

3R - 324

# REPORTS

DATE:

April 29, 1999

Public Service Company  
of New Mexico  
603 W. Elm - P.O. Box 4750  
Farmington, NM 87499  
505 950-1997  
Fax 505 325-7365

April 29, 1999

Oil Conservation Division  
Attention: Bill Olson  
2040 South Pacheco  
Santa Fe, NM 87505

Subject: OCD Closure Reports – 1st Reporting Quarter, 1999

Dear Mr. Olson:

PNM Environmental Services is submitting closure reports to the Oil Conservation Division for the groundwater sites listed below:

1. Florance #32A
2. Jacques #2A
3. McClanahan A #2E
4. Mangum #1E

I have provided copies of the closures to Denny Foust for his information.

I have also enclosed copies of closures submitted to Denny Foust for his approval for the sites listed below:

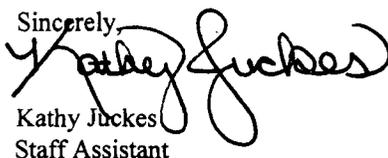
- |                            |                         |
|----------------------------|-------------------------|
| 1. Delo #2                 | 12. Navajo Indian B #6M |
| 2. Leonard Johnston #1     | 13. Patterson A Com #1  |
| 3. Leonard Johnson #2      | 14. Patterson A Com #1E |
| 4. McCroden #1             | 15. Richardson #1       |
| 5. McCroden #3             | 16. Richardson #1A      |
| 6. McCroden #3A            | 17. Richardson #9       |
| 7. McCroden A #1 Drip      | 18. Starr #1            |
| 8. McCroden A #3 Line Drip | 19. Starr #1 Drip       |
| 9. McCroden B #1           | 20. Starr #4A           |
| 10. McCroden B #1 Drip     | 21. State Com AJ #34E   |
| 11. McCroden B #3          |                         |

The following Jicarilla Apache Locations were submitted to Denny Foust, also (copies enclosed):

- |                           |                                    |
|---------------------------|------------------------------------|
| 1. Axi Apache J #19       | 12. Jicarilla B #13 Drip           |
| 2. Axi Apache N #1        | 13. Jicarilla Contract 147 #6 Drip |
| 3. Axi Apache N #10       | 14. Jicarilla G #6 Drip            |
| 4. Axi Apache N #12A      | 15. Jicarilla G #6M                |
| 5. Axi Apache N #13       | 16. Jicarilla J #14                |
| 6. Axi Apache N #14       | 17. Jicarilla J #22                |
| 7. Axi Apache O #10 Drip  | 18. Jicarilla K #12                |
| 8. Axi Apache O #5 Drip   | 19. Jicarilla K #17                |
| 9. Jicarilla 103 #6M Drip | 20. Jicarilla K #5                 |
| 10. Jicarilla A #10       | 21. Jicarilla K #6 Drip            |
| 11. Jicarilla B #12 Drip  | 22. K-Well Main Line Separator     |

If you have any questions, please call me at 324-3764.

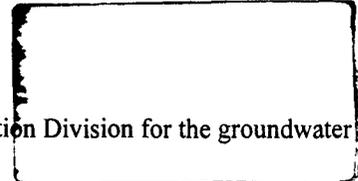
Sincerely,

  
Kathy Juckes  
Staff Assistant

RECEIVED

May APR 05 1999

ENVIRONMENTAL BUREAU  
OIL CONSERVATION DIVISION



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

State of New Mexico  
Energy, Minerals and Natural Resources Department

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

District II  
P.O. Drawer DD, Artesia, NM 88221

OIL CONSERVATION DIVISION

District III  
1000 Rio Brazos Rd, Aztec, NM 87410

2040 South Pacheco Street  
Santa Fe, New Mexico 87505

PIT REMEDIATION AND CLOSURE REPORT

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

Address: 603 W. Elm Street Farmington, NM 87401

Facility or Well Name: Jacques #2A

Location: Unit D Sec 25 T 30N R 9W County San Juan

Pit Type: Separator  Dehydrator  Other \_\_\_\_\_

Land Type: BLM  State  Fee  Other \_\_\_\_\_

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

(Attach diagram) Reference: wellhead  other \_\_\_\_\_

Footage from reference: 76'

Direction from reference: Due Degrees  East  North  
of  West  South

<b>Depth to Ground Water:</b>	Less than 50 feet	(20 points)	
	50 feet to 99 feet	(10 points)	
	Greater than 100 feet	( 0 points)	<u>10</u>

(Vertical distance from contaminants to seasonal high water elevation of ground water)

<b>Wellhead Protection Area:</b>	Yes	(20 points)	
	No	( 0 points)	<u>0</u>

(Less than 200 feet from a private domestic water source, or; less than 1,000 feet from all other water sources)

<b>Distance to Surface Water:</b>	Less than 200 feet	(20 points)	
	200 feet to 1,000 feet	(10 points)	
	Greater than 1,000 feet	( 0 points)	<u>0</u>

(Horizontal distance to perennial lakes, ponds, rivers, streams, creeks, irrigation canals and ditches)

**RANKING SCORE (TOTAL POINTS) :** 10

Jacques #2A

Date Remediation Started: 10/6/94 Date Completed: 11/16/94

Remediation Method: Excavation X Approx. Cubic Yard 767

(Check all appropriate sections)

Landfarmed X Amount Landfarmed (cubic yds) 700

Other 67 cu yds clean overburden

Remediation Location: Onsite X Offsite \_\_\_\_\_

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

Backfill Material Location: \_\_\_\_\_

General Description of Remedial Action:

Excavated contaminated soil to pit size of 30' X 30' X 23' and landfarmed soil onsite within a bermed area at a depth of 6" to 12". Soil was aerated by disking/plowing until soil met regulatory levels.

Secondary source removal conducted on 12/10/97; approximately 3500 cu yds of contaminated soil removed.

Ground Water Encountered: No  Yes  Depth 32'

Final Pit Closure Sampling:

Sample Location Center of pit bottom

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

Sample depth 23'

Sample date 11/15/94 Sample time 1:30:00 PM

Sample Results

Benzene (ppm) < 0.2000

Total BTEX (ppm) 61.8100

Field headspace (ppm) \_\_\_\_\_

TPH (ppm) 526.00 Method 418.1

Vertical Extent (ft) \_\_\_\_\_ Risk Analysis 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 April 27, 1999

SIGNATURE Maureen Gannon

PRINTED NAME Maureen Gannon  
AND TITLE Project Manager

## Groundwater Site Summary Report

Copies: WFS(1)  
Operator (1)  
NMOCD District Office (1)  
NMOCD Santa Fe (1)

Quarter/Year: 2<sup>nd</sup>/98, 3<sup>rd</sup>/98, 4<sup>th</sup>/98 & 1/99

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Operator: Amoco  
Sec: 25 Twn: 30N Rng: 9W Unit: D  
Canyon: Pump

Vulnerable Class: Original  
OCD Ranking: 20  
Lead Agency: NMOCD

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Topo Map: Figure 1

Well Completion Diagram: previously submitted

Site Map with Analysis: Figure 2

Groundwater Contour Map: Figures 3a (April, 1998), 3b (July, 1998), 3c (October, 1998) and 3d (January, 1999)

Groundwater Hydrograph Figure 4

Full-Suite Groundwater Sampling Results: previously submitted

Analytical Results: See 1999 Annual Groundwater Report

### Site Hydrology:

The Jacques 2A is located about one mile north of the San Juan River in a side drainage off Pump Canyon. An unnamed drainage runs from west to east, and the Jacques 2A site lies only about 100 feet from this drainage, which intersects Pump Canyon wash about 900 feet to the east. The site's elevation is about 5680 ft. amsl, and elevations drop eastward towards the valley floor of Pump Canyon along which elevations drop southward towards the San Juan River. The site receives roughly 8 to 10 inches of rainfall each year (based on data from Stone et al., 1983).

Pump Canyon is a major drainage, and covers a broad area. Alluvium on its valley floor spans more than 1,000 feet in width, and is probably from 50 to 100 feet thick (Stone et al., 1983). The northwestern-most well (MW-1; see Figure 2) reportedly encountered a "hard sandstone" at 42 feet, while deeper wells (MW-2 at 46.5 ft.) did not show any bedrock materials. Therefore, the general configuration of the bedrock-alluvium interface probably conforms to the surface topography (elevated in the northwest, and depressed towards the southeast).

Subsurface materials at the Jacques 2A site are described as clayey, silty sands. Well MW-2 reportedly encountered mostly clay and silt, with very little sand. Well MW-2 has been reinstalled after an additional source removal activity in December 1997, and now draws water from excavated and reworked material.

The depth to water ranges from 27 to 33 feet in monitor wells at the site. Maps showing the elevation of the water table over the last year appear in Figures 3a through 3d. In Figures 3b, 3c and 3d, the flow directions are towards the southeast, which agrees with the surface topography. Figure 3a, however, shows an anomalous mounding pattern centered on well MW-2. Figure 3a is based on the first set of water level data collected after site re-excavation and therefore is most likely unrepresentative of site conditions, but instead reflects the undeveloped state of well MW-2, collection of rainwater in the disturbed excavation materials, or other factors not related to the true groundwater surface.

Figure 4 shows water levels in the monitor wells over time. After irregularities in the earlier history of the site, water levels in the wells tend to track each other. The anomalously high water level in the newly installed MW-2 is clearly visible in Figure 4 (April, 1998 measurement). For the last three quarters, water levels in all four wells have shown consistent relationships, indicating a relatively constant flow direction, as is also reflected in the water table maps (Figures 3b through 3d).

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### **Public Service Company of New Mexico - Gas Services**

Environmental Services Division - Alvarado Square, MS-0408  
Albuquerque, NM 87158

Contact: Maureen Gannon

Telephone: 505-241-2974

## **PNMGS Well Site: Jacques 2A (continued)**

### **Activities for Previous Year:**

Quarterly sampling of well MW-2 took place on April 29, July 9 and October 5, 1998, and again on January 18, 1999. Water level measurements were taken in the four monitoring wells. In the January, 1999 sampling event, PNM conducted groundwater sampling in each well for chemical analyses of benzene, toluene, ethylbenzene, and xylenes (BTEX). No samples were analyzed for polyaromatic hydrocarbons (PAHs) because wells had no strong hydrocarbon odors or visible sheens. All sampling was performed in strict compliance with EPA protocol. PNM delivered the samples to OnSite Technologies, Farmington, New Mexico. The samples were analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX) using EPA Method 8020.

The site was resurveyed in February, 1999 to more accurately measure the wellhead elevation in the re-installed MW-2. The new information was used to prepare the figures attached to this report.

### **Results:**

Figure 2 presents a site map showing benzene, toluene, ethylbenzene and xylenes (BTEX) for each monitoring well since groundwater contamination was discovered. BTEX concentrations in the source well (MW-2) had been quite high since installation early in 1997; therefore, secondary source removal (about 5000 cubic yards) was conducted in December, 1997. After this additional work, concentrations rapidly fell below standards and have remained so for the last four quarters. No other samples from monitor wells, MW-1, -3 or -4, have contained BTEX constituents.

### **Future Actions:**

Consistent with PNM's San Juan Basin Groundwater Management Plan, PNM requests closure of the Jacques 2A with the submittal of the 1<sup>st</sup> Quarter 1999 Pit Closures Report. This request is based upon the analytical data collected over the last two years at the site. The secondary excavation of additional source materials appears to have been successful in achieving clean-up at the Jacques 2A; the BTEX concentrations in the source well (MW-2) have been below standards for four consecutive quarters. Resampling of all monitor wells also shows that BTEX compounds are below detection limits in the other wells. Since the secondary source removal activity, no wells have exhibited a visible sheen or a strong hydrocarbon odor.

Upon approval of the groundwater closure report, PNM will plug and abandon the four groundwater monitoring wells at the site. The concrete pad and metal vault surrounding each well will be removed. The well casing will be cut to ground surface and each well will be plugged to the surface with cement containing 5% bentonite.

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## **Public Service Company of New Mexico - Gas Services**

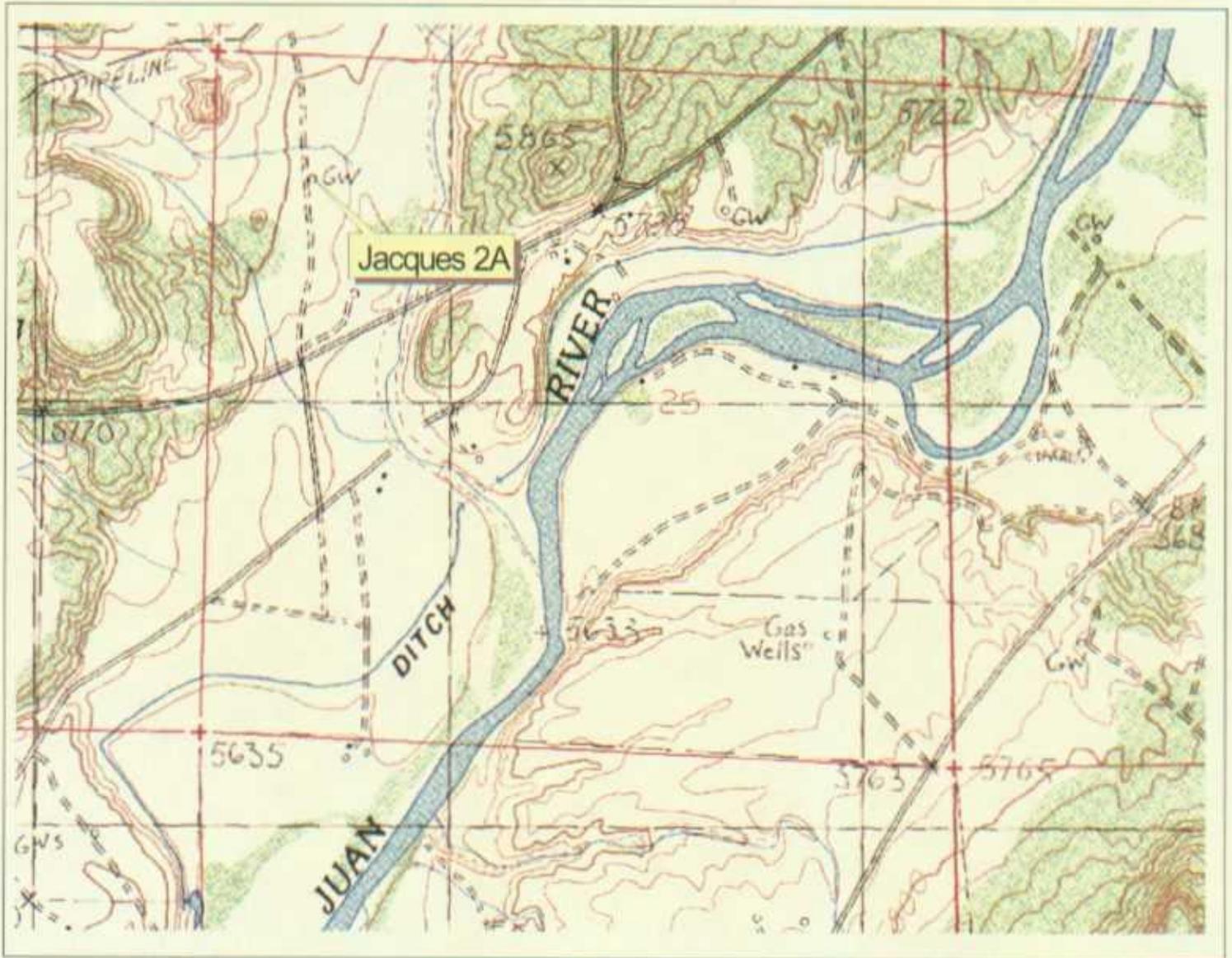
Environmental Services Division - Alvarado Square, MS-0408  
Albuquerque, NM 87158

**Contact: Maureen Gannon**

**Telephone: 505-241-2974**



Figure 1.  
Jacques 2A Groundwater Site  
Twn. 30N Rng. 9W Sec. 25 Unit D



Archuleta, NM Quadrangle

0 1000 2000 3000 4000 5000 Feet



**Figure 2.**  
**Jacques 2A Site Map & Analytical Results**  
**(Concentrations in ppb)**

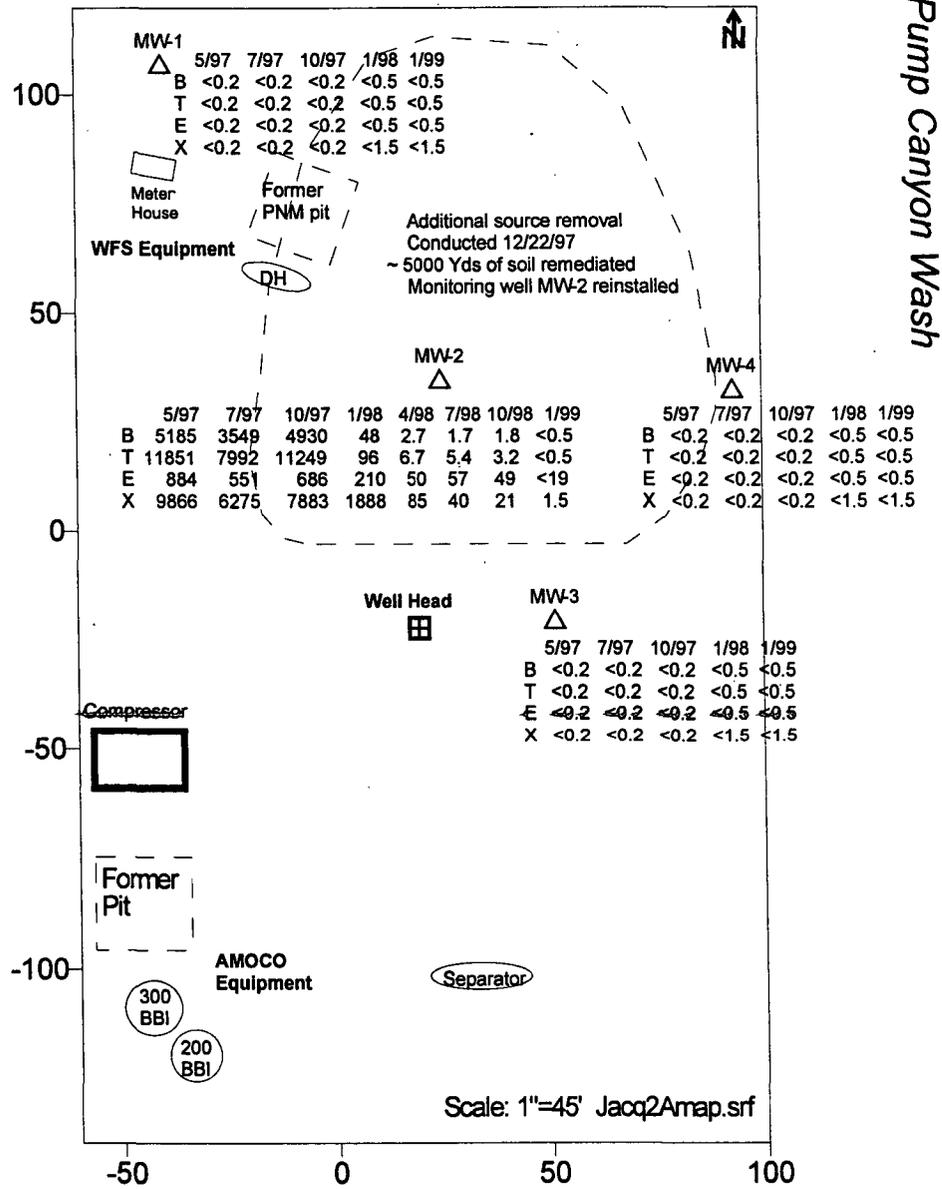
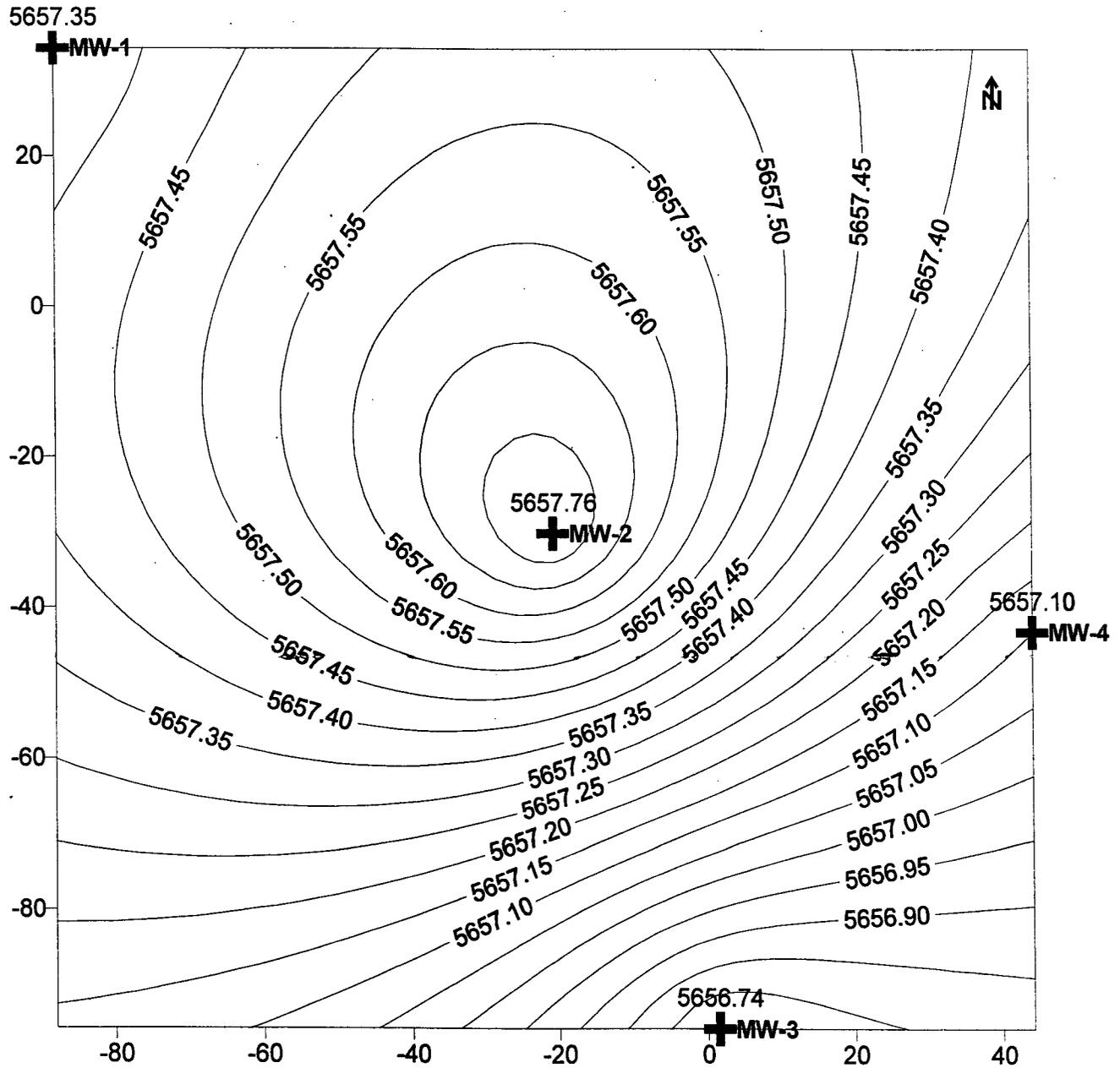
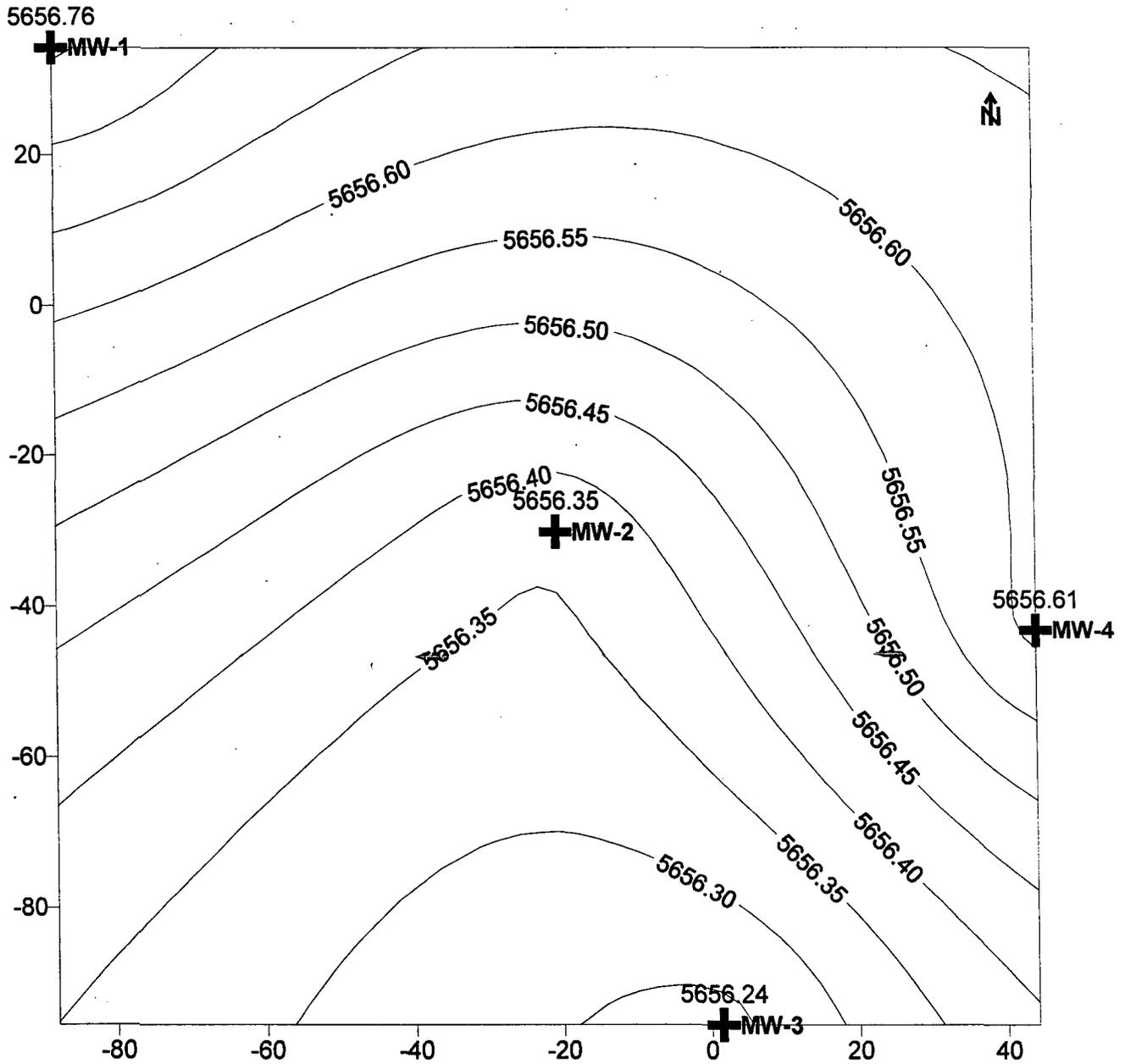


Figure 3a.  
Jacques 2A Groundwater Contour Map  
(April 29, 1998)



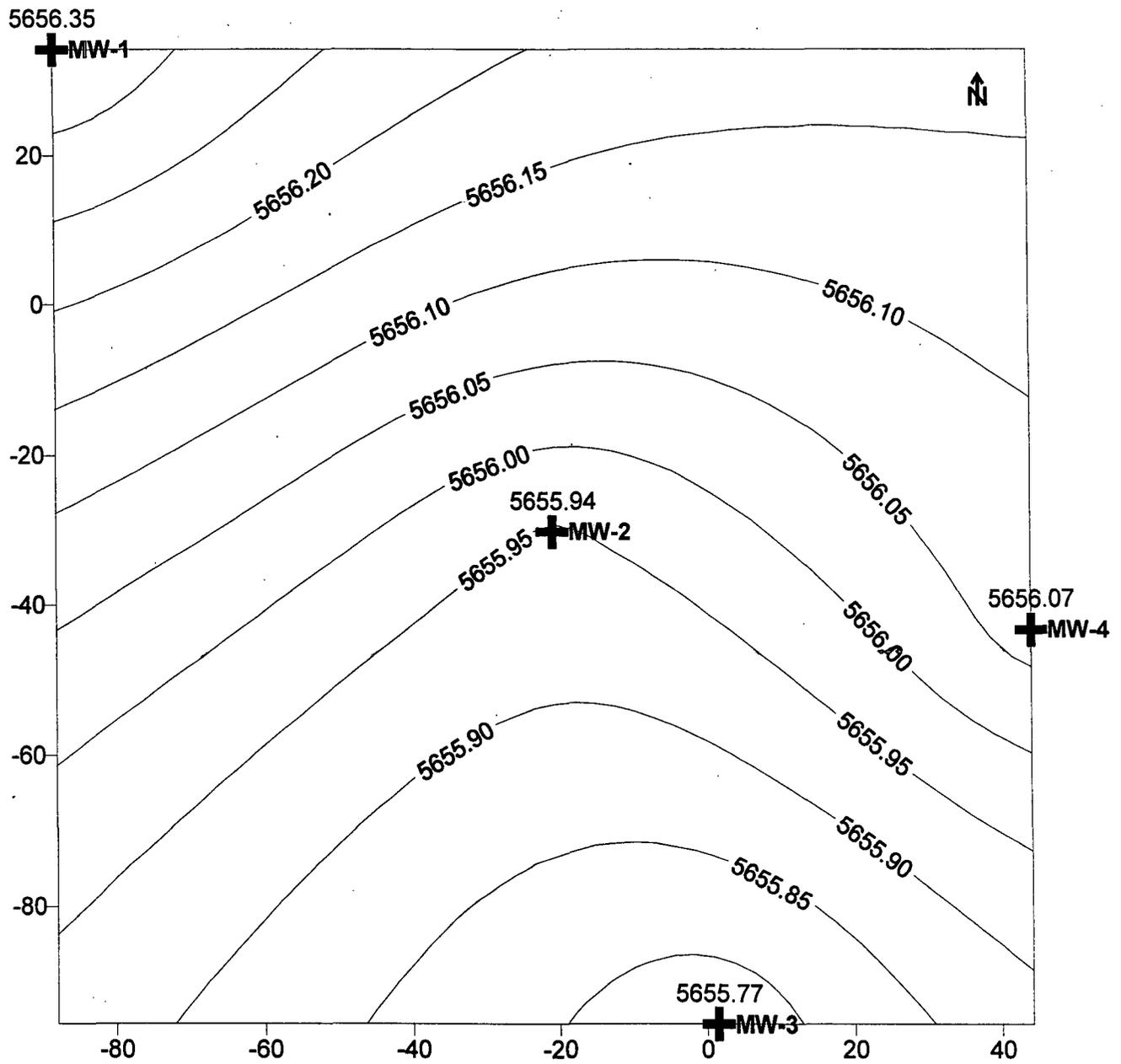
SCALE IN FEET  
(X-axis = Easting, Y-axis = Northing)

Figure 3b.  
Jacques 2A Groundwater Contour Map  
(July 9, 1998)



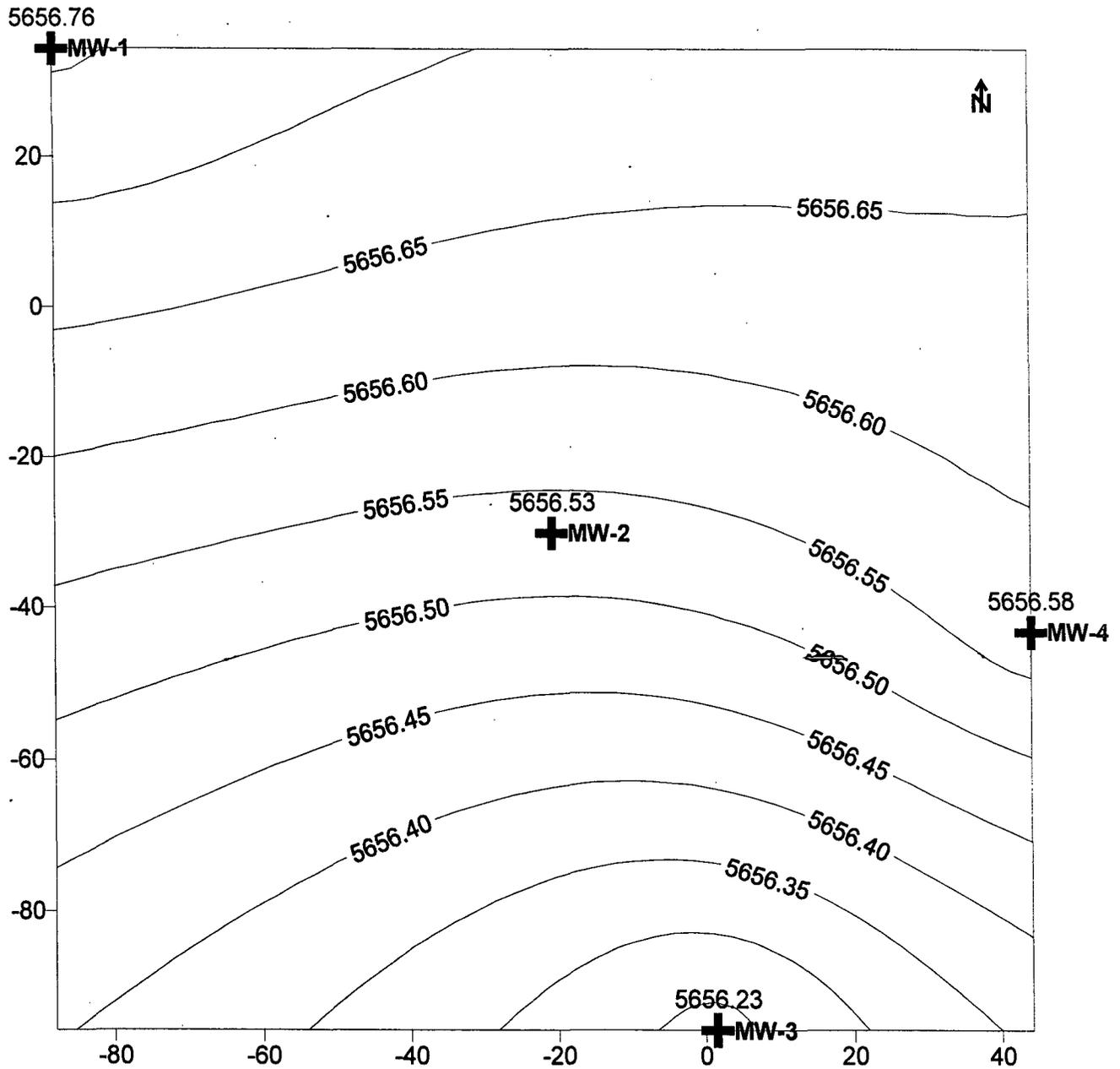
SCALE IN FEET  
(X-axis = Easting, Y-axis = Northing)

Figure 3c.  
Jacques 2A Groundwater Contour Map  
(October 5, 1998)



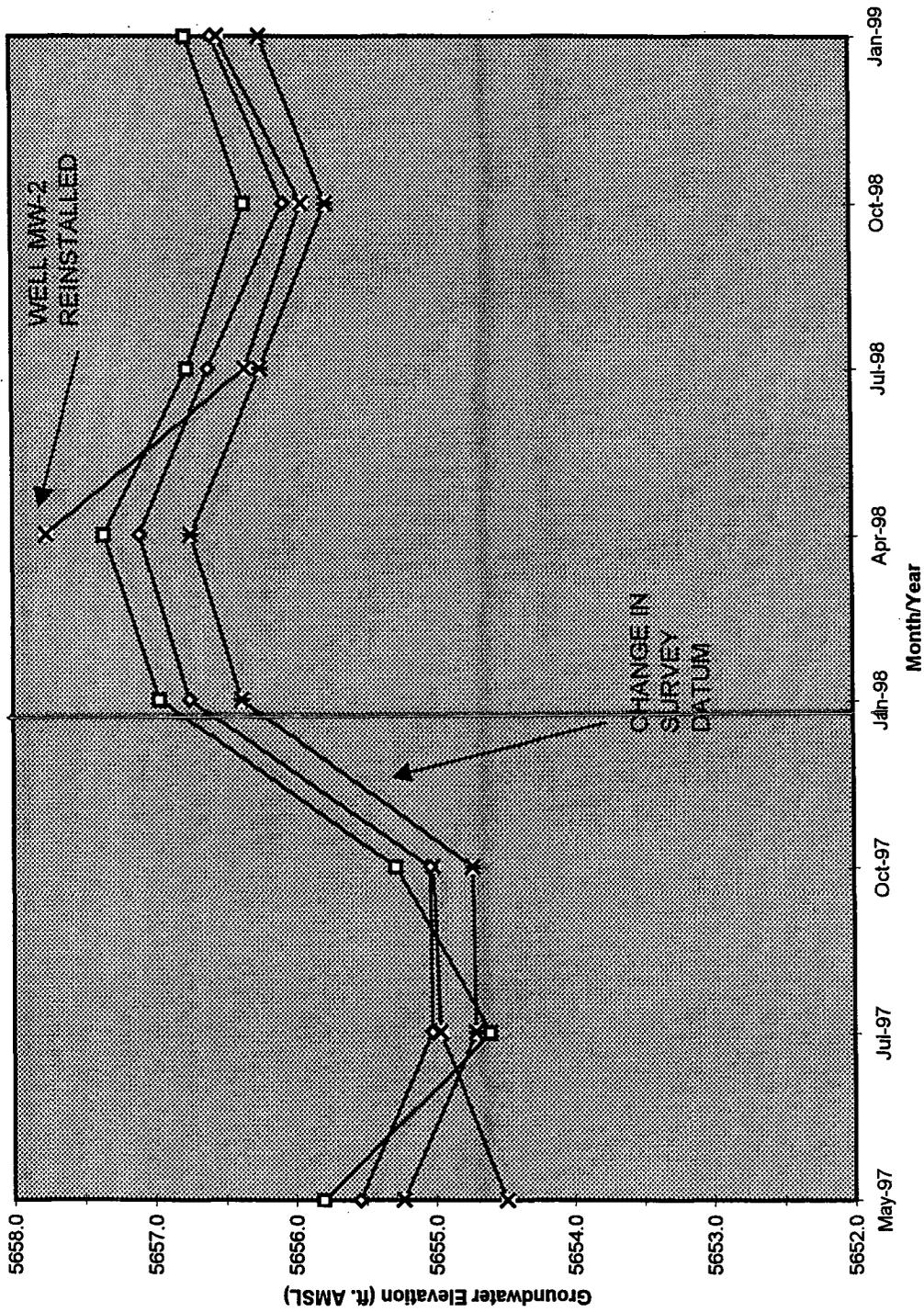
SCALE IN FEET  
(X-axis = Easting, Y-axis = Northing)

Figure 3d.  
Jacques 2A Groundwater Contour Map  
(January 18, 1999)



SCALE IN FEET  
(X-axis = Easting, Y-axis = Northing)

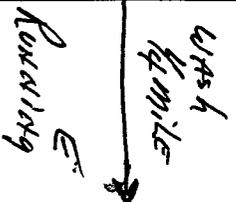
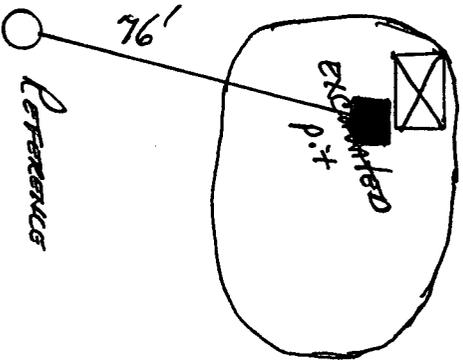
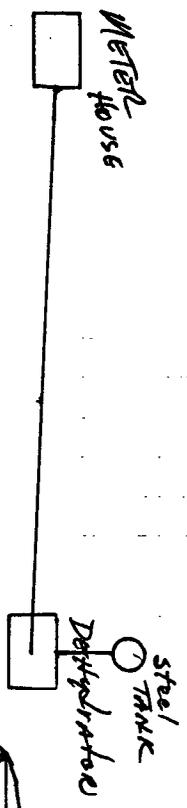
Figure 4. Jacques 2A Hydrograph  
(Water Level vs. Time)



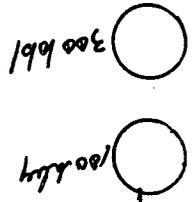
ROAD

JACOBS 24  
Amoco production

NOV  
NOV 4  
SEC 25  
T 30N  
R 9W  
GRAZING



2 BRMS  
D BRMS



Amoco Separator

LAND AREA

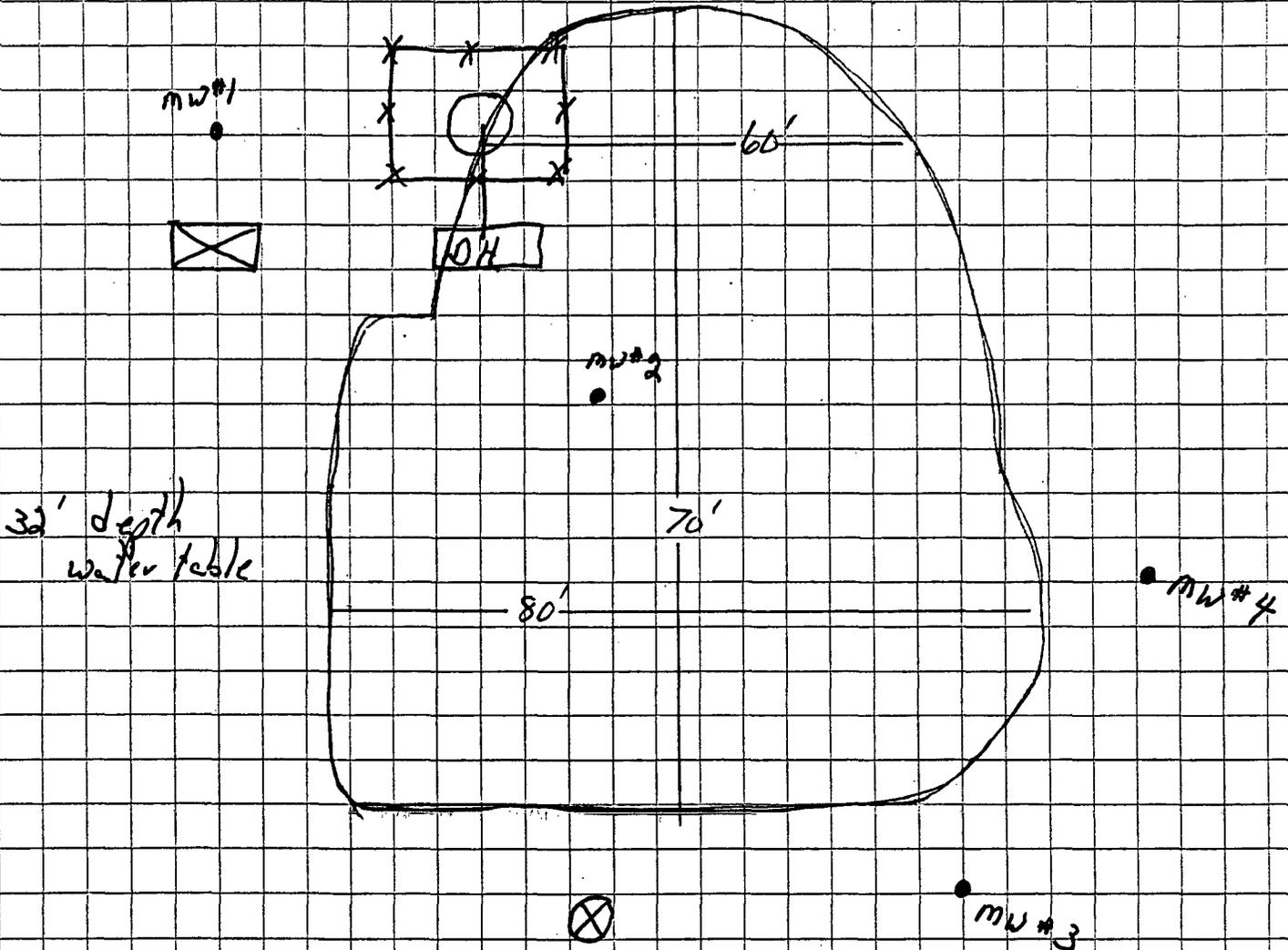
LAND AREA

Jacquez #2A

12-22-97

Amoco

Sec. 25, 30N, 9W, D



5925 yds removed  
3500 contaminated soil  
2425 overburden

**VOLATILE AROMATIC HYDROCARBONS****Gas Company of New Mexico**

Project ID: Pit Pilot Project Report Date: 11/28/94  
Sample ID: JAQ 2A - 1 - EX Date Sampled: 11/15/94  
Lab ID: 0439 Date Received: 11/16/94  
Sample Matrix: Soil Date Extracted: 11/22/94  
Preservative: Cool Date Analyzed: 11/23/94  
Condition: Intact

Target Analyte	Concentration (mg/kg)	Detection Limit (mg/kg)
Benzene	ND	0.20
Toluene	7.55	0.20
Ethylbenzene	3.46	0.20
m,p-Xylenes	40.6	0.40
o-Xylene	10.2	0.20

ND - Analyte not detected at the stated detection limit.

Quality Control:	Surrogate	Percent Recovery	Acceptance Limits
	Trifluorotoluene	115	81 -117%
	Bromofluorobenzene	100	74 -121%

Reference: Method 5030, Purge and Trap; Method 8020, Aromatic Volatile Organics;  
Test Methods for Evaluating Solid Wastes, SW-846, United States  
Environmental Protection Agency, Final Update I, July, 1992.

Comments:

  
Analyst

  
Review

**TOTAL PETROLEUM HYDROCARBONS**

EPA Method 418.1

Gas Company of New Mexico

Project ID: Pit Pilot Project  
Sample Matrix: Soil  
Preservative: Cool  
Condition: Intact

Report Date: 11/28/94  
Date Sampled: 11/16/94  
Date Received: 11/16/94  
Date Extracted: 11/23/94  
Date Analyzed: 11/23/94

Sample ID	Lab ID	Concentration (mg/kg)	Detection Limit (mg/kg)
Jaques 2A 1 - EX	0439	526	47.1
Jaques 2A 1 - <del>EX</del> LLF	0440	ND	25.0

ND- Analyte not detected at the stated detection limit.

**Reference:** Method 3550 - Sonication Extraction; Test Methods for Evaluating Solid Waste, SW-846, United States Environmental Protection Agency, September, 1986;  
Method 418.1 - Petroleum Hydrocarbons, Total Recoverable; Chemical Analysis of Water and Waste, United States Environmental Protection Agency, 1978.

**Comments:**

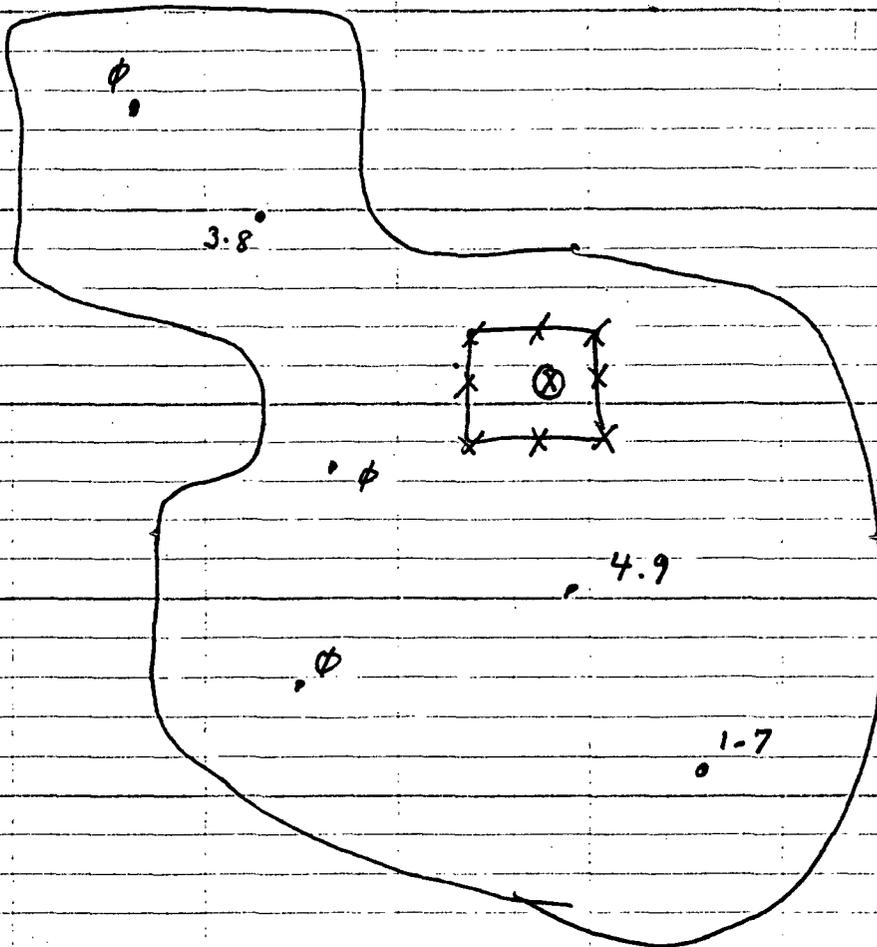
  
Analyst

  
Review

Jacques # 2A  
Amuco

7/9/98

Landfarm: SANDOVAL Gas Com "8" #1



9807091500  
2"-12" depth

soil vapor headspace = 22.3 ppm

OFF: (505) 325-5667

**ON SITE**

LAB: (505) 325-1556

**TECHNOLOGIES, LTD.**

**On Site Technologies, LTD.**

**Date:** 23-Jul-98

---

**CLIENT:** PNM - Public Service Company of NM

**Project:** Jacquez #2A LF

**Lab Order:** 9807029

**CASE NARRATIVE**

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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.

OFF: (505) 325-5667



LAB: (505) 325-1556

### ANALYTICAL REPORT

Date: 23-Jul-98

<b>Client:</b>	PNM - Public Service Company of NM	<b>Client Sample Info:</b>	Jacquez #2A LF
<b>Work Order:</b>	9807029	<b>Client Sample ID:</b>	9807091500; Sandoval GC B#1
<b>Lab ID:</b>	9807029-01A	<b>Matrix:</b>	SOIL
<b>Project:</b>	Jacquez #2A LF	<b>Collection Date:</b>	7/9/98 3:00:00 PM
		<b>COC Record:</b>	7312

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
<b>DIESEL RANGE ORGANICS</b>		<b>SW8015</b>				Analyst: HR
T/R Hydrocarbons: C10-C28	ND	25		mg/Kg	1	7/20/98

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

OFF: (505) 325-5667



LAB: (505) 325-1556

**ANALYTICAL REPORT**

Date: 23-Jul-98

<b>Client:</b>	PNM - Public Service Company of NM	<b>Client Sample Info:</b>	Jaquez #2A LF
<b>Work Order:</b>	9807029	<b>Client Sample ID:</b>	9807091530; Sandoval GC C #1E
<b>Lab ID:</b>	9807029-02A	<b>Matrix:</b>	SOIL
<b>Project:</b>	Jaquez #2A LF	<b>Collection Date:</b>	7/9/98 3:30:00 PM
		<b>COC Record:</b>	7312

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
<b>DIESEL RANGE ORGANICS</b>		<b>SW8015</b>				Analyst: HR
T/R Hydrocarbons: C10-C28	ND	25		mg/Kg	1	7/20/98

**Qualifiers:**

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