BURLINGTON RESOURCES

SAN JUAN DIVISION

January 30, 1998

Certified: P 103 693 179

Bill Olson
New Mexico Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 85704

RE: Hampton 4M - Groundwater Contamination
Unit Letter N, Section 13, Township 30N, Range 11W

Dear Mr. Olson

As requested in your November 24, 1997 letter, the following is a status report on the soil/groundwater investigation and remediation activities that have been conducted at the Hampton 4M gas production location. This report addresses the activity up gradient of PNM's former dehydrator pit as detailed in Burlington Resources' Soil and Groundwater Investigation Work Plan dated September 19, 1997. Details on the initial investigation work were submitted to you on July 30, 1997 and will not be repeated in this report. A site diagram showing the location of the discussed monitoring wells and soil excavation is included in Attachment #1.

Up Gradient Monitoring Well Information

Archaeological clearance and landowner approval was obtained on October 17, 1997 to drill a monitoring well off the existing well pad. On October 29, 1997, Philip Services Corporation drilled and completed an up gradient monitoring well located approximately 50 feet south of the southeast corner of the production location. The geologic logs and well completion diagram for this well (MW #1) are included in Attachment #2. Analytical results of a water sample collected on October 30, 1997 and again on January 12, 1998 showed the water to be clean (below regulatory limits). The laboratory results are included in Attachment #3.

On Site Source Investigation/Remediation

As discussed in the Work Plan, the source investigation work in the southeast corner of location required the use of a D-8 dozer due to the hard layers of sandstone. On December 3, 1997, the dozer began by ripping and pushing non-impacted soil to the south side of location. After approximately four feet of clean soil had been removed to the south, a small area of impacted soils was uncovered in the former location of the produced hydrocarbon storage tanks. A screen of this soil with a PID registered a reading of 900 parts per million (ppm). At that time, the dozer began ripping and pushing the soil to the north side of the excavation.

Due to the fact that a dozer was being used to excavate the contaminated soils, non-impacted soils could not easily be segregated from the contaminated soils. The dozer, unlike a backhoe, could not pick and choose the soils to be stockpiled. For this reason, soils stockpiled to the north of the excavation included a large percentage of clean soil mixed with a smaller percentage of contaminated soils. The entire stockpile was treated as contaminated soil.

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3535 East 30th St., 87402-8801. P.O. Box 4289. Farmington. New Mexico 87499-4289. Telephone 505-326-9700. Fax 505-326-9833

Excavation work continued on December 4, 1997. At approximately the 14-foot level, all four walls and the bottom of the excavation were sampled for heated headspace PID readings. All except the west wall had readings greater than the NMOCD's pit closure guideline of 100 ppm. The excavation work resumed and at approximately the 15-foot level, samples were again collected. The readings at this depth were all less than 100 ppm and a composite showed a reading of 44 ppm on the PID. The PID readings for both depths are detailed in Table 1.

Table 1
Hampton 4M Excavation
Heated Headspace PID Readings (ppm)

Depth (ft)	South Wall	West Wall	North Wall	East Wall	Bottom
14	526	51.0	273	388	195
15	5.4	51.0	49.0	15.0	38.0

At this time, the dozer work was discontinued. The final excavation was approximately 60 feet long, 30 feet wide and 15 feet deep. Due to the need for the dozer to ramp into the excavation, additional dirt had to be moved. Again, this additional dirt could not be segregated from the impacted soil and was treated as contaminated.

Soil samples were collected from the excavation for laboratory analysis on December 4, 1997. The samples were sent to Onsite Laboratory and analyzed for Benzene, Toluene, Ethlybenzene and Total Xylenes (BTEX) by USEPA Method 8020 and Total Petroleum Hydrocarbons (TPH) by USEPA Method 8015 modified for gasoline and diesel range hydrocarbons. The results were all less than NMOCD cleanup standards for soils and are included in Attachment #3.

After the excavation was left open for a few hours, groundwater seeped into the excavation. No free phase hydrocarbons were observed. Over the next week, approximately 100 barrels of water were removed from the excavation and properly disposed. Thirty barrels were removed on December 5 and seventy barrels were removed on December 11, 1997. Due to the soil disturbance from the dozer work, it was felt a water sample would not be representative of actual groundwater. For this reason, no samples of the water were collected from the excavation.

Waste Disposal

The impacted soils that were stockpiled to the north of the excavation were transported to nearby Burlington Resources locations and landfarmed. Impacted soils, totaling approximately 1000 cubic yards, were trucked to the Nye SRC #14, Nye SRC #4 and Hampton #5 well site locations . These landfarms will be periodically disked to promote natural bio-degradation until TPH and BTEX levels are less than NMOCD cleanup standards.

The water that was removed from the excavation was disposed in Burlington Resources' McGrath SWD located in Section 34 – T30N – R12W, San Juan County, New Mexico.

Additional Monitoring Wells

As requested in your November 24, 1997 letter, an additional monitoring well was installed midway between MW-4 and TPW-3. The new well, identified as MW-8, was drilled and completed on December 11, 1997 by Philip Services Corporation. The geologic logs and well completion diagrams are included in Attachment #2. Analytical results of a water sample collected on January 12, 1998 showed the water was high in dissolved BTEX components (total BTEX of 33,801 ppb). The laboratory results are included in Attachment #3.

The excavation has been left open to promote remediation; therefore, the required source monitoring well has not yet been installed. Once the excavation is backfilled, the monitoring well will be installed in the source area near the former location of temporary monitor well TPW-7.

Existing Monitoring Well Sampling

Two existing monitoring wells (MW-3 and MW-4) that are located up gradient of PNM's former dehydrator discharge pit were sampled on January 12, 1998. The water from MW-3, which is located near the west edge of location, continued to be non-detect for BTEX components. The water from MW-4, located immediately down gradient of the excavation, still had high BTEX, but the level dropped to less than half of the May 1, 1997 sample. This reduction in contaminant levels may be directly related to the remediation efforts (source removal) that have taken place to date. Table 2 shows the results of the past sampling of these two monitoring wells.

Table 2
Groundwater Sampling Summary
BTEX (ppb)

	1/31/97	5/1/97	1/12/98
MW-3	ND	ND	ND
MW-4	2651	3470	1361

PNM had all the monitoring wells surveyed for location and groundwater elevation on January 12, 1998. The direction and magnitude of the hydraulic gradient, using this most recent data, has not yet been determined. Burlington and/or PNM will provide you with a map showing the details of the recent surveys when it becomes available.

Conclusions

The water quality of the up gradient well (MW#1) indicates that groundwater contamination is not coming from an off site source. The quality of the water from the monitoring well, located approximately 50 feet up gradient of the location, has been tested twice and is within water quality standards.

The recent excavation work done at the Hampton 4M confirmed a second source of groundwater contamination in the southeast corner of the location. The dozer work in the southeast corner of the location revealed hydrocarbon impacted soils to a depth of 15 feet, which is the approximate depth to groundwater. Source removal has been completed. The contaminated soils in this area of Burlington

Resources' former tank battery have all been excavated and taken off location. The source removal appears to be effective as shown by the decrease in dissolved BTEX in monitoring well MW-4.

No evidence has been found indicating that Burlington Resources' operations in the southeast corner of the location have contributed to the free phase hydrocarbons near PNM's former dehydrator pit. High concentrations of dissolved phase hydrocarbons have been found near Burlington's operations, but no free phase. Free phase hydrocarbons have not been found in any of the temporary monitoring wells or completed monitoring wells in Burlington's area of operation. The excavation, which has been open to the groundwater for over a month, has also not shown any evidence of free phase hydrocarbons.

Plan of Action

To address the groundwater contamination associated with Burlington Resources' operations in the southeast corner of the location, plans are to leave the excavation open for a period of time while we monitor the contaminant levels in the down gradient wells. Both MW-4 and the recently drilled MW-8 are located to allow good monitoring immediately down gradient of Burlington's source removal area.

Once a downward trend of contaminant levels is established in the two wells directly down gradient of Burlington's source removal area, the excavation will be backfilled with clean soils. A monitoring well will then be installed in the source area. Water quality from the source well and the down gradient wells will be monitored periodically to show improvement in water quality.

The unique characteristics of the Hampton 4M location pose challenges of site characterization and remediation. Burlington Resources feels that continued groundwater monitoring will show a decrease in contaminant levels up gradient of PNM's former dehydrator pit as a result of the source removal in the southeast corner of the location. If you have questions or additional information is needed, please contact me at (505) 326-9841.

Sincerely,

Ed Hasely
Sr. Staff Environmental Representative

Enclosures: Attachment #1: Hampton 4M Site Diagram
Attachment #2: Geologic Logs and Well Completion Diagrams
Attachment #3: Laboratory Results

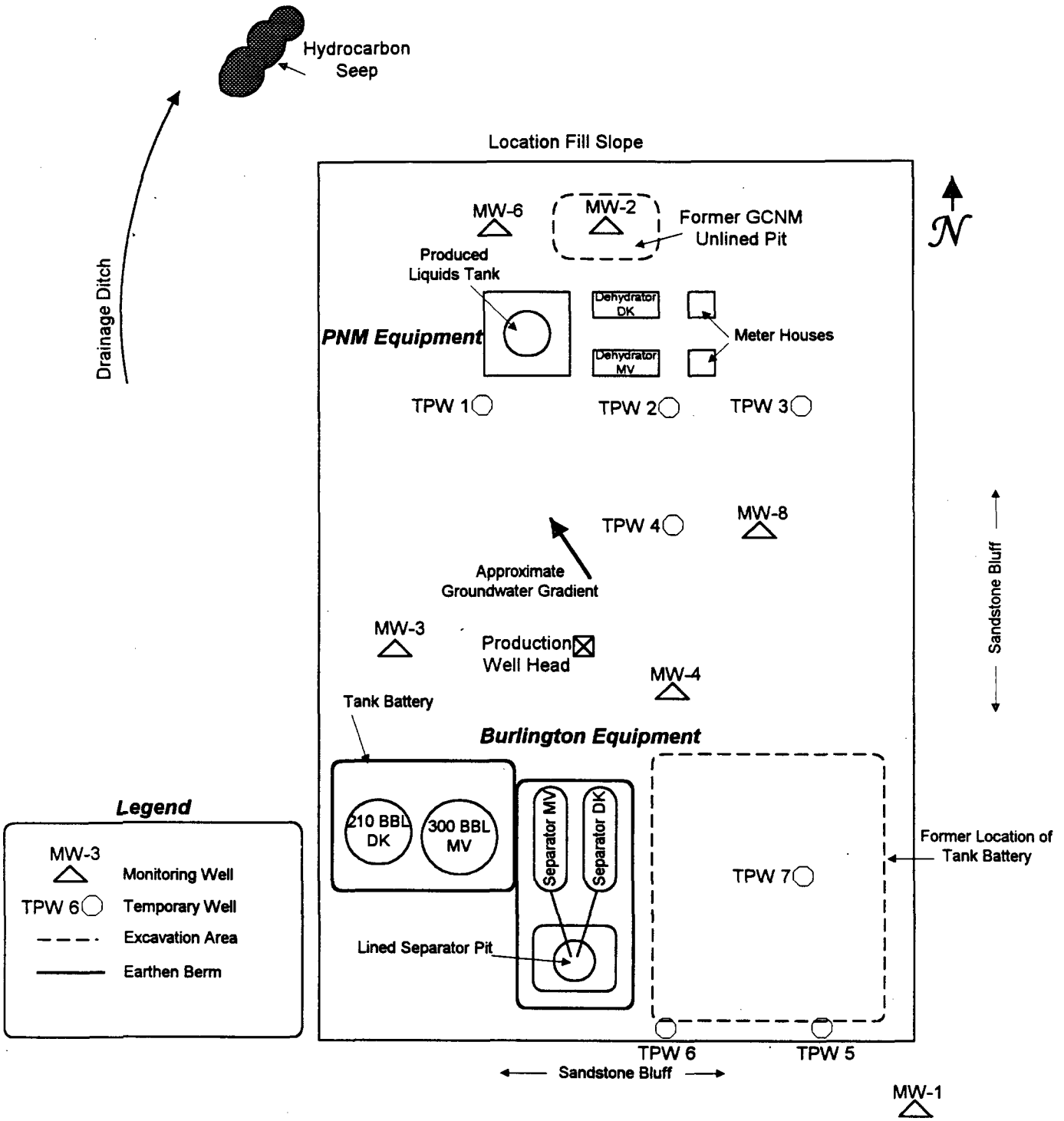
cc: Denny Foust - NMOCD Aztec
Johnny Ellis - BR
Ken Raybon - BR
Keith Baker - BR
Denver Bearden - PNM Farmington
Maurene Gannon - PNM Albuquerque
Hampton 4M File

ATTACHMENT #1

SITE DIAGRAM

001334

Hampton 4M Site Diagram



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ATTACHMENT #2

GEOLOGIC LOGS
AND
WELL COMPLETION DIAGRAMS

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RECORD OF SUBSURFACE EXPLORATION

Borehole # BH-3
Well # MW-1
Page 1 of 2

PHILIP SERVICES CORP.
4000 Monroe Road
Farmington, New Mexico 87401
(505) 326-2262 FAX (505) 326-2388

Project Name PNM HAMPTON 4M
Project Number 18839 Phase 6000
Project Location HAMPTON 4M

Elevation
Borehole Location SE Corner of Wellpad on hill
GWL Depth 38.85' BGS
Logged By CM CHANCE
Drilled By K Padilla
Date/Time Started 10/29/97
Date/Time Completed 10/29/97

Well Logged By CM CHANCE
Personnel On-Site D CHARLEY
Contractors On-Site
Client Personnel On-Site

Drilling Method 4 1/4 ID HSA
Air Monitoring Method PID

Depth (Feet)	Sample Number	Sample Interval	Sample Type & Recover (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: PPM BZ	BH	S	Drilling Conditions & Blow Counts
0										
5										
10										
15										
20	1	18-20	10	Lt Grey/Br weathered SANDSTONE Poorly Cemented, f-med sand, V. dense, dry			0		0/1	1341 hr
25	2	23-25	12	Br weathered SANDSTONE, Poorly cemented, vf-f sand, V. dense, dry			0		0/1	1351 hr
30	3	28-30	8	Lt Grey weathered SANDSTONE Fairly cemented, f-med sand, V. dense, dry			0		48/5	1418 hr
35	4	33-35	6	AA					0/1	
										GW@38.85'
40	5	38-40	4	Lt Grey weathered SANDSTONE, Poorly cemented, f-med sand, dense, wet					0/1	

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Comments: location is ~20' above well pad. Will drill to 20' before sampling. GW @ 38.85' BGS. Will drill 5' more & install well.

Geologist Signature Cm Chance

RECORD OF SUBSURFACE EXPLORATION

Borehole # BH-3
Well # MW-1
Page 2 of 2

PHILIP SERVICES CORP.
4000 Monroe Road
Farmington, New Mexico 87401
(505) 326-2262 FAX (505) 326-2388

Project Name PNM HAMPTON 4M
Project Number 18839 Phase 6000
Project Location HAMPTON 4M

Elevation
Borehole Location
GWL Depth 38.85'
Logged By CM CHANCE
Drilled By K Padilla
Date/Time Started 10/29/97
Date/Time Completed 10/29/97

Well Logged By CM CHANCE
Personnel On-Site D CHARLEY
Contractors On-Site
Client Personnel On-Site

Drilling Method 4 1/4 ID HSA
Air Monitoring Method PID

Depth (Feet)	Sampl Numbe	Sample Interval	Sample Type & Recover (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: PPM BZ	BH	S	Drilling Conditions & Blow Counts
40										
45				TDB 43.8'						
50										
55										
60										
65										
70										
75										
80										

Comments:

Geologist Signature

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MONITOR WELL INSTALLATION FORM

Borehole # 3
Well # MW-1
Page 1 of 1

Philip Services Corp.
4000 Monroe Rd.
Farmington, NM 87401
(505) 326-2262 FAX (505) 326-2388

Project Name PNM HAMPTON 4M
Project Numb 18839 Phase 6000
Site Location HAMPTON 4M

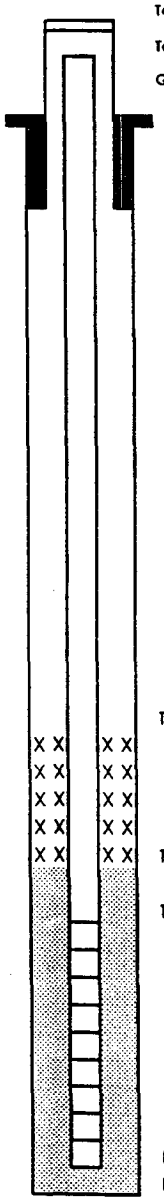
Elevation
Well Location
GWL Depth 38.85' BGS
Installed By K PADILLA

Date/Time Started 10/29/97
Date/Time Complete 10/29/97

On-Site Geologist C CHANCE
Personnel On-Site D CHARLEY
Contractors On-Site
Client Personnel On-Site

Depths in Reference to Ground Surface

Item	Material	Depth (feet)
Top of Protective Casing		+3.1
Bottom of Protective Casing		1.8
Top of Permanent Borehole Casing		NA +3
Bottom of Permanent Borehole Casing		NA 2
Top of Concrete		NA
Bottom of Concrete		NA
Top of Grout		0
Bottom of Grout		23.5
Top of Well Riser	30' 2"X10' PVC riser	+3
Bottom of Well Riser		28.5
Top of Well Screen	15' 2"X10' 0.01slot	28.5
Bottom of Well Screen		43.5
Top of Peltonite Seal	hole plug	23.5
Bottom of Peltonite Seal		25.5
Top of Gravel Pack	10-20 silica SAND	25.5
Bottom of Gravel Pack		43.5
Top of Natural Cave-In		43.5
Bottom of Natural Cave-In		43.8
Top of Groundwater		38.8
Total Depth of Borehole		43.8



Top of Protective Casing NA +3.1'
Top of Riser (survey elev.) +3
Ground Surface 0

Top of Seal 23.5
Top of Gravel Pack 25.5
Top of Screen 28.5
Bottom of Screen 43.5
Bottom of Borehole 43.8

Commen Set well @ 43.5' BGS. Hydrate seal w/ 10 gal potable water. Padlock & locking wellcap on well. Well completed

Geologist Signature Cory Chance

001339

MWINSTAL.wk1

RECORD OF SUBSURFACE EXPLORATION

Borehole # BH-6
Well # MW8
Page 1 of 1

PHILIP SERVICES CORP.
4000 Monroe Road
Farmington, New Mexico 87401
(505) 326-2262 FAX (505) 326-2388

Project Name PNM HAMPTON 4M
Project Number 18929 Phase 1001
Project Location HAMPTON 4M

Elevation
Borehole Location Center of SWP
GWL Depth ~20' BGS
Logged By CM CHANCE
Drilled By K Padilla
Date/Time Started 12/11/97
Date/Time Completed 12/11/97

Well Logged By CM CHANCE
Personnel On-Site D CHARLEY, P Archuleta
Contractors On-Site
Client Personnel On-Site M. Sikelianos, M. Gannon

Drilling Method 4 1/4 ID HSA
Air Monitoring Method PID

Depth (Feet)	Sample Numbe	Sample Interval	Sample Type & Recovery (inches)	Sample Description Classification System: USCS	USCS Symbol	Depth Lithology Change (feet)	Air Monitoring Units: PPM BZ	BH	S/MS	Drilling Conditions & Blow Counts
0										
5										
10	1	10-12	18	Br/Gry mottled CLAY, dry, stiff, low-med plastic					2/1	-1507hr
15	2	14-16	24	Redish Br silty SAND, F-med sand, dense, sl moist					305/38	-1520hr
	3	16-18	24	Gry/Redish Br clayey SAND, vf-f sand, sl moist, med dense					306/42	-1530hr
	4	18-19	12	Gry/Redish Br CLAY, dry, low plastic, interbedded siltstone					112/54	-1538hr
20	5	20-21	12	Gry silty SAND, vf-f sand, moist, med dense					24/11	-1544hr
	6	22-23	4	Gry silty CLAY, stiff, high plastic, dry					0	-1550
25				TOB 25'						
30										
35										
40										

Comments: Note: Sample #6 may have only been stiff. Only 4" of recovery
Will set 2" well @ 25' BGS

001340

Geologist Signature

MONITOR WELL INSTALLATION FORM

Philip Services Corp.
4000 Monroe Rd.
Farmington, NM 87401
(505) 326-2262 FAX (505) 326-2388

Borehole # BH6
Well # MW 8
Page ___ of ___

Project Name PNM Hampton 4M
Project Number 18929 Phase 1001.77
Site Location Hampton 4M

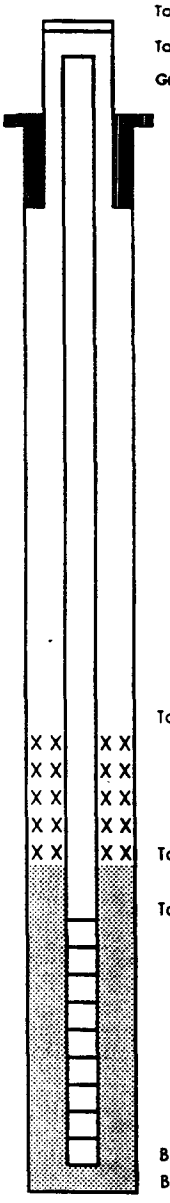
Elevation ___
Well Location Center of Site
GWL Depth ~20' BGS
Installed By K PADILLA

Date/Time Started 12/11/97
Date/Time Complete 12/11/97

On-Site Geologist C CHANCE
Personnel On-Site D Charley, P. Archuleta
Contractors On-Site ___
Client Personnel On-Site M. Sikorski, M. Gomez

Depths in Reference to Ground Surface

Item	Material	Depth (feet)
Top of Protective Casing		+3" NA
Bottom of Protective Casing		9" NA
Top of Permanent Borehole Casing		NA
Bottom of Permanent Borehole Casing		NA
Top of Concrete		NA
Bottom of Concrete		NA
Top of Grout		NA
Bottom of Grout		NA
Top of Well Riser		0
Bottom of Well Riser		10
Top of Well Screen		10
Bottom of Well Screen		25
Top of Peltonite Seal		0
Bottom of Peltonite Seal		8
Top of Gravel Pack		8
Bottom of Gravel Pack		25
Top of Natural Cave-In		25
Bottom of Natural Cave-In		25
Top of Groundwater		~20'
Total Depth of Borehole		25



Top of Protective Casing +3"
Top of Riser (survey elev.) 0
Ground Surface 0

Top of Seal 0
Top of Gravel Pack 8
Top of Screen 10
Bottom of Screen 25
Bottom of Borehole 25

001341

Commen Well completed as surface mount. Locking well cap + padlock placed on well. Seal hydrated w/ 5gal potable water.

Geologist Signature Cory Chance

MWINSTAL.wk1

ATTACHMENT #3

LABORATORY RESULTS

001342

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	*Denver Bearden*	Date:	5-Nov-97
Company:	*PNM Gas Services*	COC No.:	*7080*
Address:	*603 W. Elm*	Sample No.:	*16700*
City, State:	*Farmington, NM 87401*	Job No.:	*2-1000*

Project Name:	***PNM Gas Services - Hamptom 4M***				
Project Location:	***9710301030; MW-1***				
Sampled by:	MS	Date:	30-Oct-97	Time:	10:30
Analyzed by:	HR	Date:	4-Nov-97		
Sample Matrix:	*Liquid*				

Burlington's well —

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

001343

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

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: Flourobenzene

001344

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	Denver Bearden	Date:	23-Jan-98
Company:	PNM Gas Services	COC No.:	7086
Address:	603 W. Elm	Sample No.:	17304
City, State:	Farmington, NM 87401	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
Benzene	4.3	ug/L	0.2	ug/L
Toluene	3.3	ug/L	0.2	ug/L
Ethylbenzene	0.2	ug/L	0.2	ug/L
m,p-Xylene	0.7	ug/L	0.2	ug/L
o-Xylene	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:
Date: 1/23/98

001345

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	*Denver Bearden*	Date:	23-Jan-98
Company:	*PNM Gas Services*	COC No.:	*7086*
Address:	*603 W. Elm*	Sample No.:	*17309*
City, State:	*Farmington, NM 87401*	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:	DC	Date:	21-Jan-98		
Sample Matrix:	*Liquid*				

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

ND - Not Detected at Limit of Quantitation

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

Approved By: *Date:* 1/23/98

001346

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

QUALITY ASSURANCE REPORT

for EPA Method 8020

Date Analyzed: 21-Jan-98

Internal QC No.: 0558-STD
Surrogate QC No.: 0567-STD
Reference Standard QC No.: 0829/30-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				
17309-7086	101				

S1: Flourobenzene

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	*Scott Pope*	Date:	12-Dec-97
Company:	*Philip Environmental*	COC No.:	*G3687*
Address:	*4000 Monroe Road*	Sample No.:	*17042*
City, State:	*Farmington, NM 87401*	Job No.:	*2-1000*

Project Name:	***Burlington Resources - Hampton 4M***				
Project Location:	***B.R.O.G. 01***				
Sampled by:	DB	Date:	4-Dec-97	Time:	13:00
Analyzed by:	DC/HR	GRO Date:	9-Dec-97		
Sample Matrix:	*Soil*	DRO Date:	11-Dec-97		

Laboratory Analysis

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
Gasoline Range Organics (C5 - C9)	ND	mg kg	0.5	mg/kg
Diesel Range Organics (C10 - C28)	ND	mg kg	5	mg/kg

ND - Not Detected at Limit of Quantitation

Quality Assurance Report

GRO QC No.: 0554-STD

DRO QC No.: 0555-STD

Continuing Calibration Verification

Parameter	Method Blank	Unit of Measure	True Value	Analyzed Value	RPD	RPD Limit
Gasoline Range (C5 - C9)	ND	ppb	1,801	1,869	3.7	15%
Diesel Range (C10 - C28)	ND	ppm	200	195	2.4	15%

Matrix Spike

Parameter	1- Percent Recovered	2 - Percent Recovered	Limit	RPD	RPD Limit
Gasoline Range (C5-C9)	93	92	(80-120)	0	20%
Diesel Range (C10-C28)	95	98	(75-125)	3	20%

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

Approved by:

Date: 12/12/97

001348

OFF: (505) 325-5667

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	*Scott Pope*	Date:	10-Dec-97
Company:	*Philip Environmental*	COC No.:	*G3687*
Address:	*4000 Monroe Road*	Sample No.:	*17042*
City, State:	*Farmington, NM 87401*	Job No.:	*2-1000*

Project Name:	***Burlington Resources - Hampton 4M***				
Project Location:	***B.R.O.G. 01***				
Sampled by:	DB	Date:	4-Dec-97	Time:	13:00
Analyzed by:	DC	Date:	8-Dec-97		
Sample Matrix:	*Soil*				

Laboratory Analysis

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
Benzene	3	ug/kg	1	ug/kg
Toluene	6	ug/kg	1	ug/kg
Ethylbenzene	1	ug/kg	1	ug/kg
m,p-Xylene	17	ug/kg	1	ug/kg
o-Xylene	3	ug/kg	1	ug/kg
TOTAL	31	ug/kg		

ND - Not Detected at Limit of Quantitation

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

Approved by:
Date: 12/10/97

001349

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

QUALITY ASSURANCE REPORT

for EPA Method 8020

Date Analyzed: 8-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	<1.0	ppb

Calibration Check

Parameter	*Unit of Measure*	*True Value*	*Analyzed Value*	*RPD*	*Limit*
Benzene	ppb	60.0	62.9	5	15%
Toluene	ppb	60.0	64.8	8	15%
Ethylbenzene	ppb	60.0	63.0	5	15%
m,p-Xylene	ppb	120.0	123.2	3	15%
o-Xylene	ppb	60.0	63.0	5	15%

Matrix Spike

Parameter	*1- Percent Recovered*	*2 - Percent Recovered*	*Limit*	*RPD*	*Limit*
Benzene	96	97	(39-150)	1	20%
Toluene	98	99	(46-148)	1	20%
Ethylbenzene	97	98	(32-160)	1	20%
m,p-Xylene	95	95	(35-145)	0	20%
o-Xylene	97	97	(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)	
17042-G3687	92				
				JR, 12/12/97	(JC) 12/10/97

S1: Flourobenzene

001350

PHILIP ENVIRONMENTAL

Chain of Custody Record — Nonchemical Samples

210 West Sand Bank Road
P.O. Box 230
Columbia, IL 62236-0230

(618) 281-7173 Phone
(618) 281-5120 FAX

COC Serial No. G 3687

Project Name Burlington Pits Hampton 4M

Project Number 1895-9 Phase . Task 8000 . 77

Samplers David Brown

Lab Name ONSITE

Location Farmington

Sample Number	Date	Time	Matrix	Analysis Type: BTX	Analysis Type: TPH	Comments
B.R.O.G. 01	12-4-97	13:00	SOIL	X	X	17042-63687

Relinquished by:

Signature	Date	Time
David Brown	12-4-97	15:05

Received By:

Signature	Date	Time
[signature]	12/4/97	1505

Carrier: Airbill No.

Shipping and Lab Notes:

001351

RE-211 (4/95)