

3R - 312

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

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

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

Operator: Williams Field Services
Sec: 4 **Twn:** 25N **Rng:** 6W **NW1/4**
Canyon: Largo

Vulnerable Class: Original
OCD Ranking: 40
Lead Agency: NMOCD

Topo Map: previously submitted

Typical Well Completion Diagram: Figure 1

Site Map with Analysis: Figure 2

Groundwater Contour Maps: Figure 3a (June 1998), Figure 3b (August 1998), Figure 3c (December 1998) and Figure 3d (February 1999)

Groundwater Hydrograph: Figure 4

Full-Suite Groundwater Sampling Results: Table 1

Analytical Results: attached

Site Hydrology:

The Dogie East site lies in Largo Canyon, about 20 miles northeast of Lybrook, New Mexico, in Rio Arriba County. It is about 40 miles to the confluence of Largo Canyon with the San Juan River. Largo Canyon flows northwest, and has a broad alluvium-filled channel, about one-quarter mile wide at the site.

Sandy clay and clay materials were found in the subsurface beneath the site. Groundwater is shallow, at approximately 12 to 14 feet below ground surface. Hydrographs show seasonal fluctuations of more than 1 foot.

Groundwater flow direction is towards the northwest, towards the wash in Largo Canyon. Variation has been noted during the December 1998 sampling event (Figure 3c). The data appears to be an anomaly. Water level measurements recorded were rechecked. Two monitor wells recently installed at the site will be surveyed and tied into existing wells. This should help to clarify groundwater direction.

Activities for Previous Year:

PNM installed four monitor wells at the Dogie Compressor Station on May 20, 1998. All well installations were conducted pursuant to the PNM San Juan Basin Groundwater Management Plan. Figure 1 presents a typical well completion diagram for the monitoring well installation.

On June 4, August 11, December 9, 1998 and on February 10, 1999, PNM performed quarterly sampling of groundwater monitoring wells at the site. Table 1 presents the full-suite analysis for the newly installed monitoring wells. PNM measured water levels and conducted groundwater sampling in each well for chemical analyses of benzene, toluene, ethylbenzene, and xylenes (BTEX). In addition, during the August sampling event, MW-1 and MW-2 were also sampled for Water Quality Control Commission (WQCC) metals (dissolved) and for major cations/anions. Sampling was performed in strict compliance with EPA protocol. PNM delivered the samples to OnSite Technologies, Farmington, New Mexico for chemical analysis of the following:

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

On December 8, 1998, PNM installed 2 additional monitor wells. One, 2-inch downgradient monitor well (MW-5) and one 4-inch monitor well used for a soil vapor extraction pilot feasibility study conducted in December 1999. The test was run for 4.5 hours and results of the pilot study provided positive indications that this may be a viable option for remediation. PNM is currently reviewing the cost-benefit of operating a soil vapor extraction unit at the site.

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: Dogie Compressor Station East (continued)

Analytical data collected during the 4th quarter 1998 and the 1st quarter 1999 suggests that BTEX concentrations are increasing, particularly around MW-4. On March 10, 1999, PNM performed soil borings in three areas around the former east pit (see Figure 2). Split-spoon soil samples were collected above the saturated zone in order to better define the extent of contamination.

Results:

Figure 2 presents a site map showing BTEX for each monitoring well since groundwater contamination was discovered. MW-1, the upgradient well, is the only well with BTEX levels below laboratory detection limits.

In MW-2, the source well, benzene concentrations have fluctuated during the past three-quarters between 30 and 76 ppb. Downgradient BTEX concentrations in MW-3 and MW-4 have fluctuated as well and are above WQCC standards. In MW-5, also a downgradient well, benzene concentrations are below WQCC standards; however, concentrations for toluene and xylenes are above standards. PNM has not yet received analytical results of soil borings conducted on March 10, 1999.

Future Actions:

PNM will re-survey the site to tie in newly-installed monitor wells. The survey data will allow us to better define groundwater flow direction. Results of the soil boring investigation will be reviewed to determine if new or existing contamination is occurring at the site. This may warrant additional monitor wells and possibly the involvement of Williams to adequately define the origin of the contamination.

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.

ABOVE GROUND STEEL VAULT
WITH LOCKING CAP

3'

GL TO TOC DISTANCE

0' GL

TOC MEASUREMENT POINT

CONCRETE SLAB

NEAT CEMENT SLURRY W/5% BENTONITE

PVC PIPE

2"

8.55

10.55

BENTONITE PLUG (1/4" PELLETS)

2' seal

11.55

SAND (-FILTER PACK-)

10/20

15.00

TOP of SCREEN



STATIC WATER LEVEL

PVC SCREEN

0.01"

21.55

21.85

BOTTOM of SCREEN

END CAP TD

TOTAL DEPTH OF BORE HOLE



Environmental Services

Well Completion Diagram

SITE NAME

Dogie Compressor Station

East P.T.

WELL NUMBER

MW-1

DATE

5/20/98

RECORDER

M.S.

Figure 2.
Dogie Compressor Station East Pit
Site Map & Analytical Results
(Groundwater concentrations in ppb)

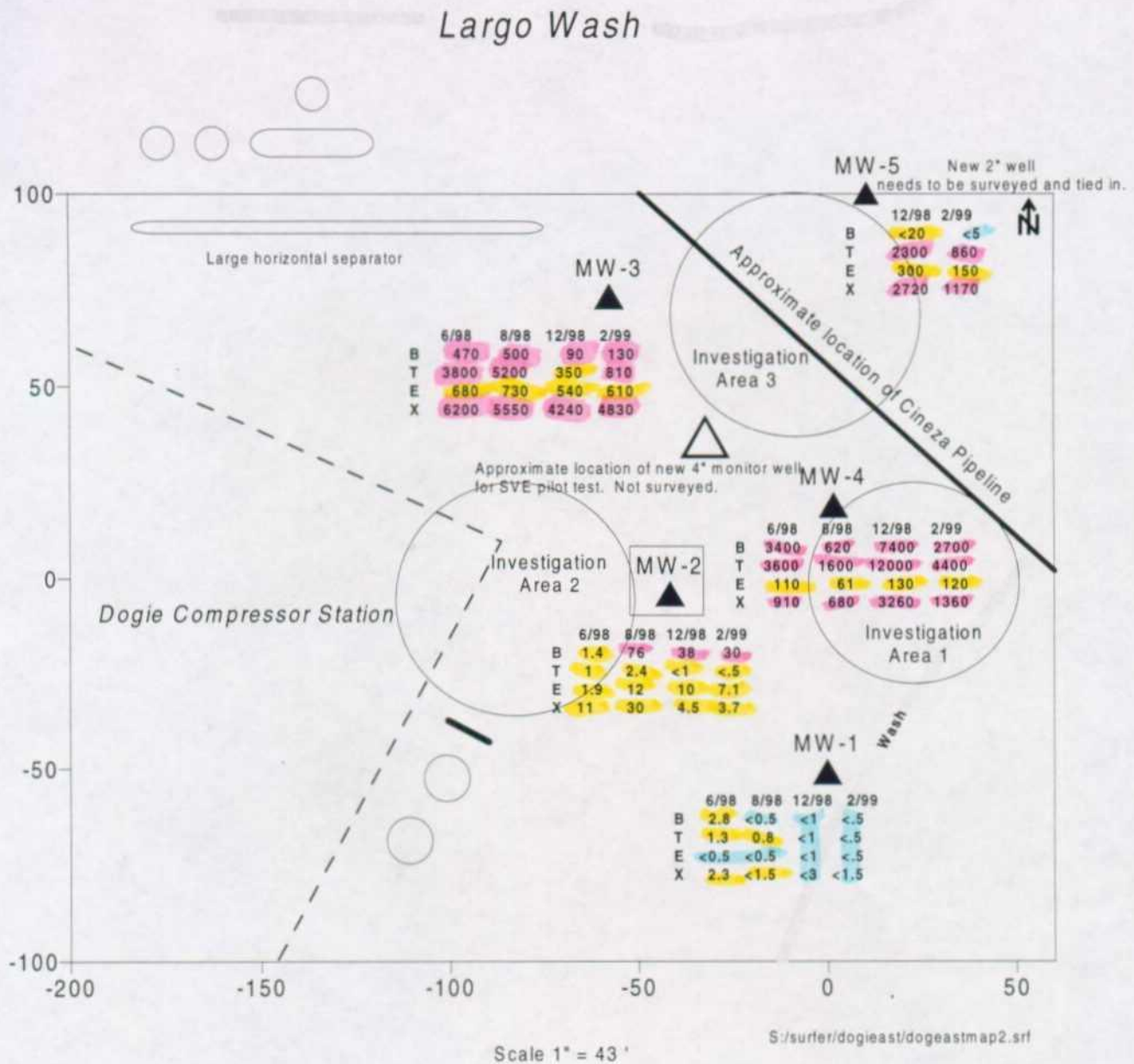


Figure3a.
Dogie Compressor Station East Pit Groundwater Contour Map
(June 4, 1998)

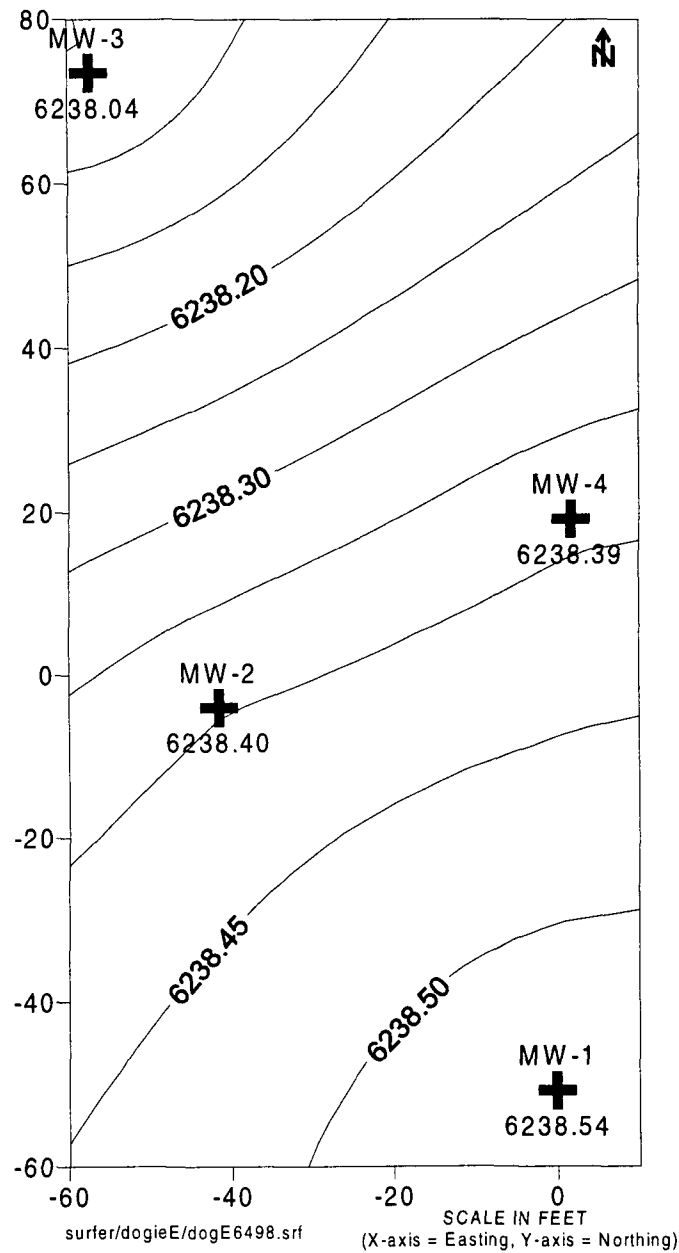
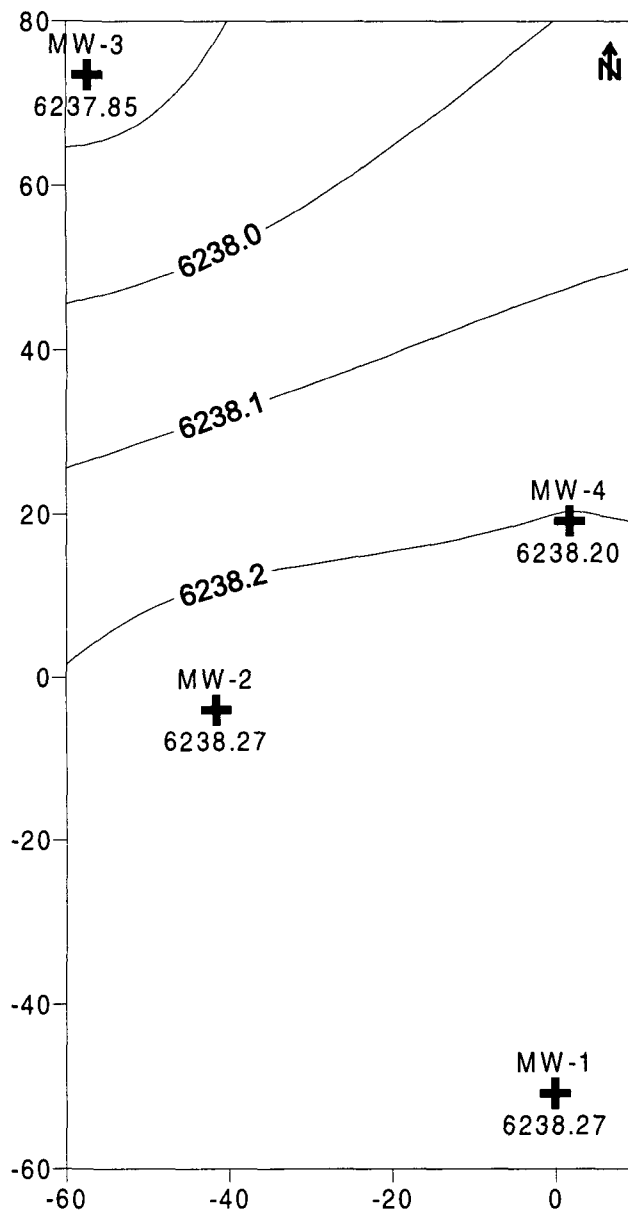


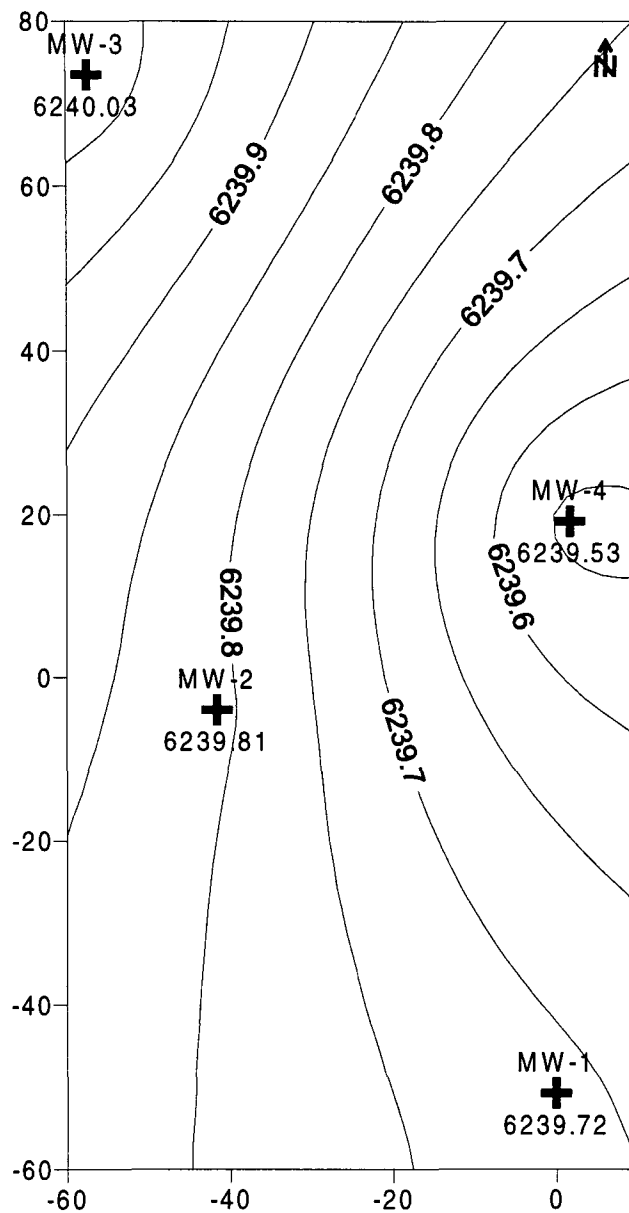
Figure3b.
Dogie Compressor Station East Pit Groundwater Contour Map
(August 11, 1999)



surfer/dogieE/dogE81198.srf

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

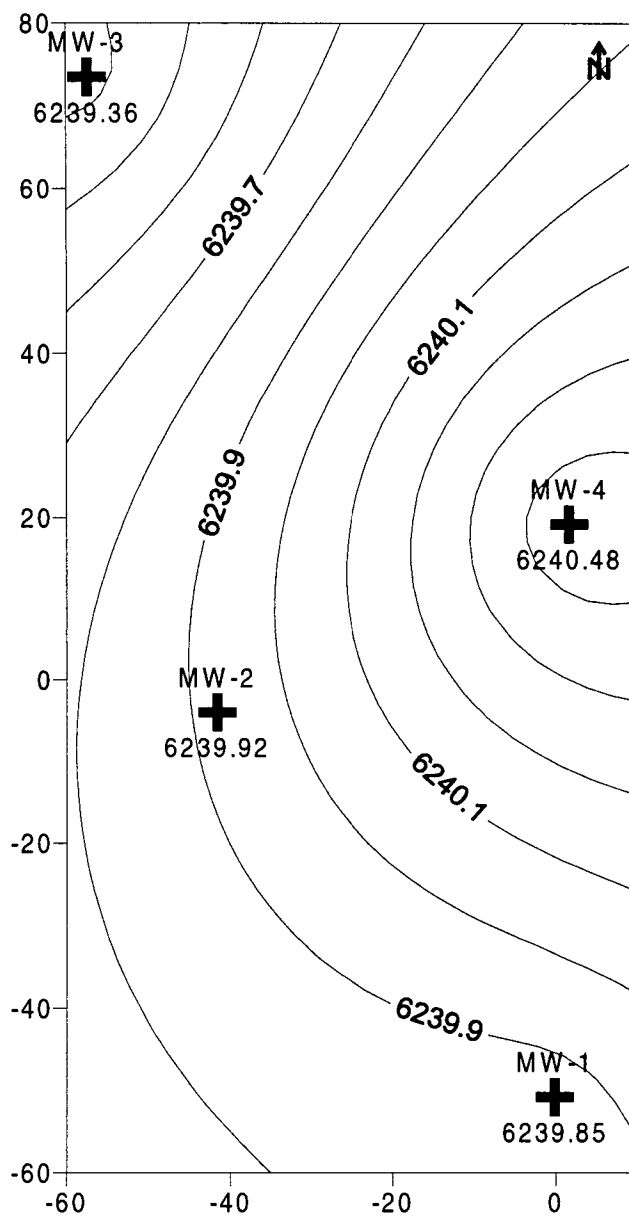
Figure 3c.
Dogie Compressor Station East Pit Groundwater Contour Map
(December 9, 1998)



surfer/dogieE/dogE12998.srf

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

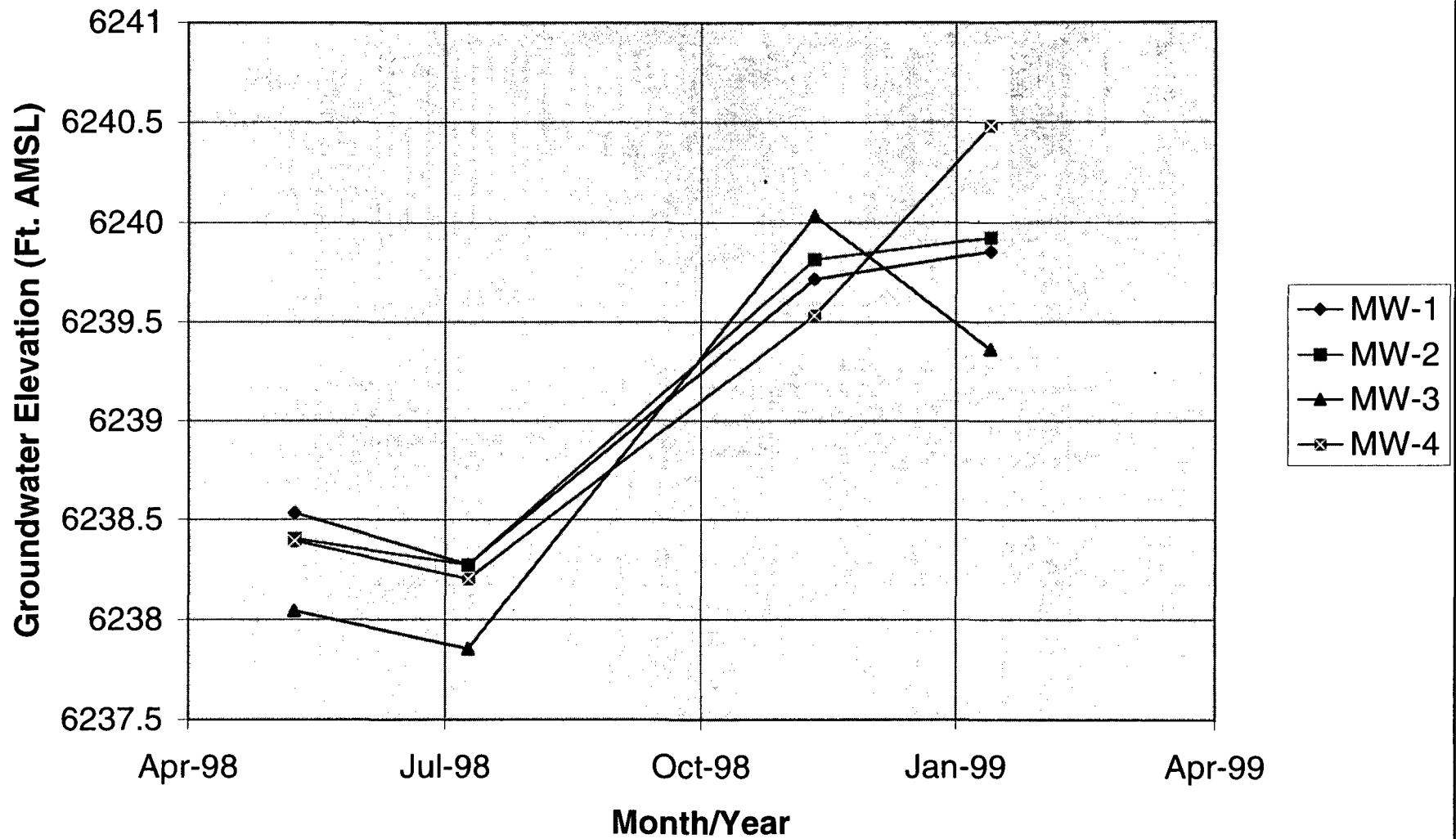
Figure 3d.
Dogie Compressor Station East Pit Groundwater Contour Map
(February 10, 1999)



surfer/dogieE/dogE21099.srf

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

Figure 4. Dogie Compressor Station East Pit Hydrograph



6/4/98

ON SITE

OFF: (505) 325-5667

LAB: (505) 325-1556

TECHNOLOGIES, LTD.

June 18, 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

1st Sampling
2nd 6/18/98

RE: Dogie Comp. Station East Pit

Order No.: 9806014

Dear Maureen Gannon,

On Site Technologies, LTD. received 5 samples on 6/4/98 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

ON SITE

OFF: (505) 325-5667

LAB: (505) 325-1556

TECHNOLOGIES, LTD.

On Site Technologies, LTD.

Date: 18-Jun-98

CLIENT: PNM - Public Service Company of NM

Project: Dogie Comp. Station East Pit

Lab Order: 9806014

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: 18-Jun-98

Client:	PNM - Public Service Company of NM	Client Sample Info:	Dogie East Pit
Work Order:	9806014	Client Sample ID:	9806040830; MW-1
Lab ID:	9806014-01A	Matrix:	AQUEOUS
Project:	Dogie Comp. Station East Pit	Collection Date:	6/4/98 8:30:00 AM
		COC Record:	7159

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8020A				Analyst: DC
Benzene	2.8	0.5		µg/L	1	6/14/98
Toluene	1.3	0.5		µg/L	1	6/14/98
Ethylbenzene	ND	0.5		µg/L	1	6/14/98
m,p-Xylene	1	1		µg/L	1	6/14/98
o-Xylene	1.3	0.5		µg/L	1	6/14/98

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

ON SITE

OFF: (505) 325-5667

LAB: (505) 325-1556

TECHNOLOGIES, LTD.

ANALYTICAL REPORT

Date: 18-Jun-98

Client:	PNM - Public Service Company of NM	Client Sample Info:	Dogie East Pit
Work Order:	9806014	Client Sample ID:	9806040845; MW-2
Lab ID:	9806014-02A	Matrix:	AQUEOUS
Project:	Dogie Comp. Station East Pit	Collection Date:	6/4/98 8:45:00 AM
		COC Record:	7159

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8020A				Analyst: DC
Benzene	1.4	0.5		µg/L	1	6/15/98
Toluene	1	0.5		µg/L	1	6/15/98
Ethylbenzene	1.9	0.5		µg/L	1	6/15/98
m,p-Xylene	11	1		µg/L	1	6/15/98
o-Xylene	ND	0.5		µg/L	1	6/15/98

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

OFF: (505) 325-5667

LAB: (505) 325-1556

TECHNOLOGIES, LTD.

ANALYTICAL REPORT

Date: 18-Jun-98

Client:	PNM - Public Service Company of NM	Client Sample Info:	Dogie East Pit
Work Order:	9806014	Client Sample ID:	9806040900; MW-3
Lab ID:	9806014-03A	Matrix:	AQUEOUS
Project:	Dogie Comp. Station East Pit	Collection Date:	6/4/98 9:00:00 AM
		COC Record:	7159

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8020A				Analyst: DC
Benzene	470	5		µg/L	10	6/15/98
Toluene	3800	25		µg/L	50	6/16/98
Ethylbenzene	680	5		µg/L	10	6/15/98
m,p-Xylene	5100	50		µg/L	50	6/16/98
o-Xylene	1100	5		µg/L	10	6/15/98

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

ON SITE

OFF: (505) 325-5667

LAB: (505) 325-1556

TECHNOLOGIES, LTD.

ANALYTICAL REPORT

Date: 18-Jun-98

Client:	PNM - Public Service Company of NM	Client Sample Info:	Dogie East Pit
Work Order:	9806014	Client Sample ID:	9806040915; MW-4
Lab ID:	9806014-04A	Matrix:	AQUEOUS
Project:	Dogie Comp. Station East Pit	Collection Date:	6/4/98 9:15:00 AM
		COC Record:	7159

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8020A				Analyst: DC
Benzene	3400	25		µg/L	50	6/16/98
Toluene	3600	25		µg/L	50	6/16/98
Ethylbenzene	110	5		µg/L	10	6/15/98
m,p-Xylene	750	10		µg/L	10	6/15/98
o-Xylene	160	5		µg/L	10	6/15/98

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

P.O. BOX 2606 • FARMINGTON, NM 87499

1 of 1

OFF: (505) 325-5667

ON SITE

TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 18-Jun-98

Client:	PNM - Public Service Company of NM	Client Sample Info:	Dogie East Pit
Work Order:	9806014	Client Sample ID:	9806040930; MW-5
Lab ID:	9806014-05A	Matrix:	AQUEOUS
Project:	Dogie Comp. Station East Pit	Collection Date:	6/4/98 9:30:00 AM
		COC Record:	7159

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8020A				Analyst: DC
Benzene	540	5		µg/L	10	6/15/98
Toluene	4500	25		µg/L	50	6/16/98
Ethylbenzene	730	5		µg/L	10	6/15/98
m,p-Xylene	5300	50		µg/L	50	6/16/98
o-Xylene	1200	5		µg/L	10	6/15/98

Duplicate of MW-3

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

On Site Technologies, LTD.

Date: 18-Jun-98

CLIENT: PNM - Public Service Company of NM
Work Order: 9806014
Project: Dogie Comp. Station East Pit

QC SUMMARY REPORT

Method Blank

Sample ID: MB1	Batch ID: GC-1_980614	Test Code: SW8020A	Units: µg/L	Analysis Date: 6/14/98	Prep Date:						
Client ID:	9806014	Run ID: GC-1_980614B		SeqNo: 2996							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	.0426	0.5									J
Ethylbenzene	.0628	0.5									J
m,p-Xylene	.1828	1									J
o-Xylene	.0816	0.5									J
Toluene	.1025	0.5									J
Sample ID: MB1	Batch ID: GC-1_980615	Test Code: SW8020A	Units: µg/L	Analysis Date: 6/15/98	Prep Date:						
Client ID:	9806014	Run ID: GC-1_980615A		SeqNo: 3106							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	.0418	0.5									J
Ethylbenzene	ND	0.5									
m,p-Xylene	.1275	1									J
o-Xylene	ND	0.5									
Toluene	.1234	0.5									J
Sample ID: MB1	Batch ID: GC-1_980616	Test Code: SW8020A	Units: µg/L	Analysis Date: 6/16/98	Prep Date:						
Client ID:	9806014	Run ID: GC-1_980616A		SeqNo: 3136							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	.0478	0.5									J
Ethylbenzene	ND	0.5									
m,p-Xylene	.1193	1									J
Methyl tert-Butyl Ether	ND	1									
o-Xylene	ND	0.5									
Toluene	.0988	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: 18-Jun-98

CLIENT: PNM - Public Service Company of NM

Work Order: 9806014

Project: Dogie Comp. Station East Pit

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 9806014-02AMS		Batch ID: GC-1_980614		Test Code: SW8020A		Units: µg/L		Analysis Date: 6/14/98			Prep Date:	
Client ID: 9806040845; MW-		9806014		Run ID: GC-1_980614B				SeqNo: 2997				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Benzene	813	10	800	4.052	101.1%	56	128					
Ethylbenzene	812.9	10	800	4.38	101.1%	78	107					
m,p-Xylene	1577	20	1600	17.67	97.5%	67	118					
o-Xylene	806.4	10	800	2.606	100.5%	78	107					
Toluene	806.6	10	800	3.922	100.3%	74	116					

Sample ID: 9806014-02AMSD		Batch ID: GC-1_980614		Test Code: SW8020A		Units: µg/L		Analysis Date: 6/14/98			Prep Date:	
Client ID: 9806040845; MW-		9806014		Run ID: GC-1_980614B				SeqNo: 2998				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Benzene	788.5	10	800	4.052	98.1%	56	128	813	3.1%	12		
Ethylbenzene	811.3	10	800	4.38	100.9%	78	107	812.9	0.2%	11		
m,p-Xylene	1559	20	1600	17.67	96.3%	67	118	1577	1.2%	10		
o-Xylene	791.3	10	800	2.606	98.6%	78	107	806.4	1.9%	14		
Toluene	783.7	10	800	3.922	97.5%	74	116	806.6	2.9%	14		

Sample ID: 9806015-02AMS		Batch ID: GC-1_980615		Test Code: SW8020A		Units: µg/L		Analysis Date: 6/15/98			Prep Date:	
Client ID:		9806014		Run ID: GC-1_980615A				SeqNo: 3107				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Benzene	8159	50	4000	4153	100.1%	56	128					
Ethylbenzene	4411	50	4000	421	99.7%	78	107					
m,p-Xylene	14170	100	8000	6527	95.5%	67	118					
o-Xylene	5239	50	4000	1346	97.3%	78	107					
Toluene	7282	50	4000	3434	96.2%	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: 9806014
Project: Dogie Comp. Station East Pit

QC SUMMARY REPORT

Sample Matrix Spike Duplicate

Sample ID: 9806015-02AMSD		Batch ID: GC-1_980615		Test Code: SW8020A		Units: µg/L		Analysis Date: 6/15/98		Prep Date:	
Client ID: 9806014		Run ID: GC-1_980615A				SeqNo: 3108					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	7966	50	4000	4153	95.3%	56	128	8159	2.4%	12	
Ethylbenzene	4305	50	4000	421	97.1%	78	107	4411	2.4%	11	
m,p-Xylene	13820	100	8000	6527	91.2%	67	118	14170	2.5%	10	
o-Xylene	5137	50	4000	1346	94.8%	78	107	5239	2.0%	14	
Toluene	7100	50	4000	3434	91.6%	74	116	7282	2.5%	14	

Sample ID: 9806052-02AMS		Batch ID: GC-1_980616		Test Code: SW8020A		Units: µg/L		Analysis Date: 6/16/98		Prep Date:	
Client ID: 9806014		Run ID: GC-1_980616A				SeqNo: 3137					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	1823	10	800	1021	100.3%	56	128				
Ethylbenzene	1178	10	800	404.6	96.7%	78	107				
m,p-Xylene	2263	20	1600	739.2	95.2%	67	118				
Methyl tert-Butyl Ether	776.8	20	800	22.28	94.3%	70	130				
o-Xylene	1042	10	800	243.9	99.8%	78	107				
Toluene	1298	10	800	507.9	98.8%	74	116				

Sample ID: 9806052-02AMSD		Batch ID: GC-1_980616		Test Code: SW8020A		Units: µg/L		Analysis Date: 6/16/98		Prep Date:	
Client ID: 9806014		Run ID: GC-1_980616A				SeqNo: 3138					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	1771	10	800	1021	93.8%	56	128	1823	2.9%	12	
Ethylbenzene	1146	10	800	404.6	92.7%	78	107	1178	2.7%	11	
m,p-Xylene	2188	20	1600	739.2	90.6%	67	118	2263	3.3%	10	
Methyl tert-Butyl Ether	760.7	20	800	22.28	92.3%	70	130	776.8	2.1%	15	
o-Xylene	1026	10	800	243.9	97.8%	78	107	1042	1.5%	14	
Toluene	1264	10	800	507.9	94.5%	74	116	1298	2.7%	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: 18-Jun-98

CLIENT: PNM - Public Service Company of NM
Work Order: 9806014
Project: Dogie Comp. Station East Pit

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS	Batch ID: GC-1_980614	Test Code: SW8020A	Units: µg/L	Analysis Date: 6/14/98				Prep Date:			
Client ID:	9806014	Run ID:	GC-1_980614B	SeqNo: 2995							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	40.87	0.5	40	0.0426	102.1%	56	128				
Ethylbenzene	40.4	0.5	40	0.0628	100.8%	78	107				
m,p-Xylene	78.11	1	80	0.1828	97.4%	67	118				
o-Xylene	40.26	0.5	40	0.0816	100.5%	78	107				
Toluene	40.14	0.5	40	0.1025	100.1%	74	116				

Sample ID: LCS WATER	Batch ID: GC-1_980615	Test Code: SW8020A	Units: µg/L	Analysis Date: 6/15/98				Prep Date:			
Client ID:	9806014	Run ID:	GC-1_980615A	SeqNo: 3105							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	41.12	0.5	40	0.0418	102.7%	56	128				
Ethylbenzene	42.19	0.5	40	0	105.5%	78	107				
m,p-Xylene	80.34	1	80	0.1275	100.3%	67	118				
o-Xylene	40.85	0.5	40	0	102.1%	78	107				
Toluene	40.86	0.5	40	0.1234	101.8%	74	116				

Sample ID: LCS WATER	Batch ID: GC-1_980616	Test Code: SW8020A	Units: µg/L	Analysis Date: 6/16/98					Prep Date:		
Client ID:	9806014	Run ID: GC-1_980616A	SeqNo: 3135								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	41.01	0.5	40	0.0478	102.4%	56	128				
Ethylbenzene	41.79	0.5	40	0	104.5%	78	107				
m,p-Xylene	79.51	1	80	0.1193	99.2%	67	118				
Methyl tert-Butyl Ether	44.96	1	40	0	112.4%	70	130				
o-Xylene	40.79	0.5	40	0	102.0%	78	107				
Toluene	40.42	0.5	40	0.0988	100.8%	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: 18-Jun-98

CLIENT: PNM - Public Service Company of NM

Work Order: 9806014

Project: Dogie Comp. Station East Pit

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV1 QC0529/30	Batch ID: GC-1_980614	Test Code: SW8020A	Units: µg/L		Analysis Date: 6/14/98				Prep Date:		
Client ID:	9806014	Run ID:	GC-1_980614B		SeqNo:		2992				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	21.32	0.5	20	0	106.6%	85	115				
Ethylbenzene	21.51	0.5	20	0	107.6%	85	115				
m,p-Xylene	41.34	1	40	0	103.3%	85	115				
o-Xylene	21.34	0.5	20	0	106.7%	85	115				
Toluene	21.1	0.5	20	0	105.5%	85	115				
1,4-Difluorobenzene	92.58	0	100	0	92.6%	70	130				
4-Bromochlorobenzene	80.52	0	100	0	80.5%	70	130				
Fluorobenzene	93.34	0	100	0	93.3%	70	130				

Sample ID: CCV2 QC0529/30	Batch ID: GC-1_980614	Test Code: SW8020A	Units: µg/L			Analysis Date: 6/14/98			Prep Date:		
Client ID:	9806014	Run ID:	GC-1_980614B			SeqNo:	2993				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.83	0.5	20	0	104.1%	85	115				
Ethylbenzene	22.1	0.5	20	0	110.5%	85	115				
m,p-Xylene	43.85	1	40	0	109.6%	85	115				
o-Xylene	21.84	0.5	20	0	109.2%	85	115				
Toluene	21.56	0.5	20	0	107.8%	85	115				
1,4-Difluorobenzene	92.73	0	100	0	92.7%	70	130				
4-Bromochlorobenzene	79.29	0	100	0	79.3%	70	130				
Fluorobenzene	92.28	0	100	0	92.3%	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: 9806014
Project: Dogie Comp. Station East Pit

QC SUMMARY REPORT
Continuing Calibration Verification Standard

Sample ID: CCV3 QC0529/30	Batch ID: GC-1_980614	Test Code: SW8020A	Units: µg/L			Analysis Date: 6/14/98			Prep Date:		
Client ID:	9806014	Run ID:	GC-1_980614B			SeqNo:		2994			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	42.1	0.5	40	0	105.3%	85	115				
Ethylbenzene	42.85	0.5	40	0	107.1%	85	115				
m,p-Xylene	81.5	1	80	0	101.9%	85	115				
o-Xylene	41.48	0.5	40	0	103.7%	85	115				
Toluene	41.48	0.5	40	0	103.7%	85	115				
1,4-Difluorobenzene	92.78	0	100	0	92.8%	70	130				
4-Bromochlorobenzene	80.77	0	100	0	80.8%	70	130				
Fluorobenzene	92.47	0	100	0	92.5%	70	130				

Sample ID: CCV1 QC0529/30		Batch ID: GC-1_980615		Test Code: SW8020A		Units: µg/L		Analysis Date: 6/15/98		Prep Date:	
Client ID:		9806014		Run ID: GC-1_980615A		SeqNo: 3102					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	21.44	0.5	20	0	107.2%	85	115				
Ethylbenzene	22.16	0.5	20	0	110.8%	85	115				
m,p-Xylene	41.99	1	40	0	105.0%	85	115				
o-Xylene	21.39	0.5	20	0	106.9%	85	115				
Toluene	21.37	0.5	20	0	106.9%	85	115				
1,4-Difluorobenzene	92.64	0	100	0	92.6%	70	130				
4-Bromochlorobenzene	79.51	0	100	0	79.5%	70	130				
Fluorobenzene	92.78	0	100	0	92.8%	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: 9806014
Project: Dogie Comp. Station East Pit

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV2 QC0529/30		Batch ID: GC-1_980615		Test Code: SW8020A		Units: µg/L		Analysis Date: 6/15/98			Prep Date:	
Client ID:		9806014		Run ID:		GC-1_980615A		SeqNo:		3103		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Benzene	20.66	0.5	20	0	103.3%	85	115					
Ethylbenzene	21.47	0.5	20	0	107.3%	85	115					
m,p-Xylene	40.93	1	40	0	102.3%	85	115					
o-Xylene	20.77	0.5	20	0	103.9%	85	115					
Toluene	20.79	0.5	20	0	104.0%	85	115					
1,4-Difluorobenzene	92.43	0	100	0	92.4%	70	130					
4-Bromochlorobenzene	68.57	0	100	0	68.6%	70	130				S	
Fluorobenzene	92.48	0	100	0	92.5%	70	130					

Sample ID: CCV3 QC0529/30		Batch ID: GC-1_980615		Test Code: SW8020A		Units: µg/L		Analysis Date: 6/15/98			Prep Date:	
Client ID:		9806014		Run ID: GC-1_980615A		SeqNo: 3104						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Benzene	21.25	0.5	20	0	106.3%	85	115					
Ethylbenzene	21.75	0.5	20	0	108.7%	85	115					
m,p-Xylene	40.9	1	40	0	102.3%	85	115					
o-Xylene	21.08	0.5	20	0	105.4%	85	115					
Toluene	21	0.5	20	0	105.0%	85	115					
1,4-Difluorobenzene	93.05	0	100	0	93.1%	70	130					
4-Bromochlorobenzene	84.48	0	100	0	84.5%	70	130					
Fluorobenzene	92.77	0	100	0	92.8%	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: 9806014
Project: Dogie Comp. Station East Pit

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV1 QC0529/30		Batch ID: GC-1_980616		Test Code: SW8020A		Units: µg/L		Analysis Date: 6/16/98			Prep Date:	
Client ID:		9806014		Run ID:		GC-1_980616A		SeqNo:		3132		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Benzene	21.71	0.5	20	0	108.5%	85	115					
Ethylbenzene	22.4	0.5	20	0	112.0%	85	115					
m,p-Xylene	42.29	1	40	0	105.7%	85	115					
Methyl tert-Butyl Ether	23.12	1	20	0	115.6%	85	115				S	
o-Xylene	21.74	0.5	20	0	108.7%	85	115					
Toluene	21.52	0.5	20	0	107.6%	85	115					
1,4-Difluorobenzene	93.47	0	100	0	93.5%	70	130					
4-Bromochlorobenzene	85.45	0	100	0	85.4%	70	130					
Fluorobenzene	93.66	0	100	0	93.7%	70	130					

Sample ID: CCV2 QC0529/30		Batch ID: GC-1_980616		Test Code: SW8020A		Units: µg/L		Analysis Date: 6/16/98			Prep Date:	
Client ID:		9806014		Run ID:		GC-1_980616A		SeqNo:		3133		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Benzene	20.55	0.5	20	0	102.8%	85	115					
Ethylbenzene	21.3	0.5	20	0	106.5%	85	115					
m,p-Xylene	39.94	1	40	0	99.9%	85	115					
Methyl tert-Butyl Ether	21.29	1	20	0	106.5%	85	115					
o-Xylene	21.45	0.5	20	0	107.2%	85	115					
Toluene	20.47	0.5	20	0	102.3%	85	115					
1,4-Difluorobenzene	93.62	0	100	0	93.6%	70	130					
4-Bromochlorobenzene	83.56	0	100	0	83.6%	70	130					
Fluorobenzene	93.34	0	100	0	93.3%	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: 9806014
Project: Dogie Comp. Station East Pit

QC SUMMARY REPORT
Continuing Calibration Verification Standard

Sample ID: CCV3 QC0529/30		Batch ID: GC-1_980616		Test Code: SW8020A		Units: µg/L		Analysis Date: 6/16/98			Prep Date:	
Client ID:		9806014		Run ID: GC-1_980616A		SeqNo: 3134						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Benzene	40.28	0.5	40	0	100.7%	85	115					
Ethylbenzene	40.18	0.5	40	0	100.5%	85	115					
m,p-Xylene	77.38	1	80	0	96.7%	85	115					
Methyl tert-Butyl Ether	37.36	1	40	0	93.4%	85	115					
o-Xylene	40.35	0.5	40	0	100.9%	85	115					
Toluene	40.24	0.5	40	0	100.6%	85	115					
1,4-Difluorobenzene	92.6	0	100	0	92.6%	70	130					
4-Bromochlorobenzene	80.3	0	100	0	80.3%	70	130					
Fluorobenzene	93.09	0	100	0	93.1%	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: 9806014

Project: Dogie Comp. Station East Pit

Test No: SW8020A

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

Sample ID	14FBZ	4BCBZ	FLBZ
9806014-01A	92.3	79.7	93.4
9806014-02A	93.9	77.6	94.9
9806014-02AMS	92.4	75.1	92.7
9806014-02AMSD	92.8	80.4	92.5
9806014-03A	92.3	86.2	93
9806014-04A	91.9	86.7	92.8
9806014-05A	92	86.3	93.2
9806015-01A	93.2	69.9 *	93
9806015-02A	91.6	67.9 *	92.5
9806015-02AMS	91.8	69.1 *	92.5
9806015-02AMSD	91.8	68.4 *	92.8
9806015-03A	92.5	67.4 *	93
9806019-01A	93.8	78.8	93.3
9806019-02A	93	77.9	93.3
9806030-01A	92.6	67.6 *	92.8
9806030-02A	93.6	79.3	93
9806030-03A	93.8	85.6	93.1
9806031-01A	90.9	85.3	91.5
9806031-02A	90.1	85.3	90.6
9806032-01A	93.1	86.7	93.6
9806033-01A	93.4	84.7	93.2
9806034-01A	90.7	83.9	91.5
9806040-01A	92	60.6 *	92
9806041-01A	92.1	76.9	92.1
9806041-02A	92.5	65.2 *	92.3
9806041-03A	93	69.9 *	92.4
9806043-01A	93	74	93.1

Acronym**Surrogate****QC Limits**

14FBZ

= 1,4-Difluorobenzene

70-130

4BCBZ

= 4-Bromochlorobenzene

70-130

FLBZ

= Fluorobenzene

70-130

* Surrogate recovery outside acceptance limits

CLIENT: PNM - Public Service Company of NM
Work Order: 9806014
Project: Dogie Comp. Station East Pit
Test No: SW8020A

QC SUMMARY REPORT SURROGATE RECOVERIES

BTEX

Sample ID	14FBZ	4BCBZ	FLBZ
9806043-02A	91.8	68.1 *	91.3
9806043-03A	93.3	84	94.6
9806043-04A	93.2	82.9	94.6
9806044-01A	92.4	66.8 *	93
9806044-02A	89.1	65.2 *	89
9806044-03A	93.8	86.5	94
9806044-04A	92.3	85.8	95.6
9806044-05A	93.3	86.1	94.2
9806045-01A	90.2	84.9	91.2
9806052-01A	90.4	83.2	90.4
9806052-02A	92.4	75.5	93.2
9806052-02AMS	91.9	86.3	92.5
9806052-02AMSD	92.4	85.4	92.6
9806052-03A	93.5	85.8	94.6
9806053-01A	99.2	103	125
9806053-02A	93.4	82.8	94.1
9806053-03A	93.5	82.4	94.1
9806054-01A	93.3	82.3	94.3
9806054-02A	93.6	81.9	94
9806055-01A	94	81.1	93.8
9806055-02A	91.8	81.8	93.8
9806058-01A	93.8	85.9	94.1
9806058-02A	97.8	82.9	93.9
9806063-01A	94.8	84	94.4
9806063-02A	93.6	87.3	94.6
CCV1 QC0529/30	93.5	85.4	93.7
CCV2 QC0529/30	93.6	83.6	93.3
CCV3 QC0529/30	92.6	80.3	93.1

Acronym

Surrogate

QC Limits

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

* Surrogate recovery outside acceptance limits

CLIENT: PNM - Public Service Company of NM
Work Order: 9806014
Project: Dogie Comp. Station East Pit
Test No: SW8020A

**QC SUMMARY REPORT
SURROGATE RECOVERIES**

BTEX

Sample ID	14FBZ	4BCBZ	FLBZ
LCS	92.4	79.8	92.9
LCS WATER	93.8	85.4	93.7
MB1	93.6	84.4	94.4

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: 6/4/98Page: 1 of 1

59

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

Purchase Order No.:		Job No.		REPORT RESULTS TO	Name Maureen Gannon		Title									
SEND INVOICE TO	Name Denver Bearden				Company PNM Gas Services											
	Company PNM Gas Services				Mailing Address Alverado Square, Mail Stop 0408											
	Dept. 324-3763				City, State, Zip Albuquerque, NM 87158											
	Address 603 W. Elm Street				Telephone No. 505-848-2974		Telefax No.									
City, State, Zip Farmington, NM 87401																
Sampling Location: Dugie Compressor Station East Pit (Dugie East Pit)					Number of Containers	ANALYSIS REQUESTED										
Sampler: RD M.S.						DTEX 8020										
SAMPLE IDENTIFICATION					SAMPLE		MATRIX		PRES.				LAB ID			
					DATE		TIME									
* 9806040830 MW-1							H2O		H2O		2		X		9806014-01A	
9806040845 MW-2							↓		↓		2		X		-02A	
9806040900 MW-3							↓		↓		2		X		-03A	
9806040915 MW-4							↓		↓		2		X		-04A	
9806040930 MW-5							↓		↓		2		X		-05A	
Relinquished by: <u>Ronald H Dedrick</u>					Date/Time <u>6/4/98 1626</u>		Received by: <u>Joe</u>					Date/Time <u>6/4/98 1626</u>				
Relinquished by:					Date/Time		Received by:					Date/Time				
Relinquished by:					Date/Time		Received by:					Date/Time				
Method of Shipment:					Rush		24-48 Hours		10 Working Days		Special Instructions:					
Authorized by: <u>Ronald H Dedrick</u> Date <u>6/4/98</u>											Results to be sent to both parties.					
(Client Signature Must Accompany Request)																



CHAIN OF CUSTODY RECORD

Date: 6/4/93Page: 1 of 1612 E. Murphy Dr. • P.O. Box 2606 • Farmington, NM 87499
LAB: (505) 325-5667 • FAX: (505) 325-6256

Purchase Order No.:		Job No.		Name		Maureen Gannon		Title			
SEND INVOICE TO	Name		Denver Bearden		Company		PNM Gas Services				
	Company		PNM Gas Services		Dept.		324-3763				
	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:				Number of Containers		ANALYSIS REQUESTED					
Dogie Compressor Station East P.+ (Dogie East P.+)				2		TEST 8020					
Sampler: RD M.S.											
SAMPLE IDENTIFICATION		SAMPLE		MATRIX	PRES.					LAB ID	
		DATE	TIME								
9806040830 MW-1				H2O	11/10					980604-11/10	
9806040845 MW-2					2	-021					
9806040900 MW-3					2	-021					
9806040915 MW-4					2	-021					
9806040930 MW-5					2	-021					
Relinquished by: <u>Randy H. Decker</u>		Date/Time: <u>6/4/93 10:26</u>		Received by: <u>[Signature]</u>		Date/Time: <u>6/4/93 10:36</u>					
Relinquished by:		Date/Time:		Received by:		Date/Time:					
Relinquished by:		Date/Time:		Received by:		Date/Time:					
Method of Shipment:				Rush		24-48 Hours		10 Working Days			
Authorized by: <u>Randy H. Decker</u> Date: <u>6/4/93</u>								Special Instructions:			
(Client Signature Must Accompany Request)								Results to be sent to both parties.			

8/11/98

OFF: (505) 325-5667



LAB: (505) 325-1556

September 23, 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: Dogie East Pit

Order No.: 9808023

Dear Maureen Gannon,

On Site Technologies, LTD. received 5 samples on 8/12/98 for the analyses presented in the following report.

The Samples were analyzed for the following tests:

- Alkalinity, Total (M2320 B)
- Arsenic, Dissolved (SW6010A)
- Barium, Dissolved (SW6010A)
- BTEX (SW8020A)
- Cadmium, Dissolved (SW6010A)
- Calcium by AA (SW7140)
- Chloride (M4500-Cl C.)
- Chromium, Dissolved (SW6010A)
- Conductivity (E120.1)
- Hardness, Total (E130.1)
- Iron, Dissolved (SW6010A)
- Lead, Dissolved (SW6010A)
- Magnesium by AA (SW7450)
- Manganese, Dissolved (SW6010A)
- Mercury, Dissolved (SW7470)
- pH (E150.1)
- Potassium by AA (SW7610)
- Selenium, Dissolved (SW7742)
- Silver, Dissolved (SW6010A)
- Sodium by AA (SW7770)
- Sulfate (M4500-SO4 D)
- Total Dissolved Solids (M2540 C.)

OFF: (505) 325-5667



LAB: (505) 325-1556

September 23, 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: Dogie East Pit

Order No.: 9808023

Dear Maureen Gannon,

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: 23-Sep-98

CLIENT: PNM - Public Service Company of NM
Project: Dogie East Pit
Lab Order: 9808023

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.

Standard Methods for The Examination of Water and Wastewater, 18th Edition.

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

Cation-Anion Balance 9808023-01B Dogie East Pit MW-1

Total Cation-Anion = 93.52 me/L
Difference Cation-Anion = 1.02 me/L
% Difference = 1.1%

Cation-Anion Balance 9808023-02B Dogie East Pit MW-2

Total Cation-Anion = 89.42 me/L
Difference Cation-Anion = 0.70 me/L
% Difference = 0.8%

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LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 23-Sep-98

Client: PNM - Public Service Company of NM
Work Order: 9808023
Lab ID: 9808023-01A **Matrix:** AQUEOUS
Project: Dogie East Pit

Client Sample Info: Dogie East Pit
Client Sample ID: 9808111500; MW-1
Collection Date: 8/11/98 3:00:00 PM
COC Record: 7287

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8020A				Analyst: DC
Benzene	ND	0.5		µg/L	1	8/17/98
Toluene	0.8	0.5		µg/L	1	8/17/98
Ethylbenzene	ND	0.5		µg/L	1	8/17/98
m,p-Xylene	ND	1		µg/L	1	8/17/98
o-Xylene	ND	0.5		µg/L	1	8/17/98

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

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- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

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LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 23-Sep-98

Client:	PNM - Public Service Company of NM	Client Sample Info:	Dogie East Pit
Work Order:	9808023	Client Sample ID:	9808111500; MW-1
Lab ID:	9808023-01B	Matrix:	AQUEOUS
Project:	Dogie East Pit	Collection Date:	8/11/98 3:00:00 PM
		COC Record:	7287

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
CALCIUM BY AA		SW7140				Analyst: HR
Calcium	106	12		mg/L	50	8/20/98
POTASSIUM BY AA		SW7610				Analyst: HR
Potassium	3.3	0.25		mg/L	1	8/20/98
MAGNESIUM BY AA		SW7450				Analyst: HR
Magnesium	30.5	6.2		mg/L	25	8/20/98
SODIUM BY AA		SW7770				Analyst: HR
Sodium	882	62		mg/L	250	8/20/98
ALKALINITY, TOTAL		M2320 B				Analyst: HR
Alkalinity, Bicarbonate (As CaCO ₃)	610	5		mg/L CaCO ₃	1	8/13/98
Alkalinity, Carbonate (As CaCO ₃)	ND	5		mg/L CaCO ₃	1	8/13/98
Alkalinity, Total (As CaCO ₃)	610	5		mg/L CaCO ₃	1	8/13/98
CHLORIDE		M4500-CL C.				Analyst: HR
Chloride	33	10		mg/L	1	8/13/98
CONDUCTIVITY		E120.1				Analyst: HR
Specific Conductance	4170	2		uS/cm	1	8/13/98
HARDNESS, TOTAL		E130.1				Analyst: HR
Hardness (As CaCO ₃)	390	1		mg/L	1	8/20/98
PH		E150.1				Analyst: HR
pH	7.34	2		pH units	1	8/12/98
SULFATE		M4500-SO4 D				Analyst: HR
Sulfate	1740	5		mg/L	1	8/17/98
TOTAL DISSOLVED SOLIDS		M2540 C.				Analyst: HR
Total Dissolved Solids (Residue, Filterable)	3410	40		mg/L	1	8/17/98

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

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OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 23-Sep-98

Client:	PNM - Public Service Company of NM	Client Sample Info:	Dogie East Pit
Work Order:	9808023	Client Sample ID:	9808111700; MW-2
Lab ID:	9808023-02A	Matrix:	AQUEOUS
Project:	Dogie East Pit	Collection Date:	8/11/98 5:00:00 PM
		COC Record:	7287

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8020A				Analyst: DC
Benzene	76	0.5		µg/L	1	8/17/98
Toluene	2.4	0.5		µg/L	1	8/17/98
Ethylbenzene	12	0.5		µg/L	1	8/17/98
m,p-Xylene	30	1		µg/L	1	8/17/98
o-Xylene	ND	0.5		µg/L	1	8/17/98

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

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OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 23-Sep-98

Client:	PNM - Public Service Company of NM	Client Sample Info:	Dogie East Pit
Work Order:	9808023	Client Sample ID:	9808111700; MW-2
Lab ID:	9808023-02B	Matrix:	AQUEOUS
Project:	Dogie East Pit	Collection Date:	8/11/98 5:00:00 PM
		COC Record:	7287

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
CALCIUM BY AA		SW7140				Analyst: HR
Calcium	111	12		mg/L	50	8/20/98
POTASSIUM BY AA		SW7610				Analyst: HR
Potassium	3.9	0.25		mg/L	1	8/20/98
MAGNESIUM BY AA		SW7450				Analyst: HR
Magnesium	31.8	6.2		mg/L	25	8/20/98
SODIUM BY AA		SW7770				Analyst: HR
Sodium	830	62		mg/L	250	8/20/98
ALKALINITY, TOTAL		M2320 B				Analyst: HR
Alkalinity, Bicarbonate (As CaCO ₃)	730	5		mg/L CaCO ₃	1	8/13/98
Alkalinity, Carbonate (As CaCO ₃)	ND	5		mg/L CaCO ₃	1	8/13/98
Alkalinity, Total (As CaCO ₃)	730	5		mg/L CaCO ₃	1	8/13/98
CHLORIDE		M4500-CL C.				Analyst: HR
Chloride	67	10		mg/L	1	8/13/98
CONDUCTIVITY		E120.1				Analyst: HR
Specific Conductance	4000	2		uS/cm	1	8/13/98
HARDNESS, TOTAL		E130.1				Analyst: HR
Hardness (As CaCO ₃)	408	1		mg/L	1	8/20/98
PH		E150.1				Analyst: HR
pH	7.22	2		pH units	1	8/12/98
SULFATE		M4500-SO4 D				Analyst: HR
Sulfate	1500	5		mg/L	1	8/17/98
TOTAL DISSOLVED SOLIDS		M2540 C.				Analyst: HR
Total Dissolved Solids (Residue, Filterable)	3270	40		mg/L	1	8/17/98

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

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ON SITE

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LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 23-Sep-98

Client:	PNM - Public Service Company of NM	Client Sample Info:	Dogie East Pit
Work Order:	9808023	Client Sample ID:	9808111530; MW-3
Lab ID:	9808023-03A	Matrix:	AQUEOUS
Project:	Dogie East Pit	Collection Date:	8/11/98 3:30:00 PM
		COC Record:	7287

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8020A				Analyst: HR
Benzene	500	25		µg/L	50	8/18/98
Toluene	5200	25		µg/L	50	8/18/98
Ethylbenzene	730	25		µg/L	50	8/18/98
m,p-Xylene	4800	50		µg/L	50	8/18/98
o-Xylene	750	25		µg/L	50	8/18/98

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 BLENDING INDUSTRY WITH THE ENVIRONMENT -

1 of 1

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 23-Sep-98

Client:	PNM - Public Service Company of NM	Client Sample Info:	Dogie East Pit
Work Order:	9808023	Client Sample ID:	9808111630; MW-4
Lab ID:	9808023-04A	Matrix:	AQUEOUS
Project:	Dogie East Pit	Collection Date:	8/11/98 4:30:00 PM
		COC Record:	7287

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8020A				Analyst: HR
Benzene	620	10		µg/L	20	8/18/98
Toluene	1600	10		µg/L	20	8/18/98
Ethylbenzene	61	10		µg/L	20	8/18/98
m,p-Xylene	560	20		µg/L	20	8/18/98
o-Xylene	120	10		µg/L	20	8/18/98

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

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LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 23-Sep-98

Client: PNM - Public Service Company of NM
Work Order: 9808023
Lab ID: 9808023-05A **Matrix:** AQUEOUS
Project: Dogie East Pit

Client Sample Info: Dogie East Pit
Client Sample ID: 9808111600; MW-5
Collection Date: 8/11/98 4:00:00 PM
COC Record: 7287

*Duplicate
of
MW-3*

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8020A				Analyst: DC
Benzene	480	25		µg/L	50	8/17/98
Toluene	5000	25		µg/L	50	8/17/98
Ethylbenzene	640	25		µg/L	50	8/17/98
m,p-Xylene	4700	50		µg/L	50	8/17/98
o-Xylene	730	25		µg/L	50	8/17/98

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

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- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

On Site Technologies, LTD.

Date: 23-Sep-98

CLIENT: PNM - Public Service Company of NM
Work Order: 9808023
Project: Dogie East Pit

QC SUMMARY REPORT

Method Blank

Sample ID: MB1	Batch ID: GC-1_980817	Test Code: SW8020A	Units: µg/L	Analysis Date: 8/17/98	Prep Date:						
Client ID:	9808023	Run ID: GC-1_980817A		SeqNo: 5534							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	.0317	0.5									J
Ethylbenzene	ND	0.5									
m,p-Xylene	ND	1									
Methyl tert-Butyl Ether	ND	1									
o-Xylene	ND	0.5									
Toluene	.075	0.5									J

Sample ID: MB1	Batch ID: GC-1_980818	Test Code: SW8020A	Units: µg/L	Analysis Date: 8/18/98	Prep Date:						
Client ID:	9808023	Run ID: GC-1_980818A		SeqNo: 5567							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	.0836	0.5									J
Ethylbenzene	ND	0.5									
m,p-Xylene	ND	1									
o-Xylene	ND	0.5									
Toluene	.1803	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: 23-Sep-98

CLIENT: PNM - Public Service Company of NM

Work Order: 9808023

Project: Dogie East Pit

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 9808023-04AMS		Batch ID: GC-1_980817		Test Code: SW8020A		Units: µg/L		Analysis Date 8/17/98		Prep Date:	
Client ID: 9808111630; MW-		9808023		Run ID: GC-1_980817A				SeqNo: 5535			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	2451	0.5	2000	659.5	89.6%	56	128				
Ethylbenzene	1900	0.5	2000	76.6	91.2%	78	107				
m,p-Xylene	4119	1	4000	672.4	86.2%	67	118				
Methyl tert-Butyl Ether	1881	1	2000	39.05	92.1%	70	130				
o-Xylene	1940	0.5	2000	145	89.7%	78	107				
Toluene	3668	0.5	2000	1814	92.7%	74	116				

Sample ID: 9808023-04AMSD		Batch ID: GC-1_980817		Test Code: SW8020A		Units: µg/L		Analysis Date 8/17/98		Prep Date:	
Client ID: 9808111630; MW-		9808023		Run ID: GC-1_980817A				SeqNo: 5536			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	2302	0.5	2000	659.5	82.1%	56	128	2451	6.3%	12	
Ethylbenzene	1782	0.5	2000	76.6	85.3%	78	107	1900	6.5%	11	
m,p-Xylene	3867	1	4000	672.4	79.9%	67	118	4119	6.3%	10	
Methyl tert-Butyl Ether	1792	1	2000	39.05	87.7%	70	130	1881	4.8%	15	
o-Xylene	1838	0.5	2000	145	84.6%	78	107	1940	5.4%	14	
Toluene	3430	0.5	2000	1814	80.8%	74	116	3668	6.7%	14	

Sample ID: 9808023-04AMS		Batch ID: GC-1_980818		Test Code: SW8020A		Units: µg/L		Analysis Date 8/18/98		Prep Date:	
Client ID: 9808111630; MW-		9808023		Run ID: GC-1_980818A				SeqNo: 5568			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	1363	10	800	622.2	92.6%	56	128				
Ethylbenzene	830.2	10	800	61.24	96.1%	78	107				
m,p-Xylene	2023	20	1600	564.9	91.1%	67	118				
o-Xylene	882.7	10	800	118.7	95.5%	78	107				
Toluene	2372	10	800	1637	91.9%	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

CLIENT: PNM - Public Service Company of NM
Work Order: 9808023
Project: Dogie East Pit

QC SUMMARY REPORT

Sample Matrix Spike Duplicate

Sample ID: 9808023-04AMSD Batch ID: GC-1_980818 Test Code: SW8020A Units: µg/L

Analysis Date 8/18/98

Prep Date:

Client ID: 9808111630; MW-

9808023

Run ID: GC-1_980818A

SeqNo: 5569

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	1322	10	800	622.2	87.5%	56	128	1363	3.0%	12	
Ethylbenzene	804	10	800	61.24	92.8%	78	107	830.2	3.2%	11	
m,p-Xylene	1962	20	1600	564.9	87.3%	67	118	2023	3.1%	10	
o-Xylene	859.2	10	800	118.7	92.6%	78	107	882.7	2.7%	14	
Toluene	2303	10	800	1637	83.2%	74	116	2372	3.0%	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: 23-Sep-98

CLIENT: PNM - Public Service Company of NM

Work Order: 9808023

Project: Dogie East Pit

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS WATER	Batch ID: GC-1_980817	Test Code: SW8020A	Units: µg/L	Analysis Date 8/17/98				Prep Date:			
Client ID:	9808023	Run ID: GC-1_980817A	SeqNo: 5533								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	37.02	0.5	40	0.0317	92.5%	56	128				
Ethylbenzene	37.94	0.5	40	0	94.8%	78	107				
m,p-Xylene	71.68	1	80	0	89.6%	67	118				
Methyl tert-Butyl Ether	42.6	1	40	0	106.5%	70	130				
o-Xylene	37.04	0.5	40	0	92.6%	78	107				
Toluene	36.46	0.5	40	0.075	91.0%	74	116				

Sample ID: LCS WATER	Batch ID: GC-1_980818	Test Code: SW8020A	Units: µg/L	Analysis Date 8/18/98				Prep Date:			
Client ID:	9808023	Run ID: GC-1_980818A	SeqNo: 5566								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	39.09	0.5	40	0.0836	97.5%	56	128				
Ethylbenzene	40.29	0.5	40	0	100.7%	78	107				
m,p-Xylene	76.06	1	80	0	95.1%	67	118				
o-Xylene	39.11	0.5	40	0	97.8%	78	107				
Toluene	38.82	0.5	40	0.1803	96.6%	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

On Site Technologies, LTD.

Date: 23-Sep-98

CLIENT: PNM - Public Service Company of NM
Work Order: 9808023
Project: Dogie East Pit

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV1 QC0606/07		Batch ID: GC-1_980817		Test Code: SW8020A		Units: µg/L		Analysis Date 8/17/98			Prep Date:	
Client ID:		9808023		Run ID:		GC-1_980817A		SeqNo: 5530				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Benzene	20.51	0.5	20	0	102.6%	85	115					
Ethylbenzene	20.55	0.5	20	0	102.8%	85	115					
m,p-Xylene	39.03	1	40	0	97.6%	85	115					
Methyl tert-Butyl Ether	23.05	1	20	0	115.2%	85	115				S	
o-Xylene	20.29	0.5	20	0	101.5%	85	115					
Toluene	20.17	0.5	20	0	100.8%	85	115					
1,4-Difluorobenzene	86.45	0	100	0	86.5%	70	130					
4-Bromochlorobenzene	92.22	0	100	0	92.2%	70	130					
Fluorobenzene	83.4	0	100	0	83.4%	70	130					

Sample ID: CCV2 QC0606/07		Batch ID: GC-1_980817		Test Code: SW8020A		Units: µg/L		Analysis Date 8/17/98			Prep Date:	
Client ID:		9808023		Run ID:		GC-1_980817A		SeqNo: 5531				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Benzene	18.51	0.5	20	0	92.6%	85	115					
Ethylbenzene	19.8	0.5	20	0	99.0%	85	115					
m,p-Xylene	36.02	1	40	0	90.0%	85	115					
Methyl tert-Butyl Ether	20.23	1	20	0	101.1%	85	115					
o-Xylene	20.54	0.5	20	0	102.7%	85	115					
Toluene	18.44	0.5	20	0	92.2%	85	115					
1,4-Difluorobenzene	85.77	0	100	0	85.8%	70	130					
4-Bromochlorobenzene	85.5	0	100	0	85.5%	70	130					
Fluorobenzene	81.73	0	100	0	81.7%	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: 9808023
Project: Dogie East Pit

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV3 QC0606/07		Batch ID: GC-1_980817		Test Code: SW8020A		Units: µg/L		Analysis Date 8/17/98		Prep Date:	
Client ID:		9808023		Run ID: GC-1_980817A				SeqNo: 5532			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	37.36	0.5	40	0	93.4%	85	115				
Ethylbenzene	38	0.5	40	0	95.0%	85	115				
m,p-Xylene	72.35	1	80	0	90.4%	85	115				
Methyl tert-Butyl Ether	38.12	1	40	0	95.3%	85	115				
o-Xylene	37.64	0.5	40	0	94.1%	85	115				
Toluene	37.58	0.5	40	0	93.9%	85	115				
1,4-Difluorobenzene	85.32	0	100	0	85.3%	70	130				
4-Bromochlorobenzene	84.5	0	100	0	84.5%	70	130				
Fluorobenzene	81.92	0	100	0	81.9%	70	130				

Sample ID: CCV1 QC0606/07		Batch ID: GC-1_980818		Test Code: SW8020A		Units: µg/L		Analysis Date 8/18/98			Prep Date:	
Client ID:		9808023		Run ID:		GC-1_980818A		SeqNo: 5563				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Benzene	19.47	0.5	20	0	97.3%	85	115					
Ethylbenzene	19.82	0.5	20	0	99.1%	85	115					
m,p-Xylene	37.59	1	40	0	94.0%	85	115					
o-Xylene	19.39	0.5	20	0	97.0%	85	115					
Toluene	19.42	0.5	20	0	97.1%	85	115					
1,4-Difluorobenzene	86.24	0	100	0	86.2%	70	130					
4-Bromochlorobenzene	88.2	0	100	0	88.2%	70	130					
Fluorobenzene	82.92	0	100	0	82.9%	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: 9808023
Project: Dogie East Pit

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV2 QC0606/07		Batch ID: GC-1_980818		Test Code: SW8020A		Units: µg/L		Analysis Date 8/18/98		Prep Date:	
Client ID: 9808023		Run ID: GC-1_980818A		SeqNo: 5564							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	19.01	0.5	20	0	95.1%	85	115				
Ethylbenzene	20.16	0.5	20	0	100.8%	85	115				
m,p-Xylene	37.65	1	40	0	94.1%	85	115				
o-Xylene	19.21	0.5	20	0	96.0%	85	115				
Toluene	19.3	0.5	20	0	96.5%	85	115				
1,4-Difluorobenzene	84.85	0	100	0	84.9%	70	130				
4-Bromochlorobenzene	79.12	0	100	0	79.1%	70	130				
Fluorobenzene	82.05	0	100	0	82.1%	70	130				

Sample ID: CCV3 QC0606/07		Batch ID: GC-1_980818		Test Code: SW8020A		Units: µg/L		Analysis Date 8/18/98		Prep Date:	
Client ID: 9808023		Run ID: GC-1_980818A				SeqNo: 5565					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	18.77	0.5	20	0	93.9%	85	115				
Ethylbenzene	19.41	0.5	20	0	97.1%	85	115				
m,p-Xylene	36.75	1	40	0	91.9%	85	115				
o-Xylene	19.81	0.5	20	0	99.1%	85	115				
Toluene	19.16	0.5	20	0	95.8%	85	115				
1,4-Difluorobenzene	85.5	0	100	0	85.5%	70	130				
4-Bromochlorobenzene	79.98	0	100	0	80.0%	70	130				
Fluorobenzene	82.31	0	100	0	82.3%	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: 9808023

Project: Dogie East Pit

Test No: SW8020A

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

Sample ID	14FBZ	4BCBZ	FLBZ					
9808008-01A	95	74.3	96.4					
9808012-06A	85.8	86.7	82.5					
9808012-07A	78.2	52.7 *	75					
9808016-01A	79.3	72.4	76.7					
9808016-02A	80.5	84.3	77.6					
9808023-01A	86	90.2	83.2					
9808023-02A	83.6	75.5	80.2					
9808023-03A	85	84.3	82.7					
9808023-04A	85.2	93	83.5					
9808023-04AMS	85	91.6	82.6					
9808023-04AMSD	85	91.2	82.8					
9808023-05A	84.5	84	81					
9808024-01A	86.9	84.2	82.6					
9808024-02A	83.7	86.2	80.8					
9808024-03A	83.3	81	80.4					
9808024-04A	86.5	80.9	82.9					
9808024-05A	86.6	81.7	82.3					
9808024-06A	87	81	82.9					
9808025-01A	84.8	78.2	80.9					
9808025-02A	83	82.9	80					
9808026-01A	83.6	85.7	81					
9808026-02A	86.6	80.2	83.5					
9808026-03A	85.1	80.5	81.5					
9808026-04A	82.9	76.8	80.2					
CCV1 QC0606/07	86.2	88.2	82.9					
CCV2 QC0606/07	84.8	79.1	82					
CCV3 QC0606/07	85.5	80	82.3					

Acronym**Surrogate****QC Limits**

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

70-130
 70-130
 70-130

* Surrogate recovery outside acceptance limits

CLIENT: PNM - Public Service Company of NM
Work Order: 9808023
Project: Dogie East Pit
Test No: SW8020A

**QC SUMMARY REPORT
SURROGATE RECOVERIES**

BTEX

Sample ID	14FBZ	4BCBZ	FLBZ					
LCS WATER	86.1	90.2	83.2					
MB1	86.8	87.9	83.9					

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.

Date: 27-Aug-98

CLIENT: PNM - Public Service Company of NM
Work Order: 9808023
Project: Dogie East Pit

QC SUMMARY REPORT

Method Blank

Sample ID: MBlank	Batch ID: API H2O_980	Test Code: SW7140	Units: mg/L	Analysis Date: 8/20/98	Prep Date:						
Client ID:	9808023	Run ID: API H2O_980820A		SeqNo: 5641							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	0.25									
Sample ID: MBlank	Batch ID: API H2O_980	Test Code: SW7450	Units: mg/L	Analysis Date: 8/20/98	Prep Date:						
Client ID:	9808023	Run ID: API H2O_980820A		SeqNo: 5647							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	ND	0.25									
Sample ID: MBlank	Batch ID: API H2O_980	Test Code: SW7610	Units: mg/L	Analysis Date: 8/20/98	Prep Date:						
Client ID:	9808023	Run ID: API H2O_980820A		SeqNo: 5667							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	ND	0.25									
Sample ID: MBlank	Batch ID: API H2O_980	Test Code: SW7770	Units: mg/L	Analysis Date: 8/20/98	Prep Date:						
Client ID:	9808023	Run ID: API H2O_980820A		SeqNo: 5674							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	ND	0.25									
Sample ID: MBlank	Batch ID: API H2O_980	Test Code: M2320 B	Units: mg/L CaCO3	Analysis Date: 8/13/98	Prep Date:						
Client ID:	9808023	Run ID: API H2O_980820A		SeqNo: 5680							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	2.7	5									J
Alkalinity, Carbonate (As CaCO3)	ND	5									
Alkalinity, Total (As CaCO3)	2.7	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

CLIENT: PNM - Public Service Company of NM
Work Order: 9808023
Project: Dogie East Pit

QC SUMMARY REPORT
Method Blank

Sample ID: MBLank	Batch ID: API H2O_980	Test Code: M4500-Cl C.	Units: mg/L	Analysis Date: 8/20/98	Prep Date:
Client ID:	9808023	Run ID: API H2O_980820A	SeqNo: 5685		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	ND	10			
Sample ID: MBLank	Batch ID: API H2O_980	Test Code: E120.1	Units: uS/cm	Analysis Date: 8/20/98	Prep Date:
Client ID:	9808023	Run ID: API H2O_980820A	SeqNo: 5690		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Specific Conductance	ND	2			
Sample ID: MBLank	Batch ID: API H2O_980	Test Code: M4500-SO4 D	Units: mg/L	Analysis Date: 8/20/98	Prep Date:
Client ID:	9808023	Run ID: API H2O_980820A	SeqNo: 5699		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sulfate	ND	5			
Sample ID: MBLank	Batch ID: API H2O_980	Test Code: M2540 C.	Units: mg/L	Analysis Date: 8/20/98	Prep Date:
Client ID:	9808023	Run ID: API H2O_980820A	SeqNo: 5704		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Total Dissolved Solids (Residue, Filtera	24	40			J

Qualifiers: ND - Not Detected at the Reporting Limit
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B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 27-Aug-98

CLIENT: PNM - Public Service Company of NM

Work Order: 9808023

Project: Dogie East Pit

QC SUMMARY REPORT

Sample Duplicate

Sample ID: 9808023-01BD		Batch ID: API H2O_980		Test Code: M2320 B		Units: mg/L CaCO3		Analysis Date: 8/13/98		Prep Date:	
Client ID: 9808111500; MW-		9808023		Run ID: API H2O_980820A				SeqNo: 5683			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	610	5	0	0	0.0%	0	0	610	0.0%	3	
Alkalinity, Carbonate (As CaCO3)	ND	5	0	0	0.0%	0	0	0	0.0%	3	
Alkalinity, Total (As CaCO3)	610	5	0	0	0.0%	0	0	610	0.0%	3	

Sample ID: 9808023-01BD		Batch ID: API H2O_980		Test Code: M4500-Cl C.		Units: mg/L		Analysis Date: 8/20/98		Prep Date:	
Client ID: 9808111500; MW-		9808023		Run ID: API H2O_980820A				SeqNo: 5688			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	35.6	10	0	0	0.0%	0	0	32.7	8.5%	7	R

Sample ID: 9808023-02BD		Batch ID: API H2O_980		Test Code: M4500-SO4 D		Units: mg/L		Analysis Date: 8/20/98		Prep Date:	
Client ID: 9808111700; MW-		9808023		Run ID: API H2O_980820A				SeqNo: 5703			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	1495	5	0	0	0.0%	0	0	1503	0.5%	6	

Qualifiers: ND - Not Detected at the Reporting Limit
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On Site Technologies, LTD.

Date: 27-Aug-98

CLIENT: PNM - Public Service Company of NM
Work Order: 9808023
Project: Dogie East Pit

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 9807064-02BMS		Batch ID: API H2O_980		Test Code: SW7610		Units: mg/L		Analysis Date 8/20/98			Prep Date:	
Client ID:		9808023		Run ID:		API H2O_980820A		SeqNo: 5671				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Potassium	5	0.25	1	4.23	77.0%	67	157					

Sample ID: 9808023-02BMS		Batch ID: API H2O_980		Test Code: SW7140		Units: mg/L		Analysis Date 8/20/98			Prep Date:	
Client ID: 9808111700; MW-		9808023		Run ID: API H2O_980820A				SeqNo: 5645				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Calcium	3.24	0.25	1	2.22	102.0%	69	159					

Sample ID: 9808023-02BMS	Batch ID: API H2O_980	Test Code: SW7450	Units: mg/L			Analysis Date 8/20/98			Prep Date:		
Client ID: 9808111700; MW-	9808023	Run ID: API H2O_980820A				SeqNo: 5651					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	2.26	0.25	1	1.27	99.0%	78	126				

Sample ID: 9808023-02BMS		Batch ID: API H2O_980		Test Code: SW7770		Units: mg/L		Analysis Date 8/20/98			Prep Date:	
Client ID: 9808111700; MW-		9808023		Run ID: API H2O_980820A				SeqNo: 5678				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Sodium	4.32	0.25	1	3.32	100.0%	81	135					

Qualifiers: ND - Not Detected at the Reporting Limit
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B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 27-Aug-98

CLIENT: PNM - Public Service Company of NM
Work Order: 9808023
Project: Dogie East Pit

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS	Batch ID: API H2O_980	Test Code: M2320 B	Units: mg/L CaCO3	Analysis Date 8/13/98			Prep Date:				
Client ID:	9808023	Run ID: API H2O_980820A	SeqNo: 5681								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	214	5	201	3	105.0%	91	116				

Sample ID: LCS	Batch ID: API H2O_980	Test Code: M4500-CI C.	Units: mg/L	Analysis Date 8/20/98			Prep Date:				
Client ID:	9808023	Run ID: API H2O_980820A	SeqNo: 5686								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	116	10	108	0	107.4%	90	114				

Sample ID: LCS	Batch ID: API H2O_980	Test Code: E120.1	Units: uS/cm	Analysis Date 8/20/98			Prep Date:				
Client ID:	9808023	Run ID: API H2O_980820A	SeqNo: 5691								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1136	2	1100	0	103.3%	97	105				

Sample ID: LCS	Batch ID: API H2O_980	Test Code: E150.1	Units: pH units	Analysis Date 8/20/98			Prep Date:				
Client ID:	9808023	Run ID: API H2O_980820A	SeqNo: 5696								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	9.003	2									

Sample ID: LCS	Batch ID: API H2O_980	Test Code: M4500-SO4 D	Units: mg/L	Analysis Date 8/20/98			Prep Date:				
Client ID:	9808023	Run ID: API H2O_980820A	SeqNo: 5700								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	138	5	139	0	99.3%	83	113				

Qualifiers: ND - Not Detected at the Reporting Limit
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B - Analyte detected in the associated Method Blank

CLIENT: PNM - Public Service Company of NM
Work Order: 9808023
Project: Dogie East Pit

QC SUMMARY REPORT
Laboratory Control Spike - generic

Sample ID: LCS	Batch ID: API H2O_980	Test Code: M2540 C.	Units: mg/L	Analysis Date: 8/20/98	Prep Date:						
Client ID:	9808023	Run ID: API H2O_980820A	SeqNo: 5705								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	920	40	930	24	96.3%	92	104				

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

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R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 27-Aug-98

CLIENT: PNM - Public Service Company of NM
Work Order: 9808023
Project: Dogie East Pit

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV1	Batch ID: API H2O_980	Test Code: SW7140	Units: mg/L	Analysis Date: 8/20/98	Prep Date:
Client ID:	9808023	Run ID: API H2O_980820A	SeqNo: 5642		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Calcium	3.79	0.25	3.89	0	97.4% 89 107
Sample ID: CCV1	Batch ID: API H2O_980	Test Code: SW7450	Units: mg/L	Analysis Date: 8/20/98	Prep Date:
Client ID:	9808023	Run ID: API H2O_980820A	SeqNo: 5648		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Magnesium	1.67	0.25	1.58	0	105.7% 96 114
Sample ID: CCV1	Batch ID: API H2O_980	Test Code: SW7610	Units: mg/L	Analysis Date: 8/20/98	Prep Date:
Client ID:	9808023	Run ID: API H2O_980820A	SeqNo: 5668		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Potassium	1.23	0.25	1.28	0	96.1% 84 114
Sample ID: CCV1	Batch ID: API H2O_980	Test Code: SW7770	Units: mg/L	Analysis Date: 8/20/98	Prep Date:
Client ID:	9808023	Run ID: API H2O_980820A	SeqNo: 5675		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sodium	1.68	0.25	1.62	0	103.7% 87 111
Sample ID: CCV2	Batch ID: API H2O_980	Test Code: SW7140	Units: mg/L	Analysis Date: 8/20/98	Prep Date:
Client ID:	9808023	Run ID: API H2O_980820A	SeqNo: 5646		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Calcium	3.76	0.25	3.89	0	96.7% 89 107

Qualifiers: ND - Not Detected at the Reporting Limit
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B - Analyte detected in the associated Method Blank

CLIENT: PNM - Public Service Company of NM

Work Order: 9808023

Project: Dogie East Pit

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV2	Batch ID: API H2O_980	Test Code: SW7450	Units: mg/L	Analysis Date 8/20/98	Prep Date:						
Client ID:	9808023	Run ID: API H2O_980820A		SeqNo: 5652							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	1.65	0.25	1.58	0	104.4%	96	114				

Sample ID: CCV2	Batch ID: API H2O_980	Test Code: SW7610	Units: mg/L	Analysis Date 8/20/98	Prep Date:						
Client ID:	9808023	Run ID: API H2O_980820A		SeqNo: 5673							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	1.21	0.25	1.28	0	94.5%	84	114				

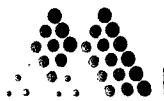
Sample ID: CCV2	Batch ID: API H2O_980	Test Code: SW7770	Units: mg/L	Analysis Date 8/20/98	Prep Date:						
Client ID:	9808023	Run ID: API H2O_980820A		SeqNo: 5679							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1.64	0.25	1.62	0	101.2%	87	111				

Qualifiers: ND - Not Detected at the Reporting Limit
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R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

RECEIVED SEP 21 1998



Mountain States Analytical, Inc.

The Quality Solution

September 15, 1998

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

Reference:

Project: Metals Analysis
MSAI Group: 23678

Dear Mr. Cox:

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

9808023-01C

9808023-02C

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

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

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

We look forward to working with you on future projects.

With Regards,

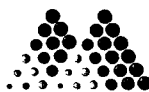
Rolf E. Larsen
Project Manager

10
Years of
Quality
Service

Corporate Office
1645 West 2200 South, Salt Lake City, Utah 84119
801-973-0050 • 1-800-973-6724(MSAI) • FAX 801-972-6278
e-mail: service@msailabs.com

Southwest States Region
6223 Bayonne, Spring, Texas 77389
281-320-2842 • FAX 281-320-0989
e-mail: gbrewer@msailabs.com





Mountain States Analytical, Inc.

The Quality Solution

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

Attn: Mr. David Cox
Project: Metals Analysis

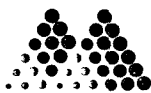
Sample ID: 9808023-01C

Matrix: Waste Water

Dogie East Pit 9808111500; MW-1

MSAI Sample: 84992
MSAI Group: 23678
Date Reported: 09/15/98
Discard Date: 10/15/98
Date Submitted: 08/19/98
Date Sampled: 08/11/98
Collected by:
Purchase Order:
Project No.:

Test Analysis	Results as Received	Units	Limit of Quantitation
0259B Mercury by CVAA, w/ww, 7470 Method: SW-846 7470	ND	mg/l	0.00050
0392I Flame/ICP Prep, w/ww, 3005A Method: SW-846 3005A	Batch. w551		
0392M Mercury Prep CVAA, w/ww, 7470 Method: SW-846 7470	Batch. w189		
0401 Prep for HAA, w/ww, 7062/7742 Method: SW-846 7062/7742	Batch. w566		
13007 Metals by hrICP, 6010A, w/ww Method: SW-846 6010A			
Arsenic	ND	mg/l	0.08
Barium	0.03	mg/l	0.02
Cadmium	ND	mg/l	0.01
Chromium	ND	mg/l	0.05
Iron	0.4	mg/l	0.3
Lead	ND	mg/l	0.1
Manganese	1.71	mg/l	0.02
Silver	ND	mg/l	0.03
1451 Selenium by HAA, w/ww, 7742 Method: SW-846 7742	ND	mg/l	0.01
0939 Sample Filtering, ww, MSAI Method: IN HOUSE MSAI	Complete		



Mountain States Analytical, Inc.

The Quality Solution

Page 2

On Site Technologies, Ltd.

MSAI Sample: 84992

MSAI Group: 23678

Sample ID: 9808023-01C

ND - Not detected at the Limit of Quantitation.

This report consists of the following items: A cover letter, a signed analytical report for each sample specified on the cover letter, and if applicable, an inorganic quality control summary. Organic sample reports contain footnotes which describe any quality control anomalies which may have occurred.

Respectfully Submitted,
Reviewed and Approved by:

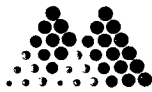
Rolf E. Larsen
Project Manager

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Corporate Office
1645 West 2200 South, Salt Lake City, Utah 84119
801-973-0050 • 1-800-973-6724(MSAI) • FAX 801-972-6278
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MEMBER
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Mountain States Analytical, Inc.

The Quality Solution

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

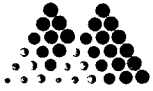
Attn: Mr. David Cox
Project: Metals Analysis

Sample ID: 9808023-02C
Matrix: Waste Water

MSAI Sample: 84993
MSAI Group: 23678
Date Reported: 09/15/98
Discard Date: 10/15/98
Date Submitted: 08/19/98
Date Sampled: 08/11/98
Collected by:
Purchase Order:
Project No.:

Dogie East Pit 9808111700; MW-2 ⁶²

Test Analysis	Results as Received	Units	Limit of Quantitation
0259B Mercury by CVAA, w/ww, 7470 Method: SW-846 7470	ND	mg/l	0.00050
0392I Flame/ICP Prep, w/ww, 3005A Method: SW-846 3005A	Batch. w551		
0392M Mercury Prep CVAA, w/ww, 7470 Method: SW-846 7470	Batch. w189		
0401 Prep for HAA, w/ww, 7062/7742 Method: SW-846 7062/7742	Batch. w566		
13007 Metals by hrICP, 6010A, w/ww Method: SW-846 6010A			
Arsenic	ND	mg/l	0.08
Barium	0.05	mg/l	0.02
Cadmium	ND	mg/l	0.01
Chromium	ND	mg/l	0.05
Iron	ND	mg/l	0.3
Lead	ND	mg/l	0.1
Manganese	3.27	mg/l	0.02
Silver	ND	mg/l	0.03
1451 Selenium by HAA, w/ww, 7742 Method: SW-846 7742	ND	mg/l	0.01
0939 Sample Filtering, ww, MSAI Method: IN HOUSE MSAI	Complete		



Mountain States Analytical, Inc.

The Quality Solution

On Site Technologies, Ltd.

Sample ID: 9808023-02C

Page 2

MSAI Sample: 84993

MSAI Group: 23678

ND - Not detected at the Limit of Quantitation.

This report consists of the following items: A cover letter, a signed analytical report for each sample specified on the cover letter, and if applicable, an inorganic quality control summary. Organic sample reports contain footnotes which describe any quality control anomalies which may have occurred.

Respectfully Submitted,
Reviewed and Approved by:

Rolf E. Larsen
Project Manager

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

09/15/98
12:14:52
Group: 23678

Analysis Batch Number: 1451 -09/10/98-061 -1

Test Identification : 1451 -Selenium by HAA, w/ww, 7742

Sequence : DASE253

Number of Samples : 23

Batch Data-Date/Time : 09/11/98 / 17:34:35

BLANK#	ANALYTE	CONC FOUND #	CONC LIMIT
PBW-565	Selenium	ND	0.0050
PBW1-566-2	Selenium	ND	0.0050
PBW2-566-3	Selenium	ND	0.0050

SPIKE						QC LIMITS	
SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	CONC SPIKE	% REC #	LOWER	UPPER
23716-85101	Selenium	0.0800	0.0255	0.0899	80.5	75.0	125.0

MSD						QC LIMITS			
SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	RESULT 2	%REC2 #	LOWER	UPPER	RPD #	LIMIT
23716-85102	Selenium	0.0800	0.0255	0.0690	54.4(2c)	75.0	125.0	26.3(2c)	20.0

DUPLICATE							
SAMPLE#	ANALYTE	RESULT 1	RESULT 2	RPD #	LIMIT	DILUTION	
23716-85100	Selenium	0.0255	0.0205	22.0(5a)	20.0	2.00	

CONTROL						QC LIMITS	
SAMPLE#	ANALYTE	CONC FOUND	CONC KNOWN	% REC #	LOWER	UPPER	
LCSW-566	Selenium	0.0389	0.0400	97.2	75.0	125.0	

						QC LIMITS	
CCV #	ANALYTE	TRUE VALUE	BATCH READ	% REC #	LOWER	UPPER	
ICV-	Selenium	0.0500	0.0498	99.5	80.0	120.0	
CCV1--2	Selenium	0.0500	0.0514	102.7	80.0	120.0	
CCV2--3	Selenium	0.0500	0.0546	109.3	80.0	120.0	
CCV2--4	Selenium	0.0500	0.0481	96.1	80.0	120.0	
ICV--5	Selenium	0.0500	0.0506	101.1	80.0	120.0	
CCV1--6	Selenium	0.0500	0.0456	91.2	80.0	120.0	
CCV1--7	Selenium	0.0500	0.0437	87.5	80.0	120.0	

CCB#	ANALYTE	CONC FOUND #	CONC LIMIT
ICB-	Selenium	ND	0.0050
CCB1-	Selenium	ND	0.0050
CCB2-	Selenium	ND	0.0050
CCB2-	Selenium	ND	0.0050
ICB-	Selenium	0.0021	0.0050
CCB1-	Selenium	0.0000	0.0050
CCB1-	Selenium	0.0026	0.0050

----- Result Footnotes -----
(2c) - Spike result outside limits. PDS is within acceptance limits.
(5a) - Duplicates not evaluated: Results are <10x detection limit

Groups & Samples

23678-84992 23678-84993 23687-85016 23687-85017 23687-85018 23687-85019 23716-85099 23716-85100

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

09/15/98
12:14:53
Group: 23678

ysis Batch Number: 1451 -09/10/98-061 -1

Test Identification : 1451 -Selenium by HAA, w/ww, 7742

Sequence : DASE253

Number of Samples : 23

Batch Data-Date/Time : 09/11/98 / 17:34:35

Groups & Samples

23716-85101 23716-85102 23716-85103 23716-85104 23716-85105 23734-85186 23734-85187 23734-85188
23734-85189 23734-85190

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

09/15/98
12:14:53
Group: 23678

Analysis Batch Number: 1521 -08/26/98-107 -1

Test Identification : 1521 -Mercury by CVAA, w/ww, 7470A

Sequence : 0259B-1

Number of Samples : 14

Batch Data-Date/Time : 08/26/98 / 16:21:15

BLANK#	ANALYTE	CONC FOUND #	CONC LIMIT
PBW1-189	Mercury	ND	0.1000
PBW2-189-2	Mercury	ND	0.1000

						QC LIMITS	
SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	CONC SPIKE	% REC #	LOWER	UPPER
23678-84992	Mercury	2.5000	-0.0890	2.5260	104.6	80.0	115.0

						QC LIMITS			
SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	RESULT 2	%REC2 #	LOWER	UPPER	RPD #	LIMIT
23678-84992	Mercury	2.5000	-0.0890	2.5300	104.8	80.0	115.0	0.2	20.0

DUPLICATE						
SAMPLE#	ANALYTE	RESULT 1	RESULT 2	RPD #	LIMIT	DILUTION
23678-84992	Mercury	-0.0890	0.0000	200.0(5a)	20.0	1.00

					QC LIMITS	
SAMPLE#	ANALYTE	CONC FOUND	CONC KNOWN	% REC #	LOWER	UPPER
LCSW-189	Mercury	2.5480	2.5000	101.9	80.0	120.0

						QC LIMITS	
#	ANALYTE	TRUE VALUE	BATCH READ	% REC #	LOWER	UPPER	
ICV-	Mercury	3.0000	3.0340	101.1	90.0	110.0	
CCV--2	Mercury	5.0000	4.9940	99.9	80.0	120.0	
CCV--3	Mercury	5.0000	5.0190	100.4	80.0	120.0	
CCV--4	Mercury	5.0000	4.9420	98.8	80.0	120.0	
CCV--5	Mercury	5.0000	4.9850	99.7	80.0	120.0	

CCB#	ANALYTE	CONC FOUND #	CONC LIMIT
ICB-	Mercury	ND	0.1000
CCB-	Mercury	ND	0.1000
CCB-	Mercury	ND	0.1000
CCB-	Mercury	ND	0.1000
CCB-	Mercury	ND	0.1000

----- Result Footnotes -----

(5a) - Duplicates not evaluated: Results are <10x detection limit

Groups & Samples

23621-84722	23621-84724	23621-84726	23621-84728	23621-84730	23621-84732	23621-84734	23622-84746
23622-84748	23622-84750	23622-84752	23622-84754	23678-84992	23678-84993		

Analysis Batch Number: ICPHR-09/01/98-061 -5

Test Identification : ICPHR-*IRIS QC parameters

Sequence : DATR244

Number of Samples : 4

Batch Data-Date/Time : 09/03/98 / 13:21:49

BLANK#	ANALYTE	CONC FOUND #	CONC LIMIT
PBW-551	Silver	0.0006	0.0050
	Arsenic	0.0062	0.0150
	Barium	0.0003	0.0030
	Cadmium	0.0002	0.0020
	Chromium	0.0025	0.0100
	Copper	0.0006	0.0100
	Iron	0.0506	0.0600
	Potassium	ND	0.0500
	Manganese	0.0010	0.0030
	Sodium	0.2739(XX)	0.2000
	Lead	0.0045	0.0200
	Selenium	0.0174	0.0300

SPIKE						QC LIMITS	
SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	CONC SPIKE	% REC #	LOWER	UPPER
23678-84992	Silver	0.0500	-0.0002	0.0485	97.3	80.0	120.0
	Arsenic	2.0000	0.0063	2.1027	104.8	80.0	120.0
	Barium	2.0000	0.0275	1.9958	98.4	80.0	120.0
	Cadmium	0.0500	0.0004	0.0501	99.2	80.0	120.0
	Chromium	0.2000	0.0041	0.2044	100.2	80.0	120.0
	Copper	0.2500	0.0073	0.2525	98.1	80.0	120.0
	Iron	1.0000	0.3665	1.2325	86.6	80.0	120.0
	Potassium	10.0000	1.5358	11.2918	97.6	80.0	120.0
	Manganese	0.5000	1.7128	2.2460	106.6	80.0	120.0
	Sodium	3.0000	779.4285	804.4628	834.5(XX)	80.0	120.0
	Lead	0.5000	0.0014	0.4811	95.9	80.0	120.0
	Selenium	2.0000	0.0100	2.0336	101.2	80.0	120.0

MSD						QC LIMITS			
SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	RESULT 2	%REC2 #	LOWER	UPPER	RPD #	LIMIT
23678-84992	Silver	0.0500	-0.0002	0.0476	95.6	80.0	120.0	1.8	20.0
	Arsenic	2.0000	0.0063	2.1062	105.0	80.0	120.0	0.2	20.0
	Barium	2.0000	0.0275	1.9930	98.3	80.0	120.0	0.1	20.0
	Cadmium	0.0500	0.0004	0.0499	98.8	80.0	120.0	0.4	20.0
	Chromium	0.2000	0.0041	0.2047	100.3	80.0	120.0	0.1	20.0
	Copper	0.2500	0.0073	0.2530	98.3	80.0	120.0	0.2	20.0
	Iron	1.0000	0.3665	1.2236	85.7	80.0	120.0	0.7	20.0
	Potassium	10.0000	1.5358	11.3084	97.7	80.0	120.0	0.1	20.0
	Manganese	0.5000	1.7128	2.2461	106.6	80.0	120.0	0.0	20.0
	Sodium	3.0000	779.4285	766.7160	-423.8(XX)	80.0	120.0	4.8	20.0
	Lead	0.5000	0.0014	0.4772	95.1	80.0	120.0	0.8	20.0
	Selenium	2.0000	0.0100	2.0337	101.2	80.0	120.0	0.0	20.0

DUPLICATE

SAMPLE#	ANALYTE	RESULT 1	RESULT 2	RPD #	LIMIT	DILUTION
23678-84992	Silver	-0.0002	0.0000	200.0(11)	20.0	1.00
	Arsenic	0.0063	0.0055	13.3	20.0	1.00
	Barium	0.0275	0.0268	2.7	20.0	1.00
	Cadmium	0.0004	0.0000	200.0(11)	20.0	1.00
	Chromium	0.0041	0.0036	12.5	20.0	1.00

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

09/15/98
12:14:55
Group: 23678

Analysis Batch Number: ICPHR-09/01/98-061 -5
Test Identification : ICPHR-*IRIS QC parameters
Number of Samples : 4
Batch Data-Date/Time : 09/03/98 / 13:21:49

Sequence : DATR244

DUPLICATE

SAMPLE#	ANALYTE	RESULT 1	RESULT 2	RPD #	LIMIT	DILUTION
23678-84992	Copper	0.0073	0.0066	9.8	20.0	1.00
	Iron	0.3665	0.1460	86.1(5a)	20.0	1.00
	Potassium	1.5358	1.5197	1.1	20.0	1.00
	Manganese	1.7128	1.6984	0.8	20.0	1.00
	Sodium	779.4285	760.0609	2.5	20.0	1.00
	Lead	0.0014	0.0049	108.9(11)	20.0	1.00
	Selenium	0.0100	0.0142	34.8(11)	20.0	1.00

CONTROL

SAMPLE#	ANALYTE	QC LIMITS			
		CONC FOUND	CONC KNOWN	% REC #	LOWER UPPER
LCSW-551	Silver	0.0493	0.0500	98.6	80.0 120.0
	Arsenic	2.0485	2.0000	102.4	80.0 120.0
	Barium	2.0216	2.0000	101.1	80.0 120.0
	Cadmium	0.0510	0.0500	102.0	80.0 120.0
	Chromium	0.2050	0.2000	102.5	80.0 120.0
	Copper	0.2580	0.2500	103.2	80.0 120.0
	Iron	1.0778	1.0000	107.8	80.0 120.0
	Potassium	10.1859	10.0000	101.9	80.0 120.0
	Manganese	0.5038	0.5000	100.8	80.0 120.0
	Sodium	3.6798	3.0000	122.7(XX)	80.0 120.0
	Lead	0.4979	0.5000	99.6	80.0 120.0
	Selenium	2.0094	2.0000	100.5	80.0 120.0

QC LIMITS

CCV #	ANALYTE	TRUE VALUE	BATCH READ	% REC #	LOWER	UPPER
ICV-	Silver	0.1000	0.1031	103.1	90.0	110.0
	Arsenic	0.4000	0.3986	99.7	90.0	110.0
	Barium	1.0000	1.0120	101.2	90.0	110.0
	Cadmium	1.0000	1.0099	101.0	90.0	110.0
	Chromium	1.0000	1.0277	102.8	90.0	110.0
	Copper	1.0000	0.9790	97.9	90.0	110.0
	Iron	1.0000	1.0360	103.6	90.0	110.0
	Potassium	10.0000	10.1024	101.0	90.0	120.0
	Manganese	1.0000	0.9915	99.2	90.0	110.0
	Sodium	10.0000	10.1062	101.1	90.0	110.0
	Lead	5.0000	4.9309	98.6	90.0	110.0
	Selenium	0.4000	0.3972	99.3	90.0	110.0
CCV1--2	Silver	0.1000	0.1030	103.0	90.0	110.0
	Arsenic	0.4000	0.4042	101.0	90.0	110.0
	Barium	1.0000	1.0139	101.4	90.0	110.0
	Cadmium	1.0000	1.0107	101.1	90.0	110.0
	Chromium	1.0000	1.0264	102.6	90.0	110.0
	Copper	1.0000	0.9820	98.2	90.0	110.0
	Iron	1.0000	1.0470	104.7	90.0	110.0
	Potassium	10.0000	10.2411	102.4	90.0	120.0
	Manganese	1.0000	0.9974	99.7	90.0	110.0
	Sodium	10.0000	10.0729	100.7	90.0	110.0
	Lead	5.0000	4.9488	99.0	90.0	110.0
	Selenium	0.4000	0.4143	103.6	90.0	110.0

Analysis Batch Number: ICPHR-09/01/98-061 -5

Test Identification : ICPHR-*IRIS QC parameters

Sequence : DATR244

Number of Samples : 4

Batch Data-Date/Time : 09/03/98 / 13:21:49

CCV #	ANALYTE	TRUE VALUE	BATCH READ	QC LIMITS		
				% REC #	LOWER	UPPER
CCV3--3	Silver	0.1000	0.1022	102.2	90.0	110.0
	Arsenic	0.4000	0.4062	101.5	90.0	110.0
	Barium	1.0000	1.0161	101.6	90.0	110.0
	Cadmium	1.0000	1.0123	101.2	90.0	110.0
	Chromium	1.0000	1.0223	102.2	90.0	110.0
	Copper	1.0000	0.9857	98.6	90.0	110.0
	Iron	1.0000	1.0409	104.1	90.0	110.0
	Potassium	10.0000	9.7880	97.9	90.0	120.0
	Manganese	1.0000	0.9983	99.8	90.0	110.0
	Sodium	10.0000	9.6117	96.1	90.0	110.0
	Lead	5.0000	4.9923	99.8	90.0	110.0
	Selenium	0.4000	0.3987	99.7	90.0	110.0
CCV4--4	Silver	0.1000	0.1036	103.6	90.0	110.0
	Arsenic	0.4000	0.4040	101.0	90.0	110.0
	Barium	1.0000	1.0162	101.6	90.0	110.0
	Cadmium	1.0000	1.0096	101.0	90.0	110.0
	Chromium	1.0000	1.0220	102.2	90.0	110.0
	Copper	1.0000	0.9883	98.8	90.0	110.0
	Iron	1.0000	1.0368	103.7	90.0	110.0
	Potassium	10.0000	9.7887	97.9	90.0	120.0
	Manganese	1.0000	0.9965	99.7	90.0	110.0
	Sodium	10.0000	9.6554	96.6	90.0	110.0
	Lead	5.0000	4.9714	99.4	90.0	110.0
	Selenium	0.4000	0.4118	103.0	90.0	110.0
CCV5--5	Silver	0.1000	0.1033	103.3	90.0	110.0
	Arsenic	0.4000	0.4004	100.1	90.0	110.0
	Barium	1.0000	1.0155	101.6	90.0	110.0
	Cadmium	1.0000	1.0147	101.5	90.0	110.0
	Chromium	1.0000	1.0254	102.5	90.0	110.0
	Copper	1.0000	0.9817	98.2	90.0	110.0
	Iron	1.0000	1.0258	102.6	90.0	110.0
	Potassium	10.0000	9.8872	98.9	90.0	120.0
	Manganese	1.0000	0.9953	99.5	90.0	110.0
	Sodium	10.0000	9.7240	97.2	90.0	110.0
	Lead	5.0000	4.9700	99.4	90.0	110.0
	Selenium	0.4000	0.4078	101.9	90.0	110.0

CCB#	ANALYTE	CONC FOUND #	CONC LIMIT
ICB-	Silver	0.0002	0.0050
	Arsenic	0.0068	0.0150
	Barium	0.0001	0.0030
	Cadmium	ND	0.0020
	Chromium	ND	0.0100
	Copper	0.0003	0.0100
	Iron	ND	0.0600
	Potassium	0.0011	0.0500
	Manganese	ND	0.0030
	Sodium	0.0345	0.2000
	Lead	0.0042	0.0200

Analysis Batch Number: ICPHR-09/01/98-061 -5

Test Identification : ICPHR-*IRIS QC parameters

Sequence : DATR244

Number of Samples : 4

Batch Data-Date/Time : 09/03/98 / 13:21:49

CCB#	ANALYTE	CONC FOUND #	CONC LIMIT
ICB-	Selenium	0.0036	0.0300
CCB1-	Silver	0.0001	0.0050
	Arsenic	0.0048	0.0150
	Barium	0.0003	0.0030
	Cadmium	ND	0.0020
	Chromium	ND	0.0100
	Copper	ND	0.0100
	Iron	ND	0.0600
	Potassium	ND	0.0500
	Manganese	ND	0.0030
	Sodium	ND	0.2000
	Lead	ND	0.0200
	Selenium	0.0075	0.0300
CCB3-	Silver	0.0001	0.0050
	Arsenic	ND	0.0150
	Barium	0.0002	0.0030
	Cadmium	0.0001	0.0020
	Chromium	ND	0.0100
	Copper	0.0003	0.0100
	Iron	ND	0.0600
	Potassium	0.0093	0.0500
	Manganese	ND	0.0030
	Sodium	ND	0.2000
	Lead	0.0033	0.0200
	Selenium	0.0094	0.0300
CCB4-	Silver	0.0004	0.0050
	Arsenic	0.0080	0.0150
	Barium	0.0003	0.0030
	Cadmium	ND	0.0020
	Chromium	ND	0.0100
	Copper	ND	0.0100
	Iron	ND	0.0600
	Potassium	ND	0.0500
	Manganese	ND	0.0030
	Sodium	0.0157	0.2000
	Lead	0.0028	0.0200
	Selenium	0.0013	0.0300
CCB5-	Silver	0.0004	0.0050
	Arsenic	0.0005	0.0150
	Barium	0.0003	0.0030
	Cadmium	ND	0.0020
	Chromium	0.0000	0.0100
	Copper	ND	0.0100
	Iron	0.0038	0.0600
	Potassium	ND	0.0500
	Manganese	ND	0.0030
	Sodium	ND	0.2000
	Lead	ND	0.0200
	Selenium	0.0191	0.0300

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

09/15/98
12:14:57
Group: 23678

Analysis Batch Number: ICPHR-09/01/98-061 -5
Test Identification : ICPHR-*IRIS QC parameters
Number of Samples : 4
Batch Data-Date/Time : 09/03/98 / 13:21:49

Sequence : DATR244

----- Result Footnotes -----
(XX) - Analyte was not reported from this run
(11) - The duplicate results cannot be evaluated because both results are <MDL.
(5a) - Duplicates not evaluated: Results are <10x detection limit

Groups & Samples

23678-84992 23678-84993 23742-85239 23749-85259

321

On Site Technologies, LTD.

612 E. Murray Drive
Farmington, NM 87401
(505) 325-2432

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Subcontractor:

Mountain States Analytical, Inc.
1645 West 2200 South

TEL: (800) 973-6724
FAX: (801) 972-6278

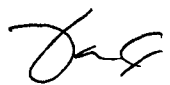
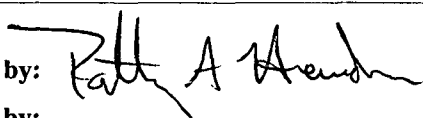
Salt Lake City, UT 84119

Acct #:

18-Aug-98

Sample ID	Matrix	Collection Date	Bottle Type	Requested Tests						
				SW6010A	SW7470	SW7742				
9808023-01C	Aqueous	8/11/98 3:00:00 PM	1LCU	6	1	1				
9808023-02C	Aqueous	8/11/98 5:00:00 PM	1LCU	6	1	1				

Comments: Please analyze two (2) water samples per WQCC Metals (Dissolved).

	Date/Time		Date/Time
Relinquished by: 	8/16/98 1600	Received by: 	08/19/98 @ 1140
Relinquished by:		Received by:	

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



CHAIN OF CUSTODY RECORD

Date: 11/1/98

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.		REPORT RESULTS TO	Name Maureen Gannon		Title																																					
SEND INVOICE TO	Name Denver Bearden				Company PNM Gas Services																																							
	Company PNM Gas Services		Dept. 324-3763		Mailing Address Alverado Square, Mail Stop 0408																																							
	Address 603 W. Elm Street				City, State, Zip Albuquerque, NM 87158																																							
	City, State, Zip Farmington, NM 87401				Telephone No. 505-848-2974		Telefax No.																																					
Sampling Location: Dogie impeller station East Pit (Dogie East Pit)				Number of Containers	ANALYSIS REQUESTED																																							
Sampler: RD M.S.																																												
SAMPLE IDENTIFICATION																																												
<table border="1"> <thead> <tr> <th rowspan="2"></th> <th colspan="2">SAMPLE</th> <th rowspan="2">MATRIX</th> <th rowspan="2">PRES.</th> </tr> <tr> <th>DATE</th> <th>TIME</th> </tr> </thead> <tbody> <tr> <td>7806040830 MW-1</td> <td></td> <td></td> <td>H₂O</td> <td>100</td> </tr> <tr> <td>7806040845 MW-2</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>7806040900 MW-3</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>7806040915 MW-4</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>7806040930 MW-5</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>														SAMPLE		MATRIX	PRES.	DATE	TIME	7806040830 MW-1			H ₂ O	100	7806040845 MW-2					7806040900 MW-3					7806040915 MW-4					7806040930 MW-5				
	SAMPLE		MATRIX											PRES.																														
	DATE	TIME																																										
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7806040900 MW-3																																												
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7806040930 MW-5																																												
				LAB ID																																								
Relinquished by: <u>[Signature]</u>				Date/Time <u>11/1/98</u>		Received by: <u>[Signature]</u>				Date/Time <u>11/1/98</u>																																		
Relinquished by:				Date/Time		Received by:				Date/Time																																		
Relinquished by:				Date/Time		Received by:				Date/Time																																		
Method of Shipment:						Rush		24-48 Hours		10 Working Days		Special Instructions:																																
Authorized by: <u>[Signature]</u> Date <u>11/1/98</u> (Client Signature <u>Must</u> Accompany Request)												Results to be sent to both parties.																																

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

4th Qtr 1998

RE: Dogie Comp. Station, East Pit

Order No.: 9812021

Dear Maureen Gannon,

On Site Technologies, LTD. received 5 samples on 12/10/98 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 be "DC" or "D Cox", written in a cursive style.

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: Dogie Comp. Station, East Pit
Lab Order: 9812021

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: 15-Dec-98

Client:	PNM - Public Service Company of NM	Client Sample Info:	Dogie Comp. Station, East Pit
Work Order:	9812021	Client Sample ID:	9812091507; MW-5
Lab ID:	9812021-01A	Matrix:	AQUEOUS
Project:	Dogie Comp. Station, East Pit	Collection Date:	12/9/98 3:07:00 PM
		COC Record:	7524

New Well

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8020A				Analyst: HR
Benzene	ND	20		µg/L	20	12/11/98
Toluene	2300	20		µg/L	20	12/11/98
Ethylbenzene	300	20		µg/L	20	12/11/98
m,p-Xylene	2300	40		µg/L	20	12/11/98
o-Xylene	420	20		µg/L	20	12/11/98

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: 15-Dec-98

Client:	PNM - Public Service Company of NM	Client Sample Info:	Dogie Comp. Station, East Pit
Work Order:	9812021	Client Sample ID:	9812091511; MW-3
Lab ID:	9812021-02A	Matrix:	AQUEOUS
Project:	Dogie Comp. Station, East Pit	Collection Date:	12/9/98 3:11:00 PM
		COC Record:	7524

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8020A				Analyst: HR
Benzene	90	20		µg/L	20	12/11/98
Toluene	350	20		µg/L	20	12/11/98
Ethylbenzene	540	20		µg/L	20	12/11/98
m,p-Xylene	3600	40		µg/L	20	12/11/98
o-Xylene	640	20		µg/L	20	12/11/98

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: 15-Dec-98

Client:	PNM - Public Service Company of NM	Client Sample Info:	Dogie Comp. Station, East Pit
Work Order:	9812021	Client Sample ID:	9812091514; MW-4
Lab ID:	9812021-03A	Matrix:	AQUEOUS
Project:	Dogie Comp. Station, East Pit	Collection Date:	12/9/98 3:14:00 PM
		COC Record:	7524

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8020A				Analyst: HR
Benzene	7400	100		µg/L	100	12/11/98
Toluene	12000	100		µg/L	100	12/11/98
Ethylbenzene	130	10		µg/L	10	12/10/98
m,p-Xylene	2600	200		µg/L	100	12/11/98
o-Xylene	660	100		µg/L	100	12/11/98

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: 15-Dec-98

Client:	PNM - Public Service Company of NM	Client Sample Info:	Dogie Comp. Station, East Pit
Work Order:	9812021	Client Sample ID:	9812091516; MW-2
Lab ID:	9812021-04A	Matrix:	AQUEOUS
Project:	Dogie Comp. Station, East Pit	Collection Date:	12/9/98 3:16:00 PM
		COC Record:	7524

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8020A				Analyst: HR
Benzene	38	1		µg/L	1	12/10/98
Toluene	ND	1		µg/L	1	12/10/98
Ethylbenzene	10	1		µg/L	1	12/10/98
m,p-Xylene	4.5	2		µg/L	1	12/10/98
o-Xylene	ND	1		µg/L	1	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

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: 15-Dec-98

Client:	PNM - Public Service Company of NM	Client Sample Info:	Dogie Comp. Station, East Pit
Work Order:	9812021	Client Sample ID:	9812091518; MW-1
Lab ID:	9812021-05A	Matrix:	AQUEOUS
Project:	Dogie Comp. Station, East Pit	Collection Date:	12/9/98 3:18:00 PM
		COC Record:	7524

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8020A				Analyst: HR
Benzene	ND	1		µg/L	1	12/10/98
Toluene	ND	1		µg/L	1	12/10/98
Ethylbenzene	ND	1		µg/L	1	12/10/98
m,p-Xylene	ND	2		µg/L	1	12/10/98
o-Xylene	ND	1		µg/L	1	12/10/98

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: 15-Dec-98

CLIENT: PNM - Public Service Company of NM

Work Order: 9812021

Project: Dogie Comp. Station, East Pit

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:		9812021		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	

Sample ID: MB1	Batch ID: GC-1_981211	Test Code: SW8020A	Units: µg/L	Analysis Date 12/11/98					Prep Date:		
Client ID:	9812021	Run ID:	GC-1_981211A	SeqNo: 9492							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	.2564	1									J
Ethylbenzene	.1588	1									J
m,p-Xylene	.4285	2									J
o-Xylene	.1668	1									J
Toluene	.4123	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: 9812021

Project: Dogie Comp. Station, East Pit

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:	9812021	Run ID:	GC-1_981210A	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: 9812007-01AMSD	Batch ID: GC-1_981210	Test Code: SW8020A	Units: µg/L	Analysis Date 12/10/98				Prep Date:			
Client ID:	9812021	Run ID:	GC-1_981210A	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	177.9	0.1%	12	
Ethylbenzene	523.6	5	200	343.4	90.1%	78	107	524.3	0.1%	11	
m,p-Xylene	880.5	10	400	522.1	89.6%	67	118	880	0.1%	10	
o-Xylene	255.6	5	200	75.14	90.2%	78	107	258.5	1.1%	14	
Toluene	219.3	5	200	0	109.7%	74	116	218.9	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: 9812091511; MW-	9812021	Run ID:	GC-1_981210A	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: 9812021
Project: Dogie Comp. Station, East Pit

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: 9812091511; MW-		9812021	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	

Sample ID: 9812009-01AMS		Batch ID: GC-1_981211	Test Code: SW8020A	Units: µg/L	Analysis Date 12/11/98				Prep Date:		
Client ID:		9812021	Run ID: GC-1_981211A		SeqNo: 9493						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	256.4	5	200	75.59	90.4%	56	128				
Ethylbenzene	205.3	5	200	16.65	94.3%	78	107				
m,p-Xylene	476.6	10	400	118.2	89.6%	67	118				
o-Xylene	225.2	5	200	38.78	93.2%	78	107				
Toluene	423.2	5	200	256.6	83.3%	74	116				

Sample ID: 9812009-01AMSD		Batch ID: GC-1_981211	Test Code: SW8020A	Units: µg/L	Analysis Date 12/11/98				Prep Date:		
Client ID:		9812021	Run ID: GC-1_981211A		SeqNo: 9494						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	254.8	5	200	75.59	89.6%	56	128	256.4	0.6%	12	
Ethylbenzene	204.5	5	200	16.65	93.9%	78	107	205.3	0.4%	11	
m,p-Xylene	474.4	10	400	118.2	89.1%	67	118	476.6	0.5%	10	
o-Xylene	224.5	5	200	38.78	92.8%	78	107	225.2	0.3%	14	
Toluene	421.2	5	200	256.6	82.3%	74	116	423.2	0.5%	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: 9812021
Project: Dogie Comp. Station, East Pit

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:	9812021	Run ID:	GC-1_981210A	SeqNo: 9436							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	37.64	1	40	0.0828	93.9%	56	128				
Ethylbenzene	37.95	1	40	0.1496	94.5%	78	107				
m,p-Xylene	74.54	2	80	0.2857	92.8%	67	118				
o-Xylene	38.56	1	40	0.1375	96.0%	78	107				
Toluene	37.79	1	40	0.1456	94.1%	74	116				

Sample ID: LCS WATER	Batch ID: GC-1_981211	Test Code: SW8020A	Units: µg/L	Analysis Date 12/11/98				Prep Date:			
Client ID:	9812021	Run ID:	GC-1_981211A	SeqNo: 9491							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	39.16	1	40	0.2564	97.3%	56	128				
Ethylbenzene	39.55	1	40	0.1588	98.5%	78	107				
m,p-Xylene	77.38	2	80	0.4285	96.2%	67	118				
o-Xylene	39.81	1	40	0.1668	99.1%	78	107				
Toluene	39.36	1	40	0.4123	97.4%	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: 15-Dec-98

CLIENT: PNM - Public Service Company of NM

Work Order: 9812021

Project: Dogie Comp. Station, East Pit

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:		9812021		Run ID: GC-1_981210A				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:	9812021	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: 9812021
Project: Dogie Comp. Station, East Pit

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: 9812021		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				

Sample ID: CCV1 QC0606/07		Batch ID: GC-1_981211		Test Code: SW8020A		Units: µg/L		Analysis Date 12/11/98		Prep Date:	
Client ID: 9812021		Run ID: GC-1_981211A				SeqNo: 9486					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.65	1	20	0	103.2%	85	115				
Ethylbenzene	20.89	1	20	0	104.4%	85	115				
m,p-Xylene	40.66	2	40	0	101.7%	85	115				
o-Xylene	20.99	1	20	0	105.0%	85	115				
Toluene	20.86	1	20	0	104.3%	85	115				
1,4-Difluorobenzene	90.02	0	100	0	90.0%	70	130				
4-Bromochlorobenzene	97.45	0	100	0	97.5%	70	130				
Fluorobenzene	88.69	0	100	0	88.7%	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: 9812021
Project: Dogie Comp. Station, East Pit

QC SUMMARY REPORT
Continuing Calibration Verification Standard

Sample ID: CCV2 QC0606/07		Batch ID: GC-1_981211		Test Code: SW8020A		Units: µg/L		Analysis Date 12/11/98		Prep Date:	
Client ID: 9812021		Run ID: GC-1_981211A		SeqNo: 9487							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.17	1	20	0	100.9%	85	115				
Ethylbenzene	20.37	1	20	0	101.9%	85	115				
m,p-Xylene	39.6	2	40	0	99.0%	85	115				
o-Xylene	20.61	1	20	0	103.1%	85	115				
Toluene	20.37	1	20	0	101.8%	85	115				
1,4-Difluorobenzene	89.98	0	100	0	90.0%	70	130				
4-Bromochlorobenzene	97.79	0	100	0	97.8%	70	130				
Fluorobenzene	88.58	0	100	0	88.6%	70	130				

Sample ID: CCV3 QC0606/07		Batch ID: GC-1_981211		Test Code: SW8020A		Units: µg/L		Analysis Date 12/11/98		Prep Date:	
Client ID: 9812021		Run ID: GC-1_981211A		SeqNo: 9488							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	38.19	1	40	0	95.5%	85	115				
Ethylbenzene	38.64	1	40	0	96.6%	85	115				
m,p-Xylene	75.65	2	80	0	94.6%	85	115				
o-Xylene	39.11	1	40	0	97.8%	85	115				
Toluene	38.57	1	40	0	96.4%	85	115				
1,4-Difluorobenzene	89.69	0	100	0	89.7%	70	130				
4-Bromochlorobenzene	98.67	0	100	0	98.7%	70	130				
Fluorobenzene	89.01	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: 9812021
Project: Dogie Comp. Station, East Pit

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV4 QC0606/07		Batch ID: GC-1_981211		Test Code: SW8020A		Units: µg/L		Analysis Date 12/11/98		Prep Date:	
Client ID:		9812021		Run ID:		GC-1_981211A		SeqNo: 9489			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.66	1	20	0	103.3%	85	115				
Ethylbenzene	20.96	1	20	0	104.8%	85	115				
m,p-Xylene	40.56	2	40	0	101.4%	85	115				
o-Xylene	21.22	1	20	0	106.1%	85	115				
Toluene	20.77	1	20	0	103.9%	85	115				
1,4-Difluorobenzene	90.18	0	100	0	90.2%	70	130				
4-Bromochlorobenzene	97.08	0	100	0	97.1%	70	130				
Fluorobenzene	88.52	0	100	0	88.5%	70	130				

Sample ID: CCV5 QC0606/07		Batch ID: GC-1_981211		Test Code: SW8020A		Units: µg/L		Analysis Date 12/11/98		Prep Date:	
Client ID:		9812021		Run ID:		GC-1_981211A		SeqNo: 9490			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.21	1	20	0	101.0%	85	115				
Ethylbenzene	20.51	1	20	0	102.6%	85	115				
m,p-Xylene	39.72	2	40	0	99.3%	85	115				
o-Xylene	20.91	1	20	0	104.5%	85	115				
Toluene	20.42	1	20	0	102.1%	85	115				
1,4-Difluorobenzene	89.72	0	100	0	89.7%	70	130				
4-Bromochlorobenzene	98.29	0	100	0	98.3%	70	130				
Fluorobenzene	88.64	0	100	0	88.6%	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

On Site Technologies, LTD.

Date: 15-Dec-98

CLIENT: PNM - Public Service Company of NM
Work Order: 9812021
Project: Dogie Comp. Station, East Pit
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	89.7	97.4	89				
9812009-01AMS	89.2	98.3	88.8				
9812009-01AMSD	89.7	98.5	88.4				
9812009-02A	93.9	89.8	87.4				
9812020-01A	90.2	97.4	89.2				
9812020-02A	90.2	95.7	185 *				
9812021-01A	88	96.2	89.7				
9812021-02A	88.5	96.4	87.5				
9812021-02AMS	89.8	96.7	89.2				
9812021-02AMSD	90.2	96.6	89.1				
9812021-03A	89.4	98.4	88.3				
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				
9812024-01A	89.8	97.8	88.7				
9812024-02A	89.8	124	89.2				
9812024-03A	90	97.6	88.6				
9812024-04A	90.2	98.3	89.5				
9812024-05A	89.5	99	88.6				
9812025-01A	86.1	92	84.6				

Acronym

Surrogate

QC Limits

14FBZ

= 1,4-Difluorobenzene

70-130

4BCBZ

= 4-Bromochlorobenzene

70-130

FLBZ

= Fluorobenzene

70-130

* Surrogate recovery outside acceptance limits

CLIENT: PNM - Public Service Company of NM
Work Order: 9812021
Project: Dogie Comp. Station, East Pit
Test No: SW8020A

**QC SUMMARY REPORT
SURROGATE RECOVERIES**

BTEX

Sample ID	14FBZ	4BCBZ	FLBZ					
9812025-02A	89.9	98.5	88.9					
9812025-03A	89.9	98.2	88.6					
9812025-04A	89.6	97.9	88.8					
CCV1 QC0606/07	90	97.4	88.7					
CCV2 QC0606/07	90	97.8	88.6					
CCV3 QC0606/07	89.7	98.7	89					
CCV4 QC0606/07	90.2	97.1	88.5					
CCV5 QC0606/07	89.7	98.3	88.6					
LCS WATER	89.6	97.8	89					
MB1	90.4	96	89.2					

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

* Surrogate recovery outside acceptance limits

OFF: (505) 325-5667



LAB: (505) 325-1556

February 23, 1999

Received
Mar 02 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: Dogie East Pit

Order No.: 9902059

Dear Maureen Gannon,

On Site Technologies, LTD. received 6 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 be "David Cox", written in a cursive style.

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: Dogie East Pit
Lab Order: 9902059

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:	Dogie East Pit
Work Order:	9902059	Client Sample ID:	9902100945; MW-1
Lab ID:	9902059-01A	Matrix:	AQUEOUS
Project:	Dogie East Pit	Collection Date:	2/10/99 9:45:00 AM
		COC Record:	7476

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8021B				Analyst: HR
Benzene	ND	0.5		µg/L	1	2/15/99
Toluene	ND	0.5		µg/L	1	2/15/99
Ethylbenzene	ND	0.5		µg/L	1	2/15/99
m,p-Xylene	ND	1		µg/L	1	2/15/99
o-Xylene	ND	0.5		µg/L	1	2/15/99

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: 23-Feb-99

Client:	PNM - Public Service Company of NM	Client Sample Info:	Dogie East Pit
Work Order:	9902059	Client Sample ID:	9902101018; MW-2
Lab ID:	9902059-02A	Matrix:	AQUEOUS
Project:	Dogie East Pit	Collection Date:	2/10/99 10:18:00 AM
		COC Record:	7476

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8021B				Analyst: HR
Benzene	30	0.5		µg/L	1	2/15/99
Toluene	ND	0.5		µg/L	1	2/15/99
Ethylbenzene	7.1	0.5		µg/L	1	2/15/99
m,p-Xylene	3.7	1		µg/L	1	2/15/99
o-Xylene	ND	0.5		µg/L	1	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

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- 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:	Dogie East Pit
Work Order:	9902059	Client Sample ID:	9902101036; MW-3
Lab ID:	9902059-03A	Matrix:	AQUEOUS
Project:	Dogie East Pit	Collection Date:	2/10/99 10:36:00 AM
		COC Record:	7476

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8021B				Analyst: HR
Benzene	130	25		µg/L	50	2/15/99
Toluene	810	25		µg/L	50	2/15/99
Ethylbenzene	610	25		µg/L	50	2/15/99
m,p-Xylene	4100	50		µg/L	50	2/15/99
o-Xylene	730	25		µg/L	50	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:	Dogie East Pit
Work Order:	9902059	Client Sample ID:	9902101053; MW-4
Lab ID:	9902059-04A	Matrix:	AQUEOUS
Project:	Dogie East Pit	Collection Date:	2/10/99 10:53:00 AM
		COC Record:	7476

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8021B				Analyst: HR
Benzene	2700	25		µg/L	50	2/16/99
Toluene	4400	25		µg/L	50	2/16/99
Ethylbenzene	120	5		µg/L	10	2/15/99
m,p-Xylene	1100	10		µg/L	10	2/15/99
o-Xylene	260	5		µg/L	10	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:	Dogie East Pit
Work Order:	9902059	Client Sample ID:	9902101128; MW-5
Lab ID:	9902059-05A	Matrix:	AQUEOUS
Project:	Dogie East Pit	Collection Date:	2/10/99 11:28:00 AM
		COC Record:	7476

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8021B				Analyst: HR
Benzene	ND	5		µg/L	10	2/16/99
Toluene	860	5		µg/L	10	2/16/99
Ethylbenzene	150	5		µg/L	10	2/16/99
m,p-Xylene	1000	10		µg/L	10	2/16/99
o-Xylene	170	5		µg/L	10	2/16/99

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: 23-Feb-99

Client:	PNM - Public Service Company of NM	Client Sample Info:	Dogie East Pit
Work Order:	9902059	Client Sample ID:	9902101153; MW-6
Lab ID:	9902059-06A	Matrix:	AQUEOUS
Project:	Dogie East Pit	Collection Date:	2/10/99 11:53:00 AM
		COC Record:	7476

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8021B				Analyst: HR
Benzene	29	0.5		µg/L	1	2/15/99
Toluene	ND	0.5		µg/L	1	2/15/99
Ethylbenzene	7	0.5		µg/L	1	2/15/99
m,p-Xylene	3.9	1		µg/L	1	2/15/99
o-Xylene	0.7	0.5		µg/L	1	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 -

On Site Technologies, LTD.

Date: 23-Feb-99

CLIENT: PNM - Public Service Company of NM
Work Order: 9902059
Project: Dogie East Pit

QC SUMMARY REPORT
Method Blank

Sample ID: MB1	Batch ID: GC-1_990215	Test Code: SW8021B	Units: µg/L	Analysis Date 2/15/99	Prep Date:							
Client ID:	9902059	Run ID: GC-1_990215A		SeqNo: 11056								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Benzene	.0508	0.5									J	
Ethylbenzene	.0611	0.5									J	
m,p-Xylene	.1669	1									J	
Methyl tert-Butyl Ether	ND	1										
o-Xylene	.1145	0.5									J	
Toluene	.1432	0.5									J	
Sample ID: MB1	Batch ID: GC-1_990216	Test Code: SW8021B	Units: µg/L	Analysis Date 2/16/99	Prep Date:							
Client ID:	9902059	Run ID: GC-1_990216A		SeqNo: 11158								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Benzene	.0456	0.5									J	
Ethylbenzene	.0406	0.5									J	
m,p-Xylene	.1017	1									J	
Methyl tert-Butyl Ether	ND	1										
o-Xylene	.0444	0.5									J	
Toluene	.1013	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: 23-Feb-99

CLIENT: PNM - Public Service Company of NM

Work Order: 9902059

Project: Dogie East Pit

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 9902056-01AMS	Batch ID: GC-1_990215	Test Code: SW8021B	Units: µg/L			Analysis Date 2/15/99			Prep Date:		
Client ID:	9902059	Run ID:	GC-1_990215A			SeqNo:	11057				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	7278	50	4000	3380	97.4%	73	115				
Ethylbenzene	5030	50	4000	1074	98.9%	74	117				
m,p-Xylene	21430	100	8000	14630	84.9%	76	112				E
Methyl tert-Butyl Ether	4639	100	4000	0	116.0%	62	122				
o-Xylene	7734	50	4000	3930	95.1%	83	112				
Toluene	9077	50	4000	5290	94.7%	71	120				

Sample ID: 9902056-01AMSD	Batch ID: GC-1_990215	Test Code: SW8021B	Units: µg/L	Analysis Date 2/15/99					Prep Date:		
Client ID:	9902059	Run ID:	GC-1_990215A	SeqNo: 11058							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	7270	50	4000	3380	97.2%	73	115	7278	0.1%	8	E
Ethylbenzene	5053	50	4000	1074	99.5%	74	117	5030	0.5%	9	
m,p-Xylene	21500	100	8000	14630	85.8%	76	112	21430	0.3%	9	
Methyl tert-Butyl Ether	4699	100	4000	0	117.5%	62	122	4639	1.3%	7	
o-Xylene	7768	50	4000	3930	95.9%	83	112	7734	0.4%	9	
Toluene	9096	50	4000	5290	95.1%	71	120	9077	0.2%	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

CLIENT: PNM - Public Service Company of NM
Work Order: 9902059
Project: Dogie East Pit

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 9902064-01AMS		Batch ID: GC-1_990216		Test Code: SW8021B		Units: µg/L		Analysis Date 2/16/99			Prep Date:	
Client ID:		9902059		Run ID:		GC-1_990216A		SeqNo:		11159		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Benzene	208.4	2.5	200	18.29	95.1%	73	115					
Ethylbenzene	212.9	2.5	200	27.38	92.8%	74	117					
m,p-Xylene	738.5	5	400	382.3	89.0%	76	112					
Methyl tert-Butyl Ether	204	5	200	40.74	81.6%	62	122					
o-Xylene	219.6	2.5	200	34.65	92.5%	83	112					
Toluene	208.2	2.5	200	33.82	87.2%	71	120					

Sample ID: 9902064-01AMSD		Batch ID: GC-1_990216		Test Code: SW8021B		Units: µg/L		Analysis Date 2/16/99			Prep Date:	
Client ID:		9902059		Run ID:		GC-1_990216A		SeqNo: 11160				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Benzene	205.4	2.5	200	18.29	93.5%	73	115	208.4	1.5%	8		
Ethylbenzene	209	2.5	200	27.38	90.8%	74	117	212.9	1.9%	9		
m,p-Xylene	725.4	5	400	382.3	85.8%	76	112	738.5	1.8%	9		
Methyl tert-Butyl Ether	200	5	200	40.74	79.6%	62	122	204	2.0%	7		
o-Xylene	216.4	2.5	200	34.65	90.9%	83	112	219.6	1.5%	9		
Toluene	196.2	2.5	200	33.82	81.2%	71	120	208.2	5.9%	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: 23-Feb-99

CLIENT: PNM - Public Service Company of NM
Work Order: 9902059
Project: Dogie East Pit

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS WATER	Batch ID: GC-1_990215	Test Code: SW8021B	Units: µg/L	Analysis Date 2/15/99				Prep Date:			
Client ID:	9902059	Run ID: GC-1_990215A	SeqNo: 11055								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	42.15	0.5	40	0.0508	105.3%	84	110				
Ethylbenzene	42.43	0.5	40	0.0611	105.9%	86	113				
m,p-Xylene	80.09	1	80	0.1669	99.9%	81	114				
Methyl tert-Butyl Ether	47.84	1	40	0	119.6%	69	129				
o-Xylene	41.43	0.5	40	0.1145	103.3%	86	112				
Toluene	41.62	0.5	40	0.1432	103.7%	85	111				

Sample ID: LCS WATER	Batch ID: GC-1_990216	Test Code: SW8021B	Units: µg/L	Analysis Date 2/16/99				Prep Date:			
Client ID:	9902059	Run ID:	GC-1_990216A	SeqNo: 11157							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	40.2	0.5	40	0.0456	100.4%	84	110				
Ethylbenzene	40.73	0.5	40	0.0406	101.7%	86	113				
m,p-Xylene	78.45	1	80	0.1017	97.9%	81	114				
Methyl tert-Butyl Ether	41.75	1	40	0	104.4%	69	129				
o-Xylene	40.64	0.5	40	0.0444	101.5%	86	112				
Toluene	40.36	0.5	40	0.1013	100.6%	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: 23-Feb-99

CLIENT: PNM - Public Service Company of NM
Work Order: 9902059
Project: Dogie East Pit

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV1 QC0606/07	Batch ID: GC-1_990215	Test Code: SW8021B	Units: µg/L	Analysis Date 2/15/99				Prep Date:			
Client ID:	9902059	Run ID:	GC-1_990215A	SeqNo: 11052							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.76	0.5	20	0	103.8%	85	115				
Ethylbenzene	21.41	0.5	20	0	107.0%	85	115				
m,p-Xylene	40.37	1	40	0	100.9%	85	115				
Methyl tert-Butyl Ether	24.16	1	20	0	120.8%	85	115				S
o-Xylene	20.94	0.5	20	0	104.7%	85	115				
Toluene	20.93	0.5	20	0	104.6%	85	115				
1,4-Difluorobenzene	95.93	0	100	0	95.9%	90	102				
4-Bromochlorobenzene	99.7	0	100	0	99.7%	93	102				
Fluorobenzene	94.14	0	100	0	94.1%	84	103				

Sample ID: CCV2 QC0606/07	Batch ID: GC-1_990215	Test Code: SW8021B	Units: µg/L			Analysis Date 2/15/99			Prep Date:		
Client ID:	9902059	Run ID:	GC-1_990215A			SeqNo:	11053				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	21.22	0.5	20	0	106.1%	85	115				
Ethylbenzene	21.3	0.5	20	0	106.5%	85	115				
m,p-Xylene	39.92	1	40	0	99.8%	85	115				
Methyl tert-Butyl Ether	23.56	1	20	0	117.8%	85	115				S
o-Xylene	20.78	0.5	20	0	103.9%	85	115				
Toluene	20.9	0.5	20	0	104.5%	85	115				
1,4-Difluorobenzene	97.32	0	100	0	97.3%	90	102				
4-Bromochlorobenzene	101.3	0	100	0	101.3%	93	102				
Fluorobenzene	94.39	0	100	0	94.4%	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

CLIENT: PNM - Public Service Company of NM
Work Order: 9902059
Project: Dogie East Pit

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV3 QC0606/07	Batch ID: GC-1_990215	Test Code: SW8021B	Units: µg/L	Analysis Date: 2/15/99	Prep Date:
Client ID: 9902059	Run ID: GC-1_990215A			SeqNo: 11054	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	41.22	0.5	40	0	103.1%	85	115				
Ethylbenzene	42.21	0.5	40	0	105.5%	85	115				
m,p-Xylene	79.36	1	80	0	99.2%	85	115				
Methyl tert-Butyl Ether	46.41	1	40	0	116.0%	85	115				S
o-Xylene	41.5	0.5	40	0	103.7%	85	115				
Toluene	41.73	0.5	40	0	104.3%	85	115				
1,4-Difluorobenzene	96.22	0	100	0	96.2%	90	102				
4-Bromochlorobenzene	99.94	0	100	0	99.9%	93	102				
Fluorobenzene	93.9	0	100	0	93.9%	84	103				

Sample ID: CCV1 QC0606/07	Batch ID: GC-1_990216	Test Code: SW8021B	Units: µg/L	Analysis Date: 2/16/99	Prep Date:
Client ID: 9902059	Run ID: GC-1_990216A			SeqNo: 11154	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.53	0.5	20	0	102.6%	85	115				
Ethylbenzene	20.79	0.5	20	0	103.9%	85	115				
m,p-Xylene	39.96	1	40	0	99.9%	85	115				
Methyl tert-Butyl Ether	20.9	1	20	0	104.5%	85	115				
o-Xylene	20.73	0.5	20	0	103.6%	85	115				
Toluene	20.53	0.5	20	0	102.7%	85	115				
1,4-Difluorobenzene	93.7	0	100	0	93.7%	84	100				
4-Bromochlorobenzene	96.58	0	100	0	96.6%	87	105				
Fluorobenzene	93.28	0	100	0	93.3%	87	99				

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: 9902059
Project: Dogie East Pit

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV2 QC0606/07		Batch ID: GC-1_990216		Test Code: SW8021B		Units: µg/L		Analysis Date 2/16/99			Prep Date:	
Client ID:		9902059		Run ID:		GC-1_990216A		SeqNo: 11155				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Benzene	20.81	0.5	20	0	104.0%	85	115					
Ethylbenzene	21.09	0.5	20	0	105.4%	85	115					
m,p-Xylene	40.47	1	40	0	101.2%	85	115					
Methyl tert-Butyl Ether	20.8	1	20	0	104.0%	85	115					
o-Xylene	21.01	0.5	20	0	105.0%	85	115					
Toluene	20.89	0.5	20	0	104.5%	85	115					
1,4-Difluorobenzene	93.54	0	100	0	93.5%	84	100					
4-Bromochlorobenzene	97.32	0	100	0	97.3%	87	105					
Fluorobenzene	93.55	0	100	0	93.6%	87	99					

Sample ID: CCV3 QC0606/07		Batch ID: GC-1_990216		Test Code: SW8021B		Units: µg/L		Analysis Date 2/16/99		Prep Date:	
Client ID:		9902059		Run ID: GC-1_990216A		SeqNo: 11156					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	41.78	0.5	40	0	104.4%	85	115				
Ethylbenzene	40.52	0.5	40	0	101.3%	85	115				
m,p-Xylene	77.9	1	80	0	97.4%	85	115				
Methyl tert-Butyl Ether	40.67	1	40	0	101.7%	85	115				
o-Xylene	40.4	0.5	40	0	101.0%	85	115				
Toluene	40.32	0.5	40	0	100.8%	85	115				
1,4-Difluorobenzene	93.87	0	100	0	93.9%	84	100				
4-Bromochlorobenzene	97.43	0	100	0	97.4%	87	105				
Fluorobenzene	93.97	0	100	0	94.0%	87	99				

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

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B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 23-Feb-99

CLIENT: PNM - Public Service Company of NM
 Work Order: 9902059
 Project: Dogie East Pit
 Test No: SW8021B

QC SUMMARY REPORT SURROGATE RECOVERIES

BTEX

Sample ID	14FBZ	4BCBZ	FLBZ
9902048-01A	92.7	97.4	93.3
9902048-02A	97.4	101	95
9902051-01A	94.6	99.2	92.4
9902053-01A	92.8	99.9	90.6
9902055-01A	94	101	91.9
9902055-02A	93.9	101	92.3
9902055-03A	94.6	100	92.2
9902056-01A	95.9	99.7	94.3
9902056-01AMS	95.2	100	93.3
9902056-01AMSD	95	101	93.3
9902056-02A	95.7	99.5	94.7
9902057-01A	94.5	97.8	95.6
9902057-02A	93.5	97.3	94.7
9902058-01A	92.2	98.2	90.7
9902058-02A	97	101	95.3
9902058-03A	94.6	101	93.3
9902059-01A	96.9	100	94.2
9902059-02A	96	98.6	92.7
9902059-03A	95.2	98.4	94.1
9902059-04A	91.4	96.4	92.1
9902059-05A	89.1	91.8	94
9902059-06A	94.7	100	92.9
9902060-01A	94.1	96.5	94.6
9902060-02A	92.8	97	93
9902060-03A	94	97.3	94.7
9902063-01A	92.8	96.4	94.4
9902063-02A	95	95.7	94.1

Acronym	Surrogate	QC Limits
14FBZ	= 1,4-Difluorobenzene	90-102
14FBZ	= 1,4-Difluorobenzene	84-100
4BCBZ	= 4-Bromochlorobenzene	93-102
4BCBZ	= 4-Bromochlorobenzene	87-105
FLBZ	= Fluorobenzene	87-99
FLBZ	= Fluorobenzene	84-103

* Surrogate recovery outside acceptance limits

CLIENT: PNM - Public Service Company of NM
Work Order: 9902059
Project: Dogie East Pit
Test No: SW8021B

QC SUMMARY REPORT SURROGATE RECOVERIES

BTEX

Sample ID	14FBZ	4BCBZ	FLBZ				
9902064-01A	86.3	89.1	89.3				
9902064-01AMS	86.3	88.9	87.9				
9902064-01AMSD	86	88.4	88.3				
9902064-02A	87.3	91.2	89.6				
9902066-01A	93.8	96.5	94.9				
9902066-02A	93.8	97.4	94.8				
9902066-03A	93.1	96.2	93.6				
9902066-04A	94.2	96.9	94.6				
9902066-05A	93.7	96.3	94.9				
9902066-06A	93.4	97	94.9				
CCV1 QC0606/07	93.7	96.6	93.3				
CCV2 QC0606/07	93.5	97.3	93.6				
CCV3 QC0606/07	93.9	97.4	94				
LCS WATER	93.5	97.8	93				
MB1	94.3	96.5	94.2				

Acronym	Surrogate	QC Limits
14FBZ	= 1,4-Difluorobenzene	90-102
14FBZ	= 1,4-Difluorobenzene	84-100
4BCBZ	= 4-Bromochlorobenzene	93-102
4BCBZ	= 4-Bromochlorobenzene	87-105
FLBZ	= Fluorobenzene	87-99
FLBZ	= Fluorobenzene	84-103

* Surrogate recovery outside acceptance limits

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