3R - 318

REPORTS

DATE:

Nov. 1, 1996

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

November 1, 1996

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

RE: SAN JUAN BASIN 3RD QUARTER 1996 GROUNDWATER REPORT

Dear Bill:

PNM Gas Services, PNMGS, (formerly Gas Company of New Mexico) is pleased to submit the 3rd Quarter 1996 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 is provided below.

Abrams Gas/Com L1
Cozzens B1
Cozzens B1E
Florance 32A
Florance 44
Florance 124
Honolulu Loop-Line Drip
Kaufmann 1
McCoy A1A
Templeton 1E
Zachry 18E

PNM hereby requests two modifications of our Groundwater Management Program Unlined Surface Impoundment Closures submitted to OCD in March of 1996:

- PNM wishes to file annual groundwater progress reports to the OCD instead of quarterly reporting. Concerning sites with problematic or unusual activities, we will prepare individual reports to the OCD between annual reports as necessary. We will also file closure reports on groundwater sites as remediation is completed.
- PNM also asks for an exemption from notifying the OCD 48 hours in advance of any major sampling event or related activity at a groundwater site. We invite OCD to participate in our sampling events at any time. Please feel free to call Denver Bearden or me to schedule a time in the field with us.

If you have any questions regarding the contents of this report or the proposed modifications, please contact me at (505) 241-2974.

Sincerely,
PNM Environmental Services Department

Maureen Gannon
Project Manager

Attachment

cc: Denver Bearden, PNMGS
Denny Foust, OCD-Aztec Office
Leigh Gooding, WFS

bcc: Colin Adams (w/o analytical results)
Ron Johnson (w/o analytical results)
Toni Ristau (w/o analytical results)
Mark Sikelianos (w/o analytical results)

PNMGS Well Site: **Florance #124**

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

Groundwater Site Summary Report

Quarter: 3 **Year:** 96

Operator: Amoco
Sec: 27 **Twn:** 29N **Rng:** 9 W **Unit:** M
Canyon: Largo

Vulnerable Class: Original
OCD Ranking: 30
Lead Agency: NMOCD

Topo Map: previously submitted
Well Completion Diagram: Figure 1
Groundwater Contour Map: Figure 2
Groundwater Elevation Graph: Figure 3
Full Suite- Groundwater Sampling: Table 1
Site Map with Analysis: Figure 4
Analytical Results: attached

Activities for Quarter:

PNM installed four wells at the Florence 124 on August 28, 1996. The wells were surveyed and sampled on September 5. Water level measurements were taken in each of the five monitoring wells. PNM conducted groundwater sampling of each well for chemical analyses of benzene, toluene, ethylbenzene, and xylenes (BTEX) and major cations/anions. In addition, MW-2, located in the source area, was sampled for WQCC metals. Sampling was performed in strict compliance with EPA protocol.

PNM delivered the samples to OnSite Technologies, Farmington, New Mexico. The samples were analyzed using the following methods:

- benzene, toluene, ethylbenzene, and xylenes (BTEX) using EPA Method 8020.
- polynuclear aromatic hydrocarbons (PAHs) using EPA Method 8100
- major cations/anions using various EPA methods
- WQCC metals- filtered (As, Ba, Cd, Cr, Pb, Se, Ag, and Hg using inductively coupled plasma (ICP) for heavy metals and atomic absorption spectroscopy (AAS) for Hg and Se).

Conclusions and Recommendations:

Figure 1 presents a typical well completion diagram for the site. Figure 2 is the groundwater contour map of the site for the third quarter of 1996. Groundwater flows in a westerly direction beneath the site. Figure 3 provides the water level elevation at each monitoring well when sampling took place in September.

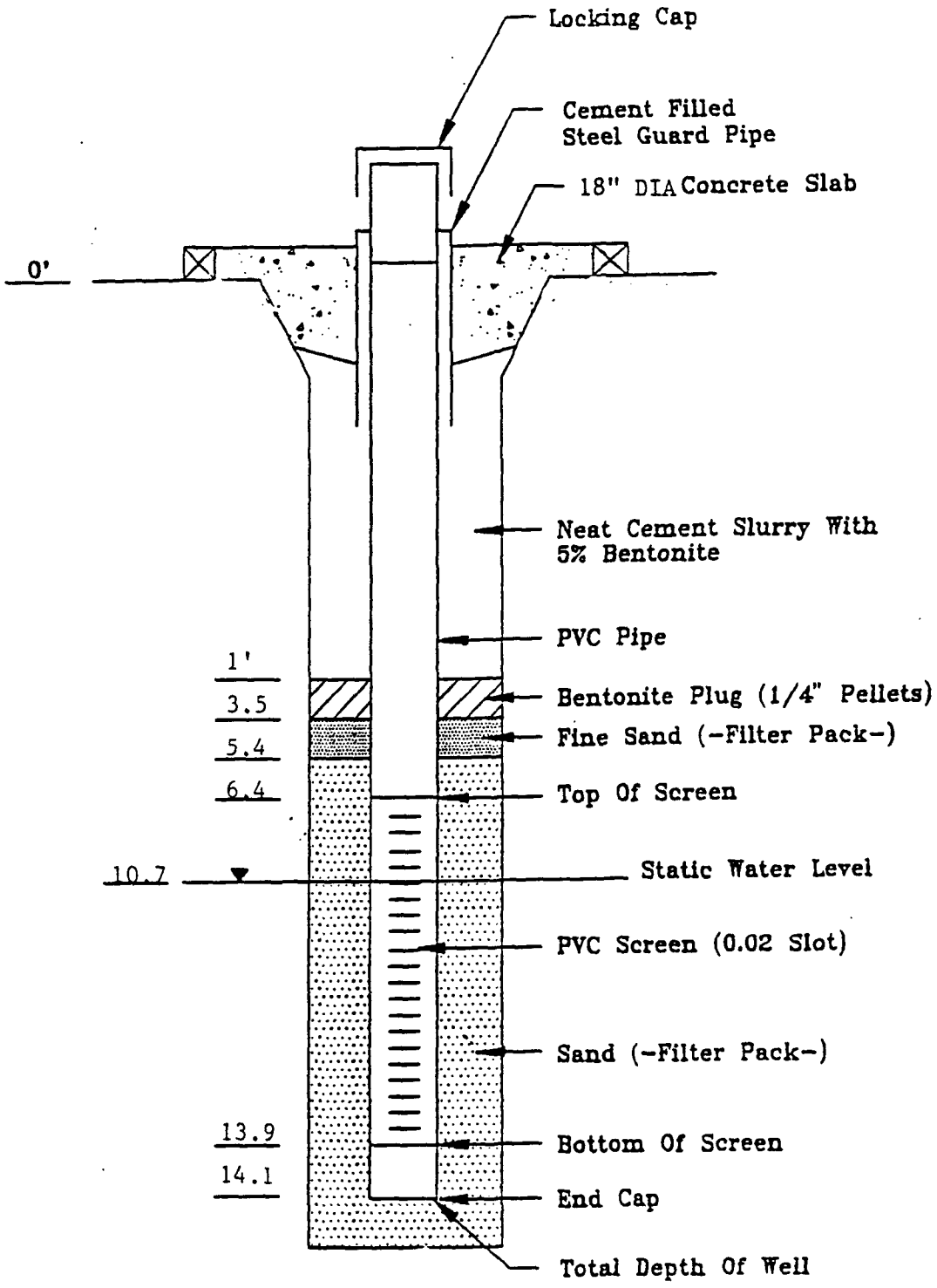
Table 1 provides a summary of the groundwater analytical results from the September 5 sampling event. BTEX concentrations were non-detect in all monitoring wells except MW-2 which lies directly in the former source area. All metal analyses in MW-2 were non-detect or below WQCC standards. Cation/anion analysis revealed high TDS in all wells indicating the presence of very brackish water. TDS levels ranged from 11,923 mg/l in MW-2 to 13,316 mg/l in MW-4. The percentage difference in cations/anions at MW-3 was out of the acceptable range. OnSite Technologies indicated that they ran the cation/anion analyses twice through and saw no change in the percentage difference for this particular well. This may indicate that there is a constituent in the water that we are not currently measuring.

Further Action:

PNM will perform another round of BTEX and cation/anion sampling and analyses. In addition, PNM will move further upgradient to ensure that a "clean" upgradient well is included in the investigation of the "brackish" water. If the water continues to exhibit high TDS, PNM will consult with OCD on possible closure of the site based upon the presence of non-beneficial waters.

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**



PNM Gas Services

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

FIGURE 1
MONITOR WELL DESIGN
Florance #124

Figure 2. Florance 124 Groundwater Contour Map (September 1996)

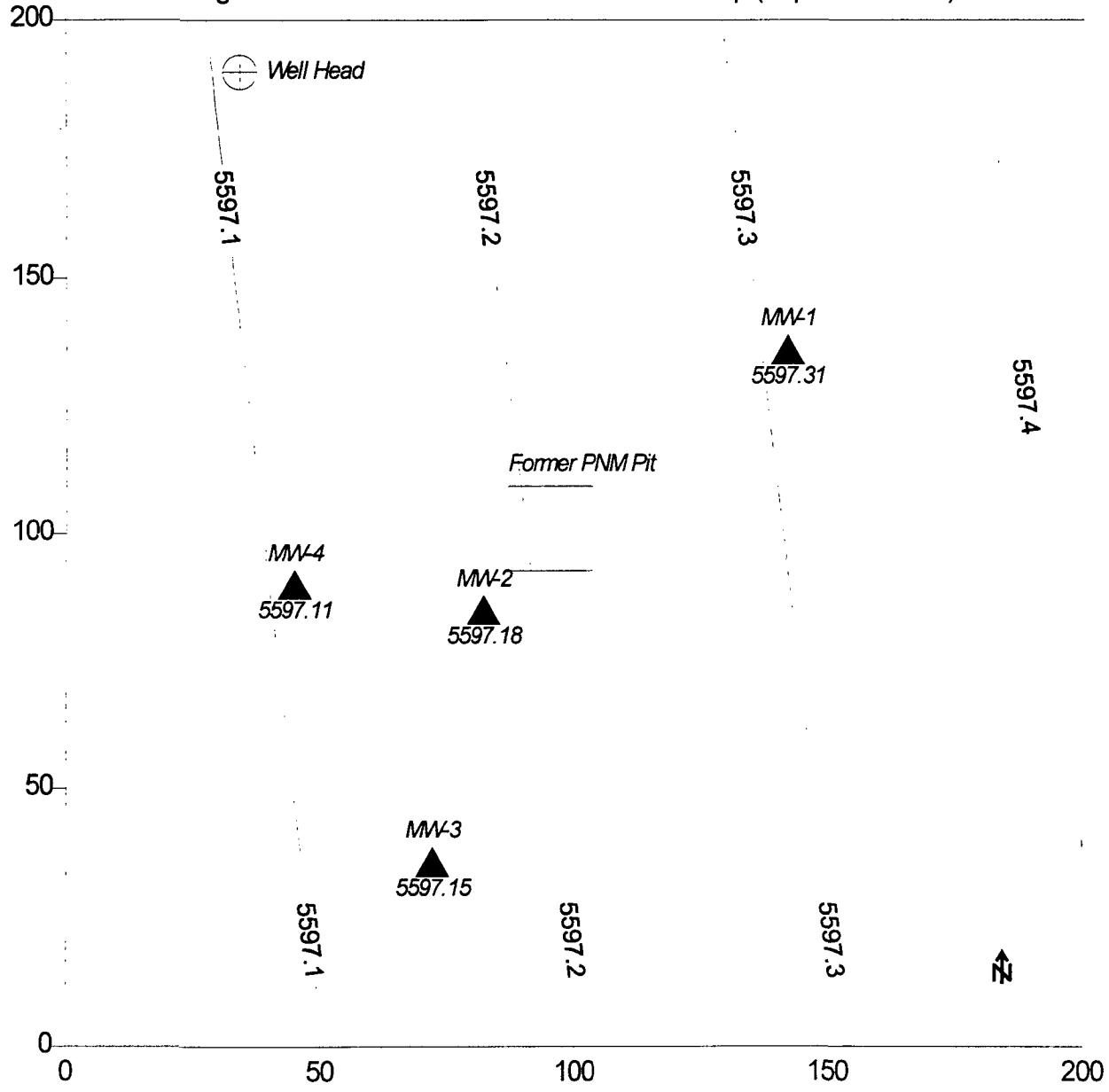


Figure 3. Third Quarter Water Levels
Florance #124

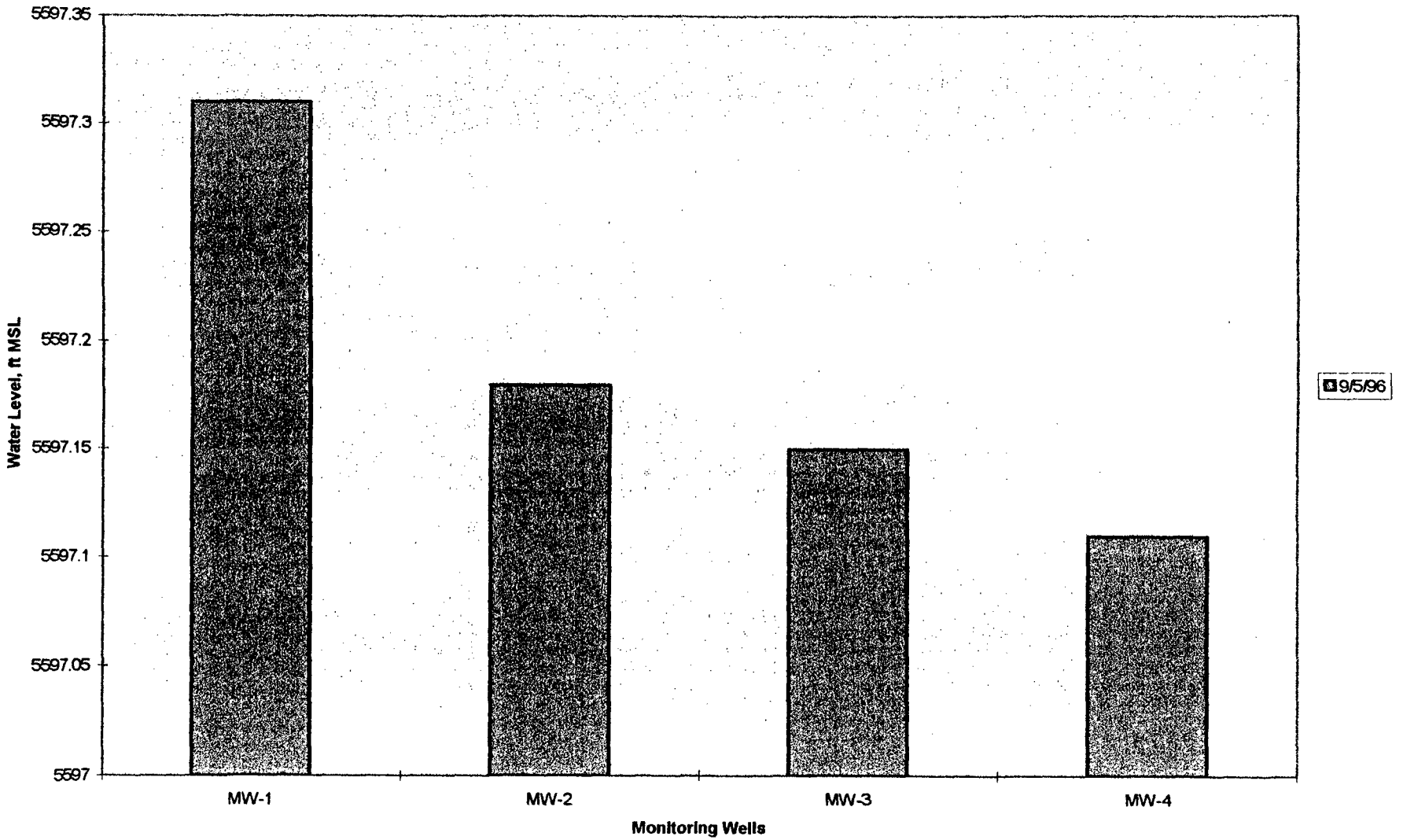


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Table 1. FLORANCE #124 GROUNDWATER SAMPLING RESULTS, mg/l

Constituent	WQCC Stds.	MW-1	MW-2	MW-3	MW-4	MW-6 (MW-2 duplicate)
B	0.01	<0.0002	**0.1224**	<0.0002	<0.0002	0.1223
T	0.75	<0.0002	0.7250	<0.0002	<0.0002	0.6770
E	0.75	<0.0002	0.0269	<0.0002	<0.0002	0.0163
X	0.62	<0.0002	**0.7648**	<0.0002	<0.0002	0.7598
PAHs	0.3	NS	NS	NS	NS	NS
Metals						
As	0.1	NS	<0.10	NS	NS	NS
Ba	1	NS	<0.02	NS	NS	NS
Cd	0.01	NS	<0.02	NS	NS	NS
Cr	0.05	NS	<0.03	NS	NS	NS
Pb	0.05	NS	<0.15	NS	NS	NS
Se	0.05	NS	<0.30	NS	NS	NS
Ag	0.05	NS	<0.02	NS	NS	NS
Hg	0.002	NS	<0.005	NS	NS	NS
Cations/Anions						
Na	NA	5620	5200	7280	5720	NS
Ca	NA	367	384	378	396	NS
Mg	NA	146	122	248	147	NS
K	NA	20.6	23.2	27.0	22	NS
Cl	NA	139	91.7	122	114	NS
SO4	NA	12,906	11,923	12,968	13,316	NS
CO3	NA	<1	<1	<1	<1	NS
HCO3	NA	442	510	492	485	NS
OH	NA	<1	<1	<1	<1	NS
Cation/Anion Balance						
Difference Cation-Anion	NA	4.55	3.19	75.13	7.18	NS
Total Cation-Anion	NA	555.17	515.16	638.12	569.92	NS
% Difference	NA	0.8	0.6	11.8**	1.3	NS
TDS, calc	NA	19,641	18,254	21,515	20,200	NS
TDS, meas	NA	20,567	18,938	26,949	21,445	NS

NA: Not Applicable
BDL: Below Detection Limit
NS: Not Sampled
Bold: Concentration Above WQCC Standard
** Out of acceptable Range % Diff. +/- 5

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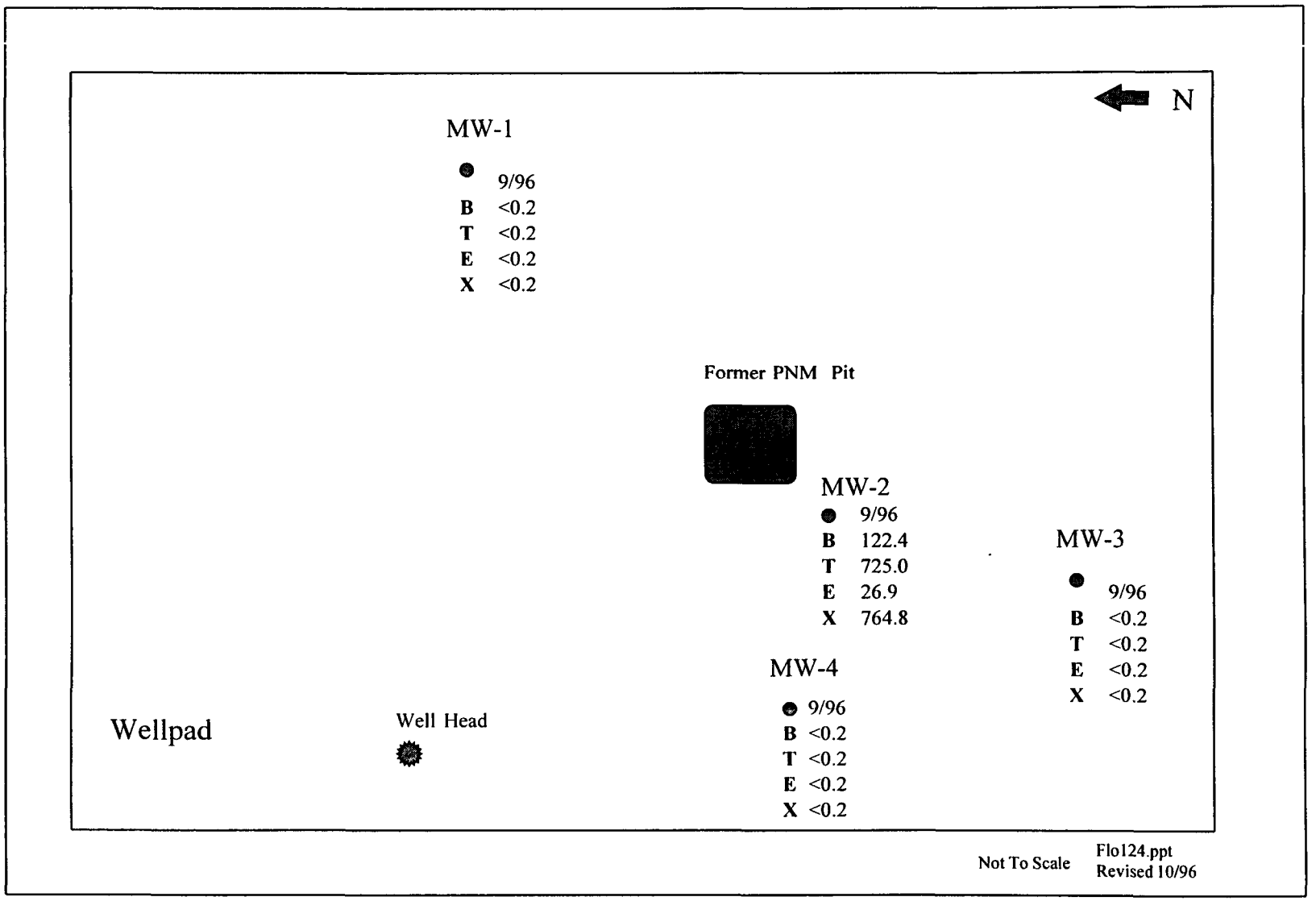
Figure 4. Florance 124 Well Site

Well locations & Analytical Results

(Concentrations in ppb)



OFF: (505) 325-5667

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-1556

AROMATIC VOLATILE ORGANICS

Attn:	*Maureen Gannon*	Date:	9-Sep-96
Company:	*PNM Gas Services*	*COC No.:*	*5251*
Address:	*Alevardo Square, Mail Stop 0408*	*Sample No.*	*12014*
City, State:	*Albuquerque, NM 87158*	*Job No.*	*2-1000*

Project Name:	***PNM Gas Services - Florance 124***				
Project Location:	***9609051100; MW-1***				
Sampled by:	MG	Date:	5-Sep-96	Time:	11:00
Analyzed by:	DC	Date:	8-Sep-96		
Sample Matrix:	*Water*				

Laboratory Analysis

Parameter	*Result*	*Unit of Measure*	*Detection Limit*	*Unit of Measure*
Benzene	<0.2	ug/L	0.2	ug/L
Toluene	<0.2	ug/L	0.2	ug/L
Ethylbenzene	<0.2	ug/L	0.2	ug/L
m,p-Xylene	<0.2	ug/L	0.2	ug/L
o-Xylene	<0.2	ug/L	0.2	ug/L
TOTAL	<0.2	ug/L		

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

Approved by: JaC
Date: 9/9/96

OFF: (505) 325-5667

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	*Maureen Gannon*	Date:	14-Oct-96
Company:	*PNM Gas Services*	*COC No.:*	*5251*
Address:	*Alevardo Square, Mail Stop 0408*	*Sample ID:*	*12014*
City, State:	*Albuquerque, NM 87158*	*Job No.:*	*2-1000*

Project Name:	***PNM Gas Services - Florance 124***				
Project Location:	***9609051100; MW1***				
Sampled by:	MG	Date:	5-Sep-96	Time:	11:00
Analyzed by:	HR	Date:	10-Oct-96		

Laboratory Analysis

Parameter		*Result*	*Unit of Measure*		*Result*	*Unit of Measure*	
Cations							
Sodium	*Na*	5620	mg/L		244.46	me/L	
Calcium	*Ca*	367	mg/L		18.31	me/L	
Magnesium	*Mg*	146	mg/L		12.01	me/L	
Potassium	*K*	20.6	mg/L		0.53	me/L	
Anions							
Chloride	*Cl*	139	mg/L		3.92	me/L	
Sulfate	*SO4*	12906	mg/L		268.70	me/L	
Carbonate	*CO3 as CaCO3*	<1	mg/L		<0.01	me/L	
Bicarbonate	*HCO3 as CaCO3*	442	mg/L		7.24	me/L	
Hydroxide	*OH as CaCO3*	<1	mg/L		<0.01	me/L	
Total Dissolved Solids Calculated, Sum of Cation/Anion		19641	mg/L				
Total Dissolved Solids Dried @ 180 C		20567	mg/L				
pH		7.68					
Conductivity @ 25 C		21900	uS/cm				
Total Hardness as CaCO3		1518	mg/L				

Cation-Anion Balance

4.55 *Difference Cation-Anion, me/L*

555.17 *Total Cation-Anion, me/L*

0.8 *% Difference Cation-Anion*

Comments

Approved by:

Date: 10/15/96

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

AROMATIC VOLATILE ORGANICS

Attn:	*Maureen Gannon*	Date:	9-Sep-96
Company:	*PNM Gas Services*	*COC No.:*	*5251*
Address:	*Alevardo Square, Mail Stop 0408*	*Sample No.*	*12015*
City, State:	*Albuquerque, NM 87158*	*Job No.*	*2-1000*

Project Name:	***PNM Gas Services - Florance 124***				
Project Location:	***9609051130; MW-2***				
Sampled by:	MG	Date:	5-Sep-96	Time:	11:30
Analyzed by:	DC	Date:	8-Sep-96		
Sample Matrix:	*Water*				

Laboratory Analysis

Parameter	*Result*	*Unit of Measure*	*Detection Limit*	*Unit of Measure*
Benzene	122.4	ug/L	0.2	ug/L
Toluene	725.0	ug/L	0.2	ug/L
Ethylbenzene	26.9	ug/L	0.2	ug/L
m,p-Xylene	579.7	ug/L	0.2	ug/L
o-Xylene	185.1	ug/L	0.2	ug/L
TOTAL	1639.1	ug/L		

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

Approved by: JC

Date: 9/9/96

OFF: (505) 325-5667

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	*Maureen Gannon*	Date:	14-Oct-96
Company:	*PNM Gas Services*	*COC No.:*	*5251*
Address:	*Alevardo Square, Mail Stop 0408*	*Sample ID:*	*12015*
City, State:	*Albuquerque, NM 87158*	*Job No.:*	*2-1000*

Project Name:	***PNM Gas Services - Florance 124***				
Project Location:	***9609051130; MW2***				
Sampled by:	MG	Date:	5-Sep-96	Time:	11:30
Analyzed by:	HR	Date:	10-Oct-96		

Laboratory Analysis

Parameter		*Result*	*Unit of Measure*		*Result*	*Unit of Measure*	
Cations							
Sodium	*Na*	5200	mg/L		226.19	me/L	
Calcium	*Ca*	384	mg/L		19.16	me/L	
Magnesium	*Mg*	122	mg/L		10.04	me/L	
Potassium	*K*	23.2	mg/L		0.59	me/L	
Anions							
Chloride	*Cl*	91.7	mg/L		2.59	me/L	
Sulfate	*SO4*	11923	mg/L		248.23	me/L	
Carbonate	*CO3 as CaCO3*	<1	mg/L		<0.01	me/L	
Bicarbonate	*HCO3 as CaCO3*	510	mg/L		8.36	me/L	
Hydroxide	*OH as CaCO3*	<1	mg/L		<0.01	me/L	
Total Dissolved Solids Calculated, Sum of Cation/Anion		18254	mg/L				
Total Dissolved Solids Dried @ 180 C		18938	mg/L				
pH		7.71					
Conductivity @ 25 C		20100	uS/cm				
Total Hardness as CaCO3		1461	mg/L				

Cation-Anion Balance

3.19 *Difference Cation-Anion, me/L*

515.16 *Total Cation-Anion, me/L*

0.6 *% Difference Cation-Anion*

Comments

Approved by:

Date: 10/15/96

OFF: (505) 325-5667

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-1556

AROMATIC VOLATILE ORGANICS

Attn:	*Maureen Gannon*	Date:	10-Sep-96
Company:	*PNM Gas Services*	*COC No.:*	*5251*
Address:	*Alevardo Square, Mail Stop 0408*	*Sample No.*	*12016*
City, State:	*Albuquerque, NM 87158*	*Job No.*	*2-1000*

Project Name:	***PNM Gas Services - Florance 124***				
Project Location:	***9609051200; MW-3***				
Sampled by:	MS/MG	Date:	5-Sep-96	Time:	12:00
Analyzed by:	DC	Date:	10-Sep-96		
Sample Matrix:	*Water*				

Laboratory Analysis

Parameter	*Result*	*Unit of Measure*	*Detection Limit*	*Unit of Measure*
Benzene	<0.2	ug/L	0.2	ug/L
Toluene	<0.2	ug/L	0.2	ug/L
Ethylbenzene	<0.2	ug/L	0.2	ug/L
m,p-Xylene	<0.2	ug/L	0.2	ug/L
o-Xylene	<0.2	ug/L	0.2	ug/L
TOTAL	<0.2	ug/L		

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

Approved by: JaG
Date: 9/10/96

OFF: (505) 325-5667

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	*Maureen Gannon*	Date:	22-Oct-96
Company:	*PNM Gas Services*	*COC No.:*	*5251*
Address:	*Alevardo Square, Mail Stop 0408*	*Sample ID:*	*12016*
City, State:	*Albuquerque, NM 87158*	*Job No.:*	*2-1000*

Project Name:	***PNM Gas Services - Florance 124***				
Project Location:	***9609051200; MW3***				
Sampled by:	MG	Date:	5-Sep-96	Time:	12:00
Analyzed by:	HR	Date:	10-Oct-96		

Laboratory Analysis

Parameter		*Result*	*Unit of Measure*		*Result*	*Unit of Measure*	
Cations							
Sodium	*Na*	7280	mg/L		316.66	me/L	
Calcium	*Ca*	378	mg/L		18.86	me/L	
Magnesium	*Mg*	248	mg/L		20.41	me/L	
Potassium	*K*	27.0	mg/L		0.69	me/L	
Anions							
Chloride	*Cl*	122	mg/L		3.44	me/L	
Sulfate	*SO4*	12968	mg/L		269.99	me/L	
Carbonate	*CO3 as CaCO3*	<1	mg/L		<0.01	me/L	
Bicarbonate	*HCO3 as CaCO3*	492	mg/L		8.06	me/L	
Hydroxide	*OH as CaCO3*	<1	mg/L		<0.01	me/L	
Total Dissolved Solids Calculated, Sum of Cation/Anion		21515	mg/L				
Total Dissolved Solids Dried @ 180 C		26949	mg/L				
pH		7.48					
Conductivity @ 25 C		27300	uS/cm				
Total Hardness as CaCO3		1965	mg/L				

Cation-Anion Balance

75.13 *Difference Cation-Anion, me/L*

638.12 *Total Cation-Anion, me/L*

11.8 *% Difference Cation-Anion*

(72)* *Out of Range, %Diff. = +/=5%*

Comments

**Balance verified by duplicate analysis of target components, including TDS, Dried @ 180C*

Approved by:

Date: 10/22/96

OFF: (505) 325-5667

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-1556

AROMATIC VOLATILE ORGANICS

Attn:	*Maureen Gannon*	Date:	9-Sep-96
Company:	*PNM Gas Services*	*COC No.:*	*5251*
Address:	*Alevardo Square, Mail Stop 0408*	*Sample No.*	*12017*
City, State:	*Albuquerque, NM 87158*	*Job No.*	*2-1000*

Project Name:	***PNM Gas Services - Florance 124***				
Project Location:	***9609051230; MW-4***				
Sampled by:	MG	Date:	5-Sep-96	Time:	12:30
Analyzed by:	DC	Date:	8-Sep-96		
Sample Matrix:	*Water*				

Laboratory Analysis

Parameter	*Result*	*Unit of Measure*	*Detection Limit*	*Unit of Measure*
Benzene	<0.2	ug/L	0.2	ug/L
Toluene	<0.2	ug/L	0.2	ug/L
Ethylbenzene	<0.2	ug/L	0.2	ug/L
m,p-Xylene	<0.2	ug/L	0.2	ug/L
o-Xylene	<0.2	ug/L	0.2	ug/L
TOTAL	<0.2	ug/L		

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

Approved by: Jac
Date: 9/9/96

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	*Maureen Gannon*	Date:	22-Oct-96
Company:	*PNM Gas Services*	*COC No.:*	*5251*
Address:	*Alevardo Square, Mail Stop 0408*	*Sample ID:*	*12017*
City, State:	*Albuquerque, NM 87158*	*Job No.:*	*2-1000*

Project Name:	***PNM Gas Services - Florance 124***				
Project Location:	***9609051230; MW-4***				
Sampled by:	MG	Date:	5-Sep-96	Time:	12:30
Analyzed by:	HR	Date:	10-Oct-96		

API RP-45 Laboratory Analysis

Parameter		*Result*	*Unit of Measure*		*Result*	*Unit of Measure*	
Cations							
Sodium	*Na*	5720	mg/L		248.81	me/L	
Calcium	*Ca*	396	mg/L		19.76	me/L	
Magnesium	*Mg*	147	mg/L		12.10	me/L	
Potassium	*K*	22	mg/L		0.56	me/L	
Anions							
Chloride	*Cl*	114	mg/L		3.22	me/L	
Sulfate	*SO4*	13316	mg/L		277.23	me/L	
Carbonate	*O3 as CaCO3*	<1	mg/L		<0.01	me/L	
Bicarbonate	*CO3 as CaCO*	485	mg/L		7.95	me/L	
Hydroxide	*OH as CaCO3*	<1	mg/L		<0.01	me/L	
Total Dissolved Solids Calculated, Sum of Cation/Anion		20200	mg/L				
Total Dissolved Solids Dried @ 180 C		21445	mg/L				
pH		7.59					
Conductivity @ 25 C		22700	uS/cm				
Total Hardness as CaCO3		1594	mg/L				

Cation-Anion Balance

7.18 *Difference Cation-Anion, me/L*

569.62 *Total Cation-Anion, me/L*

1.3 *% Difference Cation-Anion*

Comments

NA: *Not Analyzed*

Approved by:

Date: 10/22/96

OFF: (505) 325-5667

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-1556

AROMATIC VOLATILE ORGANICS

Attn:	*Maureen Gannon*	Date:	9-Sep-96
Company:	*PNM Gas Services*	*COC No.:*	*5251*
Address:	*Alevardo Square, Mail Stop 0408*	*Sample No.*	*12018*
City, State:	*Albuquerque, NM 87158*	*Job No.*	*2-1000*

Project Name:	***PNM Gas Services - Florance 124***				
Project Location:	***9609051135; MW-6***				
Sampled by:	MG	Date:	5-Sep-96	Time:	11:35
Analyzed by:	DC	Date:	8-Sep-96		
Sample Matrix:	*Water*				

Laboratory Analysis

Parameter	*Result*	*Unit of Measure*	*Detection Limit*	*Unit of Measure*
Benzene	122.3	ug/L	0.2	ug/L
Toluene	677.0	ug/L	0.2	ug/L
Ethylbenzene	16.3	ug/L	0.2	ug/L
m,p-Xylene	572.3	ug/L	0.2	ug/L
o-Xylene	187.5	ug/L	0.2	ug/L
TOTAL	1575.4	ug/L		

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

Approved by: DaC
Date: 9/9/96

OFF: (505) 325-5667

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-1556

QUALITY ASSURANCE REPORT

for EPA Method 8020

Date Analyzed: 8-Sep-96

Internal QC No.: 0486-QC
Surrogate QC No.: 0488-QC
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	21.1	5	15%
Toluene	ppb	20.0	20.7	3	15%
Ethylbenzene	ppb	20.0	22.5	12	15%
m,p-Xylene	ppb	40.0	42.4	6	15%
o-Xylene	ppb	20.0	20.6	3	15%

Matrix Spike

Parameter	*1- Percent Recovered*	*2 - Percent Recovered*	*Limit*	*%RSD*	*Limit*
Benzene	102	99	(39-150)	2	20%
Toluene	102	99	(46-148)	2	20%
Ethylbenzene	103	102	(32-160)	1	20%
m,p-Xylene	99	97	(35-145)	1	20%
o-Xylene	99	95	(35-145)	2	20%

Surrogate Recoveries

Laboratory Identification	*S1 Percent Recovered*	*S2 Percent Recovered*
Limit Percent Recovered	(70-130)	
12014-5251	103	
12015-5251	100	
12017-5251	103	
12018-5251	99	

S1: Flourobenzene

OFF: (505) 325-5667

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-1556

QUALITY ASSURANCE REPORT

for EPA Method 8020

Date Analyzed: 10-Sep-96

Internal QC No.: 0486-QC
Surrogate QC No.: 0488-QC
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	21.3	6	15%
Toluene	ppb	20.0	20.9	5	15%
Ethylbenzene	ppb	20.0	21.4	7	15%
m,p-Xylene	ppb	40.0	41.3	3	15%
o-Xylene	ppb	20.0	20.4	2	15%

Matrix Spike

Parameter	1- Percent Recovered	2 - Percent Recovered	Limit	%RSD	Limit
Benzene	99	112	(39-150)	8	20%
Toluene	97	109	(46-148)	8	20%
Ethylbenzene	98	109	(32-160)	8	20%
m,p-Xylene	93	103	(35-145)	7	20%
o-Xylene	91	103	(35-145)	8	20%

Surrogate Recoveries

Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered
Limit Percent Recovered	(70-130)	
12016-5251	104	

S1: Flourobenzene

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

QUALITY ASSURANCE REPORT

API RP-45 Water Analysis

Date: 10-Oct-96

Quality Control Sample

Parameter	*Laboratory Identification*	*True Value*	*Analyzed Value*	*Unit of Measure*	*% Diff*	*Limit % Diff*
Sodium, Na	0484-QC	3.46	3.18	mg/L	-8	10
Calcium, Ca	0454-QC	3.89	3.90	mg/L	0	10
Magnesium, Mg	0454-QC	1.21	1.29	mg/L	7	10
Potassium, K	0484-QC	2.46	2.48	mg/L	1	10
Chloride, Cl	0484-QC	138	139	mg/L	1	10
Sulfate, SO4	0484-QC	124	128	mg/L	3	10
Alkalinity	0484-QC	180	187	mg/L	4	10
pH	0484-QC	9.09	9.27		2	10
Conductivity	0484-QC	1220	1157	uS/cm	-5	15

Matrix Spike

Parameter	*Laboratory Identification*	*Analyzed Value*	*Matrix Spike*	*Spike Value*	*Unit of Measure*	*Spike Recovery*
Sodium, Na	12017-5251	1.43	0.50	1.89	mg/L	98%
Calcium, Ca	12017-5251	1.98	0.50	2.61	mg/L	105%
Magnesium, Mg	12017-5251	0.74	0.50	1.27	mg/L	102%
Potassium, K	11984-4432	0.98	1.00	1.92	mg/L	97%

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, SO4	LF-Blank	<1	mg/L
Conductivity	LF-Blank	<2	uS/cm

CHAIN OF CUSTODY RECORD

5251

ON SITE TECHNOLOGIES, LTD.

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

Date: 9/05/96

Page 1 of

Purchase Order No.:		Job No.	
SEND INVOICE TO	Name: Denver Bearden		
	Company: PNM Gas Services	Dept. 324-3763	
	Address: 603 W. Elm Street		
	City, State, Zip: Farmington, NM 87401		
REPORT RESULTS TO	Name: Maureen Gannon	Title:	
	Company: PNM Gas Services		
	Mailing Address: Alverado Square, Mail Stop 0408		
	City, State, Zip: Albuquerque, NM 87158		
	Telephone No.: 505-848-2974	Telefax No.:	

Sampling Location: FLORANCE 124

Sampler: MGannon

ANALYSIS REQUESTED

SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	MATRIX	PRES.	Number of Containers	BTEX 8020	CATS/ANIONS	PAHs	WQCC Metals	LAB ID
9609051100 MW1			H2O	None	3	X	X	X	X	12014-5251
9609051130 MW2			↓	↓	6	X	X	X	X	12015
9609051200 MW3					3	X	X			12016
9609051230 MW4					3	X	✓	pm mg 10/22/96		12017
~~9609051300~~ 9609051135 MW6			H2O	None	2	X			(Cr)	12018

Relinquished by: Maureen Gannon	Date/Time 9/05/96 1445	Received by:	Date/Time 9/5/96 1445
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time

Method of Shipment:

Authorized by: MGannon Date 9/05/96
(Client Signature Must Accompany Request)

Rush	24-48 Hours	10 Working Days	Special Instructions:
			Results to be sent to both parties.

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

(16)

4454

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: 9/17/96

Page 1 of 1

Purchase Order No.: 5251/52	Job No. PNM1002		
SEND INVOICE TO: Name	ACCOUNTS PAYABLE		
Company	ON SITE TECH	Dept.	
Address	P.O. BOX 2606		
City, State, Zip	FARMINGTON, NM 87499		
REPORT RESULTS TO: Name	DAVID COX	Title	
Company	ON SITE TECH		
Mailing Address	612 E MURRAY DRIVE		
City, State, Zip	FARMINGTON, NM 87401		
Telephone No.	505 325 2432	Telefax No.	505 325 6256

Sampling Location: TEMPLETON 1E
FLORANCE 124

Sampler: MG/MS

SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	MATRIX	PRES.	Number of Containers	ANALYSIS REQUESTED: Dissolved Ba, Pb	LAB ID
TEMPLETON 1E MW1-3 9609051600	9/5/96	1600	H2O	cool	1	✓	12021-5252
FLORANCE 124 MW1-2 9609051130	9/5/96	1130	H_2O	cool	1	✓	12015-5251

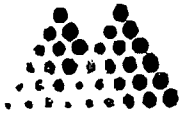
Relinquished by: DC	Date/Time 9/17/96 1600	Received by: Pam Olsen MSAI	Date/Time 9/18/96 1600
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time

Method of Shipment:

Authorized by: DC (Client Signature Must Accompany Request) Date 9/17/96

Rush	24-48 Hours	10 Working Days	Special Instructions:

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



Mountain States Analytical

The Quality Solution

October 31, 1996

Mr. David Cox
On Site Technologies, Ltd.
612 E Murray Drive
Farmington, NM 87401

Reference:
Project: ~~Templeton 1E~~ Florance 124 (Relog)
Project No.: PNM1002
MSAI Group: 14122

Dear Mr. Cox:

Enclosed are the analytical results for your project referenced above. The following sample is included in the report.

Florance 124 MW 2(52999)

All holding times were met for the tests performed on these samples except:

Sample - (Sample Date) Test Description	Expiration Date	Date Analyzed	Days Past Holding Time
Florance 124 MW 2(52999) - (09/05/96)			
Mercury by CVAA, w/ww, SW-846	10/03/96	10/31/96	28
Mercury Prep CVAA, Waters	10/03/96	10/29/96	26

If the report is acceptable, please approve the enclosed invoice and forward it for payment.

Thank you for selecting Mountain States Analytical, Inc. to serve as your analytical laboratory on this project. If you have any questions concerning these results, please feel free to contact me at any time.

We look forward to working with you on future projects.

With Regards,

Rolf E. Larsen
Project Manager

Mountain States Analytical
The Quality Solution

On Site Technologies, Ltd.
612 E Murray Drive
Farmington, NM 87401

Attn: Mr. David Cox
Project: Templeton 1E, Florance 124 (Relog)

Sample ID: Florance 124 MW 2(52999)
Matrix: Waste Water

MSAI Sample: 54931
MSAI Group: 14122
Date Reported: 10/31/96
Discard Date: 11/30/96
Date Submitted: 10/18/96
Date Sampled: 09/05/96
Collected by:
Purchase Order: 5251/52
Project No.: PNM1002

Test	Analysis	Results as Received	Units	Limit of Quantitation
0259B	Mercury by CVAA, w/ww, SW-846 Method: SW-846 7470	ND	mg/l	0.0005
0392M	Mercury Prep CVAA, Waters Method: SW-846 7470	Complete		
7245	Arsenic by ICP Method: SW-846 6010A	ND	mg/l	0.10
249	Cadmium by ICP Method: SW-846 6010A	ND	mg/l	0.02
251	Chromium by ICP Method: SW-846 6010A	ND	mg/l	0.03
64	Selenium by ICP Method: SW-846 6010A	ND	mg/l	0.30
56	Silver by ICP Method: SW-846 6010A	ND	mg/l	0.02

- Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Rolf E. Larsen
Project Manager

Mountain States Analytical
The Quality Solution

On Site Technologies, Ltd.
612 E Murray Drive
Farmington, NM 87401

Attn: Mr. David Cox
Project: Templeton 1E, Florance 124

MSAI Sample: 52999
MSAI Group: 13562
Date Reported: 09/25/96
Discard Date: 10/25/96
Date Submitted: 09/18/96
Date Sampled: 09/05/96
Collected by:
Purchase Order: 5251/52
Project No.: PNM1002

Sample ID: Florance 124 MW-2
Matrix: Waste Water

Test	Analysis	Results as Received	Units	Limit of Quantitation
0255F	Lead by ICP, Dissolved Method: SW-846 6010A	ND	mg/l	0.15
0392I	Flame/ICP Prep for Metals, Waters Method: SW-846 3005A	Complete		
2541B	Barium by ICP, Dissolved Method: SW-846 6010A	ND	mg/l	0.02
0939	Sample Filtering Method: MSAI IN-HOUSE	Complete		

ND - Not detected at the limit of quantitation

Respectfully Submitted,
Reviewed and Approved by:

Rolf E. Larsen
Project Manager

Mountain States Analytical, Inc.
Daily QC Batching Data
Data Released for Reporting

09/25/96
08:05:05
Group: 13562

Analysis Batch Number: ICPWA-09/24/96-010 -2
Test Identification : ICPWA-Metals by ICP
Number of Samples : 14
Batch Data-Date/Time : 09/24/96 / 17:17:06

Sequence : DATC268

BLANK#	ANALYTE	CONC FOUND #	CONC LIMIT
PBW-625	Aluminum	0.0202	0.2000
	Antimony	ND	0.1000
	Arsenic	0.0007	0.0500
	Barium	0.0008	0.2000
	Beryllium	ND	0.0050
	Cadmium	0.0032	0.0050
	Calcium	0.0530	1.0000
	Chromium	0.0022	0.0100
	Copper	0.0013	0.0250
	Iron	0.0726	0.1000
	Lead	ND	0.0500
	Magnesium	0.0077	1.0000
	Manganese	0.0086	0.0150
	Nickel	0.0132	0.0400
	Potassium	ND	1.0000
	Selenium	0.0096	0.1000
	Silver	0.0008	0.0100
	Sodium	0.0800	1.0000
	Thallium	0.0100	0.1500
	Vanadium	ND	0.0500
	Zinc	0.0014	0.0600
	Molybdenum	ND	0.0500

SPIKE SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	CONC SPIKE	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
13489-52767	Aluminum	1.0000	0.1290	1.1953	106.6	80.0	120.0
	Antimony	1.0000	0.0035	0.9745	97.1	80.0	120.0
	Arsenic	1.0000	0.0009	0.9778	97.7	80.0	120.0
	Barium	0.2000	0.0885	0.2864	98.9	80.0	120.0
	Beryllium	0.1000	0.0000	0.1018	101.8	80.0	120.0
	Cadmium	0.2000	0.0011	0.1949	96.9	80.0	120.0
	Calcium	2.0000	45.3217	53.4600	406.9(2a)	80.0	120.0
	Chromium	0.2000	0.0098	0.1973	93.8	80.0	120.0
	Copper	0.2000	-0.0012	0.1916	96.4	80.0	120.0
	Iron	0.7000	0.1438	0.8537	101.4	80.0	120.0
	Lead	1.0000	-0.0168	0.9399	95.7	80.0	120.0
	Magnesium	1.0000	54.7313	62.3512	762.0(2a)	80.0	120.0
	Manganese	0.2000	0.0099	0.2003	95.2	80.0	120.0
	Nickel	0.4000	0.0113	0.3882	94.2	80.0	120.0
	Potassium	2.0000	5.8840	8.1982	115.7	80.0	120.0
	Selenium	1.0000	0.0052	0.9364	93.1	80.0	120.0
	Silver	0.1000	-0.0020	0.0980	100.0	80.0	120.0
	Sodium	3.0000	172.5171	188.6594	538.1(2a)	80.0	120.0
	Thallium	2.0000	0.0154	1.8851	93.5	80.0	120.0
	Vanadium	0.5000	0.0065	0.4979	98.3	80.0	120.0
	Zinc	0.2000	0.0076	0.1955	94.0	80.0	120.0
	Molybdenum	1.0000	-0.0039	0.9628	96.7	80.0	120.0

Mountain States Analytical, Inc.
Daily QC Batching Data
Data Released for Reporting

09/25/96
08:05:06
Group: 13562

Analysis Batch Number: ICPWA-09/24/96-010 -2
Test Identification : ICPWA-Metals by ICP
Number of Samples : 14
Batch Data-Date/Time : 09/24/96 / 17:17:06

Sequence : DATC268

MSD

SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	RESULT 2	%REC2 #	QC LIMITS LOWER	QC LIMITS UPPER	RPD #	LIMIT
13489-52767	Aluminum	1.0000	0.1290	1.1524	102.3	80.0	120.0	4.1	20.0
	Antimony	1.0000	0.0035	0.9082	90.5	80.0	120.0	7.0	20.0
	Arsenic	1.0000	0.0009	0.9442	94.3	80.0	120.0	3.5	20.0
	Barium	0.2000	0.0885	0.2743	92.9	80.0	120.0	6.3	20.0
	Beryllium	0.1000	0.0000	0.1012	101.2	80.0	120.0	0.6	20.0
	Cadmium	0.2000	0.0011	0.1916	95.3	80.0	120.0	1.7	20.0
	Calcium	2.0000	45.3217	45.7920	23.5(2a)	80.0	120.0	178.2(1a)	20.0
	Chromium	0.2000	0.0098	0.1896	89.9	80.0	120.0	4.2	20.0
	Copper	0.2000	-0.0012	0.1943	97.8	80.0	120.0	1.4	20.0
	Iron	0.7000	0.1438	0.8220	96.9	80.0	120.0	4.5	20.0
	Lead	1.0000	-0.0168	0.9190	93.6	80.0	120.0	2.2	20.0
	Magnesium	1.0000	54.7313	54.1200	-61.1(2a)	80.0	120.0	234.9(1a)	20.0
	Manganese	0.2000	0.0099	0.1994	94.8	80.0	120.0	0.4	20.0
	Nickel	0.4000	0.0113	0.3790	91.9	80.0	120.0	2.5	20.0
	Potassium	2.0000	5.8840	7.6316	87.4	80.0	120.0	27.9(4a)	20.0
	Selenium	1.0000	0.0052	0.9702	96.5	80.0	120.0	3.6	20.0
	Silver	0.1000	-0.0020	0.0943	96.3	80.0	120.0	3.8	20.0
	Sodium	3.0000	172.5171	171.0307	-49.5(2a)	80.0	120.0	240.5(1a)	20.0
	Thallium	2.0000	0.0154	1.7872	88.6	80.0	120.0	5.4	20.0
	Vanadium	0.5000	0.0065	0.4894	96.6	80.0	120.0	1.7	20.0
	Zinc	0.2000	0.0076	0.2012	96.8	80.0	120.0	2.9	20.0
	Molybdenum	1.0000	-0.0039	0.9489	95.3	80.0	120.0	1.5	20.0

DUPLICATE

SAMPLE#	ANALYTE	RESULT 1	RESULT 2	RPD #	LIMIT	DILUTION
13489-52767	Aluminum	0.1290	0.1921	39.3(11)	20.0	1.00
	Antimony	0.0035	0.0344	163.1(11)	20.0	1.00
	Arsenic	0.0009	0.0250	186.1(11)	20.0	1.00
	Barium	0.0885	0.0905	2.2	20.0	1.00
	Beryllium	0.0000	0.0000	0.0	20.0	1.00
	Cadmium	0.0011	0.0015	30.8(11)	20.0	1.00
	Calcium	45.3217	45.9977	1.5	20.0	1.00
	Chromium	0.0098	0.0982	163.7(B)	20.0	1.00
	Copper	-0.0012	0.0008	1000.0(11)	20.0	1.00
	Iron	0.1438	0.6366	126.3(B)	20.0	1.00
	Lead	-0.0168	0.0000	200.0(11)	20.0	1.00
	Magnesium	54.7313	55.7875	1.9	20.0	1.00
	Manganese	0.0099	0.0111	11.4	20.0	1.00
	Nickel	0.0113	0.0681	143.1(3a)	20.0	1.00
	Potassium	5.8840	5.9577	1.2	20.0	1.00
	Selenium	0.0052	0.0398	153.8(11)	20.0	1.00
	Silver	-0.0020	0.0000	200.0(11)	20.0	1.00
	Sodium	172.5171	177.2939	2.7	20.0	1.00
	Thallium	0.0154	0.0322	70.6(11)	20.0	1.00
	Vanadium	0.0065	0.0063	3.1	20.0	1.00
	Zinc	0.0076	0.0085	11.2	20.0	1.00
	Molybdenum	-0.0039	0.0026	1000.0(11)	20.0	1.00

Mountain States Analytical, Inc.
Daily QC Batching Data
Data Released for Reporting

09/25/96
08:05:07
Group: 13562

Analysis Batch Number: ICPWA-09/24/96-010 -2
Test Identification : ICPWA-Metals by ICP
Number of Samples : 14
Batch Data-Date/Time : 09/24/96 / 17:17:06

Sequence : DATC268

CONTROL SAMPLE#	ANALYTE	CONC FOUND	CONC KNOWN	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
LCSW-625	Aluminum	0.9580	1.0000	95.8	80.0	120.0
	Antimony	0.9122	1.0000	91.2	80.0	120.0
	Arsenic	0.9717	1.0000	97.2	80.0	120.0
	Barium	0.1908	0.2000	95.4	80.0	120.0
	Beryllium	0.1019	0.1000	101.9	80.0	120.0
	Cadmium	0.1991	0.2000	99.6	80.0	120.0
	Calcium	2.0755	2.0000	103.8	80.0	120.0
	Chromium	0.2021	0.2000	101.1	80.0	120.0
	Copper	0.1929	0.2000	96.4	80.0	120.0
	Iron	0.7125	0.7000	101.8	80.0	120.0
	Lead	0.9701	1.0000	97.0	80.0	120.0
	Magnesium	0.9881	1.0000	98.8	80.0	120.0
	Manganese	0.2090	0.2000	104.5	80.0	120.0
	Nickel	0.4041	0.4000	101.0	80.0	120.0
	Potassium	1.9478	2.0000	97.4	80.0	120.0
	Selenium	1.0066	1.0000	100.7	80.0	120.0
	Silver	0.0999	0.1000	99.9	80.0	120.0
	Sodium	2.9307	3.0000	97.7	80.0	120.0
	Thallium	2.0302	2.0000	101.5	80.0	120.0
	Vanadium	0.4970	0.5000	99.4	80.0	120.0
	Zinc	0.2020	0.2000	101.0	80.0	120.0
	Molybdenum	0.9845	1.0000	98.5	80.0	120.0

CCV #	ANALYTE	TRUE VALUE	BATCH READ	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
ICV-	Aluminum	20.0000	19.6839	98.4	90.0	110.0
	Antimony	4.0000	4.0653	101.6	90.0	110.0
	Arsenic	1.6000	1.6020	100.1	90.0	110.0
	Barium	4.0000	3.8350	95.9	90.0	110.0
	Beryllium	0.4000	0.3975	99.4	90.0	110.0
	Cadmium	4.0000	3.9220	98.1	90.0	110.0
	Calcium	40.0000	40.0239	100.1	90.0	110.0
	Chromium	4.0000	3.9406	98.5	90.0	110.0
	Copper	4.0000	3.8607	96.5	90.0	110.0
	Iron	4.0000	3.8929	97.3	90.0	110.0
	Lead	20.0000	19.1943	96.0	90.0	110.0
	Magnesium	20.0000	19.7946	99.0	90.0	110.0
	Manganese	4.0000	3.8447	96.1	90.0	110.0
	Nickel	8.0000	7.7917	97.4	90.0	110.0
	Potassium	40.0000	40.3892	101.0	90.0	110.0
	Selenium	1.6000	1.5879	99.2	90.0	110.0
	Silver	0.4000	0.4238	106.0	90.0	110.0
	Sodium	40.0000	40.3638	100.9	90.0	110.0
	Thallium	4.0000	3.7819	94.5	90.0	110.0
	Vanadium	1.6000	1.5947	99.7	90.0	110.0
	Zinc	4.0000	3.8934	97.3	90.0	110.0
	Molybdenum	20.0000	20.0832	100.4	90.0	110.0
CCV1--2	Aluminum	20.0000	19.5707	97.9	90.0	110.0
	Antimony	4.0000	4.0739	101.8	90.0	110.0

Mountain States Analytical, Inc.
Daily QC Batching Data
Data Released for Reporting

09/25/96
08:05:08
Group: 13562

Analysis Batch Number: ICPWA-09/24/96-010 -2
Test Identification : ICPWA-Metals by ICP
Number of Samples : 14
Batch Data-Date/Time : 09/24/96 / 17:17:06

Sequence : DATC268

CCV #	ANALYTE	TRUE VALUE	BATCH READ	% REC	#	QC LIMITS LOWER	QC LIMITS UPPER
CCV1--2	Arsenic	1.6000	1.6073	100.5		90.0	110.0
	Barium	4.0000	3.7946	94.9		90.0	110.0
	Beryllium	0.4000	0.3969	99.2		90.0	110.0
	Cadmium	4.0000	3.9350	98.4		90.0	110.0
	Calcium	40.0000	40.2729	100.7		90.0	110.0
	Chromium	4.0000	3.9480	98.7		90.0	110.0
	Copper	4.0000	3.8362	95.9		90.0	110.0
	Iron	4.0000	3.9315	98.3		90.0	110.0
	Lead	20.0000	19.3166	96.6		90.0	110.0
	Magnesium	20.0000	19.7681	98.8		90.0	110.0
	Manganese	4.0000	3.8522	96.3		90.0	110.0
	Nickel	8.0000	7.8338	97.9		90.0	110.0
	Potassium	40.0000	40.0508	100.1		90.0	110.0
	Selenium	1.6000	1.5851	99.1		90.0	110.0
	Silver	0.4000	0.4246	106.2		90.0	110.0
	Sodium	40.0000	39.4719	98.7		90.0	110.0
	Thallium	4.0000	3.7357	93.4		90.0	110.0
	Vanadium	1.6000	1.5956	99.7		90.0	110.0
	Zinc	4.0000	3.8997	97.5		90.0	110.0
	Molybdenum	20.0000	20.1201	100.6		90.0	110.0
CCV2--3	Aluminum	20.0000	19.4752	97.4		90.0	110.0
	Antimony	4.0000	4.0086	100.2		90.0	110.0
	Arsenic	1.6000	1.5745	98.4		90.0	110.0
	Barium	4.0000	3.7769	94.4		90.0	110.0
	Beryllium	0.4000	0.3911	97.8		90.0	110.0
	Cadmium	4.0000	3.8623	96.6		90.0	110.0
	Calcium	40.0000	39.6900	99.2		90.0	110.0
	Chromium	4.0000	3.8833	97.1		90.0	110.0
	Copper	4.0000	3.8151	95.4		90.0	110.0
	Iron	4.0000	3.8138	95.3		90.0	110.0
	Lead	20.0000	19.0276	95.1		90.0	110.0
	Magnesium	20.0000	19.5952	98.0		90.0	110.0
	Manganese	4.0000	3.8052	95.1		90.0	110.0
	Nickel	8.0000	7.6535	95.7		90.0	110.0
	Potassium	40.0000	39.6865	99.2		90.0	110.0
	Selenium	1.6000	1.5181	94.9		90.0	110.0
	Silver	0.4000	0.4201	105.0		90.0	110.0
	Sodium	40.0000	39.0637	97.7		90.0	110.0
	Thallium	4.0000	3.7412	93.5		90.0	110.0
	Vanadium	1.6000	1.5753	98.5		90.0	110.0
	Zinc	4.0000	3.8588	96.5		90.0	110.0
	Molybdenum	20.0000	19.7775	98.9		90.0	110.0
CCV3--4	Aluminum	20.0000	19.9146	99.6		90.0	110.0
	Antimony	4.0000	4.0115	100.3		90.0	110.0
	Arsenic	1.6000	1.6313	102.0		90.0	110.0
	Barium	4.0000	3.8701	96.8		90.0	110.0
	Beryllium	0.4000	0.4078	101.9		90.0	110.0
	Cadmium	4.0000	3.9836	99.6		90.0	110.0
	Calcium	40.0000	40.7504	101.9		90.0	110.0

Mountain States Analytical, Inc.
Daily QC Batching Data
Data Released for Reporting

09/25/96
08:05:09
Group: 13562

Analysis Batch Number: ICPWA-09/24/96-010 -2
Test Identification : ICPWA-Metals by ICP
Number of Samples : 14
Batch Data-Date/Time : 09/24/96 / 17:17:06

Sequence : DATC268

					QC LIMITS	
CCV #	ANALYTE	TRUE VALUE	BATCH READ	% REC #	LOWER	UPPER
CCV3--4	Chromium	4.0000	4.0028	100.1	90.0	110.0
	Copper	4.0000	3.9151	97.9	90.0	110.0
	Iron	4.0000	3.9753	99.4	90.0	110.0
	Lead	20.0000	19.4547	97.3	90.0	110.0
	Magnesium	20.0000	20.0755	100.4	90.0	110.0
	Manganese	4.0000	3.9120	97.8	90.0	110.0
	Nickel	8.0000	7.8815	98.5	90.0	110.0
	Potassium	40.0000	40.4407	101.1	90.0	110.0
	Selenium	1.6000	1.6507	103.2	90.0	110.0
	Silver	0.4000	0.4337	108.4	90.0	110.0
	Sodium	40.0000	39.2281	98.1	90.0	110.0
	Thallium	4.0000	3.8012	95.0	90.0	110.0
	Vanadium	1.6000	1.6194	101.2	90.0	110.0
	Zinc	4.0000	3.9553	98.9	90.0	110.0
	Molybdenum	20.0000	20.3911	102.0	90.0	110.0
CCV4--5	Aluminum	20.0000	20.0711	100.4	90.0	110.0
	Antimony	4.0000	4.0220	100.6	90.0	110.0
	Arsenic	1.6000	1.6035	100.2	90.0	110.0
	Barium	4.0000	3.9156	97.9	90.0	110.0
	Beryllium	0.4000	0.3993	99.8	90.0	110.0
	Cadmium	4.0000	3.9206	98.0	90.0	110.0
	Calcium	40.0000	39.8531	99.6	90.0	110.0
	Chromium	4.0000	3.9413	98.5	90.0	110.0
	Copper	4.0000	3.9379	98.4	90.0	110.0
	Iron	4.0000	3.8432	96.1	90.0	110.0
	Lead	20.0000	19.1778	95.9	90.0	110.0
	Magnesium	20.0000	19.9605	99.8	90.0	110.0
	Manganese	4.0000	3.8621	96.6	90.0	110.0
	Nickel	8.0000	7.7755	97.2	90.0	110.0
	Potassium	40.0000	40.8527	102.1	90.0	110.0
	Selenium	1.6000	1.5923	99.5	90.0	110.0
	Silver	0.4000	0.4307	107.7	90.0	110.0
	Sodium	40.0000	41.4451	103.6	90.0	110.0
	Thallium	4.0000	3.8285	95.7	90.0	110.0
	Vanadium	1.6000	1.6071	100.4	90.0	110.0
	Zinc	4.0000	3.8875	97.2	90.0	110.0
	Molybdenum	20.0000	20.2935	101.5	90.0	110.0

CCB=	ANALYTE	CONC FOUND #	CONC LIMIT
CCB-	Aluminum	0.0224	0.2000
	Antimony	ND	0.1000
	Arsenic	0.0084	0.0500
	Barium	0.0010	0.2000
	Beryllium	0.0001	0.0050
	Cadmium	0.0036	0.0050
	Calcium	0.0089	1.0000
	Chromium	0.0047	0.0100
	Copper	0.0040	0.0250
	Iron	0.0127	0.1000

Mountain States Analytical, Inc.
Daily QC Batching Data
Data Released for Reporting

09/25/96
08:05:10
Group: 13562

Analysis Batch Number: ICPWA-09/24/96-010 -2
Test Identification : ICPWA-Metals by ICP
Number of Samples : 14
Batch Data-Date/Time : 09/24/96 / 17:17:06

Sequence : DATC268

CCB#	ANALYTE	CONC FOUND #	CONC LIMIT
ICB-	Lead	ND	0.0500
	Magnesium	0.0261	1.0000
	Manganese	0.0001	0.0150
	Nickel	0.0135	0.0400
	Potassium	0.0640	1.0000
	Selenium	0.0400	0.1000
	Silver	0.0044	0.0100
	Sodium	0.0328	1.0000
	Thallium	0.0010	0.1500
	Vanadium	0.0020	0.0500
	Zinc	ND	0.0600
	Molybdenum	ND	0.0500
CCB1-	Aluminum	0.0078	0.2000
	Antimony	ND	0.1000
	Arsenic	ND	0.0500
	Barium	0.0004	0.2000
	Beryllium	ND	0.0050
	Cadmium	0.0005	0.0050
	Calcium	0.0067	1.0000
	Chromium	ND	0.0100
	Copper	0.0015	0.0250
	Iron	ND	0.1000
	Lead	ND	0.0500
	Magnesium	0.0088	1.0000
	Manganese	ND	0.0150
	Nickel	0.0122	0.0400
	Potassium	0.0308	1.0000
	Selenium	0.0464	0.1000
	Silver	0.0026	0.0100
	Sodium	0.0208	1.0000
	Thallium	0.0137	0.1500
	Vanadium	0.0004	0.0500
	Zinc	ND	0.0600
	Molybdenum	ND	0.0500
CCB2-	Aluminum	0.0078	0.2000
	Antimony	ND	0.1000
	Arsenic	ND	0.0500
	Barium	0.0005	0.2000
	Beryllium	ND	0.0050
	Cadmium	0.0036	0.0050
	Calcium	0.0035	1.0000
	Chromium	ND	0.0100
	Copper	0.0005	0.0250
	Iron	ND	0.1000
	Lead	ND	0.0500
	Magnesium	ND	1.0000
	Manganese	ND	0.0150
	Nickel	ND	0.0400
	Potassium	ND	1.0000
	Selenium	ND	0.1000

Mountain States Analytical, Inc.
Daily QC Batching Data
Data Released for Reporting

09/25/96
08:05:11
Group: 13562

Analysis Batch Number: ICPWA-09/24/96-010 -2
Test Identification : ICPWA-Metals by ICP
Number of Samples : 14
Batch Data-Date/Time : 09/24/96 / 17:17:06

Sequence : DATC268

CCB#	ANALYTE	CONC FOUND #	CONC LIMIT
CCB2-	Silver	ND	0.0100
	Sodium	0.0081	1.0000
	Thallium	0.0124	0.1500
	Vanadium	ND	0.0500
	Zinc	ND	0.0600
	Molybdenum	ND	0.0500
CCB3-	Aluminum	0.0204	0.2000
	Antimony	ND	0.1000
	Arsenic	ND	0.0500
	Barium	0.0005	0.2000
	Beryllium	ND	0.0050
	Cadmium	0.0033	0.0050
	Calcium	0.0053	1.0000
	Chromium	0.0017	0.0100
	Copper	0.0010	0.0250
	Iron	0.0141	0.1000
	Lead	ND	0.0500
	Magnesium	ND	1.0000
	Manganese	ND	0.0150
	Nickel	0.0087	0.0400
	Potassium	0.0125	1.0000
	Selenium	ND	0.1000
	Silver	0.0017	0.0100
	Sodium	0.0448	1.0000
	Thallium	0.0185	0.1500
	Vanadium	ND	0.0500
	Zinc	ND	0.0600
	Molybdenum	ND	0.0500
CCB4-	Aluminum	0.0057	0.2000
	Antimony	ND	0.1000
	Arsenic	ND	0.0500
	Barium	0.0013	0.2000
	Beryllium	ND	0.0050
	Cadmium	0.0030	0.0050
	Calcium	0.0085	1.0000
	Chromium	0.0023	0.0100
	Copper	0.0018	0.0250
	Iron	ND	0.1000
	Lead	ND	0.0500
	Magnesium	0.0076	1.0000
	Manganese	ND	0.0150
	Nickel	0.0142	0.0400
	Potassium	0.0529	1.0000
	Selenium	ND	0.1000
	Silver	0.0028	0.0100
	Sodium	0.0398	1.0000
	Thallium	0.0109	0.1500
	Vanadium	0.0015	0.0500
	Zinc	ND	0.0600
	Molybdenum	ND	0.0500

Mountain States Analytical, Inc.
Daily QC Batching Data
Data Released for Reporting

Analysis Batch Number: ICPWA-09/24/96-010 -2
Test Identification : ICPWA-Metals by ICP Sequence : DATC268
Number of Samples : 14
Batch Data-Date/Time : 09/24/96 / 17:17:06

---------- Result Footnotes ----------
(2a) - Recovery is valid because sample conc. is >4x spike conc.
(1a) - RPD has no significance due to insignificant spikes.
(4a) - RPD is valid because Spike and Spike Duplicate are within method requirements.
(11) - Both Duplicate results are less than the LOQ.
(B) - Incomplete Homogenization
(3a) - Duplicate is valid because result is <5x the detection limit

Groups & Samples

13488-52765 13489-52767 13489-52768 13489-52769 13489-52770 13545-52930 13545-52931 13562-52998
13562-52999 13568-53016