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:	CASE NO. 12,033
APPLICATION OF PUBLIC SERVICE COMPANY OF NEW MEXICO FOR REVIEW OF OIL CONSERVATION DIVISION DIRECTIVE DATED MARCH 13, 1998, DIRECTING APPLICANT TO PERFORM ADDITIONAL REMEDIATION FOR HYDROCARBON CONTAMINATION, SAN JUAN COUNTY, NEW MEXICO	

NEW MEXICO OIL CONSERVATION DIVISION

PREFILED DIRECT TESTIMONY OF

WILLIAM C. OLSON

July 2, 1999

Q. Please state your name and residence for the record?

A. My name is Bill Olson and my residence is General Delivery, Lamy, New Mexico.

Q. Who is your employer and what is your position and what are your duties with that employer?

OCD Exhibit A

A. I'm employed with the New Mexico Oil Conservation Division's Environmental Bureau. I am a hydrogeologist for the Bureau, responsible for soil and groundwater contamination issues related to oil and gas production, refining and transportation. My duties include inspection, review and oversight of investigation and remediation activities carried out by responsible persons to ensure compliance with applicable New Mexico Oil Conservation Division rules.

Q. Will you summarize your educational background?

A. I have a bachelor's degree in geology and a master's degree in hydrology from the New Mexico Institute of Mining and Technology in Socorro, New Mexico.

Q. Have you attended any special conferences, seminars or workshops regarding investigation and remediation of contaminated ground water?

A. Yes, on an annual basis.

Q. How many years have you been with the Division?

A. I have worked for the Division for approximately eleven years. I also worked for two years on groundwater contamination investigations for the New Mexico Environment Department.

Q. How many cases involving groundwater contamination have you overseen?

A. I have overseen and currently oversee hundreds of groundwater cases over which the Division has regulatory authority.

Q. Have you reviewed all the documentation filed with the Division concerning the Hampton 4M site?

A. Yes. I am the Division staff member responsible for overseeing regulatory compliance actions at this site.

Q. How many times have you visited the site?

A. Four or five times. I have inspected the site during various phases of the investigation and remediation activities conducted by both PNM and Burlington.

Q. When did you first become aware of the contamination at issue?

A. I became aware of the contamination on January 7th, 1997 when I received verbal notification from Maureen Gannon of PNM of ground water contamination discovered during closure of the dehydration pit at the Hampton 4M well site. At that time there was no action taken by the OCD. OCD rules require verbal notification to the Division within 24 hours of discovery of ground water contamination and follow-up written notification within 15 days of the verbal notification.

On January 13, 1997, PNM sent the OCD subsequent written notification of the discovery of ground water contamination and stated that PNM would conduct further

actions at the site under PNM's ground water management plan. PNM is closing unlined pits in the San Juan Basin under both a soil pit closure plan and a ground water management plan which were previously approved by the OCD. These plans set out the investigation and remediation procedures that PNM will follow in all cases of soil and groundwater contamination.

Q. Was PNM following its plan in this case?

A. Yes. PNM removed a portion of the contaminated soils in the dehydration pit and installed some monitor wells to attempt to delineate the extent of contamination.

Q. Which person did you initially designate as the responsible person?

A. The only indication of the source of the contamination we had at first was that it came from PNM, so PNM was the initial Division-designated responsible person for contamination at the site.

Q. When did Burlington enter the picture?

A. After PNM installed additional monitoring wells which showed contamination existed upgradient of the PNM dehydrator pit, the OCD sent Burlington a letter on March 4, 1997 notifying Burlington of the situation and directing Burlington to address the cause and extent of contamination related to its activities.

Q. When did you designate both PNM and Burlington as responsible persons for contamination at the site?

A. On August 27, 1997, the Division sent letters to both PNM and Burlington concerning the contamination at the Site (OCD Exhibit No. 1).

The letter to Burlington informed Burlington that, based upon the available soil and ground water data, contamination upgradient of PNM's dehydration pit appeared to be the result of Burlington's production activities and the Division instructed Burlington to submit a soil and ground water investigation work plan for the areas south and upgradient of the dehydration pit.

The letter to PNM informed PNM that, based upon the available soil and ground water data, free phase product contamination in the vicinity of the dehydration pit appeared to be the result of PNM's disposal activities. The Division also required PNM to address the contamination at and downgradient of the dehydration pit under PNM's previously approved work plans.

Q. Physically, where exactly did the Division divide the responsibility between Burlington and PNM?

A. Directly south of the dehydration equipment, which would be just upgradient of the dehydration pit area where the free-phase product on the ground water was then known to exist.

Q. What were your reasons for the designation of both PNM and Burlington as responsible persons?

A. From the data presented to us at that time by both PNM and Burlington, it was clear that there were two sources of contamination. One source was the PNM dehydration pit area, under which existed measurable free phase product on the ground water. The other source was the general Burlington production area south and upgradient of the dehydration pit, which area contained mostly dissolved phase hydrocarbons.

Q. Please describe the subsequent actions taken by the Division prior to PNM filing an appeal of the Division's March 13, 1998 directive.

A. On November 24, 1997, the Division approved Burlington's soil and ground water investigation work plan.

On February 23, 1998, Mr. J. Burton Everett sent the OCD a letter stating he was concerned about the migration of hydrocarbon contamination onto his private property which is directly downgradient of the Hampton 4M well site.

On March 13, 1998, the Division informed PNM that the Division was concerned about migration of contaminated ground water onto downgradient private lands with private water wells and directed PNM to take additional actions to remove remaining source areas with free phase hydrocarbons.

This directive was directed solely at PNM since the available data showed that measurable amounts of free phase products on the ground water were only in the vicinity of the dehydration pit operated by PNM. It was this Division directive that PNM appealed to the Division and subsequently to the Commission (OCD Exhibit No. 2).

Q. Please discuss your experience with similar or analogous sites. Have you inspected other sites where dehydrator pits caused contamination of ground water?

A. Yes. In at least thirteen separate cases in the San Juan Basin, unlined dehydration pits have had free-phase product contamination as a result of disposal of dehydration wastes.

Q. What was the thickness of the free-phase product contamination?

A. From a sheen to approximately three feet of product on the ground water.

Q. Do you have any other observations about any of those sites?

A. Yes, PNM testimony at the Division hearing implied it was unique to have free product ground water contamination at dehydration sites. In my experience with the Division, this is not the case. We have seen this type of contamination at other dehydration sites.

One site had approximately three feet of product on the ground water and there was no upgradient source other than the dehydration unit. The product at that site was clearly the result of disposal of dehydration wastes into the dehydration pit. In that case, when the pit was remediated, the pit had been out of operation for approximately ten years and there was still significant amounts of free product contamination directly on the downgradient side of the dehydration pit.

Q. Besides those thirteen sites, have you made inspections of other unlined pits in the San Juan Basin?

A. Yes. I inspected over 200 oil and gas production sites with unlined pits in the San Juan Basin as part of a study of ground water contamination in the late 1980's. Most of these sites had unlined dehydration pits.

Q. Did you observe any free product in those pits?

A. Yes. I found dehydration pits containing free phase products and paraffins. It was not uncommon to find product in dehydration pits, especially back in the 1980s, which was prior to the Division's groundwater-protection measures implemented for the vulnerable areas.

Q. Were there any sites affecting private or community water wells?

A. Yes, there was one site highlighted in the initial vulnerable area studies that resulted in a

community water supply being shut down.

Q. What community was that?

A. Flora Vista.

Q. Was that contamination caused by a dehydrator pit?

A. Yes.

Q. Have you been monitoring the work that Burlington is perfroming at the site?

A. Yes, I have been overseeing Burlington's investigation and remediation actions, including inspecting the actions taken. Burlington has been excavating contaminated soils at the site that are a source of ground water contamination.

Q. After Burlington finishes the work currently being done, what remains to be done at the site?

A. The Division's concern back in March 1998 when it directed PNM to do additional work was that the sources of free-phase product contamination in the soil must be removed. Currently, most of the Division-directed groundwater remediation activities in the San Juan Basin are performed using source removal and natural attenuation of ground water. It is the Division's belief, that with the bulk of the source removed in the soil, decreases in dissolved-phase contamination in ground water would begin to occur downgradient along the arroyo. However, the

downgradient areas along the arroyo will be difficult to remediate through any type of physical removal or other type of action due to site terrain, pipelines and private property access, let alone determining whether a Clean Water Act Section 404 permit is needed for working in a waterway of the US.

Source removal, however, is just one aspect of site remediation. Groundwater contamination will still remain upon completion of the excavation activities and will need addressing. So ground water remediation and monitoring is needed. To the best of my knowledge, PNM and Burlington are still monitoring the downgradient ground water monitoring wells along the arroyo.

Q. Do you believe removing the free product from the ground water, as initially proposed by PNM, also removes the source of that product from the soil?

A. No.

Q. Is that why you issued the March 13, 1998, directive?

A. Yes.

Q. Have you become aware of any evidence since designating both companies as responsible persons that would change your mind about the Division's requirements for investigation and remediation in this case?

A. At the time the Division imposed the requirements, the only areas with measurable amounts of free phase product on the ground water were located under the area of the dehydration pit. The data presented to us showed a sheen of free phase product on ground water upgradient and south of the dehydration pit, but not in measurable quantities as under the dehydration pit.

It is still clear to me that there are two sources of contamination at the site---PNM's dehydration pit and the upgradient well pad activities of Burlington.

Burlington's witness at the Division examiner hearing testified that Burlington has contamination sources upgradient of the PNM dehydration pit. Data that became available after March 1998 also shows free phase product in the ground water upgradient of PNM's pit, but in less quantities than beneath PNM's dehydrator pit. So Burlington's production area is one of the sources of ground water contamination.

A PNM witness at the Division examiner hearing, Rodney Heath, testified that even if the dehydrator was working at 99% maximum efficiency, approximately 200 gallons/year of free phase products would be discharged from the dehydrator to the unlined pit over the lifetime of the well. In addition, since the soil underneath the dehydrator pit was heavily contaminated and the majority of the free phase

product is located under the dehydrator pit, it is apparent to me that the dehydrator pit is also a source of ground water contamination.

In addition, the ground water contamination resulting from Burlington's operations moves downgradient and commingles with ground water contamination from PNM's pit, so the ground water contamination beneath and downgradient of PNM's pit results from both PNM's pit and Burlington's operations.

Q. What is the Division's current position on who are responsible persons for the contamination at this site?

A. Burlington is the responsible person for soil and ground water contamination south and upgradient of the dehydration pit.

PNM is the responsible person for soil contamination north and downgradient of the dehydration pit.

Both PNM and Burlington are responsible persons for the ground water contamination north and downgradient of the dehydration pit and both have responsibility for remediation of that contamination.

Q. Does this conclude your testimony?

A. Yes.

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

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 12033 Exhibit No. 1
Submitted by OCD
Hearing Date 8/26/99

CERTIFIED MAIL
RETURN RECEIPT NO. P-410-431-213

Mr. Craig A. Bock
Burlington Resources
P.O. Box 4289
Farmington, New Mexico 87499-4289

RE: GROUND WATER CONTAMINATION
HAMPTON 4M WELL SITE

Dear Mr. Bock:

The New Mexico Oil Conservation Division (OCD) has 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. Therefore, the OCD requires that BR submit a detailed soil and ground water investigation work plan for the areas upgradient of PNM's former dehydration pit. The work plan will be submitted to the OCD Santa Fe Office by September 12, 1997 with a copy provided to the OCD Aztec District Office. The work plan will contain detailed information on:

1. How BR plans to conduct investigations as to the source of the contamination.

2. Proposed locations and construction plans for installation of permanent ground water monitoring points which define the extent of ground water contamination.

3. Soil and ground water sampling plans.

4. A schedule for completion of all work elements and submission of a report on the investigations.

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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,

William C. Olson
Hydrogeologist
Environmental Bureau

xc: Denny Foust, OCD Aztec District Office
Craig A. Bock, Burlington, Resources

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

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
Case No. 12033 Exhibit No. 2
Submitted by OCD
Hearing Date 8/26/99

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

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