

3R - 310

**GENERAL
CORRESPONDENCE**

YEAR(S):

1997 - 1995

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

November 12, 1997

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



RE: LATEST DEVELOPMENTS AT THE COZZENS B1 WELL SITE

Dear Bill:

Public Service Company of New Mexico, dba PNMGS Gas Services ("PNMGS"), herein submits a report summarizing the latest activities and findings at the Cozzens B1 well site and a proposal for expediting closure of our former pit on this location. As discussed in our 1997 Groundwater Progress Report¹, PNMGS in cooperation with Burlington Resources ("Burlington") performed additional source removal around and under Burlington's equipment on March 17, 1997. Figure 1 provides a site map detailing this newest excavation. During the excavation, Burlington discovered that their 300 bbl production fluids tank located to the east of the seep pond area was leaking. Burlington immediately removed the tank and replaced it with a new 300 bbl tank. PNMGS excavated and removed from location approximately 1400 cubic yards of contaminated soil; all of the soil removed was located up-gradient of MW-3. During remedial activities, MW-6 (installed during the third quarter of 1996 and located to the east of Burlington's equipment) was removed.

After the excavation, in May and again in August of 1997, PNMGS performed quarterly monitoring of the site. Prior to sampling, water level measurements were taken in each of the five monitoring wells. Groundwater sampling was conducted in strict compliance with EPA protocol. PNMGS delivered the samples to OnSite Technologies, Farmington, New Mexico, for chemical analyses of benzene, toluene, ethylbenzene, and xylenes (BTEX) using EPA Method 8020.

Figure 2 provides analytical results for all sampling events that have occurred to date at the Cozzens B1. For the past several calendar quarters, BTEX concentrations in all wells have been consistently below WQCC standards with the exception of MW-3. As seen in figure 2, MW-3 is located downgradient of Burlington's equipment. Between April 1996 and November 1996, MW-3 showed a downward trend in benzene concentration (from 181.7 ppb to 20.8 ppb). In February 1997, the benzene concentration rose to 132.1 ppb which corresponded with a slight drop in the water level elevation in this well. Between February and May of this year, MW-3 again experienced a decrease in benzene concentration (66%) as expected due to the additional source removal in March. However, during the August event, the benzene concentration rose to 96 ppb benzene and total BTEX increased from 1565 ppm to 2190. PNMGS then discovered, during a visit to the site on September 24, 1997, a depth of 0.01 feet of free-phase floating product in MW-3. Product had not been detected previously in this well. An investigation of Burlington's newly-installed product tank revealed a leaking flange on the side of the tank, a strong hydrocarbon odor and visible evidence of product on the outside of the tank surrounding the flange.

¹ M. Gannon, PNM to B. Olson, OCD, 1997 Groundwater Progress Report, April 15, 1997

Figures 3 and 4 are groundwater contour maps for the months of May 1997 and August 1997, respectively. The groundwater gradient lies in a southwesterly direction beneath the site. Groundwater recharge beneath the location is dependent on discharge from the Citizens Ditch which flows between the months of March and November in a northwesterly direction above the well site. Figure 5 is the hydrograph (water level versus time) for the site. Since the first quarter of 1997, water levels in MW-1, 2 and 3 have risen. Water levels in MW-4 and MW-5 have shown an overall decrease. MW-4 and MW-5 receive groundwater from the canyon located to the northeast of the site and are less dependent upon flow from the Citizens Ditch.

It is PNMGS' belief that ongoing contamination and the recent occurrence of free product in MW-3 are not related to our former activities at the site. In reviewing past data from monitoring well samples, particularly MW-2, it is evident that remediation of our former pit location is taking place as the result of previous source removal efforts and ongoing natural attenuation. Therefore, we propose to install a groundwater monitoring well in a true downgradient direction from our former pit (see figure 1 for location) and continue to monitor MW-1, MW-2 and the new downgradient monitoring well in order to demonstrate successful remediation of PNMGS' former source area. Pursuant to our groundwater management plan, we will monitor these three wells for at least four consecutive quarters to show that BTEX concentrations in these wells are below WQCC standards.

If you have any questions regarding the contents of this letter, please call me at (505) 241-2974. We will not proceed with this proposal until we have discussed this matter further with you.

Sincerely,



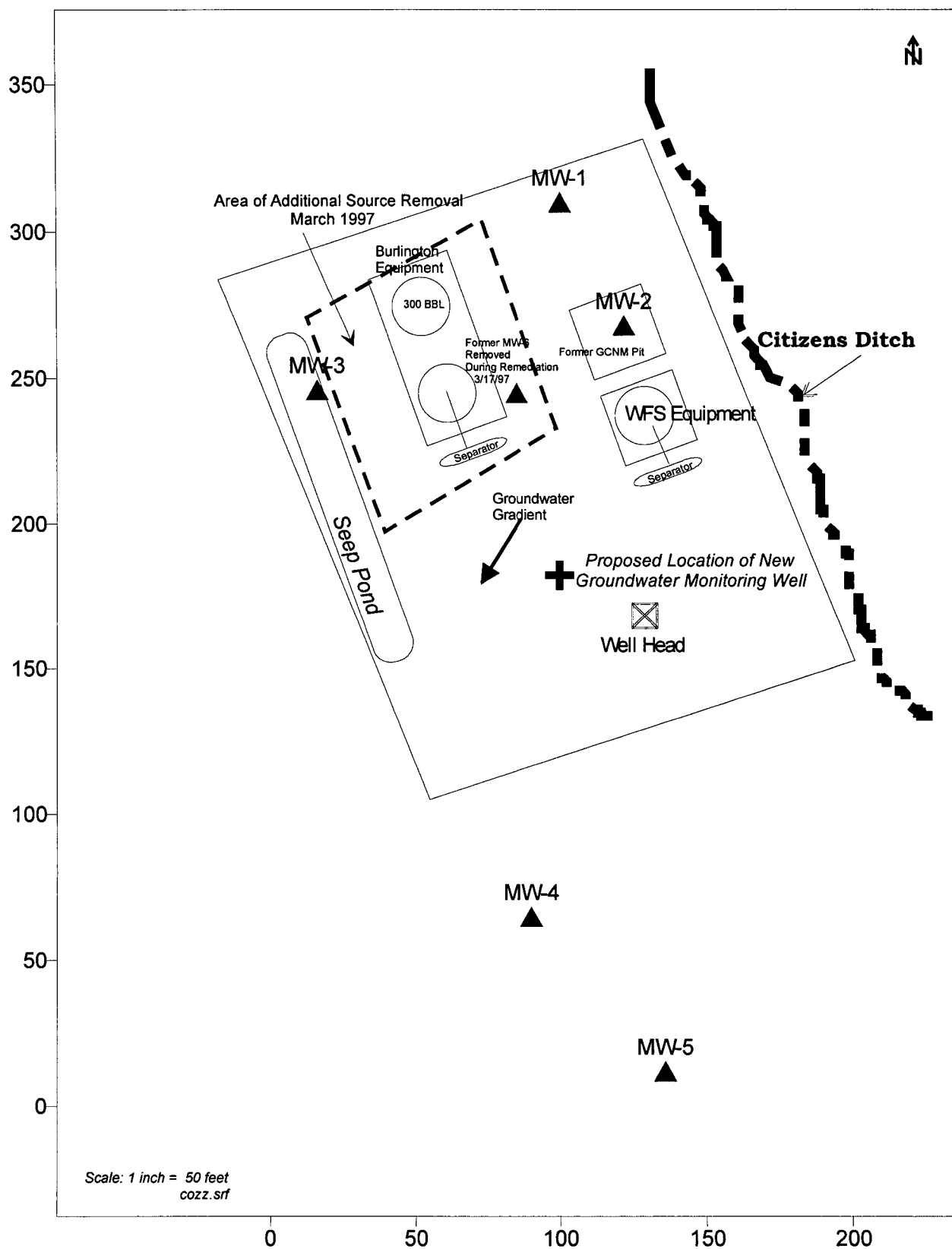
Maureen Gannon
Project Manager

MDG/COZB105.LTR

Attachments

cc: Colin Adams, PNMGS
Denver Bearden, PNMGS
Ingrid Deklau, WFS
Denny Foust, OCD-Aztec Office
Ed Hasely, Burlington Resources
Ron Johnson, PNMGS
Bill Vondrele, WFS

Figure 1. Cozzens B1 Site Map Showing March 1997 Excavation



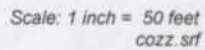


Figure 3. Cozzen B1 Groundwater Contour Map (May 29, 1997)

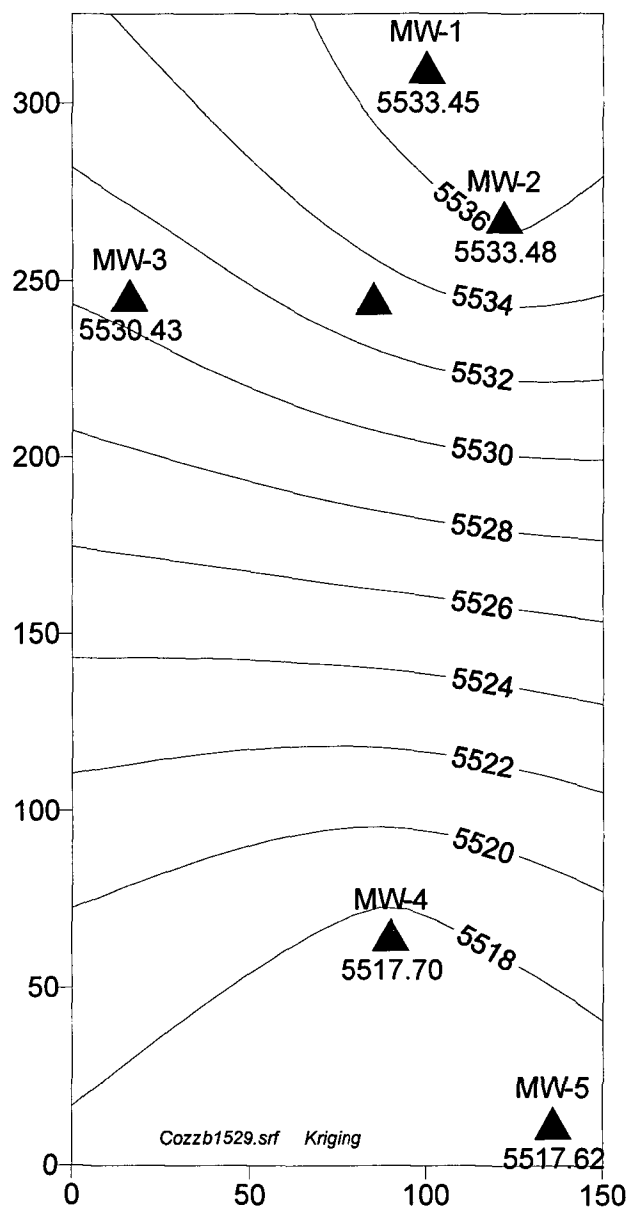


Figure 4. Cozzen B1 Groundwater Contour Map (August 1997)

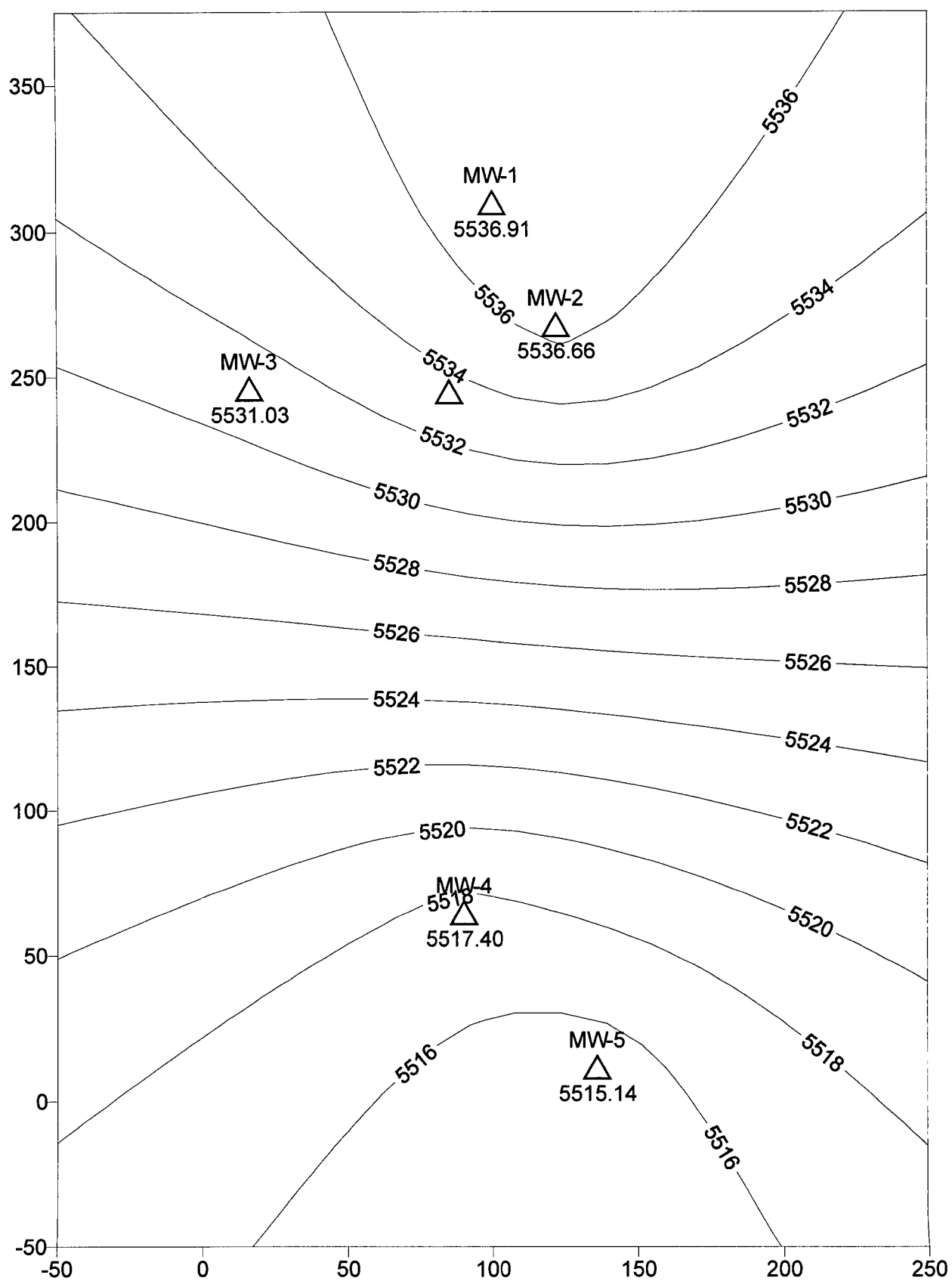
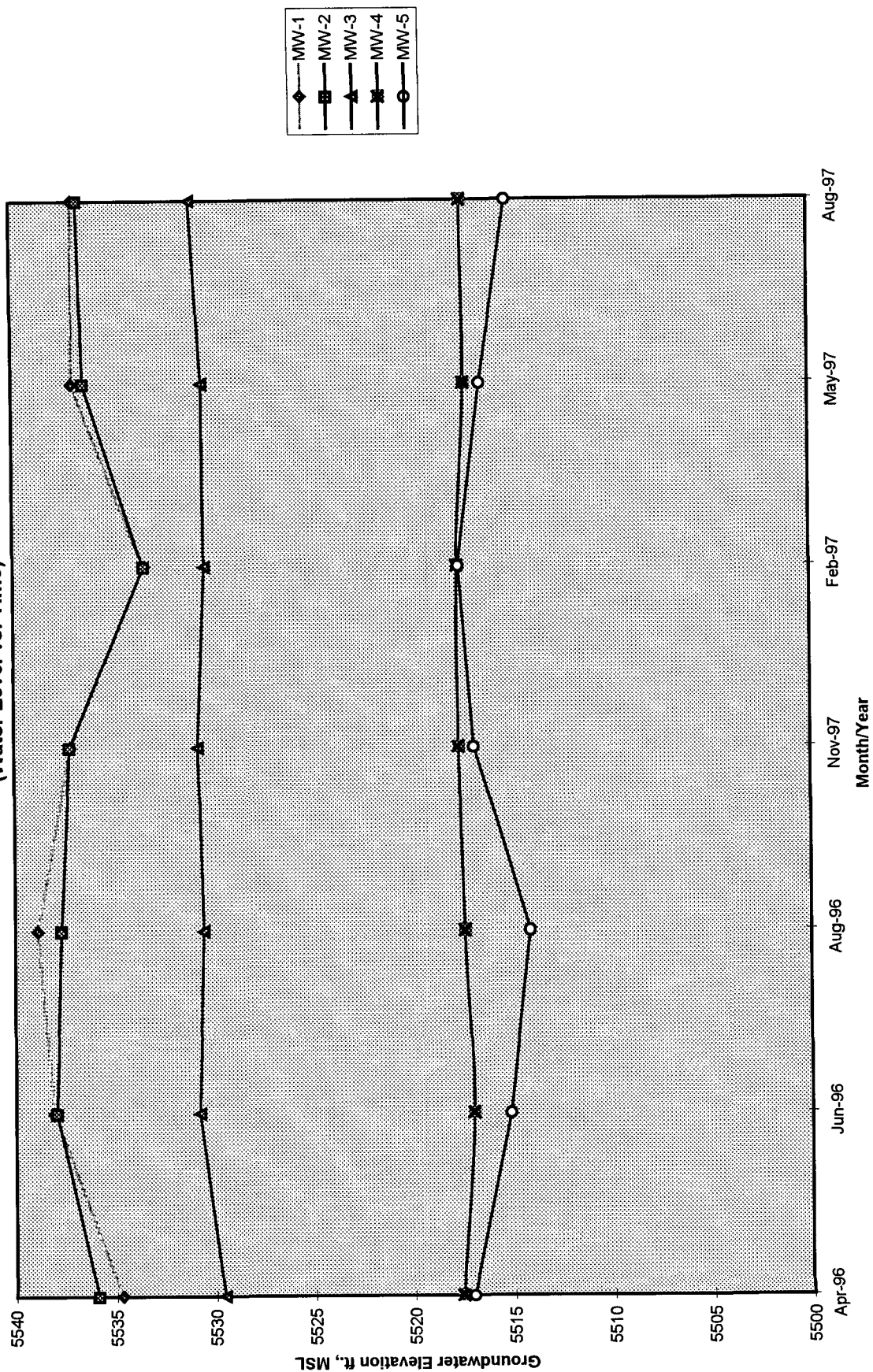


Figure 5. Cozzen B1 Hydrograph
(Water Level vs. Time)



April 12, 1996

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

The logo for PNM (Public Service Company of New Mexico) is located in the upper right quadrant of the page. It consists of the letters "PNM" in a bold, sans-serif font, with a stylized mountain peak graphic integrated into the letter "P".

RE: REQUEST FOR EXTENSION ON COZZENS B1 GROUNDWATER INVESTIGATION REPORT

Dear Bill:

PNMGS requests an extension for reporting on the groundwater investigation results at the Cozzens B1 well site, located in section 19, township 29N, range 11W, unit L and operated by Meridian Oil Company. The original date for reporting was scheduled for April 19, 1996 (phone conversation between M. Gannon, GCL, and B. Olson, OCD, 2/16/96). Due to a delay in obtaining a temporary use permit to install wells off the wellpad, PNM just completed the installation and sampling of groundwater monitoring wells on Thursday, April 12, 1996. We anticipate receiving the laboratory analytical results within the next two weeks and will have a report to OCD by Friday, May 3, 1996.

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

Sincerely,
PNM

A handwritten signature in cursive script, reading "Maureen Gannon", is positioned below the typed name.

Maureen Gannon
Contract Project Manager

MDG/COZB103.LTR

cc: Denver Bearden, PNMGS
Denny Foust, OCD-Aztec Office
Leigh Gooding, WFS
Toni Ristau, PNM

February 15, 1996

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



RE: INSTALLATION OF MONITORING WELLS AT THE COZZENS B1 WELL SITE

Dear Bill:

PNM Gas Services, PNMGS, (formerly Gas Company of New Mexico) proposes to install monitoring well points at the Cozzens B1 well site in order to define the extent of groundwater contamination, determine the groundwater gradient, and provide a means for compliance monitoring of groundwater at the site. If possible, PNM will perform this installation and sampling in conjunction with removal of contaminated soil in the area of the unlined earthen pit formerly operated by PNMGS. Soil remediation will be conducted pursuant to Gas Company of New Mexico and Sunterra Gas Gathering Company San Juan Basin Area Wide Surface Impoundment Closure Plan, approved by OCD on September 16, 1993. Excavation work is scheduled to commence Tuesday, February 20, 1996. On site well point installation is tentatively scheduled for Wednesday, February 21.

The Cozzens B1 is located between Farmington and Bloomfield, New Mexico, in section 19, township 29N, range 11W, unit L. The site is operated by Meridian Oil Company. A preliminary assessment of the site was conducted on November 1, 1995. At that time groundwater was encountered in the pit at approximately 3 feet in depth. GCL, PNM's consultant, collected a sample for laboratory analysis of BTEX using EPA Method 602. Results revealed a BTEX of 53 ppm. On Friday, December 1, 1995, PNM notified the OCD verbally of the potential groundwater impact at this site and followed with a written report on December 5, 1995.

On December 19, 1995, PNMGS performed a second assessment of the site using a backhoe to define the extent of soil contamination. The edge of soil contamination from the PNMGS pit is believed to be approximately 45 feet laterally to the east of the pit (vertical extent unknown). At approximately 135 feet horizontally to the southeast of the pit, a PID reading of 572 ppm was found in a testhole 9 feet below surface; there is a large amount of overburden on this end compared to other areas of the wellpad. To the southwest approximately 95 feet from the pit, BTEX concentrations from headspace analysis ranged from 424 ppm to 1000 ppm at approximately 3 feet below surface. The vertical extent was not defined. In the northwest direction, the contamination appears to stop at the access road. Contamination was not detected in the northern area of the well pad. Groundwater is suspected to flow in a southerly direction beneath the site.

PNM will install four to five monitoring well points at the site depending upon the results of the soil excavation. Figure 1 provides a sketch of the site and the proposed location for each well point. If possible, the well points will be installed during excavation of contaminated soil at the site so that wells can be strategically placed along and outside of the boundaries of the area with soil contamination. The wells will be completed with 2-inch diameter, stainless steel drive points and 2-inch diameter galvanized steel blank pipe, precleaned and prepackaged by the manufacturer. The well screen will consist of 2-inch, 0.020-inch stainless steel wire wrap construction. A 5-foot well screen with end point will be driven across the air/water interface. If hand driving the well points is not possible, the well annulus will be augered or excavated to groundwater prior to placement of the well screen and a filter pack of 10/20 silica sand will be brought to a level approximately 2 feet above the

Public Service Company of New Mexico

Cozzens B1 Well Point Installation
February 15, 1996
Page 2

top of the well screen. A bentonite pellet seal will then be placed on top of the filter pack all the way to the surface. Each well will be fitted with locking cap above ground surface. The wells will be fixed by placing a concrete pad or securing a metal vault above ground around each well point.

PNM will purge the standard three well volumes from each well until indicator parameters of pH, temperature and electrical conductance of water have stabilized over three consecutive measurements. The wells will then be sampled. One well will be duplicated on all parameters as a quality assurance measure. Samples will be delivered to On Site Laboratories, Farmington, New Mexico and analyzed for the following WQCC parameters:

BTEX (EPA Method 8020)

Major Cations/Anions (various EPA or standard methods)

PAHs (EPA or standard method)

WQCC metals (As, Ba, Cd, Cr, Pb, Se, Ag, and Hg [inductively coupled plasma (ICP) for heavy metals, atomic absorption spectroscopy (AAS) for Hg and Se]

Because of the lithology in the surrounding area of the site, PNM recognizes that installation of well points using a hand driver, hand or motorized auger, or a trackhoe may prove unsuccessful. On a recent excavation at the Cozzens B1E nearby, layers of sandstone were encountered at various depths throughout at the site. In the event that PNMGS' efforts are unsuccessful, PNM will propose installation of monitoring wells using a drilling rig. PNM will contact OCD prior to any deviation from the above well point specifications.

PNMGS is currently seeking a temporary use permit from the BLM to perform installation of well points off the well pad. No work shall be done outside of the well pad until the permit is approved.

PNM will prepare a letter report to OCD of the findings of the monitoring well installation and sampling. At that time, we will propose our remedial strategy for groundwater clean-up at the site. If you have any questions regarding the contents of this letter, please call me at (505) 241-2974. Otherwise, I will follow up with a phone call next week. Thank you as always for your responsiveness on these matters.

Sincerely,
PNM



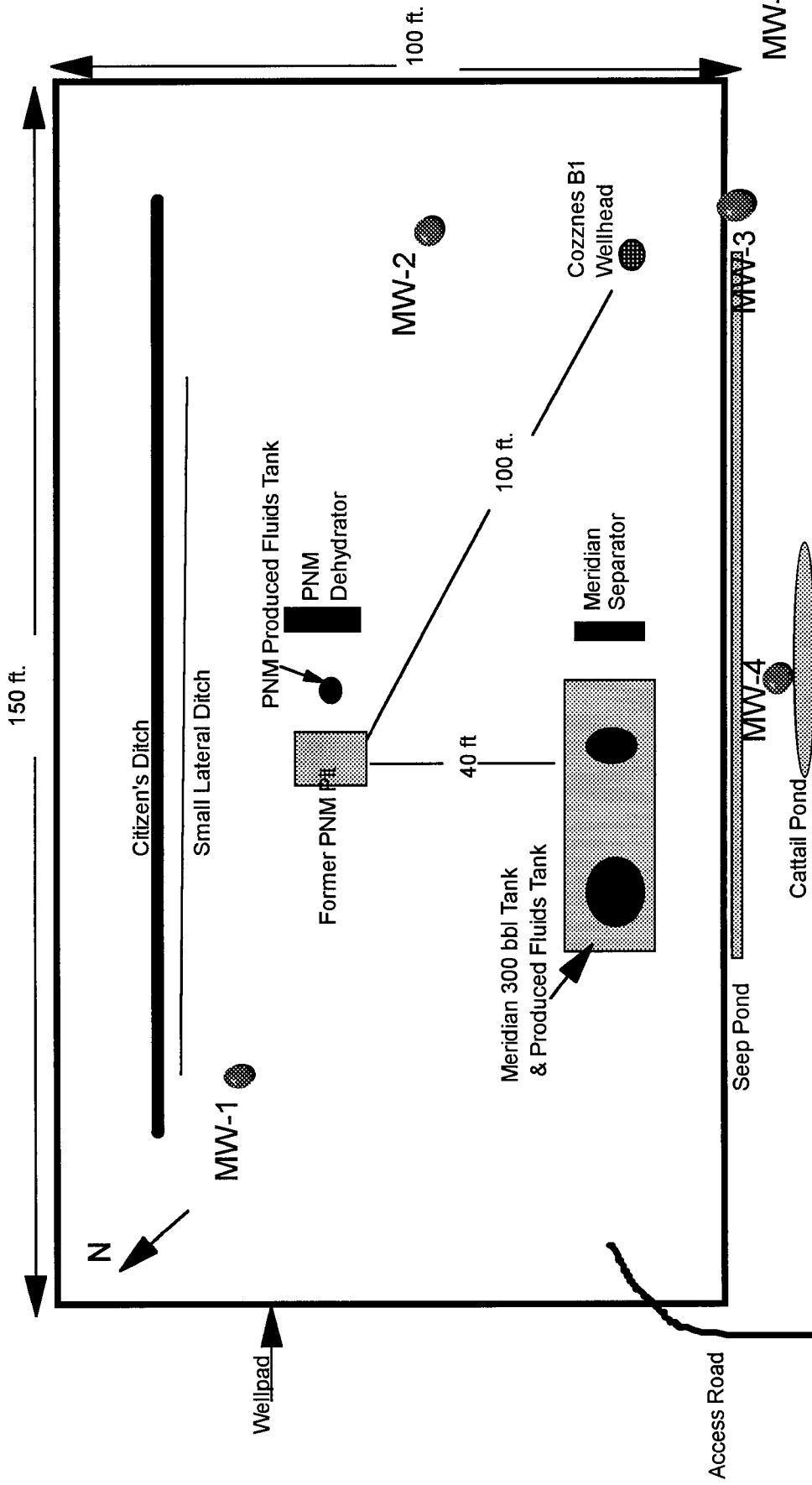
Maureen Gannon
Contract Project Manager

MDG/COZB102.LTR

Attachment

cc: Colin Adams, PNM
Craig Bach, Meridian
Denver Bearden, PNMGS
Denny Foust, OCD-Aztec Office
Leigh Gooding, WFS
Toni Ristau, PNM

Figure 1. COZZENS B1 PROPOSED WELL POINT LOCATIONS



Drawing Not to Scale



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 1145

Date 2/16/96

Originating Party

Other Parties

Bill Olson - Envir. Bureau

Maureen Gannon - GCL
(505) 241-2974

Subject

1 Cottens B#1 Ground water investigation

Discussion

Gave verbal approval of 2/15/96 monitor well
installation work plan with following condition

- 1.) Report on investigation will be submitted to OCP
by 4/19/96

Conclusions or Agreements

Distribution

file

Denny Faust - Aztec

Signed

Bill Olson

Public Service Company
of New Mexico
Alvarado Square, MS-0806
Albuquerque, NM 87158
505 241-4538
FAX 505 241-2338

Colin L. Adams
Corporate Counsel

RECEIVED

JAN 10 1996



January 3, 1996

Denny G. Foust
Deputy Oil & Gas Inspector
OCD - Aztec Office
1000 Rio Brazos Road
Aztec, NM 87410

Re: Groundwater and Soil Impacts at the Meridian Cozzens B#1,
Cozzens B#1E and the Amoco McCoy A#1A, San Juan County

Dear Mr. Foust:

Please find enclosed a duplicate original of our December 28, 1995 letter to you concerning the above matter. Our letter was in response to your December 15, 1995 letter. Unfortunately, our letter was addressed to you at the Santa Fe office of the OCD. We sincerely apologize for having misdirected that letter and for any inconvenience that such error may have caused.

Sincerely,

A handwritten signature in cursive script, appearing to read "Colin L. Adams".

Colin L. Adams
Environmental Counsel

cc: Toni Ristau, PNM Environmental
Denver Bearden, PNMGS Operations
Maureen Gannon, GCL
Bill Olson, OCD

Public Service Company
of New Mexico
Alvarado Square, MS-0806
Albuquerque, NM 87158
505 241-4538
FAX 505 241-2338

William L. Adams
Corporate Counsel

RECEIVED
OIL DIVISION
DEC 29 1995

DEC 28 1995



December 28, 1995

Denny G. Foust
Environmental Geologist
Oil Conservation Division
P.O. Box 6429
Santa Fe, New Mexico

Re: Groundwater and Soil Impacts at the Meridian Cozzens B#1,
Cozzens B#1E and the Amoco McCoy A#1A, San Juan County

Dear Mr. Foust:

I received a copy of your December 15, 1995 letter to Denver Bearden of PNM Gas Services ("PNMGS") in connection with the above matter. After reading it, we felt that a response was necessary so that the record, from our perspective, is clear.

First, contrary to what seems to be implied in your letter, PNMGS is not the "designated responsible party." The position of PNMGS is that either it has no liability for remediating the soil and groundwater in question or it shares liability with other parties. Put more directly, PNMGS' position is that the liable parties are the producers. PNMGS does have an agreement with Williams Field Services ("WFS") resulting from the sale of the gas assets, which addresses the question of who, as between PNMGS and WFS, is responsible for responding to directives from environmental regulatory authorities. However, that agreement does not constitute an admission of liability or responsible party designation by PNMGS. Even though it is PNMGS' position that it is not the responsible party, PNMGS will commence remedial activities per your direction. The responsible parties can be pursued later, and PNMGS specifically reserves any rights it may have to seek recovery from such responsible parties.

Though PNMGS will commence remedial activities as expeditiously as possible, your January 15, 1996 deadline for commencement of active remediation at Amoco McCoy A#1A, and for definition of the plumes at the other two well sites may be unrealistic. To perform the nature of the work required, PNMGS has to obtain rights of access from the producer and/or lessee, as well as the landowners involved, which may possibly include adjoining landowners. PNMGS is working diligently to obtain these rights, but cannot guarantee that they will be obtained in time for PNMGS to commence remedial activities on January 15.

Denny G. Foust
December 28, 1995
Page 2

Secondly, we point out that the soil and groundwater contamination is not due to "gas transporter equipment malfunctions" at the sites in question. As you are aware, until recently, when certain regulatory schemes were put in place, it was standard operating procedure in the natural gas industry to discharge fluids into unlined pits. This practice in fact continues in areas that are not within the OCD vulnerable areas. Also, we wish to point out that in most cases, the dehy and separator pits are ahead of the meter, so the fluids that were discharged into the pits were the property of and the responsibility of the producer, not the transporter. The pits are generally located on the producer's leasehold, and not upon any easement or right-of-way of the transporter. Further, it is likely that other pits, equipment discharges, spills, etc., other than those alleged to have been from the "transporter's equipment" at these sites have also contributed to groundwater contamination, as there are commonly multiple pits located at these sites over time. Again, we do not wish to split hairs on the issue of responsible party designation at this time, but we want to preserve any rights of cost recovery that we may have from other parties who are wholly or partially responsible for contributing to groundwater contamination at these sites. We also wish to encourage OCD's solicitation of other parties who may have responsibilities for cleanup to actively participate in or share the cost of any remediation that PNMGS may undertake at these sites.

Thank you for your time. If you have any questions concerning the points that I have set out, please call me at (505) 241-4538.

Sincerely,



Colin L. Adams
Environmental Counsel

cc: Toni Ristau, PNM Environmental
Denver Bearden, PNMGS Operations
Leigh Gooding - WFS Environmental, Salt Lake City
Bill Liess, BLM

NEW MEXICO ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON
GOVERNOR

JENNIFER A. SALISBURY
CABINET SECRETARY

1000 RIO BRAZOS ROAD
AZTEC, NEW MEXICO 87410
(505) 334-6178 FAX: (505) 334-6170

35 DE 1995 8 52

Certified: P 987 892 160

December 15, 1995

Denver Bearden
Administrator III PNM Gas Services
603 West Elm Street
Farmington NM 87401

RE: Groundwater and Soil Impacts at the Meridian Cozzens B #1, Cozzens B #1E and the Amoco McCoy A #1A all in San Juan County, New Mexico

Dear Mr. Bearden:

PNM Gas Services remains the designated responsible party, through agreement with Williams Field Services, for remediating soil and groundwater contaminated due to gas transporter equipment malfunctions at the above sites.

All three sites have soil and groundwater contamination exceeding State standards. Due to its location near residences and a domestic water well, PNM Gas Services should start active remediation at the Amoco McCoy A #1A, F-18-T31N-R10W, by January 15, 1996. PNM Gas Services needs to define the contamination plumes at the Meridian Cozzens B #1, L-19-T29N-R11W and Cozzens B #1E, J-19-T29N-R11W, by January 15, 1996, due to their locations near residences. PNM Gas Services at all three sites will have soil remediation essentially completed and groundwater remediation definitely in the active mode by April 1, 1996.

Please feel free to contact me at 505-334-6178 if you have questions.

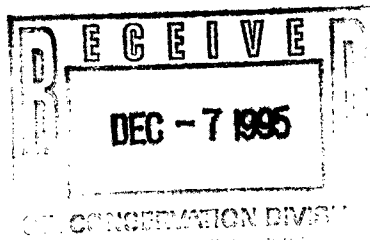
Yours truly,



Denny G. Foust
Environmental Geologist

XC: DGF File
Environmental File
Bill Olson
Leigh Gooding-WFS
Bill Liess-BLM

December 5, 1995



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

RE: GROUNDWATER RELEASE AT THE COZZEN B1 AND COZZEN B1E

Dear Mr. Olson:

Pursuant to New Mexico Water Quality Control Commission (WQCC) Regulations, section 1-203, PNM hereby provides written notification of two separate groundwater releases, one at the Cozzen B1 well site and the other at the Cozzen B1E well site. Both sites are operated by Meridian Oil Company and are located between Farmington and Bloomfield, New Mexico in section 19, township 29 north, range 11 west, unit J. The sites are located downgradient of Citizen's Ditch, within 1/4 mile of each other, but do not share the same well pad.

On November 20, 1995, field personnel collected groundwater samples from approximately three feet below ground surface in the Cozzen B1 pit and at approximately two feet below ground surface in the Cozzen B1E pit. Groundwater samples were delivered to OnSite Technologies, Ltd., for laboratory analysis. Analytical results are provided below:

| Component | Units | WQCC Stds. (ppb) | Cozzen B1 Results (ppb) | Cozzen B1E Results (ppb) |
|--------------|-------|---------------------|----------------------------|-----------------------------|
| Benzene | ppb | 10 | 12,149.4 | 4,992.4 |
| Toluene | ppb | 750 | 20,922.7 | 7,709.8 |
| Ethylbenzene | ppb | 750 | 1,448.8 | 93.4 |
| Xylenes | ppb | 620 | 18,266.4 | 8,708.9 |

Boldtype indicates a WQCC exceedance.

A hardcopy of the analytical results are attached.

This written transmittal follows verbal notification provided by PNM's representative to OCD on Friday, December 1, 1995 regarding the Cozzen B1 and on Tuesday, December 5, 1995 concerning the Cozzen B1E. PNM will develop a groundwater investigation/remediation workplan and submit it to OCD for approval prior to further activities at either site. If you have any questions, please call me at (505) 241-2974.

Sincerely,

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

Maureen D. Gannon
Contract Project Manager

olson02.ltr

Attachment

cc: C. Adams, PNM
D. Bearden, PNMGS
D. Foust, OCD-Aztec
T. Ristau, PNM

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: **22-Nov-95**
COC No.: **3705**
Sample No. **9332**
Job No. **2-1000**

Project Name: **PNM Gas Services - Cozzen 1B**

Project Location: **Cozzen 1B - 9511201100**

Sampled by: **MS** Date: **20-Nov-95** Time: **11:00**


Analyzed by: **DC** Date: **21-Nov-95**

Type of Sample: **Liquid**

Aromatic Volatile Organics

| Component | Result | Units of Measure | Detection Limit | Units of Measure |
|---------------------|----------------|-------------------------|------------------------|-------------------------|
| Benzene | 12149.4 | ug/L | 0.2 | ug/L |
| Toluene | 20922.7 | ug/L | 0.2 | ug/L |
| Ethylbenzene | 1448.8 | ug/L | 0.2 | ug/L |
| m,p-Xylene | 15389.4 | ug/L | 0.2 | ug/L |
| o-Xylene | 2877.0 | ug/L | 0.2 | ug/L |
| | TOTAL | 52787.3 | | ug/L |

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

Approved by: 
Date: **11/22/95**

P. O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-8786

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-5667

AROMATIC VOLATILE ORGANICS

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

Date: 22-Nov-95
COC No.: 3705
Sample No. 9333
Job No. 2-1000

Project Name: *PNM Gas Services - Cozzen 1BE*

Project Location: *Cozzan 1BE - 9511201130*

Sampled by: *MS*

Date: 20-Nov-95 Time: 11:30

Analyzed by: *DC*

Date: 21-Nov-95

Type of Sample: *Liquid*

Aromatic Volatile Organics

| <i>Component</i> | <i>Result</i> | <i>Units of Measure</i> | <i>Detection Limit</i> | <i>Units of Measure</i> |
|---------------------|---------------|-------------------------|------------------------|-------------------------|
| <i>Benzene</i> | 4992.4 | ug/L | 0.2 | ug/L |
| <i>Toluene</i> | 7709.8 | ug/L | 0.2 | ug/L |
| <i>Ethylbenzene</i> | 93.4 | ug/L | 0.2 | ug/L |
| <i>m,p-Xylene</i> | 7123.3 | ug/L | 0.2 | ug/L |
| <i>o-Xylene</i> | 1585.6 | ug/L | 0.2 | ug/L |
| | <i>TOTAL</i> | 21504.5 | ug/L | |

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

Approved by: *JaH*
Date: 11/22/95

P. O. BOX 2606 • FARMINGTON, NM 87499

— TECHNOLOGY BLINDING INDUSTRY WITH THE ENVIRONMENT —

OFF: (505) 325-8786



LAB: (505) 325-5667

QUALITY ASSURANCE REPORT
for EPA Method 8020

Date Analyzed: 21-Nov-95

Internal QC No.: 0419-STD

Surrogate QC No.: 0420-STD

Reference Standard QC No.: 0355-STD

Method Blank

| Analyte | Result | Units of Measure |
|---|--------|------------------|
| Average Amount of All Analytes In Blank | <0.2 | ppb |

Calibration Check

| Analyte | Units of Measure | True Value | Analyzed Value | % Diff | Limit |
|--------------|------------------|------------|----------------|--------|-------|
| Benzene | ppb | 20.0 | 19.3 | 3 | 15% |
| Toluene | ppb | 20.0 | 19.8 | 1 | 15% |
| Ethylbenzene | ppb | 20.0 | 19.6 | 2 | 15% |
| m,p-Xylene | ppb | 40.0 | 40.2 | 0 | 15% |
| o-Xylene | ppb | 20.0 | 19.4 | 3 | 15% |

Matrix Spike

| Analyte | 1 - Percent Recovered | 2 - Percent Recovered | Limit | %RSD | Limit |
|--------------|-----------------------|-----------------------|----------|------|-------|
| Benzene | 97 | 93 | (39-150) | 3 | 20% |
| Toluene | 78 | 71 | (46-148) | 7 | 20% |
| Ethylbenzene | 83 | 86 | (32-160) | 3 | 20% |
| m,p-Xylene | 84 | 78 | (35-145) | 5 | 20% |
| o-Xylene | 90 | 87 | (35-145) | 2 | 20% |

Surrogate Recoveries

| Laboratory Identification | S1 Percent Recovered | S2 Percent Recovered |
|---------------------------|-------------------------|-------------------------|
| Limits | (70-130) | |
| 9333-3705 | 95 | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

S1: Fluorobenzene

三

Page 1 of 1

Goldonrod - Client