3R - 313

MONITORING REPORT

04/12/2005

RECEIVED
3R0313

APR 25 2005

Oil Conservation Division
Environmental Bureau

Environmental Projects
188 County Road 4900
Bloomfield, NM 87413
505-634-4956 Phone
505-632-4780 Fax

April 12, 2005

Mr. Glen Von Gonten
Hydrogeologist
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

RE: DOGIE NORTH DEHY PIT REMEDIATION AND CLOSURE REPORT

Dear Mr. Von Gonten:

Enclosed please find information on remediation and closure activities associated with the unlined surface impoundment located at the Dogie North site. Public Service Company of New Mexico (PNM) was previously responsible for the site and initiated pit closure activities on June 23, 1997. The site later became the responsibility of Williams upon purchase of Gas Company of New Mexico (GCNM) from PNM. Upon expiration of PNM's retained environmental liabilities associated with this site, Williams agreed to complete necessary closure work. As such, the enclosed documentation reflects activities of both PNM and Williams, all of which has been previously reported.

Site History

Excavation of petroleum hydrocarbon impacted soil beneath the unlined surface impoundment began on June 23, 1997. An approximate total of 4700 cubic yards of contaminated soil were removed and remediated by on-site landfarming. The excavation was reportedly terminated at a depth of 6 feet. A sample of the ground water collected from the excavation contained benzene, toluene and total xylene at concentrations in excess of Water Quality Control Commission (WQCC) standards. A letter notifying the Oil Conservation Division (OCD) of ground water contamination at the site was submitted on July 11, 1997. Work at the site included the removal of an estimated 1000-2000 barrels of water prior to backfilling.

To evaluate the magnitude and extent of ground water contamination, monitoring wells were installed in and around the former pit location. A down gradient well was installed consistent with standard site investigation protocol. The depth and location of wells were approved by NMOCD. Ground water samples were collected periodically from the wells over a period of five years through September 2002.

Site Hydrogeology

The Dogie North site lies at an elevation of about 6225 feet, about 20 miles northeast of Lybrook, NM. The site lies within Largo Canyon some 40 miles from the confluence with the San Juan River.

Materials beneath the site are predominantly alluvial sands and clays. Ground water is very shallow, and ranges from 5 – 10 feet below land surface. Ground water flow direction is generally west – northwest essentially parallel to the wash axis. Following excavation and subsequent backfilling, monitoring wells were installed. Based on monitoring since 1997, water levels fluctuate depending on seasonal precipitation and /or highland storm water runoff.

Monitoring Results

Concentrations of benzene, toluene, ethylbenzene and xylene (BTEX) were analyzed in water samples collected during quarterly monitoring. Of the five wells in the initial monitoring network, only well MW-2 showed any regular exceedance of a measured WQCC water quality standard. Results of the 2002 sampling events confirm earlier water quality findings. Table 1 summarizes the analytical results from sampling of the monitoring wells.

Only source area well (MW-2) was monitored regularly over the five-year period. During the fourth consecutive quarter when MW-2 was sampled and thought to be clean, all remaining wells were again sampled to confirm earlier findings.

Summary

The unlined surface impoundment at the Dogie North site was addressed consistent with OCD Order 7940-C and with the guidelines pertaining to the remediation of unlined surface impoundments. The work included the removal of hydrocarbon impacted soils and an evaluation of groundwater impacted by the historical operation of the impoundment. A network of ground water monitoring wells was installed and ground water analyses showed that a small BTEX plume existed in the immediate vicinity of the former pit location. Natural attenuation of the BTEX compounds resulted in contaminant degradation to concentrations less than WQCC MCLs. The monitoring results show that there have been no exceedances of WQCC standards for BTEX in ground water dating to the fourth quarter of 2001.

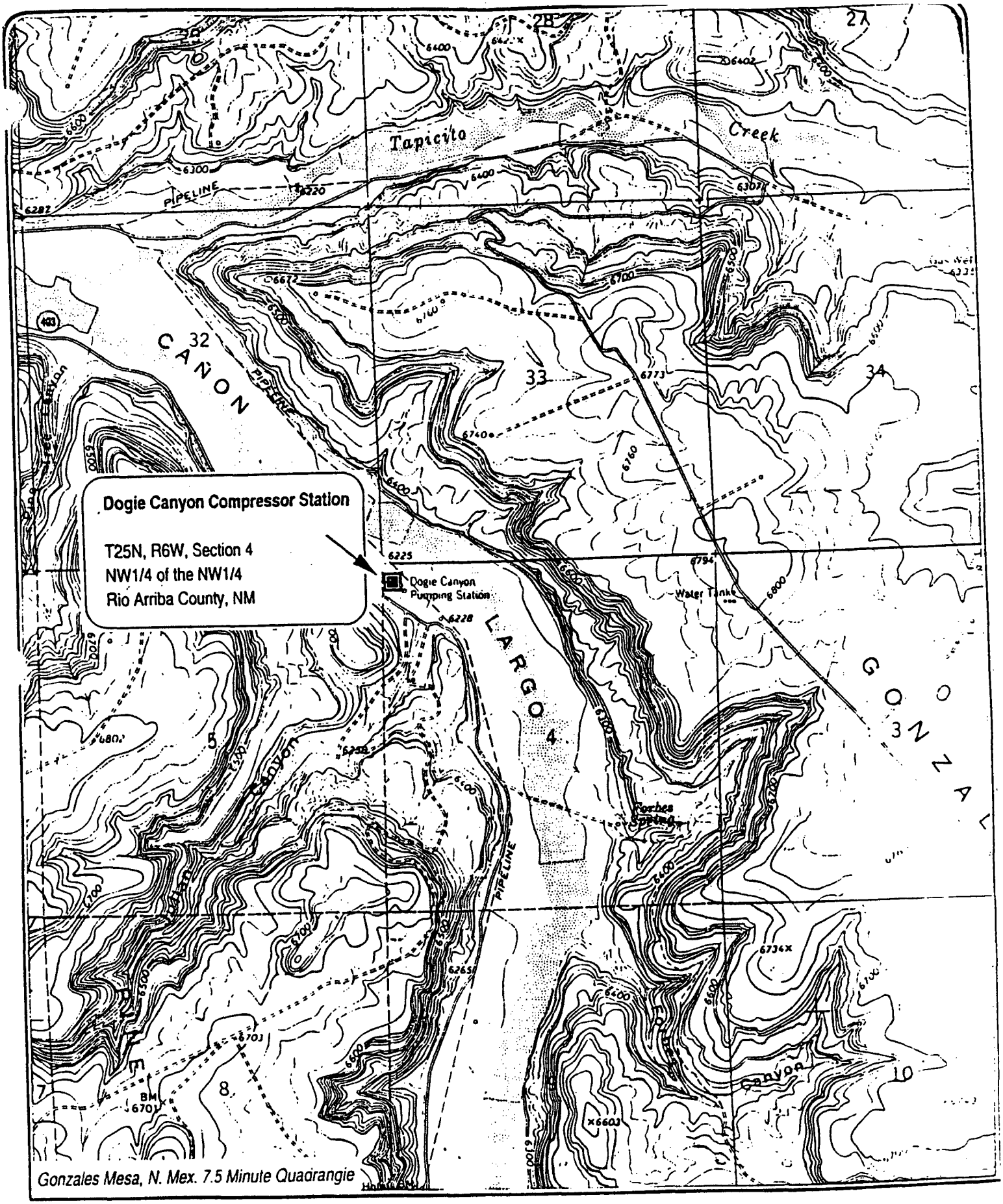
Based on current site conditions, Williams requests approval for closure of the Dogie North site. Following receipt of your closure approval we will plug and abandon the monitoring wells in accordance with applicable guidelines. Williams appreciates your time in reviewing this site closure request. If you have any questions or require any additional information, please contact me at 505-634-4956.

Respectfully,

Mark B. Harvey
Project Coordinator

enclosures

c: Mr. Denny Foust, OCD District III, Aztec
Mr. Bill Liess, BLM Farmington District Office


Dogie Canyon Compressor Station
T25N, R6W, Section 4
NW1/4 of the NW1/4
Rio Arriba County, NM
Dogie Canyon Pumping Station
Tapicito
Creek
PIPELINE
CANON
LARGO
GONZALES
Water Tanks
Forbes Spring
Canyon
Gonzales Mesa, N. Mex. 7.5 Minute Quadrangle

Analytical Data Summary

Site Name:
Dogie North Pit

Reporting Period:
1/1/97 To 1/1/03

Well ID	Sample Date	Sample ID	Benzene ug/l	Toluene ug/l	Ethylbenzene ug/l	Xylene (Total) ug/l
MW-1						
	9/17/97	9709171130	<0.2	<0.2	<0.2	<0.2
	12/16/97	9712161004	<0.2	<0.2	<0.2	<0.2
	2/10/98	9802100950	<0.5	<0.5	<0.5	<1.5
	5/20/98	9805200747	<0.5	<0.5	<0.5	<1.5
	8/11/98	9808111730	<0.5	<0.5	<0.5	<1.5
	9/28/02	130528SEP02	ND	ND	ND	ND
MW-2						
	9/17/97	9709171200	62.0	9.8	11.0	62.3
	12/16/97	9712161031	20.9	1.0	2.8	13.1
	2/10/98	9802101010	86	3.1	5.1	22.2
	5/20/98	9805200814	130	4	4.1	17.5
	8/11/98	9808111800	17	2.2	1.9	9.1
	12/9/98	9812091552	22	1.8	4	22.4
	2/10/99	9902100817	37	3	7.1	30.4
	4/27/99	9904271400	130	1.2	7.6	30.7
	9/21/99	9909211230	59	<0.5	3.1	16.8
	11/16/99	9911160905	58	1	3.3	15.6
	2/15/00	0002151032	34	<0.5	4.4	18.3
	5/10/00	0005100919	67	2.8	11	30.8
	11/3/00	134803NOV00	<1	<1	<1	<1
	2/16/01	133916FEB01	3.89	1.17	<1.0	2.23
	5/10/01	131310MAY01	15.8	2.08	1.78	6.37
	10/31/01	131031OCT01	2.1	<2.0	<2.0	2.3
	3/26/02	131726MAR02	ND	ND	ND	ND
	6/17/02	154117JUN02	ND	ND	ND	5.2
	9/28/02	141028SEP02	ND	ND	ND	ND
MW-3						
	9/17/97	9709171230	<0.2	<0.2	<0.2	<0.2
	12/16/97	9712161059	<0.2	<0.2	<0.2	<0.2
	2/10/98	9802101024	<0.5	<0.5	<0.5	<1.5
	5/20/98	9805200836	<0.5	<0.5	<0.5	<1.5
	8/11/98	9808111900	<0.5	<0.5	<0.5	<1.5
	9/28/02	134928SEP02	ND	ND	ND	ND

Site Name:
Dogie North Pit

Reporting Period:
1/1/97 To 1/1/03

Well ID	Sample Date	Sample ID	Benzene ug/l	Toluene ug/l	Ethylbenzene ug/l	Xylene (Total) ug/l
MW-4						
	9/17/97	9709171300	<0.2	<0.2	<0.2	<0.2
	12/16/97	9712161123	<0.2	<0.2	<0.2	<0.2
	2/10/98	9802101037	<0.5	<0.5	<0.5	<1.5
	5/20/98	9805200856	<0.5	<0.5	<0.5	<1.5
	8/11/98	9808111930	<0.5	<0.5	<0.5	<1.5
	9/28/02	140028SEP02	ND	ND	ND	ND
MW-5						
	9/17/97	9709171330	118.7	<0.2	0.3	0.3
	12/16/97	9712161152	9.3	<0.2	<0.2	<0.2
	2/10/98	9802101053	12	<0.5	<0.5	<1.5
	5/20/98	9805200927	<0.5	<0.5	<0.5	<1.5
	8/11/98	9808112000	<0.5	<0.5	<0.5	<1.5
	12/9/98	9812091556	<1.0	<1.0	<1.0	<3.0
	2/10/99	9902100846	<0.5	<0.5	<0.5	<1.5
	9/28/02	132528SEP02	ND	ND	ND	ND
TMW-1						
	9/21/99	9909211300	<0.5	0.6	<0.5	1.6
	9/28/02	133928SEP02	ND	ND	ND	ND

ORGANIC ANALYSIS REPORT

Client: Mile High Environmental
Collected: October 31, 2001
Received: November 6, 2001

Contact: Jim Struhs
Analyzed: November 14, 2001

Analysis Requested: SW8260B/5030A

Lab Sample ID: L48278-01A
Field Sample ID: **DOGN-SA-MW-2**
Site ID: Dogie North/JPS-110501-4

Analytical Results — **MBTEXN/TPH-P**

Units = mg/L
Final Dilution Factor: 1

Compound	Reporting Limit	Amount Detected
Benzene	0.0010	**0.0021**
Toluene	0.0020	< 0.0020
Ethylbenzene	0.0020	< 0.0020
Total Xylene	0.0020	**0.0023**
Surr: Surr 1,2-Dichloroethane	71-136	**100 %**
Surr: Surr Toluene-d8	87-111	**99.3 %**

AMERICAN WEST ANALYTICAL LABORATORIES

463 West 3600 South
Salt Lake City, Utah
84115

(801) 263-8686
Toll Free (888) 263-8686
Fax (801) 263-8687
e-mail: awal@xmission.com

Kyle F. Gross
Laboratory Director

Peggy McNicol
QA Officer

Released by: _____
Laboratory Supervisor

Report Date: November 19, 2001 Page 1 of 1

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Lenexa, KS 66219
Phone: 913.599.5665
Fax: 913.599.1759

MILE HIGH ENVIRONMENTAL
187 C.R. 4980
Bloomfield, NM 87413

Lab Project Number: 6057626
Client Project ID: SJB-GW/ DOG-N

Attn: Mr. Jim Struhs
Phone: (505)632-4457

Lab Sample No: 605018860 Project Sample Number: 6057626-001 Date Collected: 03/26/02 13:17
Client Sample ID: 131726MAR02 MW-2 Matrix: Water Date Received: 04/02/02 09:00

Parameters	Results	Units	Report Limit	Analyzed by	CAS No.	Ftnote	Reg Limit
GC Volatiles							
Aromatic Volatile Organics	Prep/Method: EPA 8021 / EPA 8021						
Benzene	ND	ug/l	2.0	04/03/02 12:21	71-43-2		
Ethylbenzene	ND	ug/l	2.0	04/03/02 12:21	100-41-4		
Toluene	ND	ug/l	2.0	04/03/02 12:21	108-88-3		
Xylene (Total)	ND	ug/l	5.0	04/03/02 12:21	1330-20-7		
a,a,a-Trifluorotoluene (S)	101	%		04/03/02 12:21	2164-17-2		

REPORT OF LABORATORY ANALYSIS

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Lab Project Number: 6059951
Client Project ID: DOGN

Lab Sample No: 605212794 Project Sample Number: 6059951-001 Date Collected: 06/17/02 15:41
Client Sample ID: 154117JUN02 MW-2 Matrix: Water Date Received: 06/20/02 09:00

Parameters	Results	Units	Report Limit	Analyzed	By	CAS No.	Qual	RegLmt
GC Volatiles								
Aromatic Volatile Organics	Method: EPA 8021							
Benzene	ND	ug/l	2.0	06/25/02 12:46	JPR	71-43-2		
Ethylbenzene	ND	ug/l	2.0	06/25/02 12:46	JPR	100-41-4		
Toluene	ND	ug/l	2.0	06/25/02 12:46	JPR	108-88-3		
Xylene (Total)	5.2	ug/l	5.0	06/25/02 12:46	JPR	1330-20-7		
a,a,a-Trifluorotoluene (S)	113	%		06/25/02 12:46	JPR	98-08-8		

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Lab Project Number: 6063377
Client Project ID: DOGN

Lab Sample No: 605485820 Project Sample Number: 6063377-001 Date Collected: 09/28/02 13:05
Client Sample ID: 130528SEP02 MW-1 Matrix: Water Date Received: 10/02/02 10:15

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	RegLmt
GC Volatiles									
Aromatic Volatile Organics	Method: EPA 8021								
Benzene	ND	ug/l	2.0	1.0	10/09/02 15:30	SHF	71-43-2		
Ethylbenzene	ND	ug/l	2.0	1.0	10/09/02 15:30	SHF	100-41-4		
Toluene	ND	ug/l	2.0	1.0	10/09/02 15:30	SHF	108-88-3		
Xylene (Total)	ND	ug/l	5.0	1.0	10/09/02 15:30	SHF	1330-20-7		
a,a,a-Trifluorotoluene (S)	103	%		1.0	10/09/02 15:30	SHF	98-08-8		

REPORT OF LABORATORY ANALYSIS

ACCREDITED IN ACCORDANCE WITH nelac

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Lab Project Number: 6063377
Client Project ID: DOGN

Lab Sample No: 605485838 Project Sample Number: 6063377-002 Date Collected: 09/28/02 13:25
Client Sample ID: 132528SEP02 MW-5 Matrix: Water Date Received: 10/02/02 10:15

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	RegLmt
GC Volatiles									
Aromatic Volatile Organics	Method: EPA 8021								
Benzene	ND	ug/l	2.0	1.0	10/09/02 15:59	SHF	71-43-2		
Ethylbenzene	ND	ug/l	2.0	1.0	10/09/02 15:59	SHF	100-41-4		
Toluene	ND	ug/l	2.0	1.0	10/09/02 15:59	SHF	108-88-3		
Xylene (Total)	ND	ug/l	5.0	1.0	10/09/02 15:59	SHF	1330-20-7		
a,a,a-Trifluorotoluene (S)	102	%		1.0	10/09/02 15:59	SHF	98-08-8		

REPORT OF LABORATORY ANALYSIS

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Lab Project Number: 6063377
Client Project ID: DOGN

Lab Sample No: 605485846 Project Sample Number: 6063377-003 Date Collected: 09/28/02 13:39
Client Sample ID: 133928SEP02 TMW-1 Matrix: Water Date Received: 10/02/02 10:15

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	RegLmt
GC Volatiles									
Aromatic Volatile Organics	Method: EPA 8021								
Benzene	ND	ug/l	2.0	1.0	10/09/02 16:28	SHF	71-43-2		
Ethylbenzene	ND	ug/l	2.0	1.0	10/09/02 16:28	SHF	100-41-4		
Toluene	ND	ug/l	2.0	1.0	10/09/02 16:28	SHF	108-88-3		
Xylene (Total)	ND	ug/l	5.0	1.0	10/09/02 16:28	SHF	1330-20-7		
a,a,a-Trifluorotoluene (S)	104	%		1.0	10/09/02 16:28	SHF	98-08-8		

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Lab Project Number: 6063377
Client Project ID: DOGN

Lab Sample No: 605485853 Project Sample Number: 6063377-004 Date Collected: 09/28/02 13:49
Client Sample ID: 134928SEP02 MW-3 Matrix: Water Date Received: 10/02/02 10:15

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	RegLmt
GC Volatiles									
Aromatic Volatile Organics	Method: EPA 8021								
Benzene	ND	ug/l	2.0	1.0	10/09/02 17:26	SHF	71-43-2		
Ethylbenzene	ND	ug/l	2.0	1.0	10/09/02 17:26	SHF	100-41-4		
Toluene	ND	ug/l	2.0	1.0	10/09/02 17:26	SHF	108-88-3		
Xylene (Total)	ND	ug/l	5.0	1.0	10/09/02 17:26	SHF	1330-20-7		
a,a,a-Trifluorotoluene (S)	102	%		1.0	10/09/02 17:26	SHF	98-08-8		

REPORT OF LABORATORY ANALYSIS

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Lab Project Number: 6063377
Client Project ID: DOGN

Lab Sample No: 605485861 Project Sample Number: 6063377-005 Date Collected: 09/28/02 14:00
Client Sample ID: 140028SEP02 MW-4 Matrix: Water Date Received: 10/02/02 10:15

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	RegLmt
GC Volatiles									
Aromatic Volatile Organics	Method: EPA 8021								
Benzene	ND	ug/l	2.0	1.0	10/09/02 17:55	SHF	71-43-2		
Ethylbenzene	ND	ug/l	2.0	1.0	10/09/02 17:55	SHF	100-41-4		
Toluene	ND	ug/l	2.0	1.0	10/09/02 17:55	SHF	108-88-3		
Xylene (Total)	ND	ug/l	5.0	1.0	10/09/02 17:55	SHF	1330-20-7		
a,a,a-Trifluorotoluene (S)	102	%		1.0	10/09/02 17:55	SHF	98-08-8		

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Lab Project Number: 6063377
Client Project ID: DOGN

Lab Sample No: 605485879 Project Sample Number: 6063377-006 Date Collected: 09/28/02 14:10
Client Sample ID: 141028SEP02 MW-2 Matrix: Water Date Received: 10/02/02 10:15

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	RegLmt
GC Volatiles									
Aromatic Volatile Organics	Method: EPA 8021								
Benzene	ND	ug/l	2.0	1.0	10/09/02 18:24	SHF	71-43-2		
Ethylbenzene	ND	ug/l	2.0	1.0	10/09/02 18:24	SHF	100-41-4		
Toluene	ND	ug/l	2.0	1.0	10/09/02 18:24	SHF	108-88-3		
Xylene (Total)	ND	ug/l	5.0	1.0	10/09/02 18:24	SHF	1330-20-7		
a,a,a-Trifluorotoluene (S)	103	%		1.0	10/09/02 18:24	SHF	98-08-8		

REPORT OF LABORATORY ANALYSIS

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

July 11, 1997

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

RE: NOTIFICATION OF GROUNDWATER CONTAMINATION AT THE DOGIE COMPRESSOR STATION NORTH PIT

Dear Bill:

Pursuant to New Mexico Water Quality Control Commission (WQCC) Regulations, section 1-203, PNM hereby provides written notification of groundwater contamination in the area underneath PNM's former north pit located at the Dogie Compressor Station. The Dogie Compressor Station is situated in the NW ¼ of section 4, township 25N, range 6 W. A topographic map showing the location of the site is provided as an attachment. The operator is Williams Field Services. This letter follows verbal notification provided to you on Monday, July 7, 1997 (M. Gannon, PNM to B. Olson, OCD).

On June 24, 1997 while excavating the north pit, PNM technicians encountered groundwater at approximately 6 feet below ground surface. A groundwater sample was collected and delivered to OnSite Technologies, Farmington, New Mexico for BTEX analysis using EPA method 8020. A hardcopy of the laboratory report is attached. A summary of the analytical results is provided below:

Component	Units	WQCC Stds.	Groundwater Sample
Benzene	ppb	10	**7209**
Toluene	ppb	750	**9491**
Ethylbenzene	ppb	750	211
Xylenes	ppb	620	**3124**
Total BTEX	ppb		20035

Bold type indicates a WQCC exceedance.

This letter serves as written notification of groundwater contamination under the north pit at the Dogie Compressor Station. 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

Attachment

cc: Colin Adams, PNM
Denver Bearden, PNMGS
Denny Foust, OCD-Aztec Office
Ron Johnson, PNM
Robin Prisk, WFS

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

District II
Drawer DD, Artesia, NM 88221

District III
1000 Rio Brazos Rd, Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

2040 South Pacheco Street
Santa Fe, New Mexico 87505

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

PIT REMEDIATION AND CLOSURE REPORT

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

Address: 603 W. Elm Street Farmington, NM 87401

Facility or Well Name: Dogie Compressor Station Sep. Pit.

Location: Unit: B Sec. 4 T. 25 N R. 6 W County Rio Arriba

Pit Type: Separator X Dehydrator ___ Other Vent Gas

Land Type: BLM ___ State ___ Fee ___ Other ___

Pit Location: Pit dimensions: length 50' width 20' depth 4'

(Attach diagram) Reference: wellhead ___ other Vent Gas Separator

Footage from reference: 30'

Direction from reference: 30 Degrees X East North X of West South ___

Depth to Ground Water: (Vertical distance from contaminants to seasonal high water elevation of ground water)	Less than 50 feet 50 feet to 99 feet Greater than 100 feet	(20 points) (10 points) (0 points)	20
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 No	(20 points) (0 points)	20
Distance to Surface Water: (Horizontal distance to perennial lakes, ponds, rivers, streams, creeks, irrigation canals and ditches)	Less than 200 feet 200 feet to 1,000 feet Greater than 1,000 feet	(20 points) (10 points) (0 points)	20
RANKING SCORE (TOTAL POINTS):			60

Date Remediation Started: 6-23-97 **Date Completed:** 7/9/97

Remediation Method: (Check all appropriate sections)
Excavation X Approx. Cubic Yard 6257
Landfarmed ✓ Amount Landfarmed (cubic yds) 4693
Other

Remediation Location: (i.e., landfarmed onsite, name and location of offsite facility)
Onsite ✓ Offsite

Backfill Material Location: Pushed land farm into pit

General Description of Remedial Action:
Excavated pit 352' x 80' x 6'. Clean clay layer at 6' depth Water at 6'

Ground Water Encountered: No ☐ Yes ☒ Depth 6'

Final Pit Closure Sampling: (if multiple samples, attach sample result and diagram of sample locations and depths.)
Sample Location 6' depth center of old pit
Sample depth 6'
Sample date 6/24/97 Sample time 0900
Sample Results
Benzene (ppm)
Total BTEX (ppm)
Field headspace (ppm)
TPH Method
Vertical Extent (ft) Risk Assessment form attached Yes ☐ No ☐

Ground Water Sample: Yes ☒ No ☐ (If yes, attach sample results)

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

DATE
SIGNATURE Denver Bearden
PRINTED NAME AND TITLE Denver Bearden Administrator III

North Pit

PNM Gas Services

Excavation Work Sheet

Date	Vertical Extent
6/23/97	Largo Wash 15'

Well Name	Operator	S	T	R	UI
Dogie Compressor Station	WFS	4	25N	6W	B

Pit Dimensions at Start	Excavation Dimensions at End
20 x 50 x 4	352' x 80' x 6'

Excavated Cu. Yds.	Overburden Cu. Yds.	Spoil Cu. Yds.
6257	1564	4693

PIT PID READINGS

Feet	Center	Soil Type	N. Wall	S. Wall	E. Wall	W. Wall
3'	789	BLK/GRY sand/clay				
H2O 6'	22	BRN heavy clay				
9'						
12'						
15'						
18'						
21'						

Composite Sample #: 9706240900 H2O

Location	Depth	PID Reading
North Wall		
South Wall		
East Wall		
West Wall		
Pit Bottom		

Land Farm Location: On location

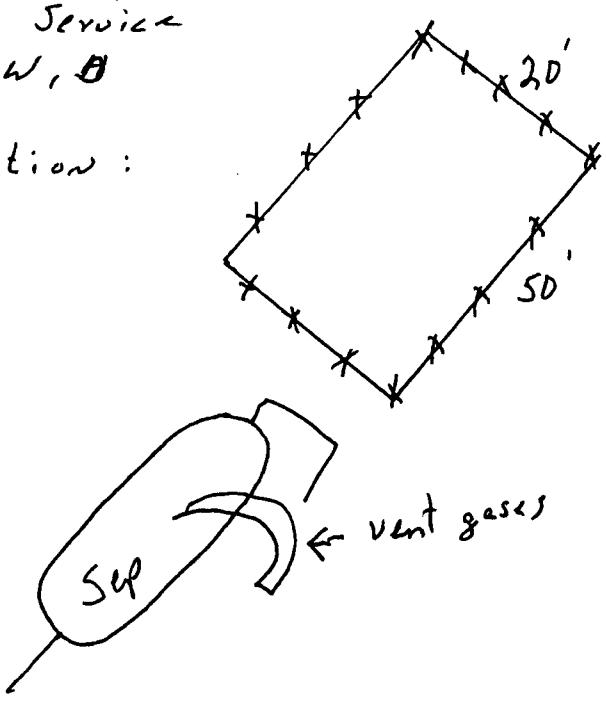
Back Fill Location: Push Land farm back into pit once cleaned ~~Blanco 4.5 miles west of old Largo School house~~

Comments: Removed large berm around pit to be used as fill dirt
At 3' level hit BLK/GRY soil.
Water at 6'. At 6' hit heavy BRN clay. As shovel hits it
is floats like a water bed. Clay is clean.
Contamination spread out over large area from existing pit.

Dogie Compressor Station
North pit (Sep.)
Williams Field Service
Sec. 4, 25N, 6W, B

6/23/97

Start of excavation:



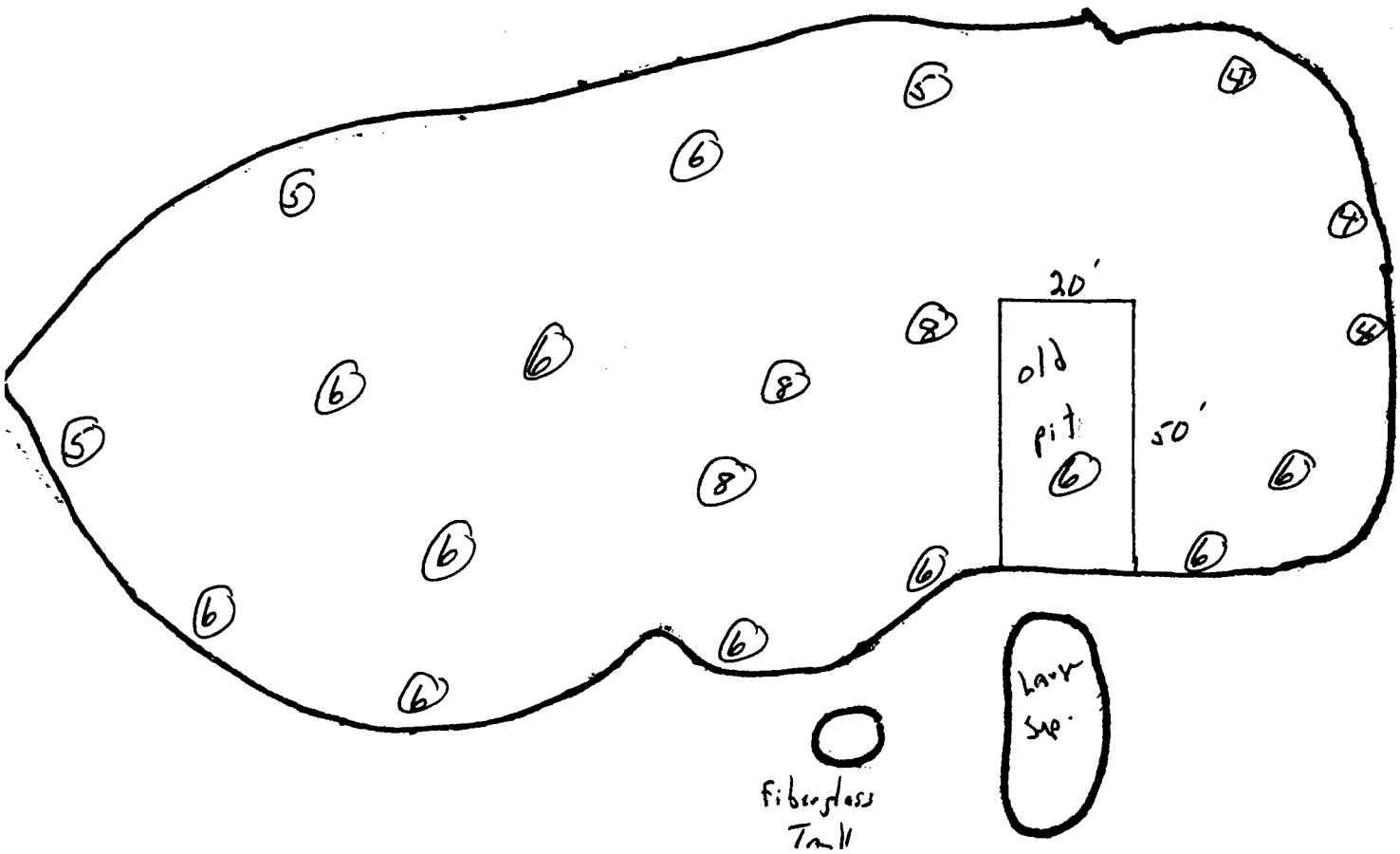
End of excavation:

352' X 80' X 6'	=	6257 yds
overburden	=	1564 yds
spoil	=	4693 yds

Dogie Compressor Station North Pit
Williams Field Services
Sec. 4, 25N, 6W

6' depth Average: Clean clay layer

(?) depth dug to



OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	*Denver Bearden*	Date:	26-Jun-97
Company:	*PNM Gas Services*	COC No.:	*5910*
Address:	*603 W. Elm*	Sample No.:	*15070*
City, State	*Farmington, NM 87401*	Job No.:	*2-1000*

Project Name:	***PNM Gas Services - Dogie Compressor Station North Pit***				
Project Location:	***9706240900; 6' depth***				
Sampled by:	GC	Date:	24-Jun-97	Time:	9:00
Analyzed by:	DC	Date:	25-Jun-97		
Sample Matrix:	*Liquid*				

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
Benzene	7209	ug/L	20	ug/L
Toluene	9491	ug/L	20	ug/L
Ethylbenzene	211	ug/L	20	ug/L
m,p-Xylene	2422	ug/L	20	ug/L
o-Xylene	702	ug/L	20	ug/L
TOTAL	20035	ug/L		

ND - Not Detected at Limit of Quantitation

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

Approved By:
Date: 6/26/97

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

QUALITY ASSURANCE REPORT

for EPA Method 8020

Date Analyzed: 25-Jun-97

Internal QC No.: 0527-STD
Surrogate QC No.: 0528-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	% Diff	Limit
Benzene	ppb	20.0	18.9	5	15%
Toluene	ppb	20.0	19.6	2	15%
Ethylbenzene	ppb	20.0	19.9	0	15%
m,p-Xylene	ppb	40.0	38.6	4	15%
o-Xylene	ppb	20.0	19.8	1	15%

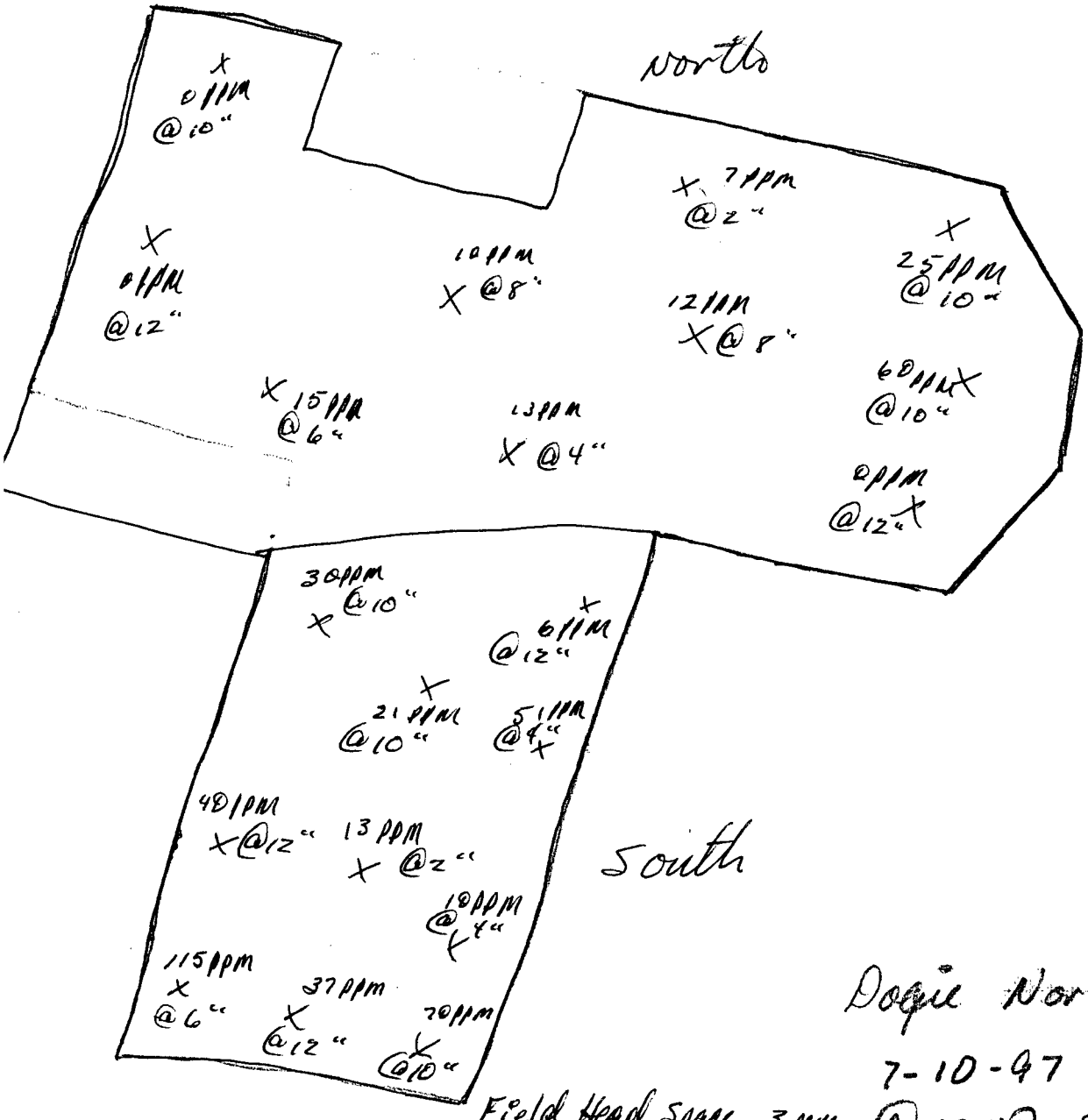
Matrix Spike

Parameter	1- Percent Recovered	2 - Percent Recovered	Limit	%RSD	Limit
Benzene	93	79	(39-150)	4	20%
Toluene	98	92	(46-148)	4	20%
Ethylbenzene	95	88	(32-160)	4	20%
m,p-Xylene	94	87	(35-145)	4	20%
o-Xylene	98	92	(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)	
15070-5910	94				
				6/26/97	6/26/97

S1: Flourobenzene



N

Dogie North pit

7-10-97

Field Head Space 3 ppm @ 1040 south landfarm

Field head Space 12 ppm @ 1100 north landfarm

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	*Denver Bearden*	Date:	16-Jul-97
Company:	*PNM Gas Services*	COC No.:	*5192*
Address:	*603 W. Elm*	Sample No.:	*15302*
City, State:	*Farmington, NM 87401*	Job No.:	*2-1000*

Project Name:	***PNM Gas Services - Dogie North Pit (South) Landfarm***				
Project Location:	***9707101040; 10pt. Composite***				
Sampled by:	RH	Date:	10-Jul-97	Time:	10:40
Analyzed by:	DC/HR	Date:	14-Jul-97		
Sample Matrix:	*Soil*				

Laboratory Analysis

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
Diesel Range Organics (C10 - C28)	33	mg/kg	5	mg/kg

ND - Not Detected at Limit of Quantitation

Quality Assurance Report

DRO QC No.: 0548-STD

Continuing Calibration Verification

Parameter	Method Blank	Unit of Measure	True Value	Analyzed Value	RPD	RPD Limit
Diesel Range (C10 - C28)	ND	ppm	200	195	2.5	15%

Matrix Spike

Parameter	1- Percent Recovered	2 - Percent Recovered	Limit	RPD	RPD Limit
Diesel Range (C10-C28)	83	87	(70-130)	5	20%

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

Approved by:
Date: 7/16/97

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	*Denver Bearden*	Date:	17-Jul-97
Company:	*PNM Gas Services*	COC No.:	*5192*
Address:	*603 W. Elm*	Sample No.:	*15302*
City, State:	*Farmington, NM 87401*	Job No.:	*2-1000*

Project Name:	***PNM Gas Services - Dogie North Pit (South) Landfarm***				
Project Location:	***9707101040; 10pt. Composite***				
Sampled by:	RH	Date:	10-Jul-97	Time:	10:40
Analyzed by:	DC	Date:	16-Jul-97		
Sample Matrix:	*Soil*				

Laboratory Analysis

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
Benzene	ND	ug/kg	1	ug/kg
Toluene	ND	ug/kg	1	ug/kg
Ethylbenzene	ND	ug/kg	1	ug/kg
m,p-Xylene	5	ug/kg	1	ug/kg
o-Xylene	2	ug/kg	1	ug/kg
TOTAL	7	ug/kg		

ND - Not Detected at Limit of Quantitation

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

Approved by:
Date: 7/17/97

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	*Denver Bearden*	Date:	16-Jul-97
Company:	*PNM Gas Services*	COC No.:	*5192*
Address:	*603 W. Elm*	Sample No.:	*15303*
City, State:	*Farmington, NM 87401*	Job No.:	*2-1000*

Project Name:	***PNM Gas Services - Dogie North Pit (North) Landfarm***			
Project Location:	***9707101100; 10pt. Composite***			
Sampled by:	RH	Date:	10-Jul-97 Time:	11:00
Analyzed by:	DC/HR	Date:	14-Jul-97	
Sample Matrix:	*Soil*			

Laboratory Analysis

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
Diesel Range Organics (C10 - C28)	20	mg/kg	5	mg/kg

ND - Not Detected at Limit of Quantitation

Quality Assurance Report

DRO QC No.: 0548-STD

Continuing Calibration Verification

Parameter	Method Blank	Unit of Measure	True Value	Analyzed Value	RPD	RPD Limit
Diesel Range (C10 - C28)	ND	ppm	200	195	2.5	15%

Matrix Spike

Parameter	1- Percent Recovered	2 - Percent Recovered	Limit	RPD	RPD Limit
Diesel Range (C10-C28)	83	87	(70-130)	5	20%

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

Approved by:
Date: 7/16/97

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Attn:	*Denver Bearden*	Date:	17-Jul-97
Company:	*PNM Gas Services*	COC No.:	*5192*
Address:	*603 W. Elm*	Sample No.:	*15303*
City, State:	*Farmington, NM 87401*	Job No.:	*2-1000*

Project Name:	***PNM Gas Services - Dogie North Pit (North) Landfarm***				
Project Location:	***9707101100; 10pt. Composite***				
Sampled by:	RH	Date:	10-Jul-97	Time:	11:00
Analyzed by:	DC	Date:	16-Jul-97		
Sample Matrix:	*Soil*				

Laboratory Analysis

Parameter	Results as Received	Unit of Measure	Limit of Quantitation	Unit of Measure
Benzene	ND	ug/kg	1	ug/kg
Toluene	ND	ug/kg	1	ug/kg
Ethylbenzene	ND	ug/kg	1	ug/kg
m,p-Xylene	3	ug/kg	1	ug/kg
o-Xylene	1	ug/kg	1	ug/kg
TOTAL	5	ug/kg		

ND - Not Detected at Limit of Quantitation

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

Approved by:
Date: 7/17/97

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

QUALITY ASSURANCE REPORT

for EPA Method 8020

Date Analyzed: 10-Jul-97

Internal QC No.: 0527-STD
Surrogate QC No.: 0528-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	20.0	21.4	7	15%
Toluene	ppb	20.0	21.0	5	15%
Ethylbenzene	ppb	20.0	21.2	6	15%
m,p-Xylene	ppb	40.0	40.2	0	15%
o-Xylene	ppb	20.0	22.3	11	15%

Matrix Spike

Parameter	*1- Percent Recovered*	*2 - Percent Recovered*	*Limit*	*RPD*	*Limit*
Benzene	98	89	(39-150)	9	20%
Toluene	73	76	(46-148)	5	20%
Ethylbenzene	87	83	(32-160)	4	20%
m,p-Xylene	81	77	(35-145)	5	20%
o-Xylene	99	90	(35-145)	10	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)	
15302-5192	97				
15303-5192	97				
					(DA)
					7/17/97

S1: *Flourobenzene*