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REPORTS

DATE: 1997

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

April 15, 1997

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



RE: 1997 SAN JUAN BASIN ANNUAL GROUNDWATER REPORT

Dear Bill:

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

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



APR 1 6 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, Hannon Maun

Maureen Gannon Project Manager

Attachment

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

97rptltr.doc

PNM 1997 San Juan Basin Groundwater Report April 15, 1997

Prepared for:

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

Prepared by:

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

Groundwater Site Summary Report

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 Copies: WFS(1) Operator (1)

NMOCD District Office (1) NMOCD Santa Fe (1)

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

PNMGS: 97gwrrpt.doc

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

PNMGS: 97gwrrpt.doc

Telephone: 505-241-2974





2

Sandstone Bluff

Sandstone Bluff

4

Produced liquid Tank

250

500 Gallon

210 BBL DK

300

scale: 1-inch = 45 feet

Ham4m.srf

Berm

Pit

200

80 150



Figure 3. Hampton 4M Groundwater Contour Map (January 1997)

Well is located near product tank batteries and separators. Dissolved phase contamination (benzene=811 ppb)

I.

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	Denver I	Bearden		Date:	3-Feb-97
Company:	PNM Ga	s Services		COC No.:	5735
Address:	603 W.	Elm		Sample No.:	13616
City, State:	Farming	ton, NM 87401		Job No.:	2-1000
Project Nan	ne:	PNM Gas Serv	vices - Hampton 4M		
Project Loc	ation:	9701311500;	MW-3		
Sampled by	<i>/</i> :	MS	Date:	31-Jan-97 Time:	15:00
Analyzed b	y:	DC	Date:	3-Feb-97	
Sample Ma	trix:	Liquid			

Laboratory Analysis

Parameter		Result	Unit of Measure	Detection Limit	Unit of Measure
Benzene		<0.2	ug/L	0.2	ug/L
Toluene		<0.2	ug/L	0.2	ug/L
Ethylbenzene		< 0.2	ug/L	0.2	ug/L
m,p-Xylene		<0.2	ug/L	0.2	ug/L
o-Xylene		<0.2	ug/L	0.2	ug/L
	TOTAL	<0.2	ug/L		

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

Approved by: (Date:

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENTRYMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	Denver I	Bearden		Date:	3-Feb-97
Company:	PNM Ga	s Services		COC No.:	5735
Address:	603 W.	Elm		Sample No.:	13617
City, State:	Farming	ton, NM 87401		Job No.:	2-1000
Project Nar	ne:	PNM Gas Serv	ices - Hampton 4M		
Project Loc	ation:	9701311530;	MW-4		
Sampled by	<i>ı</i> :	MS	Date:	31-Jan-97 Time:	15:30
Analyzed b	y:	DC	Date:	3-Feb-97	
Sample Ma	trix:	Liauid			

Laboratory Analysis

			Unit of	Detection	Unit of	
Parameter		Result	Measure	Limit	Measure	
Benzene		811.7	ug/L	0.2	ug/L	
Toluene		1420.5	ug/L	0.2	ug/L	
Ethylbenzene		31.0	ug/L	0.2	ug/L	
m,p-Xylene		303.8	ug/L	0.2	ug/L	
o-Xylene		84.3	ug/L	0.2	ug/L	
	TOTAL	2651.4	ug/L			

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

Approved by: (2/3/97 Date:

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

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

Calibration Check

	Unit of	True	Analyzed		
Parameter	Messure	Value	Value	% Diff	Limit
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Toluene	pp0	20.0	19.2	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

	1- Percent	2 - Percent			
Parameter	Recovered	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

	S1	S2		S1	S2	
	Percent	Percent		Percent	Percent	
Laboratory Identification	Recovered	Recovered	Laboratory Identification	Recovered	Recovered	
Limit Percent Recovered	(70-130)		Limit Percent Recovered	(70-130)		
13616-5735	97					
13617-5735	96					
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S1: Flourobenzene

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -



CHAIN OF CUSTODY RECORD

Date: 1/31/97

Page of

5735

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

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Date: 1/31/97

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

TECHNOLOGIES, LTD.

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





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	ррЪ	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

Maurea Ganoa

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



Client:	Public Service Co. of NM.	Project #:	9 3108-02
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- 9 6
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)
Benzena	0.040	40	
Toluono	3,840	10	1.8
	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 Bromofluorobenzene	101 % 98 %					
References:	Method 5030, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, July 1992.							
	Method 8020 USEPA, Sep), Aromatic Volatile Organics, Test Methods t. 1994.	s for Evaluating Solid Waste, SW-846,					
Comments:	2.1 Miles	South on CR 2585, Hampton #4M ((@ GW).					
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end. ajuna Analyst

tacy W Lendler Review





State of New Mexico ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT Santa Fe, New Mexico 87505

STATE OF NEW MEXICO OL CONSERVITION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

Time Date Telephone 1542 Personal Originating Party Other Parties λM Envir. Dureau ĽŚ Maureen 50 h Sanno Voice mai Subject l 51 71 # Jacq Discussion いわんり DShre AL STONNE cont rth MINCTI rini A Burlington 13 130N, KIW 51 NAIT R m hre de BTEX = 20,000 pb Bintene = 4000 # site J 30N 25 00 Sec moco 30 don BTEX = 15,000 pph 600 im 23 Conclusions or Agreements <u>Distribution</u> Signed Bi Files Denny Foust - OCD Aztac