

PNMGS Well Site: Hampton 4M

NOV 1 1998

Groundwater Site Summary Report

Environmental Bureau
Oil Conservation Division

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

Quarter/Year: 2nd/97, 3rd/97, 4th/97, 1st/98, 2nd/98, and 3rd/98

Operator: Burlington Resources
Sec: 13 Twn: 30N Rng: 11W Unit: D
Canyon: Hampton Arroyo

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

Activities to Date:

PNM's last summary report on the Hampton 4M site was submitted to OCD on August 11, 1998. Since then, PNM has continued to perform groundwater monitoring and free product recovery at the site until most recently when Burlington Resources (BR) commenced site wide soil excavation (11/12/98). To prepare for soil excavation, BR directed Williams to remove PNM's product recovery system. In addition, during excavation activities, BR destroyed PNM's groundwater monitoring well network. PNM objected to BR's insistence on moving forward with site wide soil excavation in a letter to OCD dated November 4, 1998. The basis of the objection was (1) the precise release point of free product contamination has not been determined; (2) BR's proposed excavation activities will interrupt PNM's ongoing remediation and monitoring activities; (3) site wide excavation will obliterate important evidence concerning the release point or points of contamination; (4) BR's proposed strategy does not address the true continuing source of contamination at this site or the extensive free product contamination in the groundwater underlying the site; and (5) there are other cost effective means of pursuing remediation at this site without the attendant problems associated with BR's methodology. PNM regards BR's decision to proceed with massive soil excavation as Burlington's acknowledgement that Burlington is solely and completely responsible for causing and addressing any and all contamination at the site.

Future Activities:

PNM is hereby filing the final closure report of our former pit at the Hampton 4M. For the purposes of pit closure, PNM is referencing upgradient well concentrations as remediation clean-up levels for groundwater at the Hampton 4M. Therefore, PNM has successfully remediated soil and groundwater in the area of the former pit based upon BTEX concentrations in groundwater in MW-2, MW-5, MW-6, and MW-7 with reference to background BTEX concentrations (free phase floating product) in upgradient groundwater monitoring wells, MW-4, MW-8 and MW-10.

BEFORE EXAMINER	
OIL CONSERVATION DIVISION	
OCD	EXHIBIT NO. 1
CASE NO.	12033

District I
P.O. Box 1980, Hobbs, NM

District II
P.O. Drawer DD, Artesia, NM 88221

District III
1000 Rio Brazos Rd, Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

SUBMIT 1 COPY TO
APPROPRIATE
DISTRICT OFFICE
AND 1 COPY TO
SANTA FE OFFICE

OIL CONSERVATION DIVISION

2040 South Pacheco Street
Santa Fe, New Mexico 87505

PIT REMEDIATION AND CLOSURE REPORT

Operator: PNM Gas Services (Burlington) Telephone: 324-3764

Address: 603 W. Elm Street Farmington, NM 87401

Facility or Well Name: Hampton #4M

Location: Unit N Sec 13 T 30 N R 11 W County San Juan

Pit Type: Separator ☐ Dehydrator ☒ Other

Land Type: BLM ☒ State ☐ Fee ☐ Other

Pit Location: Pit dimensions: length 20 ' width 20 ' depth 3 '

(Attach diagram) Reference: wellhead ☒ other

Footage from reference: 121'

Direction from reference: 10 Degrees ☒ East North ☒
of
☐ West South ☐

Depth to Ground Water: (Vertical distance from contaminants to seasonal high water elevation of ground water)	Less than 50 feet	(20 points)	
	50 feet to 99 feet	(10 points)	
	Greater than 100 feet	(0 points)	<u>20</u>

Wellhead Protection Area: (Less than 200 feet from a private domestic water source, or, less than 1,000 feet from all other water sources)	Yes	(20 points)	
	No	(0 points)	<u>0</u>

Distance to Surface Water: (Horizontal distance to perennial lakes, ponds, rivers, streams, creeks, irrigation canals and ditches)	Less than 200 feet	(20 points)	
	200 feet to 1,000 feet	(10 points)	
	Greater than 1,000 feet	(0 points)	<u>20</u>

RANKING SCORE (TOTAL POINTS) : 40

Hampton #4M

Date Remediation Started: 4/24/96Date Completed: 4/25/96

Remediation Method:

Excavation XApprox. Cubic Yard 286

(Check all appropriate sections)

Landfarmed XAmount Landfarmed (cubic yds) 286

Other _____

Remediation Location:

Onsite _____

Offsite

Hampton #2 13-30N-11W

(i.e., landfarmed onsite, name and location of offsite facility)

Backfill Material Location: _____

General Description of Remedial Action:

Excavated contaminated soil to pit size 21' X 32' X 11.5' and landfarmed soil onsite within a bermed area at a depth of 6" to 12". Soil was aerated by plowing/disking until soil met regulatory levels.

Ground Water Encountered:

No ☐Yes ☒

Depth

22'

Final Pit Closure Sampling:

Sample Location

5 pt composite-4 side walls and center of pit bottom

(if multiple samples, attach sample result and diagram of sample locations and depths.)

Sample depth

11.5'

Sample date

4/24/96

Sample time

1:25:00 PM

Sample Results

Benzene (ppm)

15.7475

Total BTEX (ppm)

621.8694

Field headspace (ppm) _____

TPH (ppm)

1300.90

Method

8015A

Vertical Extent (ft) _____

Risk Analysis form attached Yes ☐No ☐

Ground Water Sample:

Yes ☒No ☐

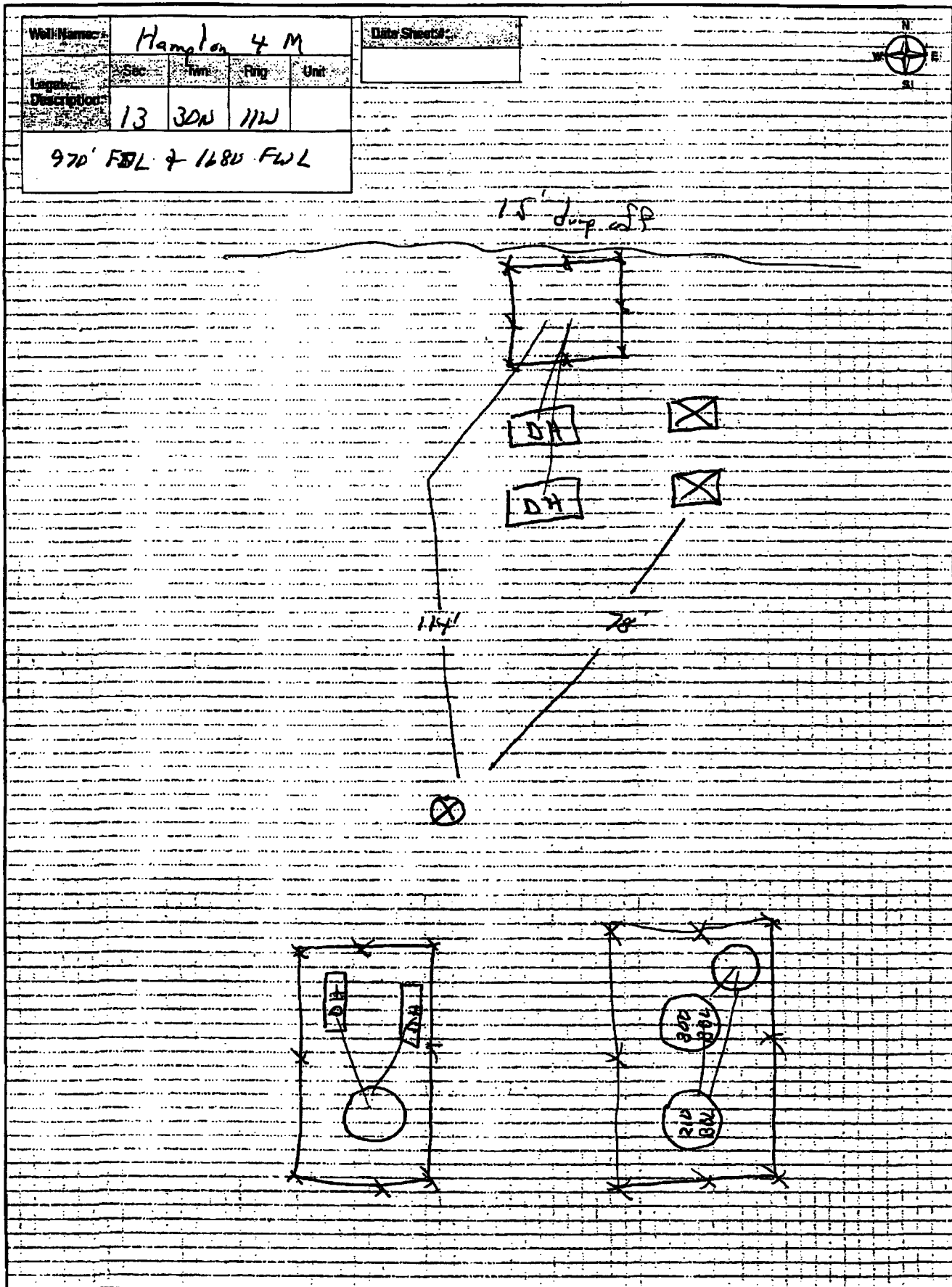
(If yes, see attached Groundwater Site Summary Report)

I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND MY BELIEF

DATE November 12, 1998

SIGNATURE

Maureen GannonPRINTED NAME **Maureen Gannon**
AND TITLE **Project Manager**





OFF: (505) 325-8786

LAB: (505) 325-5667

Diesel Range Organics EPA 8015-Modified

Attn: **Maureen Gannon**
 Company: **PNM Gas Services**
 Address: **Alevarado Square, Mail Stop 0408**
 City, State: **Albuquerque, NM 87158**

Date: **25-Apr-96**
 COC No.: **4588**
 Sample No. **10715**
 Job No. **2-1000**

Project Name: **PNM Gas Services - Hampton 4M**
 Project Location: **9604241325; Pit Excavation Composite Sample**
 Sampled by: **RH** Date: **24-Apr-96** Time: **13:25**
 Analyzed by: **DC** Date: **25-Apr-96**
 Sample Matrix: **Soil**

Laboratory Analysis

Analyte	Result	Unit of Measure	Detection Limit	Unit of Measure
Diesel Range Organics (C10 - C28)	1300.9	mg/kg	5.0	mg/kg

Quality Assurance ReportDRO QC No.: **0446-STD*****Calibration Check***

Analyte	Method Blank	Unit of Measure	True Value	Analyzed Value	% Diff	Limit
Diesel Range (C10 - C28)	<5.0	ppm	2,000	1,990	0.5	15%

Matrix Spike

Analyte	1- Percent Recovered	2 - Percent Recovered	Limit	%RSD	Limit
Diesel Range (C10-C28)	101	101	(70-130)	0	20%

Method - SW-846 EPA Method 8015A mod. - Nonhalogenated Volatile Hydrocarbons by Gas ChromatographyApproved by: *Ja4*Date: *4/26/96*

P. O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -



OFF: (505) 325-8786

LAB: (505) 325-5667

AROMATIC VOLATILE ORGANICS

Attn: **Maureen Gannon**
Company: **PNM Gas Services**
Address: **Alevarado Square, Mail Stop 0408**
City, State: **Albuquerque, NM 87158**

Date: **26-Apr-96**
COC No.: **4588**
Sample No. **10715**
Job No. **2-1000**

Project Name: **PNM Gas Services - Hampton 4M**
Project Location: **9604241325; Pit Excavation Composite Bottom**
Sampled by: **RH** Date: **24-Apr-96** Time: **13:25**
Analyzed by: **DC** Date: **26-Apr-96**
Type of Sample: **Soil**

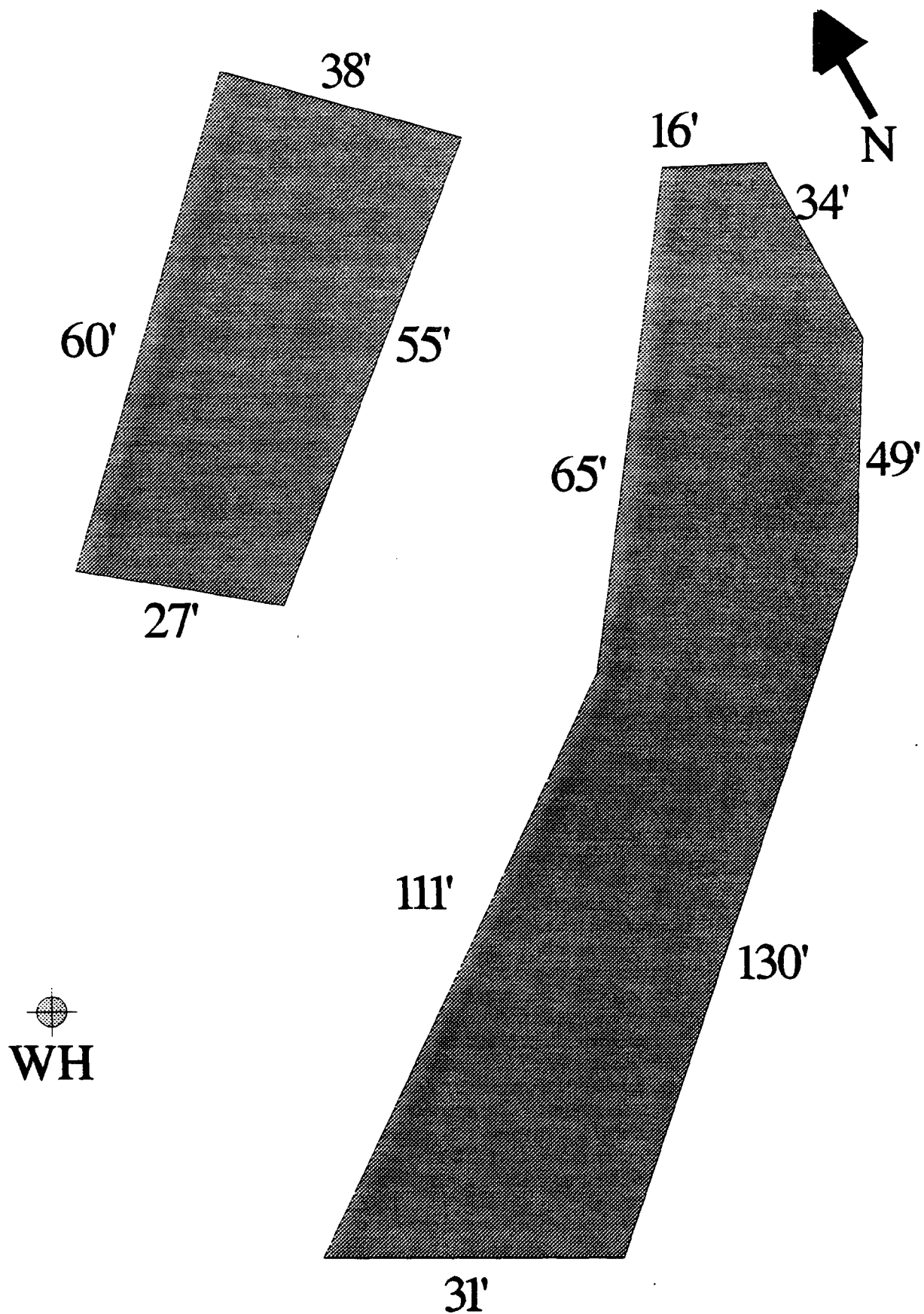
Aromatic Volatile Organics

Component	Result	Units of Measure	Detection Limit	Units of Measure
Benzene	15747.5	ug/kg	0.2	ug/kg
Toluene	210857.3	ug/kg	0.2	ug/kg
Ethylbenzene	27687.7	ug/kg	0.2	ug/kg
m,p-Xylene	310237.6	ug/kg	0.2	ug/kg
o-Xylene	57339.3	ug/kg	0.2	ug/kg
TOTAL	621869.4	ug/kg		

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

Approved by:

Date: **4/26/96****P. O. BOX 2606 • FARMINGTON, NM 87499****- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -**



HAMPTON #2 N/W-S/W-13-30N-11W
(HAMPTON #4M LANDFARM)



OFF: (505) 325-5667

LAB: (505) 325-1556

Diesel Range Organics

Attn: **Maureen Gannon**
 Company: **PNM Gas Services**
 Address: **Alevarado Square, Mail Stop 0408**
 City, State: **Albuquerque, NM 87158**

Date: **24-Jul-96**
 COC No.: **4910**
 Sample No. **11574**
 Job No. **2-1000**

Project Name: **PNM Gas Services - Hampton #4M Landfarm Hampton #2**
 Project Location: **9607231045; 8pt. Composite, 2" - 12" depth**
 Sampled by: **GC** Date: **23-Jul-96** Time: **10:45**
 Analyzed by: **HR** Date: **24-Jul-96**
 Sample Matrix: **Soil**

Laboratory Analysis

Parameter	Result	Unit of Measure	Detection Limit	Unit of Measure
Diesel Range Organics (C10 - C28)	12.3	mg/kg	5.0	mg/kg

Quality Assurance ReportDRO QC No.: **0479-QC*****Calibration Check***

Parameter	Method Blank	Unit of Measure	True Value	Analyzed Value	% Diff	Limit
Diesel Range (C10 - C28)	<5.0	ppm	2,000	1,798	10.1	15%

Matrix Spike

Parameter	1- Percent Recovered	2 - Percent Recovered	Limit	%RSD	Limit
Diesel Range (C10-C28)	98	100	(70-130)	2	20%

Method - SW-846 EPA Method 8015A mod. - Nonhalogenated Volatile Hydrocarbons by Gas Chromatography

Approved by: *[Signature]*
 Date: **7/24/96**

**CAMPBELL, CARR, BERGE
& SHERIDAN, P.A.
LAWYERS**

**MICHAEL B. CAMPBELL
WILLIAM F. CARR
BRADFORD C. BERGE
MARK F. SHERIDAN
MICHAEL H. FELDEWERT
PAUL R. OWEN
ANTHONY F. MEDEIROS**

**JACK M. CAMPBELL
OF COUNSEL**

**JEFFERSON PLACE
SUITE 1-110 NORTH GUADALUPE
POST OFFICE BOX 2208
SANTA FE, NEW MEXICO 87304-2208
TELEPHONE: (505) 988-4421
TELECOPIER: (505) 983-6043**

TELECOPIER COVER SHEET

November 9, 1998

To: Rand Carroll, Esq.
Oil Conservation Division

Fax: (827-8177)

Re: *OCD Case No. 12033.*

FROM: William F. Carr
TOTAL PAGES (including this cover sheet): 3
DOCUMENT: Letter to R. Alvidrez.

OPERATOR: Martha CLIENT/MATTER #
PLEASE CALL: [] TO CONFIRM RECEIPT [] AFTER REVIEW

MESSAGE:

**IF THERE ARE ANY PROBLEMS WITH OUR TRANSMISSION,
PLEASE CALL OPERATOR AT (505) 988-4421.**

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THANK YOU.

**CAMPBELL, CARR, BERGE
& SHERIDAN, P.A.
LAWYERS**

MICHAEL B. CAMPBELL
WILLIAM F. CARR
BRADFORD C. BERGE
MARK P. SHERIDAN
MICHAEL M. FELDEWERT
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E-MAIL: ccbspa@ix.netcom.com

November 9, 1998

VIA FACSIMILE

Richard L. Alvidrez, Esq.
Keleher & McLeod, P. A.
Post Office Drawer AA
Albuquerque, New Mexico 87103

Re: *Oil Conservation Division Case 12033*

Dear Mr. Alvidrez:

On March 13, 1998, the Oil Conservation Division wrote the Public Service Company of New Mexico ("PNM") concerning the migration of contaminated ground water from the Hampton No. 4 Well site onto down gradient private lands. The Division's Environmental Bureau required PNM take additional remedial action to remove the remaining source areas with free phase hydrocarbons in the vicinity of and immediately down gradient of the PNM dehydration pit. Since that time PNM has failed and refused to take required remedial action.

On October 26, 1998, I advised you that if PNM did not agree to undertake the full remediation of its contamination at this site by Friday, October 30, 1998, Burlington would remediate this contamination and pursue all remedies available to it for PNM's continued unwillingness to clean up its contamination. On October 28, PNM declined to undertake remediation.

Although in its October 28 letter PNM encouraged Burlington "to immediately proceed with remediation of the contamination....," PNM now opposes Burlington's plans to remediate the PNM contamination at this well site.

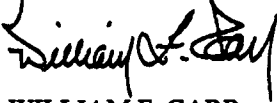
This letter is to advise you that unless otherwise directed by the Oil Conservation Division Environmental Bureau, Burlington will remediate the Hampton 4M well site commencing

Richard L. Alvidrez, Esq.
November 9, 1998
Page 2

on November 10, 1998. Representatives of PNM may monitor Burlington's remediation of this site but may not interfere with or impede Burlington's efforts to fully remediate this site to the level required by the Oil Conservation Division.

Burlington's remediation of this contamination is not an acknowledgment by Burlington of responsibility for either this contamination or the cleanup thereof.

Very truly yours,

A handwritten signature in black ink, appearing to read "William F. Carr", written over a horizontal line.

WILLIAM F. CARR

WFC:mlh

cc: Rand Carroll, Esq.
John H. Bemis, Esq.

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

NOV - 9

November 6, 1998

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



RE: Burlington Hampton 4M Well

Dear Bill:

This letter serves as written notification that Public Service Company of New Mexico ("PNM") will file a soil and groundwater closure report of PNM's former pit at the Hampton 4M well site. Burlington Resources' impending soil excavation at the site, scheduled for Tuesday, November 10, 1998, will destroy PNM's groundwater monitoring well network on site and interrupt our ongoing activities related to groundwater monitoring and free product recovery. PNM learned on Thursday, November 5, 1998, that our product recovery system in MW-6 was shut off sometime earlier in the week and removed without our knowledge or permission. Given Burlington's recent activities and plans for extensive soil removal next week, PNM must conclude that Burlington has assumed total responsibility and control of this site. These actions absolutely preclude PNM from conducting any further operations under its existing groundwater management plan as approved by OCD at the Hampton 4M. It would be pointless for PNM to conduct any further investigations or install and operate another remediation system at the site, given that another entity has been allowed to come in and negate all work done at the site, ignore the data collected, and frustrate the achievement of the objectives of PNM's OCD-approved remediation program. We must further assume that, since PNM completely remediated all contamination that could conceivably have come from its prior operations months ago, and since substantial free product and other contamination have been detected by both PNM and Burlington upgradient from PNM's former pit, PNM's obligations at this site are terminated, and submittal of a closure report is now appropriate.

You may expect our closure report on Friday, November 13, 1998. If you have any questions, please call me at (505) 241-2974.

Sincerely,

A handwritten signature in cursive script, appearing to read "Maureen Gannon".

Maureen Gannon
Project Manager

cc: Colin Adams, PNM
Richard Alvidrez, Keleher & McLeod
Denny Foust, OCD-Aztec Office
Ed Hasely, Burlington Resources
Bill VonDrehle, WFS

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

OCT 27 1998

October 20, 1998

Certified Mail: P 293 938 783



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

RE: Hampton 4M Well Site- Additional Downgradient Investigation

Dear Bill:

This letter is written as a follow-up to OCD's letter dated September 1, 1998. That letter directed Public Service Company of New Mexico ("PNM") and Burlington Resources ("BR") to undertake an investigation of groundwater impacts down gradient from the Hampton 4M well site and to complete a report by October 20, 1998.

PNM has made several attempts to contact Dr. Burton Everett, the owner of the property where this additional downgradient investigation (including the installation of another well), is planned to occur. Dr. Everett did not want PNM or BR to come on his land to site and drill a well unless he could personally be present. Dr. Everett has been out of town for the past several weeks. Therefore, PNM has been unable to fulfill the request for a down gradient investigation by the specified date of October 20, 1998. However, we are hopeful that permission from Dr. Everett for access will soon be obtained by one of the parties.

If you have any questions, please call me at (505) 241-2974.

Sincerely,
PNM Environmental Services Department

A handwritten signature in black ink, appearing to read "Maureen Gannon". The signature is fluid and cursive.

Maureen Gannon
Project Manager

cc: C. Adams, Esq., PNM
R. Alvidrez, Esq., Keleher & McLeod
I. Deklau, Williams
E. Hasely, Burlington Resources
T. Ristau, PNM
B. von Drehle, Williams



NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

September 29, 1998

Richard L. Alvidrez, Esq.
Kelleher & McLeod, P.A.
P.O. Drawer AA
Albuquerque, NM 87103

Attorneys for PNM

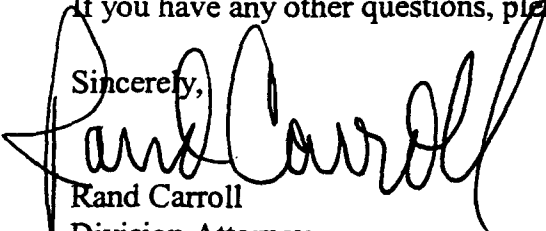
RE: Case No. 12033--Application of PNM for review of the cleanup actions required by OCD
letter dated March 13, 1998
-Letter request dated September 25, 1998

Dear Mr. Alvidrez:

Per your request by letter dated September 25, 1998, the OCD agrees that PNM, by taking certain actions pursuant to the directive contained in the OCD letter dated September 1, 1998, will not be waiving any rights under its pending appeal (referenced above) or its right to challenge the OCD determination that PNM is a responsible party for the down gradient contaminatin.

If you have any other questions, please feel free to call me at 827-8156.

Sincerely,


Rand Carroll
Division Attorney

c: Bill Olson, OCD Environmental Bureau
David Catanach, OCD Hearing Examiner



Richard L. Alvidrez
Attorney at Law
Direct Dial: 505-346-9150
E-mail: rla@keleher-law.com

September 25, 1998

Via Facsimile (505) 827-7177

Rand Carroll
NM Oil Conservation Division
2040 S. Pacheco Street
Santa Fe, NM 87505-5472

**Re: Burlington Hampton 4M Well - OCD Letter Directive
Dated September 1, 1998**

Dear Mr. Carroll:

I am writing to follow up to our telephone conversation yesterday concerning the OCD's letter dated September 1, 1998 to Public Service Company of New Mexico ("PNM") directing PNM to undertake an investigation of groundwater impacts down gradient from the Hampton 4M well site. We understand that a letter with a similar directive was sent to Burlington Resources ("Burlington") as well. As discussed, representatives from PNM and Burlington have met to discuss the OCD's directives. PNM and Burlington have tentatively agreed to cooperate with regard to the installation of a down gradient monitoring well. However, PNM is concerned that by not appealing the OCD directive in the September 1, 1998 letter, it could be somehow argued that PNM has waived its rights under its current appeal and its right to appeal the OCD's determination that PNM is responsible for the down gradient contamination.

Accordingly, PNM requests written assurance from the OCD that if it undertakes the installation of the additional monitoring well in cooperation with Burlington, that PNM will not be deemed to have in any way waived any rights with respect to the pending appeal, or waived any future right to challenge the OCD's determination that PNM is responsible for the down gradient contamination. If such written assurance is not forthcoming from the OCD, PNM is faced with the prospect of having to appeal the directive in the OCD's letter of September 1, 1998.

In order to assure that PNM preserves its rights of appeal, PNM anticipates filing an appeal to the September 1, 1998 directive on or before September 30, 1998. Therefore, we would appreciate written assurance from the OCD before that

W. A. Keleher (1886-1972)
A.H. McLeod (1902-1976)

Mailing Address
PO Drawer AA
Albuquerque NM 87103

Main Phone
505-346-4646

Street Address
Albuquerque Plaza
201 Third NW, 12th floor
Albuquerque NM 87102
Fax: 505-346-1370

414 Silver SW, 12th floor
Albuquerque NM 87102
Fax: 505-346-1345

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KELEHER & McLEOD, P.A.

September 25, 1998

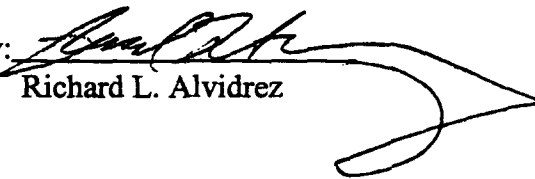
Page Two

date confirming that PNM will not be waiving any rights under the pending appeal, or its right to challenge the OCD's determination that PNM is a responsible party for the down gradient contamination.

We appreciate your attention to this matter. If you have any questions concerning any of the foregoing, please do not hesitate to call.

Very truly yours,

KELEHER & McLEOD, P.A.

By: 
Richard L. Alvidrez

RLA:sp
68435



STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

2040 S. PACHECO
SANTA FE, NEW MEXICO 87505
(505) 827-7131

September 1, 1998

CERTIFIED MAIL
RETURN RECEIPT NO. Z-274-520-551

Ms. Maureen Gannon
PNM
Alvarado Square, MS 0408
Albuquerque, New Mexico 87158

**RE: GROUND WATER CONTAMINATION
HAMPTON 4M WELL SITE**

Dear Ms. Gannon:

The New Mexico Oil Conservation Division (OCD) has been reviewing the ground water investigation and remediation actions related to PNM's former dehy pit and Burlington Resources well site operations at the BR Hampton 4M well site near Aztec, New Mexico. PNM's remedial actions taken to date are satisfactory. However, a review of the file shows that the investigation of the extent of contamination at the site has not been completed.

Since ground water at the site has been contaminated by both PNM's and BR's operations and due to the potential for contamination of downgradient private water wells, the OCD hereby requires that both PNM and BR conduct additional investigations to determine the complete downgradient extent of ground contamination at the site. The investigations are to be conducted according to PNM and BR's prior approved plans with a report on the investigations to be submitted to the OCD by October 20, 1998. The OCD requests that PNM and BR cooperatively work together on the investigation so that the activities can be conducted in the most efficient and economical manner.

If you have any questions, please call me at (505) 827-7154.

Sincerely,

William C. Olson
Hydrologist
Environmental Bureau

xc: Denny Foust, OCD Aztec District Office
Ed Hasely, Burlington, Resources
J. Burton Everett



NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

August 20, 1998

Richard L. Alvidrez, Esq.
Kelleher & McLeod, P.A.
P.O. Drawer AA
Albuquerque, NM 87103

Attorneys for PNM

William F. Carr, Esq.
Campbell, Carr, Berge & Sheridan, P.A.
P.O. Box 2208
Santa Fe, NM 87504-2208

Attorneys for Burlington Resources

RE: Case No. 12033--Application of PNM for review of the cleanup actions required by OCD
letter dated March 13, 1998

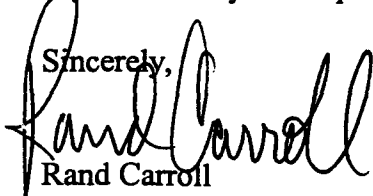
Dear Messrs. Alvidrez and Carr:

The Request for Continuance filed by Burlington on August 13, 1998 was granted on August 17, 1998 with the hearing continued to October 22, 1998.

PNM's request for a stay of the actions required in the OCD letter of March 13, 1998 is denied. In addition, Bill Olson will be sending PNM a letter in the near future setting forth the investigation actions PNM is to perform (if it has not already done so) to determine the extent of the contamination as well as any needed remedial action. Please feel free to call Bill at 827-7154 if you have any questions.

If you have any other questions, please feel free to call me at 827-8156.

Sincerely,


Rand Carroll
Division Attorney

c: Bill Olson, OCD Environmental Bureau
David Catanach, OCD Hearing Examiner

Facsimile Cover Sheet

KELEHER & McLEOD, P.A.

Mailing Address: P.O. Drawer AA
Albuquerque, New Mexico 87103

Date: 8/14/98

Client/Case No. 9999-003

To:	Lori Wrotenbery, Director Oil Conservation Division	Fax:	(505) 827-8177
From:	Richard L. Alvidrez, Esq.	Fax:	(505) 767-1370

Pages including this cover page: 11

Originals will follow by mail: Yes X No

ENCLOSURES: Prehearing Statement and Exhibit List from
PNM regarding review of final determination of the
Oil Conservation Division relating to Hampton 4M
Well Site: Case No. 12033

COMMENTS:

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Richard L. Alvarez
Attorney at Law
Direct Dial: 505-346-9150
E-mail: rla@keleher-law.com

August 14, 1998

Via Facsimile (505) 827-8177

Lori Wrotenbery, Director
Oil Conservation Division
New Mexico Department of Energy
Minerals and Natural Resources
2040 South Pacheco
Santa Fe, NM 87505

Re: Application of Public Service Company of New Mexico
for Review of Final Determination of the Oil
Conservation Division relating to the Hampton 4M
Well Site; Public Service Company of New Mexico.
Applicant: Case No. 12033

Dear Mr. Wrotenbery:

I am enclosing a copy of the Prehearing Statement submitted on behalf of Public Service Company of New Mexico ("PNM") in the above matter. Also attached is PNM's Exhibit List.

This letter is also in response to the request for continuance submitted on behalf of Burlington Resources Oil and Gas Company ("Burlington"). PNM opposes the continuance of this matter and requests that the hearing proceed on August 20, 1998 as scheduled.

Burlington's counsel correctly points out that this matter was originally set for hearing on June 25, 1998. When it became necessary to continue that hearing, PNM conferred with counsel for Burlington and the OCD about the suitability of August 20, 1998 as a new hearing date. All parties agreed to that date. Moreover, PNM has retained a number of consultants, some of whom are traveling from out of state to appear at this hearing. A continuance of the hearing would result in disruption of schedules and will delay the ultimate hearing on this matter for at least two months. PNM's counsel would not be available for hearing again until the end of October, 1998.

W. A. Kelshus (1886 - 1972)
A.H. McLeod (1902 - 1976)

Mailing Address
PO Drawer AA
Albuquerque NM 87103

Main Phone
505-346-4646

Street Address
Albuquerque Plaza
201 Third NW, 12th floor
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414 Silver SW, 12th floor
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Member, Commercial Law
Affiliates, the world's largest
affiliation of independent law firms

Running Horses by Lynn Mercer 1988,
provided for the City of Albuquerque
Public Art Collection in 1991.

KELEHER & McLEOD, P.A.

August 14, 1998

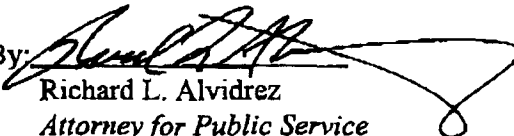
Page Two

During the pendency of PNM's Application, PNM has continued to recover free product from the Hampton 4M site. A determination in favor of PNM in this matter will relieve PNM of further responsibility for such recovery. Delay in the hearing and a determination on this appeal will only result in additional expense to PNM.

For the foregoing reasons, PNM requests that this matter be maintained on the August 20, 1998 docket. PNM further requests that a determination be made as soon as possible on the request for continuance so that PNM may notify its out-of-town consultants of any change in the hearing date in order to avoid charges for unnecessary travel and preparation time.

Very truly yours,

KELEHER & McLEOD, P.A.

By: 
Richard L. Alvidrez
*Attorney for Public Service
Company of New Mexico*

RLA:sp

cc: William F. Carr (via facsimile (505) 983-6043)
Rand Carroll (via facsimile (505) 983-6043)

**STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION**

**IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:**

**APPLICATION OF PUBLIC SERVICE
COMPANY OF NEW MEXICO FOR
REVIEW OF FINAL DETERMINATION
OF THE OIL CONSERVATION DIVISION
RELATING TO THE HAMPTON 4M WELL
SITE,**

NO. 12033

**PUBLIC SERVICE COMPANY
OF NEW MEXICO,
Applicant**

PRE-HEARING STATEMENT

This prehearing statement is submitted by Applicant, Public Service Company of New Mexico ("PNM") as required by the Oil Conservation Division.

APPEARANCES OF PARTIES

APPLICANT

Public Service Company of New Mexico

ATTORNEY

Richard L. Alvidrez, Esq.
KELEHER & McLEOD, P.A.
P.O. Drawer AA
Albuquerque, New Mexico 87103
(505) 346-9150

and

Colin L. Adams, Esq.
Corporate Counsel
Public Service Company
of New Mexico
Alvarado Square MS 806
Albuquerque, New Mexico 87158
(505) 241-4538

OPPOSITION OR OTHER PARTY

New Mexico Oil Conservation Division

Burlington Resources

ATTORNEY

Rand L. Carroll, Esq.
New Mexico Oil
Conservation Division
2040 S. Pacheco St.
Santa Fe, New Mexico 87505-5472
(505) 827-8156

William F. Carr, Esq.
CAMPBELL, CARR BERGE &
SHERIDAN, P.A.
P.O. Box 2208
Santa Fe, New Mexico 87504-2208
(505) 988-4421

STATEMENT OF THE CASE

APPLICANT

PNM seeks a review and reversal of the OCD's final determination in its letter of March 13, 1998 that "PNM take additional remedial actions with 30 days to remove the remaining source areas with free phase hydrocarbons in the vicinity of and immediately downgradient of the dehy pit." PNM seeks a reversal of this determination on the following grounds:

1. The hydrogeologic data establish that PNM's former pit location is not the source for the free phase hydrocarbons in the vicinity of the Hampton 4M well.
2. The data developed during the course of PNM's investigation suggest that there is a continuing source for dissolved phase hydrocarbons and a continuous or intermittent source of free phase product at the Hampton 4M well. Because of the existence of a continuing or intermittent source for contamination in the vicinity of the Hampton 4M well, efforts to conduct further remediation will be ineffective.
3. Operational practices and deficiencies relating to the production well and/or the separators, tanks and associated equipment owned and operated by Burlington Resources and its predecessors at the Hampton 4M well have resulted in releases of free phase product to the environment which has impacted the soils and groundwater in the vicinity of the Hampton 4M site.

4. The free phase product in the vicinity of the Hampton 4M well was neither owned, generated nor released by PNM. The product is and remains the property of the producers.
5. PNM is no longer the owner of the gathering system and dehydration equipment associated with the Hampton 4M well as the system and equipment was sold to Williams Gas Processing-Blanco, Inc. on June 30, 1995. To the extent that any contamination in the vicinity of the Hampton 4M well site occurred on or after June 30, 1995, such contamination is not the responsibility of PNM.

OPPOSITION OR OTHER PARTY

PROPOSED EVIDENCE

APPLICANT

WITNESS	EST. TIME	EXHIBITS
Toni K. Ristau PNM Director, Environmental Services	1.5 hours	See PNM Exhibit List
Maureen Gannon PNM Project Manager Environmental Engineering	1.0 hours	
Valda Terauds ESI Hydrologist	1.5 hours	
Mark Sikelianos PNM Field Environmental	1.0 hours	
Paul Fahrenthold Fahrenthold Consulting Fuels and Chemical Analysis	1.0 hours	
Rodney Heath PetroEnergy, Inc. Well Head and Gas Gathering Equipment	1.0 hours	

Grady Gist
PNM
Gas well completion

1.5 hours

OPPOSITION OR OTHER PARTY

WITNESS

EST. TIME

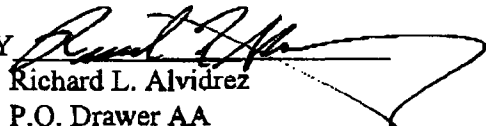
EXHIBITS

PROCEDURAL MATTERS

The present matter is set for hearing beginning August 20, 1998. Counsel for Burlington has requested that the hearing date be continued.

KELEHER & McLEOD, P.A.

BY

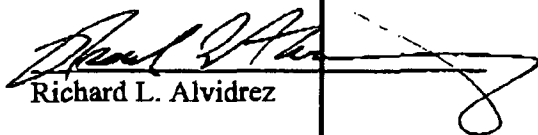

Richard L. Alvidrez
P.O. Drawer AA
Albuquerque, New Mexico 87103
(505) 346-4646

and

Colin L. Adams
Corporate Counsel
Public Service Company of New Mexico
Alvarado Square MS 0806
Albuquerque, New Mexico 87158
(505) 241-4538
Attorneys for Applicant Public Service Company
of New Mexico

64699

THIS WILL CERTIFY that a true and correct copy of the foregoing Pre-Hearing Statement was faxed and mailed to William Carr, counsel for Burlington Resources Oil & Gas and Rand Carroll, counsel for the New Mexico Oil Conservation Division this 14th day of August 1998.


Richard L. Alvidrez

64699

**STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION**

**IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:**

**APPLICATION OF PUBLIC SERVICE
COMPANY OF NEW MEXICO FOR
REVIEW OF FINAL DETERMINATION
OF THE OIL CONSERVATION DIVISION
RELATING TO THE HAMPTON 4M WELL
SITE,**

NO. 12033

**PUBLIC SERVICE COMPANY
OF NEW MEXICO,
Applicant**

PNM HEARING EXHIBIT LIST

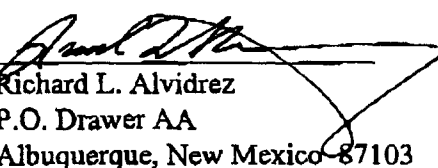
Applicant, Public Service Company of New Mexico ("PNM") hereby submits it
list of proposed exhibits in the above matter.

<u>EXHIBIT</u>	<u>DESCRIPTION</u>	<u>OFFERED</u>	<u>ADMITTED</u>	<u>REFUSED</u>
1	Hampton 4M contract	_____	_____	_____
2.	PNM Reports to OCD	_____	_____	_____
3.	Aerial Photograph of Hampton 4M site	_____	_____	_____
4.	Diagram of Hampton 4M Well site (present day)	_____	_____	_____
5.	Diagram of Hampton 4M Well site (ca 1997)	_____	_____	_____
6.	Gradient flow map for Hampton 4M site	_____	_____	_____

<u>EXHIBIT</u>	<u>DESCRIPTION</u>	<u>OFFERED</u>	<u>ADMITTED</u>	<u>REFUSED</u>
7.	Plume map showing free phase and dissolved phase hydrocarbon contamination	_____	_____	_____
8.	Cross-section diagram showing free phase and dissolved phase hydrocarbon thickness	_____	_____	_____
9.	Graph showing free product recovery compared to thickness of free phase product	_____	_____	_____
10.	Schematic of separator process flow	_____	_____	_____
11.	Schematic of dehydrator process flow	_____	_____	_____
12.	Diagram of well completion for Hampton 4M well	_____	_____	_____
13.	Hampton 4M Well Production History	_____	_____	_____
14.	Hampton 4M Well Oil Gas/Production Ratio Comparison	_____	_____	_____
15.	Hydrocarbon fate and transport model	_____	_____	_____
16.	Piping and Instrumentation Diagram	_____	_____	_____
17.	Photograph of Produced Water Tank/Dehydrator and Meter	_____	_____	_____

<u>EXHIBIT</u>	<u>DESCRIPTION</u>	<u>OFFERED</u>	<u>ADMITTED</u>	<u>REFUSED</u>
18.	Photograph of Water Accumulated in Excavation	_____	_____	_____
19.	Photograph of Present Separator and Footprint of Former Separator	_____	_____	_____
20.	Photograph of Separator and Burlington Excavation	_____	_____	_____
21.	Photograph of PNM Product Recovery From MW-6	_____	_____	_____
22.	Photograph of Seep and Stained Soils	_____	_____	_____
23.	Photograph of Free Product in MW-10	_____	_____	_____
24.	Videotape of Hampton 4-M Site and Surface Equipment.	_____	_____	_____

KELEHER & McLEOD, P.A.

BY 
Richard L. Alvidrez
P.O. Drawer AA
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(505) 346-4646

and

Colin A. Adams
Corporate Counsel
Public Service Company of New Mexico
Alvarado Square MS 0806
Albuquerque, New Mexico 87158
(505) 241-4538
Attorneys for PNM

64702

13 1998



August 11, 1998

CERTIFIED MAIL:

Bill Olson
Hydrologist, Environmental Bureau
New Mexico Oil Conservation Division
2040 South Pacheco
Santa Fe, NM 87505

RE: Hampton 4M Site
July 1998 Sampling Results

Dear Bill:

In response to your request to Maureen Gannon of PNM, enclosed are the most recent groundwater and free product recovery data collected by PNM at the Hampton 4M site. As you know, PNM has concerns regarding the effectiveness of any further remedial actions taken by PNM in the face of continuing hydrocarbon sources at this site.

Summary of PNM Activities

To update our last groundwater data report submitted to you on March 31, 1998, enclosed are groundwater potentiometric surface maps for April and July 1998 including the latest survey coordinates for monitoring wells MW-9 and MW-10. As shown on the map, groundwater flow is down-canyon towards the northwest. The hydraulic gradient is fairly steep and subparallel to the topographic gradient at approximately 0.10. This is a high energy environment, where contamination will move relatively quickly downgradient from the site of release. This is corroborated by the extent to which dissolved phase contamination is detected along the wash. The furthest downgradient monitoring well installed to date, MW-7, contains 950 ppb benzene and 4610 ppb total BTEX; benzene levels in this well have been increasing with time whereas total BTEX levels have decreased slightly. As free product has now been detected in upgradient wells MW-8 and MW-10, PNM has no downgradient wells in excess of site background concentrations (free product) when comparing downgradient water quality to water quality upgradient of PNM equipment. July 1998 sampling data are summarized in Table 1.

Hydrographs and contaminant trends with time are provided for wells with no free product and are presented in Attachment A. Contaminant trend graphs were not provided for monitoring wells MW-2, MW-6, MW-8, or MW-10 due to the presence of free product. Trend graphs were also not provided for MW-3, as it remains below standards, and for MW-9, as this well has only been sampled once since installation. The privately-owned EB well is located cross-gradient (north-northeast). No hydrocarbon constituents above the 0.2 ppb detection limit were detected in this well on original sampling; PNM has not resampled this well.

PNM installed a free product recovery well, MW-6, in November 1997 and initiated free product recovery in January 1998. Initial free product thickness in MW-6 was 4.71 feet on January 12, 1998.

Approximately 820 gallons of free product were recovered from MW-6, with an accompanying 2.3-foot drop in free product thickness, between January 12 and July 31, 1998. The sheer volume of free product recovered by PNM suggests that sources other than the former PNM pit have contributed free product to the subsurface. Free product thickness in MW-2 has remained relatively stable since April 1998 while free product recovery continues at a constant rate. Again, this suggests a large volume of product and/or intermittent or continuing sources of free product. Attachment B provides a figure illustrating free product thickness over the course of free product recovery.

As free phase is now detected in several upgradient wells, MW-10 (2 foot of accumulation) and MW-8 (0.37 feet of accumulation), it is clear that continued operation of the limited PNM free product recovery system will not offer environmental benefits until additional source removal and remediation are performed by the party(ies) responsible for upgradient contamination.

The presence of significant free phase in the subsurface is also the most likely cause of dissolved phase groundwater contamination detected at this site. Burlington, PNM, and NMOCD are aware of continuing hydrocarbon surface discharges in the area of the hydrocarbon seep along the northwestern area of the well pad. While dissolved hydrocarbon concentrations at the seep are below NMWQCC standards, this seep continues to visibly impact soils along the wash. As PNM did not discharge free product at this site, PNM maintains it is not the responsible party for dissolved phase groundwater contamination associated with ongoing free phase hydrocarbon discharges.

In addition to sampling groundwater monitoring wells, PNM also obtained samples from the temporary well TMP-1, soil and water samples from the Burlington excavation, and water samples from the hydrocarbon seep. Results of these analyses are provided in Table 1; analytical laboratory data are provided in Attachment C. Surface water samples showed relatively low levels of BTEX constituents (below NMWQCC standards); however, soil samples collected at the water table within the Burlington excavation showed over 2,000 ppm BTEX constituents remaining.

PNM is continuing to collect data and prepare for the NMOCC hearing on this site scheduled for August 20 and 21, 1998. If you have any questions related to the data summary provided for the Hampton 4M site or other project-related activities, please contact me at 505.241.2974.

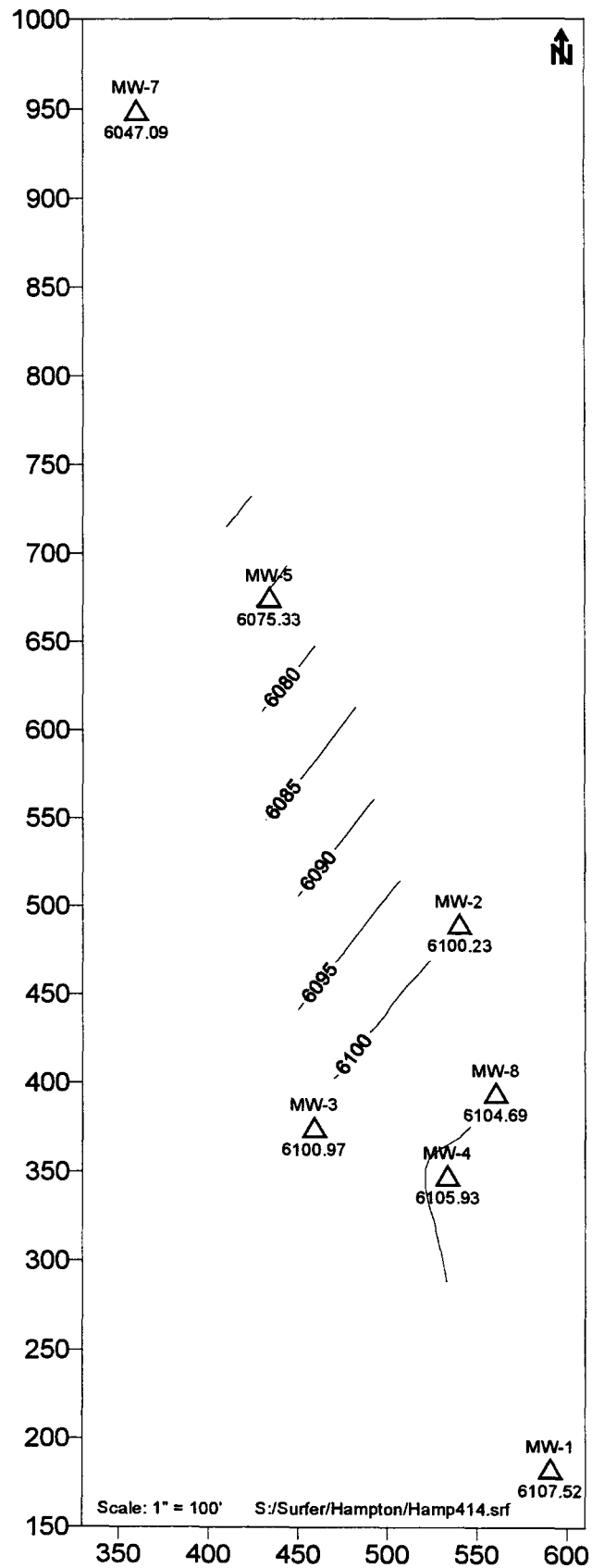
Sincerely,



Maureen Gannon
Project Manager

cc: Roger Anderson, NMOCD
Ed Haseley, Burlington Resources
Ingrid Deklau, Williams Field Services
Bill Von Drehle, Williams Field Services
Colin Adams, PNM
Denny Foust, NMOCD - Aztec

Hampton 4M Groundwater Contour Map (April, 1998)



Hampton 4M Groundwater Contour Map (July, 1998)

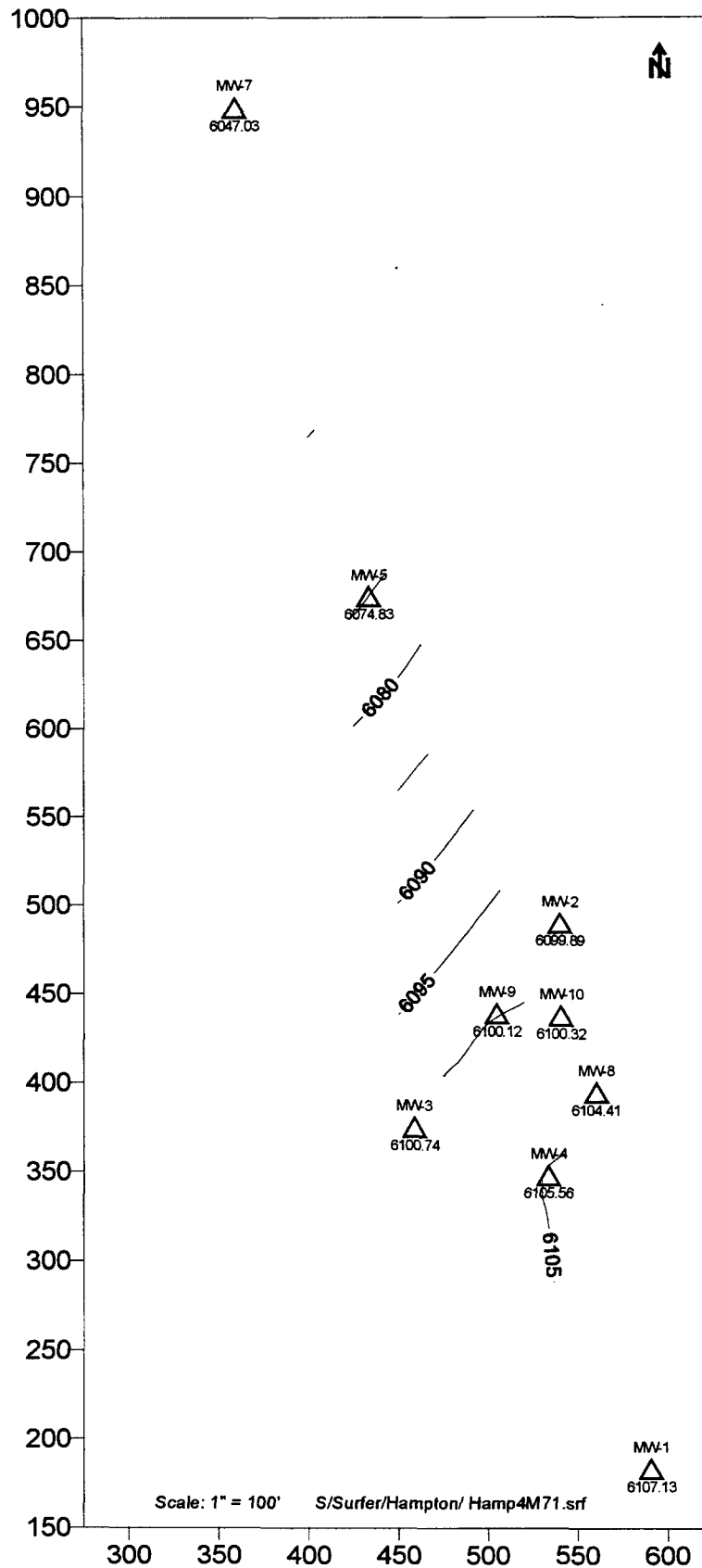


Table 1: SUMMARY OF ANALYTICAL RESULTS

GROUNDWATER MONITORING DATA - collected by PNM, except as noted

Well		Date Sampled	GWEL (ft,msl)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	Total BTEX (ug/L)	Product	
									Thickness (ft)	2-MethylPentane (ug/L)
MW-1 Upgradient well		10/30/97	6110.10	2.4	2.3	<0.2	1.1	5.8	—	NA
		01/12/98	6107.47	4.3	3.3	0.2	1.0	8.8	—	NA
		04/14/98	6107.52	1.0	1.3	<0.5	<0.5	2.3	—	NA
		07/01/98	6107.13	1.3	1.0	<0.5	3.7	6.0	—	42.0
MW-2 PNM drip pit well		01/04/96	6097.88	NA	NA	NA	NA	NA	4.40	NA
		12/16/96	NM	3840.0	7960.0	896.0	7920.0	20616.0	NM	NA
		08/27/97	6097.87	NA	NA	NA	NA	NA	4.75	NA
		10/29/97	6098.08	NA	NA	NA	NA	NA	4.58	NA
		01/12/98	6098.10	NA	NA	NA	NA	NA	4.41	NA
		04/14/98	6100.88	NA	NA	NA	NA	NA	2.59	NA
		07/01/98	6102.14	NA	NA	NA	NA	NA	2.25	NA
MW-3 Up & cross-gradient to PNM (Burlington)		1/4/96	6101.06	NA	NA	NA	NA	NA	—	NA
		1/31/97	NM	<0.2	<0.2	<0.2	<0.2	<0.2	—	NA
		5/5/97	NM	NA	NA	NA	NA	NA	—	NA
		10/29/97	6101.19	<0.2	<0.2	<0.2	<0.2	<0.2	—	NA
		1/12/98	6101.11	<0.2	<0.2	<0.2	<0.2	<0.2	—	NA
		4/14/98	6100.97	<0.5	<0.5	<0.5	<0.5	<0.5	—	NA
		7/1/98	6101.14	0.03 JB	0.05 JB	<0.5	<0.5	0.08 JB	—	<30.0
MW-4 Upgradient PNM; downgradient Burlington (Burlington)		1/3/96	6106.16	NA	NA	NA	NA	NA	—	NA
		1/31/97	NM	811.7	1420.5	31.0	388.1	2651.3	—	NA
		5/1/97	NM	1162.0	1797.0	41.0	486.0	3486.0	—	NA
		8/27/97	6106.87	NA	NA	NA	NA	NA	—	NA
		10/29/97	6106.73	NA	NA	NA	NA	NA	—	NA
		1/12/98	6105.88	1251.0	6.0	82.0	24.0	1363.0	—	NA
		4/14/98	6105.93	1100.0	7.2	28.0	12.0	1147.2	—	NA
		7/1/98	6106.14	1400.0	50.0	120.0	124.0	1694.0	—	10.0 J
MW-5 Downgradient along wash		10/29/97	6075.23	5934.0	10024.0	709.0	8188.0	24855.0	—	NA
		1/12/98	6075.09	7521.0	11213.0	779.0	8436.0	27949.0	—	NA
		4/14/98	6075.33	7000.0	11000.0	720.0	7800.0	26520.0	—	NA
		7/1/98	6075.43	6500.0	10000.0	780.0	7500.0	24780.0	—	800.0
MW-6 PNM drip pit/product recovery		11/12/97	6098.08	NA	NA	NA	NA	NA	4.80	NA
		1/12/98	6097.43	NA	NA	NA	NA	NA	4.71	NA
		4/14/98	NM	NA	NA	NA	NA	NA	pumping	NA
		7/1/98	NM	NA	NA	NA	NA	NA	pumping	NA
MW-7 Downgradient along wash; adj pipeline		1/12/98	6047.12	780.0	246.0	258.0	3942.0	5226.0	—	NA
		04/14/98	6047.09	820.0	340.0	190.0	2450.0	3800.0	—	NA
		07/01/98	6047.03	950.0	440.0	200.0	3020.0	4610.0	—	200.0
MW-8 Upgradient PNM; downgradient Burlington		1/12/98	6104.71	6410.0	17301.0	693.0	9397.0	33801.0	Sheen	NA
		4/14/98	6104.41	NA	NA	NA	NA	NA	0.37	NA
		7/1/98	6105.14	NA	NA	NA	NA	NA	0.37	NA
MW-9 Upgradient PNM, crossgradient Burlington		7/1/98	6100.51	12.0	0.2	0.6	1.3	14.1	—	<30.0
MW-10 Upgradient PNM, downgradient Burlington		7/1/98	NM	NA	NA	NA	NA	NA	2.00	NA
TMP-1 Temporary well; wash midway MW-5, MW-7		11/11/97	NM	2171.0	4185.0	190.0	2856.0	9402.0	—	NA
		7/1/98	6057.61	2000.0	4300.0	180.0	2700.0	9180.0	—	80.0
EB WELL Downgradient private well		11/25/97	5959.74	<0.2	<0.2	<0.2	<0.2	<0.2	—	NA
Burlington Excavation	Soil - @ water	7/1/98	NM	36000.0	560000.0	100000.0	1430000.0	2126000.0	—	NA
	Surface Water	7/1/98	6106.26	10.0	0.4	0.1	1.5	12.0	rainbow	<30.0
Hydrocarbon Seep	Surface Water	7/1/98	6098.72	1.6	0.7	0.6	0.36	3.26	rainbow	6.0 J

Notes:

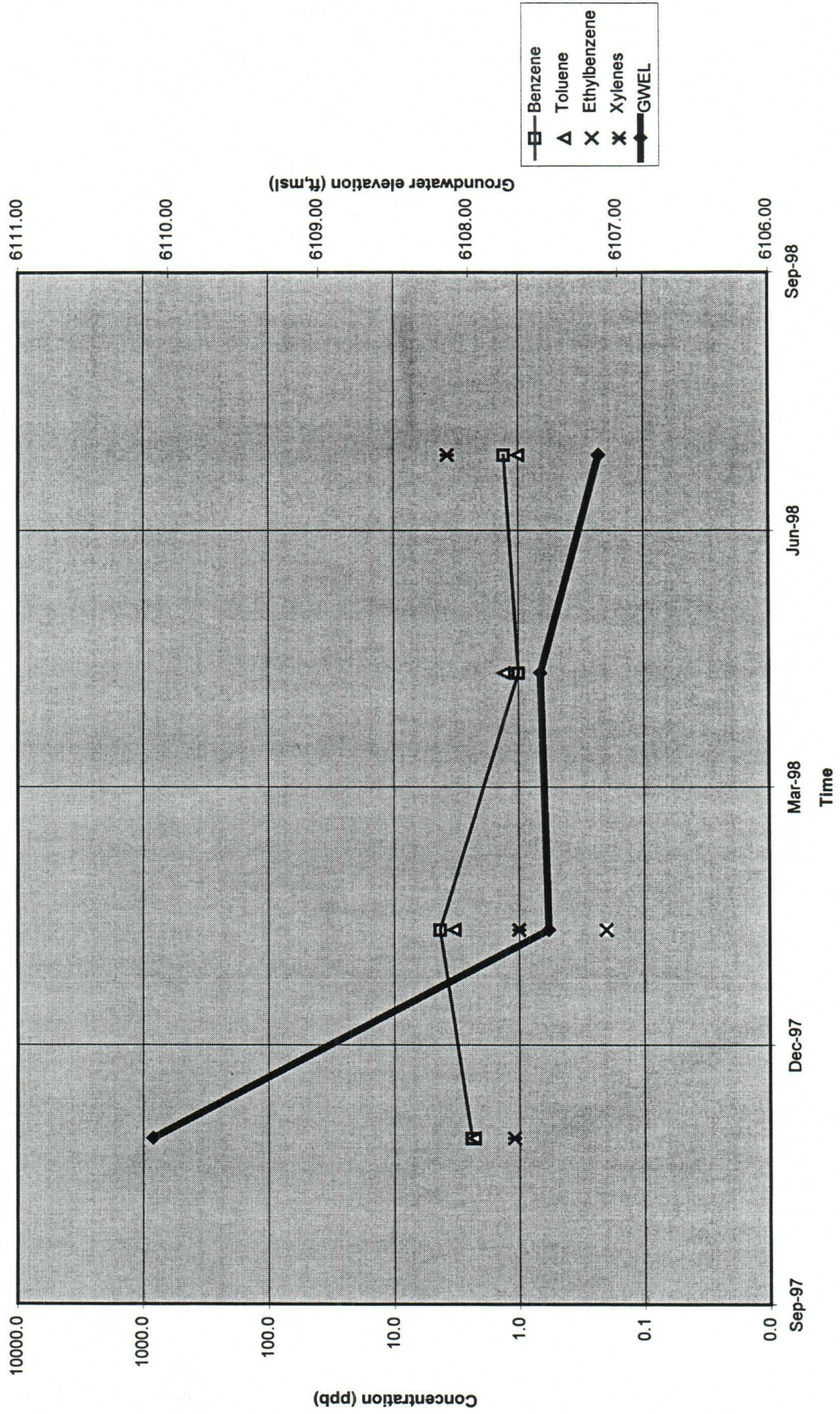
 J = Analyte detected below Practical Quantitation Limit
 B = Analyte detected in the associated Method Blank

 NM = Not measured
 NA = Not analyzed

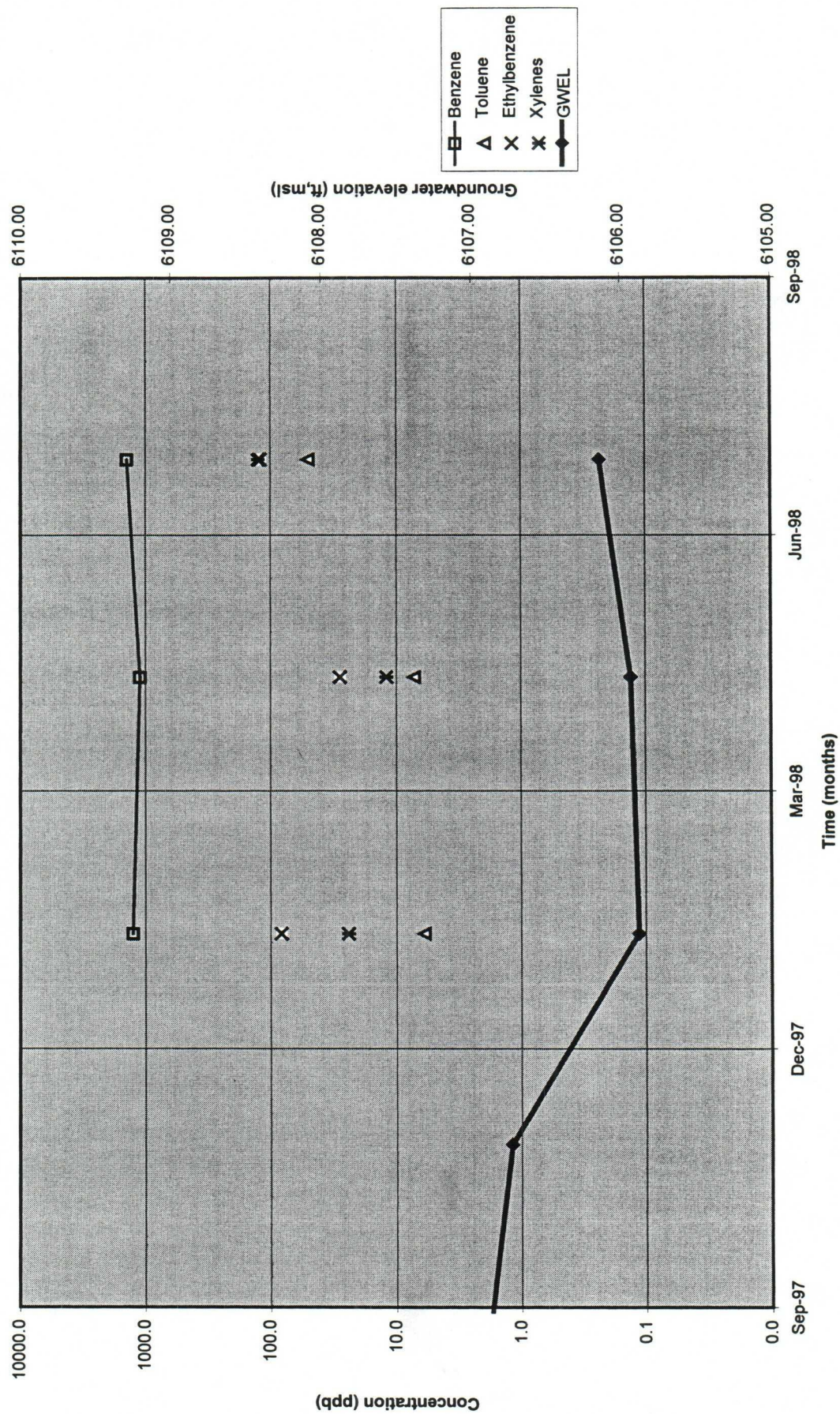
Attachment A

Hydrographs and Concentrations versus Time

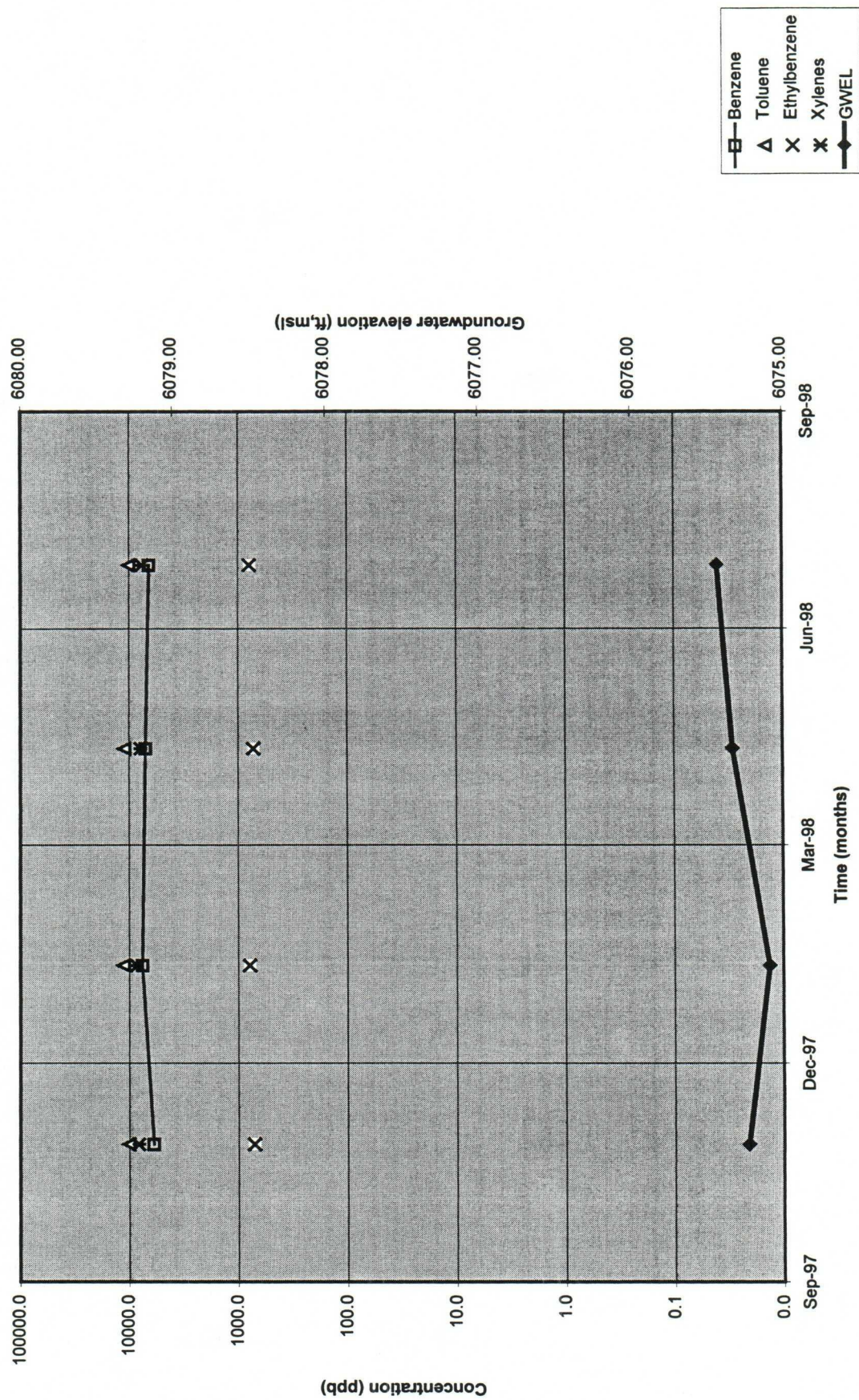
MW-1: Concentration vs. Time



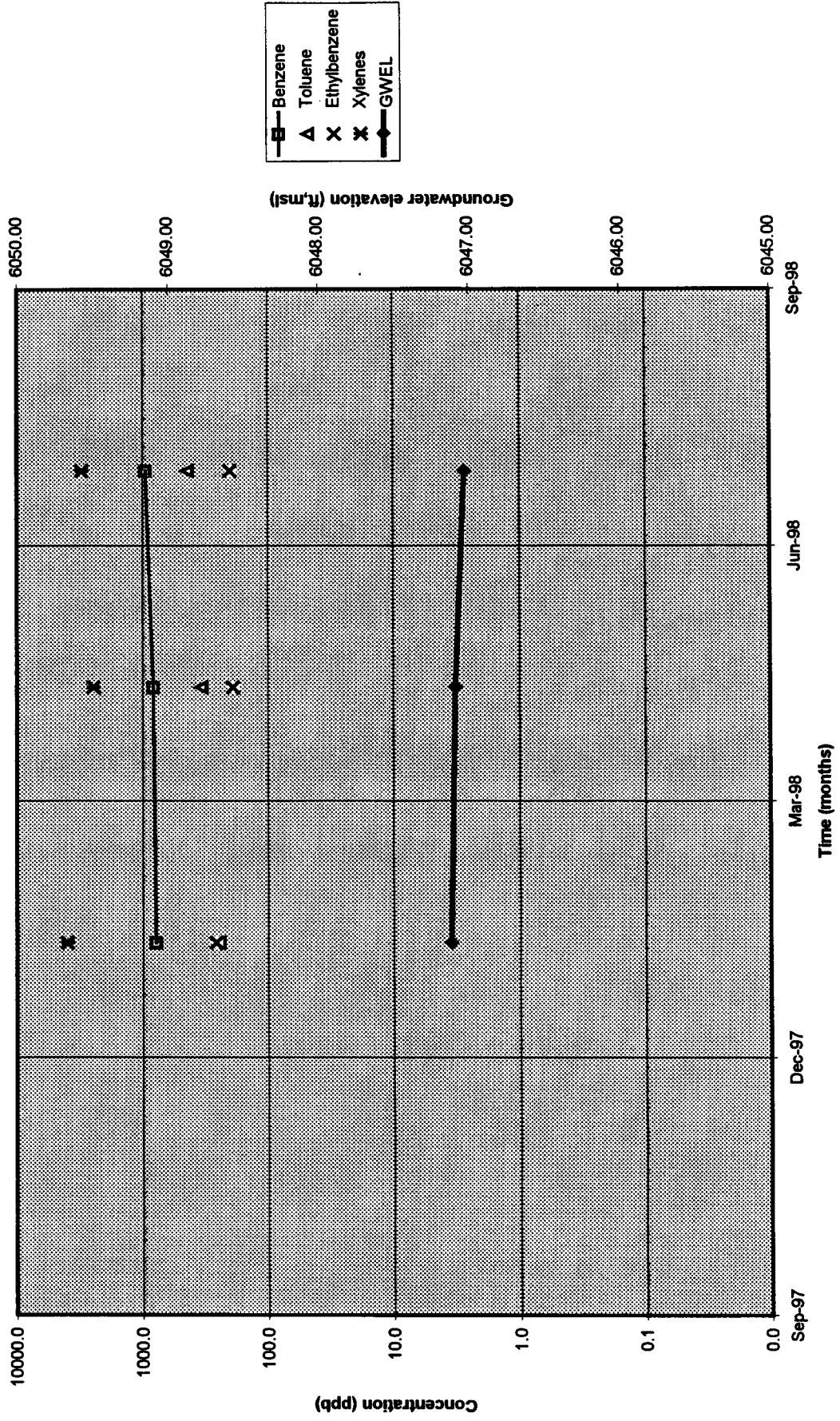
MW-4: Trends with Time



MW-5: Trends with Time



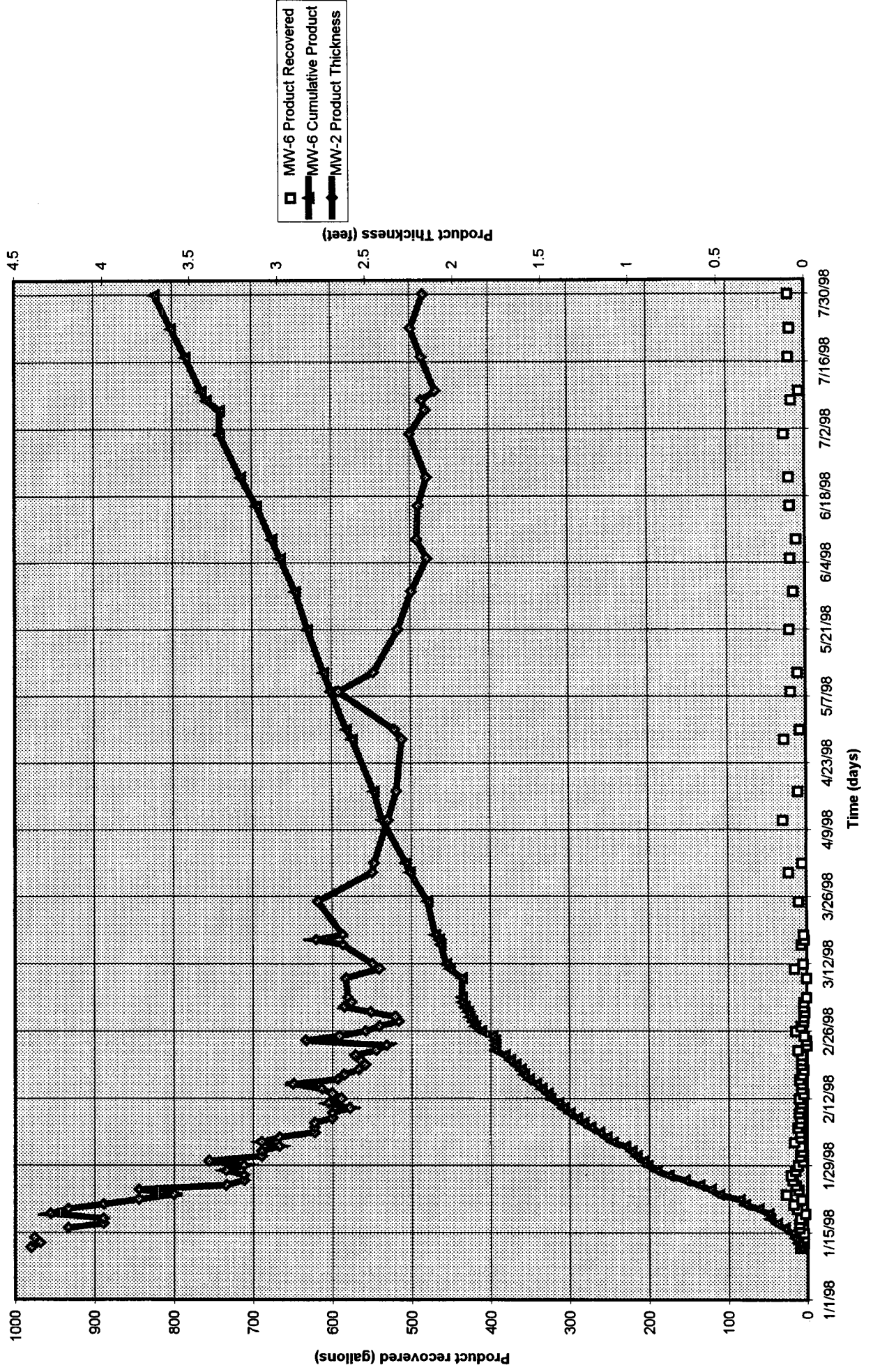
MW-7: Trends with Time



Attachment B

Free Product Recovery Response

Hampton 4M Free Product Recovery



Attachment C

Analytical Laboratory Data

OFF: (505) 325-5667



LAB: (505) 325-1556

July 21, 1998

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

RE: Hampton 4M

Order No.: 9807024

Dear Maureen Gannon,

On Site Technologies, LTD. received 2 samples on 7/9/98 for the analyses presented in the following report.

The Samples were analyzed for the following tests:

BTEX (SW8020A)

Gasoline Range Organics (SW8015)

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

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

Sincerely,

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

David Cox

OFF: (505) 325-5667



LAB: (505) 325-1556

On Site Technologies, LTD.

Date: 21-Jul-98

CLIENT: PNM - Public Service Company of NM
Project: Hampton 4M
Lab Order: 9807024

CASE NARRATIVE

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

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

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

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 21-Jul-98

Client:	PNM - Public Service Company of NM	Client Sample Info:	Hampton 4M
Work Order:	9807024	Client Sample ID:	9807091045; TMP-1
Lab ID:	9807024-01A	Matrix:	AQUEOUS
Project:	Hampton 4M	Collection Date:	7/9/98 10:45:00 AM
		COC Record:	7278

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS		SW8015				Analyst: DC
2-Methylpentane	80	300	J	µg/L	10	7/13/98
BTEX		SW8020A				Analyst: DC
Benzene	2000	25		µg/L	50	7/20/98
Toluene	4300	25		µg/L	50	7/20/98
Ethylbenzene	180	5		µg/L	10	7/17/98
m,p-Xylene	2100	50		µg/L	50	7/20/98
o-Xylene	600	5		µg/L	10	7/17/98

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

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- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 21-Jul-98

Client:	PNM - Public Service Company of NM	Client Sample Info:	Hampton 4M
Work Order:	9807024	Client Sample ID:	9807091100; Seep
Lab ID:	9807024-02A	Matrix:	AQUEOUS
Project:	Hampton 4M	Collection Date:	7/9/98 11:00:00 AM
		COC Record:	7278

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS		SW8015				Analyst: DC
2-Methylpentane	6	30	J	µg/L	1	7/13/98
BTEX		SW8020A				Analyst: DC
Benzene	1.6	0.5		µg/L	1	7/17/98
Toluene	0.7	0.5		µg/L	1	7/17/98
Ethylbenzene	0.6	0.5		µg/L	1	7/17/98
m,p-Xylene	0.3	1	JB	µg/L	1	7/17/98
o-Xylene	0.06	0.5	JB	µg/L	1	7/17/98

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: 21-Jul-98

CLIENT: PNM - Public Service Company of NM
Work Order: 9807024
Project: Hampton 4M

QC SUMMARY REPORT
Method Blank

Sample ID: MB1	Batch ID: GC-1_980713	Test Code: SW8015	Units: µg/L	Analysis Date 7/13/98	Prep Date:
Client ID:	9807024	Run ID: GC-1_980713B		SeqNo: 4530	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
2-Methylpentane	ND				30

Qualifiers:

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

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

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 21-Jul-98

CLIENT: PNM - Public Service Company of NM
Work Order: 9807024
Project: Hampton 4M

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 9807010-10AMS		Batch ID: GC-1_980713	Test Code: SW8015	Units: µg/L	Analysis Date 7/13/98	Prep Date:
Client ID:		9807024	Run ID: GC-1_980713B		SeqNo: 4536	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit	%RPD RPDLimit Qual
2-Methylpentane	14450	1500	15000	952.6	90.0% 70 130	
Sample ID: 9807010-10AMSD		Batch ID: GC-1_980713	Test Code: SW8015	Units: µg/L	Analysis Date 7/13/98	Prep Date:
Client ID:		9807024	Run ID: GC-1_980713B		SeqNo: 4537	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit	%RPD RPDLimit Qual
2-Methylpentane	13990	1500	15000	952.6	86.9% 70 130	3.3% 20

On Site Technologies, LTD.

Date: 21-Jul-98

CLIENT: PNM - Public Service Company of NM
Work Order: 9807024
Project: Hampton 4M

QC SUMMARY REPORT
Laboratory Control Spike - generic

Sample ID: LCS Water	Batch ID: GC-1_980713	Test Code: SW8015	Units: µg/L	Analysis Date 7/13/98	Prep Date:
Client ID:	9807024	Run ID: GC-1_980713B		SeqNo: 4532	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
2-Methylpentane	281.8	30	300	0	93.9% 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

On Site Technologies, LTD.

Date: 21-Jul-98

CLIENT: PNM - Public Service Company of NM
 Work Order: 9807024
 Project: Hampton 4M

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV1 QC0593		Batch ID: GC-1_980713	Test Code: SW8015	Units: µg/L		Analysis Date 7/13/98		Prep Date:	
Client ID:		9807024	Run ID: GC-1_980713B			SeqNo: 4531			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	RPDLimit Qual
2-Methylpentane	296.2	30	300	0	98.7%	85	115		
Trifluorotoluene	97.59	0	100	0	97.6%	70	130		
Sample ID: CCV2 QC0593		Batch ID: GC-1_980713	Test Code: SW8015	Units: µg/L		Analysis Date 7/13/98		Prep Date:	
Client ID:		9807024	Run ID: GC-1_980713B			SeqNo: 4538			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	RPDLimit Qual
2-Methylpentane	274.1	30	300	0	91.4%	85	115		
Trifluorotoluene	98.82	0	100	0	98.8%	70	130		
Sample ID: CCV3 QC0593		Batch ID: GC-1_980713	Test Code: SW8015	Units: µg/L		Analysis Date 7/13/98		Prep Date:	
Client ID:		9807024	Run ID: GC-1_980713B			SeqNo: 4539			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	RPDLimit Qual
2-Methylpentane	266.2	30	300	0	88.7%	85	115		
Trifluorotoluene	97.09	0	100	0	97.1%	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

On Site Technologies, LTD.

Date: 21-Jul-98

CLIENT: PNM - Public Service Company of NM
Work Order: 9807024
Project: Hampton 4M

QC SUMMARY REPORT

Method Blank

Sample ID: MB1	Batch ID: GC-1_980717	Test Code: SW8020A	Units: µg/L	Analysis Date 7/17/98	Prep Date:
Client ID:	9807024	Run ID: GC-1_980717A		SeqNo: 4649	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Benzene	.0436	0.5			J
Ethylbenzene	.0759	0.5			J
m,p-Xylene	.1652	1			J
Methyl tert-Butyl Ether	ND	1			
o-Xylene	.1832	0.5			J
Toluene	.1127	0.5			J

Sample ID: MB1	Batch ID: GC-1_980720	Test Code: SW8020A	Units: µg/L	Analysis Date 7/20/98	Prep Date:
Client ID:	9807024	Run ID: GC-1_980720A		SeqNo: 4731	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Benzene	.0649	0.5			J
Ethylbenzene	ND	0.5			
m,p-Xylene	ND	1			
Methyl tert-Butyl Ether	ND	1			
o-Xylene	ND	0.5			
Toluene	.0787	0.5			J

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

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

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 21-Jul-98

CLIENT: PNM - Public Service Company of NM
Work Order: 9807024
Project: Hampton 4M

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 9807025-01AMS		Batch ID: GC-1_980717	Test Code: SW8020A	Units: µg/L	Analysis Date 7/17/98		Prep Date:	
Client ID: 9807024		Run ID: GC-1_980717A	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit
Analyte	Result							
Benzene	1764	25	2000	21.02		87.2%	56	128
Ethylbenzene	1933	25	2000	75.09		92.9%	78	107
m,p-Xylene	3626	50	4000	127.2		87.5%	67	118
o-Xylene	1817	25	2000	30.73		89.3%	78	107
Toluene	1860	25	2000	67.96		89.6%	74	116

Sample ID: 9807025-01AMS		Batch ID: GC-1_980717	Test Code: SW8020A	Units: µg/L	Analysis Date 7/17/98		Prep Date:	
Client ID: 9807024		Run ID: GC-1_980717A	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit
Analyte	Result							
Benzene	1699	25	2000	21.02		83.9%	56	128
Ethylbenzene	1865	25	2000	75.09		89.5%	78	107
m,p-Xylene	3501	50	4000	127.2		84.4%	67	118
o-Xylene	1775	25	2000	30.73		87.2%	78	107
Toluene	1791	25	2000	67.96		86.1%	74	116

Sample ID: 9807032-01AMS		Batch ID: GC-1_980720	Test Code: SW8020A	Units: µg/L	Analysis Date 7/20/98		Prep Date:	
Client ID: 9807024		Run ID: GC-1_980720A	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit
Analyte	Result							
Benzene	7611	50	4000	3831		94.5%	56	128
Ethylbenzene	5361	50	4000	1595		94.1%	78	107
m,p-Xylene	15130	100	8000	7290		98.0%	67	118
Methyl tert-Butyl Ether	3598	100	4000	392.2		80.2%	70	130
o-Xylene	6591	50	4000	2774		95.4%	78	107
Toluene	21850	50	4000	17660		104.6%	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: 9807024
Project: Hampton 4M

QC SUMMARY REPORT

Sample Matrix Spike Duplicate

Sample ID: 9807032-01AMSD		Batch ID: GC-1_980720	Test Code: SW8020A	Units: µg/L	Analysis Date 7/20/98		Prep Date:				
Client ID:		9807024	Run ID: GC-1_980720A		SeqNo: 4733						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	7448	50	4000	3831	90.4%	56	128	7611	2.2%	12	
Ethylbenzene	5241	50	4000	1595	91.1%	78	107	5361	2.3%	11	
m,p-Xylene	14760	100	8000	7290	93.4%	67	118	15130	2.5%	10	
Methyl tert-Butyl Ether	3818	100	4000	392.2	85.6%	70	130	3598	5.9%	15	
o-Xylene	6504	50	4000	2774	93.2%	78	107	6591	1.3%	14	
Toluene	21400	50	4000	17660	93.4%	74	116	21850	2.1%	14	E

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

On Site Technologies, LTD.

Date: 21-Jul-98

CLIENT: PNM - Public Service Company of NM
Work Order: 9807024
Project: Hampton 4M

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS WATER		Batch ID: GC-1_980717		Test Code: SW8020A		Units: µg/L		Analysis Date 7/17/98		Prep Date:	
Client ID:		9807024		Run ID:		GC-1_980717A		SeqNo:		4648	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	37.81	0.5	40	0.0436	94.4%	56	128				
Ethylbenzene	38.38	0.5	40	0.0759	95.8%	78	107				
m,p-Xylene	73.54	1	80	0.1652	91.7%	67	118				
Methyl tert-Butyl Ether	46.48	1	40	0	116.2%	70	130				
o-Xylene	38.42	0.5	40	0.1832	95.6%	78	107				
Toluene	37.72	0.5	40	0.1127	94.0%	74	116				

Sample ID: LCS WATER		Batch ID: GC-1_980720	Test Code: SW8020A	Units: µg/L	Analysis Date 7/20/98		Prep Date:				
Client ID:		9807024	Run ID:	GC-1_980720A	SeqNo:	4730					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	36.97	0.5	40	0.0649	92.3%	56	128				
Ethylbenzene	38.46	0.5	40	0	96.1%	78	107				
m,p-Xylene	75.83	1	80	0	94.8%	67	118				
Methyl tert-Butyl Ether	35.6	1	40	0	89.0%	70	130				
o-Xylene	38.64	0.5	40	0	96.6%	78	107				
Toluene	38.03	0.5	40	0.0787	94.9%	74	116				

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

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

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

CLIENT: PNM - Public Service Company of NM
Work Order: 9807024
Project: Hampton 4M

Date: 21-Jul-98

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV1 QC0606/07		Batch ID: GC-1_980717	Test Code: SW8020A	Units: µg/L	Analysis Date 7/17/98		Prep Date:				
Client ID:		9807024	Run ID: GC-1_980717A		SeqNo: 4645						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	19.67	0.5	20	0	98.4%	85	115				
Ethylbenzene	19.86	0.5	20	0	99.3%	85	115				
m,p-Xylene	37.75	1	40	0	94.4%	85	115				
o-Xylene	19.83	0.5	20	0	99.2%	85	115				
Toluene	19.63	0.5	20	0	98.2%	85	115				
1,4-Difluorobenzene	86.73	0	100	0	86.7%	70	130				
4-Bromochlorobenzene	96.42	0	100	0	96.4%	70	130				
Fluorobenzene	83.42	0	100	0	83.4%	70	130				

Sample ID: CCV2 QC0606/07		Batch ID: GC-1_980717		Test Code: SW8020A		Units: µg/L		Analysis Date 7/17/98		Prep Date:	
Client ID:		9807024		Run ID: GC-1_980717A				SeqNo: 4646			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	18.82	0.5	20	0	94.1%	85	115				
Ethylbenzene	19.37	0.5	20	0	96.8%	85	115				
m,p-Xylene	36.78	1	40	0	91.9%	85	115				
o-Xylene	19.36	0.5	20	0	96.8%	85	115				
Toluene	19.05	0.5	20	0	95.3%	85	115				
1,4-Difluorobenzene	86.52	0	100	0	86.5%	70	130				
4-Bromochlorobenzene	90.57	0	100	0	90.6%	70	130				
Fluorobenzene	82.78	0	100	0	82.8%	70	130				

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

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

B - Analyte detected in the associated Method Blank

CLIENT: PNM - Public Service Company of NM
 Work Order: 9807024
 Project: Hampton 4M

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV3 QC0606/07		Batch ID: GC-1_980717		Test Code: SW8020A		Units: µg/L		Analysis Date 7/17/98		Prep Date:	
Client ID:		9807024		Run ID:		GC-1_980717A		SeqNo: 4647			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	35.5	0.5	40	0	88.7%	85	115				
Ethylbenzene	37.28	0.5	40	0	93.2%	85	115				
m,p-Xylene	71.23	1	80	0	89.0%	85	115				
o-Xylene	36.68	0.5	40	0	91.7%	85	115				
Toluene	37.03	0.5	40	0	92.6%	85	115				
1,4-Difluorobenzene	85.63	0	100	0	85.6%	70	130				
4-Bromochlorobenzene	74.02	0	100	0	74.0%	70	130				
Fluorobenzene	81.58	0	100	0	81.6%	70	130				

Sample ID: CCV1 QC0606/07		Batch ID: GC-1_980720	Test Code: SW8020A	Units: µg/L	Analysis Date 7/20/98		Prep Date:				
Client ID:		9807024	Run ID: GC-1_980720A		SeqNo: 4728						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	18.53	0.5	20	0	92.6%	85	115				
Ethylbenzene	19.44	0.5	20	0	97.2%	85	115				
m,p-Xylene	37.86	1	40	0	94.7%	85	115				
Methyl tert-Butyl Ether	17.75	1	20	0	88.8%	85	115				
o-Xylene	19.5	0.5	20	0	97.5%	85	115				
Toluene	19.16	0.5	20	0	95.8%	85	115				
1,4-Difluorobenzene	86.54	0	100	0	86.5%	70	130				
4-Bromochlorobenzene	80.3	0	100	0	80.3%	70	130				
Fluorobenzene	81.99	0	100	0	82.0%	70	130				

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

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

B - Analyte detected in the associated Method Blank

CLIENT: PNM - Public Service Company of NM
 Work Order: 9807024
 Project: Hampton 4M

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV2 QC0606/07		Batch ID: GC-1_980720		Test Code: SW8020A		Units: µg/L		Analysis Date 7/20/98		Prep Date:	
Client ID:		9807024		Run ID:		GC-1_980720A		SeqNo: 4729			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	18.45	0.5	20	0	92.3%	85	115				
Ethylbenzene	19.33	0.5	20	0	96.7%	85	115				
m,p-Xylene	37.72	1	40	0	94.3%	85	115				
Methyl tert-Butyl Ether	18.7	1	20	0	93.5%	85	115				
o-Xylene	19.46	0.5	20	0	97.3%	85	115				
Toluene	19.09	0.5	20	0	95.5%	85	115				
1,4-Difluorobenzene	86.44	0	100	0	86.4%	70	130				
4-Bromochlorobenzene	80.25	0	100	0	80.2%	70	130				
Fluorobenzene	81.78	0	100	0	81.8%	70	130				

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

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

B - Analyte detected in the associated Method Blank

CLIENT: PNM - Public Service Company of NM
Work Order: 9807024
Project: Hampton 4M
Test No: SW8020A

QC SUMMARY REPORT SURROGATE RECOVERIES

BTEX

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

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

* Surrogate recovery outside acceptance limits

OFF: (505) 325-5667



LAB: (505) 325-1556

July 20, 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: PNM Pit Remediation *Hampton 4m*

Order No.: 9807004

Dear Maureen Gannon,

On Site Technologies, LTD. received 9 samples on 7/2/98 for the analyses presented in the following report.

The Samples were analyzed for the following tests:

BTEX (SW8020A)
Diesel Range Organics (SW8015)
Gasoline Range Organics (SW8015)

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

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

Sincerely,

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

David Cox

OFF: (505) 325-5667



LAB: (505) 325-1556

On Site Technologies, LTD.

Date: 20-Jul-98

CLIENT: PNM - Public Service Company of NM

Project: PNM Pit Remediation

Lab Order: 9807004

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: 20-Jul-98

Client:	PNM - Public Service Company of NM	Client Sample Info:	Hampton 4M
Work Order:	9807004	Client Sample ID:	9807011350; MW-1
Lab ID:	9807004-01A	Matrix:	AQUEOUS
Project:	PNM Pit Remediation	Collection Date:	7/1/98 1:50:00 PM
		COC Record:	7275

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS						
	SW8015					Analyst: DC
2-Methylpentane	42	30		µg/L	1	7/12/98
BTEX						
	SW8020A					Analyst: DC
Benzene	1.3	0.5		µg/L	1	7/8/98
Toluene	1	0.5		µg/L	1	7/8/98
Ethylbenzene	ND	0.5		µg/L	1	7/8/98
m,p-Xylene	0.1	1	JB	µg/L	1	7/8/98
o-Xylene	3.6	0.5		µg/L	1	7/8/98

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

1 of 1

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 20-Jul-98

Client:	PNM - Public Service Company of NM	Client Sample Info:	Hampton 4M
Work Order:	9807004	Client Sample ID:	9807011420; MW-3
Lab ID:	9807004-02A	Matrix:	AQUEOUS
Project:	PNM Pit Remediation	Collection Date:	7/1/98 2:20:00 PM
		COC Record:	7275

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS		SW8015				Analyst: DC
2-Methylpentane	ND	30		µg/L	1	7/12/98
BTEX		SW8020A				Analyst: DC
Benzene	0.03	0.5	JB	µg/L	1	7/8/98
Toluene	0.05	0.5	JB	µg/L	1	7/8/98
Ethylbenzene	ND	0.5		µg/L	1	7/8/98
m,p-Xylene	ND	1		µg/L	1	7/8/98
o-Xylene	ND	0.5		µg/L	1	7/8/98

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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P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 20-Jul-98

Client:	PNM - Public Service Company of NM	Client Sample Info:	Hampton 4M
Work Order:	9807004	Client Sample ID:	9807011445; MW-4
Lab ID:	9807004-03A	Matrix:	AQUEOUS
Project:	PNM Pit Remediation	Collection Date:	7/1/98 2:45:00 PM
		COC Record:	7275

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS		SW8015				Analyst: DC
2-Methylpentane	10	30	J	µg/L	1	7/12/98
BTEX		SW8020A				Analyst: DC
Benzene	1400	5		µg/L	10	7/8/98
Toluene	50	5		µg/L	10	7/8/98
Ethylbenzene	120	5		µg/L	10	7/8/98
m,p-Xylene	67	10		µg/L	10	7/8/98
o-Xylene	57	5		µg/L	10	7/8/98

Qualifiers:

PQL - Practical Quantitation Limit

ND - Not Detected at Practical Quantitation Limit

J - Analyte detected below Practical Quantitation Limit

B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Surr: - Surrogate

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 20-Jul-98

Client:	PNM - Public Service Company of NM	Client Sample Info:	Hampton 4M
Work Order:	9807004	Client Sample ID:	9807011500; Burlington Exc.
Lab ID:	9807004-04A	Matrix:	AQUEOUS
Project:	PNM Pit Remediation	Collection Date:	7/1/98 3:00:00 PM
		COC Record:	7275

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS		SW8015				Analyst: DC
2-Methylpentane	ND	30		µg/L	1	7/12/98
BTEX		SW8020A				Analyst: DC
Benzene	10	0.5		µg/L	1	7/8/98
Toluene	0.4	0.5	JB	µg/L	1	7/8/98
Ethylbenzene	0.1	0.5	JB	µg/L	1	7/8/98
m,p-Xylene	1.3	1		µg/L	1	7/8/98
o-Xylene	0.2	0.5	JB	µg/L	1	7/8/98

Qualifiers:

PQL - Practical Quantitation Limit

ND - Not Detected at Practical Quantitation Limit

J - Analyte detected below Practical Quantitation Limit

B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Surr: - Surrogate

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P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 20-Jul-98

Client:	PNM - Public Service Company of NM	Client Sample Info:	Hampton 4M
Work Order:	9807004	Client Sample ID:	9807011505; Burlington Exc.
Lab ID:	9807004-05A	Matrix:	SOIL
Project:	PNM Pit Remediation	Collection Date:	7/1/98 3:05:00 PM
		COC Record:	7275

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS		SW8015				Analyst: DC
T/R Hydrocarbons: C10-C28	4800	25		mg/Kg	1	7/9/98
BTEX		SW8020A				Analyst: DC
Benzene	36000	10000		µg/Kg	10000	7/10/98
Toluene	560000	20000		µg/Kg	10000	7/10/98
Ethylbenzene	100000	10000		µg/Kg	10000	7/10/98
m,p-Xylene	1200000	20000		µg/Kg	10000	7/10/98
o-Xylene	230000	10000		µg/Kg	10000	7/10/98

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

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 20-Jul-98

Client:	PNM - Public Service Company of NM	Client Sample Info:	Hampton 4M
Work Order:	9807004	Client Sample ID:	9807011545; MW-9
Lab ID:	9807004-06A	Matrix:	AQUEOUS
Project:	PNM Pit Remediation	Collection Date:	7/1/98 3:45:00 PM
		COC Record:	7275

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS						
		SW8015				Analyst: DC
2-Methylpentane	ND	30		µg/L	1	7/12/98
BTEX						
		SW8020A				Analyst: DC
Benzene	12	0.5		µg/L	1	7/11/98
Toluene	0.2	0.5	JB	µg/L	1	7/11/98
Ethylbenzene	0.6	0.5		µg/L	1	7/11/98
m,p-Xylene	1.2	1		µg/L	1	7/11/98
o-Xylene	0.1	0.5	JB	µg/L	1	7/11/98

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

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P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 20-Jul-98

Client:	PNM - Public Service Company of NM	Client Sample Info:	Hampton 4M
Work Order:	9807004	Client Sample ID:	9807011625; MW-5
Lab ID:	9807004-07A	Matrix:	AQUEOUS
Project:	PNM Pit Remediation	Collection Date:	7/1/98 4:25:00 PM
		COC Record:	7275

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS		SW8015				Analyst: DC
2-Methylpentane	800	600		µg/L	20	7/12/98
BTEX		SW8020A				Analyst: DC
Benzene	6500	50		µg/L	100	7/8/98
Toluene	10000	50		µg/L	100	7/8/98
Ethylbenzene	780	50		µg/L	100	7/8/98
m,p-Xylene	6000	100		µg/L	100	7/8/98
o-Xylene	1500	50		µg/L	100	7/8/98

Qualifiers:

PQL - Practical Quantitation Limit

ND - Not Detected at Practical Quantitation Limit

J - Analyte detected below Practical Quantitation Limit

B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Surr: - Surrogate

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 20-Jul-98

Client:	PNM - Public Service Company of NM	Client Sample Info:	Hampton 4M
Work Order:	9807004	Client Sample ID:	9807011650; MW-7
Lab ID:	9807004-08A	Matrix:	AQUEOUS
Project:	PNM Pit Remediation	Collection Date:	7/1/98 4:50:00 PM
		COC Record:	7275

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS		SW8015				Analyst: DC
2-Methylpentane	200	300	J	µg/L	10	7/12/98
BTEX		SW8020A				Analyst: DC
Benzene	950	5		µg/L	10	7/8/98
Toluene	440	5		µg/L	10	7/8/98
Ethylbenzene	200	5		µg/L	10	7/8/98
m,p-Xylene	2300	20		µg/L	20	7/11/98
o-Xylene	720	5		µg/L	10	7/8/98

Qualifiers:

PQL - Practical Quantitation Limit

ND - Not Detected at Practical Quantitation Limit

J - Analyte detected below Practical Quantitation Limit

B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Surr: - Surrogate

1 of 1

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 20-Jul-98

Client:	PNM - Public Service Company of NM	Client Sample Info:	Hampton 4M
Work Order:	9807004	Client Sample ID:	9807011700; MW-11
Lab ID:	9807004-09A	Matrix:	AQUEOUS
Project:	PNM Pit Remediation	Collection Date:	7/1/98 5:00:00 PM
		COC Record:	7275

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
GASOLINE RANGE ORGANICS		SW8015				Analyst: DC
2-Methylpentane	100	300	J	µg/L	10	7/12/98
BTEX		SW8020A				Analyst: DC
Benzene	930	5		µg/L	10	7/8/98
Toluene	470	5		µg/L	10	7/8/98
Ethylbenzene	180	5		µg/L	10	7/8/98
m,p-Xylene	1900	20		µg/L	20	7/11/98
o-Xylene	620	5		µg/L	10	7/8/98

Qualifiers:

PQL - Practical Quantitation Limit

ND - Not Detected at Practical Quantitation Limit

J - Analyte detected below Practical Quantitation Limit

B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Surr: - Surrogate

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

On Site Technologies, LTD.

Date: 20-Jul-98

CLIENT: PNM - Public Service Company of NM
Work Order: 9807004
Project: PNM Pit Remediation

QC SUMMARY REPORT
Method Blank

Sample ID: MB1	Batch ID: GC-1_980712	Test Code: SW8015	Units: µg/L	Analysis Date 7/12/98	Prep Date:
Client ID:	9807004	Run ID: GC-1_980712B		SeqNo: 4484	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
2-Methylpentane	ND				30

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.

CLIENT: PNM - Public Service Company of NM
Work Order: 9807004
Project: PNM Pit Remediation

Date: 20-Jul-98

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 9807010-16AMS		Batch ID: GC-1_980712		Test Code: SW8015		Units: µg/L		Analysis Date 7/12/98				Prep Date:	
Client ID:		9807004		Run ID: GC-1_980712B				SeqNo: 4511					
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
2-Methylpentane		6397	600	6000	775.4	93.7%	70	130					

Sample ID: 9807010-16AMS		Batch ID: GC-1_980712		Test Code: SW8015		Units: µg/L		Analysis Date 7/12/98				Prep Date:	
Client ID:		9807004		Run ID: GC-1_980712B				SeqNo: 4512					
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
2-Methylpentane		6268	600	6000	775.4	91.5%	70	130	6397	2.0%	20		

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: 20-Jul-98

CLIENT: PNM - Public Service Company of NM
Work Order: 9807004
Project: PNM Pit Remediation

QC SUMMARY REPORT
Laboratory Control Spike - generic

Sample ID: LCS Water		Batch ID: GC-1_980712	Test Code: SW8015	Units: µg/L	Analysis Date 7/12/98		Prep Date:				
Client ID:		9807004	Run ID: GC-1_980712B		SeqNo: 4486						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Methylpentane	294.7	30	300	0	98.2%	70	130				

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

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

B - Analyte detected in the associated Method Blank

1 of 1

On Site Technologies, LTD.

Date: 20-Jul-98

CLIENT: PNM - Public Service Company of NM

Work Order: 9807004

Project: PNM Pit Remediation

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV1 QC0593		Batch ID: GC-1_980712		Test Code: SW8015		Units: µg/L		Analysis Date 7/12/98		Prep Date:	
Client ID:		9807004		Run ID: GC-1_980712B				SeqNo: 4485			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Methylpentane	312.5	30	300	0	104.2%	85	115				
Trifluorotoluene	100	0	100	0	100.0%	70	130				

Sample ID: CCV2 QC0593		Batch ID: GC-1_980712		Test Code: SW8015		Units: µg/L		Analysis Date 7/12/98		Prep Date:	
Client ID:		9807004		Run ID: GC-1_980712B				SeqNo: 4513			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Methylpentane	281.1	30	300	0	93.7%	85	115				
Trifluorotoluene	100.6	0	100	0	100.6%	70	130				

Sample ID: CCV3 QC0593		Batch ID: GC-1_980712		Test Code: SW8015		Units: µg/L		Analysis Date 7/12/98		Prep Date:	
Client ID:		9807004		Run ID: GC-1_980712B				SeqNo: 4514			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Methylpentane	272.3	30	300	0	90.8%	85	115				
Trifluorotoluene	98	0	100	0	98.0%	70	130				

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

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

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 20-Jul-98

CLIENT: PNM - Public Service Company of NM
Work Order: 9807004
Project: PNM Pit Remediation

QC SUMMARY REPORT
Method Blank

Sample ID: MB1	Batch ID: GC-2_980709	Test Code: SW8015	Units: mg/Kg	Analysis Date 7/9/98	Prep Date: 7/9/98
Client ID:	9807004	Run ID: GC-2_980709A		SeqNo: 4327	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
T/R Hydrocarbons: C10-C28		ND			25

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: 20-Jul-98

CLIENT: PNM - Public Service Company of NM
Work Order: 9807004
Project: PNM Pit Remediation

QC SUMMARY REPORT
Sample Duplicate

Sample ID: 9807004-05AD	Batch ID: GC-2_980709	Test Code: SW8015	Units: mg/Kg	Analysis Date 7/9/98	Prep Date: 7/9/98
Client ID: 9807011505; Burll	9807004	Run ID: GC-2_980709A		SeqNo: 4331	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC
	5367	25	0	0	0.0%
T/R Hydrocarbons: C10-C28				RPD Ref Val	%RPD
				4766	11.8%
					RPDLimit
					15

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: 20-Jul-98

CLIENT: PNM - Public Service Company of NM
Work Order: 9807004
Project: PNM Pit Remediation

QC SUMMARY REPORT
Sample Matrix Spike

Sample ID: 9807018-04AMS		Batch ID: GC-2_980709		Test Code: SW8015		Units: mg/Kg		Analysis Date 7/14/98		Prep Date: 7/14/98	
Client ID:		9807004		Run ID: GC-2_980709A				SeqNo: 4356			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
T/R Hydrocarbons: C10-C28	543.4	25	502	28.36	102.6%	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: 20-Jul-98

CLIENT: PNM - Public Service Company of NM

Work Order: 9807004

Project: PNM Pit Remediation

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS Soil	Batch ID: GC-2_980709	Test Code: SW8015	Units: mg/Kg	Analysis Date 7/9/98	Prep Date: 7/9/98
Client ID:	9807004	Run ID: GC-2_980709A		SeqNo: 4329	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC
	490.8	25	502	0	97.8%
T/R Hydrocarbons: C10-C28				70	130
				HighLimit	RPD Ref Val
				%RPD	RPDLimit
				Qual	

Qualifiers:

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

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

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 20-Jul-98

CLIENT: PNM - Public Service Company of NM
Work Order: 9807004
Project: PNM Pit Remediation

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV1 QC0602	Batch ID: GC-2_980709	Test Code: SW8015	Units: mg/Kg	Analysis Date 7/9/98	Prep Date:
Client ID: 9807004	Run ID: GC-2_980709A			SeqNo: 4328	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
T/R Hydrocarbons: C10-C28	458.6	25	502	0	91.4% 85 115
Sample ID: CCV2 QC0602	Batch ID: GC-2_980709	Test Code: SW8015	Units: mg/Kg	Analysis Date 7/10/98	Prep Date:
Client ID: 9807004	Run ID: GC-2_980709A			SeqNo: 4352	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
T/R Hydrocarbons: C10-C28	490	25	502	0	97.6% 85 115
Sample ID: CCV3 QC0602	Batch ID: GC-2_980709	Test Code: SW8015	Units: mg/Kg	Analysis Date 7/14/98	Prep Date:
Client ID: 9807004	Run ID: GC-2_980709A			SeqNo: 4353	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
T/R Hydrocarbons: C10-C28	569.6	25	502	0	113.5% 85 115
Sample ID: CCV4 QC0602	Batch ID: GC-2_980709	Test Code: SW8015	Units: mg/Kg	Analysis Date 7/14/98	Prep Date:
Client ID: 9807004	Run ID: GC-2_980709A			SeqNo: 4354	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
T/R Hydrocarbons: C10-C28	566.4	25	502	0	112.8% 85 115
Sample ID: CCV5 QC0602	Batch ID: GC-2_980709	Test Code: SW8015	Units: mg/Kg	Analysis Date 7/14/98	Prep Date:
Client ID: 9807004	Run ID: GC-2_980709A			SeqNo: 4355	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
T/R Hydrocarbons: C10-C28	568.7	25	502	0	113.3% 85 115

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: 20-Jul-98

CLIENT: PNM - Public Service Company of NM
Work Order: 9807004
Project: PNM Pit Remediation

QC SUMMARY REPORT
Method Blank

Sample ID: MB1	Batch ID: GC-1_980710	Test Code: SW8020A	Units: µg/Kg	Analysis Date 7/10/98	Prep Date:
Client ID:	9807004	Run ID: GC-1_980710A		SeqNo: 4324	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Benzene	ND	1			
Ethylbenzene	ND	1			
m,p-Xylene	ND	2			
Methyl tert-Butyl Ether	.8227	10			J
o-Xylene	.6462	1			J
Toluene	ND	2			

On Site Technologies, LTD.

Date: 20-Jul-98

CLIENT: PNM - Public Service Company of NM
Work Order: 9807004
Project: PNM Pit Remediation

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 9806110-02AMS		Batch ID: GC-1_980710		Test Code: SW8020A		Units: µg/Kg		Analysis Date 7/10/98		Prep Date:	
Client ID: 9807004		Run ID: GC-1_980710A		SeqNo: 4325							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	2924	50	3000	174.3	91.7%	71	116				
Ethylbenzene	4275	50	3000	1389	96.2%	68	120				
m,p-Xylene	22800	100	6000	16340	107.6%	60	121				E
o-Xylene	6169	50	3000	3308	95.4%	69	124				
Toluene	9771	100	3000	6715	101.9%	62	128				

Sample ID: 9806110-02AMSD		Batch ID: GC-1_980710		Test Code: SW8020A		Units: µg/Kg		Analysis Date 7/10/98		Prep Date:	
Client ID: 9807004		Run ID: GC-1_980710A		SeqNo: 4326							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	2748	50	3000	174.3	85.8%	71	116	2924	6.2%	15	
Ethylbenzene	4073	50	3000	1389	89.5%	68	120	4275	4.9%	15	
m,p-Xylene	21880	100	6000	16340	92.4%	60	121	22800	4.1%	15	E
o-Xylene	5986	50	3000	3308	89.3%	69	124	6169	3.0%	15	
Toluene	9425	100	3000	6715	90.3%	62	128	9771	3.6%	15	

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: 20-Jul-98

CLIENT: PNM - Public Service Company of NM
Work Order: 9807004
Project: PNM Pit Remediation

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS SOIL	Batch ID: GC-1_980710	Test Code: SW8020A	Units: µg/Kg	Analysis Date 7/10/98	Prep Date:						
Client ID:	9807004	Run ID: GC-1_980710A		SeqNo: 4323							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	61.1	1	60	0	101.8%	71	116				
Ethylbenzene	64.41	1	60	0	107.3%	68	120				
m,p-Xylene	128.4	2	120	0	107.0%	60	121				
o-Xylene	61.85	1	60	0.6462	102.0%	69	124				
Toluene	63.06	2	60	0	105.1%	62	128				

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: 20-Jul-98

CLIENT: PNM - Public Service Company of NM
 Work Order: 9807004
 Project: PNM Pit Remediation

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV1 QC0529/30		Batch ID: GC-1_980710		Test Code: SW8020A		Units: µg/Kg		Analysis Date 7/10/98		Prep Date:	
Client ID: 9807004		Run ID: GC-1_980710A		PQL		SPK value		SeqNo: 4320			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	60.09	1	60	0	100.2%	85	115				
Ethylbenzene	61.48	1	60	0	102.5%	85	115				
m,p-Xylene	122.9	2	120	0	102.4%	85	115				
o-Xylene	60.43	1	60	0	100.7%	85	115				
Toluene	61.34	2	60	0	102.2%	85	115				
1,4-Difluorobenzene	79.79	0	80	0	99.7%	70	130				
4-Bromochlorobenzene	64.01	0	80	0	80.0%	68	131				
Fluorobenzene	80	0	80	0	100.0%	70	130				

Sample ID: CCV2 QC0529/30		Batch ID: GC-1_980710		Test Code: SW8020A		Units: µg/Kg		Analysis Date 7/10/98		Prep Date:	
Client ID: 9807004		Run ID: GC-1_980710A		PQL		SPK value		SeqNo: 4321			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	60.08	1	60	0	100.1%	85	115				
Ethylbenzene	63.73	1	60	0	106.2%	85	115				
m,p-Xylene	125.5	2	120	0	104.6%	85	115				
o-Xylene	61.86	1	60	0	103.1%	85	115				
Toluene	62.39	2	60	0	104.0%	85	115				
1,4-Difluorobenzene	79.66	0	80	0	99.6%	70	130				
4-Bromochlorobenzene	68.19	0	80	0	85.2%	68	131				
Fluorobenzene	78.9	0	80	0	98.6%	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

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Qualifiers:

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

On Site Technologies, LTD.

Date: 20-Jul-98

CLIENT: PNM - Public Service Company of NM
Work Order: 9807004
Project: PNM Pit Remediation
Test No: SW8020A

QC SUMMARY REPORT SURROGATE RECOVERIES

BTEX

Sample ID	14FBZ	4BCBZ	FLBZ				
9806110-02A	101	90	100				
9806110-02AMS	101	90.4	100				
9806110-02AMSD	101	92.5	99.7				
9807004-05A	94.4	85.4	100				
9807017-01A	104	97.5	102				
9807017-02A	88.1	82.2	103				
CCV1 QC0529/30	99.7	80	100				
CCV2 QC0529/30	99.6	85.2	98.6				
CCV3 QC0529/30	98.8	81.6	97.6				
LCS SOIL	98.8	83.5	98.6				
MB1	131 *	147 *	125				

Acronym	Surrogate	QC Limits
14FBZ	= 1,4-Difluorobenzene	70-130
4BCBZ	= 4-Bromochlorobenzene	68-131
FLBZ	= Fluorobenzene	70-130

* Surrogate recovery outside acceptance limits

On Site Technologies, LTD.

Date: 20-Jul-98

CLIENT: PNM - Public Service Company of NM
 Work Order: 9807004
 Project: PNM Pit Remediation

QC SUMMARY REPORT

Method Blank

Sample ID: MB1	Batch ID: GC-1_980708	Test Code: SW8020A	Units: µg/L	Analysis Date 7/8/98	Prep Date:
Client ID:	9807004	Run ID: GC-1_980708A		SeqNo: 4280	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Benzene	.078	0.5			J
Ethylbenzene	.0704	0.5			J
m,p-Xylene	.1465	1			J
Methyl tert-Butyl Ether	.0657	1			J
o-Xylene	.1008	0.5			J
Toluene	.101	0.5			J

Sample ID: MB1	Batch ID: GC-1_980711	Test Code: SW8020A	Units: µg/L	Analysis Date 7/11/98	Prep Date:
Client ID:	9807004	Run ID: GC-1_980711A		SeqNo: 4307	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Benzene	.0361	0.5			J
Ethylbenzene	.0634	0.5			J
m,p-Xylene	.3793	1			J
Methyl tert-Butyl Ether	ND	1			J
o-Xylene	.1305	0.5			J
Toluene	.1265	0.5			J

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank
 1 of 1

On Site Technologies, LTD.

Date: 20-Jul-98

CLIENT: PNM - Public Service Company of NM
 Work Order: 9807004
 Project: PNM Pit Remediation

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 9807004-03AMS		Batch ID: GC-1_980708	Test Code: SW8020A	Units: µg/L	Analysis Date 7/8/98		Prep Date:				
Client ID: 9807011445; MW-		9807004	Run ID: GC-1_980708A		SeqNo: 4281						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	1798	5	400	1408	97.6%	56	128				E
Ethylbenzene	482	5	400	116.7	91.3%	78	107				
m,p-Xylene	847.5	10	800	67.21	97.5%	67	118				
Methyl tert-Butyl Ether	319.8	10	400	0	80.0%	70	130				
o-Xylene	425.7	5	400	56.82	92.2%	78	107				
Toluene	426.9	5	400	50.1	94.2%	74	116				

Sample ID: 9807004-03AMSD		Batch ID: GC-1_980708	Test Code: SW8020A	Units: µg/L	Analysis Date 7/8/98		Prep Date:				
Client ID: 9807011445; MW-		9807004	Run ID: GC-1_980708A		SeqNo: 4282						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	1761	5	400	1408	88.3%	56	128	1798	2.1%	12	E
Ethylbenzene	458.7	5	400	116.7	85.5%	78	107	482	5.0%	11	
m,p-Xylene	814.3	10	800	67.21	93.4%	67	118	847.5	4.0%	10	
Methyl tert-Butyl Ether	332.4	10	400	0	83.1%	70	130	319.8	3.8%	15	
o-Xylene	409.3	5	400	56.82	88.1%	78	107	425.7	3.9%	14	
Toluene	408.5	5	400	50.1	89.6%	74	116	426.9	4.4%	14	

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

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

B - Analyte detected in the associated Method Blank

CLIENT: PNM - Public Service Company of NM
Work Order: 9807004
Project: PNM Pit Remediation

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 9806110-01AMS		Batch ID: GC-1_980711		Test Code: SW8020A		Units: µg/L		Analysis Date 7/11/98		Prep Date:	
Client ID:		9807004		Run ID: GC-1_980711A				SeqNo: 4308			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	428.9	5	400	22.1	101.7%	56	128				
Ethylbenzene	1574	5	400	1116	114.3%	78	107				S
m,p-Xylene	1396	10	800	552.8	105.4%	67	118				
Methyl tert-Butyl Ether	390.1	10	400	0	97.5%	70	130				
o-Xylene	999.5	5	400	562.4	109.3%	78	107				S
Toluene	1830	5	400	1362	117.1%	74	116				S

Sample ID: 9806110-01AMS		Batch ID: GC-1_980711		Test Code: SW8020A		Units: µg/L		Analysis Date 7/11/98		Prep Date:	
Client ID:		9807004		Run ID: GC-1_980711A				SeqNo: 4309			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	402.5	5	400	22.1	95.1%	56	128	428.9	6.4%	12	
Ethylbenzene	1478	5	400	1116	90.5%	78	107	1574	6.3%	11	
m,p-Xylene	1313	10	800	552.8	95.1%	67	118	1396	6.1%	10	
Methyl tert-Butyl Ether	372.7	10	400	0	93.2%	70	130	390.1	4.6%	15	
o-Xylene	943.3	5	400	562.4	95.2%	78	107	999.5	5.8%	14	
Toluene	1710	5	400	1362	87.1%	74	116	1830	6.8%	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: 20-Jul-98

CLIENT: PNM - Public Service Company of NM
Work Order: 9807004
Project: PNM Pit Remediation

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS WATER		Batch ID: GC-1_980708	Test Code: SW8020A	Units: µg/L	Analysis Date 7/8/98		Prep Date:				
Client ID:	9807004	Run ID:	GC-1_980708A		SeqNo:	4279					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	39.12	0.5	40	0.078	97.6%	56	128				
Ethylbenzene	40.03	0.5	40	0.0704	99.9%	78	107				
m,p-Xylene	78.3	1	80	0.1465	97.7%	67	118				
Methyl tert-Butyl Ether	40.04	1	40	0.0657	99.9%	70	130				
o-Xylene	39.71	0.5	40	0.1008	99.0%	78	107				
Toluene	39.3	0.5	40	0.101	98.0%	74	116				

Sample ID: LCS WATER		Batch ID: GC-1_980711	Test Code: SW8020A	Units: µg/L	Analysis Date 7/11/98		Prep Date:				
Client ID:		9807004	Run ID: GC-1_980711A		SeqNo: 4306						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	36.54	0.5	40	0.0361	91.3%	56	128				
Ethylbenzene	39.51	0.5	40	0.0634	98.6%	78	107				
m,p-Xylene	75.72	1	80	0.3793	94.2%	67	118				
Methyl tert-Butyl Ether	36	1	40	0	90.0%	70	130				
o-Xylene	38.74	0.5	40	0.1305	96.5%	78	107				
Toluene	37.79	0.5	40	0.1265	94.2%	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

On Site Technologies, LTD.

Date: 20-Jul-98

CLIENT: PNM - Public Service Company of NM

Work Order: 9807004

Project: PNM Pit Remediation

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV1 QC0529/30		Batch ID: GC-1_980708		Test Code: SW8020A		Units: µg/L		Analysis Date 7/8/98		Prep Date:	
Client ID:		9807004		Run ID:		GC-1_980708A		SeqNo: 4276			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	19.76	0.5	20	0	98.8%	85	115				
Ethylbenzene	20.22	0.5	20	0	101.1%	85	115				
m,p-Xylene	38.96	1	40	0	97.4%	85	115				
Methyl tert-Butyl Ether	20.01	1	20	0	100.1%	85	115				
o-Xylene	19.9	0.5	20	0	99.5%	85	115				
Toluene	19.74	0.5	20	0	98.7%	85	115				
1,4-Difluorobenzene	92.76	0	100	0	92.8%	70	130				
4-Bromochlorobenzene	91.74	0	100	0	91.7%	70	130				
Fluorobenzene	90.72	0	100	0	90.7%	70	130				

Sample ID: CCV2 QC0529/30		Batch ID: GC-1_980708		Test Code: SW8020A		Units: µg/L		Analysis Date 7/8/98		Prep Date:	
Client ID:		9807004		Run ID:		GC-1_980708A		SeqNo: 4277			
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	20.93	0.5	20	0	104.7%	85	115				
m,p-Xylene	40.19	1	40	0	100.5%	85	115				
Methyl tert-Butyl Ether	22.08	1	20	0	110.4%	85	115				
o-Xylene	20.72	0.5	20	0	103.6%	85	115				
Toluene	20.54	0.5	20	0	102.7%	85	115				
1,4-Difluorobenzene	93.01	0	100	0	93.0%	70	130				
4-Bromochlorobenzene	93.72	0	100	0	93.7%	70	130				
Fluorobenzene	90.72	0	100	0	90.7%	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: 9807004
 Project: PNM Pit Remediation

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV3 QC0529/30		Batch ID: GC-1_980708	Test Code: SW8020A	Units: µg/L	Analysis Date 7/8/98				Prep Date:		
Client ID:		9807004	Run ID:	GC-1_980708A	SeqNo: 4278						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	40.99	0.5	40	0	102.5%	85	115				
Ethylbenzene	42.13	0.5	40	0	105.3%	85	115				
m,p-Xylene	82.1	1	80	0	102.6%	85	115				
Methyl tert-Butyl Ether	37.21	1	40	0	93.0%	85	115				
o-Xylene	41.89	0.5	40	0	104.7%	85	115				
Toluene	41.32	0.5	40	0	103.3%	85	115				
1,4-Difluorobenzene	92.93	0	100	0	92.9%	70	130				
4-Bromochlorobenzene	91.03	0	100	0	91.0%	70	130				
Fluorobenzene	89.72	0	100	0	89.7%	70	130				

Sample ID: CCV1 QC0529/30		Batch ID: GC-1_980711		Test Code: SW8020A		Units: µg/L		Analysis Date 7/11/98		Prep Date:	
Client ID:		9807004		Run ID:		GC-1_980711A		SeqNo: 4303			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	19.83	0.5	20	0	99.2%	85	115				
Ethylbenzene	20.43	0.5	20	0	102.1%	85	115				
m,p-Xylene	38.84	1	40	0	97.1%	85	115				
Methyl tert-Butyl Ether	18.82	1	20	0	94.1%	85	115				
o-Xylene	20.92	0.5	20	0	104.6%	85	115				
Toluene	20.51	0.5	20	0	102.6%	85	115				
1,4-Difluorobenzene	93.84	0	100	0	93.8%	70	130				
4-Bromochlorobenzene	86.54	0	100	0	86.5%	70	130				
Fluorobenzene	90.95	0	100	0	90.9%	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: 9807004
 Project: PNM Pit Remediation

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV2 QC0529/30		Batch ID: GC-1_980711		Test Code: SW8020A		Units: µg/L		Analysis Date 7/11/98		Prep Date:	
Client ID:		9807004		Run ID:		GC-1_980711A		SeqNo: 4304			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	18.58	0.5	20	0	92.9%	85	115				
Ethylbenzene	20.91	0.5	20	0	104.6%	85	115				
m,p-Xylene	39.03	1	40	0	97.6%	85	115				
Methyl tert-Butyl Ether	10.57	1	20	0	52.9%	85	115				
o-Xylene	18.98	0.5	20	0	94.9%	85	115				
Toluene	19.63	0.5	20	0	98.2%	85	115				
1,4-Difluorobenzene	91.13	0	100	0	91.1%	70	130				
4-Bromochlorobenzene	55.28	0	100	0	55.3%	70	130				
Fluorobenzene	87.89	0	100	0	87.9%	70	130				

8

7/10/11

7/10

7/10

S

8-60/98
 7/20/98
 7/21/98

S

Sample ID: CCV3 QC0529/30		Batch ID: GC-1_980711		Test Code: SW8020A		Units: µg/L		Analysis Date 7/11/98		Prep Date:	
Client ID:		9807004		Run ID:		GC-1_980711A		SeqNo: 4305			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	40.32	0.5	40	0	100.8%	85	115				
Ethylbenzene	43.01	0.5	40	0	107.5%	85	115				
m,p-Xylene	81.19	1	80	0	101.5%	85	115				
Methyl tert-Butyl Ether	32.06	1	40	0	80.1%	85	115				
o-Xylene	42.05	0.5	40	0	105.1%	85	115				
Toluene	41.78	0.5	40	0	104.5%	85	115				
1,4-Difluorobenzene	93.37	0	100	0	93.4%	70	130				
4-Bromochlorobenzene	81.59	0	100	0	81.6%	70	130				
Fluorobenzene	90.71	0	100	0	90.7%	70	130				

8-10
9/2

446
7/21/98

8-60/98
 7/20/98
 7/21/98

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: 20-Jul-98

CLIENT: PNM - Public Service Company of NM
Work Order: 9807004
Project: PNM Pit Remediation
Test No: SW8020A

QC SUMMARY REPORT SURROGATE RECOVERIES

BTEX

Sample ID	14FBZ	4BCBZ	FLBZ				
9806110-01A	93.9	93.3	91.5				
9806110-01AMS	94.1	91.1	91.2				
9806110-01AMSD	93.3	92.1	91.1				
9807004-01A	92.4	91.3	90.8				
9807004-02A	93.1	88.6	90.9				
9807004-03A	92.1	83.9	90.2				
9807004-03AMS	92.8	83.7	90.2				
9807004-03AMSD	92	84.2	90				
9807004-04A	92.7	86.5	89.8				
9807004-06A	94.3	91.4	91.1				
9807004-07A	92.2	92.1	89.8				
9807004-08A	88.3	55.6 *	85.9				
9807004-09A	90.2	62.2 *	87.6				
9807010-01A	93.8	95.1	91.3				
9807010-02A	93.5	95.8	91.1				
9807010-03A	93.4	96.3	91.4				
9807010-04A	93.9	96.2	91.4				
9807010-05A	93.3	98.7	91.2				
9807010-06A	93.9	98.1	91.2				
9807010-07A	93.8	99.6	91.2				
9807010-09A	94.3	59.8 *	90.6				
9807010-10A	95.3	69.2 *	91.4				
9807010-11A	92.6	98.9	91.2				
9807010-12A	93.7	98.4	91.5				
9807010-13A	93.7	95	91.5				
9807010-14A	102	77	92.5				
9807010-15A	93.8	96.7	92.2				

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

* Surrogate recovery outside acceptance limits

CLIENT: PNM - Public Service Company of NM
Work Order: 9807004
Project: PNM Pit Remediation
Test No: SW8020A

QC SUMMARY REPORT SURROGATE RECOVERIES

BTEX

Sample ID	14FBZ	4BCBZ	FLBZ
9807010-16A	122	58.4 *	92.4
9807010-18A	97.5	62.4 *	89.8
9807010-19A	93.2	83.5	91
9807010-20A	96.9	66.4 *	92.1
9807010-21A	93.7	75.4	91.7
9807010-22A	88.7	50 *	85.4
9807010-23A	85.4	41.5 *	82.1
9807010-24A	90.5	52.6 *	87.4
9807010-25A	90.3	53.8 *	87.5
9807010-26A	72	25.2 *	69.1 *
9807010-27A	75.1	27.5 *	72.2
9807016-01A	93.9	92.4	91.4
CCV1 QC0529/30	93.8	86.5	90.9
CCV2 QC0529/30	91.1	55.3 *	87.9
CCV3 QC0529/30	93.4	81.6	90.7
LCS WATER	93.9	89.1	87.1
MB1	94	86.4	90.9

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

* Surrogate recovery outside acceptance limits

CHAIN OF CUSTODY RECORD

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

Purchase Order No.:		Job No.	
Name		Denver Bearden	
Company		PNM Gas Services	
Address		603 W. Elm Street	
City, State, Zip		Farmington, NM 87401	
Sampling Location: <u>Hampton Lym</u>			
Sampler: <u>Mark Anderson</u> <u>Ken Dedrick</u>			
SAMPLE IDENTIFICATION		SAMPLE DATE	TIME
9307011350 MW-1		7/1/93	
9307011400 MW-2			
9307011445 MW-4			
9307011500 Borings 1 & 2, 4, 5, 6, 7, 8, 9, 10, 11			
9307011505 Borings 1 & 2, 4, 5, 6, 7, 8, 9, 10, 11			
9307011505 MW-4			
9307011615 MW-5			
9307011655 MW-7			
9307011700 MW-11			
Relinquished by: <u>Ken Dedrick</u>		Date/Time	7/2/93
Relinquished by:		Date/Time	
Relinquished by:		Date/Time	
Method of Shipment: <u>Hand Delivered</u>			
Authorized by: <u>[Signature]</u>		Date <u>7/2/93</u>	
(Client Signature Must Accompany Request)			

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

JUN 25 1998

CONSERVATION DIVISION



June 25, 1998

Certified Mail:

Bill Olson
Hydrologist, Environmental Bureau
New Mexico Oil Conservation Division
2040 South Pacheco
Santa Fe, NM 87505

RE: Hampton 4M Site - Proposed Activities and
Response to Burlington Report of May 28, 1998

Dear Bill:

PNM has reviewed the Burlington report for the Hampton 4M site dated May 28, 1998. This report raises additional questions that PNM would like to resolve through further sampling and site surveying. For example, the theoretical cross-section proposed by Burlington in Attachment #5 may not accurately depict the distribution of free phase hydrocarbons in the subsurface. In order to gain a better understanding of site conditions, PNM proposes the following activities for our July 1998 third quarter sampling event.

1. Survey the locations of Burlington wells MW-9 and MW-10 and the hydrocarbon seep at the northwest corner of the well pad such that accurate site cross-sections and groundwater contour maps can be developed.
2. Measure free product and groundwater elevations for all wells in July 1998.
3. Obtain groundwater quality and/or free product samples for all wells in July 1998.

In order to complete the proposed activities, PNM will require access from Burlington for those monitoring wells installed by Burlington - we are requesting such access from Burlington via separate correspondence. Representatives from NMOCD and Burlington are welcome to collect split samples and/or observe the proposed sampling activities. If you have any questions related to the proposed activities for the Hampton 4M site or other project-related activities, please contact me at 505.241.2974.

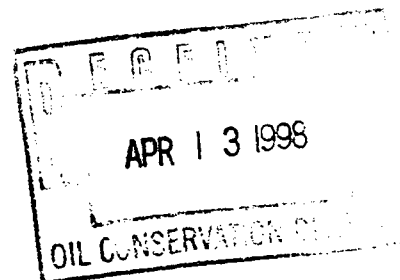
Sincerely,

A handwritten signature in cursive script that reads "Maureen Gannon".

Maureen Gannon
Project Manager

cc: Roger Anderson, NMOCD
Ed Haseley, Burlington Resources
Ingrid Deklau, Williams Field Services
Colin Adams, PNM
Denny Foust, NMOCD - Aztec

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



April 10, 1998

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

RE: RESPONSE TO MARCH 13, 1998 LETTER ON GROUNDWATER CONTAMINATION AT THE HAMPTON 4M WELL SITE

Dear Bill:

PNM has reviewed the March 13, 1998 letter from OCD regarding groundwater contamination at the Hampton 4M well site. In the letter, OCD directs PNM to conduct additional remedial actions within 30 days to remove the remaining source areas with free phase hydrocarbons in the vicinity of and immediately downgradient of PNM's former dehydration pit. While we recognize OCD's concerns about migration of contaminated groundwater onto private lands, we are preparing under separate cover a formal appeal to your request for additional remediation by PNM at this site. This appeal is based upon the documented presence of sources or activities on site other than PNM's that have or are contributing to free phase and dissolved phase contamination in groundwater.

While our appeal is reviewed, PNM will continue to conduct quarterly groundwater sampling and water level measurements at the site. We will also continue to operate the free product recovery pump in MW-6. These activities shall not be deemed a waiver or admission of liability of any kind. Please be assured that if we detect any significant changes in the depth of free phase product in MW-2 or MW-6 or detect free phase in any wells downgradient from our former pit, we will notify you immediately. If you have any questions regarding this letter or our ongoing activities at the site, please call me at (505) 241-2974.

Sincerely,

Maureen Gannon
Project Manager

cc: Colin Adams, PNM
Richard Alvidrez, Keleher & McLeod
Denny Foust, OCD-Aztec Office
Ed Hasely, Burlington Resources
Bill VonDrehle, WFS

OCD/PNM Hampton 4M Meeting 4/3/98 7:30 am

Attendees - Bill Olson - Environmental Bureau
Rogen Anderson - "
Mark Sicillanos - PNM
Maureen Gannon - "
Valde Terpedis - "
Toni Ristan - "

Problem with sites resulting from free product which came from operators malfunctioning equipment

500 gallons total recovered to date

approx. 2-3 gals/day

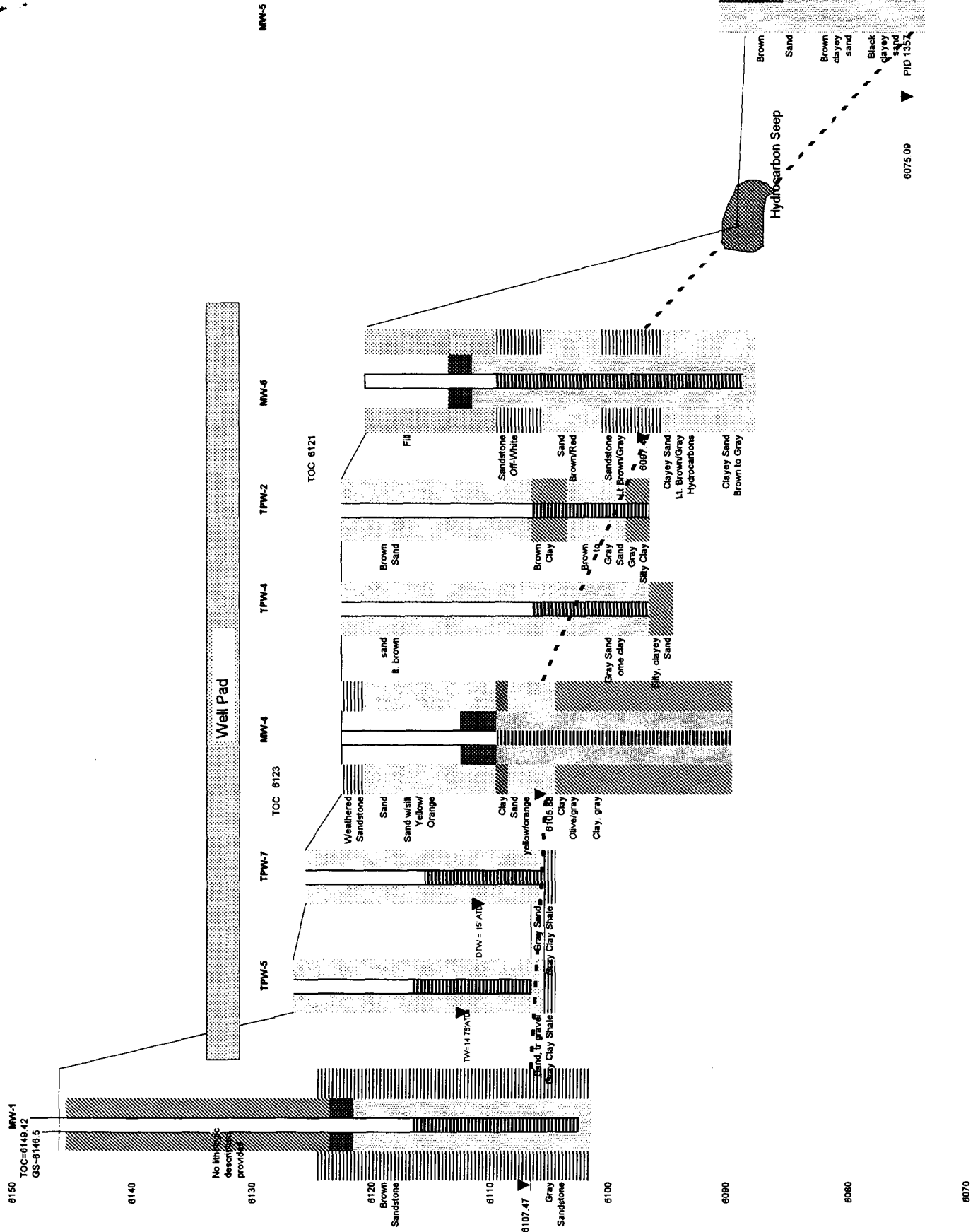
Burlington pit still not back filled

* Need to send Burlington letter to be more aggressive on removal activities

PNM believes free product not a result of PNM activities

PNM handout at site x-section

Hampton Cross-Sect' (SE-NW)



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

April 2, 1998

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

RECEIVED
APR 23 1998
Oil Conservation Bureau
Oil Conservation Division



RE: 1998 SAN JUAN BASIN ANNUAL GROUNDWATER REPORT

Dear Bill:

PNM is pleased to submit the 1998 Annual Groundwater Report on Unlined Surface Impoundments in the San Juan Basin. Pursuant to PNM's Groundwater Management Program for Unlined Surface Impoundment Closures, the report details the ongoing investigation/remedial activities at unlined surface impoundments having groundwater contamination as identified by PNM. A list of groundwater sites reported in this document is provided below.

Cozzens B1
Dogie Compressor Station East Pit
Dogie Compressor Station North Pit
Florance 32A
Florance Z 40 M
Florance 44
Florance 47X
Florance 124
Hampton 4M
Honolulu Loop Line Drip
Ice Canyon Drip
Jacques 2A
Mangum 1E
McClanahan 22
McClanahan A2E
McCoy Gas Com A1
Miles Federal 1E
Miles Federal 1E Drip
Randleman 1
Reid 16 Drip
Sammons 2
Turner 1A
Turner 3
Zachry 18E

PNM 1998 Groundwater Report

PNM plans to request closure of two of the above sites, the Cozzens B1 and the Sammons 2, in our April 30, 1998 filing of the San Juan Pit Closure Reports to the OCD Santa Fe office. If you have any questions regarding the contents of the report, please contact me at (505) 241-2974.

Sincerely,

A handwritten signature in black ink, appearing to read "Maureen Gannon", with a horizontal line extending to the right.

Maureen Gannon
Project Manager

Attachment

cc: Ingrid Deklau, WFS
Denny Foust, OCD-Aztec Office
Bill VonDrehle, WFS

PNM 1998 Groundwater Report

bcc: Colin Adams (w/o analytical results)
Kathy Juckes
Ron Johnson (w/o analytical results)
Mark Sikelianos

Groundwater Site Summary Report

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

Quarter/Year: 2nd/97, 3rd/97, 4th/97 and 1st/98

Operator: Burlington Resources
Sec: 13 Twn: 30N Rng: 11W Unit: D
Canyon: Hampton Arroyo

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

PNM has prepared and submitted to the OCD a site summary report detailing the activities, results and further actions at the Hampton 4M under separate cover. The report is titled, "Hampton 4M Free Product and Groundwater Contamination," and dated March 31, 1998.

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

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Attn: *Denver Bearden*
Company: *PNM Gas Services*
Address: *603 W. Elm*
City, State: *Farmington, NM 87401*

Date: 23-Jan-98
COC No.: 7086
Sample No.: 17304
Job No.: 2-1000

Project Name: ***PNM Gas Services - Hampton 4M***

Project Location: ***9801121030; MW-1***

Sampled by: *MS/MG/RD/RB*

Date: 12-Jan-98 Time: 10:30

Analyzed by: *DC*

Date: 21-Jan-98

Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	4.3	ug/L	0.2	ug/L
<i>Toluene</i>	3.3	ug/L	0.2	ug/L
<i>Ethylbenzene</i>	0.2	ug/L	0.2	ug/L
<i>m,p-Xylene</i>	0.7	ug/L	0.2	ug/L
<i>o-Xylene</i>	0.3	ug/L	0.2	ug/L
TOTAL	8.8	ug/L		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*
Date: *1/23/98*

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Attn: *Denver Bearden*
Company: *PNM Gas Services*
Address: *603 W. Elm*
City, State: *Farmington, NM 87401*

Date: *23-Jan-98*
COC No.: *7086*
Sample No.: *17305*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Hampton 4M*Project Location: *9801121100; MW-3*Sampled by: *MS/MG/RD/RB*Date: *12-Jan-98* Time: *11:00*Analyzed by: *DC*Date: *21-Jan-98*Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	ND	ug/L	0.2	ug/L
<i>Toluene</i>	ND	ug/L	0.2	ug/L
<i>Ethylbenzene</i>	ND	ug/L	0.2	ug/L
<i>m,p-Xylene</i>	ND	ug/L	0.2	ug/L
<i>o-Xylene</i>	ND	ug/L	0.2	ug/L
<i>TOTAL</i>	ND	ug/L		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*
Date: *1/23/98*

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Attn: *Denver Bearden*
Company: *PNM Gas Services*
Address: *603 W. Elm*
City, State: *Farmington, NM 87401*

Date: *23-Jan-98*
COC No.: *7086*
Sample No.: *17306*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Hampton 4M*
Project Location: *9801121130; MW-4*
Sampled by: *MS/MG/RD/RB*
Analyzed by: *DC*
Sample Matrix: *Liquid*

Date: *12-Jan-98* Time: *11:30*
Date: *21-Jan-98*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>1251</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>Toluene</i>	<i>6</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>81</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>24</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>ND</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>1361</i>	<i>ug/L</i>		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*
Date: *1/23/98*

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Attn: *Denver Bearden*
Company: *PNM Gas Services*
Address: *603 W. Elm*
City, State: *Farmington, NM 87401*

Date: *23-Jan-98*
COC No.: *7086*
Sample No.: *17307*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Hampton 4M*
Project Location: *9801121200; MW-5*
Sampled by: *MS/MG/RD/RB* Date: *12-Jan-98* Time: *12:00*
Analyzed by: *DC* Date: *21-Jan-98*
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>7521</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>Toluene</i>	<i>11213</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>779</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>6762</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>1674</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>27950</i>	<i>ug/L</i>		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*
Date: *1/23/98*

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Attn: *Denver Bearden*
Company: *PNM Gas Services*
Address: *603 W. Elm*
City, State: *Farmington, NM 87401*

Date: *23-Jan-98*
COC No.: *7086*
Sample No.: *17308*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Hampton 4M*
Project Location: *9801121230; MW-7*
Sampled by: *MS/MG/RD/RB*
Analyzed by: *DC*
Sample Matrix: *Liquid*

Date: *12-Jan-98* Time: *12:30*
Date: *21-Jan-98*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>780</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>Toluene</i>	<i>246</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>258</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>3204</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>738</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>5227</i>	<i>ug/L</i>		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*
Date: *1/23/98*

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Attn: *Denver Bearden*
Company: *PNM Gas Services*
Address: *603 W. Elm*
City, State: *Farmington, NM 87401*

Date: *23-Jan-98*
COC No.: *7086*
Sample No.: *17309*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Hampton 4M*
Project Location: *9801121300; MW-8*
Sampled by: *MS/MG/RD/RB*
Analyzed by: *DC*
Sample Matrix: *Liquid*

Date: *12-Jan-98* Time: *13:00*
Date: *21-Jan-98*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>6410</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>Toluene</i>	<i>17301</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>693</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>7612</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>1785</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>33801</i>	<i>ug/L</i>		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*
Date: *1/23/98*

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Attn: *Denver Bearden*
Company: *PNM Gas Services*
Address: *603 W. Elm*
City, State: *Farmington, NM 87401*

Date: *23-Jan-98*
COC No.: *7086*
Sample No.: *17310*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Hampton 4M*
Project Location: *9801121330; MW-9*
Sampled by: *MS/MG/RD/RB* Date: *12-Jan-98* Time: *13:30*
Analyzed by: *DC* Date: *21-Jan-98*
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>1252</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>Toluene</i>	<i>7</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>80</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>23</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>ND</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>1362</i>	<i>ug/L</i>		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*
Date: *1/23/98*

OFF: (505) 325-5667



LAB: (505) 325-1556

QUALITY ASSURANCE REPORT

for EPA Method 8020

Date Analyzed: 21-Jan-98

Internal QC No.: 0559-STD

Surrogate QC No.: 0567-STD

Reference Standard QC No.: 0529/30-QC

Method Blank

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

Calibration Check

Parameter	Unit of Measure	True Value	Analyzed Value	RPD	Limit
Benzene	ppb	30.0	30.6	2	15%
Toluene	ppb	30.0	30.8	3	15%
Ethylbenzene	ppb	30.0	31.4	5	15%
m,p-Xylene	ppb	60.0	59.7	0	15%
o-Xylene	ppb	30.0	31.1	4	15%

Matrix Spike

Parameter	1 - Percent Recovered	2 - Percent Recovered	Limit	RPD	Limit
Benzene	102	92	(39-150)	2	20%
Toluene	108	105	(46-149)	2	20%
Ethylbenzene	108	105	(32-160)	3	20%
m,p-Xylene	104	102	(35-145)	3	20%
o-Xylene	110	107	(35-145)	2	20%

Surrogate Recoveries

Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered	Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered
Limit Percent Recovered	(70-130)		Limit Percent Recovered	(70-130)	
17304-7086	101		17310-7086	100	
17305-7086	102				
17306-7086	100				
17307-7086	100				
17308-7086	101				
17309-7086	101				

S1: Fluorobenzene

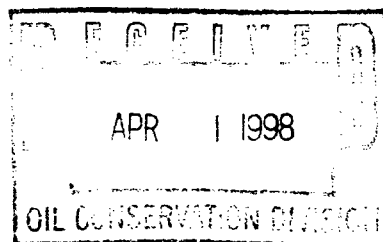
P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -



March 31, 1998

Bill Olson
Hydrologist, Environmental Bureau
New Mexico Oil Conservation Division
2040 South Pacheco
Santa Fe, NM 87505



RE: Hampton 4M Site
Free Product and Groundwater Contamination

Dear Bill:

In response to your letter of March 13, 1998, PNM has concerns regarding the effectiveness of any further remedial actions taken by PNM in the face of continuing hydrocarbon sources at this site. We provide a summary of PNM activities, a review of Burlington's reports concerning effectiveness of source removal actions performed by Burlington, and our position regarding free phase hydrocarbons.

I. Summary of PNM Activities

PNM removed soils associated with the former PNM drip pit shown on Figure 1 in April 1996. Approximately 300 cubic yards of soil were excavated, with a total excavation dimension of approximately 32' x 21' x 12'. Soils remaining at the bottom of the excavation exceeded 1000 ppm as measured by a photoionization detector. Excavation was stopped due to safety concerns related to excessive side-wall sloughing and proximity to the edges of the well pad and onsite equipment. The excavation was backfilled with clean soil; approximately 286 cubic yards of soil excavated from Hampton 4M were landfarmed at the Hampton #2 site.

In December 1996, PNM assessed the vertical extent of contamination remaining beneath the former PNM drip pit. Groundwater was encountered at 28 feet, with approximately 2 inches of free phase hydrocarbons observed in the bailer upon sampling. The initial groundwater sample from this boring (completed as MW-2) contained 3,840 ppb benzene and 20,620 ppb total BTEX. Free product thickness in MW-2 accumulated to 4.41 feet in January 1998 (see Table 1).

PNM has continued to monitor groundwater and recover free product at the Hampton 4M site in accordance with your letter of August 27, 1997. Analytical results for groundwater sampling are reported in Table 1. PNM and Burlington have installed a total of eight monitoring wells and one temporary well at this site. PNM also performed extensive test augering along the wash in November 1997 to determine the downgradient extent of groundwater contamination.

A groundwater potentiometric surface map is provided for January 1998. As shown on the map, groundwater flow is down-canyon towards the northwest. The hydraulic gradient is fairly steep and subparallel to the topographic gradient at approximately 0.10. This is a high energy environment, where contamination will move relatively quickly downgradient from the site of release. This is corroborated by

the extent to which dissolved phase contamination is detected along the wash. The furthest downgradient monitoring well installed to date, MW-7, contains 780 ppb benzene and 5226 ppb total BTEX. Only MW-5 exceeds proposed remediation reference concentrations when comparing downgradient water quality to water quality (e.g., TPW-2 and MW-8) upgradient of PNM equipment.

Hydrographs and contaminant trends with time are provided for each well in Attachment A. The graphs provided for monitoring wells MW-2 and MW-6 do not reflect the presence of free product.

The privately-owned EB well is located cross-gradient (north-northeast). No hydrocarbon constituents above the 0.2 ppb detection limit have been detected in this well.

PNM installed a free product recovery well, MW-6, in November 1997 and initiated free product recovery in January 1998. Initial free product thickness in MW-6 was 4.71 feet on January 12, 1998. Approximately 470 gallons of free product were recovered from MW-6, with an accompanying 2 foot drop in free product thickness, between January 12 and March 18, 1998. Attachment B provides a figure demonstrating free product thickness decrease over the course of free product recovery.

II. Burlington Document Review

PNM reviewed the documents listed below concerning contamination at the Hampton 4M site, submitted to NMOCD by Burlington.

- Burlington Resources, 1998, Hampton 4M - Groundwater Contamination (Status Report); Unit Letter N, Section 13, Township 30N, Range 11W
- Burlington Resources, 1997, Data Summary: Hampton 4M Production Location

Following our review of these documents and our field records for site investigation and remediation data, we are concerned that upgradient source removal is not complete and continuing sources of hydrocarbons will continue to affect downgradient areas, including not only the well pad, but a significant volume of offsite groundwater. Relevant soil and groundwater data collected by both PNM and Burlington is compiled in Table 1. Figure 1 provides a site map of the well pad, equipment, and general vicinity surrounding the site.

- Burlington states they have removed contaminated soils to a depth of 15 feet in the deepest areas of their source area excavation. Sampling of temporary well borings TPW-05 and -07 by Burlington detected significant contamination in the 15 to 16-foot interval. Thus, excavating the source area only to 15 feet at the deepest location leaves documented contamination in place to act as a continuing source to areas downgradient.
- While total BTEX concentrations in MW-4 did decrease as stated by Burlington, concentrations of the most mobile and most toxic constituent, benzene, increased following remediation activities conducted by Burlington. PNM does not agree with the statement that the decrease in total BTEX concentrations in the quarter immediately following excavation points to the success of source removal activities; additional monitoring is needed.
- Monitoring well MW-8 was installed by PNM as an additional well downgradient of the Burlington source area, and upgradient of the former PNM pit. This well detected soil contamination at depths of 14 to 20 feet below grade; groundwater was visibly contaminated by sheen and high dissolved phase contamination.
- Temporary well TPW-02 was installed by Burlington at a location upgradient of the former PNM pit. This temporary monitoring well encountered free product on installation and significant soil contamination at a depth of 25 to 26 feet. Free product is not likely to migrate upgradient in an

environment where both the topographic and groundwater flow gradients are as steep as 0.10. Thus, the contamination at TPW-02 likely originated from upgradient sources.

- If NMOCD considers MW-8 and TPW-02 as upgradient wells for the purposes of establishing remediation reference concentrations for PNM, the upgradient reference concentrations related to contamination caused by PNM are as follows:

Free phase as indicated by TPW-02 (accumulation) and MW-8 (sheen)

Benzene	=	6,410 ppb
Toluene	=	17,301 ppb
Ethylbenzene	=	693 ppb
Xylenes (total)	=	9,397 ppb
BTEX	=	33,801 ppb

Our conclusions relative to the effectiveness of remedial actions undertaken by Burlington are as follows:

- Continuing sources of free phase, sorbed, and dissolved hydrocarbons remain in Burlington source areas and areas immediately downgradient of their facilities.
- These continuing sources will continue to migrate downgradient in the absence of significant containment and/or remediation, beyond the activities documented by Burlington to date.

III. Free Phase Hydrocarbon Discharge

With regard to the presence and remediation of free product beneath the well pad, this site has had numerous problems associated with equipment operations, including separators throwing fluids and inadequate tankage to handle fluids discharged. Even if PNM has in the past provided dehydration, PNM, by contract with producers, is not responsible for free product. Further, PNM has not provided dehydration at this site since June 30, 1995, when the sale of the gathering system to Williams Field Services (WFS) was concluded. Free product belongs to the producers, even when it is discharged under conditions of system upset. Therefore, free product contamination, regardless of where it occurs, is not the responsibility of PNM, but of the producer.

PNM detected over 4.5 feet of free product in MW-2 and MW-6 in January 1998. In response to NMOCD concerns, PNM installed and continues to operate a single free product recovery well, MW-6. Approximately 450 gallons of free phase were recovered from January 12, 1998 through March 17, 1998. Free product thicknesses as measured in monitoring wells MW-2 and -6 have declined approximately 2 feet since the inception of free product recovery. As the product is not the result of PNM operations prior to June 30, 1995, PNM has placed Burlington and Williams Field Services on notice that PNM will be seeking cost recovery from the responsible party for actions concerning free product and groundwater investigation and remediation activities performed to date at this site.

The presence of significant free phase in the subsurface is also the most likely cause of dissolved phase groundwater contamination detected at this site. Burlington, PNM, and NMOCD are aware of continuing hydrocarbon surface discharges in the area of the hydrocarbon seep along the northwestern area of the well pad. This seep continues to visibly impact soils and dissolved phase groundwater from monitoring wells sampled along the wash. As PNM did not discharge free product at this site, PNM maintains it is not the responsible party for groundwater contamination associated with this ongoing hydrocarbon seep.

If you have any questions related to the proposed activities for the Hampton 4M site or other project-related activities, please contact me at 505.241.2974.

Sincerely,

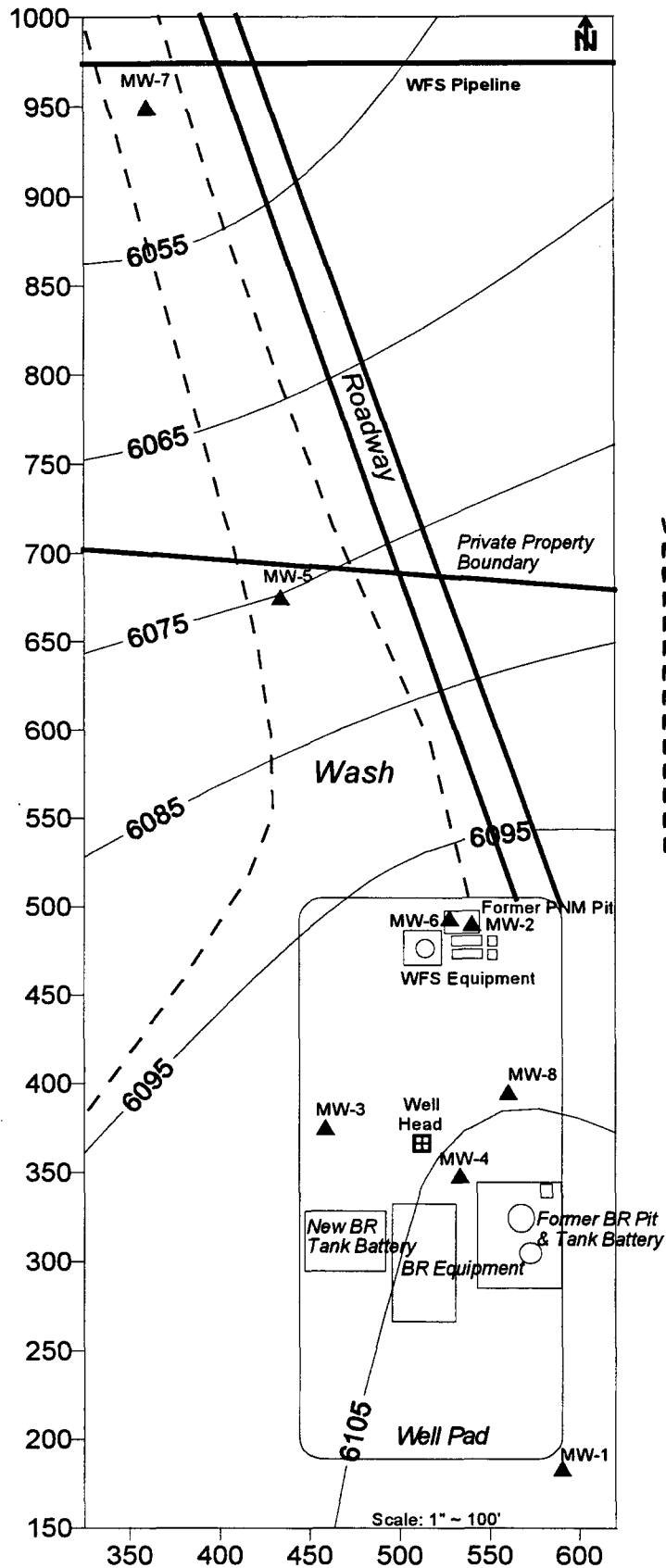
A handwritten signature in black ink that reads "Maureen Gannon". The signature is fluid and cursive, with a long horizontal stroke at the end.

Maureen Gannon
Project Manager

cc: Roger Anderson, NMOCD
Ed Haseley, Burlington Resources
Ingrid Deklau, Williams Field Services
Colin Adams, PNM
Denny Foust, NMOCD - Aztec

Fig 3 1
Hampton 4M site map & analytical results (ppb)
(January,1998)

△
 EB - Private Well
 (Not to Scale)



Well #	Date	B	T	E	X
MW-1	10/30/97	2.4	2.3	<0.2	1.1
MW-1	1/12/98	4.3	3.3	0.2	1
MW-2	1/12/98	4.41 feet of product			
MW-3	1/31/97	<0.2	<0.2	<0.2	<0.2
MW-3	1/12/98	<0.2	<0.2	<0.2	<0.2
MW-4	1/31/97	811.7	1420.5	31.0	388.1
MW-4	1/12/98	1251	6	81	24
MW-5	10/29/97	5934	10024	709	8188
MW-5	1/12/98	7521	11213	779	8436
MW-6	1/12/98	4.71 feet of product			
MW-7	1/12/98	780	246	258	3942
MW-8	1/12/98	6410	17301	693	9397
EB-Well	11/25/97	<0.2	<0.2	<0.2	<0.2

Table 1: SUMMARY OF ANALYTICAL RESULTS

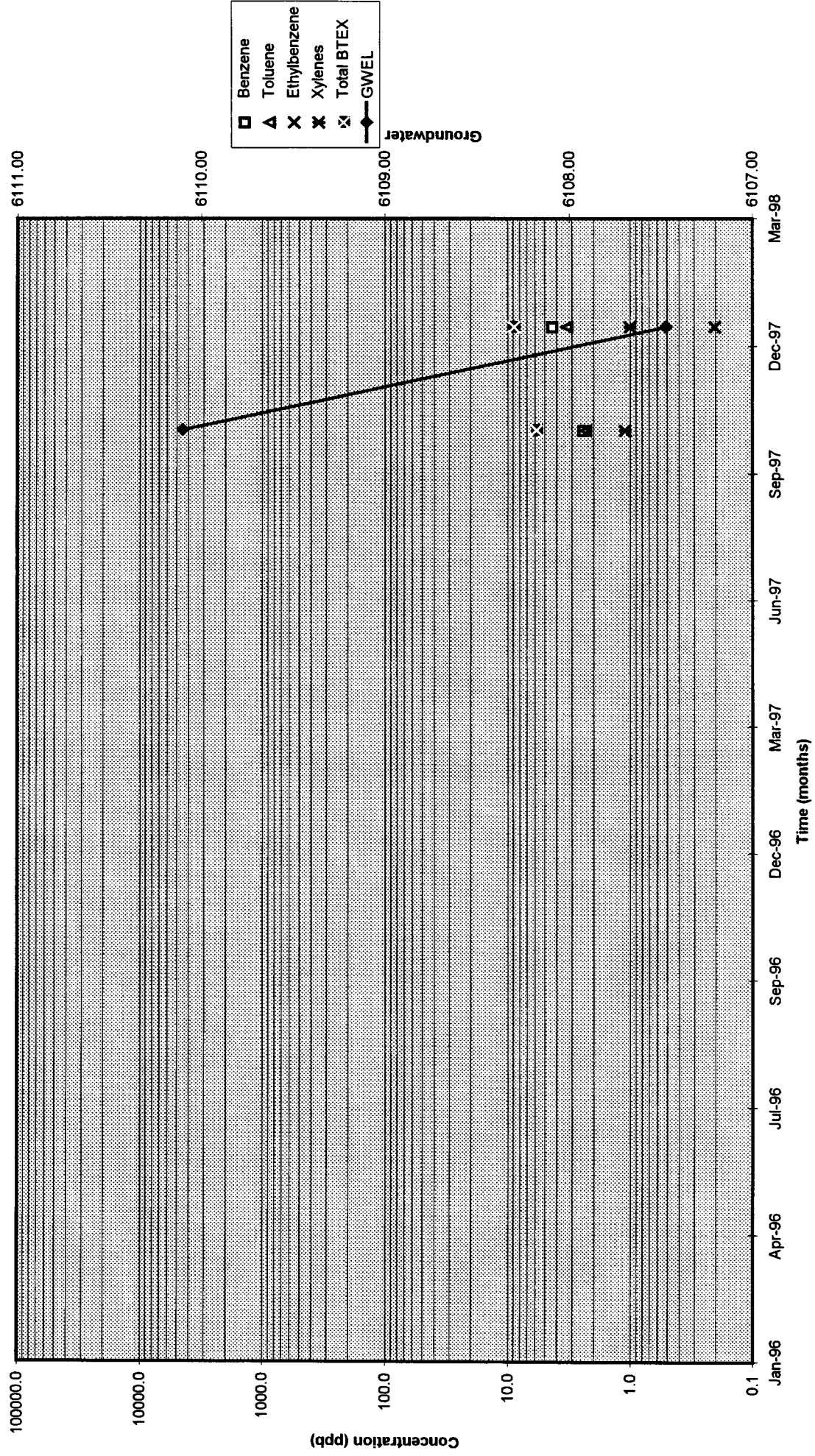
GROUNDWATER MONITORING DATA - collected by PNM, except as noted

Well		Date Sampled	GWEL (ft,msl)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	Total BTEX (ug/L)	Product Thickness (ft)
MW-1		10/30/97	6110.10	2.4	2.3	<0.2	1.1	5.8	--
Upgradient well		01/12/98	6107.47	4.3	3.3	0.2	1.0	8.8	--
MW-2		01/04/96	6097.88	NA	NA	NA	NA	NA	4.40
PNM drip pit well		12/16/96	NM	3840.0	7960.0	896.0	7920.0	20616.0	NM
		08/27/97	6097.87	NA	NA	NA	NA	NA	4.75
		10/29/97	6098.08	NA	NA	NA	NA	NA	4.58
		01/12/98	6098.10	NA	NA	NA	NA	NA	4.41
MW-3		1/4/96	6101.06	NA	NA	NA	NA	NA	--
Up & cross-gradient to PNM		1/31/97	NM	<0.2	<0.2	<0.2	<0.2	<0.2	--
		5/5/97	NM	NA	NA	NA	NA	NA	--
	Burlington	10/29/97	6101.19	<0.2	<0.2	<0.2	<0.2	<0.2	--
		1/12/98	6101.11	<0.2	<0.2	<0.2	<0.2	<0.2	--
MW-4		1/4/96	6106.16	NA	NA	NA	NA	NA	--
Upgradient PNM; downgradient Burlington		1/31/97		811.7	1420.5	31.0	388.1	2651.3	--
	Burlington	5/1/97		1162.0	1797.0	41.0	486.0	3486.0	--
		8/27/97	6106.87	NA	NA	NA	NA	NA	--
		10/29/97	6106.73	NA	NA	NA	NA	NA	--
		1/12/98	6105.88	1251.0	6.0	82.0	24.0	1363.0	--
MW-5		10/29/97		5934.0	10024.0	709.0	8188.0	24855.0	--
Downgradient along wash		1/12/98	6075.09	7521.0	11213.0	779.0	8436.0	27949.0	--
MW-6		11/12/97	6098.08	NA	NA	NA	NA	NA	4.80
PNM drip pit/product recovery		1/12/98	6097.43	NA	NA	NA	NA	NA	4.71
MW-7		1/12/98	6047.12	780.0	246.0	258.0	3942.0	5226.0	--
Downgradient along wash; adj pipeline									
MW-8		1/12/98	6104.71	6410.0	17301.0	693.0	9397.0	33801.0	Sheen
Upgradient PNM; downgradient Burlington									
EB WELL		11/25/97	DTW=68.	<0.2	<0.2	<0.2	<0.2	<0.2	--
Downgradient private well									
Sample	Matrix	Date Sampled	Depth (ft)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)	Total BTEX (ppb)	TPH (mg/Kg)
Burlington Temporary Monitoring Well Sampling									
TPW-01	Water	6/5/97		20.0	<1	<1	<1	20.0	NA
	Soil		25-26'	<1	<1	<1	<1	<1	<10
TPW-02	Water	6/5/97	Product	NA	NA	NA	NA	NA	NA
	Soil		25-26'	2000.0	4600.0	14000.0	39000.0	59600.0	600.0
TPW-03	Water	6/5/97	Dry	NA	NA	NA	NA	NA	NA
	Soil	6/5/97	25-26	<1	<1	<1	<1	<1	25
TPW-04	Water	6/6/97		2000.0	3100.0	57.0	810.0	5967.0	NA
	Soil	6/6/97	20-21.5'	28.0	3.4	76.0	40.0	147.4	52
TPW-05	Water	6/6/97		5800.0	460.0	16000.0	7000.0	29260.0	NA
	Soil	6/6/97	15-16'	4000.0	10000.0	4500.0	28000.0	46500.0	61
TPW-06	Water	6/6/97		1600.0	3400.0	48.0	690.0	5738.0	NA
	Soil	6/6/97	16-16.5'	<1	<1	2.8	4.8	7.6	11
TPW-07	Water	6/6/97		5300.0	18000.0	620.0	9300.0	33220.0	NA
	Soil	6/6/97	15-16'	7000.0	74000.0	20000.0	170000.0	271000.0	250
PNM Test Holes along Wash									
TH-1	Soil	11/11/97	12.7'	NA	NA	NA	NA	NA	PID (ppm) 1412
TH-2	Soil	11/11/97	14.4'	NA	NA	NA	NA	NA	1357
TH-3	Soil	11/11/97	16.5'	NA	NA	NA	NA	NA	0
TH-4	Soil	11/11/97	15'	NA	NA	NA	NA	NA	279
TH-5	Soil	11/11/97	14.5'	NA	NA	NA	NA	NA	1211
TH-6	Soil	11/11/97	16'	NA	NA	NA	NA	NA	0
TH-7 (temporary well)	Water	11/11/97	NA	2171.0	4185.0	190.0	2856.0	170000.0	279
TH-8	Soil	11/12/97	14'	NA	NA	NA	NA	NA	0
Sample from Burlington Excavation									
Groundwater	Water	2/11/98	15'	1800	1700	<25	1420	4920	NA

Attachment A

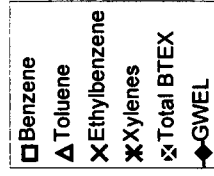
Hydrographs and Concentrations versus Time

MW-1: Trends with Time

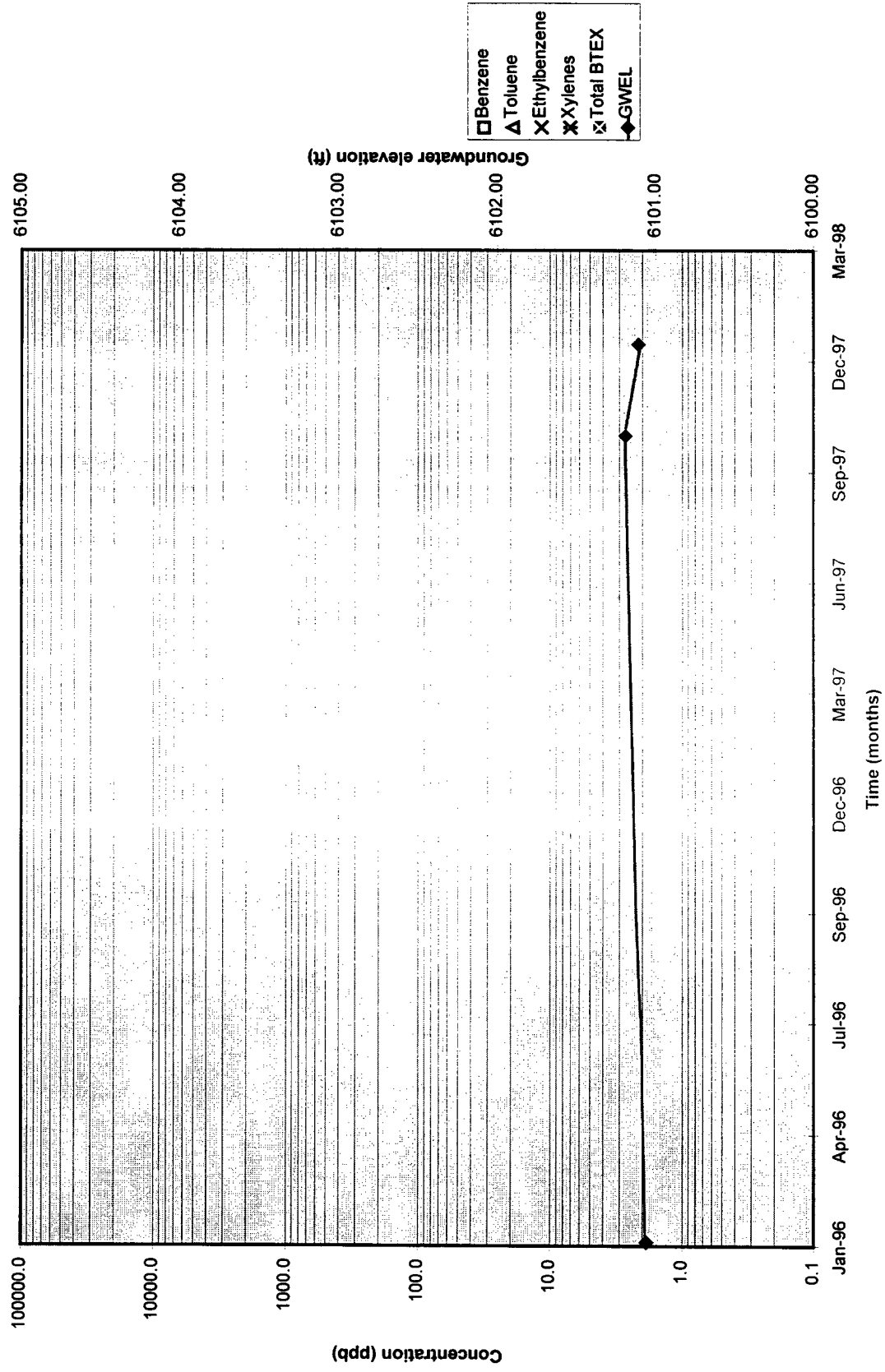


The following table represents the data points estimated from the plot:

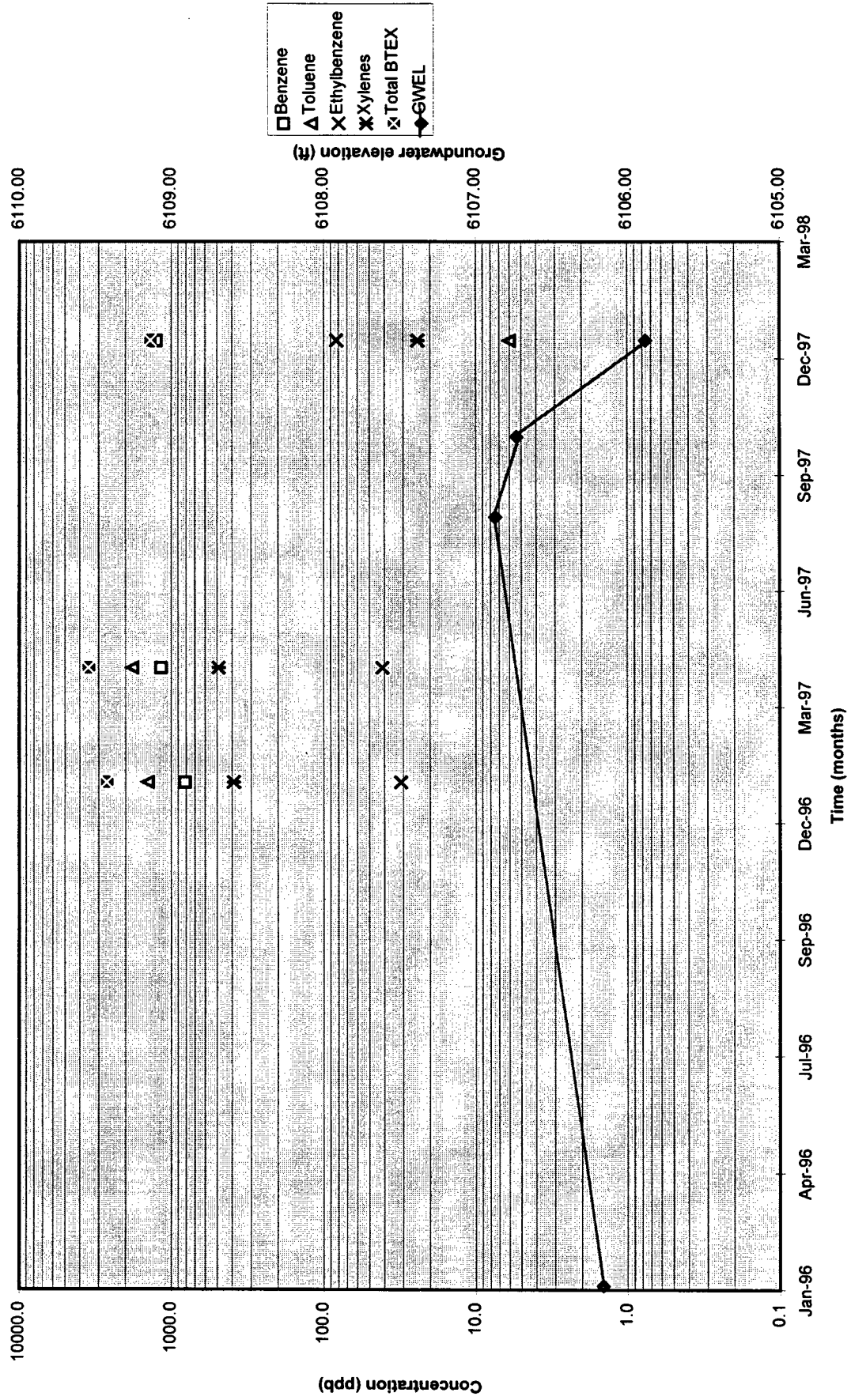
Time (months)	Concentration (ppb)	Symbol
Jan-96	~1000	Circle
Apr-96	~1000	Circle
Jul-96	~1000	Circle
Sep-96	~1000	Circle
Dec-96	~1000	Circle
Mar-97	~1000	Circle
Jun-97	~1000	Circle
Sep-97	~1000	Circle
Oct-97	~1000	Circle
Nov-97	~1000	Circle
Dec-97	~10000	Circle



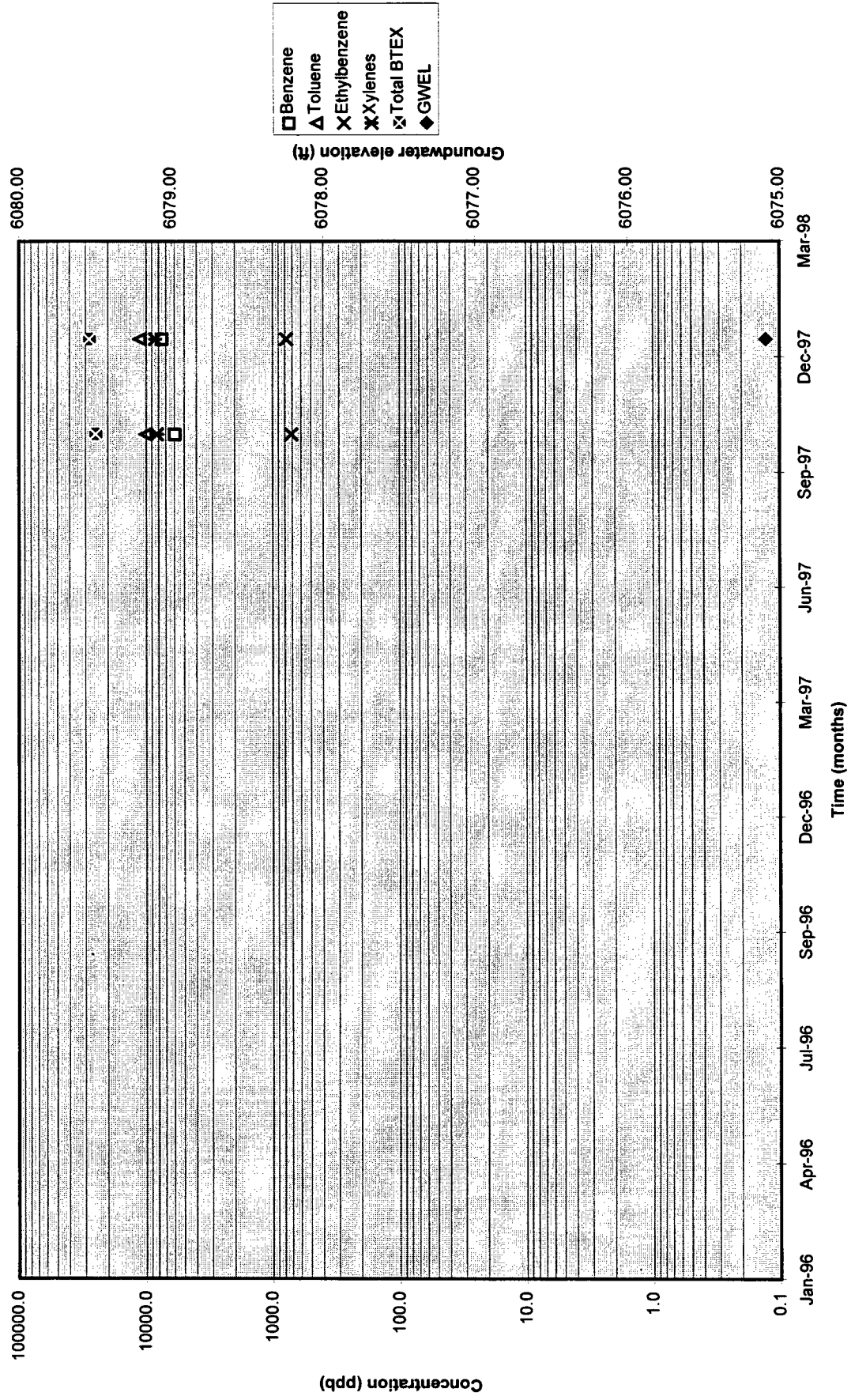
MW-3: Trends with Time



MW-4: Trends with Time



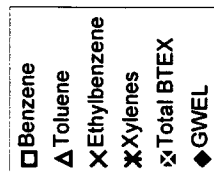
MW-5: Trends with Time



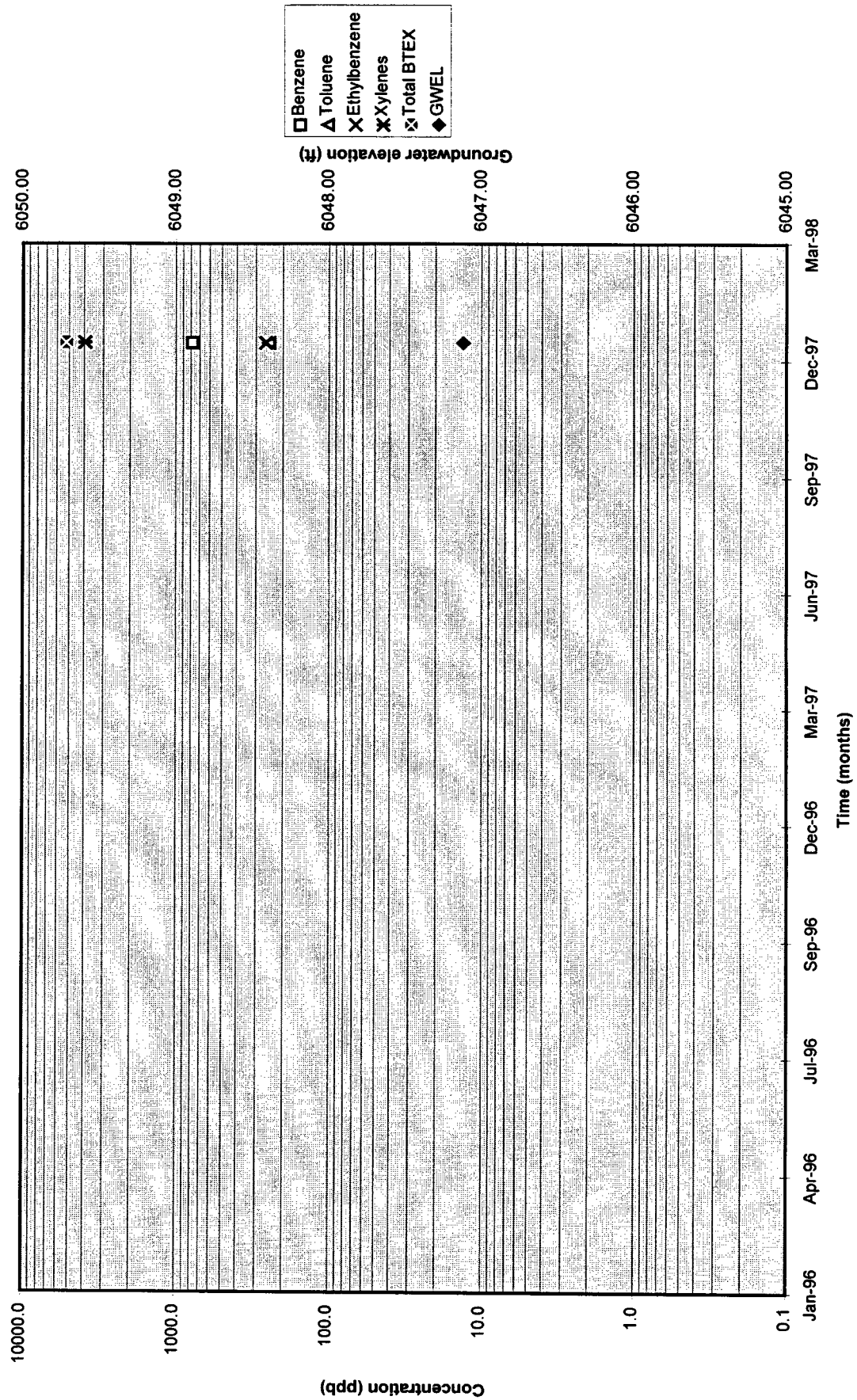
Concentration (ppb)

Time (months)

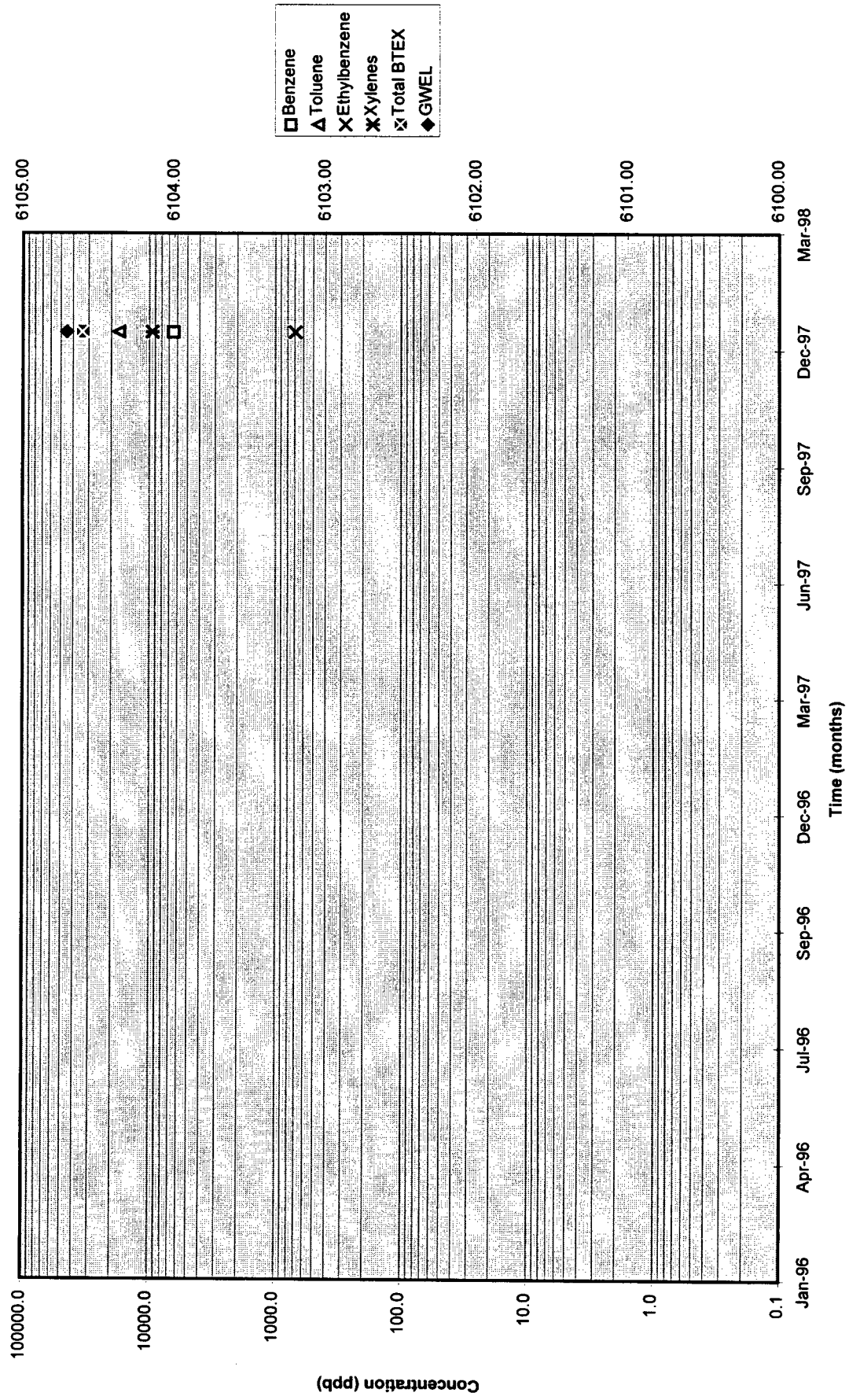
Time (months)	Concentration (ppb)
Jan-96	100.0
Apr-96	100.0
Jul-96	100.0
Sep-96	100.0
Dec-96	100.0
Mar-97	100.0
Jun-97	100.0
Sep-97	100.0
Dec-97	10.0
Mar-98	20.0



MW-7: Trends with Time



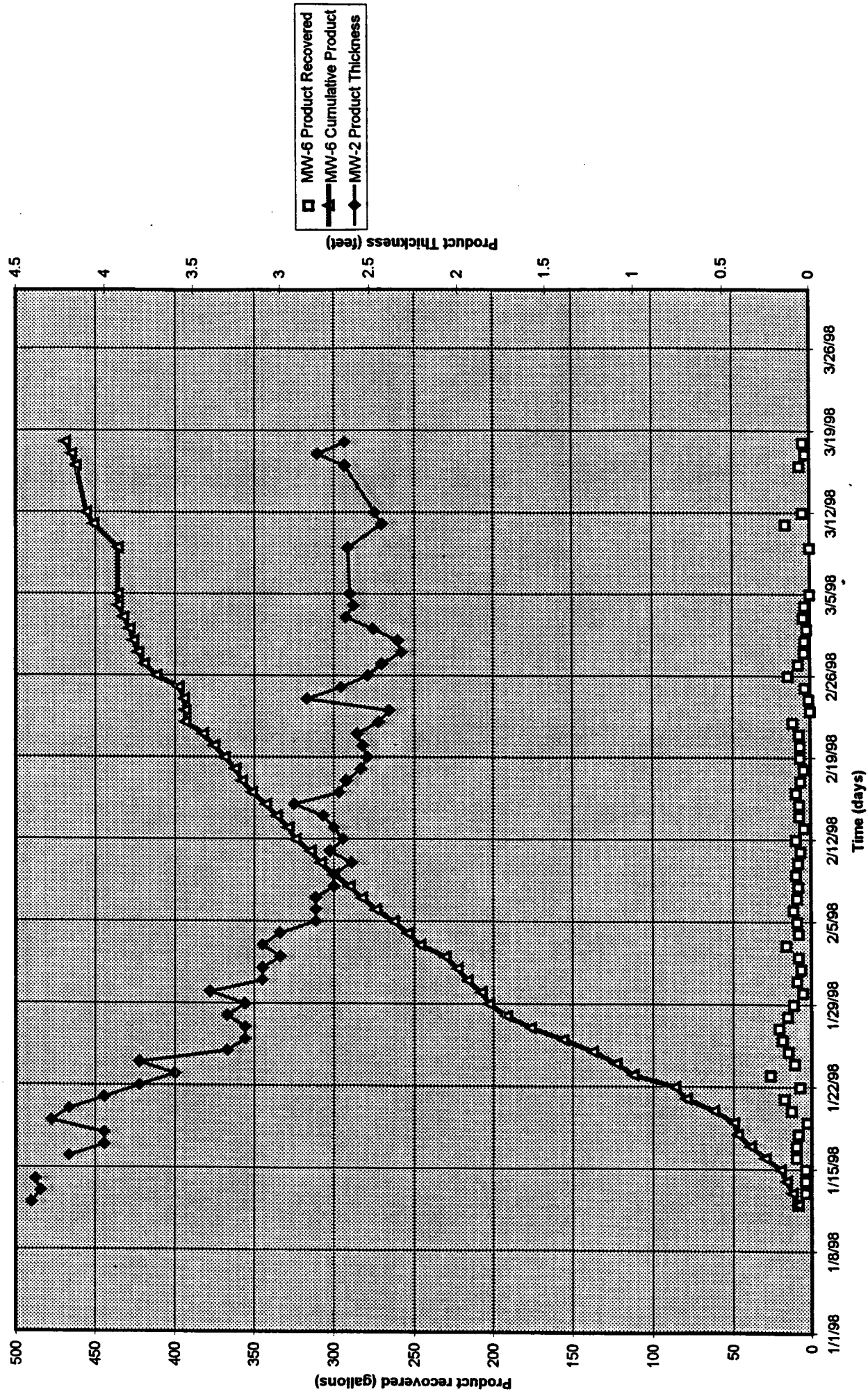
MW-8: Trends with Time



Attachment B

Free Product Recovery Response

Hampton 4M Free Product Recovery



HAMPTON 4M

DATE	TIME	PUMP TIME SET	CYCLES / DAY	PUMPING TIME TOTAL	NITROGEN PRESSURE	NITROGEN TANK LEVEL	DRUM LEVEL	MW #2 PRODUCT LEVEL	MW #2 WATER LEVEL	
1/16/98	1323	5 min.	3	2 Hr. 10 min.	58	675	5	20.78	25.04	4.26
1/17/98	1619	5 min.	3	2 Hr. 32 min.	58	475	5 3/4"	20.98	25.04	4.06
1/18/98	1529	5 min.	3	2 Hr. 53 min.	58	275	11 1/2"	20.96	24.96	4.00
1/19/98	1323	5 min.	3	3 Hr. 3 min.	58	50	15 1/2"	20.69	25.04	4.35
1/20/98	1454	5 min.	3	3 Hr. 30 min.	50	750	17"	20.83	25.06	4.22
1/21/98	0734	Cont.	1	4 Hr. 23 min.	50	550	24 1/2"	20.93	24.97	4.04
1/22/98	1344	10 min.	3	4 Hr. 56 min.	50	400	5 1/4"	21.00	24.88	3.88
1/23/98	1418	10 min.	6	6 Hr. 33 min.	50	50	14"	21.11	24.74	3.62
1/24/98	1316	20 min.	6	6 Hr. 31 min.	50	2175	16 1/2"	20.97	24.78	3.81
1/25/98	1153	10 min.	6	8 Hr. 03 min.	50	1875	25 1/4"	21.18	24.50	3.32
1/26/98	1330	10 min.	6	10 Hr. 55 min.	50	1625	11 1/4"	21.20	24.43	3.23
1/27/98	1431	10 min.	6	12 Hr. 07 min.	50	1375	23 1/2"	21.16	24.39	3.23
1/28/98	1320	10 min.	6	16 Hr. 48 min.	50	600	6"	20.09	24.40	3.3
1/29/98	1321	10 min.	6	18 Hr. 10 min.	50	325	12 3/4"	21.11	24.31	3.2
1/30/98	1525	10 min.	6	19 Hr. 02 min.	50	150	12 3/4"	21.05	24.48	3.4
1/31/98	1150	10 min.	6	20 Hr. 06 min.	60	2275	18"	21.17	24.27	3.11
2/1/98	1143	10 min.	12	22 Hr. 12 min.	60	1875	21 3/4"	21.17	24.27	3.1
2/2/98	1517	10 min.	6	23 Hr. 13 min.	60	1600	26 1/2"	21.25	24.25	3.0
2/3/98	1516	10 min.	6	24 Hr. 15 min.	60	1410	9 1/2"	21.10	24.20	3.4
2/4/98	1315	10 min.	6	25 Hr. 18 min.	60	1120	14 1/4"	21.09	24.23	3.1
2/5/98	1303	10 min.	6	26 Hr. 14 min.	60	875	19 1/2"	21.27	24.13	2.8
2/6/98	1518	5 min.	12	27 Hr. 27 min.	60	600	26 1/4"	21.25	24.10	2.8
2/7/98	1121	5 min.	12	28 Hr. 21 min.	60	375	5 1/4"	21.26	24.10	2.8
2/8/98	1522	5 min.	12	30 Hr. 07 min.	0	0	10"	21.24	23.98	2.7
2/9/98	1615	5 min.	12	31 Hr. 17 min.	55	2325	15 3/4"	21.21	24.00	2.7
2/10/98	1611	5 min.	12	32 Hr. 21 min.	55	2110	20 1/2"	21.36	24.00	2.6
2/11/98	1350	5 min.	12	33 Hr. 21 min.	55	1875	24 1/2"	21.23	23.95	2.7
2/12/98	1718	5 min.	12	34 Hr. 30 min.	55	1625	5 3/4"	21.30	23.95	2.7
2/13/98	1603	5 min.	6	34 Hr. 56 min.	55	1500	8 1/4"	21.22	23.92	2.7
2/14/98	1623	5 min.	6	35 Hr. 59 min.	55	1225	12 1/2"	21.19	23.95	2.7

140/5

HAMPTON 4M

DATE	TIME	PUMP TIME SET	CYCLES / DAY	PUMPING TIME TOTAL	NITROGEN PRESSURE	NITROGEN TANK LEVEL	DRUM LEVEL	MW #2 PRODUCT LEVEL	MW #2 WATER LEVEL	
2/13/98	1529	5 min	12	37 Hrs 23 min	55	990	16 3/4"	21.08	24.00	2.5
2/16/98	1413	5 min	12	38 Hrs 19 min	55	675	22 1/4"	21.26	23.93	2.6
2/17/98	1740	5 min	12	39 Hrs 22 min	55	450	26 3/4"	21.26	23.89	2.6
2/18/98	1344	5 min	12	40 Hrs 14 min	55	2475	2 1/2"	21.32	23.87	2.5
2/19/98	1717	5 min	12	41 Hrs 27 min	55	2075	6 1/2"	21.34	23.85	2.5
2/20/98	1418	5 min	12	42 Hrs 25 min	55	1775	10 1/2"	21.26	23.82	2.5
2/21/98	1631	5 min	12	43 Hrs 33 min	55	1500	14 3/4"	21.30	23.87	2.5
2/22/98	1645	Change 5 min 5 min	6	43 Hrs 34 min 44 Hrs 10 min	55	1375	21 1/2"	21.35	23.80	2.5
2/23/98	1602	5	6	44 Hrs 38 min	55	1175	19 1/2"	21.36	23.75	2.5
2/24/98	1601	5	6	50 Hrs 5 min	5	6	22.0	21.10	23.95	2.6
2/25/98	1429	5	12	50 Hrs 5 min	60	2150	24.0	21.24	23.90	2.6
2/26/98	1512	5	12	51 Hrs 54 min	58	1650	32 1/2"	21.29	23.80	2.5
2/27/98	1543	5	12	52 Hrs 56 min	50	1100	4 1/2"	21.35	23.78	2.4
2/28/98	1604	5	12	53 Hrs 57 min	50	480	6 3/4"	21.41	23.73	2.3
3/1/98	1105	5	12	54 Hrs 17 min	5	5	8 3/4"	21.41	23.75	2.3
3/2/98	1131	5	12	55 Hrs 38 min	50	2525 1300	10"	21.32	23.80	2.4
3/3/98	1643	Co-5	12	55 Hrs 5 min	50	1150	12 1/2"	21.25	23.88	2.4
3/4/98							14 1/2"	21.29	23.88	2.4
3/5/98								21.29	23.90	2.4
3/9/98	1701	5	12	56 Hrs 56 min	50	900		21.38	24.00	2.5
3/11/98	1730	5	12	59 Hrs 00 min	50	200	23 3/4"	21.38	23.81	2.5
3/12/98	1604	5	12	59 Hrs.	50	2700	26 1/2"	21.34	23.81	2.5
3/16/98	1610 1620	5	12	62 Hrs 36 min	5	5	4"	21.31	23.95	2.5
3/17/98	160732	5	12/6	63 Hrs 40 min	50	1850	7 1/2"	21.26	24.05	2.5
3/18/98	1623	-	-	64 Hrs 14 min	50	1600	10"	21.36	24.02	2.6

20 60
14 42
15 1400

26.53
24.06
2.47

1.25

24.10
21.38
2.72

3

DEPARTMENT

PROJECT Hampton 4m	FILE	SHEET OF
COMPONENT Product removed (gallons) from mw-6	BY	DATE
	CHECKED	DATE

12 - 8.50 gal. 5.0 gal. in November Feb. 16 - 9.13
 13 - 3.75 gal. 17 - 6.23
 14 - 3.75 gal. 18 - 4.15
 15 - 3.80 gal. 19 - 6.64 - 353.63
 16 - 9.55 gal. 20 - 6.64
 17 - 9.55 gal. 21 - 7.06
 18 - 8.30 gal. 22 - 11.21 - 378.54
 19 - 2.49 gal. 23 - 0
 20 - 12.45 gal. 24 - 0.83
 21 - 17.72 gal. 25 - 3.32
 22 - 7.00 gal. Total 86.86 gal. + 5
 23 - 20.26 gal. " 112.14 gal.
 24 - 10.65 gal.
 25 - 14.53 gal.
 26 - 18.68 gal. Total 174.34 gal.
 27 - 20.34 gal.
 28 - 14.96 gal. Total 187.55 gal.
 29 - 11.21 gal.
 30 - 5.00 gal.
 31 - 8.72 gal. Total 201.27 gal.
 Feb. 1 - 6.23 gal.
 2 - 7.89 gal.
 3 - 15.77 gal. Total 231.16 gal.
 4 - 7.89 gal.
 5 - 8.72 gal.
 6 - 11.21 gal. Total 258.98 gal.
 7 - 8.72 gal.
 8 - 7.89 gal.
 9 - 9.55 gal.
 10 - 7.89 gal. Total 293.02 gal.
 11 - 6.64 gal. 299.66
 12 - 9.55 gal.
 13 - 4.15 gal.
 14 - 7.06 gal.
 15 - 7.06 gal.

20 - 6.64
 21 - 7.06
 22 - 11.21 - 378.54
 23 - 0
 24 - 0.83
 25 - 3.32
 26 - 14.11 - 396.80
 27 - 7.47
 28 - 3.74
 March 1 - 3.32 - 411.33 gal.
 2 - 2.08
 3 - 3.32
 4 - 4.15
 11 - 15.36
 12 - 4.57
 14 - 6.64
 17 - 5.81 - 453.26 gal.
 18 - 4.15

Attachment C

Analytical Laboratory Data

OFF: (505) 325-5667



LAB: (505) 325-1556

February 24, 1998

Maureen Gannon
PNM Gas Services
Alevardo Square, Mail Stop 0408
Albuquerque, NM 87401
TEL: (505) 241-2974
FAX (505) 241-2340

RE: Hampton 4M Burlington Excavation

Order No.: 9802007

Dear Maureen Gannon,

On Site Technologies, LTD. received 1 sample on 2/11/98 for the analyses presented in the following report.

The Samples were analyzed for the following tests:
Aromatic Volatiles by GC-PID (SW8021A)

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

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

Sincerely,

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

David Cox

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 24-Feb-98

Client:	PNM Gas Services	Client Sample Info:	Hampton 4M
Work Order:	9802007	Client Sample ID:	9802111400; Burlington Excava
Lab ID:	9802007-01A	Matrix:	AQUEOUS
Project:	Hampton 4M Burlington Excavation	Collection Date:	2/11/98 2:00:00 PM
		COC#:	7174

Parameter	Result	Limit	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC-PID		SW8021A				Analyst: DC
Benzene	1800	25		µg/L	50	2/17/98
Toluene	1700	25		µg/L	50	2/17/98
Ethylbenzene	ND	25		µg/L	50	2/17/98
m,p-Xylene	1200	50		µg/L	50	2/17/98
o-Xylene	220	25		µg/L	50	2/17/98
Surr: Fluorobenzene	99.6	70-130		%REC	50	2/17/98
Surr: 1,4-Difluorobenzene	101.2	70-130		%REC	50	2/17/98
Surr: 4-Bromochlorobenzene	100.6	70-130		%REC	50	2/17/98

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level

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

On Site Technologies, LTD.

Date: 24-Feb-98

CLIENT: PNM Gas Services

Work Order: 9802007

Project: Hampton 4M Burlington Excavation

QC SUMMARY REPORT

Method Blank

Sample ID: MB1 W	Batch ID: GC-1_980217	Test Code: SW8021A	Units: µg/L	Analysis Date: 2/17/98	Prep Date:
Client ID: 9802007	Run ID: 9802007	GC-1_980217A		SeqNo: 71	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Benzene	.1481	0.5			
Ethylbenzene	ND	0.5			
m,p-Xylene	ND	1			
o-Xylene	ND	0.5			
Toluene	.0621	0.5			

Qualifiers:

NID - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 24-Feb-98

CLIENT: PNM Gas Services
Work Order: 9802007
Project: Hampton 4M Burlington Excavation

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 9802002-06A MS		Batch ID: GC-1_980217	Test Code: SW8021A	Units: µg/L	Analysis Date: 2/17/98		Prep Date:	
Client ID: 9802007		Run ID: GC-1_980217A	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit
Analyte	Result							
Benzene	18890	50	4000	15090		95.0%	57	128
Ethylbenzene	4625	50	4000	489.6		103.4%	78	107
m,p-Xylene	12080	100	8000	4068		100.2%	67	118
o-Xylene	5186	50	4000	1043		103.6%	78	107
Toluene	5121	50	4000	1055		101.7%	74	116

Sample ID: 9802002-06A MSD		Batch ID: GC-1_980217	Test Code: SW8021A	Units: µg/L	Analysis Date: 2/17/98		Prep Date:	
Client ID: 9802007		Run ID: GC-1_980217A	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit
Analyte	Result							
Benzene	19120	50	4000	15090		100.9%	57	128
Ethylbenzene	4687	50	4000	489.6		104.9%	78	107
m,p-Xylene	12240	100	8000	4068		102.1%	67	118
o-Xylene	5283	50	4000	1043		106.0%	78	107
Toluene	5195	50	4000	1055		103.5%	74	116

On Site Technologies, LTD.

Date: 24-Feb-98

CLIENT: PNM Gas Services
Work Order: 9802007
Project: Hampton 4M Burlington Excavation

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS WATER	Batch ID: GC-1_980217	Test Code: SW8021A	Units: µg/L	Analysis Date: 2/17/98	Prep Date:
Client ID: 9802007	Run ID: GC-1_980217A	PQL	SPK value	SeqNo: 73	
Analyte	Result	PQL	SPK value	LowLimit	HighLimit
Benzene	43.06	0.5	40	84	114
Ethylbenzene	45.72	0.5	40	86	118
m,p-Xylene	87.09	1	80	50	150
o-Xylene	44.73	0.5	40	49	147
Toluene	44.06	0.5	40	87	120
				%REC	%RPD
				107.3%	
				114.3%	
				108.9%	
				111.8%	
				110.0%	
				RPD Ref Val	RPDLimit
					Qual

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

On Site Technologies, LTD.

Date: 24-Feb-98

CLIENT: PNM Gas Services
Work Order: 9802007
Project: Hampton 4M Burlington Excavation

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV2 QC0529/30		Batch ID: GC-1_980217		Test Code: SW8021A		Units: µg/L		Analysis Date: 2/17/98			Prep Date:	
Client ID:		9802007	Run ID:	GC-1_980217A				SeqNo:	81			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Benzene	21.26	0.5	20	0	106.3%	85	115					
Ethylbenzene	21.77	0.5	20	0	108.8%	85	115					
m,p-Xylene	42.35	1	40	0	105.9%	85	115					
o-Xylene	22.08	0.5	20	0	110.4%	85	115					
Toluene	21.94	0.5	20	0	109.7%	85	115					
1,4-Difluorobenzene	100.6	0	100	0	100.7%	70	130					
4-Bromochlorobenzene	96.82	0	100	0	96.8%	70	130					
Fluorobenzene	99.99	0	100	0	100.0%	70	130					

Sample ID: CCV2 QC0529/30		Batch ID: GC-1_980217	Test Code: SW8021A	Units: µg/L	Analysis Date: 2/17/98				Prep Date:		
Client ID:		9802007	Run ID: GC-1_980217A		SeqNo: 72						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.01	0.5	20	0	100.0%	85	115				
Ethylbenzene	21.19	0.5	20	0	105.9%	85	115				
m,p-Xylene	39.98	1	40	0	99.9%	85	115				
o-Xylene	20.62	0.5	20	0	104.1%	85	115				
Toluene	20.3	0.5	20	0	101.5%	85	115				
1,4-Difluorobenzene	101.8	0	100	0	101.8%	70	130				
4-Bromochlorobenzene	99.27	0	100	0	99.3%	70	130				
Fluorobenzene	99.75	0	100	0	99.8%	70	130				

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

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

B - Analytic detected in the associated Method Blank

CLIENT: PNM Gas Services
Work Order: 9802007
Project: Hampton 4M Burlington Excavation

QC SUMMARY REPORT
 Continuing Calibration Verification Standard

Sample ID: CCV3 QC0529/30		Batch ID: GC-1_980217		Test Code: SW8021A		Units: µg/L		Analysis Date: 2/17/98			Prep Date:	
Client ID:		9802007		Run ID: GC-1_980217A				SeqNo: 94				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Benzene	20.56	0.5	20	0	102.8%	85	115					
Ethylbenzene	21.76	0.5	20	0	108.8%	85	115					
m,p-Xylene	40.95	1	40	0	102.4%	85	115					
o-Xylene	21.29	0.5	20	0	106.4%	85	115					
Toluene	20.93	0.5	20	0	104.6%	85	115					
1,4-Difluorobenzene	101.2	0	100	0	101.2%	70	130					
4-Bromochlorobenzene	95.23	0	100	0	95.2%	70	130					
Fluorobenzene	99.96	0	100	0	100.0%	70	130					

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Attn: *Denver Bearden*
Company: *PNM Gas Services*
Address: *603 W. Elm*
City, State: *Farmington, NM 87401*

Date: *23-Jan-98*
COC No.: *7086*
Sample No.: *17304*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Hampton 4M*
Project Location: *9801121030; MW-1*
Sampled by: *MS/MG/RD/RB*
Analyzed by: *DC*
Sample Matrix: *Liquid*

Date: *12-Jan-98* Time: *10:30*
Date: *21-Jan-98*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>4.3</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Toluene</i>	<i>3.3</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>0.2</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>0.7</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>0.3</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>8.8</i>	<i>ug/L</i>		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*
Date: *1/23/98*

P.O. BOX 2606 • FARMINGTON, NM 87499

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Attn: *Denver Bearden*
 Company: *PNM Gas Services*
 Address: *603 W. Elm*
 City, State: *Farmington, NM 87401*

Date: *26-Jan-98*
 COC No.: *7086*
 Sample ID.: *17304*
 Job No.: *2-1000*

Project Name: **PNM Gas Services - Hampton 4M**Project Location: **9801121030; MW-1**Sampled by: **MS/MG/RD/RB**Date: **12-Jan-98** Time: **10:30**Analyzed by: **HR**Date: **26-Jan-98****Laboratory Analysis**

Parameter	Results as Received	Unit of Measure	Results as Received	Unit of Measure
Cations				
Sodium <i>Na</i>	112	mg/L	4.87	me/L
Calcium <i>Ca</i>	444	mg/L	22.16	me/L
Magnesium <i>Mg</i>	210	mg/L	17.28	me/L
Potassium <i>K</i>	8.3	mg/L	0.21	me/L
Anions				
Chloride <i>Cl</i>	9	mg/L	0.26	me/L
Sulfate <i>SO4</i>	2202	mg/L	45.84	me/L
Carbonate <i>CO3 as CaCO3</i>	<1	mg/L	<0.01	me/L
Bicarbonate <i>HCO3 as CaCO3</i>	2	mg/L	0.03	me/L
Hydroxide <i>OH as CaCO3</i>	<1	mg/L	<0.01	me/L
Total Dissolved Solids				
Calculated, Sum of Cation/Anion	2987	mg/L	Cation-Anion Balance 1.61 Difference Cation-Anion, me/L 90.65 Total Cation-Anion, me/L 1.8 % Difference Cation-Anion Comments	
Total Dissolved Solids Dried @ 180 C	3242	mg/L		
pH	4.62			
Conductivity @ 25 C	2960	uS/cm		
Total Hardness as CaCO3	1973	mg/L		

Approved by: *[Signature]*Date: *1/30/98*

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Attn: *Denver Bearden*
Company: *PNM Gas Services*
Address: *603 W. Elm*
City, State: *Farmington, NM 87401*

Date: *23-Jan-98*
COC No.: *7086*
Sample No.: *17305*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Hampton 4M*
Project Location: *9801121100; MW-3*
Sampled by: *MS/MG/RD/RB*
Analyzed by: *DC*
Sample Matrix: *Liquid*

Date: *12-Jan-98* Time: *11:00*
Date: *21-Jan-98*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	ND	ug/L	0.2	ug/L
<i>Toluene</i>	ND	ug/L	0.2	ug/L
<i>Ethylbenzene</i>	ND	ug/L	0.2	ug/L
<i>m,p-Xylene</i>	ND	ug/L	0.2	ug/L
<i>o-Xylene</i>	ND	ug/L	0.2	ug/L
<i>TOTAL</i>	ND	ug/L		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*
Date: *1/23/98*

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Attn: *Denver Bearden*
Company: *PNM Gas Services*
Address: *603 W. Elm*
City, State: *Farmington, NM 87401*

Date: *23-Jan-98*
COC No.: *7086*
Sample No.: *17306*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Hampton 4M*
Project Location: *9801121130; MW-4*
Sampled by: *MS/MG/RD/RB*
Analyzed by: *DC*
Sample Matrix: *Liquid*

Date: *12-Jan-98* Time: *11:30*
Date: *21-Jan-98*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>1251</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>Toluene</i>	<i>6</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>81</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>24</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>ND</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>1361</i>	<i>ug/L</i>		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*
Date: *1/23/98*

P.O. BOX 2606 • FARMINGTON, NM 87499

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Attn: *Denver Bearden*
Company: *PNM Gas Services*
Address: *603 W. Elm*
City, State: *Farmington, NM 87401*

Date: *23-Jan-98*
COC No.: *7086*
Sample No.: *17307*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Hampton 4M*
Project Location: *9801121200; MW-5*
Sampled by: *MS/MG/RD/RB*
Analyzed by: *DC*
Sample Matrix: *Liquid*

Date: *12-Jan-98* Time: *12:00*
Date: *21-Jan-98*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>7521</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>Toluene</i>	<i>11213</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>779</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>6762</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>1674</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>27950</i>	<i>ug/L</i>		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*
Date: *1/23/98*

P.O. BOX 2606 • FARMINGTON, NM 87499

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Attn: *Denver Bearden*
Company: *PNM Gas Services*
Address: *603 W. Elm*
City, State: *Farmington, NM 87401*

Date: *23-Jan-98*
COC No.: *7086*
Sample No.: *17308*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Hampton 4M*
Project Location: *9801121230; MW-7*
Sampled by: *MS/MG/RD/RB*
Analyzed by: *DC*
Sample Matrix: *Liquid*

Date: *12-Jan-98* Time: *12:30*
Date: *21-Jan-98*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>780</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>Toluene</i>	<i>246</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>258</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>3204</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>738</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>5227</i>	<i>ug/L</i>		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*
Date: *1/23/98*

P.O. BOX 2606 • FARMINGTON, NM 87499

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Attn: *Denver Bearden*
Company: *PNM Gas Services*
Address: *603 W. Elm*
City, State: *Farmington, NM 87401*

Date: *23-Jan-98*
COC No.: *7086*
Sample No.: *17309*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Hampton 4M*
Project Location: *9801121300; MW-8*
Sampled by: *MS/MG/RD/RB*
Analyzed by: *DC*
Sample Matrix: *Liquid*

Date: *12-Jan-98* Time: *13:00*
Date: *21-Jan-98*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>6410</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>Toluene</i>	<i>17301</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>693</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>7612</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>1785</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>33801</i>	<i>ug/L</i>		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*
Date: *1/23/98*

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Attn: **Denver Bearden**
 Company: **PNM Gas Services**
 Address: **603 W. Elm**
 City, State: **Farmington, NM 87401**

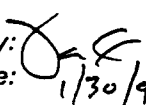
Date: **26-Jan-98**
 COC No.: **7086**
 Sample ID.: **17309**
 Job No.: **2-1000**

Project Name: **PNM Gas Services - Hampton 4M**
 Project Location: **9801121300; MW-8**

Sampled by: **MS/MG/RD/RB** Date: **12-Jan-98** Time: **13:00**
 Analyzed by: **HR** Date: **26-Jan-98**

Laboratory Analysis

Parameter	Results as Received	Unit of Measure		Results as Received	Unit of Measure	
Cations						
Sodium Na	108	mg/L		4.70	me/L	
Calcium Ca	456	mg/L		22.76	me/L	
Magnesium Mg	236	mg/L		19.42	me/L	
Potassium K	20.9	mg/L		0.53	me/L	
Anions						
Chloride Cl	30	mg/L		0.83	me/L	
Sulfate SO4	2215	mg/L		46.12	me/L	
Carbonate CO3 as CaCO3	< 1	mg/L		< 0.01	me/L	
Bicarbonate HCO3 as CaCO3	73	mg/L		1.20	me/L	
Hydroxide OH as CaCO3	< 1	mg/L		< 0.01	me/L	
Total Dissolved Solids			Cation-Anion Balance 0.74 Difference Cation-Anion, me/L 95.55 Total Cation-Anion, me/L 0.8 % Difference Cation-Anion Comments			
Calculated, Sum of Cation/Anion	3139	mg/L				
Total Dissolved Solids						
Dried @ 180 C	3424	mg/L				
pH	6.21					
Conductivity @ 25 C	2950	uS/cm				
Total Hardness as CaCO3	2110	mg/L				

Approved by: Date: **1/30/98**

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Attn: *Denver Bearden*
Company: *PNM Gas Services*
Address: *603 W. Elm*
City, State: *Farmington, NM 87401*

Date: *23-Jan-98*
COC No.: *7086*
Sample No.: *17310*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Hampton 4M*
Project Location: *9801121330; MW-9*
Sampled by: *MS/MG/RD/RB*
Analyzed by: *DC*
Sample Matrix: *Liquid*

Date: *12-Jan-98* Time: *13:30*
Date: *21-Jan-98*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>1252</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>Toluene</i>	<i>7</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>80</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>23</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>ND</i>	<i>ug/L</i>	<i>2</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>1362</i>	<i>ug/L</i>		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*
Date: *1/23/98*

P.O. BOX 2606 • FARMINGTON, NM 87499

OFF: (505) 325-5667



LAB: (505) 325-1556

QUALITY ASSURANCE REPORT

for EPA Method 8020

Date Analyzed: 21-Jan-98

Internal QC No.: 0559-STD

Surrogate QC No.: 0567-STD

Reference Standard QC No.: 0529/30-QC

Method Blank

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

Calibration Check

Parameter	Unit of Measure	True Value	Analyzed Value	RPD	Limit
Benzene	ppb	30.0	30.6	2	15%
Toluene	ppb	30.0	30.8	3	15%
Ethylbenzene	ppb	30.0	31.4	5	15%
m,p-Xylene	ppb	60.0	59.7	0	15%
o-Xylene	ppb	30.0	31.1	4	15%

Matrix Spike

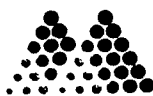
Parameter	1 - Percent Recovered	2 - Percent Recovered	Limit	RPD	Limit
Benzene	102	92	(39-150)	2	20%
Toluene	108	105	(46-148)	2	20%
Ethylbenzene	108	105	(32-160)	3	20%
m,p-Xylene	104	102	(35-145)	3	20%
o-Xylene	110	107	(35-145)	2	20%

Surrogate Recoveries

Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered	Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered
Limit Percent Recovered	(70-130)		Limit Percent Recovered	(70-130)	
17304-7086	101		17310-7086	100	
17305-7086	102				
17306-7086	100				
17307-7086	100				
17308-7086	101			212	(102)
17309-7086	101			1/26/98	1/23/98

S1: Fluorobenzene

RECEIVED FEB 12 1998



Mountain States Analytical, Inc.

The Quality Solution

February 6, 1998

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

Reference:

Project: Hampton 4M
MSAI Group: 19520

Dear Mr. Cox:

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

9801121030 MW-1 (Diss)

9801121300 MW-8 (Diss)

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

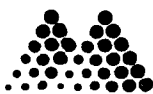
If the report is acceptable, please approve the enclosed invoice and forward it for payment.

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

We look forward to working with you on future projects.

With Regards,

Rolf E. Larsen
Project Manager



Mountain States Analytical, Inc.

The Quality Solution

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

Attn: Mr. David Cox
Project: Hampton 4M

Sample ID: 9801121030 MW-1 (Diss)
Matrix: Waste Water

MSAI Sample: 74841
MSAI Group: 19520
Date Reported: 02/06/98
Discard Date: 03/08/98
Date Submitted: 01/30/98
Date Sampled: 01/12/98
Collected by: MG
Purchase Order: 7086
Project No.:

Test	Analysis	Results as Received	Units	Method Detection Limit
----	-----	-----	-----	-----
0001M	**Special Instructions, Metals Method: SPECIAL INST MSAI	Batch. w59		
0259B	Mercury by CVAA, w/ww, 7470 Method: SW-846 7470	ND	mg/l	0.0001
0392I	Flame/ICP Prep, w/ww, 3005A Method: SW-846 3005A	Batch. w059		
0392M	Mercury Prep CVAA, w/ww, 7470 Method: SW-846 7470	Batch. W001		
0401	Prep for HAA, w/ww, 7062/7742 Method: SW-846 7062/7742	Batch. w60		
1451	Selenium by HAA, w/ww, 7742 Method: SW-846 7742	ND	mg/l	0.002
7245	Arsenic by ICP, w/ww, 6010A Method: SW-846 6010A	ND	mg/l	0.04
7246	Barium by ICP, w/ww, 6010A Method: SW-846 6010A	0.008	mg/l	0.003
7249	Cadmium by ICP, w/ww, 6010A Method: SW-846 6010A	ND	mg/l	0.004
7251	Chromium by ICP, w/ww, 6010A Method: SW-846 6010A	ND	mg/l	0.010
7255	Lead by ICP, w/ww, 6010A Method: SW-846 6010A	ND	mg/l	0.050

10
Years of
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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





On Site ~~Technologies, Ltd.~~ **Mountain States Analytical, Inc.**
The Quality Solution

Sample ID: 9801121030 MW-1 (Diss)

Page 2

MSAI Sample: 74841
MSAI Group: 19520

Test	Analysis	Results as Received	Units	Method Detection Limit
----	-----	-----	-----	-----
7266	Silver by ICP, w/ww, 6010A Method: SW-846 6010A	ND	mg/l	0.005
0939	Sample Filtering, ww, MSAI Method: IN HOUSE MSAI	Complete		

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:



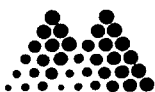
Rolf E. Larsen
Project Manager

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Corporate Office
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e-mail: service@msailabs.com

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6223 Bayonne, Spring, Texas 77389
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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: Hampton 4M

Sample ID: 9801121300 MW-8 (Diss)
Matrix: Waste Water

MSAI Sample: 74842
MSAI Group: 19520
Date Reported: 02/06/98
Discard Date: 03/08/98
Date Submitted: 01/30/98
Date Sampled: 01/12/98
Collected by: MG
Purchase Order: 7086
Project No.:

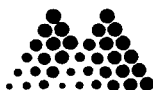
Test Analysis	Results as Received	Units	Method Detection Limit
0259B Mercury by CVAA, w/ww, 7470 Method: SW-846 7470	ND	mg/l	0.0001
0392I Flame/ICP Prep, w/ww, 3005A Method: SW-846 3005A	Batch. w059		
0392M Mercury Prep CVAA, w/ww, 7470 Method: SW-846 7470	Batch. W001		
0401 Prep for HAA, w/ww, 7062/7742 Method: SW-846 7062/7742	Batch. w60		
1451 Selenium by HAA, w/ww, 7742 Method: SW-846 7742	ND	mg/l	0.002
7245 Arsenic by ICP, w/ww, 6010A Method: SW-846 6010A	ND	mg/l	0.04
7246 Barium by ICP, w/ww, 6010A Method: SW-846 6010A	0.014	mg/l	0.003
7249 Cadmium by ICP, w/ww, 6010A Method: SW-846 6010A	ND	mg/l	0.004
7251 Chromium by ICP, w/ww, 6010A Method: SW-846 6010A	ND	mg/l	0.010
7255 Lead by ICP, w/ww, 6010A Method: SW-846 6010A	ND	mg/l	0.050
7266 Silver by ICP, w/ww, 6010A Method: SW-846 6010A	ND	mg/l	0.005

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e-mail: gbrewer@msailabs.com





Mountain States Analytical, Inc.

Page 2

On Site Technologies, Ltd.

The Quality Solution

MSAI Sample: 74842

MSAI Group: 19520

Sample ID: 9801121300 MW-8 (Diss)

Test	Analysis	Results as Received	Units	Method Detection Limit
0939	Sample Filtering, ww, MSAI Method: IN HOUSE MSAI	Complete		

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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281-320-2842 • FAX 281-320-0989
e-mail: gbrewer@msailabs.com



Analysis Batch Number: 0259B-02/03/98-114 -1

Test Identification : 0259B-Mercury by CVAA, w/ww, 7470

Sequence : 8259 -1

Number of Samples : 4

Batch Data-Date/Time : 02/04/98 / 11:19:01

BLANK#	ANALYTE	CONC FOUND #	CONC LIMIT
19477-74729	Mercury	-0.0900	0.1000
PBW1-001-2	Mercury	-0.0900	0.1000
19477-74729-3	Mercury	-0.0900	0.1000

						QC LIMITS	
SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	CONC SPIKE	% REC #	LOWER	UPPER
19527-74856	Mercury	2.0000	-0.1800	1.8900	103.5	80.0	120.0

						QC LIMITS			
SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	RESULT 2	%REC2 #	LOWER	UPPER	RPD #	LIMIT
19527-74856	Mercury	2.0000	-0.1800	1.9000	104.0	80.0	120.0	0.5	20.0

DUPLICATE						
SAMPLE#	ANALYTE	RESULT 1	RESULT 2	RPD #	LIMIT	DILUTION
19527-74856	Mercury	-0.1800	-0.1800	0.0	20.0	1.00

					QC LIMITS	
SAMPLE#	ANALYTE	CONC FOUND	CONC KNOWN	% REC #	LOWER	UPPER
19477-74730	Mercury	2.5000	2.5000	100.0	80.0	120.0
LCSW-001-2	Mercury	2.5000	2.5000	100.0	80.0	120.0
19477-74730-3	Mercury	2.5000	2.5000	100.0	80.0	120.0

QC LIMITS						
CCV #	ANALYTE	TRUE VALUE	BATCH READ	% REC #	LOWER	UPPER
CCV-	Mercury	3.0000	2.8800	96.0	90.0	110.0
CCV--2	Mercury	5.0000	4.8900	97.8	80.0	120.0
CCV--3	Mercury	5.0000	4.7800	95.6	80.0	120.0
CCV--4	Mercury	5.0000	4.7700	95.4	80.0	120.0

CCB#	ANALYTE	CONC FOUND #	CONC LIMIT
CCB-	Mercury	-0.0300	0.1000
CCB-	Mercury	-0.0100	0.1000
CCB-	Mercury	0.0800	0.1000
CCB-	Mercury	0.0700	0.1000

Groups & Samples

19477-74728 19477-74729 19477-74730 19520-74841 19520-74842 19523-74848 19527-74856

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

02/06/98
15:55:16
Group: 19520

Analysis Batch Number: 1451 -02/02/98-061 -1

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

Sequence : DAAA033

Number of Samples : 2

Batch Data-Date/Time : 02/02/98 / 20:38:44

BLANK#	ANALYTE	CONC FOUND #	CONC LIMIT
PBW-060	Selenium	ND	0.0050

						QC LIMITS	
SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	CONC SPIKE	% REC #	LOWER	UPPER
19520-74841	Selenium	0.0400	0.0010	0.0436	106.5	75.0	125.0

						QC LIMITS			
SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	RESULT 2	%REC2 #	LOWER	UPPER	RPD #	LIMIT
19520-74841	Selenium	0.0400	0.0010	0.0393	95.8	75.0	125.0	10.4	20.0

DUPLICATE						
SAMPLE#	ANALYTE	RESULT 1	RESULT 2	RPD #	LIMIT	DILUTION
19520-74841	Selenium	0.0010	0.0007	35.3(11)	20.0	2.00

					QC LIMITS	
SAMPLE#	ANALYTE	CONC FOUND	CONC KNOWN	% REC #	LOWER	UPPER
LCSW-060	Selenium	0.0384	0.0400	96.0	75.0	125.0

QC LIMITS						
CCV #	ANALYTE	TRUE VALUE	BATCH READ	% REC #	LOWER	UPPER
ICV-	Selenium	0.0500	0.0533	106.6	80.0	120.0
CCV1--2	Selenium	0.0500	0.0534	106.8	80.0	120.0

CCB#	ANALYTE	CONC FOUND #	CONC LIMIT
ICB-	Selenium	0.0001	0.0050
CCB1-	Selenium	0.0003	0.0050

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

(11) - The duplicate results cannot be evaluated because both results are <MDL.

Groups & Samples

19520-74841 19520-74842

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

02/06/98
15:55:21
Group: 19520

Analysis Batch Number: ICPWA-02/03/98-001 -4

Test Identification : ICPWA-*Metals by ICP

Sequence : DATC034

Number of Samples : 4

Batch Data-Date/Time : 02/04/98 / 07:42:35

BLANK#	ANALYTE	CONC FOUND #	CONC LIMIT
PBW1-059	Silver	0.0010	0.0060
	Arsenic	0.0019	0.0300
	Barium	ND	0.0030
	Cadmium	ND	0.0040
	Chromium	0.0017	0.0100
	Iron	ND	0.2000
	Molybdenum	ND	0.0300
	Nickel	ND	0.0300
	Lead	0.0119	0.0400
	Selenium	0.0069	0.0700

SPIKE						QC LIMITS	
SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	CONC SPIKE	% REC #	LOWER	UPPER
19523-74848	Silver	0.0500	0.0000	0.0479	95.8	80.0	120.0
	Arsenic	2.0000	0.0017	1.9432	97.1	80.0	120.0
	Barium	2.0000	0.2139	2.1351	96.1	80.0	120.0
	Cadmium	0.0500	0.0002	0.0516	102.8	80.0	120.0
	Chromium	0.2000	0.0017	0.2019	100.1	80.0	120.0
	Iron	1.0000	0.2537	1.2570	100.3	80.0	120.0
	Molybdenum	0.5000	0.0037	0.5063	100.5	80.0	120.0
	Nickel	0.5000	-0.0015	0.4943	99.2	80.0	120.0
	Lead	0.5000	-0.0106	0.5096	104.0	80.0	120.0
	Selenium	2.0000	0.0102	1.9405	96.5	80.0	120.0

MSD						QC LIMITS			
SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	RESULT 2	%REC2 #	LOWER	UPPER	RPD #	LIMIT
19523-74848	Silver	0.0500	0.0000	0.0495	99.0	80.0	120.0	3.3	20.0
	Arsenic	2.0000	0.0017	1.9992	99.9	80.0	120.0	2.8	20.0
	Barium	2.0000	0.2139	2.1773	98.2	80.0	120.0	2.0	20.0
	Cadmium	0.0500	0.0002	0.0506	100.8	80.0	120.0	2.0	20.0
	Chromium	0.2000	0.0017	0.2042	101.3	80.0	120.0	1.1	20.0
	Iron	1.0000	0.2537	1.2820	102.8	80.0	120.0	2.0	20.0
	Molybdenum	0.5000	0.0037	0.5201	103.3	80.0	120.0	2.7	20.0
	Nickel	0.5000	-0.0015	0.4993	100.2	80.0	120.0	1.0	20.0
	Lead	0.5000	-0.0106	0.5027	102.7	80.0	120.0	1.4	20.0
	Selenium	2.0000	0.0102	2.0087	99.9	80.0	120.0	3.5	20.0

DUPLICATE						
SAMPLE#	ANALYTE	RESULT 1	RESULT 2	RPD #	LIMIT	DILUTION
19523-74848	Silver	0.0000	0.0000	0.0	20.0	1.00
	Arsenic	0.0017	0.0121	150.7(11)	20.0	1.00
	Barium	0.2139	0.2118	1.0	20.0	1.00
	Cadmium	0.0002	0.0001	66.7(11)	20.0	1.00
	Chromium	0.0017	0.0000	200.0(11)	20.0	1.00
	Iron	0.2537	0.2477	2.4	20.0	1.00
	Molybdenum	0.0037	0.0000	200.0(11)	20.0	1.00
	Nickel	-0.0015	0.0000	200.0(11)	20.0	1.00
	Lead	-0.0106	0.0074	1125.0(11)	20.0	1.00
	Selenium	0.0102	0.0136	28.6(11)	20.0	1.00

Analysis Batch Number: ICPWA-02/03/98-001 -4

Test Identification : ICPWA-*Metals by ICP

Sequence : DATC034

Number of Samples : 4

Batch Data-Date/Time : 02/04/98 / 07:42:35

CONTROL		QC LIMITS				
SAMPLE#	ANALYTE	CONC FOUND	CONC KNOWN	% REC #	LOWER	UPPER
LCSW-059	Silver	0.0521	0.0500	104.2	80.0	120.0
	Arsenic	2.0127	2.0000	100.6	80.0	120.0
	Barium	1.9239	2.0000	96.2	80.0	120.0
	Cadmium	0.0557	0.0500	111.4	80.0	120.0
	Chromium	0.2081	0.2000	104.1	80.0	120.0
	Iron	1.0343	1.0000	103.4	80.0	120.0
	Molybdenum	0.5225	0.5000	104.5	80.0	120.0
	Nickel	0.5137	0.5000	102.7	80.0	120.0
	Lead	0.5514	0.5000	110.3	80.0	120.0
	Selenium	2.0482	2.0000	102.4	80.0	120.0

		QC LIMITS				
CCV #	ANALYTE	TRUE VALUE	BATCH READ	% REC #	LOWER	UPPER
ICV-	Silver	0.4000	0.3789	94.7	90.0	110.0
	Arsenic	1.6000	1.5838	99.0	90.0	110.0
	Barium	4.0000	3.8169	95.4	90.0	110.0
	Cadmium	4.0000	3.9563	98.9	90.0	110.0
	Chromium	4.0000	4.0024	100.1	90.0	110.0
	Iron	4.0000	4.0909	102.3	90.0	110.0
	Molybdenum	20.0000	19.4749	97.4	90.0	110.0
	Nickel	8.0000	7.9267	99.1	90.0	110.0
	Lead	20.0000	19.2317	96.2	90.0	110.0
	Selenium	1.6000	1.5514	97.0	90.0	110.0
CCV1--2	Silver	0.4000	0.3724	93.1	90.0	110.0
	Arsenic	1.6000	1.5616	97.6	90.0	110.0
	Barium	4.0000	3.7455	93.6	90.0	110.0
	Cadmium	4.0000	3.9347	98.4	90.0	110.0
	Chromium	4.0000	3.9560	98.9	90.0	110.0
	Iron	4.0000	4.1056	102.6	90.0	110.0
	Molybdenum	20.0000	19.2108	96.1	90.0	110.0
	Nickel	8.0000	7.8528	98.2	90.0	110.0
	Lead	20.0000	19.0628	95.3	90.0	110.0
	Selenium	1.6000	1.5385	96.2	90.0	110.0
CCV2--3	Silver	0.4000	0.3825	95.6	90.0	110.0
	Arsenic	1.6000	1.5837	99.0	90.0	110.0
	Barium	4.0000	3.7675	94.2	90.0	110.0
	Cadmium	4.0000	3.9612	99.0	90.0	110.0
	Chromium	4.0000	3.9819	99.5	90.0	110.0
	Iron	4.0000	4.1693	104.2	90.0	110.0
	Molybdenum	20.0000	19.3837	96.9	90.0	110.0
	Nickel	8.0000	7.8818	98.5	90.0	110.0
	Lead	20.0000	19.4674	97.3	90.0	110.0
	Selenium	1.6000	1.5373	96.1	90.0	110.0
CCV3--4	Silver	0.4000	0.3834	95.9	90.0	110.0
	Arsenic	1.6000	1.5810	98.8	90.0	110.0
	Barium	4.0000	3.7692	94.2	90.0	110.0
	Cadmium	4.0000	3.9638	99.1	90.0	110.0
	Chromium	4.0000	3.9899	99.7	90.0	110.0
	Iron	4.0000	4.1877	104.7	90.0	110.0

Analysis Batch Number: ICPWA-02/03/98-001 -4

Test Identification : ICPWA-*Metals by ICP

Sequence : DATC034

Number of Samples : 4

Batch Data-Date/Time : 02/04/98 / 07:42:35

QC LIMITS

CCV #	ANALYTE	TRUE VALUE	BATCH READ	% REC #	LOWER	UPPER
CCV3--4	Molybdenum	20.0000	19.3755	96.9	90.0	110.0
	Nickel	8.0000	7.9553	99.4	90.0	110.0
	Lead	20.0000	19.4548	97.3	90.0	110.0
	Selenium	1.6000	1.4923	93.3	90.0	110.0

CCB#	ANALYTE	CONC FOUND #	CONC LIMIT
ICB-	Silver	ND	0.0060
	Arsenic	ND	0.0300
	Barium	ND	0.0030
	Cadmium	0.0027	0.0040
	Chromium	0.0034	0.0100
	Iron	ND	0.2000
	Molybdenum	0.0182	0.0300
	Nickel	0.0067	0.0300
	Lead	0.0279	0.0400
	Selenium	0.0466	0.0700
CCB1-	Silver	0.0015	0.0060
	Arsenic	ND	0.0300
	Barium	ND	0.0030
	Cadmium	0.0026	0.0040
	Chromium	0.0015	0.0100
	Iron	ND	0.2000
	Molybdenum	0.0164	0.0300
	Nickel	ND	0.0300
	Lead	0.0017	0.0400
	Selenium	0.0310	0.0700
CCB2-	Silver	0.0038	0.0060
	Arsenic	0.0042	0.0300
	Barium	ND	0.0030
	Cadmium	0.0026	0.0040
	Chromium	0.0020	0.0100
	Iron	0.0081	0.2000
	Molybdenum	0.0111	0.0300
	Nickel	0.0016	0.0300
	Lead	ND	0.0400
	Selenium	0.0200	0.0700
CCB3-	Silver	ND	0.0060
	Arsenic	0.0031	0.0300
	Barium	ND	0.0030
	Cadmium	ND	0.0040
	Chromium	0.0010	0.0100
	Iron	ND	0.2000
	Molybdenum	0.0119	0.0300
	Nickel	ND	0.0300
	Lead	0.0060	0.0400
	Selenium	0.0111	0.0700

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

02/06/98
15:55:27
Group: 19520

Analysis Batch Number: ICPWA-02/03/98-001 -4

Test Identification : ICPWA-*Metals by ICP

Sequence : DATC034

Number of Samples : 4

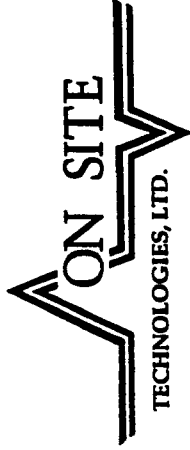
Batch Data-Date/Time : 02/04/98 / 07:42:35

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

(11) - The duplicate results cannot be evaluated because both results are <MDL.

Groups & Samples

19494-74776	19520-74841	19520-74842	19523-74848
-------------	-------------	-------------	-------------



CHAIN OF CUSTODY RECORD

7086

Page: 1 of 1

Date: 1/12/97

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

Purchase Order No.:		Job No.	
Name		Denver Bearden	
Company		PNM Gas Services	
Address		603 W. Elm Street	
City, State, Zip		Farmington, NM 87401	
Name		Maureen Gannon	
Company		PNM Gas Services	
Mailing Address		Alverado Square, Mail Stop 0408	
City, State, Zip		Albuquerque, NM 87158	
Telephone No.		505-848-2974	
Telefax No.			
Title			
RESULTS TO REPORT		ANALYSIS REQUESTED	
Containers		ANALYSIS REQUESTED	
Number of Containers		ANALYSIS REQUESTED	
Sample Identification		LAB ID	
T801121030 MW-1		17304-10816	
T801121100 MW-3		17305	
T801121130 MW-4		17306	
T801121200 MW-5		17307	
T801121230 MW-7		17308	
T801121300 MW-8		17309	
T801121320 MW-9		17310	
Relinquished by: Mark S. Linares		Date/Time 1/13/97 1430	
Relinquished by:		Date/Time	
Relinquished by:		Date/Time	
Method of Shipment:		Special Instructions:	
Authorized by: Mark S. Linares		Results to be sent to both parties.	

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Attn: *Denver Bearden*
Company: *PNM Gas Services*
Address: *603 W. Elm*
City, State: *Farmington, NM 87401*

Date: *17-Nov-97*
COC No.: *7083*
Sample No.: *16818*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Hampton 4M*
Project Location: *9711111330; TH-7*
Sampled by: *MS*
Analyzed by: *DC*
Sample Matrix: *Liquid*

Date: *11-Nov-97* Time: *13:30*
Date: *13-Nov-97*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>2171</i>	<i>ug/L</i>	<i>10</i>	<i>ug/L</i>
<i>Toluene</i>	<i>4185</i>	<i>ug/L</i>	<i>10</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>190</i>	<i>ug/L</i>	<i>10</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>2225</i>	<i>ug/L</i>	<i>10</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>631</i>	<i>ug/L</i>	<i>10</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>9402</i>	<i>ug/L</i>		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*
Date: *11/17/97*

American Environmental Network, Inc.

AEN I.D. 711365

December 18, 1997

PUBLIC SERVICE COMPANY
ALVARADO SQUARE-MS0408
ALBUQUERQUE, NM 87158

Project Name HAMPTON 4M
Project Number (none)

Attention: GANNON MAUREEN

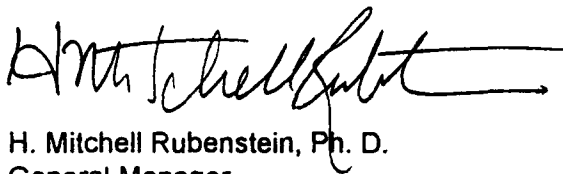
On 11/26/97 American Environmental Network (NM), Inc. (ADHS License No. AZ0015), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

On December 3, 1997, the client notified the laboratory which cations and which anions should be analyzed. The list is attached to the COC.

EPA Method 8020 was performed by AEN(NM), Inc., Albuquerque, NM.

All other analyses were performed by AEN(FL), Pensacola, FL.

If you have any questions or comments, please do not hesitate to contact us at (505)344-3777.



H. Mitchell Rubenstein, Ph. D.
General Manager

MR: mt

Enclosure

American Environmental Network, Inc.

CLIENT	: PUBLIC SERVICE COMPANY	AEN I.D.	: 711365
PROJECT #	: (none)	DATE RECEIVED	: 11/26/97
PROJECT NAME	: HAMPTON 4M	REPORT DATE	: 12/18/97
AEN			DATE
ID. #	CLIENT DESCRIPTION	MATRIX	COLLECTED
01	9711251200	AQ	11/25/97

GAS CHROMATOGRAPHY RESULTS

TEST : BTEX (EPA 8020)
CLIENT : PUBLIC SERVICE COMPANY
PROJECT # : (none)
PROJECT NAME : HAMPTON 4M

AEN I.D.: 711365

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
01	9711251200	AQUEOUS	11/15/97	NA	11/25/97	1

PARAMETER	DET. LIMIT	UNITS	01
BENZENE	0.5	UG/L	< 0.5
TOLUENE	0.5	UG/L	< 0.5
ETHYLBENZENE	0.5	UG/L	< 0.5
TOTAL XYLENES	0.5	UG/L	< 0.5

SURROGATE:

BROMOFLUOROBENZENE (%) 105

SURROGATE LIMITS (80 - 120)

CHEMIST NOTES:

N/A

GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: BTEX (EPA 8020)	AEN I.D.	: 711365
BLANK I. D.	: 112597	DATE EXTRACTED	: NA
CLIENT	: PUBLIC SERVICE COMPANY	DATE ANALYZED	: 11/25/97
PROJECT #	: (none)	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: HAMPTON 4M		

PARAMETER	UNITS	
BENZENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
ETHYLBENZENE	UG/L	<0.5
TOTAL XYLENES	UG/L	<0.5

SURROGATE:
BROMOFLUOROBENZENE (%) 101
SURROGATE LIMITS: (80 - 120)
CHEMIST NOTES:
N/A

GAS CHROMATOGRAPHY RESULTS
REAGENT BLANK

TEST	: BTEX (EPA 8020)	AEN I.D.	: 711365
BLANK I. D.	: 112697	DATE EXTRACTED	: NA
CLIENT	: PUBLIC SERVICE COMPANY	DATE ANALYZED	: 11/26/97
PROJECT #	: (none)	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: HAMPTON 4M		

PARAMETER	UNITS	
BENZENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
ETHYLBENZENE	UG/L	<0.5
TOTAL XYLENES	UG/L	<0.5

SURROGATE:
BROMOFLUOROBENZENE (%) 104
SURROGATE LIMITS: (80 - 120)
CHEMIST NOTES:
N/A

GAS CHROMATOGRAPHY QUALITY CONTROL
MSMSD

TEST	: BTEX (EPA 8020)	AEN I.D.	: 711365
MSMSD #	: 711361-03	DATE EXTRACTED	: NA
CLIENT	: PUBLIC SERVICE COMPANY	DATE ANALYZED	: 11/25/97
PROJECT #	: (none)	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: HAMPTON 4M	UNITS	: UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
BENZENE	<0.5	10.0	9.7	97	10.1	101	4	(80 - 120)	20
TOLUENE	<0.5	10.0	9.6	96	10.0	100	4	(80 - 120)	20
ETHYLBENZENE	<0.5	10.0	10.2	102	10.6	106	4	(80 - 120)	20
TOTAL XYLENES	<0.5	30.0	31.1	104	32.4	108	4	(80 - 120)	20

CHEMIST NOTES:
N/A

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

CHAIN OF CUSTODY

DATE: 11/26/97 PAGE: 1 OF 1

SHADED AREAS ARE FOR LAB USE ONLY

PLEASE FILL THIS FORM IN COMPLETELY.

PROJECT MANAGER: Cannon, Maureen COMPANY: PNM ADDRESS: Alvarado Square MS 0408 87158 PHONE: 505 241-2018 FAX: 505 241-2340 BILL TO: Same COMPANY: ADDRESS:		ANALYSIS REQUEST <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:30%;">504</td> <td style="width:30%;">EDB ☐ / DBCP ☐</td> <td style="width:30%;">Polynuclear Aromatics (610/8310)</td> <td style="width:30%;">Volatile Organics (624/8240) GC/MS</td> <td style="width:30%;">Volatile Organics (8260) GC/MS</td> <td style="width:30%;">Pesticides/PCB (608/8080)</td> <td style="width:30%;">Herbicides (615/8150)</td> <td style="width:30%;">Base/Neutral/Acid Compounds GC/MS (625/8270)</td> </tr> <tr> <td colspan="8">General Chemistry: <i>Mebr. Cstn/Air</i></td> </tr> </table>		504	EDB ☐ / DBCP ☐	Polynuclear Aromatics (610/8310)	Volatile Organics (624/8240) GC/MS	Volatile Organics (8260) GC/MS	Pesticides/PCB (608/8080)	Herbicides (615/8150)	Base/Neutral/Acid Compounds GC/MS (625/8270)	General Chemistry: <i>Mebr. Cstn/Air</i>							
504	EDB ☐ / DBCP ☐	Polynuclear Aromatics (610/8310)	Volatile Organics (624/8240) GC/MS	Volatile Organics (8260) GC/MS	Pesticides/PCB (608/8080)	Herbicides (615/8150)	Base/Neutral/Acid Compounds GC/MS (625/8270)												
General Chemistry: <i>Mebr. Cstn/Air</i>																			
DATE: 11/25/97 TIME: 1200 MATRIX: H2O LAB ID: 9711251200 H2O		PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS (RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK ☒ (NORMAL) CERTIFICATION REQUIRED: ☐ NM ☐ SDWA ☐ OTHER METHANOL PRESERVATION ☐																	
PROJECT INFORMATION PROJ. NO.: PROJ. NAME: Hampton 4M P.O. NO.: SHIPPED VIA:		RELINQUISHED BY: Signature: <i>[Signature]</i> Time: 10:30 Printed Name: Mark S. Williams Date: 11/26/97 Company: PNM																	
RELINQUISHED BY: Signature: <i>[Signature]</i> Time: 10:30 Printed Name: Mark S. Williams Date: 11/26/97 Company: PNM		RECEIVED BY: Signature: <i>[Signature]</i> Time: Printed Name: Date: Company: 																	

MARK CALLED AT 9:20 AM 12-3-97 AND REQUESTED CATIONS/ANIONS TO INCLUDE :

CATIONS: Na, Ca, Mg, K

ANIONS: Cl, SO₄, CARBONATE/BICARBONATE, HYDROXIDE, TDS,
pH, CONDUCTIVITY, TOTAL HARDNESS

& CAT./ANION % DIFFERENCE.

[0] Page 1
Date 12-Dec-97

"FINAL REPORT FORMAT - SINGLE"

Accession: 711653
Client: AMERICAN ENVIRONMENTAL NETWORK (NEW MEXICO) INC.
Project Number: 711365
Project Name: PNM
Project Location: HAMPTON 4N
Test: TOTAL ALKALINITY
Matrix: WATER
QC Level: II

Lab ID: 001
Client Sample Id: 711365-01
Sample Date/Time: 25-NOV-97 1200
Received Date: 04-DEC-97

Parameters:	Units:	Results:	Rpt Lmts:	Q:	Batch:	Analyst:
ALKALINITY, TOTAL (2320B)	MG/L	160	1		ASW046	JL
PH (150.1)	UNITS	7.3	NA	R4	PHW251	JL
BICARBONATE, CACO3 (2330B)	MG/L	160	1		NONE	DPH
CARBONATE, CACO3 (2330B)	MG/L	ND	1		NONE	DPH
CARBON DIOXIDE, FREE AS CACO3	MG/L	16	1		NONE	DPH
HYDROXIDE (2330B) AS CACO3	MG/L	ND	1		NONE	DPH

Comments:

[0] Page 2
Date 12-Dec-97

"Method Report Summary"

Accession Number: 711653
Client: AMERICAN ENVIRONMENTAL NETWORK (NEW MEXICO) INC.
Project Number: 711365
Project Name: PNM
Project Location: HAMPTON 4N
Test: TOTAL ALKALINITY

Client Sample Id:	Parameter:	Unit:	Result:
711365-01	ALKALINITY, TOTAL (2320B)	MG/L	160
	PH (150.1)	UNITS	7.3
	BICARBONATE, CACO3 (2330B)	MG/L	160
	CARBON DIOXIDE, FREE AS CACO3	MG/L	16

Analysis Report

Analysis: Group of Single Wetchem

Accession:	711653
Client:	AMERICAN ENVIRONMENTAL NETWORK (NEW MEXICO) INC.
Project Number:	711365
Project Name:	PNM
Project Location:	HAMPTON 4N
Department:	WET CHEM

[0] Page 1
Date 12-Dec-97

"FINAL REPORT FORMAT - SINGLE"

Accession: 711653
Client: AMERICAN ENVIRONMENTAL NETWORK (NEW MEXICO) INC.
Project Number: 711365
Project Name: PNM
Project Location: HAMPTON 4N
Test: Group of Single Wetchem
Matrix: WATER
QC Level: II

Lab ID:	001	Sample Date/Time:	25-NOV-97 1200
Client Sample Id:	711365-01	Received Date:	04-DEC-97

Parameters:	Units:	Results:	Rpt Lmts:	Q:	Batch:	Analyst:
CHLORIDE (325.3)	MG/L	29	1		CIW116	RB
CONDUCTIVITY (120.1/2510 B)	UMH/CM	5000	1		CDW026	ED
SULFATE (375.4)	MG/L	3000	1000	+	SEW094	JL
TOTAL DISSOLVED SOLIDS (160.1)	MG/L	4100	5	R4	TDW069	ED

Comments:

[0] Page 2
Date 12-Dec-97

"Method Report Summary"

Accession Number: 711653
Client: AMERICAN ENVIRONMENTAL NETWORK (NEW MEXICO) INC.
Project Number: 711365
Project Name: PNM
Project Location: HAMPTON 4N
Test: Group of Single Wetchem

Client Sample Id:	Parameter:	Unit:	Result:
711365-01	CHLORIDE (325.3)	MG/L	29
	CONDUCTIVITY (120.1/2510 B)	UMH/CM	5000
	SULFATE (375.4)	MG/L	3000
	TOTAL DISSOLVED SOLIDS (160.1)	MG/L	4100

Analysis Report

Analysis: Group of Single Metals

Accession:	711653
Client:	AMERICAN ENVIRONMENTAL NETWORK (NEW MEXICO) INC.
Project Number:	711365
Project Name:	PNM
Project Location:	HAMPTON 4N
Department:	METALS

[0] Page 1
Date 16-Dec-97

"FINAL REPORT FORMAT - SINGLE"

Accession: 711653
Client: AMERICAN ENVIRONMENTAL NETWORK (NEW MEXICO) INC.
Project Number: 711365
Project Name: PNM
Project Location: HAMPTON 4N
Test: Group of Single Metals
Matrix: WATER
QC Level: II

Lab Id: 001
Client Sample Id: 711365-01
Sample Date/Time: 25-NOV-97 1200
Received Date: 04-DEC-97

Parameters:	Units:	Results:	Rpt Lmts:	Q:	Batch:	Analyst:
CALCIUM (200.7)	MG/L	400	1		I0W291	JR
POTASSIUM (200.7)	MG/L	6	2		X0W291	JR
MAGNESIUM (200.7)	MG/L	19	0.2		J0W291	JR
SODIUM (200.7)	MG/L	880	1	+	10W291	JR

Comments:

[0] Page 2
Date 16-Dec-97

"Method Report Summary"

Accession Number: 711653
Client: AMERICAN ENVIRONMENTAL NETWORK (NEW MEXICO) INC.
Project Number: 711365
Project Name: PNM
Project Location: HAMPTON 4N
Test: Group of Single Metals

Client Sample Id:	Parameter:	Unit:	Result:
711365-01	CALCIUM (200.7)	MG/L	400
	POTASSIUM (200.7)	MG/L	6
	MAGNESIUM (200.7)	MG/L	19
	SODIUM (200.7)	MG/L	880

Analysis Report

Analysis: HARDNESS

Accession:	711653
Client:	AMERICAN ENVIRONMENTAL NETWORK (NEW MEXICO) INC.
Project Number:	711365
Project Name:	PNM
Project Location:	HAMPTON 4N
Department:	METALS

[0] Page 1
Date 16-Dec-97

"FINAL REPORT FORMAT - SINGLE"

Accession: 711653
Client: AMERICAN ENVIRONMENTAL NETWORK (NEW MEXICO) INC.
Project Number: 711365
Project Name: PNM
Project Location: HAMPTON 4N
Test: HARDNESS
Matrix: WATER
QC Level: II

Lab Id:	001	Sample Date/Time:	25-NOV-97 1200
Client Sample Id:	711365-01	Received Date:	04-DEC-97

Parameters:	Units:	Results:	Rpt Lmts:	Q:	Batch:	Analyst:
CALCIUM, HARDNESS (200.7)	MG/L	990	2		IOW291	JR
MAGNESIUM, HARDNESS (200.7)	MG/L	78	0.8		JOW291	JR
TOTAL HARDNESS	MG/L	1100	NA		NONE	JR

Comments:

[0] Page 2
Date 16-Dec-97

"Method Report Summary"

Accession Number: 711653
Client: AMERICAN ENVIRONMENTAL NETWORK (NEW MEXICO) INC.
Project Number: 711365
Project Name: PNM
Project Location: HAMPTON 4N
Test: HARDNESS

Client Sample Id:	Parameter:	Unit:	Result:
-711365-01	CALCIUM, HARDNESS (200.7)	MG/L	990
	MAGNESIUM, HARDNESS (200.7)	MG/L	78
	TOTAL HARDNESS	MG/L	1100

Data Qualifiers for Final Report

AEN-Pensacola Inorganic/Organic

@	Adjusted reporting limit due to sample matrix (dilution prior to digestion and/or analysis)
+	Elevated reporting limit due to dilution into calibration range
*	Elevated reporting limit due to matrix interference (dilution prior to digestion and/or analysis)
#	Elevated reporting limit due to insufficient sample size
D	Diluted out
J5	The reported value is quantitated as a TIC; therefore, it is estimated
ND = Not Detected	N/S = Not Submitted N/A = Not Applicable

Florida Projects Inorganic/Organic

Y1	Improper preservation, no preservative present in sample upon receipt
Y2	Improper preservation, incorrect preservative present in sample upon receipt
Y3	Improper preservation, sample temperature exceeded EPA temperature limits of 2-6°C upon receipt
Y (FL description)	The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
Q	Sample held beyond the accepted holding time
I	The reported value is < Laboratory RL and > laboratory MDL
U1	The reported value is ≤ Laboratory MDL (value for sample result is reported as the MDL)
U (FL description)	Indicates the compound was analyzed for but not detected.
T	The reported value is < Laboratory MDL (value shall not be used for statistical analysis)
V	The analyte was detected in both the sample and the associated method blank.
J1	Surrogate recovery limits have been exceeded
J2	The sample matrix interfered with the ability to make any accurate determinations
J3	The reported value failed to meet the established quality control criteria for either precision or accuracy
J (FL description)	Estimated value; not accurate.

AFCEE Projects (under QAPP) and All Other (AEN-PN) Projects/Sites for Inorganic/Organic Parameters

J4	(For positive results) Temperature limits exceeded (≤2°C or ≥ 6°C)
J (AFCEE description)	The analyte was positively identified, the quantitation is an estimation
R1	(For nondetects) Temperature limits exceeded (≤2°C or ≥ 6°C)
R2	Improper preservation, no preservative present in sample upon receipt
R3	Improper preservation, incorrect preservative present in sample upon receipt
R4	Holding time exceeded
R5	Collection requirements not met, improper container used for sample
R (AFCEE description)	The data are unusable due to deficiencies in the ability to analyze the sample and meet QC criteria
F	< RL and > laboratory MDL
F (AFCEE description)	The analyte was positively identified but the associated numerical value is below the AFCEE or lab RL
U2	≤ Laboratory MDL (value for result will be the MDL, never below the MDL)
U (AFCEE description)	The analyte was analyzed for but not detected. The associated numerical value is at or below the MDL
B (AFCEE description)	The analyte was found in the associated blank, as well as in the sample

ICR Projects Inorganic/Organic

A	Acceptable
R6	Rejected

Examples: ICR Flags

R6 = Laboratory extracted the sample but the refrigerator malfunctioned so the extract became warm and client was notified
R6 = Sample arrived in laboratory in good condition; however, the laboratory did not analyze it within EPA's established holding time limit.

CLP and CLP-like Projects

Refer to referenced CLP Statement of Work (SOW) for explanation of data qualifiers

IDL = Laboratory Instrument Detection Limit

MDL = Laboratory Method Detection Limit

RL = Reporting Limit (AFCEE RLs are listed in the AFCEE QAPP)

CLP CRDL = CLP Contract Required Detection Limit (these limits are listed in the EPA CLP Statement of Work or SOW)

CLP CRQL = CLP Contract Required Quantitation Limit (these limits are listed in the EPA CLP Statement of Work or SOW)

Any time a sample arrives at the laboratory improperly preserved (at improper pH or temperature) or after holding time has expired or prepared or analyzed after holding time, client must be notified in writing (i.e. case narrative).

AEN-Pensacola uses the most current promulgated methods contained in the reference manuals.

Quality Control Report

Analysis: TOTAL ALKALINITY

Accession:	711653
Client:	AMERICAN ENVIRONMENTAL NETWORK (NEW MEXICO) INC.
Project Number:	711365
Project Name:	PNM
Project Location:	HAMPTON 4N
Department:	WET CHEM

[0] Page 1
Date 12-Dec-97

"WetChem Quality Control Report"

Parameter:	ALKALINITY	PH
Batch Id:	ASW046	PHW251
Blank Result:	<1	N/A
Anal. Method:	2320B	150.1
Prep. Method:	N/A	N/A
Analysis Date:	04-DEC-97	04-DEC-97
Prep. Date:	04-DEC-97	04-DEC-97

Sample Duplication

Sample Dup:	711550-2	711654-1
Rept Limit:	<1	N/A
Sample Result:	99.6	5.92
Dup Result:	99.9	5.92
Sample RPD:	0	0
Max RPD:	4	0.12
Dry Weight%	N/A	N/A

Matrix Spike

Sample Spiked:	711550-2	N/A
Rept Limit:	<1	N/A
Sample Result:	99.6	
Spiked Result:	127.0	
Spike Added:	25.0	
% Recovery:	110	
% Rec Limits:	77-122	
Dry Weight%	N/A	

ICV

ICV Result:	244	10.09
True Result:	250	10.00
% Recovery:	98	101
% Rec Limits:	90-110	90-110

LCS

LCS Result:		6.87
True Result:		6.87
% Recovery:		100
% Rec Limits:		96-104

[0] Page 2
Date 12-Dec-97

----- Common Footnotes WetChem -----

N/A = NOT APPLICABLE.
 N/S = NOT SUBMITTED.
 N/C = SAMPLE AND DUPLICATE RESULTS ARE AT OR BELOW AEN REPORTING LIMIT;
 THEREFORE, THE RPD IS "NOT CALCULABLE" AND NO CONTROL LIMITS APPLY.
 N/D = NOT DETECTED.
 R = REACTIVE
 T = TOTAL
 G = SAMPLE AND/OR DUPLICATE RESULT IS BELOW 5 X AEN REPORTING LIMIT AND
 THE ABSOLUTE DIFFERENCE BETWEEN THE SAMPLE AND DUPLICATE RESULT IS AT
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 Q = THE ANALYTICAL (POST-DISTILLATION) SPIKE IS REPORTED DUE TO PERCENT RECOVERY
 BEING OUTSIDE ACCEPTANCE LIMITS ON THE MATRIX (PRE-DISTILLATION) SPIKE.
 # = ELEVATED REPORTING LIMIT DUE TO INSUFFICIENT SAMPLE.
 + = ELEVATED REPORTING LIMIT DUE TO DILUTION INTO CALIBRATION RANGE.
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 AND/OR ANALYSIS).
 @ = ADJUSTED REPORTING LIMIT DUE TO SAMPLE MATRIX (DILUTION PRIOR TO DIGESTION
 AND/OR ANALYSIS).
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 I = DUPLICATE INJECTION.
 & = AUTOMATED
 F = SAMPLE SPIKED > 4 X SPIKE CONCENTRATION.
 N/C+ = NOT CALCULABLE
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 LIMIT; THEREFORE, THE RESULTS ARE "OUT OF CONTROL".
 A = SAMPLE AND DUPLICATE RESULTS ARE "OUT OF CONTROL".
 Z = THE SAMPLE RESULT FOR THE SPIKE IS BELOW THE REPORTING LIMIT. HOWEVER,
 THIS RESULT IS REPORTED FOR ACCURATE QC CALCULATIONS.
 NH= SAMPLE AND / OR DUPLICATE RESULT IS BELOW 5 X AEN REPORTING LIMIT
 AND THE ABSOLUTE DIFFERENCE BETWEEN THE RESULTS EXCEEDS THE AEN
 REPORTING LIMIT; THEREFORE, THE RESULTS ARE "OUT OF CONTROL".
 SAMPLE IS NON-HOMOGENEOUS.
 (*) = REPORTING LIMITS RAISED DUE TO CLP METHOD NOT REQUIRING A CONCENTRATION STEP FOR CN.
 (CA) = SEE CORRECTIVE ACTIONS FORM.
 **= MATRIX INTERFERENCE
 SW-846, 3rd Edition, latest EPA-approved edition.
 EPA 600/4-79-020, Revised March 1983.
 STANDARD METHODS, For the Examination of Water and Wastewater, latest EPA-approved edition.
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 METHODS FOR THE DETERMINATION OF INORGANIC SUBSTANCES IN ENVIRONMENTAL SAMPLES,
 EPA600/R-93/100, AUGUST 1993
 METHODS FOR SOIL ANALYSIS, PART 2, CHEMICAL AND MICROBIOLOGICAL PROPERTIES, 2ND EDITION.
 AEN-PN USES THE MOST CURRENT PROMULGATED METHODS FROM THE REFERENCES LISTED ABOVE.

1. COLIFORM. COLIFORM PRECISION IS MEASURED BY THE ABSOLUTE DIFFERENCE BETWEEN
 THE LOGARITHM OF COLONIES PER 100 MLS OF SAMPLE ON DUPLICATE PLATES.
2. PH. PH PRECISION IS MEASURED BY THE ABSOLUTE DIFFERENCE BETWEEN THE
 SAMPLE AND DUPLICATE ANALYSIS.
3. FLASHPOINT. FLASHPOINT PRECISION IS MEASURED BY THE ABSOLUTE DIFFERENCE BETWEEN
 THE SAMPLE AND DUPLICATE ANALYSIS.

RPD = RELATIVE PERCENT DIFFERENCE (OR DEVIATION).
 RPT LMTS = REPORTING LIMITS BASED ON METHOD DETECTION LIMIT STUDIES.

DPH = DOLLY P. HWANG	RB = REBECCA BROWN	JL = JANET LECLEAR
MM = MIKE MCKENZIE	ED = ESTHER DANTIN	CR = CYNTHIA ROBERTS
PLD = PAULA L. DOUGHTY	LV = LASSANDRA VON APPEN	JTZ = JONATHAN T. ZIENTARSKI
RH = RICKY HAGENDORFER	MG = MARY GUTIERREZ	AB = AMY BRADLEY
NK = NIKKI KILBURN		

Quality Control Report

Analysis: Group of Single Wetchem

Accession:	711653
Client:	AMERICAN ENVIRONMENTAL NETWORK (NEW MEXICO) INC.
Project Number:	711365
Project Name:	PNM
Project Location:	HAMPTON 4N
Department:	WET CHEM

[0] Page 1
Date 12-Dec-97

"WetChem Quality Control Report"				
Parameter:	CHLORIDE	CONDUCT'Y	SULFATE	TDS
Batch Id:	CIW116	CDW026	SEW094	TDW069
Blank Result:	<1	<1	<10	<5
Anal. Method:	325.3	120.1	375.4	160.1
Prep. Method:	N/A	N/A	N/A	N/A
Analysis Date:	03-DEC-97	12-DEC-97	08-DEC-97	09-DEC-97
Prep. Date:	03-DEC-97	12-DEC-97	08-DEC-97	08-DEC-97

Sample Duplication

Sample Dup:	711631-2	711653-1	711603-1	711653-1
Rept Limit:	<1	<1	<10	<5
Sample Result:	12.8	4990	<10	4120
Dup Result:	12.6	4980	<10	4068
Sample RPD:	2	0	N/C	1
Max RPD:	6	2	10	15
Dry Weight%	N/A	N/A	N/A	N/A

Matrix Spike

Sample Spiked:	711631-2	N/A	711603-1	N/A
Rept Limit:	<1	N/A	<10	N/A
Sample Result:	12.8		<10	
Spiked Result:	70.2		21.1	
Spike Added:	55.0		20.0	
% Recovery:	104		106	
% Rec Limits:	88-113		64-150	
Dry Weight%	N/A		N/A	

ICV

ICV Result:	98.1		20.1	
True Result:	100		20.0	
% Recovery:	98		101	
% Rec Limits:	90-110		90-110	

LCS

LCS Result:		1426		310
True Result:		1412		293
% Recovery:		101		106
% Rec Limits:		98-102		77-122

[0] Page 2
Date 12-Dec-97

"Quality Control Comments"

Batch Id: Comments:

CIW116	711654-1; 711653-1	WAS ADDED TO BATCH ON 4-DEC-97
TDW069	712058-1,2,3,4,5,6;	712059-1,2,3,4,5,6,7,8,9,10 WERE ADDED TO BATCH
TDW069	ON 10-DEC-97	

[0] Page 3
Date 12-Dec-97

----- Common Footnotes WetChem -----

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THEREFORE, THE RPD IS "NOT CALCULABLE" AND NO CONTROL LIMITS APPLY.
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T = TOTAL
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RH = RICKY HAGENDORFER MG = MARY GUTIERREZ AB = AMY BRADLEY
NK = NIKKI KILBURN

Quality Control Report

Analysis: Group of Single Metals

Accession:	711653
Client:	AMERICAN ENVIRONMENTAL NETWORK (NEW MEXICO) INC.
Project Number:	711365
Project Name:	PNM
Project Location:	HAMPTON 4N
Department:	METALS

[0] Page 1
Date 16-Dec-97

"Metals Quality Control Report"

Parameter:	CALCIUM	POTASSIUM	MAGNESIUM	SODIUM
Batch Id:	IOW291	XOW291	JOW291	10W291
Blank Result:	<1	<2	<0.2	<0.2
Anal. Method:	200.7	200.7	200.7	200.7
Prep. Method:	200.7	200.7	200.7	200.7
Analysis Date:	09-DEC-97	11-DEC-97	11-DEC-97	11-DEC-97
Prep. Date:	08-DEC-97	08-DEC-97	08-DEC-97	08-DEC-97

Sample Duplication

Sample Dup:	711410-2	711410-2	711410-2	711410-2
Rept Limit:	<1	<2	<0.2	<0.2
Sample Result:	23	22	21	23
Dup Result:	23	22	21	23
Sample RPD:	0	0	0	0
Max RPD:	20	20	20	20
Dry Weight%	N/A	N/A	N/A	N/A

Matrix Spike

Sample Spiked:	711410-2	711410-2	711410-2	711410-2
Rept Limit:	<1	<2	<0.2	<0.2
Sample Result:	3	<2	0.8	3.0
Spiked Result:	23	22	21	23
Spike Added:	20	20	20	20
% Recovery:	100	110	101	100
% Rec Limits:	75-125	75-125	75-125	75-125
Dry Weight%	N/A	N/A	N/A	N/A

ICV

ICV Result:	24	26	25	24
True Result:	25	25	25	25
% Recovery:	96	104	100	96
% Rec Limits:	95-105	95-105	95-105	95-105

LCS

LCS Result:	20	21	20	20
True Result:	20	20	20	20
% Recovery:	100	105	100	100
% Rec Limits:	80-120	80-120	80-120	80-120

[0] Page 2
Date 16-Dec-97

"Quality Control Comments"

Batch Id: Comments:

IOW291	ANALYST: JR
IOW291	The results reported under 'Sample Duplication' are the MS/MSD.
XOW291	ANALYST: JR
XOW291	The results reported under 'Sample Duplication' are the MS/MSD.
JOW291	ANALYST: JR
JOW291	The results reported under 'Sample Duplication' are the MS/MSD.
10W291	ANALYST: JR
10W291	The results reported under 'Sample Duplication' are the MS/MSD.

[0] Page 3
Date 16-Dec-97

----- Common Footnotes Metals -----

N/A = NOT APPLICABLE.
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THEREFORE, THE RPD IS "NOT CALCULABLE" AND NO CONTROL LIMITS APPLY.
N/D = NOT DETECTED.
DISS. OR D = DISSOLVED
T & D = TOTAL AND DISSOLVED
R = REACTIVE
T = TOTAL
G = SAMPLE AND/OR DUPLICATE RESULT IS BELOW 5 X THE REPORTING LIMIT AND
THE ABSOLUTE DIFFERENCE BETWEEN THE SAMPLE AND DUPLICATE RESULT IS AT
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TO ANALYSIS)
@ = ADJUSTED REPORTING LIMIT DUE TO SAMPLE MATRIX. (DILUTION PRIOR TO
DIGESTION)
P = ANALYTICAL (POST DIGESTION) SPIKE.
I = DUPLICATE INJECTION.
& = AUTOMATED
F = SAMPLE SPIKED > 4 X SPIKE CONCENTRATION.
N/C+ = NOT CALCULABLE
N/C* = NOT CALCULABLE; SAMPLE SPIKED > 4 X SPIKE CONCENTRATION.
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NH= THE RELATIVE PERCENT DIFFERENCE (RPD) EXCEEDS THE AEN CONTROL LIMIT
AND IS "OUT OF CONTROL; DUE TO A NON-HOMOGENEOUS SAMPLE MATRIX.
J = (FLORIDA DEP 'J' FLAG) - MATRIX SPIKE AND POST SPIKE RECOVERY IS OUT OF
THE ACCEPTABLE RANGE. SEE OUT OF CONTROL EVENTS FORM.
U = (FLORIDA DEP 'U' FLAG) - THE COMPOUND WAS ANALYZED FOR, BUT NOT DETECTED.
S = METHOD OF STANDARD ADDITIONS (MSA) WAS PERFORMED ON THIS SAMPLE.

FROM QUALITY CONTROL REPORT:

RPD= RELATIVE PERCENT DEVIATION.

REPT LIMIT= REPORTING LIMIT BASED ON METHOD DETECTION LIMIT STUDIES.

NOTE: THE UNITS REPORTED ON THE QUALITY CONTROL REPORT ARE REPORTED ON AN AS
RUN BASIS. (NOT ADJUSTED FOR DRY WEIGHT).

SW-846, 3rd Edition, latest revision.

EPA 600/4-79-020, Revised March 1983.

NIOSH Manual of Analytical Methods, 4th Edition.

Standard Methods For the Examination of Water and Wastewater, 18th Edition, 1992.

Methods For the Determination of Metals in Environmental Samples - Supplement I,

EPA 600/R-94-111, May 1994.

GJ = GARY JACOBS
JLH = JAMES L. HERED

JR = JOHN REED
LV = LASSANDRA VON APPEN

Quality Control Report

Analysis: HARDNESS

Accession:	711653
Client:	AMERICAN ENVIRONMENTAL NETWORK (NEW MEXICO) INC.
Project Number:	711365
Project Name:	PNM
Project Location:	HAMPTON 4N
Department:	METALS

[0] Page 1
Date 16-Dec-97

"Metals Quality Control Report"

Parameter:	CALCIUM	MAGNESIUM
Batch Id:	IOW291	JOW291
Blank Result:	<1	<0.2
Anal. Method:	200.7	200.7
Prep. Method:	200.7	200.7
Analysis Date:	09-DEC-97	11-DEC-97
Prep. Date:	08-DEC-97	08-DEC-97

Sample Duplication

Sample Dup:	711410-2	711410-2
Rept Limit:	<1	<0.2
Sample Result:	23	21
Dup Result:	23	21
Sample RPD:	0	0
Max RPD:	20	20
Dry Weight%	N/A	N/A

Matrix Spike

Sample Spiked:	711410-2	711410-2
Rept Limit:	<1	<0.2
Sample Result:	3	0.8
Spiked Result:	23	21
Spike Added:	20	20
% Recovery:	100	101
% Rec Limits:	75-125	75-125
Dry Weight%	N/A	N/A

ICV

ICV Result:	24	25
True Result:	25	25
% Recovery:	96	100
% Rec Limits:	95-105	95-105

LCS

LCS Result:	20	20
True Result:	20	20
% Recovery:	100	100
% Rec Limits:	80-120	80-120

[0] Page 2
Date 16-Dec-97

"Quality Control Comments"

Batch Id: Comments:

IOW291	ANALYST: JR
IOW291	The results reported under 'Sample Duplication' are the MS/MSD.
JOW291	ANALYST: JR
JOW291	The results reported under 'Sample Duplication' are the MS/MSD.

[0] Page 3
Date 16-Dec-97

----- Common Footnotes Metals -----

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I = DUPLICATE INJECTION.
& = AUTOMATED
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N/C+ = NOT CALCULABLE
N/C* = NOT CALCULABLE; SAMPLE SPIKED > 4 X SPIKE CONCENTRATION.
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GJ = GARY JACOBS

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PROJECT SAMPLE INSPECTION FORM

Lab Accession #: 711 653Date Received: 12-4-971. Was there a Chain of Custody? Yes No*2. Was Chain of Custody properly filled out and relinquished? Yes No*3. Were samples received cold? Yes No* N/A
(Criteria: 2° - 6°C: AEN-SOP 1055)4. Were all samples properly labeled and identified? Yes No*5. Did samples require splitting? Yes* No
Req By: PM Client Other*6. Were samples received in proper containers for analysis requested? Yes No*7. Were all sample containers received intact? Yes No*8. Were samples checked for preservative? (Check pH of all H₂O requiring preservative except VOA vials that require zero headspace)* Yes No* N/A9. Is there sufficient volume for analysis requested? Yes No* PK 12/4/9710. Were samples received within Holding Time? (REFER TO AEN-SOP 1040) Yes No*11. Is Headspace visible > ¼" in diameter in VOA vials?* If any headspace is evident, comment in out-of-control section. Yes* No N/A12. If sent, were matrix spike bottles returned? Yes No* N/A13. Was Project Manager notified of problems? (initials: _____) Yes No* N/AAirbill Number(s): 329 4596 986Shipped By: FEDEXCooler Number(s): N/AShipping Charges: N/ACooler Weight(s): N/ACooler Temp(s) (°C): 5°CPK 6
(LIST THERMOMETER NUMBER(S) FOR VERIFICATION)

Out of Control Events and Inspection Comments:

10. PH, Conductivity and TDS were received out of hold time. PK 12/4/97.

(USE BACK OF PSIF FOR ADDITIONAL NOTES AND COMMENTS)

Inspected By: J. Webb Date: 12-4-97 Logged By: PK Date: 12/4/97

+ Note all Out-of-Control and/or questionable events on Comment Section of this form.

+ Note who requested the splitting of samples on the Comment Section of this form.

+ All preservatives for the State of North Carolina, the State of New York, and other requested samples are to be recorded on the sheet provided to record pH results (AEN-SOP 938, section 2.2.9).

* According to EPA, ¼" of headspace is allowed in 40 ml vials requiring volatile analysis, however, AEN makes it policy to record any headspace as out-of-control (AEN-SOP 938, section 2.2.12).

CHAIN OF CUSTODY

DATE: 11/26/97 PAGE: 1 OF 1

PROJECT MANAGER: <u>Gannon, Maureen</u>		ANALYSIS REQUEST	
COMPANY: <u>PNM</u>	ADDRESS: <u>Alvarado Square</u>	504 ☐ EDB ☐ / DBCP ☐	Polynuclear Aromatics (610/8310)
PHONE: <u>505 241-2018</u>	FAX: <u>505 241-2340</u>	Volatile Organics (624/8240) GC/MS	Volatile Organics (8260) GC/MS
BILL TO: <u>Same</u>	COMPANY: <u>711653</u>	Pesticides/PCB (608/8080)	Herbicides (615/8150)
ADDRESS: <u>711653</u>		Base/Neutral/Acid Compounds GC/MS (625/8270)	General Chemistry: <u>Mel. Cstn./An.</u>
			Priority Pollutant Metals (13)
			Target Analyte List Metals (23)
			RCRA Metals (8)
			RCRA Metals by TCLP (Method 1311)
			Metals:

PROJECT INFORMATION		PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS		RELINQUISHED BY	
PROJ NO: <u>711653</u>	(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK ☒ (NORMAL) ☒	Signature: <u>[Signature]</u>	Time: <u>10:30</u>	Signature: <u>[Signature]</u>	Time: <u></u>
PROJ NAME: <u>Hampden 4M</u>	CERTIFICATION REQUIRED: ☐ NM ☐ SDWA ☐ OTHER	Printed Name: <u>Mark S. Williams</u>	Date: <u>11/26/97</u>	Printed Name: <u></u>	Date: <u></u>
P.O. NO: <u></u>	METHANOL PRESERVATION ☐	Company: <u>PNM</u>		Company: <u></u>	
SHIPPED VIA: <u></u>	COMMENTS: <u>Will Fax</u>				
	<u>Cation/Anion List</u>				
	<u>Dec 1, 1997</u>				

PLEASE FILL THIS FORM IN COMPLETELY.

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Attn: *Denver Bearden*
Company: *PNM Gas Services*
Address: *603 W. Elm*
City, State: *Farmington, NM 87401*

Date: *5-Dec-97*
COC No.: *7087*
Sample No.: *16982*
Job No.: *2-1000*

Project Name: *PNM Gas Services - EB Well*
Project Location: *9711251200*
Sampled by: *MG/MS*
Analyzed by: *DC*
Sample Matrix: *Liquid*

Date: *25-Nov-97* Time: *12:00*
Date: *4-Dec-97*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	ND	ug/L	0.2	ug/L
<i>Toluene</i>	ND	ug/L	0.2	ug/L
<i>Ethylbenzene</i>	ND	ug/L	0.2	ug/L
<i>m,p-Xylene</i>	ND	ug/L	0.2	ug/L
<i>o-Xylene</i>	ND	ug/L	0.2	ug/L
<i>TOTAL</i>	ND	ug/L		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*
Date: *12/5/97*

P.O. BOX 2606 • FARMINGTON, NM 87499



ON SITE
TECHNOLOGIES, LTD.

QUALITY ASSURANCE REPORT

for EPA Method 8020

Internal QC No.: 0559-STD
Surrogate QC No.: 0556-STD
Reference Standard QC No.: 0529/30-QC

<i>Parameter</i>	<i>Result</i>	<i>Unit of Measure</i>
<i>Average Amount of All Analytes In Blank</i>	<0.2	ppb

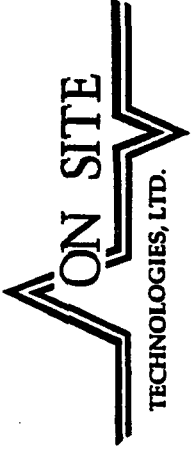
<i>Parameter</i>	<i>Unit of Measure</i>	<i>True Value</i>	<i>Analyzed Value</i>	<i>RPD</i>	<i>Limit</i>
<i>Benzene</i>	ppb	20.0	20.4	2	15%
<i>Toluene</i>	ppb	20.0	21.1	5	15%
<i>Ethylbenzene</i>	ppb	20.0	21.2	6	15%
<i>m,p-Xylene</i>	ppb	40.0	41.1	3	15%
<i>o-Xylene</i>	ppb	20.0	21.0	5	15%

<i>Parameter</i>	<i>1- Percent Recovered</i>	<i>2 - Percent Recovered</i>	<i>Limit</i>	<i>RPD</i>	<i>Limit</i>
<i>Benzene</i>	94	87	(39-150)	4	20%
<i>Toluene</i>	99	95	(46-148)	4	20%
<i>Ethylbenzene</i>	99	92	(32-160)	4	20%
<i>m,p-Xylene</i>	100	93	(35-145)	4	20%
<i>o-Xylene</i>	100	95	(35-145)	4	20%

	S1 Percent Recovered	S2 Percent Recovered		S1 Percent Recovered	S2 Percent Recovered
Laboratory Identification			Laboratory Identification		
Limit Percent Recovered	(70-130)		Limit Percent Recovered	(70-130)	
16982-7087	94				
				24%	(m)
				12/8/97	12/5/97

P.O. BOX 2606 • FARMINGTON, NM 87499
- TECHNOLOGY BLENDING DEPARTMENT - 505-875-2100 • FAX 505-875-2101

CHAIN OF CUSTODY RECORD



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

[illegible]

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

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Attn: *Denver Bearden*
Company: *PNM Gas Services*
Address: *603 W. Elm*
City, State: *Farmington, NM 87401*

Date: *17-Nov-97*
COC No.: *7083*
Sample No.: *16818*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Hampton 4M*
Project Location: *9711111330; TH-7*
Sampled by: *MS* Date: *11-Nov-97* Time: *13:30*
Analyzed by: *DC* Date: *13-Nov-97*
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>2171</i>	<i>ug/L</i>	<i>10</i>	<i>ug/L</i>
<i>Toluene</i>	<i>4185</i>	<i>ug/L</i>	<i>10</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>190</i>	<i>ug/L</i>	<i>10</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>2225</i>	<i>ug/L</i>	<i>10</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>631</i>	<i>ug/L</i>	<i>10</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>9402</i>	<i>ug/L</i>		

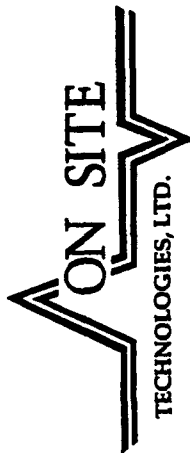
ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*
Date: *11/17/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

- FARMINGTON: BLENDING INDUSTRY WITH THE FUTURE -



CHAIN OF CUSTODY RECORD

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

Date: 11/11/97

Page: 1 of 1[illegible]

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Attn: *Denver Bearden*
Company: *PNM Gas Services*
Address: *603 W. Elm*
City, State: *Farmington, NM 87401*

Date: *5-Dec-97*
COC No.: *7087*
Sample No.: *16982*
Job No.: *2-1000*

Project Name: *PNM Gas Services - EB Well*

Project Location: *9711251200*

Sampled by: *MG/MS*

Date: *25-Nov-97* Time: *12:00*

Analyzed by: *DC*

Date: *4-Dec-97*

Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	ND	ug/L	0.2	ug/L
<i>Toluene</i>	ND	ug/L	0.2	ug/L
<i>Ethylbenzene</i>	ND	ug/L	0.2	ug/L
<i>m,p-Xylene</i>	ND	ug/L	0.2	ug/L
<i>o-Xylene</i>	ND	ug/L	0.2	ug/L
<i>TOTAL</i>	ND	ug/L		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*
Date: *12/5/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

QUALITY ASSURANCE REPORT

for EPA Method 8020

Date Analyzed: 4-Dec-97

Internal QC No.: 0559-STD

Surrogate QC No.: 0556-STD

Reference Standard QC No.: 0529/30-QC

Method Blank

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

Calibration Check

Parameter	Unit of Measure	True Value	Analyzed Value	RPD	Limit
Benzene	ppb	20.0	20.4	2	15%
Toluene	ppb	20.0	21.1	5	15%
Ethylbenzene	ppb	20.0	21.2	6	15%
m,p-Xylene	ppb	40.0	41.1	3	15%
o-Xylene	ppb	20.0	21.0	5	15%

Matrix Spike

Parameter	1 - Percent Recovered	2 - Percent Recovered	Limit	RPD	Limit
Benzene	94	87	(39-150)	4	20%
Toluene	99	95	(46-148)	4	20%
Ethylbenzene	99	92	(32-160)	4	20%
m,p-Xylene	100	93	(35-145)	4	20%
o-Xylene	100	95	(35-145)	4	20%

Surrogate Recoveries

Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered	Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered
Limit Percent Recovered	(70-130)		Limit Percent Recovered	(70-130)	
16982-7087	94				
					(12)
					12/5/97

S1: Fluorobenzene

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Attn: **Denver Bearden**
Company: **PNM Gas Services**
Address: **603 W. Elm**
City, State: **Farmington, NM 87401**

Date: **5-Nov-97**
COC No.: **7080**
Sample No.: **16700**
Job No.: **2-1000**

Project Name: **PNM Gas Services - Hampton 4M**
Project Location: **9710301030; MW-1**
Sampled by: **MS**
Analyzed by: **HR**
Sample Matrix: **Liquid**

Date: **30-Oct-97** Time: **10:30**
Date: **4-Nov-97**

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	2.4	ug/L	0.2	ug/L
<i>Toluene</i>	2.3	ug/L	0.2	ug/L
<i>Ethylbenzene</i>	ND	ug/L	0.2	ug/L
<i>m,p-Xylene</i>	1.1	ug/L	0.2	ug/L
<i>o-Xylene</i>	ND	ug/L	0.2	ug/L
TOTAL	5.8	ug/L		

ND - Not Detected at Limit of Quantitation

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

Approved By: 
Date: **11/5/97**

OFF: (505) 325-5667



LAB: (505) 325-1556

QUALITY ASSURANCE REPORT

for EPA Method 8020

Date Analyzed: 4-Nov-97

Internal QC No.: 0559-STD

Surrogate QC No.: 0556-STD

Reference Standard QC No.: 0529/30-QC

Method Blank

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

Calibration Check

Parameter	Unit of Measure	True Value	Analyzed Value	RPD	Limit
Benzene	ppb	20.0	20.7	4	15%
Toluene	ppb	20.0	21.3	6	15%
Ethylbenzene	ppb	20.0	21.2	6	15%
m,p-Xylene	ppb	40.0	40.3	1	15%
o-Xylene	ppb	20.0	21.1	5	15%

Matrix Spike

Parameter	1 - Percent Recovered	2 - Percent Recovered	Limit	RPD	Limit
Benzene	92	86	(39-150)	3	20%
Toluene	96	87	(46-148)	3	20%
Ethylbenzene	97	92	(32-160)	4	20%
m,p-Xylene	94	88	(35-145)	4	20%
o-Xylene	95	92	(35-145)	2	20%

Surrogate Recoveries

Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered	Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered
Limit Percent Recovered	(70-130)		Limit Percent Recovered	(70-130)	
16699-7080	95				
16700-7080	95				
					(nc)
					11/5/97

S1: Fluorobenzene

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Attn: **Denver Bearden**
Company: **PNM Gas Services**
Address: **603 W. Elm**
City, State: **Farmington, NM 87401**

Date: **5-Nov-97**
COC No.: **7080**
Sample No.: **16700**
Job No.: **2-1000**

Project Name: **PNM Gas Services - Hampton 4M**
Project Location: **9710301030; MW-1**
Sampled by: **MS**
Analyzed by: **HR**
Sample Matrix: **Liquid**

Date: **30-Oct-97** Time: **10:30**
Date: **4-Nov-97**

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	2.4	ug/L	0.2	ug/L
<i>Toluene</i>	2.3	ug/L	0.2	ug/L
<i>Ethylbenzene</i>	ND	ug/L	0.2	ug/L
<i>m,p-Xylene</i>	1.1	ug/L	0.2	ug/L
<i>o-Xylene</i>	ND	ug/L	0.2	ug/L
TOTAL	5.8	ug/L		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*
Date: **11/5/97**

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Attn: *Denver Bearden*
Company: *PNM Gas Services*
Address: *603 W. Elm*
City, State: *Farmington, NM 87401*

Date: *5-Nov-97*
COC No.: *7080*
Sample No.: *16699*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Hampton 4M*
Project Location: *9710291400; MW-5*
Sampled by: *MS* Date: *29-Oct-97* Time: *14:00*
Analyzed by: *HR* Date: *4-Nov-97*
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>5934</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>Toluene</i>	<i>10024</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>709</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>6451</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>1737</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>24855</i>	<i>ug/L</i>		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*
Date: *11/5/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

QUALITY ASSURANCE REPORT

for EPA Method 8020

Date Analyzed: 4-Nov-97

Internal QC No.: 0559-STD

Surrogate QC No.: 0556-STD

Reference Standard QC No.: 0529/30-QC

Method Blank

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

Calibration Check

Parameter	Unit of Measure	True Value	Analyzed Value	RPD	Limit
Benzene	ppb	20.0	20.7	4	15%
Toluene	ppb	20.0	21.3	6	15%
Ethylbenzene	ppb	20.0	21.2	6	15%
m,p-Xylene	ppb	40.0	40.3	1	15%
o-Xylene	ppb	20.0	21.1	5	15%

Matrix Spike

Parameter	1 - Percent Recovered	2 - Percent Recovered	Limit	RPD	Limit
Benzene	92	86	(39-150)	3	20%
Toluene	96	87	(46-148)	3	20%
Ethylbenzene	97	92	(32-160)	4	20%
m,p-Xylene	94	88	(35-145)	4	20%
o-Xylene	95	92	(35-145)	2	20%

Surrogate Recoveries

Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered	Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered
Limit Percent Recovered	(70-130)		Limit Percent Recovered	(70-130)	
16699-7080	95				
16700-7080	95				
					(nc)
					11/5/97

S1: Fluorobenzene

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Attn: *Denver Bearden*
Company: *PNM Gas Services*
Address: *603 W. Elm*
City, State: *Farmington, NM 87401*

Date: *5-Nov-97*
COC No.: *7080*
Sample No.: *16699*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Hamptom 4M*
Project Location: *9710291400; MW-5*
Sampled by: *MS* Date: *29-Oct-97* Time: *14:00*
Analyzed by: *HR* Date: *4-Nov-97*
Sample Matrix: *Liquid*

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
<i>Benzene</i>	<i>5934</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>Toluene</i>	<i>10024</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>709</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>6451</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>1737</i>	<i>ug/L</i>	<i>20</i>	<i>ug/L</i>
<i>TOTAL</i>	<i>24855</i>	<i>ug/L</i>		

ND - Not Detected at Limit of Quantitation

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

Approved By: *[Signature]*
Date: *11/5/97*



STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 S. PACHECO
SANTA FE, NEW MEXICO 87505
(505) 827-7131

March 13, 1998

CERTIFIED MAIL
RETURN RECEIPT NO. Z-235-437-244

Ms. Maureen Gannon
PNM
Alvarado Square, MS 0408
Albuquerque, New Mexico 87158

**RE: GROUND WATER CONTAMINATION
HAMPTON 4M WELL SITE**

Dear Ms. Gannon:

The New Mexico Oil Conservation Division (OCD) has been reviewing the investigation and remedial actions related to PNM's former dehy pit at Burlington Resources Hampton 4M well site near Aztec, New Mexico.

The investigation and remedial actions taken to date are satisfactory. However, the OCD is concerned about the migration of contaminated ground water onto downgradient private lands and the presence of private water wells downgradient of the site. Therefore, the OCD requires that PNM take additional remedial actions within 30 days to remove the remaining source areas with free phase hydrocarbons in the vicinity of and immediately downgradient of the dehy pit.

If you have any questions, please call me at (505) 827-7154.

Sincerely,

William C. Olson
Hydrogeologist
Environmental Bureau

xc: Denny Foust, OCD Aztec District O
Ed Hasely, Burlington, Resources
J. Burton Everett

PS Form 3800, April 1995

US Postal Service Receipt for Certified Mail No Insurance Coverage Provided. Do not use for International Mail (See reverse)	
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Return Receipt Showing to Whom, Date, & Addressee's Address	
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STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 S. PACHECO
SANTA FE, NEW MEXICO 87505
(505) 827-7131

March 11, 1998

Mr. J. Burton Everett
Everett Investment
P.O. Box 476
Aztec, New Mexico 87410

**RE: GROUND WATER CONTAMINATION
HAMPTON 4M WELL SITE**

Dear Mr. Everett:

The New Mexico Oil Conservation Division (OCD) has reviewed your February 23, 1998 correspondence notifying the OCD that contaminated ground water has migrated onto your property from Burlington Resources Hampton 4M well site near Aztec, New Mexico.

The OCD has been working with the Public Service Company of New Mexico (PNM) and Burlington Resources to remediate contaminated soils and ground water at the site. Because you are directly impacted by the contamination the OCD will copy you on all correspondence related to the site. If you are interested in reviewing the actions taken to date, all of the information related to the remedial actions are on file at the OCD Aztec Office.

If you have any questions or concerns, please call me at (505) 827-7154.

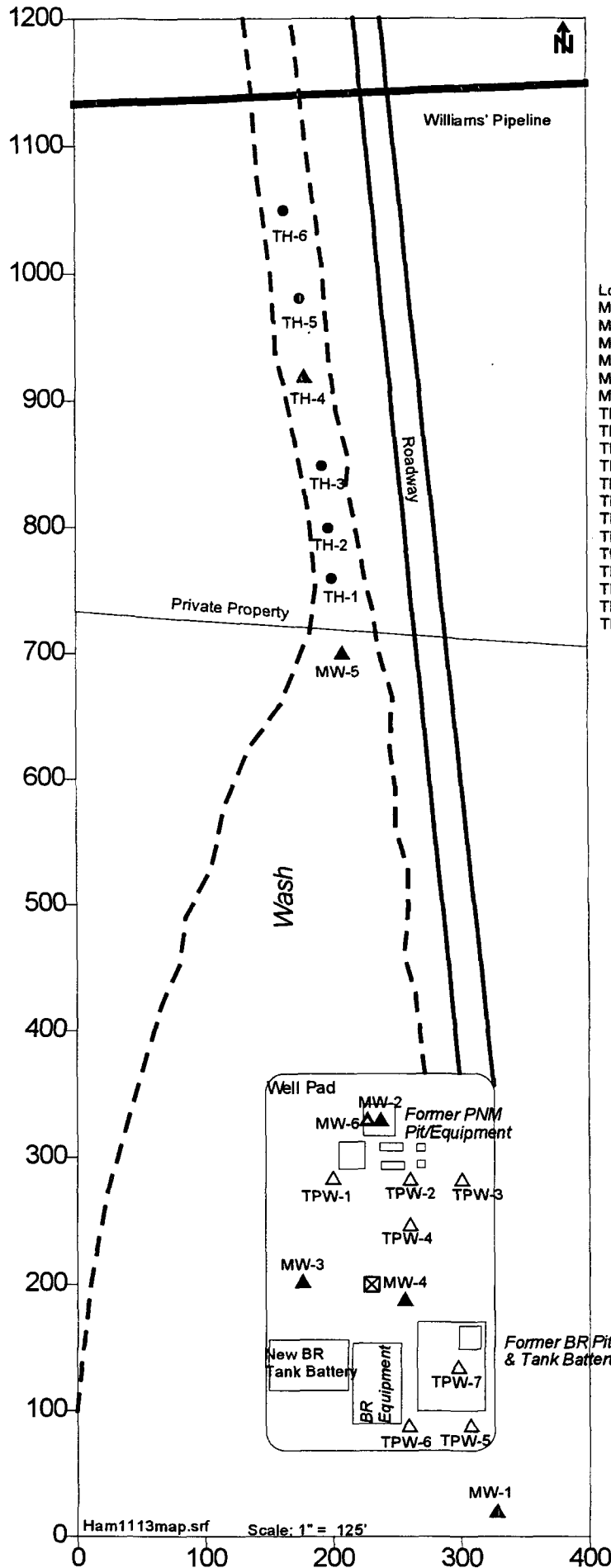
Sincerely,

A handwritten signature in dark ink, appearing to read "Will Olson".

William C. Olson
Hydrologist
Environmental Bureau

xc: Denny Foust, OCD Aztec District Office
Maureen Gannon, PNM
Ed Hasely, Burlington, Resources

⊕ Private
Owners' Well



Location	Date	BTEX (ug/L)	PID	Depth
MW-1	10/29/97	5.8		
MW-2	1/31/97	Free product		
MW-3	1/31/97	<0.2		
MW-4	1/31/97	2,651		
MW-5	10/29/97	24,854		
MW-6	10/29/97	Free product		
TPW-1	6/5/97	20		
TPW-2	6/5/97	Free product		
TPW-3	6/5/97	Dry Hole		
TPW-4	6/5/97	5,967		
TPW-5	6/5/97	29,260		
TPW-6	6/5/97	5,738		
TPW-7	6/5/97	33,220		
TH-1	11/11/97		1412	12.7
TH-2	11/11/97		1357	14.3
TH-3	11/11/97		0	16.5
TH-4	11/11/97	~2000	279	15
TH-5	11/11/97		1211	14.5
TH-6	11/11/97		0	16



STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

2040 S. PACHECO
SANTA FE, NEW MEXICO 87505
(505) 827-7131

August 27, 1997

CERTIFIED MAIL
RETURN RECEIPT NO. P-410-431-214

Ms. Maureen Gannon
PNM
Alvarado Square, MS 0408
Albuquerque, New Mexico 87158

**RE: GROUND WATER CONTAMINATION
HAMPTON 4M WELL SITE**

Dear Ms. Gannon:

The New Mexico Oil Conservation Division (OCD) has recently reviewed Burlington Resources' (BR) August 1997 "BURLINGTON RESOURCES OIL & GAS CO. DATA SUMMARY, HAMPTON 4M PRODUCTION LOCATION". This document contains a summary of BR's recent investigation of soil and ground water contamination at BR's Hampton 4M well site near Aztec, New Mexico.

A review of the above referenced document shows that soil and ground water contamination upgradient of PNM's former dehydration pit appears to be a result of production activities related to BR's Hampton 4M well site. However, free phase product contamination of ground water in the vicinity of the dehy unit appears to be the result of disposal practices at PNM's former unlined dehy pit. Therefore, the OCD requires that PNM address soil and ground water contamination at PNM's former dehy pit and downgradient of the pit under PNM's "GROUNDWATER MANAGEMENT PROGRAM FOR UNLINED SURFACE IMPOUNDMENT CLOSURES".

If you have any questions, please call me at (505) 827-7154.

Sincerely,

A handwritten signature in black ink, appearing to read "Will Olson".

William C. Olson
Hydrogeologist
Environmental Bureau

xc: Denny Foust, OCD Aztec District Office
Craig A. Bock, Burlington, Resources

April 15, 1997

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



RE: 1997 SAN JUAN BASIN ANNUAL GROUNDWATER REPORT

Dear Bill:

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

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

RECEIVED

APR 16 1997

Environmental Bureau
Oil Conservation Division

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

Sincerely,

A handwritten signature in cursive script that reads "Maureen Gannon".

Maureen Gannon
Project Manager

Attachment

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

**PNM 1997 San Juan Basin Groundwater Report
April 15, 1997**

Prepared for:

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

Prepared by:

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

PNMGS Well Site: **Hampton 4M**

Groundwater Site Summary Report

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

Quarter/Year: 4/96 & 1/97

Operator: Burlington Resources
Sec: 13 Twn: 30N Rng: 11W Unit: D
Canyon: Hampton Arroyo

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

Topo Map: previously submitted
Well Completion Diagram: Figure 1
Site Map with Analytical Results: Figure 2
Groundwater Contour Map: Figure 3 (January 1996)
Hydrograph: NA
Analytical Results: attached

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

On December 16, 1996, PNM conducted drilling at the Hampton 4M well site to determine the vertical extent of hydrocarbon contamination in soil beneath PNM's former pit. During drilling, groundwater was encountered at approximately 28 feet and a monitoring well, MW-2, was installed in the area of PNM's former pit. At the time of installation, the PNM field crew found evidence of free product in the soil boring. A groundwater sample taken from the new well contained a benzene concentration of 3840 ppb and a total benzene, toluene, ethylbenzene and xylenes (BTEX) concentration of 20620 ppb. PNM notified OCD in writing of groundwater contamination at the site on January 13, 1997. On January 28, PNM returned to the site to gauge the water level in MW-2 and discovered approximately 4 feet of free-phase floating product in the well. On January 31, 1997, PNM installed two up-gradient wells in an attempt to locate the source of the free product. Water level and product measurements were taken in each of the three monitoring wells at this time. PNM conducted groundwater sampling in the two up-gradient wells for chemical analyses of benzene, toluene, ethylbenzene, and xylenes (BTEX) using EPA Method 8020. Sampling was performed in strict compliance with EPA protocol. PNM hand delivered the samples to OnSite Technologies, Farmington, New Mexico.

As part of the January 31 investigation to locate the source of free product on site, PNM also collected samples of various product sources at the site for chemical fuel analysis. These sources included:

- Burlington Resources "Dakota" and "Mesa Verde" product tanks
- WFS separator discharges of "Dakota" and "Mesa Verde" fluids
- MW-2 monitoring well

Sampling was performed in strict compliance with EPA protocol. Fingerprint analysis was conducted on each product sample by Southern Petroleum Laboratory, Houston, Texas.

On February 4, 1997, PNM hosted OCD and Burlington Resources onsite to discuss possible options for addressing contamination at the site.

Results:

Figure 1 presents the Hampden 4M site map with BTEX analytical results. Figure 2 provides a groundwater contour map for the site in February 1997. The direction of groundwater flow is northwesterly beneath the site. From the results, PNM determined that MW-3, the well down-gradient from Burlington Resources' equipment and up-gradient from PNM's former equipment, is contaminated. MW-4, located cross-gradient from the direction of groundwater flow, is clean.

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: Hampton 4M (continued)

Fingerprinting of the various sources of free product on site revealed that there is a marked similarity between the free product discovered in MW-2 and the Burlington Resources Dakota product tank. A hardcopy of the fuel analysis is attached.

Future Actions:

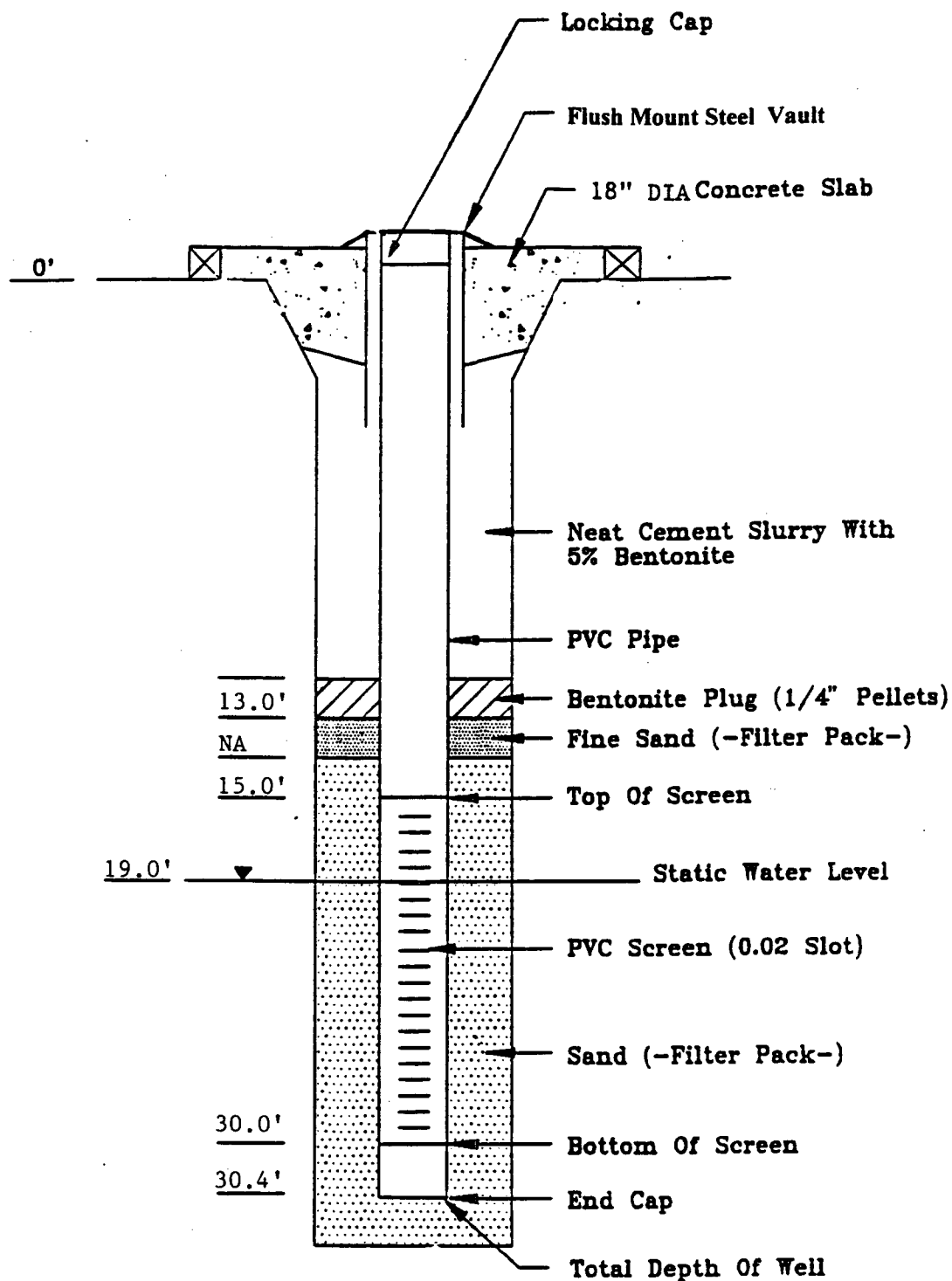
Based upon the fuel analysis, PNM believes the free product in MW-2 is coming from an on site source other than resulting from our previous activities at the site. The fuel analysis conducted on the product in MW-2 does not resemble typical drip product and may be the result of malfunctioning equipment and/or operations upstream of our former separator(s). Therefore, PNM will conduct no further activity at the site other than gauging the product and water levels in each well until further notice from OCD.

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



CLIENT: PNM

DATE:

REV. NO.: 0

AUTHOR: M.D.G.

DRAWN BY: M.P.

CK'D BY: M.D.G.

FILE: .DWG

Figure 1
Well Completion Diagram

Residence
~ 1000 ft.

Figure 2. Hampton 4M Site Map with Analytical Results
(Concentration in ppb)

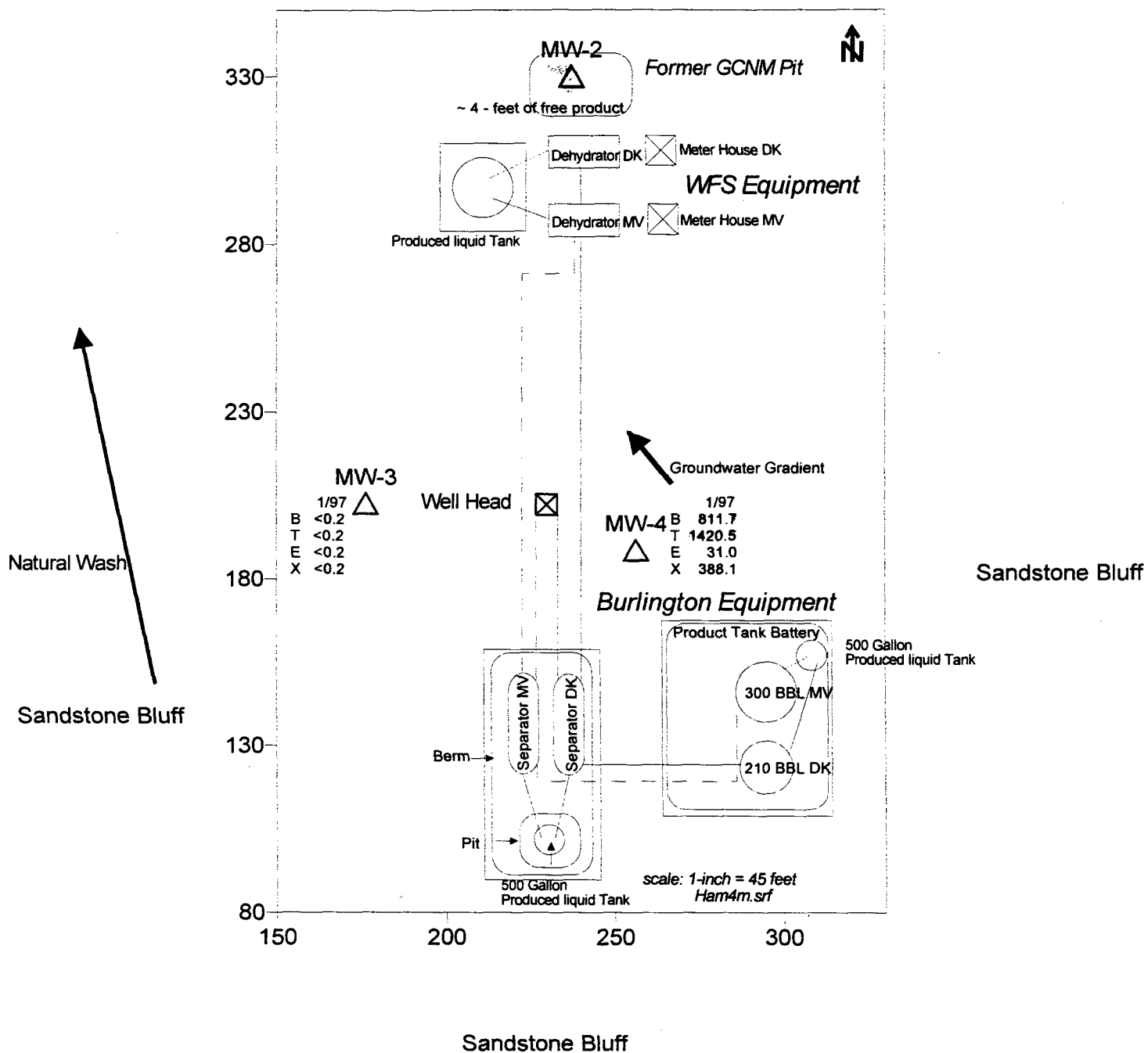
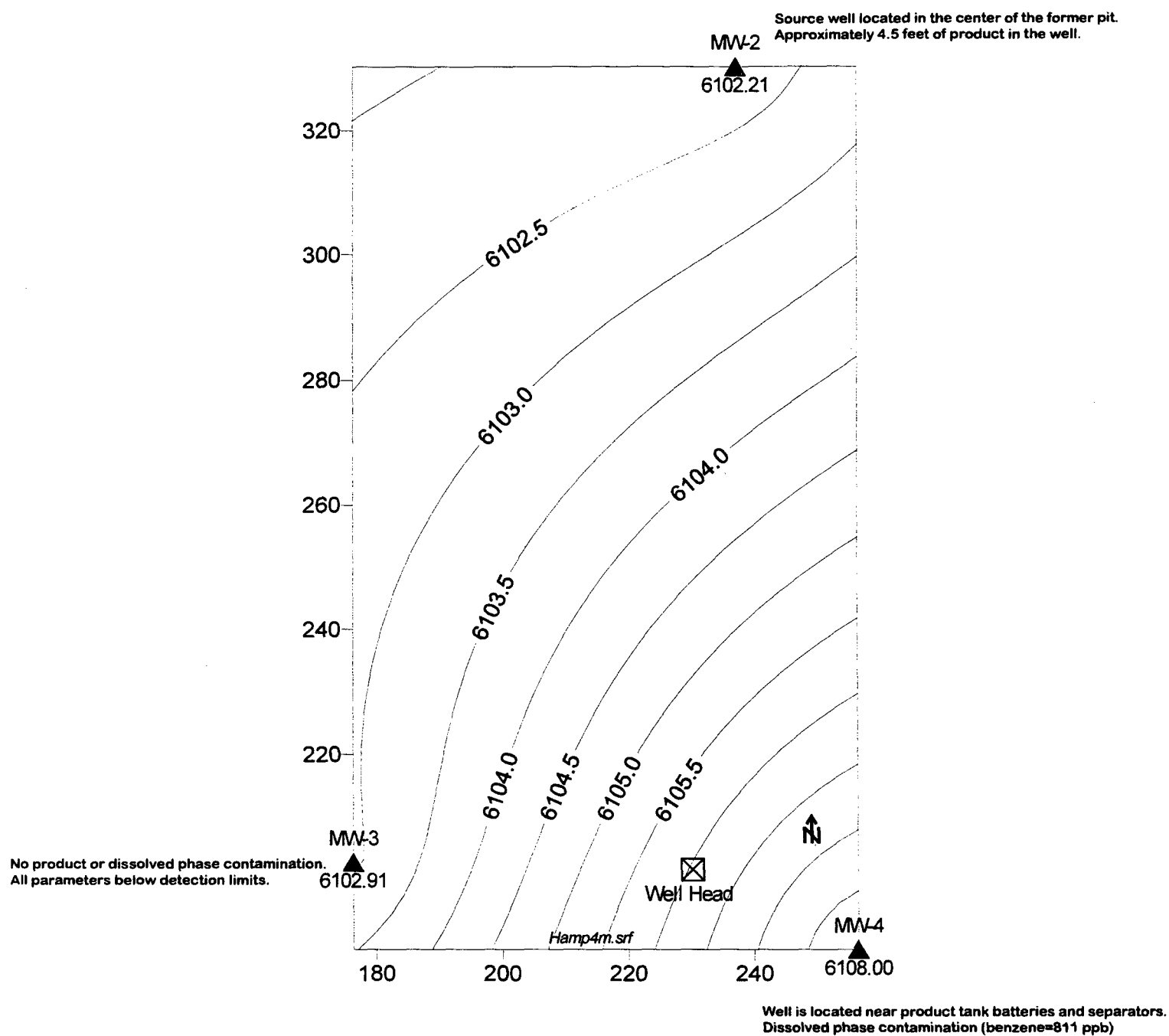


Figure 3. Hampton 4M Groundwater Contour Map (January 1997)



OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Attn: *Denver Bearden*
Company: *PNM Gas Services*
Address: *603 W. Elm*
City, State: *Farmington, NM 87401*

Date: *3-Feb-97*
COC No.: *5735*
Sample No.: *13616*
Job No.: *2-1000*

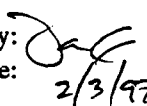
Project Name: *PNM Gas Services - Hampton 4M*
Project Location: *9701311500; MW-3*
Sampled by: *MS*
Analyzed by: *DC*
Sample Matrix: *Liquid*

Date: *31-Jan-97* Time: *15:00*
Date: *3-Feb-97*

Laboratory Analysis

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

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

Approved by: 
Date: *2/3/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Attn: *Denver Bearden*
Company: *PNM Gas Services*
Address: *603 W. Elm*
City, State: *Farmington, NM 87401*

Date: *3-Feb-97*
COC No.: *5735*
Sample No.: *13617*
Job No.: *2-1000*

Project Name: *PNM Gas Services - Hampton 4M*
Project Location: *9701311530; MW-4*
Sampled by: *MS*
Analyzed by: *DC*
Sample Matrix: *Liquid*

Date: *31-Jan-97* Time: *15:30*
Date: *3-Feb-97*

Laboratory Analysis

Parameter	Result	Unit of Measure	Detection Limit	Unit of Measure
<i>Benzene</i>	<i>811.7</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Toluene</i>	<i>1420.5</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>Ethylbenzene</i>	<i>31.0</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>m,p-Xylene</i>	<i>303.8</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
<i>o-Xylene</i>	<i>84.3</i>	<i>ug/L</i>	<i>0.2</i>	<i>ug/L</i>
	<i>TOTAL</i>	<i>2651.4</i>		<i>ug/L</i>

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

Approved by: *[Signature]*
Date: *2/3/97*

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

QUALITY ASSURANCE REPORT

for EPA Method 8020

Date Analyzed: 3-Feb-97

Internal QC No.: 0527-STD

Surrogate QC No.: 0528-STD

Reference Standard QC No.: 0417-QC

Method Blank

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

Calibration Check

Parameter	Unit of Measure	True Value	Analyzed Value	% Diff	Limit
Benzene	ppb	20.0	19.2	4	15%
Toluene	ppb	20.0	19.6	2	15%
Ethylbenzene	ppb	20.0	20.0	0	15%
m,p-Xylene	ppb	40.0	39.0	3	15%
o-Xylene	ppb	20.0	19.7	1	15%

Matrix Spike

Parameter	1 - Percent Recovered	2 - Percent Recovered	Limit	%RSD	Limit
Benzene	92	90	(39-150)	1	20%
Toluene	95	93	(46-148)	1	20%
Ethylbenzene	97	95	(32-160)	1	20%
m,p-Xylene	94	92	(35-145)	1	20%
o-Xylene	95	94	(35-145)	1	20%

Surrogate Recoveries

Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered	Laboratory Identification	S1 Percent Recovered	S2 Percent Recovered
Limit Percent Recovered	(70-130)		Limit Percent Recovered	(70-130)	
13616-5735	97				
13617-5735	96				

S1: Fluorobenzene

(12)



CHAIN OF CUSTODY RECORD

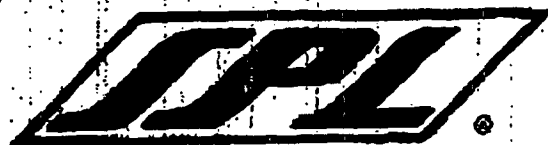
5735

Date: 1/31/97

Page 1 of 1

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

Purchase Order No.:		Job No.	
Name	Denver Bearden	Name	Maureen Gannon
Company	PNM Gas Services	Company	PNM Gas Services
Address	603 W. Elm Street	Mailing Address	Alverado Square, Mail Stop 0408
City, State, Zip	Farmington, NM 87401	City, State, Zip	Albuquerque, NM 87158
Sampling Location: Hampton 4M		Telephone No.	505-848-2974
Sampler: Mark Sikelianos		Telefax No.	
SEND INVOICE TO		ANALYSIS REQUESTED	
REPORT TO		Number of Containers	
SAMPLE IDENTIFICATION		LAB ID	
MW-3	9701311500	DATE	1/31/97
MW-4	97013115306	TIME	1500
		MATRIX	Ice
		PRES.	Ice
Relinquished by:		Date/Time	1/31/97 1615
Relinquished by:		Date/Time	
Relinquished by:		Date/Time	
Method of Shipment:		Special Instructions:	
Authorized by:		Results to be sent to both parties.	



HOUSTON LABORATORY
6880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. 9702166-01A

Company: On Site Technologies
ID: B MV TANK 9701311300
Date: 01/31/97 @ 13:00

1 Burlington
Mesa Verde Tank (300 BBL)

ATTN: David Cox

Product

COLOR: Medium Straw
SP. GR. 0.7560
@ 60 F

ODOR: Fuel
API 55.65
@ 60 F

CARBON RANGE C₂ - C₂₅
PARAFFIN 21.856 Wt. %
ISOPARAFFINS 28.044 Wt. %
NAPHTHENICS 29.688 Wt. %
AROMATICS 15.863 Wt. %
OLEFINS 4.155 Wt. %
UNKNOWN 0.395 Wt. %
2,2,4-TRI 0.011 Wt. %
METHYLPENTANE

MAJOR RANGE C₆ - C₉
N-HEXANE 2.707 Wt. %
BENZENE 0.614 Wt. %
ETHYL BENZENE 0.493 Wt. %
TOLUENE 6.874 Wt. %
META XYLENE 3.182 Wt. %
PARA XYLENE 1.049 Wt. %
ORTHO XYLENE 0.868 Wt. %
XYLENES 5.099 Wt. %

RESEARCH OCTANE 71.34
LEAD NA
MTRK NA
C₁₇ 0.206 Wt. %
PRISTANE 0.076 Wt. %
NAPHTHALENE 0.078 Wt. %
1-METHYL 0.013 Wt. %
NAPHTHALENE

EDB NA
EDC NA
ETHANOL NA
C₁₈ 0.139 Wt. %
PHYTANE 0.029 Wt. %
2-METHYL 0.077 Wt. %
NAPHTHALENE

— GASOLINE RANGE: C₄, C₅, INDICATORS: 2,2,4-TRI, NIDE, OLEFINS, LEAD
— DIESEL RANGE: C₇, C₂₀ INDICATORS: NO OLEFINS, PRISTANE, PHYTANE
— CONDENSATE RANGE: C₂-C₂₅+INDICATORS: NO OLEFINS, LIGHT & HEAVIES
— HEAVY OIL: C₂₀+

COMMENTS:



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77064
PHONE (713) 860-0901

Certificate of Analysis No. 9702166-02A

Company: On Site Technologies
ID: B DK TANK 9701311330
Date: 01/31/97 @ 13:30

2 Burlington Dakota
210 BBL Product Tank

ATTN: David Cox

COLOR: Clear
SP. GR. 0.7427
@ 60 F

ODOR: Fuel
API 59.01
@ 60 F

CARBON RANGE $C_2 - C_{17}$

MAJOR RANGE $C_6 - C_9$

PARAFFIN 25.817 Wt. %
ISOPARAFFINS 28.530 Wt. %
NAPHTHENICS 25.421 Wt. %
AROMATICS 15.525 Wt. %
OLEFINS 4.034 Wt. %
UNKNOWN 0.673 Wt. %
2,2,4-TRI. ND Wt. %
METHYLPENTANE

N-HEXANE 3.394 Wt. %
BENZENE 0.691 Wt. %
ETHYL BENZENE 0.379 Wt. %
TOLUENE 4.418 Wt. %
META XYLENE 3.273 Wt. %
PARA XYLENE 1.097 Wt. %
ORTHO XYLENE 0.909 Wt. %
XYLENES 5.279 Wt. %

RESEARCH OCTANE 70.49
LEAD NA
MTBE NA
 C_{17} 0.014 Wt. %
PRISTANE ND Wt. %
NAPHTHALENE 0.114 Wt. %
1-METHYL 0.019 Wt. %
NAPHTHALENE

EDB NA
EDC NA
ETHANOL NA
 C_{18} ND Wt. %
PHYTANE ND Wt. %
2-METHYL 0.061 Wt. %
NAPHTHALENE

— GASOLINE RANGE: $C_4 - C_{13}$ INDICATORS: 2,2,4-TMP; MTBE; OLEFINS, LEAD
— DIESEL RANGE: $C_7 - C_{20}$ INDICATORS: NO OLEFINS, PRISTANE, PHYTANE
— CONDENSATE RANGE: $C_2 - C_{25}$ INDICATORS: NO OLEFINS, LIGHT & HEAVIES
— HEAVY OIL: $C_{30}+$

COMMENTS:



HOUSTON LABORATORY
6880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 680-0901

Certificate of Analysis No. 9702166-03A

Company: On Site Technologies
ID: P DK SEP 9701311400
Date: 01/31/97 @ 14:00

3

PNM Dakota Separator

ATTN: David Cox

COLOR: Clear
SP. GR. 0.7073
@ 60 F

ODOR: Fuel
API 68.54
@ 60 F

CARBON RANGE $C_1 - C_{12}$
PARAFFIN 29.130 Wt. %
ISOPARAFFINS 34.558 Wt. %
NAPHTHENICS 24.411 Wt. %
AROMATICS 9.447 Wt. %
OLEFINS 2.453 Wt. %
UNKNOWN 0.000 Wt. %
2,2,4-TRI ND Wt. %
METHYLPENTANE

MAJOR RANGE $C_3 - C_8$
N-HEXANE 7.720 Wt. %
BENZENE 1.351 Wt. %
ETHYL BENZENE 0.216 Wt. %
TOLUENE 4.073 Wt. %
META XYLENE 1.798 Wt. %
PARA XYLENE 0.608 Wt. %
ORTHO XYLENE 0.461 Wt. %
XYLENES 2.867 Wt. %

RESEARCH OCTANE 69.81
LEAD NA
MTBE NA
 C_{17} ND Wt. %
PRISTANE ND Wt. %
NAPHTHALENE ND Wt. %
1-METHYL ND Wt. %
NAPHTHALENE

EDB NA
EDC NA
ETHANOL NA
 C_{18} ND Wt. %
PHYTANE ND Wt. %
2-METHYL ND Wt. %
NAPHTHALENE

— GASOLINE RANGE: $C_4 - C_{13}$ INDICATORS: 2,2,4-TMP; MTBE; OLEFINS, LEAD
— BENSOL RANGE: $C_7 - C_{20}$ INDICATORS: NO OLEFINS, PRISTANE, PHYTANE
— CONDENSATE RANGE: $C_1 - C_{25} +$ INDICATORS: NO OLEFINS, LIGHT & HEAVIES
— HEAVY OIL: $C_{20} +$

COMMENTS:



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 680-0901

Certificate of Analysis No. 9702166-04A

Company: On Site Technologies
ID: P MV Sep 9701311430
Date: 01/31/97 @ 14:30

PNM Nueva Verde Separator

ATTN: David Cox

COLOR: Dark
SP. GR. 0.7464
@ 60 F

ODOR: Fuel
API 58.08
@ 60 F

CARBON RANGE C₁ - C₁₄
PARAFFIN 19.506 Wt. %
ISOPARAFFINS 27.365 Wt. %
NAPHTHENICS 34.240 Wt. %
AROMATICS 14.775 Wt. %
OLEFINS 3.986 Wt. %
UNKNOWN 0.128 Wt. %
2,2,4-TRI 0.017 Wt. %
METHYLPENTANE

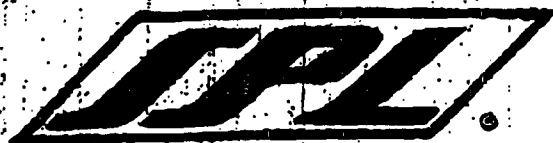
MAJOR RANGE C₆ - C₉
N-HEXANE 2.843 Wt. %
BENZENE 0.622 Wt. %
ETHYL BENZENE 0.280 Wt. %
TOLUENE 9.195 Wt. %
META XYLENE 2.116 Wt. %
PARA XYLENE 0.702 Wt. %
ORTHO XYLENE 0.578 Wt. %
XYLENES 3.396 Wt. %

RESEARCH OCTANE 67.03
LEAD NA
MTBE NA
C₁₇ ND Wt. %
PRISTANE ND Wt. %
NAPHTHALENE ND Wt. %
1-METHYL ND Wt. %
NAPHTHALENE

EDB NA
EDC NA
ETHANOL NA
C₁₈ 0.006 Wt. %
PHYTANE ND Wt. %
2-METHYL 0.009 Wt. %
NAPHTHALENE

— GASOLINE RANGE: C₄-C₁₃ INDICATORS: 2,2,4-TMP; MTBE; OLEFINS, LEAD
— DIESEL RANGE: C₇-C₂₀ INDICATORS: NO OLEFINS, PRISTANE, PHYTANE
— CONDENSATE RANGE: C₂-C₂₅+INDICATORS: NO OLEFINS, LIGHT & HEAVIES
— HEAVY OIL: C₂₀+

COMMENTS:



HOUSTON LABORATORY
6900 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 680-0801

Certificate of Analysis No. 9702166-05A

Company: On Site Technologies
ID: MW-2 9701311445
Date: 01/31/97 @ 14:45

5

Monitoring Well #2

ATTN: David Cox

COLOR: Light Straw
SP. GR. 0.7495
@ 60 F

ODOR: Fuel
API 57.29
@ 60 F

CARBON RANGE C₃ - C₁₇MAJOR RANGE C₆ - C₉

PARAFFIN 25.352 Wt. %
ISOPARAFFINS 28.727 Wt. %
NAPHTHENICS 24.739 Wt. %
AROMATICS 16.229 Wt. %
OLEFINS 4.084 Wt. %
UNKNOWN 0.868 Wt. %
2,2,4-TRI ND Wt. %
METHYLPENTANE

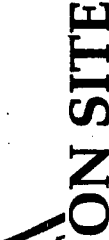
N-HEXANE 3.435 Wt. %
BENZENE 0.642 Wt. %
ETHYL BENZENE 0.358 Wt. %
TOLUENE 4.102 Wt. %
META XYLENE 2.272 Wt. %
PARA XYLENE 1.092 Wt. %
ORTHO XYLENE 0.934 Wt. %
XYLENES 5.298 Wt. %

RESEARCH OCTANE 70.49
LEAD NA
MTBE NA
C₁₇ 0.021 Wt. %
PRISTANE ND Wt. %
NAPHTHALENE 0.147 Wt. %
1-METHYL 0.026 Wt. %
NAPHTHALENE

EDB NA
EDC NA
ETHANOL NA
C₁₈ ND Wt. %
PHYTANE ND Wt. %
2-METHYL 0.081 Wt. %
NAPHTHALENE

___ GASOLINE RANGE: C₄-C₁₃ INDICATORS: 2,2,4-TMP; MTBE; OLEFINS, LEAD
___ DIESEL RANGE: C₇-C₂₀ INDICATORS: NO OLEFINS, PRISTANE, PHYTANE
___ CONDENSATE RANGE: C₂-C₂₅+INDICATORS: NO OLEFINS, LIGHT & HEAVIES
___ HEAVY OIL: C₂₀+

COMMENTS:



1375

Date: 1/31/97Page 1 of 1

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

Purchase Order No.:						Job No.	
Name						Denver Bearden	
Company						PNM Gas Services	
Address						603 W. Elm Street	
City, State, Zip						Farmington, NM 87401	
Sampling Location:						Hampton HAM	
Sampler:						Mark S. Kelland	
SAMPLE IDENTIFICATION						SAMPLE DATE	SAMPLE TIME
B MV Tank						970131	1300
B DK Tank						970131	1330
P DK Sep						970131	1400
P MV Sep						970131	1430
MP-2						970131	1445
REPORT TO RESULTS TO						Number of Containers	
Name						Maureen Gannon	
Company						PNM Gas Services	
Mailing Address						Alverado Square, Mail Stop 0408	
City, State, Zip						Albuquerque, NM 87158	
Telephone No.						505-848-2974	
Telefax No.							
ANALYSIS REQUESTED							
LAB ID							
Date/Time						Received by:	
Date/Time						Received by:	
Date/Time						Received by:	
Rush						24-48 Hours	
Special Instructions:						Results to be sent to both parties.	
Authorized by:						Date 1/31/97	



January 13, 1997

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

RE: NOTIFICATION OF GROUNDWATER CONTAMINATION AT THE HAMPTON 4M WELL SITE

Dear Bill:

Pursuant to New Mexico Water Quality Control Commission (WQCC) Regulations, section 1-203, PNM hereby provides written notification of groundwater contamination at the Hampton 4M well site, located in section 13, township 30 North, range 11 West, unit letter D. A topographic map showing the location of the site is provided as an attachment. The operator is Burlington. This letter follows verbal notification provided to you on Tuesday January 7, 1997 (M. Gannon, PNM to B. Olson, OCD).

On December 16, 1996, groundwater was encountered at approximately 28 feet while conducting vertical extent soil boring. A 2-inch, schedule 40, PVC monitoring well with 15 feet of 0.01 inch screen was placed in the annulus 10 feet below and 5 feet above the soil/water interface. The annulus was backfilled with 10-12 silica sand one foot above the screened interval with a one foot bentonite seal. Clean fill material was then backfilled to the surface. After purging three casing volumes, field personnel collected a groundwater sample for BTEX 8020 analysis. The groundwater sample was delivered to Envirotech Labs, in Farmington, New Mexico, for laboratory analysis. A hardcopy of the analytical results is attached. A summary of the analytical results is provided below:

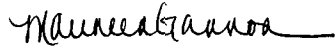
Component	Units	WQCC Stds.	Groundwater Sample
Benzene	ppb	10	3,840
Toluene	ppb	750	7,960
Ethylbenzene	ppb	750	896
Xylenes	ppb	620	7,920
Total BTEX	ppb		20,620

Bold type indicates a WQCC exceedance.

Hampton 4M
1/13/97
Page 2

This letter serves as written notification of groundwater impact at the Hampton 4M. PNM will conduct future activities at the site pursuant to PNM's Groundwater Management Plan. If you have any questions, please call me at (505) 241-2974. Thank you.

Sincerely,
PNM



Maureen Gannon
Project Manager

s/gaspits/hampt4m.doc

Attachment

cc: Colin Adams, PNM
Denver Bearden, PNMGS
Denny Foust, OCD-Aztec Office
Leigh Gooding, WFS
Toni Ristau, PNM
Craig Boch, Burlington

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8020 AROMATIC VOLATILE ORGANICS

Client:	Public Service Co. of NM.	Project #:	93108-02
Sample ID:	TB #1	Date Reported:	12-18-96
Chain of Custody:	5035	Date Sampled:	12-16-96
Laboratory Number:	A842	Date Received:	12-16-96
Sample Matrix:	Water	Date Analyzed:	12-17-96
Preservative:	HgCl2 & Cool	Analysis Requested:	BTEX
Condition:	Cool & Intact		

Parameter	Concentration (ug/L)	Dilution Factor	Det. Limit (ug/L)
Benzene	3,840	10	1.8
Toluene	7,960	10	1.7
Ethylbenzene	896	10	1.5
p,m-Xylene	5,600	10	2.2
o-Xylene	2,320	10	1.0
Total BTEX	20,620		

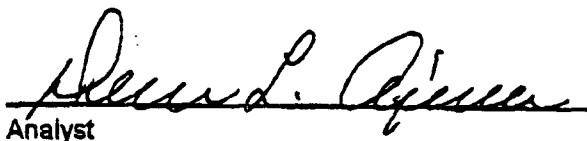
ND - Parameter not detected at the stated detection limit.

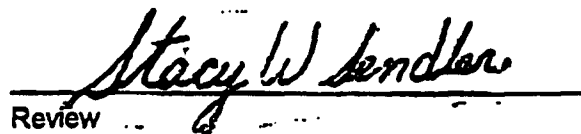
Surrogate Recoveries:	Parameter	Percent Recovery
	Trifluorotoluene	101 %
	Bromofluorobenzene	98 %

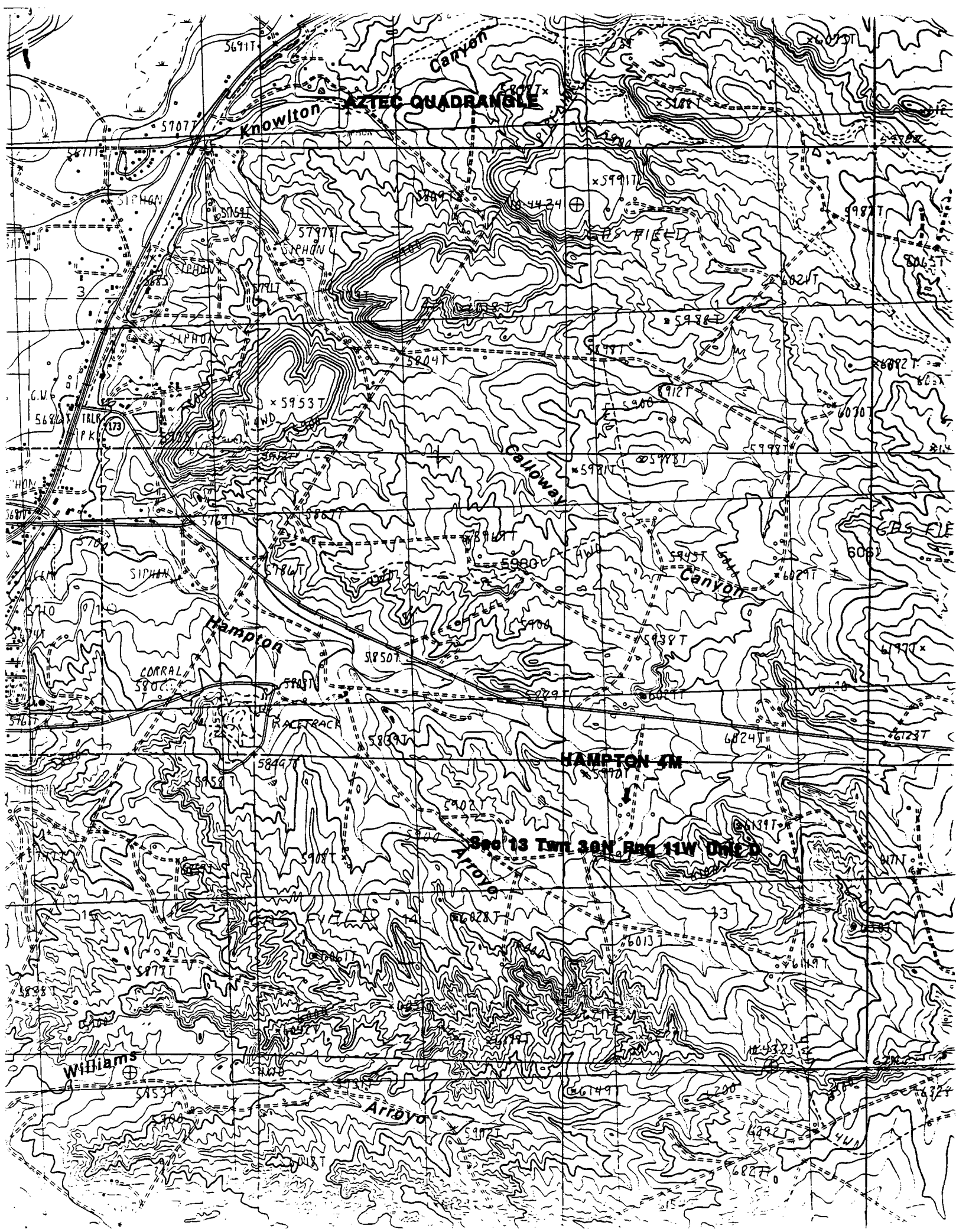
References: Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.

Method 8020, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, Sept. 1994.

Comments: 2.1 Miles South on CR 2585, Hampton #4M (@ GW).


Analyst


Review





State of New Mexico
ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT
Santa Fe, New Mexico 87505

STATE OF
NEW MEXICO
OIL
CONSERVATION
DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

☒ Telephone ☐ Personal	Time 1542	Date 1/7/97
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Originating Party

Other Parties

McGuire Canyon - PNM

Bill Olson - Envir. Bureau
(voice mail)

Subject

Ground Water Contamination - Hampton #4 N well site
Jacquez #2A well site

Discussion

Notification of ground water contamination during pit closure activities at:

Hampton #4 N (Burlington well site dehy pit) - unit D sec 13, T30N, R11W
- depth to water = 28'
- Benzene = 4000 ppb, BTEX = 20,000 ppb

Jacquez #2A (Amoco well site dehy pit) - unit D sec 25, T30N, R9W
- depth to water = 30'
- Benzene = 1600 ppb, BTEX = 15,000 ppb

Conclusions or Agreements

Distribution

Signed

Bill Olson

files

Danny Faust - O&D A&T