3R - 316

REPORTS

DATE:
1997

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

April 15, 1997

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

RE: 1997 SAN JUAN BASIN ANNUAL GROUNDWATER REPORT

Dear Bill:

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

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

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

Sincerely,

Maureen Gannon
Project Manager

Attachment

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

97rptltr.doc

PNM 1997 San Juan Basin Groundwater Report
April 15, 1997

Prepared for:

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

Prepared by:

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

PNMGS Well Site: **Florence 44**

Groundwater Site Summary Report

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

Quarter/Year: 4/96 & 1/97

Operator: Amoco
Sec: 31 **Twn:** 30 **Rng:** 8 **Unit:** H
Canyon: Salvador, San Juan

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

Topo Map: previously submitted
Well Completion Diagram: Figures 1A & 1B
Site Map with Analysis: Figure 2
Groundwater Contour Map: Figure 3 (November 1996)
Groundwater Contour Map: Figure 4 (February 1996)
Groundwater Hydrograph: Figure 5
Full Suite - Groundwater Analysis: Table 1
Analytical Results: attached

Activities for Previous Two Quarters (Oct. - Dec. 1996 & Jan. - Mar. 1997):

Four monitoring wells were installed at the Florance 44 during the third and fourth quarters of 1996. Figures 1A and 1B provide monitoring well diagrams for the site. Installation of the down-gradient well, MW-4, was completed at approximately 50 feet below ground surface (BGS), considerably deeper than the groundwater levels in and around the former pit area. This well may not be completed within the same aquifer as the other three on site wells. Attempts to find groundwater at a shallower depth down-gradient of the former pit proved unsuccessful.

PNM performed quarterly groundwater sampling on November 8, 1996 and on February 7, 1997. Water level measurements were taken at all of the monitoring wells. PNM conducted groundwater sampling of each well for chemical analyses of benzene, toluene, ethylbenzene, and xylenes (BTEX). In addition, MW-1, located up-gradient of the former pit location, and MW-2, located in the source area, were sampled for Water Quality Control Commission (WQCC) metals (dissolved) and major cations/anions during the November 8 sampling event. MW-4 was also sampled for major cations/anions in an attempt to determine whether water qualities between MW-4 and other wells show similar characteristics. Sampling was performed in strict compliance with EPA protocol.

Samples were analyzed using the following methods:

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

Results:

Figure 1 is a site map of the Florance 44 and includes BTEX analytical results in groundwater. BTEX concentrations up-gradient and down-gradient of PNM's pit are below detection limits. In MW-2, BTEX concentrations rose during the last quarter and remain elevated above WQCC standards. Table 1 provides the full-suite of groundwater sampling results from the November 8 sampling event. Results of all metals analyses were below WQCC standards. In comparing the water quality between MW-4 and the two more up-gradient wells, MW-1 and MW-2, MW-4 contains higher sulfates but was not significantly different from the other two wells.

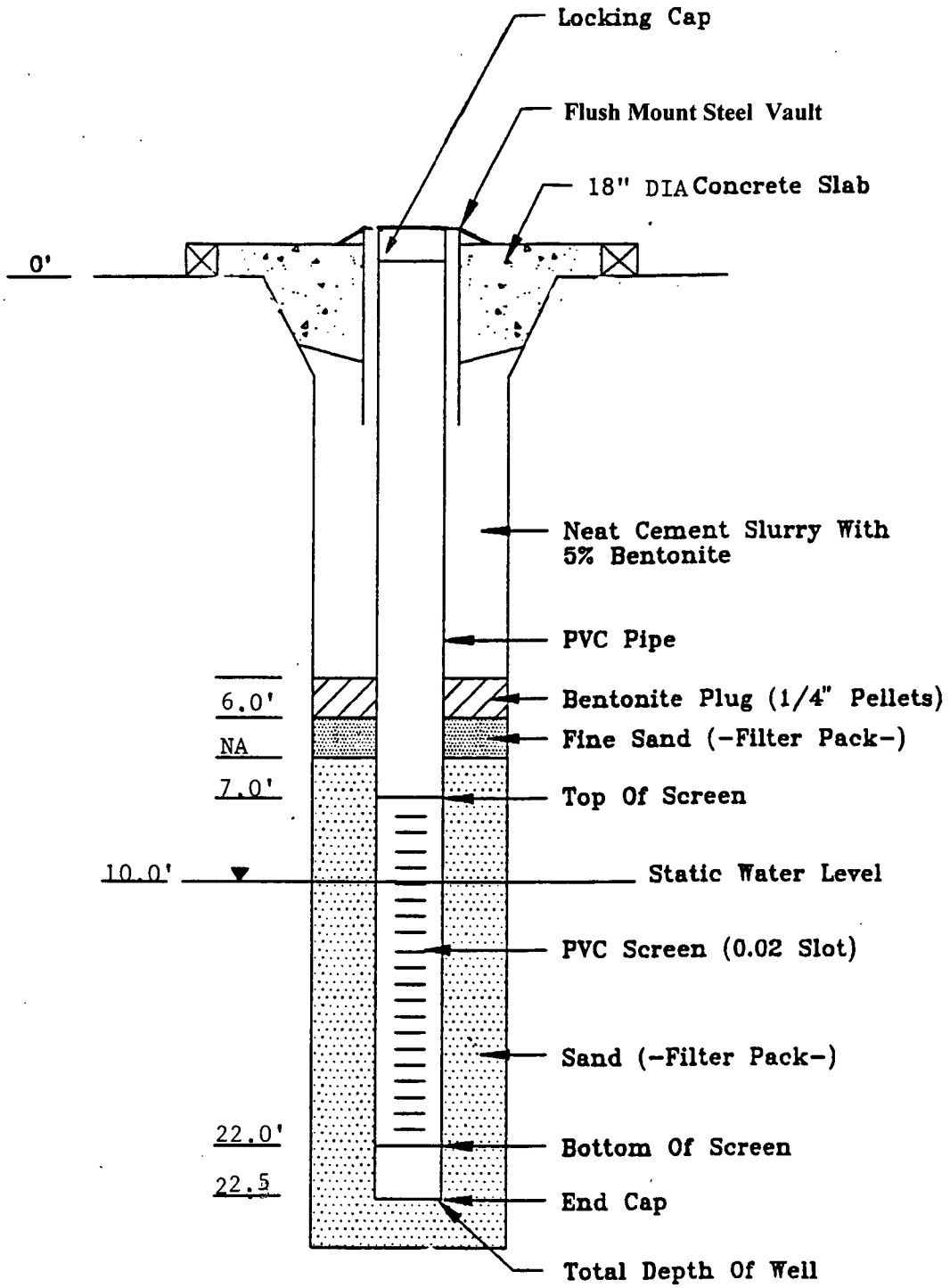
Figure(s) 2 and 3 are groundwater contour maps for the months of November 1996 and February 1997, respectively. Groundwater flow follows Salvador canyon, traveling from the southwest to the northeast direction. Figure 4 is the hydrograph (water level versus time) for the site. The site contains spring water from numerous sources above the location. Water levels have remained fairly constant over the last two calendar quarters.

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**

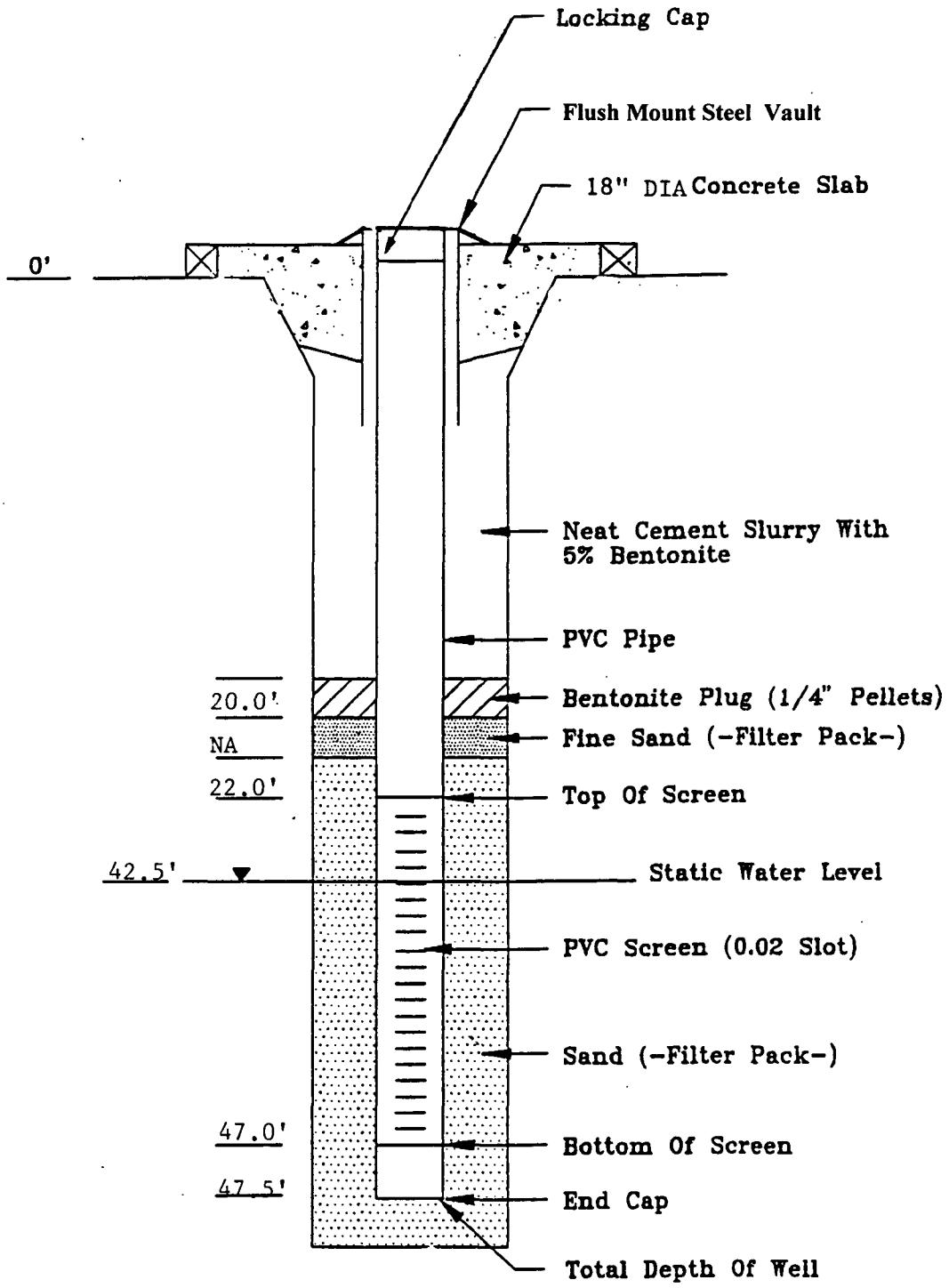
Further Action:

Contamination from other on site sources up-gradient of PNM's former pit location may be the cause of elevated BTEX levels in MW-2. During remedial activities, PNM documented areas of soil contamination up-gradient of MW-2 in the vicinity of the well head and to the southwest. PNM will continue to perform quarterly monitoring at the site. After the next quarterly sampling, we will evaluate if additional investigation is warranted to determine if further remediation is necessary.



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 1A Typical Well Completion Diagram



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 1B (MW-4)
Well Completion Diagram

Figure 2. Florance 44: Site Map With Analytical Results
(Concentrations in ppb)

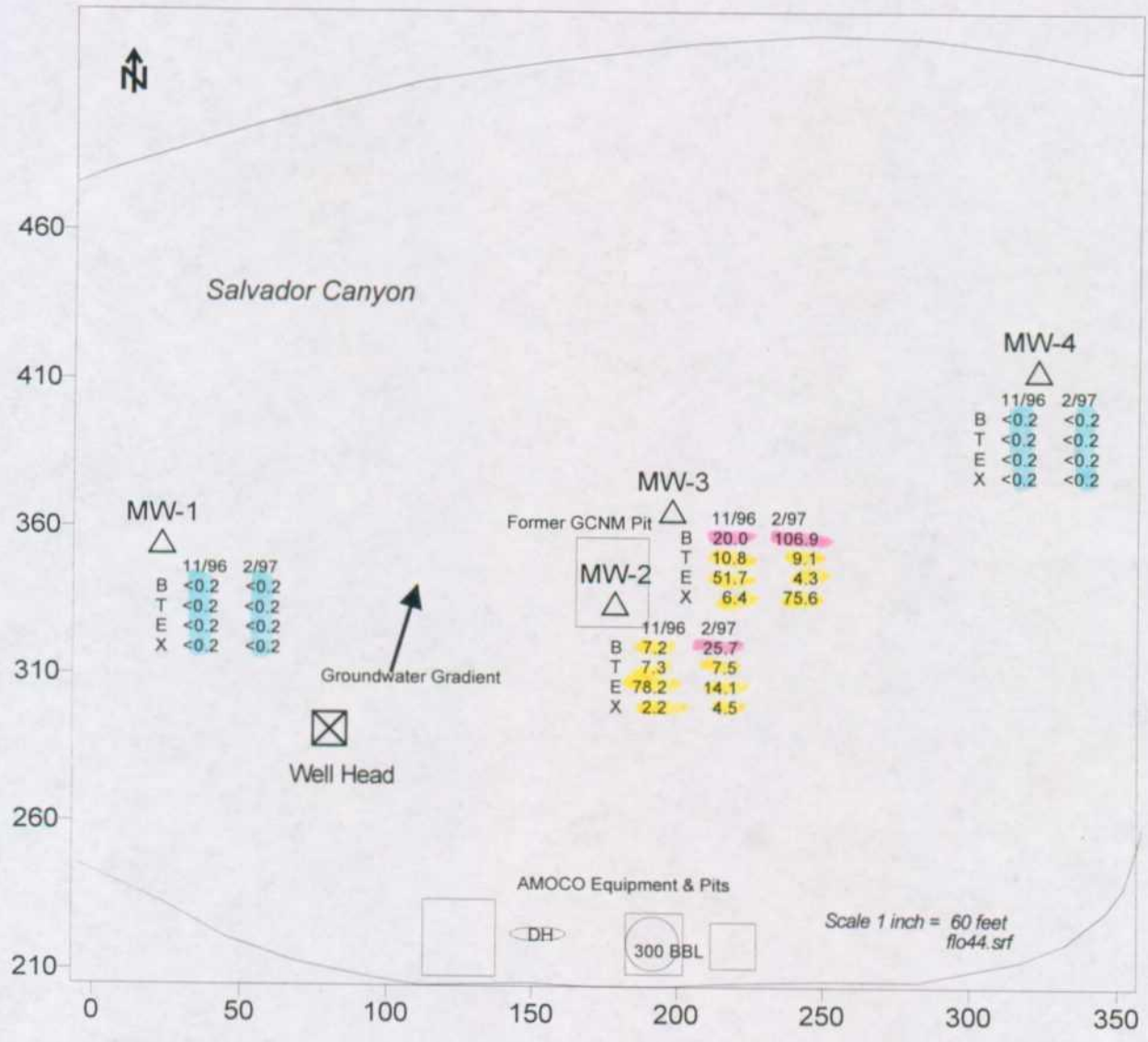


Figure 3. Florance 44 Groundwater Contour Map (November 1996)

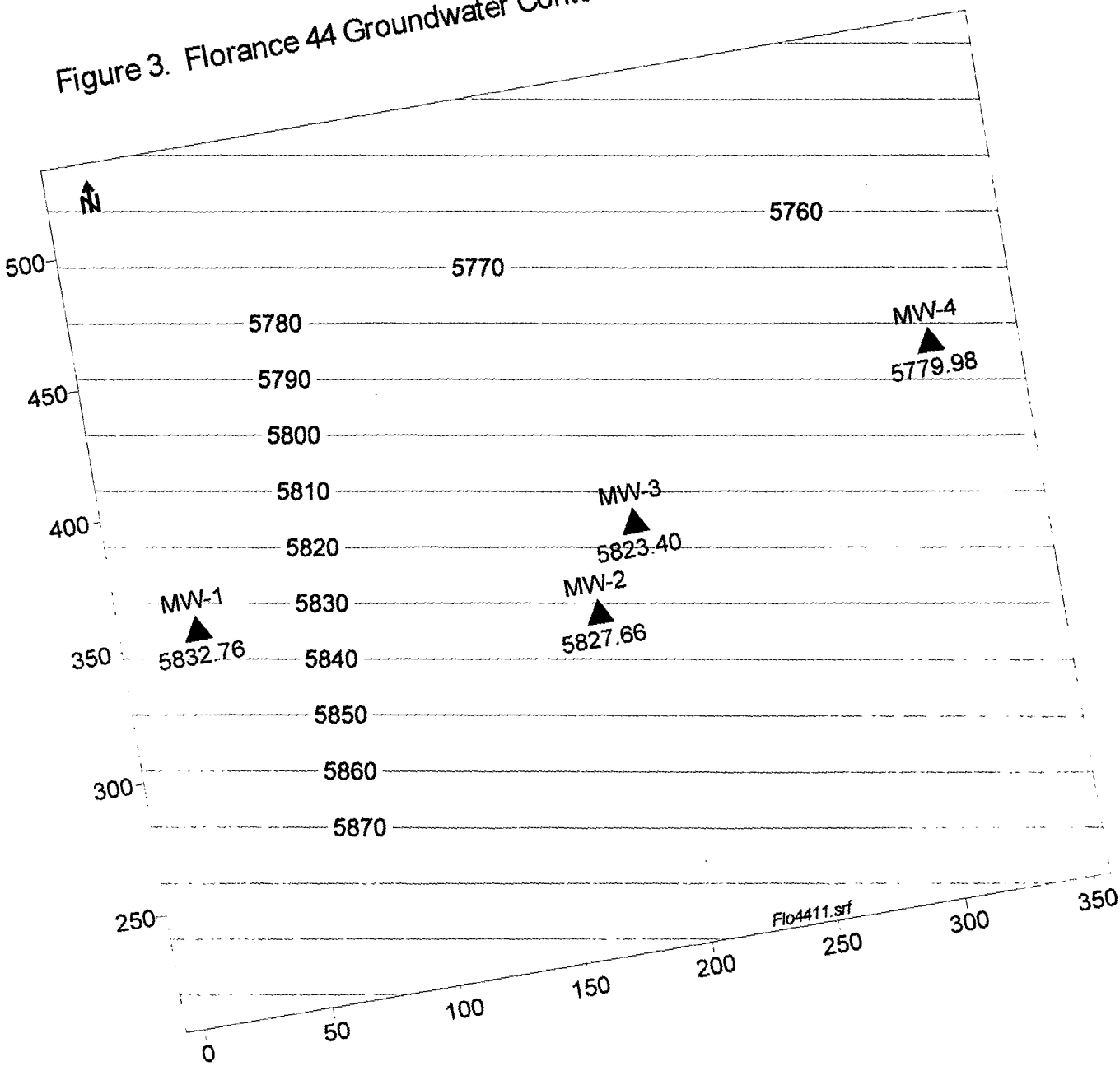


Figure 4. Florance 44 Groundwater Contour Map (February 1997)

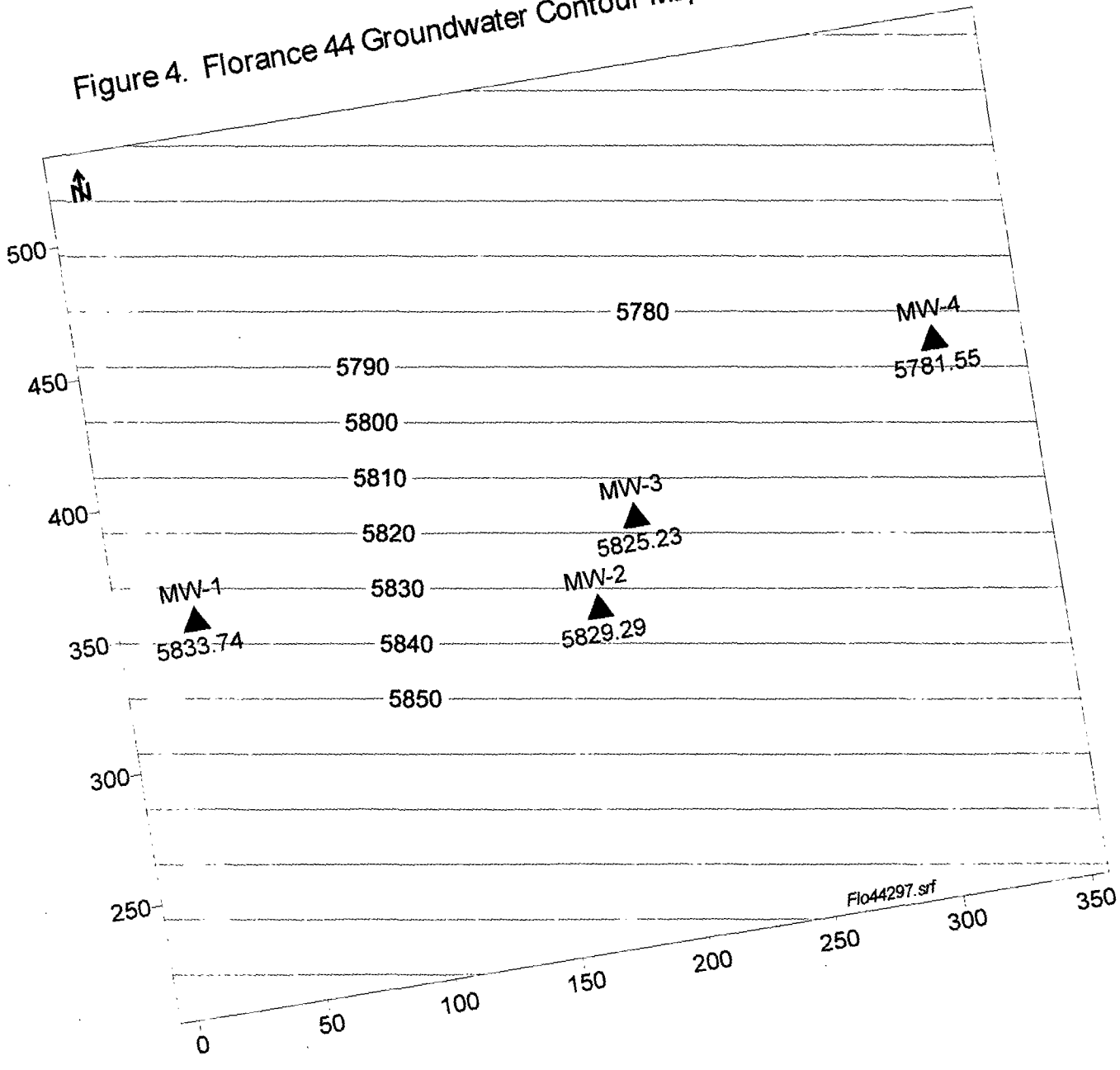
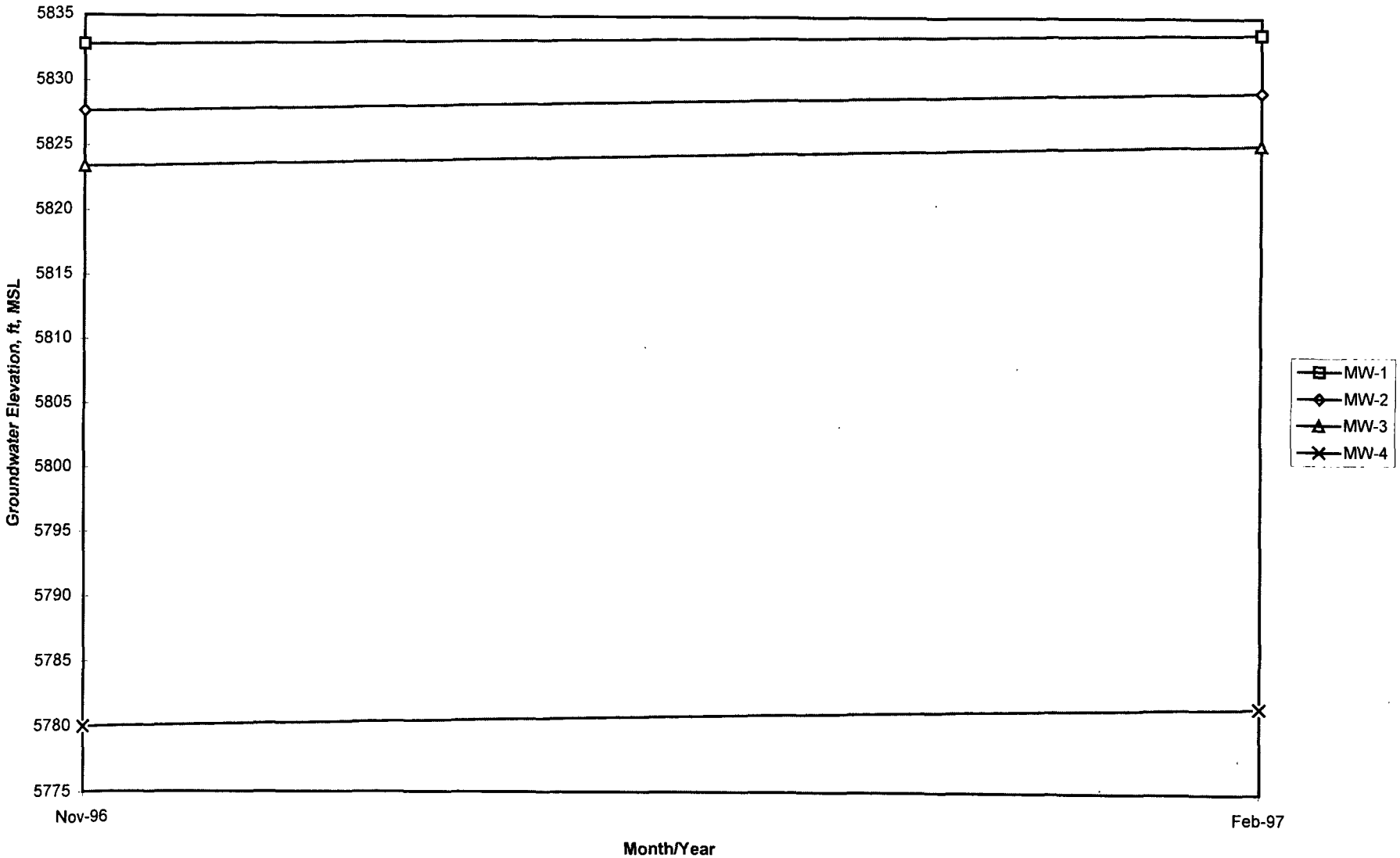


Figure 5. Florance 44 Hydrograph
(Time vs. Water Level)



flo44.xls

Table 1. Florance 44 GROUNDWATER SAMPLING RESULTS, mg/l (11/8/96)

Constituent	WQCC Stds.	MW-1	MW-2	MW-3	MW-4	MW-5 (*MW-2 duplicate*)
B	0.01	<0.0002	0.0072	0.0200	<0.0002	0.0068
T	0.75	<0.0002	0.0073	0.0108	<0.0002	0.0064
E	0.75	<0.0002	0.0782	0.0517	<0.0002	0.0759
X	0.62	<0.0002	0.0022	0.0064	<0.0002	0.0021
PAHs	0.03	NA	NA	NA	NA	NA
Metals						
As	0.1	<0.020	0.023	NA	NA	NA
Ba	1	0.055	0.148	NA	NA	NA
Cd	0.01	<0.003	<0.003	NA	NA	NA
Cr	0.05	<0.005	0.012	NA	NA	NA
Pb	0.05	<0.030	<0.030	NA	NA	NA
Se	0.05	<0.060	<0.060	NA	NA	NA
Ag	0.05	<0.003	<0.003	NA	NA	NA
Hg	0.002	<0.0001	<0.0001	NA	NA	NA
Cations/Anions						
Na	NA	232	192	NA	384	NA
Ca	NA	388	614	NA	578	NA
Mg	NA	94.5	135.0	NA	86.0	NA
K	NA	5.3	8.4	NA	11.1	NA
Cl	NA	46	37	NA	81	NA
SO4	NA	1606	1563	NA	2281	NA
CO3	NA	<1	<1	NA	<1	NA
HCO3	NA	264	1260	NA	369	NA
OH	NA	<1	<1	NA	<1	NA
Cation/Anion Balance						
Difference Cation-Anion	NA	1.68	3.92	NA	2.92	NA
Total Cation-Anion	NA	76.41	104.55	NA	108.73	NA
% Difference	NA	2.2	3.7	NA	2.7	NA
TDS, calc	NA	2635	3809	NA	3790	NA
TDS, meas	NA	2684	3592	NA	3650	NA
Hardness as CaCO3	NA	1358	2089	NA	1797	NA

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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OFF: (505) 325-5667

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-1556

AROMATIC VOLATILE ORGANICS

Attn:	*Denver Bearden*	*Date:*	14-Nov-96
Company:	*PNM Gas Services*	*COC No.:*	*5701*
Address:	*603 W. Elm*	*Sample No.:*	*12790*
City, State:	*Farmington, NM 87401*	*Job No.:*	*2-1000*

Project Name:	***PNM Gas Services - Florance 44***				
Project Location:	***9611081100; MW-1***				
Sampled by:	MS	Date:	8-Nov-96	Time:	11:00
Analyzed by:	DC	Date:	13-Nov-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:
Date: 11/14/96

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

AROMATIC VOLATILE ORGANICS

Attn:	*Denver Bearden*	*Date:*	14-Nov-96
Company:	*PNM Gas Services*	*COC No.:*	*5701*
Address:	*603 W. Elm*	*Sample No.:*	*12791*
City, State:	*Farmington, NM 87401*	*Job No.:*	*2-1000*

Project Name:	***PNM Gas Services - Florance 44***				
Project Location:	***9611081130; MW-2***				
Sampled by:	MS	Date:	8-Nov-96	Time:	11:30
Analyzed by:	DC	Date:	13-Nov-96		
Sample Matrix:	*Water*				

Laboratory Analysis

Parameter	*Result*	*Unit of Measure*	*Detection Limit*	*Unit of Measure*
Benzene	7.2	ug/L	0.2	ug/L
Toluene	7.3	ug/L	0.2	ug/L
Ethylbenzene	78.2	ug/L	0.2	ug/L
m,p-Xylene	1.9	ug/L	0.2	ug/L
o-Xylene	0.3	ug/L	0.2	ug/L
TOTAL	95.0	ug/L		

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

Approved by: Jan G
Date: 11/14/96

OFF: (505) 325-5667

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-1556

AROMATIC VOLATILE ORGANICS

Attn:	*Denver Bearden*	*Date:*	14-Nov-96
Company:	*PNM Gas Services*	*COC No.:*	*5701*
Address:	*603 W. Elm*	*Sample No.:*	*12792*
City, State:	*Farmington, NM 87401*	*Job No.:*	*2-1000*

Project Name:	***PNM Gas Services - Florance 44***				
Project Location:	***9611081200; MW-3***				
Sampled by:	MS	Date:	8-Nov-96	Time:	12:00
Analyzed by:	DC	Date:	13-Nov-96		
Sample Matrix:	*Water*				

Laboratory Analysis

Parameter	*Result*	*Unit of Measure*	*Detection Limit*	*Unit of Measure*
Benzene	20.0	ug/L	0.2	ug/L
Toluene	10.8	ug/L	0.2	ug/L
Ethylbenzene	51.7	ug/L	0.2	ug/L
m,p-Xylene	5.2	ug/L	0.2	ug/L
o-Xylene	1.2	ug/L	0.2	ug/L
TOTAL	88.9	ug/L		

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

Approved by:
Date: 11/14/96

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

AROMATIC VOLATILE ORGANICS

Attn:	*Denver Bearden*	*Date:*	14-Nov-96
Company:	*PNM Gas Services*	*COC No.:*	*5701*
Address:	*603 W. Elm*	*Sample No.:*	*12793*
City, State:	*Farmington, NM 87401*	*Job No.:*	*2-1000*

Project Name:	***PNM Gas Services - Florance 44***				
Project Location:	***9611081230; MW-4***				
Sampled by:	MS	Date:	8-Nov-96	Time:	12:30
Analyzed by:	DC	Date:	13-Nov-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:

Date: 11/14/96

OFF: (505) 325-5667

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-1556

AROMATIC VOLATILE ORGANICS

Attn:	*Denver Bearden*	*Date:*	14-Nov-96
Company:	*PNM Gas Services*	*COC No.:*	*5701*
Address:	*603 W. Elm*	*Sample No.:*	*12794*
City, State:	*Farmington, NM 87401*	*Job No.:*	*2-1000*

Project Name:	***PNM Gas Services - Florance 44***				
Project Location:	***9611081300; MW-5***				
Sampled by:	MS	Date:	8-Nov-96	Time:	13:00
Analyzed by:	DC	Date:	13-Nov-96		
Sample Matrix:	*Water*				

Laboratory Analysis

Parameter	*Result*	*Unit of Measure*	*Detection Limit*	*Unit of Measure*
Benzene	6.8	ug/L	0.2	ug/L
Toluene	6.4	ug/L	0.2	ug/L
Ethylbenzene	75.9	ug/L	0.2	ug/L
m,p-Xylene	1.9	ug/L	0.2	ug/L
o-Xylene	0.2	ug/L	0.2	ug/L
TOTAL	91.2	ug/L		

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

Approved by:
Date: 11/14/96

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

QUALITY ASSURANCE REPORT

for EPA Method 8020

Date Analyzed: 13-Nov-96

Internal QC No.: 0515-QC
Surrogate QC No.: 0516-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	20.0	0	15%
Toluene	ppb	20.0	20.6	3	15%
Ethylbenzene	ppb	20.0	21.0	5	15%
m,p-Xylene	ppb	40.0	41.3	3	15%
o-Xylene	ppb	20.0	20.9	4	15%

Matrix Spike

Parameter	*1- Percent Recovered*	*2 - Percent Recovered*	*Limit*	*%RSD*	*Limit*
Benzene	99	98	(39-150)	1	20%
Toluene	102	101	(46-148)	1	20%
Ethylbenzene	104	102	(32-160)	1	20%
m,p-Xylene	102	101	(35-145)	1	20%
o-Xylene	102	102	(35-145)	0	20%

Surrogate Recoveries

Laboratory Identification	*S1 Percent Recovered*	*S2 Percent Recovered*
Limit Percent Recovered	(70-130)	
12790-5701	98	
12791-5701	95	
12792-5701	94	
12793-5701	97	
12794-5701	95	

S1: Flourobenzene

OFF: (505) 325-5667

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	Denver Bearden	Date:	10-Dec-96
Company:	PNM Gas Services	COC No.:	5701
Address:	603 W. Elm	Sample ID:	12790
City, State:	Farmington, NM 87401	Job No.:	2-1000

Project Name:	PNM Gas Services - Florance 44				
Project Location:	9611081100; MW-1				
Sampled by:	MS	Date:	8-Nov-96	Time:	11:00
Analyzed by:	HR	Date:	10-Dec-96		

Laboratory Analysis

Parameter		Result	Unit of Measure		Result	Unit of Measure	
Cations							
Sodium	Na	232	mg/L		10.09	me/L	
Calcium	Ca	388	mg/L		19.36	me/L	
Magnesium	Mg	94.5	mg/L		7.78	me/L	
Potassium	K	5.3	mg/L		0.14	me/L	
Anions							
Chloride	Cl	46	mg/L		1.28	me/L	
Sulfate	SO4	1606	mg/L		33.44	me/L	
Carbonate	CO3 as CaCO3	<1	mg/L		<0.01	me/L	
Bicarbonate	HCO3 as CaCO3	264	mg/L		4.33	me/L	
Hydroxide	OH as CaCO3	<1	mg/L		<0.01	me/L	
Total Dissolved Solids Calculated, Sum of Cation/Anion		2635	mg/L				
Total Dissolved Solids Dried @ 180 C		2684	mg/L				
pH		7.25					
Conductivity @ 25 C		2950	uS/cm				
Total Hardness as CaCO3		1358	mg/L				

Cation-Anion Balance	
1.68	Difference Cation-Anion, me/L
76.41	Total Cation-Anion, me/L
2.2	% Difference Cation-Anion

Comments

Approved by:

Date: 12/10/96

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	*Denver Bearden*	Date:	10-Dec-96
Company:	*PNM Gas Services*	*COC No.:*	*5701*
Address:	*603 W. Elm*	*Sample ID:*	*12791*
City, State:	*Farmington, NM 87401*	*Job No.:*	*2-1000*

Project Name:	***PNM Gas Services - Florance 44***				
Project Location:	***9611081130; MW-2***				
Sampled by:	MS	Date:	8-Nov-96	Time:	11:30
Analyzed by:	HR	Date:	10-Dec-96		

Laboratory Analysis

Parameter		*Result*	*Unit of Measure*		*Result*	*Unit of Measure*	
Cations							
Sodium	*Na*	192	mg/L		8.35	me/L	
Calcium	*Ca*	614	mg/L		30.64	me/L	
Magnesium	*Mg*	135.0	mg/L		11.11	me/L	
Potassium	*K*	8.4	mg/L		0.21	me/L	
Anions							
Chloride	*Cl*	37	mg/L		1.04	me/L	
Sulfate	*SO4*	1563	mg/L		32.54	me/L	
Carbonate	*CO3 as CaCO3*	<1	mg/L		<0.01	me/L	
Bicarbonate	*HCO3 as CaCO3*	1260	mg/L		20.65	me/L	
Hydroxide	*OH as CaCO3*	<1	mg/L		<0.01	me/L	
Total Dissolved Solids Calculated, Sum of Cation/Anion		3809	mg/L				
Total Dissolved Solids Dried @ 180 C		3592	mg/L				
pH		6.75					
Conductivity @ 25 C		3890	uS/cm				
Total Hardness as CaCO3		2089	mg/L				

Cation-Anion Balance

3.92 *Difference Cation-Anion, me/L*

104.55 *Total Cation-Anion, me/L*

3.7 *% Difference Cation-Anion*

Comments

TDS, Dried @ 180C confirmed by duplicate analysis

TDS, Calc. confirmed by duplicate analysis of target parameters

Approved by: Dan S

Date: 12/10/96

OFF: (505) 325-5667

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	*Denver Bearden*	Date:	10-Dec-96
Company:	*PNM Gas Services*	*COC No.:*	*5701*
Address:	*603 W. Elm*	*Sample ID:*	*12793*
City, State:	*Farmington, NM 87401*	*Job No.:*	*2-1000*

Project Name:	***PNM Gas Services - Florance 44***				
Project Location:	***9611081230; MW-4***				
Sampled by:	MS	Date:	8-Nov-96	Time:	12:30
Analyzed by:	HR	Date:	10-Dec-96		

Laboratory Analysis

Parameter		*Result*	*Unit of Measure*		*Result*	*Unit of Measure*	
Cations							
Sodium	*Na*	384	mg/L		16.70	me/L	
Calcium	*Ca*	578	mg/L		28.84	me/L	
Magnesium	*Mg*	86.0	mg/L		7.08	me/L	
Potassium	*K*	11.1	mg/L		0.28	me/L	
Anions							
Chloride	*Cl*	81	mg/L		2.29	me/L	
Sulfate	*SO4*	2281	mg/L		47.49	me/L	
Carbonate	*CO3 as CaCO3*	<1	mg/L		<0.01	me/L	
Bicarbonate	*HCO3 as CaCO3*	369	mg/L		6.05	me/L	
Hydroxide	*OH as CaCO3*	<1	mg/L		<0.01	me/L	
Total Dissolved Solids Calculated, Sum of Cation/Anion		3790	mg/L				
Total Dissolved Solids Dried @ 180 C		3650	mg/L				
pH		7.51					
Conductivity @ 25 C		4060	uS/cm				
Total Hardness as CaCO3		1797	mg/L				

Cation-Anion Balance

2.92	*Difference Cation-Anion, me/L*
108.73	*Total Cation-Anion, me/L*
2.7	*% Difference Cation-Anion*

Comments

TDS, Dried @ 180C confirmed by duplicate analysis

TDS, Calc. confirmed by duplicate analyses of target parameters

Approved by:
Date: 12/10/96

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

QUALITY ASSURANCE REPORT

Cation/Anion Balance

Date: 10-Dec-96

Quality Control Sample

Parameter	*Laboratory Identification*	*True Value*	*Analyzed Value*	*Unit of Measure*	*% Diff*	*Limit % Diff*
Sodium, Na	0508-QC	3.60	3.69	mg/L	3	10
Calcium, Ca	0454-QC	0.78	0.81	mg/L	4	10
Magnesium, Mg	0462-QC	1.14	1.21	mg/L	6	10
Potassium, K	0508-QC	2.24	2.03	mg/L	-9	10
Chloride, Cl	0437-QC	50	48	mg/L	-5	10
Sulfate, SO4	0508-QC	116	128	mg/L	10	10
Alkalinity	0508-QC	174	185	mg/L	6	10
pH	0507-QC	9.05	9.21		2	10
Conductivity	0507-QC	1210	1172	uS/cm	-3	15
Total Dissolved Solids, 180C	0507-QC	905	884	uS/cm	-2	15

Matrix Spike

Parameter	*Laboratory Identification*	*Analyzed Value*	*Matrix Spike*	*Spike Value*	*Unit of Measure*	*Spike Recovery*
Sodium, Na	12793-5701	1.86	0.50	2.36	mg/L	100%
Calcium, Ca	12793-5701	1.54	0.50	2.13	mg/L	104%
Magnesium, Mg	12793-5701	0.94	0.50	1.35	mg/L	94%
Potassium, K	12793-5701	0.56	0.50	1.06	mg/L	100%

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

(nc)

Mountain States Analytical

December 3, 1996

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

Reference:
Project: Florance 44 Samples
Project No.: PNM1002
MSAI Group: 14358

Dear Mr. Cox:

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

12790-5701 Dissolved	12791-5701 Dissolved

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

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

Analytical Report

Mountain States Analytical
The Quality Solution

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

Attn: Mr. David Cox
Project: Florance 44 Samples

MSAI Sample: 55710
MSAI Group: 14358
Date Reported: 12/03/96
Discard Date: 01/02/97
Date Submitted: 11/15/96
Date Sampled: 11/08/96
Collected by:
Purchase Order: 5701
Project No.: PNM1002

Sample ID: 12790-5701 Dissolved MW-1 (PC)
Matrix: Waste Water

Test	Analysis	Results as Received	Units	Method Detection Limit
0246K	Barium by ICP, 200.7 Method: EPA 200.7	0.055	mg/l	0.003
0249N	Cadmium by ICP, 200.7 Method: EPA 200.7	ND	mg/l	0.003
0251N	Chromium by ICP, 200.7 Method: EPA 200.7	ND	mg/l	0.005
0255L	Lead by ICP, 200.7 Method: EPA/CLP 200.7	ND	mg/l	0.03
0266M	Silver by ICP, 200.7 Method: EPA 200.7	ND	mg/l	0.003
0392K	Flame/ICP Prep., 200.7, w/ww Method: SW-846 3005A	Complete		
0392M	Mercury Prep CVAA, Waters Method: SW-846 7470	Complete		
1045N	Arsenic by ICP, 200.7 Method: EPA 200.7	ND	mg/l	0.020
1468	Selenium by ICP, 200.7 Method: EPA 200.7	ND	mg/l	0.06
8259	Mercury by CVAA, w/ww, EPA 245.1 Method: EPA 245.1	ND	mg/l	0.0001
0939	Sample Filtering Method: MSAI IN-HOUSE	Complete		

Mountain States Analytical
The Quality Solution

On Site Technologies, Ltd.

MSAI Sample: 55710
MSAI Group: 14358

Sample ID: 12790-5701 Dissolved

Respectfully Submitted,
Reviewed and Approved by:

Rolf E. Larsen
Project Manager

1645 West 2200 South, Salt Lake City, Utah 84119-1456 (801) 973-0050 1-800-973-MSAI FAX (801) 972-6278

Analytical Report

Mountain States Analytical
The Quality Solution

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

Attn: Mr. David Cox
Project: Florance 44 Samples

Sample ID: 12791-5701 Dissolved MW-2 (12)
Matrix: Waste Water

MSAI Sample: 55711
MSAI Group: 14358
Date Reported: 12/03/96
Discard Date: 01/02/97
Date Submitted: 11/15/96
Date Sampled: 11/08/96
Collected by:
Purchase Order: 5701
Project No.: PNM1002

Test	Analysis	Results as Received	Units	Method Detection Limit
0246K	Barium by ICP, 200.7 Method: EPA 200.7	0.148	mg/l	0.003
0249N	Cadmium by ICP, 200.7 Method: EPA 200.7	ND	mg/l	0.003
0251N	Chromium by ICP, 200.7 Method: EPA 200.7	0.012	mg/l	0.005
)255L	Lead by ICP, 200.7 Method: EPA/CLP 200.7	ND	mg/l	0.03
)266M	Silver by ICP, 200.7 Method: EPA 200.7	ND	mg/l	0.003
)392K	Flame/ICP Prep., 200.7, w/ww Method: SW-846 3005A	Complete		
)392M	Mercury Prep CVAA, Waters Method: SW-846 7470	Complete		
045N	Arsenic by ICP, 200.7 Method: EPA 200.7	0.023	mg/l	0.020
468	Selenium by ICP, 200.7 Method: EPA 200.7	ND	mg/l	0.06
259	Mercury by CVAA, w/ww, EPA 245.1 Method: EPA 245.1	ND	mg/l	0.0001
939	Sample Filtering Method: MSAI IN-HOUSE	Complete		

Mountain States Analytical
The Quality Solution

On Site Technologies, Ltd.

MSAI Sample: 55711
MSAI Group: 14358

Sample ID: 12791-5701 Dissolved

Respectfully Submitted,
Reviewed and Approved by:

Rolf E. Larsen
Project Manager

1645 West 2200 South, Salt Lake City, Utah 84119-1456 (801) 973-0050 1-800-973-MSAI FAX (801) 972-6278

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

12/02/96
16:54:10
Group: 14358

Analysis Batch Number: 8259 -11/15/96-107 -1
Test Identification : 8259 -Mercury by CVAA, w/ww, EPA 245.1 Sequence : 0259T-1
Number of Samples : 9
Batch Data-Date/Time : 11/18/96 / 07:40:41

BLANK#	ANALYTE	CONC FOUND #	CONC LIMIT
PBW1-749	Mercury	-0.0100	0.5000
PBW2-749-2	Mercury	-0.0200	0.5000

SPIKE

SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	CONC SPIKE	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
14356-55697	Mercury	1.0000	0.3200	1.2200	90.0	80.0	120.0

MSD

SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	RESULT 2	%REC2 #	QC LIMITS LOWER	QC LIMITS UPPER	RPD #	LIMIT
14356-55697	Mercury	1.0000	0.3200	1.2500	93.0	80.0	120.0	3.3	20.0

DUPLICATE

SAMPLE#	ANALYTE	RESULT 1	RESULT 2	RPD #	LIMIT	DILUTION
14356-55697	Mercury	0.3200	0.1500	72.3(11)	20.0	1.00

CONTROL

SAMPLE#	ANALYTE	CONC FOUND	CONC KNOWN	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
LCSW-749	Mercury	2.5700	2.5000	102.8	80.0	120.0

CCV #	ANALYTE	TRUE VALUE	BATCH READ	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
ICV-	Mercury	3.0000	3.1800	106.0	80.0	120.0
CCV--2	Mercury	5.0000	4.9400	98.8	80.0	120.0
CCV--3	Mercury	5.0000	4.8300	96.6	80.0	120.0
CCV--4	Mercury	5.0000	4.7800	95.6	80.0	120.0
CCV--5	Mercury	5.0000	4.8100	96.2	80.0	120.0

CCB#	ANALYTE	CONC FOUND #	CONC LIMIT
ICB-	Mercury	-0.0700	0.5000
CCB-	Mercury	0.0100	0.5000
CCB-	Mercury	-0.0100	0.5000
CCB-	Mercury	0.0600	0.5000
CCB-	Mercury	0.0800	0.5000

---------- Result Footnotes ----------
(11) - Both Duplicate results are less than the LOQ.

Groups & Samples

14298-55474 14320-55577 14340-55668 14351-55692 14352-55693 14353-55694 14354-55695 14356-55697
14358-55710 14358-55711

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

12/02/96
16:54:14
Group: 1435S

Analysis Batch Number: ICPWA-11/21/96-001 -1
Test Identification : ICPWA-Metals by ICP
Number of Samples : 17
Batch Data-Date/Time : 11/22/96 / 11:51:33

Sequence : DATA326

BLANK#	ANALYTE	CONC FOUND #	CONC LIMIT
PBW1-752	Antimony	0.0095	0.1000
	Cadmium	0.0034	0.0050
	Lead	0.0133	0.0500
PBW2-752-2	Antimony	ND	0.1000
	Cadmium	0.0004	0.0050
	Lead	0.0088	0.0500

SPIKE

SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	CONC SPIKE	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
14351-55692	Antimony	0.5000	-0.0199	0.4618	96.3	80.0	120.0
	Cadmium	0.0500	0.0014	0.0529	103.0	80.0	120.0
	Lead	0.5000	0.0154	0.5220	101.3	80.0	120.0

MSD

SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	RESULT 2	%REC2 #	QC LIMITS LOWER	QC LIMITS UPPER	RPD #	LIMIT
14351-55692	Antimony	0.5000	-0.0199	0.5114	106.3	80.0	120.0	9.9	20.0
	Cadmium	0.0500	0.0014	0.0564	110.0	80.0	120.0	6.6	20.0
	Lead	0.5000	0.0154	0.5326	103.4	80.0	120.0	2.1	20.0

DUPLICATE

SAMPLE#	ANALYTE	RESULT 1	RESULT 2	RPD #	LIMIT	DILUTION
14351-55692	Antimony	-0.0199	0.0000	200.0(11)	20.0	1.00
	Cadmium	0.0014	0.0001	173.3(11)	20.0	1.00
	Lead	0.0154	0.0053	97.6(11)	20.0	1.00

CONTROL

SAMPLE#	ANALYTE	CONC FOUND	CONC KNOWN	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
LCSW-752	Antimony	0.4935	0.5000	98.7	80.0	120.0
	Cadmium	0.0512	0.0500	102.4	80.0	120.0
	Lead	0.5253	0.5000	105.1	80.0	120.0
LCSW-752-2	Antimony	0.4850	0.5000	97.0	80.0	120.0
	Cadmium	0.0532	0.0500	106.4	80.0	120.0
	Lead	0.5207	0.5000	104.1	80.0	120.0

CCV #	ANALYTE	TRUE VALUE	BATCH READ	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
CCV-	Antimony	4.0000	3.9777	99.4	90.0	110.0
	Cadmium	4.0000	3.8999	97.5	90.0	110.0
	Lead	20.0000	19.2843	96.4	90.0	110.0
CCV1--2	Antimony	4.0000	3.9912	99.8	90.0	110.0
	Cadmium	4.0000	3.9147	97.9	90.0	110.0
	Lead	20.0000	19.2420	96.2	90.0	110.0
CCV2--3	Antimony	4.0000	3.9996	100.0	90.0	110.0
	Cadmium	4.0000	4.0272	100.7	90.0	110.0
	Lead	20.0000	19.6724	98.4	90.0	110.0
CCV3--4	Antimony	4.0000	4.1169	102.9	90.0	110.0
	Cadmium	4.0000	4.1585	104.0	90.0	110.0
	Lead	20.0000	20.0524	100.3	90.0	110.0
CCV4--5	Antimony	4.0000	4.0437	101.1	90.0	110.0
	Cadmium	4.0000	4.0251	100.6	90.0	110.0

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

12/02/96
16:54:15
Group: 14358

Analysis Batch Number: ICPWA-11/21/96-001 -1
Test Identification : ICPWA-Metals by ICP
Number of Samples : 17
Batch Data-Date/Time : 11/22/96 / 11:51:33

Sequence : DATA326

CCV #	ANALYTE	TRUE VALUE	BATCH READ	% REC	#	QC LIMITS LOWER	QC LIMITS UPPER
CCV4--5	Lead	20.0000	19.6312	98.2		90.0	110.0

CCB#	ANALYTE	CONC FOUND	#	CONC LIMIT
ICB-	Antimony	ND		0.1000
	Cadmium	0.0009		0.0050
	Lead	0.0343		0.0500
CCB-1	Antimony	0.0001		0.1000
	Cadmium	ND		0.0050
	Lead	0.0112		0.0500
CCB2-	Antimony	ND		0.1000
	Cadmium	0.0040		0.0050
	Lead	0.0193		0.0500
CCB3-	Antimony	ND		0.1000
	Cadmium	0.0020		0.0050
	Lead	0.0061		0.0500
CCB4-	Antimony	ND		0.1000
	Cadmium	ND		0.0050
	Lead	0.0142		0.0500

---------- Result Footnotes ----------
(11) - Both Duplicate results are less than the LOQ.

Groups & Samples

14277-55415 14279-55417 14298-55474 14320-55577 14339-55661 14339-55662 14339-55663 14339-55664
14339-55665 14340-55668 14345-55674 14351-55692 14352-55693 14353-55694 14354-55695 14358-55710
14358-55711

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

12/02/96
16:54:18
Group: 14358

Analysis Batch Number: ICPWA-11/21/96-001 -2
Test Identification : ICPWA-Metals by ICP
Number of Samples : 17
Batch Data-Date/Time : 11/22/96 / 12:02:42

Sequence : DATB326

BLANK#	ANALYTE	CONC FOUND #	CONC LIMIT
PBW1-752	Arsenic	0.0063	0.0500
	Beryllium	ND	0.0050
	Chromium	ND	0.0100
	Copper	0.0001	0.0250
	Nickel	ND	0.0400
	Selenium	0.0284	0.1000
	Silver	0.0001	0.0100
	Molybdenum	ND	0.0500
PBW2-752-2	Arsenic	0.0078	0.0500
	Beryllium	ND	0.0050
	Chromium	0.0009	0.0100
	Copper	0.0011	0.0250
	Nickel	ND	0.0400
	Selenium	0.0597	0.1000
	Silver	0.0017	0.0100
	Molybdenum	ND	0.0500

SPIKE

SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	CONC SPIKE	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
14351-55692	Arsenic	2.0000	0.0208	2.1046	104.2	80.0	120.0
	Beryllium	0.0500	0.0000	0.0523	104.6	80.0	120.0
	Chromium	0.2000	0.0036	0.2095	103.0	80.0	120.0
	Copper	0.2500	0.0703	0.3291	103.5	80.0	120.0
	Nickel	0.5000	0.0011	0.5104	101.9	80.0	120.0
	Selenium	2.0000	0.0237	2.0265	100.1	80.0	120.0
	Silver	0.0500	-0.0012	0.0504	103.2	80.0	120.0
	Molybdenum	0.5000	7.5615	8.1875	125.2(2a)	80.0	120.0

MSD

SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	RESULT 2	%REC2 #	QC LIMITS LOWER	QC LIMITS UPPER	RPD #	LIMIT
14351-55692	Arsenic	2.0000	0.0208	2.1428	106.1	80.0	120.0	1.8	20.0
	Beryllium	0.0500	0.0000	0.0533	106.6	80.0	120.0	1.9	20.0
	Chromium	0.2000	0.0036	0.2136	105.0	80.0	120.0	1.9	20.0
	Copper	0.2500	0.0703	0.3391	107.5	80.0	120.0	3.8	20.0
	Nickel	0.5000	0.0011	0.5246	104.7	80.0	120.0	2.7	20.0
	Selenium	2.0000	0.0237	2.1226	104.9	80.0	120.0	4.7	20.0
	Silver	0.0500	-0.0012	0.0505	103.4	80.0	120.0	0.2	20.0
	Molybdenum	0.5000	7.5615	8.2231	132.3(2a)	80.0	120.0	5.5	20.0

)UPLICATE

SAMPLE#	ANALYTE	RESULT 1	RESULT 2	RPD #	LIMIT	DILUTION
14351-55692	Arsenic	0.0208	0.0183	12.8	20.0	1.00
	Beryllium	0.0000	0.0000	0.0	20.0	1.00
	Chromium	0.0036	0.0011	106.4(11)	20.0	1.00
	Copper	0.0703	0.0881	22.5(3a)	20.0	1.00
	Nickel	0.0011	0.0078	150.6(11)	20.0	1.00
	Selenium	0.0237	0.0004	193.4(11)	20.0	1.00
	Silver	-0.0012	0.0000	200.0(11)	20.0	1.00
	Molybdenum	7.5615	7.5433	0.2	20.0	1.00

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

12/02/96
16:54:19
Group: 14358

Analysis Batch Number: ICPWA-11/21/96-001 -2
Test Identification : ICPWA-Metals by ICP
Number of Samples : 17
Batch Data-Date/Time : 11/22/96 / 12:02:42

Sequence : DATB326

CONTROL SAMPLE#	ANALYTE	CONC FOUND	CONC KNOWN	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
Q.C.-Std	Arsenic	1.0365	1.0000	103.7	95.0	105.0
	Beryllium	1.0101	1.0000	101.0	95.0	105.0
	Chromium	1.0300	1.0000	103.0	95.0	105.0
	Copper	1.0223	1.0000	102.2	95.0	105.0
	Nickel	1.0212	1.0000	102.1	95.0	105.0
	Selenium	1.0265	1.0000	102.7	95.0	105.0
	Silver	1.0125	1.0000	101.3	95.0	105.0
	Molybdenum	1.0445	1.0000	104.5	95.0	105.0
LCSW-752-2	Arsenic	2.0554	2.0000	102.8	80.0	120.0
	Beryllium	0.0510	0.0500	102.0	80.0	120.0
	Chromium	0.2015	0.2000	100.8	80.0	120.0
	Copper	0.2536	0.2500	101.4	80.0	120.0
	Nickel	0.5148	0.5000	103.0	80.0	120.0
	Selenium	2.0008	2.0000	100.0	80.0	120.0
	Silver	0.0498	0.0500	99.6	80.0	120.0
	Molybdenum	0.5201	0.5000	104.0	80.0	120.0

CCV #	ANALYTE	TRUE VALUE	BATCH READ	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
ICV-	Arsenic	2.0000	2.0014	100.1	90.0	110.0
	Beryllium	0.4000	0.3955	98.9	90.0	110.0
	Chromium	4.0000	3.9057	97.6	90.0	110.0
	Copper	4.0000	3.8245	95.6	90.0	110.0
	Nickel	8.0000	7.6857	96.1	90.0	110.0
	Selenium	2.0000	1.9818	99.1	90.0	110.0
	Silver	0.4000	0.4008	100.2	90.0	110.0
	Molybdenum	20.0000	19.3258	96.6	90.0	110.0
CCV1--2	Arsenic	2.0000	2.0160	100.8	90.0	110.0
	Beryllium	0.4000	0.4068	101.7	90.0	110.0
	Chromium	4.0000	4.0077	100.2	90.0	110.0
	Copper	4.0000	3.9411	98.5	90.0	110.0
	Nickel	8.0000	7.8774	98.5	90.0	110.0
	Selenium	2.0000	2.0099	100.5	90.0	110.0
	Silver	0.4000	0.4093	102.3	90.0	110.0
	Molybdenum	20.0000	19.9425	99.7	90.0	110.0
CCV2--3	Arsenic	2.0000	1.9972	99.9	90.0	110.0
	Beryllium	0.4000	0.4001	100.0	90.0	110.0
	Chromium	4.0000	3.9531	98.8	90.0	110.0
	Copper	4.0000	3.8675	96.7	90.0	110.0
	Nickel	8.0000	7.7844	97.3	90.0	110.0
	Selenium	2.0000	1.9833	99.2	90.0	110.0
	Silver	0.4000	0.4022	100.5	90.0	110.0
	Molybdenum	20.0000	19.6376	98.2	90.0	110.0
CCV3--4	Arsenic	2.0000	2.0352	101.8	90.0	110.0
	Beryllium	0.4000	0.4100	102.5	90.0	110.0
	Chromium	4.0000	3.9997	100.0	90.0	110.0
	Copper	4.0000	3.9964	99.9	90.0	110.0
	Nickel	8.0000	7.8664	98.3	90.0	110.0
	Selenium	2.0000	2.0121	100.6	90.0	110.0

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

12/02/96
16:54:20
Group: 14358

Analysis Batch Number: ICPWA-11/21/96-001 -2
Test Identification : ICPWA-Metals by ICP
Number of Samples : 17
Batch Data-Date/Time : 11/22/96 / 12:02:42

Sequence : DATB326

CCV #	ANALYTE	TRUE VALUE	BATCH READ	% REC	#	QC LIMITS LOWER	QC LIMITS UPPER
CCV3--4	Silver	0.4000	0.4092	102.3		90.0	110.0
	Molybdenum	20.0000	19.9377	99.7		90.0	110.0
CCV4--5	Arsenic	2.0000	2.0465	102.3		90.0	110.0
	Beryllium	0.4000	0.4097	102.4		90.0	110.0
	Chromium	4.0000	4.0416	101.0		90.0	110.0
	Copper	4.0000	3.9593	99.0		90.0	110.0
	Nickel	8.0000	7.9730	99.7		90.0	110.0
	Selenium	2.0000	2.0821	104.1		90.0	110.0
	Silver	0.4000	0.4127	103.2		90.0	110.0
	Molybdenum	20.0000	20.2537	101.3		90.0	110.0

CCB#	ANALYTE	CONC FOUND	#	CONC LIMIT
ICB-	Arsenic	0.0145		0.0500
	Beryllium	0.0001		0.0050
	Chromium	ND		0.0100
	Copper	ND		0.0250
	Nickel	ND		0.0400
	Selenium	0.0165		0.1000
	Silver	ND		0.0100
	Molybdenum	0.0053		0.0500
CCB1-	Arsenic	0.0105		0.0500
	Beryllium	0.0002		0.0050
	Chromium	ND		0.0100
	Copper	ND		0.0250
	Nickel	ND		0.0400
	Selenium	ND		0.1000
	Silver	0.0002		0.0100
	Molybdenum	0.0071		0.0500
CCB2-	Arsenic	0.0126		0.0500
	Beryllium	ND		0.0050
	Chromium	ND		0.0100
	Copper	ND		0.0250
	Nickel	0.0002		0.0400
	Selenium	ND		0.1000
	Silver	ND		0.0100
	Molybdenum	ND		0.0500
CCB3-	Arsenic	0.0159		0.0500
	Beryllium	0.0002		0.0050
	Chromium	ND		0.0100
	Copper	0.0018		0.0250
	Nickel	ND		0.0400
	Selenium	0.0221		0.1000
	Silver	0.0008		0.0100
	Molybdenum	0.0080		0.0500
CCB4-	Arsenic	0.0115		0.0500
	Beryllium	ND		0.0050
	Chromium	ND		0.0100
	Copper	ND		0.0250
	Nickel	0.0082		0.0400

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

12/02/96
16:54:21
Group: 14358

Analysis Batch Number: ICPWA-11/21/96-001 -2
Test Identification : ICPWA-Metals by ICP
Sequence : DATB326
Number of Samples : 17
Batch Data-Date/Time : 11/22/96 / 12:02:42

CCB#	ANALYTE	CONC FOUND #	CONC LIMIT
CCB4-	Selenium	0.0077	0.1000
	Silver	ND	0.0100
	Molybdenum	0.0053	0.0500

---------- Result Footnotes ----------
(2a) - Recovery is valid because sample conc. is >4x spike conc.
(11) - Both Duplicate results are less than the LOQ.
(3a) - Duplicate is valid because result is <5x the detection limit

Groups & Samples

14277-55415	14279-55417	14298-55474	14320-55577	14339-55661	14339-55662	14339-55663	14339-55664
14339-55665	14340-55668	14345-55674	14351-55692	14352-55693	14353-55694	14354-55695	14358-55710
14358-55711							

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

12/02/96
16:54:24
Group: 14358

Analysis Batch Number: ICPWA-11/27/96-001 -1
Test Identification : ICPWA-Metals by ICP
Number of Samples : 17
Batch Data-Date/Time : 11/27/96 / 16:47:10

Sequence : DATB332

BLANK#	ANALYTE	CONC FOUND #	CONC LIMIT
PBW1-752	Barium	0.0001	0.2000
PBW2-752-2	Barium	0.0004	0.2000

SPIKE

SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	CONC SPIKE	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
14351-55692	Barium	2.0000	0.0784	2.1844	105.3	80.0	120.0

MSD

SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	RESULT 2	%REC2 #	QC LIMITS LOWER	QC LIMITS UPPER	RPD #	LIMIT
14351-55692	Barium	2.0000	0.0784	2.2580	109.0	80.0	120.0	3.5	20.0

DUPLICATE

SAMPLE#	ANALYTE	RESULT 1	RESULT 2	RPD #	LIMIT	DILUTION
14351-55692	Barium	0.0784	0.0751	4.3	20.0	1.00

CONTROL

SAMPLE#	ANALYTE	CONC FOUND	CONC KNOWN	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
Q.C.-Std	Barium	0.9627	1.0000	96.3	95.0	105.0
LCSW-752-2	Barium	2.1037	2.0000	105.2	80.0	120.0

CCV #	ANALYTE	TRUE VALUE	BATCH READ	% REC #	QC LIMITS LOWER	QC LIMITS UPPER
ICV-	Barium	4.0000	3.8639	96.6	90.0	110.0
CCV1--2	Barium	4.0000	3.8092	95.2	90.0	110.0
CCV2--3	Barium	4.0000	3.8255	95.6	90.0	110.0
CCV3--4	Barium	4.0000	3.8678	96.7	90.0	110.0
CCV4--5	Barium	4.0000	3.8283	95.7	90.0	110.0

CCB#	ANALYTE	CONC FOUND #	CONC LIMIT
CCB-	Barium	0.0009	0.2000
CCB1-	Barium	0.0013	0.2000
CCB2-	Barium	0.0004	0.2000
CCB3-	Barium	0.0008	0.2000
CCB4-	Barium	0.0009	0.2000

Groups & Samples

14277-55415 14279-55417 14298-55474 14320-55577 14339-55661 14339-55662 14339-55663 14339-55664
14339-55665 14340-55668 14345-55674 14351-55692 14352-55693 14353-55694 14354-55695 14358-55710
14358-55711

1-G1

CHAIN OF COUSTODY RECORD

6188

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

Date: 11/14/96

Page 1 of 1

Purchase Order No.: 5701 Job No. PNM1002

SEND INVOICE TO
Name: ACCOUNTS PAYABLE
Company: ON SITE 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
City, State, Zip: FARMINGTON, NM 87401
Telephone No. 505-325-2432 Telefax No. 505-325-6256

Sampling Location: FLORANCE 44

Sampler:

ANALYSIS REQUESTED

8°C wet

SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	MATRIX	PRES.	Number of Containers	RCRA METALS (DISSOLVED)								LAB ID
FLORANCE 44 MW-1 ; 9611081100	11/8/96	1100	H_2O	—	1	✓								12790-5701
FLORANCE 44 MW-2 ; 9611081130	11/8/96	1130	↓	—	1	✓								12791-5701

Relinquished by:	Date/Time	Received by:	Date/Time
[signature]	11/8/96 1600	Nichole Mayhew	11/15/96 1045

Method of Shipment:

Authorized by: [signature] Date 11/8/96
(Client Signature Must Accompany Request)

Rush | 24-48 Hours | 10 Working Days

Special Instructions:
* PLEASE ANALYZE AS TO ATTAIN DETECTION LIMITS PER ATTACHMENT

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

CHAIN OF CUSTODY RECORD

5701

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

Date: 11/18/96

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 44

Sampler: Mark Sikelianos

ANALYSIS REQUESTED

SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	MATRIX	PRES.	Number of Containers	BTEX 8020	WQCC	Metals Dissolved not Filtered / Mass-Cation Anion Balance							LAB ID
961108 1100 MW-1	11/8/96	1100	H2O	Ice		X	X	X							12790-5701
961108 1130 MW-2	↓	1130	↓	↓		X	X	X							12791
961108 1200 MW-3		1200				X									12792
961108 1230 MW-4		1230				X		X							12793
961108 1300 MW-5	↓	1300	↓	↓		X									12794 ↓

Relinquished by: [signature]	Date/Time 11/8/96 1500	Received by: [signature]	Date/Time 11/8/96 1511
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time

Method of Shipment:

Authorized by: [signature] Date 11/8/96

(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

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	*Denver Bearden*	Date:	12-Feb-97
Company:	*PNM Gas Services*	COC No.:	*5738*
Address:	*603 W. Elm*	Sample No.:	*13653*
City, State:	*Farmington, NM 87401*	Job No.:	*2-1000*

Project Name:	***PNM Gas Services - Florance 44***				
Project Location:	***9702071230; MW-1***				
Sampled by:	MS/MG	Date:	7-Feb-97	Time:	12:30
Analyzed by:	DC	Date:	11-Feb-97		
Sample Matrix:	*Liquid*				

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:
Date: 2/12/97

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	*Denver Bearden*	Date:	12-Feb-97
Company:	*PNM Gas Services*	COC No.:	*5738*
Address:	*603 W. Elm*	Sample No.:	*13654*
City, State:	*Farmington, NM 87401*	Job No.:	*2-1000*

Project Name:	***PNM Gas Services - Florance 44***				
Project Location:	***9702071300; MW-2***				
Sampled by:	MS/MG	Date:	7-Feb-97	Time:	13:00
Analyzed by:	DC	Date:	11-Feb-97		
Sample Matrix:	*Liquid*				

Laboratory Analysis

Parameter	*Result*	*Unit of Measure*	*Detection Limit*	*Unit of Measure*
Benzene	25.7	ug/L	0.2	ug/L
Toluene	7.5	ug/L	0.2	ug/L
Ethylbenzene	14.1	ug/L	0.2	ug/L
m,p-Xylene	3.1	ug/L	0.2	ug/L
o-Xylene	1.4	ug/L	0.2	ug/L
TOTAL	51.8	ug/L		

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

Approved by:
Date: 2/12/97

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	*Denver Bearden*	Date:	12-Feb-97
Company:	*PNM Gas Services*	COC No.:	*5738*
Address:	*603 W. Elm*	Sample No.:	*13655*
City, State:	*Farmington, NM 87401*	Job No.:	*2-1000*

Project Name:	***PNM Gas Services - Florance 44***				
Project Location:	***9702071330; MW-3***				
Sampled by:	MS/MG	Date:	7-Feb-97	Time:	13:30
Analyzed by:	DC	Date:	11-Feb-97		
Sample Matrix:	*Liquid*				

Laboratory Analysis

Parameter	*Result*	*Unit of Measure*	*Detection Limit*	*Unit of Measure*
			11/08/96	
Benzene	106.9	ug/L	20.0	
Toluene	9.1	ug/L	10.8	
Ethylbenzene	4.3	ug/L	51.7	
m,p-Xylene	58.3	ug/L	6.4	
o-Xylene	17.3	ug/L		
TOTAL	195.9	ug/L		

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

Approved by:

Date: 2/12/97

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	*Denver Bearden*	Date:	12-Feb-97
Company:	*PNM Gas Services*	COC No.:	*5738*
Address:	*603 W. Elm*	Sample No.:	*13656*
City, State:	*Farmington, NM 87401*	Job No.:	*2-1000*

Project Name:	***PNM Gas Services - Florance 44***				
Project Location:	***9702071400; MW-4***				
Sampled by:	MS/MG	Date:	7-Feb-97	Time:	14:00
Analyzed by:	DC	Date:	12-Feb-97		
Sample Matrix:	*Liquid*				

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:
Date: 2/12/97

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	*Denver Bearden*	Date:	12-Feb-97
Company:	*PNM Gas Services*	COC No.:	*5738*
Address:	*603 W. Elm*	Sample No.:	*13657*
City, State:	*Farmington, NM 87401*	Job No.:	*2-1000*

Project Name:	***PNM Gas Services - Florance 44***				
Project Location:	***9702071430; MW-5*** Dup of MW-3				
Sampled by:	MS/MG	Date:	7-Feb-97	Time:	14:30
Analyzed by:	DC	Date:	11-Feb-97		
Sample Matrix:	*Liquid*				

Laboratory Analysis

Parameter	*Result*	*Unit of Measure*	*Detection Limit*	*Unit of Measure*
Benzene	106.4	ug/L	0.2	ug/L
Toluene	8.9	ug/L	0.2	ug/L
Ethylbenzene	4.3	ug/L	0.2	ug/L
m,p-Xylene	56.8	ug/L	0.2	ug/L
o-Xylene	17.1	ug/L	0.2	ug/L
TOTAL	193.4	ug/L		

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

Approved by:

Date: 2/12/97

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

QUALITY ASSURANCE REPORT

for EPA Method 8020

Date Analyzed: 11-Feb-97

Internal QC No.: 0527-STD
Surrogate QC No.: 0528-STD
Reference Standard QC No.: 0417-QC

Method Blank

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

Calibration Check

Parameter	*Unit of Measure*	*True Value*	*Analyzed Value*	*% Diff*	*Limit*
Benzene	ppb	20.0	18.8	6	15%
Toluene	ppb	20.0	19.6	2	15%
Ethylbenzene	ppb	20.0	20.2	1	15%
m,p-Xylene	ppb	40.0	39.2	2	15%
o-Xylene	ppb	20.0	19.7	2	15%

Matrix Spike

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

Surrogate Recoveries

Laboratory Identification	*S1 Percent Recovered*	*S2 Percent Recovered*	*Laboratory Identification*	*S1 Percent Recovered*	*S2 Percent Recovered*
Limit Percent Recovered	(70-130)		*Limit Percent Recovered*	(70-130)	
13653-5738	97				
13654-5738	92				
13655-5738	91				
13657-5738	92				

S1: *Flourobenzene*

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

QUALITY ASSURANCE REPORT

for EPA Method 8020

Date Analyzed: 12-Feb-97

Internal QC No.: 0527-STD
Surrogate QC No.: 0528-STD
Reference Standard QC No.: 0417-QC

Method Blank

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

Calibration Check

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

Matrix Spike

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

Surrogate Recoveries

Laboratory Identification	*S1 Percent Recovered*	*S2 Percent Recovered*	*Laboratory Identification*	*S1 Percent Recovered*	*S2 Percent Recovered*
Limit Percent Recovered	(70-130)		*Limit Percent Recovered*	(70-130)	
13656-5738	96				

(2)

S1: *Flourobenzene*

CHAIN OF CUSTODY RECORD

5738

ON SITE TECHNOLOGIES, LTD.

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

Date: 2/7/97

Page 1 of 1

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 44

Sampler: Mark S. Kelleinos
Maureen Gannon

ANALYSIS REQUESTED

SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	MATRIX	PRES.	Number of Containers	BTEX 8020	LAB ID
MW-1 9702071230				Ice	2		13653-5738
MW-2 9702071300					2		13654
MW-3 9702071330					2		13655
MW-4 9702071400					2		13656
MW-5 9702071430					2		13657

Relinquished by:	Date/Time 2/7/97 1515	Received by:	Date/Time 2/7/97 1515
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time

Method of Shipment:

Authorized by: _____ Date 2/7/97
(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