3R - 326

REPORTS

DATE:

Nov. 12, 2002

Environmental Project Services
187 County Road 4980
Bloomfield, NM 87413
505-632-4409 Phone
505-632-4405 Fax

November 12, 2002

Mr. Bill Olson
Hydrogeologist
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

RE: KAUFMAN #1 PIT REMEDIATION AND CLOSURE REPORT

Dear Mr. Olson:

Enclosed please find information on remediation and closure activities associated with the unlined surface impoundment located at the Kaufman #1 site. Public Service Company of New Mexico (PNM) previously owned the site and initiated closure activities on February 29, 1996. The site later became an asset of Williams upon purchase of Gas Company of New Mexico (GCNM) from PNM. Upon expiration of PNM's retained environmental liabilities associated with the site, Williams agreed to complete necessary closure work. As such, the enclosed documentation reflects activities of both PNM and Williams.

Site History

Excavation of petroleum hydrocarbon impacted soil beneath the unlined surface impoundment was conducted in two phases. Phase I began on February 29, 1996 with the excavation and landfarming of approximately 899 cubic yards of contaminated soil. The excavation was terminated at a depth of 6-feet, where ground water was encountered. A sample of ground water collected from the excavation contained benzene (362.8 µg/l) and total xylenes (1085.8 µg/l) 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 March 11, 1996.

To evaluate the magnitude and extent of ground water contamination, four monitoring wells were installed on March 13, 1996. Free-phase product was not encountered in any well. Quarterly ground water samples were collected from the wells through March of 2002.

Phase II began on February 12, 2000 with the excavation and landfarming of an additional 2500 cubic yards of contaminated soil from an area located west and south of the initial excavation. This secondary source removal was triggered by the discovery of soil contamination by the Bureau of Land Management (BLM) during a fence installation project. A ground water sample collected from the excavation contained benzene (460 µg/l) and total xylenes (9600 µg/l) at levels in excess of WQCC standards. A letter notifying the OCD of ground water contamination was submitted on March 30, 2000. Four wells were added to the monitoring network to evaluate the newly defined contaminant plume.

Exhibit A contains the original PNM Pit Remediation and Closure Report filing. In addition, excavation maps, field notes and landfarm confirmation sample results are included.

Site Hydrogeology

The Kaufman #1 site is located in Unit H, Section 33, Township 31N, Range 13W of San Juan County, New Mexico (Figure 1). The site lies within the La Plata River flood plain. The alluvial sediments consist primarily of sand and cobbles extending to an unknown depth.

Ground water in the unconsolidated sediments is unconfined and the depth to ground water is typically around 6-feet below ground level. Hydrographs for the wells were included in the Annual Ground Water Reports previously submitted to you. Ground water flows to the southwest toward the La Plata River. A potentiometric surface map is included as Figure 2. The average hydraulic gradient across the site is 0.005. Hydraulic conductivities of the sediments are likely on the order of 10^{-2} to 1 cm/sec.

Monitoring Results

Concentrations of benzene, toluene, ethylbenzene and xylene (BTEX) were analyzed in water samples collected quarterly from March 1996 through March 2002. Four of the eight wells in the monitoring network had BTEX concentrations in excess of WQCC standards. Well MW-2, located in the former source area, contained the highest BTEX levels. Downgradient wells MW-6, MW-7 and MW-8 respectively located 255-feet, 360-feet and 510-feet downgradient of the source area, also contained measurable concentrations of the BTEX compounds. Table 1 summarizes the ground water analytical results. Copies of laboratory analytical reports not previously submitted are attached.

Natural attenuation processes active at the site resulted in a steady decrease in BTEX over the six-year monitoring period. The initial concentration of total BTEX in well MW-2 was 1173.2 µg/l. One and one-half years later, in August 1997, the total BTEX concentration was reduced to 54.9 µg/l. During phase II of the project, monitoring wells MW5, MW-6, MW-7 and MW-8 were installed. Well MW-5 acted as a sentinel well and consistently demonstrated that no off-site migration of BTEX occurred. Total BTEX in well MW-8 was 387 µg/l at the time of initial sampling. These concentrations decreased to non-detectable levels in less than one-year. For the last four consecutive quarters of monitoring the concentrations of the BTEX compounds have remained below the WQCC standards in all monitoring wells.

Summary

The unlined surface impoundment at the Kaufman #1 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 soil and an evaluation of ground water impacted by the historical operation of the impoundment. A network of ground water monitoring wells was installed and ground water analyses showed that a BTEX plume existed in the vicinity of the former pit location. Natural attenuation of the BTEX compounds resulted in contaminant degradation to concentrations less than WQCC standards.

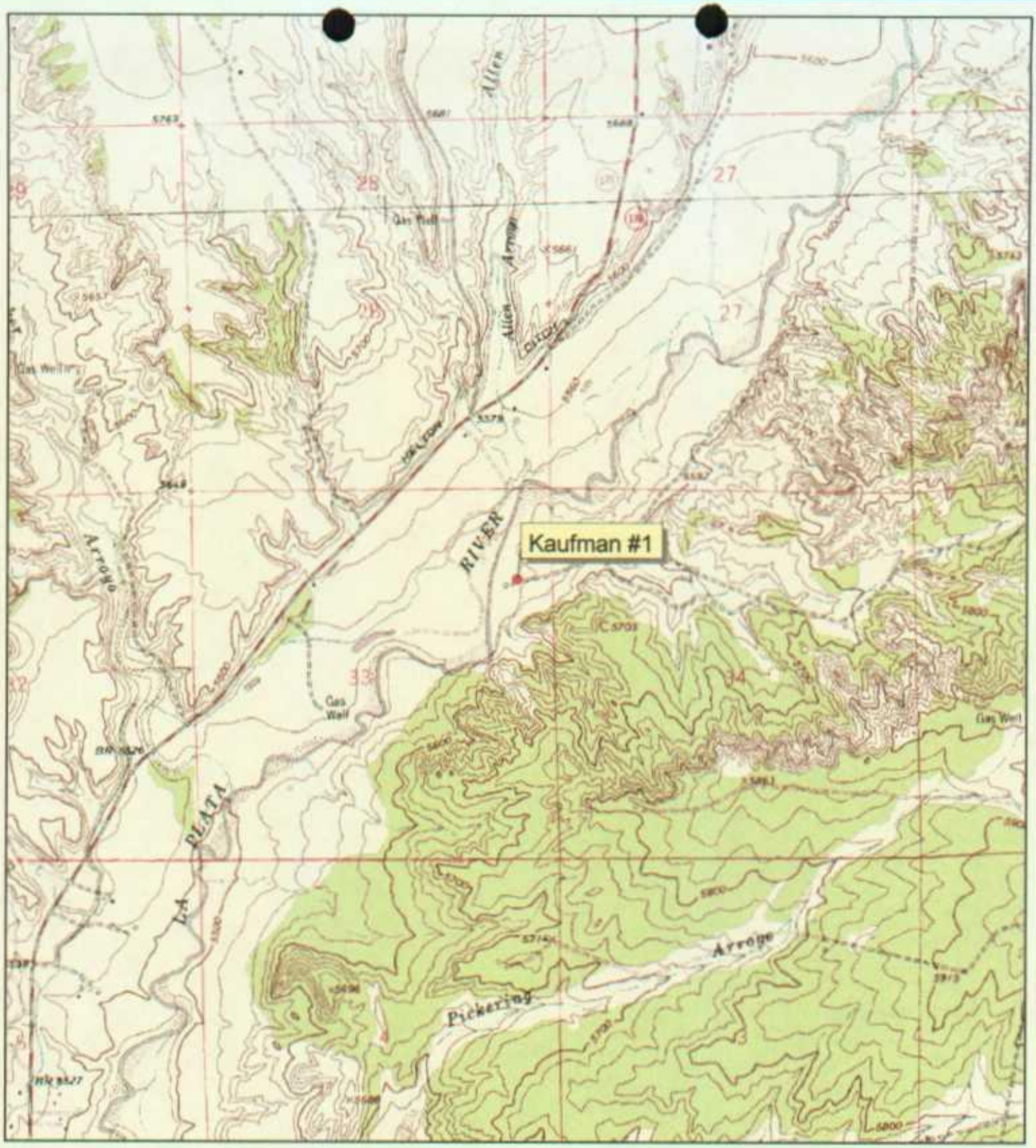
Based on current site conditions, Williams requests approval for closure of the Kaufman #1 site. Following receipt of your closure approval we will plug and abandon the monitoring wells in accordance with applicable regulations. Williams appreciates your time in reviewing this site closure request. If you have any questions or require any additional information, please contact me at 505-632-4409 or Jim Struhs, Project Hydrogeologist at 505-632-4457.

Respectfully,

Mark B. Harvey
Project Coordinator

Attachments

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



Williams

Figure 1. Site Location Map
Kaufman #1
Unit H, Sec. 33, T31N, R13W

N

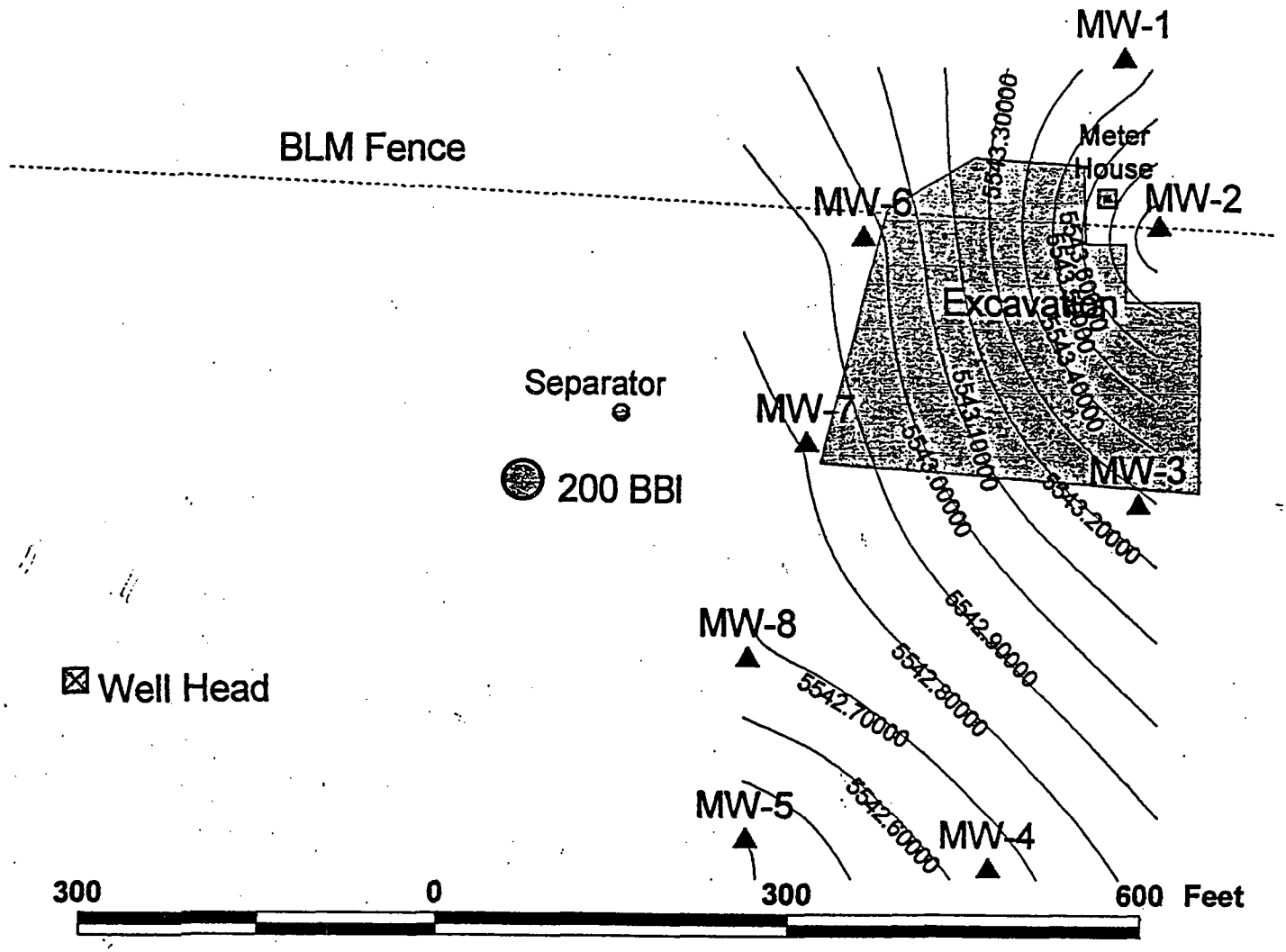
1000 0 1000 2000 Feet

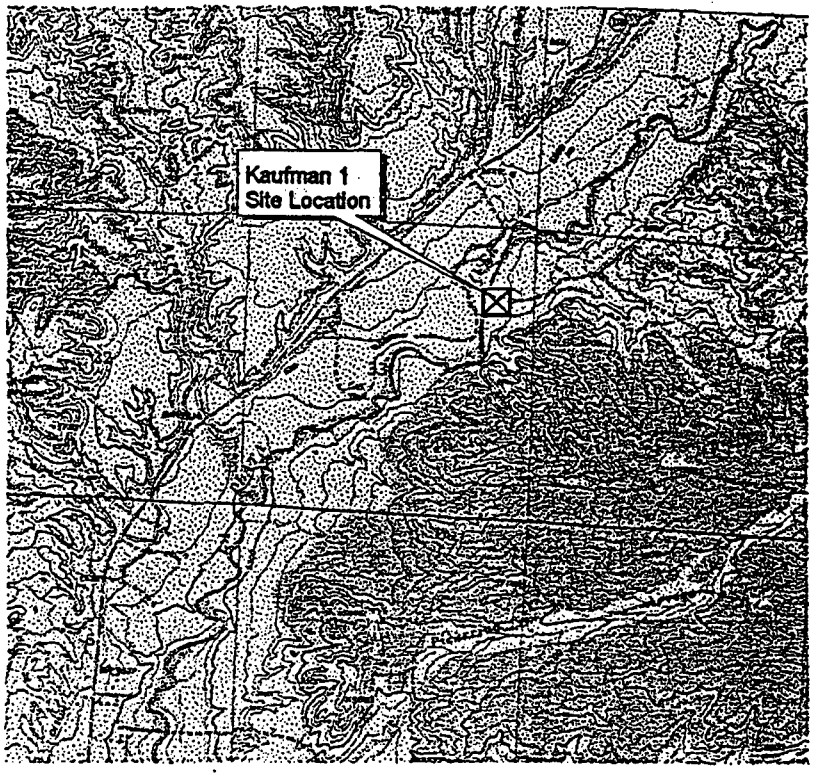
FIGURE 2.

POTENTIOMETRIC SURFACE MAP

Kaufman 1 Well Site

S33 T30N R13W Unit H





- Meter House
- Groundwater Contours 3/28/99
- BLM Fence line
- Excavation
- Well Head
- Separator
- 200 bbl.shp
- Monitor Wells

N

TABLE 1.

ANALYTICAL DATA SUMMARY AND REPORTS

Analytical Data Summary

Site Name:
Kaufman 1

Reporting Period:
1/1/96 To 4/1/02

Well ID	Sample Date	Sample ID	Benzene ug/l	Toluene ug/l	Ethylbenzene ug/l	Xylene (Total) ug/l
MW-1						
	3/13/96	9603131330	<0.2	0.5	0.5	3.6
	7/24/96	9607241130	<0.2	<0.2	<0.2	0.5
	11/12/96	9611121300	<0.2	<0.2	<0.2	<0.4
	2/20/97	9702201230	<0.2	<0.2	<0.2	<0.2
	5/29/97	9705291030	<0.2	<0.2	<0.2	<0.2
	8/28/97	9708281100	<0.2	<0.2	<0.2	<0.2
	5/22/00	0005220908	<0.5	<0.5	<0.5	<1.5
	10/12/00	174812OCT00	<1	1.44	<1	2.30
	1/12/01	122912JAN01	<1	<1	<1	<1
	4/25/01	152025APR01	<1	<1	<1	<1
	10/1/01	152301OCT01	<1.0	<2.0	<2.0	<2.0
	3/20/02	132820MAR02	ND	ND	ND	ND
MW-2						
	3/13/96	9603131300	22.0	253.5	88.6	809.1
	7/24/96	9607241200	22.1	3.9	62.1	395
	11/12/96	9611121330	2.2	4.6	21.2	227.6
	2/20/97	9702201300	2.7	10.2	1.6	357.8
	5/29/97	9705291100	6.5	3.0	7.8	45.9
	8/28/97	9708281130	2.0	0.9	9.1	42.9
	5/22/00	0005221030	<0.5	<0.5	<0.5	<1.5
	10/12/00	180312OCT00	<1	<1	<1	<1
	1/12/01	124112JAN01	<1	<1	<1	<1
	3/20/02	134220MAR02	ND	ND	ND	ND

Site Name:
Kaufman 1

Reporting Period:
1/1/96 To 4/1/02

Well ID	Sample Date	Sample ID	Benzene ug/l	Toluene ug/l	Ethylbenzene ug/l	Xylene (Total) ug/l
MW-3						
	3/13/96	9603131115	0.6	6.0	2.6	6.7
	7/24/96	9607241230	<0.2	1.4	1.0	2.3
	11/12/96	9611121400	<0.2	0.3	0.5	4.4
	2/20/97	9702201330	<0.2	<0.2	0.9	0.6
	5/29/97	9705291130	<0.2	0.4	0.2	1.6
	8/28/97	9708281230	<0.2	<0.2	<0.2	<0.2
	2/29/00	0002291300	<0.5	<0.5	1.2	1.8
	3/9/00	0003090910	0.8	1.1	1.4	19.6
	5/22/00	0005220927	3.2	<0.5	0.6	<1.5
	10/12/00	162612OCT00	<1	<1	<1	<1
	1/12/01	125312JAN01	<1	<1	<1	<1
	4/25/01	162125APR01	<1	<1	<1	<1
	10/1/01	151501OCT01	<1.0	<2.0	<2.0	<2.0
	3/20/02	135420MAR02	ND	ND	ND	ND
MW-4						
	3/13/96	9603131230	<0.2	<0.2	<0.2	0.2
	7/24/96	9607241300	9.3	<0.2	1.6	0.7
	11/12/96	9611121430	0.3	0.3	<0.2	0.3
	2/20/97	9702201400	<0.2	<0.2	<0.2	<0.2
	5/29/97	9705291200	<0.2	<0.2	<0.2	<0.2
	8/28/97	9708281300	<0.2	<0.2	<0.2	<0.2
	5/22/00	0005220939	<0.5	<0.5	<0.5	<1.5
	10/12/00	153312OCT00	<1	<1	<1	<1
	1/12/01	130412JAN01	<1	<1	<1	2.14
	4/25/01	161225APR01	<1	<1	<1	<1
	10/1/01	151201OCT01	<1.0	<2.0	<2.0	<2.0
	3/20/02	140820MAR02	ND	ND	ND	ND
MW-5						
	5/22/00	0005220949	<0.5	<0.5	<0.5	<1.5
	10/12/00	155512OCT00	1.01	1.25	<1	2.88
	1/12/01	131712JAN01	<1	<1	<1	<1
	4/25/01	160325APR01	<1	<1	<1	<1
	10/1/01	150901OCT01	<1.0	<2.0	<2.0	<2.0
	3/20/02	142320MAR02	ND	ND	ND	ND

Site Name:
Kaufman 1

Reporting Period:
1/1/96 To 4/1/02

Well ID	Sample Date	Sample ID	Benzene ug/l	Toluene ug/l	Ethylbenzene ug/l	Xylene (Total) ug/l
MW-6						
	3/9/00	0003090929	<0.5	0.6	<0.5	5.6
	5/22/00	0005221001	140	<0.5	26	55
	10/12/00	172112OCT00	<1	<1	<1	<1
	1/12/01	133112JAN01	<1	<1	<1	<1
	4/25/01	153025APR01	1.78	<1	<1	<1
	10/1/01	152801OCT01	<1.0	<2.0	<2.0	<2.0
	3/20/02	143820MAR02	ND	ND	ND	ND
MW-7						
	3/9/00	0003090947	2.2	15	3.7	54
	5/22/00	0005221010	51	<0.5	15	44
	10/12/00	170612OCT00	<1	<1	<1	<1
	1/12/01	134512JAN01	<1	<1	<1	<1
	4/25/01	154225APR01	<1	<1	<1	<1
	10/1/01	150101OCT01	<1.0	<2.0	<2.0	<2.0
	3/20/02	145120MAR02	ND	ND	ND	ND
MW-8						
	3/9/00	0003091006	17	100	17	253
	5/22/00	0005221022	180	<0.5	8.4	9.1
	10/12/00	164612OCT00	2.65	<1	1.29	2.95
	1/12/01	135912JAN01	<1	<1	<1	<1
	4/25/01	155025APR01	<1	<1	<1	<1
	10/1/01	150601OCT01	<1.0	<2.0	<2.0	<2.0
	3/20/02	150220MAR02	ND	ND	ND	ND

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April 09, 2002

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

RE: Lab Project Number: 6057813
Client Project ID: SJB-GW KAUFI

Dear Mr. Struhs:

Enclosed are the analytical results for sample(s) received by the laboratory on March 27, 2002. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report please feel free to contact me.

Sincerely,

Mary Jane Walls
mjwalls@pacelabs.com
Project Manager

Kansas/NELAP Certification Number E-10116

Enclosures

REPORT OF LABORATORY ANALYSIS

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Lenexa, KS 66219
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Fax: 913.599.1759

SAMPLE SUMMARY

Lab Project Number: 6057813
Client Project ID: SJB-GW KAUFI

Project Sample Number	Sample Number	Client Sample ID	Matrix	Date Collected	Date Received
6057813-001	605034529	150220MAR02	Water	03/20/02 15:02	03/27/02 09:40
6057813-002	605034537	145120MAR02	Water	03/20/02 14:51	03/27/02 09:40
6057813-003	605034552	143820MAR02	Water	03/20/02 14:38	03/27/02 09:40
6057813-004	605034560	142320MAR02	Water	03/20/02 14:23	03/27/02 09:40
6057813-005	605034578	135420MAR02	Water	03/20/02 13:54	03/27/02 09:40
6057813-006	605034594	140820MAR02	Water	03/20/02 14:08	03/27/02 09:40
6057813-007	605034602	134220MAR02	Water	03/20/02 13:42	03/27/02 09:40
6057813-008	605034651	132820MAR02	Water	03/20/02 13:28	03/27/02 09:40
6057813-009	605034669	TRIPBLANK	Water	03/20/02	03/27/02 09:40

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SAMPLE ANALYTE COUNT

Lab Project Number: 6057813
Client Project ID: SJB-GW KAUFI

Project Sample Number	Sample No	Client Sample ID	Analysis Code	Analysis Description	Analytes Reported
6057813-001	605034529	150220MAR02	8020 WPAC	Aromatic Volatile Organics	5
6057813-002	605034537	145120MAR02	8020 WPAC	Aromatic Volatile Organics	5
6057813-003	605034552	143820MAR02	8020 WPAC	Aromatic Volatile Organics	5
6057813-004	605034560	142320MAR02	8020 WPAC	Aromatic Volatile Organics	5
6057813-005	605034578	135420MAR02	8020 WPAC	Aromatic Volatile Organics	5
6057813-006	605034594	140820MAR02	8020 WPAC	Aromatic Volatile Organics	5
6057813-007	605034602	134220MAR02	8020 WPAC	Aromatic Volatile Organics	5
6057813-008	605034651	132820MAR02	8020 WPAC	Aromatic Volatile Organics	5
6057813-009	605034669	TRIPBLANK	8020 WPAC	Aromatic Volatile Organics	5

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

Lab Project Number: 6057813
Client Project ID: SJB-GW KAUFI

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

Lab Sample No: 605034529 Project Sample Number: 6057813-001 Date Collected: 03/20/02 15:02
Client Sample ID: 150220MAR02 Matrix: Water Date Received: 03/27/02 09:40

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	03/29/02 14:38	SHF	71-43-2		
Ethylbenzene	ND	ug/l	2.0	03/29/02 14:38	SHF	100-41-4		
Toluene	ND	ug/l	2.0	03/29/02 14:38	SHF	108-88-3		
Xylene (Total)	ND	ug/l	5.0	03/29/02 14:38	SHF	1330-20-7		
a,a,a-Trifluorotoluene (S)	103	%		03/29/02 14:38	SHF	2164-17-2		

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Lab Project Number: 6057813
Client Project ID: SJB-GW KAUFI

Lab Sample No: 605034537 Project Sample Number: 6057813-002 Date Collected: 03/20/02 14:51
Client Sample ID: 145120MAR02 Matrix: Water Date Received: 03/27/02 09:40

Parameters	Results	Units	Report Limit	Analyzed	by	CAS No.	Ftnote	Req Limit
GC Volatiles								
Aromatic Volatile Organics	Prep/Method: EPA 8021 / EPA 8021							
Benzene	ND	ug/l	2.0	03/29/02 15:07	SHF	71-43-2		
Ethylbenzene	ND	ug/l	2.0	03/29/02 15:07	SHF	100-41-4		
Toluene	ND	ug/l	2.0	03/29/02 15:07	SHF	108-88-3		
Xylene (Total)	ND	ug/l	5.0	03/29/02 15:07	SHF	1330-20-7		
a,a,a-Trifluorotoluene (S)	104	%		03/29/02 15:07	SHF	2164-17-2		

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Lab Project Number: 6057813
Client Project ID: SJB-GW KAUFI

Lab Sample No: 605034552 Project Sample Number: 6057813-003 Date Collected: 03/20/02 14:38
Client Sample ID: 143820MAR02 Matrix: Water Date Received: 03/27/02 09:40

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	03/29/02 15:37	SHF	71-43-2		
Ethylbenzene	ND	ug/l	2.0	03/29/02 15:37	SHF	100-41-4		
Toluene	ND	ug/l	2.0	03/29/02 15:37	SHF	108-88-3		
Xylene (Total)	ND	ug/l	5.0	03/29/02 15:37	SHF	1330-20-7		
a,a,a-Trifluorotoluene (S)	102	%		03/29/02 15:37	SHF	2164-17-2		

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Lab Project Number: 6057813
Client Project ID: SJB-GW KAUFI

Lab Sample No: 605034560 Project Sample Number: 6057813-004 Date Collected: 03/20/02 14:23
Client Sample ID: 142320MAR02 Matrix: Water Date Received: 03/27/02 09:40

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	03/29/02 16:06	SHF	71-43-2		
Ethylbenzene	ND	ug/l	2.0	03/29/02 16:06	SHF	100-41-4		
Toluene	ND	ug/l	2.0	03/29/02 16:06	SHF	108-88-3		
Xylene (Total)	ND	ug/l	5.0	03/29/02 16:06	SHF	1330-20-7		
a,a,a-Trifluorotoluene (S)	103	%		03/29/02 16:06	SHF	2164-17-2		

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Lab Project Number: 6057813
Client Project ID: SJB-GW KAUFI

Lab Sample No: 605034578 Project Sample Number: 6057813-005 Date Collected: 03/20/02 13:54
Client Sample ID: 135420MAR02 Matrix: Water Date Received: 03/27/02 09:40

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	03/29/02 17:04	SHF	71-43-2		
Ethylbenzene	ND	ug/l	2.0	03/29/02 17:04	SHF	100-41-4		
Toluene	ND	ug/l	2.0	03/29/02 17:04	SHF	108-88-3		
Xylene (Total)	ND	ug/l	5.0	03/29/02 17:04	SHF	1330-20-7		
a,a,a-Trifluorotoluene (S)	102	%		03/29/02 17:04	SHF	2164-17-2		

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Lab Project Number: 6057813
Client Project ID: SJB-GW KAUFI

Lab Sample No: 605034594 Project Sample Number: 6057813-006 Date Collected: 03/20/02 14:08
Client Sample ID: 140820MAR02 Matrix: Water Date Received: 03/27/02 09:40

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	03/29/02 17:33	SHF	71-43-2		
Ethylbenzene	ND	ug/l	2.0	03/29/02 17:33	SHF	100-41-4		
Toluene	ND	ug/l	2.0	03/29/02 17:33	SHF	108-88-3		
Xylene (Total)	ND	ug/l	5.0	03/29/02 17:33	SHF	1330-20-7		
a,a,a-Trifluorotoluene (S)	105	%		03/29/02 17:33	SHF	2164-17-2		

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Lab Project Number: 6057813
Client Project ID: SJB-GW KAUFI

Lab Sample No: 605034602 Project Sample Number: 6057813-007 Date Collected: 03/20/02 13:42
Client Sample ID: 134220MAR02 Matrix: Water Date Received: 03/27/02 09:40

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	03/29/02 18:02	SHF	71-43-2		
Ethylbenzene	ND	ug/l	2.0	03/29/02 18:02	SHF	100-41-4		
Toluene	ND	ug/l	2.0	03/29/02 18:02	SHF	108-88-3		
Xylene (Total)	ND	ug/l	5.0	03/29/02 18:02	SHF	1330-20-7		
a,a,a-Trifluorotoluene (S)	103	%		03/29/02 18:02	SHF	2164-17-2		

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www.pacelabs.com

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
Phone: 913.599.5665
Fax: 913.599.1759

Lab Project Number: 6057813
Client Project ID: SJB-GW KAUFI

Lab Sample No: 605034651 Project Sample Number: 6057813-008 Date Collected: 03/20/02 13:28
Client Sample ID: 132820MAR02 Matrix: Water Date Received: 03/27/02 09:40

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	03/29/02 18:32	SHF	71-43-2		
Ethylbenzene	ND	ug/l	2.0	03/29/02 18:32	SHF	100-41-4		
Toluene	ND	ug/l	2.0	03/29/02 18:32	SHF	108-88-3		
Xylene (Total)	ND	ug/l	5.0	03/29/02 18:32	SHF	1330-20-7		
a,a,a-Trifluorotoluene (S)	102	%		03/29/02 18:32	SHF	2164-17-2		

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Phone: 913.599.5665
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Lab Project Number: 6057813
Client Project ID: SJB-GW KAUFI

Lab Sample No: 605034669 Project Sample Number: 6057813-009 Date Collected: 03/20/02 00:00
Client Sample ID: TRIPBLANK Matrix: Water Date Received: 03/27/02 09:40

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	03/29/02 19:01	SHF	71-43-2		
Ethylbenzene	ND	ug/l	2.0	03/29/02 19:01	SHF	100-41-4		
Toluene	ND	ug/l	2.0	03/29/02 19:01	SHF	108-88-3		
Xylene (Total)	ND	ug/l	5.0	03/29/02 19:01	SHF	1330-20-7		
a,a,a-Trifluorotoluene (S)	105	%		03/29/02 19:01	SHF	2164-17-2		

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9608 Loiret Blvd.
Lenexa, KS 66219
Phone: 913.599.5665
Fax: 913.599.1759

Lab Project Number: 6057813
Client Project ID: SJB-GW KAUFI

PARAMETER FOOTNOTES

ND Not detected at or above adjusted reporting limit
NC Not Calculable
J Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit
(S) Surrogate

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Phone: 913.599.5665
Fax: 913.599.1759

QUALITY CONTROL DATA

Lab Project Number: 6057813
Client Project ID: SJB-GW KAUFI

QC Batch: 119997 Analysis Method: EPA 8021
QC Batch Method: EPA 8021 Analysis Description: Aromatic Volatile Organics
Associated Lab Samples: 605034529 605034537 605034552 605034560 605034578 605034594 605034602 605034651 605034669

METHOD BLANK: 605008549
Associated Lab Samples: 605034529 605034537 605034552 605034560 605034578 605034594 605034602 605034651 605034669

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Benzene	ug/l	ND	2.0	
Ethylbenzene	ug/l	ND	2.0	
Toluene	ug/l	ND	2.0	
Xylene (Total)	ug/l	ND	5.0	
a,a,a-Trifluorotoluene (S)	%	106		

LABORATORY CONTROL SAMPLE: 605008556

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Footnotes
Benzene	ug/l	20	21.45	107	84-122	
Ethylbenzene	ug/l	20	21.21	106	85-117	
Toluene	ug/l	20	21.14	106	87-117	
Xylene (Total)	ug/l	60	66.30	111	85-119	
a,a,a-Trifluorotoluene (S)				104	83-115	1

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Lenexa, KS 66219
Phone: 913.599.5665
Fax: 913.599.1759

Lab Project Number: 6057813
Client Project ID: SJB-GW KAUFI

QUALITY CONTROL DATA PARAMETER FOOTNOTES

Consistent with EPA guidelines, unrounded concentrations are displayed and have been used to calculate % Rec and RPD values.

LCS(D) Laboratory Control Sample (Duplicate)
MS(D) Matrix Spike (Duplicate)
DUP Sample Duplicate
ND Not detected at or above adjusted reporting limit
NC Not Calculable
J Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit
RPD Relative Percent Difference
(S) Surrogate
[1] Insufficient sample volume received for the MS/MSD. Acceptable recovery of the LCS indicates the analytical system is in control.

EXHIBIT A.

PIT REMEDIATION AND CLOSURE REPORT

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

District II
P.O. 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 (Snyder) **Telephone:** 324-3764

Address: 603 W. Elm Street Farmington, NM 87401

Facility or Well Name: Kaufmann #1

Location: Unit H Sec 33 T 31 N R 13 W County San Juan

Pit Type: Separator ☐ Dehydrator ☑ Other

Land Type: BLM ☐ State ☐ Fee ☑ Other No

Pit Location: Pit dimensions: length 20 ' width 20 ' depth 3 '

(Attach diagram) Reference: wellhead ☑ other

Footage from reference: 318'

Direction from reference: 20 Degrees ☑ East North ☑ 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)	0
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) :			40

Kaufmann #1

Date Remediation Started: 2/29/96 **Date Completed:** 3/12/96

Remediation Method: Excavation X Approx. Cubic Yard 899

(Check all appropriate sections) Landfarmed X Amount Landfarmed (cubic yds) _____

Other _____

Remediation Location: Onsite _____ Offsite Langendorf #1E Sec. 34, T31N, R13W

(i.e., landfarmed onsite, name and location of offsite facility)

Backfill Material Location: _____

General Description of Remedial Action:

Excavated contaminated soil to pit sizes of 40' X 48' X 7' & 144' X 5' X 6' and landfarmed soil offsite at Langendorf #1E within a bermed area at a depth of 6" to 12". Soil was aerated by plowing/disking until soil met regulatory levels.

Ground Water Encountered: No ☐ Yes ☑ Depth 4'

Final Pit Closure Sampling:

(if multiple samples, attach sample result and diagram of sample locations and depths.)

Sample Location **

Sample depth _____

Sample date ** Sample time _____

Sample Results

Benzene (ppm) **

Total BTEX (ppm) **

Field headspace (ppm) _____

TPH (ppm) ** Method _____

** - Soil samples not taken. See groundwater report.

Vertical Extent (ft) _____ Risk Assessment form attached Yes ☐ No ☐

Ground Water Sample: Yes ☑ No ☐ (If yes, see attached Groundwater Site Summary Report)

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

DATE **October 27, 1997**

SIGNATURE _____

PRINTED NAME AND TITLE **Denver Bearden Administrator III**

EXCAVATION WORK SHEET

Well Name	Operator	S	T	R	UL
Kaufman #1	Snyder	33	31N	12W	

Pit Dimensions at Start	Excavation Dimensions at End
20X20X3	40'X48'X7' & 144'X5X6'

Excavated Cu. Yds.	Overburden Cu. Yds.	Spoil Cu. Yds.
899	0	899

Middle of Pit

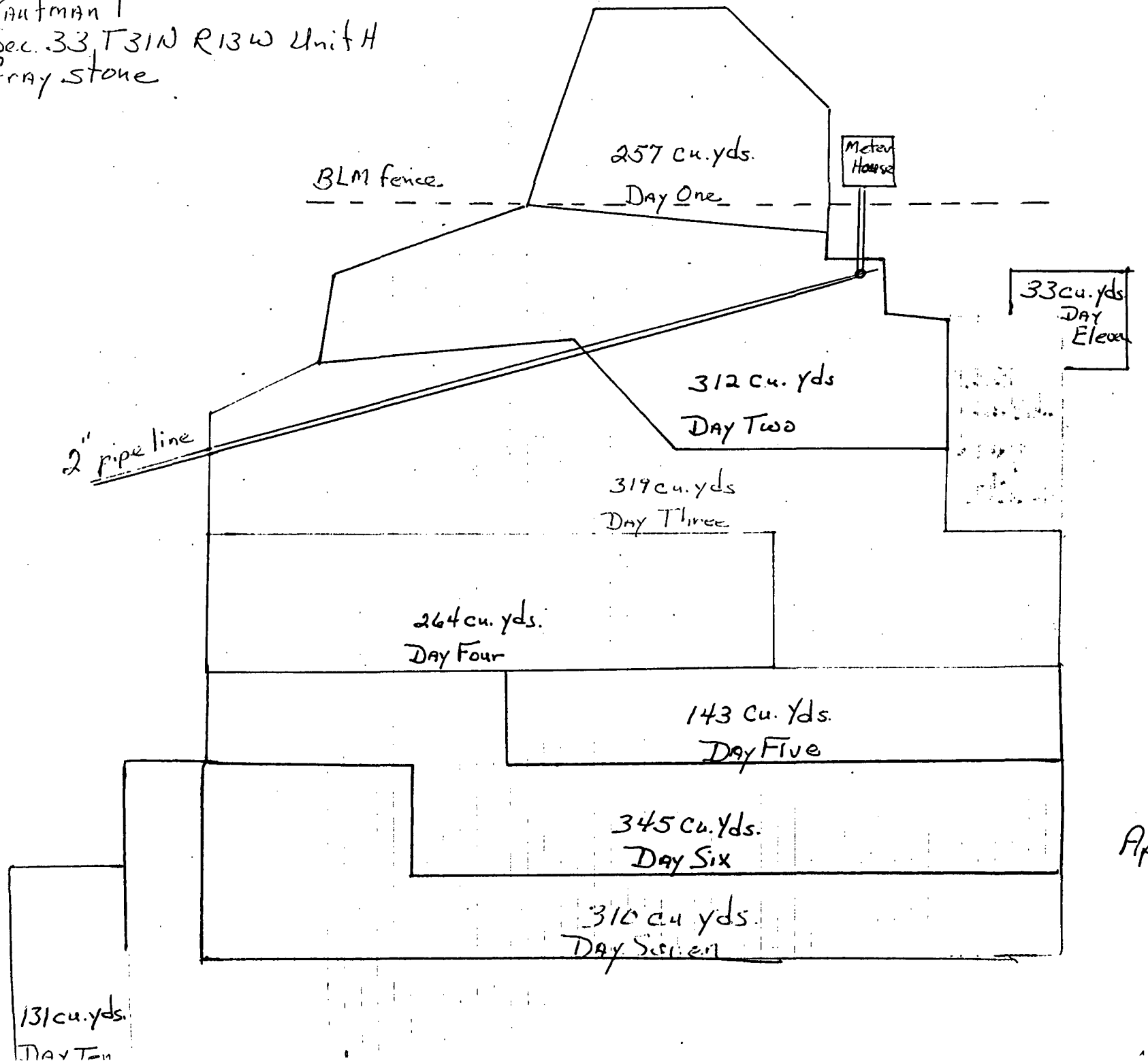
Feet	PID ppm	Soil Type				
3'	710	sand	clay	cobbles	sandstone	cleachy
6'	614	sand	clay	cobbles	sandstone	cleachy
9'(7')	111	sand	clay	cobbles	sandstone	cleachy
12'		sand	clay	cobbles	sandstone	cleachy
15'		sand	clay	cobbles	sandstone	cleachy
18'		sand	clay	cobbles	sandstone	cleachy
		sand	clay	cobbles	sandstone	cleachy

Composite Sample #Water 9603041000 & #9602291140

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

Land Farm Location:	Langendorf #1E
	Sec. 34,31N,13W
Back Fill Location:	BLM Wash 1.2 miles north
Comments:	

Kaufman 1
Sec. 33 T31N R13W Unit H
Gray stone



Approx. 2550 cu. yc

Not to Scale.

N

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

April 14, 2000

Maureen Gannon
PNM - Public Service Company of NM
Alvarado Square Mail Stop 0408
Albuquerque, NM 87158
TEL: (505) 241-2974
FAX (505) 241-2340

RE: Kaufman 1 Order No.: 0004035

Dear Maureen Gannon,

On Site Technologies, LTD. received 3 samples on 4/11/2000 for the analyses presented in the following report.

The Samples were analyzed for the following tests:
Diesel Range Organics (SW8015B)

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

David Cox

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

On Site Technologies, LTD. **Date:** *14-Apr-00*

CLIENT: PNM - Public Service Company of NM
Project: Kaufman 1
Lab Order: 0004035

CASE NARRATIVE

Samples were analyzed using the methods outlined in the following references:

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition

All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objectives.

P.O. BOX 2606 • FARMINGTON, NM 87499

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Date: *14-Apr-00*

Client:	PNM - Public Service Company of NM	**Client Sample Info:**	Kaufman 1
Work Order:	0004035	**Client Sample ID:**	0004111450; LF #1
Lab ID:	0004035-01A **Matrix:** SOIL	**Collection Date:**	4/11/2000 2:50:00 PM
Project:	Kaufman 1	**COC Record:**	8516

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS		**SW8015B**				Analyst: **DM**
T/R Hydrocarbons: C10-C28	130	25		mg/Kg	1	4/12/2000

Qualifiers:

PQL - Practical Quantitation Limit

ND - Not Detected at Practical Quantitation Limit

J - Analyte detected below Practical Quantitation Limit

B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Surr: - Surrogate

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- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Date: *14-Apr-00*

Client:	PNM - Public Service Company of NM	**Client Sample Info:**	Kaufman 1
Work Order:	0004035	**Client Sample ID:**	0004111416; LF #2
Lab ID:	0004035-02A **Matrix:** SOIL	**Collection Date:**	4/11/2000 2:16:00 PM
Project:	Kaufman 1	**COC Record:**	8516

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS		**SW8015B**				Analyst: **DM**
T/R Hydrocarbons: C10-C28	110	25		mg/Kg	1	4/12/2000

Qualifiers:

PQL - Practical Quantitation Limit

ND - Not Detected at Practical Quantitation Limit

J - Analyte detected below Practical Quantitation Limit

B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Surr: - Surrogate

P.O. BOX 2606 • FARMINGTON, NM 87499

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Date: *14-Apr-00*

Client:	PNM - Public Service Company of NM	**Client Sample Info:**	Kaufman 1
Work Order:	0004035	**Client Sample ID:**	0004111435; LF #3
Lab ID:	0004035-03A **Matrix:** SOIL	**Collection Date:**	4/11/2000 2:35:00 PM
Project:	Kaufman 1	**COC Record:**	8516

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS		**SW8015B**				Analyst: **DM**
T/R Hydrocarbons: C10-C28	87	25		mg/Kg	1	4/12/2000

Qualifiers:

PQL - Practical Quantitation Limit

ND - Not Detected at Practical Quantitation Limit

J - Analyte detected below Practical Quantitation Limit

B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Surr: - Surrogate

P.O. BOX 2606 • FARMINGTON, NM 87499

OFF: (505) 325-5667
FAX: (505) 327-1496

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-1556
FAX: (505) 327-1496

April 26, 2000

Maureen Gannon
PNM - Public Service Company of NM
Alvarado Square Mail Stop 0408
Albuquerque, NM 87158
TEL: (505) 241-2974
FAX (505) 241-2340

RE: Kaufman 1 Landfarms

Order No.: 0004039

Dear Maureen Gannon,

On Site Technologies, LTD. received 2 samples on 4/17/2000 for the analyses presented in the following report.

The Samples were analyzed for the following tests:
Diesel Range Organics (SW8015B)

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

David Cox

OFF: (505) 325-5667
FAX: (505) 327-1496

ON SITE
TECHNOLOGIES, LTD.

LAB: (505) 325-1556
FAX: (505) 327-1496

On Site Technologies, LTD. **Date:** *26-Apr-00*

CLIENT: PNM - Public Service Company of NM
Project: Kaufman 1 Landfarms
Lab Order: 0004039

CASE NARRATIVE

Samples were analyzed using the methods outlined in the following references:

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition

All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objectives.

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OFF: (505) 325-5667
FAX: (505) 327-1496

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556
FAX: (505) 327-1496

ANALYTICAL REPORT

Date: *26-Apr-00*

Client:	PNM - Public Service Company of NM	**Client Sample Info:**	Kaufman 1
Work Order:	0004039	**Client Sample ID:**	0004170717; LF #1 7pt Comp
Lab ID:	0004039-01A **Matrix:** SOIL	**Collection Date:**	4/17/2000 7:17:00 AM
Project:	Kaufman 1 Landfarms	**COC Record:**	8517

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS		**SW8015B**				Analyst: **DM**
T/R Hydrocarbons: C10-C28	62	25		mg/Kg	1	4/17/2000

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate

P.O. BOX 2606 • FARMINGTON, NM 87499

OFF: (505) 325-5667
FAX: (505) 327-1496

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556
FAX: (505) 327-1496

ANALYTICAL REPORT

Date: *26-Apr-00*

Client:	PNM - Public Service Company of NM	**Client Sample Info:**	Kaufman 1
Work Order:	0004039	**Client Sample ID:**	0004170735; LF #2 6pt Comp
Lab ID:	0004039-02A **Matrix:** SOIL	**Collection Date:**	4/17/2000 7:35:00 AM
Project:	Kaufman 1 Landfarms	**COC Record:**	8517

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS		**SW8015B**				Analyst: **DM**
T/R Hydrocarbons: C10-C28	35	25		mg/Kg	1	4/17/2000

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate

P.O. BOX 2606 • FARMINGTON, NM 87499

Environmental Services
187 County Road 4980
Bloomfield, New Mexico 87413
(505) 632-4409
(505) 632-4405

September 18, 2000

Mr. William Olson
Hydrologist
Oil Conservation Division
2040 South Pacheco
Santa Fe, New Mexico 87505

RE: 2000 SAN JUAN BASIN ANNUAL GROUNDWATER REPORT

Dear Mr. Olson:

Enclosed for your review is the 2000 San Juan Basin Annual Groundwater Report prepared by Williams for work conducted by Public Service New Mexico (PNM). The report presents monitoring data for twenty-two sites having petroleum hydrocarbon impacted groundwater, which resulted from the past use of unlined surface impoundments. The reporting period begins in the second quarter of 1999 and ends in the second quarter of 2000. The sites included in the report are listed in Table 1, attached.

The natural gas production and gathering facilities at which the impacted groundwater sites are located were formerly owned and operated by PNM. The facilities became assets of Williams upon purchase of the Gas Company of New Mexico (GCNM) from PNM. PNM had retained certain environmental liabilities associated with the assets including obligations for unlined surface impoundment impacts to soil and groundwater. Subsequent negotiations between PNM and Williams resulted in an agreement whereby Williams would complete further investigations and remediation at sites not previously closed by PNM. The agreement also states that Williams will complete work at sites where PNM has identified soil or groundwater contamination or otherwise initiated remedial actions.

During PNM's tenure, management of sites with hydrocarbon impacted groundwater was directed by their Ground Water Management Plan. This plan specified general procedures for site investigation, remediation, and reporting. The plan called for PNM to prepare an annual report summarizing the results of groundwater monitoring at each site. The report was to be submitted each April 1st and include data collected during the second, third and fourth quarters of the previous year and data from the first quarter of the reporting year.

Anticipating termination of their environmental obligations, PNM requested on March 4, 2000 an extension for submittal of the 2000 annual report so that they could also include data collected during the second quarter of 2000. Although PNM completed collection of monitoring data for the second quarter of 2000, they did not prepare and submit an annual report. Williams has prepared the 2000 annual report in an effort to maintain project continuity and to provide closure to PNM's management of the project.

As with most projects of this magnitude, first hand knowledge is paramount to prepare a thorough summary of site activities. Given the limited firsthand knowledge of project workings, Williams is in the unenviable position of trying to glean information from only the paper record. As such, the 2000 report simply transmits the PNM-collected data to OCD in what we hope is a concise and useable format. Initially, it was Williams' goal to provide more comprehensive reporting on the status of each site, however, preliminary evaluation of the data soon revealed that accurate interpretations could not be formulated in a timely manner.

Williams is continuing to review and evaluate the data provided by PNM to determine the best course for future actions at the sites. Preliminary review has revealed several high priority needs. For the majority of sites, accurate surveys are needed along with development of site base maps and a comprehensive database to facilitate project management. Moreover, sites with free product should be evaluated to determine the efficacy of free-product recovery and whether or not all source contributions are known.

Organization of the report follows the same format used by PNM. Data for each site is contained in a separate tabbed section labeled with the site name. Each section contains a data summary table listing each monitoring well. The absence or presence of free product is indicated on the table and the concentrations of the BTEX compounds for the reporting period are noted. Following the data summary table are the actual laboratory analytical reports. In an effort to make this document more manageable, the laboratory quality control reports have not been included. These reports will of course remain a part of the project file and be made available for review upon request. In addition to the analytical data, a contour map depicting the elevation of the water table as interpolated from water-level data is also included. When possible, hydrographs illustrating the seasonal fluctuations in water-table elevations are presented.

Thank you for your understanding of the Williams position and the time to review this submittal. Mr. Jim Struhs has been assigned the role of Project Hydrogeologist and as such will be involved in many of the day to day project operations. If you have any questions regarding the report, you may call me at (505) 632-4409 or Jim at (505) 632-4457.

Best regards,

Mark B. Harvey
Project Manager
Mark.Harvey@Williams.com

James P. Struhs
Project Hydrogeologist
Jim.Struhs@Williams.com

Attachment
Enclosure

c: Denny Foust, OCD Aztec District Office
Bill Liess, BLM Farmington District Office
Allen Talley, Williams

Table 1. List of Sites for Period Q2/1999 to Q2/2000

Site Name	Section	Township	Range	Unit Letter	OCD Notified	Installed Wells	2nd QTR 1999	3rd QTR 1999	4th QTR 1999	1st QTR 2000	2nd QTR 2000
Albright #4 Drip	22	29N	10W	F	9-Jul-99	28-Jul-99		5-Aug-99	6-Dec-99	5-Mar-00	7-Jun-00
Blanco Wash Drip	31	27N	8W	J	19-Feb-99	6-Apr-99	28-Apr-99	28-Sep-99	6-Dec-99	17-Mar-00	7-Jun-00
Chamberlain 1	14	32N	12W	F	30-Sep-99	13-Sep-99			11-Nov-99	1-Feb-00	2-May-00
Davis 1	11	31N	12W	E	2-Mar-99	2-Aug-99	25-May-99	20-Sep-99	8-Dec-99	14-Mar-00	8-Jun-00
Dogie East Pit	4	25N	6W	D	7-Jul-97	20-May-98	27-Apr-99	21-Sep-99	16-Nov-99	15-Feb-00	11-May-00
Dogie North Pit	4	25N	6W	D	7-Jul-97	6-Jul-97	27-Apr-99	21-Sep-99	16-Nov-99	15-Feb-00	11-May-00
Florance 124	27	29N	9W	C	12-Aug-96	28-Aug-96	7-Apr-99	28-Jul-99	14-Oct-99	1-Feb-00	26-Apr-00
Florance 40	21	30N	8W	G	27-Jan-97	29-Jan-97	21-Apr-99	28-Jul-99	1-Nov-99	21-Mar-00	14-Jun-00
Florance M 47X	5	30N	9W	G	27-Jan-97	6-Feb-97	21-Apr-99	28-Jul-99	3-Nov-99	23-Mar-00	14-Jun-00
Grenier 4A	7	31N	11W	M	18-Oct-99	28-Sep-99			3-Nov-99	7-Mar-00	12-Jun-00
Hampton 4M	13	30N	11W	N	7-Jan-97	31-Jan-97	5-May-99	12-Jul-99	21-Oct-99	27-Jan-00	13-Jun-00
Honolulu Drip	15	26N	4W	B	18-Jun-96	13-Jun-96	14-Apr-99	21-Sep-99	23-Nov-99	9-Feb-00	23-May-00
Ice Canyon Drip	15	26N	6W	B	1-Dec-97	13-May-98	27-Apr-99	20-Sep-99	16-Nov-99	7-Feb-00	18-May-00
Jicarilla Contract 147-6	6	25N	5W	C	13-Aug-98	27-Jan-99	14-Apr-99	27-Sep-99	15-Nov-99	20-Mar-00	7-Jun-00
Kaufman 1	33	31N	13W	H	9-Mar-00					9-Mar-00	22-May-00
Miles Federal 1E Drip	5	26N	7W	N	23-Jun-97	7-Jul-97	1-Jun-99	3-Aug-99	23-Nov-99	7-Feb-00	18-May-00
O' Shea 1M	3	31N	13W	F	6-Jun-98	9-Jul-98	24-May-99	6-Aug-99	12-Nov-99	3-Feb-00	9-May-00
Patterson A Com A1	2	31N	12W	G	2-Mar-99	15-Mar-99	2-Jun-99	6-Aug-99	22-Nov-99	15-Mar-00	8-Jun-00
Pritchard 2	6	30N	8W	J	22-Feb-99	1-Apr-99	26-May-99	17-Aug-99	20-Oct-99	26-Jan-00	17-Apr-00
Randleman 1	13	31N	11W	K	9-May-97	14-May-97	19-Apr-99	17-Aug-99	27-Oct-99	25-Jan-00	10-Apr-00
Wilmerding 1M	10	31N	13W	C	5-Jun-98	1-Jul-98	1-Jun-99	10-Aug-99	12-Oct-99	1-Feb-00	1-May-00
Zachry 18E	11	28N	10W	O	6-Sep-96	19-Nov-96	20-Apr-99	2-Aug-99	1-Nov-99	31-Jan-00	26-Apr-00