

3R - 331

REPORTS

DATE:

1999

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

RECEIVED

April 5, 1999

APR 07 1999

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

ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION



RE: 1999 SAN JUAN BASIN ANNUAL GROUNDWATER REPORT

Dear Bill:

PNM is pleased to submit the 1999 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.

Blanco Wash Drip	Mangum 1E
Davis 1	McClanahan 22
Dogie East Pit	McClanahan A 2E
Dogie North Pit	McCoy Gas Com A1
Florance 124	Miles Federal 1E Drip
Florance 32A	O' Shea 1M
Florance 40	Patterson A Com A1
Florance 44	Pritchard 2
Florance M 47X	Randleman 1
Hampton 4M	Reid 16 Drip
Honolulu Drip	Turner 1A
Ice Canyon Drip	Wilmerding 1M
Jacques 2A	Zachry 18E
Jicarilla Contract 147-6	
Linda 1A	

Consistent with PNM's San Juan Basin Groundwater Management Plan, PNM will request closure of four of the above sites, the Florance 32A, Jacques 2A, Mangum 1E and the McClanahan A2E, with the submittal of the 1st Quarter 1999 Pit Closures Report. This request is based upon the analytical data collected over the last two years at each of the sites. BTEX concentrations have been consistently below WQCC standards for four consecutive quarters.

Upon approval of the groundwater closure report, PNM will plug and abandon all of the groundwater monitoring wells at each of the locations. The concrete pad and metal vault surrounding each well will be removed. The well casing will be cut to ground surface and each well will be plugged to the surface

Bill Olson
04/05/99
Page 2

with cement containing 5% bentonite. If you have any questions regarding the contents of the report, please contact me at (505) 241-2974.

Sincerely,

A handwritten signature in cursive script, appearing to read "Maureen Gannon", with a large loop at the end.

Maureen Gannon
Project Manager

Enclosure

cc: Colin Adams, Esq.
Ingrid Deklau, WFS
Denny Foust, OCD-Aztec Office
Ron Johnson
Mark Sikelianos
Bill VonDrehle, WFS



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APR 07 1999

ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION



Annual

Groundwater Report

1999

Volume II

***Unlined Surface Impoundments
San Juan Basin***



Groundwater Site Summary Report

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

Quarter/Year: 2nd/98, 3rd/98, 4th/98 & 1st/99

Operator: Burlington Resources
Sec: 14 **Twn:** 28N **Rng:** 10W **Unit:** G
Canyon: Armenta

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

Topo Map: previously submitted

Well Completion Diagram: previously submitted

Site Map with Analytical Results: Figure 1

Groundwater Contour Map: Figure 2a (June 1998), Figure 2b (September 1998), Figure 2c (December 1998) & Figure 2d (February 1999)

Hydrograph: Figure 3

Analytical Results: attached

Site Hydrology:

The McClanahan 22 site lies in a side drainage off Armenta Canyon, a tributary to the San Juan River located about 7 miles east-southeast of Bloomfield, New Mexico. The site lies at an elevation of about 5636 feet amsl, on the south side of the drainage and perhaps 20 feet above the valley floor. The drainage runs northeast and empties into the north-draining Armenta Canyon about 500 feet from the site.

Subsurface materials beneath the site are composed primarily of sands, with minor amounts of silt or clay materials, as determined from the four monitoring wells installed (see Figure 1). Total depths of the wells are less than 20 feet, and no resistant bedrock units were encountered in the monitor well borings.

Depth to water has ranged from 7 to 15 feet beneath the site. No appreciable seasonal changes in flow direction are apparent, as evidenced by the groundwater flow maps spanning the year in Figures 2a through 2d. Groundwater flow direction appears to be towards the west, directly towards the unnamed drainage lying closest to the site. However, in general the surface topography drops to the north and northeast, along with the direction of streamflow in the unnamed nearby drainage as well as Armenta Canyon.

The site hydrograph (Figure 4) shows that in general water levels are higher in winter and spring, and lower in summertime. About one foot of water level fluctuations are observed seasonally. Similar trends are seen in other sites investigated in Armenta Canyon (Zachry 18E, McClanahan A2E).

Activities for Previous Year:

PNM performed groundwater monitoring at the McClanahan 22 well site on June 19, September 2, December 2, 1998 and again on February 9, 1999. Water level measurements were taken in each of the four monitoring wells. PNM submitted groundwater samples from well, MW-3, for chemical analyses of benzene, toluene, ethylbenzene, and xylenes (BTEX). The other wells (MW-1, MW-2 and MW-4) were not sampled because they have not shown appreciable amounts of BTEX compounds in previous sampling events. All sampling was performed in strict compliance with EPA protocol. PNM delivered the samples to OnSite Technologies, Farmington, New Mexico, for analyses of BTEX using EPA Method 8020.

Results:

Figure 2 provides a site map with BTEX results collected to date. With the exception of MW-3, all wells contain BTEX concentrations below detection limits. MW-3 had exhibited elevated levels of xylenes, in excess of NMWQCC standards; however, in the last two quarterly sampling rounds, BTEX constituents are below standards, and benzene has been below detection limits.

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

PNMGS Well Site: McClanahan 22 (continued)

Further Action:

PNM will continue to monitor groundwater gradient and perform quarterly groundwater sampling at the McClanahan 22 well site. Site closure is anticipated after two more quarters of monitoring.

Public Service Company of New Mexico - Gas Services

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

Contact: Maureen Gannon

Telephone: 505-241-2974

Figure 1. McClanahan 22 Site Map With Analytical Results
(Concentrations in ppb)

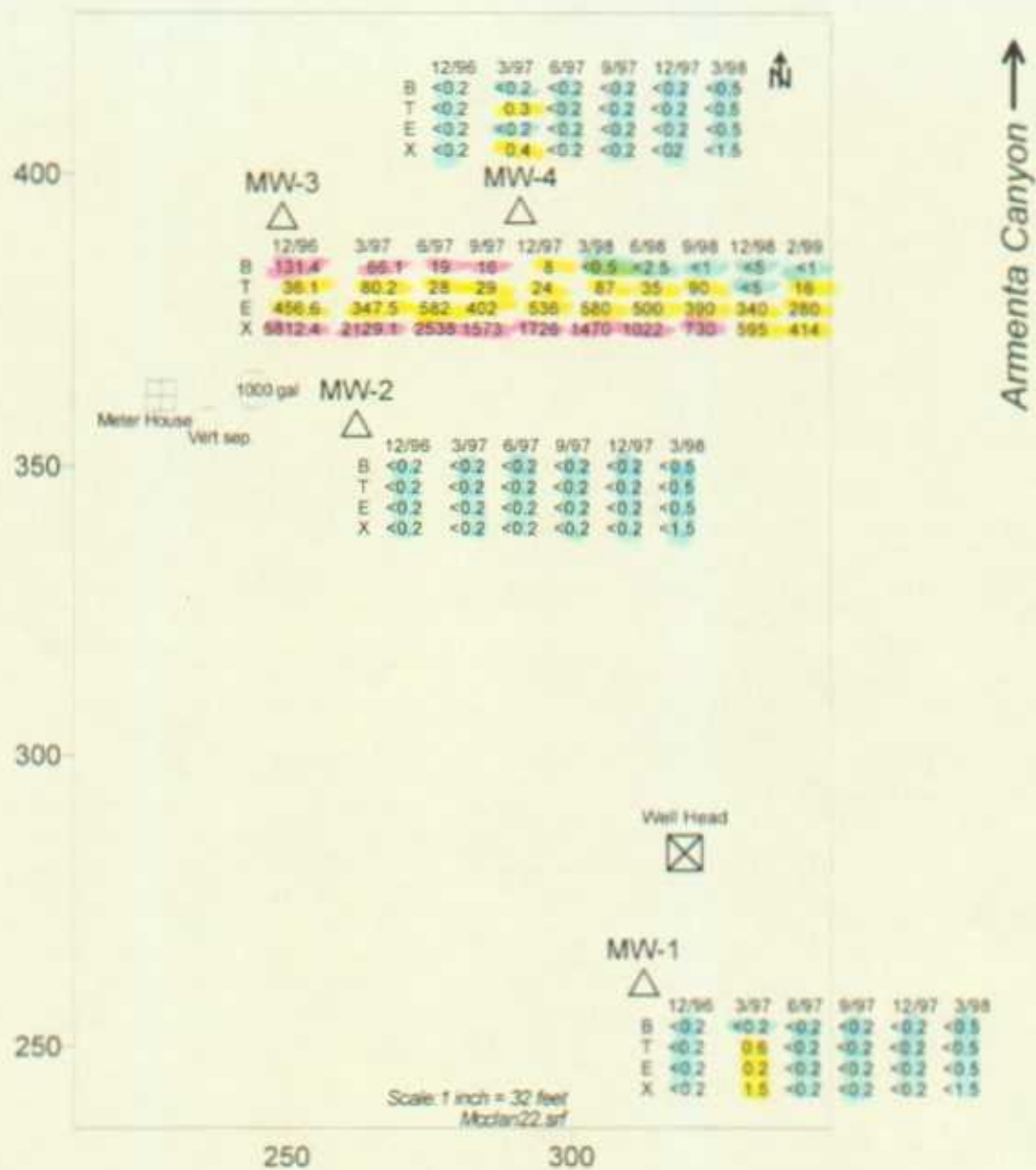
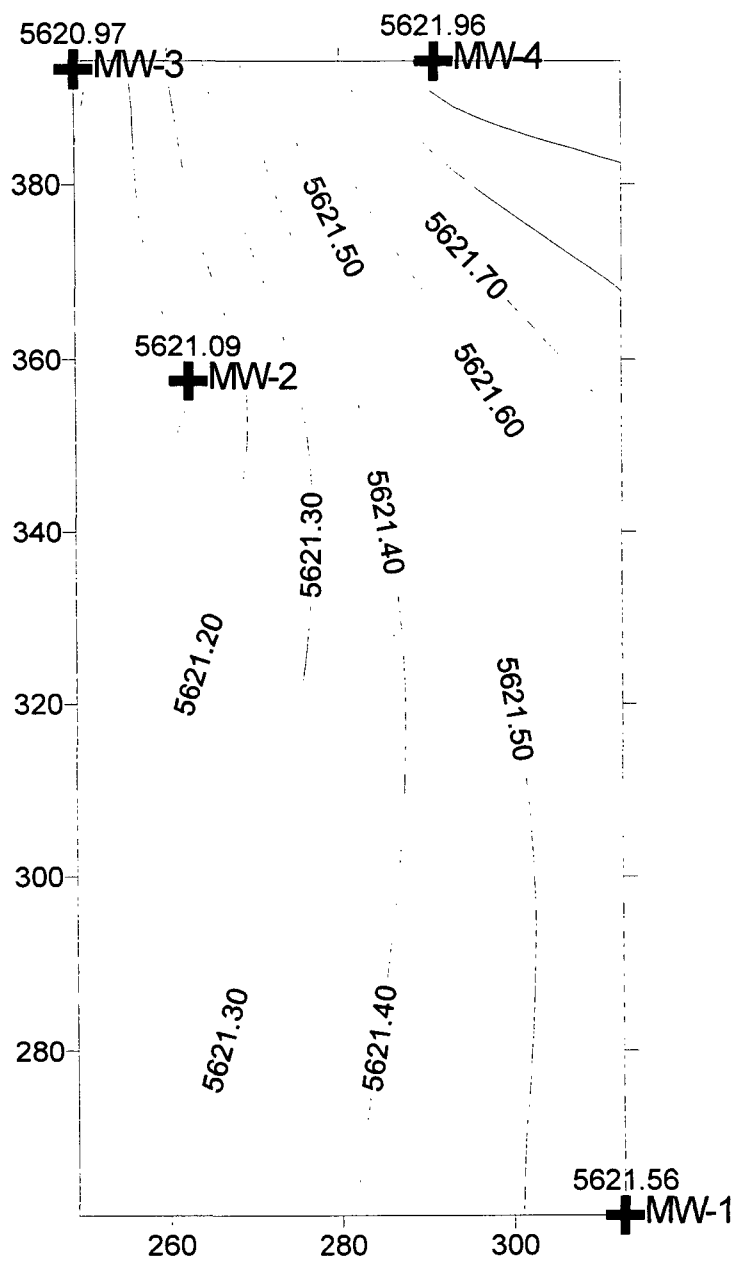


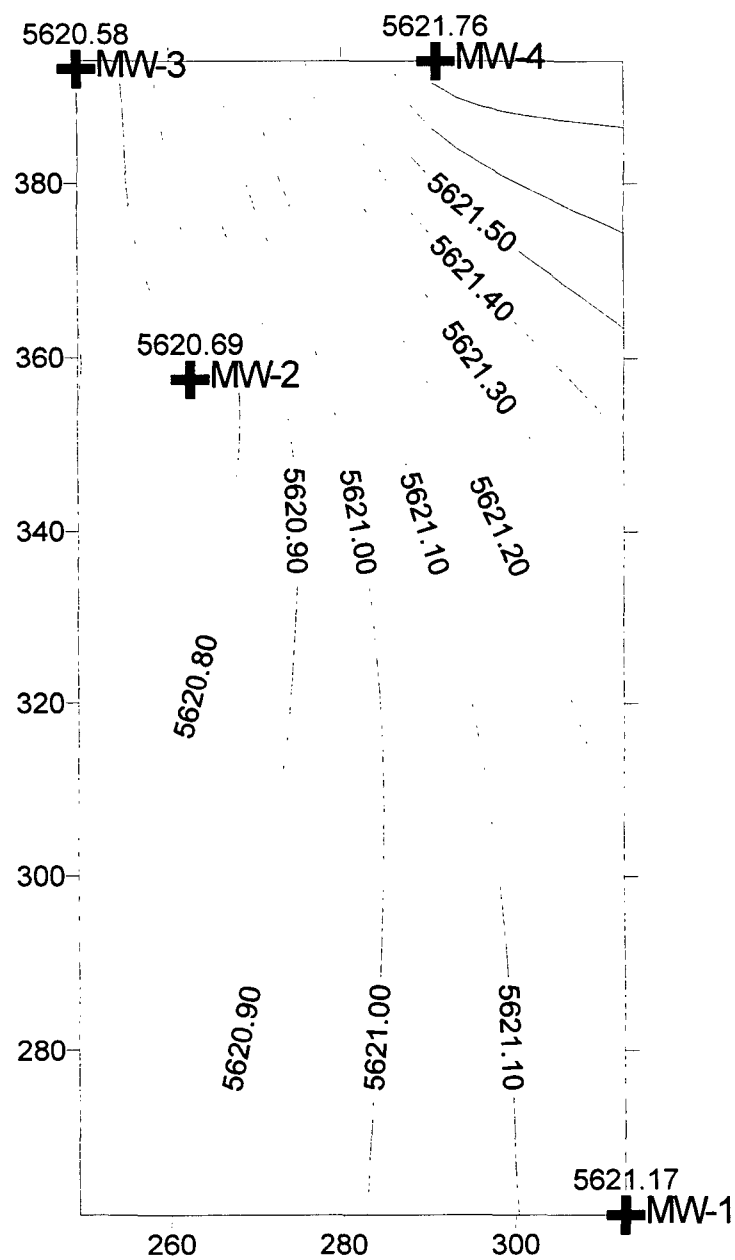
Figure 2a. McClanahan 22 Groundwater Contour Map
(June 19, 1998)



SCALE IN FEET
(X-axis = Easting,
Y-axis = Northing)

Mc22-698.srf

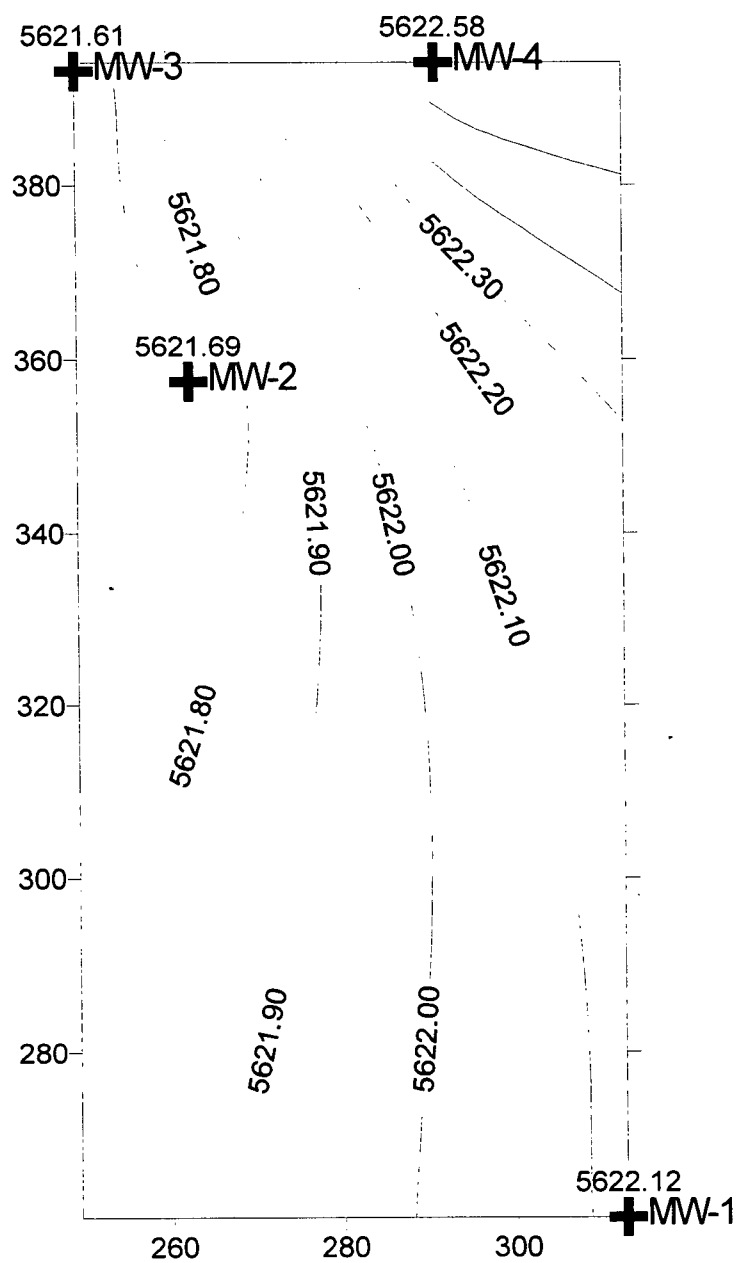
Figure 2b. McClanahan 22 Groundwater Contour Map
(September 2, 1998)



SCALE IN FEET
(X-axis = Easting,
Y-axis = Northing)

Mc22-998.srf

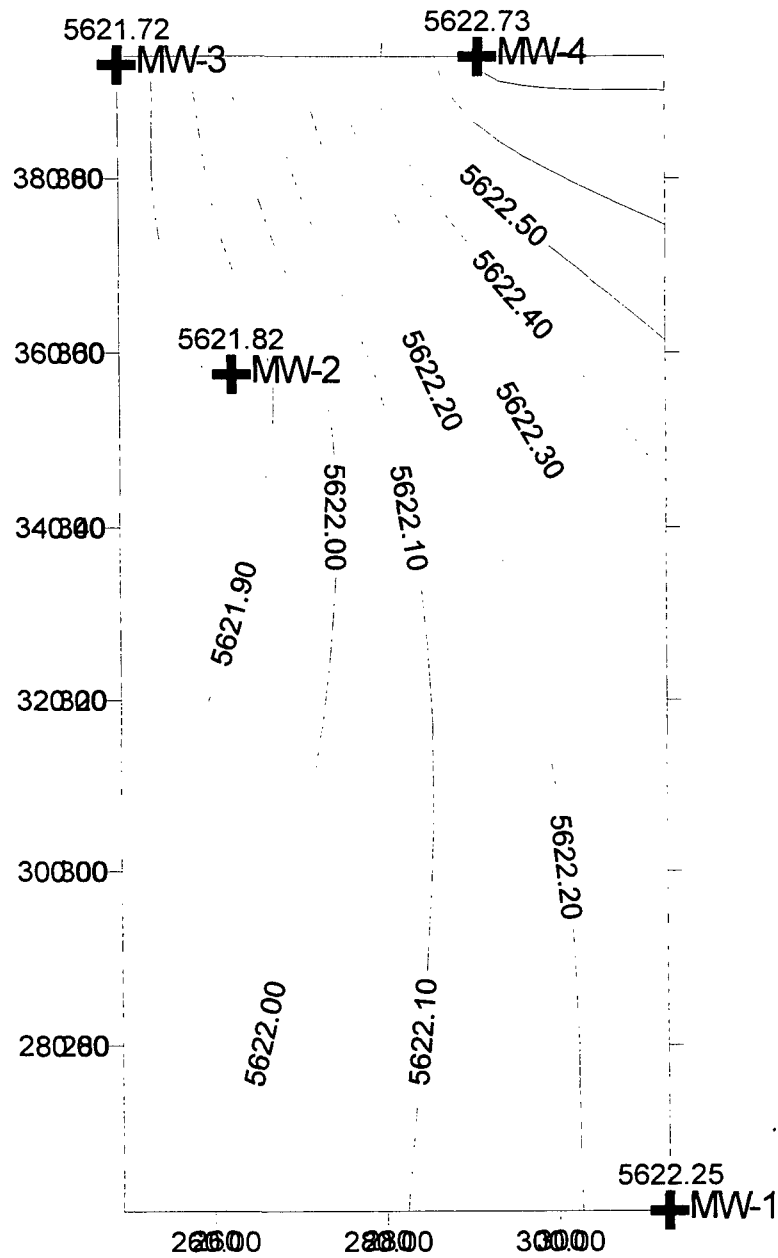
Figure 2c. McClanahan 22 Groundwater Contour Map
(December 2, 1998)



SCALE IN FEET
(X-axis = Easting,
Y-axis = Northing)

Mc22-1298.srf

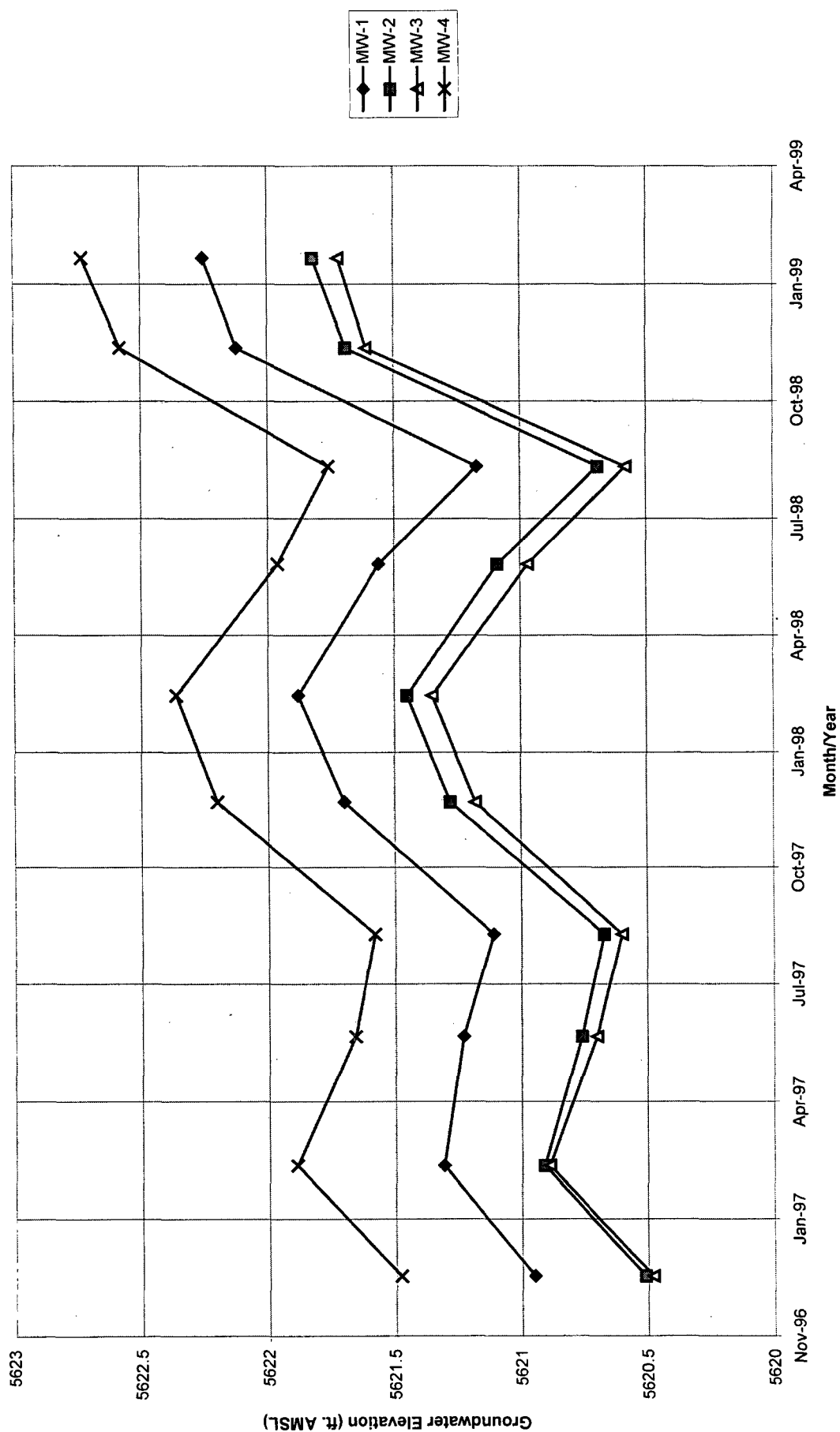
Figure 2d. McClanahan Groundwater Contour Map
(February 9, 1999)



SCALE IN FEET
(X-axis = Easting,
Y-axis = Northing)

Mc22-299.srf

Figure 3. McClanahan 22 Hydrograph
(Water Level vs. Time)



OFF: (505) 325-5667



LAB: (505) 325-1556

February 23, 1999

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Maureen Gannon
PNM - Public Service Company of NM
Alvarado Square Mail Stop 0408
Albuquerque, NM 87158
TEL: (505) 241-2974
FAX (505) 241-2340

RE: McClanahan 22

Order No.: 9902057

Dear Maureen Gannon,

On Site Technologies, LTD. received 2 samples on 2/10/99 for the analyses presented in the following report.

The Samples were analyzed for the following tests:
BTEX (SW8021B)

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

A handwritten signature in black ink, appearing to read "David Cox", written over a horizontal line.

David Cox

OFF: (505) 325-5667



LAB: (505) 325-1556

On Site Technologies, LTD.

Date: 23-Feb-99

CLIENT: PNM - Public Service Company of NM
Project: McClanahan 22
Lab Order: 9902057

CASE NARRATIVE

Samples were analyzed using the methods outlined in the following references:

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition

All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objectives.

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 23-Feb-99

Client:	PNM - Public Service Company of NM	Client Sample Info:	McClanahan 22
Work Order:	9902057	Client Sample ID:	9902091530; MW-3
Lab ID:	9902057-01A	Matrix:	AQUEOUS
Project:	McClanahan 22	Collection Date:	2/9/99 3:30:00 PM
		COC Record:	7474

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8021B				Analyst: HR
Benzene	ND	2.5		µg/L	5	2/15/99
Toluene	16	2.5		µg/L	5	2/15/99
Ethylbenzene	280	2.5		µg/L	5	2/15/99
m,p-Xylene	370	5		µg/L	5	2/15/99
o-Xylene	44	2.5		µg/L	5	2/15/99

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate

1 of 1

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 23-Feb-99

Client:	PNM - Public Service Company of NM	Client Sample Info:	McClanahan 22
Work Order:	9902057	Client Sample ID:	9902091600; MW-5
Lab ID:	9902057-02A	Matrix:	AQUEOUS
Project:	McClanahan 22	Collection Date:	2/9/99 4:00:00 PM
		COC Record:	7474

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8021B				Analyst: HR
Benzene	ND	2.5		µg/L	5	2/15/99
Toluene	15	2.5		µg/L	5	2/15/99
Ethylbenzene	270	2.5		µg/L	5	2/15/99
m,p-Xylene	360	5		µg/L	5	2/15/99
o-Xylene	46	2.5		µg/L	5	2/15/99

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate

1 of 1

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

CHAIN OF CUSTODY RECORD

Date: 2/9/99

612 E. Murphy Dr. • P.O. Box 2606 • Farmington, NM 87499
LAB: (505) 325-5667 • FAX: (505) 325-6256

TECHNOLOGIES, LTD.

ON SITE

[illegible]

OFF: (505) 325-5667



LAB: (505) 325-1556

December 15, 1998

Maureen Gannon
PNM - Public Service Company of NM
Alvarado Square Mail Stop 0408
Albuquerque, NM 87158
TEL: (505) 241-2974
FAX (505) 241-2340

RE: McClanahan #22

Order No.: 9812007

Dear Maureen Gannon,

On Site Technologies, LTD. received 1 sample on 12/2/98 for the analyses presented in the following report.

The Samples were analyzed for the following tests:
BTEX (SW8020A)

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

David Cox

OFF: (505) 325-5667



LAB: (505) 325-1556

On Site Technologies, LTD.

Date: 15-Dec-98

CLIENT: PNM - Public Service Company of NM

Project: McClanahan #22

Lab Order: 9812007

CASE NARRATIVE

Samples were analyzed using the methods outlined in the following references:

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition

All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objectives.

OFF: (505) 325-5667

ON SITE

TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 15-Dec-98

Client:	PNM - Public Service Company of NM	Client Sample Info:	McClanahan #22
Work Order:	9812007	Client Sample ID:	9812020900; MW-3
Lab ID:	9812007-01A	Matrix:	AQUEOUS
Project:	McClanahan #22	Collection Date:	12/2/98 9:00:00 AM
		COC Record:	7520

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8020A				Analyst: HR
Benzene	ND	5		µg/L	5	12/10/98
Toluene	ND	5		µg/L	5	12/10/98
Ethylbenzene	340	5		µg/L	5	12/10/98
m,p-Xylene	520	10		µg/L	5	12/10/98
o-Xylene	75	5		µg/L	5	12/10/98

Qualifiers:

PQL - Practical Quantitation Limit

S - Spike Recovery outside accepted recovery limits

ND - Not Detected at Practical Quantitation Limit

R - RPD outside accepted recovery limits

J - Analyte detected below Practical Quantitation Limit

E - Value above quantitation range

B - Analyte detected in the associated Method Blank

Surr: - Surrogate

1 of 1

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

On Site Technologies, LTD.

Date: 15-Dec-98

CLIENT: PNM - Public Service Company of NM

Work Order: 9812007

Project: McClanahan #22

QC SUMMARY REPORT

Method Blank

Sample ID: MB1	Batch ID: GC-1_981210	Test Code: SW8020A	Units: µg/L	Analysis Date: 12/10/98	Prep Date:
Client ID:	9812007	Run ID: GC-1_981210A		SeqNo: 9432	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Benzene	.0828	1			J
Ethylbenzene	.1496	1			J
m,p-Xylene	.2857	2			J
o-Xylene	.1375	1			J
Toluene	.1456	1			J

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 15-Dec-98

CLIENT: PNM - Public Service Company of NM
 Work Order: 9812007
 Project: McClanahan #22

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 9812007-01AMS	Batch ID: GC-1_981210	Test Code: SW8020A	Units: µg/L	Analysis Date 12/10/98	Prep Date:
Client ID: 9812020900; MW-	Run ID: 9812007	PQL	SPK value	SeqNo: 9437	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Benzene	177.9	5	200	0	89.0% 56 128
Ethylbenzene	524.3	5	200	343.4	90.4% 78 107
m,p-Xylene	880	10	400	522.1	89.5% 67 118
o-Xylene	258.5	5	200	75.14	91.7% 78 107
Toluene	218.9	5	200	0	109.5% 74 116

Sample ID: 9812007-01AMS	Batch ID: GC-1_981210	Test Code: SW8020A	Units: µg/L	Analysis Date 12/10/98	Prep Date:
Client ID: 9812020900; MW-	Run ID: 9812007	PQL	SPK value	SeqNo: 9439	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Benzene	177.8	5	200	0	88.9% 56 128 0.1% 12
Ethylbenzene	523.6	5	200	343.4	90.1% 78 107 0.1% 11
m,p-Xylene	880.5	10	400	522.1	89.6% 67 118 0.1% 10
o-Xylene	255.6	5	200	75.14	90.2% 78 107 1.1% 14
Toluene	219.3	5	200	0	109.7% 74 116 0.2% 14

Sample ID: 9812021-02AMS	Batch ID: GC-1_981210	Test Code: SW8020A	Units: µg/L	Analysis Date 12/10/98	Prep Date:
Client ID:	Run ID: 9812007	PQL	SPK value	SeqNo: 9438	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Benzene	1963	50	2000	110.6	92.6% 56 128
Ethylbenzene	2410	50	2000	573.1	91.8% 78 107
m,p-Xylene	7339	100	4000	3782	88.9% 67 118
o-Xylene	2537	50	2000	675.1	93.1% 78 107
Toluene	2267	50	2000	374.8	94.6% 74 116

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: PNM - Public Service Company of NM
Work Order: 9812007
Project: McClanahan #22

QC SUMMARY REPORT

Sample Matrix Spike Duplicate

Sample ID: 9812021-02AMSD		Batch ID: GC-1_981210	Test Code: SW8020A	Units: µg/L	Analysis Date 12/10/98				Prep Date:		
Client ID:		9812007	Run ID: GC-1_981210A		SeqNo: 9440						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	1984	50	2000	110.6	93.7%	56	128	1963	1.1%	12	
Ethylbenzene	2434	50	2000	573.1	93.1%	78	107	2410	1.0%	11	
m,p-Xylene	7417	100	4000	3782	90.9%	67	118	7339	1.1%	10	
o-Xylene	2574	50	2000	675.1	95.0%	78	107	2537	1.5%	14	
Toluene	2292	50	2000	374.8	95.9%	74	116	2267	1.1%	14	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 15-Dec-98

CLIENT: PNM - Public Service Company of NM
Work Order: 9812007
Project: McClanahan #22

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS WATER	Batch ID: GC-1_981210	Test Code: SW8020A	Units: µg/L	Analysis Date 12/10/98	Prep Date:
Client ID: 9812007	Run ID: GC-1_981210A	PQL	SPK value	SeqNo: 9436	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC
Benzene	37.64	1	40	0.0828	93.9%
Ethylbenzene	37.95	1	40	0.1496	94.5%
m,p-Xylene	74.54	2	80	0.2857	92.8%
o-Xylene	38.56	1	40	0.1375	96.0%
Toluene	37.79	1	40	0.1456	94.1%
				HighLimit	RPD Ref Val
				56	128
				78	107
				67	118
				78	107
				74	116
				LowLimit	RPD Limit
				56	128
				78	107
				67	118
				78	107
				74	116
				%RPD	RPD Limit
				93.9%	128
				94.5%	107
				92.8%	118
				96.0%	107
				94.1%	116

Qualifiers: NID - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 15-Dec-98

CLIENT: PNM - Public Service Company of NM
 Work Order: 9812007
 Project: McClanahan #22

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV1 QC0606/07		Batch ID: GC-1_981210		Test Code: SW8020A		Units: µg/L		Analysis Date 12/10/98		Prep Date:	
Client ID: 9812007		Run ID: GC-1_981210A		PQL		SPK value		SeqNo: 9433			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	19.57	1	20	0	97.9%	85	115				
Ethylbenzene	19.86	1	20	0	99.3%	85	115				
m,p-Xylene	38.68	2	40	0	96.7%	85	115				
o-Xylene	20.19	1	20	0	100.9%	85	115				
Toluene	19.7	1	20	0	98.5%	85	115				
1,4-Difluorobenzene	90.06	0	100	0	90.1%	70	130				
4-Bromochlorobenzene	96.84	0	100	0	96.8%	70	130				
Fluorobenzene	88.7	0	100	0	88.7%	70	130				

Sample ID: CCV2 QC0606/07			Batch ID: GC-1_981210		Test Code: SW8020A		Units: µg/L		Analysis Date 12/10/98		Prep Date:	
Client ID:		9812007	Run ID:		GC-1_981210A				SeqNo: 9434			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Benzene	19.58	1	20	0	97.9%	85	115					
Ethylbenzene	19.78	1	20	0	98.9%	85	115					
m,p-Xylene	38.52	2	40	0	96.3%	85	115					
o-Xylene	20.04	1	20	0	100.2%	85	115					
Toluene	19.63	1	20	0	98.2%	85	115					
1,4-Difluorobenzene	90.13	0	100	0	90.1%	70	130					
4-Bromochlorobenzene	95.97	0	100	0	96.0%	70	130					
Fluorobenzene	89.03	0	100	0	89.0%	70	130					

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: PNM - Public Service Company of NM
Work Order: 9812007
Project: McClanahan #22

QC SUMMARY REPORT Continuing Calibration Verification Standard

Sample ID: CCV3 QC0606/07			Batch ID: GC-1_981210		Test Code: SW8020A		Units: µg/L		Analysis Date 12/10/98			Prep Date:	
Client ID:		9812007	Run ID:	GC-1_981210A					SeqNo:	9435			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Benzene	38.69	1	40	0	96.7%	85	115						
Ethylbenzene	39.06	1	40	0	97.6%	85	115						
m,p-Xylene	76.76	2	80	0	95.9%	85	115						
o-Xylene	39.63	1	40	0	99.1%	85	115						
Toluene	39.05	1	40	0	97.6%	85	115						
1,4-Difluorobenzene	90.34	0	100	0	90.3%	70	130						
4-Bromochlorobenzene	97.62	0	100	0	97.6%	70	130						
Fluorobenzene	89.28	0	100	0	89.3%	70	130						

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: PNM - Public Service Company of NM
Work Order: 9812007
Project: McClanahan #22
Test No: SW8020A

QC SUMMARY REPORT SURROGATE RECOVERIES

BTEX

Sample ID	14FBZ	4BCBZ	FLBZ
9812007-01A	87.6	92.4	90.6
9812007-01AMS	83.9	92.9	84.5
9812007-01AMSD	83.9	93.2	84.8
9812008-01A	89.7	96.8	88.6
9812008-02A	90.9	97	90.1
9812008-03A	89.2	95.3	88.2
9812009-01A	88	97	88
9812009-02A	93.9	89.8	87.4
9812020-01A	90.2	97.4	89.2
9812020-02A	90.2	95.7	185 *
9812021-02AMS	89.8	96.7	89.2
9812021-02AMSD	90.2	96.6	89.1
9812021-03A	93.4	98	93.3
9812021-04A	89.2	97.2	88.7
9812021-05A	89.9	96.2	89
9812022-01A	89.4	95.6	88
9812023-01A	89.2	97	88.6
CCV1 QC0606/07	90.1	96.8	88.7
CCV2 QC0606/07	90.1	96	89
CCV3 QC0606/07	90.3	97.6	89.3
LCS WATER	89.7	96.8	88.7
MB1	90.4	95.9	89.1

Acronym	Surrogate	QC Limits
14FBZ	= 1,4-Difluorobenzene	70-130
4BCBZ	= 4-Bromochlorobenzene	70-130
FLBZ	= Fluorobenzene	70-130

* Surrogate recovery outside acceptance limits

CHAIN OF CUSTODY RECORD

Page: 1 of 1

Date:

612 E. Murphy Dr. • P.O. Box 2606 • Farmington, NM 87499
LAB: (505) 325-5667 • FAX: (505) 325-6256

[illegible]

7/02/78

OFF: (505) 325-5667



LAB: (505) 325-1556

September 10, 1998

Maureen Gannon
PNM - Public Service Company of NM
Alvarado Square Mail Stop 0408
Albuquerque, NM 87158
TEL: (505) 241-2974
FAX (505) 241-2340

3rd Quarter 73

RE: McClanahan 22

Order No.: 9809004

Dear Maureen Gannon,

On Site Technologies, LTD. received 2 samples on 9/2/98 for the analyses presented in the following report.

The Samples were analyzed for the following tests:
BTEX (SW8020A)

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

David Cox

OFF: (505) 325-5667

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-1556

On Site Technologies, LTD.

Date: 10-Sep-98

CLIENT: PNM - Public Service Company of NM

Project: McClanahan 22

Lab Order: 9809004

CASE NARRATIVE

Samples were analyzed using the methods outlined in the following references:

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition

All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objectives.

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 10-Sep-98

Client:	PNM - Public Service Company of NM	Client Sample Info:	McClanahan 22
Work Order:	9809004	Client Sample ID:	9809021321; MW-3
Lab ID:	9809004-01A	Matrix:	AQUEOUS
Project:	McClanahan 22	Collection Date:	9/2/98 1:21:00 PM
		COC Record:	7439

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8020A				Analyst: DC
Benzene	ND	1		µg/L	1	9/9/98
Toluene	90	10		µg/L	10	9/9/98
Ethylbenzene	390	10		µg/L	10	9/9/98
m,p-Xylene	620	20		µg/L	10	9/9/98
o-Xylene	90	10		µg/L	10	9/9/98

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY SERVING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 10-Sep-98

Client:	PNM - Public Service Company of NM	Client Sample Info:	McClanahan 22
Work Order:	9809004	Client Sample ID:	9809021351; MW-5
Lab ID:	9809004-02A	Matrix:	AQUEOUS
Project:	McClanahan 22	Collection Date:	9/2/98 1:51:00 PM
		COC Record:	7439

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8020A				Analyst: DC
Toluene	81	10		µg/L	10	9/9/98
Ethylbenzene	380	10		µg/L	10	9/9/98
m,p-Xylene	610	20		µg/L	10	9/9/98
o-Xylene	88	10		µg/L	10	9/9/98
BTEX		SW8020A				Analyst: HR
Benzene	ND	1		µg/L	1	9/8/98

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate

1 of 1

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY FOR THE INDUSTRY WITH THE ENVIRONMENT -

On Site Technologies, LTD.

Date: 10-Sep-98

CLIENT: PNM - Public Service Company of NM
 Work Order: 9809004
 Project: McClanahan 22

QC SUMMARY REPORT

Method Blank

Sample ID: MB1	Batch ID: GC-1_980908	Test Code: SW8020A	Units: µg/L	Analysis Date 9/8/98	Prep Date:
Client ID:	9809004	Run ID: GC-1_980908A		SeqNo: 6239	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Benzene	.1435	1			J
Ethylbenzene	.1562	1			J
m,p-Xylene	.2875	2			J
Methyl tert-Butyl Ether	ND	1			
o-Xylene	.098	1			J
Toluene	.1843	1			J

Sample ID: MB1	Batch ID: GC-1_980909	Test Code: SW8020A	Units: µg/L	Analysis Date 9/9/98	Prep Date:
Client ID:	9809004	Run ID: GC-1_980909A		SeqNo: 6251	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Benzene	.0636	1			J
Ethylbenzene	ND	1			
m,p-Xylene	ND	2			
Methyl tert-Butyl Ether	ND	1			
o-Xylene	ND	1			
Toluene	.088	1			J

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 10-Sep-98

CLIENT: PNM - Public Service Company of NM
Work Order: 9809004
Project: McClanahan 22

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 9809004-01AMS		Batch ID: GC-1_980908	Test Code: SW8020A	Units: µg/L	Analysis Date 9/8/98		Prep Date:				
Client ID: 9809021321; MW-		9809004	Run ID: GC-1_980908A		SeqNo: 6240						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	365.6	10	400	0	91.4%	56	128				
Ethylbenzene	739.1	10	400	395.1	86.0%	78	107				
m,p-Xylene	1335	20	800	619.7	89.4%	67	118				
Methyl tert-Butyl Ether	333	10	400	6.379	81.7%	70	130				
o-Xylene	461.1	10	400	81.48	94.9%	78	107				
Toluene	414.6	10	400	20.62	98.5%	74	116				

Sample ID: 9809004-01AMS		Batch ID: GC-1_980908	Test Code: SW8020A	Units: µg/L	Analysis Date 9/8/98		Prep Date:				
Client ID: 9809021321; MW-		9809004	Run ID: GC-1_980908A		SeqNo: 6241						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	385.3	10	400	0	96.3%	56	128	365.6	5.2%	12	
Ethylbenzene	780.7	10	400	395.1	96.4%	78	107	739.1	5.5%	11	
m,p-Xylene	1411	20	800	619.7	98.9%	67	118	1335	5.5%	10	
Methyl tert-Butyl Ether	340.5	10	400	6.379	83.5%	70	130	333	2.2%	15	
o-Xylene	486	10	400	81.48	101.1%	78	107	461.1	5.3%	14	
Toluene	437.1	10	400	20.62	104.1%	74	116	414.6	5.3%	14	

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: PNM - Public Service Company of NM
 Work Order: 9809004
 Project: McClanahan 22

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 9809004-02AMS		Batch ID: GC-1_980909	Test Code: SW8020A	Units: µg/L	Analysis Date 9/9/98		Prep Date:	
Client ID: 9809021351; MW-		Run ID: 9809004	PQL	SPK value	SPK Ref Val	SeqNo: 6252		
Analyte	Result					LowLimit	HighLimit	RPD Ref Val
Benzene	408		10	400	2.83	56	128	
Ethylbenzene	825.6		10	400	383	78	107	
m,p-Xylene	1478		20	800	612	67	118	
Methyl tert-Butyl Ether	433.4		10	400	6.897	70	130	
o-Xylene	505.2		10	400	88.05	78	107	
Toluene	453.7		10	400	80.88	74	116	
								%RPD RPDLimit Qual

Sample ID: 9809004-02AMSD		Batch ID: GC-1_980909	Test Code: SW8020A	Units: µg/L	Analysis Date 9/9/98		Prep Date:	
Client ID: 9809021351; MW-		Run ID: 9809004	PQL	SPK value	SPK Ref Val	SeqNo: 6253		
Analyte	Result					LowLimit	HighLimit	RPD Ref Val
Benzene	394.8		10	400	2.83	56	128	408
Ethylbenzene	801.3		10	400	383	78	107	825.6
m,p-Xylene	1432		20	800	612	67	118	1478
Methyl tert-Butyl Ether	420.6		10	400	6.897	70	130	433.4
o-Xylene	492.4		10	400	88.05	78	107	505.2
Toluene	439.3		10	400	80.88	74	116	453.7
								%RPD RPDLimit Qual

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 10-Sep-98

CLIENT: PNM - Public Service Company of NM
 Work Order: 9809004
 Project: McClanahan 22

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS WATER		Batch ID: GC-1_980908	Test Code: SW8020A	Units: µg/L	Analysis Date 9/8/98		Prep Date:				
Client ID:		9809004	Run ID: GC-1_980908A		SeqNo: 6238						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	39.2	1	40	0.1435	97.6%	56	128				
Ethylbenzene	40.3	1	40	0.1562	100.3%	78	107				
m,p-Xylene	80.16	2	80	0.2875	99.8%	67	118				
Methyl tert-Butyl Ether	34.92	1	40	0	87.3%	70	130				
o-Xylene	40.52	1	40	0.098	101.1%	78	107				
Toluene	40.1	1	40	0.1843	99.8%	74	116				

Sample ID: LCS WATER		Batch ID: GC-1_980909	Test Code: SW8020A	Units: µg/L	Analysis Date 9/9/98		Prep Date:				
Client ID:		9809004	Run ID: GC-1_980909A		SeqNo: 6250						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	41.6	1	40	0.0636	103.9%	56	128				
Ethylbenzene	43.89	1	40	0	109.7%	78	107				S
m,p-Xylene	86.1	2	80	0	107.6%	67	118				
Methyl tert-Butyl Ether	42.49	1	40	0	106.2%	70	130				
o-Xylene	42.9	1	40	0	107.3%	78	107				S
Toluene	42.67	1	40	0.088	106.5%	74	116				

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 10-Sep-98

CLIENT: PNM - Public Service Company of NM
 Work Order: 9809004
 Project: McClanahan 22

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV1 QC0606/07	Batch ID: GC-1_980908	Test Code: SW8020A	Units: µg/L	Analysis Date 9/8/98	Prep Date:						
Client ID: 9809004	Run ID: GC-1_980908A			SeqNo: 6234							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	21.13	1	20	0	105.6%	85	115				
Ethylbenzene	21.71	1	20	0	108.6%	85	115				
m,p-Xylene	42.82	2	40	0	107.1%	85	115				
Methyl tert-Butyl Ether	19.04	1	20	0	95.2%	85	115				
o-Xylene	21.76	1	20	0	108.8%	85	115				
Toluene	21.7	1	20	0	108.5%	85	115				
1,4-Difluorobenzene	92.03	0	100	0	92.0%	70	130				
4-Bromochlorobenzene	84.58	0	100	0	84.6%	70	130				
Fluorobenzene	91.58	0	100	0	91.6%	70	130				

Sample ID: CCV2 QC0606/07	Batch ID: GC-1_980908	Test Code: SW8020A	Units: µg/L	Analysis Date 9/8/98	Prep Date:						
Client ID:	Run ID:	GC-1_980908A		SeqNo:							
9809004				6235							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	39.51	1	40	0	98.8%	85	115				
Ethylbenzene	42.32	1	40	0	105.8%	85	115				
m,p-Xylene	83.07	2	80	0	103.8%	85	115				
Methyl tert-Butyl Ether	33.78	1	40	0	84.5%	85	115				
o-Xylene	41.39	1	40	0	103.5%	85	115				S
Toluene	41.04	1	40	0	102.6%	85	115				
1,4-Difluorobenzene	91.73	0	100	0	91.7%	70	130				
4-Bromochlorobenzene	82.14	0	100	0	82.1%	70	130				
Fluorobenzene	91.12	0	100	0	91.1%	70	130				

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: PNM - Public Service Company of NM
Work Order: 9809004
Project: McClanahan 22

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV4 QC0606/07		Batch ID: GC-1_980908	Test Code: SW8020A	Units: µg/L		Analysis Date 9/9/98		Prep Date:	
Client ID: 9809004		Run ID: GC-1_980908A				SeqNo: 6237			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	RPDLimit
Benzene	20.77	1	20	0	103.8%	85	115		
Ethylbenzene	21.61	1	20	0	108.1%	85	115		
m,p-Xylene	42.58	2	40	0	106.5%	85	115		
Methyl tert-Butyl Ether	17.57	1	20	0	87.8%	85	115		
o-Xylene	21.69	1	20	0	108.5%	85	115		
Toluene	21.51	1	20	0	107.5%	85	115		
1,4-Difluorobenzene	92.2	0	100	0	92.2%	70	130		
4-Bromochlorobenzene	77.84	0	100	0	77.8%	70	130		
Fluorobenzene	91.26	0	100	0	91.3%	70	130		

Sample ID: CCV1 QC0606/07		Batch ID: GC-1_980909	Test Code: SW8020A	Units: µg/L		Analysis Date 9/9/98		Prep Date:	
Client ID: 9809004		Run ID: GC-1_980909A				SeqNo: 6248			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	RPDLimit
Benzene	40.51	1	40	0	101.3%	85	115		
Ethylbenzene	42.72	1	40	0	106.8%	85	115		
m,p-Xylene	83.7	2	80	0	104.6%	85	115		
Methyl tert-Butyl Ether	41.49	1	40	0	103.7%	85	115		
o-Xylene	41.66	1	40	0	104.1%	85	115		
Toluene	41.5	1	40	0	103.7%	85	115		
1,4-Difluorobenzene	91.68	0	100	0	91.7%	70	130		
4-Bromochlorobenzene	81.86	0	100	0	81.9%	70	130		
Fluorobenzene	91	0	100	0	91.0%	70	130		

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: PNM - Public Service Company of NM
 Work Order: 9809004
 Project: McClanahan 22

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV2 QC0606/07		Batch ID: GC-1_980909	Test Code: SW8020A	Units: µg/L	Analysis Date 9/9/98		Prep Date:	
Client ID: 9809004		Run ID: GC-1_980909A	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit
Analyte	Result							
Benzene	38.56		1	40	0	96.4%	85	115
Ethylbenzene	41.52		1	40	0	103.8%	85	115
m,p-Xylene	81.56		2	80	0	101.9%	85	115
Methyl tert-Butyl Ether	38.45		1	40	0	96.1%	85	115
o-Xylene	40.1		1	40	0	100.3%	85	115
Toluene	40.44		1	40	0	101.1%	85	115
1,4-Difluorobenzene	91.65		0	100	0	91.7%	70	130
4-Bromochlorobenzene	76.78		0	100	0	76.8%	70	130
Fluorobenzene	90.24		0	100	0	90.2%	70	130
						%RPD	RPDLimit	Qual

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 10-Sep-98

CLIENT: PNM - Public Service Company of NM
Work Order: 9809004
Project: McClanahan 22
Test No: SW8020A

QC SUMMARY REPORT SURROGATE RECOVERIES

BTEX

Sample ID	14FBZ	4BCBZ	FLBZ
9808059-06A	94	86.5	92.6
9808059-13A	90.2	82.1	89.8
9808059-14A	90.4	85.7	90
9808059-19A	89.3	83	90.1
9808059-22A	93.8	86.2	93.5
9808059-24A	93.6	85.5	91.6
9809003-01A	89.5	91.3	89.6
9809004-01A	91.5	83.8	92.1
9809004-01AMS	88.6	81.5	89.2
9809004-01AMSD	88.4	80	89.3
9809004-02A	91.3	83.3	91.3
9809004-02AMS	89.3	81.9	89.2
9809004-02AMSD	89	80.5	89.1
CCV1 QC0606/07	91.7	81.8	91
CCV2 QC0606/07	91.6	76.8	90.2
CCV4 QC0606/07	92.2	77.8	91.2
LCS WATER	92	83	91.4
MBI	92.8	78.6	92.2

Acronym	Surrogate	QC Limits
14FBZ	= 1,4-Difluorobenzene	70-130
4BCBZ	= 4-Bromochlorobenzene	70-130
FLBZ	= Fluorobenzene	70-130

* Surrogate recovery outside acceptance limits

[illegible]

6/10/98

OFF: (505) 325-5667

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-1556

July 01, 1998

Maureen Gannon
PNM - Public Service Company of NM
Alvarado Square Mail Stop 0408
Albuquerque, NM 87158
TEL: (505) 241-2974
FAX (505) 241-2340

5th Quarter '98

RE: McClanahan 22

Order No.: 9806082

Dear Maureen Gannon,

On Site Technologies, LTD. received 2 samples on 6/19/98 for the analyses presented in the following report.

The Samples were analyzed for the following tests:
BTEX (SW8020A)

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,



David Cox

OFF: (505) 325-5667

ON SITE

LAB: (505) 325-1556

TECHNOLOGIES, LTD.

On Site Technologies, LTD.

Date: 01-Jul-98

CLIENT: PNM - Public Service Company of NM
Project: McClanahan 22
Lab Order: 9806082

CASE NARRATIVE

Samples were analyzed using the methods outlined in the following references:

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition

All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objectives.

OFF: (505) 325-5667

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 01-Jul-98

Client:	PNM - Public Service Company of NM	Client Sample Info:	McClanahan 22
Work Order:	9806082	Client Sample ID:	9806191330; MW-3
Lab ID:	9806082-01A	Matrix:	AQUEOUS
Project:	McClanahan 22	Collection Date:	6/19/98 1:30:00 PM
		COC Record:	7270

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8020A				Analyst: HR
Benzene	ND	2.5		µg/L	5	6/26/98
Toluene	35	2.5		µg/L	5	6/26/98
Ethylbenzene	500	2.5		µg/L	5	6/26/98
m,p-Xylene	850	5		µg/L	5	6/26/98
o-Xylene	170	2.5		µg/L	5	6/26/98

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted recovery limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surr: - Surrogate

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- TECHNOLOGY BUILDERS - DESIGNING THE FUTURE

1 of 1

OFF: (505) 325-5667

ON SITE

TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 01-Jul-98

Client:	PNM - Public Service Company of NM	Client Sample Info:	McClanahan 22
Work Order:	9806082	Client Sample ID:	9806191400; MW-5
Lab ID:	9806082-02A	Matrix:	AQUEOUS
Project:	McClanahan 22	Collection Date:	6/19/98 2:00:00 PM
		COC Record:	7270

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8020A				Analyst: HR
Benzene	ND	2.5		µg/L	5	6/26/98
Toluene	26	2.5		µg/L	5	6/26/98
Ethylbenzene	530	2.5		µg/L	5	6/26/98
m,p-Xylene	890	5		µg/L	5	6/26/98
o-Xylene	180	2.5		µg/L	5	6/26/98

Qualifiers:

PQL - Practical Quantitation Limit

S - Spike Recovery outside accepted recovery limits

ND - Not Detected at Practical Quantitation Limit

R - RPD outside accepted recovery limits

J - Analyte detected below Practical Quantitation Limit

E - Value above quantitation range

B - Analyte detected in the associated Method Blank

Surr: - Surrogate

1 of 1

P.O. BOX 2606 • FARMINGTON, NM 87499

On Site Technologies, LTD.

Date: 01-Jul-98

CLIENT: PNM - Public Service Company of NM
 Work Order: 9806082
 Project: McClanahan 22

QC SUMMARY REPORT

Method Blank

Sample ID: MB1	Batch ID: GC-1_980626	Test Code: SW8020A	Units: µg/L	Analysis Date 6/26/98	Prep Date:						
Client ID:	9806082	Run ID:	GC-1_980626B	SeqNo: 3712							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	.0354	0.5									J
Ethylbenzene	.1588	0.5									J
m,p-Xylene	.2269	1									J
Methyl tert-Butyl Ether	ND	1									J
o-Xylene	.1206	0.5									J
Toluene	.0987	0.5									J

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank
 1 of 1

On Site Technologies, LTD.

Date: 01-Jul-98

CLIENT: PNM - Public Service Company of NM
 Work Order: 9806082
 Project: McClanahan 22

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 9806071-02AMS		Batch ID: GC-1_980626		Test Code: SW8020A		Units: µg/L		Analysis Date 6/26/98		Prep Date:	
Client ID: 9806082		Run ID: GC-1_980626B		PQL		SPK value		SeqNo: 3713			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	1885	5	400	1500	96.3%	56	128				
Ethylbenzene	982.6	5	400	580	100.7%	78	107				
m,p-Xylene	1771	10	800	990	97.6%	67	118				
Methyl tert-Butyl Ether	478.9	10	400	32	111.7%	70	130				
o-Xylene	743.7	5	400	360	95.9%	78	107				
Toluene	1144	5	400	750	98.5%	74	116				

Sample ID: 9806071-02AMSD		Batch ID: GC-1_980626		Test Code: SW8020A		Units: µg/L		Analysis Date 6/26/98		Prep Date:	
Client ID: 9806082		Run ID: GC-1_980626B		PQL		SPK value		SeqNo: 3714			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	1808	5	400	1500	76.9%	56	128	1885	4.2%	12	
Ethylbenzene	941.9	5	400	580	90.5%	78	107	982.6	4.2%	11	
m,p-Xylene	1700	10	800	990	88.7%	67	118	1771	4.1%	10	
Methyl tert-Butyl Ether	471.3	10	400	32	109.8%	70	130	478.9	1.6%	15	
o-Xylene	715	5	400	360	88.8%	78	107	743.7	3.9%	14	
Toluene	1098	5	400	750	86.9%	74	116	1144	4.1%	14	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 01-Jul-98

CLIENT: PNM - Public Service Company of NM

Work Order: 9806082

Project: McClanahan 22

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS WATER		Batch ID: GC-1_980626	Test Code: SW8020A	Units: µg/L	Analysis Date 6/26/98		Prep Date:				
Client ID:		9806082	Run ID: GC-1_980626B		SeqNo: 3711						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	41.07	0.5	40	0.0354	102.6%	56	128				
Ethylbenzene	42.06	0.5	40	0.1588	104.7%	78	107				
m,p-Xylene	80.77	1	80	0.2269	100.7%	67	118				
Methyl tert-Butyl Ether	44.05	1	40	0	110.1%	70	130				
o-Xylene	41.54	0.5	40	0.1206	103.6%	78	107				
Toluene	41.33	0.5	40	0.0987	103.1%	74	116				

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 01-Jul-98

CLIENT: PNM - Public Service Company of NM
 Work Order: 9806082
 Project: McClanahan 22

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV1 QC0529/30	Batch ID: GC-1_980626	Test Code: SW8020A	Units: µg/L	Analysis Date 6/26/98	Prep Date:						
Client ID: 9806082	Run ID: GC-1_980626B	PQL	SPK value	SeqNo: 3708							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	21.54	0.5	20	0	107.7%	85	115				
Ethylbenzene	22.08	0.5	20	0	110.4%	85	115				
m,p-Xylene	42.12	1	40	0	105.3%	85	115				
Methyl tert-Butyl Ether	23.75	1	20	0	118.7%	85	115				S
o-Xylene	21.73	0.5	20	0	108.7%	85	115				
Toluene	21.67	0.5	20	0	108.4%	85	115				
1,4-Difluorobenzene	93.05	0	100	0	93.1%	70	130				
4-Bromochlorobenzene	84.53	0	100	0	84.5%	70	130				
Fluorobenzene	92.92	0	100	0	92.9%	70	130				

Sample ID: CCV2 QC0529/30	Batch ID: GC-1_980626	Test Code: SW8020A	Units: µg/L	Analysis Date 6/26/98	Prep Date:				
Client ID: 9806082	Run ID: GC-1_980626B	PQL	SPK value	SeqNo: 3709					
Analyte	Result			LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.22	0.5	20	0	85	115	101.1%		
Ethylbenzene	21.22	0.5	20	0	85	115	106.1%		
m,p-Xylene	39.72	1	40	0	85	115	99.3%		
Methyl tert-Butyl Ether	17.62	1	20	0	85	115	88.1%		
o-Xylene	20.36	0.5	20	0	85	115	101.8%		
Toluene	20.4	0.5	20	0	85	115	102.0%		
1,4-Difluorobenzene	92.57	0	100	0	70	130	92.6%		
4-Bromochlorobenzene	72.38	0	100	0	70	130	72.4%		
Fluorobenzene	92.38	0	100	0	70	130	92.4%		

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: PNM - Public Service Company of NM
 Work Order: 9806082
 Project: McClanahan 22

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV3 QC0529/30		Batch ID: GC-1_980626	Test Code: SW8020A	Units: µg/L	Analysis Date 6/26/98		Prep Date:	
Client ID: 9806082		Run ID: GC-1_980626B	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit
Analyte	Result							
Benzene	20.34	0.5	20	0	101.7%	85	115	
Ethylbenzene	20.56	0.5	20	0	102.8%	85	115	
m,p-Xylene	39.15	1	40	0	97.9%	85	115	
Methyl tert-Butyl Ether	20.77	1	20	0	103.9%	85	115	
o-Xylene	20.52	0.5	20	0	102.6%	85	115	
Toluene	20.41	0.5	20	0	102.1%	85	115	
1,4-Difluorobenzene	92.79	0	100	0	92.8%	70	130	
4-Bromochlorobenzene	83.34	0	100	0	83.3%	70	130	
Fluorobenzene	92.67	0	100	0	92.7%	70	130	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: PNM - Public Service Company of NM
Work Order: 9806082
Project: McClanahan 22
Test No: SW8020A

QC SUMMARY REPORT SURROGATE RECOVERIES

BTEX

Sample ID	14FBZ	4BCBZ	FLBZ				
9806071-01A	94.8	74.1	92.4				
9806071-02A	97	72.1	95.4				
9806071-02AMS	97.7	73.6	95.2				
9806071-02AMSD	97.4	74.2	95.2				
9806071-03A	93.3	86.9	93.4				
9806082-01A	87.9	71.3	93.8				
9806082-02A	89.8	66.1 *	95.3				
9806083-01A	92.9	68.7 *	92.8				
9806083-02A	92.8	72.2	92.3				
9806084-01A	92.4	60.3 *	91.9				
9806084-02A	92.9	69.3 *	92.5				
9806084-03A	92.9	69.9 *	92.5				
9806095-01A	93.5	87.5	93.4				
9806095-02A	93.4	84.6	93.1				
9806095-03A	92.8	71.3	92.9				
9806095-04A	93.4	70.3	93.1				
9806095-05A	91.5	52.7 *	91.1				
9806095-06A	89.8	47.2 *	89.7				
9806095-07A	79	71.7	84.4				
9806095-09A	91.9	73.3	91.9				
9806095-10A	92.7	70.2	92.7				
CCV1 QC0529/30	93	84.5	92.9				
CCV2 QC0529/30	92.6	72.4	92.4				
CCV3 QC0529/30	92.8	83.3	92.7				
LCS WATER	92.6	85.7	92.6				
MB1	93.1	88.4	92.6				

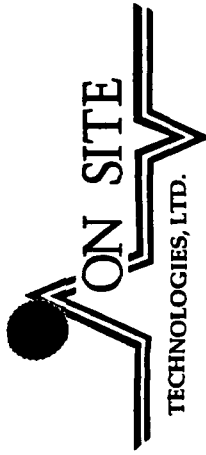
Acronym

Surrogate

QC Limits

14FBZ	=	1,4-Difluorobenzene	70-130
4BCBZ	=	4-Bromochlorobenzene	70-130
FLBZ	=	Fluorobenzene	70-130

* Surrogate recovery outside acceptance limits



CHAIN OF CUSTODY RECORD

ON SITE

TECHNOLOGIES, LTD.

612 E. Murphy Dr. • P.O. Box 2606 • Farmington, NM 87499
LAB: (505) 325-5667 • FAX: (505) 325-6256

Date: 6/19/98

Page: 1

of 1

Purchase Order No.:		Job No.	
Name: Denver Bearden		Title: Maureen Gannon	
Company: PNIM Gas Services		Company: PNIM Gas Services	
Address: 603 W. Elm Street		Mailing Address: Alverado Square, Mail Stop 0408	
City, State, Zip: Farmington, NM 87401		City, State, Zip: Albuquerque, NM 87158	
Sampling Location: Mcclanahan 22		Telephone No.: 505-848-2974	
Sampler: Mark Sikelianos		Telefax No.:	
SEND INVOICE TO		RESULTS TO	
SAMPLE IDENTIFICATION		Number of Containers	
DATE	TIME	LAB ID	
980619	MW-1	980619-01A	
980619	MW-3	980619-02A	
980619	MW-5		
ANALYSIS REQUESTED			
Date/Time: 6/19/98 1445		Date/Time: 6/19/98 1445	
Relinquished by: Mark Sikelianos		Received by: Maureen Gannon	
Date/Time:		Date/Time:	
Relinquished by:		Received by:	
Date/Time:		Date/Time:	
Relinquished by:		Received by:	
Date/Time:		Date/Time:	
Method of Shipment: Hand Delivered		10 Working Days	
Authorized by: Mark Sikelianos		Special Instructions:	
Date: 6/19/98		Results to be sent to both parties.	



Date:

1

Page: _____ of _____

612 E. Murphy Dr. • P.O. Box 2606 • Farmington, NM 87499
LAB: (505) 325-5667 • FAX: (505) 325-6256

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