

3R - 324

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 long horizontal flourish extending to the right.

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

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

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

Operator: Amoco
Sec: 25 Twn: 30N Rng: 9W Unit: D
Canyon: Pump

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

Topo Map: previously submitted

Well Completion Diagram: previously submitted

Site Map with Analysis: Figure 1

Groundwater Contour Map: Figures 2a (April, 1998), 2b (July, 1998), 2c (October, 1998) and 2d (January, 1999)

Groundwater Hydrograph: Figure 3

Full-Suite Groundwater Sampling Results: previously submitted

Analytical Results: attached

Site Hydrology:

The Jacques 2A is located about one mile north of the San Juan River in a side drainage off Pump Canyon. An unnamed drainage runs from west to east, and the Jacques 2A site lies only about 100 feet from this drainage, which intersects Pump Canyon wash about 900 feet to the east. The site's elevation is about 5680 ft. amsl, and elevations drop eastward towards the valley floor of Pump Canyon along which elevations drop southward towards the San Juan River. The site receives roughly 8 to 10 inches of rainfall each year (based on data from Stone et al., 1983).

Pump Canyon is a major drainage, and covers a broad area. Alluvium on its valley floor spans more than 1,000 feet in width, and is probably from 50 to 100 feet thick (Stone et al., 1983). The northwestern-most well (MW-1; see Figure 2) reportedly encountered a "hard sandstone" at 42 feet, while deeper wells (MW-2 at 46.5 ft.) did not show any bedrock materials. Therefore, the general configuration of the bedrock-alluvium interface probably conforms to the surface topography (elevated in the northwest, and depressed towards the southeast).

Subsurface materials at the Jacques 2A site are described as clayey, silty sands. Well MW-2 reportedly encountered mostly clay and silt, with very little sand. Well MW-2 has been reinstalled after an additional source removal activity in December 1997, and now draws water from excavated and reworked material.

The depth to water ranges from 27 to 33 feet in monitor wells at the site. Maps showing the elevation of the water table over the last year appear in Figures 2a through 2d. In Figures 2b, 2c and 2d, the flow directions are towards the southeast, which agrees with the surface topography. Figure 2a, however, shows an anomalous mounding pattern centered on well MW-2. Figure 2a is based on the first set of water level data collected after site re-excavation and therefore is most likely unrepresentative of site conditions, but instead reflects the undeveloped state of well MW-2, collection of rainwater in the disturbed excavation materials, or other factors not related to the true groundwater surface.

Figure 3 shows water levels in the monitor wells over time. After irregularities in the earlier history of the site, water levels in the wells tend to track each other. The anomalously high water level in the newly installed MW-2 is clearly visible in Figure 3 (April, 1998 measurement). For the last three quarters, water levels in all four wells have shown consistent relationships, indicating a relatively constant flow direction, as is also reflected in the water table maps (Figures 2b through 2d).

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: Jacques 2A (continued)

Activities for Previous Year:

Quarterly sampling of well MW-2 took place on April 29, July 9 and October 5, 1998, and again on January 18, 1999. Water level measurements were taken in the four monitoring wells. In the January, 1999 sampling event, PNM conducted groundwater sampling in each well for chemical analyses of benzene, toluene, ethylbenzene, and xylenes (BTEX). No samples were analyzed for polyaromatic hydrocarbons (PAHs) because wells had no strong hydrocarbon odors or visible sheens. All sampling was performed in strict compliance with EPA protocol. PNM delivered the samples to OnSite Technologies, Farmington, New Mexico. The samples were analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX) using EPA Method 8020.

The site was resurveyed in February, 1999 to more accurately measure the wellhead elevation in the re-installed MW-2. The new information was used to prepare the figures attached to this report.

Results:

Figure 2 presents a site map showing benzene, toluene, ethylbenzene and xylenes (BTEX) for each monitoring well since groundwater contamination was discovered. BTEX concentrations in the source well (MW-2) had been quite high since installation early in 1997; therefore, secondary source removal (about 5000 cubic yards) was conducted in December, 1997. After this additional work, concentrations rapidly fell below standards and have remained so for the last four quarters. No other samples from monitor wells, MW-1, -3 or -4, have contained BTEX constituents.

Future Actions:

Consistent with PNM's San Juan Basin Groundwater Management Plan, PNM will request closure of the Jacques 2A 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 the site. The secondary excavation of additional source materials appears to have been successful in achieving clean-up at the Jacques 2A; the BTEX concentrations in the source well (MW-2) have been below standards for four consecutive quarters. Resampling of all monitor wells also shows that BTEX compounds are below detection limits in the other wells.

Upon approval of the groundwater closure report, PNM will plug and abandon the four groundwater monitoring wells at the site. 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 o the surface with cement containing 5% bentonite.

Public Service Company of New Mexico - Gas Services

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

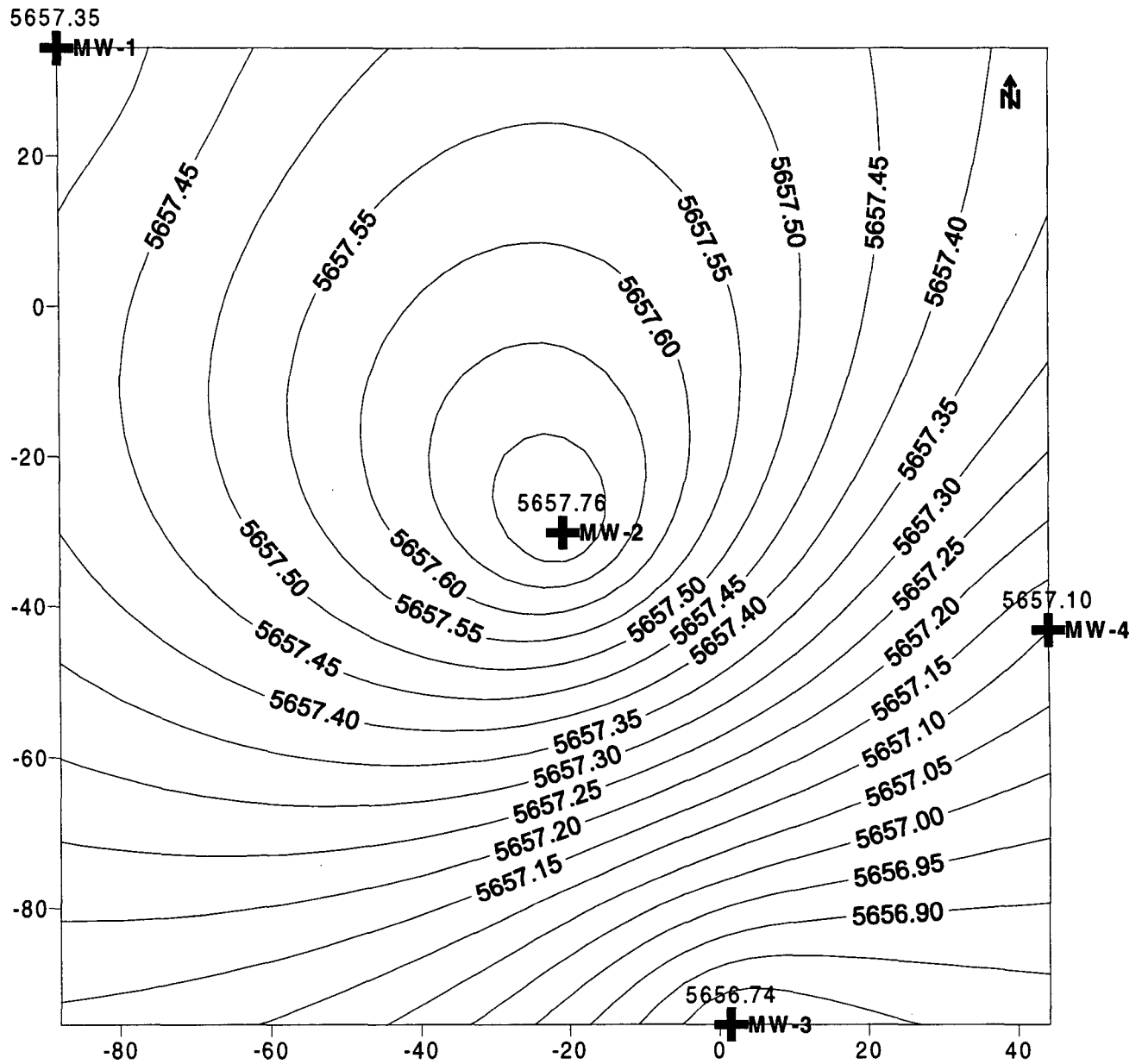
Contact: Maureen Gannon

Telephone: 505-241-2974

Figure 1.
Jacques 2A Site Map & Analytical Results
(Concentrations in ppb)



Figure 2a.
Jacques 2A Groundwater Contour Map
(April 29, 1998)



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

Figure 2b.
Jacques 2A Groundwater Contour Map
(July 9, 1998)

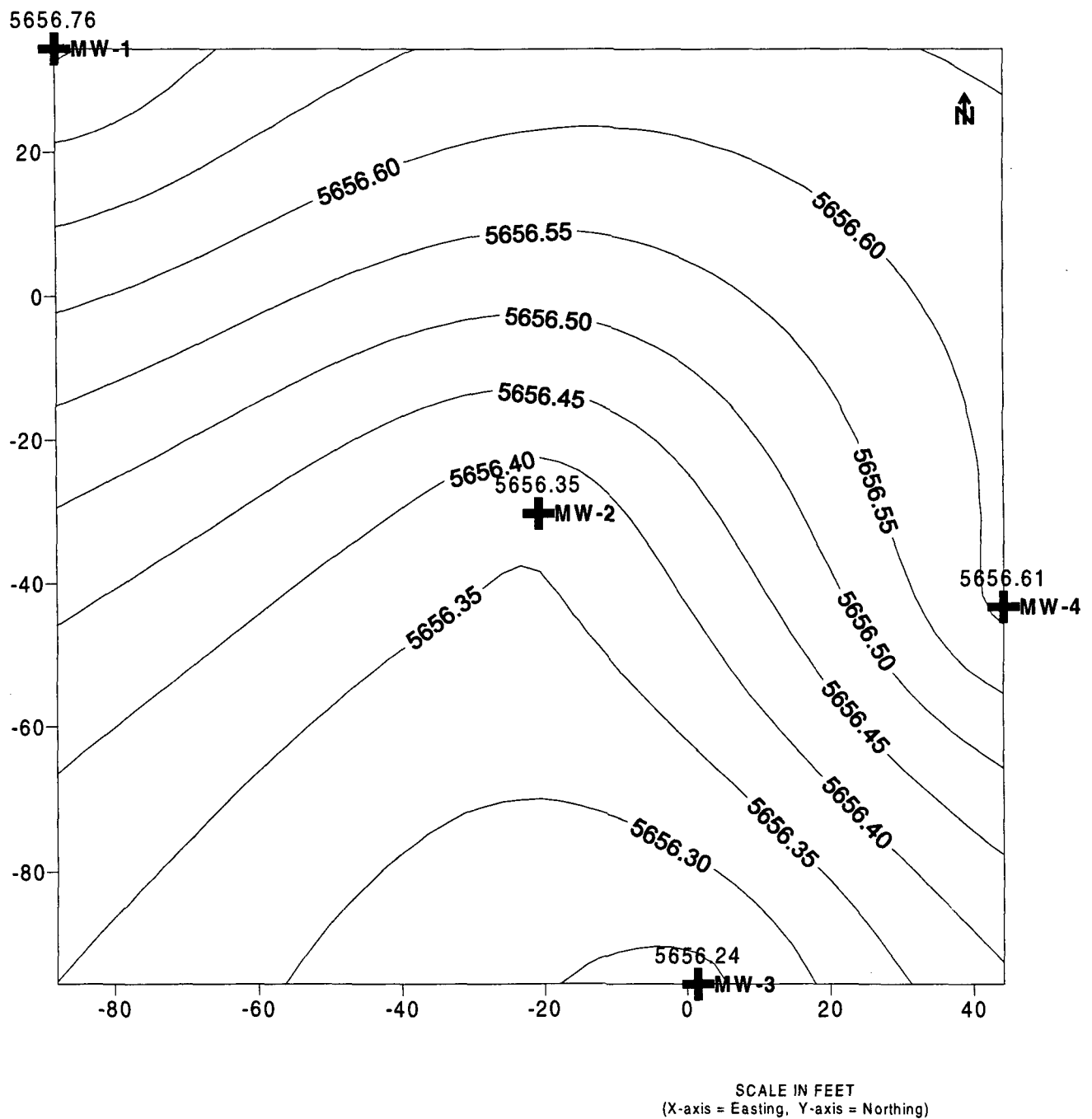


Figure 2c.
Jacques 2A Groundwater Contour Map
(October 5, 1998)

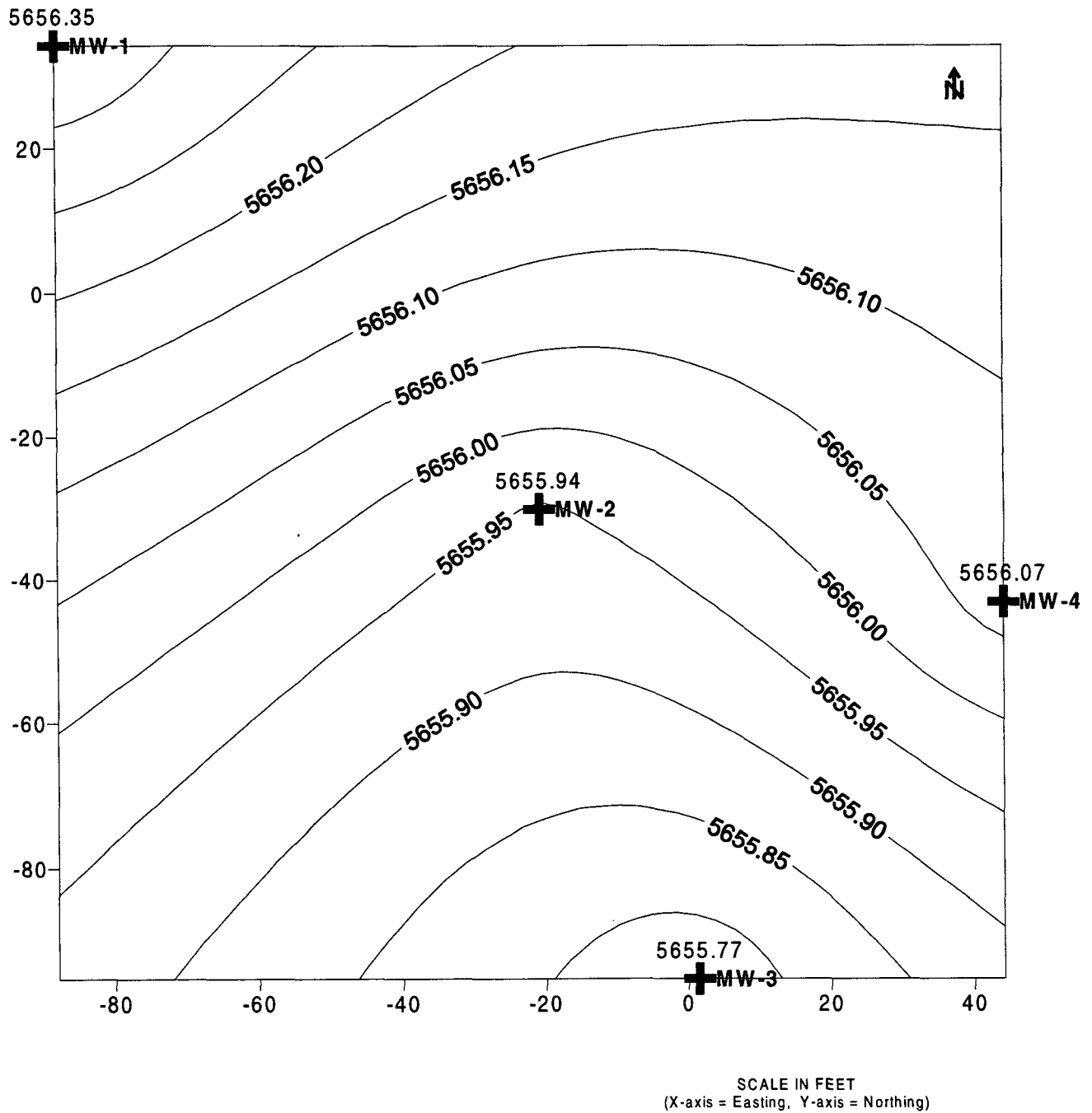


Figure 2d.
Jacques 2A Groundwater Contour Map
(January 18, 1999)

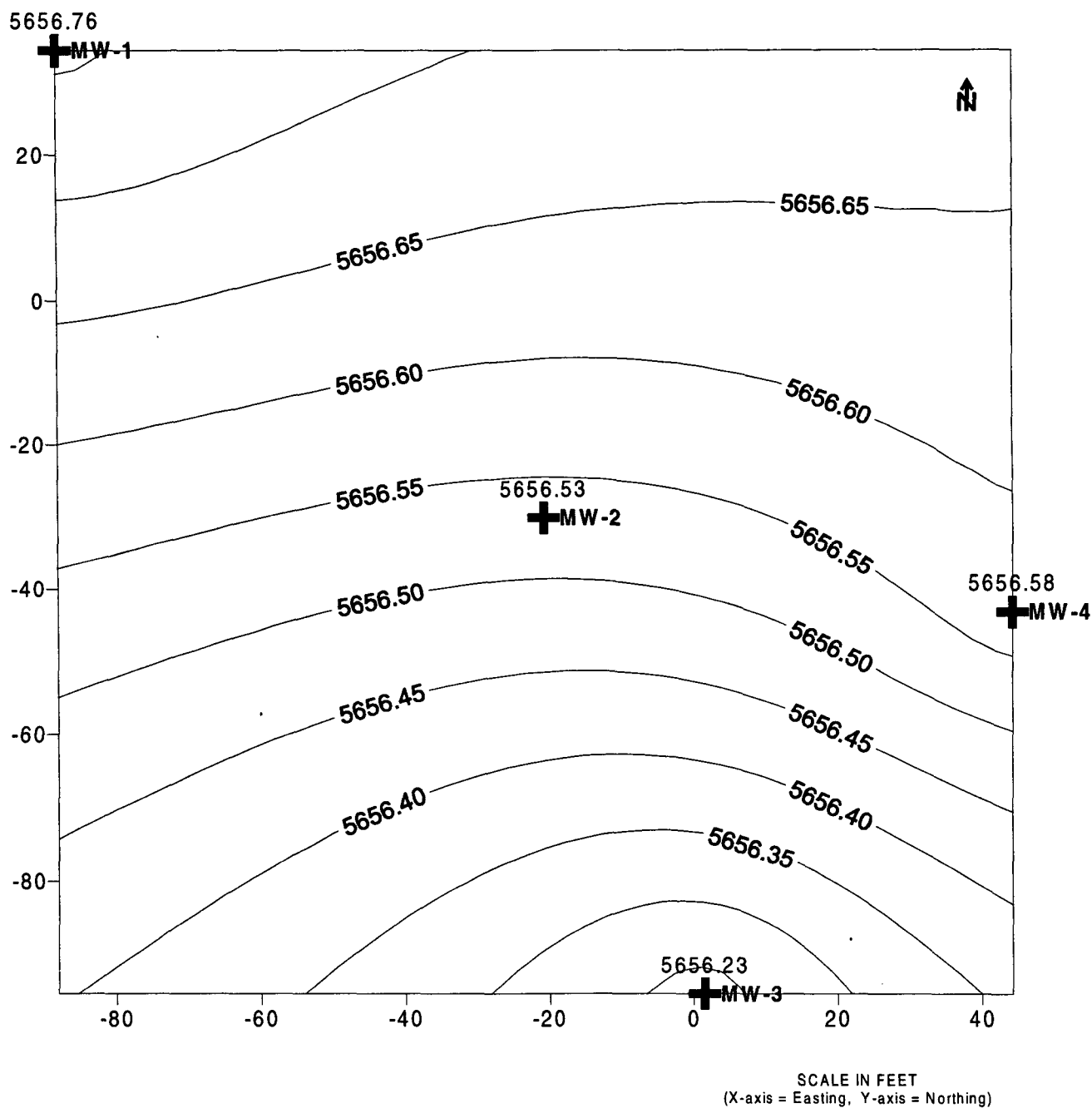
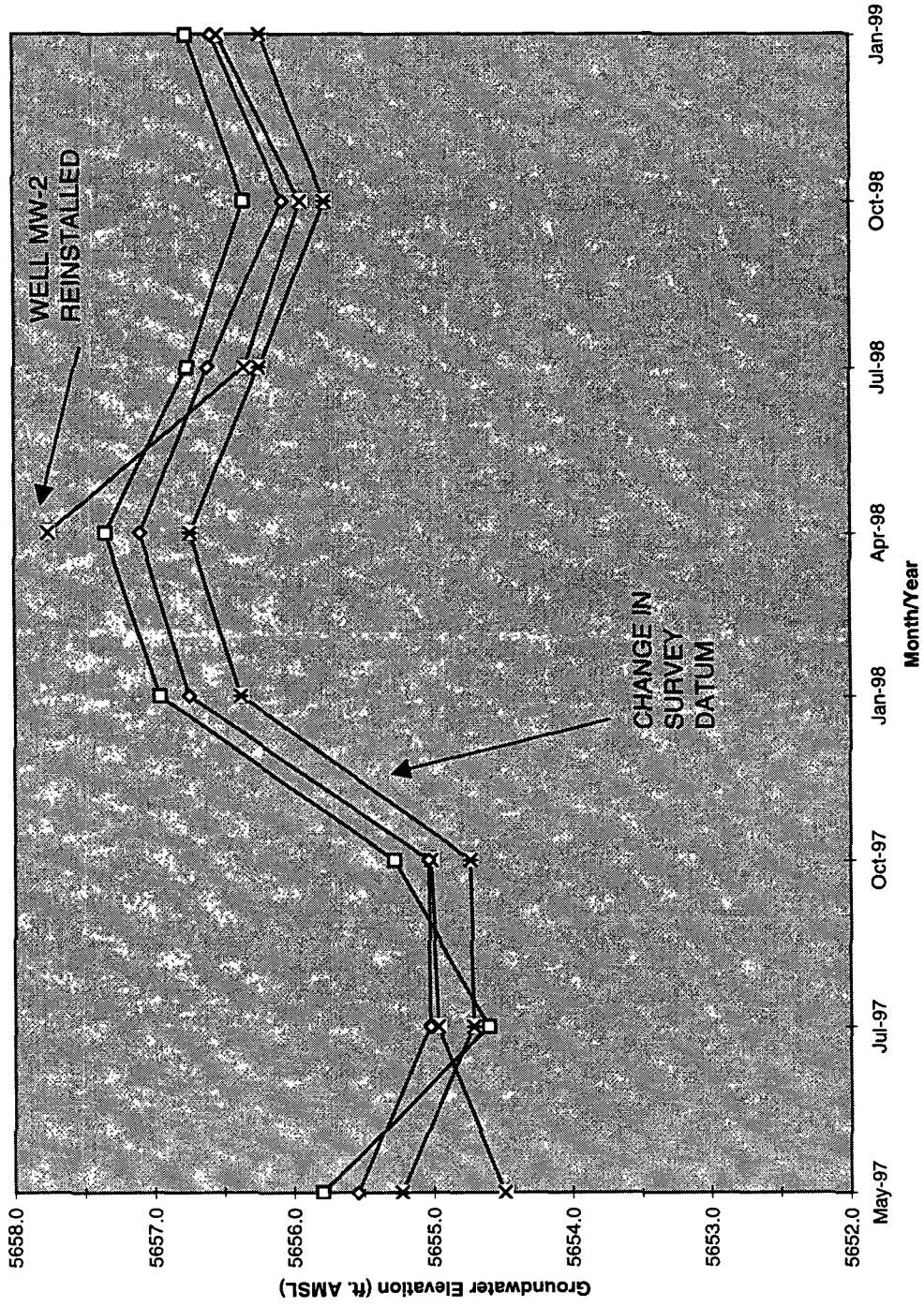


Figure 3. Jacques 2A Hydrograph
(Water Level vs. Time)



OFF: (505) 325-5667



LAB: (505) 325-1556

May 11, 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

2nd Quarter 98

RE: Jacques 2A

Order No.: 9804056

Dear Maureen Gannon,

On Site Technologies, LTD. received 1 sample on 4/29/98 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,

A handwritten signature in black ink, appearing to read "D Cox", written in a cursive style.

David Cox

OFF: (505) 325-5667



LAB: (505) 325-1556

On Site Technologies, LTD.

Date: 11-May-98

CLIENT: PNM - Public Service Company of NM

Project: Jacques 2A

Lab Order: 9804056

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: 11-May-98

Client: PNM - Public Service Company of NM
Work Order: 9804056
Lab ID: 9804056-01A **Matrix:** AQUEOUS
Project: Jacques 2A

Client Sample Info: Jacques 2A
Client Sample ID: 9804291300; MW-2
Collection Date: 4/29/98 1:00:00 PM
COC Record: 7251

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8020A				Analyst: DC
Benzene	2.7	0.5		µg/L	1	5/7/98
Toluene	6.7	0.5		µg/L	1	5/7/98
Ethylbenzene	50	0.5		µg/L	1	5/7/98
m,p-Xylene	79	1		µg/L	1	5/7/98
o-Xylene	6	0.5		µg/L	1	5/7/98

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 BLENDING INDUSTRY WITH THE ENVIRONMENT -

On Site Technologies, LTD.

Date: 11-May-98

CLIENT: PNM - Public Service Company of NM
 Work Order: 9804056
 Project: Jacques 2A

QC SUMMARY REPORT

Method Blank

Sample ID: MB1	Batch ID: GC-1_980507	Test Code: SW8020A	Units: µg/L	Analysis Date 5/7/98	Prep Date:						
Client ID:	9804056	Run ID: GC-1_980507A		SeqNo: 1678							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	.0604	0.5									J
Ethylbenzene	.0824	0.5									J
m,p-Xylene	.2996	1									J
Methyl tert-Butyl Ether	.0751	1									J
o-Xylene	.1208	0.5									J
Toluene	.173	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

On Site Technologies, LTD.

Date: 11-May-98

CLIENT: PNM - Public Service Company of NM
 Work Order: 9804056
 Project: Jacques 2A

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 9804054-01AMS		Batch ID: GC-1_980507		Test Code: SW8020A		Units: µg/L		Analysis Date 5/7/98		Prep Date:	
Client ID:		9804056		Run ID:		GC-1_980507A		SeqNo: 1679			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	8323	50	4000	3999	108.1%	56	128				S
Ethylbenzene	5411	50	4000	995.8	110.4%	78	107				S
m,p-Xylene	28750	100	8000	14760	174.9%	67	118				S
Methyl tert-Butyl Ether	3732	100	4000	18.23	92.9%	70	130				S
o-Xylene	9129	50	4000	3818	132.8%	78	107				S
Toluene	18610	50	4000	12990	140.7%	74	116				S

Sample ID: 9804054-01AMSD		Batch ID: GC-1_980507		Test Code: SW8020A		Units: µg/L		Analysis Date 5/7/98		Prep Date:	
Client ID: 9804056		Run ID: GC-1_980507A						SeqNo: 1680			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	7975	50	4000	3999	99.4%	56	128	8323	4.3%	12	S
Ethylbenzene	5198	50	4000	995.8	105.1%	78	107	5411	4.0%	11	
m,p-Xylene	27560	100	8000	14760	160.1%	67	118	28750	4.2%	10	
Methyl tert-Butyl Ether	3664	100	4000	18.23	91.1%	70	130	3732	1.9%	15	S
o-Xylene	8811	50	4000	3818	124.8%	78	107	9129	3.5%	14	
Toluene	17820	50	4000	12990	120.7%	74	116	18610	4.4%	14	S

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: 11-May-98

CLIENT: PNM - Public Service Company of NM

Work Order: 9804056

Project: Jacques 2A

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS WATER		Batch ID: GC-1_980507	Test Code: SW8020A	Units: µg/L	Analysis Date 5/7/98	Prep Date:					
Client ID:	9804056	Run ID:	GC-1_980507A		SeqNo: 1677						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	42.28	0.5	40	0.0604	105.6%	56	128				
Ethylbenzene	42.69	0.5	40	0.0824	106.5%	78	107				
m,p-Xylene	82.27	1	80	0.2996	102.5%	67	118				
Methyl tert-Butyl Ether	38.02	1	40	0.0751	94.9%	70	130				
o-Xylene	42.5	0.5	40	0.1208	105.9%	78	107				
Toluene	42.21	0.5	40	0.173	105.1%	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: 11-May-98

CLIENT: PNM - Public Service Company of NM
Work Order: 9804056
Project: Jacques 2A

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV1 QC0529/30		Batch ID: GC-1_980507	Test Code: SW8020A	Units: µg/L		Analysis Date 5/7/98		Prep Date:			
Client ID: 9804056		Run ID: GC-1_980507A				SeqNo: 1672					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	21.26	0.5	20	0	106.3%	85	115				
Ethylbenzene	21.65	0.5	20	0	108.3%	85	115				
m,p-Xylene	41.55	1	40	0	103.9%	85	115				
Methyl tert-Butyl Ether	19.41	1	20	0	97.0%	85	115				
o-Xylene	21.46	0.5	20	0	107.3%	85	115				
Toluene	21.37	0.5	20	0	106.8%	85	115				
1,4-Difluorobenzene	92.8	0	100	0	92.8%	70	130				
4-Bromochlorobenzene	89.27	0	100	0	89.3%	70	130				
Fluorobenzene	92.92	0	100	0	92.9%	70	130				

Sample ID: CCV2 QC0529/30		Batch ID: GC-1_980507	Test Code: SW8020A	Units: µg/L	Analysis Date 5/7/98		Prep Date:				
Client ID:		9804056	Run ID:	GC-1_980507A	SeqNo:	1673					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.82	0.5	20	0	104.1%	85	115				
Ethylbenzene	21.2	0.5	20	0	106.0%	85	115				
m,p-Xylene	40.61	1	40	0	101.5%	85	115				
Methyl tert-Butyl Ether	18.49	1	20	0	92.4%	85	115				
o-Xylene	21.2	0.5	20	0	106.0%	85	115				
Toluene	20.97	0.5	20	0	104.9%	85	115				
1,4-Difluorobenzene	92.53	0	100	0	92.5%	70	130				
4-Bromochlorobenzene	90.18	0	100	0	90.2%	70	130				
Fluorobenzene	92.97	0	100	0	93.0%	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: 9804056
Project: Jacques 2A

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV3 QC0529/30		Batch ID: GC-1_980507		Test Code: SW8020A		Units: µg/L		Analysis Date 5/7/98		Prep Date:	
Client ID:		9804056		Run ID: GC-1_980507A				SeqNo: 1674			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	21.24	0.5	20	0	106.2%	85	115				
Ethylbenzene	21.5	0.5	20	0	107.5%	85	115				
m,p-Xylene	41.01	1	40	0	102.5%	85	115				
Methyl tert-Butyl Ether	17.96	1	20	0	89.8%	85	115				
o-Xylene	22.72	0.5	20	0	113.6%	85	115				
Toluene	21.47	0.5	20	0	107.3%	85	115				
1,4-Difluorobenzene	92.47	0	100	0	92.5%	70	130				
4-Bromochlorobenzene	88.18	0	100	0	88.2%	70	130				
Fluorobenzene	92.84	0	100	0	92.8%	70	130				

Sample ID: CCV4 QC0529/30		Batch ID: GC-1_980507	Test Code: SW8020A	Units: µg/L	Analysis Date 5/7/98		Prep Date:				
Client ID: 9804056		Run ID: GC-1_980507A			SeqNo: 1675						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.82	0.5	20	0	104.1%	85	115				
Ethylbenzene	21.86	0.5	20	0	109.3%	85	115				
m,p-Xylene	41.02	1	40	0	102.6%	85	115				
Methyl tert-Butyl Ether	18.32	1	20	0	91.6%	85	115				
o-Xylene	21.68	0.5	20	0	108.4%	85	115				
Toluene	21.03	0.5	20	0	105.1%	85	115				
1,4-Difluorobenzene	92.66	0	100	0	92.7%	70	130				
4-Bromochlorobenzene	88.98	0	100	0	89.0%	70	130				
Fluorobenzene	92.65	0	100	0	92.6%	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: 9804056
Project: Jacques 2A

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV5 QC0529/30		Batch ID: GC-1_980507		Test Code: SW8020A		Units: µg/L		Analysis Date 5/7/98		Prep Date:	
Client ID:		9804056		Run ID: GC-1_980507A				SeqNo: 1676			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.54	0.5	20	0	102.7%	85	115				
Ethylbenzene	20.93	0.5	20	0	104.6%	85	115				
m,p-Xylene	40.5	1	40	0	101.2%	85	115				
Methyl tert-Butyl Ether	17.55	1	20	0	87.8%	85	115				
o-Xylene	20.6	0.5	20	0	103.0%	85	115				
Toluene	21.34	0.5	20	0	106.7%	85	115				
1,4-Difluorobenzene	91.93	0	100	0	91.9%	70	130				
4-Bromochlorobenzene	88.69	0	100	0	88.7%	70	130				
Fluorobenzene	92.03	0	100	0	92.0%	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

On Site Technologies, LTD.

Date: 11-May-98

CLIENT: PNM - Public Service Company of NM
Work Order: 9804056
Project: Jacques 2A
Test No: SW8020A

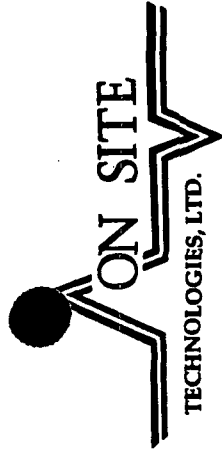
QC SUMMARY REPORT SURROGATE RECOVERIES

BTEX

Sample ID	14FBZ	4BCBZ	FLBZ					
9804051-01A	89.6	85	90.3					
9804051-02A	89.5	84.7	89.6					
9804052-01A	90.3	88	91.7					
9804053-01A	78	80	80.4					
9804054-01A	91.5	89.1	92.8					
9804054-01AMS	91.5	91.3	93.3					
9804054-01AMSD	90	89.2	91.1					
9804055-01A	81.8	77.1	87.9					
9804055-02A	85.9	83.4	88.5					
9804056-01A	85.8	85.3	86.6					
9804057-01A	93.4	88.7	93.7					
9804057-02A	90.2	88.6	91.3					
9804057-03A	91.2	88.6	91.7					
9805003-01A	93.1	88.8	93.5					
9805003-02A	90.7	88.8	91.6					
CCV1 QC0529/30	92.8	89.3	92.9					
CCV2 QC0529/30	92.5	90.2	93					
CCV3 QC0529/30	92.5	88.2	92.8					
CCV4 QC0529/30	92.7	89	92.6					
CCV5 QC0529/30	91.9	88.7	92					
LCS WATER	92.5	89.2	92.5					
MB1	93.1	86.4	93.6					

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

* Surrogate recovery outside acceptance limits

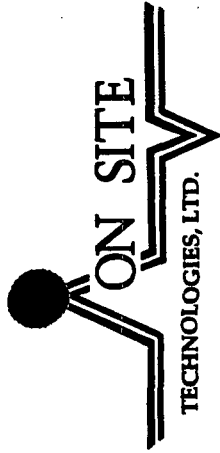


CHAIN OF CUSTODY RECORD

Date: 4/29/98 Page: 1 of 1

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

Purchase Order No.:		Job No.	
Name: Denver Bearden		Name: Maureen Gannon	
Company: PNM Gas Services		Company: PNM Gas Services	
Address: 603 W. Elm Street		Mailing Address: Alverado Square, Mail Stop 0408	
City, State, Zip: Farmington, NM 87401		City, State, Zip: Albuquerque, NM 87158	
		Telephone No.: 505-848-2974	
		Telefax No.:	
Sampling Location: Jacques 2 A		ANALYSIS REQUESTED	
Sampler: M.S.		LAB ID	
SAMPLE IDENTIFICATION		LAB ID	
DATE	SAMPLE TIME	MATRIX	PRES.
9804291300	MW-2	AP01H2	2
Number of Containers		RESULTS TO	
2		X	
Relinquished by: <u>Pat D.B.</u>		Received by: <u>DeS</u>	
Date/Time: <u>4/29/98 1345</u>		Date/Time: <u>4/29/98 1345</u>	
Relinquished by:		Received by:	
Date/Time:		Date/Time:	
Relinquished by:		Received by:	
Date/Time:		Date/Time:	
Method of Shipment: <u>HAND DELIVERED</u>		10 Working Days	
Authorized by: <u>Pat D.B.</u>		Special Instructions:	
Date: <u>4/29/98</u>		Results to be sent to both parties.	
(Client Signature Must Accompany Request)			



CHAIN OF CUSTODY RECORD

Page: 1 of 1

Date: 4/29/98

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

Purchase Order No.:		Job No.	
Name: Denver Bearden		Name: Maureen Gannon	
Company: PNM Gas Services		Company: PNM Gas Services	
Address: 603 W. Elm Street		Mailing Address: Alverado Square, Mail Stop 0408	
City, State, Zip: Farmington, NM 87401		City, State, Zip: Albuquerque, NM 87158	
Telephone No.:		Telephone No.:	
Telefax No.:		Telefax No.:	
Sampling Location: Jacques 2 A		ANALYSIS REQUESTED	
Sampler: M.S.		LAB ID	
SAMPLE IDENTIFICATION		LAB ID	
9804291300 MW-2		980429-01A	
DATE		DATE	
TIME		TIME	
MATRIX		MATRIX	
PRES.		PRES.	
Date/Time: 4/29/98 1345		Date/Time: 4/29/98 1345	
Date/Time:		Date/Time:	
Date/Time:		Date/Time:	
Relinquished by: [Signature]		Received by: [Signature]	
Relinquished by:		Received by:	
Relinquished by:		Received by:	
Method of Shipment: HAND DELIVERED		10 Working Days Special Instructions:	
Authorized by: [Signature]		Results to be sent to both parties.	

OFF: (505) 325-5667



LAB: (505) 325-1556

July 21, 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 98

RE: Jacques 2A

Order No.: 9807025

Dear Maureen Gannon,

On Site Technologies, LTD. received 2 samples on 7/9/98 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,

A handwritten signature in black ink, appearing to read "David Cox".

David Cox

OFF: (505) 325-5667



LAB: (505) 325-1556

On Site Technologies, LTD.

Date: 21-Jul-98

CLIENT: PNM - Public Service Company of NM

Project: Jacques 2A

Lab Order: 9807025

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: 21-Jul-98

Client:	PNM - Public Service Company of NM	Client Sample Info:	Jacques 2A
Work Order:	9807025	Client Sample ID:	9807091215; MW-2
Lab ID:	9807025-01A	Matrix:	AQUEOUS
Project:	Jacques 2A	Collection Date:	7/9/98 12:15:00 PM
		COC Record:	7279

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8020A				Analyst: DC
Benzene	1.7	0.5		µg/L	1	7/20/98
Toluene	5.4	0.5		µg/L	1	7/20/98
Ethylbenzene	57	0.5		µg/L	1	7/20/98
m,p-Xylene	40	1		µg/L	1	7/20/98
o-Xylene	ND	0.5		µg/L	1	7/20/98

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 BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 21-Jul-98

Client: PNM - Public Service Company of NM
Work Order: 9807025
Lab ID: 9807025-02A **Matrix:** AQUEOUS
Project: Jacques 2A

Client Sample Info: Jacques 2A
Client Sample ID: 9807091230; MW-5
Collection Date: 7/9/98 12:30:00 PM
COC Record: 7279

*MW-5
Duplicate*

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8020A				Analyst: DC
Benzene	1.9	0.5		µg/L	1	7/20/98
Toluene	5.9	0.5		µg/L	1	7/20/98
Ethylbenzene	62	0.5		µg/L	1	7/20/98
m,p-Xylene	42	1		µg/L	1	7/20/98
o-Xylene	ND	0.5		µg/L	1	7/20/98

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 BLENDING INDUSTRY WITH THE ENVIRONMENT -

On Site Technologies, LTD.

Date: 21-Jul-98

CLIENT: PNM - Public Service Company of NM
 Work Order: 9807025
 Project: Jacques 2A

QC SUMMARY REPORT

Method Blank

Sample ID: MB1	Batch ID: GC-1_980717	Test Code: SW8020A	Units: µg/L	Analysis Date 7/17/98	Prep Date:						
Client ID:	9807025	Run ID: GC-1_980717A		SeqNo: 4649							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	.0436	0.5									J
Ethylbenzene	.0759	0.5									J
m,p-Xylene	.1652	1									J
Methyl tert-Butyl Ether	ND	1									J
o-Xylene	.1832	0.5									J
Toluene	.1127	0.5									J

Sample ID: MB1	Batch ID: GC-1_980720	Test Code: SW8020A	Units: µg/L	Analysis Date 7/20/98	Prep Date:						
Client ID:	9807025	Run ID: GC-1_980720A		SeqNo: 4731							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	.0649	0.5									J
Ethylbenzene	ND	0.5									
m,p-Xylene	ND	1									
Methyl tert-Butyl Ether	ND	1									
o-Xylene	ND	0.5									
Toluene	.0787	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

On Site Technologies, LTD.

Date: 21-Jul-98

CLIENT: PNM - Public Service Company of NM
 Work Order: 9807025
 Project: Jacques 2A

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 9807025-01AMS	Batch ID: GC-1_980717	Test Code: SW8020A	Units: µg/L	Analysis Date 7/17/98	Prep Date:
Client ID: 9807091215; MW-	Run ID: 9807025	PQL	SPK value	SeqNo: 4650	
Analyte	Result	PQL	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Benzene	1764	25	2000	87.2%	56 128
Ethylbenzene	1933	25	2000	92.9%	78 107
m,p-Xylene	3626	50	4000	87.5%	67 118
o-Xylene	1817	25	2000	89.3%	78 107
Toluene	1860	25	2000	89.6%	74 116

Sample ID: 9807025-01AMSD	Batch ID: GC-1_980717	Test Code: SW8020A	Units: µg/L	Analysis Date 7/17/98	Prep Date:
Client ID: 9807091215; MW-	Run ID: 9807025	PQL	SPK value	SeqNo: 4651	
Analyte	Result	PQL	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Benzene	1699	25	2000	83.9%	56 128 1764 3.8% 12
Ethylbenzene	1865	25	2000	89.5%	78 107 1933 3.6% 11
m,p-Xylene	3501	50	4000	84.4%	67 118 3626 3.5% 10
o-Xylene	1775	25	2000	87.2%	78 107 1817 2.3% 14
Toluene	1791	25	2000	86.1%	74 116 1860 3.8% 14

Sample ID: 9807032-01AMS	Batch ID: GC-1_980720	Test Code: SW8020A	Units: µg/L	Analysis Date 7/20/98	Prep Date:
Client ID: 9807025	Run ID: 9807025	PQL	SPK value	SeqNo: 4732	
Analyte	Result	PQL	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Benzene	7611	50	4000	94.5%	56 128
Ethylbenzene	5361	50	4000	94.1%	78 107
m,p-Xylene	15130	100	8000	98.0%	67 118
Methyl tert-Butyl Ether	3598	100	4000	80.2%	70 130
o-Xylene	6591	50	4000	95.4%	78 107
Toluene	21850	50	4000	104.6%	74 116 E

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: 9807025
 Project: Jacques 2A

QC SUMMARY REPORT

Sample Matrix Spike Duplicate

Sample ID: 9807032-01AMSD		Batch ID: GC-1_980720	Test Code: SW8020A	Units: µg/L	Analysis Date 7/20/98		Prep Date:				
Client ID:		9807025	Run ID:	GC-1_980720A	SeqNo:	4733					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	7448	50	4000	3831	90.4%	56	128	7611	2.2%	12	
Ethylbenzene	5241	50	4000	1595	91.1%	78	107	5361	2.3%	11	
m,p-Xylene	14760	100	8000	7290	93.4%	67	118	15130	2.5%	10	
Methyl tert-Butyl Ether	3818	100	4000	392.2	85.6%	70	130	3598	5.9%	15	
o-Xylene	6504	50	4000	2774	93.2%	78	107	6591	1.3%	14	
Toluene	21400	50	4000	17660	93.4%	74	116	21850	2.1%	14	E

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: 21-Jul-98

CLIENT: PNM - Public Service Company of NM
 Work Order: 9807025
 Project: Jacques 2A

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS WATER	Batch ID: GC-1_980717	Test Code: SW8020A	Units: µg/L	Analysis Date 7/17/98	Prep Date:						
Client ID:	9807025	Run ID: GC-1_980717A		SeqNo: 4648							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	37.81	0.5	40	0.0436	94.4%	56	128				
Ethylbenzene	38.38	0.5	40	0.0759	95.8%	78	107				
m,p-Xylene	73.54	1	80	0.1652	91.7%	67	118				
Methyl tert-Butyl Ether	46.48	1	40	0	116.2%	70	130				
o-Xylene	38.42	0.5	40	0.1832	95.6%	78	107				
Toluene	37.72	0.5	40	0.1127	94.0%	74	116				

Sample ID: LCS WATER	Batch ID: GC-1_980720	Test Code: SW8020A	Units: µg/L	Analysis Date 7/20/98	Prep Date:						
Client ID:	9807025	Run ID: GC-1_980720A		SeqNo: 4730							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	36.97	0.5	40	0.0649	92.3%	56	128				
Ethylbenzene	38.46	0.5	40	0	96.1%	78	107				
m,p-Xylene	75.83	1	80	0	94.8%	67	118				
Methyl tert-Butyl Ether	35.6	1	40	0	89.0%	70	130				
o-Xylene	38.64	0.5	40	0	96.6%	78	107				
Toluene	38.03	0.5	40	0.0787	94.9%	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

Date: 21-Jul-98

On Site Technologies, LTD.

CLIENT: PNM - Public Service Company of NM
Work Order: 9807025
Project: Jacques 2A

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV1 QC0606/07		Batch ID: GC-1_980717		Test Code: SW8020A		Units: µg/L		Analysis Date 7/17/98		Prep Date:	
Client ID: 9807025		Run ID: GC-1_980717A		SeqNo: 4645							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	19.67	0.5	20	0	98.4%	85	115				
Ethylbenzene	19.86	0.5	20	0	99.3%	85	115				
m,p-Xylene	37.75	1	40	0	94.4%	85	115				
o-Xylene	19.83	0.5	20	0	99.2%	85	115				
Toluene	19.63	0.5	20	0	98.2%	85	115				
1,4-Difluorobenzene	86.73	0	100	0	86.7%	70	130				
4-Bromochlorobenzene	96.42	0	100	0	96.4%	70	130				
Fluorobenzene	83.42	0	100	0	83.4%	70	130				

Sample ID: CCV2 QC0606/07		Batch ID: GC-1_980717		Test Code: SW8020A		Units: µg/L		Analysis Date 7/17/98		Prep Date:	
Client ID: 9807025		Run ID: GC-1_980717A		SeqNo: 4646							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	18.82	0.5	20	0	94.1%	85	115				
Ethylbenzene	19.37	0.5	20	0	96.8%	85	115				
m,p-Xylene	36.78	1	40	0	91.9%	85	115				
o-Xylene	19.36	0.5	20	0	96.8%	85	115				
Toluene	19.05	0.5	20	0	95.3%	85	115				
1,4-Difluorobenzene	86.52	0	100	0	86.5%	70	130				
4-Bromochlorobenzene	90.57	0	100	0	90.6%	70	130				
Fluorobenzene	82.78	0	100	0	82.8%	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: 9807025

Project: Jacques 2A

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV3 QC0606/07		Batch ID: GC-1_980717		Test Code: SW8020A		Units: µg/L		Analysis Date 7/17/98		Prep Date:	
Client ID: 9807025		Run ID: GC-1_980717A		PQL		SPK value		SeqNo: 4647			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	35.5	0.5	40	0	88.7%	85	115				
Ethylbenzene	37.28	0.5	40	0	93.2%	85	115				
m,p-Xylene	71.23	1	80	0	89.0%	85	115				
o-Xylene	36.68	0.5	40	0	91.7%	85	115				
Toluene	37.03	0.5	40	0	92.6%	85	115				
1,4-Difluorobenzene	85.63	0	100	0	85.6%	70	130				
4-Bromochlorobenzene	74.02	0	100	0	74.0%	70	130				
Fluorobenzene	81.58	0	100	0	81.6%	70	130				

Sample ID: CCV1 QC0606/07		Batch ID: GC-1_980720		Test Code: SW8020A		Units: µg/L		Analysis Date 7/20/98		Prep Date:	
Client ID: 9807025		Run ID: GC-1_980720A		PQL		SPK value		SeqNo: 4728			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	18.53	0.5	20	0	92.6%	85	115				
Ethylbenzene	19.44	0.5	20	0	97.2%	85	115				
m,p-Xylene	37.86	1	40	0	94.7%	85	115				
Methyl tert-Butyl Ether	17.75	1	20	0	88.8%	85	115				
o-Xylene	19.5	0.5	20	0	97.5%	85	115				
Toluene	19.16	0.5	20	0	95.8%	85	115				
1,4-Difluorobenzene	86.54	0	100	0	86.5%	70	130				
4-Bromochlorobenzene	80.3	0	100	0	80.3%	70	130				
Fluorobenzene	81.99	0	100	0	82.0%	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: 9807025

Project: Jacques 2A

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV2 QC0606/07			Batch ID: GC-1_980720		Test Code: SW8020A		Units: µg/L		Analysis Date 7/20/98		Prep Date:	
Client ID:			9807025		Run ID:		GC-1_980720A		SeqNo: 4729			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Benzene	18.45	0.5	20	0	92.3%	85	115					
Ethylbenzene	19.33	0.5	20	0	96.7%	85	115					
m,p-Xylene	37.72	1	40	0	94.3%	85	115					
Methyl tert-Butyl Ether	18.7	1	20	0	93.5%	85	115					
o-Xylene	19.46	0.5	20	0	97.3%	85	115					
Toluene	19.09	0.5	20	0	95.5%	85	115					
1,4-Difluorobenzene	86.44	0	100	0	86.4%	70	130					
4-Bromochlorobenzene	80.25	0	100	0	80.2%	70	130					
Fluorobenzene	81.78	0	100	0	81.8%	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

On Site Technologies, LTD.

Date: 21-Jul-98

CLIENT: PNM - Public Service Company of NM

Work Order: 9807025

Project: Jacques 2A

Test No: SW8020A

QC SUMMARY REPORT SURROGATE RECOVERIES

BTEX

Sample ID	14FBZ	4BCBZ	FLBZ					
9807024-01A	83.1	68.1 *	79.6					
9807024-02A	87.7	99.1	84.4					
9807025-01A	80.9	77.7	77.1					
9807025-01AMS	85	66.3 *	80.7					
9807025-01AMSD	84.8	68 *	81.1					
9807025-02A	80.6	70.2	76.3					
9807026-01A	83.1	92.3	80					
9807026-02A	83.1	90.7	79.8					
9807032-01A	85.2	71.4	81.4					
9807032-01AMS	85.2	75.3	81.4					
9807032-01AMSD	85.5	78.5	81.4					
9807033-01A	86.8	96	82.8					
9807033-02A	86.9	96.7	82.8					
9807033-03A	86.6	92.2	83.7					
9807033-04A	90.3	94.2	81.3					
9807033-05A	86.5	90.8	83					
9807033-06A	90.2	81.1	80.1					
9807033-07A	86.9	83.2	82.2					
9807034-01A	86.8	91.7	81.8					
CCV1 QC0606/07	86.5	80.3	82					
CCV2 QC0606/07	86.4	80.2	81.8					
CCV3 QC0606/07	85.6	74	81.6					
LCS WATER	85.4	82.1	81.9					
MB1	86.5	75.6	82.6					

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

Date:

Page:

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

[illegible]

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

OFF: (505) 325-5667



LAB: (505) 325-1556

October 14, 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

4th Quarter 1998

RE: Jacques 2A

Order No.: 9810014

Dear Maureen Gannon,

On Site Technologies, LTD. received 2 samples on 10/5/98 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,

A handwritten signature in dark ink, appearing to read "David Cox", written in a cursive style.

David Cox

OFF: (505) 325-5667



LAB: (505) 325-1556

On Site Technologies, LTD.

Date: 14-Oct-98

CLIENT: PNM - Public Service Company of NM

Project: Jacques 2A

Lab Order: 9810014

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: 14-Oct-98

Client:	PNM - Public Service Company of NM	Client Sample Info:	Jacques 2A
Work Order:	9810014	Client Sample ID:	9810051545; MW-2
Lab ID:	9810014-01A	Matrix:	AQUEOUS
Project:	Jacques 2A	Collection Date:	10/5/98 3:45:00 PM
		COC Record:	7301

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8020A				Analyst: DC
Benzene	1.8	1		µg/L	1	10/13/98
Toluene	3.2	1		µg/L	1	10/13/98
Ethylbenzene	49	1		µg/L	1	10/13/98
m,p-Xylene	21	2		µg/L	1	10/13/98
o-Xylene	ND	1		µg/L	1	10/13/98

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

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- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 14-Oct-98

Client: PNM - Public Service Company of NM
Work Order: 9810014
Lab ID: 9810014-02A **Matrix:** AQUEOUS
Project: Jacques 2A

Client Sample Info: Jacques 2A
Client Sample ID: 9810051600; MW-5
Collection Date: 10/5/98 4:00:00 PM
COC Record: 7301

*MW-2
Duplicate*

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8020A				Analyst: DC
Benzene	ND	1		µg/L	1	10/13/98
Toluene	ND	1		µg/L	1	10/13/98
Ethylbenzene	39	1		µg/L	1	10/13/98
m,p-Xylene	17	2		µg/L	1	10/13/98
o-Xylene	ND	1		µg/L	1	10/13/98

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 BLENDING INDUSTRY WITH THE ENVIRONMENT -

1 of 1

On Site Technologies, LTD.

Date: 14-Oct-98

CLIENT: PNM - Public Service Company of NM
 Work Order: 9810014
 Project: Jacques 2A

QC SUMMARY REPORT

Method Blank

Sample ID: MB1	Batch ID: GC-1_981012	Test Code: SW8020A	Units: µg/L	Analysis Date: 10/13/98	Prep Date:						
Client ID:	9810014	Run ID: GC-1_981012A		SeqNo: 7574							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	.0451	1									J
Ethylbenzene	ND	1									
m,p-Xylene	ND	2									
o-Xylene	ND	1									
Toluene	.1564	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: 14-Oct-98

CLIENT: PNM - Public Service Company of NM
Work Order: 9810014
Project: Jacques 2A

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 9810013-04AMS		Batch ID: GC-1_981012		Test Code: SW8020A		Units: µg/L		Analysis Date: 10/13/98		Prep Date:	
Client ID: 9810014		Run ID: GC-1_981012A		PQL		SPK value		SeqNo: 7575			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	421.3	10	400	18.42	100.7%	56	128				
Ethylbenzene	414	10	400	2.204	103.0%	78	107				
m,p-Xylene	813	20	800	4.029	101.1%	67	118				
o-Xylene	417.3	10	400	0.79	104.1%	78	107				
Toluene	411.1	10	400	2.54	102.1%	74	116				

Sample ID: 9810013-04AMSD		Batch ID: GC-1_981012		Test Code: SW8020A		Units: µg/L		Analysis Date: 10/13/98		Prep Date:	
Client ID: 9810014		Run ID: GC-1_981012A		PQL		SPK value		SeqNo: 7576			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	410.1	10	400	18.42	97.9%	56	128	421.3	2.7%	12	
Ethylbenzene	402.5	10	400	2.204	100.1%	78	107	414	2.8%	11	
m,p-Xylene	791.5	20	800	4.029	98.4%	67	118	813	2.7%	10	
o-Xylene	408.2	10	400	0.79	101.9%	78	107	417.3	2.2%	14	
Toluene	400.3	10	400	2.54	99.5%	74	116	411.1	2.6%	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: 14-Oct-98

CLIENT: PNM - Public Service Company of NM
Work Order: 9810014
Project: Jacques 2A

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS WATER		Batch ID: GC-1_981012	Test Code: SW8020A	Units: µg/L	Analysis Date: 10/13/98			Prep Date:			
Client ID:		9810014	Run ID: GC-1_981012A		SeqNo: 7573						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	38.11	1	40	0.0451	95.2%	56	128				
Ethylbenzene	38.84	1	40	0	97.1%	78	107				
m,p-Xylene	76.81	2	80	0	96.0%	67	118				
o-Xylene	39.5	1	40	0	98.7%	78	107				
Toluene	38.73	1	40	0.1564	96.4%	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: 14-Oct-98

CLIENT: PNM - Public Service Company of NM

Work Order: 9810014

Project: Jacques 2A

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV1 QC0606/07		Batch ID: GC-1_981012		Test Code: SW8020A		Units: µg/L		Analysis Date: 10/13/98		Prep Date:	
Client ID: 9810014		Run ID: GC-1_981012A		SeqNo: 7570							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.54	1	20	0	102.7%	85	115				
Ethylbenzene	21.08	1	20	0	105.4%	85	115				
m,p-Xylene	41.56	2	40	0	103.9%	85	115				
o-Xylene	21.34	1	20	0	106.7%	85	115				
Toluene	20.94	1	20	0	104.7%	85	115				
1,4-Difluorobenzene	90.49	0	100	0	90.5%	70	130				
4-Bromochlorobenzene	99.74	0	100	0	99.7%	70	130				
Fluorobenzene	90.13	0	100	0	90.1%	70	130				

Sample ID: CCV2 QC0606/07		Batch ID: GC-1_981012		Test Code: SW8020A		Units: µg/L		Analysis Date: 10/13/98		Prep Date:	
Client ID: 9810014		Run ID: GC-1_981012A		SeqNo: 7571							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.71	1	20	0	103.5%	85	115				
Ethylbenzene	21.24	1	20	0	106.2%	85	115				
m,p-Xylene	41.59	2	40	0	104.0%	85	115				
o-Xylene	21.37	1	20	0	106.9%	85	115				
Toluene	21.06	1	20	0	105.3%	85	115				
1,4-Difluorobenzene	90.97	0	100	0	91.0%	70	130				
4-Bromochlorobenzene	100.4	0	100	0	100.4%	70	130				
Fluorobenzene	89.74	0	100	0	89.7%	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: 9810014

Project: Jacques 2A

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV3 QC0606/07		Batch ID: GC-1_981012		Test Code: SW8020A		Units: µg/L		Analysis Date: 10/13/98		Prep Date:	
Client ID: 9810014		Run ID: GC-1_981012A						SeqNo: 7572			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	40.05	1	40	0	100.1%	85	115				
Ethylbenzene	40.6	1	40	0	101.5%	85	115				
m,p-Xylene	79.82	2	80	0	99.8%	85	115				
o-Xylene	41.18	1	40	0	102.9%	85	115				
Toluene	40.5	1	40	0	101.3%	85	115				
1,4-Difluorobenzene	90.2	0	100	0	90.2%	70	130				
4-Bromochlorobenzene	101.5	0	100	0	101.5%	70	130				
Fluorobenzene	89.76	0	100	0	89.8%	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: 9810014

Project: Jacques 2A

Test No: SW8020A

**QC SUMMARY REPORT
SURROGATE RECOVERIES****BTEX**

Sample ID	14FBZ	4BCBZ	FLBZ					
9810013-04A	91	100	90.1					
9810013-04AMS	90.6	102	89.7					
9810013-04AMSD	90.7	102	89.8					
9810013-05A	89.2	101	88.7					
9810013-06A	85.9	100	86.7					
9810014-01A	86.9	93.4	85.2					
9810014-02A	87.6	95.3	85.7					
9810022-01A	91	99.9	90.4					
9810022-02A	90.8	99.8	90.4					
9810022-03A	90.8	101	90.4					
9810022-04A	91.2	98.9	89.3					
9810022-05A	91	101	90					
9810022-07A	109	102	98					
9810022-08A	91.3	102	90					
CCV1 QC0606/07	90.5	99.7	90.1					
CCV2 QC0606/07	91	100	89.7					
CCV3 QC0606/07	90.2	101	89.8					
LCS WATER	90.6	100	89.8					
MB1	91.2	99.1	90.2					

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

* Surrogate recovery outside acceptance limits

ON SITE

TECHNOLOGIES, LTD.

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

Date:

Page: 1 of 1[illegible]

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

Rec'd 2/05/99

OFF: (505) 325-5667



LAB: (505) 325-1556

January 26, 1999

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

1st Quarter 1999

RE: Jacques 2A

Order No.: 9901007

Dear Maureen Gannon,

On Site Technologies, LTD. received 5 samples on 1/18/99 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".

David Cox

OFF: (505) 325-5667



LAB: (505) 325-1556

On Site Technologies, LTD.

Date: 26-Jan-99

CLIENT: PNM - Public Service Company of NM

Project: Jacques 2A

Lab Order: 9901007

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: 26-Jan-99

Client:	PNM - Public Service Company of NM	Client Sample Info:	Jacques 2A
Work Order:	9901007	Client Sample ID:	9901180820; MW-1
Lab ID:	9901007-01A	Matrix:	AQUEOUS
Project:	Jacques 2A	Collection Date:	1/18/99 8:20:00 AM
		COC Record:	7455

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8021B				Analyst: DM
Benzene	ND	0.5		µg/L	1	1/19/99
Toluene	ND	0.5		µg/L	1	1/19/99
Ethylbenzene	ND	0.5		µg/L	1	1/19/99
m,p-Xylene	ND	1		µg/L	1	1/19/99
o-Xylene	ND	0.5		µg/L	1	1/19/99

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

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

1 of 1

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 26-Jan-99

Client:	PNM - Public Service Company of NM	Client Sample Info:	Jacques 2A
Work Order:	9901007	Client Sample ID:	9901180852; MW-2
Lab ID:	9901007-02A	Matrix:	AQUEOUS
Project:	Jacques 2A	Collection Date:	1/18/99 8:52:00 AM
		COC Record:	7455

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8021B				Analyst: DM
Benzene	ND	0.5		µg/L	1	1/19/99
Toluene	ND	0.5		µg/L	1	1/19/99
Ethylbenzene	19	0.5		µg/L	1	1/19/99
m,p-Xylene	6	1		µg/L	1	1/19/99
o-Xylene	0.9	0.5		µg/L	1	1/19/99

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

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- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 26-Jan-99

Client:	PNM - Public Service Company of NM	Client Sample Info:	Jacques 2A
Work Order:	9901007	Client Sample ID:	9901180923; MW-3
Lab ID:	9901007-03A	Matrix:	AQUEOUS
Project:	Jacques 2A	Collection Date:	1/18/99 9:23:00 AM
		COC Record:	7455

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8021B				Analyst: DM
Benzene	ND	0.5		µg/L	1	1/19/99
Toluene	ND	0.5		µg/L	1	1/19/99
Ethylbenzene	ND	0.5		µg/L	1	1/19/99
m,p-Xylene	ND	1		µg/L	1	1/19/99
o-Xylene	ND	0.5		µg/L	1	1/19/99

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

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

1 of 1

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 26-Jan-99

Client:	PNM - Public Service Company of NM	Client Sample Info:	Jacques 2A
Work Order:	9901007	Client Sample ID:	9901180953; MW-4
Lab ID:	9901007-04A	Matrix:	AQUEOUS
Project:	Jacques 2A	Collection Date:	1/18/99 9:53:00 AM
		COC Record:	7455

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8021B				Analyst: DM
Benzene	ND	0.5		µg/L	1	1/19/99
Toluene	ND	0.5		µg/L	1	1/19/99
Ethylbenzene	ND	0.5		µg/L	1	1/19/99
m,p-Xylene	ND	1		µg/L	1	1/19/99
o-Xylene	ND	0.5		µg/L	1	1/19/99

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 -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 26-Jan-99

Client: PNM - Public Service Company of NM
Work Order: 9901007
Lab ID: 9901007-05A **Matrix:** AQUEOUS
Project: Jacques 2A

Client Sample Info: Jacques 2A
Client Sample ID: 9901181025; MW-5
Collection Date: 1/18/99 10:25:00 AM
COC Record: 7455

*Duplicate
of
MW-2*

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8021B				Analyst: DM
Benzene	ND	0.5		µg/L	1	1/19/99
Toluene	ND	0.5		µg/L	1	1/19/99
Ethylbenzene	17	0.5		µg/L	1	1/19/99
m,p-Xylene	5.4	1		µg/L	1	1/19/99
o-Xylene	0.8	0.5		µg/L	1	1/19/99

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 -

On Site Technologies, LTD.

Date: 26-Jan-99

CLIENT: PNM - Public Service Company of NM
Work Order: 9901007
Project: Jacques 2A

QC SUMMARY REPORT

Method Blank

Sample ID: MB1	Batch ID: GC-1_990119	Test Code: SW8021B	Units: µg/L	Analysis Date: 1/19/99	Prep Date:
Client ID:	9901007	Run ID: GC-1_990119A		SeqNo: 10390	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Benzene	.0678	0.5			J
Ethylbenzene	ND	0.5			
m,p-Xylene	ND	1			
o-Xylene	ND	0.5			
Toluene	.0672	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

On Site Technologies, LTD.

Date: 26-Jan-99

CLIENT: PNM - Public Service Company of NM
 Work Order: 9901007
 Project: Jacques 2A

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 9901007-02AMS		Batch ID: GC-1_990119		Test Code: SW8021B		Units: µg/L		Analysis Date 1/19/99		Prep Date:	
Client ID: 9901180852; MW-		9901007		Run ID: GC-1_990119A				SeqNo: 10391			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	396.8	5	400	0.929	99.0%	73	115				
Ethylbenzene	413.7	5	400	16.32	99.3%	74	117				
m,p-Xylene	779.2	10	800	4.79	96.8%	76	112				
Methyl tert-Butyl Ether	357.7	10	400	0	89.4%	62	122				
o-Xylene	393.7	5	400	4.928	97.2%	83	112				
Toluene	396.8	5	400	0.397	99.1%	71	120				

Sample ID: 9901007-02AMSD		Batch ID: GC-1_990119		Test Code: SW8021B		Units: µg/L		Analysis Date 1/19/99		Prep Date:	
Client ID: 9901180852; MW-		9901007		Run ID: GC-1_990119A				SeqNo: 10392			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	403.8	5	400	0.929	100.7%	73	115	396.8	1.7%	8	
Ethylbenzene	420.2	5	400	16.32	101.0%	74	117	413.7	1.6%	9	
m,p-Xylene	791.2	10	800	4.79	98.3%	76	112	779.2	1.5%	9	
Methyl tert-Butyl Ether	358.8	10	400	0	89.7%	62	122	357.7	0.3%	7	
o-Xylene	398.7	5	400	4.928	98.4%	83	112	393.7	1.3%	9	
Toluene	403.4	5	400	0.397	100.7%	71	120	396.8	1.6%	9	

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: 26-Jan-99

CLIENT: PNM - Public Service Company of NM
 Work Order: 9901007
 Project: Jacques 2A

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS WATER		Batch ID: GC-1_990119		Test Code: SW8021B		Units: µg/L		Analysis Date 1/19/99		Prep Date:	
Client ID:		9901007		Run ID: GC-1_990119A				SeqNo: 10389			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	38.06	0.5	40	0.0678	95.0%	84	110				
Ethylbenzene	38.39	0.5	40	0	96.0%	86	113				
m,p-Xylene	74.55	1	80	0	93.2%	81	114				
Methyl tert-Butyl Ether	34.65	1	40	0	86.6%	69	129				
o-Xylene	37.8	0.5	40	0	94.5%	86	112				
Toluene	37.67	0.5	40	0.0672	94.0%	85	111				

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: 26-Jan-99

CLIENT: PNM - Public Service Company of NM

Work Order: 9901007

Project: Jacques 2A

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV1 QC0606/07		Batch ID: GC-1_990119	Test Code: SW8021B	Units: µg/L	Analysis Date 1/19/99		Prep Date:				
Client ID:		9901007	Run ID:	GC-1_990119A	SeqNo:	10387					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.39	0.5	20	0	102.0%	85	115				
Ethylbenzene	20.6	0.5	20	0	103.0%	85	115				
m,p-Xylene	39.47	1	40	0	98.7%	85	115				
Methyl tert-Butyl Ether	19.15	1	20	0	95.7%	85	115				
o-Xylene	20.16	0.5	20	0	100.8%	85	115				
Toluene	20.12	0.5	20	0	100.6%	85	115				
1,4-Difluorobenzene	96.29	0	100	0	96.3%	90	102				
4-Bromochlorobenzene	99.66	0	100	0	99.7%	93	102				
Fluorobenzene	94.18	0	100	0	94.2%	84	103				

Sample ID: CCV2 QC606/07	Batch ID: GC-1_990119	Test Code: SW8021B	Units: µg/L	Analysis Date 1/19/99	Prep Date:						
Client ID:	9901007	Run ID: GC-1_990119A		SeqNo: 10388							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	19.67	0.5	20	0	98.3%	85	115				
Ethylbenzene	19.79	0.5	20	0	98.9%	85	115				
m,p-Xylene	37.84	1	40	0	94.6%	85	115				
Methyl tert-Butyl Ether	18.6	1	20	0	93.0%	85	115				
o-Xylene	19.55	0.5	20	0	97.8%	85	115				
Toluene	19.4	0.5	20	0	97.0%	85	115				
1,4-Difluorobenzene	95.93	0	100	0	95.9%	90	102				
4-Bromochlorobenzene	100.3	0	100	0	100.3%	93	102				
Fluorobenzene	94.09	0	100	0	94.1%	84	103				

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: 26-Jan-99

CLIENT: PNM - Public Service Company of NM

Work Order: 9901007

Project: Jacques 2A

Test No: SW8021B

QC SUMMARY REPORT SURROGATE RECOVERIES

BTEX

Sample ID	14FBZ	4BCBZ	FLBZ					
9901007-01A	96.4	99.7	94.4					
9901007-02A	90.7	94.9	88.8					
9901007-02AMS	95	101	93					
9901007-02AMSD	94.5	99.7	93.3					
9901007-03A	96.6	99.8	94.4					
9901007-04A	95.7	99.4	94.4					
9901007-05A	91	95.4	89.9					
9901008-01A	96.6	99.9	94.3					
9901008-02A	96.7	100	94.4					
9901008-03A	91.4	94.7	89.5					
9901008-04A	92.6	98.2	91					
9901008-05A	96	98.7	94.1					
CCV1 QC606/07	96.3	99.7	94.2					
CCV2 QC606/07	95.9	100	94.1					
LCS WATER	95.5	99.7	93.8					
MB1	96.4	98.2	94					

Acronym	Surrogate	QC Limits
14FBZ	= 1,4-Difluorobenzene	90-102
4BCBZ	= 4-Bromochlorobenzene	93-102
FLBZ	= Fluorobenzene	84-103

* Surrogate recovery outside acceptance limits

CHAIN OF CUSTODY RECORD

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

Purchase Order No.:			Job No.		
Name		Denver Bearden			
Company		PNM Gas Services			
Address		603 W. Elm Street			
City, State, Zip		Farmington, NM 87401			
Sampling Location:					
JAC9405 2A Sampler: R. Dedrick					
SEND INVOICE TO		SAMPLE IDENTIFICATION			
REPORT RESULTS TO		DATE		TIME	
		DATE		TIME	
Number of Containers		DATE		TIME	
		DATE		TIME	
LAB ID		DATE		TIME	
		DATE		TIME	
ANALYSIS REQUESTED		DATE		TIME	
		DATE		TIME	
Name		DATE		TIME	
		DATE		TIME	
Company		DATE		TIME	
		DATE		TIME	
Mailing Address		DATE		TIME	
		DATE		TIME	
City, State, Zip		DATE		TIME	
		DATE		TIME	
Telephone No.		DATE		TIME	
		DATE		TIME	
Telefax No.		DATE		TIME	
		DATE		TIME	
RESULTS TO		DATE		TIME	
		DATE		TIME	
Number of Containers		DATE		TIME	
		DATE		TIME	
LAB ID		DATE		TIME	
		DATE		TIME	
ANALYSIS REQUESTED		DATE		TIME	
		DATE		TIME	
Name		DATE		TIME	
		DATE		TIME	
Company		DATE		TIME	
		DATE		TIME	
Mailing Address		DATE		TIME	
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City, State, Zip		DATE		TIME	
		DATE		TIME	
Telephone No.		DATE		TIME	
		DATE		TIME	
Telefax No.		DATE		TIME	
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RESULTS TO		DATE		TIME	
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Number of Containers		DATE		TIME	
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LAB ID		DATE		TIME	
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ANALYSIS REQUESTED		DATE		TIME	
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		DATE		TIME	
LAB ID		DATE		TIME	
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ANALYSIS REQUESTED		DATE		TIME	
		DATE</			

Distribution: White - On Site ; Yellow - 1 AB ; Pink - Sampler ; Goldenrod - Client