-5680
9708281400 MW2					15999-
9708281430 MW3					15000-
9708281500 MW4					16001-
9708281530 MW6					16002-
9708281600 MW5	8-28-97		H2O	HCL	16003-

Received by: *DS* Date/Time: 8/28/97 1600

Received by: Date/Time:

Received by: Date/Time:

Rush

24-48 Hours

10 Working Days

Special Instructions: Results to be sent to both parties.

Relinquished by: *Maureen Gannon* Date/Time: 8-28-97

Relinquished by: Date/Time:

Relinquished by: Date/Time:

Method of Shipment:

Authorized by: *Maureen Gannon* Date: 8/28/97
 (Client Signature Must Accompany Request)

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

UNCONTAMINATED 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: *22-Oct-97*
 COC No.: *5848*
 Sample No.: *16598*
 Job No.: *2-1000*

Project Name: *PNM Gas Services - Cozzens B1*
 Project Location: *9710151030; Seep Pond*
 Sampled by: *MG/MS* Date: *15-Oct-97* Time: *10:30*
 Analyzed by: *DC* Date: *20-Oct-97*
 Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	972	ug/L	10	ug/L
<i>Toluene</i>	461	ug/L	10	ug/L
<i>Ethylbenzene</i>	233	ug/L	10	ug/L
<i>m,p-Xylene</i>	1592	ug/L	10	ug/L
<i>o-Xylene</i>	443	ug/L	10	ug/L
<i>TOTAL</i>	3700	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: *10/22/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

- THE FUTURE OF REMEDIATION INDUSTRY WITH THE FINEST PEOPLE -

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: *3-Feb-98*
 COC No.: *7169*
 Sample No.: *17415*
 Job No.: *2-1000*

Project Name: *PNM Gas Services - Cozzen B-1*
 Project Location: *9801271015; MW-1*
 Sampled by: *MS/RD* Date: *27-Jan-98* Time: *10:15*
 Analyzed by: *DC* Date: *30-Jan-98*
 Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	ND	ug/L	0.5	ug/L
<i>Toluene</i>	ND	ug/L	0.5	ug/L
<i>Ethylbenzene</i>	ND	ug/L	0.5	ug/L
<i>m,p-Xylene</i>	ND	ug/L	1.0	ug/L
<i>o-Xylene</i>	ND	ug/L	0.5	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: *JAG*
 Date: *2/3/98*

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: *3-Feb-98*
 COC No.: *7169*
 Sample No.: *17416*
 Job No.: *2-1000*

Project Name: *PNM Gas Services - Cozzen B-1*
 Project Location: *9801271030; MW-2*
 Sampled by: *MS/RD* Date: *27-Jan-98* Time: *10:30*
 Analyzed by: *DC* Date: *30-Jan-98*
 Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	0.7	ug/L	0.5	ug/L
<i>Toluene</i>	4.8	ug/L	0.5	ug/L
<i>Ethylbenzene</i>	1.9	ug/L	0.5	ug/L
<i>m,p-Xylene</i>	3.0	ug/L	1.0	ug/L
<i>o-Xylene</i>	0.6	ug/L	0.5	ug/L
<i>TOTAL</i>	10.9	ug/L		

ND - Not Detected at Limit of Quantitation

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

Approved By: *DC*
 Date: *2/3/98*

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: *3-Feb-98*
 COC No.: *7169*
 Sample No.: *17417*
 Job No.: *2-1000*

Project Name: ***PNM Gas Services - Cozzen B-1***
 Project Location: ***9801271045; MW-7***
 Sampled by: *MS/RD* Date: *27-Jan-98* Time: *10:45*
 Analyzed by: *DC* Date: *30-Jan-98*
 Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	ND	ug/L	0.5	ug/L
<i>Toluene</i>	ND	ug/L	0.5	ug/L
<i>Ethylbenzene</i>	ND	ug/L	0.5	ug/L
<i>m,p-Xylene</i>	ND	ug/L	1.0	ug/L
<i>o-Xylene</i>	ND	ug/L	0.5	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: *2/3/98*

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: *3-Feb-98*
COC No.: *7169*
Sample No.: *17418*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Cozzen B-1*
Project Location: *9801271100; MW-8*
Sampled by: *MS/RD* Date: *27-Jan-98* Time: *11:00*
Analyzed by: *DC* Date: *30-Jan-98*
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	ND	ug/L	0.5	ug/L
<i>Toluene</i>	0.7	ug/L	0.5	ug/L
<i>Ethylbenzene</i>	0.7	ug/L	0.5	ug/L
<i>m,p-Xylene</i>	ND	ug/L	1.0	ug/L
<i>o-Xylene</i>	ND	ug/L	0.5	ug/L
<i>TOTAL</i>	1.4	ug/L		

ND - Not Detected at Limit of Quantitation

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

Approved By: *Jack*
Date: *2/3/98*

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: *3-Feb-98*
COC No.: *7169*
Sample No.: *17419*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Cozzen B-1*
Project Location: *9801271115; MW-9*
Sampled by: *MS/RD* Date: *27-Jan-98* Time: *11:15*
Analyzed by: *DC* Date: *30-Jan-98*
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	ND	ug/L	0.5	ug/L
<i>Toluene</i>	0.8	ug/L	0.5	ug/L
<i>Ethylbenzene</i>	0.7	ug/L	0.5	ug/L
<i>m,p-Xylene</i>	ND	ug/L	1.0	ug/L
<i>o-Xylene</i>	ND	ug/L	0.5	ug/L
<i>TOTAL</i>	1.5	ug/L		

ND - Not Detected at Limit of Quantitation

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

Approved By: *Jac*
Date: *2/3/98*

P.O. BOX 2606 • FARMINGTON, NM 87499



QUALITY ASSURANCE REPORT
for EPA Method 8020

Date Analyzed: 30-Jan-98

Internal QC No.: 0559-STD
Surrogate QC No.: 0567-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	RPD	Limit
Benzene	ppb	20.0	21.7	8	15%
Toluene	ppb	20.0	21.9	9	15%
Ethylbenzene	ppb	20.0	22.9	13	15%
m,p-Xylene	ppb	40.0	42.8	7	15%
o-Xylene	ppb	20.0	22.1	10	15%

Matrix Spike

Parameter	1 - Percent Recovered	2 - Percent Recovered	Limit	RPD	Limit
Benzene	108	95	(39-150)	12	20%
Toluene	106	97	(46-148)	9	20%
Ethylbenzene	110	100	(32-160)	9	20%
m,p-Xylene	103	94	(35-145)	8	20%
o-Xylene	108	99	(35-145)	8	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)	
17415-7169	100				
17416-7169	99				
17417-7169	100				
17418-7169	100				
17419-7169	100				
				JK 2/3/98	(pe) 2/3/98

S1: Fluorobenzene

