

**3R - 316**

# **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 13 1998  
Oil Conservation Bureau  
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 1998 Groundwater Report**

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 Report**

Quarter/Year: 2<sup>nd</sup>/97, 3<sup>rd</sup>/97, 4<sup>th</sup>/97 & 1<sup>st</sup>/98

---

**Operator:** Amoco

**Sec:** 31 Twn: 30 Rng: 8 Unit: H

**Canyon:** Salvador, San Juan

**Vulnerable Class:** Extended

**OCD Ranking:** 20

**Lead Agency:** NMOCD

---

PNM conducted additional source removal at the Florance 44 in November 1997. During this time, we discovered gross contamination upgradient in the vicinity of the well head and Amoco's former pit location. In addition, the clean fill in our previous excavation had become contaminated. PNM will prepare a site summary report detailing the activities, results and further actions at the Florance 44 by April 30, 1998.

---

**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

---



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.: *5559*  
 Sample No.: *14727*  
 Job No.: *2-1000*

Project Name: *PNM Gas Services - Florence 44*  
 Project Location: *9705281030; MW-1*  
 Sampled by: *MS* Date: *28-May-97* Time: *10:30*  
 Analyzed by: *DC* Date: *3-Jun-97*  
 Sample Matrix: *Liquid*

**Laboratory Analysis**

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

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*

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.: *5559*  
 Sample No.: *14729*  
 Job No.: *2-1000*

Project Name: *PNM Gas Services - Florance 44*

Project Location: *9705281130; MW-3*

Sampled by: *MS* Date: *28-May-97* Time: *11:30*

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>	<i>865</i>	<i>ug/L</i>	<i>1</i>	<i>ug/L</i>
<i>Toluene</i>	<i>8</i>	<i>ug/L</i>	<i>1</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>126</i>	<i>ug/L</i>	<i>1</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>322</i>	<i>ug/L</i>	<i>1</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>3</i>	<i>ug/L</i>	<i>1</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>1324</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: *6/11/97*

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: *10-Jun-97*  
 COC No.: *5559*  
 Sample No.: *14730*  
 Job No.: *2-1000*

Project Name: *PNM Gas Services - Florance 44*  
 Project Location: *9705281200; MW-4*  
 Sampled by: *MS*  
 Analyzed by: *DC*  
 Sample Matrix: *Liquid*

Date: *28-May-97* Time: *12:00*  
 Date: *3-Jun-97*

**Laboratory Analysis**

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

ND - Not Detected at Limit of Quantitation

Method - *SW-845 EPA Method 8020A Aromatic Volatile Organics by Gas Chromatography*

Approved by: *[Signature]*  
 Date: *6/11/97*

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: *11-Jun-97*  
 COC No.: *5559*  
 Sample No.: *14731*  
 Job No.: *2-1000*

Project Name: *PNM Gas Services - Florance 44*Project Location: *9705281230; MW-5*Sampled by: *MS* Date: *28-May-97* Time: *12:30*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>	<i>882</i>	<i>ug/L</i>	<i>1</i>	<i>ug/L</i>
<i>Toluene</i>	<i>7</i>	<i>ug/L</i>	<i>1</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>130</i>	<i>ug/L</i>	<i>1</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>343</i>	<i>ug/L</i>	<i>1</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>2</i>	<i>ug/L</i>	<i>1</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>1364</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: *6/11/97*

P.O. BOX 2606 • FARMINGTON, NM 87499





# CHAIN OF CUSTODY

5559

Date: 3/28/97

Page 1 of 1

TECHNOLOGIES, LTD.

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

AUG-15-97 10:24 FROM: ON-SITE TECH.

ID: 5053271496

PAGE 2/9

Purchase Order No.:		Job No.:		Name: <b>Maureen Gannon</b>		Title:			
SEND INVOICE TO	Name: <b>Denver Bearden</b>		Company: <b>PNM Gas Services</b>		Mailing Address: <b>Alverado Square, Mail Stop 0408</b>		City, State, Zip: <b>Albuquerque, NM 87158</b>		
	Company: <b>PNM Gas Services</b>		Dept. <b>324-3763</b>		City, State, Zip: <b>Albuquerque, NM 87158</b>		Telephone No. <b>505-848-2974</b>		
	Address: <b>603 W. Elm Street</b>				City, State, Zip: <b>Albuquerque, NM 87158</b>		Telefax No.:		
	City, State, Zip: <b>Farmington, NM 87401</b>				City, State, Zip: <b>Albuquerque, NM 87158</b>		Telefax No.:		
Sampling Location: <b>Florange 44</b>				ANALYSIS REQUESTED					
Sampler: <i>Hand</i>				Number of Containers					
SAMPLE IDENTIFICATION				SAMPLE		MATRIX		PRES.	
				DATE		TIME		LAB ID	
970528 1030 MW-1						H <sub>2</sub> O HCl		2 X 14727-5559	
970528 1100 MW-2						↓ ↓		2 X 14728	
970528 1130 MW-3						↓ ↓		2 X 14729	
970528 1200 MW-4						↓ ↓		2 X 14730	
970528 1230 MW-5						↓ ↓		2 X 14731 ✓	
Relinquished by: <i>Hand</i>				Date/Time: <u>5/28/97 1530</u>		Received by: <i>Hand</i>		Date/Time: <u>5/28/97 1530</u>	
Relinquished by:				Date/Time:		Received by:		Date/Time:	
Relinquished by:				Date/Time:		Received by:		Date/Time:	
Method of Shipment: <u>Hand Delivered</u>				Rush		24-48 Hours		10 Working Days	
Authorized by: <i>Hand</i>				Date: <u>5/28/97</u>		Special Instructions: <b>Results to be sent to both parties.</b>			
(Client Signature Must Accompany Request)									

Distribution: White - On Site    Yellow - LAB    Pink - Sampler    Gold/rod - Client

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: *27-Aug-97*  
COC No.: *5649*  
Sample No.: *15836*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Florance 44*  
Project Location: *9708201030; MW-1*  
Sampled by: *MG/MS* Date: *20-Aug-97* Time: *10:30*  
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>	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 8020.A 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.: *5649*  
 Sample No.: *15837*  
 Job No.: *2-1000*

Project Name: *PNM Gas Services - Florance 44*  
 Project Location: *9708201100; MW-2*  
 Sampled by: *MG/MS*  
 Analyzed by: *DC*  
 Sample Matrix: *Liquid*

Date: *20-Aug-97* Time: *11:00*  
 Date: *25-Aug-97*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>972</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>Toluene</i>	<i>8</i>	<i>ug/L</i>	<i>1</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>46</i>	<i>ug/L</i>	<i>1</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>ND</i>	<i>ug/L</i>	<i>1</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>ND</i>	<i>ug/L</i>	<i>1</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>1027</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*

**ANALYTICAL REPORT**

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

Date: *4-Sep-97*  
 COC No.: *5649*  
 Sample ID.: *15837*  
 Job No.: *2-1000*

Project Name: *PNM Gas Services - Florance 44*  
 Project Location: *9708201100; MW-2*

Sampled by: *MS/MG* Date: *20-Aug-97* Time: *11:00*  
 Analyzed by: *HR* Date: *2-Sep-97*

*Laboratory Analysis*

Parameter	Results as Received	Unit of Measure	Results as Received	Unit of Measure										
<i>Cations</i>														
<i>Sodium Na</i>	<i>254</i>	<i>mg/L</i>	<i>11.05</i>	<i>me/L</i>										
<i>Calcium Ca</i>	<i>560</i>	<i>mg/L</i>	<i>27.95</i>	<i>me/L</i>										
<i>Magnesium Mg</i>	<i>125</i>	<i>mg/L</i>	<i>10.29</i>	<i>me/L</i>										
<i>Potassium K</i>	<i>11.7</i>	<i>mg/L</i>	<i>0.30</i>	<i>me/L</i>										
<i>Anions</i>														
<i>Chloride Cl</i>	<i>32.4</i>	<i>mg/L</i>	<i>0.91</i>	<i>me/L</i>										
<i>Sulfate SO4</i>	<i>1812</i>	<i>mg/L</i>	<i>37.73</i>	<i>me/L</i>										
<i>Carbonate CO3 as CaCO3</i>	<i>&lt; 1</i>	<i>mg/L</i>	<i>&lt; 0.01</i>	<i>me/L</i>										
<i>Bicarbonate HCO3 as CaCO3</i>	<i>1193</i>	<i>mg/L</i>	<i>19.55</i>	<i>me/L</i>										
<i>Hydroxide OH as CaCO3</i>	<i>&lt; 1</i>	<i>mg/L</i>	<i>&lt; 0.01</i>	<i>me/L</i>										
<i>Total Dissolved Solids</i>			<table style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2" style="text-align: center;"><u><i>Cation-Anion Balance</i></u></td> </tr> <tr> <td style="text-align: right;"><i>8.61</i></td> <td><i>Difference Cation-Anion, me/L</i></td> </tr> <tr> <td style="text-align: right;"><i>107.77</i></td> <td><i>Total Cation-Anion, me/L</i></td> </tr> <tr> <td style="text-align: right;"><i>8.0</i></td> <td><i>% Difference Cation-Anion</i></td> </tr> <tr> <td colspan="2" style="text-align: center;"><u><i>Comments</i></u></td> </tr> </table>		<u><i>Cation-Anion Balance</i></u>		<i>8.61</i>	<i>Difference Cation-Anion, me/L</i>	<i>107.77</i>	<i>Total Cation-Anion, me/L</i>	<i>8.0</i>	<i>% Difference Cation-Anion</i>	<u><i>Comments</i></u>	
<u><i>Cation-Anion Balance</i></u>														
<i>8.61</i>	<i>Difference Cation-Anion, me/L</i>													
<i>107.77</i>	<i>Total Cation-Anion, me/L</i>													
<i>8.0</i>	<i>% Difference Cation-Anion</i>													
<u><i>Comments</i></u>														
<i>Calculated, Sum of Cation/Anion</i>	<i>3988</i>	<i>mg/L</i>												
<i>Total Dissolved Solids</i>														
<i>Dried @ 180 C</i>	<i>3794</i>	<i>mg/L</i>												
<i>pH</i>	<i>6.66</i>													
<i>Conductivity @ 25 C</i>	<i>3920</i>	<i>uS/cm</i>												
<i>Total Hardness as CaCO3</i>	<i>1913</i>	<i>mg/L</i>												

Approved by: *[Signature]*  
 Date: *9/4/97*

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: *27-Aug-97*  
 COC No.: *5649*  
 Sample No.: *15838*  
 Job No.: *2-1000*

Project Name: ***PNM Gas Services - Florance 44***  
 Project Location: ***9708201130; MW-3***  
 Sampled by: *MG/MS* Date: *20-Aug-97* Time: *11:30*  
 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>948</i>	<i>ug/L</i>	<i>10</i>	<i>ug/L</i>
<i>Toluene</i>	<i>ND</i>	<i>ug/L</i>	<i>10</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>244</i>	<i>ug/L</i>	<i>10</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>ND</i>	<i>ug/L</i>	<i>10</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>ND</i>	<i>ug/L</i>	<i>10</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>1192</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

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: *27-Aug-97*  
COC No.: *5649*  
Sample No.: *15839*  
Job No.: *2-1000*

Project Name: *PNM Gas Services - Florance 44*  
Project Location: *9708201200; MW-4*  
Sampled by: *MG/MS* Date: *20-Aug-97* Time: *12:00*  
Analyzed by: *DC* Date: *25-Aug-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>	0.2	ug/L	0.2	ug/L
<i>TOTAL</i>	0.4	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*

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.: *5649*  
 Sample No.: *15840*  
 Job No.: *2-1000*

Project Name: *PNM Gas Services - Florance 44*  
 Project Location: *9708201230; MW-5*  
 Sampled by: *MG/MS*  
 Analyzed by: *DC*  
 Sample Matrix: *Liquid*

Date: *20-Aug-97* Time: *12:30*  
 Date: *22-Aug-97*

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



**QUALITY ASSURANCE REPORT**  
for EPA Method 8020

Date Analyzed: 22-Aug-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	< 1.0	ppb

**Calibration Check**

Parameter	Unit of Measure	True Value	Analyzed Value	RPD	Limit
Benzene	ppb	20.0	19.7	2	15%
Toluene	ppb	20.0	20.4	2	15%
Ethylbenzene	ppb	20.0	20.6	3	15%
m,p-Xylene	ppb	40.0	39.4	2	15%
o-Xylene	ppb	20.0	20.4	2	15%

**Matrix Spike**

Parameter	1 - Percent Recovered	2 - Percent Recovered	Limit	RPD	Limit
Benzene	96	91	(39-150)	3	20%
Toluene	100	97	(46-148)	3	20%
Ethylbenzene	100	97	(32-160)	3	20%
m,p-Xylene	96	93	(35-145)	3	20%
o-Xylene	99	96	(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)	
15836-5649	97				
15838-5649	95				
15840-5649	97				
				JHC	(R)
				8/29/97	8/28/97

S1: Fluorobenzene



**QUALITY ASSURANCE REPORT**

Cation/Anion Balance

Date: 2-Sep-97

**Quality Control Sample**

Parameter	Laboratory Identification	True Value	Analyzed Value	Unit of Measure	% Diff	Limit % Diff
Sodium, Na	0451-QC	2.32	2.31	mg/L	0	10
Calcium, Ca	0465-QC	2.18	2.22	mg/L	2	10
Magnesium, Mg	0465-QC	1.14	1.23	mg/L	8	10
Potassium, K	0451-QC	1.33	1.34	mg/L	1	10
Chloride, Cl	0541-QC	66	68	mg/L	3	10
Sulfate, SO <sub>4</sub>	0541-QC	78	81	mg/L	4	10
Alkalinity	0541-QC	159	167	mg/L	5	10
pH	0541-QC	9.13	9.29		2	10
Conductivity	0541-QC	740	735	uS/cm	-1	15
Total Dissolved Solids, 180C	0541-QC	642	622	uS/cm	-3	15

**Matrix Spike**

Parameter	Laboratory Identification	Analyzed Value	Matrix Spike	Spike Value	Unit of Measure	Spike Recovery
Sodium, Na	15843-5650	1.40	0.50	1.93	mg/L	102%
Calcium, Ca	15843-5650	1.86	0.50	2.50	mg/L	106%
Magnesium, Mg	15853-5652	0.81	0.50	1.36	mg/L	104%
Potassium, K	15853-5652	1.46	0.50	2.00	mg/L	102%

**Method Blank**

Parameter	Laboratory Identification	Analyzed Value	Unit of Measure
Sodium, Na	LF-Blank	<0.2	mg/L
Calcium, Ca	LF-Blank	<0.05	mg/L
Magnesium, Mg	LF-Blank	<0.05	mg/L
Potassium, K	LF-Blank	<0.05	mg/L
Chloride, Cl	LF-Blank	<3 X DL	mg/L
Sulfate, SO <sub>4</sub>	LF-Blank	<1	mg/L
Conductivity	LF-Blank	<2	uS/cm

(mc) 2/12  
9/4/97 9/4/97



# CHAIN OF CUSTODY RECORD

5649

Date: 8/20/97

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 <b>Maureen Gannon</b>		Title														
SEND INVOICE TO	Name <b>Denver Bearden</b>		Company <b>PNM Gas Services</b>		Company <b>PNM Gas Services</b>															
	Company <b>PNM Gas Services</b>		Dept. <b>324-3763</b>		Mailing Address <b>Alverado Square, Mail Stop 0408</b>															
	Address <b>603 W. Elm Street</b>		City, State, Zip <b>Albuquerque, NM 87158</b>																	
	City, State, Zip <b>Farmington, NM 87401</b>		Telephone No. <b>505-848-2974</b>		Telefax No.															
Sampling Location: <b>FLORENCE 44</b>				ANALYSIS REQUESTED																
Sampler: <b>M. Stilianos / M. Gannon</b>																				
SAMPLE IDENTIFICATION		SAMPLE		MATRIX	PRES.	Number of Containers	<i>BY 8020</i> <i>WQC MAJOR</i> <i>CLARIFIED</i>													
		DATE	TIME														LAB ID			
9708201050 MW1		8/20/97	-	H2O	HCL	2	X													15836-5649
9708201100 MW2		↓		↓	↓	3	X	X												15837-
9708201130 MW3		↓		↓	↓	2	X													15838-
9708201200 MW4		↓		↓	↓	2	X													15839-
9708201230 MW5		8/20/97		H2O	HCL	2	X													15840- ✓
Relinquished by: <i>M. Gannon</i>				Date/Time <u>8/20/97</u>		Received by: <i>[Signature]</i>				Date/Time <u>8/20/97 1540</u>										
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: <b>Results to be sent to both parties.</b>											
Authorized by: <i>M. Gannon</i> (Client Signature <u>Must</u> Accompany Request)						Date <u>8/20/97</u>														