APPLICATION

ENVIROCORP®

DISCHARGE PLAN APPLICATION AND APPLICATION FOR AUTHORIZATION TO INJECT, PER OIL CONSERVATION DIVISION FORM C-108, INTO PROPOSED CLASS I WELLS WDW-1, WDW-2, AND WDW-3

NAVAJO REFINING COMPANY
Artesia, New Mexico

Envirocorp Project No. 60A4305

April 1998

Prepared By:

ENVIROCORP SERVICES & TECHNOLOGY, INC.
Houston, Texas

ENVIROCORP SERVICES & TECHNOLOGY, INC.

7020 PORTWEST DRIVE, #100 HOUSTON, TEXAS 77024 713/880-4640 FAX 713/880-3248

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ATTACHMENTS

DATE IN	SUSPENSE	ENGINEER	LOGGED BY	TYPE

ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION

- Engineering Bureau -

ADMINISTRATIVE APPLICATION COVER SHEET

THIS COVERSHEET IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS

Application Acronyms:

[NSP-Non-Standard Proration Unit] [NSL-Non-Standard Location]
[DD-Directional Drilling] [SD-Simultaneous Dedication]
[DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]
[PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]
[WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]
[SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]
[EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

[1] **TYPE OF APPLICATION** - Check Those Which Apply for [A]

[A] Location - Spacing Unit - Directional Drilling

❑ NSL ❑ NSP ❑ DD ❑ SD

Check One Only for [B] and [C]

[B] Commingling - Storage - Measurement

❑ DHC ❑ CTB ❑ PLC ❑ PC ❑ OLS ❑ OLM

[C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery

❑ WFX ❑ PMX ❑ SWD ❑ IPI ❑ EOR ❑ PPR Class I Effluent Disposal Wells

[2] **NOTIFICATION REQUIRED TO:** - Check Those Which Apply, or ❑ Does Not Apply

[A] ❑ Working, Royalty or Overriding Royalty Interest Owners

[B] ❑ Offset Operators, Leaseholders or Surface Owner

[C] ☒ Application is One Which Requires Published Legal Notice

[D] ❑ Notification and/or Concurrent Approval by BLM or SLO
U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office

[E] ❑ For all of the above, Proof of Notification or Publication is Attached, and/or,

[F] ☒ Waivers are Attached See Section XIII of Form C-108 application.

[3] **INFORMATION / DATA SUBMITTED IS COMPLETE** - Statement of Understanding

I hereby certify that I, or personnel under my supervision, have read and complied with all applicable Rules and Regulations of the Oil Conservation Division. Further, I assert that the attached application for administrative approval is accurate and complete to the best of my knowledge and where applicable, verify that all interest (WI, RI, ORRI) is common. I understand that any omission of data (including API numbers, pool codes, etc.), pertinent information and any required notification is cause to have the application package returned with no action taken.

Note: Statement must be completed by an individual with supervisory capacity.

Darrell Moore	Darrell Moore	Env. Mgr. Water & Waste	4/27/98
Print or Type Name	Signature	Title	Date

District I - (505) 393-6161
P. O. Box 1980
Hobbs, NM 88241-1980
District II - (505) 748-1283
811 S. First
Artesia, NM 88210
District III - (505) 334-6178
1000 Rio Brazos Road
Aztec, NM 87410
District IV - (505) 827-7131

New Mexico
Energy Minerals and Natural Resources Department
Oil Conservation Division
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

Revised 12/1/95

Submit Original
Plus 1 Copies
to Santa Fe
1 Copy to appropriate
District Office

DISCHARGE PLAN APPLICATION FOR SERVICE COMPANIES, GAS PLANTS, REFINERIES, COMPRESSOR, AND CRUDE OIL PUMP STATIONS

(Refer to the OCD Guidelines for assistance in completing the application)

☒ New ☐ Renewal ☐ Modification

1. Type: Proposed Class I Well Nos. WDW-1, WDW-2, and WDW-3
2. Operator: Navajo Refining Company

   Address: Post Office Box 159, Highway 82 East, Artesia, New Mexico 88211

   Contact Person: Darrell Moore Phone: 505/748-3311
3. Location: attached /4 _____/4 Section _____ Township _____ Range _____
   Submit large scale topographic map showing exact location.
4. Attach the name, telephone number and address of the landowner of the facility site.
5. Attach the description of the facility with a diagram indicating location of fences, pits, dikes and tanks on the facility.
6. Attach a description of all materials stored or used at the facility.
7. Attach a description of present sources of effluent and waste solids. Average quality and daily volume of waste water must be included.
8. *Attach a description of current liquid and solid waste collection/treatment/disposal procedures.*
9. Attach a description of proposed modifications to existing collection/treatment/disposal systems.
10. Attach a routine inspection and maintenance plan to ensure permit compliance.
11. Attach a contingency plan for reporting and clean-up of spills or releases.
12. Attach geological/hydrological information for the facility. Depth to and quality of ground water must be included.
13. Attach a facility closure plan, and other information as is necessary to demonstrate compliance with any other OCD rules, regulations and/or orders.
14. CERTIFICATION

I herby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

NAME: _____ Title: Director of Environmental Affairs

Signature: PHILLIP L. YOUNGBLOOD Date: 4-27-98

DISCHARGE PLAN APPLICATION FOR SERVICE COMPANIES, GAS PLANTS, REFINERIES, COMPRESSOR, AND CRUDE OIL PUMP STATIONS

1. **Type**
   Proposed Class I Wells WDW-1, WDW-2, and WDW-3

2. **Operator**
   Navajo Refining Company
   Post Office Box 159
   Highway 82 East
   Artesia, New Mexico 88211

   Contact
   Darrell Moore
   Environmental Manager of Water and Waste
   Navajo Refining Company
   Post Office Box 159
   Artesia, New Mexico 88211
   505-748-3311

3. **Location**
   The locations of proposed WDW-1, WDW-2, and WDW-3 are detailed on accompanying Forms C-102. The well locations are shown on Attachment V-2 of the Application for Authorization to Inject, Per OCD Form C-108, Into Proposed WDW-1, WDW-2, and WDW-3 (the "Application to Inject").

4. **Facility Ownership**
   Navajo Refining Company owns the facility sites.

5. **Facilities**
   The facilities currently planned for each wellsite include the wellhead, the well annulus monitoring system, and monitoring and recording instrumentation. The waste water to be injected will be delivered to each well from Navajo's refinery in Artesia by a pipeline system.

6. **Materials Storage**
   No materials storage is planned.

7. **Waste Stream**
   The waste stream to be injected is described in Section VII of the "Application to Inject."

8. **Current Treatment and Disposal**
   The waste stream to be injected is currently managed in evaporation ponds at Navajo's refinery in Artesia. A portion of the stream is sent to a publicly owned treatment works.

9. **Modifications**
Not applicable; this application is for planned facilities.

10. **Inspection and Maintenance Plan**
Navajo will operate instrumentation that will monitor and record continuously the injection pressure, flow rate, flow volume, and casing-tubing annulus pressure.

The injection well system will be equipped with a pressure-limiting device that will prevent the wellhead pressure from exceeding the permitted maximum surface injection pressure.

A well annulus monitoring system will be installed and maintained at each wellsite to monitor for tubing and casing leaks.

Mechanical integrity testing will be conducted annually and any time the tubing is pulled or the packer is reseated, in accordance with OCD testing procedures.

11. **Contingency Plan**
Navajo will notify the OCD District Office in Artesia within 24 hours of failures of the tubing, casing, or packer and will correct failures in a timely manner.

12. **Geological and Hydrological Information**
Geological and hydrogeological information is included in Sections VIII and XI of the "Application to Inject."

13. **Closure Plan**
The proposed closure plan for the wells is included as Attachment III-5 of the "Application to Inject."

District I
PO Box 1980, Hobbs, NM 88241-1980
District II
811 South First, Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
2040 South Pacheco
Santa Fe, NM 87505

Form C-101
Revised October 18, 1994
Instructions on back
Submit to Appropriate District Office
State Lease - 6 Copies
Fee Lease - 5 Copies

☐ AMENDED REPORT

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

1 Operator Name and Address	2 OGRID Number
Navajo Refining Company P. O. Box 159 Artesia, New Mexico 88211	
	3 API Number 30 - 015-27592-0001

4 Property Code	5 Property Name	6 Well No.
	WDW-1	

7 Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
O	31	17S	28E		660	South	2310	East	Eddy

8 Proposed Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

9 Proposed Pool 1	10 Proposed Pool 2
Lower Wolfcamp, Cisco, and Canyon Fms.	

11 Work Type Code	12 Well Type Code	13 Cable/Rotary	14 Lease Type Code	15 Ground Level Elevation
Re-enter	Class I Injection	Rotary	Private	3678 feet
16 Multiple	**17 Proposed Depth**	**18 Formation**	**19 Contractor**	**20 Spud Date**
No	9624 feet PBTD	Wolfcamp, Cisco, and Canyon		

21 Proposed Casing and Cement Program

Hole Size	Casing Size	Casing weight/foot	Setting Depth	Sacks of Cement	Estimated TOC
17-1/2	13-3/8	48	390	525	surface
12-1/4	9-5/8	36	2555	1000	surface
8-1/2	7	26	9600	+/-2000*	surface
* Calipered hole volume plus 20%.					

22 Describe the proposed program. If this application is to DEEPEN or PLUG BACK give the data on the present productive zone and proposed new productive zone. Describe the blowout prevention program, if any. Use additional sheets if necessary.

Navajo proposes to re-enter the plugged and abandoned Mewbourne Oil Company Chalk Bluff 31 State No. 1, drill out plugs to 9624 feet, test, set 7-inch casing, and recomplete per the Class II permit application submitted in March 1998. Proposed injection zone is the lower Wolfcamp Formation and the Cisco and Canyon Formations from 7450 feet to 9016 feet. See accompanying Form C 108 for more information.

23 I hereby certify that the information given above is true and complete to the best of my knowledge and belief.	OIL CONSERVATION DIVISION
Signature: Darrell Moore	Approved by:
Printed name: Darrell Moore	Title:
Title: Env. Mgr. for Water + Waste	Approval Date: / Expiration Date:
Date: 4/30/98 / Phone: 505-748-2455	Conditions of Approval: Attached ☐

District I
PO Box 1980, Hobbs, NM 88241-1980
District II
811 South First, Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
2040 South Pacheco
Santa Fe, NM 87505

Form C-1
Revised October 18, 19
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☐ AMENDED REPOR

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number	2 Pool Code	3 Pool Name
30-015-27592-0001		Wolfcamp, Cisco, and Canyon Injection Zone

4 Property Code	5 Property Name	6 Well Number
	WDW-1	

7 OGRID No.	8 Operator Name	9 Elevation
	Navajo Refining Company	3678 Feet GL

10 Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
-O-	31	17S	28E		660	South	2310	East	Eddy

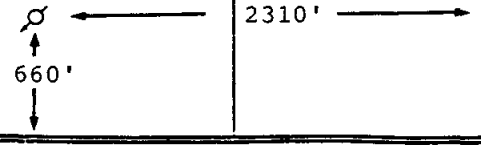
11 Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

12 Dedicated Acres	13 Joint or Infill	14 Consolidation Code	15 Order No.

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

16



17 OPERATOR CERTIFICATIO

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belie

Darrell Moore
Signature
Darrell Moore
Printed Name
Env. Mgr. for Water + Was
Title
3/28/98
Date

18 SURVEYOR CERTIFICATIO

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

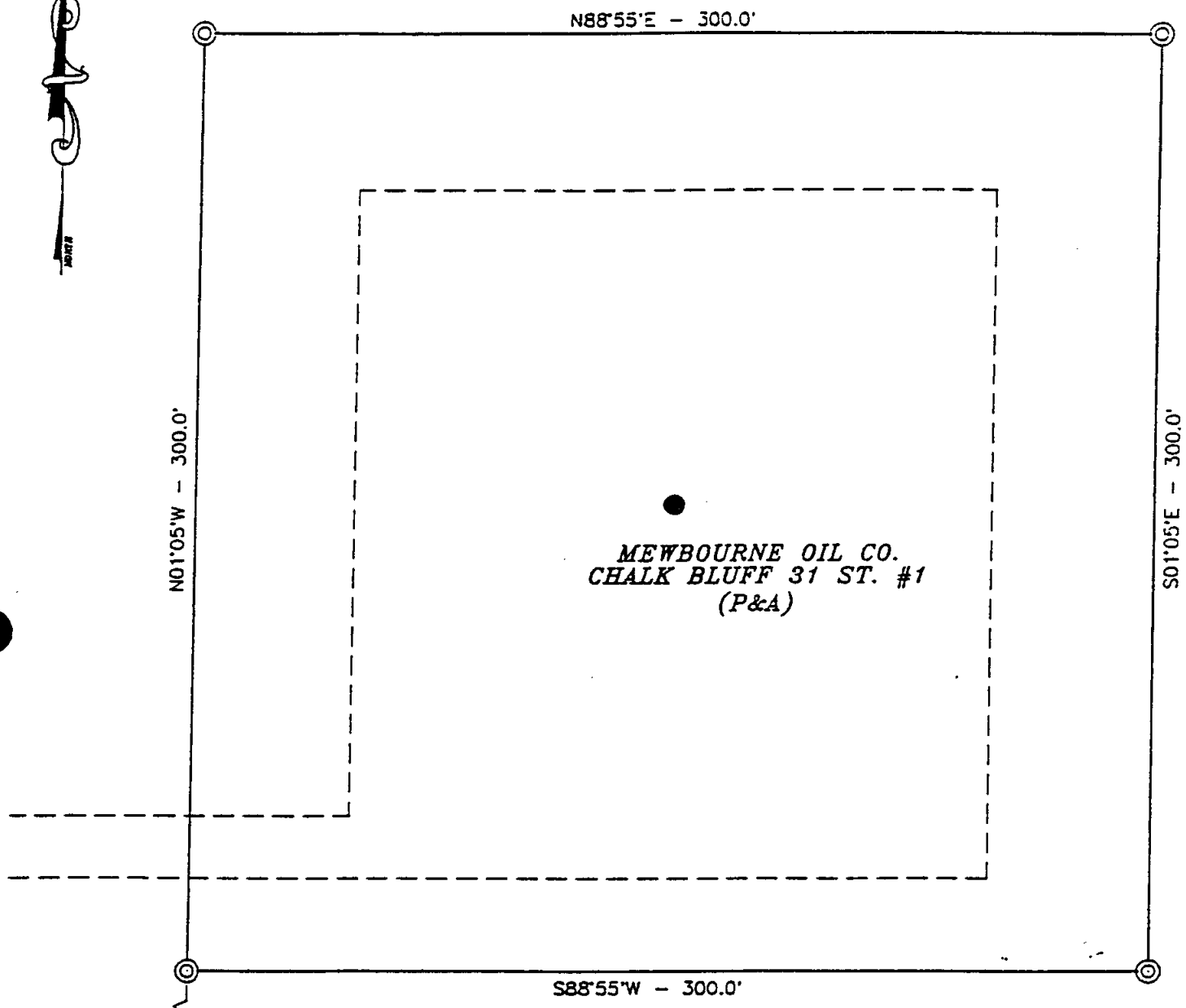
Date of Survey

Signature and Seal of Professional Surveyor

Certificate Number

See attached survey plat

SECTION 31, TOWNSHIP 17 SOUTH, RANGE 28 EAST, N.M.P.M.,
EDDY COUNTY NEW MEXICO



◎ DENOTES: SET 1/2" IRON ROD W/ PVC CAP MARKED "PS 3239 PS 12641"

NAVAJO REFINING COMPANY

CHALK BLUFF 31 STATE #1 LOCATED 660 FEET FROM THE SOUTH LINE AND 2310 FEET FROM THE EAST LINE SECTION 31, TOWNSHIP 17 SOUTH, RANGE 28 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO.

Survey Date: 11/24/97		Sheet 1 of 1 Sheets
W.O. Number: 97-11-1922		Drawn By: CDG
Date: 12/1/97	DISK: NAVAJO	NAV1922

JOHN W. WEST ENGINEERING COMPANY
CONSULTING ENGINEERS & SURVEYORS – HOBBS, NEW MEXICO

District I
PO Box 1980, Hobbs, NM 88241-1980
District II
811 South First, Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
2040 South Pacheco
Santa Fe, NM 87505

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☐ AMENDED REPORT

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

[1] Operator Name and Address	[2] OGRID Number
Navajo Refining Company Post Office Box 159 Artesia, New Mexico 88211	
	[3] API Number 30 - 0

[4] Property Code	[5] Property Name	[6] Well No.
	WDW-2	

[7] Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
F	6	18S	28E		2310	North	1500	West	Eddy

[8] Proposed Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

[9] Proposed Pool 1	[10] Proposed Pool 2
Wolfcamp, Cisco, and Canyon Injection Zone	

[11] Work Type Code	[12] Well Type Code	[13] Cable/Rotary	[14] Lease Type Code	[15] Ground Level Elevation
New Well	Class I Injection	Rotary	Private	3656
[16] Multiple	**[17] Proposed Depth**	**[18] Formation**	**[19] Contractor**	**[20] Spud Date**
No	9000	Wolfcamp/Cisco/ Canyon		

[21] Proposed Casing and Cement Program

Hole Size	Casing Size	Casing weight/foot	Setting Depth	Sacks of Cement	Estimated TOC
17-1/2	13-3/8	48	400	+/-525	surface
12-1/4	9-5/8	36	2550	+/-1000	surface
8-3/4	7	26	9000	+/-2000	surface

[22] Describe the proposed program. If this application is to DEEPEN or PLUG BACK give the data on the present productive zone and proposed new productive zone. Describe the blowout prevention program, if any. Use additional sheets if necessary.

NOTE: See accompanying Form C-108 for additional information.

[23] I hereby certify that the information given above is true and complete to the best of my knowledge and belief.

Signature: [signature]

Printed name: PHILLIP L. YORK (for Navajo Refining Co.)

Title: DIRECTOR OF ENVIRONMENTAL AFFAIRS

Date: 4-27-98

Phone: 505-748-3311

OIL CONSERVATION DIVISION

Approved by:

Title:

Approval Date:

Expiration Date:

Conditions of Approval:

Attached ☐

DISTRICT I
P.O. Box 1980, Hobbs, NM 88241-1980

DISTRICT II
P.O. Drawer DD, Artesia, NM 88211-0719

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV
P.O. Box 2088, Santa Fe, NM 87504-2088

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Form C-102
Revised February 10, 1994
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☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name

Property Code	Property Name	Well Number
	WDW-2	1

OGRID No.	Operator Name	Elevation
	NAVAJO REFINING COMPANY	3656

Surface Location

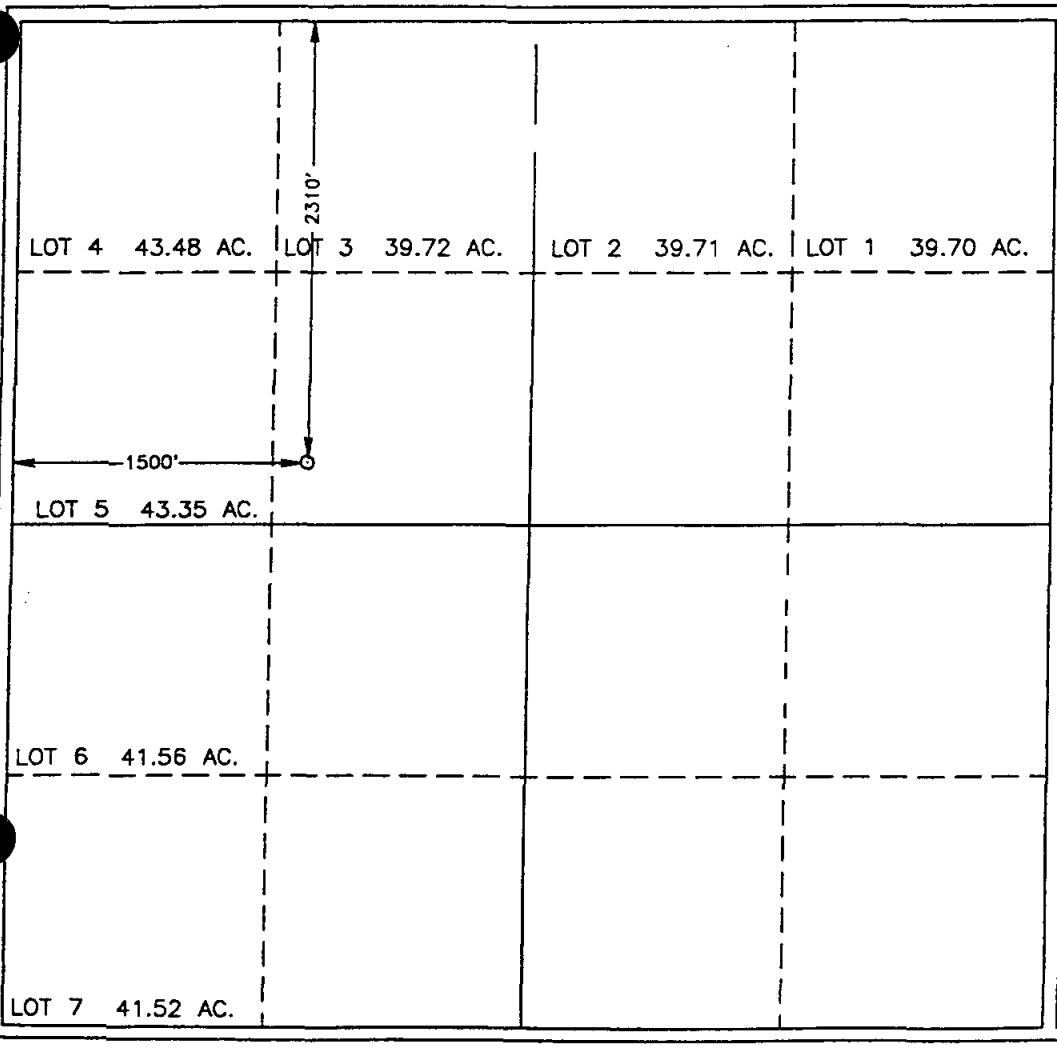
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
F	6	18 S	28 E		2310	NORTH	1500	WEST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



OPERATOR CERTIFICATION

I hereby certify the the information contained herein is true and complete to the best of my knowledge and belief.

Signature

Phillip L. Youngblood
Printed Name

Dir. of Environ. Affairs
Title

4/27/98
Date

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervison, and that the same is true and correct to the best of my belief.

SEPTEMBER 26, 1997
Date Surveyed JLP

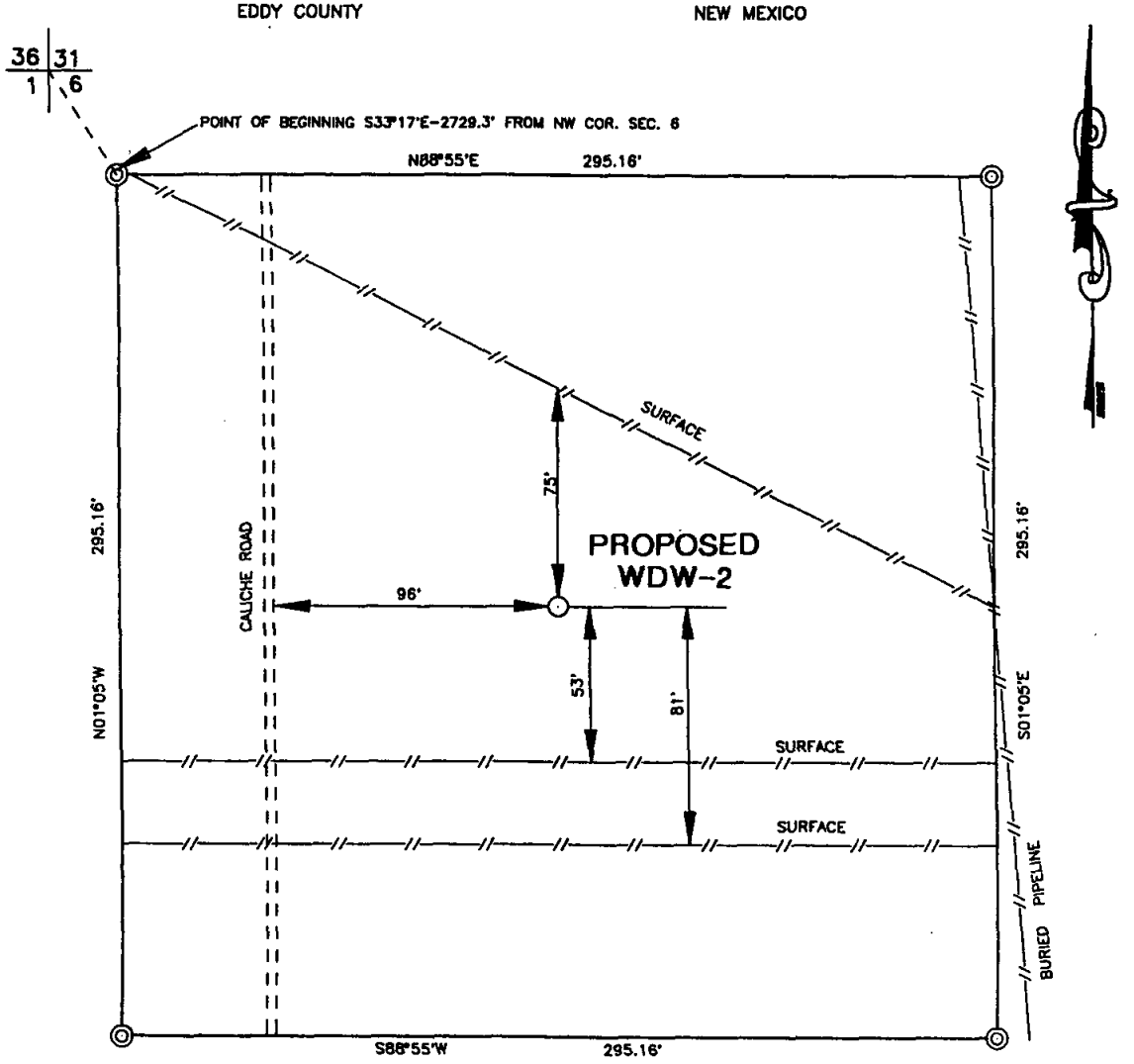
Signature & Seal of Professional Surveyor

10-06-97

W.O. Num. 97-11-1607

Certificate No. RONALD J. EIDSON, 3239
GARY L. EIDSON, 12641

SECTION 6, TOWNSHIP 18 SOUTH, RANGE 28 EAST, N.M.P.M.,
EDDY COUNTY NEW MEXICO



LEGEND

◎ DENOTES: SET 1/2" IRON ROD
W/ PVC CAP MARKED
"PS 3239 PS 12641"

50 0 50 100 FEET
SCALE: 1"=50'

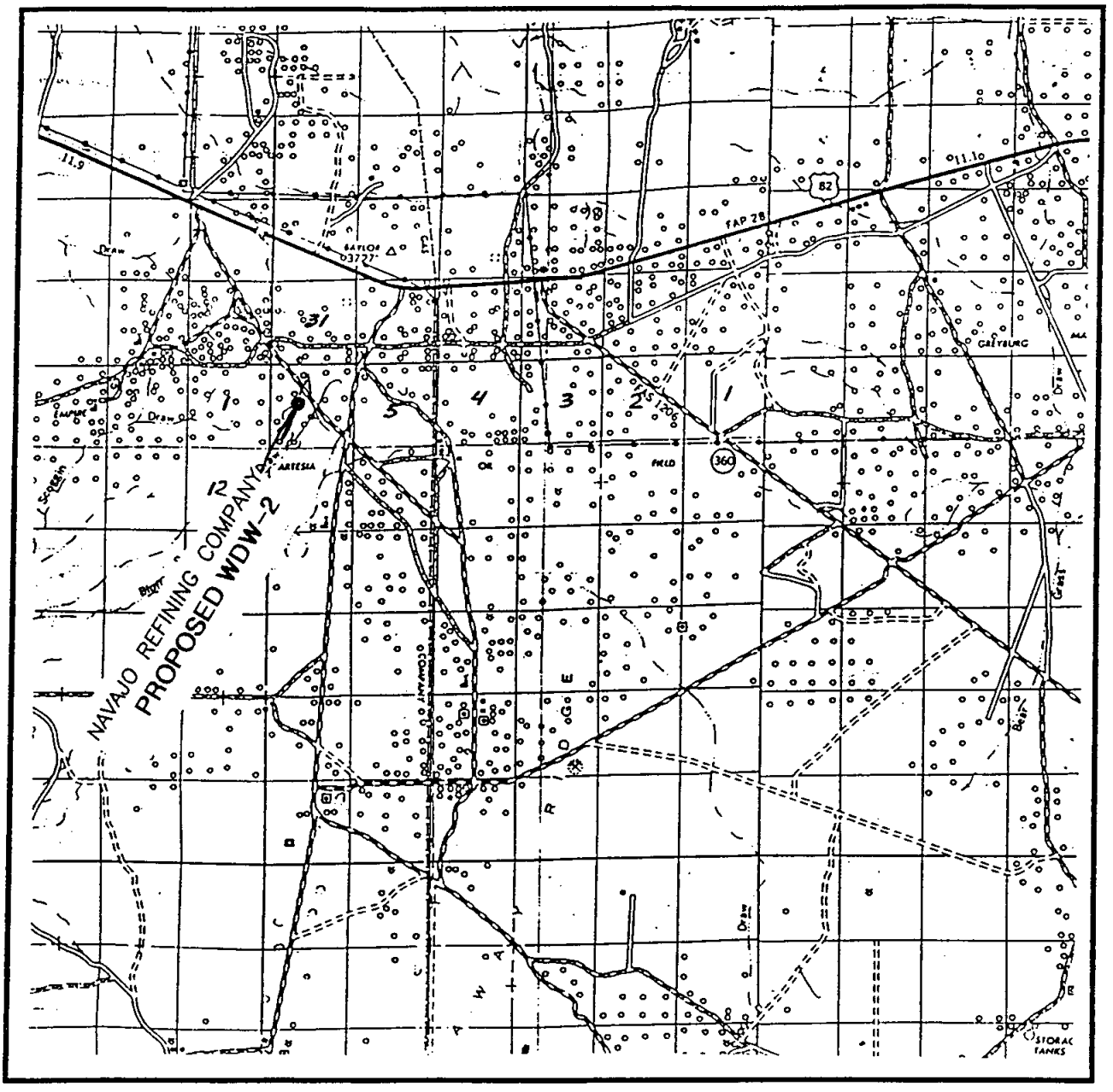
NAVAJO REFINING COMPANY

BOGLE H_2O DISPOSAL WELL #1 LOCATED 2310 FEET FROM THE NORTH LINE AND 1500 FEET FROM THE WEST LINE SECTION 6, TOWNSHIP 18 SOUTH, RANGE 28 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO.

Survey Date: 9/26/97		Sheet 1 of 1 Sheets	
W.O. Number: 97-11-1607		Drawn By: JAMES L. PRESLEY	
Date: 10/4/97	DISK: JLP#187	NAV1607	

JOHN W. WEST ENGINEERING COMPANY
CONSULTING ENGINEERS & SURVEYORS – HOBBS, NEW MEXICO

VICINITY MAP



SCALE: 1" = 2 MILES

SEC. 6 TWP. 18-S RGE. 28-E

SURVEY N.M.P.M.

COUNTY EDDY

DESCRIPTION 2310' FNL & 1500' FWL

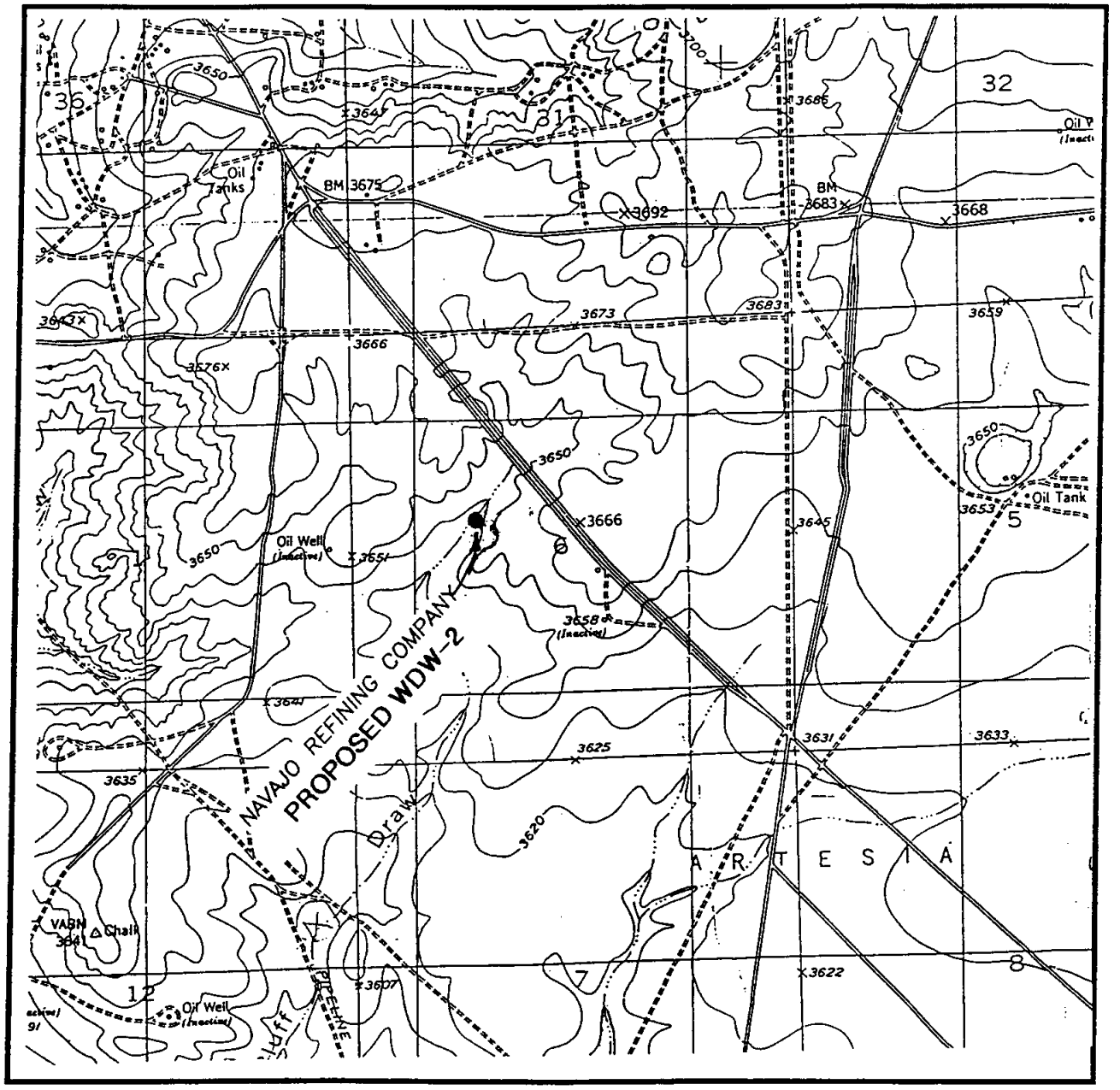
ELEVATION 3656'

OPERATOR NAVAJO REFINING COMPANY

LEASE

JOHN WEST ENGINEERING
HOBBS, NEW MEXICO
(505) 393-3117

LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL – 10'

SEC. 6 TWP. 18-S RGE. 28-E

SURVEY N.M.P.M.

COUNTY EDDY

DESCRIPTION 2310' FNL & 1500' FWL

ELEVATION 3656'

OPERATOR NAVAJO REFINING COMPANY

LEASE

U.S.G.S. TOPOGRAPHIC MAP

RED LAKE, N.M.

JOHN WEST ENGINEERING
HOBBS, NEW MEXICO
(505) 393-3117

District I
PO Box 1980, Hobbs, NM 88241-1980
District II
811 South First, Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
2040 South Pacheco
Santa Fe, NM 87505

Form C-101
Revised October 18, 1994
Instructions on back
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☐ AMENDED REPORT

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

[1] Operator Name and Address.	[2] OGRID Number
Navajo Refining Company Post Office Box 159 Artesia, New Mexico 88211	[3] API Number 30 - 0

[4] Property Code	[5] Property Name	[6] Well No.
	WDW-3	

[7] Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

[8] Proposed Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D Lot 4	6	18S	28E		778	North	995	West	Eddy

[9] Proposed Pool 1	[10] Proposed Pool 2
Wolfcamp, Cisco, and Canyon Injection Zone	

[11] Work Type Code	[12] Well Type Code	[13] Cable/Rotary	[14] Lease Type Code	[15] Ground Level Elevation
New Well	Class I Injection	Rotary	Private	3657
[16] Multiple	**[17] Proposed Depth**	**[18] Formation**	**[19] Contractor**	**[20] Spud Date**
No	9000	Wolfcamp/Cisco/ Canyon		

[21] Proposed Casing and Cement Program

Hole Size	Casing Size	Casing weight/foot	Setting Depth	Sacks of Cement	Estimated TOC
17-1/2	13-3/8	48	400	+/- 525	surface
12-1/4	9-5/8	36	2550	+/-1000	surface
8-3/4	7	26	9000	+/-2000	surface

[22] Describe the proposed program. If this application is to DEEPEN or PLUG BACK give the data on the present productive zone and proposed new productive zone. Describe the blowout prevention program, if any. Use additional sheets if necessary.

NOTE: See accompanying Form C-108 for additional information.

[23] I hereby certify that the information given above is true and complete to the best of my knowledge and belief.

Signature:

Printed Name: Phillip L. Youngblood

Title: Director of Environmental Affairs

Date: 4/27/98

Phone: 505-748-3311

OIL CONSERVATION DIVISION

Approved by:

Title:

Approval Date: Expiration Date:

Conditions of Approval Attached ☐

DISTRICT I
P.O. Box 1980, Hobbs, NM 88241-1980

DISTRICT II
P.O. Drawer DD, Artesia, NM 88211-0719

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV
P.O. Box 2088, Santa Fe, NM 87504-2088

State of New Mexico
Energy, Minerals and Natural Resources Department

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OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name

Property Code	Property Name	Well Number
	WDW-3	2
OGRID No.	Operator Name	Elevation
	NAVAJO REFINING COMPANY	3657

Surface Location

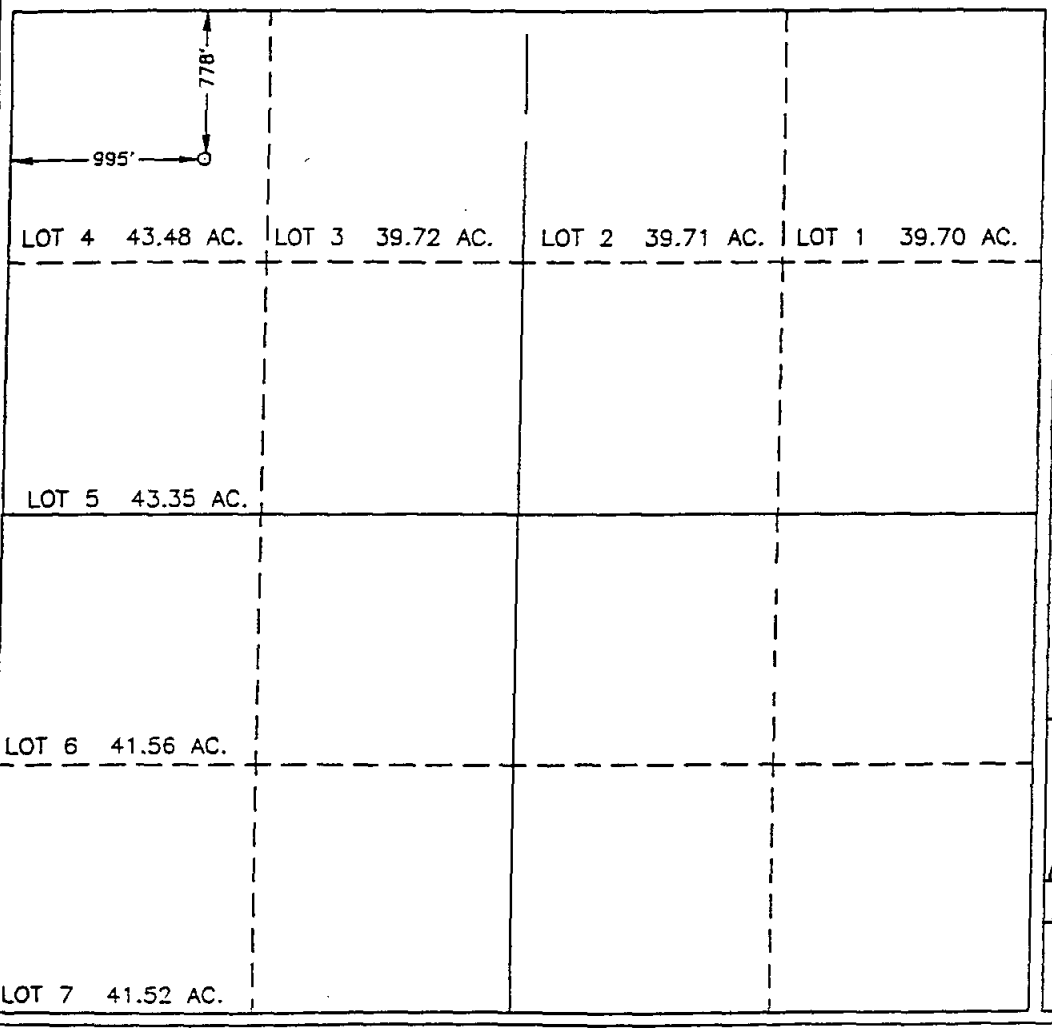
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
4	6	18 S	28 E		778	NORTH	995	WEST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



OPERATOR CERTIFICATION

I hereby certify the the information contained herein is true and complete to the best of my knowledge and belief.

Signature

Phillip L. Youngblood
Printed Name

Dir. of Environ. Affairs
Title

7/27/98
Date

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervison, and that the same is true and correct to the best of my belief.

NOVEMBER 24, 1997
Date Surveyed

Signature & Seal of Professional Surveyor

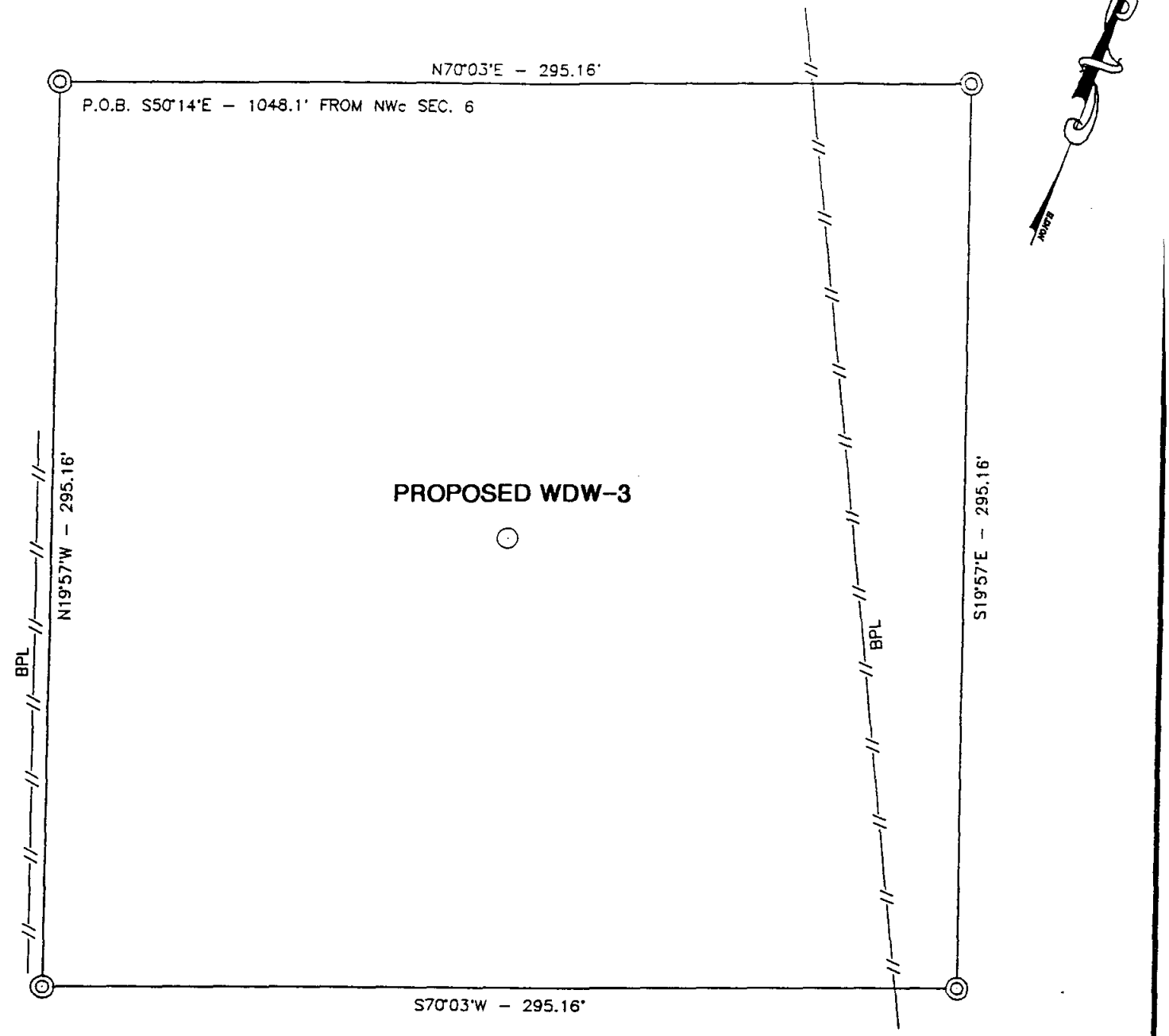
RONALD J. EIDSON
NEW MEXICO
3239
REGISTERED PROFESSIONAL SURVEYOR

12-02-97

W.O. Num. 97-11-1921

Certificate No. RONALD J. EIDSON 3239
GARY L. EIDSON 12641

SECTION 6, TOWNSHIP 18 SOUTH, RANGE 28 EAST, N.M.P.M.,
EDDY COUNTY NEW MEXICO



◎ DENOTES: SET 1/2" IRON ROD W/ PVC CAP MARKED "PS 3239 PS 12641"

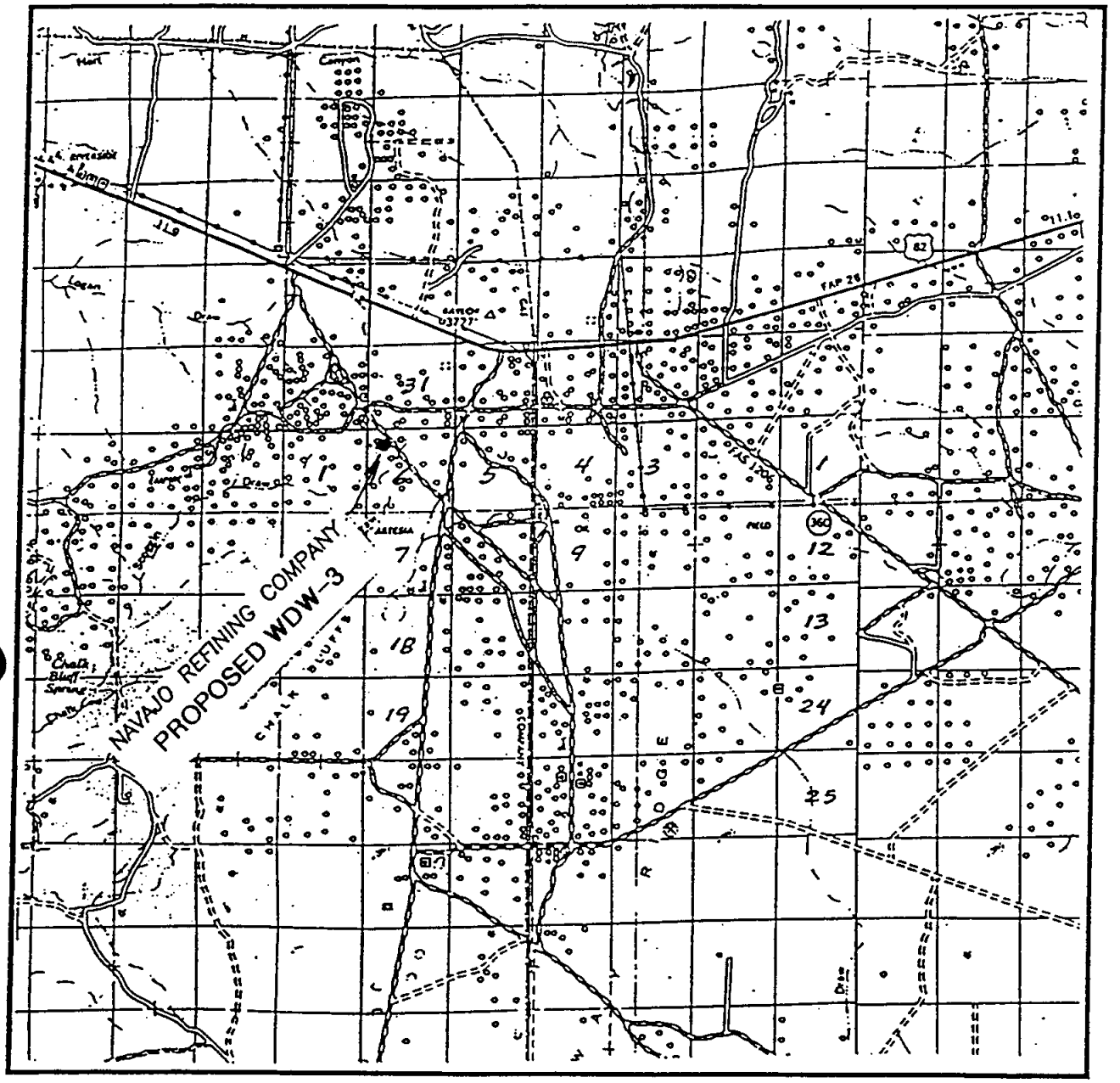
NAVAJO REFINING COMPANY

BOGLE H_2O DISPOSAL WELL #2 LOCATED 778 FEET FROM THE NORTH LINE AND 995 FEET FROM THE WEST LINE SECTION 6, TOWNSHIP 18 SOUTH, RANGE 28 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO.

Survey Date: 11/24/97		Sheet 1 of 1 Sheets
W.O. Number: 97-11-1921		Drawn By: CDG
Date: 12/01/97	DISK: NAVAJO	NAV1921

JOHN W. WEST ENGINEERING COMPANY
CONSULTING ENGINEERS & SURVEYORS – HOBBS, NEW MEXICO

VICINITY MAP



SCALE: 1" = 2 MILES

SEC. 6 TWP. 18-S RGE. 28-E

SURVEY N.M.P.M.

COUNTY EDDY

DESCRIPTION 778' FNL & 995' FWL

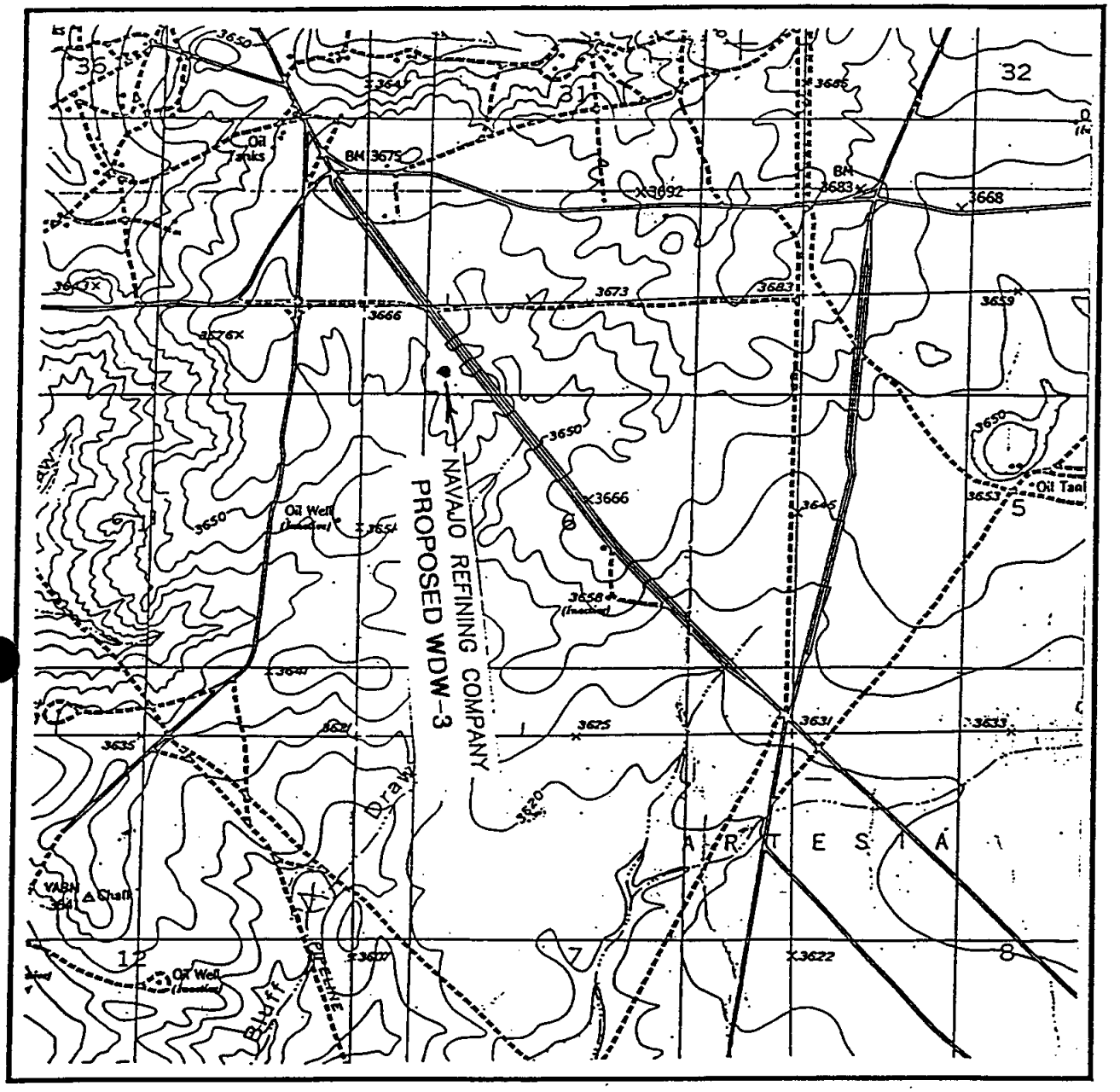
ELEVATION 3657'

OPERATOR NAVAJO REFINING COMPANY

LEASE

JOHN WEST ENGINEERING
HOBBS, NEW MEXICO
(505) 393-3117

LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL – 10'

SEC. 6 TWP. 18-S RGE. 28-E

SURVEY N.M.P.M.

COUNTY EDDY

DESCRIPTION 778' FNL & 995' FWL

ELEVATION 3657'

OPERATOR NAVAJO REFINING COMPANY

LEASE

U.S.G.S. TOPOGRAPHIC MAP
RED LAKE, N.M.

JOHN WEST ENGINEERING
HOBBS, NEW MEXICO
(505) 393-3117

STATE OF NEW MEXICO
ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

Oil Conservation Div.
2040 Pacheco St.
Santa Fe, NM 87505

FORM C-108
Revised 7-1-81

APPLICATION FOR AUTHORIZATION TO INJECT

I. PURPOSE: ____ Secondary Recovery ____ Pressure Maintenance __x__ Disposal ____ Storage
Application qualifies for administrative approval? __Yes __x__No

II. OPERATOR: Navajo Refining Company

ADDRESS: Post Office Box 159, Highway 82 East, Artesia, New Mexico 88211

CONTACT PARTY: Darrell Moore, Environmental Mgr. Water and Waste PHONE: 505-748-3311

III. WELL DATA: Complete the data required on the reverse side of this form for each well processed for injection. Additional sheets may be attached if necessary.

IV. Is this an expansion of an existing project: __x__ Yes ___ No
If yes, give the Division order number authorizing the project SWD Permit No. SWD-702

V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.

VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected;
2. Whether the system is open or closed;
3. Proposed average and maximum injection pressure;
4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and
5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).

*VIII. Attach appropriate geological data on the injection zone including appropriate lithologic detail, geological name, thickness and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval.

IX. Describe the proposed stimulation program, if any.

* X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted.)

* XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.

XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.

XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.

XIV. Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

NAME: _____ TITLE: Director Environmental Affair

SIGNATURE: Phillip L. Youngblood DATE: 4/27/98

* If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted. Please show the date and circumstance of the earlier submittal. _____

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate District Office

I. PURPOSE

Navajo Refining Company (Navajo) submits this application to construct and operate three proposed nonhazardous Class I effluent disposal wells. The waste stream proposed for injection is a nonhazardous aqueous stream that is generated by Navajo at its refinery in Artesia. The waste water will be transported to the injection wellsites by pipeline. The facilities at the wellsites will be limited to the wellhead, the well annulus monitoring system, and monitoring and recording instrumentation.

Navajo proposes to convert a plugged and abandoned exploration well to become its effluent disposal well WDW-1. The well is the Mewbourne Oil Company Chalk Bluff 31 State No. 1 well, which is located in Section 31, T17S, R28E, Unit Letter O, approximately 11 miles east-southeast of Artesia, in Eddy County, New Mexico. The Mewbourne Oil Company Chalk Bluff 31 State No. 1 well was drilled through the Morrow Formation to 10,200 feet in 1993 and was plugged and abandoned. In March 1998, Navajo submitted an application to the New Mexico Oil Conservation Division (OCD) for permission to re-enter, test, and recomplete the well. Permission from the OCD for this work is pending. To date, Navajo has not re-entered the Mewbourne well, and no fluids have been injected into the well.

In addition, Navajo proposes to drill two new wells, proposed WDW-2 and WDW-3, in the northwest quarter of Section 6, T18S, R28E.

The proposed injection zone consists of porous intervals in the lower Wolfcamp Formation and the Cisco and Canyon Formations between 7450 feet and 9016 feet below kelly bushing in proposed WDW-1 (the Mewbourne Oil Company Chalk Bluff 31 No. 1 well).

II. OPERATOR

Operator Name and Mailing Address:

Navajo Refining Company
Post Office Box 159
Artesia, New Mexico 88211

Street Address:

Navajo Refining Company
Highway 82 East
Artesia, New Mexico 88211

Operator Contacts and Telephone:

Darrell Moore
Environmental Manager of Water and Waste
Navajo Refining Company
Post Office Box 159
Artesia, New Mexico 88211
505-748-3311

George Walbert, Geologist
Holly Petroleum, Inc.
100 Crescent Court, Suite 1600
Dallas, Texas 75201-6927
214-871-3555

III. WELL DATA

The injection well data forms and well schematics for proposed WDW-1, WDW-2, and WDW-3 are provided as Attachments III-1, III-2, and III-3. A drilling and completion procedure for proposed WDW-2 and WDW-3 is included as Attachment III-4.

A closure plan with the estimated cost to plug and abandon the proposed disposal wells is included as Attachment III-5.

ATTACHMENT III-1

INJECTION WELL DATA SHEET
AND WELL SCHEMATIC FOR PROPOSED WDW-1

ATTACHMENT III-1

INJECTION WELL DATA SHEET

OPERATOR: Navajo Refining Company **LEASE:** WDW-1 (formerly Mewbourne Oil Company Chalk Bluff 31 State No. 1)

660' FSL, 2310' FEL 31-T17SR28E
Footage Location Section Township Range

WELL CONSTRUCTION DATA

Surface Casing
Size 13-3/8" Cemented with 525 sx
TOC Surface feet determined by Circulated 86 sx to surface
Hole Size 17-1/2" Set at 390 feet

Intermediate Casing
Size 9-5/8" Cemented with 1000 sx
TOC Surface feet determined by Circulated 133 sx to surface
Hole Size 12-1/4" Set at 2555 feet

Long String (Proposed)
Size 7" Cemented with Multi-stage: 2000 sacks (caliper volume plus 20%)
TOC Surface feet determined by Temperature log if cement does not reach surface
Hole Size 8-1/2" Set at 9600 feet (proposed)
Total Depth 10,200', Plugged back to 9624'

Injection Interval
7450 feet to 9016 feet, perforated
(perforated or open-hole; indicate which)

Tubing size 3-1/2 lined with not lined* set in a retrievable full bore packer at approximately 6000** feet. Other type of tubing/casing seal if applicable latch-in seal assembly

OTHER DATA

1. Is this a new well drilled for injection? ___ Yes _X_ No

   If no, for what purpose was the well originally drilled? The well was drilled in 1993 as an exploratory well. The well was plugged and abandoned in 1993.

2. Name of the injection formation: Wolfcamp, Cisco, and Canyon Formations

3. Name of Field or Pool (if applicable): Not applicable

ATTACHMENT III-1 (Continued)

4. Has the well ever been perforated in any other zones(s)? List all such perforated intervals and give plugging detail, i.e., sacks of cement or plug(s) used. No

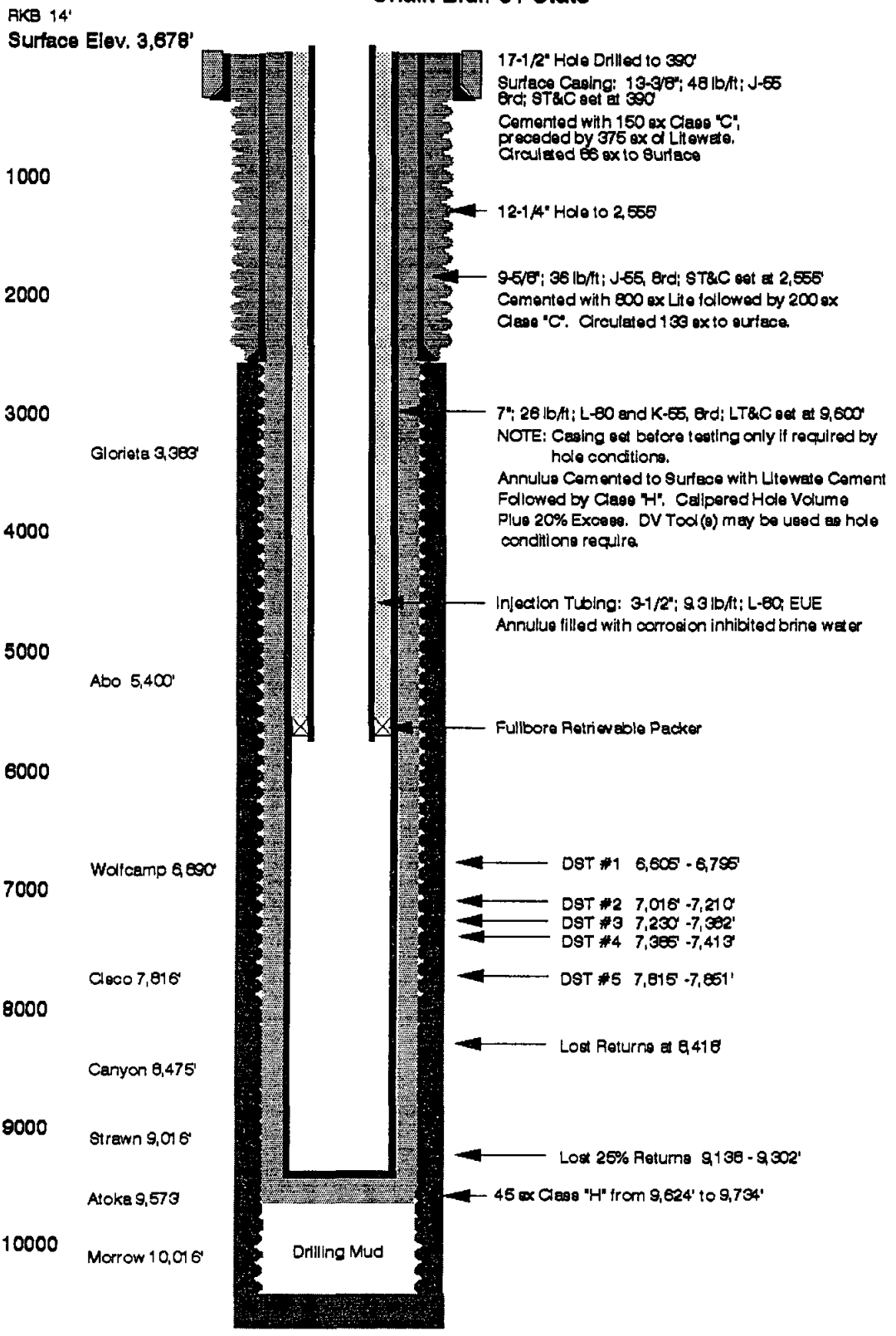
5. Give the names and depths of any over or underlying oil or gas zones (pools) in the area:

Within one mile: Yates (500 feet), Seven Rivers (600 feet), Grayburg (1600 feet to 1900 feet), San Andres (2000 feet), Abo (5400 feet to 6200 feet), and Morrow (9900 feet)

* Waiting on fluid analysis to determine corrosivity. Tubing or lining will be adjusted to address corrosion problems.

** Depends on injection perforations selected.

Proposed Navajo Disposal Well No. 1 (Re-entry)
Mewbourne Oil Company
Chalk Bluff 31 State



ATTACHMENT III-2

INJECTION WELL DATA SHEET
AND WELL SCHEMATIC FOR PROPOSED WDW-2

ATTACHMENT III-2

INJECTION WELL DATA SHEET

OPERATOR: Navajo Refining Company **LEASE:** WDW-2 (Proposed)

2310' FNL, 1500' FWL 6-T18S-R28E

Footage Location Section Township Range

WELL CONSTRUCTION DATA

Surface Casing

Size 13-3/8" Cemented with 600 sacks (caliper volume plus 50%)

TOC Surface feet determined by Circulating to surface

Hole Size 17-1/2" Set at 400 feet

Intermediate Casing

Size 9-5/8" Cemented with 1000 sacks (caliper volume plus 20%)

TOC Surface feet determined by Circulating to surface

Hole Size 12-1/4" Set at 2550 feet

Long String (Proposed)

Size 7" Cemented with Multi-stage: 2000 sacks (caliper plus 20%)

TOC Surface feet determined by Temperature log if cement does not reach surface

Hole Size 8-1/2" Set at (proposed) 9000 feet

Total Depth

Injection Interval

7401 feet to 8971 feet, perforated

(perforated or open-hole; indicate which)

Tubing size 3-1/2 lined with not lined* set in a retrievable full bore packer at approximately 6000** feet. Other type of tubing/casing seal if applicable latch-in seal assembly

OTHER DATA

1. Is this a new well drilled for injection? X Yes ___ No

2. Name of the injection formation: Wolfcamp, Cisco, and Canyon Formations

3. Name of Field or Pool (if applicable): Not applicable

4. Has the well ever been perforated in any other zones(s)? List all such perforated intervals and give plugging detail, i.e., sacks of cement or plug(s) used. No

ATTACHMENT III-2 (Continued)

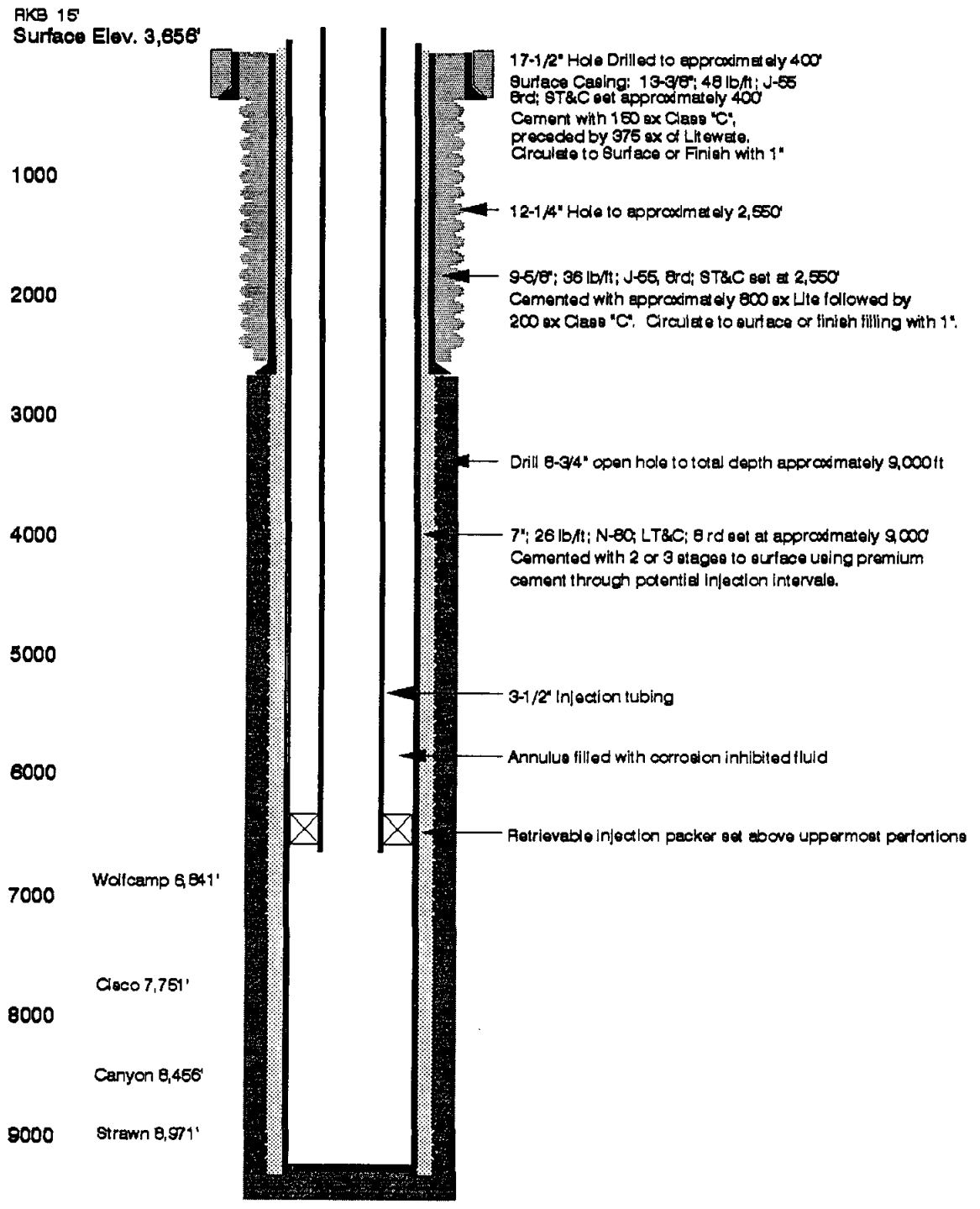
5. Give the names and depths of any over or underlying oil or gas zones (pools) in the area:

Within one mile: Yates (500 feet), Seven Rivers (600 feet), Grayburg (1600 feet to 1900 feet), San Andres (2000 feet), Abo (5400 feet to 6200 feet), and Morrow (9900 feet)

* Waiting on fluid analysis to determine corrosivity. Tubing or lining will be adjusted to address corrosion problems.

** Depends on injection interval selected.

Proposed Navajo Disposal Well No. 2



ATTACHMENT III-3

INJECTION WELL DATA SHEET
AND WELL SCHEMATIC FOR PROPOSED WDW-3

ATTACHMENT III-3

INJECTION WELL DATA SHEET

OPERATOR: Navajo Refining Company **LEASE:** WDW-3 (Proposed)

778' FNL, 995' FWL 6-T18S-R28E
Footage Location Section Township Range

WELL CONSTRUCTION DATA

Surface Casing
Size 13-3/8" Cemented with 600 sacks (caliper volume plus 50%)
TOC Surface feet determined by Circulating to surface
Hole Size 17-1/2" Set at 400 feet

Intermediate Casing
Size 9-5/8" Cemented with 1000 sacks (caliper volume plus 20%)
TOC Surface feet determined by Circulating to surface
Hole Size 12-1/4" Set at 2550 feet

Long String (Proposed)
Size 7" Cemented with Multi-stage: 2000 sacks (caliper plus 20%)
TOC Surface feet determined by Temperature log if cement does not reach surface
Hole Size 8-1/2" Set at 9000 feet
Total Depth

Injection Interval
7392 feet to 8957 feet, perforated
(perforated or open-hole; indicate which)

Tubing size 3-1/2 lined with not lined* set in a retrievable full bore packer at approximately 6000** feet. Other type of tubing/casing seal if applicable latch-in seal assembly

OTHER DATA

1. Is this a new well drilled for injection? X Yes ___ No

2. Name of the injection formation: Wolfcamp, Cisco, and Canyon Formations

3. Name of Field or Pool (if applicable): Not applicable

4. Has the well ever been perforated in any other zones(s)? List all such perforated intervals and give plugging detail, i.e., sacks of cement or plug(s) used. No

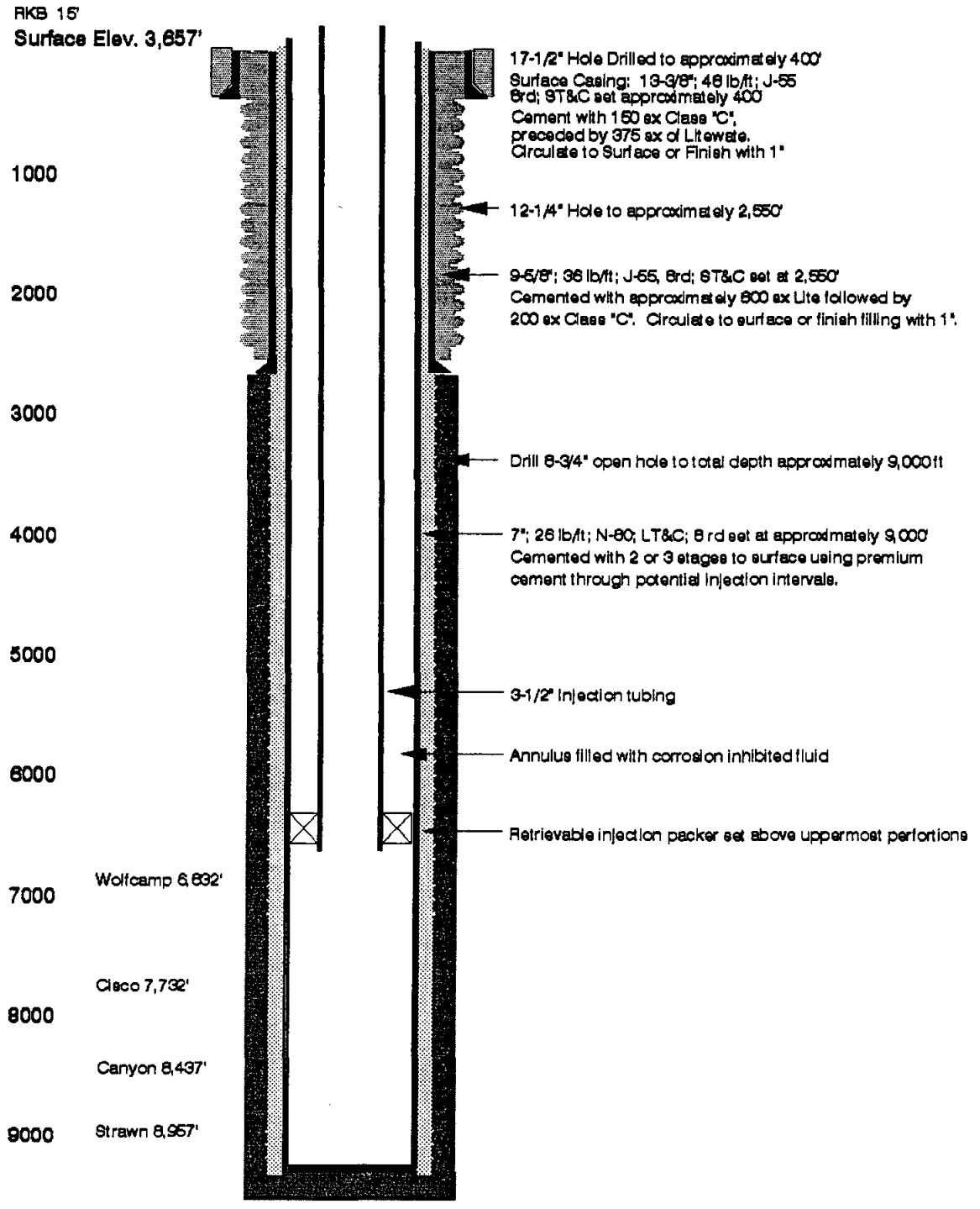
5. Give the names and depths of any over or underlying oil or gas zones (pools) in the area:

Within one mile: Yates (500 feet), Seven Rivers (600 feet), Grayburg (1600 feet to 1900 feet), San Andres (2000 feet), Abo (5400 feet to 6200 feet), and Morrow (9900 feet)

* Waiting on fluid analysis to determine corrosivity. Tubing or lining will be adjusted to address corrosion problems.

** Depends on injection interval selected.

Proposed Navajo Disposal Well No. 3



ATTACHMENT III-4

DRILLING AND COMPLETION PROCEDURE FOR PROPOSED WDW-2 AND WDW-3

ATTACHMENT III-4

DRILLING AND COMPLETION PROCEDURE FOR PROPOSED WDW-2 AND WDW-3

1. Obtain all permits and approvals for the installation of a Class I Nonhazardous injection well.

2. Build the location and all weather road. Dig and line drilling mud reserve pits.

3. Set approximately 50 feet of 20 inch conductor casing with auger rig. Grout the annulus to the surface with ready mix.

4. Mobilize all drilling equipment and install a flow line to the circulating tanks.

5. Drill a 17-1/2 inch hole to approximately 400 feet. Run open hole logs to determine the base of the USDW and caliper the open hole for cement volume determination.

6. Run 13-3/8 inch, 68 lb/ft, H-40 casing to total depth. Cement the casing to the surface with a low density lead cement followed by 100 sacks of premium cement. Cement volumes to be calculated on a minimum of 20% excess above the calipered hole volume.

7. Allow 24 hours for the cement to cure. If cement returns were not observed, run a temperature log after eight hours to determine the cement top. Finish filling the annulus with premium cement through 1 inch pipe lowered into the annulus.

8. Install a casinghead and blowout preventers, flow line, and solids control equipment. Drill a 12-1/4 inch hole to approximately 2550 feet. Maintain drilling fluid properties to minimize hole enlargement and salt dissolution and to maximize hole cleaning and penetration rate. Run open-hole wireline logs with a 4-arm caliper to determine required cement volumes. Run a cement bond log on the 13-3/8 inch casing.

9. Run 9-5/8 inch, 36 lb/ft, J-55 casing to 2550 feet. Cement the casing to surface with a low-density lead cement followed by 200 sacks of premium cement. Cement volumes to be calculated on a minimum of 20% excess above the calipered hole volume.

10. Allow 24 hours for the cement to cure. If cement returns were not observed, run a temperature log after eight hours to determine the cement top. Finish filling the annulus with premium cement through 1 inch pipe lowered into the annulus.

11. Install and test the blowout preventers. Pressure test the intermediate casing to 1500 psig for 30 minutes. Drill out the casing and drill an 8-3/4 inch hole to total depth (approximately 9000 feet). Cut 30-foot core in the injection zone as directed. Maintain drilling fluid properties to minimize hole enlargement and maximize hole cleaning and penetration rates.

12. At total depth, run open-hole wireline logs to evaluate potential injection intervals and determine the amount of cement required to fill the casing/open-hole annulus.

13. Determine from drilling conditions, hole conditions, and electric logs whether to use a 2-stage or a 3-stage cement procedure. Run 7 inch, 26 lb/ft, N-80, LT&C casing to total depth. Run a cement bond log on the intermediate casing. Cement the annulus as determined from total depth to surface.

14. Demobilize all drilling equipment and begin the cleanup of reserve pits and the location.

15. Mobilize completion equipment. Pick up a bit and a work string. Test the casing above the stage tool to 2000 psi for 30 minutes. Drill out the stage tool and clean out the well to bottom. Retest the casing to 2000 psi for 30 minutes.

16. Run a baseline casing inspection log and a cement bond log over the long-string casing. Perforate, stimulate, and test the desired injection intervals.

17. Run injection tubing with a retrievable packer set above the uppermost perforated interval. Conduct mechanical integrity testing, as required.

18. Secure the well, install surface equipment, and prepare for injection service upon receipt of a permit to inject nonhazardous industrial waste.

ATTACHMENT III-5

CLOSURE PLAN

ATTACHMENT III-5

CLOSURE PLAN

Plug and Abandonment Procedures

The balance plug method will be employed to plug and abandon the wells. This technique involves displacing the cement through a work string which has been run into the casing. The cement slurry is pumped down the work string and up the annulus to a calculated height which would balance the cement inside and outside the work string. Then the work string is slowly pulled out of the cement leaving a solid uniform plug.

Heavy drilling mud is placed between the cement plugs. This mud establishes a hydrostatic gradient that will exceed the static bottom-hole pressure at the time of plugging and any anticipated pressures which would result from future injection activity in these particular formations.

Finally, after all cement plugs are set, the well casings will be cut off 3 feet below grade and capped by welding a 1/2 inch steel plate to the outermost casing string.

The plugging and abandonment plan is described as follows:

1. Submit Form C-103 to notify the OCD of the proposed plugging plan.
2. Prepare the well and location for plugging. Remove the wellhouse (if present), well monitoring equipment, and wellhead injection piping.
3. Move in and rig up the well service unit with BOP equipment and a 2-7/8 inch work string.
4. Remove the wellhead and install the BOP equipment and stripper head.
5. Unlatch the seal assembly from the packer and displace annular fluid by flushing annulus with brine.
6. Trip out of the hole laying down the injection tubing.
7. Pick up the 2-7/8 inch work string and packer retrieving tool and unseat the packer. Trip out of the hole with the packer.
8. Pick up and run a wireline set cast iron bridge plug to the top of the injection zone at approximately 7450 feet. Rig down the wireline unit.
9. Trip in hole to 7450 feet and displace wellbore with heavy mud.
10. Set the 2-7/8 inch work string to 7450 feet.

11. Rig up cement service equipment. Cement shall be densified Class "H" (or comparable), weighing 16.4 pounds/gallon. Pressure test the surface lines as required.
12. Spot sufficient Class "H" (or comparable) cement slurry to develop a cumulative 100-foot column (minimum). Pull the tubing up 200 feet and reverse out excess cement. Catch a sample of cement to check curing time and compressive strength. Allow the cement to set overnight (eight-hour minimum) before tagging top of plug to confirm proper setup and location. Pressure test the plug to the pressure recommended by the OCD. If cement is set adequately, proceed to Step 13. Otherwise, spot additional cement on top of the first plug, as before, to achieve a cumulative 100-foot cement plug. Allow cement to set for a longer period, if necessary.
13. Displace the casing with heavy mud from top of plug to 2600 feet (50 feet below the base of the intermediate casing).
14. Pull tubing up to 2600 feet. Place densified Class "H" (or comparable) cement plug from 2600 feet to 2500 feet. Pull the tubing up 200 feet and reverse out excess cement. Shut down for eight hours, or as required; then, tag the plug to confirm location. Pressure test the plug.
15. Displace the casing with heavy mud from 2500 feet to 450 feet. (50 feet below the base of the surface casing).
16. Pull the tubing up to 450 feet. Place densified Class "H" (or comparable) cement plug from 450 feet to 350 feet. Pull the tubing up 200 feet and reverse out excess cement. Shut down for eight hours, or as required; then, tag the plug to confirm location. Pressure test the plug.
17. Displace the casing with heavy mud from 350 feet to 100 feet.
18. Pull the work string to 100 feet below the surface and spot 100 feet of densified Class "H" cement as the surface plug. Lay down remaining tubing and remove the bradenhead. Cut casing strings three feet below ground level.
19. Weld a 1/2 inch steel plate across the 9-5/8 inch casing. Inscribe on plate, in a permanent manner, the following information: (1) operator name, (2) closure date, and (3) well number.
20. Release all equipment and clean up the location.
21. Submit closure data to the TNRCC.

ATTACHMENT III-5

Estimated Cost to Plug and Abandon

Consultant	
Wellsite (8 days at $800/day)	$ 6,400.00
Preparation and Report	3,000.00
Workover Rig (8 days at $6000 day)	48,000.00
Mechanical Bridge	3,000.00
Welding	500.00
Cement	5,000.00
Mud (450 barrels at $15/barrel)	7,000.00
Procurement and Consultant Markup on Third-Party Charges (15%)	9,525.00
TOTAL (Rounded to Nearest $1000)	$83,000.00

IV. EXISTING PROJECT

Navajo submitted an application in March 1998 for permission to re-enter, test, recomplete a plugged and abandoned exploration well, the Mewbourne Oil Company Chalk Bluff 31 State No. 1 well. Pending successful well tests, Navajo proposes to convert the well to its effluent disposal well WDW-1. Navajo also intends to drill proposed WDW-2 and WDW-3. Proposed WDW-1, WDW-2, and WDW-3 will be used for the disposal of a nonhazardous aqueous waste stream by injection into porous intervals of the lower Wolfcamp Formation and the Cisco and Canyon Formations.

V. AREA OF REVIEW

A map that shows all non-freshwater wells within 2 miles of the proposed Class I wells is provided as Attachment V-1. Also shown on Attachment V-1 is the area of review (AOR), which consists of the area within 1 mile of the proposed Class I wells. The wells within the AOR are marked with map identification numbers (Map ID Nos.) that are keyed to the list of wells in Attachment VI-1.

The names and addresses of the leasehold operators of the active non-freshwater wells within 1 mile of the proposed Class I wells are provided in Attachment XIII-1. The leasehold operators were obtained from the Form C-104 (Request for Allowable and Authorization) that is on file with the Oil Conservation Division (OCD) for each active well within the 1-mile AOR.

All freshwater wells within 2 miles of the proposed injection wells are shown in Attachment V-2. The freshwater wells are keyed to the list of wells in Attachment XI-1.

ATTACHMENT V-1

NON-FRESHWATER WELLS IN THE AREA OF REVIEW

ATTACHMENT V-2

WATER WELLS IN THE VICINITY OF THE PROPOSED INJECTION WELLS

VI. INJECTION ZONE WELLS

VI.A Protocol for Identifying Wells

Search Protocol for Non-Freshwater Artificial Penetrations

As Navajo's agent, Envirocorp employed the services of Federal Abstract Company in the research and acquisition of data concerning non-freshwater wells. Federal Abstract understands the necessity for complete records and makes every diligent effort to complete this task. Envirocorp and Federal Abstract examined public and private sources of data to identify producing and abandoned oil and gas wells and disposal wells in the AOR.

The Oil Conservation Division (OCD) is the primary agency in which files are researched for oil and gas well records. The OCD is the state repository for oil and gas well and Class II well records, as the state regulatory authority for the oil and gas industry. In order to retrieve well records, the following general procedure is used for researching each well within a given area:

Map Review

Before the retrieval process can begin, it is necessary to know the operator, lease name, county in which the well is located, and the township, range, and section in which the well is found. This information is normally found on commercially prepared oil and gas base maps. Maps are produced by commercial firms, who obtained the data to build the oil and gas bases from "scout" tickets (completion information received from individual oil companies) in the early years and then, in later years, from the OCD itself. The commercial firms continually update the maps by plotting information filed by oil and gas operators with the OCD. Changes in the status of existing wells are noted, as well as information on new wells. Attachment V-1 is a modified version of the oil and gas base map provided by Midland Map Company, a recognized commercial supplier of oil and gas base maps for southeastern New Mexico.

Well Records Review

The OCD filing system is the best source of oil and gas well data in New Mexico. Microfiche and microfilm files of historical well records are searched as well as the hard copy files of well records not yet placed on microfilm. These files are organized by quarter-quarter section, township, and range.

Scout Tickets

Scout tickets were available for the wells in the AOR from Petroleum Information Dwights LLC. Information about nearly every well in the AOR was available, including some wells for which records were not available from the OCD.

VI.B Well Data Tabulations and Well Records

One hundred seventy-two (172) well locations have been identified within or slightly beyond one mile of proposed WDW-1, WDW-2, and WDW-3. The well locations are shown in Attachment V-1. A tabulation of total depth, status, and drill date for all of the wells in the one-mile AOR is provided in Attachment VI-1. Wells in Attachment VI-1 are identified with Map ID numbers that are keyed to the map in Attachment V-1.

One hundred fifty-seven (157) of the wells are documented to have been drilled to depths of less than 7450 feet, which coincides with the top of the injection zone in proposed WDW-1. The wells did not penetrate the proposed injection zone. These wells are:

Map ID Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 82, 84, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 121, 122, 123, 125, 126, 127, 128, 129, 130, 131, 133, 135, 136, 138, 139, 140, 141, 142, 143, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 158, 159, 160, 162, 163, 164, 165, 166, 168, 169, 170, 171, 172, and 173.

Six (6) well locations appear on Attachment V-1 for which well records could not be found in the files of the OCD and for which scout tickets were not available. All of these well locations are mis-plotted or duplicate locations. These locations appear only on a commercial base map prepared by the Midland Map Company (Attachment V-1). These locations do not appear on a commercial base map prepared by the Geomap Company or on the lease map prepared by Midland Map Company. A representative of Midland Map Company confirmed that five of the six well locations on the oil and gas base map, Map ID Nos. 85, 108, 119, 132, and 137, are duplicate locations for existing wells. The Midland Map representative stated that the locations

will be removed from the map. Map ID No. 30 is the incorrect, duplicate location plotted on the Midland Map base map for Map ID No. 14, the Arco Empire Abo Unit G No. 20 (formerly the Kersey Ramapo No. 5). The correct location of Map ID No. 14 is shown on the Midland Map lease map. The mis-plotted well locations are:

Map ID Nos. 30, 85, 108, 119, 132, and 137.

One (1) Map ID No., No. 120, was not used.

Nine (9) wells reached total depths of 7450 feet or greater and thus penetrated the proposed injection zone as it is defined in proposed WDW-1. Each of these wells is discussed in detail below. The wells that penetrated the injection zone are:

Map ID Nos. 59, 81, 83, 124, 134, 144, 157, 161, and 167.

Attachment VI-1 includes construction details, total depth, status, and drill date for the nine injection zone penetrations. Well records available from the OCD for these wells are provided in Attachment VI-2.

VI.C Well Schematics

Map ID Nos. 59, 81, 83, 124, 134, 144, 157, 161, and 167 penetrated the injection zone within one mile of proposed WDW-1, WDW-2, and WDW-3. Schematics of all plugged and abandoned wells within one mile of proposed WDW-1, WDW-2, and WDW-3 that penetrate the injection zone are included with the well records in Attachment VI-2. These are Map ID Nos. 59 and 157. Map ID No. 59 was the former Mewbourne Oil Company Chalk Bluff 31 State No. 1, which is proposed to be converted to the Navajo WDW-1, as discussed in Section III. A schematic of Map ID No. 167 is also provided, although it is currently completed as a shallow oil producer. No plugging inadequacies or potential problems are noted.

VI.D Condition of Artificial Penetrations

Each of the wells that penetrates the injection zone was evaluated to determine if it will allow movement of fluids into or between USDWs. For the purpose of this demonstration, the artificial penetrations may be categorized as follows:

Class II Saltwater Disposal Wells (1 well):

Map ID No. 83, the I&W Inc., Walter Solt SWD-1, is a Class II saltwater disposal well that is currently active. The well injects into the Wolfcamp in four sets of perforations: 7518 to 7534 feet, 7742 to 7756 feet, 7778 to 7787 feet, and 7810 to 7812 feet. The injection zone coincides with the shallowest formation proposed for injection by the proposed Navajo injection wells. The well has surface and intermediate or production casing set to prevent contamination of the USDW. The casing/formation annulus is cemented across the injection zone, as presented in Attachment VI-3. At the end of the well's useful life, the operator will plug and abandon the well according to OCD regulations with cement plugs set to protect the USDW and with heavy mud left in the wellbore. The Class II well in the AOR is listed below:

Map ID No. 83.

No corrective action is required for this well.

Active Producing Wells (6 wells):

Active producing wells include producing and shut-in oil and gas wells. The mechanical integrity of active producing wells is monitored by the OCD. These wells have surface and intermediate or production casing set to prevent contamination of the USDW. In all wells, except ID No. 161, the casing/formation annulus is cemented across the injection zone. In ID No. 161 the top of the annulus cement is calculated to occur at 7298 feet below ground level (BGL), which is above the top of the injection zone in ID No. 161, or at approximately 7374 feet. This information is presented in Attachment VI-3. At the end of the wells' useful lives, the operators will plug and abandon the wells according to OCD regulations with cement plugs set to protect the USDW and with heavy mud left in the wellbore. The active producing wells within the AOR are listed below:

Map ID Nos. 81, 124, 134, 144, 161, and 167.

No corrective action is required for these wells.

Plugged and Abandoned Producing Well (1 well):

Plugged and abandoned producing wells are former producing wells with surface and intermediate or production casing set that have been plugged with cement plugs and heavy mud. The cement plugs were placed between the injection zone and the USDWs. The plugged and abandoned producing well within the AOR is listed below:

Map ID No. 157.

No corrective action is required for this well.

Plugged and Abandoned Dry Hole (1 well):

Map ID No. 59 is a plugged and abandoned dry hole, the former Mewbourne Oil Company Chalk Bluff 31 State No. 1. Navajo proposes to convert this well to a Class I well, the Navajo WDW-1, as discussed in Section III.

VI.E Cone of Influence and Area of Review Determination

The cone of influence is defined here as the area within which increased injection zone pressures caused by injection of wastes would be sufficient to cause fluid movement through any well or other conduit into a USDW. This demonstration shows that the worst-case cone of influence of the proposed injection operations is smaller than the one-mile radius AOR in which artificial penetrations were investigated.

In the worst case, an undocumented abandoned well is imagined to be open to the injection zone and the USDW. In addition, the well is imagined to be filled to within 100 feet of the ground surface with formation brine from the injection zone and fresh water from the USDW. The cone of influence can be calculated by comparing the hydraulic heads of the injection zone and the lowermost USDW. It is only where the injection zone head is above the USDW head that fluid movement from the injection zone into the USDW could occur.

The injection zone for the proposed injection wells has a native pressure such that the resulting hydraulic head is lower than the head of the lowermost USDW. The pre-injection pressure of the injection interval, determined from drillstem test (DST)

No. 5 conducted on August 26, 1993, in proposed WDW-1 (Attachment VIII-9), was 2851 psia at 7817 feet below kelly bushing (BKB) or 7803 feet below ground level (BGL). The salinity of the formation fluid retrieved during DST No. 5 was reported in Attachment VIII-9 as a chlorides concentration of 25,000 ppm. The formation fluid is therefore assumed to have a sodium chloride concentration of 25,000 ppm. The specific gravity of such a fluid is approximately 1.02. The corresponding pre-injection pressure, P_i, at the top of the injection zone in proposed WDW-1 at 7450 feet BKB or 7436 feet BGL, is 2683 psia, as calculated below, based on a formation fluid specific gravity of 1.02:

$$\begin{aligned} P_i(7436 \text{ feet}) &= P_i(7803 \text{ feet}) - (7803 \text{ feet} - 7436 \text{ feet})\ (0.433 \text{ psi/ft})\ (1.02) \\ &= 2851 \text{ psia} - 162 \text{ psi} \\ &= 2689 \text{ psia} \end{aligned}$$

The critical pressure, P_c, at 7436 feet BGL that would be necessary to raise the hydrostatic head of the injection interval to the height of the USDW head at 100 feet BGL is 3237 psia, as calculated below:

P_c = (Top of Injection Zone - Base of USDW) (0.433 psi/ft)(1.02) + (Base of USDW - Head of USDW) (0.433 psi/ft)

= (7436 feet - 493 feet) (0.433 psi/ft) (1.02) + (493 feet - 100 feet) (0.433 psi/ft)

3,066 170 psi

= 3237 psia

The critical increase in reservoir pressure, ΔP_c, above the native pressure, that is necessary to raise the hydrostatic head of the injection interval to the height of the USDW head is, therefore, 548 psi, as calculated below:

$$\begin{aligned} \Delta P_c &= P_c - P_i \\ &= 3237 \text{ psia} - 2689 \text{ psia} \\ &= 548 \text{ psi} \end{aligned}$$

An increase in reservoir pressure greater than 548 psi would be sufficient to raise the head of the injection zone above the head of the USDW. The cone of influence is the area around the injection wells within which the increase in reservoir pressure caused by injection is greater than 548 psi.

Contour plots of the predicted pressure increase in the injection zone (Attachment VI-5) were generated using the maximum injection rates proposed for WDW-1, WDW-2, and WDW-3 in Section VII. A Visual Basic program, PREDICTW, was used to calculate the pressure increase throughout the injection zone at the end of 20 years of injection into the proposed wells. The theoretical basis for PREDICTW is discussed in Attachment VI-6. The gridded pressure increases created by PREDICTW are contoured using SURFER, a commercial contouring software package.

Conservative values were used to overestimate the predicted increase in reservoir pressure. The reservoir was assumed to have a thickness of 85 feet, which is 85% of the thickness that is expected to have porosity greater than 10%, based on data presented in Section VIII.A. The permeability of the reservoir was assumed to be 250 md, which is 42% of the permeability of the Cisco interval that was tested by DST No. 5 in proposed WDW-1, as discussed in Section VIII.A. The porosity was assumed to be 10%.

The viscosity of the formation fluid with TDS concentration of 25,000 ppm at 130°F is 0.53 cp (Attachment VI-7). The compressibility of the pore volume of the formation (Canyon Reef as shown on Attachment VI-8), c_r, is 5.5×10^{-6} psi^{-1}. The compressibility of the formation fluid (distilled water as shown on Attachment VI-8), c_w, is 2.9×10^{-6} psi^{-1}. The total compressibility ($c_t = c_r + c_w$) is 8.4×10^{-6} psi^{-1}.

Proposed WDW-1, WDW-2, and WDW-3 are modeled as injecting for 20 years at a maximum total rate of 1000 gallons per minute (gpm) distributed among the three wells. The maximum per-well injection rate modeled is 500 gpm for 20 years.

The I & W, Inc. Walter Solt SWD-1 (Map ID No. 83), a Class II well, injects into the lower Wolfcamp through four sets of perforations between 7518 and 7812 feet. Historical injection records available from the OCD for 1994 through 1997 indicate that the average injection rate is 17.6 gpm. This rate is used for the historical injection period from June 1, 1988, through June 30, 1998. For the future injection period, July 1, 1998, through June 30, 2018, the Walter Solt SWD-1 is expected to inject at 58.3 gpm, or 2000 barrels per day (bpd), the maximum rate requested by the original permit application for the Walter Solt SWD-1.

The 548-psi pressure-increase contour, which defines the outline of the worst-case cone of influence, is located less than one mile from proposed WDW-1, WDW-2, and

WDW-3, as shown in Attachment VI-5. An improperly abandoned wellbore or other conduit filled with formation fluid that is located farther than one mile from the proposed wells would not transmit sufficient pressure from the injection zone to move fluids into the USDW. Navajo researched public and private sources of information about wells within the one-mile AOR. Only nine of 166 wells drilled in the AOR penetrated the injection zone. Information was presented in Section VI.D that demonstrates that each of the nine injection zone penetrations is properly constructed to prevent migration of fluids into the USDW.

ATTACHMENT VI-1

CONSTRUCTION DATA FOR WELLS WITHIN 1 MILE OF THE PROPOSED INJECTION WELLS

ATTACHMENT VI-1

CONSTRUCTION DATA FOR WELLS WITHIN 1 MILE OF THE PROPOSED INJECTION WELLS

ID NO.	OPERATOR/LEASE	TYPE	TOTAL DEPTH (ft)	CASING			DATE COMPLETED OR PLUGGED	PLUGGING		MUD DATA		REMARKS
				DIAMETER (in)	DEPTH (ft)	SX OF CEMENT		DEPTH (ft)	SX OF CEMENT	FILLED (Y/N)	MUD WEIGHT (lb/gal)	
1	E. L. Fulton State No. 1 36-17S-27E Unit A	Active Oil	528				8/30/41					
2	Delhi Oil Corp. State No. 13 36-17S-27E Unit A	P&A Dry	1993				6/24/48					
3	J. E. Bedingfield Delhi No. 7 36-17S-27E Unit A	Active Oil	540				4/21/50					
4	Barney Cockburn Bedingfield-State No. 2 36-17S-27E Unit G	Active Oil	1736				12/6/47					
5	J. E. Bedingfield Unit G No. 2 36-17S-27E Unit G	Active Oil	532				3/6/49					
6	Barney Cockburn B. S. No. 5 36-17S-27E Unit G	Active SWD	1733				3/23/49					
7	E. L. Fulton Conklin-State No. 1 36-17S-27E Unit G	Active Oil	533				1/10/42					

ATTACHMENT VI-1 (Continued)

CONSTRUCTION DATA FOR WELLS WITHIN 1 MILE OF THE PROPOSED INJECTION WELLS

ID NO.	OPERATOR/LEASE	TYPE	TOTAL DEPTH (ft)	CASING			DATE COMPLETED OR PLUGGED	PLUGGING		MUD DATA		REMARKS
				DIAMETER (in)	DEPTH (ft)	SX OF CEMENT		DEPTH (ft)	SX OF CEMENT	FILLED (Y/N)	MUD WEIGHT (lb/gal)	
8	S & A Oil Co. Gates-State No. 1 36-17S-27E Unit H	Active Oil	557				8/4/50					
9	Guy Stevenson Gates-State No. 2 36-17S-27E Unit H	Active Oil	551				10/10/52					
10	Barney Cockburn Cockburn-Homan No. 1 36-17S-27E Unit H	Active Shut In	1804				6/20/49					
11	Kersey & Co. State No. 1 36-17S-27E Unit I	P&A Oil	590				10/28/41					
12	Kersey & Company Ramapo No. 3 36-17S-27E Unit I	P&A Oil	1857				1/3/50					
13	Kersey & Co. Ramapo No. 2 36-17S-27E Unit I	P&A Oil	1900				5/7/48					
14	Kersey & Co. Ramapo No. 5 36-17S-27E Unit I	P&A Oil	5980				8/24/61					

ATTACHMENT VI-1 (Continued)

CONSTRUCTION DATA FOR WELLS WITHIN 1 MILE OF THE PROPOSED INJECTION WELLS

ID NO.	OPERATOR/LEASE	TYPE	TOTAL DEPTH (ft)	CASING			DATE COMPLETED OR PLUGGED	PLUGGING		MUD DATA		REMARKS
				DIAMETER (in)	DEPTH (ft)	SX OF CEMENT		DEPTH (ft)	SX OF CEMENT	FILLED (Y/N)	MUD WEIGHT (lb/gal)	
15	William P. Dooley Ramapo No. 3 36-17S-27E Unit J	Active Oil	591				2/13/42					
16	Martin Yates, III William P. Dooley No. 2 36-17S-27E Unit J	Active Oil	1790				2/27/48					
17	Martin Yates III Dooley-State No. 3 36-17S-27E Unit J	Unknown	5865				4/22/61					Scout ticket only.
18	Martin Yates, III Dooley-State Abo No. 2 36-17S-27E Unit J	Active Inj. Gas	5970				2/26/61					
19	Martin Yates, III William P. Dooley No. 4 36-17S-27E Unit K	Active Oil	1747				2/3/49					
20	William P. Dooley Ramapo No. 2 36-17S-27E Unit K	Active Oil	514				5/15/47					
21	Martin Yates, III William P. Dooley No. 1 36-17S-27E Unit K	Active SWD	1710				1/20/48					

ATTACHMENT VI-1 (Continued)

CONSTRUCTION DATA FOR WELLS WITHIN 1 MILE OF THE PROPOSED INJECTION WELLS

ID NO.	OPERATOR/LEASE	TYPE	TOTAL DEPTH (ft)	CASING			DATE COMPLETED OR PLUGGED	PLUGGING		MUD DATA		REMARKS
				DIAMETER (in)	DEPTH (ft)	SX OF CEMENT		DEPTH (ft)	SX OF CEMENT	FILLED (Y/N)	MUD WEIGHT (lb/gal)	
22	L. Texas Enterprises South Red Lake Grayburg Unit No. 43 36-17S-27E Unit K	Active Oil	1785				12/11/81					
23	Martin Yates, III Dooley-State Abo No. 3 36-17S-27E Unit K	Active Oil	5865				4/19/61					
24	William P. Dooley Ramapo No. 1 36-17S-27E Unit K	Active Oil	510				10/16/41					
25	William P. Dooley Ramapo No. 4 36-17S-27E Unit N	Active Oil	541				9/29/42					
26	Martin Yates, III William P. Dooley No. 3 36-17S-27E Unit N	Active SWD	1812				4/16/48					
27	Martin Yates, III Dooley-State Abo No. 1 36-17S-27E Unit N	Active Oil/Gas	5925				2/2/60					
28	Burnham Oil Co. State B-6961 No. 1-A 36-17S-27E Unit O	P&A Oil	1500				5/13/47					

ATTACHMENT VI-1 (Continued)

CONSTRUCTION DATA FOR WELLS WITHIN 1 MILE OF THE PROPOSED INJECTION WELLS

ID NO.	OPERATOR/LEASE	TYPE	TOTAL DEPTH (ft)	CASING			DATE COMPLETED OR PLUGGED	PLUGGING		MUD DATA		REMARKS
				DIAMETER (in)	DEPTH (ft)	SX OF CEMENT		DEPTH (ft)	SX OF CEMENT	FILLED (Y/N)	MUD WEIGHT (lb/gal)	
29	Gulf Oil Corp. Eddy State I (NCT-C) No. 1 36-17S-27E Unit O	Active Inj. Gas	6200				9/8/59					
30	36-17S-27E Unit P	NA	NA				NA					Mis-plotted location. Duplicate location for Map ID No. 14.
31	Kersey & Co. Ramapo No. 4 36-17S-27E Unit P	Active Oil/Gas	6013				5/16/60					
32	J. E. Bedingfield Blake-State No. 1 30-17S-28E Unit P	Active Oil	615				3/7/53					
33	J. E. Bedingfield and Malco, Resler & Yates State No. 1 31-17S-28E Unit A	P&A Oil	2004				7/15/52					
34	Charles Powell Powco State No. 1 31-17S-28E Unit B	Active Oil	652				11/15/75					
35	J. E. Bedingfield Delhi-State No. 1 31-17S-28E Unit B	P&A Oil	637				12/23/52					

ATTACHMENT VI-1 (Continued)

CONSTRUCTION DATA FOR WELLS WITHIN 1 MILE OF THE PROPOSED INJECTION WELLS

ID NO.	OPERATOR/LEASE	TYPE	TOTAL DEPTH (ft)	CASING			DATE COMPLETED OR PLUGGED	PLUGGING		MUD DATA		REMARKS
				DIAMETER (in)	DEPTH (ft)	SX OF CEMENT		DEPTH (ft)	SX OF CEMENT	FILLED (Y/N)	MUD WEIGHT (lb/gal)	
36	Hegwer Drilling Co. Powco State No. 2 31-17S-28E Unit B	Active Oil	747				7/15/86					
37	The Astins State No. 1 31-17S-28E Unit D	Unknown	531				06/23/42					Scout ticket only.
38	Aston & Fair State 31 No. 1X 31-17S-28E Unit D	Active Shut In	525				1/5/46					
39	C. T. McLaughlin Bedingfield State 1 No. 1 31-17S-28E Unit D	P&A Oil	2307				2/16/50					
40	David C. Saikin B-5862 Hudson No. 1 31-17S-28E Unit E	Active Oil	1816				5/29/48					
41	Metex Pipe & Supply Hudson-Saikin No. 2 31-17S-28E Unit E	Active Oil	1950				7/1/84					
42	Franklin, Aston & Fair, Inc. State F No. 1 31-17S-28E Unit F	Active Oil	5971				6/7/60					

ATTACHMENT VI-1 (Continued)

CONSTRUCTION DATA FOR WELLS WITHIN 1 MILE OF THE PROPOSED INJECTION WELLS

ID NO.	OPERATOR/LEASE	TYPE	TOTAL DEPTH (ft)	CASING			DATE COMPLETED OR PLUGGED	PLUGGING		MUD DATA		REMARKS
				DIAMETER (in)	DEPTH (ft)	SX OF CEMENT		DEPTH (ft)	SX OF CEMENT	FILLED (Y/N)	MUD WEIGHT (lb/gal)	
43	Aston & Fair State No. Y-1 31-17S-28E Unit F	Active Oil	1926				5/8/48					
44	J. E. Bedingfield Malco State No. 1 31-17S-28E Unit G	Active Shut In	1852				10/12/53					
45	Pan American Petroleum Corp. State of New Mexico CC No. 1 31-17S-28E Unit G	Active Oil	6025				8/10/60					
46	Hondo Oil & Gas Co. State A No. 47 31-17S-28E Unit H	Active SWD	6180				9/23/65					
47	DEPCO, Inc. State 647 No. 213 31-17S-28E Unit I	Active Oil	1945				6/17/66					
48	Hondo-Western-Yates State A No. 9 31-17S-28E Unit I	Active Inj. Gas	6106				4/29/60					
49	Franklin, Aston & Fair, Inc. State AG No. 1 31-17S-28E Unit J	Active Oil	1937				12/23/62					

ATTACHMENT VI-1 (Continued)

CONSTRUCTION DATA FOR WELLS WITHIN 1 MILE OF THE PROPOSED INJECTION WELLS

ID NO.	OPERATOR/LEASE	TYPE	TOTAL DEPTH (ft)	CASING			DATE COMPLETED OR PLUGGED	PLUGGING		MUD DATA		REMARKS
				DIAMETER (in)	DEPTH (ft)	SX OF CEMENT		DEPTH (ft)	SX OF CEMENT	FILLED (Y/N)	MUD WEIGHT (lb/gal)	
50	Pan American Petroleum Corp. State of New Mexico BJ No. 2 31-17S-28E Unit J	Active Oil	6094				3/13/60					
51	Pan American Petroleum Corp. State BM No. 1 31-17S-28E Unit K	Active Inj. Gas	6046				4/10/60					
52	Barney Cockburn Ramapo-State No. 2 31-17S-28E Unit L	Active Oil	1996				7/16/55					
53	Pan American Petroleum Corp. State BE No. 2 31-17S-28E Unit L	Active Oil	5971				4/29/60					
54	Barney Cockburn Ramapo-State No. 1 31-17S-28E Unit M	Active Oil	1975				5/1/48					
55	Pan American Petroleum Corp. State BE No. 1 31-17S-28E Unit M	Active Inj. Gas	6006				1/31/60					
56	Pan American Petroleum Corp. State BD No. 1 31-17S-28E Unit N	Active Oil	6050				1/22/60					

ATTACHMENT VI-1 (Continued)

CONSTRUCTION DATA FOR WELLS WITHIN 1 MILE OF THE PROPOSED INJECTION WELLS

ID NO.	OPERATOR/LEASE	TYPE	TOTAL DEPTH (ft)	CASING			DATE COMPLETED OR PLUGGED	PLUGGING		MUD DATA		REMARKS
				DIAMETER (in)	DEPTH (ft)	SX OF CEMENT		DEPTH (ft)	SX OF CEMENT	FILLED (Y/N)	MUD WEIGHT (lb/gal)	
57	Franklin, Aston & Fair, Inc. State AD No. 1 31-17S-28E Unit N	Active Oil	1938				3/1/63					
58	Otis A. Roberts Parker-State No. 1 31-17S-28E Unit O	P&A Dry	742				1/18/42					
59	Mewbourne Oil Company Chalk Bluff 31 State No. 1 Illinois Camp Morrow North Field 31-17S-28E Unit O	P&A Dry	10200	13-3/8	390	525	9/9/93 9/10/93 P&A	9734 8528 7866 6648 5520 3734 2350 - 2605 440 0-30	45 45 55 45 45 45 65 40 10	Y	9.2-9.8	Proposed Navajo Refining Company WDW-1.
60	Pan American Petroleum Corp. State BJ No. 1 31-17S-28E Unit O	Active Oil	6094				2/24/60					
61	DEPCO, Inc. State 647 No. 219 31-17S-28E Unit P	Active SWD	2012				5/8/67					

ATTACHMENT VI-1 (Continued)

CONSTRUCTION DATA FOR WELLS WITHIN 1 MILE OF THE PROPOSED INJECTION WELLS

ID NO.	OPERATOR/LEASE	TYPE	TOTAL DEPTH (ft)	CASING			DATE COMPLETED OR PLUGGED	PLUGGING		MUD DATA		REMARKS
				DIAMETER (in)	DEPTH (ft)	SX OF CEMENT		DEPTH (ft)	SX OF CEMENT	FILLED (Y/N)	MUD WEIGHT (lb/gal)	
62	Hondo-Western-Yates State A No. 5 31-17S-28E Unit P	Active Oil	6122				3/12/60					
63	J. E. Bedingfield Aston-State No. 1 32-17S-28E Unit D	P&A Dry	651				5/12/53					
64	Pan American Petroleum Corp. State BV No. 1 32-17S-28E Unit E	Active Inj. Gas	6013				9/13/60					
65	Sinclair Oil & Gas Co. State Eddy 32 No. 2 32-17S-28E Unit F	Active Oil	6171				8/24/60					
66	International-Yates State 647 No. 211 32-17S-28E Unit K	Active Oil	2003				6/8/66					
67	Hondo-Western-Yates State A No. 7 32-17S-28E Unit K	Active Oil	6083				3/27/60					
68	International-Yates State 647 No. 208 32-17S-28E Unit L	Active SWD	1930				5/15/66					

ATTACHMENT VI-1 (Continued)

CONSTRUCTION DATA FOR WELLS WITHIN 1 MILE OF THE PROPOSED INJECTION WELLS

ID NO.	OPERATOR/LEASE	TYPE	TOTAL DEPTH (ft)	CASING			DATE COMPLETED OR PLUGGED	PLUGGING		MUD DATA		REMARKS
				DIAMETER (in)	DEPTH (ft)	SX OF CEMENT		DEPTH (ft)	SX OF CEMENT	FILLED (Y/N)	MUD WEIGHT (lb/gal)	
69	Hondo-Western-Yates State A No. 8 32-17S-28E Unit L	Active Oil	6075				4/13/60					
70	DEPCO, Inc. State 647 No. 220 32-17S-28E Unit M	Active SWD	1998				5/9/67					
71	Hondo-Western-Yates State A No. 4 32-17S-28E Unit M	Active Oil	6132				3/5/60					
72	DEPCO, Inc. State 647 No. 212 32-17S-28E Unit N	Active SWD	1954				6/17/66					
73	Hondo-Western-Yates State A No. 3 32-17S-28E Unit N	Active Oil	6172				2/14/60					
74	Atlantic Richfield Co. Empire Abo Unit H No. 261 32-17S-28E Unit N	Active Oil	6220				7/25/75					
75	Atlantic Richfield Company Empire Abo Unit H No. 272 32-17S-28E Unit O	Active Oil	6370				7/18/77					

ATTACHMENT VI-1 (Continued)

CONSTRUCTION DATA FOR WELLS WITHIN 1 MILE OF THE PROPOSED INJECTION WELLS

ID NO.	OPERATOR/LEASE	TYPE	TOTAL DEPTH (ft)	CASING			DATE COMPLETED OR PLUGGED	PLUGGING		MUD DATA		REMARKS
				DIAMETER (in)	DEPTH (ft)	SX OF CEMENT		DEPTH (ft)	SX OF CEMENT	FILLED (Y/N)	MUD WEIGHT (lb/gal)	
76	Pan American Petroleum Corp. State BK No. 1 5-18S-28E Unit C	Active Oil	6254				7/18/60					
77	Atlantic Richfield Co. Empire Abo Unit I No. 261 5-18S-28E Unit C	Active Oil	6350				1/4/79					
78	Pan American Petroleum Corp. State BN No. 1 5-18S-28E Unit D	Active Oil	6273				3/27/60					
79	Atlantic Richfield Co. Empire Abo Unit I No. 251 5-18S-28E Unit D	Active Oil	6250				1/12/79					
80	Signal Oil and Gas Co. State No. 1-E 5-18S-28E Unit E	Active Oil	6265				5/10/60					
81	Phillips Oil Company Illinois Camp A Com No. 1 Empire Penn Gas Field 5-18S-28E Unit E	Active Gas	10450	13-3/8 8-5/8 5-1/2 2-7/8	663 4000 10450 9922	650 1400 2007	8/10/83	NA	NA	NA	NA	Perfs: 10172 - 10184 feet 10070 - 10075 feet
82	Leonard Oil Co. State E-2715 No. 2 5-18S-28E Unit F	Active Oil	6265				12/30/59					

ATTACHMENT VI-1 (Continued)

CONSTRUCTION DATA FOR WELLS WITHIN 1 MILE OF THE PROPOSED INJECTION WELLS

ID NO.	OPERATOR/LEASE	TYPE	TOTAL DEPTH (ft)	CASING			DATE COMPLETED OR PLUGGED	PLUGGING		MUD DATA		REMARKS
				DIAMETER (in)	DEPTH (ft)	SX OF CEMENT		DEPTH (ft)	SX OF CEMENT	FILLED (Y/N)	MUD WEIGHT (lb/gal)	
83	Metek Pipe & Supply (original) I&W, Inc. Walter Solt State No. 1 5-18S-28E Unit L	Active SWD	8500	13-3/8 8-5/8 5-1/2 2-7/8	354 1745 8466 7500	350 650 520	8/12/83	NA	NA	NA	NA	Perfs: 7518 - 7534 feet 7632 - 7642 feet (cemented) 7742 - 7756 feet 7778 - 7787 feet 7810 - 7812 feet
84	Robert G. Hanagan Graridge-State No. 1 5-18S-28E Unit L	Active Shut In	6365				8/25/63					
85	5-18S-28E Unit M	NA	NA				NA					Mis-plotted location. Not a well per Midland Map Company representative.
86	SDX Resources S. A. Solt No. 4 5-18S-28E Unit M	Active Oil	2850				7/23/96					
87	DEPCO, Inc. State 647 No. 216 6-18S-28E Unit A	Active Oil	3280				3/14/67					
88	Hondo-Western-Yates State A No. 2 6-18S-28E Unit A	Active Oil	6241				2/29/60					

ATTACHMENT VI-1 (Continued)

CONSTRUCTION DATA FOR WELLS WITHIN 1 MILE OF THE PROPOSED INJECTION WELLS

ID NO.	OPERATOR/LEASE	TYPE	TOTAL DEPTH (ft)	CASING			DATE COMPLETED OR PLUGGED	PLUGGING		MUD DATA		REMARKS
				DIAMETER (in)	DEPTH (ft)	SX OF CEMENT		DEPTH (ft)	SX OF CEMENT	FILLED (Y/N)	MUD WEIGHT (lb/gal)	
89	Resler and Sheldon State No. 1 6-18S-28E Unit B	Active Inj. Gas	6194				12/21/59					
90	Atlantic Richfield Co. Empire Abo Unit I No. 231 6-18S-28E Unit B	Active Oil	6250				11/1/75					
91	Pan American Petroleum Corp. State BB No. 3 6-18S-28E Unit C	Active Oil	6033				12/29/59					
92	Atlantic Richfield Co. Empire Abo Unit J No. 231 6-18S-28E Unit G	Active Oil	6380				10/22/75					
93	Hondo Oil & Gas Co. State EA No. 1 6-18S-28E Unit D	Active Oil	6119				12/30/59					
94	ARCO Oil and Gas Co. Empire Abo Unit J No. 213 6-18S-28E Unit E	Active Oil	6225				6/2/80					
95	Pan American Petroleum Corp. State BB No. 1 6-18S-28E Unit E	Active Oil	6202				10/30/59					

ATTACHMENT VI-1 (Continued)

CONSTRUCTION DATA FOR WELLS WITHIN 1 MILE OF THE PROPOSED INJECTION WELLS

ID NO.	OPERATOR/LEASE	TYPE	TOTAL DEPTH (ft)	CASING			DATE COMPLETED OR PLUGGED	PLUGGING		MUD DATA		REMARKS
				DIAMETER (in)	DEPTH (ft)	SX OF CEMENT		DEPTH (ft)	SX OF CEMENT	FILLED (Y/N)	MUD WEIGHT (lb/gal)	
96	Atlantic Richfield Co. Empire Abo Unit J No. 214 6-18S-28E Unit E	Active Oil	6267				12/28/78					
97	Atlantic Richfield Co. Empire Abo Unit J No. 211 6-18S-28E Unit E	Active Oil	6200				2/11/75					
98	Atlantic Richfield Co. Empire Abo Unit J No. 222 6-18S-28E Unit F	Active Oil	6303				3/13/77					
99	David C. Saikin & Henry F. Oliver State No. 1 6-18S-28E Unit F	P&A Dry	705				2/21/42					
100	Franklin, Aston & Fair, Inc. State AB No. 1 6-18S-28E Unit F	Active Oil	1985				8/8/63					
101	Pan American Petroleum Corp. State BB No. 2 6-18S-28E Unit F	Active Oil	6206				11/26/59					
102	Atlantic Richfield Co. Empire Abo Unit J No. 223 6-18S-28E Unit F	Active Inj. Gas	6250				5/19/78					

ATTACHMENT VI-1 (Continued)

CONSTRUCTION DATA FOR WELLS WITHIN 1 MILE OF THE PROPOSED INJECTION WELLS

ID NO.	OPERATOR/LEASE	TYPE	TOTAL DEPTH (ft)	CASING			DATE COMPLETED OR PLUGGED	PLUGGING		MUD DATA		REMARKS
				DIAMETER (in)	DEPTH (ft)	SX OF CEMENT		DEPTH (ft)	SX OF CEMENT	FILLED (Y/N)	MUD WEIGHT (lb/gal)	
103	Atlantic Richfield Co. Empire Abo Unit J No. 221 6-18S-28E Unit F	Active Oil	6305				4/23/76					
104	ARCO Oil and Gas Co. Empire Abo Unit J No. 235 6-18S-28E Unit G	Active Oil	6300				7/8/79					
105	Atlantic Richfield Co. Empire Abo Unit J No. 234 6-18S-28E Unit G	Active Oil	6260				8/27/78					
106	Hondo-Western-Yates State A No. 1 6-18S-28E Unit G	Active Oil	6242				1/26/60					
107	Atlantic Richfield Co. Empire Abo Unit J No. 232 6-18S-28E Unit G	Active Oil	6345				4/13/76					
108	6-18S-28E Unit G	NA	NA				NA					Mis-plotted location. Not a well per Midland Map Company's representative.
109	Atlantic Richfield Co. Empire Abo Unit J No. 233 6-18S-28E Unit G	Active Oil	6300				6/5/78					

ATTACHMENT VI-1 (Continued)

CONSTRUCTION DATA FOR WELLS WITHIN 1 MILE OF THE PROPOSED INJECTION WELLS

ID NO.	OPERATOR/LEASE	TYPE	TOTAL DEPTH (ft)	CASING			DATE COMPLETED OR PLUGGED	PLUGGING		MUD DATA		REMARKS
				DIAMETER (in)	DEPTH (ft)	SX OF CEMENT		DEPTH (ft)	SX OF CEMENT	FILLED (Y/N)	MUD WEIGHT (lb/gal)	
110	Hondo-Western-Yates State A No. 6 6-18S-28E Unit H	Active Oil	6253				3/24/60					
111	ARCO Oil and Gas Co. Empire Abo Unit J No. 241 6-18S-28E Unit H	Active Oil	6386				4/12/81					
112	Hondo-Western-Yates State A No. 30 6-18S-28E Unit I	Active Oil	6350				8/24/60					
113	Atlantic Richfield Co. Empire Abo Unit J No. 232 6-18S-28E Unit J	Active Shut In	6350				2/5/79					
114	Barney Cockburn State No. 1 6-18S-28E Unit J	P&A Dry	2095				8/15/49					
115	Sunray Mid-Continent Oil Co. N. M. State T No. 1 6-18S-28E Unit J	Active Oil	6179				5/23/79					
116	Atlantic Richfield Co. Empire Abo Unit K No. 231 6-18S-28E Unit J	Active Oil	6350				8/13/78					

ATTACHMENT VI-1 (Continued)

CONSTRUCTION DATA FOR WELLS WITHIN 1 MILE OF THE PROPOSED INJECTION WELLS

ID NO.	OPERATOR/LEASE	TYPE	TOTAL DEPTH (ft)	CASING			DATE COMPLETED OR PLUGGED	PLUGGING		MUD DATA		REMARKS
				DIAMETER (in)	DEPTH (ft)	SX OF CEMENT		DEPTH (ft)	SX OF CEMENT	FILLED (Y/N)	MUD WEIGHT (lb/gal)	
117	Miller Bros. Oil Co. Capital State No. 1 6-18S-28E Unit J	P&A Dry	2396				3/21/55					
118	Pan American Petroleum Corp. State BB No. 5 6-18S-28E Unit K	Active Oil	6210				2/22/60					
119	6-18S-28E Unit K	NA	NA				NA					Mis-plotted location. Not a well per Midland Map Company's representative.
120	Number Not Used.											Number Not Used.
121	Pan American Petroleum Corp. State BB No. 4 6-18S-28E Unit L	Active Oil	6194				1/23/60					
122	ARCO Oil and Gas Co. Empire Abo Unit K No. 211 6-18S-28E Unit L	Active Oil	6312				7/17/80					
123	Signal Oil and Gas Co. State No. 2-M 6-18S-28E Unit M	Active Oil	6225				10/21/60					

ATTACHMENT VI-1 (Continued)

CONSTRUCTION DATA FOR WELLS WITHIN 1 MILE OF THE PROPOSED INJECTION WELLS

ID NO.	OPERATOR/LEASE	TYPE	TOTAL DEPTH (ft)	CASING			DATE COMPLETED OR PLUGGED	PLUGGING		MUD DATA		REMARKS
				DIAMETER (in)	DEPTH (ft)	SX OF CEMENT		DEPTH (ft)	SX OF CEMENT	FILLED (Y/N)	MUD WEIGHT (lb/gal)	
124	Mewbourne Oil Company Chalk Bluff 6 State No. 1 North Illinois Camp Morrow 6-18S-28E Unit M	Active Gas	10200	13-3/8 9-5/8 7 4-1/2 2-3/8	400 2600 9445 9077 - 10198 9990	500 1100 1895 175	4/16/92	NA	NA	NA	NA	Perfs: 10084 - 10092 feet
125	Chambers & Kennedy Sunray Mid-Continent No. 1 6-18S-28E Unit N	Active Oil	6243				8/5/60					
126	Pan American Petroleum Corp. State CD No. 1 6-18S-28E Unit O	P&A Dry	6412				5/1/61					
127	Dickson Petroleum, Inc. Kimberly St. No. 1 6-18S-28E Unit P	P&A Dry	1750				12/30/85					
128	D. & H. Oil Co. State No. 1 6-18S-28E Unit P	P&A Dry	2246				5/13/52					
129	Pan American Petroleum Corp. Malco Refineries F No. 11 1-18S-27E Unit A	Active Oil	6118				11/5/59					

ATTACHMENT VI-1 (Continued)

CONSTRUCTION DATA FOR WELLS WITHIN 1 MILE OF THE PROPOSED INJECTION WELLS

ID NO.	OPERATOR/LEASE	TYPE	TOTAL DEPTH (ft)	CASING			DATE COMPLETED OR PLUGGED	PLUGGING		MUD DATA		REMARKS
				DIAMETER (in)	DEPTH (ft)	SX OF CEMENT		DEPTH (ft)	SX OF CEMENT	FILLED (Y/N)	MUD WEIGHT (lb/gal)	
130	Pan American Petroleum Corp. USA Malco Refineries F No. 6 1-18S-27E Unit B	Active Oil	6078				7/7/59					
131	Malco Refineries Hill No. 4 1-18S-27E Unit C	Unknown	1840				5/10/48					Scout ticket only.
132	1-18S-27E Unit C	NA	NA				NA					Mis-plotted location. Not a well per Midland Map Company's representative.
133	Pan American Petroleum Corp. USA Malco Refineries F No. 8 1-18S-27E Unit C	Active Inj. Gas	6173				9/16/59					
134	Mewbourne Oil Company Chalk Bluff Federal Com No. 2 North Illinois Camp Morrow 1-18S-27E Unit F	Active Gas	10140	13-3/8 9-5/8 5-1/2 2-7/8	416 2610 10148 9939	450 1025 1020	8/24/91	NA	NA	NA	NA	Perfs: 9999 - 10024 feet
135	Pan American Petroleum Corp. USA Malco Refineries F No. 4 1-18S-27E Unit F	Active Oil	6087				5/31/59					
136	Pan American Petroleum Corp. USA Malco Refineries F No. 7 1-18S-27E Unit G	Active Oil	6205				8/2/59					

ATTACHMENT VI-1 (Continued)

CONSTRUCTION DATA FOR WELLS WITHIN 1 MILE OF THE PROPOSED INJECTION WELLS

ID NO.	OPERATOR/LEASE	TYPE	TOTAL DEPTH (ft)	CASING			DATE COMPLETED OR PLUGGED	PLUGGING		MUD DATA		REMARKS
				DIAMETER (in)	DEPTH (ft)	SX OF CEMENT		DEPTH (ft)	SX OF CEMENT	FILLED (Y/N)	MUD WEIGHT (lb/gal)	
137	1-18S-27E Unit G	NA	NA				NA					Mis-plotted location. Not a well per Midland Map Company representative.
138	Atlantic Richfield Co. Empire Abo Unit J No. 191 1-18S-27E Unit G	Active Oil	6259				9/7/75					
139	Pan American Petroleum Corp. USA Malco Refineries F No. 9 1-18S-27E Unit H	Active Oil	6218				10/13/59					
140	Atlantic Richfield Co. Empire Abo Unit J No. 202 1-18S-27E Unit H	Active Inj. Gas	6296				5/13/76					
141	Atlantic Richfield Co. Empire Abo Unit J No. 203 1-18S-27E Unit H	Active Oil	6225				10/10/78					
142	Manhattan Oil Cronin No. 1 1-18S-27E Unit H	Unknown	2900				4/1/25 7/1/27					Scout ticket only.
143	Atlantic Richfield Co. Empire Abo Unit J No. 201 1-18S-27E Unit H	Active Oil	6225				7/19/75					

ATTACHMENT VI-1 (Continued)

CONSTRUCTION DATA FOR WELLS WITHIN 1 MILE OF THE PROPOSED INJECTION WELLS

ID NO.	OPERATOR/LEASE	TYPE	TOTAL DEPTH (ft)	CASING			DATE COMPLETED OR PLUGGED	PLUGGING		MUD DATA		REMARKS
				DIAMETER (in)	DEPTH (ft)	SX OF CEMENT		DEPTH (ft)	SX OF CEMENT	FILLED (Y/N)	MUD WEIGHT (lb/gal)	
144	Mewbourne Oil Company Chalk Bluff Federal Com No. 3 North Illinois Camp Morrow 1-18S-27E Unit I	Active Gas	10150	13-3/8 9-5/8 7 4-1/2 2-3/8	400 2600 8968 8600 - 10150 9972	100 250 1200 200	1/16/93	NA	NA	NA	NA	Perfs: 9950 - 9954 feet 9957 - 9972 feet
145	Humble Oil & Refining Co. Federal Empire Abo No. 2 1-18S-27E Unit I	Active Oil	6185				9/29/59					
146	Atlantic Richfield Co. Empire Abo Unit K No. 193 1-18S-27E Unit J	Active Oil	6225				10/26/78					
147	Humble Oil & Refining Co. Federal Empire Abo No. 1 1-18S-27E Unit J	Active Oil	6180				8/20/59					
148	Atlantic Richfield Co. Empire Abo Unit K No. 192 1-18S-27E Unit J	Active Oil	6250				6/25/78					
149	Atlantic Richfield Co. Empire Abo Unit K No. 191 1-18S-27E Unit J	Active Oil	6350				9/23/76					

ATTACHMENT VI-1 (Continued)

CONSTRUCTION DATA FOR WELLS WITHIN 1 MILE OF THE PROPOSED INJECTION WELLS

ID NO.	OPERATOR/LEASE	TYPE	TOTAL DEPTH (ft)	CASING			DATE COMPLETED OR PLUGGED	PLUGGING		MUD DATA		REMARKS
				DIAMETER (in)	DEPTH (ft)	SX OF CEMENT		DEPTH (ft)	SX OF CEMENT	FILLED (Y/N)	MUD WEIGHT (lb/gal)	
150	Atlantic Richfield Co. Empire Abo Unit K No. 194 1-18S-27E Unit J	Active Oil	6325				11/14/78					
151	Atlantic Richfield Co. Empire Abo Unit K No. 184 1-18S-27E Unit K	Active Oil	6200				7/25/78					
152	Atlantic Richfield Co. Empire Abo Unit K No. 183 1-18S-27E Unit K	Active Oil	6210				7/24/77					
153	Atlantic Richfield Co. Empire Abo Unit K No. 181 1-18S-27E Unit K	Active Oil	6203				10/30/75					
154	Pan American Petroleum Corp. USA Malco Refineries F No. 5 1-18S-27E Unit K	Active Oil	6163				5/22/59					
155	Atlantic Richfield Co. Empire Abo Unit K No. 182 1-18S-27E Unit K	Active Inj. Gas	6369				6/1/76					
156	Pan American Petroleum Corp. USA Malco Refineries F No. 12 1-18S-27E Unit N	Active Oil	6174				12/5/59					

ATTACHMENT VI-1 (Continued)

CONSTRUCTION DATA FOR WELLS WITHIN 1 MILE OF THE PROPOSED INJECTION WELLS

ID NO.	OPERATOR/LEASE	TYPE	TOTAL DEPTH (ft)	CASING			DATE COMPLETED OR PLUGGED	PLUGGING		MUD DATA		REMARKS
				DIAMETER (in)	DEPTH (ft)	SX OF CEMENT		DEPTH (ft)	SX OF CEMENT	FILLED (Y/N)	MUD WEIGHT (lb/gal)	
157	Mewbourne Oil Company Chalk Bluff Fed. Com No. 1 North Illinois Camp Morrow 1-18S-27E Unit N	P&A Gas	10120	13-3/8 9-5/8 7 4-1/2	400 2604 9450 9051 - 10119	425 1025 1350 175	3/7/91 5/25/91 P&A	7010 2650 450 0-50	8, CIBP 17 17 8	Y	Unknown	Perfs: 9936 - 9946 feet 9964 - 9967 feet Plugging data from Notice of Intent to Abandon filed 5/25/95.
158	Humble Oil & Refining Co. Empire ABO Federal No. 5 1-18S-27E Unit O	P&A Oil	6300				4/9/71					
159	Humble Oil & Refining Co. Federal Empire Abo No. 3 1-18S-27E Unit O	P&A SWD	6365				11/8/59					
160	Humble Oil & Refining Co. Federal Empire Abo No. 4 1-18S-27E Unit P	Active Oil	6250				12/2/61					
161	Mewbourne Oil Company Federal T No. 1 North Illinois Camp Morrow 12-18S-27E Unit A	Active Shut In	10141	13-3/8 8-5/8 5-1/2 4	472 2589 9473 10140 (liner)	450 900 430 80	9/13/90					
162	Collier Energy, Inc. Crossfire Federal No. 1 12-18S-27E Unit H	Active Oil	1652				9/11/85					

ATTACHMENT VI-1 (Continued)

CONSTRUCTION DATA FOR WELLS WITHIN 1 MILE OF THE PROPOSED INJECTION WELLS

ID NO.	OPERATOR/LEASE	TYPE	TOTAL DEPTH (ft)	CASING			DATE COMPLETED OR PLUGGED	PLUGGING		MUD DATA		REMARKS
				DIAMETER (in)	DEPTH (ft)	SX OF CEMENT		DEPTH (ft)	SX OF CEMENT	FILLED (Y/N)	MUD WEIGHT (lb/gal)	
163	Santa Rita Exploration Corp. Sun State No. 1 7-18S-28E Unit A	Active Oil	2502				3/28/84					
164	Santa Rita Exploration Corp. Sun State No. 2 7-18S-28E Unit B	P&A Dry	2000				12/10/84					
165	Fred Pool Drilling, Inc. Laurel State No. 1 7-18S-28E Unit C	Active Oil	1690				2/23/87					
166	Fred Pool Drilling, Inc. Laurel State No. 2 7-18S-28E Unit E	Active Oil	1690				11/10/88					
167	ARCO Oil & Gas Company Morexco, Inc. State BY No. 1 Artesia Q-GB-SA 7-18S-28E Unit F	Active Oil	10400	13-3/8 8-5/8 5-1/2 2-7/8	418 2600 10400 1706	500 1150 1000	6/10/85 12/20/95 Recompleted to Grayburg	10050 7050 5950 2600	35', CIBP 100' 100' 100'	Y	Unknown	Perfs: 10116 - 10124 feet (cemented) 1627 - 46 feet
168	Morexco, Inc. Tejon State No. 1 7-18S-28E Unit G	Unknown	2500				12/4/96					Scout ticket only.

ATTACHMENT VI-1 (Continued)

CONSTRUCTION DATA FOR WELLS WITHIN 1 MILE OF THE PROPOSED INJECTION WELLS

ID NO.	OPERATOR/LEASE	TYPE	TOTAL DEPTH (ft)	CASING			DATE COMPLETED OR PLUGGED	PLUGGING		MUD DATA		REMARKS
				DIAMETER (in)	DEPTH (ft)	SX OF CEMENT		DEPTH (ft)	SX OF CEMENT	FILLED (Y/N)	MUD WEIGHT (lb/gal)	
169	Marbob Energy Corp. West Artesia Grbg. Ut. Tr. 4 No. 27 8-18S-28E Unit D	Active Oil	2520				8/28/81					
170	Leonard Oil Co. State #1-D No. 1 8-18S-28E Unit D	Active Oil	2385				5/15/58					
171	J. E. Bedingfield Humble No. 1 7-18S-28E Unit G	P&A Dry	2377				4/28/58					
172	Burnham Oil State A No. 1 36-17S-27E Unit N	Unknown	2200				5/31/47					Scout ticket only.
173	J. B. Adamson Ramapo No. 2 31-17S-28E Unit L	Unknown	1996				8/1/55					Scout ticket only.

NA - Not applicable

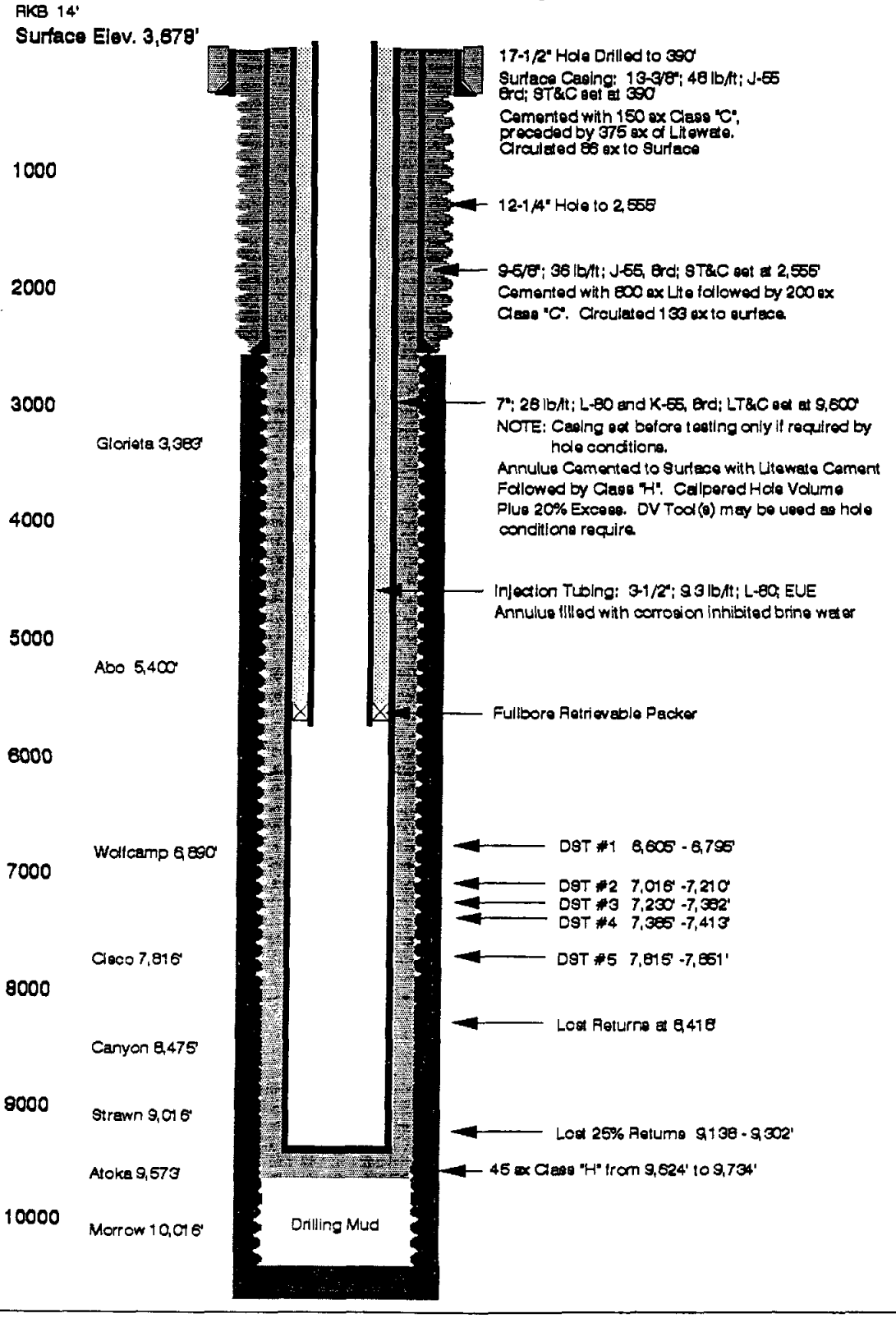
ATTACHMENT VI-2

WELL RECORDS FOR WELLS THAT PENETRATE THE INJECTION ZONE AND SCHEMATICS FOR PLUGGED AND ABANDONED WELLS

MAP ID NO. 59

MEWBOURNE OIL COMPANY
NO. 1 CHALK BLUFF 31 STATE
(PROPOSED NAVAJO WDW-1)

Proposed Navajo Disposal Well No. 1 (Re-entry)
Mewbourne Oil Company
Chalk Bluff 31 State



Submit to Appropriate
District Office
State Lease – 6 copies
Fee Lease – 5 copies

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Form C-101
Revised 1-1-89

API NO. (assigned by OCD on New Wells) 30-015-27542

5. Indicate Type of Lease STATE ■ FEE ☐

6. State Oil & Gas Lease No. B-2071-28

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. Type of Work:
DRILL ■ RE-ENTER ☐ DEEPEN ☐ PLUG BACK ☐

b. Type of Well:
OIL WELL ☐ GAS WELL ■ OTHER SINGLE ZONE ■ MULTIPLE ZONE ☐

7. Lease Name or Unit Agreement Name: Chalk Bluff "31" State

2. Name of Operator: Mewbourne Oil Company

8. Well No. 1

3. Address of Operator: P.O. Box 5270 Hobbs, New Mexico 88241

9. Pool name or Wildcat: Illinois Camp Morrow North

4. Well Location
Unit Letter O : 2310 Feet From The East Line and 660 Feet From The South Line

Section 31 Township 17S Range 28E NMPM Eddy County

10. Proposed Depth	11. Formation	12. Rotary or C.T.
10,400'	Morrow	Rotary

13. Elevations (Show whether DF, RT, GR, etc.)	14. Kind & Status Plug. Bond	15. Drilling Contractor	16. Approx. Date Work will start
3678' GR	Blanket on File	WEK Drlg. Co.	August 1, 1993

17. PROPOSED CASING AND CEMENT PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	SACKS OF CEMENT	EST. TOP
17-1/2"	13-3/8"	48#	400'	350	Circulated
12-1/2"	9-5/8"	36#	2600'	800	Tie back into
					surface
8-3/4"	5-1/2"	17#	10400'	800	6,000'

BOP PROGRAM: Hydril annular preventor (bag-type preventor) 900 series on surface casing to intermediate casing point.
Schaffer LWS or equivalent (double-ram hydraulic) 900 series w/Hydril 900 series from intermediate casing to total depth. Rotating head, PVT system, flow monitors, and mud-gas seperators from top of Wolfcamp formation to T.D.

MUD PROGRAM:
0 - 400' Fresh water w/spud mud, paper for LCM as needed.
400 - 2,600' Brine water w/paper for LCM as needed and lime for pH.
2,600 - 9,500' Cut brine w/paper for LCM and lime for pH.
9,500 - 10,400' Cut brine w/Drispac, starch, salt gel, soda ash, and caustic soda. Wt. 9.2-9.8 ppg, WL 10 cc's or less, Vis. 30-34.

GAS IS NOT DEDICATED

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: IF PROPOSAL IS TO DEEPEN OR PLUG BACK, GIVE DATA ON PRESENT PRODUCTIVE ZONE AND PROPOSED NEW PRODUCTIVE ZONE. GIVE BLOWOUT PREVENTER PROGRAM, IF ANY.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Bill Pierce TITLE Drilling Superintendent DATE July 22, 1993

TYPE OR PRINT NAME Bill Pierce TELEPHONE NO.

(This space for State Use)

APPROVED BY Mark Ashley TITLE GEOLOGIST DATE 7-27-93

CONDITIONS OF APPROVAL, IF ANY:

Submit to Appropriate
District Office
State Lease - 4 copies
Fee Lease - 3 copies

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Form C-102
Revised 1-1-89

WELL LOCATION AND ACREAGE DEDICATION PLAT

All Distances must be from the outer boundaries of the section

Operator	Lease	Well No.
MEWBOURNE OIL COMPANY	CHALK BLUFF 31 STATE	1

Unit Letter	Section	Township	Range	County
O	31	17 SOUTH	28 EAST NMPM	EDDY

Actual Footage Location of Well:
2310 feet from the EAST line and 660 feet from the SOUTH line

Ground level Elev.	Producing Formation	Pool	Dedicated Acreage:
3678	Morrow	Illinois Camp Morrow North	320 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

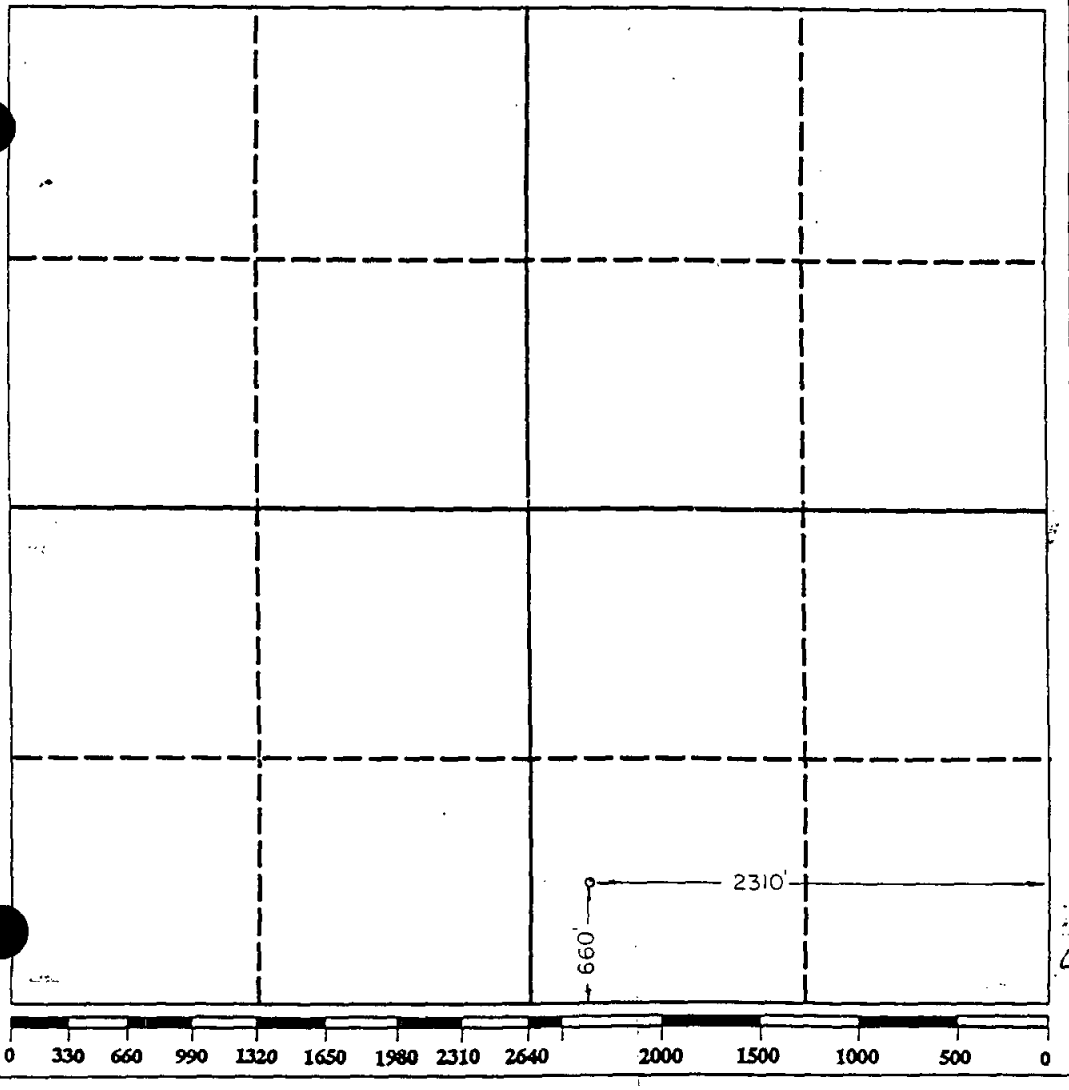
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interest of all owners been consolidated by communitization, unitization, force-pooling, etc.?

[X] Yes [ ] No If answer is "yes" type of consolidation Communitization

If answer is "no" list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary. _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interest, has been approved by the Division.



OPERATOR CERTIFICATION

I hereby certify that the information contained herein in true and complete to the best of my knowledge and belief.

Signature: Bill Pierce
Printed Name: Bill Pierce
Position: Drlg. Supt.
Company: Mewbourne Oil Company
Date: July 22, 1993

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervison, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed: 10/26/92
Signature & Seal of Professional Surveyor: HERSCHEL
Certificate No. 3640

Submit to Appropriate District Office
State Lease – 6 copies
Fee Lease – 5 copies

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Form C-105
Revised 1-1-89

WELL API NO. 30-015-27592

5. Indicate Type of Lease STATE [X] FEE [ ]

6. State Oil & Gas Lease No. B-2071-28

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

1a. Type of Well: OIL WELL [ ] GAS WELL [ ] DRY [X] OTHER

b. Type of Completion: NEW WELL [ ] WORK OVER [ ] DEEPEN [ ] PLUG BACK [ ] DIFF RESVR [ ] OTHER

7. Lease Name or Unit Agreement Name: Chalk Bluff "31" State

2. Name of Operator: Newbourne Oil Company

8. Well No. 1

3. Address of Operator: P.O. Box 5270 Hobbs, New Mexico 88241

9. Pool name or Wildcat: Illinois Camp Morrow, North

4. Well Location
Unit Letter O : 2310 Feet From The East Line and 660 Feet From The South Line
Section 31 Township 17S Range 28E NMPM Eddy County

10. Date Spudded	11. Date T.D. Reached	12. Date Compl. (Ready to Prod.)	13. Elevations (DF& RKB, RT, GR, etc.)	14. Elev. Casinghead
08/04/93	09/09/93	----	3678' GR	---

15. Total Depth	16. Plug Back T.D.	17. If Multiple Compl. How Many Zones?	18. Intervals Drilled By	Rotary Tools	Cable Tools
10,200'	----	---		All	----

19. Producing Interval(s), of this completion - Top, Bottom, Name: ----------

20. Was Directional Survey Made: No

21. Type Electric and Other Logs Run: Dual Laterlog, Density Neutron, Sonic (Already Submitted)

22. Was Well Cored: No

23. **CASING RECORD (Report all strings set in well)**

CASING SIZE	WEIGHT LB./FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
13-3/8"	48#	390'	17-1/2"	375 sks. "C" Lite + 150 sks. "C" Neet	None
9-5/8"	36#	2555'	12-1/4"	800 sks. "C" Lite + 200 sks. "C" Neet	None

24. LINER RECORD

SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN

25. TUBING RECORD

SIZE	DEPTH SET	PACKER SET

26. Perforation record (interval, size, and number)

N/A

27. ACID, SHOT, FRACTURE, CEMENT, SQUEEZE, ETC.

DEPTH INTERVAL	AMOUNT AND KIND MATERIAL USED

28. **PRODUCTION**

Date First Production	Production Method (Flowing, gas lift, pumping - Size and type pump)	Well Status (Prod. or Shut-in)

Date of Test	Hours Tested	Choke Size	Prod'n For Test Period	Oil - Bbl.	Gas - MCF	Water - Bbl.	Gas - Oil Ratio

Flow Tubing Press.	Casing Pressure	Calculated 24-Hour Rate	Oil - Bbl.	Gas - MCF	Water - Bbl.	Oil Gravity - API - (Corr.)

29. Disposition of Gas (Sold, used for fuel, vented, etc.)

Test Witnessed By

30. List Attachments: Deviation Report

31. I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief

Signature Bill Pierce Printed Name Bill Pierce Title Drlg. Supt. Date 09/23/93

INSTRUCTIONS

This form is to be filed with the appropriate District Office of the Division not later than 20 days after the completion of any newly-drilled or deepened well. It shall be accompanied by one copy of all electrical and radio-activity logs run on the well and a summary of all special tests conducted, including drill stem tests. All depths reported shall be measured depths. In the case of directionally drilled wells, true vertical depths shall also be reported. For multiple completions, Items 25 through 29 shall be reported for each zone. The form is to be filed in quintuplicate except on state land, where six copies are required. See Rule 1105.

INDICATE FORMATION TOPS IN CONFORMANCE WITH GEOGRAPHICAL SECTION OF STATE

Southeastern New Mexico				Northwestern New Mexico			
T. Anhy		T. Canyon	8782'	T. Ojo Alamo		T. Penn. "B"	
T. Salt		T. Strawn	9016'	T. Kirtland-Fruitland		T. Penn. "C"	
B. Salt		T. Atoka	9573'	T. Pictured Cliffs		T. Penn. "D"	
T. Yates	506'	T. Miss		T. Cliff House		T. Leadville	
T. 7 Rivers	596'	T. Devonian		T. Menefee		T. Madison	
T. Queen	1176'	T. Silurian		T. Point Lookout		T. Elbert	
T. Grayburg	1462'	T. Montoya		T. Mancos		T. McCracken	
T. San Andres	[illegible]	T. Simpson		T. Gallup		T. Ignacio Otzte	
T. Glorieta	3386'	T. McKee		Base Greenhorn		T. Granite	
T. Paddock		T. Ellenburger		T. Dakota		T.	
T. Blinebry		T. Gr. Wash		T. Morrison		T.	
T. Tubb		T. Delaware Sand		T. Todilto		T.	
T. Drinkard		T. Bone Springs		T. Entrada		T.	
T. Abo	5398'	T. Morrow	10016'	T. Wingate		T.	
T. Wolfcamp	6593'	T.		T. Chinle		T.	
T. Penn		T.		T. Permain		T.	
T. Cisco (Bough C)	7816'	T.		T. Penn "A"		T.	

OIL OR GAS SANDS OR ZONES

No. 1, from.....to..... No. 3, from.....to.....

No. 2, from.....to..... No. 4, from.....to.....

IMPORTANT WATER SANDS

Include data on rate of water inflow and elevation to which water rose in hole.

No. 1, from.....to.....feet.....

No. 2, from.....to.....feet.....

No. 3, from.....to.....feet.....

LITHOLOGY RECORD (Attach additional sheet if necessary)

From	To	Thickness in Feet	Lithology	From	To	Thickness in Feet	Lithology
0'	400'	400'	Surface rock, Anhydrite				
400'	6900'	6500'	Dolomite, Chert, Sandstone, Shale				
6900'	7800'	900'	Limestone, Shale, Chert				
7800'	8500'	700'	Dolomite, Shale				
8500'	9600'	1100'	Limestone, Shale				
9600'	10200'	600'	Limestone, Sandstone, Chert, & Shale				

Submit 3 Copies to Appropriate District Office

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-103
Revised 1-1-89

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

WELL API NO.
30-015-27592

5. Indicate Type of Lease STATE ■ FEE ☐

6. State Oil & Gas Lease No.
B-2071-28

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

7. Lease Name or Unit Agreement Name
Chalk Bluff "31" State

1. Type of Well: OIL WELL ☐ GAS WELL ■ OTHER

2. Name of Operator
Mewbourne Oil Company

8. Well No.
1

3. Address of Operator
P. O. Box 5270 ; Hobbs, New Mexico 88241

9. Pool name or Wildcat
Illinois Camp Morrow, North

4. Well Location
Unit Letter O : 2310 Feet From The East Line and 660' Feet From The South Line

Section 31 Township 17S Range 28E NMPM Eddy County

10. Elevation (Show whether DF, RKB, RT, GR, etc.)
3678' GR

11. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
PERFORM REMEDIAL WORK	☐	PLUG AND ABANDON	☐	REMEDIAL WORK	☐	ALTERING CASING	☐
TEMPORARILY ABANDON	☐	CHANGE PLANS	☐	COMMENCE DRILLING OPNS.	☐	PLUG AND ABANDONMENT	■
PULL OR ALTER CASING	☐			CASING TEST AND CEMENT JOB	☐		
OTHER:	☐			OTHER:			☐

12. Describe Proposed or Completed Operations *(Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work)* SEE RULE 1103.

9-9-93: Drilled 8 3/4" production hole to a T.D. of 10,200' K.B. Ran electric logs and evaluated well.

9-10-93: Decided to plug well. Received verbal permission from Mike Stubblefield w/NMOCD office in Artesia to plug well. Placed cement plugs at following depths:

45 sacks of Class "H" Neet @ 9734'
45 sacks of Class "H" Neet @ 8528'
55 sacks of Class "H" Neet @ 7866'
45 sacks of Class "H" Neet @ 6648'
45 sacks of Class "H" Neet @ 5320'
45 sacks of Class "H" Neet @ 3734'
65 sacks of Class "H" Neet W/2% $CaCl_2$ @ 2605'. WOC 4 hours. Tagged top of cement plug @ 2350'.
40 sacks of Class "H" Neet @ 44
10 sacks of Class "H" Neet From 30' to surface.
Rig released @ 7:00 PM, 9-11-93
Installed dry hole marker.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Bill Price TITLE Drilling Superintendent DATE Sept. 13, 1993

TYPE OR PRINT NAME TELEPHONE NO.

(This space for State Use)

APPROVED BY Mike Stubblefield TITLE Field Rep. I DATE Apr. 1 11-94

CONDITIONS OF APPROVAL, IF ANY:

MAP ID NO. 81

PHILLIPS PETROLEUM COMPANY
NO. 1 ILLINOIS CAMP A

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

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OPERATOR		

OIL CONSERVATION DIVISION

P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

MAY 23 1983
O. C. D.
ARTESIA, OFFICE

API # 30-015-

Form C-101
Revised 10-1-78

81

5A. Indicate Type of Lease: STATE [X] FEE [ ]

5. State Oil & Gas Lease No.: E-7179

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. Type of Work

b. Type of Well: DRILL [X] DEEPEN [ ] PLUG BACK [ ]

OIL WELL [ ] GAS WELL [X] OTHER SINGLE ZONE [X] MULTIPLE ZONE [ ]

7. Unit Agreement Name: --

8. Farm or Lease Name: Illinois Camp A COM

2. Name of Operator: Phillips Oil Company

9. Well No.: 1

3. Address of Operator: Room 401, 4001 Penbrook Street, Odessa, Texas 79762

10. Field and Pool, or Wildcat: ~~Undesignated Morrow~~ Empire Penn GAS

4. Location of Well: UNIT LETTER E LOCATED 1980 FEET FROM THE north LINE AND 990 FEET FROM THE west LINE OF SEC. 5 TWP. 18-S RGE. 28-E NMPM

12. County: Eddy

19. Proposed Depth	19A. Formation	20. Rotary or C.T.
10,500'	Morrow	Rotary

21. Elevations (Show whether DF, RT, etc.)	21A. Kind & Status Plug. Bond	21B. Drilling Contractor	22. Approx. Date Work will start
advise later	blanket	advise later	upon approval

23.

PROPOSED CASING AND CEMENT PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	SACKS OF CEMENT	EST. TOP
17 1/4"	13 3/8"	54.5# K-55	650'	800 sx Cl C	Circ at surface
11"	8 5/8"	32# K-55	3150'	3000 sx Cl C	Circ at surface
7 7/8"	5 1-2"	17#,20#, N-80	10,500'	2000 sx Cl C	Sufficient to t into intermedia casing string

UNORTHODOX LOCATION - Case No. 7876 ~~PENDING APPROVAL - DF 5/26/83~~

Use mud additives as required for control

BOP Eqpt.: 5000# WP, double gate w/one annular preventer

GAS IS NOT DEDICATED.

11/29/83

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: IF PROPOSAL IS TO DEEPEN OR PLUG BACK, GIVE DATA ON PRESENT PRODUCTIVE ZONE AND PROPOSED NEW PRODUCTIVE ZONE. GIVE BLOWOUT PREVENTER PROGRAM, IF ANY.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

Signed W. J. Mueller Title Senior Engineering Advisor Date 5-20-83

(This space for State Use)

APPROVED BY Leslie A. Clements TITLE SUPERVISOR, DISTRICT II DATE JUN 02 1983 ~~MAY 26 1983~~

CONDITIONS OF APPROVAL, IF ANY:

NEW MEXICO OIL CONSERVATION COMMISSION

WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102
Supersedes C-128
Effective 1-1-65

All distances must be from the outer boundaries of the Section.

Operator	Lease	Well No.
Phillips Oil Company	Illinois Camp "A" Com.	1

Unit Letter	Section	Township	Range	County
E	5	18 South	28 East	Eddy

Actual Footage Location of Well:
1980 feet from the north line and 990 feet from the west line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
advise later	Morrow	~~Wildcat~~ Empire Penn	320.88 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

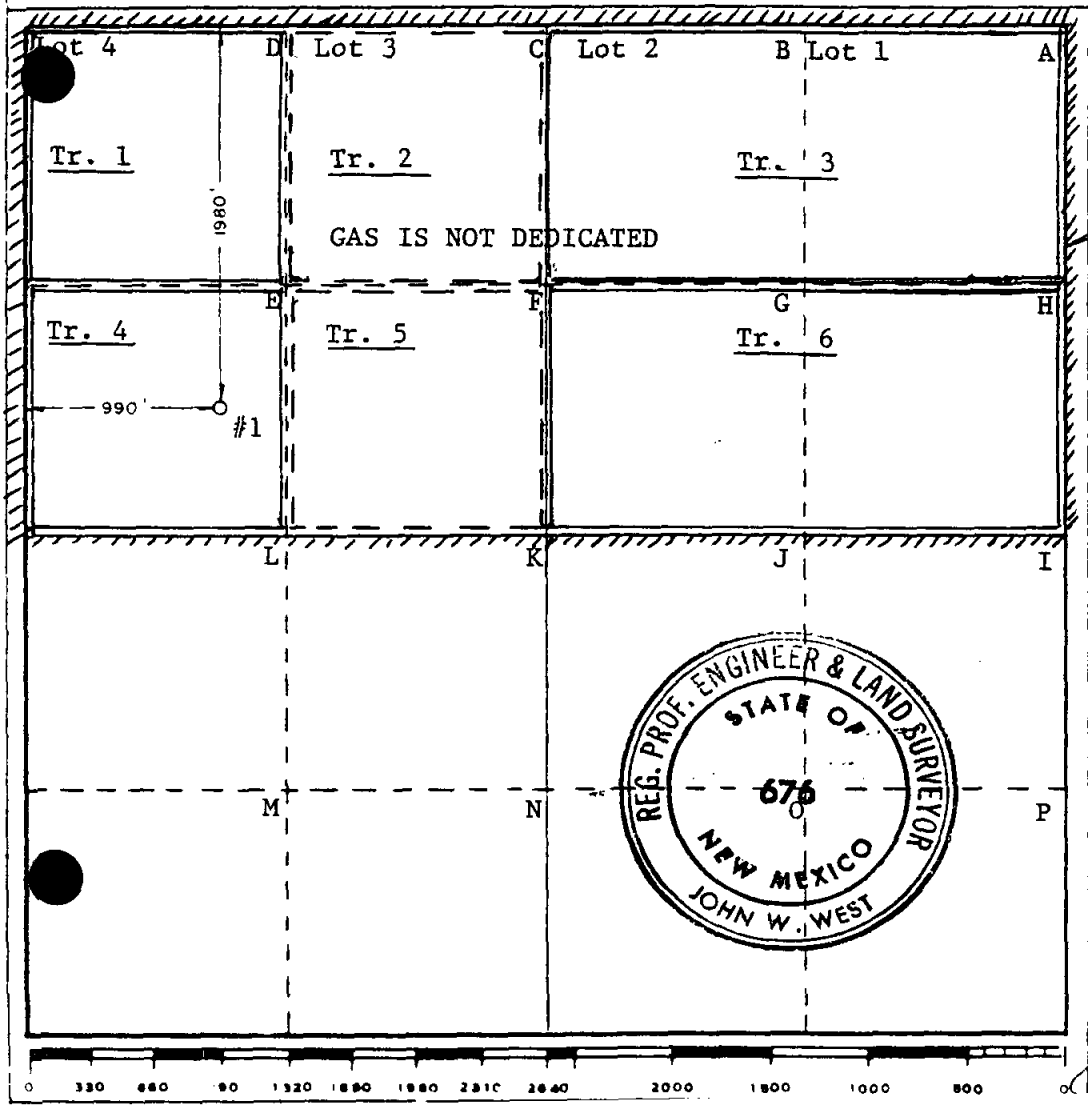
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty). SEE REVERSE SIDE

3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling. etc?

XX Yes ☐ No If answer is "yes," type of consolidation COMMUNITIZATION

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.



CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Name: W. J. Mueller

Position: Sr. Engineering Specialist

Company: PHILLIPS OIL COMPANY

Date: May 20, 1983

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed: May 20, 1983

Registered Professional Engineer and/or Land Surveyor

Certificate No: John W. West, NM L.S. No.676

Form C-105
Revised 10-1-78

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

API 30-015-24485

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

NO. OF COPIES RECEIVED	
DISTRIBUTION	
SANTA FE	
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LAND OFFICE	
OPERATOR	

5a. Indicate Type of Lease: State [XX] Fee [ ]

5. State Oil & Gas Lease No.: E-7179

1a. TYPE OF WELL: OIL WELL [ ] GAS WELL [XX] DRY [ ] OTHER

7. Unit Agreement Name:

b. TYPE OF COMPLETION: NEW WELL [XX] WORK OVER [ ] DEEPEN [ ] PLUG BACK [ ] DIFF. RESVR. [ ] OTHER

AUG 16 1983

8. Farm or Lease Name: Illinois Camp A COM

2. Name of Operator: Phillips Oil Company

O. C. D.
ARTESIA, OFFICE

9. Well No.: 1

3. Address of Operator: Room 401, 4001 Penbrook Street, Odessa, TX 79762

10. Field and Pool, or Wildcat: Empire Penn GAS

4. Location of Well

UNIT LETTER E LOCATED 1980 FEET FROM THE north LINE AND 990 FEET FROM

THE west LINE OF SEC 5 TWP. 18S RGE. 28E NMPM

12. County: Eddy

15. Date Spudded	16. Date T.D. Reached	17. Date Compl. (Ready to Prod.)	18. Elevations (DF, RKB, RT, GR, etc.)	19. Elev. Cashinghead
5-28-83	7-10-83	8-10-83	2667' DF 2654' GR	-

20. Total Depth	21. Plug Back T.D.	22. If Multiple Compl., How Many	23. Intervals Drilled By	Rotary Tools	Cable Tools
10450	10401	no	→	0-10450'	

24. Producing Interval(s), of this completion — Top, Bottom, Name
Morrow - top 10,005'; bottom 10,401'

25. Was Directional Survey Made: no

26. Type Electric and Other Logs Run
CNL/GR caliper, DLL-/RXO-GR, BHC Sonic

27. Was Well Cored: no

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT LB./FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
13 3/8"	54.5#	663'	17 1/2"	650sxClass C w/2% CaCl&1/4#Flocele/sx.	Cl
8 5/8"	32#	4000'	11"	1400sx Class C w/20%DD	Circ 300sx.
&5#Gilsonite &1/4# Flocele/sx & 20 sxClass C					
5 1/2"	20#	10450 w/DV@6500" 7 7/8'		see reverse side	TempTOC4040'

29. LINER RECORD

SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN
--				

30. TUBING RECORD

SIZE	DEPTH SET	PACKER SET
2 7/8"	9922	9900

31. Perforation Record (Interval, size and number)
10172-84' & 10070-75', 4 JSPF, 68 holes

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL	AMOUNT AND KIND MATERIAL USED
=	

33. See Form C-122 attached

PRODUCTION

Date First Production	Production Method (Flowing, gas lift, pumping — Size and type pump)	Well Status (Prod. or Shut-in)
8-10-83	Flwg	shut in pending conne

Date of Test	Hours Tested	Choke Size	Prod'n. For Test Period →	Oil — Bbl.	Gas — MCF	Water — Bbl.	Gas — Oil Ratio
8-10-83							21.9 Mcf/bbl

Flow Tubing Press.	Casing Pressure	Calculated 24-Hour Rate →	Oil — Bbl.	Gas — MCF	Water — Bbl.	Oil Gravity — API (Corr.)
1993	pkr		119 Cond	2611	-	53

34. Disposition of Gas (Sold, used for fuel, vented, etc.)
shut in pending gas connection

Test Witnessed By: Richard Townley

35. List of Attachments
Logs furnished direct by logging company

36. I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief.

SIGNED W. J. Mueller TITLE Sr.Engineering Specialist DATE 8-15-83

INSTRUCTIONS

This form is to be filed with the appropriate District Office of the Division not later than 20 days after the completion of any newly-drilled or deepened well. It shall be accompanied by one copy of all electrical and radioactivity logs run on the well and a summary of all special tests conducted, including drill stem tests. All depths reported shall be measured depths. In the case of directionally drilled wells, true vertical depths shall also be reported. For multiple completions, Items 30 through 34 shall be repeated for each zone. The form is to be filed in quintuplicate except on state land, where six copies are required. See Rule 1105.

INDICATE FORMATION TOPS IN CONFORMANCE WITH GEOGRAPHICAL SECTION OF STATE

Southeastern New Mexico				Northwestern New Mexico			
T. Anhy		T. Canyon	8630	T. Ojo Alamo		T. Penn. "B"	
T. Salt		T. Strawn	9199	T. Kirtland-Fruitland		T. Penn. "C"	
B. Salt		T. Atoka	9656	T. Pictured Cliffs		T. Penn. "D"	
T. Yates		T. xxxMorrow	10005	T. Cliff House		T. Leadville	
T. 7 Rivers		T. xxxxxxx Morrow Clastics	10015	T. Menefee		T. Madison	
T. Queen		T. Chester Shale	10247	T. Point Lookout		T. Elbert	
T. Grayburg		T. Miss. Lime	10393	T. Mancos		T. McCracken	
T. San Andres		T. Simpson		T. Gallup		T. Ignacio Qtzte	
T. Glorieta		T. McKee		Base Greenhorn		T. Granite	
T. Paddock		T. Ellenburger		T. Dakota		T.	
T. Blinebry		T. Gr. Wash		T. Morrison		T.	
T. Tubb		T. Granite		T. Todilto		T.	
T. Drinkard		T. Delaware Sand		T. Entrada		T.	
T. Abo	5700	T. Bone Springs		T. Wingate		T.	
T. Wolfcamp	6877	T.		T. Chinle		T.	
T. Penn.		T.		T. Permian		T.	
T. Cisco (Bough C)	8152	T.		T. Penn. "A"		T.	

OIL OR GAS SANDS OR ZONES

No. 1, from ..... to ..... No. 4, from ..... to .....

No. 2, from ..... to ..... No. 5, from ..... to .....

No. 3, from ..... to ..... No. 6, from ..... to .....

IMPORTANT WATER SANDS

Include data on rate of water inflow and elevation to which water rose in hole.

No. 1, from ..... to ..... feet. .....

No. 2, from ..... to ..... feet. .....

No. 3, from ..... to ..... feet. .....

No. 4, from ..... to ..... feet. .....

FORMATION RECORD (Attach additional sheets if necessary)

From	To	Thickness in Feet	Formation	From	To	Thickness in Feet	Formation
0	715	715	Surface rock				
715	2080	1365	Anhydrite				
2080	2905	825	Anhydrite, lime				
2905	5708	2803	Lime				
5708	6928	1220	Lime, shale				
6928	7758	830	Lime, dolomite				
7758	9570	1812	Lime, shale				
9570	9716	146	Lime, chert				
9716	9989	273	Lime, shale				
9989	10190	201	Lime, shale, sand				
10190	10260	70	Lime				
10260	10329	69	Lime, shale				
10329	10450	121	Shale				

Item 28: Cmtd 5 1/2" csg w/1472 sx Class C w/10%LWL;opened DV @6500, circ 100sx. Cmtd w/ 235 sx w/20%DD & 1/4#Flocele/sx & 300sxClass H WOC, ran temp survey, TOC 4040'

District I
PO Box 1980, Hobbs, NM 88241-1980
District II
PO Drawer DD, Artesia, NM 88211-0719
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
PO Box 2088, Santa Fe, NM 87504-2088

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, NM 87504-2088

Form C-104
Revised February 10, 1994
Instructions on back
Submit to Appropriate District Office
5 Copies

'95 JU ... AM 8:52

☐ AMENDED REPORT

I. REQUEST FOR ALLOWABLE AND AUTHORIZATION TO TRANSPORT

1 Operator name and Address	2 OGRID Number
PHILLIPS PETROLEUM COMPANY 4001 PENBROOK ODESSA, TEXAS 79762	017643
	3 Reason for Filing Code: CG NAME

4 API Number	5 Pool Name	6 Pool Code
30-015-24485	EMPIRE PENN. (GAS)	76440
7 Property Code	**8 Property Name**	**9 Well Number**
009104	ILLINOIS CAMP A	1

II. 10 Surface Location

UL or lot no.	Section	Township	Range	Lot. Idn	Feet from the	North/South Line	Feet from the	East/West line	County
E	5	18S	28E		1980	N	990	W	EDDY

11 Bottom Hole Location

UL or lot no.	Section	Township	Range	Lot. Idn	Feet from the	North/South Line	Feet from the	East/West line	County
E	5	18S	28E		1980	N	990	W	EDDY

12 Lse Code	13 Producing Method Code	14 Gas Connection Date	15 C-129 Permit Number	16 C-129 Effective Date	17 C-129 Expiration Date
S	F	01/01/86			

III. Oil and Gas Transporters

18 Transporter OGRID	19 Transporter Name and Address	20 POD	21 O/G	22 POD ULSTR Location and Description
034019	PHILLIPS PETROLEUM CO. TRUCKS 4001 PENBROOK ODESSA, TEXAS 79762	2083810	O	E 5 18S 28E
009171	GPM GAS CORPORATION 4044 PENBROOK ODESSA, TX 79762	2083830	G	E 5 18S 28E

IV. Produced Water

23 POD	24 POD ULSTR Location and Description
2083850	E 5 18S 28E

V. Well Completion Data

25 Spud Date	26 Ready Date	27 TD	28 PBTD	29 Perforations

30 Hole Sie	31 Casing & Tubing Size	32 Depth Set	33 Sacks Cement

VI. Well Test Data

34 Date New Oil	35 Gas Delivery Date	36 Test Date	37 Test Length	38 Tbg. Pressure	39 Csg. Pressure
40 Choke Size	**41 Oil**	**42 Water**	**43 Gas**	**44 AOF**	**45 Test Method**

46 I hereby certify that the rules of the Oil Conservation Division have been complied with and that the information given above is true and complete to the best of my knowledge and belief.

Signature: K R Oberle

Printed name: K. R. OBERLE

Title: COORDINATOR OPERATIONS

Date: 06/19/95 Phone: (915)368-1675

OIL CONSERVATION DIVISION

Approved by: ORIGINAL SIGNED BY TIM W. GUM

Title: DISTRICT II SUPERVISOR

Approval Date: JUL 0 5 1995

47 If this is a change of operator fill in the OGRID number and name of the previous operator

Previous Operator Signature	Printed Name	Title	Date

MAP ID NO. 83

I&W, INC.
NO. 1 WALTER SOLT STATE
(SWD-130)

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

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OIL CONSERVATION DIVISION

P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

Form C-101
Revised 10-1-78

83

5A. Indicate Type of Lease STATE [XX] FEE [ ]

5. State Oil & Gas Lease No. B-3823

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. Type of Work

b. Type of Well
DRILL [X] DEEPEN [ ] PLUG BACK [ ]
OIL WELL [XX] GAS WELL [ ] OTHER SINGLE ZONE [ ] MULTIPLE ZONE [ ]

7. Unit Agreement Name

8. Farm or Lease Name: Walter Solt Stat

2. Name of Operator: Metex Fipe & Supply

9. Well No.: 1

3. Address of Operator: P.O. Box 1037 Artesia, N.M. 88210

10. Field and Pool, or Wildcat: WILDCAT – Penn

4. Location of Well UNIT LETTER L LOCATED 400 FEET FROM THE WEST LINE
2240 FEET FROM THE SOUTH LINE OF SEC. 5 TWP. 18S RGE. 28E NMPM

12. County: EDDY

19. Proposed Depth	19A. Formation	20. Rotary or C.T.
8500'	Penn.	Rotary

21. Elevations (Show whether DF, RT, etc.)	21A. Kind & Status Plug. Bond	21B. Drilling Contractor	22. Approx. Date Work will start
3644.4 GL	one well	Hondo Rig #9	Jan 10, 1985

23.

PROPOSED CASING AND CEMENT PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	SACKS OF CEMENT	EST. TOP
17"	13 3/8"	54.5#	350'	250	circulated
12 1/4"	8 5/8"	24#	2250'	500 sx.	
7 7/8"	5 1/2"	17# J-55 N-80	8500'	800	4500'

APPROVAL VALID FOR 180 DAYS
UNLESS DRILLING UNDERWAY

BOP Diagram attached

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: IF PROPOSAL IS TO DEEPEN OR PLUG BACK, GIVE DATA ON PRESENT PRODUCTIVE ZONE AND PROPOSED NEW PRODUCTIVE ZONE. GIVE BLOWOUT PREVENTER PROGRAM, IF ANY.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

Signed Martin B Mincy Title Metex Pipe & Supply Date 12-23-85

(This space for State Use)

APPROVED BY Leslie A. Clements TITLE SUPERVISOR, DISTRICT II DATE DEC 27 1985

CONDITIONS OF APPROVAL, IF ANY:

NEW MEXICO OIL CONSERVATION COMMISSION

WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102
Supersedes C-128
Effective 1-1-65

All distances must be from the outer boundaries of the Section

Operator	Lease	Well No.
METEX PIPE & SUPPLY	WALTER SOLT STATE	1

Unit Letter	Section	Township	Range	County
L	5	18S	28E	EDDY

Actual Footage Location of Well:
400 feet from the WEST line and 2240 feet from the SOUTH line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
3644.4	Permo-Penn	Wildcat	40-Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

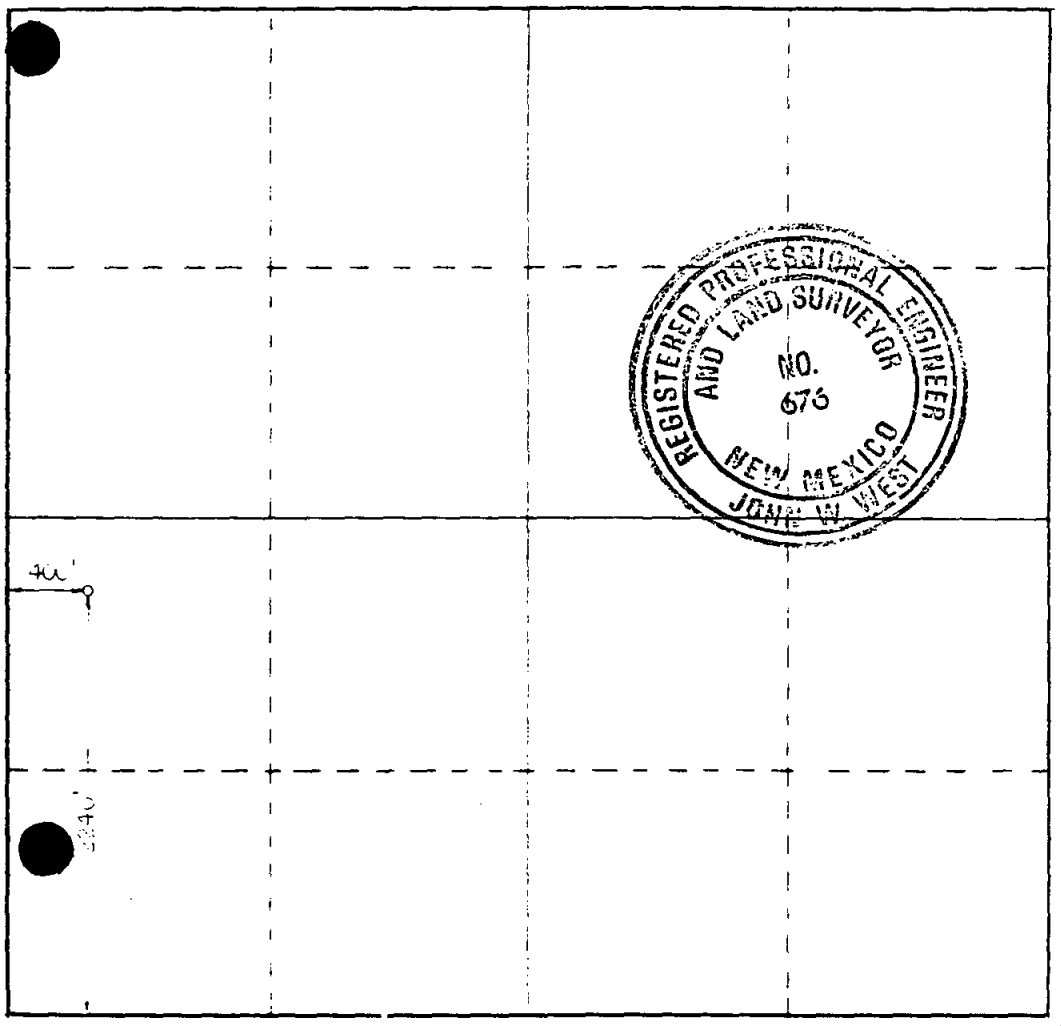
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

☐ Yes ☒ No If answer is "yes," type of consolidation _____

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.



CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief

Martin B Murray

Name
d/b/a Metex Pipe & Supply

Position
METEX PIPE & SUPPLY

Company
12-23-85

Date

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief

Date Surveyed
DEC. 17, 1985

Registered Professional Engineer and/or Land Surveyor

John W West

Certificate No JOHN W. WEST 676

330 660 990 1320 1650 1980 2310 2640

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

Form C-105
Revised 10-1-78

OIL CONSERVATION DIVISION

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WELL COMPLETION OR RECOMPLETION REPORT AND LOG

RECEIVED

5a. Indicate Type of Lease: State [XX] Fee [ ]

5. State Oil & Gas Lease No.: SWD-130

1a. TYPE OF WELL: Salt Water Disposal — OIL WELL [ ] GAS WELL [ ] DRY [ ] OTHER

b. TYPE OF COMPLETION: NEW WELL [ ] WORK OVER [ ] DEEPEN [ ] PLUG BACK [ ] DIFF. RESVR. [ ] OTHER

7. Unit Agreement Name:

8. Farm or Lease Name: Walter Solt State #1

2. Name of Operator: I. & W, Inc.

9. Well No.: 1

3. Address of Operator: P. O. Box 98, Loco Hills, New Mexico 88255

10. Field and Pool, or Wildcat: Wolfcamp

4. Location of Well: UNIT LETTER L LOCATED 400 FEET FROM THE West LINE AND 2240 FEET FROM THE South LINE OF SEC. 5 TWP. 18-S RGE. 28-E NMPM

12. County: Eddy

15. Date Spudded	16. Date T.D. Reached	17. Date Compl. (Ready to Prod.)	18. Elevations (DF, RKB, RT, GR, etc.)	19. Elev. Casinghead
5-28-83		8-12-83	3644.4' Gr.	3654.4' KB

20. Total Depth	21. Plug Back T.D.	22. If Multiple Compl., How Many	23. Intervals Drilled By	Rotary Tools	Cable Tools
8500	7981'		→	X	

24. Producing Interval(s), of this completion — Top, Bottom, Name:

25. Was Directional Surv Made: No

26. Type Electric and Other Logs Run: Micro-Seismogram

27. Was Well Cored: No

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT LB./FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
13 3/8"	54.5#	354'	17-1/2"	350 Sacks	
8 5/8"	24#	1745'	11"	650 "	
5 1/2"	17# N-80	8466'	7 7/8"	135 "	620'

29. LINER RECORD

SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN
Plastic 2-7/8" O.D.		7500'		

30. TUBING RECORD

SIZE	DEPTH SET	PACKER SET
2-7/8"	7500"	7500'

31. Perforation Record (Interval, size and number)

Perfs 16 holes 7518'-7534'
Perfs 10 holes 7632'-7642'
Perfs 14 holes 7742'-7756'
Perfs 10 holes 7778'-7787'
Perfs 3 holes 7810'-7812'

2 cmt.

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL	AMOUNT AND KIND MATERIAL USED
	5000 Gallons of Acid

33. PRODUCTION

Date First Production	Production Method (Flowing, gas lift, pumping — Size and type pump)	Well Status (Prod. or Shut-in)

Date of Test	Hours Tested	Choke Size	Prod'n. For Test Period →	Oil — Bbl.	Gas — MCF	Water — Bbl.	Gas — Oil Ratio

Flow Tubing Press.	Casing Pressure	Calculated 24-Hour Rate →	Oil — Bbl.	Gas — MCF	Water — Bbl.	Oil Gravity — API (Corr.)

34. Disposition of Gas (Sold, used for fuel, vented, etc.)

Test Witnessed By

35. List of Attachments

36. I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief.

SIGNED Regina E. Bell TITLE Office Manager DATE 8-23-88

INSTRUCTIONS

This form is to be filed with the appropriate District Office of the Division not later than 20 days after the completion of any newly-drilled or deepened well. It shall be accompanied by one copy of all electrical and radio-activity logs run on the well and a summary of all special tests conducted, including drill stem tests. All depths reported shall be measured depths. In the case of directionally drilled wells, true vertical depths shall be reported. For multiple completions, Items 30 through 34 shall be reported for each zone. The form is to be filed in quintuplicate except on land, where six copies are required. See Rule 1105.

INDICATE FORMATION TOPS IN CONFORMANCE WITH GEOGRAPHICAL SECTION OF STATE

Southeastern New Mexico				Northwestern New Mexico			
T. Anhy		T. Canyon		T. Ojo Alamo		T. Penn. "B"	
T. Salt		T. Strawn		T. Kirtland-Fruitland		T. Penn. "C"	
B. Salt		T. Atoka		T. Pictured Cliffs		T. Penn. "D"	
T. Yates		T. Miss		T. Cliff House		T. Leadville	
T. 7 Rivers		T. Devonian		T. Menefee		T. Madison	
T. Queen		T. Silurian		T. Point Lookout		T. Elbert	
T. Grayburg		T. Montoya		T. Mancos		T. McCracken	
T. San Andres		T. Simpson		T. Gallup		T. Ignacio Qtzte	
T. Glorieta		T. McKee		Base Greenhorn		T. Granite	
T. Paddock		T. Ellenburger		T. Dakota		T.	
T. Blinebry		T. Gr. Wash		T. Morrison		T.	
T. Tubb		T. Granite		T. Todilto		T.	
T. Drinkard		T. Delaware Sand		T. Entrada		T.	
T. Abo		T. Bone Springs		T. Wingate		T.	
T. Wolfcamp		T.		T. Chinle		T.	
T. Penn.		T.		T. Permian		T.	
T Cisco (Bough C)		T.		T. Penn. "A"		T.	

OIL OR GAS SANDS OR ZONES

No. 1, from..... to..... No. 4, from..... to.....

No. 2, from..... to..... No. 5, from..... to.....

No. 3, from..... to..... No. 6, from..... to.....

IMPORTANT WATER SANDS

Include data on rate of water inflow and elevation to which water rose in hole.

No. 1, from..... to..... feet. .....

No. 2, from..... to..... feet. .....

No. 3, from..... to..... feet. .....

No. 4, from..... to..... feet. .....

FORMATION RECORD (Attach additional sheets if necessary)

From	To	Thickness in Feet	Formation	From	To	Thickness in Feet	Formation

.ELD _____ COUNTY Eddy, NM OCC NUMBER _____

OPERATOR Metex Pipe & Supply ADDRESS P. O. Box 1037, Artesia, New Mexico 88210

ASE Walter Solt State WELL NO. 1

SURVEY NW/4, SW/4, Section 5, T-18-S, R-28-E

RECORD OF INCLINATION

DEPTH (FEET)	ANGLE OF INCLINATION (DEGREES)
354	3/4
667	3/4
1001	3/4
1406	3/4
1685	3/4
2068	1 1/2
2690	1 1/4
2970	3/4
3610	1
3905	1 1/4
4155	1
4341	1
4478	3/4
4621	1
4746	1 1/2
4965	1 3/4
5158	1 3/4
5246	1 3/4
5340	2
5434	2 1/4
5519	2 1/2
5623	2 3/4
5717	3 1/2
5780	4
5843	4 1/2
5897	4 1/2
5958	4 3/4
5977	4 1/2
5990	4 1/4
6052	4 3/4
6083	4 3/4

Certification of personal knowledge inclination data:

I hereby certify that I have personally assembled the data and facts placed on this form, and such information given above is true and complete to the best of my knowledge.

HONDO DRILLING COMPANY

BY: _____
Walter Frederickson
Vice President

Sworn and subscribed to before me the undersigned authority, on this the 19th day of February, 1986.

Margaret B. Anderson Notary Public in and for Midland County, Texas.

Margaret B. Anderson

FIELD _____ COUNTY Eddy, NM OCC NUMBER _____

OPERATOR Metex Pipe & Supply ADDRESS P. O. Box 1037, Artesia, New Mexico 88210

LEASE Walter Solt State WELL NO. 1

SURVEY NW/4, SW/4, Section 5, T-18-S, R-28-E

RECORD OF INCLINATION

DEPTH (FEET)	ANGLE OF INCLINATION (DEGREES)
6114	4 1/4
6207	4 3/4
6229	4 3/4
6274	4 3/4
6305	4 3/4
6367	4 3/4
6427	4 1/2
6461	4 1/2
6524	4
6587	3 1/4
6648	3 1/4
6772	3
6936	2 1/2
7095	2
7485	1 1/4
7975	1 1/4
8500	1 1/4

Certification of personal knowledge inclination data:

I hereby certify that I have personally assembled the data and facts placed on this form, and such information given above is true and complete to the best of my knowledge.

HONDO DRILLING COMPANY

BY: _____
Walter Frederickson
Vice President

Sworn and subscribed to before me the undersigned authority, on this the 19th day of February, 1986.

_____ Notary Public in and for Midland County, Texas.
Margaret B. Anderson

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ENERGY AND MINERALS DEPARTMENT

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OIL CONSERVATION DIVISION

P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

Form C-103
Revised 10-1-7

5a. Indicate Type of Lease
State XXX Fee ☐

5. State Oil & Gas Lease No.
B-3823

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT —" (FORM C-101) FOR SUCH PROPOSALS.)

OIL WELL XX GAS WELL ☐ OTHER-

7. Unit Agreement Name

Name of Operator
Metex Pipe & Supply ✓

8. Farm or Lease Name
Walter Solt State

Address of Operator
P.O. Box 1037 Artesia, N.M. 88210

9. Well No.
1

Location of Well
UNIT LETTER L , 400 FEET FROM THE WEST LINE AND 2240 FEET FROM THE SOUTH LINE, SECTION 5 TOWNSHIP 18S RANGE 28E NMPM.

10. Field and Pool, or Wildcat
Wildcat - Penn.

15. Elevation (Show whether DF, RT, GR, etc.)
3644.4

12. County
EDDY

6.

Check Appropriate Box To Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK ☐	PLUG AND ABANDON ☐	REMEDIAL WORK ☐	ALTERING CASING ☐
TEMPORARILY ABANDON ☐		COMMENCE DRILLING OPNS. ☐	PLUG AND ABANDONMENT ☐
PULL OR ALTER CASING ☐	CHANGE PLANS ☐	CASING TEST AND CEMENT JOB ☐	
OTHER run surface casing ☒		OTHER ☐	

17. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

Spud well 3:00 p/m, Jan. 9, 1986 with Hondo, Rig #9.
Ran 11 joints 13 3/8" 54 lb. J-55 casing and set at 354'. Halliburton cemented with 350 sacks class"C" cement with 2% CaCl. Circulated 45 sacks to pit. Plug down at 5:30 a/m on January 10, 1986.
WOC for ~~12~~ 18 hours, drilled out 2 ft. past shoe and tested BOP to 500 PSI and held pressure for 30 minutes. Presently drilling 11" hole with full returns.

RECEIVED BY
JAN 16 1986
O. C. D.
ARTESIA, OFFICE

18. I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNED [signature] d/b/a TITLE Metex Pipe & Supply DATE Jan. 10, 1986

Original Signed By
Les A. Clements
Supervisor District II

APPROVED BY _____ TITLE _____ DATE JAN 23 1986

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OIL CONSERVATION DIVISION

P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

Form C-103
Revised 10-1-

5a. Indicate Type of Lease
State [X] Fee [ ]

5. State Oil & Gas Lease No.
B-3823

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT —" (FORM C-101) FOR SUCH PROPOSALS.)

OIL WELL [XXX] GAS WELL [ ] OTHER-

7. Unit Agreement Name

Name of Operator
Metex Pipe and Supply

8. Farm or Lease Name
Walter Solt State

Address of Operator
P.O. Box 1037 Artesia, N.M. 88210

9. Well No.
1

Location of Well
UNIT LETTER L , 400 FEET FROM THE west LINE AND 2240 FEET FROM

10. Field and Pool, or Wildcat
WILDCAT Penn.

THE south LINE, SECTION 5 TOWNSHIP 18S RANGE 28E NMPM.

15. Elevation (Show whether DF, RT, GR, etc.)
3644.4 GL

12. County
Eddy

6. Check Appropriate Box To Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
PERFORM REMEDIAL WORK	[ ]	PLUG AND ABANDON	[ ]	REMEDIAL WORK	[ ]	ALTERING CASING	[ ]
TEMPORARILY ABANDON	[ ]			COMMENCE DRILLING OPNS.	[ ]	PLUG AND ABANDONMENT	[ ]
PULL OR ALTER CASING	[ ]	CHANGE PLANS	[ ]	CASING TEST AND CEMENT JOB	[ ]		
OTHER	[ ]			OTHER run intermeciate casing			[X]

7. Describe Proposed or Completed Operations *(Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work)* SEE RULE 1103.

Ran 42 jt. 8 5/8", 24 lb., J-55 casing to 1745'. Cemented with 400 sacks Halco Lite with 8# salt and ¼# Flowseal and 250 sacks class"C" with 2% CaCl. Circulated 100 sacks to pit. Plug down at 4:00 p/m, Jan. 12, 1986.

WOC for 12 hrs. drilled out 2' past shoe and tested BOP to 1000 psi and held for thirty minutes. Presently drilling 7 7/8" hole with full returns.

8. I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNED [signature] TITLE d/b/a Metex Pipe & Supply DATE 1-13-86

APPROVED BY Original Signed By Les A. Clements TITLE Supervisor District II DATE JAN 23 1986

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OIL CONSERVATION DIVISION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

Form C-103
Revised 10-1-

5a. Indicate Type of Lease: State [XX] Fee [ ]

5. State Oil & Gas Lease No.: B-3823

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT —" (FORM C-101) FOR SUCH PROPOSALS.)

1. OIL WELL [XX] GAS WELL [ ] OTHER-

7. Unit Agreement Name: -

2. Name of Operator: METEX PIPE & SUPPLY

8. Farm or Lease Name: WALTER SOLT STATE

3. Address of Operator: POB 1037 Artesia, NM 88210

9. Well No.: 1

4. Location of Well: UNIT LETTER L, 400 FEET FROM THE West LINE AND 2240 FEET FROM THE South LINE, SECTION 5 TOWNSHIP 18S RANGE 28E NMPM.

10. Field and Pool, or Wildcat: Wildcat Penn.

15. Elevation (Show whether DF, RT, GR, etc.): 3644.4'

12. County: Eddy

16. Check Appropriate Box To Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK [ ]	PLUG AND ABANDON [ ]	REMEDIAL WORK [ ]	ALTERING CASING [ ]
TEMPORARILY ABANDON [ ]		COMMENCE DRILLING OPNS. [ ]	PLUG AND ABANDONMENT [ ]
PULL OR ALTER CASING [ ]	CHANGE PLANS [ ]	CASING TEST AND CEMENT JOB [XX]	
OTHER [ ]		OTHER DST's, Logs & TD	[ ]

17. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

DST #1 6678-6822'
DST #1 7035-7090'
Results to be submitted with completion report

2-16-85: Driller's TD=8500' Loggers TD=8484'
Ran Open-Hole Logs: GR/CNLD & DLL/MSFL
Ran 5½" 17# LTC(N-80/J-K-55) Casing to 8466' KB with float shoe @ 8466' & Insert float @ 8424'. Cemented with 135-Sxs Howco "H" + .7-1% Halad-9. Bumped Plug to 4500#-Held-OK. HOWCO FULL-OPENING CEMENTER SET @ 7785'.

2-25-85: Cleaned Location & Set Dead-Men

2-26-86: Ran Cement Bond Log and found good cement from PBTD 8398' to 7961'

Present operation is waiting on completion unit
PBTD= 8398'KB

18. I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNED R A Murray Jr. TITLE d/b/a METEX PIPE & SUPPLY DATE 2-28-86

APPROVED BY Original Signed By Mike Williams TITLE Oil & Gas Inspector DATE FEB 28 1986

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

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FILE	✔	✔
U.S.G.S.		
LAND OFFICE		
OPERATOR	✔	

OIL CONSERVATION DIVISION

P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

Form C-103
Revised 19-

5a. Indicate Type of Lease: State [XX] Fee [ ]

5. State Oil & Gas Lease No.: B-3823

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT —" (FORM C-101) FOR SUCH PROPOSALS.)

1. OIL WELL [X] GAS WELL [ ] OTHER-

7. Unit Agreement Name:

2. Name of Operator: Metex Pipe & Supply

8. Farm or Lease Name: Walter Solt State

3. Address of Operator: PO Box 1037 Artesia, NM 88210

9. Well No.: 1

4. Location of Well: UNIT LETTER L, 400 FEET FROM THE West LINE AND 2240 FEET FROM THE South LINE, SECTION 5 TOWNSHIP 18S RANGE 28E NMPM.

10. Field and Pool, or Wildcat: Wildcat Penn.

15. Elevation (Show whether DF, RT, GR, etc.): 3644.4' GL

12. County: Eddy

16. Check Appropriate Box To Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK [ ]	PLUG AND ABANDON [ ]	REMEDIAL WORK [ ]	ALTERING CASING
TEMPORARILY ABANDON [ ]		COMMENCE DRILLING OPNS. [ ]	PLUG AND ABANDONMENT
PULL OR ALTER CASING [ ]	CHANGE PLANS [ ]	CASING TEST AND CEMENT JOB [ ]	
OTHER [ ]		OTHER	

17. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

*Results of DST #1(6678-6822') & DST #2(7035-7090') are attached with this report.

*The Drilling Inclination Record is attached with this report.

*The 2-26-86, Schlumberger CNL-CET Logs are attached with this report.

*The 3-22-86, Welex CBL is attached with this report.

3-13-86/3-17-86: Perf Cisco Lime with 10-0.41" Holes(8214,16,17,18,20,30,32,33,34,36')
Treat with 2000-Gal 20% NeFe Acid, 1000 SCF N2/BBL and balls. Flowed and swa
approx. 20-bbls. over load with slight show oil and approx. 30-MCFD gas.
Set CIBP at 8200' with 35' "H" Cement-Tested to 3000#-OK-PBTD=8163'.

3-18-86: Perf 2-Cmt. squeeze holes at 7870' & set cmt. sq. ret. at 7860'

3-19-86: Squeeze with 110-sxs "H" with 3# NaCl/Sk.

3-22-86: Ran Welex CBL(submitted with this report) & found PBTD=7842' with no cmt. behind 5½"

4-15-86: Plan to change operator
PBTD=7842'

NOTE: New operator will submit Open-Hole Logs

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNED [signature] TITLE d/b/a METEX PIPE & SUPPLY DATE 4-15-86

APPROVED BY Original Signed By Les A. Clements TITLE Supervisor District II DATE APR 23 1986

CONDITIONS OF APPROVAL, IF ANY:

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LAND OFFICE		
OPERATOR	✓	

NEW MEXICO OIL CONSERVATION COMMISSION

Form C-103
Supersedes Old
C-102 and C-103
Effective 1-1-65

5a. Indicate Type of Lease
State [X] Fee [ ]

5. State Oil & Gas Lease No.
B-3823

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT —" (FORM C-101) FOR SUCH PROPOSALS.)

7. Unit Agreement Name

OIL WELL [ ] GAS WELL [ ] OTHER-

1. Name of Operator
Frostman Oil Corporation

8. Farm or Lease Name
Walter State

2. Address of Operator
P. O. Drawer W, Artesia, NM 88210

9. Well No.
1

4. Location of Well
UNIT LETTER L, 400 FEET FROM THE West LINE AND 2240 FEET FROM THE South LINE, SECTION 5 TOWNSHIP 18 S RANGE 28E NMPM.

10. Field and Pool, or Wildcat
Wildcat Penn

15. Elevation (Show whether DF, RT, GR, etc.)

12. County
Eddy

6. Check Appropriate Box To Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK [ ]	PLUG AND ABANDON [ ]	REMEDIAL WORK [ ]	ALTERING CASING [ ]
TEMPORARILY ABANDON [ ]		COMMENCE DRILLING OPNS. [ ]	PLUG AND ABANDONMENT [ ]
PULL OR ALTER CASING [ ]	CHANGE PLANS [ ]	CASING TEST AND CEMENT JOB [ ]	
OTHER [ ]		OTHER [ ]	

7. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

6/23/86: Shot off casing at 7846' with jet shot. Pulled casing out of hole.

6/25/86: Installed Halliburton packer shoe on bottom & Lynes casing formation packer 157' above bottom casing. Ran casing back to T.D. Packer shoe at 7832, Lynes packer at 7690. Dropped ball, loaded casing, broke circulation. Cemented with 100 Sxs of Class H Cement. Pumped plug down. Pressured casing to 3250'. Plug down 5:30 p.m. 6/25/86.

6/30/86: Ran bond log top of cement at 7400'. Perforated 7778' - 7787' (10 holes) acidized with 1000 gals of 15% acid. Swabbing all water.

7/2/86 : Perforated 7810'-7812' (1 shot per foot). Swabbed with packer at 7794' - all water.

7/3/86 : Perforated 7742' - 7756' (15 holes) Set bridge plug at 7768', packer at 7685', acidized with 1000 gal. 15% acid. Swabbed - all water.

7/9/86 : Perforated 7518' to 7534' (16 ft. - 17 holes). Acidized with 1000 gals. 15% acid. Swabbed - all water.

Set bridge plug at 7490', pulled tubing and shut in well.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

FROSTMAN OIL CORPORATION

SIGNED [signature] TITLE Clarence Forister, President DATE 1/20/87

APPROVED BY Original Signed By Leslie A. Clements Supervisor District II TITLE DATE JAN 27 1987

CONDITIONS OF APPROVAL, IF ANY:

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

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OIL CONSERVATION DIVISION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

RECEIVED
JUL 26 '88

Form C-103
Revised 10-1-

5a. Indicate Type of Lease: State [X] Fee [ ]
5. State Oil & Gas Lease No.: SWD-130

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT —" (FORM C-101) FOR SUCH PROPOSALS.)

1. OIL WELL [ ] GAS WELL [ ] OTHER Disposal Well
7. Unit Agreement Name: Walter Solt State No.
2. Name of Operator: I. & W, Inc.
8. Farm or Lease Name: Solt #1
3. Address of Operator: P. O. Box 98 , Loco Hills, New Mexico 88255
9. Well No.: 1
4. Location of Well: UNIT LETTER "L" , 2240' FEET FROM FSL LINE AND 40 FEET FROM THE FWL LINE, SECTION 5 TOWNSHIP 18-S RANGE 28-E NMPM.
10. Field and Pool, or Wildcat: Wolfcamp
15. Elevation (Show whether DF, RT, GR, etc.): 3644.4' Gr.
12. County: Eddy

16. Check Appropriate Box To Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK [ ]	PLUG AND ABANDON [ ]	REMEDIAL WORK [ ]	ALTERING CASING [ ]
TEMPORARILY ABANDON [ ]		COMMENCE DRILLING OPNS. [ ]	PLUG AND ABANDONMENT [ ]
PULL OR ALTER CASING [ ]	CHANGE PLANS [ ]	CASING TEST AND CEMENT JOB [ ]	
OTHER [ ]		OTHER run tubing, acidizing	

17. Describe Proposed or Completed Operations (*Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work*) SEE RULE 1103.

2-8-88 Run tbg. hit fill at 7468', circulate to 7830', pump packer fluid.
2-9-88 set packer at 7457', pump treatment of 500 gal. zeloline, 5000 Gal.15% NE Acid.
Test to 500# W/ state man on location , held for 30 min.
Shut in waiting on battery to be build.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNED Peggy L. Bell TITLE Office Mgr. DATE 7-23-88

APPROVED BY Original Signed By [illegible] TITLE [ ] DATE DEC 9 1988

CONDITIONS OF APPROVAL, IF ANY:

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-103
Revised 1-1-89

83 dsf

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

obbs, NM 88240

DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

WELL API NO.

5. Indicate Type of Lease STATE [X] FEE [ ]

6. State Oil & Gas Lease No.

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

7. Lease Name or Unit Agreement Name: Walter Solt State SWD

1. Type of Well: OIL WELL [ ] GAS WELL [ ] OTHER SWD

2. Name of Operator: I & W, Inc.

8. Well No.: 1

3. Address of Operator: P.O. Box 98 Loco Hills, NM 88255

9. Pool name or Wildcat:

4. Well Location
Unit Letter L : 400 Feet From The West Line and 2240 Feet From The South L

Section 5 Township 18S Range 28E NMPM Eddy County

10. Elevation (Show whether DF, RKB, RT, GR, etc.) 3644.4 GR

11. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
PERFORM REMEDIAL WORK	[ ]	PLUG AND ABANDON	[ ]	REMEDIAL WORK	[X]	ALTERING CASING	
TEMPORARILY ABANDON	[ ]	CHANGE PLANS	[ ]	COMMENCE DRILLING OPNS.	[ ]	PLUG AND ABANDONMENT	
PULL OR ALTER CASING	[ ]			CASING TEST AND CEMENT JOB	[ ]		
OTHER:	[ ]			OTHER:			

12. Describe Proposed or Completed Operations *(Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work)* SEE RULE 1103.

Cement Squeeze: 5/3/91 to 5/9/91

1. Found hole in casing @ 7390'
2. Squeezed w/25 sks. premium plus w/2% $CaCl_2$ @ 14.8#/gal and 250 sks. neat @ 14.8#/gal.
3. Found cmt. top @ 6250' by temp. survey.
4. Drilled out cement & tested squeeze to 400# for 30 min. No pressure loss.
5. Ran back pkr. & tbg. & set @ 7457'. Tested backside to 300# for 30 min.No pressure loss. Well put back in operation.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Michael R. Butts TITLE General Manager DATE 6/3/91

TYPE OR PRINT NAME Michael R. Butts TELEPHONE NO. 746-4

(This space for State Use) ORIGINAL SIGNED BY MIKE WILLIAMS SUPERVISOR, DISTRICT II

APPROVED BY _____ TITLE _____ DATE JUN 5 1991

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STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

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	GAS	
OPERATOR		
PRORATION OFFICE		

OIL CONSERVATION DIVISION

P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

Form C-104
Revised 10-01-78
Format 06-01-83
Page 1

REQUEST FOR ALLOWABLE AND AUTHORIZATION TO TRANSPORT OIL AND NATURAL GAS

I.

Operator: I. & W, Inc.

Address: P. O. Box 98, Loco Hills, New Mexico 88255

Reason(s) for filing (Check proper box)

- [ ] New Well
- [ ] Recompletion
- [ ] Change in Ownership

Change in Transporter of:

- [X] Oil
- [ ] Dry Gas
- [ ] Casinghead Gas
- [ ] Condensate

Other (Please explain)

If change of ownership give name and address of previous owner _____

II. DESCRIPTION OF WELL AND LEASE

Lease Name	Well No.	Pool Name, Including Formation	Kind of Lease	Lease No.
Walker Solt State	1	Wolfcamp	State, Federal or Fee State	SWD-130

Location

Unit Letter "L" ; 2240' Feet From The South Line and 400' Feet From The West

Line of Section 5 Township 19-S Range 28-E , NMPM, Eddy County

III. DESIGNATION OF TRANSPORTER OF OIL AND NATURAL GAS

Name of Authorized Transporter of Oil [X] or Condensate [ ]: Navajo Trucking
Address (Give address to which approved copy of this form is to be sent): P. O. Box 159, Artesia, New Mexico 88210

Name of Authorized Transporter of Casinghead Gas [ ] or Dry Gas [ ]:
Address (Give address to which approved copy of this form is to be sent):

If well produces oil or liquids, give location of tanks.	Unit	Sec.	Twp.	Rge.	Is gas actually connected?	When
	L	5	19-S	28-E		

If this production is commingled with that from any other lease or pool, give commingling order number: _____

NOTE: *Complete Parts IV and V on reverse side if necessary.*

VI. CERTIFICATE OF COMPLIANCE

I hereby certify that the rules and regulations of the Oil Conservation Division have been complied with and that the information given is true and complete to the best of my knowledge and belief.

Mike Butts
(Signature)

Manager
(Title)

10-27-88
(Date)

OIL CONSERVATION DIVISION

APPROVED DEC 6 1988, 19____

BY Mike Williams

TITLE SUPERVISOR, DISTRICT II

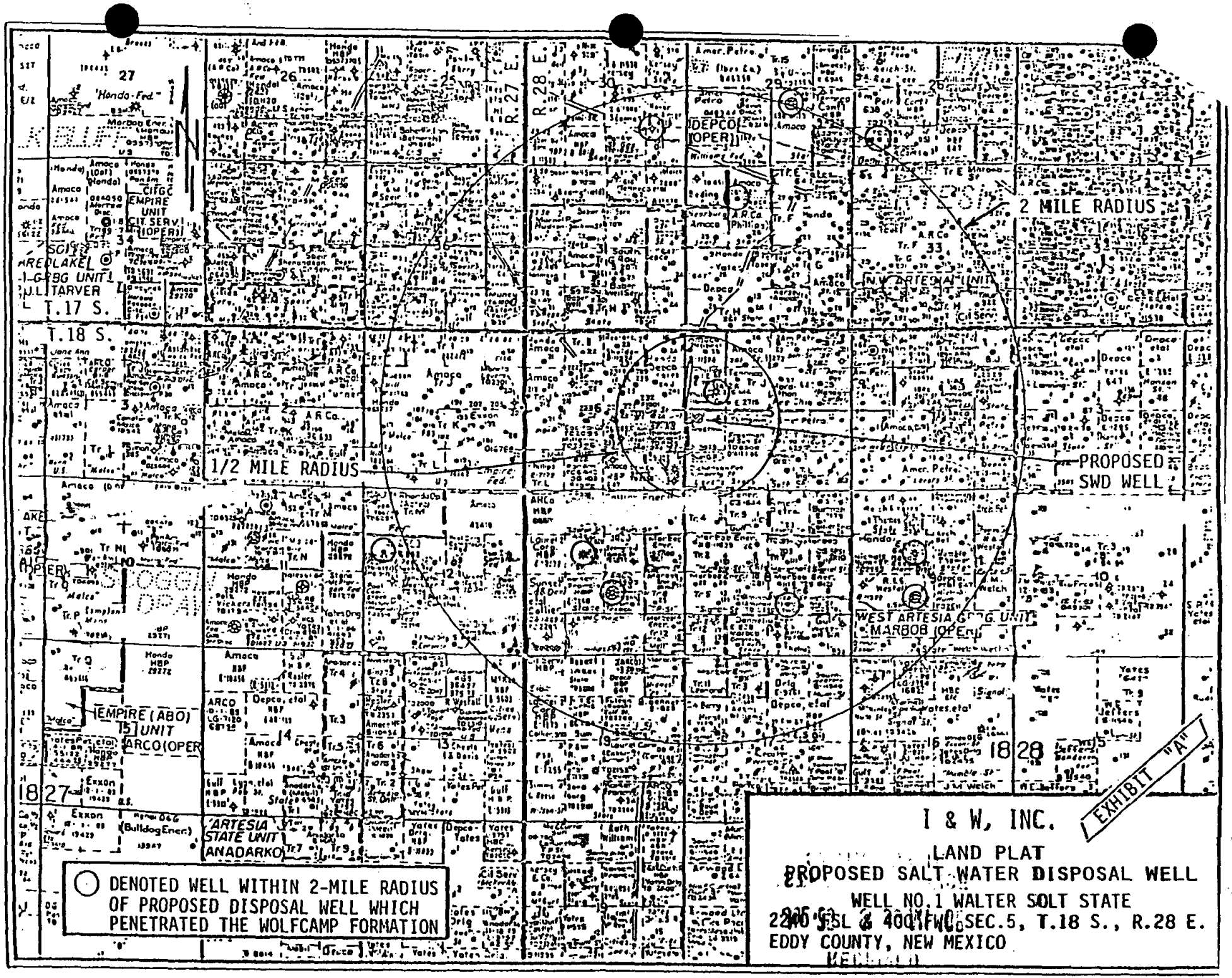
This form is to be filed in compliance with RULE 1104.

If this is a request for allowable for a newly drilled or deepened well, this form must be accompanied by a tabulation of the deviation tests taken on the well in accordance with RULE 111.

All sections of this form must be filled out completely for allowable on new and recompleted wells.

Fill out only Sections I, II, III, and VI for changes of owner, well name or number, or transporter, or other such change of condition.

Separate Forms C-104 must be filed for each pool in multiply completed wells.


R. 28 E.
R. 27 E.
T. 17 S.
T. 18 S.
2 MILE RADIUS
1/2 MILE RADIUS
PROPOSED SWD WELL
DEPCO (OPER.)
EMPIRE UNIT
CITIES SERV. (OPER.)
EMPIRE (ABO) UNIT
ARCO (OPER.)
ARTESIA STATE UNIT
ANADARKO
WEST ARTESIA GRBG. UNIT
MARBOB (OPER.)
N.W. ARTESIA UNIT
Hondo-Fed.
Bulldog Enerc.
EXHIBIT "A"
DENOTED WELL WITHIN 2-MILE RADIUS OF PROPOSED DISPOSAL WELL WHICH PENETRATED THE WOLFCAMP FORMATION
I & W, INC.
LAND PLAT
PROPOSED SALT WATER DISPOSAL WELL
WELL NO. 1 WALTER SOLT STATE
2240' FSL & 400' FWL SEC. 5, T. 18 S., R. 28 E.
EDDY COUNTY, NEW MEXICO

CMD :
OG6ISWI

ONGARD
INQUIRE SALT WATER/GAS INJECTION

02/05/98 10:52:45
OGOAJL -EMF2
PAGE NO: 1

Ogrid Identifier : 10866 I & W INC
Pool Identifier : 96135 SWD;WOLFCAMP
API Well No : 30 15 25522 Report Period - From : 01 1994 To : 12 1997

API Well No	Property Name	Injn. Days MM/YY	Injn Days	Injection Volume Salt Water	Injection Volume Gas	Injn Pres	Well Stat
30 15 25522	WALTER SOLT STATE	03	94	24704			D
30 15 25522	WALTER SOLT STATE	04	94	19701			D
30 15 25522	WALTER SOLT STATE	05	94	27440			D
30 15 25522	WALTER SOLT STATE	06	94	17719			D
30 15 25522	WALTER SOLT STATE	07	94	20040			D
30 15 25522	WALTER SOLT STATE	08	94	22905			D
30 15 25522	WALTER SOLT STATE	09	94	21371			D
	Reporting Period Total :						

M0025: Enter PF keys to scroll

PF01 HELP PF02 PF03 EXIT PF04 GOTO PF05 PF06
PF07 BKWD PF08 FWD PF09 PF10 NXTPOOL PF11 PF12

CMD :
OG6ISWI

ONGARD
INQUIRE SALT WATER/GAS INJECTION

02/05/98 10:52:58
OGOAJL -EMF2
PAGE NO: 2

43

Ogrid Identifier : 10866 I & W INC
Pool Identifier : 96135 SWD;WOLFCAMP
API Well No : 30 15 25522 Report Period - From : 01 1994 To : 12 1997

API Well No	Property Name	Injn. Days MM/YY	Injn	Injection Volume Salt Water	Gas	Injn Pres	Well Stat
30 15 25522	WALTER SOLT STATE	10	94	18997			D
30 15 25522	WALTER SOLT STATE	11	94	17647			D
30 15 25522	WALTER SOLT STATE	12	94	15071			D
30 15 25522	WALTER SOLT STATE	01	95	19402			D
30 15 25522	WALTER SOLT STATE	02	95	17017			D
30 15 25522	WALTER SOLT STATE	09	95	26129			D
30 15 25522	WALTER SOLT STATE	10	95	36239			D
	Reporting Period Total :						

PF01 HELP PF02 PF03 EXIT PF04 GOTO PF05 PF06
PF07 BKWD PF08 FWD PF09 PF10 NXTPOOL PF11 PF12

43

Ogrid Identifier : 10866 I & W INC
Pool Identifier : 96135 SWD;WOLFCAMP
API Well No : 30 15 25522 Report Period - From : 01 1994 To : 12 1997

API Well No	Property Name	Injn. Days MM/YY Injn	Injection Volume Salt Water	Gas	Injn Pres	Well Stat
30 15 25522	WALTER SOLT STATE	11 95	29117			D
30 15 25522	WALTER SOLT STATE	12 95	23579			D
30 15 25522	WALTER SOLT STATE	01 96	27765			D
30 15 25522	WALTER SOLT STATE	02 96	18782			D
30 15 25522	WALTER SOLT STATE	03 96	14169			D
30 15 25522	WALTER SOLT STATE	04 96	16893			D
30 15 25522	WALTER SOLT STATE	05 96	13448			D
	Reporting Period Total :					

PF01 HELP PF02 PF03 EXIT PF04 GOTO PF05 PF06
PF07 BKWD PF08 FWD PF09 PF10 NXTPOOL PF11 PF12

43

Ogrid Identifier : 10866 I & W INC
Pool Identifier : 96135 SWD;WOLFCAMP
API Well No : 30 15 25522 Report Period - From : 01 1994 To : 12 1997

API Well No	Property Name	Injn. Days MM/YY	Injn	Injection Volume Salt Water	Gas	Injn Pres	Well Stat
30 15 25522	WALTER SOLT STATE	06	96	15856			D
30 15 25522	WALTER SOLT STATE	07	96	22100			D
30 15 25522	WALTER SOLT STATE	08	96	11207			D
30 15 25522	WALTER SOLT STATE	09	96	26087			D
30 15 25522	WALTER SOLT STATE	10	96	47320			D
30 15 25522	WALTER SOLT STATE	11	96	32019			D
30 15 25522	WALTER SOLT STATE	12	96				D
	Reporting Period Total :			.			

PF01 HELP PF02 PF03 EXIT PF04 GOTO PF05 PF06
PF07 BKWD PF08 FWD PF09 PF10 NXTPOOL PF11 PF12

CMD :
OG6ISWI

ONGARD
INQUIRE SALT WATER/GAS INJECTION

02/05/98 10:55:39
OGOAJL -EMF2
PAGE NO: 5

Ogrid Identifier : 10866 I & W INC
Pool Identifier : 96135 SWD;WOLFCAMP
API Well No : 30 15 25522 Report Period - From : 01 1994 To : 12 1997

API Well No	Property Name	Injn. Days MM/YY Injn	Injection Volume Salt Water	Gas	Injn Pres	Well Stat
30 15 25522	WALTER SOLT STATE	01 97	78779			D
30 15 25522	WALTER SOLT STATE	02 97	37402			D
30 15 25522	WALTER SOLT STATE	03 97	13330			D
30 15 25522	WALTER SOLT STATE	04 97	9162			D
30 15 25522	WALTER SOLT STATE	05 97	5582			D
30 15 25522	WALTER SOLT STATE	06 97	14688			D
30 15 25522	WALTER SOLT STATE	07 97	25682			D
	Reporting Period Total :					

PF01 HELP PF02 PF03 EXIT PF04 GOTO PF05 PF06
PF07 BKWD PF08 FWD PF09 PF10 NXTPOOL PF11 PF12

CMD :
OG6ISWI

ONGARD
INQUIRE SALT WATER/GAS INJECTION

02/05/98 10:55:42
OGOAJL -EMF2
PAGE NO: 6

Ogrid Identifier : 10866 I & W INC
Pool Identifier : 96135 SWD;WOLFCAMP
API Well No : 30 15 25522 Report Period - From : 01 1994 To : 12 1997

API Well No	Property Name	Injn. Days MM/YY Injn	Injection Volume Salt Water	Gas	Injn Pres	Well Stat
30 15 25522	WALTER SOLT STATE	08 97	21038			D

Reporting Period Total : 808387

PF01 HELP PF02 PF03 EXIT PF04 GOTO PF05 PF06
PF07 BKWD PF08 FWD PF09 PF10 NXTPOOL PF11 PF12

NEW MEXICO STATE LAND OFFICE

QUESTIONAIRE TO BE COMPLETED IN CONNECTION
WITH SALT WATER DISPOSAL WELL EASEMENT

1. What is the oil and gas mineral ownership of the land from which the salt water will be produced?

   Private 20 %, State 40 %, Federal 40 %.

2. What is the approximate number of barrels of salt water that will be injected into the well per day?

   2000 bbls.

3. What is the formation into which the salt water will be injected? Wolfcamp

4. Have you enclosed consent of the oil and gas lessee for the use as a salt water disposal well? See attached

5. From which well(s) is the salt water being produced and to be injected? (Give complete description of oil wells.) See attached plat of wells in the vacinity

6. What is your O.C.C. Order No. -

7. What reaction have the adjacent wells reflected from the injected water? (Answer only if this is a renewal application.)

8. What is estimated reservoir of oil still to be recovered from wells which are the source of the salt water?

   Unknown

9. What is the estimated time that it will take to deplete the well or wells?

   Depends upon economics of oil business

I & W, Inc.

Signed by: Robert E. Boling

Robert E. Boling Agent

Address: P O Box 176

Artesia, New Mexico 88210

FOR OFFICE USE ONLY

Approved by O.C.C.:

S-1 8/17/82

MAP ID NO. 124

MEWBORNE OIL COMPANY
NO. 1 CHALK BLUFF "6" STATE

124

Submit to Appropriate
District Office
State Lease -- 6 copies
Fee Lease -- 5 copies

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-101
Revised 1-1-89

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

API NO. (assigned by OCD on New Wells) 30-015-26743

5. Indicate Type of Lease STATE [X] FEE [ ]

6. State Oil & Gas Lease No. E-7179

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. Type of Work:
DRILL [X] RE-ENTER [ ] DEEPEN [ ] PLUG BACK [ ]

b. Type of Well:
OIL WELL [ ] GAS WELL [X] OTHER SINGLE ZONE [ ] MULTIPLE ZONE [ ]

7. Lease Name or Unit Agreement Name: Chalk Bluff "6" State

2. Name of Operator: Mewbourne Oil Company

8. Well No. 1

3. Address of Operator: P.O. Box 5270 Hobbs, New Mexico 88241

9. Pool name or Wildcat: North Illinois Camp Morrow

4. Well Location
Unit Letter M : 730 Feet From The West Line and 990 Feet From The South Line

Section 6 Township 18S Range 28E NMPM Eddy County

10. Proposed Depth	11. Formation	12. Rotary or C.T.
10,200'	Morrow	Rotary

13. Elevations (Show whether DF, RT, GR, etc.)	14. Kind & Status Plug. Bond	15. Drilling Contractor	16. Approx. Date Work will start
3635' G.L.	Blanket on file	WEK Drilling Co.	August 10, 1991

17. PROPOSED CASING AND CEMENT PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	SACKS OF CEMENT	EST. TOP
17-1/2"	13-3/8"	68#	± 400'	500	Surface
12-1/4"	9-5/8"	36#	± 2,600'	1000	Surface
7-7/8"	5-1/2"	17#	10,200'	600	Back 6,000'

Blow Out Preventor: Schaffer LWS or equivalent (Double Ram Hydraulic) 900 series. Hydril 900 series annular preventor. Grant rotating head, totco flow monitors on pits.

Mud Program:
0' - 400' Fresh water with spud mud. Paper for LCM material
400' - 2,600' Fresh water with LCM as needed.
2,600' - 8,400' Cut brine with lime.
8,400' - 10,200' Cut brine with Drispac, salt gel, lime, soda ash
Wt. 9.2-9.6 ppg WL 10 cc's or less

Gas is not dedicated.

APPROVAL VALID FOR [illegible] DAYS
PERMIT EXPIRES [illegible]
UNLESS DRILLING UNDERWAY

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: IF PROPOSAL IS TO DEEPEN OR PLUG BACK, GIVE DATA ON PRESENT PRODUCTIVE ZONE AND PROPOSED NEW PRODUCTIVE ZONE. GIVE BLOWOUT PREVENTER PROGRAM, IF ANY.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE [signature] TITLE District Supt. DATE July 11, 1991

TYPE OR PRINT NAME TELEPHONE NO.

(This space for State Use)

APPROVED BY [signature] TITLE SUPERVISOR, DISTRICT II DATE FEB 11 1992

CONDITIONS OF APPROVAL, IF ANY:

Submit to Appropriate
District Office
State Lease - 4 copies
Fee Lease - 3 copies

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Form C-102
Revised 1-1-89

WELL LOCATION AND ACREAGE DEDICATION PLAT
All Distances must be from the outer boundaries of the section

Operator	Lease	Well No.
MEWBOURNE OIL COMPANY	CHALK BLUFF "6" State	1

Unit Letter	Section	Township	Range	County
M	6	18 SOUTH	28 EAST NMPM	EDDY

Actual Footage Location of Well:
990 feet from the SOUTH line and 730 feet from the WEST line

Ground level Elev.	Producing Formation	Pool	Dedicated Acreage:
3635.0	Morrow	North Illinois Camp Morrow	334.98 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below. W 1/2

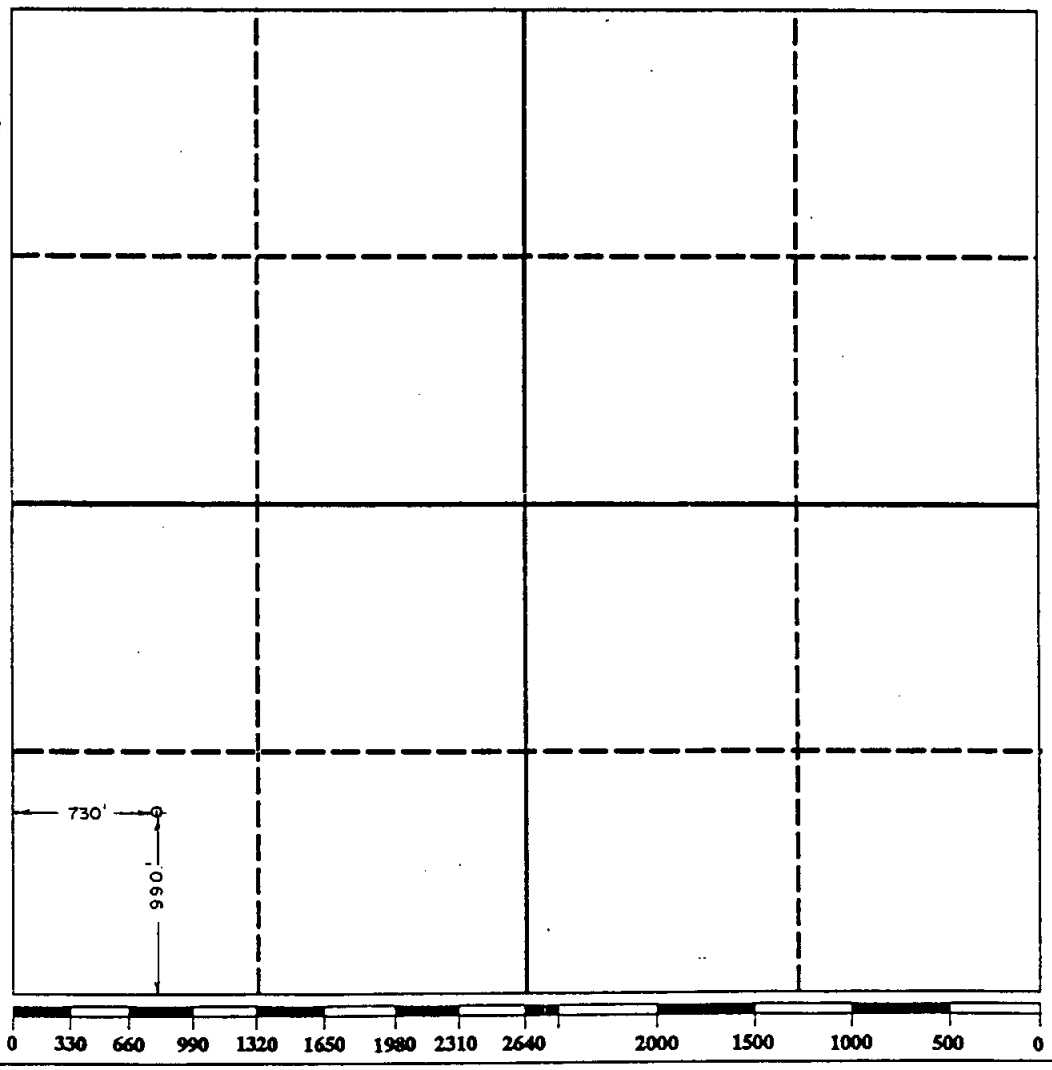
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interest of all owners been consolidated by communitization, unitization, force-pooling, etc.?

☐ Yes ☐ No If answer is "yes" type of consolidation _____

If answer is "no" list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary. _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interest, has been approved by the Division.



OPERATOR CERTIFICATION

I hereby certify that the information contained herein in true and complete to the best of my knowledge and belief.

Signature: W H Cravey

Printed Name: W.H. Cravey

Position: District Supt.

Company: Mewbourne Oil Co.

Date: July 9, 1991

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervison, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed: 6/28/[illegible]

Signature & Seal of Professional Surveyor

STATE OF NEW MEXICO
HERSCHEL L. JONES
3640
REGISTERED PROFESSIONAL SURVEYOR

Certificate No. 3640

Submit to Appropriate
District Office
State Lease – 6 copies
Fee Lease – 5 copies

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Form C-105
Revised 1-1-89

WELL API NO. 30-015-26943

5. Indicate Type of Lease STATE ■ FEE ☐

6. State Oil & Gas Lease No. E-7179

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

1a. Type of Well: OIL WELL ☐ GAS WELL ■ DRY ☐ OTHER

b. Type of Completion: NEW WELL ■ WORK OVER ☐ DEEPEN ☐ PLUG BACK ☐ DIFF RESVR ☐ OTHER

7. Lease Name or Unit Agreement Name: CHALK BLUFF "6" STATE

2. Name of Operator: MEWBOURNE OIL COMPANY

8. Well No. 1

3. Address of Operator: P. O. Box 7698, Tyler, Texas 75711

9. Pool name or Wildcat: NORTH ILLINOIS CAMP MORROW

4. Well Location
Unit Letter M : 730 Feet From The WEST Line and 990 Feet From The SOUTH Line

Section 6 Township 18S Range 28E NMPM EDDY County

10. Date Spudded	11. Date T.D. Reached	12. Date Compl. (Ready to Prod.)	13. Elevations (DF & RKB, RT, GR, etc.)	14. Elev. Casinghead
2/17/92	3/21/92	4/16/92	DF 3339', GR 3324'	

15. Total Depth	16. Plug Back T.D.	17. If Multiple Compl. How Many Zones?	18. Intervals Drilled By	Rotary Tools	Cable Tools
10,200'	10,151'			X	

19. Producing Interval(s), of this completion - Top, Bottom, Name: 10,084'-10,092' - Morrow

20. Was Directional Survey Made: Yes

21. Type Electric and Other Logs Run: SDL-DSN, DIL/DLL-MSFL

22. Was Well Cored: NO

23. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT LB./FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
13-3/8"	48# & 68#	400'	17-1/2"	500 sxs - circ	None
9-5/8"	24#	2,600'	12-1/4"	1100 sxs - circ	None
7"	26#	9,445'	7-7/8"	1895 sxs - circ 1st string	None

24. LINER RECORD

SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN
4-1/2"	9077'	10,198'	175	

25. TUBING RECORD

SIZE	DEPTH SET	PACKER SET
2-3/8"	9,990'	9,990'

26. Perforation record (interval, size, and number)

10,084'-10,092' - 8', 1 SPF, 9 holes

27. ACID, SHOT, FRACTURE, CEMENT, SQUEEZE, ETC.

DEPTH INTERVAL	AMOUNT AND KIND MATERIAL USED
10,084-092'	Acidized with 2600 gals 7½% HCL + additives & 1367 scf/ bbl N^2 & 15 frac balls.

28. PRODUCTION

Date First Production	Production Method (Flowing, gas lift, pumping - Size and type pump)	Well Status (Prod. or Shut-in)
4/17/92	Flowing	Producing

Date of Test	Hours Tested	Choke Size	Prod'n For Test Period	Oil - Bbl.	Gas - MCF	Water - Bbl.	Gas - Oil Ratio
4/28/92	24 hours	12/64"		36	1,902	0	52,833:1

Flow Tubing Press.	Casing Pressure	Calculated 24-Hour Rate	Oil - Bbl.	Gas - MCF	Water - Bbl.	Oil Gravity - API - (Corr.)
2690#	—		36	1,902	0	51.6

29. Disposition of Gas (Sold, used for fuel, vented, etc.): Sold

Test Witnessed By: Bill Pierce

30. List Attachments: Logs

31. I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief

Signature [signature] Printed Name Gaylon Thompson Title Engr.Oprns.Sec. Date 4/28/92

Submit to Appropriate
District Office
State Lease – 6 copies
Fee Lease – 5 copies

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Form C-105
Revised 1-1-89

WELL API NO.
30-015-26943

5. Indicate Type of Lease STATE ■ FEE ☐

6. State Oil & Gas Lease No.
E-7179

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

1a. Type of Well: OIL WELL ☐ GAS WELL ■ DRY ☐ OTHER

b. Type of Completion: NEW WELL ■ WORK OVER ☐ DEEPEN ☐ PLUG BACK ☐ DIFF RESVR ☐ OTHER

7. Lease Name or Unit Agreement Name
CHALK BLUFF "6" STATE

2. Name of Operator
MEWBOURNE OIL COMPANY

8. Well No.
1

3. Address of Operator
P. O. Box 7698, Tyler, Texas 75711

9. Pool name or Wildcat
NORTH ILLINOIS CAMP MORROW

4. Well Location
Unit Letter M : 730 Feet From The WEST Line and 990 Feet From The SOUTH Line

Section 6 Township 18S Range 28E NMPM EDDY County

10. Date Spudded	11. Date T.D. Reached	12. Date Compl. (Ready to Prod.)	13. Elevations (DF& RKB, RT, GR, etc.)	14. Elev. Casinghead
2/17/92	3/21/92	4/16/92	DF 3339', GR 3324'	

15. Total Depth	16. Plug Back T.D.	17. If Multiple Compl. How Many Zones?	18. Intervals Drilled By	Rotary Tools	Cable Tools
10,200'	10,151'			X	

19. Producing Interval(s), of this completion - Top, Bottom, Name
10,084'-10,092' - Morrow

20. Was Directional Survey Made
Yes

21. Type Electric and Other Logs Run
SDL-DSN, DIL/DLL-MSFL

22. Was Well Cored
NO

23. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT LB./FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
13-3/8"	48# & 68#	400'	17-1/2"	500 sxs - circ	None
9-5/8"	24#	2,600'	12-1/4"	1100 sxs - circ	None
7"	26#	9,445'	7-7/8"	1895 sxs - circ 1st string	None

24. LINER RECORD

SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN
4-1/2"	9077'	10,198'	175	

25. TUBING RECORD

SIZE	DEPTH SET	PACKER SET
2-3/8"	9,990'	9,990'

26. Perforation record (interval, size, and number)

10,084'-10,092' - 8', 1 SPF, 9 holes

27. ACID, SHOT, FRACTURE, CEMENT, SQUEEZE, ETC.

DEPTH INTERVAL	AMOUNT AND KIND MATERIAL USED
10,084-092'	Acidized with 2600 gals 7½% HCL + additives & 1367 scf/ bbl N^2 & 15 frac balls.

28. PRODUCTION

Date First Production	Production Method (Flowing, gas lift, pumping - Size and type pump)	Well Status (Prod. or Shut-in)
4/17/92	Flowing	Producing

Date of Test	Hours Tested	Choke Size	Prod'n For Test Period	Oil - Bbl.	Gas - MCF	Water - Bbl.	Gas - Oil Ratio
4/28/92	24 hours	12/64"		36	1,902	0	52,833:1

Flow Tubing Press.	Casing Pressure	Calculated 24-Hour Rate	Oil - Bbl.	Gas - MCF	Water - Bbl.	Oil Gravity - API - (Corr.)
690#	—		36	1,902	0	51.6

29. Disposition of Gas (Sold, used for fuel, vented, etc.)
Sold

Test Witnessed By
Bill Pierce

30. List Attachments
Logs

31. I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief

Signature [signature] Printed Name Gaylon Thompson Title Engr.Oprns.Sec. Date 4/28/92

INSTRUCTIONS

This form is to be filed with the appropriate District Office of the Division not later than 20 days after the completion of any newly-drilled or deepened well. It shall be accompanied by one copy of all electrical and radio-activity logs run on the well and a summary of all special tests conducted, including drill stem tests. All depths reported shall be measured depths. In the case of directionally drilled wells, true vertical depths shall also be reported. For multiple completions, Items 25 through 29 shall be reported for each zone. The form is to be filed in quintuplicate except on state land, where six copies are required. See Rule 1105.

INDICATE FORMATION TOPS IN CONFORMANCE WITH GEOGRAPHICAL SECTION OF STATE

Southeastern New Mexico				Northwestern New Mexico			
T. Anhy		T. Canyon	8,432'	T. Ojo Alamo		T. Penn. "B"	
T. Salt		T. Strawn	8,944'	T. Kirtland-Fruitland		T. Penn. "C"	
B. Salt		T. Atoka	9,562'	T. Pictured Cliffs		T. Penn. "D"	
T. Yates	478'	T. Miss		T. Cliff House		T. Leadville	
T. 7 Rivers	596'	T. Devonian		T. Menefee		T. Madison	
T. Queen	1,209'	T. Silurian		T. Point Lookout		T. Elbert	
T. Grayburg	1,560'	T. Montoya		T. Mancos		T. McCracken	
T. San Andres	2,062'	T. Simpson		T. Gallup		T. Ignacio Otzte	
T. Glorieta	3,626'	T. McKee		Base Greenhorn		T. Granite	
T. Paddock		T. Ellenburger		T. Dakota		T.	
T. Blinebry		T. Gr. Wash		T. Morrison		T.	
T. Tubb	4,736'	T. Delaware Sand		T. Todilto		T.	
T. Drinkard	5,531'	T. Bone Springs		T. Entrada		T.	
T. Abo	5,878'	T. Morrow	9,664'	T. Wingate		T.	
T. Wolfcamp	6,606'	T. Mor.Clast.	9,874'	T. Chinle		T.	
T. Penn		T. L.Morrow	10,006'	T. Permain		T.	
T. Cisco	7,742'	T.		T. Penn "A"		T.	

OIL OR GAS SANDS OR ZONES

No. 1, from 10,084' to 10,092' No. 3, from ..... to .....

No. 2, from ..... to ..... No. 4, from ..... to .....

IMPORTANT WATER SANDS

Include data on rate of water inflow and elevation to which water rose in hole.

No. 1, from NONE to ..... feet .....

No. 2, from ..... to ..... feet .....

No. 3, from ..... to ..... feet .....

LITHOLOGY RECORD (Attach additional sheet if necessary)

From	To	Thickness in Feet	Lithology	From	To	Thickness in Feet	Lithology
0'	430'	430'	Red Bed & Anhydrite				
430'	2490'	2060'	Anhydrite				
2490'	2600'	110'	Anhydrite & Dolomite				
2600'	4782'	2182'	Dolomite				
4782'	7520'	2730'	Dolomite & Lime				
7520'	9450'	1930'	No Returns				
9450'	9840'	390'	Lime				
9840'	10028'	188'	Lime & Shale				
10028'	10200'	172'	Shale				

Suomit 3 Copies to Appropriate District Office

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

RECEIVED
APR 3 1992
O. C. D.
ARTESIA, OFFICE

Form C-103
Revised 1-1-89

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

MAR 2 3 1992

O. C. D.
ARTESIA OFFICE

WELL API NO. 30-015-26943

5. Indicate Type of Lease STATE ■ FEE ☐

6. State Oil & Gas Lease No. E-7179

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

7. Lease Name or Unit Agreement Name: CHALK BLUFF "6" STATE

1. Type of Well: OIL WELL ☐ GAS WELL ■ OTHER

2. Name of Operator: Mewbourne Oil Company

8. Well No. 1

3. Address of Operator: P. O. Box 7698, Tyler, Texas 75711

9. Pool name or Wildcat: NORTH ILLINOIS CAMP MORROW

4. Well Location
Unit Letter M : 730 Feet From The West Line and 990 Feet From The South Line

Section 6 Township 18S Range 28E NMPM Eddy County

10. Elevation (*Show whether DF, RKB, RT, GR, etc.*) 3635' GR

11. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK ☐	PLUG AND ABANDON ☐	REMEDIAL WORK ☐	ALTERING CASING ☐
TEMPORARILY ABANDON ☐	CHANGE PLANS ☐	COMMENCE DRILLING OPNS. ■	PLUG AND ABANDONMENT ☐
PULL OR ALTER CASING ☐		CASING TEST AND CEMENT JOB ■	
OTHER: ☐		OTHER: ☐	

12. Describe Proposed or Completed Operations (*Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work*) SEE RULE 1103.

2/18/92 - Spud 7:45 AM 2/17/92. Cemented 13-3/8" casing at 400' with 100 sxs Class "C" + 10 pps Calseal + 5 pps Gilsonite + 1/2 pps Flocele + 2% $CaCl^2$ and 200 sxs Class "C" + 6% gel + ½ pps Flocele + 5# gilsonite + 2% $CaCl^2$. Tailed in with 200 sxs Class "C" + 2% $CaCl^2$. Plug down 4:15 PM 2/17/92. Pressure tested casing to 1000#. Float held okay. Did not circulate cement. WOC 3 hrs. Ran 1" and tagged at 190'. Cemented with 150 sxs Class "C" Neat. Circulated 20 sacks to pit. Total 12-1/4 hrs. WOC.

2/22/92 - Ran 9-5/8" 24# J-55 casing set at 2600' and cemented with 100 sxs Class "C" + 10# calseal + ½ pps Flocele + 5 pps Gilsonite + 2% $CaCl^2$ and 700 sxs Class "C" Lite + ½ pps Flocele + 5 pps Gilsonite. Tailed in with 300 sxs Class "C" + 2% $CaCl^2$. Had full returns while cementing. Plug down at 10:30 PM 2/22/92. Pressure tested casing to 1000# for 30 mins, float held okay. Circ 65 sxs to pit. WOC 8½ hours.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Clayton Thompson TITLE Engr.Oprns.Secretary DATE 3/19/92

TYPE OR PRINT NAME TELEPHONE NO.

(This space for State Use)

ORIGINAL SIGNED BY
MIKE WILLIAMS
SUPERVISOR, DISTRICT II

APPROVED BY TITLE DATE APR 2 3 1992

CONDITIONS OF APPROVAL, IF ANY:

Submit 3 Copies to Appropriate District Office

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Form C-103
Revised 1-1-89

clsf dp+

WELL API NO.
30-015-26943

5. Indicate Type of Lease STATE ■ FEE ☐

6. State Oil & Gas Lease No.
E-7179

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

7. Lease Name or Unit Agreement Name
CHALK BLUFF "6" STATE

1. Type of Well:
OIL WELL ☐ GAS WELL ■ OTHER

2. Name of Operator
Mewbourne Oil Company

8. Well No.
1

3. Address of Operator
P. O. Box 7698, Tyler, Texas 75711

9. Pool name or Wildcat
NORTH ILLINOIS CAMP MORROW

4. Well Location
Unit Letter M : 730 Feet From The West Line and 990 Feet From The South Line

Section 6 Township 18S Range 28E NMPM Eddy County

10. Elevation (*Show whether DF, RKB, RT, GR, etc.*)
3635' GR

11. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK ☐	PLUG AND ABANDON ☐	REMEDIAL WORK ☐	ALTERING CASING ☐
TEMPORARILY ABANDON ☐	CHANGE PLANS ☐	COMMENCE DRILLING OPNS. ☐	PLUG AND ABANDONMENT ☐
PULL OR ALTER CASING ☐		CASING TEST AND CEMENT JOB ■	
OTHER: ☐		OTHER: ☐	

12. Describe Proposed or Completed Operations (*Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work*) SEE RULE 1103.

3/14/92 - Ran 7" 26# S-95 casing set at 9445'. Bottom of packer at 7096'. DVT at 7033'. CEMENTED 1ST STAGE with 325 sacks Class "H" + 2 pps KCL + .3% CFR-3 + .4% Halad 22A + 5 pps Gilsonite + 5 pps Silicalite & 300 sacks Class "H" + 2 pps KCL + .3% CFR-3 + .4% Halad 22A + 5 pps Silicalite. Plug down at 9:00 AM 3/15/92. Pressure tested casing to 2600# and set packer. Checked float collar. Held okay. Did not have returns while cementing. Dropped bomb and opened DVT at 9:30 AM. Pumped 1 bbl and had full returns. Circulated bottoms up from DVT. Did circulate cement. CEMENTED 2ND STAGE with 1170 sacks H/L + ½ pps Flocele + 5 pps Silicalite + 5 pps salt. Tailed in with 100 sacks Class "H" + 5# Silicalite + 2 pps KCL. Had full returns while cementing. Started losing returns with 140 bbls displacement gone. Lost complete returns with 240 bbls of displacement gone. Plug down at 11:45 AM 3/15/92. Closed DVT. Held okay. Did not circulate on 2nd stage. WOC 19-1/4 hours.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Clayton Thompson TITLE Engr.Oprns.Secretary DATE 3/19/92

TYPE OR PRINT NAME TELEPHONE NO.

(This space for State Use)

ORIGINAL SIGNED BY
MIKE WILLIAMS
SUPERVISOR, DISTRICT II

APPROVED BY TITLE DATE MAR 2 3 1992

CONDITIONS OF APPROVAL, IF ANY:

c15F Dp

Submit 3 Copies to Appropriate District Office

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-103
Revised 1-1-89

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

WELL API NO.
30-015-26943

5. Indicate Type of Lease STATE ■ FEE ☐

6. State Oil & Gas Lease No.
E-7179

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

7. Lease Name or Unit Agreement Name
CHALK BLUFF "6" STATE

1. Type of Well:
OIL WELL ☐ GAS WELL ■ OTHER

8. Well No.
1

2. Name of Operator
Mewbourne Oil Company

9. Pool name or Wildcat
NORTH ILLINOIS CAMP MORROW

3. Address of Operator
P. O. Box 7698, Tyler, Texas 75711

4. Well Location
Unit Letter M : 730 Feet From The West Line and 990 Feet From The South Line

Section 6 Township 18S Range 28E NMPM Eddy County

10. Elevation (*Show whether DF, RKB, RT, GR, etc.*)
3635' GR

11. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
PERFORM REMEDIAL WORK	☐	PLUG AND ABANDON	☐	REMEDIAL WORK	☐	ALTERING CASING	☐
TEMPORARILY ABANDON	☐	CHANGE PLANS	☐	COMMENCE DRILLING OPNS.	☐	PLUG AND ABANDONMENT	☐
PULL OR ALTER CASING	☐			CASING TEST AND CEMENT JOB	■		
OTHER:	☐			OTHER:	☐		

12. Describe Proposed or Completed Operations (*Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work*) SEE RULE 1103.

3/24/92 - Ran 4-1/2" 11.6# N-80 liner. Top of liner at 9077'. Set liner at 10,198'. Cemented with 750 gals mud flush followed by 175 sxs Class "H" + 5 pps KCL + 5 pps Silicalite + 6/10% Halad 22A + 4/10% CRF-3. Plug down to 10,151' at 7:15 AM 3/23/92 with full returns. Checked float. Held okay.

4/10/92 - Tested casing to 1000# for 30 mins, held okay. Drilled out 120' cement in 4½" liner. Drilled through at 9200'. Tagged up at 10,103'. Drilled down to landing collar at 10,151'. Circulated hole. Tested casing to 1000# for 30 mins. Held OK.

4/11/92 - Western spotted acid over perforation interval. Ran CBL from TD 10,159' to 620'. Had good bond around 4½" lienr from TD to 9600'.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Gaylon Thompson TITLE Engr.Oprns.Secretary DATE 4/22/92

TYPE OR PRINT NAME TELEPHONE NO.

(This space for State Use)

APPROVED BY ORIGINAL SIGNED BY MIKE WILLIAMS SUPERVISOR, DISTRICT II TITLE DATE MAY 2 5 1992

CONDITIONS OF APPROVAL, IF ANY:

Submit 3 Copies to Appropriate District Office

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-103
Revised 1-1-89

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

WELL API NO. 30-015-26943

5. Indicate Type of Lease STATE ■ FEE ☐

6. State Oil & Gas Lease No. E-7179

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

7. Lease Name or Unit Agreement Name: CHALK BLUFF "6" STATE

1. Type of Well: OIL WELL ☐ GAS WELL ■ OTHER

2. Name of Operator: Mewbourne Oil Company

8. Well No. 1

3. Address of Operator: P. O. Box 7698, Tyler, Texas 75711

9. Pool name or Wildcat: NORTH ILLINOIS CAMP MORROW

4. Well Location
Unit Letter M : 730 Feet From The West Line and 990 Feet From The South Line

Section 6 Township 18S Range 28E NMPM Eddy County

10. Elevation (Show whether DF, RKB, RT, GR, etc.) 3635' GR

11. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
PERFORM REMEDIAL WORK	☐	PLUG AND ABANDON	☐	REMEDIAL WORK	☐	ALTERING CASING	☐
TEMPORARILY ABANDON	☐	CHANGE PLANS	☐	COMMENCE DRILLING OPNS.	☐	PLUG AND ABANDONMENT	☐
PULL OR ALTER CASING	☐			CASING TEST AND CEMENT JOB	☐		
OTHER:	☐			OTHER: Perforate and acidize	■		

12. Describe Proposed or Completed Operations *(Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work)* SEE RULE 1103.

4/14/92 - Ran 2-3/8" tubing set at 9990'. Tested to 8000#. Held okay. Set packer with 16 points compression.

4/15/92 - Perforated Lower Morrow 10,084' - 10,092'. 8' net, 1 SPF, 9 holes.

4/16/92 - Acidized perfs with 2600 gals 7½% HCL + additives and 1367 scf/bbl N^2 & 15 frac balls. MTP 3800#. Max TP 7600#. Avg 6300#. Well started flowing to pit on 10/64" choke. FTP 3000#.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Claytine Bomfrow TITLE Engr.Oprns.Secretary DATE 4/22/92

TYPE OR PRINT NAME TELEPHONE NO.

(This space for State Use)

APPROVED BY ORIGINAL SIGNED BY MIKE WILLIAMS SUPERVISOR, DISTRICT II TITLE DATE MAY 2 5 1992

CONDITIONS OF APPROVAL, IF ANY:

Submit 3 Copies to Appropriate District Office

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

NOV 15 1993

Revised 1-1-89

124

WELL API NO.
30-015-26943

5. Indicate Type of Lease STATE ■ FEE ☐

6. State Oil & Gas Lease No.
E-7179

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

7. Lease Name or Unit Agreement Name
Chalk Bluff "6" State

1. Type of Well:
OIL WELL ☐ GAS WELL ■ OTHER

2. Name of Operator
Mewbourne Oil Company

8. Well No.
1

3. Address of Operator
P.O. Box 5270 Hobbs, New Mexico 88241 (505) 393-5905

9. Pool name or Wildcat
North Illinois Camp Morrow

4. Well Location
Unit Letter M : 730 Feet From The West Line and 990 Feet From The South Line

Section 6 Township 18S Range 28E NMPM Eddy County

10. Elevation (Show whether DF, RKB, RT, GR, etc.)
3339' DF 3324' GR

11. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
PERFORM REMEDIAL WORK	☐	PLUG AND ABANDON	☐	REMEDIAL WORK	☐	ALTERING CASING	☐
TEMPORARILY ABANDON	☐	CHANGE PLANS	☐	COMMENCE DRILLING OPNS.	☐	PLUG AND ABANDONMENT	☐
PULL OR ALTER CASING	☐			CASING TEST AND CEMENT JOB	☐		
OTHER:	☐			OTHER: Add Perforations	■		

12. Describe Proposed or Completed Operations (*Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work*) SEE RULE 1103.

11/02/93 Rig up Schlumberger and perf'd Morrow 10,044' - 10,064' with 2 SPF. 20' and 41 holes.

11/03/93 Acidized Morrow formation with 4,000 gal. 7 1/2% FE acid & 1,000 CF/bbl. nitrogen Put well on production.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE [signature] TITLE Production Engineer DATE 11/15/93

TYPE OR PRINT NAME Brent Thurman TELEPHONE NO. (505) 393-5905

(This space for State Use)

APPROVED BY ORIGINAL SIGNED BY MIKE WILLIAMS SUPERVISOR, DISTRICT II TITLE DATE NOV 23 1993

CONDITIONS OF APPROVAL, IF ANY

124

Submit 5 Copies
Appropriate District Office
DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Form C-104
Revised 1-1-89
See Instructions
at Bottom of Page

REQUEST FOR ALLOWABLE AND AUTHORIZATION TO TRANSPORT OIL AND NATURAL GAS

I.

Operator	Well API No.
MEWBOURNE OIL COMPANY	30-015-26943

Address: P. O. Box 7698, Tyler, Texas 75711

Reason(s) for Filing (Check proper box)

New Well	■	Change in Transporter of:			
Recompletion	☐	Oil	☐	Dry Gas	☐
Change in Operator	☐	Casinghead Gas	☐	Condensate	☐

☐ Other (Please explain)

If change of operator give name and address of previous operator _____

II. DESCRIPTION OF WELL AND LEASE

Lease Name	Well No.	Pool Name, Including Formation	Kind of Lease	Lease No.
CHALK BLUFF "6" STATE	1	N. ILLINOIS CAMP MORROW	State, Federal or Fee	E-7179

Location

Unit Letter M : 730 Feet From The West Line and 990 Feet From The South Line

Section 6 Township 18S Range 28E NMPM, Eddy County

III. DESIGNATION OF TRANSPORTER OF OIL AND NATURAL GAS

Name of Authorized Transporter of Oil ☐ or Condensate ■	Address (Give address to which approved copy of this form is to be sent)
PHILLIPS PETROLEUM COMPANY - TRUCKS	4001 Pembrook, Odessa, Texas 79761
Name of Authorized Transporter of Casinghead Gas ☐ or Dry Gas ■	Address (Give address to which approved copy of this form is to be sent)
TRANSWESTERN PIPELINE COMPANY	P.O.Box 1188, Houston, Texas 77251

If well produces oil or liquids, give location of tanks.	Unit	Sec.	Twp.	Rge.	Is gas actually connected?	When ?
	M	6	18S	28E	Yes	4/22/92

If this production is commingled with that from any other lease or pool, give commingling order number: _____

IV. COMPLETION DATA

Designate Type of Completion - (X)	Oil Well	Gas Well	New Well	Workover	Deepen	Plug Back	Same Res'v	Diff Res'v
		X	X					

Date Spudded	Date Compl. Ready to Prod.	Total Depth	P.B.T.D.
2/17/92	4/16/92	10,200'	10,151'
Elevations (DF, RKB, RT, GR, etc.)	**Name of Producing Formation**	**Top Oil/Gas Pay**	**Tubing Depth**
DF 3339', GR 3324'	Morrow	10,084'	9,990'
Perforations			**Depth Casing Shoe**
10,084' - 10,092'			--

TUBING, CASING AND CEMENTING RECORD

HOLE SIZE	CASING & TUBING SIZE	DEPTH SET	SACKS CEMENT
17-1/2"	13-3/8"	400'	500 - circ
12-1/4"	9-5/8"	2,600'	1100 - circ
7-7/8"	7"	9,445'	1895 - circ 1st stg.
7"	4½" Liner	10,198'	175

V. TEST DATA AND REQUEST FOR ALLOWABLE

OIL WELL *(Test must be after recovery of total volume of load oil and must be equal to or exceed top allowable for this depth or be for full 24 hours.)*

Date First New Oil Run To Tank	Date of Test	Producing Method (Flow, pump, gas lift, etc.)	
Length of Test	Tubing Pressure	Casing Pressure	Choke Size
Actual Prod. During Test	Oil - Bbls.	Water - Bbls.	Gas- MCF

GAS WELL

Actual Prod. Test - MCF/D	Length of Test	Bbls. Condensate/MMCF	Gravity of Condensate
2,149 Mcf	24 hours	89.9:1	~~N/A~~ 51.6
Testing Method (pilot, back pr.)	**Tubing Pressure (Shut-in)**	**Casing Pressure (Shut-in)**	**Choke Size**
Back Pressure	N/A	---	12/64"

VI. OPERATOR CERTIFICATE OF COMPLIANCE

I hereby certify that the rules and regulations of the Oil Conservation Division have been complied with and that the information given above is true and complete to the best of my knowledge and belief.

Signature: Gaylon Thompson

Gaylon Thompson, Engr.Oprns.Secretary
Printed Name / Title

April 22, 1992 (903) 561-2900
Date / Telephone No.

OIL CONSERVATION DIVISION

Date Approved MAY 2 5 1992

By _____

Title SUPERVISOR, DISTRICT II

SUPERVISOR, DISTRICT II

INSTRUCTIONS: This form is to be filed in compliance with Rule 1104

1) Request for allowable for newly drilled or deepened well must be accompanied by tabulation of deviation tests taken in accordance with Rule 111.
2) All sections of this form must be filled out for allowable on new and recompleted wells.
3) Fill out only Sections I, II, III, and VI for changes of operator, well name or number, transporter, or other such changes.
4) Separate Form C-104 must be filed for each pool in multiply completed wells.

Submit 5 Copies
Appropriate District Office
DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

124

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Form C-104
Revised 1-1-89
See Instructions
at Bottom of Page

REQUEST FOR ALLOWABLE AND AUTHORIZATION TO TRANSPORT OIL AND NATURAL GAS

I.

Operator	Well API No.
MEWBOURNE OIL COMPANY	30-015-26943

Address: P. O. Box 7698, Tyler, Texas 75711

Reason(s) for Filing (Check proper box)
- New Well [■]
- Recompletion [ ]
- Change in Operator [ ]

Change in Transporter of:
- Oil [ ] Dry Gas [ ]
- Casinghead Gas [ ] Condensate [ ]

Other (Please explain) [ ]

If change of operator give name and address of previous operator _____

II. DESCRIPTION OF WELL AND LEASE

Lease Name	Well No.	Pool Name, Including Formation	Kind of Lease State, Federal or Fee	Lease No.
CHALK BLUFF "6" STATE	1	N. ILLINOIS CAMP MORROW	State	E-7179

Location
Unit Letter M : 730 Feet From The West Line and 990 Feet From The South Line
Section 6 Township 18S Range 28E NMPM, Eddy County

III. DESIGNATION OF TRANSPORTER OF OIL AND NATURAL GAS

Name of Authorized Transporter of Oil [ ] or Condensate [■]	Address (Give address to which approved copy of this form is to be sent)
PHILLIPS PETROLEUM COMPANY - TRUCKS	4001 Pembrook, Odessa, Texas 79761
Name of Authorized Transporter of Casinghead Gas [ ] or Dry Gas [■]	Address (Give address to which approved copy of this form is to be sent)
TRANSWESTERN PIPELINE COMPANY	P.O.Box 1188, Houston, Texas 77251

If well produces oil or liquids, give location of tanks.	Unit	Sec.	Twp.	Rge.	Is gas actually connected?	When ?
	M	6	18S	28E	Yes	4/22/92

If this production is commingled with that from any other lease or pool, give commingling order number: _____

IV. COMPLETION DATA

Designate Type of Completion - (X)	Oil Well	Gas Well	New Well	Workover	Deepen	Plug Back	Same Res'v	Diff Res'v
		X	X					

Date Spudded	Date Compl. Ready to Prod.	Total Depth	P.B.T.D.
2/17/92	4/16/92	10,200'	10,151'
Elevations (DF, RKB, RT, GR, etc.)	**Name of Producing Formation**	**Top Oil/Gas Pay**	**Tubing Depth**
DF 3339',GR 3324'	Morrow	10,084'	9,990'
Perforations			**Depth Casing Shoe**
10,084' - 10,092'			--

TUBING, CASING AND CEMENTING RECORD

HOLE SIZE	CASING & TUBING SIZE	DEPTH SET	SACKS CEMENT
17-1/2"	13-3/8"	400'	500 - circ
12-1/4"	9-5/8"	2,600'	1100 - circ
7-7/8"	7"	9,445'	1895 - circ 1st stg.
7"	4½" Liner	10,198'	175

V. TEST DATA AND REQUEST FOR ALLOWABLE

OIL WELL *(Test must be after recovery of total volume of load oil and must be equal to or exceed top allowable for this depth or be for full 24 hours.)*

Date First New Oil Run To Tank	Date of Test	Producing Method (Flow, pump, gas lift, etc.)	
		Pmp ED-2	6-5-92
Length of Test	**Tubing Pressure**	**Casing Pressure**	**Choke Size** comp + BK
Actual Prod. During Test	**Oil - Bbls.**	**Water - Bbls.**	**Gas- MCF**

GAS WELL

Actual Prod. Test - MCF/D	Length of Test	Bbls. Condensate/MMCF	Gravity of Condensate
2,149 Mcf	24 hours	89.9:1	~~N/A~~ 51.6
Testing Method (pitot, back pr.)	**Tubing Pressure (Shut-in)**	**Casing Pressure (Shut-in)**	**Choke Size**
Back Pressure	N/A	---	12/64"

VI. OPERATOR CERTIFICATE OF COMPLIANCE

I hereby certify that the rules and regulations of the Oil Conservation Division have been complied with and that the information given above is true and complete to the best of my knowledge and belief.

Signature: Gaylon Thompson
Gaylon Thompson, Engr.Oprns.Secretary
Printed Name / Title
April 22, 1992 (903) 561-2900
Date / Telephone No.

OIL CONSERVATION DIVISION

Date Approved MAY 2 5 1992

By ORIGINAL SIGNED BY MIKE WILLIAMS

Title SUPERVISOR, DISTRICT II

INSTRUCTIONS: This form is to be filed in compliance with Rule 1104

1) Request for allowable for newly drilled or deepened well must be accompanied by tabulation of deviation tests taken in accordance with Rule 111.
2) All sections of this form must be filled out for allowable on new and recompleted wells.
3) Fill out only Sections I, II, III, and VI for changes of operator, well name or number, transporter, or other such changes.
4) Separate Form C-104 must be filed for each pool in multiply completed wells.

MAP ID NO. 134

MEWBORNE OIL COMPANY
NO. 2 CHALK BLUFF FEDERAL COMMISSION

30-015-26741

Form 3160-3
(November 1983)
(formerly 9-331C)

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0136
Expires August 31, 1985

134

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

5. LEASE DESIGNATION AND SERIAL NO.: NM-0557371

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: Chalk Bluff Federal Co

9. WELL NO.: 2 (SDS)

10. FIELD AND POOL, OR WILDCAT: North Illinois Camp M

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 1-T18S-R27E

12. COUNTY OR PARISH: Eddy

13. STATE: N.M.

1a. TYPE OF WORK: DRILL [X] DEEPEN [ ] PLUG BACK [ ]

b. TYPE OF WELL: OIL WELL [ ] GAS WELL [X] OTHER — SINGLE ZONE [ ] MULTIPLE ZONE [ ]

'91 MAY 13 AM 9

2. NAME OF OPERATOR: Mewbourne Oil Company

3. ADDRESS OF OPERATOR: P.O. Box 5270 Hobbs, New Mexico 88241

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface: 1350' FWL & 1650' FNL
At proposed prod. zone: Same

Ut. F

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*: 7 miles Southeast of Artesia, New Mexico

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any)	16. NO. OF ACRES IN LEASE	17. NO. OF ACRES ASSIGNED TO THIS WELL
1350'	320	320
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.	**19. PROPOSED DEPTH**	**20. ROTARY OR CABLE TOOLS**
	10,200'	Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.): 3599' GR

22. APPROX. DATE WORK WILL START*: Upon BLM approval

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
17 1/2"	13-3/8"	61#	400'±	450 sks. Class "C" circulated
12 1/4"	9-5/8"	36#	2,600'±	800 sks. Class "C" Tie back int surface
8 3/4"	5-1/2"	17# & 20#	10,200'±	600 sks. Class "H" 600' above Wolfca

Mud Program:

0' - 400' Spud mud with fresh water gel and lime. LCM as needed.
400' - 2,600' Fresh water gel and lime. LCM as needed.
2,600' - 8,500' Cut brine with lime for pH control. Wt. 9.2-9.6 ppg, WL - NC. LCM as needed.
8,500' - 10,200' Cut brine with Drispac, salt gel, lime, soda ash, and starch. Wt. 9.2-9.6 ppg. WL 10 cc or less. Raise weight accordingly if abnormal pressures are encountered.

BOP Program

900 series BOP and Hydril on 13-3/8" surface casing and on 9 5/8" intermediate casing.

Gas is not dedicated.

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.

SIGNED W H Lacey TITLE District Superintendent DATE April 2, 1991

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

APPROVED BY _____ TITLE _____ DATE 5-7-91

CONDITIONS OF APPROVAL, IF ANY:

APPROVAL SUBJECT TO GENERAL REQUIREMENTS AND SPECIAL STIPULATIONS ATTACHED

*See Instructions On Reverse Side

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the

Submit to Appropriate District Office
State Lease - 4 copies
Fee Lease - 3 copies

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Form C-102
Revised 1-1-89

134

WELL LOCATION AND ACREAGE DEDICATION PLAT
All Distances must be from the outer boundaries of the section

Operator	Lease	Well No.
MEWBOURNE OIL COMPANY	CHALK BLUFF FEDERAL Com. (SD)	2

Unit Letter	Section	Township	Range	County
F	1	18 SOUTH	27 EAST NMPM	EDDY

Actual Footage Location of Well:
1350 feet from the WEST line and 1650 feet from the NORTH line

Ground level Elev.	Producing Formation	Pool	Dedicated Acreage:
3599	Morrow	North Illinois Camp Morrow	320 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below. N ½

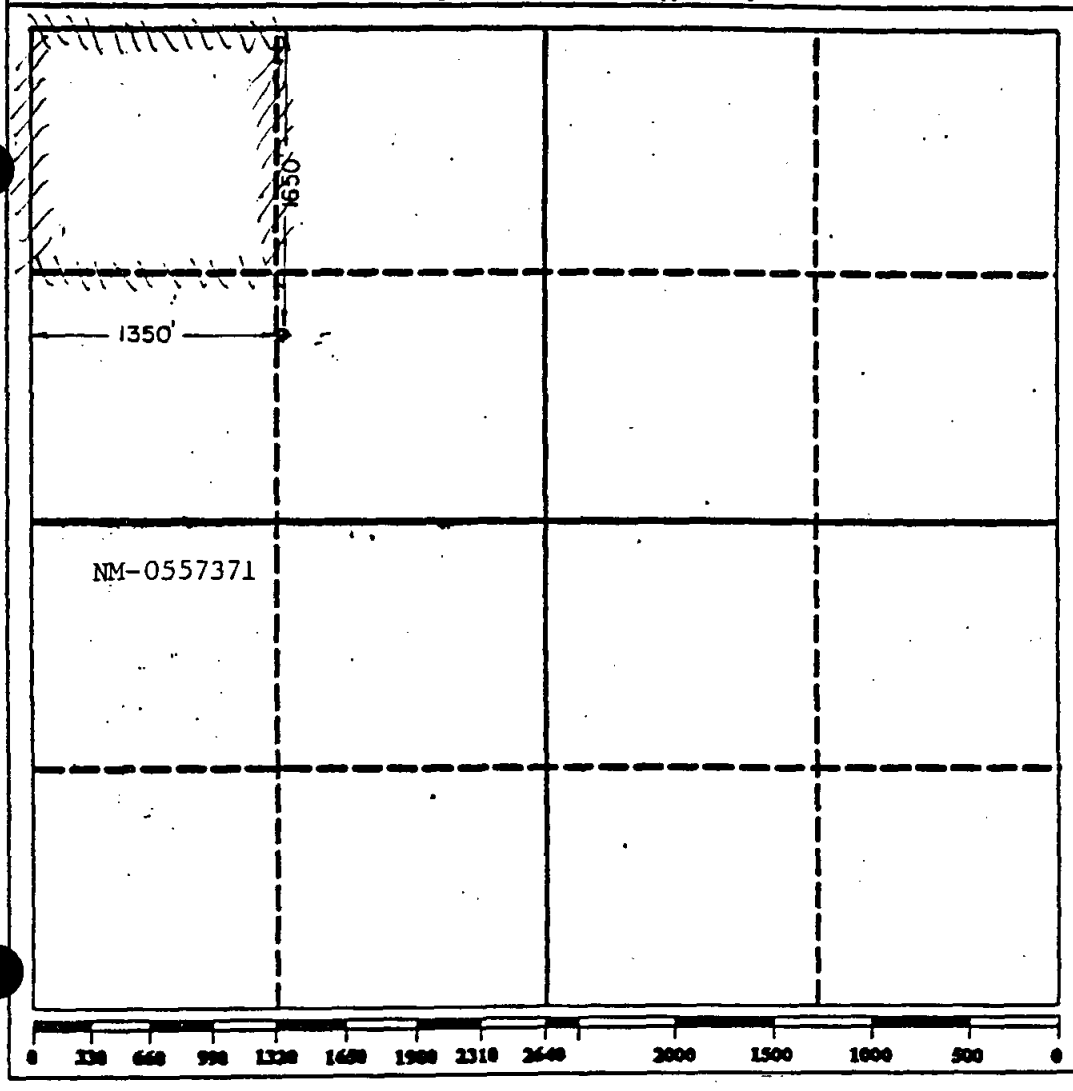
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interest of all owners been consolidated by communitization, unitization, force-pooling, etc.?

☑ Yes ☐ No If answer is "yes" type of consolidation _____

If answer is "no" list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary. _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interest, has been approved by the Division.



OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Signature: W.H. Cravey

Printed Name: W.H. Cravey

Position: District Supt.

Company: Mewbourne Oil Co.

Date: April 2, 1991

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervison, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed: 3/28/91

Signature & Seal of Professional Surveyor: NEW MEXICO HERSCHEL L. JONES

Certificate No. 3640

Form 3160-4
(November 1983)
(formerly 9-330)

OIL CONSERVATION DIVISION
RECEIVED
BLM 9 17

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN DUPLICATE* (See other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0137
Expires August 31, 1985

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

5. LEASE DESIGNATION AND SERIAL NO.: NM-0557371

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: Chalk Bluff Federal Com

9. WELL NO.: 2

10. FIELD AND POOL, OR WILDCAT: N. Illinois Camp Morrow

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: Sec. 1, T18S-R27E

1a. TYPE OF WELL: OIL WELL ☐ GAS WELL ■ DRY ☐ Other

b. TYPE OF COMPLETION: NEW WELL ■ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF. RESVR. ☐ Other

2. NAME OF OPERATOR: Mewbourne Oil Company

3. ADDRESS OF OPERATOR: P. O. Box 7698, Tyler, Texas 75711

4. LOCATION OF WELL (*Report location clearly and in accordance with any State requirements*)*
At surface: 1350' FWL & 1650' FNL
At top prod. interval reported below
At total depth: Same

14. PERMIT NO. / DATE ISSUED: API #30-015-26741

12. COUNTY OR PARISH: Eddy

13. STATE: N.M.

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (*Ready to prod.*)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
5/13/91	6/12/91	8/24/91	KB 3615', DF 3613', GL 3599'	

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
10,140'	10,125'		→	X	

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*: 9,999'-10,024' - Morrow

25. WAS DIRECTIONAL SURVEY MADE: Yes

26. TYPE ELECTRIC AND OTHER LOGS RUN: Dual Spaced Neutron/CBL

27. WAS WELL CORED: No

CASING RECORD (*Report all strings set in well*)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
13-3/8"	61#	416'	17-1/2"	450 - Circulated	None
9-5/8"	36#	2,610'	12-1/4"	1025 - Circulated	None
5-1/2"	17# & 20#	10,148'	8-3/4"	1020 - Circulated	None

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2-7/8"	9939'	9939'

31. PERFORATION RECORD (*Interval, size and number*): 9999'-10,024' - 4 SPF, 101 holes

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
9999-10,024'	Acidized w/5000 gals 7½% HCL.
	Acidized w/20,000 gals acid/CO_2

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (*Flowing, gas lift, pumping—size and type of pump*)	WELL STATUS (*Producing or shut-in*)
8/26/91	Flowing	Producing

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
8/29/91	24 hrs.	16/64"		0	118	0	—

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)
410#	—		0	118	0	—

34. DISPOSITION OF GAS (*Sold, used for fuel, vented, etc.*): Sold

TEST WITNESSED BY: Bill Pierce

35. LIST OF ATTACHMENTS: Logs

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED Raylon Thompson TITLE Engr. Oprns. Secretary DATE 9/03/91

*(See Instructions and Spaces for Additional Data on Reverse Side)

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

37. SUMMARY OF POROUS ZONES: (Show all important zones of porosity and contents thereof; cored intervals; and all drill-stem, tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures, and recoveries):

FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.
Middle Morrow	9752'	9785'	Sandstone
Lower Morrow	9808'	9878'	Sandstone
Basal Morrow	9999'	10024'	Detrital Limestone

38. GEOLOGIC MARKERS

NAME	TOP	
	MEAS. DEPTH	TRUE VERT. DEPTH
Yates	370'	
Queen	1,034'	
Grayburg	1,346'	
San Andres	1,833'	
Glorietta	3,178'	
Tubb	4,130'	
Drinkard	5,076'	
Abo	5,380'	
Wolfcamp	6,644'	
Cisco	7,602'	
Canyon	8,326'	
Strawn	8,808'	
Morrow	9,496'	
Morrow Clastics	9,696'	
Chester	10,056'	

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals

SUBMIT IN TRIPLICATE

RECEIVED
MAY 24 1991
DIST. 6 N.M.
Carlsbad, New Mexico
BUREAU OF LAND MANAGEMENT

5. Lease Designation and Serial No.: NM-0557371

6. If Indian, Allottee or Tribe Name:

7. If Unit or CA, Agreement Designation:

1. Type of Well: ☐ Oil Well ■ Gas Well ☐ Other

8. Well Name and No.: Chalk Bluff Federal C

2. Name of Operator: Mewbourne Oil Company

9. API Well No.: 30-015-26741

3. Address and Telephone No.: P. O. Box 7698, Tyler, Texas 75711

10. Field and Pool, or Exploratory Area: North Illinois Camp M

4. Location of Well (Footage, Sec., T., R., M., or Survey Description): 1350' FWL & 1650' FNL of Sec. 1, T18S-R27E

11. County or Parish, State: Eddy, New Mexic

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
☐ Notice of Intent	☐ Abandonment	☐ Change of Plans
■ Subsequent Report	☐ Recompletion	☐ New Construction
☐ Final Abandonment Notice	☐ Plugging Back	☐ Non-Routine Fracturing
	☐ Casing Repair	☐ Water Shut-Off
	☐ Altering Casing	☐ Conversion to Injection
	☒ Other Spud & set Pipe	☐ Dispose Water

(Note: Report results of multiple completion on Completion or Recompletion Report and Log f

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

5/13/91 - Spud @ 8:00 PM 5/13/91.

5/15/91 - Ran 13 jts 13-3/8" 61# ST&C surface casing set at 416'. Cemented w 100 sxs Class "C" thixset w/½# flocele, 5# Gilsonite & 3% CaCl and 100 sxs Class "C" w/6% gel, ½# flocele, 5# Gilsonite and 250 sxs C "C" w/3% CaCl. Plug down @ 9:45 AM. Did not circulate. WOC 6 hr Tagged with 1" at 82'. At 3:00 PM cemented w/100 sxs Class "C" w/ CaCl. Job complete 3:15 PM. Circulated est. 25 sxs to pit. WOC 1 Pressure tested to 1000# - held okay.

5/20/91 - Ran 60 jts 9-5/8" 36# J-55 ST&C Intermediate casing set at 2610' K Cemented w/825 sxs Class "C" + 6% gel + 5# Gilsonite + ½# flocele 2% CaCl followed by 200 sxs Class "C" + 2% CaCl. PD at 5:45 AM. Pressure tested 1000-1500#. Float held. Circulated 125 sxs cement pit. WOC 18 hrs.

14. I hereby certify that the foregoing is true and correct

Signed [signature] Title Engr. Oprns. Secretary Date 5/20/91

(This space for Federal or State office use)

Approved by _____ Title _____ Date _____

Conditions of approval, if any:

ACCEPTED FOR RECORD
SJS
JUN 17 1991
CARLSBAD, NEW MEXICO

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

*See Instruction on Reverse Side

RECEIVED
91 JUN 21 11 25 AM '91
CARLSBAD, NEW MEXICO

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals

5. Lease Designation and Serial No.
NM-0557371

6. If Indian, Allonee or Tribe Name

SUBMIT IN TRIPLICATE

7. If Unit or CA, Agreement Designation
2

1. Type of Well
☐ Oil Well ■ Gas Well ☐ Other

8. Well Name and No.
Chalk Bluff Federal C

2. Name of Operator
Mewbourne Oil Company

9. API Well No.
30-015-26741

3. Address and Telephone No.
P. O. Box 7698, Tyler, Texas 75711

10. Field and Pool, or Exploratory Area
North Illinois Camp M

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
1350' FWL & 1650' FNL of Sec. 1, T18S-R27E

11. County or Parish, State
Eddy, New Mexic

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
☐ Notice of Intent	☐ Abandonment	☐ Change of Plans
■ Subsequent Report	☐ Recompletion	☐ New Construction
☐ Final Abandonment Notice	☐ Plugging Back	☐ Non-Routine Fracturing
	☐ Casing Repair	☐ Water Shut-Off
	☐ Altering Casing	☐ Conversion to Injection
	■ Other Run 5-1/2" casing	☐ Dispose Water

(Note: Report results of multiple completion on Completion or Recompletion Report and Log)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

6/16/91 - Ran 5-1/2" 17# & 20# N-80 casing set at 10,148'. DVT @ 7606'. Circulated 30 mi Cemented 1st stage with 260 sacks Hal-Lite Class "H" w/5# Gilsonite, + 1/4# Floc + 3/10% CFR-3. Tailed in with 300 sacks Premium containing 5/10% Halad-22A + 3/ CFR-3 + 3# Gilsonite + 5# KCL. Plug down with full returns. Pressure tested to 1000#. Held OK. Drop bomb open DVT. Circulated 6 hrs.

6/17/91 - Cemented 2nd stage with 260 sacks Hal-Lite Class "C" containing 3# Gilsonite + ¼# Flocele. Tailed in with 200 sacks Prem H cement. Plug down 4:15 PM 6/16/91 with full returns. Closed DVT. WOC 18 hrs. Pressure tested to 1500#. Held OK.

14. I hereby certify that the foregoing is true and correct
Signed Clayton Thompson Title Engr. Oprns. Secretary Date 6/18/91

(This space for Federal or State office use)
Approved by _____ Title _____ Date _____
Conditions of approval, if any:

ACCEPTED FOR RECORD
SJS
JUN 21 1991
CARLSBAD, NEW MEXICO

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*See Instruction on Reverse Side

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals

SUBMIT IN TRIPLICATE

5. Lease Designation and Serial No.: NM-0557371

6. If Indian, Allottee or Tribe Name:

7. If Unit or CA, Agreement Designation: # 2

1. Type of Well: ☐ Oil Well ■ Gas Well ☐ Other

8. Well Name and No.: Chalk Bluff Federal Com

2. Name of Operator: Mewbourne Oil Company

9. API Well No.: 30-015-26741

3. Address and Telephone No.: P. O. Box 7698, Tyler, Texas 75711

10. Field and Pool, or Exploratory Area: North Illinois Camp Mor

4. Location of Well (Footage, Sec., T., R., M., or Survey Description): 1350' FWL & 1650' FNL of Sec. 1, T18S-R27E

11. County or Parish, State: Eddy, New Mexico

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
☐ Notice of Intent	☐ Abandonment	☐ Change of Plans
■ Subsequent Report	☐ Recompletion	☐ New Construction
☐ Final Abandonment Notice	☐ Plugging Back	☐ Non-Routine Fracturing
	☐ Casing Repair	☐ Water Shut-Off
	☐ Altering Casing	☐ Conversion to Injection
	■ Other Perforate & Treat	☐ Dispose Water

(Note: Report results of multiple completion on We Completion or Recompletion Report and Log form

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally dri give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

7/10/91 - Made final cut-off on 5-1/2" casing. Installed tubinghead and tes to 3000#. Tagged cement on top of DV tool at 7414'. DV tool @ 76(

7/11/91 - Pressure tested casing to 1500#. Held OK. Drilled out 192' cemen & DV tool. Tested casing to 1500#. TIH w/tubing and tagged cemen @ 10,090'. Drilled out 24' to float collar at 10,114'. Tested cas to 1500#. Held OK.

8/12/91 - Perforated 9999'-10,024', 4 SPF, 101 holes. Acidized with 5000 ga 7-1/2% HCL. ISDP 7350#, 5 min 7100#, 10 min 6950#, 15 min 6800#. Max treating press 7500#. Avg treating press 8100#. Avg injectio rate 4.4 BPM.

14. I hereby certify that the foregoing is true and correct

Signed [signature] Title Engr. Oprns. Secretary Date 8/16/91

(This space for Federal or State office use)

Approved by _____ Title _____ Date _____

Conditions of approval, if any:

ACCEPTED FOR RECORD
SOS
SEP 3 1991

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*See Instruction on Reverse Side

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(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

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SUBMIT IN TRIPLICATE

5. Lease Designation and Serial No.: NM-0557371

6. If Indian, Allottee or Tribe Name:

7. If Unit or CA, Agreement Designation: #2

1. Type of Well: ☐ Oil Well ■ Gas Well ☐ Other

8. Well Name and No.: Chalk Bluff Federal Co

2. Name of Operator: Mewbourne Oil Company

9. API Well No.: 30-015-26741

3. Address and Telephone No.: P. O. Box 7698, Tyler, Texas 75711

10. Field and Pool, or Exploratory Area: North Illinois Camp Mo

4. Location of Well (Footage, Sec., T., R., M., or Survey Description): 1350' FWL & 1650' FNL of Sec. 1, T18S-R27E

11. County or Parish, State: Eddy, New Mexico

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☐ Final Abandonment Notice	☐ Plugging Back	☐ Non-Routine Fracturing
	☐ Casing Repair	☐ Water Shut-Off
	☐ Altering Casing	☐ Conversion to Injection
	■ Other _____	☐ Dispose Water

(Note: Report results of multiple completion on Completion or Recompletion Report and Log f

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally d give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

8/17/91 - Rigged up Western to acidize perfs 9999-10,243' using 10,000 gals gelled 15% HCL with 10,000 gals CO_2 containing 2 gal I-22, 1 gal Clay Master 4, 1 gal FS-2, 2 gal Nine-40, 6 gal Acigel & 5 gal citric acid liquid per 1000 gals acid. Pumped as follows:

20,000 Gals Acid/CO_2 6 BPM - total rate @ 9200#. Spotting 5 Ball Sealers; 6 Bbls Foam.
60 Bbls 2% KCL water/CO_2 flush 6 BPM - Total rate @ 9150#.

Tubing loaded with 38 bbls pumped away. Had good ball action throughout but swab no noticeable break in treating pressures. Min Press: 8500#. Max Press: 9500#. Avg Press: 9200#. Avg Rate: 6 BPM. ISDP: 6600# (5 Min=6400#; 10 Min=6200#; 15 Min=6150#). Rigged down Western. Started flowing well to pit on 24/64" choke

14. I hereby certify that the foregoing is true and correct
Signed: Clifford Thompson Title: Engr. Oprns. Secretary Date: 9/03/91

(This space for Federal or State office use)
Approved by _____ Title _____ Date _____
Conditions of approval, if any:

ACCEPTED FOR RECORD
SJS
SEP 1 1991

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*See Instruction on Reverse Side

RECEIVED

OCT 19 1992

O. C. D.
ARTESIA, OFFICE

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

5. Lease Designation and Serial No.
NM-0557371

6. If Indian, Allottee or Tribe Name

SUNDRY NOTICES AND REPORTS ON WELLS

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SUBMIT IN TRIPLICATE

7. If Unit or CA, Agreement Designa
#2

1. Type of Well
☐ Oil Well ■ Gas Well ☐ Other

8. Well Name and No.
Chalk Bluff Fed Com

2. Name of Operator
Mewbourne Oil Company

9. API Well No.
30-015-26741

3. Address and Telephone No.
P. O. Box 7698, Tyler, Texas 75711 (903) 561-2900

10. Field and Pool, or Exploratory Are
North Illinois Camp

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
1350' FWL & 1650' FNL of Sec. 1, T18S-R27E

11. County or Parish, State
Eddy, New Mexico

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TYPE OF SUBMISSION	TYPE OF ACTION	
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■ Subsequent Report	☐ Recompletion	☐ New Construction
☐ Final Abandonment Notice	■ Plugging Back	☐ Non-Routine Fracturing
	☐ Casing Repair	☐ Water Shut-Off
	☐ Altering Casing	☐ Conversion to Injection
	☐ Other _____	☐ Dispose Water

(Note: Report results of multiple completio
Completion or Recompletion Report and L

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directiona
give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

9/10/92 - Killed well. Pulled tbg & pkr. Ran in hole w/CIBP set at 9970'. Dumped 35'cement top. PBTD @ 9935'.

9/11/92 - RIH w/tbg & pkr set at 9731'. Tested to 8000#. Set pkr w/15 pts compression. Tes annulus to 2000#. Held OK. Tested tbg to 2500#. Held OK. Swabbed well down.

9/12/92 - Perf Lower Morrow 9850-9876' w/2 SPF, 22' net, 46 holes.

9/13/92 - Acidized perfs w/2800 gals 7½% HCL acid + additives containing 1000 SCF/Bbl nit + 60 ball sealers. Flushed w/2% KCL containing 1000 SCF/bbl nitrogen. Pressure tested ann to 1500# and pumped acid.

9/17/92 - Frac perfs w/40,000 gals Binary foam + 30,000# 20/40 Interprop. ISDP 5400#, 5 m 4600#, 10 mins 4350#, 15 mins 4150#. AR 12 BPM. AP 8100#. MR 12 BPM. MP 8400#. Opened wel left flowing to pit.

9/19/92 - Well flowing thru test unit. Put well down sales line @ 5:00 PM 9/19/92.

AR

OCT 15 1992

14. I hereby certify that the foregoing is true and correct
Signed Mayte Thompson Title Engr.Oprns.Secretary Date 9/30/92

(This space for Federal or State office use)

Approved by _____ Title _____ Date _____
Conditions of approval, if any:

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Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

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5. Lease Designation and Serial No.: NM-0557371

6. If Indian, Allottee or Tribe Name:

SUBMIT IN TRIPLICATE

7. If Unit or CA, Agreement Designation: #2

1. Type of Well: ☐ Oil Well ☒ Gas Well ☐ Other

8. Well Name and No.: Chalk Bluff Fed. Com

2. Name of Operator: Mewbourne Oil Company

9. API Well No.:

3. Address and Telephone No.: P.O. Box 5270 Hobbs, New Mexico 88241 (505) 393-5905

10. Field and Pool, or Exploratory Area: N. Illinois Camp Mor

4. Location of Well (Footage, Sec., T., R., M., or Survey Description): 1350' FWL & 1650' FNL
Unit F
1-R25-E

11. County or Parish, State: Eddy Co., N.M.

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
☐ Notice of Intent	☐ Abandonment	☐ Change of Plans
☒ Subsequent Report	☐ Recompletion	☐ New Construction
☐ Final Abandonment Notice	☒ Plugging Back	☐ Non-Routine Fracturing
	☐ Casing Repair	☐ Water Shut-Off
	☐ Altering Casing	☐ Conversion to Injection
	☐ Other _____	☐ Dispose Water

(Note: Report results of multiple completion on Completion or Recompletion Report and Log fo

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally c give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

9-09-92 Set CIBP @ 9970'. Dumped 35' cement on CIBP.

9-11-92 Perforated Morrow formation (9850'-9860' & 9864'-9876') with 2 SPF for a total of 46 holes.

9-12-92 Acidized Morrow perforations with 2800 gal. 7 1/2% HCL and 1000 SCF/bbl. N2.

9-16-92 Fraced Morrow perforations with 40,000 gal. binary foam carrying 30,000# 20/40 sand.

NOV 2 1992

14. I hereby certify that the foregoing is true and correct

Signed _____ Title District Supt. Date Oct. 27, 1992

(This space for Federal or State office use)

Approved by _____ Title _____ Date _____
Conditions of approval, if any:

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*See Instruction on Reverse Side

KEN REYNOLDS—PRESIDENT
ARNIE NEWKIRK—VICE-PRESIDE

WEK DRILLING CO., INC. — OIL WELL DRILLING CONTRACTORS

P. O. Box 1498 ROSWELL, NEW MEXICO 88202-
505/623-5070 ROSWELL, NM
505/746-2719 ARTESIA, NM

June 18, 1991

Mewbourne Oil Company
P.O. Box 5270
Hobbs, N.M. 88241

REF: Chalk Bluff Federal Comm #2

Gentlemen:

The following is a Deviation Survey on the above referenced well located in Eddy County, New Mexico.

416' - 1/2°	4715' - 1 1/4°	5766' - 4 1/2°	6944' - 2 1/2°
917' - 1°	5182' - 1 1/2°	5829' - 4 1/4°	7441' - 2°
1423' - 1°	5222' - 2 1/4°	5891' - 4 1/2°	7939' - 2°
1791' - 3/4°	5306' - 3 1/4°	5951' - 3 3/4°	8435' - 1 3/4°
2093' - 1/2°	5398' - 4°	6013' - 3 3/4°	8623' - 1°
2610' - 1°	5459' - 4°	6075' - 3 3/4°	9093' - 1°
3088' - 1°	5521' - 4°	6136' - 3 1/2°	9570' - 1 1/4°
3564' - 1°	5583' - 3 3/4°	6197' - 3°	9638' - 3/4°
3905' - 1/2°	5645' - 4 1/2°	6253' - 3°	10140' - 3/4° T
4231' - 1 1/2°	5705' - 4 1/2°	6443' - 2 1/4°	

Sincerely,

Arnold Newkirk
Vice-President

STATE OF NEW MEXICO)
)
COUNTY OF CHAVES)

The foregoing was acknowledged before me this 18th day of June 1991 by Arnold Newkirk.

MY COMMISSION EXPIRES

October 07, 1992

NOTARY PUBLIC

134 5P

Submit 5 Copies
Appropriate District Office
DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Form C-104
Revised 1-1-89
See Instructions
at Bottom of Page

'92 MAR 1 AM 8 56

REQUEST FOR ALLOWABLE AND AUTHORIZATION TO TRANSPORT OIL AND NATURAL GAS

I.

Operator	Well API No.
MEWBOURNE OIL COMPANY	30-015-26741
Address: P. O. Box 7698, Tyler, Texas 75711	

Reason(s) for Filing (Check proper box)

New Well	[X]	Change in Transporter of:			
Recompletion	[ ]	Oil	[ ]	Dry Gas	[ ]
Change in Operator	[ ]	Casinghead Gas	[ ]	Condensate	[ ]

Other (Please explain) [ ]

If change of operator give name and address of previous operator _____

II. DESCRIPTION OF WELL AND LEASE

Lease Name	Well No.	Pool Name, Including Formation	Kind of Lease State, Federal or Fee	Lease No.
CHALK BLUFF FEDERAL	2	N. Illinois Camp-Morrow Gas		NM-0557371

Location

Unit Letter F : 1350 Feet From The West Line and 1650 Feet From The North Line

Section 1 Township 18 South Range 27 East, NMPM, Eddy County

III. DESIGNATION OF TRANSPORTER OF OIL AND NATURAL GAS

Name of Authorized Transporter of Oil [ ] or Condensate [X]	Address (Give address to which approved copy of this form is to be sent)
Amoco Pipeline Intercorporate Trucking	Oil Tender Dept. Box 702068, Tulsa, Ok 74170-2068
Name of Authorized Transporter of Casinghead Gas [ ] or Dry Gas [X]	Address (Give address to which approved copy of this form is to be sent)
Transwestern Pipeline Company	P.O. Box 1188, Houston, Texas 77251-1188

If well produces oil or liquids, give location of tanks.	Unit	Sec.	Twp.	Rge.	Is gas actually connected?	When ?
	F	1	18S	27E	Yes	8/13/91

If this production is commingled with that from any other lease or pool, give commingling order number: No

IV. COMPLETION DATA

Designate Type of Completion - (X)	Oil Well	Gas Well	New Well	Workover	Deepen	Plug Back	Same Res'v	Diff Res'v
		X	X					

Date Spudded	Date Compl. Ready to Prod.	Total Depth	P.B.T.D.
5/13/91	8/24/91	10,140'	10,125'
Elevations (DF, RKB, RT, GR, etc.)	**Name of Producing Formation**	**Top Oil/Gas Pay**	**Tubing Depth**
KB 3615', DF 3613', GL 3599'	Morrow	9,999'	9,939'
Perforations			**Depth Casing Shoe**
9999'-10,024'			—

TUBING, CASING AND CEMENTING RECORD

HOLE SIZE	CASING & TUBING SIZE	DEPTH SET	SACKS CEMENT
17-1/2"	13-3/8"	416'	450 - Circulated
12-1/4"	9-5/8"	2,610'	1025 - Circulated
8-3/4"	5-1/2"	10,148'	1020 - Circulated

V. TEST DATA AND REQUEST FOR ALLOWABLE

OIL WELL *(Test must be after recovery of total volume of load oil and must be equal to or exceed top allowable for this depth or be for full 24 hours.)*

Date First New Oil Run To Tank	Date of Test	Producing Method (Flow, pump, gas lift, etc.)	
Length of Test	**Tubing Pressure**	**Casing Pressure**	**Choke Size**
Actual Prod. During Test	**Oil - Bbls.**	**Water - Bbls.**	**Gas - MCF**

GAS WELL

Actual Prod. Test - MCF/D	Length of Test	Bbls. Condensate/MMCF	Gravity of Condensate
118	24 hours	0	0
Testing Method (pitot, back pr.)	**Tubing Pressure (Shut-in)**	**Casing Pressure (Shut-in)**	**Choke Size**
Back Pressure	410#	—	16/64"

VI. OPERATOR CERTIFICATE OF COMPLIANCE

I hereby certify that the rules and regulations of the Oil Conservation Division have been complied with and that the information given above is true and complete to the best of my knowledge and belief.

Gaylon Thompson
Signature
Gaylon Thompson, Engr, Oprns, Secretary
Printed Name — Title
9/03/91 — (903) 561-2900
Date — Telephone No.

OIL CONSERVATION DIVISION

Date Approved APR 2 3 1992

By _____

Title SUPERVISOR, DISTRICT II

INSTRUCTIONS: This form is to be filed in compliance with Rule 1104

1) Request for allowable for newly drilled or deepened well must be accompanied by tabulation of deviation tests taken in accordance with Rule 111.
2) All sections of this form must be filled out for allowable on new and recompleted wells.
3) Fill out only Sections I, II, III, and VI for changes of operator, well name or number, transporter, or other such changes.
4) Separate Form C-104 must be filed for each pool in multiply completed wells.

MAP ID NO. 144

MEWBORNE OIL COMPANY
NO. 3 CHALK BLUFF FEDERAL COMMISSION

Form 3160-3
(November 1983)
(formerly 9-331C)

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0136
Expires August 31, 1985

144

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

5. LEASE DESIGNATION AND SERIAL NO.: NM-~~016788~~ 055737

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

1a. TYPE OF WORK: DRILL [XXX] DEEPEN [ ] PLUG BACK [ ]

b. TYPE OF WELL: OIL WELL [ ] GAS WELL [X] OTHER — SINGLE ZONE [X] MULTIPLE ZONE [ ]

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: Chalk Bluff Fed. Comm.

2. NAME OF OPERATOR: Mewbourne Oil Company

9. WELL NO.: 3

3. ADDRESS OF OPERATOR: Box 5270 Hobbs, New Mexico 88241

10. FIELD AND POOL, OR WILDCAT: North Illinois Camp Morro

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements*)
At surface: 1980' FSL and 990' FEL Ut. I
At proposed prod. zone: Same

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: 18S 27E
1-~~T17S~~-~~R29E~~

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*: 12 miles southeast of Artesia, New Mexico

12. COUNTY OR PARISH: Eddy

13. STATE: NM

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any)	16. NO. OF ACRES IN LEASE	17. NO. OF ACRES ASSIGNED TO THIS WELL
990'	320	320
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.	**19. PROPOSED DEPTH**	**20. ROTARY OR CABLE TOOLS**
2040'	10,300'	Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.): 3628' GR

22. APPROX. DATE WORK WILL START*: Upon BLM approval

23. PROPOSED CASING AND CEMENTING PROGRAM — No Water Basin

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
17 1/2"	13 3/8"	61#	400' ±	450 sks. Class C circulated
12 1/4"	9 5/8"	36#	2,600' ±	800 sks. Tie back into surface.
8 3/4"	5 1/2"	17 & 20#	10,300' ±	600 sks. of Class "H"-see stips

Mud Program:

0-400' Spud mud with fresh water gel and lime. LCM as needed.
400' - 2600' Fresh water gel and lime. LCM as needed.
2,600' - 8500' Cut brine with lime for pH control. Wt. 9.2 - 9.6# ppg, WL - NC. LCM as needed.
8,500 - 10.300' Cut brine with Drispac, salt gel, lime, soda ash, and starch. Wt. 9.2 - 9.6 ppg. WL 10 CC or less. Raise weight accordingly if abnormal pressure are encountered.

BOP PROGRAM:

900 series BOP and Hydrill on 13 3/8" surface casing and on 9 5/8" intermediate casing.

Gas is not dedicated.

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.

SIGNED Kelly Cox TITLE District Superintendent DATE 09/09/1992

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

SUBJECT TO GENERAL REQUIREMENTS AND SPECIAL STIPULATIONS

RECEIVED
SEP 10 1992
O. C. D.

*See Instructions On Reverse Side

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

Submit to Appropriate
District Office
State Lease - 4 copies
Fee Lease - 3 copies

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102
Revised 1-1-89

144

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

WELL LOCATION AND ACREAGE DEDICATION PLAT

All Distances must be from the outer boundaries of the section

Operator	Lease	Well No.
MEWBOURNE OIL COMPANY	CHALK BLUFF FEDERAL	3

Unit Letter	Section	Township	Range	County
I	1	18 SOUTH	27 EAST NMPM	EDDY

Actual Footage Location of Well:
1980 feet from the SOUTH line and 990 feet from the EAST line

Ground level Elev.	Producing Formation	Pool	Dedicated Acreage:
3628	Morrow	North Illinois Camp Morrow	320 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

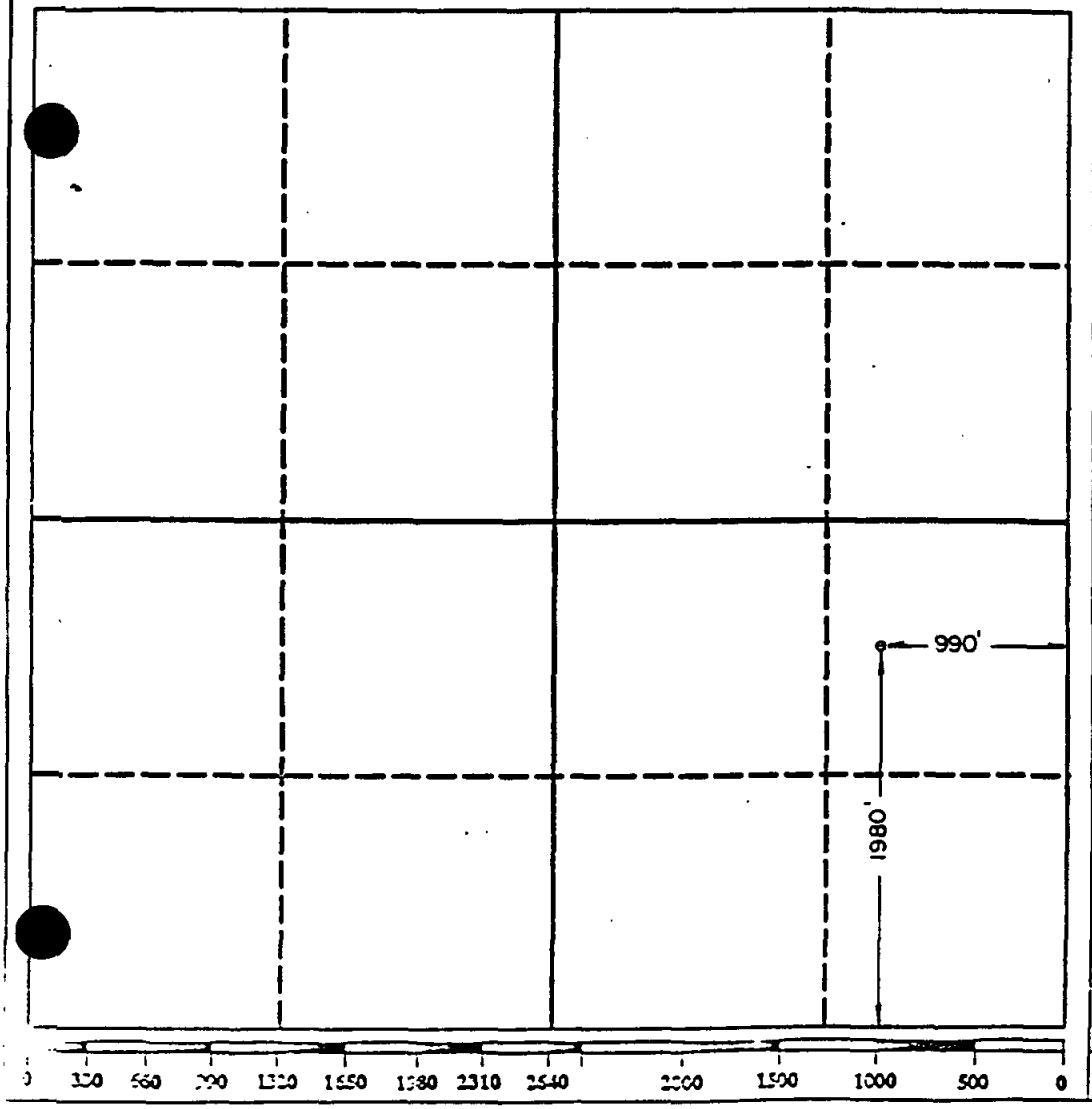
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interest of all owners been consolidated by communitization, unitization, force-pooling, etc.?

[XX] Yes [ ] No If answer is "yes" type of consolidation Communitization

If answer is "no" list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary. _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interest, has been approved by the Division.



OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Signature: Bill Pierce

Printed Name: Bill Pierce

Position: Drilling Superintendent

Company: Mewbourne Oil Company

Date: August 31, 1992

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervison, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed: 8/26/92

Signature & Seal of Professional Surveyor: STATE OF NEW MEXICO HERSCHEL L JONES

Certificate No. 3640

Form 3160-4
(October 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN DUPLICATE* (See other instructions on reverse side)

FOR APPROVED
OMB NO. 1004-0137
Expires: December 31, 1991

5. LEASE DESIGNATION AND SERIAL NO.: NM-055726

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME, WELL NO.: Chalk Bluff Fed. Comm. #

9. API WELL NO.: 30-015-27163

10. FIELD AND POOL, OR WILDCAT: N. Illinois Camp Morro

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: Sec. 1-T18S-R27E

12. COUNTY OR PARISH: Eddy

13. STATE: N.M.

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

1a. TYPE OF WELL: OIL WELL [X] GAS WELL [ ] DRY [ ] Other

b. TYPE OF COMPLETION: NEW WELL [X] WORK OVER [ ] DEEP-EN [ ] PLUG BACK [ ] DIFF. RESVR. [ ] Other

2. NAME OF OPERATOR: Mewbourne Oil Company

3. ADDRESS AND TELEPHONE NO.: P.O. Box 5270 Hobbs, New Mexico 88241 (505) 393-5905

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)*
At surface: 1980' FSL & 990' FEL
At top prod. interval reported below
At total depth: Same

14. PERMIT NO. | DATE ISSUED

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (Ready to prod.)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
11/24/92	01/06/93	01/16/93	KB 3643' DF 3641' GL 3628'	3628'

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
10,150'	10,102'		→	X	

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*: 9950'-9954', 9957'-9972' Lower Morrow Orange Sand

25. WAS DIRECTIONAL SURVEY MADE: Yes

26. TYPE ELECTRIC AND OTHER LOGS RUN: SDL-DSN Dual-Latero-MFSL-GR Sonic CBL

27. WAS WELL CORED: No

28. CASING RECORD (Report all strings set in well)

CASING SIZE/GRADE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	TOP OF CEMENT, CEMENTING RECORD	AMOUNT PULLED
13-3/8"	54.5#	400'±	17-1/2"	100 sx. Class "H"	None
9-5/8"	36#	2,600'±	12-1/4"	250 sx. Class "C"	None
7"	26 & 29#	8,968'	8-3/4"	1200 sx. Class "C & H"	None

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)
4-1/2"	8600'	10,150'	200 sxs.	None

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2-7/8"	9972'	9797'
2-3/8"		

31. PERFORATION RECORD (Interval, size and number)

9950'-9954' 9957'-9972'

4 SPF 19' 76 holes

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
9950'-9954'	None
9957'-9972'	None

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump)	WELL STATUS (Producing or shut-in)
01/16/93	Flowing	Producing

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
01/16/93	24	10/64"		50	2000	0	40 MCF/BBL

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)
2720	0		60	2000	0	

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.): Sold

TEST WITNESSED BY: R. Jones

35. LIST OF ATTACHMENTS: Logs- * Please hold in confidence

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED [signature] TITLE Engineer DATE 01/21/93

*(See Instructions and Spaces for Additional Data on Reverse Side)

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the

37. SUMMARY OF POROUS ZONES: (Show all important zones of porosity and contents thereof; cored intervals; and all drill-stem, tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures, and recoveries):

FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.
M. Morrow	9950'	9972'	Sandstone

38. GEOLOGIC MARKERS

NAME	TOP	
	MEAS. DEPTH	TRUE VERT. DEPTH
Yates	450'	
7 Rivers	564'	
Queen	1159'	
Grayburg	1492'	
San Andres	1985'	
Glorieta	3536'	
Tubb	4760'	
Drinkard	5524'	
Abo	5744'	
Wolfcamp	6474'	
Cisco	7686'	
Canyon	8440'	
Strawn	8932'	
Atoka	9490'	
Morrow	9594'	
Morrow Clastic	9800'	
L. Morrow	9911'	

1441

SEC 1 TWN 18 ··· RGE 27 API # 30-015-27163

144

OPERATOR NEWBOURNE OIL CO

WELL NAME CHALK BLUFF FED Com #3

STATE OCD TOPS AS PER MARK ASHLEY DATE 1-25-93

Southeastern New Mexico			Northwestern New Mexico		
Anhy		T. Canyon		T. Ojo Alamo	T. Penn. "B"
Salt		T. Strawn	8932	T. Kirtland-Fruitland	T. Penn. "C"
Salt		T. Atoka	9190	T. Pictured Cliffs	T. Penn. "D"
Yates	450	T. Miss		T. Cliff House	T. Leadville
7 Rivers	565	T. Devonian		T. Menefee	T. Madison
Queen	1159	T. Silurian		T. Point Lookout	T. Elbert
Grayburg	1494	T. Montoya		T. Mancos	T. McCracken
San Andres	1985	T. Simpson		T. Gallup	T. Ignacio Otzte
Glorieta	3535	T. McKee		Base Greenhorn	T. Granite
Paddock		T. Ellenburger		T. Dakota	T.
Blinebry		T. Gr. Wash		T. Morrison	T.
Tubb	4760	T. Delaware Sand		T. Todilto	T.
Drinkard		T. Bone Springs		T. Entrada	T.
Abo	5745	T. MORROW LS	9710	T. Wingate	T.
Wolfcamp	6475	T.		T. Chinle	T.
Penn	7970	T.		T. Permain	T.
Cisco (Bough C)		T.		T. Penn "A"	T.

OIL OR GAS SANDS OR ZONES

No. 1, from ..... to ..... No. 3, from ..... to .....

No. 2, from ..... to ..... No. 4, from ..... to .....

IMPORTANT WATER SANDS

Include data on rate of water inflow and elevation to which water rose in hole.

No. 1, from ..... to ..... feet .....

No. 2, from ..... to ..... feet .....

No. 3, from ..... to ..... feet .....

REMARKS:

KEN REYNOLDS—PRESIDENT
ARNIE NEWKIRK—VICE-PRESIDENT

WEK DRILLING CO., INC. — OIL WELL DRILLING CONTRACTORS

P. O. Box 1498 ROSWELL, NEW MEXICO 88202-1498
505/623-5070 ROSWELL, NM
505/746-2719 ARTESIA, NM

144

January 06,1993

Mewbourne Oil Company
P.O. Box 5270
Hobbs, N.M. 88240

RE: Chalk Bluff Federal #3

The following is a Deviation Survey on the above referenced well located in Eddy County, New Mexico.

400' - 3/4°	5033' - 2 3/4°	5813' - 4°
887' - 1°	5096' - 3°	5875' - 4°
1359' - 1°	5158' - 3°	5967' - 3 3/4°
1864' - 2°	5222' - 3 1/4°	6094' - 3 3/4°
2336' - 1 1/2°	5283' - 3 3/4°	6217' - 3 1/4°
2600' - 3/4°	5346' - 3 3/4°	6720' - 3 1/2°
2792' - 1 1/4°	5409' - 4°	7213' - 3°
3086' - 1°	5464' - 4 1/4°	7685' - 2 1/2°
3580' - 1 1/3°	5555' - 4 1/4°	8155' - 2 1/4°
4079' - 1°	5587' - 4 1/4°	8654' - 2°
4358' - 1 3/4°	5650' - 4 1/4°	9003' - 2°
4846' - 2 3/4°	5719' - 4 1/2°	9509' - 1/4°
		9837' - 3/4°
		10150' - 1 3/4° TD

Sincerely,

Gary W. Chappell
Contracts Manager

STATE OF NEW MEXICO)
)
COUNTY OF CHAVES)

The foregoing was acknowledged before me this 06th day of January 1993 by Gary W. Chappell.

MY COMMISSION EXPIRES

October 07,1996

NOTARY PUBLIC

RECEIVED JAN 07 1993

KEN REYNOLDS—PRESIDENT
ARNIE NEWKIRK—VICE-PRESIDENT

WEK DRILLING CO., INC. — OIL WELL DRILLING CONTRACTORS

P. O. Box 1498 ROSWELL, NEW MEXICO 88202-1498
505/623-5070 ROSWELL, NM
505/746-2719 ARTESIA, NM

144

January 06,1993

Mewbourne Oil Company
P.O. Box 5270
Hobbs, N.M. 88240

RE: Chalk Bluff Federal #3

The following is a Deviation Survey on the above referenced well located in Eddy County, New Mexico.

400' - 3/4°
887' - 1°
1359' - 1°
1864' - 2°
2336' - 1 1/2°
2600' - 3/4°
2792' - 1 1/4°
3086' - 1°
3580' - 1 1/3°
4079' - 1°
4358' - 1 3/4°
4846' - 2 3/4°
5033' - 2 3/4°
5096' - 3°
5158' - 3°
5222' - 3 1/4°
5283' - 3 3/4°
5346' - 3 3/4°
5409' - 4°
5464' - 4 1/4°
5555' - 4 1/4°
5587' - 4 1/4°
5650' - 4 1/4°
5719' - 4 1/2°
5813' - 4°
5875' - 4°
5967' - 3 3/4°
6094' - 3 3/4°
6217' - 3 1/4°
6720' - 3 1/2°
7213' - 3°
7685' - 2 1/2°
8155' - 2 1/4°
8654' - 2°
9003' - 2°
9509' - 1/4°
9837' - 3/4°
10150' - 1 3/4° TD

Sincerely,

Gary W. Chappell
Contracts Manager

STATE OF NEW MEXICO)
)
COUNTY OF CHAVES)

The foregoing was acknowledged before me this 06th day of January 1993 by Gary W. Chappell.

MY COMMISSION EXPIRES

October 07,1996

NOTARY PUBLIC

RECEIVED

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals

5. Lease Designation and Serial No.: NM-0557371

6. If Indian, Allottee or Tribe Name:

7. If Unit or CA, Agreement Designation:

SUBMIT IN TRIPLICATE

1. Type of Well: ☐ Oil Well ☒ Gas Well ☐ Other

2. Name of Operator: Mewbourne Oil Company

3. Address and Telephone No.: P.O. Box 5270 Hobbs, New Mexico 88241 (505) 393-5905

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
1980' FSL & 990' FEL
Sec. 1-T18S-R27E

8. Well Name and No.: Chalk Bluff Federal Comm. #3

9. API Well No.: 3001527163

10. Field and Pool, or Exploratory Area: North Illinois Camp Morrow

11. County or Parish, State: Eddy Co., N.M.

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
☐ Notice of Intent	☐ Abandonment	☐ Change of Plans
■ Subsequent Report	☐ Recompletion	☐ New Construction
☐ Final Abandonment Notice	☐ Plugging Back	☐ Non-Routine Fracturing
	☐ Casing Repair	☐ Water Shut-Off
	☐ Altering Casing	☐ Conversion to Injection
	■ Other Spud well & cemented 13-3/8" surf. csg.	☐ Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Spudded well @ 4:00 p.m. MST 11/24/92. Drilled 17-1/2" surface hole to 400' KB. Ran 10 joints of 13-3/8", 54.50#, New LS, ST&C casing and set @ 400' KB. Western cemented w/100 sks. Class "H" cement containing 12% Thixad + 3% CaCl2 followed by 265 sks. of Class "C" containing 6% Gel + 3% CaCl2 + 1/4 pps celloseal + 5 pps gilsonite followed by 150 sks. of Class "C" neet containing 3% CaCl2. Circulated 50 sks. of cement to the pit. Job complete @ 5:30 a.m. 11/25/92.

BUREAU OF LAND MANAGEMENT RECEIVED DEC 07 1992 ROSWELL, N. MEX.

14. I hereby certify that the foregoing is true and correct

Signed Bill Vience Title Drilling Supt. Date 12/02/92

This space for Federal or State office use)

Approved by David R. Glass Title _____ Date _____
Conditions of approval, if any:

1992

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

*See Instruction on Reverse Side

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals

5. Lease Designation and Serial No.: NM-0557371

6. If Indian, Allottee or Tribe Name:

SUBMIT IN TRIPLICATE

7. If Unit or CA, Agreement Designation:

1. Type of Well: ☐ Oil Well ☒ Gas Well ☐ Other

8. Well Name and No.: Chalk Bluff Federal Comm. #3

2. Name of Operator: Mewbourne Oil Company

9. API Well No.: 3001527163

3. Address and Telephone No.: P.O. Box 5270 Hobbs, New Mexico 88241 (505) 393-5905

10. Field and Pool, or Exploratory Area: N. Illinois Camp Morrow

4. Location of Well (Footage, Sec., T., R., M., or Survey Description): 1980' FSL & 1980' FEL Sec. 1-T18S-R27E

11. County or Parish, State: Eddy Co., New Mexico

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
☐ Notice of Intent	☐ Abandonment	☐ Change of Plans
☒ Subsequent Report	☐ Recompletion	☐ New Construction
☐ Final Abandonment Notice	☐ Plugging Back	☐ Non-Routine Fracturing
	☐ Casing Repair	☐ Water Shut-Off
	☐ Altering Casing	☐ Conversion to Injection
	☒ Other Cement 9-5/8" Inter. Casing	☐ Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Drilled 12-1/4" Intermediate hole to 2600' KB. Ran 59 joints of 9-5/8", 36#, New LS, ST&C casing and set @ 2600' KB. Western cemented with 590 sacks of Class "C" lite containing 6% gel + 10 pps NaCl + 1/4 pps celloseal followed by 250 sacks of Class "C" containing 2% CaCl2. Circulated 50 sacks of cement to the pit. Job complete @ 11: 50 p.m. 11/29/92.

BUREAU OF LAND MANAGEMENT RECEIVED DEC 07 1992 ROSWELL, NEW MEXICO

14. I hereby certify that the foregoing is true and correct

Signed Bill Rieve Title Drilling Supt. Date 12-02-92

(This space for Federal or State office use)

Approved by Title Date

Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

*See Instruction on Reverse Side

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

144

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals

SUBMIT IN TRIPLICATE

5. Lease Designation and Serial No.: NM-0557371
6. If Indian, Allottee or Tribe Name:
7. If Unit or CA, Agreement Designation:

1. Type of Well: ☐ Oil Well ■ Gas Well ☐ Other
2. Name of Operator: Mewbourne Oil Company
3. Address and Telephone No.: P.O. Box 5270 Hobbs, New Mexico 88241
4. Location of Well (Footage, Sec., T., R., M., or Survey Description): 1980' FSL & ~~1980'~~ 660' FEL, Sec. 1-T18S-R27E
8. Well Name and No.: Chalk Bluff Fed. Comm.
9. API Well No.: 30-015-27163
10. Field and Pool, or Exploratory Area: N. Illinois Camp Morrow
11. County or Parish, State: Eddy

12. **CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA**

TYPE OF SUBMISSION	TYPE OF ACTION	
☐ Notice of Intent	☐ Abandonment	☐ Change of Plans
■ Subsequent Report	☐ Recompletion	☐ New Construction
☐ Final Abandonment Notice	☐ Plugging Back	☐ Non-Routine Fracturing
	☐ Casing Repair	☐ Water Shut-Off
	☐ Altering Casing	☐ Conversion to Injection
	■ Other Cement 7" casing	☐ Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Lost complete returns @ 7683'. Dry drilled 8-3/4" hole to 8968'. Ran 226 Jts. of 7", 26# & 29#, N-80 & S-95 grade used API casing and set @ 8968'. Multiple stage cementer @ 6997' and external casing packer @ 7026'. Western cemented the first stage w/350 sks. of Class "H" containing 8 pps CSE + .75% CF-14 + 5 pps Gilsonite + .35% Thrifty Lite. Set ECP and opened DV tool. Cemented 2nd stage w/750 sks. of Class "C" containing 1 pps celloseal + 5 pps gilsonite + 3% salt followed by 100 sks. of Class "H" Neet. Plug down to 6997' @ 2:45 a.m. 12/26/92

14. I hereby certify that the foregoing is true and correct

Signed Bill Fuerce Title Drilling Superintendent Date 01/20/93

(This space for Federal or State office use)

Approved by _____ Title _____ Date _____
Conditions of approval, if any

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

*See Instruction on Reverse Side

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

144

5. Lease Designation and Serial No.
NM-0557371

6. If Indian, Allottee or Tribe Name

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals

SUBMIT IN TRIPLICATE

7. If Unit or CA, Agreement Designation

1. Type of Well
☐ Oil Well ■ Gas Well ☐ Other

8. Well Name and No.
Chalk Bluff Fed. Comm. #3

2. Name of Operator
Mewbourne Oil Company

9. API Well No.
30-015-27163

3. Address and Telephone No.
P.O. Box 5270 Hobbs, New Mexico 88241

10. Field and Pool, or Exploratory Area
N. Illinois Camp Morrow

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
1980' FSL & ~~1980'~~ 990' FEL
Sec. 1-T18S-R27E

11. County or Parish, State
Eddy

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
☐ Notice of Intent	☐ Abandonment	☐ Change of Plans
■ Subsequent Report	☐ Recompletion	☐ New Construction
☐ Final Abandonment Notice	☐ Plugging Back	☐ Non-Routine Fracturing
	☐ Casing Repair	☐ Water Shut-Off
	☐ Altering Casing	☐ Conversion to Injection
	■ Other Run 4-1/2" Liner	☐ Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Drilled well to a total depth of 10,150' w/6" hole, ran 45 jts. of 4-1/2", 11.6#, N-80, used API casing and hung liner from 8599' to 10,150'. Western cemented w/200 sks. of Class "H" containing 5 pps CSE + 20 pps SF-3 + .9% CF-14 + 1 gal./ 100 sacks of Klay-Treat. Plug down to 10,113' @ 5:00 a.m. 01/06/93. Released rig and moved off location. 01/08/93

ORIG. SGD. DAVID R. GLASS
APR 4 1993

RECEIVED
JAN 25 9 40 AM '93
OIL CON. DIV.
ARTESIA

14. I hereby certify that the foregoing is true and correct
Signed Bill Keese Title Drilling Superintendent Date 01/21/93

(This space for Federal or State office use)

Approved by _____ Title _____ Date _____
Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

*See Instruction on Reverse Side

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OIL CONSERVATION COMMISSION
Drawer DD
Artesia, NM 88210

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals

SUBMIT IN TRIPLICATE

5. Lease Designation and Serial No.: NM-0557371
6. If Indian, Allottee or Tribe Name:
7. If Unit or CA, Agreement Designation: #3
8. Well Name and No.: Chalk Bluff Fed. Com. #
9. API Well No.: 30-015-27163
10. Field and Pool, or Exploratory Area: N. Illinois Camp Morrow
11. County or Parish, State: Eddy Co., N.M.

1. Type of Well: ☐ Oil Well ☒ Gas Well ☐ Other
2. Name of Operator: Mewbourne Oil Company
3. Address and Telephone No.: P.O. Box 5270 Hobbs, New Mexico 88241
4. Location of Well (Footage, Sec., T., R., M., or Survey Description): 990' 1980' FSL & ~~1980~~' FEL Sec. 1-T18S-R27E

RECEIVED
APR 26 1993
O. C. D.
ARTESIA, NEW MEXICO

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
☐ Notice of Intent	☐ Abandonment	☐ Change of Plans
☒ Subsequent Report	☐ Recompletion	☐ New Construction
☐ Final Abandonment Notice	☐ Plugging Back	☐ Non-Routine Fracturing
	☐ Casing Repair	☐ Water Shut-Off
	☐ Altering Casing	☐ Conversion to Injection
	☐ Other _____	☒ Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

1) Formation: Morrow
2) Amount of water produced 10 BW/mo.
3) Water analysis attached
4) Water is stored on lease in fiberglass tank
5) Produced water will be trucked by I & W Inc.
6) The disposal well is I & W Inc., Walter Solt #1, Unit Letter L, Section 5-T18S-R28E Eddy County, New Mexico

SWD #318

14. I hereby certify that the foregoing is true and correct

Signed _____ Title Production Engineer Date March 4, 1993

(This space for Federal or State office use)

Approved by (ORIG. SGD.) DAVID R. GLASS Title PETROLEUM ENGINEER Date 4/22/93

Conditions of approval, if any:

SEE ATTACHED

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

*See Instruction on Reverse Side

Submit 5 Copies
Appropriate District Office
DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

RECEIVED 144
'93 FEB 24 AM 9 05

Form C-104
Revised 1-1-89
See Instructions
at Bottom of Page

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

O. C. D.
ARTESIA, NEW MEXICO

I. REQUEST FOR ALLOWABLE AND AUTHORIZATION TO TRANSPORT OIL AND NATURAL GAS

Operator	Well API No.
Mewbourne Oil Company	30-015-27163
Address: P.O. Box 5270 Hobbs, New Mexico 88241	

Reason(s) for Filing (Check proper box)

New Well [X]
Recompletion [ ]
Change in Operator [ ]

Change in Transporter of:
Oil [ ] Dry Gas [ ]
Casinghead Gas [ ] Condensate [ ]

Other (Please explain) [ ]

If change of operator give name and address of previous operator _____

II. DESCRIPTION OF WELL AND LEASE

Lease Name	Well No.	Pool Name, Including Formation	Kind of Lease	Lease No.
Chalk Bluff Federal Comm.	3	North Illinois Camp Morrow	~~State~~, Federal or ~~Fee~~	NM-0557371

Location
Unit Letter I : 1980 Feet From The South Line and 990 Feet From The East Line
Section 1 Township 18S Range 27E, NMPM, Eddy County

III. DESIGNATION OF TRANSPORTER OF OIL AND NATURAL GAS

Name of Authorized Transporter of Oil or Condensate	Address (Give address to which approved copy of this form is to be sent)
Amoco Pipeline IPC [X]	502 N. West Ave. Levelland, Tx. 79336-3914
Name of Authorized Transporter of Casinghead Gas or Dry Gas	Address (Give address to which approved copy of this form is to be sent)
Transwestern Pipeline Company [X]	P.O. Box 1188 Houston, Texas 77251

If well produces oil or liquids, give location of tanks.	Unit	Sec.	Twp.	Rge.	Is gas actually connected?	When ?
	I	1	18S	27E	Yes	01/15/93

If this production is commingled with that from any other lease or pool, give commingling order number: None

IV. COMPLETION DATA

Designate Type of Completion - (X)	Oil Well	Gas Well	New Well	Workover	Deepen	Plug Back	Same Res'v	Diff Res'v
		X	X					

Date Spudded	Date Compl. Ready to Prod.	Total Depth	P.B.T.D.
11/24/92	01/16/93	10,150'	10,102'
Elevations (DF, RKB, RT, GR, etc.)	**Name of Producing Formation**	**Top Oil/Gas Pay**	**Tubing Depth**
KB 3643' DF 3641' GL 3628'	Lower Morrow	9950'	9972'
Perforations			**Depth Casing Shoe**
9950'-9954' 9957'-9972'			10,150'

TUBING, CASING AND CEMENTING RECORD

HOLE SIZE	CASING & TUBING SIZE	DEPTH SET	SACKS CEMENT
17-1/2"	13-3/8" 54.5#	400'±	100 sacks
12-1/4"	9-5/8" 36#	2,600'	250 sacks
8-3/4"	7" 26#	8,968'	1200 sacks
6"	4-1/2" Liner 11.6#	8,600' to 10,150'	200 sacks

V. TEST DATA AND REQUEST FOR ALLOWABLE 2-3/8" & 2-7/8"

OIL WELL *(Test must be after recovery of total volume of load oil and must be equal to or exceed top allowable for this depth or be for full 24 hours.)*

Date First New Oil Run To Tank	Date of Test	Producing Method (Flow, pump, gas lift, etc.)	
Length of Test	**Tubing Pressure**	**Casing Pressure**	**Choke Size**
Actual Prod. During Test	**Oil - Bbls.**	**Water - Bbls.**	**Gas- MCF**

GAS WELL

Actual Prod. Test - MCF/D	Length of Test	Bbls. Condensate/MMCF	Gravity of Condensate
2000 MCF/D	24 Hrs.	30 : 1	N/A
Testing Method (pitot, back pr.)	**Tubing Pressure (Shut-in)**	**Casing Pressure (Shut-in)**	**Choke Size**
Back Pressure	2850	0	10/64"

VI. OPERATOR CERTIFICATE OF COMPLIANCE

I hereby certify that the rules and regulations of the Oil Conservation Division have been complied with and that the information given above is true and complete to the best of my knowledge and belief.

R. G. Jones

Signature
Robert A Jones — Engineer
Printed Name — Title
01/19/93 — (505) 393-5905
Date — Telephone No.

OIL CONSERVATION DIVISION

Date Approved JAN 29 1993

By _____

Title SUPERVISOR, DISTRICT II

INSTRUCTIONS: This form is to be filed in compliance with Rule 1104

1) Request for allowable for newly drilled or deepened well must be accompanied by tabulation of deviation tests taken in accordance with Rule 111.
2) All sections of this form must be filled out for allowable on new and recompleted wells.
3) Fill out only Sections I, II, III, and VI for changes of operator, well name or number, transporter, or other such changes.
4) Separate Form C-104 must be filed for each pool in multiply completed wells.

Submit 5 Copies
Appropriate District Office
DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

144
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JAN 2 9 1993
O. C. D.
ARTESIA, OFFICE

Form C-104
Revised 1-1-89
See Instructions at Bottom of Page

REQUEST FOR ALLOWABLE AND AUTHORIZATION TO TRANSPORT OIL AND NATURAL GAS

I.

Operator	Well API No.
Mewbourne Oil Company	30-015-27163

Address: P.O. Box 5270 Hobbs, New Mexico 88241

Reason(s) for Filing (Check proper box)
- New Well [X]
- Recompletion [ ]
- Change in Operator [ ]
- Change in Transporter of: Oil [ ] Dry Gas [ ] Casinghead Gas [ ] Condensate [ ]
- Other (Please explain) [ ]

If change of operator give name and address of previous operator: _____

II. DESCRIPTION OF WELL AND LEASE

Lease Name	Well No.	Pool Name, Including Formation	Kind of Lease XXX Federal or XXX	Lease No.
Chalk Bluff Federal Comm.	3	North Illinois Camp Morrow		NM-0557371

Location: Unit Letter I : 1980 Feet From The South Line and 990 Feet From The East Line

Section 1 Township 18S Range 27E NMPM, Eddy County

III. DESIGNATION OF TRANSPORTER OF OIL AND NATURAL GAS

Name of Authorized Transporter of Oil or Condensate	Address (Give address to which approved copy of this form is to be sent)
Amoco Pipeline IPC [X]	502 N. West Ave. Levelland, Tx. 79336-3914
Name of Authorized Transporter of Casinghead Gas or Dry Gas [X]	Address (Give address to which approved copy of this form is to be sent)
Transwestern Pipeline Company	P.O. Box 1188 Houston, Texas 77251

If well produces oil or liquids, give location of tanks.	Unit	Sec.	Twp.	Rge.	Is gas actually connected?	When ?
	I	1	18S	27E	Yes	01/15/93

If this production is commingled with that from any other lease or pool, give commingling order number: None

IV. COMPLETION DATA

Designate Type of Completion - (X)	Oil Well	Gas Well	New Well	Workover	Deepen	Plug Back	Same Res'v	Diff Res'v
		X	X					

Date Spudded	Date Compl. Ready to Prod.	Total Depth	P.B.T.D.
11/24/92	01/16/93	10,150'	10,102'
Elevations (DF, RKB, RT, GR, etc.)	**Name of Producing Formation**	**Top Oil/Gas Pay**	**Tubing Depth**
KB 3643' DF 3641' GL 3628'	Lower Morrow	9950'	9972'
Perforations			**Depth Casing Shoe**
9950'-9954' 9957'-9972'			10,150'

TUBING, CASING AND CEMENTING RECORD

HOLE SIZE	CASING & TUBING SIZE	DEPTH SET	SACKS CEMENT
17-1/2"	13-3/8" 54.5#	400'±	100 sacks Circ. 2
12-1/4"	9-5/8" 36#	2,600'	250 sacks 2-12-93
8-3/4"	7" 26#	8,968'	1200 sacks Circ. 4 hrs
6"	4-1/2" Liner 11.6#	8,600' to 10,150'	200 sacks

V. TEST DATA AND REQUEST FOR ALLOWABLE 2-3/8" & 2-7/8"

OIL WELL *(Test must be after recovery of total volume of load oil and must be equal to or exceed top allowable for this depth or be for full 24 hours.)*

Date First New Oil Run To Tank	Date of Test	Producing Method (Flow, pump, gas lift, etc.)	
Length of Test	**Tubing Pressure**	**Casing Pressure**	**Choke Size**
Actual Prod. During Test	**Oil - Bbls.**	**Water - Bbls.**	**Gas- MCF**

GAS WELL

Actual Prod. Test - MCF/D	Length of Test	Bbls. Condensate/MMCF	Gravity of Condensate
2000 MCF/D	24 Hrs.	30 : 1	N/A
Testing Method (pitot, back pr.)	**Tubing Pressure (Shut-in)**	**Casing Pressure (Shut-in)**	**Choke Size**
Back Pressure	2850	0	10/64"

VI. OPERATOR CERTIFICATE OF COMPLIANCE

I hereby certify that the rules and regulations of the Oil Conservation Division have been complied with and that the information given above is true and complete to the best of my knowledge and belief.

R. G. Jones

Signature
Robert A Jones — Engineer
Printed Name — Title
01/19/93 — (505) 393-5905
Date — Telephone No.

OIL CONSERVATION DIVISION

Date Approved JAN 29 1993

By ORIGINAL SIGNED BY MIKE WILLIAMS

Title SUPERVISOR, DISTRICT II

INSTRUCTIONS: This form is to be filed in compliance with Rule 1104

1) Request for allowable for newly drilled or deepened well must be accompanied by tabulation of deviation tests taken in accordance with Rule 111.
2) All sections of this form must be filled out for allowable on new and recompleted wells.
3) Fill out only Sections I, II, III, and VI for changes of operator, well name or number, transporter, or other such changes.
4) Separate Form C-104 must be filed for each pool in multiply completed wells.

MAP ID NO. 157

MEWBORNE OIL COMPANY
NO. 1 CHALK BLUFF FEDERAL COMMISSION

ENVIROCORP.

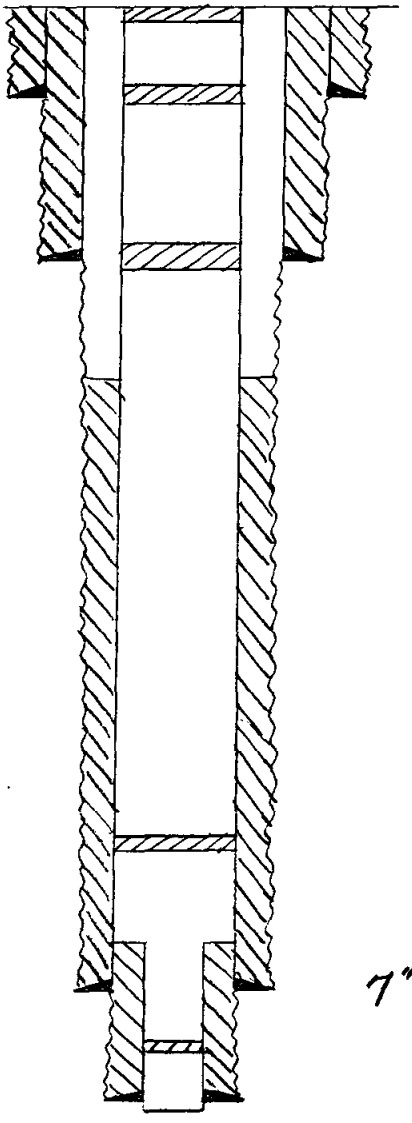
Artificial Penetration Review
Number 157

OPERATOR Mewbourne Oil Co.
LEASE Chalk Bluff Fed. Comm.
WELL NUMBER 1
DRILLED 3/7/91
PLUGGED 5/25/95 (see remarks)

STATUS P&A - Gas
DIST FROM INJECT
LOCATION 1-18S-27E Unit N
MUD FILLED BOREHOLE Yes
REPORTED MUD WEIGHT

API NO.

REMARKS: Plugging data from Notice of Intention to Abandon filed with OCD.



10120'

13 3/8" Surface casing set at 400'
cemented with 425 sx.

9 5/8" Casing set at 2604'
cemented with 1025 sx.

Cement Plugs:
0'-50', 8 sx
450', 17 sx
2650', 17 sx
7010', 8 sx on CIBP
9800', 35 sx on CIBP

7" Casing set at 9450'
cemented with 1350 sx.
Top of cement 1547'-4721' Calculated in Table

4 1/2" Liner set at 9051'-10119'
cemented with 175 sx.
Top of cement 9051' Calculated Table

Form 3160-3
(November 1983)
(formerly 9-331C)

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0136
Expires August 31, 1985

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

TYPE OF WORK
DRILL [X] DEEPEN [ ] PLUG BACK [ ]

b. TYPE OF WELL
OIL WELL [ ] GAS WELL [X] OTHER SINGLE ZONE [ ] MULTIPLE ZONE [ ]

2. NAME OF OPERATOR
Mewbourne Oil Company

3. ADDRESS OF OPERATOR
P.O. Box 5270 Hobbs, New Mexico 88241

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface
2250' FWL & 790' FSL
At proposed prod. zone
Same

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*
7 miles Southeast of Artesia, New Mexico

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any): 790'

16. NO. OF ACRES IN LEASE: 320

17. NO. OF ACRES ASSIGNED TO THIS WELL: 320

18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.:

19. PROPOSED DEPTH: 10,300'

20. ROTARY OR CABLE TOOLS: Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.): 3609.0' GR

22. APPROX. DATE WORK WILL START*: Upon BLM approval

5. LEASE DESIGNATION AND SERIAL NO.: NM 0557371

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: Chalk Bluff Federal Co

9. WELL NO.: 1

10. FIELD AND POOL, OR WILDCAT: Wdc. North Illinois Camp Mo

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 1-T18S-R27E

12. COUNTY OR PARISH: Eddy

13. STATE: N.M.

RECEIVED
DEC 6 '90
O. C. D.
ARTESIA, OFFICE

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
17 1/2"	13 3/8"	61#	400'±	450 sks. Class "C" Circulated
12 1/4"	9 5/8"	36#	2,600'±	800 sks. Class "C" Tie back int surface.
8 3/4"	5 1/2"	17# & 20#	10,300'±	600 sks. Class "H" [see stips]

Mud Program:

0' - 400'	Spud mud with fresh water gel and lime. LCM as needed.
400' - 2,600'	Fresh water gel and lime. LCM as needed.
2,600' - 8,500'	Cut brine with lime for pH control. Wt. 9.2-9.6 ppg, WL - NC. LCM as needed.
8,500' - 10,300'	Cut brine with Drispac, salt gel, lime, soda ash, and starch. Wt. 9.2-9.6 ppg. WL 10 cc or less. Raise weight accordingly if abnormal pressu are encountered.

BOP Program:

900 series BOP and Hydril on 13 3/8" surface casing and on 9 5/8" intermediate casing.

Gas is not dedicated.

Part ID- 12-14-90
New Lse + HP

RECEIVED
NOV 27 2 08 PM '90
CARLSBAD, NEW MEXICO

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.

SIGNED W. K. Chaney TITLE District Superintendent DATE Nov. 8, 1990

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS AND
SPECIAL STIPULATIONS
ATTACHED

*See Instructions On Reverse Side

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the

State Lease - 4 copies
Fee Lease - 5 copies

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

157

WELL LOCATION AND ACREAGE DEDICATION PLAT

All Distances must be from the outer boundaries of the section

Operator	Lease	Well No.
MEWBOURNE OIL COMPANY	CHALK BLUFF FEDERAL	1

Unit Letter	Section	Township	Range	County
N	1	18 SOUTH	27 EAST NMPM	EDDY

Actual Footage Location of Well:
2250 feet from the WEST line and 790 feet from the SOUTH line

Ground level Elev.	Producing Formation	Pool	Dedicated Acreage:
3609.0	Morrow	North Illinois Camp	320 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

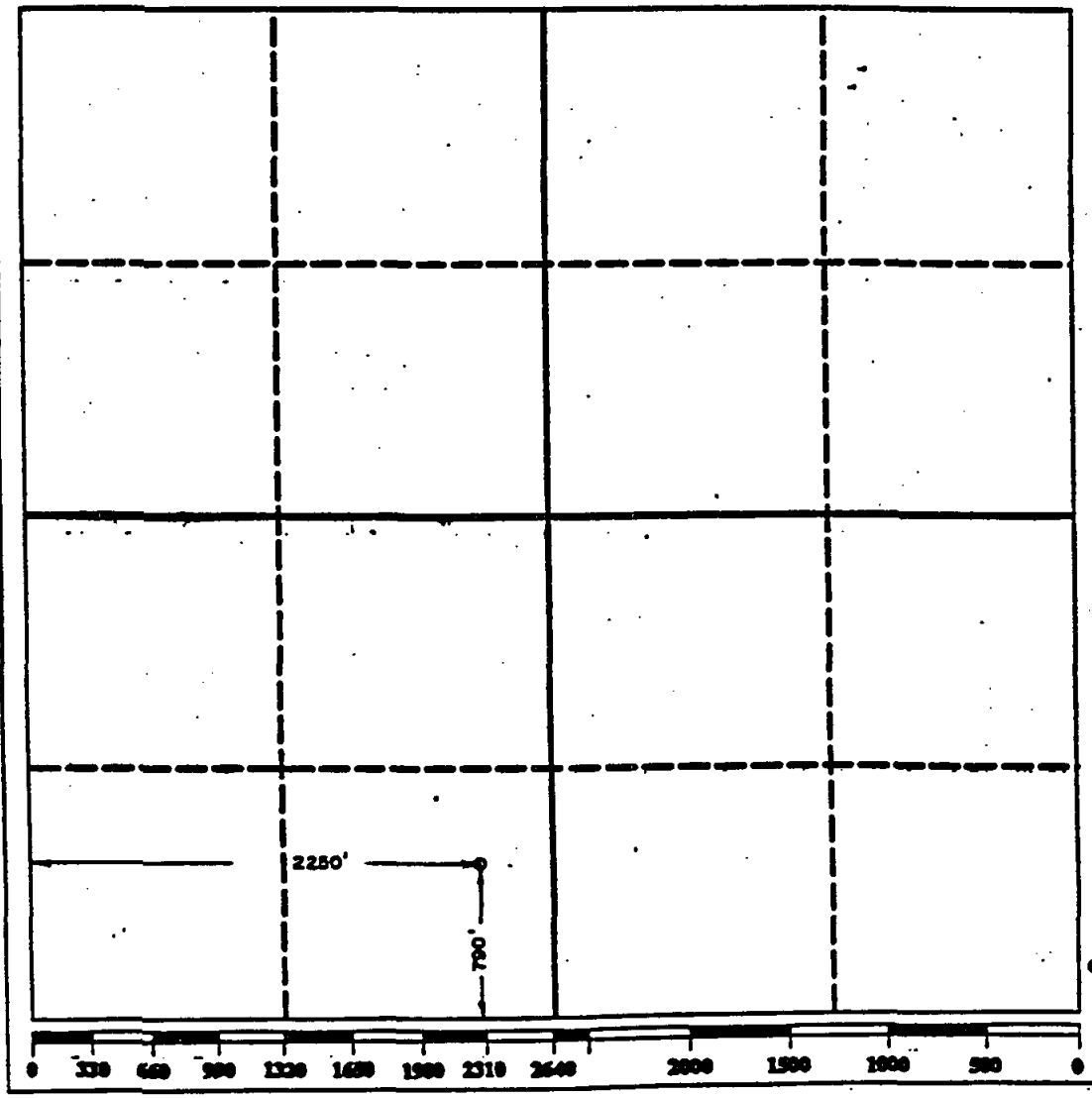
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interest of all owners been consolidated by communitization, unitization, force-pooling, etc.?

[X] Yes [ ] No If answer is "yes" type of consolidation Communitization

If answer is "no" list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary. _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interest, has been approved by the Division.



OPERATOR CERTIFICATION

I hereby certify that the inform contained herein is true and complete t best of my knowledge and belief.

Signature: W.H. Cravey

Printed Name: W.H. Cravey

Position: District Supt.

Company: Mewbourne Oil Compa

Date: October 25, 1990

SURVEYOR CERTIFICATION

I hereby certify that the well location on this plat was plotted from field no actual surveys made by me or und supervison, and that the same is tru correct to the best of my knowledg belief.

Date Surveyed: 10/04/90

Signature & Seal of Professional Surveyor: NEW MEXICO HERSCHEL L. JONES SURVEYOR

Certificate No. 3640

Form 3160-4
(November 1983)
(formerly 9-330)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN DUPLICATE (See other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0137
Expires August 31, 1985

WELL COMPLETION OR RECOMPLETION REPORT AND LOG *

5. LEASE DESIGNATION AND SERIAL NO.: NM-0557371

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

1a. TYPE OF WELL: OIL WELL ☐ GAS WELL ☒ DRY ☐

b. TYPE OF COMPLETION: NEW WELL ☒ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF. RESVR. ☐ Other

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: Chalk Bluff Federal Com

2. NAME OF OPERATOR: Mewbourne Oil Company

9. WELL NO.: 1

3. ADDRESS OF OPERATOR: P. O. Box 7698, Tyler, Texas 75711

10. FIELD AND POOL, OR WILDCAT: N. Illinois Camp Morrow

4. LOCATION OF WELL (*Report location clearly and in accordance with any State requirements*)*
At surface: 2250' FWL & 790' FSL
At top prod. interval reported below
At total depth: Same

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: Sec. 1-T18S-R27

CONFIDENTIAL

RECEIVED
MAY 15 1991
O. C. D.
ARTESIA, OFFICE

14. PERMIT NO.	DATE ISSUED	12. COUNTY OR PARISH	13. STATE
API #30-015-26575		Eddy	N.M.

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (*Ready to prod.*)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
12/22/90	1/29/91	3/07/91	KB 3625', GM 3609'	

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
10,120'	10,079'		→	X	

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*: 9936-46', 9964-67' - Morrow

25. WAS DIRECTIONAL SURVEY MADE: Yes

26. TYPE ELECTRIC AND OTHER LOGS RUN: SDL-DSN, DLL-MSFL, DILL

27. WAS WELL CORED: No

28. CASING RECORD (*Report all strings set in well*)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
13-3/8"	54.50#	400'	17-1/2"	425 - Circ	None
9-5/8"	36#	2604'	12-1/4"	1025 - Circ	None
7"	26# & 29#	9450'	8-3/4"	1350 - Circ	None

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)
4-1/2"	9051'	10119'	175	

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2-3/8"	9805'	9805'

31. PERFORATION RECORD (*Interval, size and number*)
9936-46', 9964-67'
13', 2 SPF, Total 28

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
9936-67'	3000 gals Mod-101 acid + 1000 bbl N2 + 50 ball sealers. Flus w/35 bbls 2% KCL water + 1000 SCF/bbl N2.

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (*Flowing, gas lift, pumping—size and type of pump*)	WELL STATUS (*Producing or shut-in*)
	Flowing	Producing

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
3/11/91	24 hrs	8/64"		1	886	0	886:1

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)
1600#			1	886	0	58°

34. DISPOSITION OF GAS (*Sold, used for fuel, vented, etc.*): Sold

TEST WITNESSED BY: W. H. Cravey

35. LIST OF ATTACHMENTS: Logs

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED: Phyllis Thompson TITLE: Engr. Oprns. Secretary DATE: 3/18/91

*(See Instructions and Spaces for Additional Data on Reverse Side)

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the

Form 3160—4
(November 1983)
(formerly 9—330)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN DUPLICATE* (See other instructions on reverse side)

Form approved.
Budget Bureau No. 1004—0137
Expires August 31, 1985

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

5. LEASE DESIGNATION AND SERIAL NO.: NM-0557371

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: Chalk Bluff Federal Co

9. WELL NO.: 1

10. FIELD AND POOL, OR WILDCAT: N. Illinois Camp Morro

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: Sec. 1-T18S-R27

a. TYPE OF WELL: OIL WELL ☐ GAS WELL ☒ DRY ☐ Other

b. TYPE OF COMPLETION: NEW WELL ☒ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF. RESVR. ☐ Other

CONFIDENTIAL

2. NAME OF OPERATOR: Mewbourne Oil Company ✓

3. ADDRESS OF OPERATOR: P. O. Box 7698, Tyler, Texas 75711

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)*
At surface: 2250' FWL & 790' FSL
At top prod. interval reported below
At total depth: Same

14. PERMIT NO. / DATE ISSUED: API #30-015-26575

12. COUNTY OR PARISH: Eddy

13. STATE: N.M.

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (Ready to prod.)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
12/22/90	1/29/91	3/07/91	KB 3625', GM 3609'	

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
10,120'	10,079'		→	X	

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*: 9936-46', 9964-67' - Morrow

25. WAS DIRECTIONAL SURVEY MADE: Yes

26. TYPE ELECTRIC AND OTHER LOGS RUN: SDL-DSN, DLL-MSFL, DILL

27. WAS WELL CORED: No

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
13-3/8"	54.50#	400'	17-1/2"	425 - Circ	None
9-5/8"	36#	2604'	12-1/4"	1025 - Circ	None
7"	26# & 29#	9450'	8-3/4"	1350 - Circ	None

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)
4-1/2"	9051'	10119'	175	

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2-3/8"	9805'	9805'

31. PERFORATION RECORD (Interval, size and number)
9936-46', 9964-67'
13', 2 SPF, Total 28

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
9936-67'	3000 gals Mod-101 acid + 1000 bbl N2 + 50 ball sealers. Flu w/35 bbls 2% KCL water + 1000 SCF/bbl N2.

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump)	WELL STATUS (Producing or shut-in)
	Flowing	Producing

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
3/11/91	24 hrs	8/64"		1	886	0	886:1

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)
1600#			1	886	0	58

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.): Sold

TEST WITNESSED BY: W. H. Coffey

35. LIST OF ATTACHMENTS: Logs

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED: Debra Thompson TITLE: Engr. Oprns. Secretary DATE: 3/18/91

ACCEPTED FOR RECORD
APR 1 1991
CARLSBAD, NEW MEXICO

*(See Instructions and Spaces for Additional Data on Reverse Side)

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the

37. SUMMARY OF POROUS ZONES: (Show all important zones of porosity and contents thereof; cored intervals; and all drill-stem, tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures, and recoveries)

FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.
Lower Morrow	9936'	9967'	Sandstone
Middle Morrow	9861'	9881'	Sandstone

38. GEOLOGIC MARKERS

NAME	TOP	
	MEAS. DEPTH	TRUE VERT. DEPTH
Yates	424'	
Queen	1138'	
Grayburg	1484'	
San Andres	1976'	
Glorietta	3458'	
Tubb	4451'	
Drinkard	5376'	
Abo	5794'	
Wolfcamp	6420'	
Cisco	7666'	
Canyon	8368'	
Strawn	8844'	
Morrow	9454'	
Morrow Clastics	9770'	
Barnett	10016'	

KEN REYNOLDS—PRESIDENT
ARNIE NEWKIRK—VICE-PRESIDEN

WEK DRILLING CO., INC. — OIL WELL DRILLING CONTRACTORS

P. O. Box 1498 ROSWELL, NEW MEXICO 88202-1
505/623-5070 ROSWELL, NM
505/746-2719 ARTESIA, NM

157

February 05, 1991

Mewbourne Oil Company, Inc.
P.O. Box 5270
Hobbs, N.M. 88241

REF: Chalk Bluff Fed Comm #1

Gentlemen:

The following is a Deviation Survey on the above referenced well located in Eddy County, New Mexico.

400' - 1/4°	4674' - 1 1/4°	6559' - 2 1/2°
905' - 3/4°	5120' - 1 1/2°	6650' - 2 1/4°
1303' - 3/4°	5639' - 1 1/4°	7146' - 1 3/4°
1901' - 1 1/4°	6077' - 3 1/2°	7672' - 3/4°
2399' - 1 3/4°	6126' - 3 3/4°	7800' - 3/4°
2600' - 1 3/4°	6189' - 3 3/4°	8291' - 1°
3098' - 1 1/2°	6250' - 3 3/4°	8815' - 1°
3592' - 1 1/2°	6312' - 3 1/2°	9313' - 3/4°
3682' - 3/4°	6374' - 3 1/4°	9808' - 1 1/4°
4177' - 1°	6467' - 2 3/4°	10,120' 3/4° TD

Sincerely,

Arnold Newkirk

Arnold Newkirk
Vice-President

STATE OF NEW MEXICO)
)
COUNTY OF CHAVES)

The foregoing was acknowledged before me this 05th day of February 1991 by Arnold Newkirk.

MY COMMISSION EXPIRES

October 27, 1992

Linda Rogers

NOTARY PUBLIC

(November 1983)
(Formerly 9-331)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

(Other instructions on reverse side)

Expires August 31, 1985

5. LEASE DESIGNATION AND SERIAL NO.: NM-0557371

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

157

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

OIL WELL ☐ GAS WELL ☒ OTHER

APR - 1 1991

7. UNIT AGREEMENT NAME:

2. NAME OF OPERATOR: Mewbourne Oil Company

8. FARM OR LEASE NAME: Chalk Bluff Federal Com

3. ADDRESS OF OPERATOR: P. O. Box 7698, Tyler, Texas 75711

9. WELL NO.: 1

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 2250' FWL & 790' FSL

10. FIELD AND POOL, OR WILDCAT: North Illinois Camp Mor

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 1-T18S-R27E

14. PERMIT NO.	15. ELEVATIONS (Show whether DF, RT, GR, etc.)	12. COUNTY OR PARISH	13. STATE
API #30-015-26575	3609' GR	Eddy	N.M.

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	XX	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other)			
(Other)				(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

12/23/90 - Spud well at 7:00 PM 12/22/90.

12/24/90 - Ran 12 jts (404.25') 13-3/8" 54.50# casing set at 400'. Cemented with 100 sxs Thickset, 1/2# Flocele + 3% $CaCl_2$ + 5# Gilsonite followed by 125 sxs Class "C", 6% gel + 3% $CaCl_2$ + ¼# Flocele + 5# Gilsonite followed by 200 sxs Class "C" 3% $CaCl_2$. Plug down at 2:00 PM 12/23. Did not circ. Ran 1" in and tagged up at 214'. Cut thru 1" at 198' with 200 sxs Class "C" w/3% $CaCl_2$. Circulated 20 sacks.

12/31/90 - Ran 59 jts 9-5/8" 36# ST&C set at 2604.43' cemented with 825 sxs Class "C" w/6% gel, 5# Gilsonite, 1/2# Flocele, 2% CaCl and 200 sxs Class "C" w/2% CaCl. Plug down at 10:30 PM 12/30/90. Circulated 40 sacks.

01/24/91 - Ran 7" 26# & 29# N80, S95, P110 casing set at 9450.27'. Set bottom packer at 7609'. DV tool at 7599'. Cemented 1st stage with 150 sxs Lite + ¼# Flocele + 5# Gilsonite followed by 200 sxs Class "H" neet. Bumped plug at 12:05 AM. Pressured casing to 3000# and set packer. Dropped bomb. Opened DV tool at 12:45 AM. Pumped 39 bbls and had full returns. Began circulating for 2nd stage Pumped 2nd stage cement with 900 sxs of Lite + 5# Gilsonite + 1/2# Flocele, followed by 100 sxs Class "H" neet. Cemented with full returns.

18. I hereby certify that the foregoing is true and correct

SIGNED [signature] TITLE Engineering Operations Sec. DATE 1/29/91

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

ACCEPTED FOR RECORD
FEB 15 1991
SJS
CARLSBAD, NEW MEXICO

*See Instructions on Reverse Side

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals

SUBMIT IN TRIPLICATE

5. Lease Designation and Serial No.: NM-0557371

6. If Indian, Allottee or Tribe Name: 157

7. If Unit or CA, Agreement Designation:

1. Type of Well: ☐ Oil Well ☒ Gas Well ☐ Other

8. Well Name and No.: Chalk Bluff Federal C

2. Name of Operator: Mewbourne Oil Company

9. API Well No.: 30-015-26575

3. Address and Telephone No.: P. O. Box 7698, Tyler, Texas (903) 561-2900

10. Field and Pool, or Exploratory Area: N. Illinois Camp Morr

4. Location of Well (Footage, Sec., T., R., M., or Survey Description): 2250' FWL & 790' FSL of Sec. 1-T18S-R27E

11. County or Parish, State: Eddy, New Mexico

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
☐ Notice of Intent	☐ Abandonment	☐ Change of Plans
☒ Subsequent Report	☐ Recompletion	☐ New Construction
☐ Final Abandonment Notice	☐ Plugging Back	☐ Non-Routine Fracturing
	☐ Casing Repair	☐ Water Shut-Off
	☐ Altering Casing	☐ Conversion to Injection
	☒ Other New Well Completion	☐ Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

2/2/91 - Ran 4½" liner. Top of liner @ 9051'. Bottom of liner @ 10,119'. Cemented with 175 sacks Class "H". Plug down at 2:30 AM with full returns.

2/26/91- Perforated Lower Morrow 9964-9967' & 9936-9946', 13' net interval w/2SPF, total 28 perfs.

2/26/91- Broke down Lower Morrow perfs 9936-46' & 9964-67' with 3000 gals Mod-101 acid containing 1000 SCF/bbl N2 carrying 50 RCN ball sealers. Flushed w/35 bbls 2% KCL water containing 1000 SCF/bbl N2. Had good ball action. Avg rate: 4.0 BPM. Avg press 6000#. Max rate 4.0 BPM. Max press 6180#. ISIP 5100#. in 5 mins 3810#, 10 mins 2810#, 15 mins 2560#.

ACCEPTED FOR RECORD
SJS
APR 1 1991
CARLSBAD, NEW MEXICO

RECEIVED
3 01 Fil '91

14. I hereby certify that the foregoing is true and correct

Signed [signature] Title Engr. Oprns. Secretary Date 3/18/91

(This space for Federal or State office use)

Approved by _____ Title _____ Date _____
Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

*See Instruction on Reverse Side

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals

SUBMIT IN TRIPLICATE

RECEIVED
MAY 24 1991
DIST. 6 N.M.
Carlsbad, New Mexico

5. Lease Designation and Serial No.: NM-0557371

6. If Indian, Allottee or Tribe Name:

7. If Unit or CA, Agreement Designation:

1. Type of Well: ☐ Oil Well ☒ Gas Well ☐ Other

8. Well Name and No.: CHALK BLUFF FED. COM

2. Name of Operator: Mewbourne Oil Company

9. API Well No.: 30-015-26575

3. Address and Telephone No.: P. O. Box 7698, Tyler, Texas 75711

10. Field and Pool, or Exploratory Area: No. Illinois Camp Mor

4. Location of Well (Footage, Sec., T., R., M., or Survey Description): 2250' FWL & 790' FSL of Sec. 1, T18S-R27E

11. County or Parish, State: Eddy, New Mexico

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
☐ Notice of Intent	☐ Abandonment	☐ Change of Plans
☒ Subsequent Report	☐ Recompletion	☐ New Construction
☐ Final Abandonment Notice	☐ Plugging Back	☐ Non-Routine Fracturing
	☐ Casing Repair	☐ Water Shut-Off
	☐ Altering Casing	☐ Conversion to Injection
	☒ Other Fracture Treat	☐ Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

4/24/91 - Western fracture treated Morrow Sand perfs 9936-46', 9964'67' down tubing with 16,000 gals 73 downhole slurry quality Binary Westfoam carrying 16,000# 20/40 mesh ACFRAC Black Westprop-3. Screened out with 545 gals CO_2/N_2 2% KCL water. Screened out at 10,100# with 1200 gals of 3# stage in formation and 545 gals flush in tubing. Pumped 116 sxs Proppant into formation and left 25 sacks in casing and 19 sacks in tubing. ISDP 8300#, 5 mins 7600#, 10 mins 7200#, 15 mins 6800#. Avg 10.0 BPM at 8200#. Job complete 10:20 AM.

ACCEPTED FOR RECORD
JUN 14 1991
CARLSBAD, NEW MEXICO

14. I hereby certify that the foregoing is true and correct
Signed [signature] Title Engr. Oprns. Secretary Date 5/21/91

(This space for Federal or State office use)
Approved by _____ Title _____ Date _____
Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

*See Instruction on Reverse Side

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED
SEP 2 1 1992
O. C. D.
Artesia, Office

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals

SUBMIT IN TRIPLICATE

5. Lease Designation and Serial No.
NM-0557371

6. If Indian, Allottee or Tribe Name
157

7. If Unit or CA, Agreement Designation

1. Type of Well
☐ Oil Well ■ Gas Well ☐ Other

8. Well Name and No.
Chalk Bluff Fed.Com

2. Name of Operator
Mewbourne Oil Company

9. API Well No.
30-015-26575

3. Address and Telephone No.
P. O. Box 7698, Tyler, Texas 75711 (903) 561-2900

10. Field and Pool, or Exploratory Area
N.Illinois Camp-Mor

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
2250' FWL & 790' FSL Sec. 1, T18S-R27E

11. County or Parish, State
Eddy

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
☐ Notice of Intent	☐ Abandonment	☐ Change of Plans
■ Subsequent Report	☐ Recompletion	☐ New Construction
☐ Final Abandonment Notice	☐ Plugging Back	☐ Non-Routine Fracturing
	☐ Casing Repair	☐ Water Shut-Off
	☐ Altering Casing	☐ Conversion to Injection
	■ Other Additional perfs, acidize & frac	☐ Dispose Water

(Note: Report results of multiple completion on Completion or Recompletion Report and Log)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

8/13/92 - Perf Middle Morrow 9861-9882', 2 SPF, 10' Net, 22 holes.

8/14/92 - Acidized w/3500 gals 7½% HCL + additives + 1000 SCF/bbl nitrogen carrying 80 ball sealers. Flushed w/2% KCL wtr + 1000 SCF/bbl nitrogen. ISDP 4300#, 5 mins 3800#, 10 mins 3400#, 15 mins 2800#. Avg rate 3.7 BPM, AP 5000#, MP 5600#. Blew well dow to pit 8/15 - 8/18/92.

8/19/92 - MI swab unit. Pressure tested tbg to 2000#.Held OK. Removed tree. RU BOP. RU swab Swabbed well down to 5300'.

8/20/92 - Swabbed down to 6500'. POOH w/tbg & pkr. TIH w/new pkr assembly & 200 jts tbg. Tested tbg to 8000#. 8/21/92 - Continued testing tbg. Set pkr @ 9740.68' w/15 pts compression. Press annulus to 2000#. Held OK. Started swabbing. Had light blow of

8/22/92 - RU Western Co. Acidized perfs w/1500 gals 7½% HCL acid + additives + 1000 scf/bbl nitrogen + 35 ball sealers. Flushed w/2% KCL wtr. ISDP 400#. 5 min 3700#, 10 min 15 min 3600#. ATP 5100#, MTP 5400#. RD Western. Opened well to pit on 12/64" chol No show of gas or oil. Recovering load.

8/23/92 - RU swab. FL @ 7000'. Swabbed dry in 3 runs. Continued swabbing. Recovering load.

14. I hereby certify that the foregoing is true and correct

Signed [signature] Title Engr. Oprns. Secretary Date 9/11/92

(This space for Federal or State office use)

Approved by _____ Title _____ Date _____

Conditions of approval, if any:

APPROVED
SEP 22 1992

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

*See Instruction on Reverse Side

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals

5. Lease Designation and Serial No.
NM-0557371

6. If Indian, Allottee or Tribe Name

7. If Unit or CA, Agreement Designation

SUBMIT IN TRIPLICATE

1. Type of Well
☐ Oil Well ■ Gas Well ☐ Other

8. Well Name and No.
Chalk Bluff Fed.Com.#1

2. Name of Operator
Mewbourne Oil Company

9. API Well No.
30-015-26575

3. Address and Telephone No.
P. O. Box 7698, Tyler, Texas 75711 (903) 561-2900

10. Field and Pool, or Exploratory Area
N.Illinois Camp-Mor.-(

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
2250' FWL & 790' FSL Sec. 1, T18S-R27E

11. County or Parish, State
Eddy

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
☐ Notice of Intent	☐ Abandonment	☐ Change of Plans
■ Subsequent Report	☐ Recompletion	☐ New Construction
☐ Final Abandonment Notice	☐ Plugging Back	☐ Non-Routine Fracturing
	☐ Casing Repair	☐ Water Shut-Off
	☐ Altering Casing	☐ Conversion to Injection
	■ Other Additional perfs, acidize & frac	☐ Dispose Water

(Note: Report results of multiple completion on W
Completion or Recompletion Report and Log for

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally dr
give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

8/25/92 - Frac Morrow perfs 9861-9882' w/38,000 gals Binary Foam carrying 30,000# 20/40 Interprop. ISDP 4650#, 5 min 4010#, 10 min 3880#, 15 min 3800#. ATP 7800#. MTP 8600#. RD Western. 320 bbls load to recover. Opened well to pit on 12/64" choke. Installed 14/64" positive choke. Left well flowing to pit.

8/27/92 - RU swab unit. IFL @ 6150'. Swabbed well dry. Continued swabbing. Had flare during swab run & no flare after run. Recovering load.

9/03/92 - SITP 1450#. Put well down line on 12/64" choke.

14. I hereby certify that the foregoing is true and correct
Signed [signature] Title Engr. Oprns. Secretary Date 9/11/92

(This space for Federal or State office use)

Approved by _____ Title _____ Date _____
Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statem
or representations as to any matter within its jurisdiction.

*See Instruction on Reverse Side

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals

SUBMIT IN TRIPLICATE

5. Lease Designation and Serial No.: NM-0557371
6. If Indian, Allottee or Tribe Name:
7. If Unit or CA, Agreement Designation: #1
8. Well Name and No.: Chalk Bluff Fed. Comm.
9. API Well No.: 30-015-26575
10. Field and Pool, or Exploratory Area: N. Illinois Camp
11. County or Parish, State: Eddy Co., N.M.

1. Type of Well: [X] Oil Well [ ] Gas Well [ ] Other
2. Name of Operator: Mewbourne Oil Company
3. Address and Telephone No.: P.O. Box 5270 Hobbs, New Mexico 88241 (505) 393-5905
4. Location of Well (Footage, Sec., T., R., M., or Survey Description): 2250' FWL & 790' FSL of Sec. 1-T18S-R27E

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
[ ] Notice of Intent	[ ] Abandonment	[ ] Change of Plans
[X] Subsequent Report	[X] Recompletion	[ ] New Construction
[ ] Final Abandonment Notice	[X] Plugging Back	[ ] Non-Routine Fracturing
	[ ] Casing Repair	[ ] Water Shut-Off
	[ ] Altering Casing	[ ] Conversion to Injection
	[ ] Other	[ ] Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

* Verbal from Adam Salameh

9/10/93 Abandon Morrow formation. Set CIBP @ 9800' & cover w/35' cement.
9/11/93 Perforate Cisco from 7826'-7830'. Test & evaluate.
9/12/93 Squeeze Cisco from 7826'-7830' w/600 sx. Class "C".
9/15/93 Drill out squeeze perfs. to 7792'. Squeeze held 2,000#.
9/16/93 Perforate Cisco from 7676'-7678'. Test and evaluate.
9/17/93 Abandon Cisco formation, set CIBP @ 7600' & cover w/35' cement.
9/18/93 Perforate Wolfcamp 7304'-7314'. Test & evaluate.
9/19/93 Acidize Wolfcamp w/1500 gal. 15% NE-FE from 7304'-7314'.
9/21/93 Set CIBP @ 7294' & perforate Wolfcamp from 7262'-7278'. Test & evaluate.
9/22/93 Acidize Wolfcamp w/2000 gal. 15% NE-FE from 7262'-7278'.
9/23/93 Set CIBP @ 7208' & perforate Wolfcamp from 7050'-7102'. Test & evaluate.
9/24/93 Acidize Wolfcamp w/2000 gal. 15% NE-FE from 7050'-7102'.
9/25/93 Set CIBP @ 7010'.

14. I hereby certify that the foregoing is true and correct

Signed Robert G. Jones Title Petroleum Engineer Date 10/05/93

(This space for Federal or State office use)

Approved by _____ Title _____ Date _____
Conditions of approval, if any:

ACCEPTED FOR RECORD
NOV 1993
NEW MEXICO

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

*See Instruction on Reverse Side

Submit 5 Copies
Appropriate District Office
DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Form C-104
Revised 1-1-89
See Instructions at Bottom of Page

157

REQUEST FOR ALLOWABLE AND AUTHORIZATION TO TRANSPORT OIL AND NATURAL GAS

Operator	Well API No.
MEWBOURNE OIL COMPANY ✓	30-015-26575

Address: P. O. Box 7698, Tyler, Texas 75711

Reason(s) for Filing (Check proper box)

New Well	[X]	Change in Transporter of:	
Recompletion	[ ]	Oil [ ]	Dry Gas [ ]
Change in Operator	[ ]	Casinghead Gas [ ]	Condensate [ ]

[ ] Other (Please explain)

If change of operator give name and address of previous operator _____

II. DESCRIPTION OF WELL AND LEASE

Lease Name	Well No.	Pool Name, Including Formation	Kind of Lease (State, Federal or Fee)	Lease No.
CHALK BLUFF FEDERAL	1	North Illinois Camp Morrow	Federal	NM-0557371

Location
Unit Letter N : 2250 Feet From The West Line and 790 Feet From The South Line

Section 1 Township 18 South Range 27 East, NMPM, Eddy County

III. DESIGNATION OF TRANSPORTER OF OIL AND NATURAL GAS

Name of Authorized Transporter of Oil [ ] or Condensate [X]	Address (Give address to which approved copy of this form is to be sent)
Amoco Pipeline Inter-corporate Trucking	Oil Tender Dept. Box 702068, Tulsa, OK 74170-2068
Name of Authorized Transporter of Casinghead Gas [ ] or Dry Gas [X]	Address (Give address to which approved copy of this form is to be sent)
Transwestern Pipeline Company	P.O. Box 1188, Houston, Texas 77251-1188

If well produces oil or liquids, give location of tanks.	Unit	Sec.	Twp.	Rge.	Is gas actually connected?	When ?
	N	1	18S	27E	Yes	March, 1991

If this production is commingled with that from any other lease or pool, give commingling order number: No

IV. COMPLETION DATA

Designate Type of Completion - (X)	Oil Well	Gas Well	New Well	Workover	Deepen	Plug Back	Same Res'v	Diff Res'v
		X	X					

Date Spudded	Date Compl. Ready to Prod.	Total Depth	P.B.T.D.
12/22/90	3/07/91	10,120'	10,079'
Elevations (DF, RKB, RT, GR, etc.)	**Name of Producing Formation**	**Top Oil/Gas Pay**	**Tubing Depth**
KB 3625', GR 3609'	Morrow	9936'	9,805'
Perforations			**Depth Casing Shoe**
9936-46', 9964-67', 13',2 SPF,Total 28			---

TUBING, CASING AND CEMENTING RECORD

HOLE SIZE	CASING & TUBING SIZE	DEPTH SET	SACKS CEMENT
17-1/2"	13-3/8"	400'	425 circ 70 sx
12-1/4"	9-5/8"	2604'	1025 circ 12 sx
8-3/3"	7"	9450'	1350 circ 45 sx
7"	4-1/2" Liner	10119'	175

V. TEST DATA AND REQUEST FOR ALLOWABLE

OIL WELL *(Test must be after recovery of total volume of load oil and must be equal to or exceed top allowable for this depth or be for full 24 hours.)*

Date First New Oil Run To Tank	Date of Test	Producing Method (Flow, pump, gas lift, etc.)	
Length of Test	**Tubing Pressure**	**Casing Pressure**	**Choke Size**
Actual Prod. During Test	**Oil - Bbls.**	**Water - Bbls.**	**Gas- MCF**

GAS WELL

Actual Prod. Test - MCF/D	Length of Test	Bbls. Condensate/MMCF	Gravity of Condensate
886	24 hours	1	58
Testing Method (pitot, back pr.)	**Tubing Pressure (Shut-in)**	**Casing Pressure (Shut-in)**	**Choke Size**
Back Pressure	1600#	---	8/64"

VI. OPERATOR CERTIFICATE OF COMPLIANCE

I hereby certify that the rules and regulations of the Oil Conservation Division have been complied with and that the information given above is true and complete to the best of my knowledge and belief.

Gaylon Thompson
Signature
Gaylon Thompson, Engineering Operations
Printed Name Title
March 11, 1991 (903) 561-2900
Date Telephone No.

OIL CONSERVATION DIVISION

Date Approved MAY 16 1991

By ORIGINAL SIGNED BY MIKE WILLIAMS

Title SUPERVISOR, DISTRICT II

INSTRUCTIONS: This form is to be filed in compliance with Rule 1104

1) Request for allowable for newly drilled or deepened well must be accompanied by tabulation [illegible] with Rule 111.
2) All sections of this form must be filled out for allowable on new and recompleted [illegible]
3) Fill out only Sections I, II, III, and VI for changes of operator, well name or [illegible] completed wells

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

157

Drawer DD, Artesia, NM

Budget Bureau No 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals

SUBMIT IN TRIPLICATE

1. Type of Well
☐ Oil Well ■ Gas Well ☐ Other

2. Name of Operator
Mewbourne Oil Company

3. Address and Telephone No
P.O. Box 5270 Hobbs, New Mexico 88241 (505) 393-5905

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
2250' FWL & 790' FSL
Sec. 1-T18S-R27E

Unit L

5. Lease Designation and Serial No.
NM-0557371

6. If Indian, Allottee or Tribe Name

157

7. If Unit or CA, Agreement Designation

8. Well Name and No.
Chalk Bluff Fed. Comm. #1

9. API Well No.
30-015-26575

10. Field and Pool, or Exploratory Area
N. Illinois Camp Morrow

11. County or Parish, State
Eddy Co., N.M.

12. **CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA**

TYPE OF SUBMISSION	TYPE OF ACTION	
■ Notice of Intent	■ Abandonment	☐ Change of Plans
☐ Subsequent Report	☐ Recompletion	☐ New Construction
☐ Final Abandonment Notice	☐ Plugging Back	☐ Non-Routine Fracturing
	☐ Casing Repair	☐ Water Shut-Off
	☐ Altering Casing	☐ Conversion to Injection
	☐ Other _____	☐ Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

- Spot 8 sx. (50') cement plug on top of existing CIBP @ 7010'. Circulate hole with plug mud.
- Spot 17 sx. (100') cement plug @ 2650'.
- Spot 17 sx. (100') cement plug @ 450'.
- Cut off and remove wellhead.
- Spot 8 sx. (50') surface plug.
- Install cup and dry hole marker.
- Clean location.

14. I hereby certify that the foregoing is true and correct

Signed _____ Title Engineer Date 5/25/95

(This space for Federal or State office use)

Approved by _____ Title PETROLEUM ENGINEER Date 8/14/95

Conditions of approval, if any

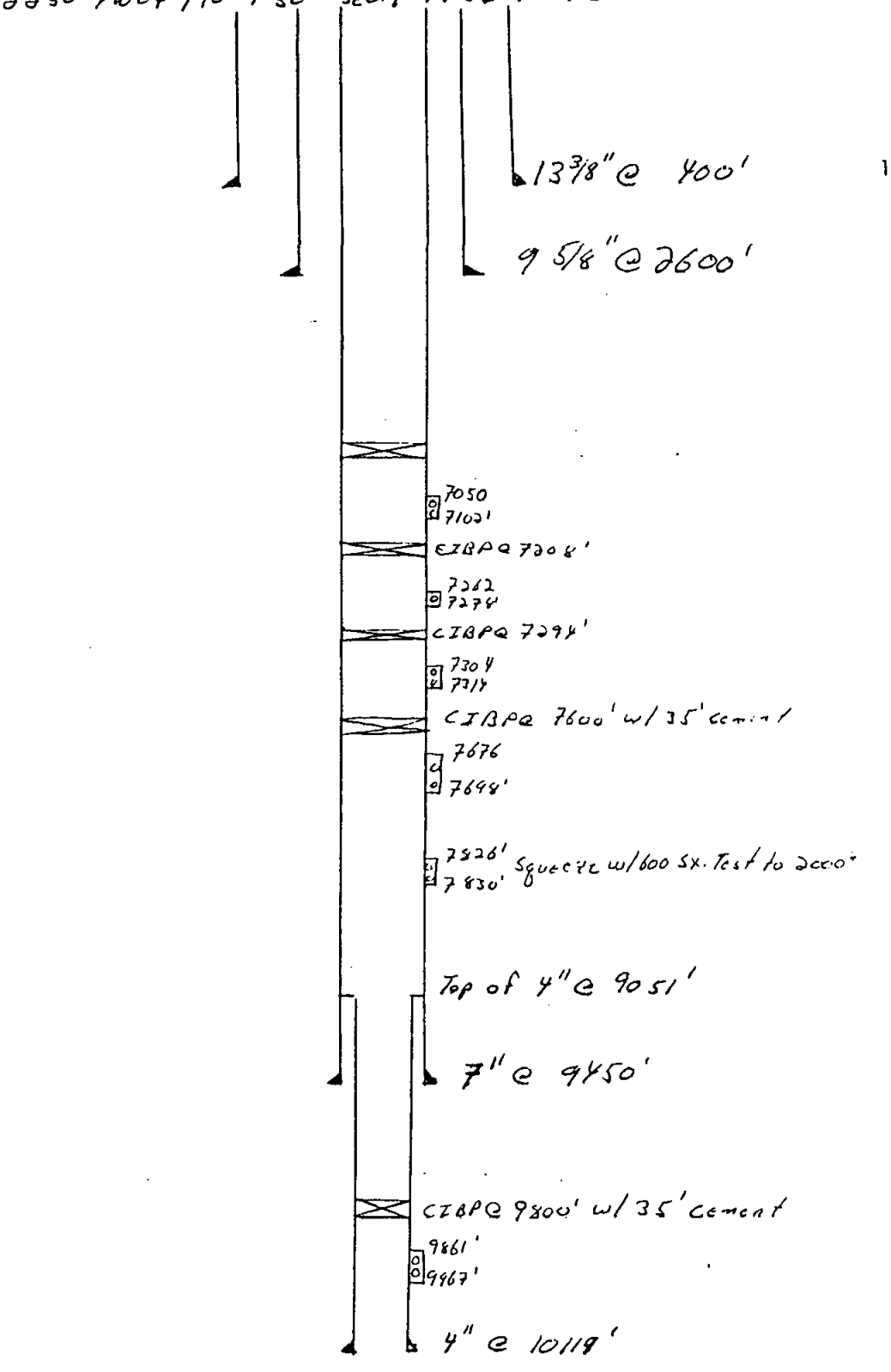
Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

*See Instruction on Reverse Side

Chuck Bluff Federal #1

2250' FWL & 740' FSL Sec. 1-T18S-R27E

157



MAP ID NO. 161

MEWBORNE OIL COMPANY
NO. 1 FEDERAL "T"

161

Form 3160-3
(November 1983)
(formerly 9-331C)

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0136
Expires August 31, 1985

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

5. LEASE DESIGNATION AND SERIAL NO.: NM 42410

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

1a. TYPE OF WORK: DRILL [XX] DEEPEN [ ] PLUG BACK [ ]

7. UNIT AGREEMENT NAME:

b. TYPE OF WELL: OIL WELL [ ] GAS WELL [XX] OTHER — SINGLE ZONE [ ] MULTIPLE ZONE [ ]

8. FARM OR LEASE NAME: FEDERAL "T"

2. NAME OF OPERATOR: MEWBOURNE OIL COMPANY

9. WELL NO.: 1

3. ADDRESS OF OPERATOR: Box 5270; Hobbs, New Mexico 88241

10. FIELD AND POOL, OR WILDCAT: North Illinois Camp Morrow

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface: 660' FNL & 990' FEL
At proposed prod. zone: SAME

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: 12-T18S-R27E

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*: 8 miles southeast of Artesia, New Mexico

12. COUNTY OR PARISH: EDDY

13. STATE: N. MEX.

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any): 660'

16. NO. OF ACRES IN LEASE: 320

17. NO. OF ACRES ASSIGNED TO THIS WELL: 320

18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.:

19. PROPOSED DEPTH: 10,300'

20. ROTARY OR CABLE TOOLS: Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.): 3618.9' GR

22. APPROX. DATE WORK WILL START*: Upon BLM approval

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
17½"	13 3/8"	61#	450'±	450 sks. Class C Circulated
11"	8 5/8"	24# & 32#	2600'±	700 sks. Class C Tie back into surf
7 7/8"	5½"	17# & 20#	10,300' ±	600 sks. Class H

Mud Program :
0 - 450' Spud mud with fresh water gel and lime. LCM as needed.
450' - 2600' Fresh water gel and lime. LCM as needed.
2600' -8500' Cut brine with lime for pH control. WT. 9.2 - 9.6ppg, WL - NC LCM as needed.
8500' - 10,300' Cut brine with Drispac, salt gel, lime, soda ash, and starch. Wt. 9.2 - 9.6 ppg. WL 10 cc's or less. Raise weight accordingly if abnormal pressures a encountered.

BOP PROGRAM:

900 series BOP and Hydril on 13 3/8" surface casing and on 8 5/8" intermediate casing.

Gas is not dedicated.

RECEIVED
MAY 25 AM '90
CARLSBAD, NEW MEXICO
ARTESIA, OFFICE

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24. For W.H. Cravey

SIGNED Bill Pierce TITLE District Superintendent DATE 5/18/90

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

APPROVED BY _____ TITLE _____ DATE 6-13-90

CONDITIONS OF APPROVAL, IF ANY:
APPROVAL SUBJECT TO
GENERAL REQUIREMENTS AND
SPECIAL STIPULATIONS
ATTACHED

*See Instructions On Reverse Side

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the

propriate
ce
- 4 copies
- 3 copies

RICT I
Box 1980, Hobbs, NM 88240

RICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
nergy, Minerals and Natural Resources Depar nt

Form C-102
Revised 1-1-89

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

WELL LOCATION AND ACREAGE DEDICATION PLAT

All Distances must be from the outer boundaries of the section

Operator	Lease	Well No.
MEWBOURNE OIL COMPANY	FEDERAL "T"	1

Unit Letter	Section	Township	Range	County
A	12	18 South	27 East NMPM	Eddy

Actual Footage Location of Well:
660 feet from the North line and 990 feet from the East line

Ground level Elev.	Producing Formation	Pool	Dedicated Acreage:
3618.9	Morrow	North Illinois Camp Morrow	320 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below. N½

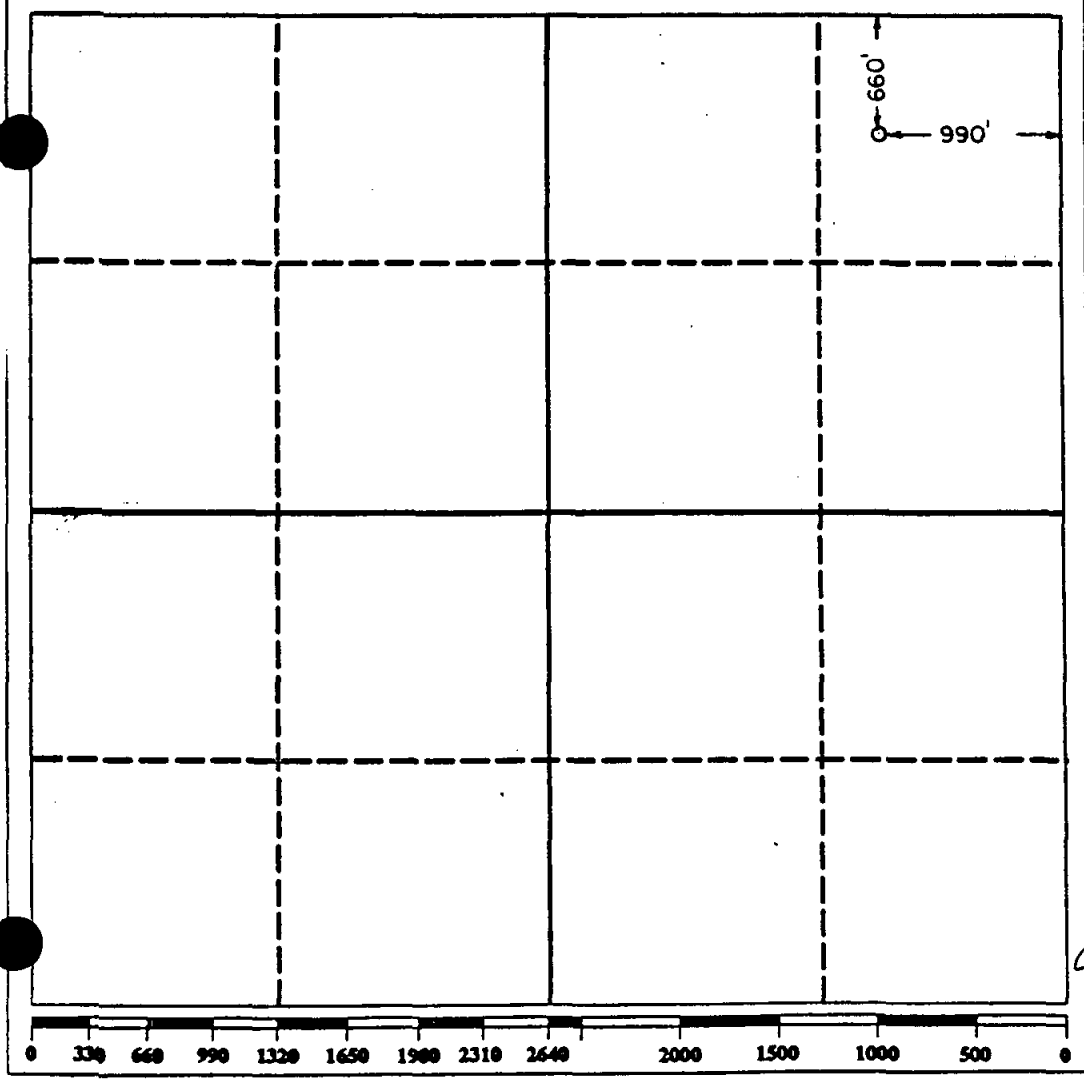
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interest of all owners been consolidated by communitization, unitization, force-pooling, etc.?

☐ Yes ☐ No If answer is "yes" type of consolidation _____

If answer is "no" list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary. _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interest, has been approved by the Division.



OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Signature: W.H. Cravey

Printed Name: W.H. Cravey

Position: District Supt.

Company: Mewbourne Oil Company

Date: April 12, 1990

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervison, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed: 4/7/90

Signature & Seal of Professional Surveyor: HERSCHEL L. JONES

Certificate No. 3640

REGISTERED LAND SURVEYOR

KEN REYNOLDS—PRESIDENT
ARNIE NEWKIRK—VICE-PRESIDENT

DRILLING CO., INC. — OIL WELL DRILLING CONTRACTORS

P. O. Box 1498 ROSWELL, NEW MEXICO 88202-1498
505/623-5070 ROSWELL, NM
505/746-2719 ARTESIA, NM

August 29, 1990

Mewbourne Oil Co., Inc.
P.O. Box 5270
Hobbs, NM 88241

Ref: Federal "T" #1

Gentlement:

The following is a Deviation Survey on the above referenced well located in Eddy County, New Mexico.

472' - ¼ °	4062' - ½°	6841' - 3¼°
840' - 1 °	4560' - ½°	6934' - 3½°
1380' - ½ °	5048' - 0°	7026' - 2 3/4°
1759' - ¼ °	5546' - 3/4 °	7148' - 2 3/4°
2253' - 3/4°	5950' - 1¼°	7272' - 2°
2589' - ¼ °	6479' - 3 3/4°	8137' - 2 °
3068' - ½ °	6564' - 4½°	8815' - 2 °
3567' - ¼ °	6626' - 4¼°	9470' - 1 3/4°
		10141' - TD

Sincerely,

Arnold Newkirk
Vice-President

STATE OF NEW MEXICO)
)
COUNTY OF CHAVES)

The foregoing was acknowledged before me on this 29th day of August 1990 by Arnold Newkirk.

My Commission Expires:

10-07-1992

Notary Public

No well Completion Info File (12-30-91)

SHIPPED AUG 31 1990

161

Submit 5 Copies
Appropriate District Office
DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Form C-104
Revised 1-1-89
See Instructions
at Bottom of Page

REQUEST FOR ALLOWABLE AND AUTHORIZATION TO TRANSPORT OIL AND NATURAL GAS

I.

Operator	Well API No.
Mewbourne Oil Company	30-015-26404

Address: P. O. Box 7698, Tyler, Texas 75711

Reason(s) for Filing (Check proper box)
- New Well [X]
- Recompletion [ ]
- Change in Operator [ ]
- Change in Transporter of: Oil [ ] Dry Gas [ ] Casinghead Gas [ ] Condensate [ ]
- Other (Please explain) [ ]

If change of operator give name and address of previous operator _____

II. DESCRIPTION OF WELL AND LEASE

Lease Name	Well No.	Pool Name, Including Formation	Kind of Lease	Lease No.
FEDERAL "T"	1	North Illinois Camp Morrow	State, Federal or Fee X	NM-42410

Location: Unit Letter A : 660 Feet From The North Line and 990 Feet From The East Line

Section 12 Township 18S Range 27E, NMPM, Eddy County

III. DESIGNATION OF TRANSPORTER OF OIL AND NATURAL GAS

Name of Authorized Transporter of Oil or Condensate	Address (Give address to which approved copy of this form is to be sent)
Amoco Pipeline Inter-corporate Trucking [X]	Oil Tender Dept. Box 702068, Tulsa, OK 74170-2068
Name of Authorized Transporter of Casinghead Gas or Dry Gas [X]	Address (Give address to which approved copy of this form is to be sent)
Transwestern Pipeline Company	P. O. Box 1188, Houston, Texas 77251-1188

If well produces oil or liquids, give location of tanks.	Unit	Sec.	Twp.	Rge.	Is gas actually connected?	When ?
	A	12	18S	27E	No	February, 1991

If this production is commingled with that from any other lease or pool, give commingling order number: No

IV. COMPLETION DATA

Designate Type of Completion - (X)	Oil Well	Gas Well	New Well	Workover	Deepen	Plug Back	Same Res'v	Diff Res'v
		X	X					

Date Spudded	Date Compl. Ready to Prod.	Total Depth	P.B.T.D.
6/28/90	9/13/90	10,141'	10,100'
Elevations (DF, RKB, RT, GR, etc.)	**Name of Producing Formation**	**Top Oil/Gas Pay**	**Tubing Depth**
DF 3632', GL 3618'	Morrow	10,008'	9,842'
Perforations			**Depth Casing Shoe**
10,008-054'			---

TUBING, CASING AND CEMENTING RECORD

HOLE SIZE	CASING & TUBING SIZE	DEPTH SET	SACKS CEMENT
17-1/2"	13-3/8"	472'	450
12-1/4"	8-5/8"	2589'	900
7-7/8"	5-1/2"	9473'	430
5-1/2"	4" Liner	10140'	80

V. TEST DATA AND REQUEST FOR ALLOWABLE

OIL WELL *(Test must be after recovery of total volume of load oil and must be equal to or exceed top allowable for this depth or be for full 24 hours.)*

Date First New Oil Run To Tank	Date of Test	Producing Method (Flow, pump, gas lift, etc.)	
Length of Test	**Tubing Pressure**	**Casing Pressure**	**Choke Size**
Actual Prod. During Test	**Oil - Bbls.**	**Water - Bbls.**	**Gas- MCF**

GAS WELL

Actual Prod. Test - MCF/D	Length of Test	Bbls. Condensate/MMCF	Gravity of Condensate
923	24 hours	1	58°
Testing Method (pitot, back pr.)	**Tubing Pressure (Shut-in)**	**Casing Pressure (Shut-in)**	**Choke Size**
Back Pressure	2300#	---	34/64"

VI. OPERATOR CERTIFICATE OF COMPLIANCE

I hereby certify that the rules and regulations of the Oil Conservation Division have been complied with and that the information given above is true and complete to the best of my knowledge and belief.

Gaylon Thompson
Signature
Gaylon Thompson, Engr. Oprns. Sec.
Printed Name / Title
1/28/91 (903) 561-2900
Date / Telephone No.

OIL CONSERVATION DIVISION

Date Approved MAR 12 1991

By ORIGINAL SIGNED BY MIKE WILLIAMS

Title SUPERVISOR, DISTRICT II

INSTRUCTIONS: This form is to be filed in compliance with Rule 1104

1) Request for allowable for newly drilled or deepened well must be accompanied by tabulation of deviation tests taken in accordance with Rule 111.
2) All sections of this form must be filled out for allowable on new and recompleted wells.
3) Fill out only Sections I, II, III, and VI for changes of operator, well name or number, transporter, or other such changes.
4) Separate Form C-104 must be filed for each pool in multiply completed wells.

Submit 5 Copies
Appropriate District Office
DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Form C-104
Revised 1-1-89
See Instructions
at Bottom of Page

REQUEST FOR ALLOWABLE AND AUTHORIZATION TO TRANSPORT OIL AND NATURAL GAS

I.

Operator	Well API No.
MEWBOURNE OIL COMPANY	30-015-26404
Address P.O. BOX 5270, HOBBS, NM 88241	

Reason(s) for Filing (Check proper box)
- New Well ☐
- Recompletion ☐
- Change in Operator ☐
- Other (Please explain) ☐

Change in Transporter of:
- Oil ☐ Dry Gas ☐
- Casinghead Gas ☒ Condensate ☐

If change of operator give name and address of previous operator _____

II. DESCRIPTION OF WELL AND LEASE

Lease Name	Well No.	Pool Name, Including Formation	Kind of Lease State, Federal or Fee	Lease No.
FEDERAL "T"	1	NORTH ILLINOIS CAMP, WOLFCAMP		NM-42410

Location
Unit Letter A : 660' Feet From The FNL Line and 990' Feet From The FEL Line
Section 12 Township 18S Range 27E, NMPM, EDDY County

III. DESIGNATION OF TRANSPORTER OF OIL AND NATURAL GAS

Name of Authorized Transporter of Oil ☐ or Condensate ☐	Address (Give address to which approved copy of this form is to be sent)
Name of Authorized Transporter of Casinghead Gas ☒ or Dry Gas ☐	Address (Give address to which approved copy of this form is to be sent)
GPM GAS CORPORATION	BARTLESVILLE, OKLAHOMA 74004

If well produces oil or liquids, give location of tanks.	Unit	Sec.	Twp.	Rge.	Is gas actually connected?	When ?
		12	18S	27E	YES	8-1-93

If this production is commingled with that from any other lease or pool, give commingling order number: _____

IV. COMPLETION DATA

Designate Type of Completion - (X)	Oil Well	Gas Well	New Well	Workover	Deepen	Plug Back	Same Res'v	Diff Res'v

Date Spudded	Date Compl. Ready to Prod.	Total Depth	P.B.T.D.
Elevations (DF, RKB, RT, GR, etc.)	Name of Producing Formation	Top Oil/Gas Pay	Tubing Depth
Perforations			Depth Casing Shoe

TUBING, CASING AND CEMENTING RECORD

HOLE SIZE	CASING & TUBING SIZE	DEPTH SET	SACKS CEMENT

V. TEST DATA AND REQUEST FOR ALLOWABLE

OIL WELL *(Test must be after recovery of total volume of load oil and must be equal to or exceed top allowable for this depth or be for full 24 hours.)*

Date First New Oil Run To Tank	Date of Test	Producing Method (Flow, pump, gas lift, etc.)	
Length of Test	Tubing Pressure	Casing Pressure	Choke Size
Actual Prod. During Test	Oil - Bbls.	Water - Bbls.	Gas- MCF

GAS WELL

Actual Prod. Test - MCF/D	Length of Test	Bbls. Condensate/MMCF	Gravity of Condensate
Testing Method (pitot, back pr.)	Tubing Pressure (Shut-in)	Casing Pressure (Shut-in)	Choke Size

VI. OPERATOR CERTIFICATE OF COMPLIANCE

I hereby certify that the rules and regulations of the Oil Conservation Division have been complied with and that the information given above is true and complete to the best of my knowledge and belief.

Signature
JAY PRUDHOMME — PRODUCTION ENGINEER
Printed Name — Title
SEPT. 28, 1993 — (505) 393-5905
Date — Telephone No.

OIL CONSERVATION DIVISION

Date Approved OCT 7 1993

By Mike Williams

Title SUPERVISOR, DISTRICT II

INSTRUCTIONS: This form is to be filed in compliance with Rule 1104

1) Request for allowable for newly drilled or deepened well must be accompanied by tabulation of deviation tests taken in accordance with Rule 111.
2) All sections of this form must be filled out for allowable on new and recompleted wells.
3) Fill out only Sections I, II, III, and VI for changes of operator, well name or number, transporter, or other such changes.
4) Separate Form C-104 must be filed for each pool in multiply completed wells.

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

N.M. Oil Cons. Division
811 S. 1st Street
Artesia, NM 88210-2834

FORM APPROVED
Budget Bureau No 1004-0135
Expires March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals

SUBMIT IN TRIPLICATE

5. Lease Designation and Serial No: NM 42410
6. If Indian, Allottee or Tribe Name:
7. If Unit or CA, Agreement Designation:

1. Type of Well: ☐ Oil Well ☒ Gas Well ☐ Other
2. Name of Operator: Mewbourne Oil Company
3. Address and Telephone No: P.O. Box 5270, Hobbs, NM 88241 (505) 393-5905
4. Location of Well (Footage, Sec., T., R., M., or Survey Description): 660' FNL & 990' FEL, Sec. 12-T18S-R27E

DEC 05 '96
ARTESIA, OFFICE

8. Well Name and No.: Federal T #1
9. API Well No.: 30-015-26404
10. Field and Pool, or Exploratory Area: N. Illinois Camp Morrow
11. County or Parish, State: Eddy Co., NM

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
☒ Notice of Intent	☐ Abandonment	☐ Change of Plans
☐ Subsequent Report	☐ Recompletion	☐ New Construction
☐ Final Abandonment Notice	☐ Plugging Back	☐ Non-Routine Fracturing
	☐ Casing Repair	☐ Water Shut-Off
	☐ Altering Casing	☐ Conversion to Injection
	☒ Other Temporary Abandonment	☐ Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Mewbourne Oil Company requests an extension of Temporary Abandonment Status for the above referenced well for the purpose of evaluating further behind pipe potential. This well passed the casing integrity test on 05/23/95 and indicates no additional tests should be needed.

See Federal Onshore Orders & Stipulations concerning Justification — to approve — Gary Gourley RDO - BLM 12-03-96

RECEIVED
NOV 27 9 50 AM '96
AFMSS

14. I hereby certify that the foregoing is true and correct
Signed Robert C. Jones Title Engineer Date 11/25/96

(This space for Federal or State office use)
Approved by _____ Title _____ Date _____
Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

*See Instruction on Reverse Side

MAP ID NO. 167

ARCO OIL & GAS COMPANY/MOREXCO, INC.
NO. 1 STATE BY

ENVIROCORP.

Artificial Penetration Review
Number 167

OPERATOR Arco Oil & Gas Co./Morexco, Inc. STATUS Active – Oil

LEASE State BY DIST FROM INJECT

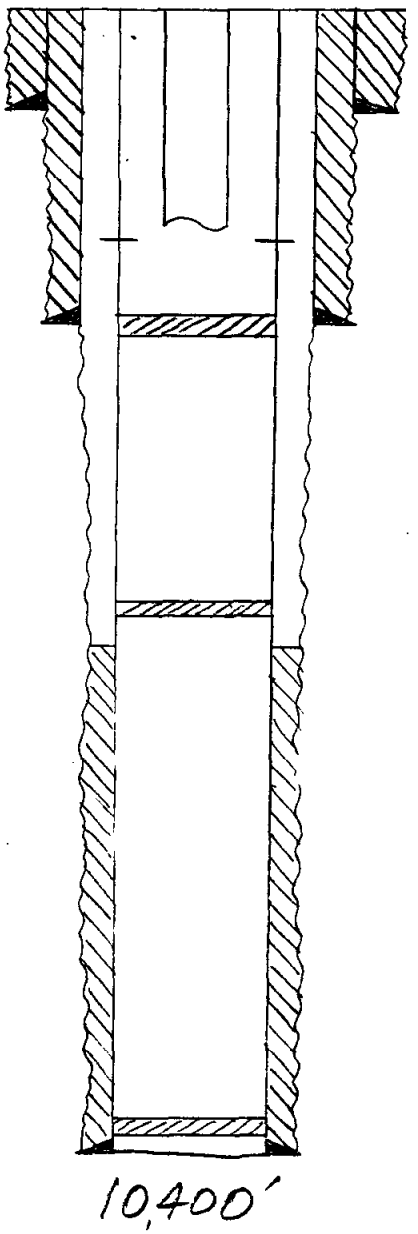
WELL NUMBER 1 LOCATION 7-18S-28E Unit F

DRILLED 6/10/85 MUD FILLED BOREHOLE Gelled brine

PLUGGED Plugged Back 12/20/95 REPORTED MUD WEIGHT

API NO.

REMARKS:



10,400'

13 3/8" Surface Casing set at 418'
Cemented with 500 sx.

8 5/8" Casing set at 2600'
Cemented with 1150 sx.

Cement Plugs:

2600', 100'
5950', 100'
7050', 100'
10050, 35' + CIBP

5 1/2" Casing set at 10400'
Cemented with 1000 sx.
Top of Cement calculated at
5321'–7074' in Table

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

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OIL CONSERVATION DIVISION

P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

167

Form C-101
Revised 10-1-78

30-015-2

5A. Indicate Type of Lease STATE [X] FEE [ ]

5. State Oil & Gas Lease No.

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. Type of Work

b. Type of Well
DRILL [X] DEEPEN [ ] PLUG BACK [ ]
OIL WELL [ ] GAS WELL [X] OTHER SINGLE ZONE [X] MULTIPLE ZONE [ ]

7. Unit Agreement Name

8. Farm or Lease Name
State BY

2. Name of Operator
ARCO Oil and Gas Company
Division of Atlantic Richfield Company

9. Well No.
1

3. Address of Operator
P. O. Box 1710, Hobbs, New Mexico 88240

10. Field and Pool, or Wildcat
Wildcat Morrow Gas

4. Location of Well UNIT LETTER F LOCATED 1980 FEET FROM THE North LINE
AND 1980 FEET FROM THE West LINE OF SEC. 7 TWP. 18S RGE. 28E NMPM

12. County
Eddy

19. Proposed Depth	19A. Formation	20. Rotary or C.T.
10,450'	Morrow Gas	Rotary

21. Elevations (Show whether DF, RT, etc.)	21A. Kind & Status Plug. Bond	21B. Drilling Contractor	22. Approx. Date Work will start
3612.5' GR	GCA #8	Not selected	4/19/85

23.

PROPOSED CASING AND CEMENT PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	SACKS OF CEMENT	EST. TOP
26"	20"	Cond Pipe	30'	3 yds Redi-mix	Surf
17½"	13-3/8" OD	54.5#	400'	375	Surf
12¼"	8-5/8" OD	28#	2600'	1475	Surf
7-7/8"	5½" OD	17#	10450'	1075	7000' Min.

Propose to drill an exploratory well and test for gas production from the Morrow Gas zone.

Blowout Preventer Program attached.

180
7-25-85

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: IF PROPOSAL IS TO DEEPEN OR PLUG BACK, GIVE DATA ON PRESENT PRODUCTIVE ZONE AND PROPOSED NEW PRODUCTIVE ZONE. GIVE BLOWOUT PREVENTER PROGRAM, IF ANY.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

Signed Kent E. Ballenger Title Drlg. Engr. Date 3/19/85

(This space for State Use)

APPROVED BY [signature] TITLE OIL AND GAS INSPECTOR DATE MAR 26 1985

CONDITIONS OF APPROVAL, IF ANY:

NEW MEXICO OIL CONSERVATION COMMISSION

WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102
Supersedes C-128
Effective 1-1-65

All distances must be from the outer boundaries of the Section

Operator	Lease	Well No.
Div. of Atlantic Richfield Co. ARCO OIL & GAS CO	STATE BY	1

Unit Letter	Section	Township	Range	County
F	7	18S	28E	ELDY

Actual Footage Location of Well:
1980 feet from the WEST line and 1980 feet from the NORTH line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
3612.5	Morrow Gas	Wildcat	327.36 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

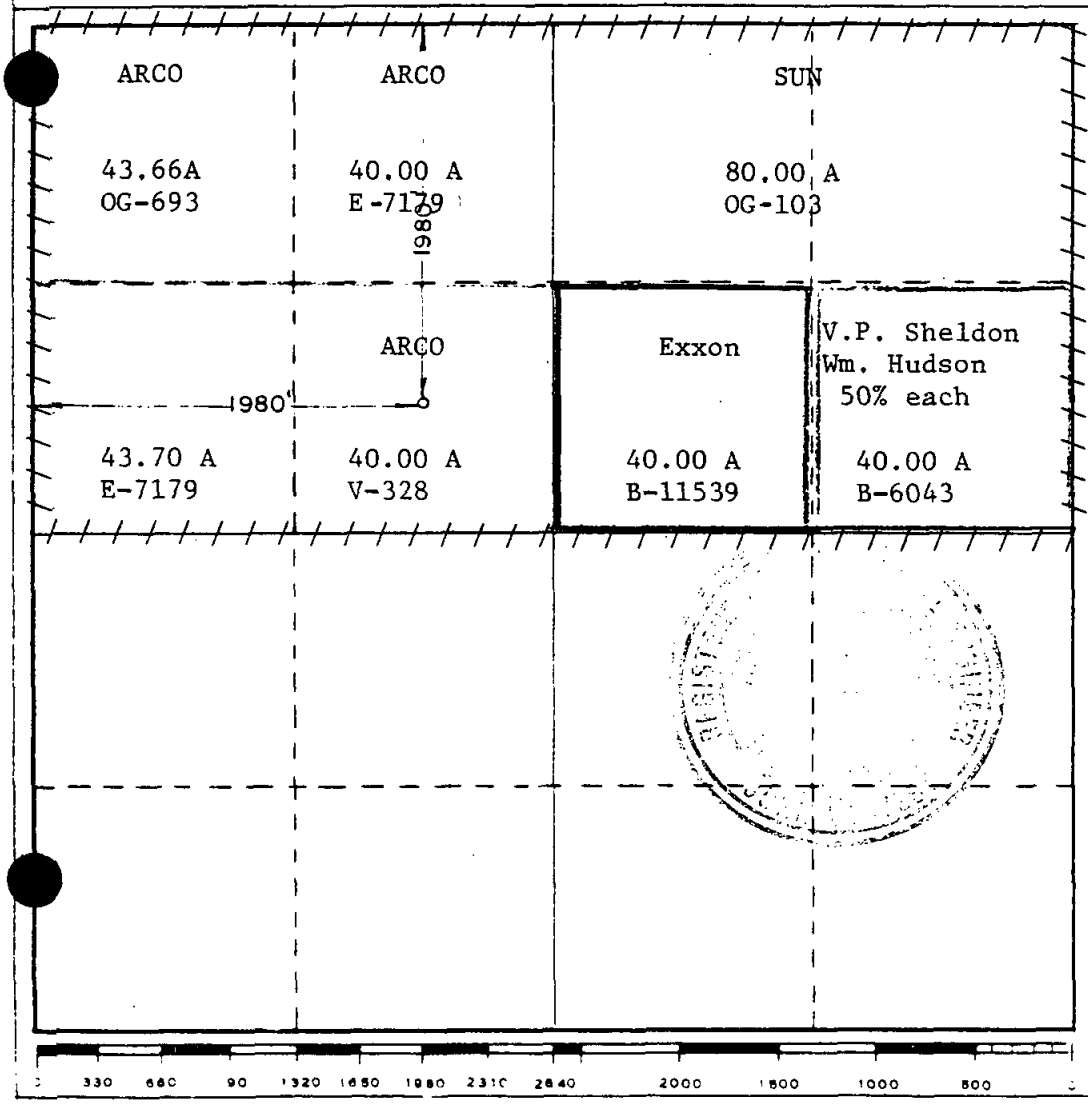
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling. etc?

[X] Yes [ ] No If answer is "yes," type of consolidation Joint Operating Agreement

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.



CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Name: Robert E. Baldridge

Position: Drlg. Engr.

Company: ARCO Oil and Gas Co.
Div of Atlantic Richfield Co

Date: 3/19/85

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed: 3/15/85

Registered Professional Engineer and/or Land Surveyor

Certificate No. JOHN W. WEST 676
RONALD J. EIDSON 3239

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

Form C-105
Revised 10-1-78

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OIL CONSERVATION DIVISION

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SANTA FE, NEW MEXICO 87501

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

ARTESIA, OFFICE

5a. Indicate Type of Lease: State [X] Fee [ ]
5. State Oil & Gas Lease No.: V-328

1a. TYPE OF WELL: OIL WELL [ ] GAS WELL [X] DRY [ ] OTHER
b. TYPE OF COMPLETION: NEW WELL [X] WORK OVER [ ] DEEPEN [ ] PLUG BACK [ ] DIFF. RESVR. [ ] OTHER

7. Unit Agreement Name:
8. Farm or Lease Name: State BY
2. Name of Operator: ARCO Oil and Gas Company
Division of Atlantic Richfield Company
9. Well No.: 1
3. Address of Operator: P. O. Box 1710, Hobbs, New Mexico 88240
10. Field and Pool, or Wildcat: ~~Wildcat Morrow Gas~~ Empire Penn

4. Location of Well
UNIT LETTER F LOCATED 1980 FEET FROM THE North LINE AND 1980 FEET FROM THE West LINE OF SEC. 7 TWP. 18S RGE. 28E NMPM
12. County: Eddy

15. Date Spudded	16. Date T.D. Reached	17. Date Compl. (Ready to Prod.)	18. Elevations (DF, RKB, RT, GR, etc.)	19. Elev. Cashinghead
4/12/85	5/16/85	6/10/85	3612.5' GR	

20. Total Depth	21. Plug Back T.D.	22. If Multiple Compl., How Many	23. Intervals Drilled By	Rotary Tools	Cable Tools
10,400'	10,294'		→	0-10,400'	

24. Producing Interval(s), of this completion — Top, Bottom, Name
10,116-10,124' Morrow

25. Was Directional Survey Made: No

26. Type Electric and Other Logs Run
GR-CNL/FDC w/Cal & GR-DLL/MSFG, GR-Corr

27. Was Well Cored: No

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT LB./FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
13-3/8" OD	54.50# K-55	418'	17½"	500 sx	
8-5/8" OD	28# S-80	2600'	11"	1150 sx	
5½" OD	17# N-80 & K-55	10400'	7-7/8"	1000 sx	

29. LINER RECORD

SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN

30. TUBING RECORD

SIZE	DEPTH SET	PACKER SET
2-3/8" OD	10,010'	10,010'

31. Perforation Record (Interval, size and number)
10,116, 117, 118, 119, 120, 121, 122, 123, 124' = 36 .46" holes

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL	AMOUNT AND KIND MATERIAL USED
None	

33. PRODUCTION

Date First Production	Production Method (Flowing, gas lift, pumping — Size and type pump)	Well Status (Prod. or Shut-in)
6/5/85	Flowing	Shut in

Date of Test	Hours Tested	Choke Size	Prod'n. For Test Period →	Oil — Bbl.	Gas — MCF	Water — Bbl.	Gas — Oil Ratio
6/10/85	4 pt	Various		2.75	3613	.25	13,138:1

Flow Tubing Press.	Casing Pressure	Calculated 24-Hour Rate →	Oil — Bbl.	Gas — MCF	Water — Bbl.	Oil Gravity — API (Corr.)
2#	Pkr		16.5	101	1.5	59.2°

34. Disposition of Gas (Sold, used for fuel, vented, etc.)
To be sold - Presently shut in WOPLC

Test Witnessed By: James Cogburn

35. List of Attachments
Logs as listed in item 26 above & Inclination Report.

36. I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief.

SIGNED [signature] TITLE Drlg. Engr. DATE 6/18/85

CORRECTED

Form C-105
Revised 10-1-78

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ENERGY AND MINERALS DEPARTMENT

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SANTA FE, NEW MEXICO 87501

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

5a. Indicate Type of Lease: State [X] Fee [ ]

5. State Oil & Gas Lease No.: V-328

1a. TYPE OF WELL: OIL WELL [ ] GAS WELL [X] DRY [ ] OTHER

b. TYPE OF COMPLETION: NEW WELL [X] WORK OVER [ ] DEEPEN [ ] PLUG BACK [ ] DIFF. RESVR. [ ] OTHER

7. Unit Agreement Name:

8. Farm or Lease Name: State BY

2. Name of Operator: ARCO Oil and Gas Company
Division of Atlantic Richfield Company

9. Well No.: 1

3. Address of Operator: P. O. Box 1710, Hobbs, New Mexico 88240

10. Field and Pool, or Wildcat: ~~Wildcat Morrow Gas~~ Empire Penn

4. Location of Well

UNIT LETTER F LOCATED 1980 FEET FROM THE North LINE AND 1980 FEET FROM THE West LINE OF SEC. 7 TWP. 18S RGE. 28E NMPM

12. County: Eddy

15. Date Spudded	16. Date T.D. Reached	17. Date Compl. (Ready to Prod.)	18. Elevations (DF, RKB, RT, GR, etc.)	19. Elev. Cashinghead
4/12/85	5/16/85	6/10/85	3612.5' GR	

20. Total Depth	21. Plug Back T.D.	22. If Multiple Compl., How Many	23. Intervals Drilled By	Rotary Tools	Cable Tools
10,400'	10,294'		→	0-10,400'	

24. Producing Interval(s), of this completion — Top, Bottom, Name: 10,116-10,124' Morrow

25. Was Directional Survey Made: No

26. Type Electric and Other Logs Run: GR-CNL/FDC w/Cal & GR-DLL/MSFG, GR-Corr

27. Was Well Cored: No

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT LB./FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
13-3/8" OD	54.50# K-55	418'	17½"	500 sx	
8-5/8" OD	28# S-80	2600'	11"	1150 sx	
5½" OD	17# N-80 & K-55	10400'	7-7/8"	1000 sx	

29. LINER RECORD

SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN

30. TUBING RECORD

SIZE	DEPTH SET	PACKER SET
2-3/8" OD	10,010'	10,010'

31. Perforation Record (Interval, size and number)

10,116, 117, 118, 119, 120, 121, 122, 123, 124' = 36 .46" holes

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL	AMOUNT AND KIND MATERIAL USED
None	

33. PRODUCTION

Date First Production	Production Method (Flowing, gas lift, pumping — Size and type pump)	Well Status (Prod. or Shut-in)
6/5/85	Flowing	Shut in

Date of Test	Hours Tested	Choke Size	Prod'n. For Test Period →	Oil — Bbl.	Gas — MCF	Water — Bbl.	Gas — Oil Ratio
6/10/85	4 pt	Various		2.75	101	.25	36,727:1

Flow Tubing Press.	Casing Pressure	Calculated 24-Hour Rate →	Oil — Bbl.	Gas — MCF	Water — Bbl.	Oil Gravity — API (Corr.)
2#	Pkr		16.5	606	1.5	59.2°

34. Disposition of Gas (Sold, used for fuel, vented, etc.): To be sold - Presently shut in WOPLC

Test Witnessed By: James Cogburn

35. List of Attachments: Logs as listed in item 26 above & Inclination Report.

36. I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief.

H. Thomas Fidon TITLE Dist Drlg Supv. DATE 11/19/85

INSTRUCTIONS

This form is to be filed with the appropriate District Office of the Division not later than 20 days after the completion of any newly-drilled or deepened well. It shall be accompanied by one copy of all electrical and radioactivity logs run on the well and a summary of all special tests conducted, including drill stem tests. All depths reported shall be measured depths. In the case of directionally drilled wells, true vertical depths shall also be reported. For multiple completions, Items 30 through 34 shall be reported for each zone. The form is to be filed in quintuplicate except on state land, where six copies are required. See Rule 1105.

INDICATE FORMATION TOPS IN CONFORMANCE WITH GEOGRAPHICAL SECTION OF STATE

Southeastern New Mexico				Northwestern New Mexico			
T. Anhy		T. Canyon	8345'	T. Ojo Alamo		T. Penn. "B"	
T. Salt		T. Strawn	8953'	T. Kirtland-Fruitland		T. Penn. "C"	
B. Salt		T. Atoka	9583'	T. Pictured Cliffs		T. Penn. "D"	
T. Yates		T. Miss		T. Cliff House		T. Leadville	
T. 7 Rivers		T. Devonian		T. Menefee		T. Madison	
T. Queen	1695'	T. Silurian		T. Point Lookout		T. Elbert	
T. Grayburg		T. Montoya		T. Mancos		T. McCracken	
T. San Andres	2167'	T. Simpson		T. Gallup		T. Ignacio Qtzte	
T. Glorieta		T. McKee		Base Greenhorn		T. Granite	
T. Paddock		T. Ellenburger		T. Dakota		T.	
T. Blinebry		T. Gr. Wash		T. Morrison		T.	
T. Tubb		T. Granite		T. Todilto		T.	
T. Drinkard		T. Delaware Sand		T. Entrada		T.	
T. Abo		T. Bone Springs		T. Wingate		T.	
T. Wolfcamp	6975'	T. Morrow	9765'	T. Chinle		T.	
T. Penn		T. Morrow Clastics	9939'	T. Permian		T.	
T. Cisco (Bough C)	7731'	T. Barnett	10157'	T. Penn. "A"		T.	
			Chester Lime 10,307'				

OIL OR GAS SANDS OR ZONES

No. 1, from 10,116' to 10,124' No. 4, from ..... to .....

No. 2, from ..... to ..... No. 5, from ..... to .....

No. 3, from ..... to ..... No. 6, from ..... to .....

IMPORTANT WATER SANDS

Include data on rate of water inflow and elevation to which water rose in hole.

No. 1, from ..... to ..... feet. None encountered

No. 2, from ..... to ..... feet. .....

No. 3, from ..... to ..... feet. .....

No. 4, from ..... to ..... feet. .....

FORMATION RECORD (Attach additional sheets if necessary)

From	To	Thickness in Feet	Formation	From	To	Thickness in Feet	Formation
0	666	666	Surface & Red Bed	5448	5537	89	Dolo, Lime & Shale
666	990	324	Anhy	5537	5737	200	Dolo, Lime
990	1517	527	Anhy & Salt	5737	5869	132	Dolo, Shale
1517	2695	1178	Anhy	5869	5988	119	Lime
2695	3095	400	Lime & Anhy	5988	6039	51	Dolo & Lime
3095	3294	199	Dolo & Chert	6039	6114	75	Sand stone Silt
3294	3885	591	Chert & Dolo	6114	6825	711	Lime
3885	4076	191	Dolo	6825	6937	112	Lime & Shale
4076	4108	32	Lime & Dolo	6937	7049	112	Dolo
4108	4469	361	Chert & Dolo	7049	7270	221	Shale, Lime & Dolo
4469	5366	897	Dolo & Shale	7270	7300	30	Lime
5366	5448	82	Dolo	7300	7339	39	Dolo & Shale
				7339	7777	438	Lime & Shale
				7777	8162	385	Dolo
				8162	8927	765	Lime & Shale
				8927	10337	1410	Lime
				10337	10400	63	Lime & Shale

ENERGY AND MINERALS DEPARTMENT

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LAND OFFICE		
OPERATOR		

OIL CONSERVATION DIVISION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

RECEIVED BY
APR 18 1985
O. C. D.
ARTESIA, OFFICE

Form C-103
Revised 10-1-

5a. Indicate Type of Lease: State [X] Fee [ ]

5. State Oil & Gas Lease No.: V-328

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT —" (FORM C-101) FOR SUCH PROPOSALS.)

7. Unit Agreement Name:

OIL WELL [ ] GAS WELL [X] OTHER-

1. Name of Operator: ARCO Oil and Gas Company
Division of Atlantic Richfield Company

8. Farm or Lease Name: State BY

2. Address of Operator: P. O. Box 1710, Hobbs, New Mexico 88240

9. Well No.: 1

4. Location of Well: UNIT LETTER F, 1980 FEET FROM THE North LINE AND 1980 FEET FROM THE West LINE, SECTION 7 TOWNSHIP 18S RANGE 28E NMPM.

10. Field and Pool, or Wildcat: Wildcat Morrow Gas

15. Elevation (Show whether DF, RT, GR, etc.): 3612.5' GR

12. County: Eddy

6. Check Appropriate Box To Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:			SUBSEQUENT REPORT OF:		
PERFORM REMEDIAL WORK	[ ]	PLUG AND ABANDON [ ]	REMEDIAL WORK	[ ]	ALTERING CASING [ ]
TEMPORARILY ABANDON	[ ]		COMMENCE DRILLING OPNS.	[X]	PLUG AND ABANDONMENT [ ]
PULL OR ALTER CASING	[ ]	CHANGE PLANS [ ]	CASING TEST AND CEMENT JOB	[X] Surface	
OTHER	[ ]		OTHER		[ ]

17. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any propose work) SEE RULE 1103.

On 4/10/85 set 20" conductor pipe @ 30' & cmtd w/2½ yds Redi-mix to surface. Spudded 17½" hole @ 9:30 AM 4/12/85. Finished drlg to 418' @ 5:00 PM 4/12/85. RIH w/13-3/8" OD 54.50# J-55 csg, set @ 418'. Cmtd w/500 sx Cl H Neat. PD @ 8:30 PM 4/12/85. Circ 95 sx cmt to pit. Cut off csg & installed wellhead. Installed BOP. WOC 12½ hrs. Pressure tested csg to 1000# for 30 mins OK. The cement compressive strength criterion is furnished for cementing in accordance w/Option 2 of the Rules and Regulations.

1. The volume of cement slurry used was 530 cu ft of Cl H Neat. Circ 101 cu ft cement to pit.
2. The approximate temperature of cement slurry when mixed was 70°F.
3. The estimated minimum formation temperature in zone of interest was 67°F.
4. The estimate of cement strength at time of casing test was 2800 psig.
5. Actual time cement in place prior to starting test was 12½ hrs.

18. I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNED: Robert E. Bullock TITLE Drlg. Engr. DATE 4/16/85

APPROVED BY: Original Signed By Mike Williams TITLE Oil & Gas Inspector DATE APR 19 1985

CONDITIONS OF APPROVAL, IF ANY:

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

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OPERATOR		

OIL CONSERVATION DIVISION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

RECEIVED
APR 22 1985
O. C. D.
ARTESIA, OFFICE

Form C-103
Revised 10-1-78

5a. Indicate Type of Lease: State [X] Fee [ ]

5. State Oil & Gas Lease No.: V-328

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT —" (FORM C-101) FOR SUCH PROPOSALS.)

7. Unit Agreement Name:

OIL WELL [ ] GAS WELL [X] OTHER-

Name of Operator: ARCO Oil and Gas Company
Division of Atlantic Richfield Company

8. Farm or Lease Name: State BY

Address of Operator: P. O. Box 1710, Hobbs, New Mexico 88240

9. Well No.: 1

Location of Well
UNIT LETTER F . 1980 FEET FROM THE North LINE AND 1980 FEET FROM THE West LINE, SECTION 7 TOWNSHIP 18S RANGE 28E NMPM.

10. Field and Pool, or Wildcat: Wildcat Morrow Gas

15. Elevation (Show whether DF, RT, GR, etc.): 3612.5' GR

12. County: Eddy

Check Appropriate Box To Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK [ ]	PLUG AND ABANDON [ ]	REMEDIAL WORK [ ]	ALTERING CASING [ ]
TEMPORARILY ABANDON [ ]		COMMENCE DRILLING OPNS. [ ]	PLUG AND ABANDONMENT [ ]
PULL OR ALTER CASING [ ]	CHANGE PLANS [ ]	CASING TEST AND CEMENT JOB [X] Intermediate	
OTHER [ ]		OTHER [ ]	

17. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

Finished drlg 11" hole to 2600' @ 7:45 PM 4/16/85. RIH w/8-5/8" OD 28# S-80 csg, set @ 2600'. Cmtd w/200 sx Lite cont'g ¼#/sk celloflake & ½#/sk of tuff plug followed by 700 sx lite cmt followed by 250 sx Cl H cmt. Circ 300 sx cmt to pit. PD @ 3:00 AM 4/17/85. Inst wellhead. WOC 18 hrs. Pressure tested csg to 1500# for 30 mins OK. Commenced drlg new fm @ 9:00 PM 4/17/85.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNED Robert E. Baldridge TITLE Drlg. Engr. DATE 4/18/85

APPROVED BY Original Signed By Mike Williams TITLE Oil & Gas Inspector DATE APR 23 1985

CONDITIONS OF APPROVAL, IF ANY:

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

NO. OF COPIES RECEIVED		
DISTRIBUTION		
SANTA FE		
FILE		
U.S.		
LAND OFFICE		
OPERATOR		

OIL CONSERVATION DIVISION

P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

RECEIVED BY
JUN 27 1985

Form C-103
Revised 10-1-7

5a. Indicate Type of Lease: State [X] Fee [ ]

5. State Oil & Gas Lease No.: V-328

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT —" (FORM C-101) FOR SUCH PROPOSALS.)

7. Unit Agreement Name:

OIL WELL [ ] GAS WELL [X] OTHER-

Name of Operator: ARCO Oil and Gas Company
Division of Atlantic Richfield Company

8. Farm or Lease Name: State BY

Address of Operator: P. O. Box 1710, Hobbs, New Mexico 88240

9. Well No.: 1

Location of Well
UNIT LETTER F, 1980 FEET FROM THE North LINE AND 1980 FEET FROM THE West LINE, SECTION 7 TOWNSHIP 18S RANGE 28E NMPM.

10. Field and Pool, or Wildcat: Wildcat Morrow Gas

15. Elevation (Show whether DF, RT, GR, etc.): 3612.5' GR

12. County: Eddy

6.

Check Appropriate Box To Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
PERFORM REMEDIAL WORK	[ ]	PLUG AND ABANDON	[ ]	REMEDIAL WORK	[ ]	ALTERING CASING	[ ]
TEMPORARILY ABANDON	[ ]			COMMENCE DRILLING OPNS.	[ ]	PLUG AND ABANDONMENT	[ ]
PULL OR ALTER CASING	[ ]	CHANGE PLANS	[ ]	CASING TEST AND CEMENT JOB	[X]	Prod Csg	
				OTHER DST, Log, Perf, Test			[X]
OTHER	[ ]						

7. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

Finished drlg 7-7/8" hole to 4076' on 4/21/85. DST #1 3994-4076'. OT @ 5:15 AM for IF on 4/21, fair blow in 5 mins. Closed tool after 15 mins for 30 mins. Op 1 hr, slight blow in 5 mins. Closed tool after 15 mins for 30 mins. OT 1 hr, slight blow ½# on ¼" ck. Decr to ¼# in 15 mins After 30 mins, no reading on gauge. No gas to surf. Closed tool for 2 hrs. Rel tools & POH, rec 240' gas & oil cut mud. Finished drlg 7-7/8" hole to 7339'. DST #2 7309-7339'. OT @ 5:45 for IFP w/strong blow. IFP press incr to 24# on ½" ck. Closed tools @ 6:15 AM for 1 hr ISIP. OT @ 7:15 AM on ¼" ck for 1 hr FFP. Press decr from 34# to 2#. Closed tools @ 8:15 AM for 2 hr FSIP. RO 2 BO & 36 bbls fm wtr. POH w/test tools. BHT 118°F. Continued drlg 7-7/8" hole to 7677'. DST #3 7617-7677'. OT @ 5:45 AM for IFP w/strong blow. Attempted to close tool for 1 h ISIP. Unable to move or release tools. Worked 1 hr, no movement. Dropped bar & RO 2 BO, 2 bb gas cut mud & 85 BW. POH w/test tools. Resumed drlg 7-7/8" hole @ 4:00 PM 5/7/85. Finished drlg 7-7/8" hole to 10,400' TD @ 6:30 AM 5/16/85. Ran GR-CNL/FDC w/Cal & GR-DLL/MSFG. RIH w/ 5½" OD 17# N-80 & K-55 csg, set @ 10,400'. FC set @ 10,317'. Cmtd w/1000 sx Cl H cmt cont'g FLA. Good returns while cmtg. Inst wellhead on 5/18/85. On 6/3/85 RIH w/4-3/4" bit & tagged TOC @ 10,294' PBD. RIH w/Vann perf assy pkr & on-off tool, ran Corr-log & spaced out tbg. Set pkr @ 10,010'. Dropped bar & perf'd Morrow @ 10,116-10,124', gas to surface in 6 mins. IFTP 1150# on ½" ck, estimated @ 7 MMCFG. Cleaned up in 1½ hrs on ½" ck. FFTP 610# on ½" ck, estmd rate of 3.9 MMCFGPD. Flwd thru separator 4 hrs. Stab @ 840# TP on 24/64" ck, 300# BP, estmd 3 MMCFGPD. SI for buildup. 88 hr SIBPH = 4395.2#. On 4-pt test 6/10/85 CAOF = 3.6 MMCFGPD. Fluid produced during 4-pt test was 2.75 bbls cond & .25 BW. Final Report.

8. I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNED Elizabeth S. Bush TITLE Drlg. Engr. DATE 6/18/85

APPROVED BY ORIGINAL SIGNED BY LARRY BROOKS GEOLOGIST - NMOCD TITLE _____ DATE JUL 9 1985

CONDITIONS OF APPROVAL, IF ANY:

Submit 3 Copies to Appropriate District Office

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-103
Revised 1-1-89

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

WELL API NO.
30-015-25236

5. Indicate Type of Lease STATE [X] FEE [ ]

6. State Oil & Gas Lease No.

SUNDRY NOTICES AND REPORTS ON WELLS
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

7. Lease Name or Unit Agreement Name
State "BY"

1. Type of Well: OIL WELL [ ] GAS WELL [X] OTHER

2. Name of Operator
Mewbourne Oil Company

8. Well No.
1

3. Address of Operator
P.O. Box 5270 Hobbs, New Mexico 88241

9. Pool name or Wildcat
N. Illinois Camp Morrow

4. Well Location
Unit Letter F : 1980 Feet From The North Line and 1980 Feet From The West Line

Section 7 Township 18S Range 28E NMPM Eddy County

10. Elevation (Show whether DF, RKB, RT, GR, etc.)
3612' GR

11. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
PERFORM REMEDIAL WORK	[ ]	PLUG AND ABANDON	[X]	REMEDIAL WORK	[ ]	ALTERING CASING	[ ]
TEMPORARILY ABANDON	[ ]	CHANGE PLANS	[ ]	COMMENCE DRILLING OPNS.	[ ]	PLUG AND ABANDONMENT	[ ]
PULL OR ALTER CASING	[ ]			CASING TEST AND CEMENT JOB	[ ]		
OTHER:	[ ]			OTHER:			[ ]

12. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

MIRU pluggers. Set CIBP @ 10,050' cap with 35' cement. Load hole with 25#/bbl. salt gel and brine. Spot 100'plugs @ 7050' and 5950'. Recover as much 5-1/2" casing as possible. Spot 100' cement plug at 2600', 1000', 418'. Set 10 sx. surface plug. Set dry hole marker, cut anchors, and clean location. Will notify OCD 24 hours before starting.

Tag

100' plug in and out of stub.

Tag

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Robert G. Jones TITLE Engineer DATE Nov. 27, 1995

TYPE OR PRINT NAME Rob Jones TELEPHONE NO. (505) 393-5905

(This space for State Use)

APPROVED BY Jim W Gum TITLE District Supervisor DATE 11/29/95

CONDITIONS OF APPROVAL, IF ANY:

Submit 3 Copies to Appropriate District Office

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-103
Revised 1-1-89

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

WELL API NO. 30-015-25361

5. Indicate Type of Lease STATE ■ FEE ☐

6. State Oil & Gas Lease No. 06-1409

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

7. Lease Name or Unit Agreement Name: State "CG"

1. Type of Well: OIL WELL ☐ GAS WELL ■ OTHER

2. Name of Operator: Mewbourne Oil Company

8. Well No. 1

3. Address of Operator: P O Box 5270 Hobbs, New Mexico 88240 (505) 393-5905

9. Pool name or Wildcat: N. Illinois Camp Morrow

4. Well Location
Unit Letter J : 2310 Feet From The East Line and 1980 Feet From The South Line

Section 7 Township 18S Range 28E NMPM Eddy County

10. Elevation (*Show whether DF, RKB, RT, GR, etc.*) 3597' GR

11. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
PERFORM REMEDIAL WORK	☐	PLUG AND ABANDON	☐	REMEDIAL WORK	☐	ALTERING CASING	☐
TEMPORARILY ABANDON	☐	CHANGE PLANS	☐	COMMENCE DRILLING OPNS.	☐	PLUG AND ABANDONMENT	■
PULL OR ALTER CASING	☐			CASING TEST AND CEMENT JOB	☐		
OTHER:	☐			OTHER:			☐

12. Describe Proposed or Completed Operations (*Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work*) SEE RULE 1103.

12/09/95 MIRU pluggers.
12/08/95 Set CIBP @ 10,150'.
12/09/95 Circulate hole with mud. Spot 25 sks. cement on CIBP @ 10,150'. Spot 25 sks. cement plug @ 7050'. Spot 25 sks. cement plug @ 6200'. Spot 25 sks. cement plug @ 3900'. Spot 25 sks. cement plug @ 2885'.
12/12/95 Tag plug @ 2650'. Pump additional 25 sks. cement plut @ 2650' at States request. Spot 25 sks. cement plug @ 1000'. Spot 25 sks. cement plug @ 600'.
12/13/95 Tag plug @ 510'. Spot 25 sks. cement plug @ 400'. Spot 10 sks. cement surface plug. Set State marker. Cut anchors and clean location.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Robert C. Jones TITLE Engineer DATE 1/02/96

TYPE OR PRINT NAME Robert Jones TELEPHONE NO.

(This space for State Use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

5F

District I
PO Box 1980, Hobbs, NM 88241-1980
District II
PO Drawer DD, Artesia, NM 88211-0719
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
PO Box 2088, Santa Fe, NM 87504-2088

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

Form C-101
Revised February 10, 1994
Instructions on back
Submit to Appropriate District Office
State Lease - 6 Copies
Fee Lease - 5 Copies

☐ AMENDED REPORT

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

1 Operator Name and Address.	2 OGRID Number
Morexco, Inc. P. O. Box 481 Artesia, NM 88211-0481	015262
	3 API Number 30-0 15-25236

4 Property Code	5 Property Name	6 Well No.
18118	State BY	1

7 Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
F	7	18S	28E		1980	North	1980	West	Eddy

8 Proposed Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
Same as above.									

9 Proposed Pool 1	10 Proposed Pool 2
Artesia Q-GB-SA	

11 Work Type Code	12 Well Type Code	13 Cable/Rotary	14 Lease Type Code	15 Ground Level Elevation
Redrill	oil	rotary	S	3612 GB
16 Multiple	**17 Proposed Depth**	**18 Formation**	**19 Contractor**	**20 Spud Date**
	1800	Queen-Penrose	NA	12-20-95

21 Proposed Casing and Cement Program

Hole Size	Casing Size	Casing weight/foot	Setting Depth	Sacks of Cement	Estimated TOC
17½	13 3/8	NA	418	was cir.	
12¼	8 5/8	24/32	2600	was cir.	cir 300 sx

22 Describe the proposed program. If this application is to DEEPEN or PLUG BACK give the data on the present productive zone and proposed new productive zone. Describe the blowout prevention program, if any. Use additional sheets if necessary.

Plan to drill out plugs @ surface, 418' and 1000'. Clean out casing to a depth of 1800' and perf and test Penrose Sand @ 1628-40'.
No other well on proration unit.

Former: Moutourne - State BY #1

23 I hereby certify that the information given above is true and complete to the best of my knowledge and belief.

Signature: Donald G. Becker

Printed name: Donald G. Becker, Jr.

Title: President

Date: 12-18-95 Phone: 505-746-6520

OIL CONSERVATION DIVISION

Approved by: Jim W. Sims

Title: District II Supervisor

Approval Date: 12/20/95 Expiration Date: 6/20/96

Conditions of Approval:
Attached ☐

District I
PO Box 1980, Hobbs, NM 88241-1980
District II
PO Drawer DD, Artesia, NM 88211-0719
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
PO Box 2088, Santa Fe, NM 87504-2088

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

Form C-101
Revised February 10, 1994
Instructions on back
Submit to Appropriate District Office
State Lease - 6 Copies
Fee Lease - 5 Copies

☐ AMENDED REPORT

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

1 Operator Name and Address	2 OGRID Number
Morexco, Inc. P. O. Box 481 Artesia, NM 88211-0481	015262
	3 API Number 30-0 15-25236

4 Property Code	5 Property Name	6 Well No.
18118	State BY	1

7 Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
F	7	18S	28E		1980	North	1980	West	Eddy

8 Proposed Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
Same as above.									

9 Proposed Pool 1	10 Proposed Pool 2
Artesia Q-GB-SA	

11 Work Type Code	12 Well Type Code	13 Cable/Rotary	14 Lease Type Code	15 Ground Level Elevation
Redrill	oil	rotary	S	3612 GB
16 Multiple	**17 Proposed Depth**	**18 Formation**	**19 Contractor**	**20 Spud Date**
	1800	Queen-Penrose	NA	12-20-95

21 Proposed Casing and Cement Program

Hole Size	Casing Size	Casing weight/foot	Setting Depth	Sacks of Cement	Estimated TOC
17½	13 3/8	NA	418	was cir.	
12¼	8 5/8	24/32	2600	was cir.	cir 300 sx

22 Describe the proposed program. If this application is to DEEPEN or PLUG BACK give the data on the present productive zone and proposed new productive zone. Describe the blowout prevention program, if any. Use additional sheets if necessary.

Plan to drill out plugs @ surface, 418' and 1000'. Clean out casing to a depth of 1800' and perf and test Penrose Sand @ 1628-40'.
No other well on proration unit.

Post ED-1
12-22-95
Rec'd by

Former: Mewbourne: State BY #1

23 I hereby certify that the information given above is true and complete to the best of my knowledge and belief.

Signature: Donald G. Becker, Jr.

Printed name: Donald G. Becker, Jr.

Title: President

Date:

OIL CONSERVATION DIVISION	
Approved by:	ORIGINAL SIGNED BY TIM W. GUM
Title:	DISTRICT II SUPERVISOR
Approval Date: 12-20-95	Expiration Date: 6-20-96
Conditions of Approval:	

MEXICO OIL CONSERVATION COMMISSION

WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102
Supersedes C-128
Effective 1-1-65

All distances must be from the outer boundaries of the Section.

Operator	Lease	Well No.
Div. of Atlantic Richfield Co. ARCO OIL & GAS CO	STATE BY	1

Unit Letter	Section	Township	Range	County
F	7	18S	28E	EDDY

Actual Footage Location of Well:
1980 feet from the WEST line and 1980 feet from the NORTH line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
3612.5	~~Morrow Gas~~ Penrose	~~Wildcat~~ Art-Q-6-5A	~~327.36~~ 40 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

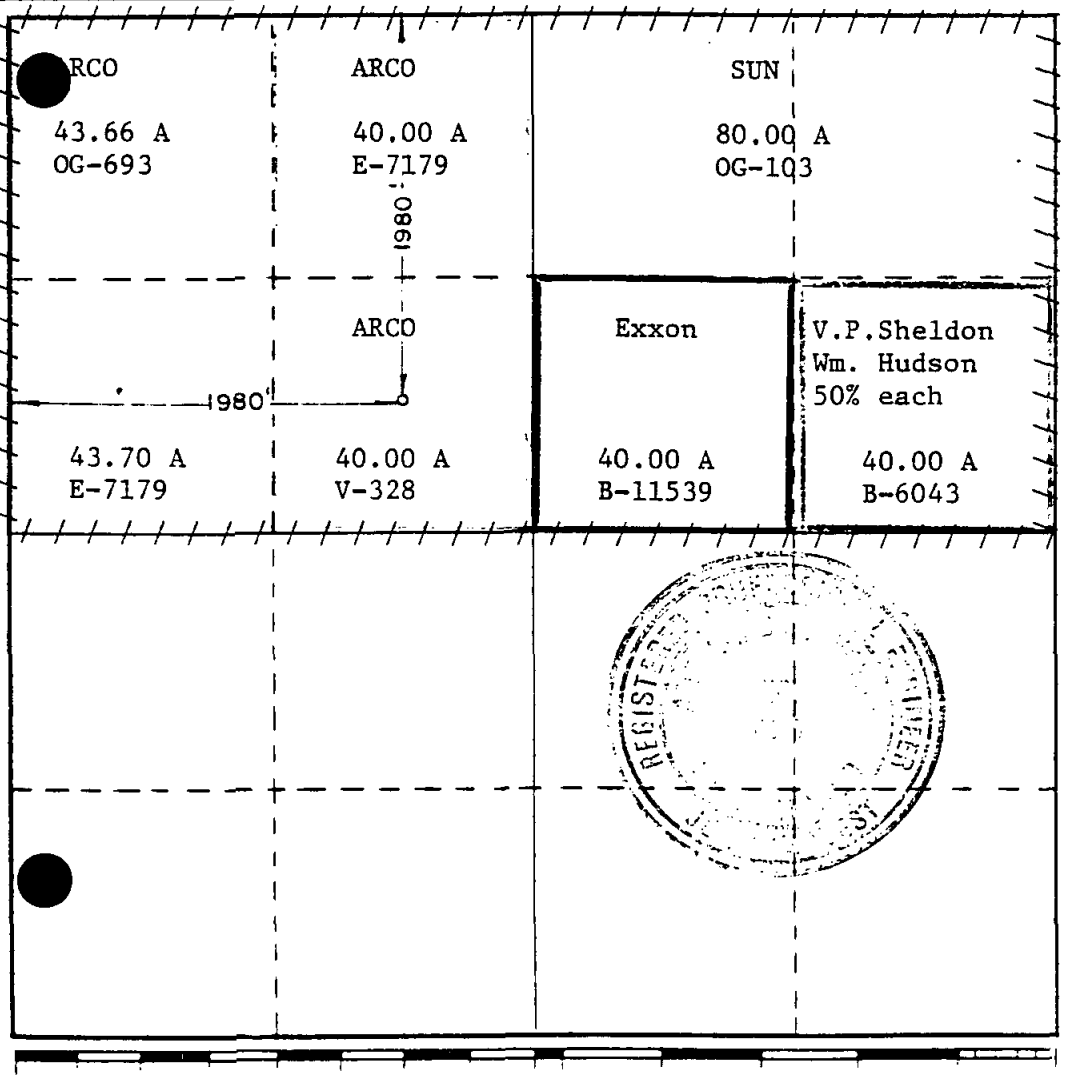
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

[X] Yes [ ] No If answer is "yes," type of consolidation Joint Operating Agreement

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.



CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Name: Robert E. Bullinger

Position: Drlg. Engr.

Company: ARCO Oil and Gas Co, Div. of Atlantic Richfield Co

Date: 3/19/85

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed: 3/15/85

Registered Professional Engineer and/or Land Surveyor

Certificate No. JOHN W. WEST, 676
RONALD J. EIDSON, 3239

Submit 3 Copies to Appropriate District Office

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Form C-103
Revised 1-1-89

WELL API NO.

5. Indicate Type of Lease STATE [X] FEE [ ]

6. State Oil & Gas Lease No. V-328

SUNDRY NOTICES AND REPORTS ON WELLS
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

7. Lease Name or Unit Agreement Name

1. Type of Well: OIL WELL [X] GAS WELL [ ] OTHER

BY

2. Name of Operator: Morexco, Inc.

8. Well No. 1

3. Address of Operator: P. O. Box 481, Artesia, NM 88211-0481

9. Pool name or Wildcat: Artesia Q-GB-SA

4. Well Location
Unit Letter F : 1980 Feet From The North Line and 1980 Feet From The West Line

Section 7 Township 18 South Range 28 East NMPM Eddy County

10. Elevation (*Show whether DF, RKB, RT, GR, etc.*) 3612 GR

11. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
PERFORM REMEDIAL WORK	[X]	PLUG AND ABANDON	[ ]	REMEDIAL WORK	[ ]	ALTERING CASING	[ ]
TEMPORARILY ABANDON	[ ]	CHANGE PLANS	[ ]	COMMENCE DRILLING OPNS.	[ ]	PLUG AND ABANDONMENT	[ ]
PULL OR ALTER CASING	[ ]			CASING TEST AND CEMENT JOB	[ ]		
OTHER: Re-Entry	[ ]			OTHER:			[ ]

12. Describe Proposed or Completed Operations (*Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work*) SEE RULE 1103.

12/23/95 - 12/30/95 Cut dry hole marker and tied back into 8-5/8 casing. Drilled out cement plugs and cleaned out casing to a T.D. of 2600'.
1/ 2/96 Perf 8-5/8 casing @ 1627-46 with 18 holes in Penrose Sand.
1/ 3/96 Acidize perf 1627-46 with 2000 gals of 15% NEFE.
1/ 4/96 Fraced perfs 1627-46 with 20,000 gals of 40# x-linked kcl water plus 47,000# of 16-30 Brady Sand.
1/ 5/96 Ran pump & rods.
1/ 9/96 Set pumping unit and began to test.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE [signature] TITLE President DATE 1-17-96

TYPE OR PRINT NAME Donald G. Becker, Jr. TELEPHONE NO. 746-6520

(This space for State Use)

APPROVED BY ORIGINAL SIGNED BY TIM W. GUM DISTRICT I SUPERVISOR TITLE DATE JAN 18 1996

CONDITIONS OF APPROVAL, IF ANY:

Submit to Appropriate
District Office
State Lease – 6 copies
Fee Lease – 5 copies

DISTRICT I
[redacted]ox 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Form C-105
Revised 1-1-89

WELL API NO.

5. Indicate Type of Lease STATE [X] FEE [ ]

6. State Oil & Gas Lease No. V-328

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

1a. Type of Well: OIL WELL [X] GAS WELL [ ] DRY [ ] OTHER

b. Type of Completion: NEW WELL [ ] WORK OVER [X] DEEPEN [ ] PLUG BACK [ ] DIFF RESVR [ ] OTHER

7. Lease Name or Unit Agreement Name: BY

2. Name of Operator: Morexco, Inc.

8. Well No. 1

3. Address of Operator: P. O. Box 481, Artesia, NM 88211-0481

9. Pool name or Wildcat: Artesia Q-GB-SA

4. Well Location
Unit Letter F : 1980 Feet From The North Line and 1980 Feet From The West Line
Section 7 Township 18 South Range 28 East NMPM Eddy County

10. Date Spudded	11. Date T.D. Reached	12. Date Compl. (Ready to Prod.)	13. Elevations (DF & RKB, RT, GR, etc.)	14. Elev. Casinghead
12/23/95	12/30/95	1/10/96	3612 GR	

15. Total Depth	16. Plug Back T.D.	17. If Multiple Compl. How Many Zones?	18. Intervals Drilled By	Rotary Tools	Cable Tools
2600'	2600'			NA	

19. Producing Interval(s), of this completion - Top, Bottom, Name: Queen (Penrose) 1627-46

20. Was Directional Survey Made: NA

21. [redacted] Electric and Other Logs Run: None

22. Was Well Cored: No

23. **CASING RECORD** (Report all strings set in well)

CASING SIZE	WEIGHT LB./FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
13-3/8	not avail.	418	17-1/2	was cir	
8-5/8	24/32	2600	12-1/4	was cir	

24. LINER RECORD

SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN

25. TUBING RECORD

SIZE	DEPTH SET	PACKER SET
2-7/8	1706	None

26. Perforation record (interval, size, and number)
1627-46 18 holes 2spf

27. ACID, SHOT, FRACTURE, CEMENT, SQUEEZE, ETC.

DEPTH INTERVAL	AMOUNT AND KIND MATERIAL USED
1627-46	A/2000 gal of 15% NEFE acid
"	F/20,000 gals of 40 x-linke
	kcl water w/47,000# of
	16/30 Brady Sand

28. **PRODUCTION**

Date First Production	Production Method (Flowing, gas lift, pumping - Size and type pump)	Well Status (Prod. or Shut-in)
1/10/96	Pumping 2-1/2 x 1-1/2 x 10ft.	prod

Date of Test	Hours Tested	Choke Size	Prod'n For Test Period	Oil - Bbl.	Gas - MCF	Water - Bbl.	Gas - Oil Ratio
1/11/96	24	NA		39	vented	26	not avail.

Flow Tubing Press.	Casing Pressure	Calculated 24-Hour Rate	Oil - Bbl.	Gas - MCF	Water - Bbl.	Oil Gravity - API - (Corr.)
[redacted]	0		39	vented	26	34

29. [redacted]sition of Gas (Sold, used for fuel, vented, etc.): Vented Plan to test the week of 1/20/96.

Test Witnessed By: Donald G. Becker, Jr.

30. List Attachments: None

31. *I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief*

Signature [signature] Printed Name Donald G. Becker, Jr. Title President Date 1-17-96

INSTRUCTIONS

This form is to be filed with the appropriate District Office of the Division not later than 20 days after the completion of any newly-drilled or deepened well. It shall be accompanied by one copy of all electrical and radio-activity logs run on the well and a summary of all special tests conducted, including drill stem tests. All depths reported shall be measured depths. In the case of directionally drilled wells, true vertical depths shall also be reported. For multiple completions, Items 25 through 29 shall be reported for each zone. The form is to be filed in quintuplicate except on state land, where six copies are required. See Rule 1105.

INDICATE FORMATION TOPS IN CONFORMANCE WITH GEOGRAPHICAL SECTION OF STATE

Southeastern New Mexico		Northwestern New Mexico	
T. Anhy	T. Canyon	T. Ojo Alamo	T. Penn. "B"
T. Salt	T. Strawn	T. Kirtland-Fruitland	T. Penn. "C"
B. Salt	T. Atoka	T. Pictured Cliffs	T. Penn. "D"
T. Yates	T. Miss	T. Cliff House	T. Leadville
T. 7 Rivers	T. Devonian	T. Menefee	T. Madison
T. Queen	T. Silurian	T. Point Lookout	T. Elbert
T. Grayburg	T. Montoya	T. Mancos	T. McCracken
T. San Andres	T. Simpson	T. Gallup	T. Ignacio Otzte
T. Glorieta	T. McKee	Base Greenhorn	T. Granite
T. Paddock	T. Ellenburger	T. Dakota	T.
T. Blinebry	T. Gr. Wash	T. Morrison	T.
T. Tubb	T. Delaware Sand	T. Todilto	T.
T. Drinkard	T. Bone Springs	T. Entrada	T.
T. Abo	T.	T. Wingate	T.
T. Wolfcamp	T.	T. Chinle	T.
T. Penn	T.	T. Permain	T.
T. Cisco (Bough C)	T.	T. Penn "A"	T.

OIL OR GAS SANDS OR ZONES

No. 1, from.....to..... No. 3, from.....to.....

No. 2, from.....to..... No. 4, from.....to.....

IMPORTANT WATER SANDS

Include data on rate of water inflow and elevation to which water rose in hole.

No. 1, from.....to.....feet.....

No. 2, from.....to.....feet.....

No. 3, from.....to.....feet.....

LITHOLOGY RECORD (Attach additional sheet if necessary)

From	To	Thickness in Feet	Lithology	From	To	Thickness in Feet	Lithology

District I
PO Box 1980, Hobbs, NM 88241-1980
District II
PO Drawer DD, Artesia, NM 88211-0719
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
PO Box 2088, Santa Fe, NM 87504-2088

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

Form C-104
Revised February 10, 1994
Instructions on back
Submit to Appropriate District Office
5 Copies

96 AP 8 AM 8 [5] AMENDED REPORT

I. REQUEST FOR ALLOWABLE AND AUTHORIZATION TO TRANSPORT

[1] Operator name and Address	[2] OGRID Number
Morexco, Inc. P. O. Box 481 Artesia, NM 88211-0481	015262
	[3] Reason for Filing Code CO -/ / /

[4] API Number	[5] Pool Name	[6] Pool Code
30-0 15-25236	Artesia Q-GB-SA	3230

[7] Property Code	[8] Property Name	[9] Well Number
18118	State BY	1

II. [10] Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South Line	Feet from the	East/West Line	County
F	7	18S	28E		1980	North	1980	West	Eddy

[11] Bottom Hole Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South Line	Feet from the	East/West Line	County
F	7	18S	28E		1980	North	1980	West	Eddy

[12] Lse Code	[13] Producing Method Code	[14] Gas Connection Date	[15] C-129 Permit Number	[16] C-129 Effective Date	[17] C-129 Expiration Date
S	P				

III. Oil and Gas Transporters

[18] Transporter OGRID	[19] Transporter Name and Address	[20] POD	[21] O/G	[22] POD ULSTR Location and Description
012852	Koch Oil Company P. O. Box 2256 Wichita, KS 67201	1922310	O	2 210 bbl tanks at location stated above.
009171	GPM Gas Corp. 9C1 Adams Building Bartlesville OK 74004	1922330	G	

IV. Produced Water

[23] POD	[24] POD ULSTR Location and Description
1922350	

V. Well Completion Data

[25] Spud Date	[26] Ready Date	[27] TD	[28] PBTD	[29] Perforations

[30] Hole Size	[31] Casing & Tubing Size	[32] Depth Set	[33] Sacks Cement

VI. Well Test Data

[34] Date New Oil	[35] Gas Delivery Date	[36] Test Date	[37] Test Length	[38] Tbg. Pressure	[39] Csg. Pressure

[40] Choke Size	[41] Oil	[42] Water	[43] Gas	[44] AOF	[45] Test Method

[46] I hereby certify that the rules of the Oil Conservation Division have been complied with and that the information given above is true and complete to the best of my knowledge and belief.

Signature: Donald G. Becker, Jr.

Printed name: Donald G. Becker, Jr.

Title: President

Date: 3/26/96 Phone: 505-746-6520

OIL CONSERVATION DIVISION

Approved by: ORIGINAL SIGNED BY TIM W. GUM
DISTRICT II SUPERVISOR

Title:

Approval Date: MAR 27 1996

[47] If this is a change of operator fill in the OGRID number and name of the previous operator

Previous Operator Signature	Printed Name	Title	Date

ATTACHMENT VI-3

TOP OF CEMENT IN INJECTION ZONE WELLS IN AREA OF REVIEW

ATTACHMENT VI-3

TOP OF CEMENT IN INJECTION ZONE WELLS IN THE AREA OF REVIEW

Map ID No.	Casing Diameter (inches)	Setting Depth (feet)	Cement Volume (sacks)	Hole Diameter (inches)	Cement Factor (cu ft/sacks)	Hole Rugosity	Cement Height (feet)	Top of Cement (feet below ground)
81	13.375 8.625 5.5	663 4000 10450	650 1400 2007	17.5 11 7.875	1.1 1.1 1.1	0.8 0.8 0.8	823 4846 10194	Surface Surface 256
83*	13.375 8.625 5.5	354 1745 8466	350 650 520	17.5 .11 7.875	1.1 1.1 1.1	0.8 0.8 0.8	443 2250	Surface Surface 6250[1]
124*	13.375 9.625 7 4.5	400 2600 9445 10198	500 1100 1895 175	17.5 12.25 7.875 6.125	1.1 1.1 1.1 1.1	0.8 0.8 0.8 0.8	633 3091 23491 1635	Surface Surface Surface Top of Liner
134	13.375 9.625 5.5	416 2610 10148	450 1025 1020	17.5 12.25 8.75	1.1 1.1 1.1	0.8 0.8 0.8	570 2880 3554	Surface Surface 6594
144	13.375 9.625 7 4.5	400 2600 8968 10150	100 250 1200 200	17.5 12.25 8.75 6.125	1.1 1.1 1.1 1.1	0.8 0.8 0.8 0.8	127 702 7025 1869	273 1898 1943 Top of Liner
157	13.375 9.625 7 4.5	400 2604 9450 10119	425 1025 1350 175	17.5 12.25 8.75 6.125	1.1 1.1 1.1 1.1	0.8 0.8 0.8 0.8	538 2880 7903 1635	Surface Surface 1547 Top of Liner
161	13.375 8.625 5.5 4.5	472 2589 9473 10140	450 900 430 80	17.5 12.25 7.875 5.5	1.1 1.1 1.1 1.1	0.8 0.8 0.8 0.8	570 1919 2184 1291	Surface 670 7289 Top of Liner

TOP OF CEMENT IN INJECTION ZONE WELLS IN THE AREA OF REVIEW

Map ID No.	Casing Diameter (inches)	Setting Depth (feet)	Cement Volume (sacks)	Hole Diameter (inches)	Cement Factor (cu ft/sacks)	Hole Rugosity	Cement Height (feet)	Top of Cement (feet below ground)
167	13.375	418	500	17.5	1.1	0.8	633	Surface
	8.625	2600	1150	11	1.1	0.8	3981	Surface
	5.5	10400	1000	7.875	1.1	0.8	5079	5321

Cement Height = Cement Volume * Cement Factor * Hole Rugosity * 1/(PI*(Hole Radius ^ 2 - Casing Radius ^ 2))

* For Map ID No. 83, cement volume for 5.5 inch casing includes squeezes.

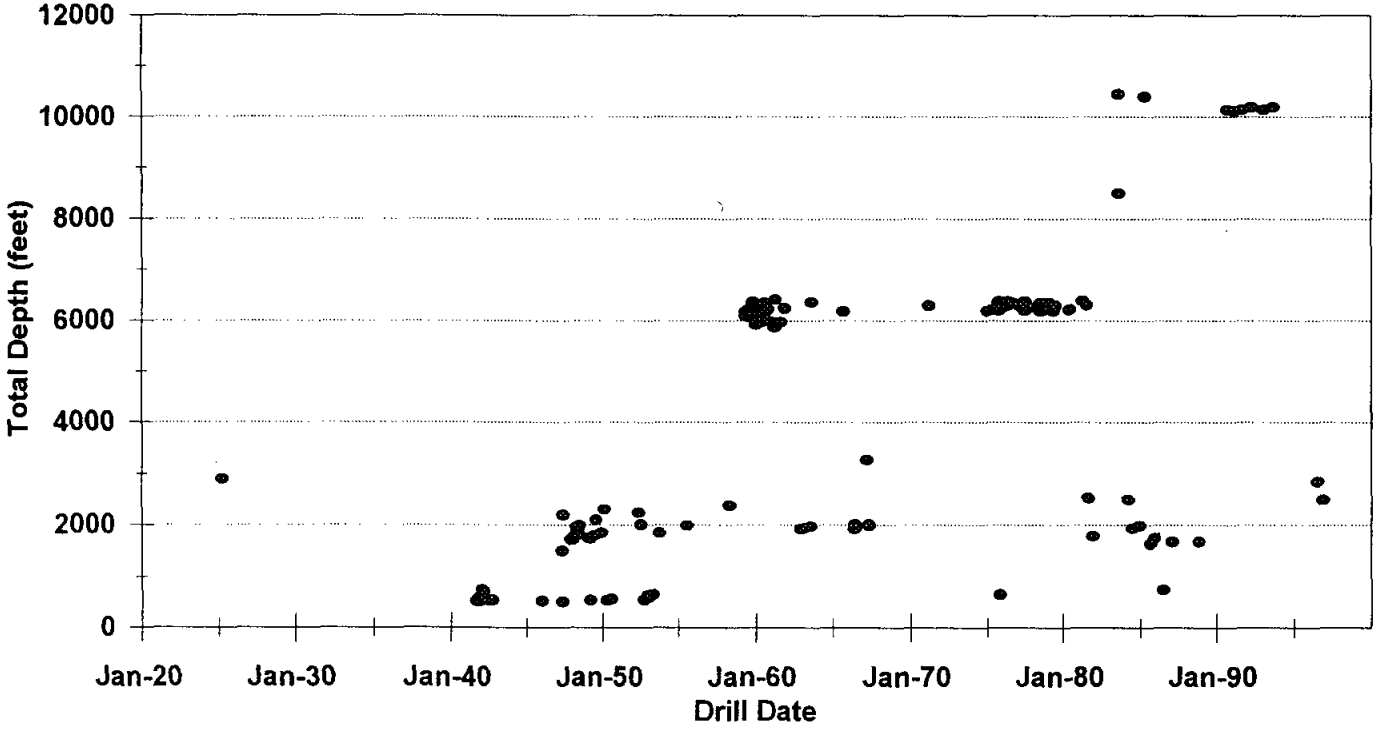
** For Map ID No. 124, hole diameter for 4-1/2 inch liner was not reported; 6.125 inches is estimated.

[1] Per temperature survey conducted on May 9, 1991.

ATTACHMENT VI-4

TOTAL DEPTH VERSUS DRILL DATE

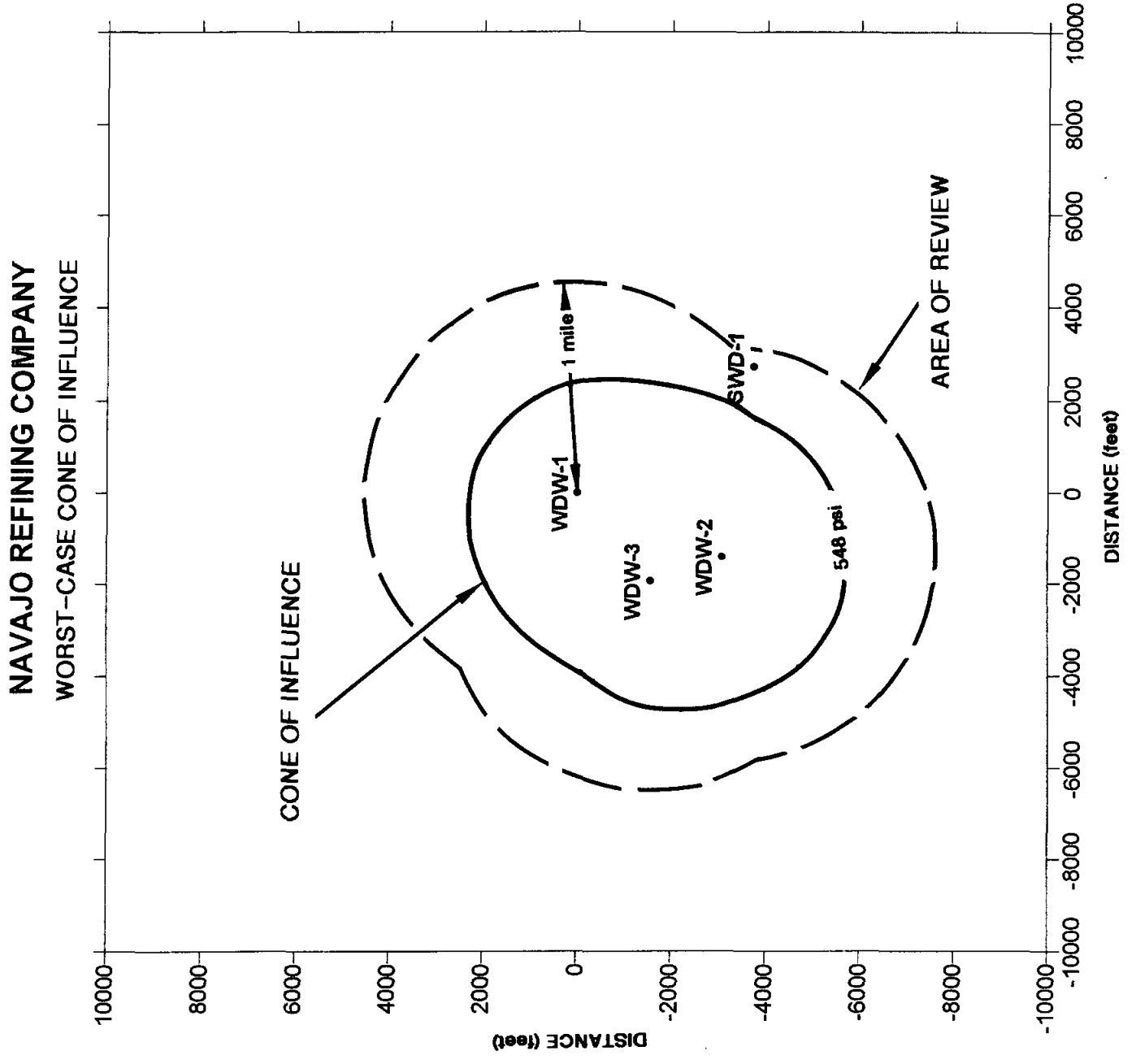
Total Depth vs Drill Date
Wells in 1-Mile AOR



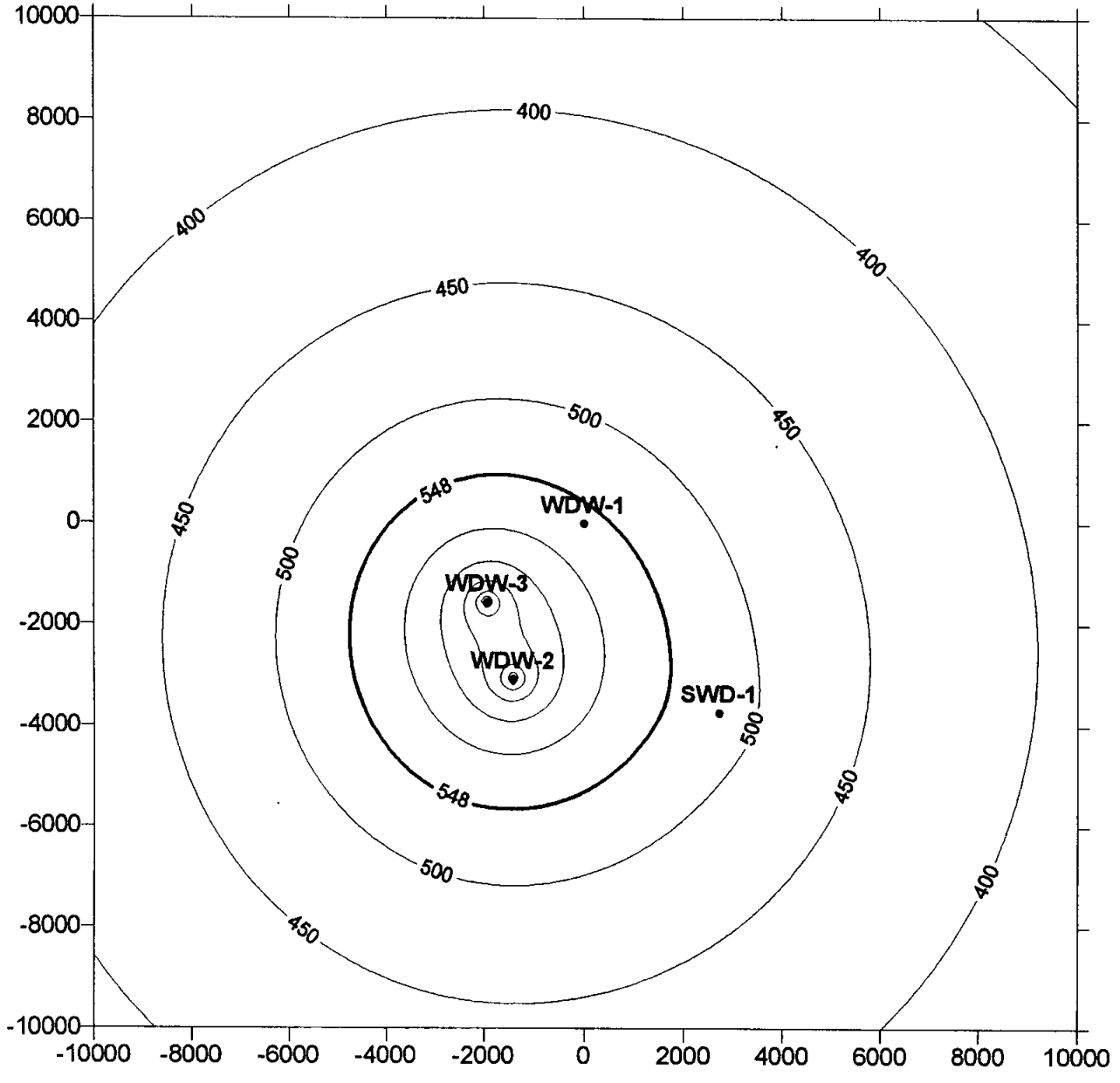
ATTACHMENT VI-4

ATTACHMENT VI-5

PREDICTED PRESSURE INCREASE AND CONE OF INFLUENCE


NAVAJO REFINING COMPANY
WORST-CASE CONE OF INFLUENCE
CONE OF INFLUENCE
AREA OF REVIEW
1 mile
WDW-1
WDW-2
WDW-3
SWD-1
548 psi
DISTANCE (feet)
DISTANCE (feet)
10000
8000
6000
4000
2000
0
-2000
-4000
-6000
-8000
-10000

NAVAJO REFINING COMPANY

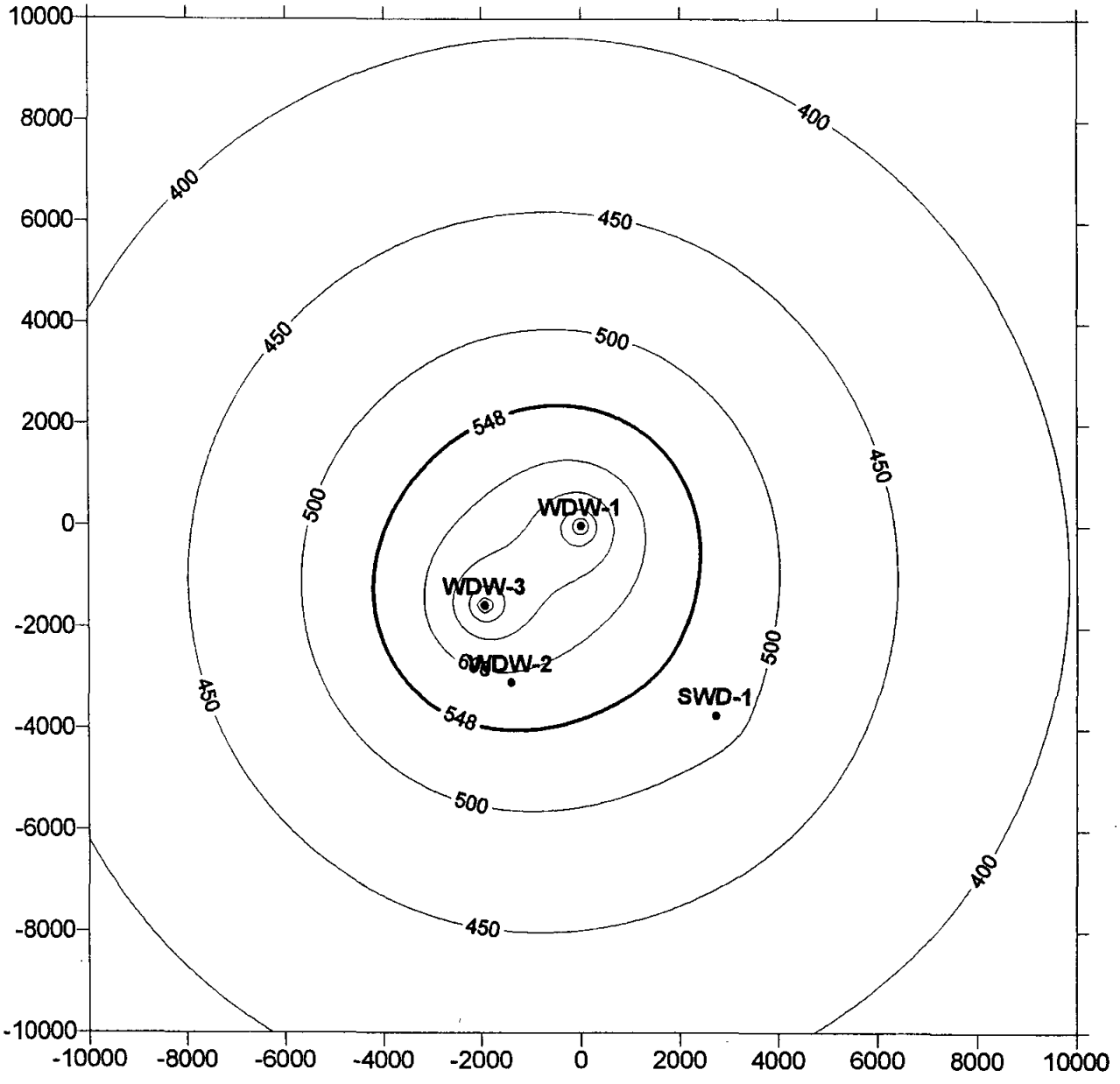


WDW-1 at 0 gpm for 20 years
WDW-2 at 500 gpm for 20 years
WDW-3 at 500 gpm for 20 years

SWD-1 at 17.6 gpm for 1988-1998
SWD-1 at 58.3 gpm for 20 years

k = 250 md
h = 85 ft
10% porosity
0.53 cp viscosity
ct = 8.4E-6/psi

NAVAJO REFINING COMPANY

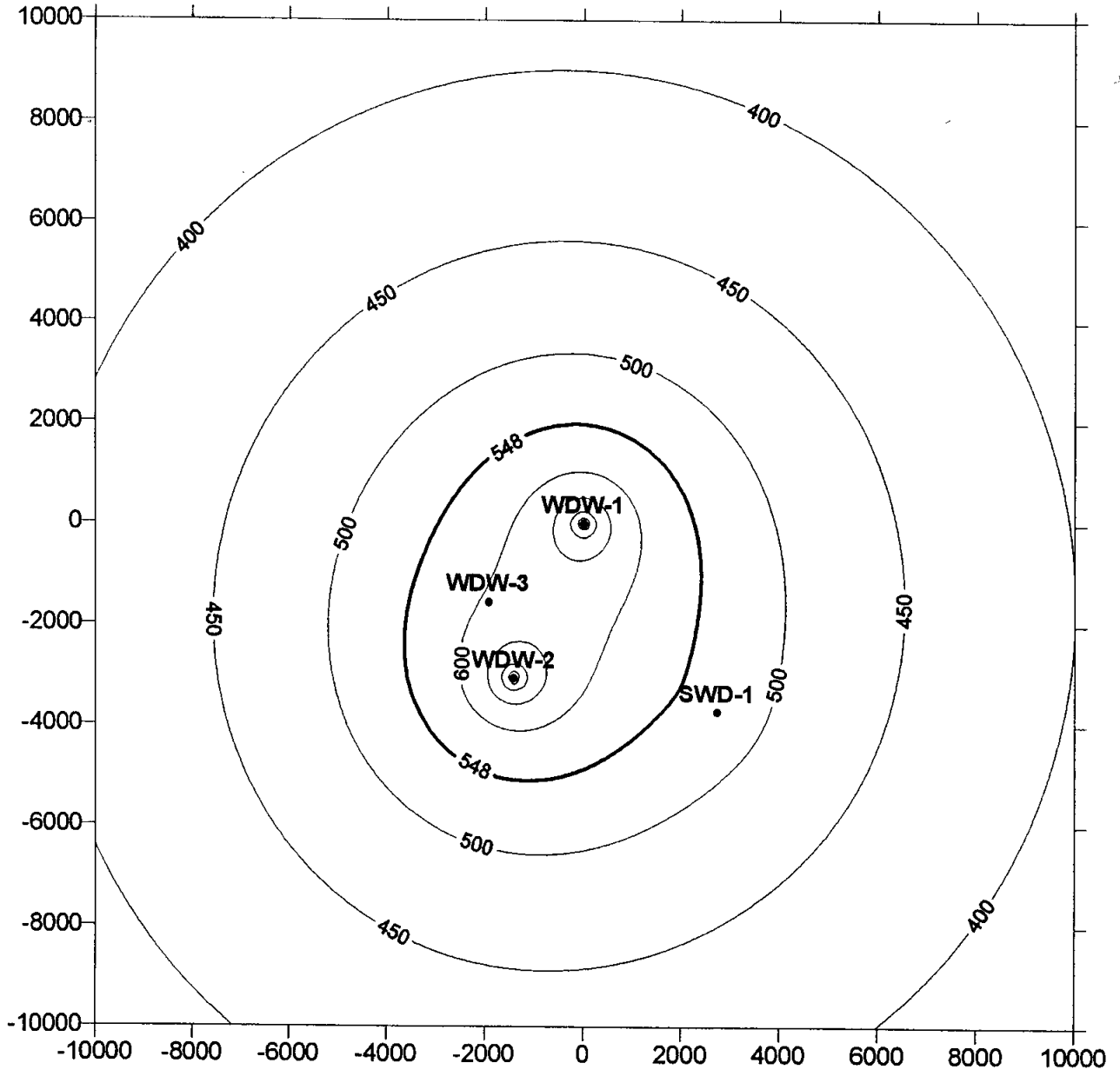


WDW-1 at 500 gpm for 20 years
WDW-2 at 0 gpm for 20 years
WDW-3 at 500 gpm for 20 years

SWD-1 at 17.6 gpm for 1988-1998
SWD-1 at 58.3 gpm for 20 years

k = 250 md
h = 85 ft
10% porosity
0.53 cp viscosity
ct = 8.4E-6/psi

NAVAJO REFINING COMPANY



WDW-1 at 500 gpm for 20 years
WDW-2 at 500 gpm for 20 years
WDW-3 at 0 gpm for 20 years

SWD-1 at 17.6 gpm for 1988-1998
SWD-1 at 58.3 gpm for 20 years

k = 250 md
h = 85 ft
10% porosity
0.53 cp viscosity
ct = 8.4E-6/psi

ATTACHMENT VI-6

PREDICTW - RESERVOIR PRESSURE INCREASE PROGRAM

ATTACHMENT VI-6

PREDICTW - RESERVOIR PRESSURE INCREASE PROGRAM

The pressure response for radial flow of a slightly compressible fluid in a planar (porous) injection layer with spatially-constant properties is determined by the well-known diffusivity equation (Lee, 1982):

$$\frac{\partial^2 p}{\partial r^2} + \frac{1}{r}\frac{\partial p}{\partial r} = \frac{\phi \mu c_t}{0.000264k}\frac{\partial p}{\partial t}, \qquad \text{Equation 1}$$

where ϕ, μ, c_t, and k refer to porosity, viscosity (cp), compressibility (psi^{-1}), and permeability (md), respectively. The pressure, p, is expressed in psi; radial distance, r, is in feet; and time, t, is indicated in hours. For an infinite reservoir of thickness h (ft) with $p \rightarrow p_o$ (initial pressure) as $r \rightarrow \infty$, the transient pressure, p (r, t), for a single line source injector at r = 0 is determined from Equation 1 as (Muskat, 1937):

$$p\,(r,t) = p_o - \frac{70.6\,q\mu}{kh}\,Ei\left(\frac{-39.5\phi\mu c_t r^2}{kt}\right), \qquad \text{Equation 2}$$

where Ei represents the exponential integral defined by:

$$Ei\,(-x) = -\int_x^{\infty} \frac{e^{-\varepsilon}}{\varepsilon}\,d\varepsilon,$$

and q represents the (constant) injection rate in barrels per day (bbl/day). Time, t, in Equation 2 is expressed in days.

For the general case of multiple wells in a single layer, in which injection from each is represented by a succession of piece-wise constant flow rate intervals, the pressure response is readily obtained by superposition of elementary solutions given by Equation 1. In terms of Cartesian coordinates, the pressure transient at an arbitrary point (x, y) is given by:

$$p(x,y,t) = p_o + \sum_{j=1}^{N} \frac{70.6\,q_1^j\mu}{kh}\,Ei\left(\frac{-39.5\phi\mu c_t\left[(x-x_j)^2 + (y-y_j)^2\right]}{kt}\right)$$

$$+ \sum_{j=1}^{N}\sum_{i=1}^{n_{j-1}} \frac{70.6\left[(q_{i+1}^j - q_i^j)\mu\right]}{kh}\,Ei\left(\frac{-39.5\phi\mu c_t\left[(x-x_j)^2 + (y-y_j)^2\right]}{k(t-t_i^j)}\right) \qquad \text{Equation 3}$$

for all $t_i^j < t$. In Equation 3, the following notation is employed:

N	=	number of wells injecting into the reservoir
n_j	=	number of constant flow rate increments for well j operative over time t
i	=	flow rate summation index ($1 < i < n_j$)
j	=	well number summation index ($1 < j < N$)
t_i^j	=	cumulative time corresponding to the end of injection rate interval i for well j
x_j, y_j	=	cartesian coordinates of well j
q_i^j	=	flow rate from well j during flow increment i

Equation 3 forms the basis for determining the cone of influence for a general multi-well system.

To determine shutin or flowing pressures at a generic wellbore location, Equation 3 is modified to include a dimensionless skin factor, s_b, which reflects the effects of altered properties in the near-wellbore region (Van Everdingen, 1953). The associated augmentation, Δp^b_{skin}, of the theoretical flowing pressure is assumed to be of the form:

$$\Delta p^b_{skin}\ (\text{psi}) = 141.2\ \frac{q_i^b \mu}{kh}\ s_b \qquad \text{Equation 4}$$

Incorporation of Equation 4 into Equation 3 and replacement of the quantity $[(x-x_b)^2 + (y-y_b)^2]$ in the Ei-function argument by $r^2_{w,b}$ (wellbore radius squared) leads to the following expression for the transient flowing pressure at a generic wellbore (b):

$$p^b_{wf}(x_b,y_b,t) = p_o + \sum_{j=1}^{N} \frac{70.6 q_1^j \mu}{kh}\ \text{Ei}\left(\frac{-39.5\phi\mu c_t[(x_b-x_j)^2 + (y_b-y_j)^2]}{kt}\right)$$

$$+ \sum_{j=1(j\neq b)}^{N} \sum_{i=1}^{n_{j-1}} \frac{70.6(q_{i+1}^j - q_i^j)\mu}{kh}\ \text{Ei}\left(\frac{-39.5\phi\mu c_t[(x_b-x_j)^2 + (y_b-y_j)^2]}{k(t-t_i^j)}\right)$$

$$+ \frac{70.6 q_1^b \mu}{kh}\left[\text{Ei}\left(\frac{-39.5\phi\mu c_t r^2_{w,b}}{kt}\right) - 2s_b\right]$$

$$+ \sum_{i=1}^{n_{j-1}} \frac{70.6(q_{i+1}^b - q_i^b)\mu}{kh}\left[\text{Ei}\left(\frac{-39.5\phi\mu c_t r^2_{w,b}}{k(t-t_i^b)}\right) - 2s_b\right]$$

Equation 5

where x_b, y_b denote the wellbore coordinates at well b where the pressure response is evaluated.

Application of Equations 3 and 5 to address actual operational conditions often requires inclusion of many wells (including image injectors), each having several hundred flow rate increments. Accordingly, a Visual Basic computer program, PREDICTW, was created to evaluate these equations. When isobaric contours at a given time in a given injection zone are desired, Equation 3, actually $p - p_o$, is evaluated at each node of a predefined uniform grid. The resulting Δp-x-y array is then input into a 3-D graphics routine, SURFER (® Golden Software, Inc.), to generate selected isobaric contours. When transient wellbore responses are desired to determine flowing pressures at a given well or to simulate pressure falloff tests, Equation 5 is utilized. The output for this case consists of a record of $\Delta p = p - p_o$ at a single well location over a specified time interval.

REFERENCES:

Lee, J., 1982, Well Testing: SPE Textbook Series, Vol. 1, Dallas, Texas.

Muskat, M., 1937, The Flow of Homogeneous Fluids Through Porous Media: McGraw Hill.

Van Everdingen, A. F., 1953, The Skin Effect and Its Influence on the Productive Capacity of a Well: SPE, Presented at the Petroleum Branch Fall Meeting, Fall 1953.

ATTACHMENT VI-7

WATER VISCOSITIES AT VARIOUS SALINITIES AND TEMPERATURES

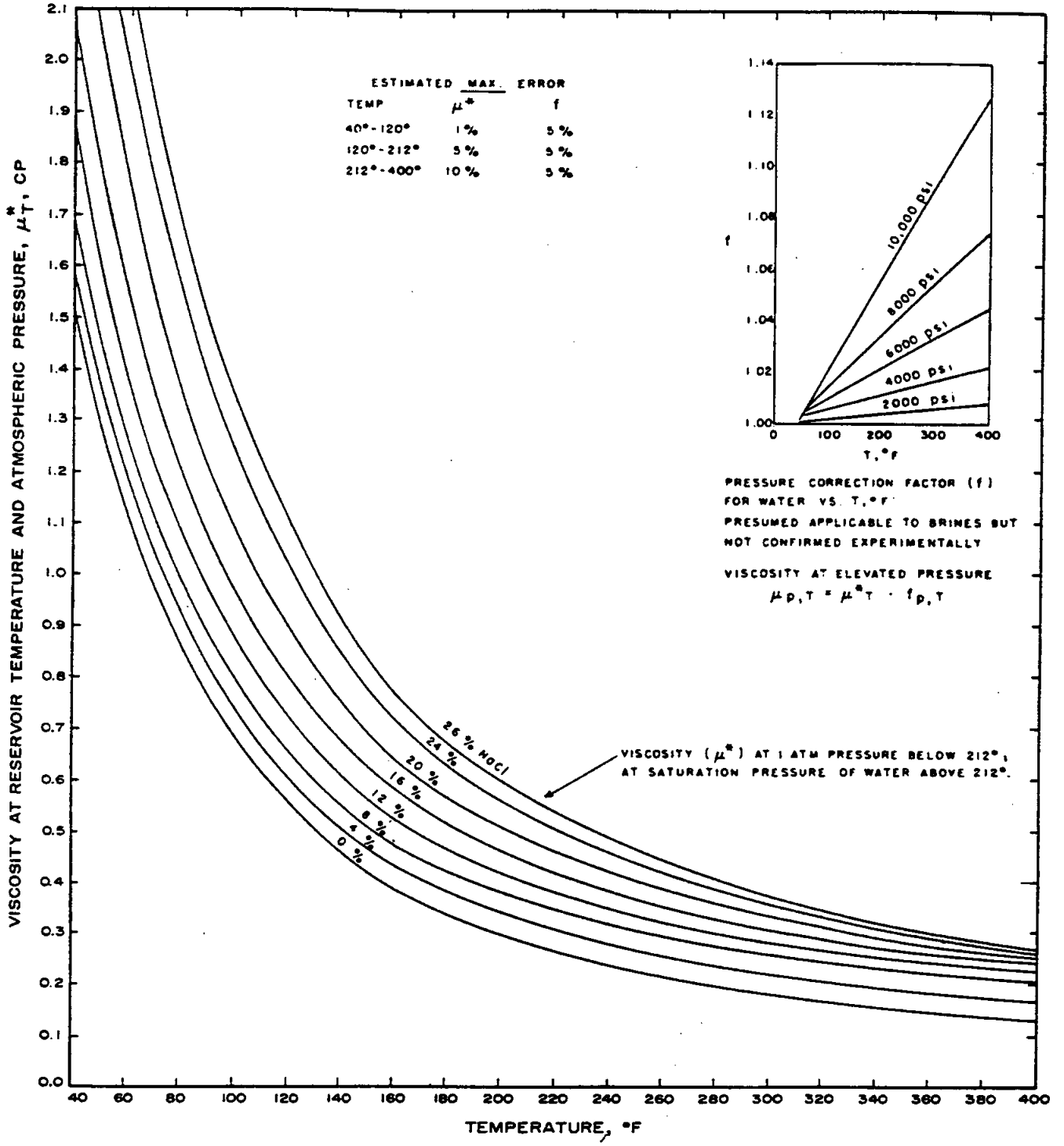


Fig. D.35 Water viscosity at various salinities and temperatures. After Matthews and Russell, data of Chesnut.[18]

FROM: Earlougher, R.C., 1977, "Advances in Well Test Analysis", SPE of AIME, Dallas, Texas

ATTACHMENT VI-8

COMPRESSIBILITY OF PORE VOLUME AND DISTILLED WATER

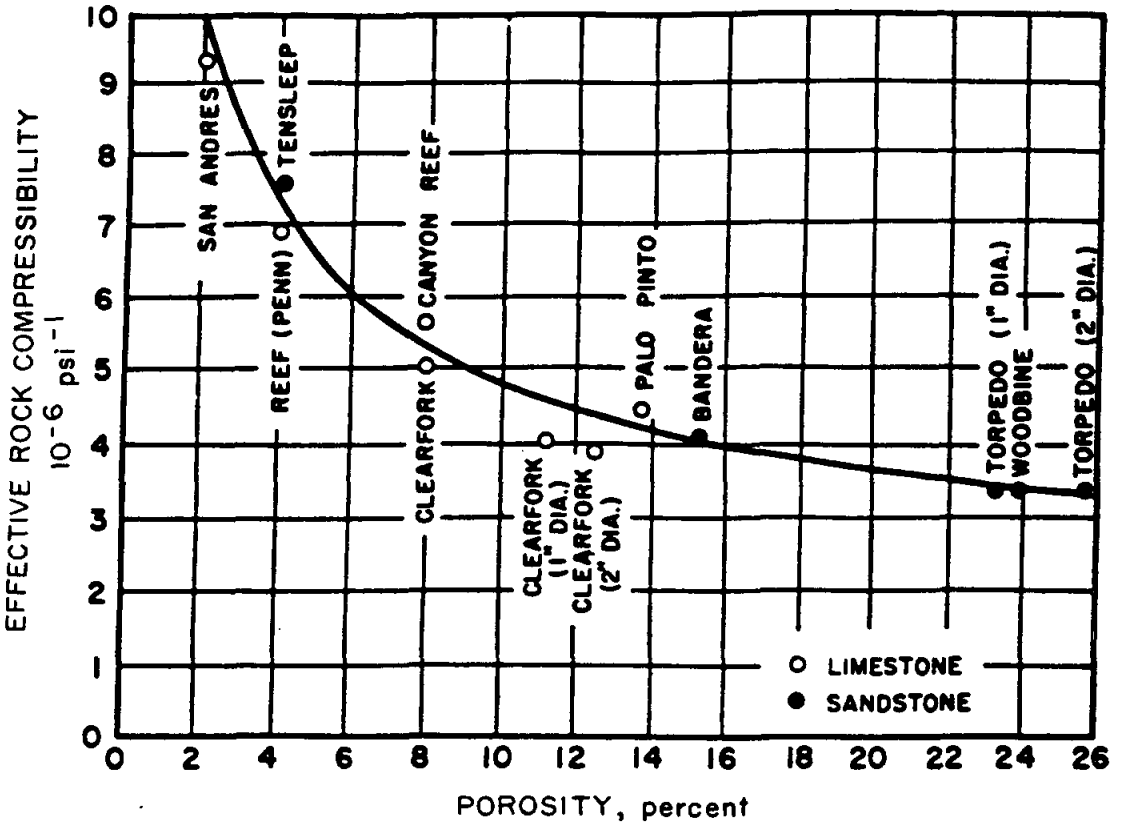


Fig. G.5 Effective formation (rock) compressibility. From Hall, *Trans.*, AIME (1953) **198**, 309.

Source: Matthews and Russell, 1967, Pressure Buildup and Flow Tests in Wells

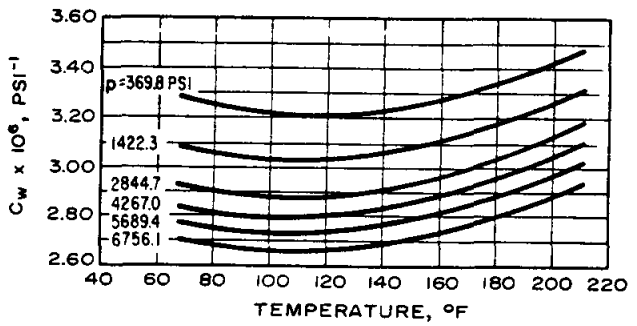


Fig. D.16 Average compressibility of distilled water. After Long and Chierici.[13]

Source: Earlougher, 1977, Advances in Well Test Analysis

COMPRESSIBILITY OF PORE VOLUME AND DISTILLED WATER

VII. PROPOSED OPERATIONS

1. Proposed Injection Rate and Volume

   The proposed maximum injection rate for proposed WDW-1, WDW-2, and WDW-3 combined is 1000 gpm or 34,286 bpd. The proposed maximum injection volume in any given month is that volume calculated by multiplying 1000 gpm by 60 minutes per hour by 24 hours per day by the number of days in the month.

   The proposed maximum rate of injection into any one well is 500 gpm.

2. Whether the System Is Open or Closed

   The operations for the proposed Class I wells will be restricted to injection from a closed system. Fluids to be injected will be generated on site at Navajo's refinery in Artesia and will be transported to the injection wells by pipeline.

3. Proposed Injection Pressure

   The maximum injection pressure may vary, depending on the depth of the injection formation. For example, if proposed WDW-1 is completed at the top of the injection zone at 7450 feet, then the requested maximum injection pressure is 1490 psi, as calculated below:

   Maximum Injection Pressure at the Top of the Injection Zone

   = Top of the Injection Zone x 0.2 psi/ft
   = 7450 feet x 0.2 psi/ft
   = 1490 psi

   If the top of the injection formation coincides with the top of the Cisco or Canyon Formations, both of which are deeper than the Wolfcamp Formation, then the proposed injection pressure will be higher. The proposed injection pressure for each injection formation is summarized in the following table:

PROPOSED INJECTION PRESSURE			
Injection Formation	**Top of Injection Formation**	**Maximum Injection Pressure Gradient**	**Proposed Injection Pressure**
WDW-1			
Wolfcamp	7450 feet	0.2 psi/ft	1490 psi
Cisco	7816 feet	0.2 psi/ft	1563 psi
Canyon	8475 feet	0.2 psi/ft	1695 psi
WDW-2			
Wolfcamp	7401 feet (est.)	0.2 psi/ft	1480 psi
Cisco	7751 feet (est.)	0.2 psi/ft	1550 psi
Canyon	8456 feet (est.)	0.2 psi/ft	1691 psi
WDW-3			
Wolfcamp	7392 feet (est.)	0.2 psi/ft	1478 psi
Cisco	7732 feet (est.)	0.2 psi/ft	1548 psi
Canyon	8437 feet (est.)	0.2 psi/ft	1687 psi

4. Wastestream Information and Compatibility with the Injection Zone

Navajo proposes to inject a nonhazardous waste stream that is generated at its refinery in Artesia. Waste waters from process units, cooling towers and boilers, streams from water purification units and desalting units, and general wash waters will be blended to make up the proposed waste stream. The sources of the individual waste streams are listed below:

a. process waste waters from crude oil fractionation, catalytic cracking, alkylation, and desulfurization units;
b. cooling tower blowdown water;
c. waste waters from water purification and desalting units;
d. general wash waters;
e. boiler blowdown water; and
f. recovered and treated ground water.

A recent chemical analysis of the waste water proposed for injection is included as Attachment VII-1 (Pond Outfall). Average concentration levels for major constituents are listed in Attachment VII-2, along with the expected pH range and specific gravity.

5. Injection Zone Fluid Analysis

The composition of the native formation fluid in the proposed Wolfcamp, Cisco, and Canyon injection zone is expected to be similar to that in these formations in other parts of southeastern New Mexico. The salinity of Wolfcamp, Cisco, and Canyon formation brines from hydrocarbon producing areas in northern Lea County, to the east of Eddy County, was reported by Meyer (1966, Table 4). Attachment VII-3 summarizes the salinity data reported by Meyer (1966, Table 4) for Wolfcamp, Cisco, and Canyon formation brines from limestones that were deposited in a shelf environment similar to that of the proposed injection site. The salinity of the formation brines range from 67,098 to 119,909 parts per million (ppm). The formation brines were produced from intervals that occur between 9001 feet and 10742 feet below ground. Also listed in Attachment VII-7 are data from Strawn limestones that were deposited in a platform environment and that occur at 7700 feet below ground; the salinity of the Strawn formation brine is 39,374 ppm. DST data from proposed WDW-1 indicate that the salinity of fluid recovered from the Cisco Formation in DST No. 5 is 25,000 ppm (Attachment VIII-9).

Navajo will attempt to retrieve a sample of formation brine during the proposed well testing operations. As discussed above, the salinity of the formation brine in the Wolfcamp, Cisco, and Canyon injection zone is expected to be between 25,000 and 120,000 ppm.

ATTACHMENT VII-1

CHEMICAL ANALYSIS OF WASTE WATER
FROM NAVAJO REFINING COMPANY
DATED FEBRUARY 18, 1998

TRACEANALYSIS, INC.
6701 Aberdeen Avenue Lubbock, Texas 79424 806•794•1296 FAX 806•794•1298

ANALYTICAL RESULTS FOR
NAVAJO REFINING
Attention: Bryan Madrid
501 E. Main
Artesia, NM 88210

February 18, 1998
Receiving Date: 01/16/98
Sample Type: Water
Project No: NA
Project Location: NA

Prep Date: 01/21/98
Analysis Date: 01/28/98
Sampling Date: 01/14/98
Sample Condition: Intact & Cool
Sample Received by: VW
Project Name: NA

TA#	Field Code	POTASSIUM (mg/L)	MAGNESIUM (mg/L)	CALCIUM (mg/L)	SODIUM (mg/L)
T89208	KWB-1A	5.4	410	540	350
T89209	KWB-1C	5.9	380	550	370
T89210	KWB-24	4.5	220	440	140
T89211	KWB-12A	5.2	210	510	269
T89212	KWB-9	4.1	160	370	130
T89213	KWB-3A	6.1	280	620	510
T89214	KWB-11A	10	230	430	290
T89215	KWB-7	5.1	300	440	300
T89216	MW-18	5.4	200	340	70
T89217	MW-45	13.6	340	620	510
T89218	Ponds (Outfall)	51	98	48	1,200
ICV		50	49	49	50
CCV		50	48	48	51
Reporting Limit		0.50	0.50	0.50	0.50
METHOD BLANK		<0.50	<0.50	<0.50	<0.50
RPD		4	3	4	5
% Extraction Accuracy		106	104	107	110
% Instrument Accuracy		100	97	97	101

METHODS: EPA 200.7.
CHEMIST: RR
SPIKE: 100 mg/L POTASSIUM, MAGNESIUM, CALCIUM, SODIUM.
CV: 50 mg/L POTASSIUM, MAGNESIUM, CALCIUM, SODIUM.

RR

Director, Dr. Blair Leftwich

2-18-98

Date

ATTACHMENT VII-1

TRACE ANALYSIS, INC.
6701 Aberdeen Avenue Lubbock, Texas 79424 806•794•1296 FAX 806•794•1298

ANALYTICAL RESULTS FOR
NAVAJO REFINING
Attention: Bryan Madrid
501 E. Main
Artesia, NM 88210

January 21, 1998
Receiving Date: 01/16/98
Sample Type: Water
Project No: NA
Project Location: NA

Prep Date: 01/17/98
Analysis Date: 01/17/98
Sampling Date: 01/14/98
Sample Condition: Intact & Cool
Sample Received by: VW
Project Name: NA

TA#	FIELD CODE	MTBE (mg/L)	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL-BENZENE (mg/L)	M,P,O XYLENE (mg/L)	TOTAL BTEX (mg/L)
T89218	Ponds (Outfall)	0.012	0.015	0.034	<0.010	0.028	0.077
QC	Quality Control	0.094	0.096	0.097	0.094	0.283	
REPORTING LIMIT		0.001	0.001	0.001	0.001	0.001	
RPD		1	1	1	2	1	
% Extraction Accuracy		100	103	102	98	101	
% Instrument Accuracy		94	96	98	94	95	

METHODS: EPA SW 846-8021B, 5030.
CHEMIST: AG
MTBE/BTEX SPIKE AND QC: 0.100 mg/L MTBE/BTEX.

Director, Dr. Blair Leftwich

1-21-98
Date

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
4725 Ripley Avenue, Suite A El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
E-Mail. lab@traceanalysis.com

ANALYTICAL RESULTS FOR
NAVAJO REFINING
Attention: Bryan Madrid
501 E. Main
Artesia, NM 88210

February 18, 1998
Receiving Date: 01/16/98
Sample Type: Water
Sampling Date: 01/14/98
Sample Condition: I & C
Sample Received by: VW
Extraction Date: 01/21/98
Analysis Date: 01/29/98

T89218

PAH 8270 Compounds (mg/L)	Reporting Limit	Ponds (Outfall)	QC	RPD	%EA	%IA
Naphthalene	0.001	0.034	74	4	41	93
Acenaphthylene	0.001	ND	74	0	73	93
Acenaphthene	0.001	ND	73	1	71	91
Fluorene	0.001	ND	68	---	72	85
Phenanthrene	0.001	0.004	74	11	76	93
Anthracene	0.001	ND	78	8	80	98
Fluoranthene	0.001	ND	72	20	72	90
Pyrene	0.001	ND	74	---	111	93
Benzo[a]anthracene	0.001	ND	78	---	81	98
Chrysene	0.001	ND	74	---	98	93
Benzo[b]fluoranthene	0.001	ND	74	---	69	93
Benzo[k]fluoranthene	0.001	ND	88	---	98	110
Benzo[a]pyrene	0.001	ND	77	---	85	96
Indeno[1,2,3-cd]pyrene	0.001	ND	74	---	91	93
Dibenz[a,h]anthracene	0.001	ND	69	---	91	86
Benzo[g,h,i]perylene	0.001	ND	70	---	86	87

ND = Not Detected

SURROGATES	% RECOVERY
Nitrobenzene-d5 SURR	40
2-Fluorobiphenyl SURR	30
Terphenyl-d14 SURR	60

METHODS: EPA SW 846-8270, 3510.
CHEMIST: MB

Director, Dr. Blair Leftwich

2-18-98
DATE

TRACE ANALYSIS, INC.
6701 Aberdeen Avenue Lubbock, Texas 79424 806•794•1296 FAX 806•794•1298

ANALYTICAL RESULTS FOR
NAVAJO REFINING

February 18, 1998
Receiving Date: 01/16/98
Sample Type: Water
Project No: NA
Project Location: NA

Attention: Bryan Madrid
501 E. Main
Artesia, NM 88210

Prep Date: 01/22/98
Analysis Date: 01/22/98
Sampling Date: 01/14/98
Sample Condition: Intact & Cool
Sample Received by: VW
Project Name: NA

TA#	FIELD CODE	NITRATE-N (mg/L)	CHLORIDE (mg/L)	FLUORIDE (mg/L)	SULFATE (mg/L)	ALKALINITY (mg/L as CaCo3) HC03	C03
T89218	Ponds (Outfall)	<0.01	1,100	3.9	1,500	100	<1.0
ICV		1.338	496	1.07	24	—	—
CCV		1.350	501	1.04	24	—	—
REPORTING LIMIT		0.01	0.5	0.1	10	1.0	1.0
RPD		2	4	0	0	2	2
% Extraction Accuracy		104	102	100	63	—	—
% Instrument Accuracy		101	100	106	97	—	—

METHODS: EPA 300.0, 310.1.
CHEMIST: NITRATE-N: RS CHLORIDE: RC FLUORIDE: JS/RC SULFATE/ALKALINITY: JS
SPIKE: 5,000 mg/L CHLORIDE; 1.0 mg/L FLUORIDE; 2,500 mg/L SULFATE; 19.995 mg/L NITRATE-N.
CV: 500 mg/L CHLORIDE; 1.0 mg/L FLUORIDE; 25 mg/L SULFATE; 1.333 mg/L NITRATE-N.

Director, Dr. Blair Leftwich

2-18-98
Date

ATTACHMENT VII-2

AVERAGE CONCENTRATION LEVELS FOR MAJOR WASTE STREAM CONSTITUENTS

ATTACHMENT VII-2

AVERAGE CONCENTRATION LEVELS FOR MAJOR WASTE STREAM CONSTITUENTS

PARAMETER	AVERAGE CONCENTRATION[1] (mg/l)
Calcium	48
Magnesium	98
Potassium	51
Sodium	1200
Chloride	1100
Fluoride	3.9
Nitrate-N	< 0.01
Sulfate	1500
Alkalinity (Bicarbonate)	100
pH	6.0 to 9.0
Specific Gravity	1.00 to 1.01

[1] Average of values from sample labeled Ponds (Outfall) in analysis in Attachment VII-1.

ATTACHMENT VII-3

SALINITY OF FORMATION BRINES FROM HYDROCARBON-PRODUCING INTERVALS IN THE WOLFCAMP, CISCO, CANYON, AND STRAWN FORMATIONS

ATTACHMENT VII-3

SALINITY OF FORMATION BRINES
FROM HYDROCARBON-PRODUCING INTERVALS
IN THE WOLFCAMP, CISCO, CANYON, AND STRAWN FORMATIONS

FIELD	COUNTY	FORMATION	DEPOSITIONAL ENVIRONMENT	LITHOLOGY	DEPTH	BRINE SALINITY ppm
Allison Penn	Lea	Wolfcamp	shelf	limestone	9673	119447
Bagley Penn	Lea	Cisco	shelf	limestone	9001	67098
Bough Permo Penn	Lea	Wolfcamp	shelf	limestone	9615	109594
Cass Penn	Lea	Strawn	platform	limestone	7700	39374
Crossroads Penn	Lea	Cisco	shelf	limestone	9750	119909
Denton Wolfcamp	Lea	Wolfcamp	shelf	limestone	9395	103705
Eidson Penn	Lea	Wolfcamp	shelf	limestone	10705	90559
Kemnitz Wolfcamp	Lea	Cisco	shelf	limestone	10742	81382
King Penn	Lea	Canyon	shelf	limestone	10708	118521
King Wolfcamp	Lea	Cisco	shelf	limestone	10125	108410
Lazy J Penn	Lea	Cisco	shelf	limestone	9580	105741
Saunders Permo Penn	Lea	Cisco	shelf	limestone	9908	75728

Source: Meyer, 1966, Table 4.

VIII. GEOLOGY

VIII.A Injection Zone Lithology, Depth, Thickness, Porosity, and Permeability

The proposed injection zones are porous carbonates of the lower portion of the Wolfcamp Formation and the Cisco and Canyon Formations. These formations occur in proposed WDW-1 between 7450 feet (560 feet below the top of the Wolfcamp at 6890 feet) and 9016 feet (base of the Canyon). The proposed injection zone is shown on the logs of proposed WDW-1 in Attachments VIII-1 and VIII-2 and in cross sections in Attachments VIII-3 and VIII-4.

In proposed WDW-2 and WDW-3, the formations that comprise the injection zone are expected to occur at the depths listed in the table below. The depths of these formations in proposed WDW-1 are also tabulated.

Injection Zone Formation	PROPOSED WDW-1 (KB height = 3693 feet)		PROPOSED WDW-2 (KB height = 3671 feet, estimated)		PROPOSED WDW-3 (KB height = 3672 feet, estimated)	
	Measured Depth below KB (feet)	Subsea Depth (feet)	Measured Depth below KB (feet)	Subsea Depth (feet)	Measured Depth below KB (feet)	Subsea Depth (feet)
Lower Wolfcamp	7450	-3757	7401	-3730	7392	-3720
Cisco	7816	-4123	7751	-4080	7732	-4060
Canyon	8475	-4782	8456	-4785	8437	-4765
Base of Injection Zone (base of Canyon)	9016	-5323	8971	-5300	8957	-5285

The lower portion of the Wolfcamp Formation, from 7450 feet to 7816 feet in proposed WDW-1, is the shallowest formation in the proposed injection interval. The Wolfcamp Formation (Permian - Wolfcampian age) consists of light brown to tan, fine- to medium-grained, fossiliferous limestones with variegated shale interbeds (Meyer, 1966, page 69). The top of the Wolfcamp was picked for this study at 6890 feet, at the base of the massive, dense dolomites of the overlying Abo Formation. The base of the Wolfcamp coincides with the top of the Cisco Formation at 7816 feet. Attachment VIII-5 shows that the thickness of log porosity greater than 5% in the entire Wolfcamp Formation ranges from 0 feet to 295 feet in a band 3 miles

wide that trends northeast-southwest across the study area, which indicates that the Wolfcamp will have porosity at proposed WDW-2 and WDW-3 that is similar to that at proposed WDW-1.

The upper portion of the Wolfcamp, from 6890 feet to 7450 feet, has low permeability, as indicated by DSTs run in proposed WDW-1, and is not included in the proposed injection zone. The DSTs in the upper portion of the Wolfcamp are discussed in Section VIII.B.

The lower portion of the Wolfcamp is the same interval used for injection in the I&W, Inc., Walter Solt SWD-1 (Map ID No. 83), which is completed between 7518 feet and 7812 feet. The caliper log run in proposed WDW-1 in the lower portion of the Wolfcamp (Attachment VIII-2) shows several intervals of hole enlargement in carbonates, for example, from 7640 feet to 7670 feet. These intervals may have sufficient permeability and lateral extent to accept injected fluids. The total thickness of intervals of hole enlargement shown by the caliper log (Attachment VIII-2) is 60 feet. In addition, 25 feet of interval have porosity greater than 5%, and 4 feet of interval have porosity greater than 10%. The total thickness of the lower portion of the Wolfcamp in proposed WDW-1 is 366 feet.

The Cisco Formation (Pennsylvanian - Virginian age) of the Northwest Shelf is described by Meyer (1966, page 59) as consisting of uniform, light-colored, chalky, fossiliferous limestones interbedded with variegated shales. Meyer (1966, page 59) also describes the Cisco at the edge of the Permian Basin as consisting of biohermal (mound) reefs composed of thick, porous, coarse-grained dolomites. In proposed WDW-1, the Cisco consists of dolomite extending from 7816 feet to the top of the limestones of the Canyon Formation at 8475 feet. The Cisco is 659 feet thick in proposed WDW-1. The total thickness of intervals with log porosity greater than 5% is approximately 310 feet. The total thickness with log porosity greater than 10% is approximately 100 feet. Attachment VIII-6 shows that the thickness of the porous intervals in the Cisco ranges from 0 feet in the northwestern part of the study area to nearly 700 feet in a band 3 miles wide that trends northeast-southwest. In proposed WDW-2 and WDW-3, the total thickness of intervals in the Cisco with log porosity greater than 5% is expected to be 300 feet and 320 feet, respectively; the total thickness of intervals with log porosity greater than 10% is expected to be 100 feet in both wells.

The Canyon Formation (Pennsylvanian - Missourian age) consists of white to tan to light brown fine-grained, chalky, fossiliferous limestone with gray and red shale interbeds (Meyer, 1966, page 53). In proposed WDW-1, the Canyon occurs between 8475 feet, the base of the Cisco dolomites, and 9016 feet, the top of the Strawn Formation of Pennsylvanian (Desmoinesian) age. The Canyon is 541 feet thick in proposed WDW-1. The total thickness of intervals with log porosity greater than 5% is 34 feet. No intervals appear to have log porosity greater than 10% in proposed WDW-1. In proposed WDW-2 and WDW-3, the total thickness of intervals in the Canyon with log porosity greater than 5% is expected to be 50 feet and 50 feet, respectively; no intervals are expected to have porosity greater than 10%. The caliper log of proposed WDW-1 shows 30 feet of hole enlargement in carbonate intervals that may have sufficient permeability and lateral extent to accept injected fluids.

Permeable zones in the proposed lower Wolfcamp, Cisco, and Canyon injection zone are expected to be encountered in porous intervals and in naturally fractured carbonates. These fractured intervals may coincide with intervals of hole enlargement. Drilling records for proposed WDW-1 indicate that returns of drilling mud and cuttings were lost at 8418 feet in the Cisco, in a porous interval that also may be naturally fractured. Permeability measurements from hydrocarbon-producing intervals in the Wolfcamp, Cisco, and Canyon are available from Meyer (1966, Table 4). These permeability data are summarized in Attachment VIII-7. Meyer reported permeabilities in the Cisco of up to 114 millidarcies (md), up to 38 md in the Canyon, and up to 200 md in the Wolfcamp.

Permeability data are also estimated from DST No. 5 conducted in proposed WDW-1. DST No. 5 was conducted near the top of the Cisco Formation from 7817 feet to 7851 feet. Test data for DST No. 5 are included in Attachment VIII-9. The permeability of the interval tested is calculated to be 597 md, as follows:

$$k = 162.6 \frac{q B \mu}{mh}$$

where

- k = permeability, md
- q = production rate, (bbl/day)
- B = formation volume factor, (reservoir bbl)/(stock tank bbl)
- μ = viscosity, centipoise (cp)
- m = slope of Horner plot, psi/cycle

h = reservoir thickness, feet

The production rate, q, is calculated from the total volume of fluid, 78.7 bbl, produced during DST No. 5, which lasted for 90 minutes (the sum of the lengths of the first and second flow periods). Using these values, q is equal to 1259 bbl/day. The formation volume factor, B, is assumed to be 1. The viscosity, μ, of reservoir brine with 25,000 ppm chlorides (approximately 2% salinity) at a bottom-hole temperature of 130°F is 0.53 cp, taken from the chart in Attachment VI-7. The slope of the Horner plot, m, is taken from the Horner plot for the second flow period of DST No. 5, or 5.348 psi/cycle (Page 22 of Attachment VIII-9). The reservoir thickness, h, is the thickness of the interval tested during DST No. 5, or 34 feet (7851 feet - 7817 feet). Substituting these values into the equation above gives:

$$k = 162.6 \frac{(1259)(1)(0.53)}{(34)(5.348)}$$

$$k = 597 \text{ md}$$

In summary, permeability values in the proposed injection zone from producing fields in the region range up to 200 md, as discussed above. Based on DST data from proposed WDW-1, however, permeability values as high as 597 md occur in intervals in the injection zone. Permeabilities of up to 200 md and greater are also expected in the injection zone in proposed WDW-2 and WDW-3.

VIII.B Confining Zone

The confining zone extends from 4000 feet to 7450 feet in proposed WDW-1. The confining zone includes massive low-porosity carbonate beds and layers of shale that will confine the injected fluids to the proposed injection zone (lower Wolfcamp, Cisco, and Canyon Formations). The formations that comprise the confining zone are described below. The confining zone extends throughout the AOR, as shown in the cross sections in Attachments VIII-3 and VIII-4.

The proposed injection zone is directly overlain by the confining layers of the upper portion of the Wolfcamp Formation, which extends from 6890 feet to 7450 feet in proposed WDW-1. Three (3) DSTs were conducted in the upper portion of the Wolfcamp, in the interval from 7016 feet to 7413 feet, that indicate that the interval has low permeability and can confine injected fluids to the injection zone. The

DSTs, DST Nos. 2, 3, and 4, are summarized in the daily drilling reports in Attachment VIII-8. Reports of the data from DST Nos. 3 and 4 are presented in Attachment VIII-9. Although the data from DST No. 4 are not analyzable, an average permeability of 0.36 md was calculated from the data from DST No. 3, as shown below:

$$k = 162.6 \frac{q B \mu}{mh}$$

$$= 162.6 \frac{(20 \text{ bbl}/89 \text{ min} \times 1440 \text{ min/day})(1)(0.53 \text{ cp})}{(570.883 \text{ psi/cycle})(7382 \text{ feet} - 7230 \text{ feet})}$$

$$= 162.6 \frac{(323.6 \text{ bpd})(1)(0.53 \text{ cp})}{(570.883 \text{ psi/cycle})(152 \text{ feet})}$$

$$= 0.36 \text{ md}$$

A permeability on the order of 10^{-1} md is at the low end of the permeability range for carbonates, and is at the high end of the permeability range for shales, according to Freeze and Cherry (1979, p. 29). Therefore, the low-permeability carbonates of the upper Wolfcamp will provide the first level of confinement for the injection zone.

The Abo Formation overlies the Wolfcamp and extends from 5400 feet to 6890 feet in proposed WDW-1, with a total thickness of 1390 feet. Although the Abo is well known as a major oil producer in the AOR, the producing intervals lie in the upper Abo and the B Reef of the Abo, whose equivalents are above 6100 feet in proposed WDW-1. The deepest Abo well in the AOR, Map ID No. 126, located 2500 feet southeast (downdip) of proposed WDW-2, was drilled to 6412 feet. No Abo production in the AOR has been established below 6298 feet, the producing interval in Map ID No. 112, located 2800 feet east of proposed WDW-2, and downdip of the proposed injection wells. The base of the producing interval within the Abo Formation in the AOR, therefore, is more than 1150 feet above the top of the proposed injection zone. The lower 600 feet of the Abo Formation (below the deepest producing interval in the AOR), consisting primarily of dolomite with average porosity less than 5% and interbedded shale, will serve as the secondary confining layer above the proposed injection zone.

The Yeso Formation, which will provide additional confining capabilities, directly overlies the Abo Formation. The top of the Yeso is not clearly identified in the

AOR, according to well records submitted to the OCD and scout tickets available from Petroleum Information Dwights LLC. However, the top of the confining zone can be considered to extend to 4000 feet in the proposed injection well, which coincides with the top of the low-porosity limestone interval below the higher-porosity dolomites below the Glorieta Member of the San Andres Formation. The Yeso consists of low-porosity carbonates and clastic beds. The Tubb shale, a shale interval that is up to 150 feet thick in some wells in the study area, occurs between 4380 feet and 4500 feet in proposed WDW-1. Although no faults are known to exist in the confining zone within the AOR, the Tubb shale will serve to prevent movement of fluids through a hypothetical unknown fault.

VIII.C Structure

The proposed injection well is located on the Artesia-Vacuum anticline (also called the Vacuum Arch), which trends east-west across the study area. The Vacuum Arch is shown clearly on Attachment VIII-10, a structure map drawn on the Rio Bonito member of the San Andres Formation. The top of the Rio Bonito member occurs at approximately 2260 feet in proposed WDW-1, or 300 feet below the top of the San Andres Formation, and 4630 feet above the top of the proposed injection interval (Wolfcamp, Cisco, and Canyon Formations). The general structure of the injection zone is shown on Attachment VIII-11, a regional structure map of the Strawn Formation, drawn on a horizon that is 370 feet below the top of the Strawn (base of the proposed injection zone), as it is recognized in records and scout tickets for wells in the local study area. The top of the proposed injection zone is conformable with the Strawn Formation. Attachment VIII-11 shows the trend of the Vacuum arch, as well as the southeasterly dip of the beds at 85 feet per mile in the vicinity of the proposed injection well. No faults exist in the study area, and faulting occurs no closer than 17 miles to the proposed injection well. The nearest fault is the K-M fault, which is located 6 miles northwest of Artesia and trends northeast-southwest, as shown on Attachment VIII-6. Attachments VIII-12, VIII-13, VIII-14, and VIII-15 are local structure maps drawn on the Wolfcamp, Cisco, Canyon, and Strawn Formations.

VIII.D Underground Sources of Drinking Water (USDWs)

The base of the USDWs, in which the total dissolved solids (TDS) concentration of the formation water is less than 10,000 milligrams/liter (mg/l) or the equivalent, 10 g/l, occurs at approximately 3200 feet above sea level in the study area, as shown

on Attachment VIII-16. In proposed WDW-1, the base of the USDWs occurs at a measured depth of 493 feet below kelly bushing (KB; 493' KB = 3693' - 3200', where 3693' is the elevation of the kelly bushing of the proposed injection well), or the base of the Tansill Formation (Permian - Guadalupean age). In the eastern part of the study area, at depth, the Tansill Formation is overlain by the Salado Formation (Permian - Ochoan age). The Salado consists of halite, polyhalite, anhydrite, and potassium salts, which are soluble. The Salado is overlain by the Rustler Formation (Permian - Ochoan age). In the AOR, which straddles the outcrop area of the Salado, and to the east, the Salado has been removed by solution by ground water flowing through the Rustler.

To the east, where the Rustler is present, the Rustler is the USDW. To the west, where the Rustler has been removed by erosion and the Salado has been removed by solution, the Tansill is the USDW. The Tansill Formation and the underlying Yates Formation comprise the Three Twins Member of the Chalk Bluff Formation known in outcrops in the region (Hendrickson and Jones, 1952, page 20), and listed as a freshwater-producing interval in Attachment XI-1. The proposed injection zone (Wolfcamp, Cisco, and Canyon Formations) is separated from the USDWs by 6957 feet of carbonates, siltstones, and shales in proposed WDW-1.

VIII.E Compatibility Issues

The integrity of the carbonates of the injection zone and the confining zone is not threatened by the injected waste. The monitoring system and physical limitations on injection established by state and federal regulations are adequate checks to identify and address any problems that may arise. Operating limits on maximum injection pressure and monitoring requirements for well annular pressure versus injection pressure and annular fluid volume force the operator to be as protective of his wellbore and the injection zone as is possible. Furthermore, events such as tubing failures and packer failures that are caused by the injection of corrosive materials would require that the well be shut down and that a workover be performed. The current monitoring methods are capable of detecting wellbore integrity and injection problems before they could threaten human health and the environment.

The proposed waste stream will have a pH range of 6.0 to 9.0, that is, near neutral to slightly alkaline. The reactions of alkaline solutions with carbonates are slow or non-existent, so no significant loss of formation is expected from injection of this

waste stream. Therefore, no chemical incompatibility between the proposed waste stream and the formation is expected to occur that could allow wastes to migrate out of the injection zone.

ATTACHMENT VIII-1

RESISTIVITY LOG OF PROPOSED WDW-1

ATTACHMENT VIII-2

POROSITY LOG OF PROPOSED WDW-1

ATTACHMENT VIII-3

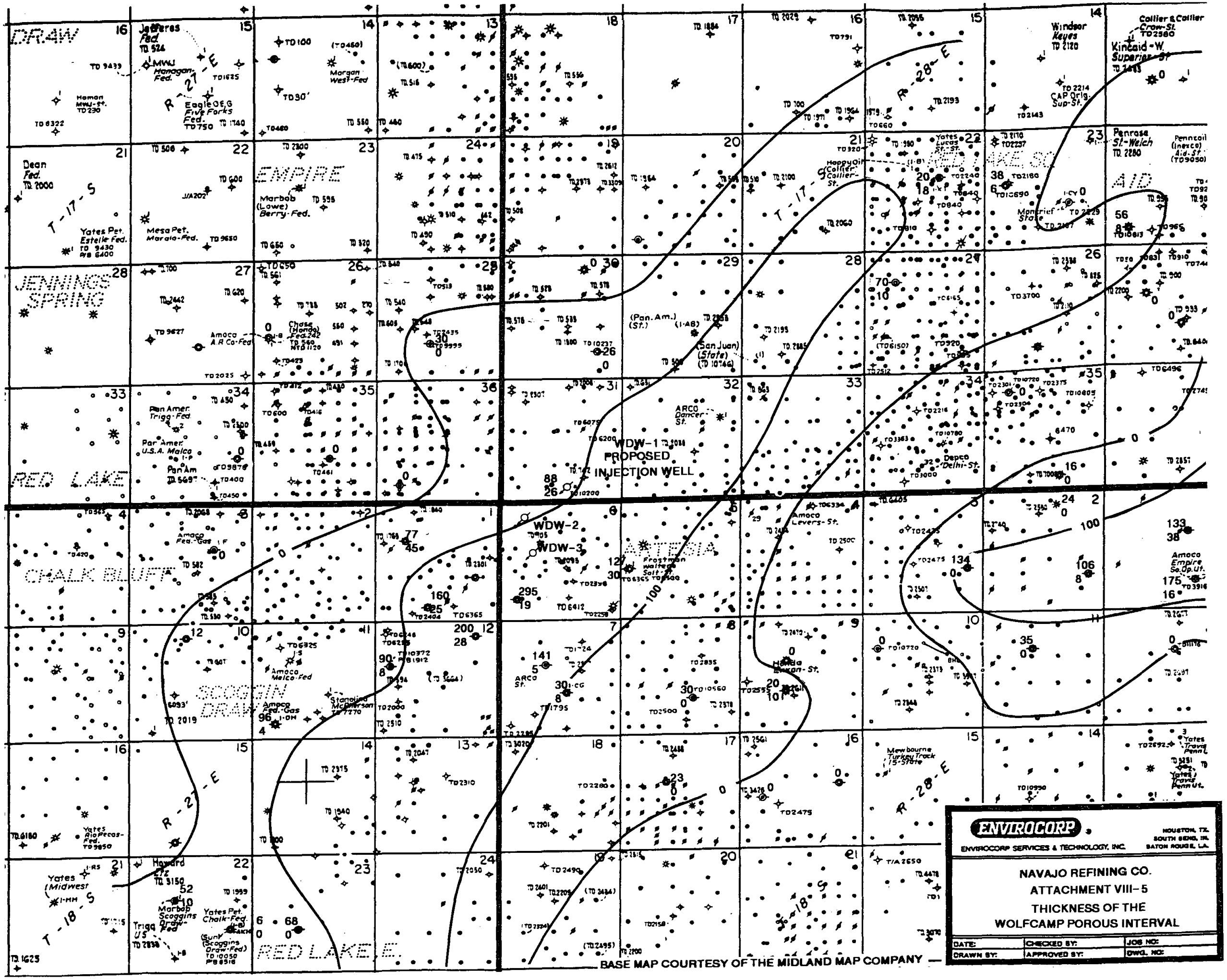
DIP STRUCTURE CROSS SECTION A-A'

ATTACHMENT VIII-4

STRIKE STRUCTURAL CROSS SECTION B-B'

ATTACHMENT VIII-5

THICKNESS OF THE WOLFCAMP POROUS INTERVAL



380 FEET WITH POROSITY OVER 5%
78 FEET WITH POROSITY OVER 10%

CONTOUR INTERVAL
100 FEET WITH POROSITY OVER 5%

ENVIROCORP
ENVIROCORP SERVICES & TECHNOLOGY, INC.
HOUSTON, TX.
SOUTH BEND, IN.
BATON ROUGE, LA.

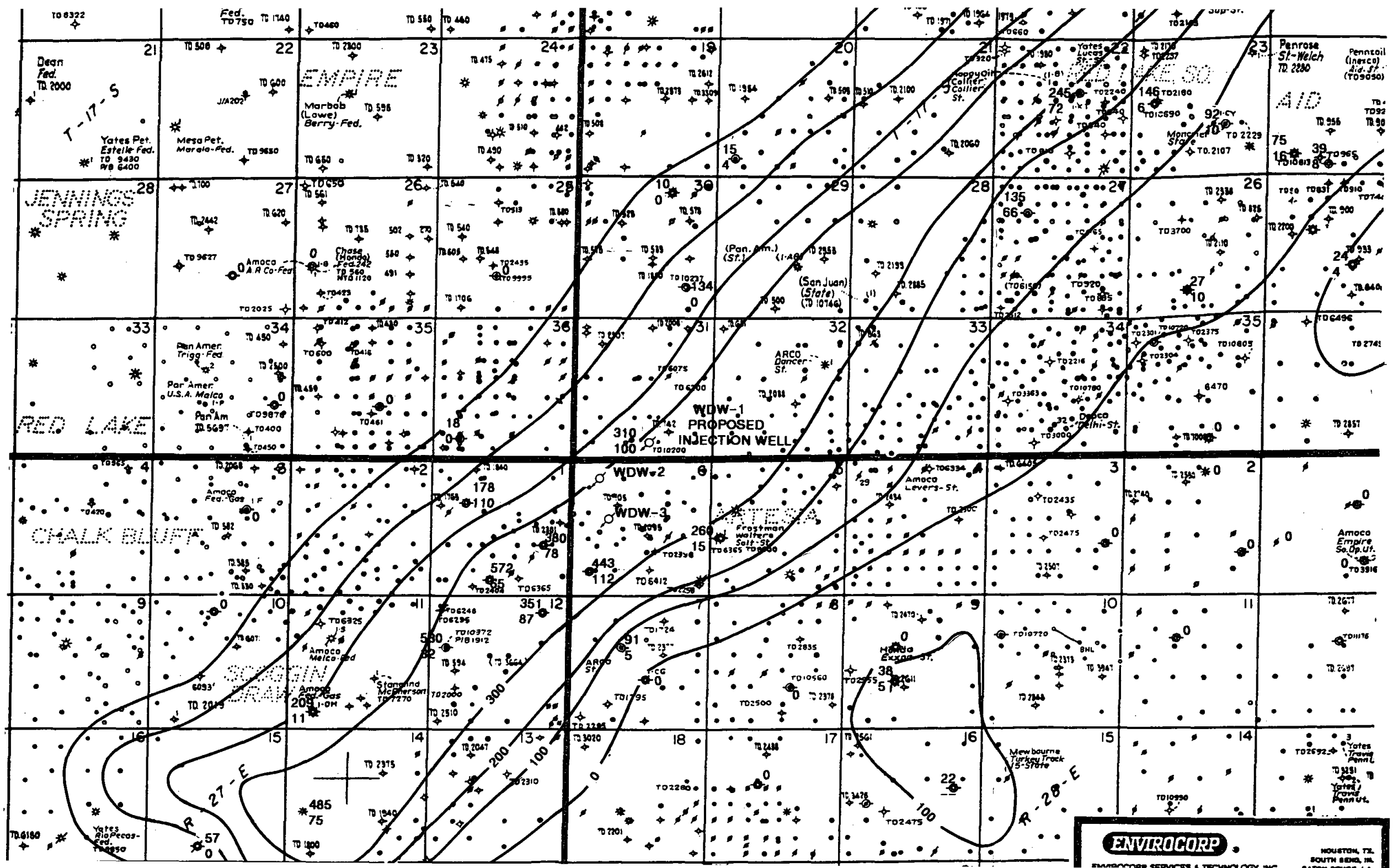
NAVAJO REFINING CO.
ATTACHMENT VIII-5
THICKNESS OF THE
WOLFCAMP POROUS INTERVAL

DATE:	CHECKED BY:	JOB NO:
DRAWN BY:	APPROVED BY:	DWG. NO:

BASE MAP COURTESY OF THE MIDLAND MAP COMPANY

ATTACHMENT VIII-6

THICKNESS OF THE CISCO POROUS INTERVAL


380 FEET WITH POROSITY OVER 5%
78 FEET WITH POROSITY OVER 10%
CONTOUR INTERVAL
100 FEET WITH POROSITY OVER 5%
EMPIRE
JENNINGS SPRING
RED LAKE
CHALK BLUFF
SOUTH EMPIRE
TESSA
AID
WDW-1
PROPOSED
INJECTION WELL
WDW-2
WDW-3
T-17-S
R-27-E
R-28-E
ENVIROCORP
HOUSTON, TX.
SOUTH BEND, IN.

ATTACHMENT VIII-7

PERMEABILITY, POROSITY, AND THICKNESS OF HYDROCARBON-PRODUCING INTERVALS IN THE WOLFCAMP, CISCO, AND CANYON FORMATIONS IN EDDY AND LEA COUNTIES

ATTACHMENT VIII-7

PERMEABILITY, POROSITY, AND THICKNESS OF HYDROCARBON-PRODUCING INTERVALS IN THE WOLFCAMP, CISCO, AND CANYON FORMATIONS IN SOUTHEASTERN NEW MEXICO

FIELD	COUNTY	DEPOSTIONAL PROVINCE*	LITHOLOGY	DEPTH feet	THICKNESS feet	POROSITY %	PERMEABILITY md
WOLFCAMP FORMATION							
Allison Penn	Lea	shelf	limestone	9673	17	9	200
Apache Springs Wolfcamp	Chaves	shelf	limestone	4929	7	8	1
Bagley East Wolfcamp	Lea	shelf	limestone	9994	17	8	1
Bluitt Wolfcamp	Roosevelt	shelf	limestone	8022	50	8	5
Bough Permo Penn	Lea	shelf	limestone	9615	20	13	30
Caudill Wolfcamp	Lea	shelf	limestone	10292	22	8	1
Chambers Wolfcamp	Lea	shelf	limestone	10581	34	6	36
Denton Wolfcamp	Lea	shelf	limestone	9395	53	10	13
Eidson Penn	Lea	shelf	limestone	10705	35	9	20
Jenkins Wolfcamp	Lea	shelf	limestone	9604	15	7	20
Mescalero Wolfcamp North	Lea	shelf	limestone	8350	15	9	13
Milnesand Penn	Roosevelt	shelf	limestone	9202	14	4	10
Prarie Penn South	Roosevelt	shelf	limestone	9653	7	4	194
Shell Henshaw 1	Eddy	transition	limestone	8500	10	6	17
Tatum Wolfcamp	Lea	shelf	limestone	10285	19	10	12
Townsand Wolfcamp	Lea	shelf	limestone	10410	36	8	38
CISCO FORMATION							
Anderson Ranch Penn East	Lea	shelf	limestone	10960	24	4	1
Anderson Ranch Wolfcamp	Lea	shelf	limestone	9664	50	10	114
Bagley Penn	Lea	shelf	limestone	9001	45	7	1
Bronco Wolfcamp	Lea	shelf	limestone	9600	25	13	45
Four Lakes Penn	Lea	shelf	limestone	10277	16	10	60
Kemnitz Wolfcamp	Lea	shelf	limestone	10742	32	9	9
Lane Penn	Lea	shelf	limestone	9802	18	3	9
Lane Wolfcamp	Lea	shelf	limestone	9648	13	11	100
Lazy J Penn	Lea	shelf	limestone	9580	20	6	8
Mescalero Permo Penn	Lea	shelf	limestone	8390	16	8	18
Ranger Lake Penn	Lea	shelf	limestone	10312	33	10	28
Saunders Permo Penn Sou	Lea	shelf	limestone	10587	22	8	1
Shell Henshaw 2	Eddy	transition	limestone	9124	18	7	20
Shell Henshaw 3	Eddy	transition	limestone	8711	30	7	2
CANYON FORMATION							
Kemnitz Cisco	Lea	shelf	dolomite	11446	30	8	16
King Penn	Lea	shelf	limestone	10708	25	4	38

* "transition" denotes area between shelf and basin

Source: Meyer, 1966, Table 4.

ATTACHMENT VIII-8

DRILLING REPORT FROM PROPOSED WDW-1

NEWBOURNE OIL COMPANY
P. O. BOX 7698
TYLER, TEXAS 75711

Lease Chalk Bluff "31" State Well No. 1 Location 560' FSL & 2310' FEL

County Eddy State New Mexico Section 31

Block Township 17S Range 28E Page 1

DATE	DAILY REPORTS
OCT 31 1992	Staked well @ 660' FSL & 2310' FEL of Sec 31-17S-28E in Eddy County, New Mexico. Location drillable.
JUL 27 1993	Move in construction equipment. Will start building location today.
JUL 28 1993	Continue building location.
JUL 31 1993	Continue building location.
AUG 01 1993	Continue building location.
AUG 02 1993	Continue building location.
AUG 03 1993	Continue building location.
AUG 04 1993	Continue building location. Should finish today.
AUG 05 1993	390' (350'). Circ in Red Beds & Anhydrite. MW 10.4, Vis 32. Bit #1, Size: 17 1/2", Type: R-1, SN: RT, Jets 3/12's, IN @ 40' OUT @ 390' (made 350' in 6 3/4 hrs). PP 1025#, SPM 59, WOB All, RPM 100, Collars 42,000#. (Drilling 6 3/4, Circ 1/4, Idle 6, RU 11). REMARKS: Spud 17 1/2" hole @ 11:00 PM, 8/04/93. DAY 1
AUG 06 1993	815' (425'). Drilling in Red Beds & Anhydrite. Dev. @ 390' - 1/2 deg. MW 8.4, Vis 28, CL 4,000, pH 10. Bit #2, Size: 12 1/4", Type: F37, SN: RR, Jets 10/11/11, TN @ 390' (made 425' in 7 3/4 hrs). PP 1375#, SPM 60, WOB 65,000#, RPM 55, Collars 71,000#. (Drilling 7 3/4, Trip 3/4, Circ 1/4, RU Ran Csg & Cmt 3 1/4, WOC & NU BOP 12). Ran 13 3/8" surface casing as follows: 13 3/8" Notched Texas Pattern Shoe 1.21' 1-13 3/8" 48# J-55 8rd ST&C SJ w/IF 43.83' 8-13 3/8" 48# J-55 8rd ST&C Casing 348.21' Total Casing 393.25' Less KB Correction 3.25' Casing Set At 390.00' Halliburton cmtd w/375 sks Class "C" Lite containing 1/2#/sk + 3% CaCl2 followed by 150 sks Class "C" containing 3% CaCl2. PD to 348' @ 10:15 AM 8/5/93. Circ 86 sks to pit.
AUG 07 1993	1735' (920'). Drilling in Anhydrite & Dolomite. Dev. @ 867' - 3/4 degs; @ 1338' - 3/4 degs. MW 8.5, Vis 28, CL 2000, pH 10. Bit #2 (made 1345' in 31 1/4 hrs). PP 1375#, SPM 59, WOB 65,000#, RPM 55, Collars 71,000#. (Drilling 23 1/4, Totco 1/2). DAY 3
AUG 08 1993	2150' (415'). Drilling in Dolomite. Dev. @ 1839' - 1 1/4 degs; @ 1988' - 1 1/2 degs. MW 8.6, Vis 28, CL 6000. Bit #2, OUT @ 1988' (made 1598' in 42 1/2 hrs). Bit #3, Size: 12 1/4", Type: J44, SN: RR, Jets 3/11's. IN @ 1988' (made 162' in 8 hrs). PP 1300#, SPM 59, WOB 65,000#, Collars 71,000#. (Drilling 19 1/4, Trip 2 3/4 hrs, Totco 1/2, Wash 120' to Btm w/100' Fill 1 1/2). DAY 4
AUG 09 1993	2555' (405'). Circulating in Dolomite. Dev. @ 2201' - 3/4 degs. MW 8.6, Vis 28, CL 16,000, pH 9. Bit #3, Size: 12 1/4", Type: J44, SN: RR, Jets 3/11's. IN @ 1988' OUT @ 2201' (made 213' in 10 1/2 hrs). Bit #4, Size: 12 1/4", Type: J55, SN: RR, Jets 3/12's. IN @ 2201' OUT @ 2555' (made 354' in 17 3/4 hrs). PP 1100#, SPM 59, WOB 65,000#, RPM 55, Collars 71,000#. (Drilling 20 1/4, Trip 2 3/4, Circ 3/4, Wash 60' to Btm w/45' of Fill 1/4). REMARKS: Preparing to TOOH & run 9 5/8" casing. DAY 5

NEWBOURNE OIL COMPANY
P. O. BOX 7698
TYLER, TEXAS 75711

Lease Chalk Bluff "31" State Well No. 1 Location 660' FSL & 2310' FEL

County Eddy State New Mexico Section 31

Block Township 17S Range 28E Page 2

DATE	DAILY REPORTS
AUG 10 1993	1700' (145'). Drilling in Dolomite. Dev. @ 2555' - 0 deg. MW 8.6, Vis 28, CL 16,000, pH 11.5. Bit #4, Size: 8 3/4", Type: Varel B537C, SN: 15789, Jets 3/11's, IN @ 2555' (made 145' in 3 hrs). PP 1475#, SPM 58, WOB 60,000#, RPM 55, Collars 68,000#. (Drilling 3, Trip 2, Circ 1/2, Run Csg & Cmt 6 1/2, WOC & NU BOP 12). Ran 9 5/8" csg as follows: Davis-Lynch Guide Shoe 1.00' 1-9 5/8", 36#, J-55, 8rd, LTC Shoe Jt 42.55' Davis-Lynch Float Collar 1.40' 56-9 5/8", 36#, J-55, 8rd, STC Casing 2518.23' Total Casing 2563.18' Less KB Correction 8.18' Casing Set At 2555.00' Halliburton cmtd w/800 sks Howco Lite "C" containing 1/2#/sk flocele + 2#/sk Gilsonite + 12% NaCl followed by 200 sks Class "C" Neat containing 2% CaCl2. Plug down to 2518' @ 3:00 PM, 8/9/93. Circ 133 sks to pit.
AUG 11 1993	3545' (845'). Drilling in Dolomite. Dev. @ 3051' - 1/2 degs; @ 3520' - 3/4 degs. MW 8.4, Vis 28, CL 16,000, pH 11.0. Bit #5, Size: 8 3/4" (made 990' in 26 1/2 hrs). PP 1475#, SPM 59, WOB 60,000#, RPM 55, Collars 68,000#. (Drilling 23 1/2, Totco 1/2). DAY 7
AUG 12 1993	4120' (575'). Drilling in Dolomite. Dev. @ 3983' - 1 1/4 degs. MW 9.0, Vis 29, CL 35,000, pH 9.5. Bit #5, Size: 8 3/4" OUT @ 3900' (made 1433' in 41 hrs). Bit #6, Size: 8 3/4", Type: B547, SN: 19373, Jets 12/12/11. IN @ 3988' (made 132' in 5 3/4 hrs) PP 1425#, SPM 58, WOB 60,000#, RPM 55, Collars 68,000#. (Drilling 20 1/4, Trip 1/4, Totco 1/4, Wash to Btm w/no fill 1/4). DAY 8
AUG 13 1993	4635' (515'). Drilling in Dolomite. Dev. @ 4635' - 1 3/4°. MW 9.0, Vis 29, CL 60,000, pH 9.5. Bit #6, Size: 8 3/4", Type: B547, SN: 19373, Jets 12/12/11. IN @ 3988' (made 647' in 129 1/4 hrs) PP 1425#, SPM 58, WOB 60,000#, RPM 60, Collars 68,000#. (Drilling 23 1/2, Totco 1/2). DAY 9
AUG 14 1993	5055' (430'). Drlg in Dolomite. Dev. @ 4995' - 3 1/4°. MW 9.1, Vis 29, CL 65,000. Bit #6 OUT @ 5005' (made 1017' in 47 hrs). Bit #7, Type: 8 3/4", Type: V547, SN: 19480, Jets 12/12/11. IN @ 5005' (made 50' in 2 hrs). PP 1475#, SPM 58, WOB 50,000#, RPM 60, Collars 68,000#. (Drlg 19 3/4, Trip 3 3/4. Wash 40' to Btm w/No Fill 1/2). DAY 10
AUG 15 1993	5315' (260'). Drilling in Dolomite. Dev. @ 5120' - 3 3/4°; @ 5215' - 4 1/4°; @ 5310' - 4 1/4°. MW 9.1, Vis 29, CL 80,000. Bit #7, (made 310' in 24 1/2 hrs). PP 1475#, SPM 58, WOB 20,000#, Collars 68,000#. (Drilling 22 1/2, Totco 1 1/2). DAY 11
AUG 16 1993	5503' (187'). Drilling in Dolomite. Dev. @ 5403' - 4°; @ 5497' - 4 1/2°. MW 9.2, Vis 29, CL 81,000, pH 10. Bit #7, (made 497' in 47 1/2 hrs). PP 1475#, SPM 58, WOB 20,000#, RPM 60, Collars 68,000#. (Drilling 23, Totco 1). DAY 12
AUg 17 1993	5595' (92'). Drilling in Dolomite. Dev. @ 5527' - 4 1/4°. MW 9.1, Vis 29, CL 93,000, pH 10. Bit #7, OUT @ 5527' (made 525' in 53 3/4 hrs). Bit #8, Size 8 3/4", Type: J44C, SN: RR, Jets 11/12/12, IN @ 5527' (made 68' in 12 1/4 hrs) PP 1475#, SPM 58, WOB 20,000#, RPM 60, Collars 68,000#. (Drilling 18 3/4, Trip 4 1/2, Totco 1/4, Ream 75' to Btm 1/2). REMARKS: Picked up RT tool and installed on top of collars during bit trip.

NEWBOURNE OIL COMPANY
P. O. BOX 7698
TYLER, TEXAS 75711

Lease Chalk Bluff "31" State Well No. 1 Location 660' FSL & 2310' FEL

County Eddy State New Mexico Section 31

Block Township 17S Range 28E Page 3

DATE	DAILY REPORTS
AUG 18 1993	5786' (191'). Drilling in Dolomite. Dev. @ 5529' - 4°, @ 5722' - 3 1/4°. MW 9.2, Vis 29, CL 89,000, pH 10. Bit #8, Size 8 3/4", Type: J44C, SN: RR, Jets 11/12/12, IN @ 5527' (made 259' in 35 1/4 hrs) PP 1475#, SPM 58, WOB 30,000#, RPM 60, Collars 68,000#. (Drilling 22 3/4, Totco 1 1/4). DAY 14
AUG 19 1993	6225' (439'). Drlg in Dolomite. Dev. @ 5786' - 3 1/2°; @ 5879' - 3°; @ 5974' - 3°; 6195' - 3 1/2°. MW 9.2, Vis 29, CL 90,000, pH 9. Bit #8, Size 8 3/4", Type: J44C, SN: RR, Jets 11/12/12, IN @ 5527' (made 698' in 50 hrs) PP 1500#, SPM 58, WOB 65,000#, RPM 60, Collars 68,000#. (Drlg 19 3/4, Trip. hole in DP 2 1/4, Totco 2). REMARKS: @ 5849' hole in DP 30 stds dwn. No fill after trip. DAY 15
AUG 20 1993	6790' (565'). Drilling in Dolomite. Dev. @ 6352' - 3 1/4°. MW 9.2, Vis 29, CL 88,000, pH 10. Bit #8, (made 1263' in 78 1/2 hrs) PP 1500#, SPM 58, WOB 65,000#, RPM 65, Collars 68,000#. (Drilling 23 1/2, Survey 1/2). REMARKS: Circulated through steel pits for 30 minutes on evening tower, had full returns. DAY 16
AUG 21 1993	6825' (35'). Drlg in Dolomite. Dev. @ 6795' - 2 1/2°. MW 9.1, Vis 29, CL 87,000, pH 9. Bit #8 OUT @ 6795' (made 1260' in 79 hrs). Bit #9, Type: 8 3/4", Type: ATJ44C, SN: D48WC, Jets 12/12/12. IN @ 6795' (made 30' in 1 hrs). PP 1500#, SPM 58, WOB 65,000#, RPM 60, Collars 68,000#. (Drlg 1 1/2, Trip 10 1/2, Circ 2, PU DST Tools 2, DST #1 5 1/4, Reverse Out 3/4, LD DST Tools 2). REMARKS: Ran DST #1 in Wolfcamp fmn from 6605' to 6795'. IHP 3088#, IFP 421-1149#, ISIP 1795#, FFP 1121-1795#, FSIP 1823#, FHP 3088#, Temp 94°. Opened tool w/good blow off btm of bucket increasing to 6#. No shows to surface. FF had max of 2# in 30 mins, decreasing to 10 ounces at end of flow. No shows to surface. Rec 4002' of fmn fluid. Sample chamber recovery: 2400 cc's of fmn wtr. DAY 17
AUG 22 1993	7210'(385').TOH.DST #2. Dolomite & Lime. MW 9.1, Vis 29, CL 88,000, pH 9. Bit #9, (made 415' in 19 hrs). PP 1500#, SPM 58, WOB 65,000#, RPM 60, Collars 68,000#. (Drlg 18, Trip 2 1/4, Circ 3 3/4). DAY 18
AUG 23 1993	7350' (140'). Drilling in Lime & Dolomite. MW 9.1, Vis 29, CL 88,000, pH 9. Bit #9, (made 555' in 24 3/4 hrs). PP 1500#, SPM 58, WOB 65,000#, RPM 60, Collars 68,000#. (Drilling 5 3/4, Trip 8, Wash 86' to bottom w/no fill 1/2, Cut Drlg Line 3/4, Run DST #2 2, PU Test Tools 3 1/2, Pull On Stuck Pipe 1, LD Test Tools 2 1/2). REMARKS: Checked for loss thru steel pits @ 7230'. Lost 4 bbls in 30 mins. Ran DST #2 in Wolfcamp Fmn from 7016'-7210', IHP 3305#, IFP 44-67#, ISIP 986#. Attempted to open tool for final flow. Unable to open tool due to collars above tool being hydrostatically stuck. Worked pipe and were unable to work loose. Dropped bar and opened circ sub. Were able to work collars loose and TOOH w/tools. Opened tool w/weak blow increasing to 16 3/4 ounces at end of IF period. No show to surface. Rec 20 stds of drill string w/small show of gas. Sample Chamber Recovery: 70#, 1000 cc's of gas-cut drlg mud. Temp 120°. DAY 19
AUG 24 1993	7382' (32'). TIH w/bit. Dev. @ 7382' - 2 1/4°. MW 9.1, Vis 28, CL 82,000, pH 8.5. Bit #9, (made 587' in 26 1/2 hrs) PP 1500#, SPM 58, WOB 65,000#, RPM 60, Collars 68,000#. (Drilling 1 3/4, Tripping 9 3/4, Circ 4 1/4, Run DST #3 4 1/2, PU Test Tools 1 1/2, Reverse Out 3/4, LD Test Tools 1 1/2). REMARKS: Ran DST #3 in Wolfcamp Fmn from 7230'-7382' (152'). IHP 3451#, IFP 209#-555#, ISIP 2418#, FFP 555#-924#, FSIP 2435#. Surface Action: Opened tool w/weak blow increasing to btm of bucket in 8 mins. Max surface press 14 1/2 ozs. FF: opened w/weak blow. Max surface press 12 ozs. No show to surface on either flow period. Drill Pipe Recovery: 406' of slightly gas-cut drlg mud & 1533' of fmn wtr w/strong sulfur smell. Sample Chamber Recovery: 330#, 1.01 cuft of gas, 1600 cc's of wtr.

NEWBOURNE OIL COMPANY
P. O. BOX 7698
TYLER, TEXAS 75711

Lease Chalk Bluff "31" State Well No. 1 Location 660' FSL & 2310' FEL

County Eddy State New Mexico Section 31

Block Township 17S Range 26E Page 4

DATE	DAILY REPORTS
AUG 25 1993	7441' (59'). Drlg in Lm & Dolo. MW 9.1, Vis 29, CL 82,000, pH 10. Bit #9, (made 646' in 28 3/4 hrs) PP 1500#, SPM 58, WOB 65,000#, RPM 60, Collars 68,000#. (Drlg 2 1/4, Trip 11 1/4, Wash 90' to Btm W/No Fill 3/4, Circ 2 1/2, Run DST #4 4 1/2, PU Test Tools 1, LD Test Tools 1 3/4). REMARKS: Ran DST #4 in Wolfcamp Fmn from 7385'-7413' (28'). IHP 3485#, IFP 191#-156# in 30 mins, ISIP 991# in 60 mins, FFP 122#-174# in 60 mins, FSIP 488# in 120 mins. Surface Action: Initial opening w/weak blow increasing to btm of bucket in 2 mins. Built to 15# in 30 mins thru 1/8" bubble hose. Shut tool in. Gas to surface in 38 mins, volume TSTM. FF: opened w/weak blow turned thru 1/4" choke. 12# in 5 mins, decreasing to 4# in 50 mins. Remained 4# to end of final flow. Gas volume TSTM, 1 1/2' 2' lazy flame. Drill Pipe Recovery: Rec 300' of slightly gas-cut rat hole drlg mud w/trace of sultur water. Sample Chamber Recovery: 80#,.57 cuft of gas, 350 cc's of wtr. CL 63,000 ppm. DAY 21
AUG 26 1993	7851' (410'). TO for DST #5 in Dolomite. MW 9.1, Vis 28, CL 80,000, pH 9. Bit #9. (made 1056' in 46 1/2 hrs) PP 1500#, SPM 58, RPM 60, Collars 68,000#. (Drilling 17 3/4, Tripping 2 1/4, Circ Samples @ 7840' 1, Circ for DST #5 3). DAY 22
AUG 27 1993	8215' (364'). Drilling in Dolomite. Dev. @ 7851' - 1 1/4°. MW 9.1, Vis 28, CL 80,000, pH 9.5. Bit #9, (made 1420' in 53 1/4 hrs) PP 1575#, SPM 58, WOC 65,000#, RPM 60, Collars 68,000#. (Drilling 6 3/4, Tripping 8 1/4, Wash 70' to btm w/no fill 1/4, RR 1/2, DST #5 4 1/2, PU test tools 1 1/4, Reverse out 3/4, LD test tools 1 3/4). REMARKS: At 7995', lost 25-30% returns. At 8028' circ thru steel pits & lost 34 bbls in 30 mins. At 8123' pumped 30 bbl. LCM sweep. At report time, drilling w/95% returns. Ran DST #5 in Cisco Fmn from 7015'-7051' (34'). IHP 3832#, IFP 1633#-2913#, ISIP 2913#, FFP 2913#-2913#, FSIP 2913#, FHP 3804#. SURFACE ACTION: IF started w/good blow on 1/4" choke beginning w/5.5# increasing to 40# in 25 mins, decreasing to 30# in 30 mins. No gas to surface. FF started w/good blow on 1/4" choke beginning w/6 oz. in 5 mins, decreasing to 0 oz. in 20 mins. remained dead throughout rest of FF. DRILL STRING RECOVERY: Rec 6060' (78.7 bbls) FW. No show of oil. Mud pit sample: RW=.11 @ 60°, CL 78,000. Sample Recovery: RW=.35 @ 60°, CL 25,000. SAMPLE CHAMBER RECOVERY: 1100#, .08 cuft of gas, 2575 cc's fmn wtr.
AUG 28 1993	8494' (279'). Working stuck drill string. Dolomite. Dev. @ 8342' - 1 1/2°. MW 9.3, Vis 37, WL 20, CL 80,000, pH 9. Bit #9, (made 1699' in 59 hrs). PP 1500#, SPM 58, WOB 65,000#, RPM 60, Collars 68,000#. (Drilling 5 3/4, Trip 5 1/2, Totco 1/2, Mix LCM 7 1/4, Work Stuck String 3, Spot Oil & Work Stuck String 2). REMARKS: Hit 5' void while drlg @ 8414', lost complete returns. Pumped LCM pill & regained 95% returns. Lost complete returns @ 8475'. Pumped LCM pill & regained partial returns. TOOH & removed jets from bit & built up 400 bbl LCM pill containing 70#/bbl LCM material. TIH & spotted pill @ 8434'. While spotting pill & rotating, drill string became stuck. Attempted to work string loose unsuccessfully. Spotted 70 bbls oil around collars & let soak. Periodically working string in an attempt to get loose. At report time all efforts have been unsuccessful. DAY 24
AUG 29 1993	8494' (0'). Laying down fishing tools. Dolomite. MW 9.3, Vis 37, WL 20, CL 80,000, pH 9. (Tripping 8, Working Stuck Drill String 8 1/4, Run Free Point & Make Back Off 1 1/4, PU & LD Fishing Tools 3, Jar on Fish 1/2). REMARKS: Continued working drill string unsuccessfully. RU Jerrel Services & ran free point. Found collars stuck @ 8300'. Backed off collars @ 8255'. TOOH w/collars & PU fishing tools. TIH. Engaged fish & jarred same loose. TOOH & started laying down fishing tools. DAY 25

NEWBOURNE OIL COMPANY
P. O. BOX 7698
TYLER, TEXAS 75711

Lease Chalk Bluff "31" State Well No. 1 Location 660' FSL & 2310' FEL

County Eddy State New Mexico Section 31

Block Township 17S Range 28E Page 5

DATE	DAILY REPORTS
AUG 30 1993	8650' (356'). Drilling in Lime. MW 9.2, Vis 38, WL 10, CL 80,000, pH 9, PV 6, YP 10, Gels 7/18, FC Film, Calcium 1560, Solids 2.2%, LCM 8#. Bit #9 (made 1855' in 73 1/2 hrs). PP 1625#, SPM 54, WOB 60,000#, RPM 60, Collars 63000# (840'). (Drilling 14 1/2, Tripping 3 1/4, Wash 20 jts to Btm 4 1/4, Finish LD Fishing Tools 2). REMARKS: Rejetted Bit #9. TIH & washed 20 jts to btm. Had loss of 2 bbls on evening tour & 15 bbls on morning tour. DAY 26
AUG 31 1993	8895' (245'). Drilling in Lime. Dev. @ 8876' - 1 1/4°. MW 9.2, Vis 38, WL 12, CL 78,000, pH 9.5, PV 7, YP 9, Gels 6/14, FC 1/31, Calcium 1480, Solids 2.5%, LCM 7#. Bit #9, (made 2100' in 97 hrs) PP 1650#, SPM 54, WOC 60,000#, RPM 60, Collars 63,000#. (Drilling 23 1/2, Totco 1/2). REMARKS: Lost 3 bbls on daylights, 15 bbls on evenings, 20 bbls on morning tour. DAY 27
SEP 01 1993	9077' (182'). Circ & mixing LCM in Lime. MW 9.3. Vis 38, WL 12, CL 79,000, pH 9.5, PV 9, YP 8, Gels 7/17, FC 1/32. Bit #9, (made 2202' in 110 hrs) PP 1500#, SPM 54, WOC 60,000#, RPM 60, Collars 63,000#. (Drilling 21, Mix LCM Mud 1 1/2, RR 1 1/2). REMARKS: At 9060' lost 40 bbls mud. Pumped swept & regained full returns. Resumed drlg w/full returns but started losing returns. Pumped additional sweep. At report time have 85% returns. In last 4 hrs, lost 90 bbls mud.
SEP 02 1993	9138' (61'). Drilling in Lime. Dev. @ 9077' - 1/2°. MW 9.3, Vis 39, WL 12, CL 75,000, pH 10. Bit #9 OUT @ 9077' (made 2282' in 118 hrs). Bit #10, Size: 8 3/4", Type: HP62, SN: TH6443, Jets 3/13's. IN @ 9077' (made 61' in 8 3/4 hrs). PP 1250#, SPM 59, WOC 60,000#, RPM 60, Collars 63,000#. (Drilling 8 3/4, Tripping 6, Totco 1/4, Circ 3 1/4, Cut Drlg Line 1, Test BOP Stack 4, Jet Pits 3/4). REMARKS: Have lost 86 bbls mud in 16 hrs. DAY 29
SEP 03 1993	9302' (164'). Drilling in Lime. MW 9.4, Vis 41, WL 10, CL 70,000, pH 9.5, PV 12, YP 15, Gels 14/29, FC 1/32, Solids 3.3%, LCM 8#. Bit #10, Size: 8 3/4", Type: HP62, SN: TH6443, Jets 3/13's. IN @ 9077' (made 225' in 32 3/4 hrs). PP 1375#, SPM 58, WOC 60,000#, RPM 60, Collars 63,000#. (Drilling 24). REMARKS: Lost 170 bbls on daylights, 75 bbls on evening, 12 bbls on morning tour. Total loss for past 24 hrs is 257 bbls. At report time drilling w/95% returns. DAY 30
SEP 04 1993	9474' (172'). Drilling in Lime. MW 9.4, Vis 45, WL 10, CL 65,000, pH 9.5, PV 14, YP 15, Gels 18/34, FC 1/32, Calcium 1000, Solids 3.8%, LCM 10#. Bit #10, Size: 8 3/4", Type: HP62, SN: TH6443, Jets 3/13's. IN @ 9077' (made 397' in 56 3/4 hrs). PP 1375#, SPM 58, WOC 60,000#, RPM 60, Collars 63,000#. (Drilling 24). REMARKS: Lost 40 bbls on daylights, 30 bbls on evening, 20 bbls on morning tour. Total loss for past 24 hrs is 90 bbls. At report time drilling w/95% returns. DAY 31
SEP 05 1993	9568' (158'). Drilling in Lime & Shale. MW 9.4, Vis 48, WL 12, CL 68,000, pH 9.5, PV 14, YP 19, Gels 16/30, FC 1/32, Calcium 880, Solids 4.0%, LCM 9#. Bit #10, Size: 8 3/4", Type: HP62, SN: TH6443, Jets 3/13's. IN @ 9077' (made 555' in 80 1/4 hrs). PP 1375#, SPM 58, WOB 60,000#, RPM 60, Collars 63,000#. (Drilling 23 1/2, Totco 1/2). REMARKS: Lost 25 bbls on daylights, 50 bbls on evening, 8 bbls on morning tour. Total loss for past 24 hrs is 83 bbls. At report time drilling w/95 % returns. Rigged up mud filter and put in service at 3:30 PM. DAY 32
SEP 06 1993	9791' (159'). Drilling in Lime & Shale. MW 9.3, Vis 38, LS 12, CL 81,000, pH 9.5, PV 13, YP 21, Gels 15/28, FC 1/32, Calcium 1100, Solids 7.8%. Bit #10 (made 714' in 104 1/4 hrs). PP 1375#, SPM 58, WOB 60,000#, RPM 60, Collars 63,000#. (Drlg 24). REMARKS: No mud lost in last 24 hrs. DAY 33

NEWBOURNE OIL COMPANY
P. O. BOX 7698
TYLER, TEXAS 75711

Lease Chalk Bluff "31" State Well No. 1 Location 660' FSL & 2310' FEL

County Eddy State New Mexico Section 31

Block Township 17S Range 28E Page 6

DATE	DAILY REPORTS
SEP 07 1993	9945' (154'). Drilling in Lime & Shale. MW 9.5, Vis 39, WL 7, CL 82,000, pH 9.5, PV 15, YP 19, Gels 16/31, FC 1/32, Solids 3.4%, LCM 7#. Bit #10 (made 868' in 128 1/4 hrs). PP 1325#, SPM 57, WOB 60,000#, RPM 60, Collars 63,000# (840'). (Drilling 24). REMARKS: No mud lost past 24 hrs. DAY 34
SEP 08 1993	10,039' (94'). Drilling in Lime & Shale. MW 9.5, Vis 40, WL 97, CL 81,000, pH 9.5, PV 16, YP 18, Gels 17/34, FC 1/32, Solids 3.5%, LCM 6#. Dev. @ 9959' - 1 3/4°. Bit #10, OUT @ 9959' (made 714' in 104 1/4 hrs). Bit #11, Size 8 3/4", Type: RR. IN @ 9959' (made 80' in 13 hrs) PP 1350#, SPM 57, WOB 60,000#, RPM 60, Collars 63,000# (840'). (Drilling 15 3/4, Trip 6 1/2, Totco 1 1/4, Wash 60' to Btm w/No Fill 1/2). REMARKS: Lost 25 bbls in last 13 hrs. DAY 35
SEP 09 1993	10,177' (138'). Drilling in Lime & Shale. MW 9.5, Vis 40, WL 8, CL 80,000, pH 9.5, PV 16, YP 15, Gels 12/26, FC 1/32, Calcium 800, Solids 3.7%, LCM 6.5#. Bit #11, Size 8 3/4", Type: RR. IN @ 9959' (made 218' in 37 hrs) PP 1350#, SPM 57, WOB 60,000#, RPM 60, Collars 63,000#. (Drilling 24). REMARKS: Lost 29 bbls mud past 24 hrs. DAY 36
SEP 10 1993	10,200' (23'). Drilling in Shale. MW 9.6, Vis 40, WL 8, CL 85,000, pH 8.5, PV 12, YP 14, Gels 11/25, FC 1/32, Solids 3.6%, LCM 5#. Bit #11, Size 8 3/4", Type: RR. IN @ 9959' (made 218' in 37 hrs) PP 1350#, SPM 57, WOB 60,000#, RPM 60, Collars 63,000#. (Drilling 1/2, Trip 5 1/2, Circ 2, Logging 13). REMARKS: TD @ 9:30 AM on 9/9/93. Steel line TD 10,197'. Logger's TD 10,184'. DAY 37
SEP 11 1993	10,200' (0'). Plugging well. (Trip 3 1/4, Circ 2 1/2, Logging 1, WOO 9, LDDC's 1 3/4, Plugging Well 6 1/2). REMARKS: Set 45 sk "H" Neat @ 9734' & 8528'. Set 55 sk "H" Neat @ 7866'. Set 45 sk "H" Neat @ 6648', 5320' & 3734'. DAY 38
SEP 12 1993	10,200' (0'). IDLE. (WOC 4, ND & Clean Pits 4, Plugging Well 5 Idle 11). REMARKS: Set 65 sk "H" + 2% CaCl2 @ 2605'. WOC 4 hrs Tagged cmt @ 2350'. Set 40 sk "H" Neat @ 440'. Set 10 sk "H" Neat at surface. P&A operations complete @ 3:00 PM 9/11/93. Released rig @ 7:00 PM 9/11/93. DAY 39

ATTACHMENT VIII-9

DRILLSTEM TEST DATA FROM PROPOSED WDW-1 (MEWBOURNE OIL COMPANY CHALK BLUFF 31 STATE NO. 1)

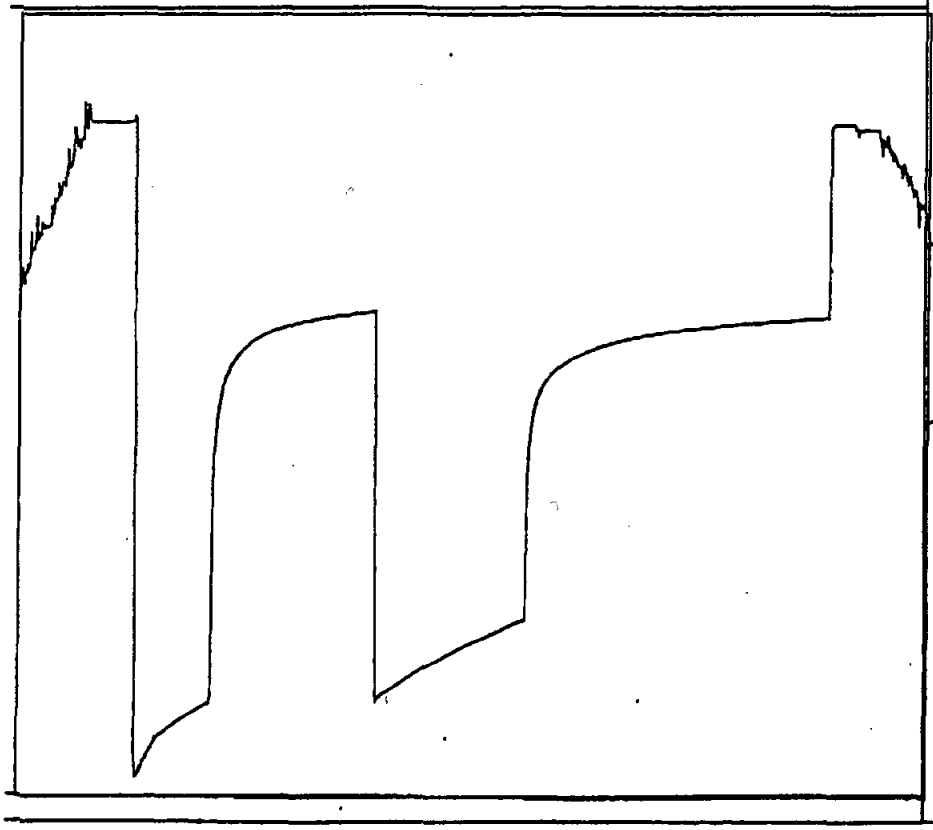
ATTACHMENT VIII-9

BAKER OIL TOOLS
Phone (303) 790-2705
56 Inverness Drive East
Englewood, CO 80112

MEWBOURNE OIL CO.
TICKET #258-80146

CHALK BLUFF "31" STATE #1
WOLFCAMP ~ 7230' - 7382'
DST #3
08-24-1993

Contractor	Wek Drilling	Surface Choke	1/8"	Mud Type	—
Rig No.	2	Bottom Choke	3/4"	Weight	9.1
Spot	2310' FEL & 660' FSL	Hole Size	8 3/4"	Viscosity	28
Sec	31	Core Hole Size	None	Water Loss	--
Twp.	17 S	DP Size & Wt.	4 1/2" 20.00	Filter Cake	--
Rng.	28 E	Wt. Pipe	None	Resistivity	.073 @ 60 °F
Field	Illinois Camp	I.D. of DC	2 1/4"		75,000 Ppm. NaCl
County	Eddy	Length of DC	593'	B.H.T.	119.7 °F
State	New Mexico	Total Depth	7382'	Co. Rep.	--
Elevation	3693' KB	Type Test	Conventional	Tester	Berry Fisher
Formation	Wolfcamp	Interval	7230'- 7382'	Baker Dist.	Hobbs NM



		REPORTED	CORRECTED	
Opened Tool @		18:23		hrs.
Flow No.	1	30	29	min.
Shut-In No.	1	65	65	min.
Flow No	2	60	60	min.
Shut-in No.	2	120	120	min.
Flow No.	3	None	Taken	min.
Shut-In No.	3	"	"	min.

Recorder Type	STI 8000		
No.	01190	Cap.	7500 psi
Depth			7241 feet
Inside		Clock	
Outside	x	Range	hrs.

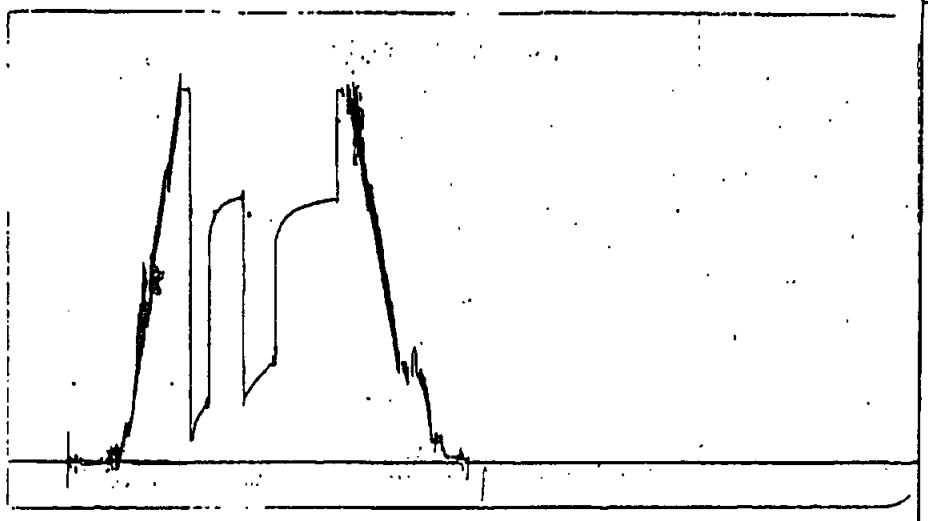
Initial Hydrostatic	A	3453
Final Hydrostatic	K	3446
Initial Flow	B	102
Final Initial Flow	C	496
Initial Shut-In	D	2483
Second Initial Flow	E	499
Second Final Flow	F	929
Second Shut-In	G	2451
Third Initial Flow	H	
Third Final Flow	I	
Third Shut-In	J	

Pipe Recovery

Reverse circulated:
1939' Total fluid = 20.00 bbl., consisting of:
406' Slightly gas cut mud = 5.1 bbl.
1533' Formation water = 14.9 bbl.

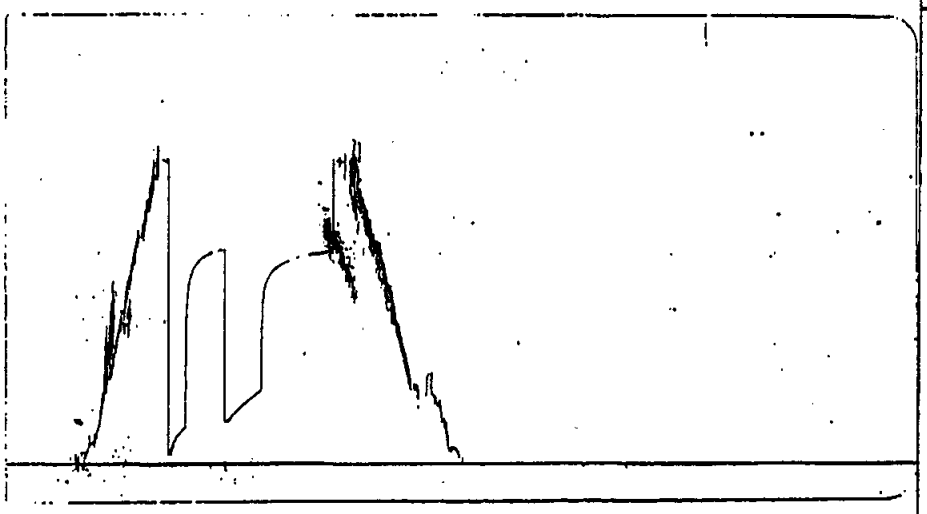
Resistivity:
Top: .073 @ 60 Deg F/.04 @ Res Temp/75,000 ppm Cl. titrated.
Middle: .160 @ 60 Deg F/.08 @ Res Temp/30,000 ppm Cl. titrated.
Bottom: .160 @ 60 Deg F/.08 @ Res Temp/30,000 ppm Cl. titrated.

Company: Mewbourne Oil Co.
Well: Chalk Bluff "31" State #1
DST No: 3



Recorder Type	Kuster K-3		
No. 18079	Cap.	4075	psi
Depth		7212	feet
Inside x	Clock		
Outside	Range	24	hrs.

Initial Hydrostatic	A	3440
Final Hydrostatic	K	3422
Initial Flow	B	193
Final Initial Flow	C	528
Initial Shut-In	D	2443
Second Initial Flow	E	525
Second Final Flow	F	928
Second Shut-In	G	2421
Third Inital Flow	H	
Third Final Flow	I	
Third Shut-In	J	



Recorder Type	Kuster K-3		
No. 21630	Cap.	4950	psi
Depth		7241	feet
Inside	Clock		
Outside x	Range	24	hrs.

Initial Hydrostatic	A	3451
Final Hydrostatic	K	3436
Initial Flow	B	134
Final Initial Flow	C	476
Initial Shut-In	D	2462
Second Initial Flow	E	542
Second Final Flow	F	911
Second Shut-In	G	2433
Third Inital Flow	H	
Third Final Flow	I	
Third Shut-In	J	

Company: Mewbourne Oil Co.
Well: Chalk Bluff "31" State #1
DST No: 3

	TIME	CHOKE SIZE	SURFACE PRESSURE	FLOW RATE MCF/D	REMARKS
8/23/93	18:23 Hr.	.125"	Weak Blow		Opened for initial flow:
	18:28		6.0 oz		
	18:33		8.5		
	18:37		11.0		
	18:43		12.5		
	18:48		14.0		
	18:53		14.5		Closed for initial shut-in:
	19:58		Weak Blow		Opened for final flow:
	20:03		5.0 oz		
	20:08		7.5		
	20:13		9.0		
	20:18		10.5		
	20:23		11.0		
	20:28		11.5		
	20:33		12.0		
	20:38		12.0		
	20:43		12.0		
	20:48		12.0		
	20:53		12.0		
	20:58		12.0		Closed for final shut-in:
	22:58				Pulled tool:

Company: Mewbourne Oil Co.
Well: Chalk Bluff "31" State #1
DST No: 3

SAMPLER REPORT

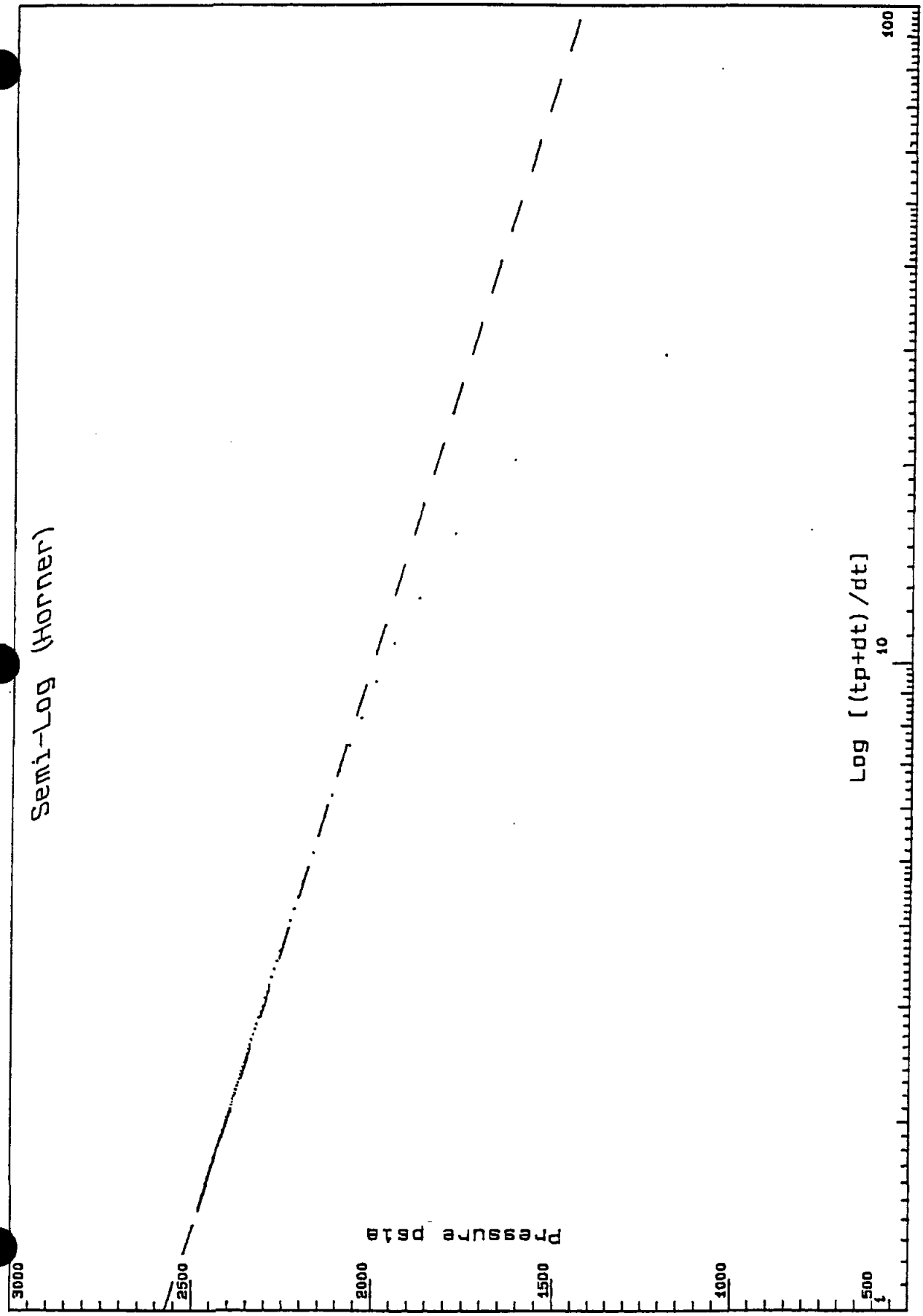
Pressure in Sampler:	330	psig
Total Volume of Sampler:	2600	cc.
Total Volume of Sample:	1600	cc.
Oil:	None	cc.
Water:	1600	cc.
Mud:	None	cc.
Gas:	1.01	cu. ft.
Other:	None	

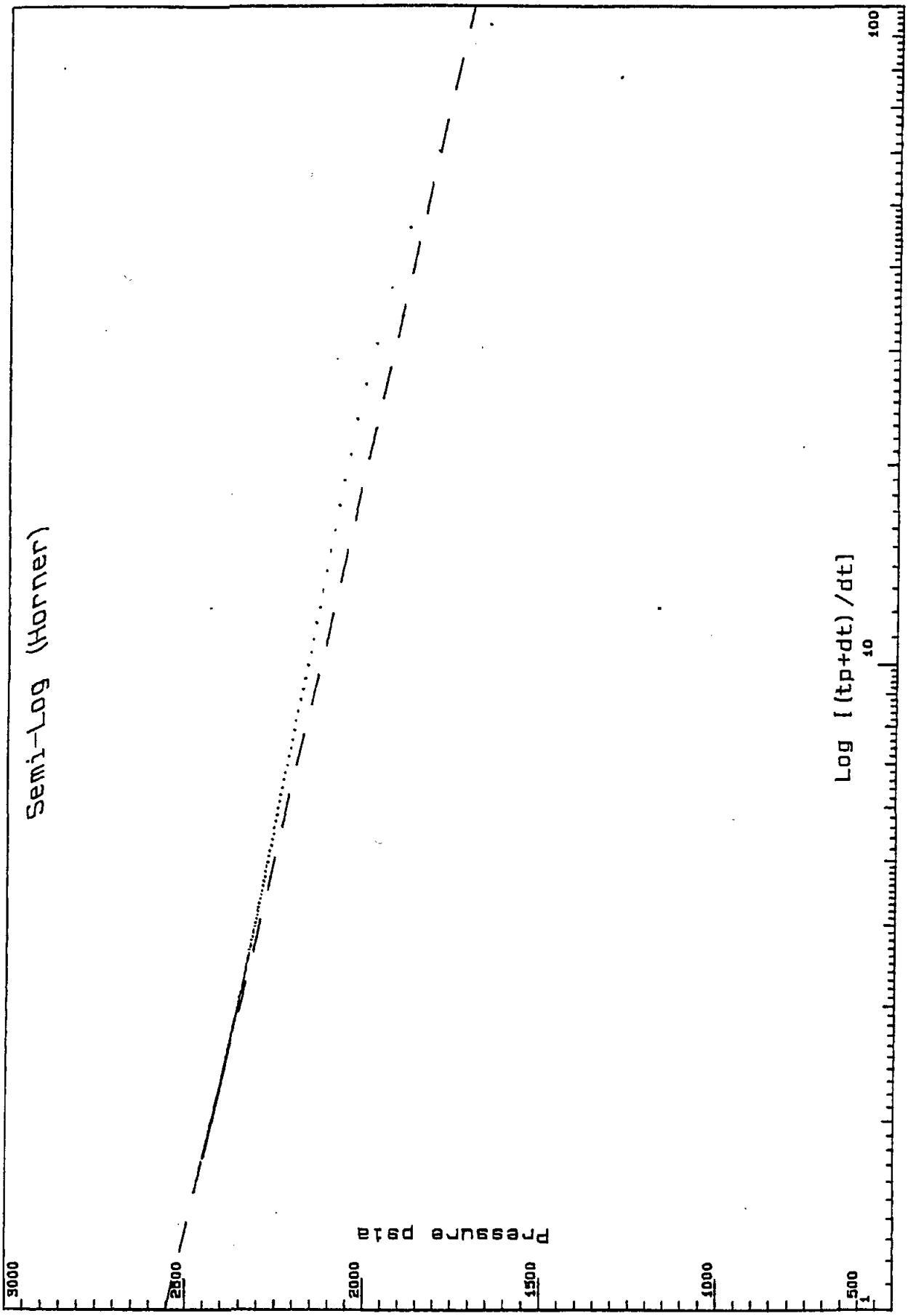
Sample RW: .16 @ 60 Deg F/.08 @ Res Temp/30,000 ppm Cl. titrated.
Resistivity

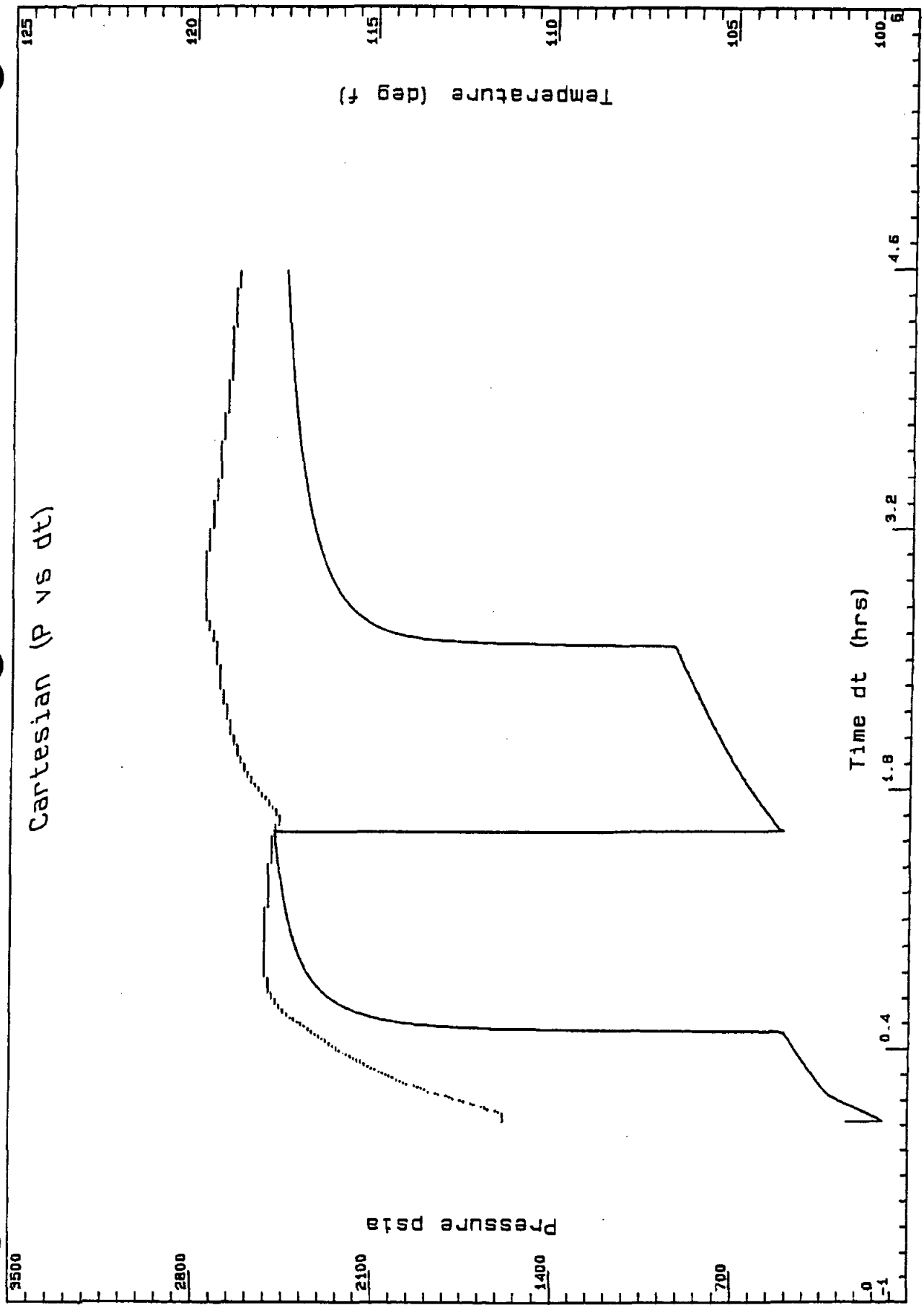
Make up Water		@		°F of Chloride Content		ppm.
Mud Pit Sample	.073	@	60	°F of Chloride Content	75,000	ppm.
Gas / Oil Ratio			Gravity		°API @	°F

Where was sample drained On Location.

Remarks:


Semi-Log (Horner)
Pressure psia
3000
2500
2000
1500
1000
500
100
10
1
Log [(tp+dt)/dt]
Shut-in #1:
Pw = 2574 psi
M = -570.883 psi/cycle


Semi-Log (Horner)
Pressure psia
3000
2500
2000
1500
1000
500
100
10
1
Log [(tp+dt)/dt)
Shut-in #2:
P* = 2553 psi
M = -425.469 psi/cycle


Cartesian (P vs dt)
Pressure psia
3500
2800
2100
1400
700
0
-1
Temperature (deg f)
125
120
115
110
105
100
Time dt (hrs)
0.4
1.8
3.2
4.6
Pressure
Temperature
Company: Mewbourne Oil Co.
Well: Chalk Bluff "31" State #1, DST #3
Field: Illinois Camp
Date: 08-24-1993

Company: Mewbourne Oil Co.
Well: Chalk Bluff "31" State #1

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Midland TX 79701

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Hobbs NM 88241

Amoco Production Co. (2)
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Houston TX 77253

ARCO Oil & Gas Co. (1)
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Midland TX 79702

Louis Dreyfus Natural Gas Corp. (2)
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Oklahoma City OK 73134

Enron Oil & Gas Co. (2)
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Midland TX 79701

Fina Oil & Gas Co. (1)
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Midland TX 79702

Marathon Oil Co. (1)
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Midland TX 79702-0552

Read & Stevens, Inc. (2)
Box 1518
Roswell NM 88202

Meridian Oil, Inc. (2)
Box 51810
Midland TX 79701-1810

Phone (303) 790-2705

BAKER OIL TOOLS

56 Inverness Drive East
Englewood, CO 80112

MEWBOURNE OIL CO.
TICKET #258-80150

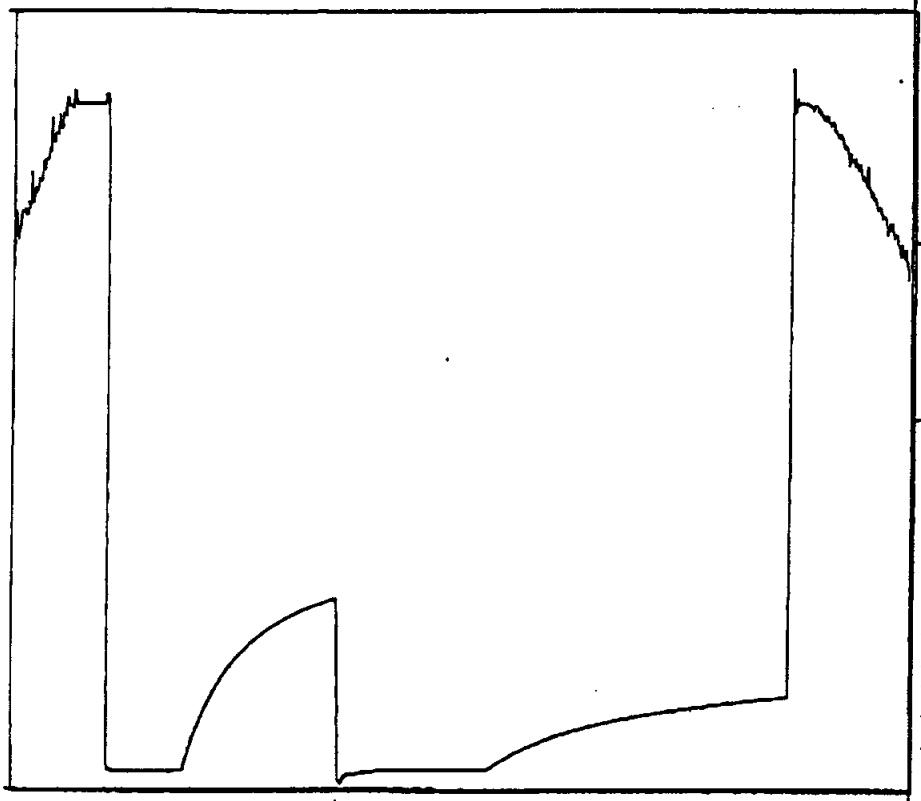
CHALK BLUFF "31" STATE #1
WOLFCAMP ~ 7385'- 7413'

DST #4
08-24-1993

Contractor	Wek Drilling
Rig No.	2
Spot	2310' FEL & 660' FSL
Sec	31
Twp.	17 S
Rng.	28 E
Field	Illinois Camp
County	Eddy
State	New Mexico
Elevation	3693' KB
Formation	Wolfcamp

Surface Choke	1/4" & 1/8"
Bottom Choke	3/4"
Hole Size	8 3/4"
Core Hole Size	None
DP Size & Wt.	4 1/2" 16.60
Wt. Pipe	4 1/2" 20.00
I.D. of DC	2 1/4"
Length of DC	722'
Total Depth	7413'
Type Test	Conventional
Interval	7385'- 7413'

Mud Type	--
Weight	9.1
Viscosity	28
Water Loss	--
Filter Cake	--
Resistivity	.073 @ 60 °F
	75,000 Ppm. NaCl
B.H.T.	114.0 °F
Co. Rep.	Earl Reavis
Tester	Berry Fisher
Baker Dist.	Hobbs NM



		REPORTED	CORRECTED	
Opened Tool @		16:24		hrs.
Flow No.	1	30	30	min.
Shut-in No.	1	60	60	min.
Flow No	2	60	61	min.
Shut-in No.	2	120	120	min.
Flow No.	3	None	Taken	min.
Shut-in No.	3	"	"	min.

Recorder Type		STI 8000	
No.	01190	Cap. 7500	psi
Depth		7396	feet
Inside		Clock	
Outside	x	Range	hrs.

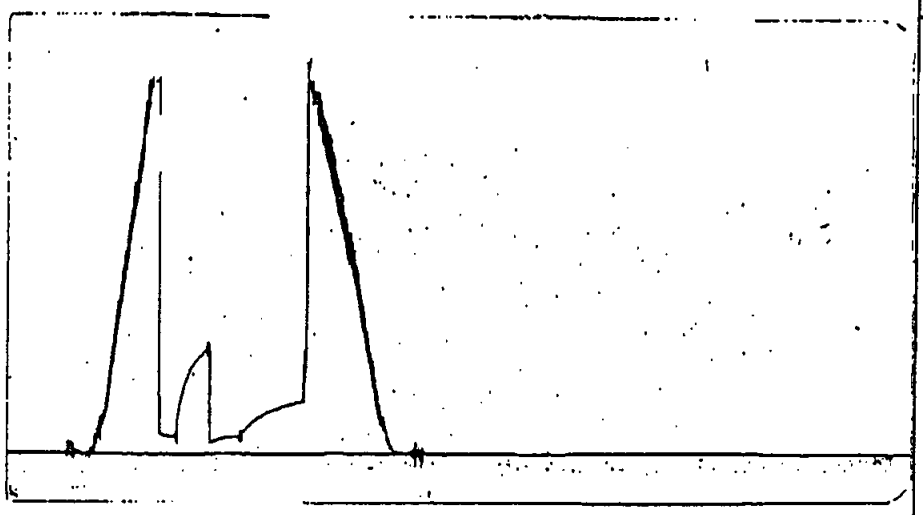
Initial Hydrostatic	A	3524
Final Hydrostatic	K	3527
Initial Flow	B	131
Final Initial Flow	C	110
Initial Shut-in	D	983
Second Initial Flow	E	46
Second Final Flow	F	117
Second Shut-in	G	486
Third Initial Flow	H	
Third Final Flow	I	
Third Shut-in	J	

Pipe Recovery 300' Rat hole mud w/sulfur water (gas cut) = 1.47 bbl.

Resistivity:

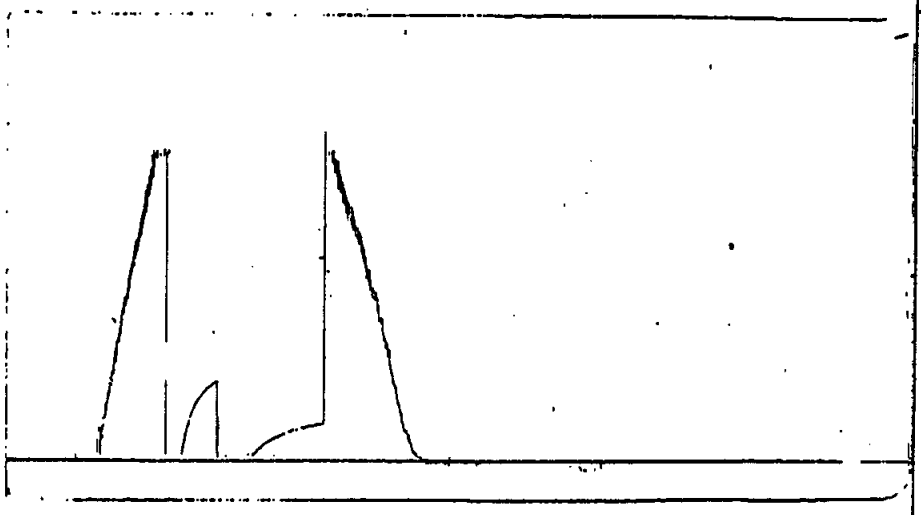
Top: .073 @ 60 Deg F/.04 @ Res Temp/75,000 ppm Cl. titrated.
Middle: .076 @ 60 Deg F/.04 @ Res Temp/70,000 ppm Cl. titrated.
Bottom: .083 @ 60 Deg F/.05 @ Res Temp/63,000 ppm Cl. titrated.

Company: Mewbourne Oil Co.
Well: Chalk Bluff "31" State #1
DST No: 4



Recorder Type	Kuster K-3		
No. 18079	Cap.	4075	psi
Depth		7367	feet
Inside x	Clock		
Outside	Range	24	hrs.

Initial Hydrostatic	A	3493
Final Hydrostatic	K	3499
Initial Flow	B	194
Final Initial Flow	C	168
Initial Shut-In	D	965
Second Initial Flow	E	119
Second Final Flow	F	168
Second Shut-In	G	494
Third Inital Flow	H	
Third Final Flow	I	
Third Shut-In	J	



Recorder Type	Kuster K-3		
No. 21630	Cap.	4950	psi
Depth		7396	feet
Inside	Clock		
Outside x	Range	24	hrs.

Initial Hydrostatic	A	3499
Final Hydrostatic	K	3505
Initial Flow	B	110
Final Initial Flow	C	102
Initial Shut-In	D	946
Second Initial Flow	E	59
Second Final Flow	F	91
Second Shut-In	G	463
Third Inital Flow	H	
Third Final Flow	I	
Third Shut-In	J	

Company: Mewbourne Oil Co.
Well: Chalk Bluff "31" State #1
DST No: 4

	TIME	CHOKE SIZE	SURFACE PRESSURE	FLOW RATE MCF/D	REMARKS
8/24/93	16:24 Hr.	.25"	Weak Blow		Opened for initial flow:
	16:29		4.0 psi		
	16:34		8.0		
	16:39		10.0		
	16:44		12.0		
	16:49		14.0		
	16:54		15.0		Closed for initial shut-in:
	17:02				Gas to surface:
	17:56		Good Blow		Opened for final flow:
	18:01		12.0 psi		
	18:06		10.0		
	18:11		8.0		
	18:16		7.0		
	18:21		6.5		
	18:26		6.0		
	18:31		5.5		
	18:36		5.0		
	18:41		4.5		
	18:46		4.0		
	18:51		4.0		
	18:56		4.0		Closed for final shut-in:
	20:56				Pulled tool:

Company: Mewbourne Oil Co.
Well: Chalk Bluff "31" State #1
DST No: 4

SAMPLER REPORT

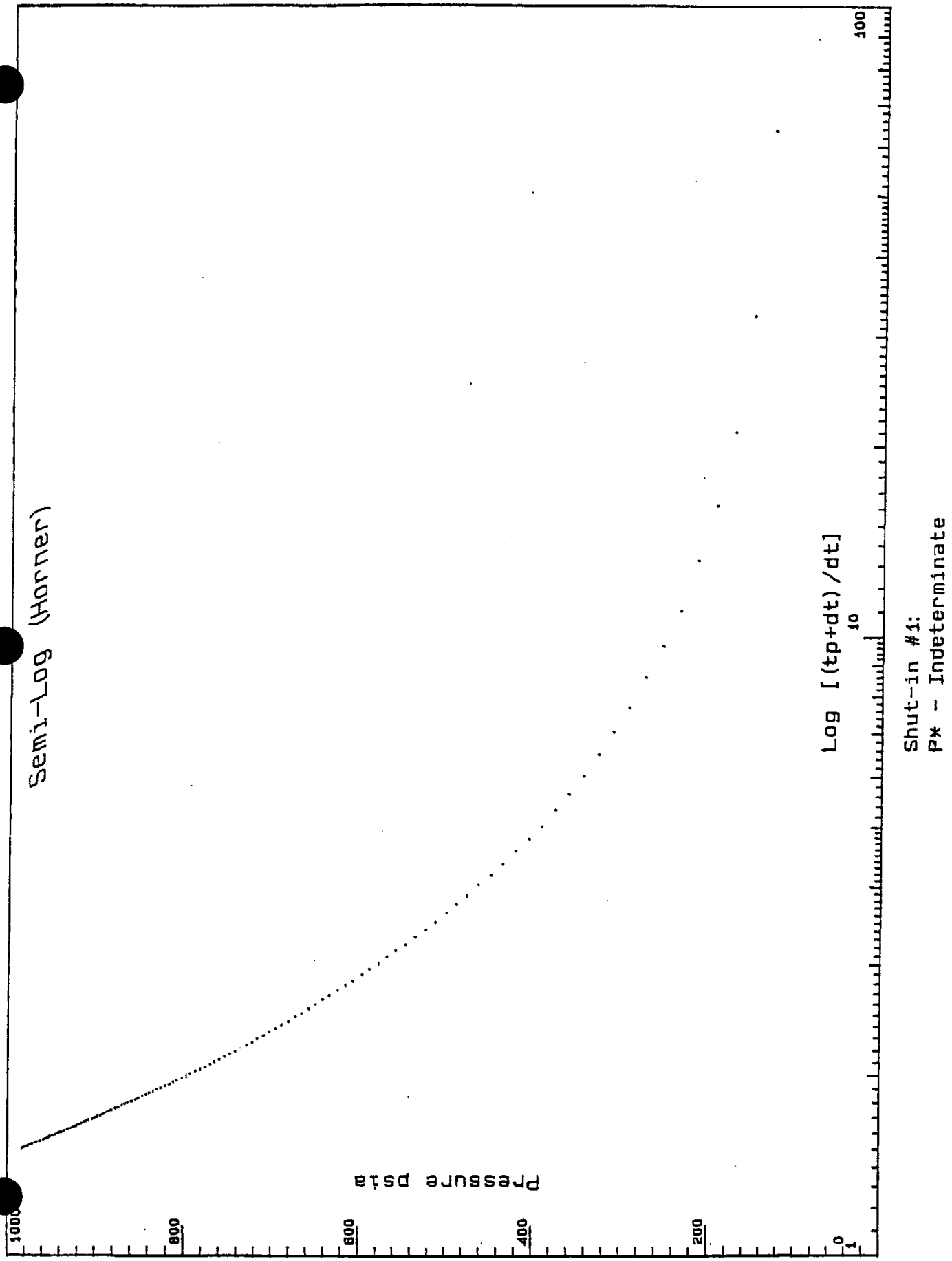
Pressure in Sampler:	80	psig
Total Volume of Sampler:	2600	cc.
Total Volume of Sample:	550	cc.
Oil:	None	cc.
Water:	550	cc.
Mud:	None	cc.
Gas:	0.57	cu. ft.
Other:	None	

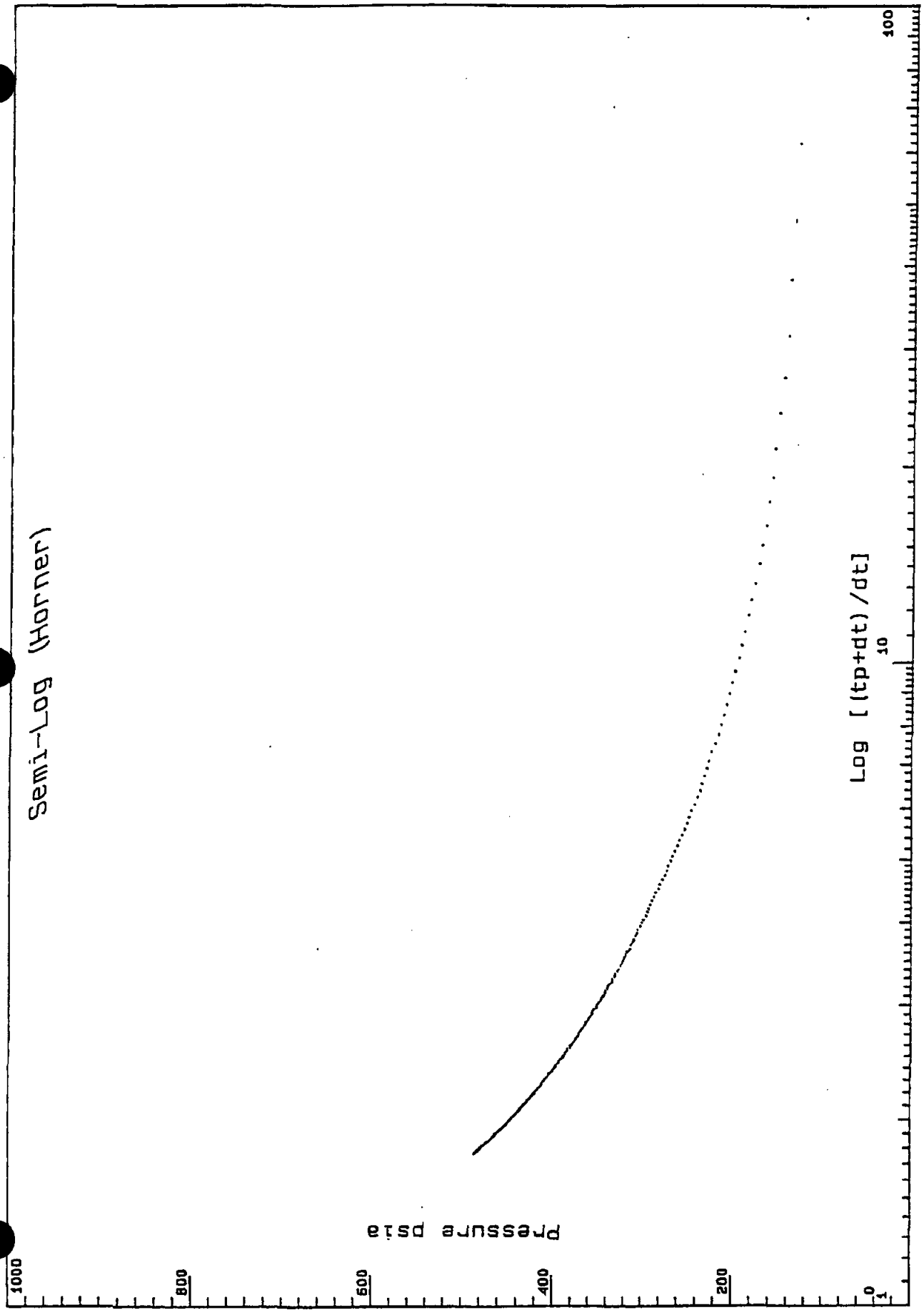
Sample RW: .083 @ 60 Deg F/.05 @ Res Temp/63,000 ppm Cl. titrated.
Resistivity

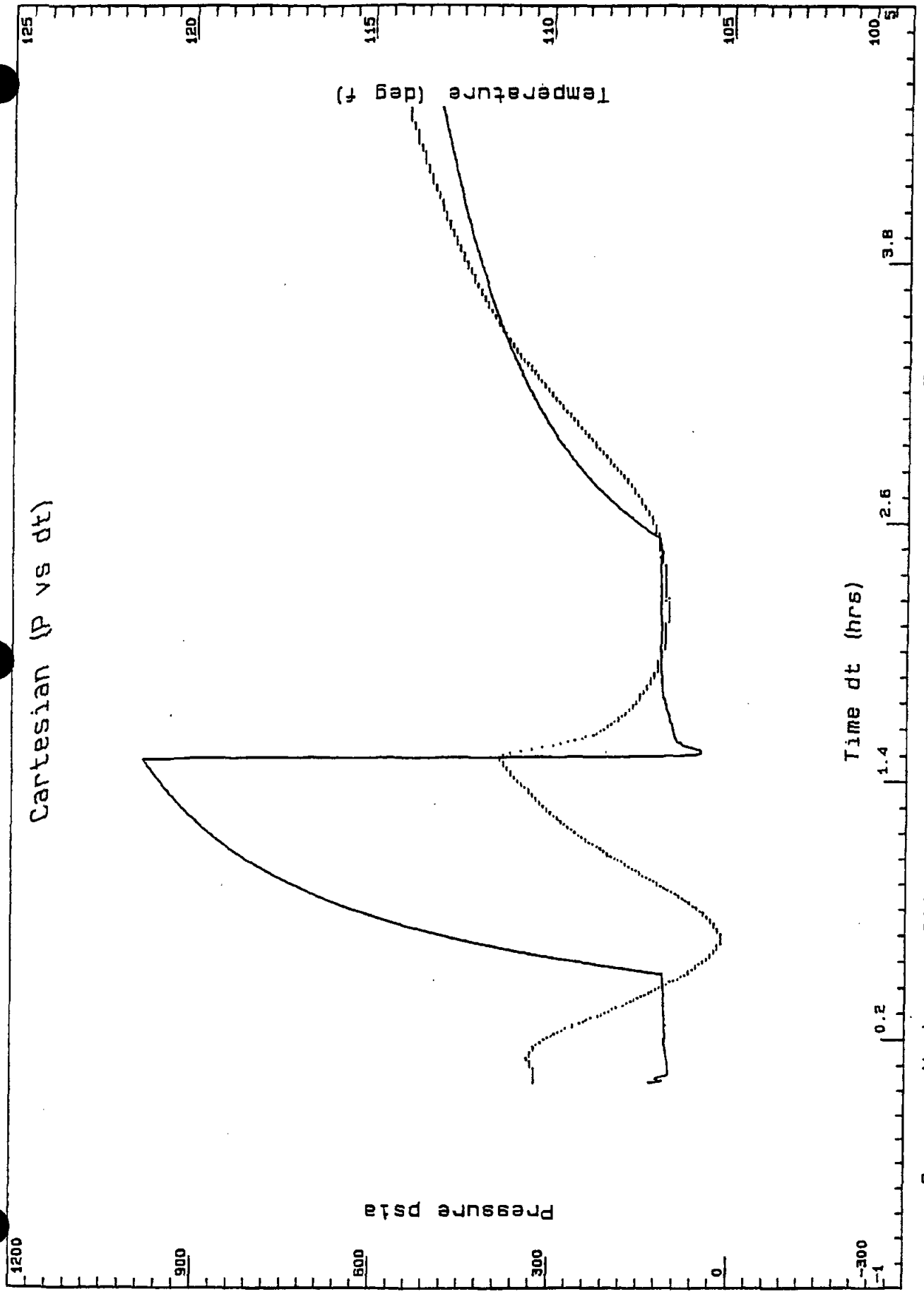
Make up Water		@		°F of Chloride Content		ppm.
Mud Pit Sample	.073	@	60	°F of Chloride Content	75,000	ppm.
Gas / Oil Ratio			Gravity		°API @	°F

Where was sample drained On Location.

Remarks:


Semi-Log (Horner)
Pressure psia
1000
800
600
400
200
0
1
10
100
Log [(tp+dt)/dt]
Shut-in #1:
P* - Indeterminate


Semi-Log (Horner)
Pressure psia
1000
800
600
400
200
0
Log [(tp+dt)/dt]
100
10
1
Shut-in #2:
P* - Indeterminate


Cartesian (P vs dt)
Temperature (deg f)
Pressure psia
Time dt (hrs)
Pressure
Temperature
Company: Mewbourne Oil Co.
Well: Chalk Bluff "31" State #1, DST #4
Field: Illinois Camp
Date: 08-24-1993

Company: Mewbourne Oil Co.
Well: Chalk Bluff "31" State #1

DISTRIBUTION OF FINAL REPORTS

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Mewbourne Oil Co. (1)
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Hobbs NM 88241

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Houston TX 77253

ARCO Oil & Gas Co. (1)
Box 1610
Midland TX 79702

Louis Dreyfus Natural Gas Corp. (2)
Quail Springs Parkway, Ste 600
Oklahoma City OK 73134

Enron Oil & Gas Co. (2)
508 W. Wall, Ste 1100
Midland TX 79701

Fina Oil & Gas Co. (1)
Box 2990
Midland TX 79702

Marathon Oil Co. (1)
Box 552
Midland TX 79702-0552

Read & Stevens, Inc. (2)
Box 1518
Roswell NM 88202

Meridian Oil, Inc. (2)
Box 51810
Midland TX 79701-1810

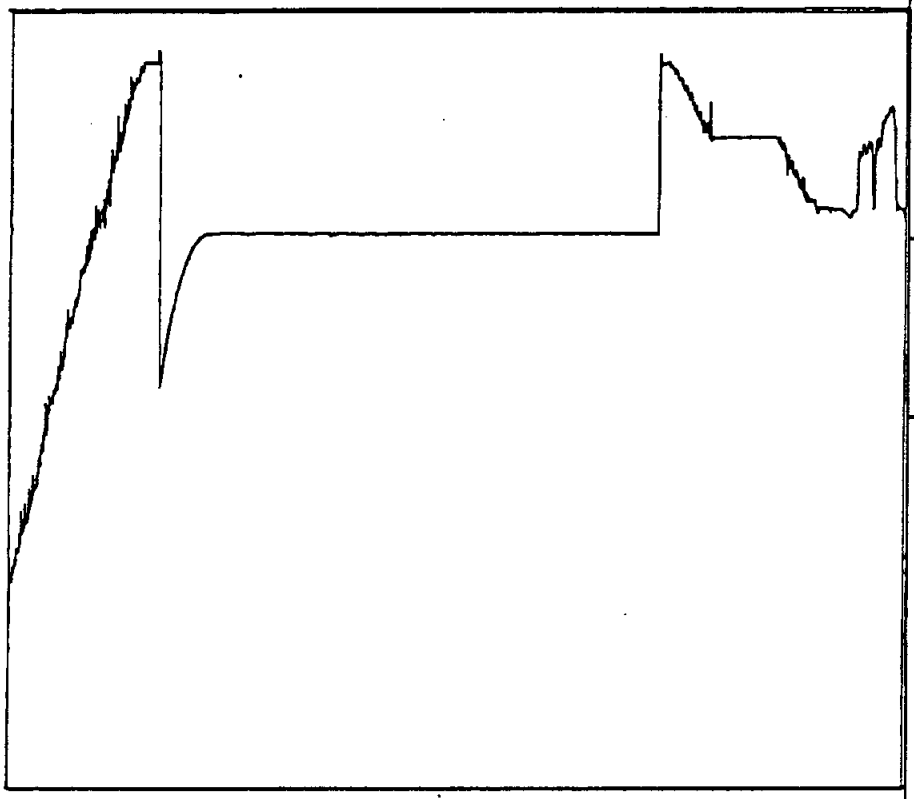
BAKER OIL TOOLS
Phone (303) 790-2705
56 Inverness Drive East
Englewood, CO 80112

MEWBOURNE OIL CO.
TICKET #258-80159
CHALK BLUFF "31" STATE #1
CISCO ~ 7817'- 7851'
DST #5
08-26-1993

Contractor	Wek Drilling
Rig No.	2
Spot	2310' FEL & 660' FSL
Sec	31
Twp.	17 S
Rng.	28 E
Field	Illinois Camp
County	Eddy
State	New Mexico
Elevation	3693' KB
Formation	Cisco

Surface Choke	1/4"
Bottom Choke	3/4"
Hole Size	8 3/4"
Core Hole Size	None
DP Size & Wt.	4 1/2" 16.60
Wt. Pipe	4 1/2" 20.00
I.D. of DC	2 1/4"
Length of DC	723'
Total Depth	7851'
Type Test	Conventional
Interval	7817'- 7851'

Mud Type	--
Weight	9.1
Viscosity	28
Water Loss	--
Filter Cake	--
Resistivity	.11 @ 60 °F
	78,000 Ppm. NaCl
B.H.T.	130.0 °F
Co. Rep.	Earl Reavis
Tester	Mike Fraley
Baker Dist.	Hobbs NM



		REPORTED	CORRECTED	
Opened Tool @		10:15		hrs.
Flow No.	1	30	30	min.
Shut-In No.	1	60	61	min.
Flow No	2	60	60	min.
Shut-In No.	2	120	117	min.
Flow No.	3	None Taken		min.
Shut-In No.	3	"	"	min.

Recorder Type		STI 8000	
No.	01179	Cap. 10000	psi
Depth		7822	feet
Inside		Clock	
Outside	x	Range	hrs.

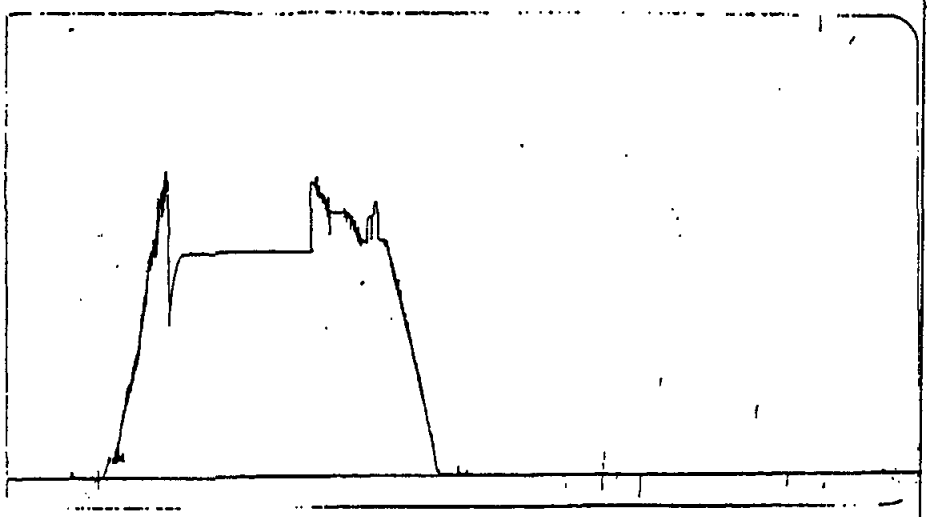
Initial Hydrostatic	A	3741
Final Hydrostatic	K	3737
Initial Flow	B	2479
Final Initial Flow	C	2849
Initial Shut-In	D	2850
Second Initial Flow	E	2835
Second Final Flow	F	2849
Second Shut-In	G	2851
Third Initial Flow	H	
Third Final Flow	I	
Third Shut-In	J	

Pipe Recovery

Reverse circulated:
6060' Water = 78.7 bbl.

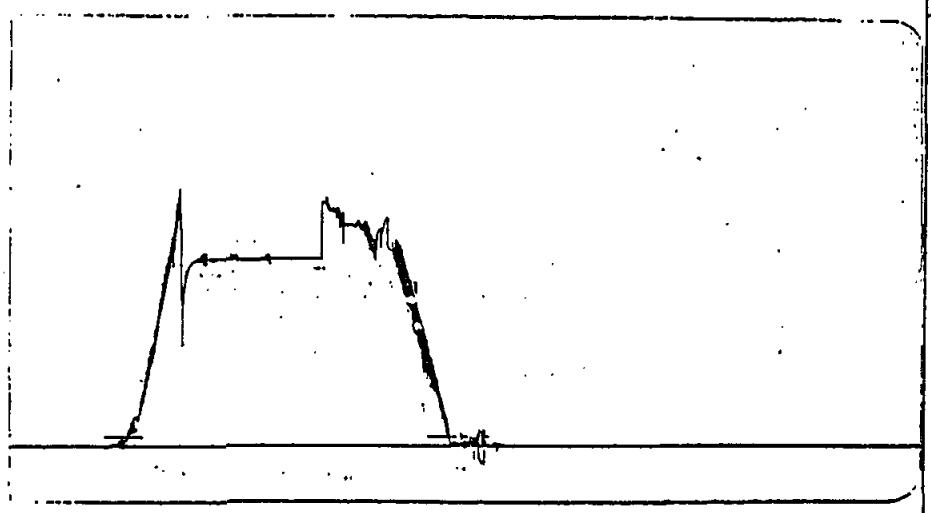
Resistivity:
Top: .35 @ 60 Deg F/.17 @ Res Temp/25,000 ppm Cl. titrated.
Middle: .35 @ 60 Deg F/.17 @ Res Temp/25,000 ppm Cl. titrated.
Bottom: .35 @ 60 Deg F/.17 @ Res Temp/25,000 ppm Cl. titrated.

Company: Mewbourne Oil Co.
Well: Chalk Bluff "31" State #1
DST No: 5



Recorder Type	Kuster K-3		
No. 25178	Cap.	6500	psi
Depth		7794	feet
Inside x	Clock		
Outside	Range	24	hrs.

Initial Hydrostatic	A	3680
Final Hydrostatic	K	3671
Initial Flow	B	1584
Final Initial Flow	C	2787
Initial Shut-In	D	2798
Second Initial Flow	E	2798
Second Final Flow	F	2800
Second Shut-In	G	2810
Third Inital Flow	H	
Third Final Flow	I	
Third Shut-In	J	



Recorder Type	Kuster K-3		
No. 15909	Cap.	5550	psi
Depth		7822	feet
Inside	Clock		
Outside x	Range	24	hrs.

Initial Hydrostatic	A	3692
Final Hydrostatic	K	3686
Initial Flow	B	1934
Final Initial Flow	C	2804
Initial Shut-In	D	2808
Second Initial Flow	E	2808
Second Final Flow	F	2814
Second Shut-In	G	2816
Third Inital Flow	H	
Third Final Flow	I	
Third Shut-In	J	

Company: Newbourne Oil Co.
Well: Chalk Bluff "31" State #1
DST No: 5

	TIME	CHOKE SIZE	SURFACE PRESSURE	FLOW RATE MCF/D	REMARKS
8/26/93	10:15 Hr.	.25"	5.0 oz		Opened for initial flow:
	10:20		5.5 psi		
	10:25		14.0		
	10:30		23.0		
	10:35		36.5		
	10:40		40.0		
	10:45		38.0		Closed for initial shut-in:
	11:45		3.0 oz		Opened for final flow:
	11:48		10.0		
	11:50		6.0		
	11:55		2.5		
	12:00		1.0		
	12:05		0.0		
	12:10		0.0		
	12:15		0.0		
	12:20		0.0		
	12:25		0.0		
	12:30		0.0		
	12:35		0.0		
	12:40		0.0		
	12:45		0.0		Closed for final shut-in:
	14:45				Pulled tool:

Company: Newbourne Oil Co.
Well: Chalk Bluff "31" State #1
DST No: 5

SAMPLER REPORT

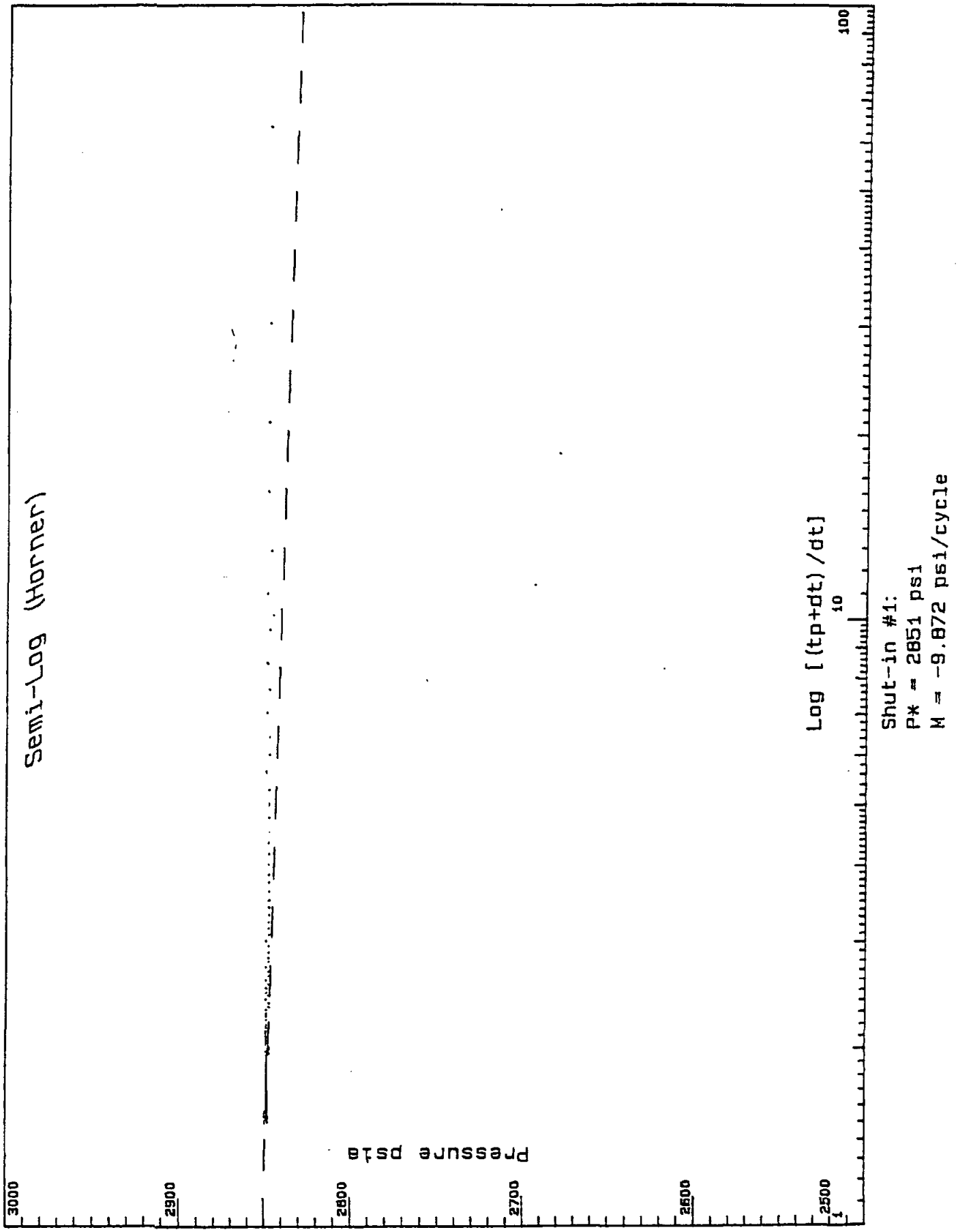
Pressure in Sampler:	1100	psig
Total Volume of Sampler:	2600	cc.
Total Volume of Sample:	2575	cc.
Oil:	None	cc.
Water:	2575	cc.
Mud:	None	cc.
Gas:	0.08	cu. ft.
Other:	None	

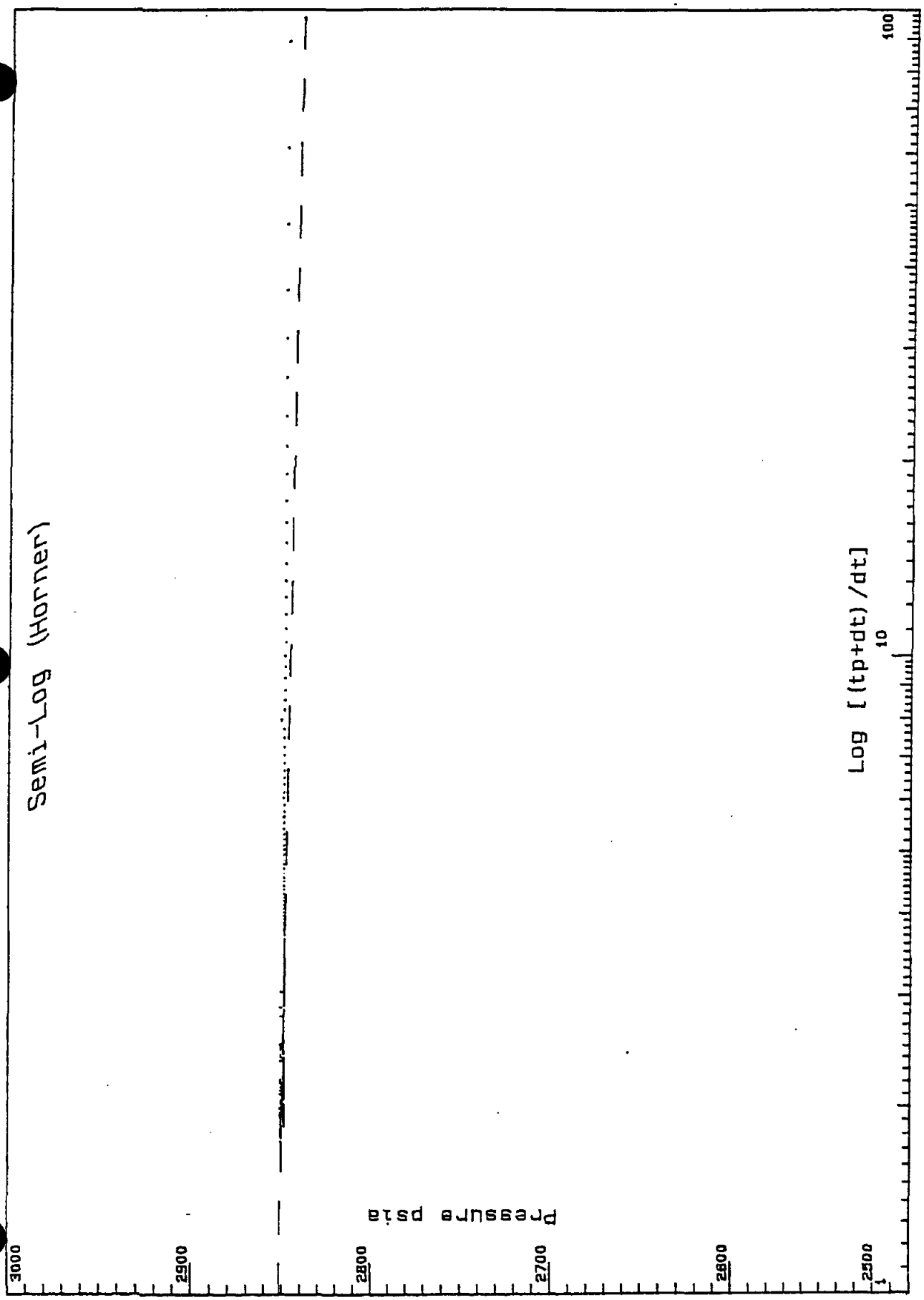
Sample RW: 0.35 @ 60/.17 @ Res Temp/25,000 ppm Cl. titrated.
Resistivity

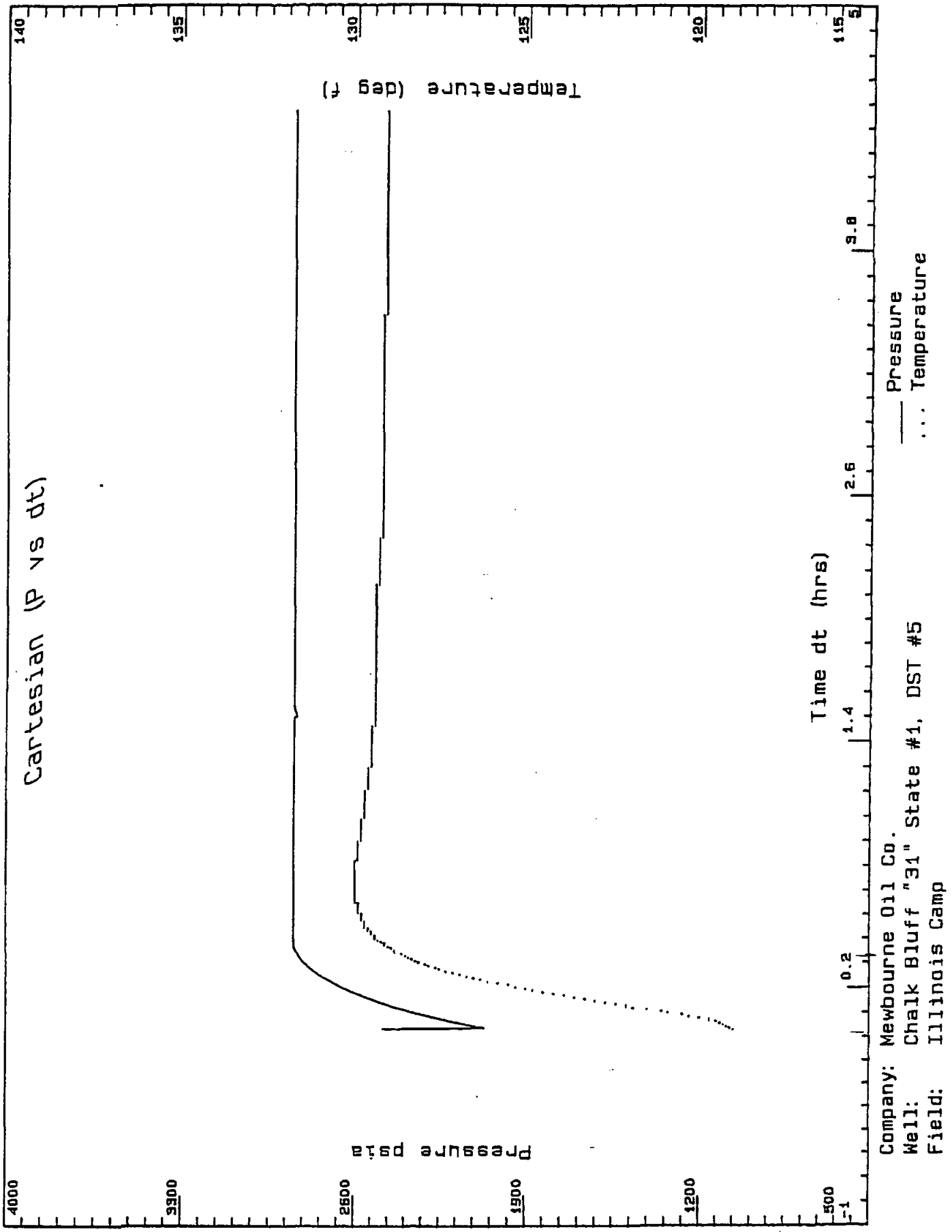
Make up Water		@		°F of Chloride Content		ppm.
Mud Pit Sample	.11	@	60	°F of Chloride Content	78,000	ppm.
Gas / Oil Ratio			Gravity		°API @	°F

Where was sample drained On Location.

Remarks:


Semi-Log (Horner)
Pressure psia
3000
2900
2800
2700
2600
2500
1
10
100
Log [(tp+dt)/dt]
Shut-in #1:
P* = 2851 psi
M = -9.872 psi/cycle


Semi-Log (Horner)
Pressure psia
3000
2900
2800
2700
2600
2500
Log [(tp+dt)/dt]
100
10
1
Shut-in #2:
P* = 2851 psi
M = -5.348 psi/cycle


Cartesian (P vs dt)
Temperature (deg f)
Pressure psia
Time dt (hrs)
Pressure
Temperature
Company: Mewbourne Oil Co.
Well: Chalk Bluff "31" State #1, DST #5
Field: Illinois Camp
Date: 08-26-1993

Company: Mewbourne Oil Co.
Well: Chalk Bluff "31" State #1

DISTRIBUTION OF FINAL REPORTS

Mewbourne Oil Co. (4)
Box 7698
Tyler TX 75711

Mewbourne Oil Co. (1)
500 West Texas, Ste 1020
Midland TX 79701

Mewbourne Oil Co. (1)
Box 5270
Hobbs NM 88241

Amoco Production Co. (2)
Box 3092
Houston TX 77253

ARCO Oil & Gas Co. (1)
Box 1610
Midland TX 79702

Louis Dreyfus Natural Gas Corp. (2)
Quail Springs Parkway, Ste 600
Oklahoma City OK 73134

Enron Oil & Gas Co. (2)
508 W. Wall, Ste 1100
Midland TX 79701

Fina Oil & Gas Co. (1)
Box 2990
Midland TX 79702

Marathon Oil Co. (1)
Box 552
Midland TX 79702-0552

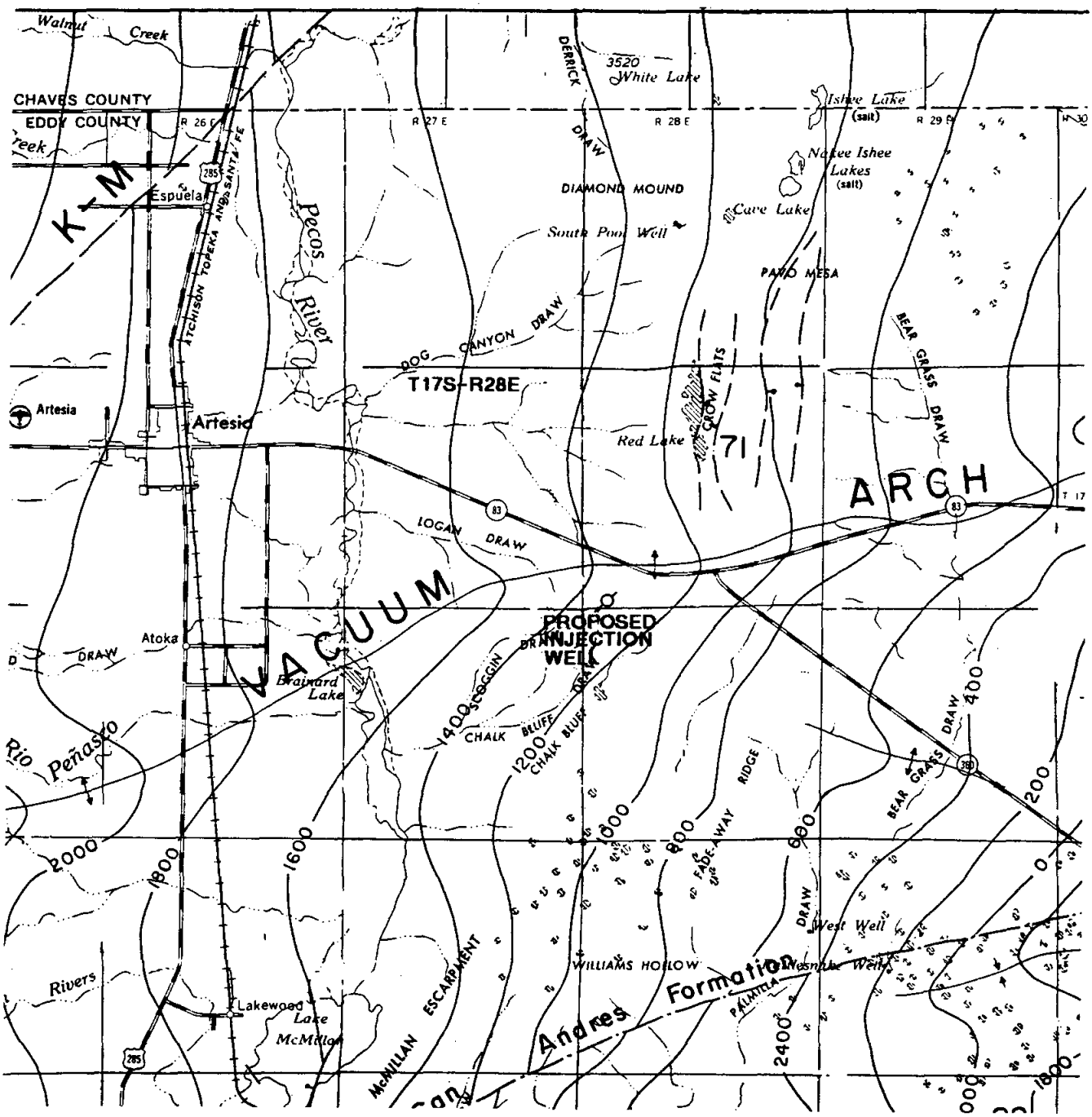
Read & Stevens, Inc. (2)
Box 1518
Roswell NM 88202

Meridian Oil, Inc. (2)
Box 51810
Midland TX 79701-1810

Ray Beck (1)
Yates Petroleum Corp.
105 S. 4th St.
Artesia NM 88210

ATTACHMENT VIII-10

STRUCTURE MAP OF THE TOP OF THE RIO BONITO MEMBER OF THE SAN ANDRES FORMATION



0 6 miles

SCALE

N

SOURCE: KELLEY, 1971, PLATE 5S

ENVIROCORP

ENVIROCORP SERVICES & TECHNOLOGY, INC.

HOUSTON, TX.
SOUTH BEND, IN.
BATON ROUGE, LA.

NAVAJO REFINING CO.

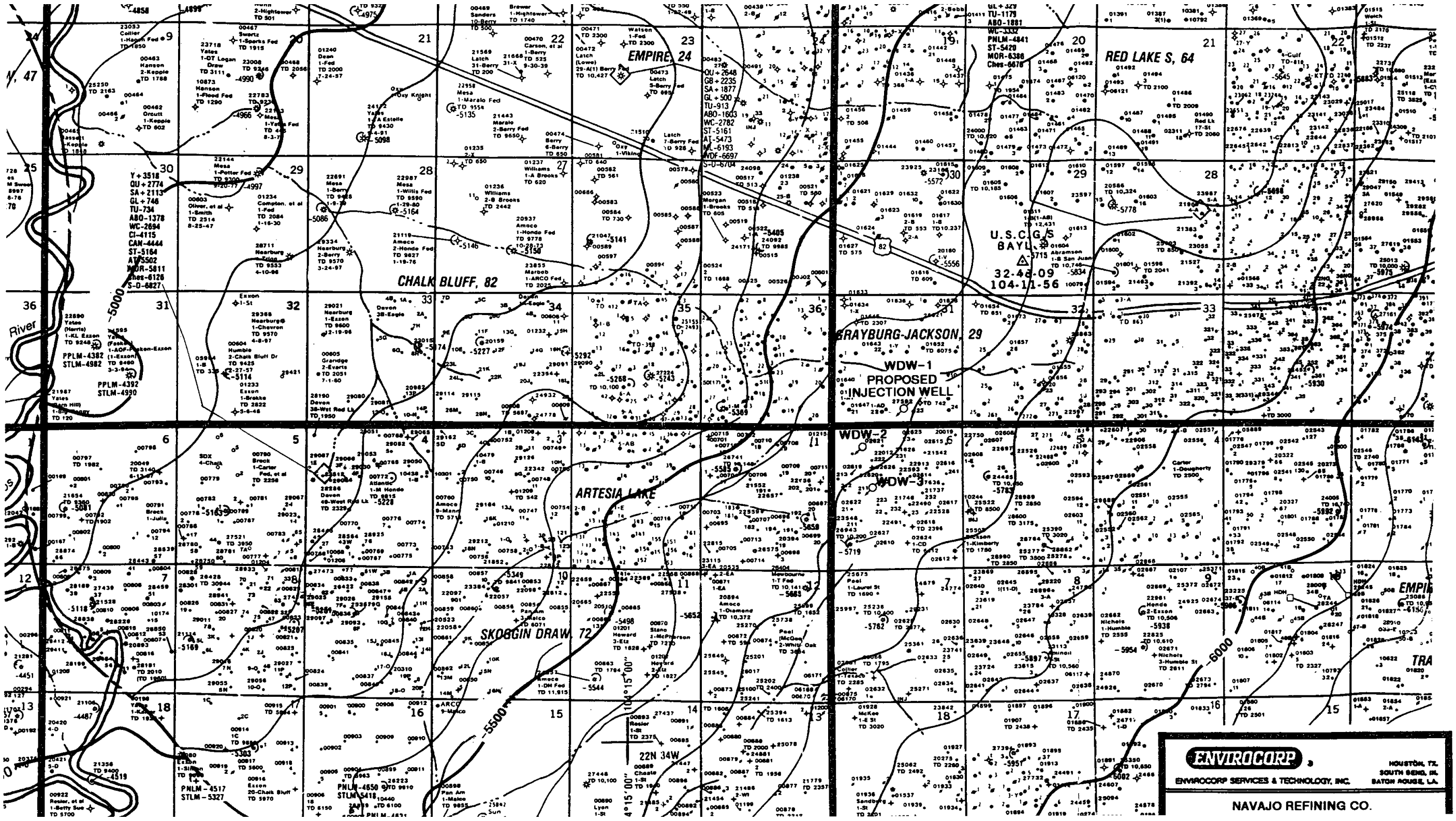
ATTACHMENT VIII-10

STRUCTURE OF THE RIO BONITO MEMBER OF THE SAN ANDRES FM.

DATE:	CHECKED BY:	JOB NO:
DRAWN BY:	APPROVED BY:	DWG. NO:

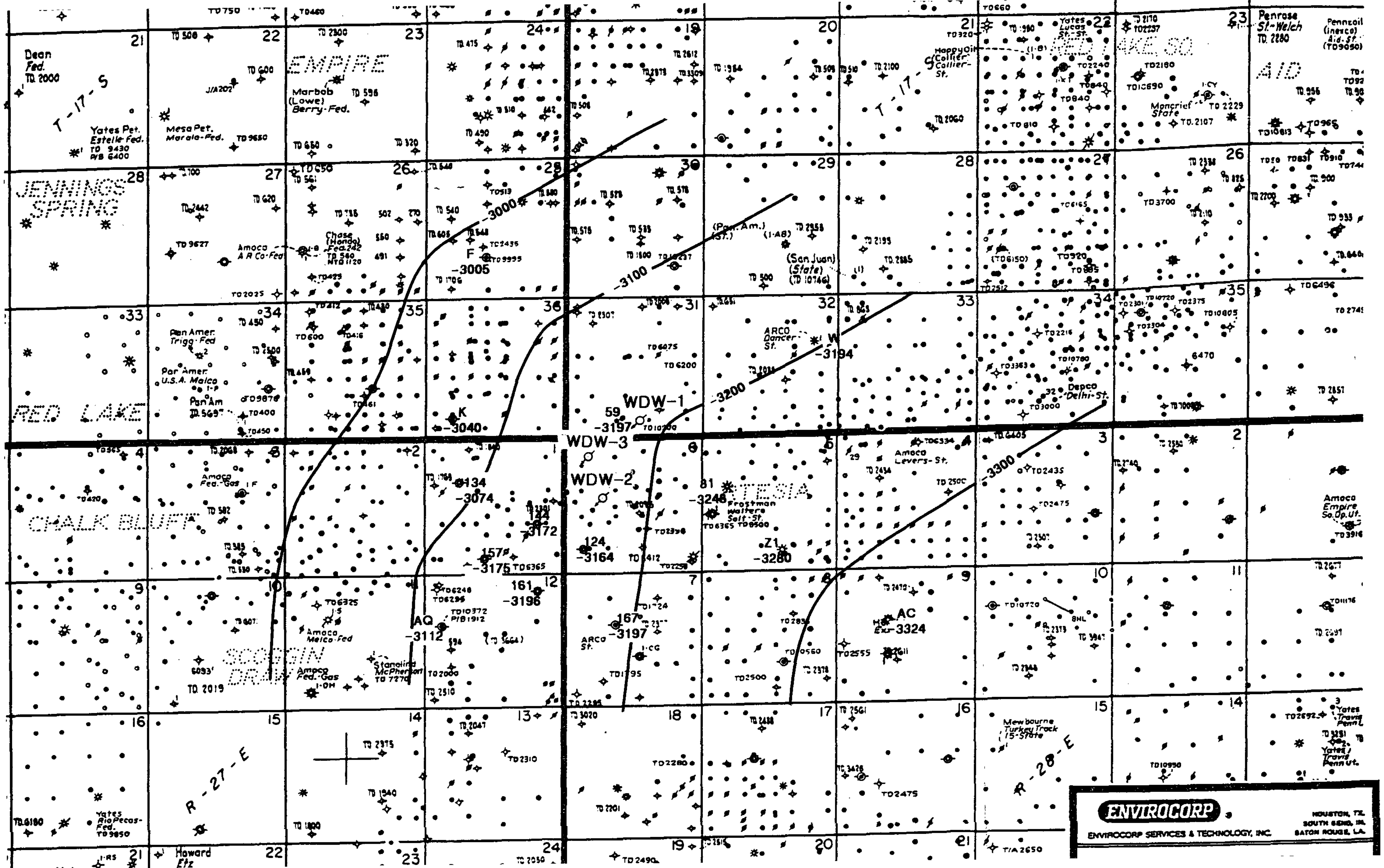
ATTACHMENT VIII-11

STRUCTURE MAP OF THE STRAWN FORMATION


EMPIRE, 24
CHALK BLUFF, 82
RED LAKE S, 64
U.S.C.G.S. BAYL
32-48-09
104-11-56
GRAYBURG-JACKSON, 29
WDW-1
PROPOSED
INJECTION WELL
WDW-2
WDW-3
ARTESIA LAKE
SKOGGIN DRAW, 72
22N 34W
PPLM-4382
STLM-4982
PPLM-4392
STLM-4990
PNLM-4517
STLM-5327
PNLM-4650
STLM-5418
ENVIROCORP
ENVIROCORP SERVICES & TECHNOLOGY, INC.
HOUSTON, TX.
SOUTH BEND, IN.
BATON ROUGE, LA.
NAVAJO REFINING CO.

ATTACHMENT VIII-12

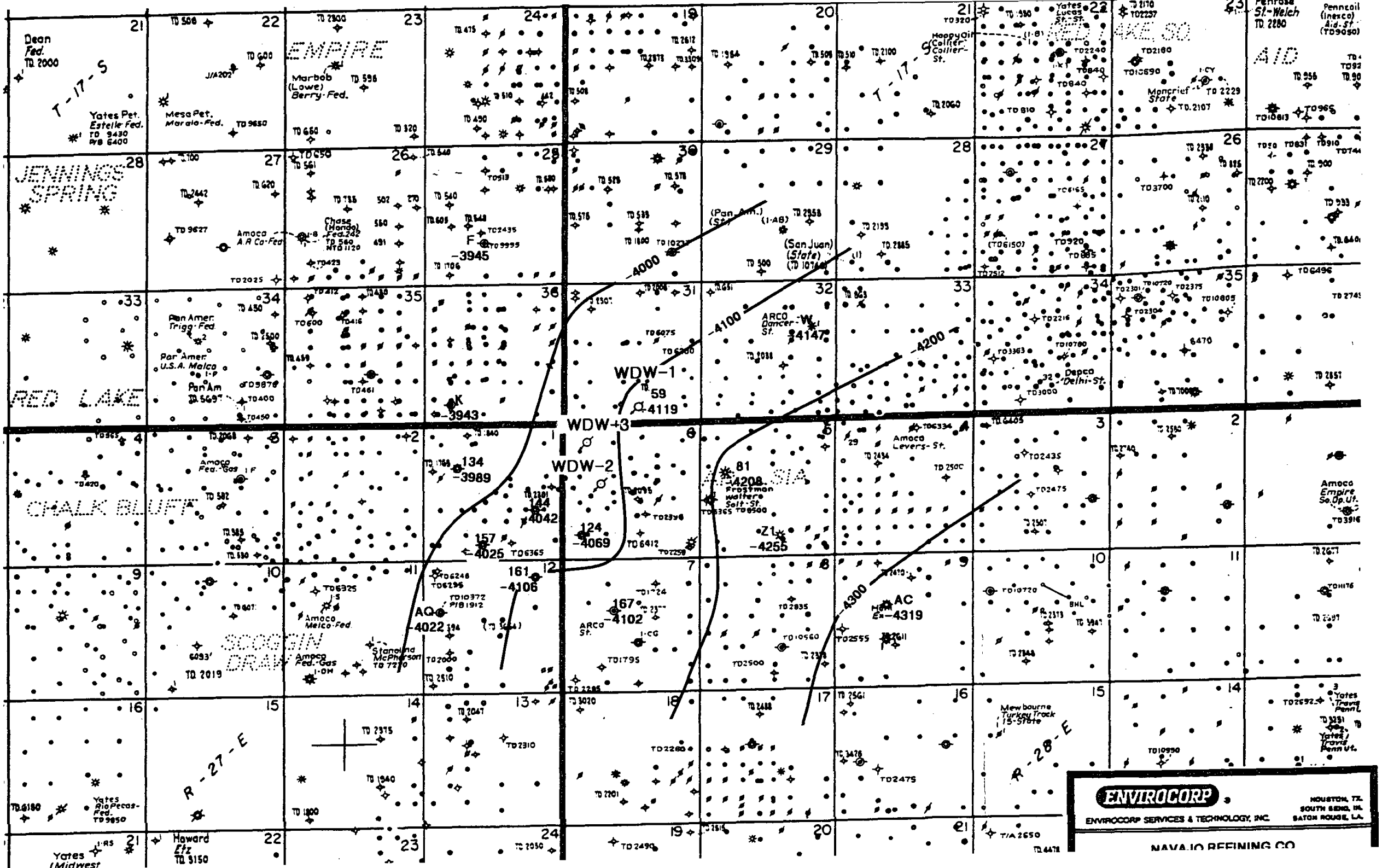
LOCAL STRUCTURE MAP OF THE WOLFCAMP FORMATION



157 -4025 ID NO. SUBSEA DEPTH

ATTACHMENT VIII-13

LOCAL STRUCTURE MAP OF THE CISCO FORMATION

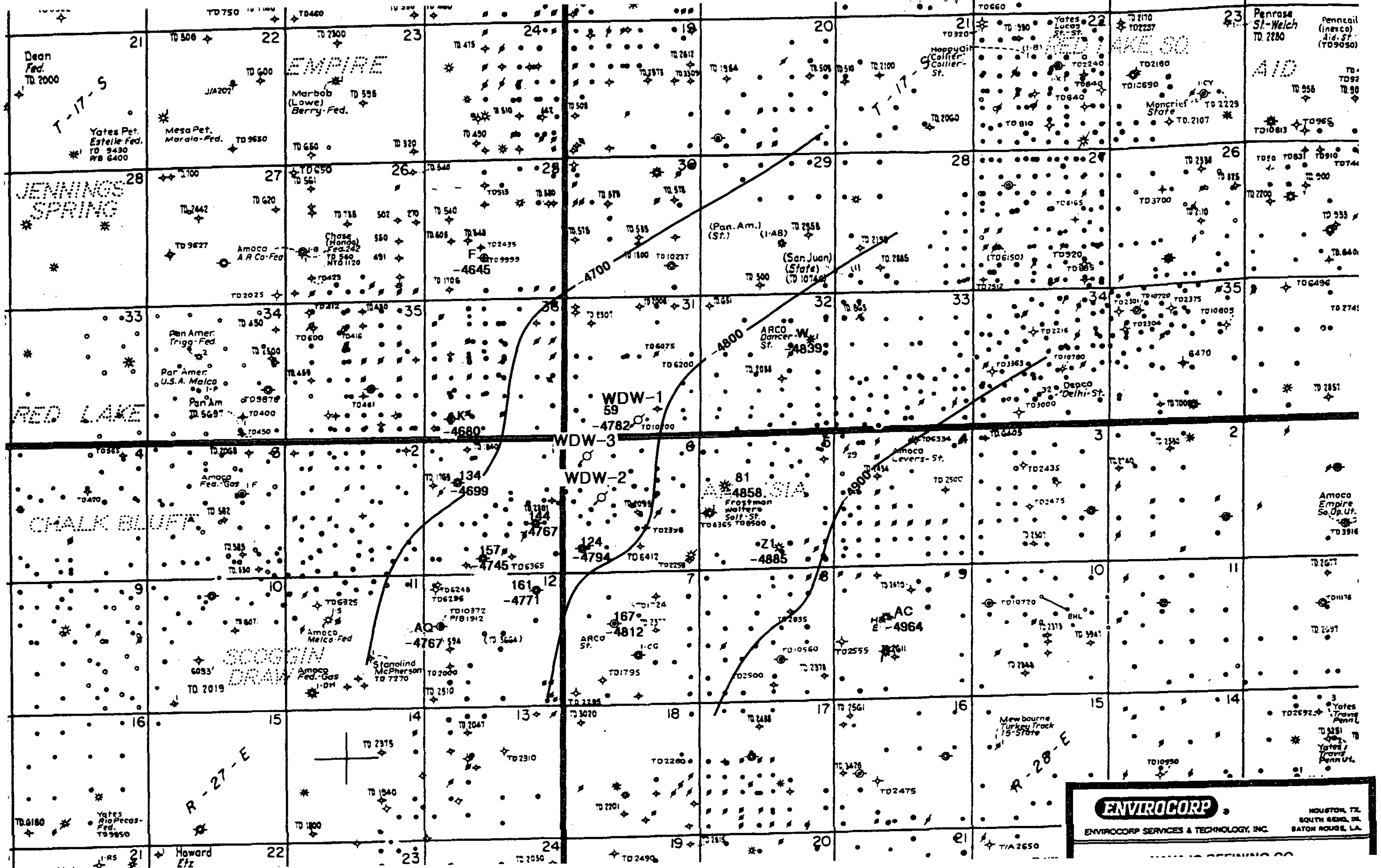


157 -4025 ID NO. SUBSEA DEPTH

ATTACHMENT VIII-14

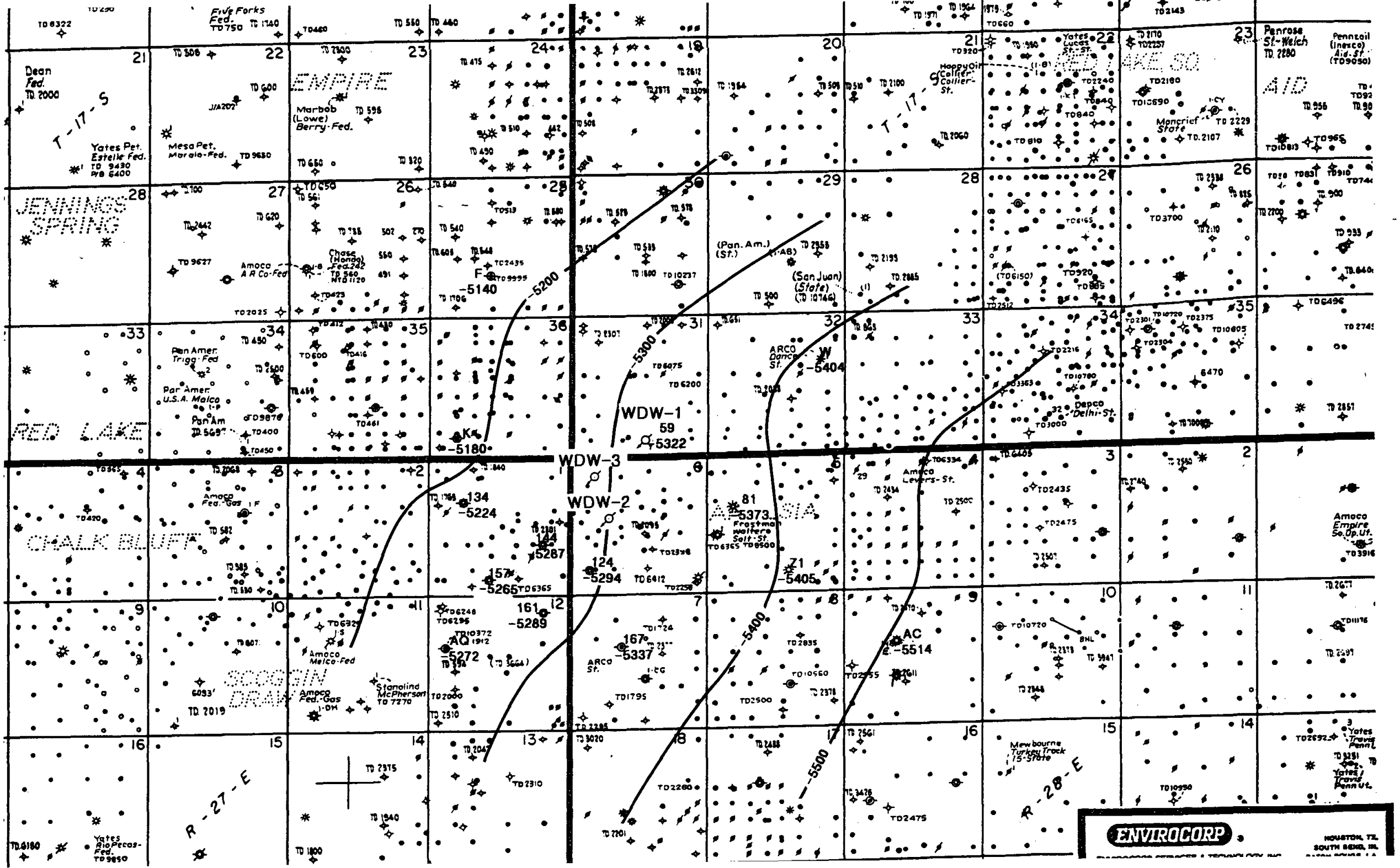
LOCAL STRUCTURE MAP OF THE CANYON FORMATION

157 ☼ ID NO.
-4025 SUBSEA DEPTH



ATTACHMENT VIII-15

LOCAL STRUCTURE MAP OF THE STRAWN FORMATION



157 ID NO.
-4025 SUBSEA DEPTH

ATTACHMENT VIII-16

MAP SHOWING THE ALTITUDE OF THE 10-g/l ISOSALINE SURFACE

X. LOGGING AND TESTING

A formation fluid sample will be retrieved from the proposed injection zone in proposed WDW-1, WDW-2, and WDW-3. Navajo will conduct injectivity testing in permeable intervals of proposed WDW-1.

A conventional formation core will be collected from the injection zone while drilling proposed WDW-2 or WDW-3. A 30-foot core will be retrieved from the proposed injection zone. Should the first attempt be unsuccessful, a second attempt will be made to retrieve a core of the injection zone. Sidewall cores may be obtained from the injection zone if a conventional core is not retrieved.

The proposed logging program is described below:

HOLE/CASING	OPEN-HOLE LOGS	CASED-HOLE LOGS
Proposed WDW-1		
17-1/2 inch Surface Borehole (13-3/8 inch Casing) 390 feet		Logs Proposed on Re-Entry: Cement Bond/Variable Density Casing Inspection Log
12-1/4 inch Intermediate Borehole (9-5/8 inch Casing) 2555 feet		Logs Run in 1993: Dual-Spaced Neutron Log CSL Gamma Ray Logs Proposed on Re-Entry: Cement Bond/Variable Density Casing Inspection Log
8-3/4 inch Long-String Borehole (7 inch Casing) 9600 feet	Logs Run on September 8, 1993: Dual Laterolog/ Microspherically Focused Log Spectral Density/ Dual-Spaced Neutron Log Caliper Gamma Ray Logs Proposed on Re-Entry: Fracture Identification Log 4-Arm Caliper	Logs Proposed on Re-Entry: Cement Bond/Variable Density Casing Inspection Log Differential Temperature Log

HOLE/CASING	OPEN-HOLE LOGS	CASED-HOLE LOGS
Proposed WDW-2 and WDW-3		
17-1/2 inch Surface Borehole (13-3/8 inch Casing) 400 feet	Spontaneous Potential Induction-Resistivity Caliper Gamma Ray	Temperature/Cement Bond/Variable Density
12-1/4 inch Intermediate Borehole (9-5/8 inch Casing) 2550 feet	Spontaneous Potential Induction-Resistivity Gamma Ray Caliper	Temperature/Cement Bond/Variable Density
8-3/4 inch Long-String Borehole (7 inch Casing) 9000 feet	Spontaneous Potential Dual Induction/Microlog Compensated Neutron/ Formation Density Gamma Ray 4-Arm Caliper	Temperature/Cement Bond/Variable Density Casing Inspection Log Differential Temperature Log

XI. FRESHWATER CHEMISTRY

The files of the State Engineer Office in Roswell, New Mexico were searched for records of water wells in the AOR. No records of water wells drilled in the AOR were found. According to the State Engineer Office personnel, records are not required to be filed on water wells that are not drilled in declared underground water basins. The western portion of the study area, which lies in T17S-R27E and T18S-R27E, as shown on Attachment V-3, has been part of the Roswell Underground Water Basin since August 21, 1946 (New Mexico State Engineer, 1995, pages 140-141); therefore, records for any water wells drilled in these townships after August 21, 1946, should be on file. The eastern part of the study area, in T17S-R28E and T18S-R28E, however, was declared part of the Roswell Underground Water Basin on February 8, 1993 (New Mexico State Engineer, 1995, page 142). Records for any water wells drilled in these townships after February 8, 1993, should be on file; however, no records were found.

Although no records for wells in the AOR are available from the State Engineer Office, several water wells have been drilled within the study area, according to Hendrickson and Jones (1952, Table 1) and as shown as windmills on the topographic map in Attachment V-2. Water wells indicated by these two sources are listed in Attachment XI-1 and shown on Attachment V-2.

TDS and chloride concentrations from a water well located 2 miles south of the proposed injection well are presented in Attachment XI-2. Attachment XI-2 is a letter report from the New Mexico State Engineer Office that lists the analyses of three samples taken from Water Well ID No. 18.28.7.430 in 1985, 1988, and 1994. Water Well ID No. 18.28.7.430 is located in the SW/4 SE/4 of Section 7, T18S-R28E. The TDS concentrations in water samples from this well ranged from 1535 to 2209 mg/l.

ATTACHMENT XI-1

FRESHWATER WELLS IN THE VICINITY OF THE PROPOSED INJECTION WELL (Table)

ATTACHMENT XI-1

FRESHWATER WELLS IN THE VICINITY OF THE PROPOSED INJECTION WELL

WATER WELL ID NO.	OWNER	PRINCIPAL WATER-BEARING BED		LIFT METHOD	USE OF WELL
		LITHOLOGY	FORMATION		
17.28.19.200	Hal Bogle	redbeds, gypsum	Chalk Bluff or Rustler	Windmill	Stock
17.28.22.230	Unknown	redbeds	Dockum	None	Abandoned stock well
18.28.7.330	Unknown	redbeds, gypsum, limestone?	Chalk Bluff or Rustler	Windmill	Stock
18.28.7.430*	Unknown	Unknown	Unknown	Windmill	Unknown
18.28.8.330**	Unknown	Unknown	Unknown	Windmill	Unknown

Source: Hendrickson and Jones (1952, Table 1).

* Attachment XI-2 and topographic map data.

** Topographic map data only.

ATTACHMENT XI-2

CHEMICAL ANALYSIS OF SAMPLES FROM THE WATER WELL IN SECTION 7, T18S, R28E

ATTACHMENT XI-2

WATER WELL ID NO. 18.28.7.430
WATER ANALYSES

STATE OF NEW MEXICO
STATE ENGINEER OFFICE
ROSWELL

THOMAS C. TURNEY
State Engineer

DISTRICT II
1900 West Second St.
Roswell, New Mexico 88201
(505) 622-6521

January 16, 1998

Nancy Nieman
Enviro Corp.
7020 Portwest, Ste. 100
Houston, Texas 77024

Greetings:

Enclosed is the information that you requested. Please call if you have any further questions. If you find a driller who has a well record, please send our office a copy.

Well is located in the NW¼NW¼SW¼NW¼SW¼SE¼ of Section 7, Township 18 South, Range 28 East, N.M.P.M.; 900 feet FSL, 2600 feet FEL.

DATE SAMPLED	CHLORIDES	TOTAL DISSOLVED SOLIDS
October 8, 1985	255	1535
November 20, 1988	280	2209
March 9, 1994	208	2010

The well is shown on 7 ½ minute topographic map as a windmill, on map named Red Lake, New Mexico.

Sincerely,

Sheldon Dorman
Water Resource Specialist

SD/tmi

XII. FAULTING AND OTHER HYDRAULIC CONNECTIONS BETWEEN THE INJECTION ZONE AND THE USDWS

No evidence has been found of open faults or other hydraulic connection between the injection zone and any USDWs. No undocumented wells penetrate the injection zone within the AOR of the proposed injection well; therefore, no hydraulic connection through an improperly constructed wellbore exists. With the exception of the K-M fault located 17 miles northwest of the proposed injection well, no faulting is indicated on structure maps of the study area (Attachments VIII-10 and VIII-11); therefore, no faults are believed to exist in the study area. Natural fractures in the proposed injection zone are confined to thin intervals and do not extend between the injection zone and the USDWs. The interval between the injection zone and the USDWs contains at least one interval, the Abo and Yeso Formations described in Section VIII.B, that serves as a confining zone that is free of known open faults and fractures in the AOR.

XIII. PROOF OF NOTICE

Navajo understands that the notification requirements have changed recently. Navajo will provide notice, as required by the OCD, upon receipt from the OCD of the current requirements.

REFERENCES

Freeze, R. Allan and John A. Cherry, 1979, Groundwater: Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 604 pages.

Hendrickson, G. E., and R. S. Jones, 1952, Geology and Ground-Water Resources of Eddy County, New Mexico, Ground Water Report 3: New Mexico Bureau of Mines and Mineral Resources, Socorro, New Mexico, 169 pages.

Kelley, Vincent C., 1971, Geology of the Pecos Country, Southeastern New Mexico, Memoir 24: New Mexico Bureau of Mines and Mineral Resources, Socorro, New Mexico, 78 pages.

Kelly, T. E., 1974, Reconnaissance Investigation of Ground Water in the Rio Grande Drainage Basin - with Special Emphasis on Saline Ground-Water Resources, Hydrologic Investigations Atlas HA-510: U. S. Geological Survey, Washington, D. C., 4 sheets.

Meyer, Richard F., 1966, Geology of Pennsylvanian and Wolfcampian Rocks in Southeast New Mexico, Memoir 17: New Mexico Bureau of Mines and Mineral Resources, Socorro, New Mexico, 123 pages.

New Mexico State Engineer, 1995, Rules and Regulations Governing Drilling of Wells and Appropriation and Use of Ground Water in New Mexico: State Engineer Office, Santa Fe, New Mexico, 166 pages.

U. S. Geological Survey, 1965, Mineral and Water Resources of New Mexico, Bulletin 87: New Mexico Bureau of Mines and Mineral Resources, Socorro, New Mexico, printed 1982, 437 pages.

ENVIROCORP®

DISCHARGE PLAN APPLICATION AND APPLICATION FOR AUTHORIZATION TO INJECT, PER OIL CONSERVATION DIVISION FORM C-108, INTO CLASS I WELLS WDW-1 AND PROPOSED WDW-2 AND WDW-3

VOLUME I
SECTIONS I THROUGH VII

NAVAJO REFINING COMPANY
Artesia, New Mexico

Subsurface Project No. 60A4305
Subsurface Project No. 60A4937

April 1999

Prepared By:

SUBSURFACE TECHNOLOGY, INC.
Houston, Texas

ENVIROCORP WELL SERVICES, INC.

7020 PORTWEST DRIVE, #100 HOUSTON, TEXAS 77024 713/880-4640 FAX 713/880-3248

ATTACHMENT A

REVISIONS TO THE DISCHARGE PLAN APPLICATION

DISCHARGE PLAN APPLICATION FORM

Modified to provide revised information about proposed WDW-2 and to include construction of tankage at the WDW-1 wellsite.

APPLICATION FORMS

Added OCD Form C-105 (Well Completion or Recompletion Report and Log) for Navajo's WDW-1, which was completed in July and August 1998. Replaced Form C-101 for proposed WDW-2 (original location) with BLM Form 3160-3 (Application for Permit to Drill) for proposed WDW-2 (new location). Replaced Form C-102 for proposed WDW-2 to show new location. Added OCD Form C-101 for proposed WDW-2 (new location).

TABLE OF CONTENTS

Updated.

SECTION I: PURPOSE

Updated to include that WDW-1 was completed in July and August 1998 and that the location of proposed WDW-2 has been changed.

SECTION III: WELL DATA

Updated to include information about WDW-1 and new information about proposed WDW-2.

SECTION IV: EXISTING PROJECT

Updated.

SECTION V: AREA OF REVIEW

Revised to show the locations of freshwater wells and non-freshwater wells in the vicinity of the new location of proposed WDW-2.

ATTACHMENT A (Continued)

SECTION VI: WELLS IN THE AREA OF REVIEW

Revised to add information about wells in the 1-mile-radius area of review for proposed WDW-2. The predicted pressure buildup caused by the proposed injection operations and the size of the cone of influence were modified to include the revised location of WDW-2. Injection zone data obtained from WDW-1 are summarized and are shown to support the reservoir model that was used in the original application document to simulate predicted pressure buildup.

SECTION VII: PROPOSED OPERATIONS

Revised to update the maximum surface injection pressure in proposed WDW-2. Revised to clarify the character of the waste stream proposed for injection from "aqueous nonhazardous waste stream" to "exempt and nonexempt nonhazardous oilfield waste" to conform with the wording of Discharge Plan OCD-CLI-008-1. Updated to include the analysis of formation fluid samples retrieved from WDW-1 in July 1998.

SECTION VIII: GEOLOGY

Revised to add information about the injection zone that was obtained by testing WDW-1. Revised to add site-specific geological information for proposed WDW-2.

SECTION X: LOGGING AND TESTING

Revised to add information on the logs and test run in WDW-1. Revised to specify the logging program planned for proposed WDW-2.

SECTION XI: FRESHWATER CHEMISTRY

Revised to add information from freshwater wells in the vicinity of proposed WDW-2.

ATTACHMENT B

INSTRUCTIONS FOR UPDATING THE DOCUMENT "DISCHARGE PLAN AND APPLICATION FOR AUTHORIZATION TO INJECT," SUBMITTED BY NAVAJO ON MAY 1, 1999

Remove and discard the cover sheet and spine label from the outside of the binder, and replace with the enclosed cover sheet and spine label, marked "VOLUME 1."

Remove and discard the title page, and replace with enclosed.

Insert the divider marked "TRANSMITTAL LETTERS" behind the title page and in front of the transmittal letters.

Remove and discard the Table of Contents, and replace with enclosed.

Insert the divider marked "DISCHARGE PLAN APPROVAL LETTERS" behind the Table of Contents and in front of the letters.

Remove and discard the Discharge Plan Application, and replace with enclosed.

Remove the divider marked "WDW-1 FORMS C-101 AND C -102," and replace with enclosed.

Add the enclosed OCD Form C-105 for WDW-1 behind Form C-101.

Remove the divider marked "WDW-2 FORMS C-101 AND C-102," and replace with enclosed.

Remove and discard the OCD Forms C-101 and C-102 for the original location of WDW-2, and replace with the enclosed application forms for the new location of WDW-2.

Remove and discard Form C-108, and replace with enclosed.

SECTION I: Remove and discard the text of Section I, and replace with enclosed.

SECTION III: Remove and discard the text of Section III, and replace with enclosed.

Remove and discard Attachments III-1 through III-5, and replace with enclosed Attachments III-1 through III-4.

SECTION IV: Remove and discard the text of Section IV, and replace with enclosed.

SECTION V: Remove and discard the text of Section V, and replace with enclosed.

Remove and discard Figures V-1 and V-2, and replace with enclosed.

SECTION VI: Remove and discard the text of Section VI, and replace with enclosed.

Remove and discard Pages 22 and 24 of Attachment VI-1, replace with enclosed, and add new Pages 27 through 35.

Add the well records for Map ID Nos. 848, 851, 855, and 861 to the end of Attachment VI-2.

Add new Attachments VI-2A through VI-2C.

Remove and discard Attachments VI-3 through VI-5, and replace with enclosed. Note that Attachment VI-4 is not being replaced.

SECTION VII: Remove and discard the text of Section VII, and replace with enclosed.

Add new Attachment VII-4.

Remove Sections VIII through Addendum No. 1 from Volume 1, and insert in the 2-inch binder labeled, "Volume 2."

SECTION VIII: Remove and discard the text of Section VIII, and replace with enclosed.

Remove and discard the cover sheet for Attachment VIII-2, and replace with the cover sheet labeled, "ATTACHMENT VIII-1A." Add the white plastic stick-on label to the front of the log labeled, "ATTACHMENT VIII-2."

Add new Attachments VIII-2 and VIII-2A.

Remove and discard Attachments VIII-5 and VIII-6, and replace with enclosed. Add new Attachments VIII-9A and VIII-9B.

Remove and discard Attachments VIII-10 through VIII-15, and replace with enclosed.

SECTION X: Remove and discard the text of Section X, and replace with enclosed.

SECTION XI: Remove and discard the text of Section XI, and replace with enclosed.

Remove and discard the cover sheet for Attachment XI-2, and replace with enclosed.

Remove and discard Attachment XI-1, and replace with enclosed.

Add new Attachments XI-3 and XI-4.

Remove Addendum No. 1 from the end of Volume 2, and insert it in Volume 1 behind Form C-108 and before Section I.

SECTION XIII: Remove the divider marked Section XIII.

ATTACHMENT C

LEASEHOLD OPERATORS WITHIN 1 MILE OF NAVAJO REFINING COMPANY'S PROPOSED WDW-2

Map ID No. 855

Altura Energy Ltd.
Post Office Box 4294
Houston, Texas 77210-4294

Map ID Nos. 135, 138, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 160, 752, 753, 756, 785, 786, 789, 791, 793, 796, 797, 799, 800, 801, 802, 805, 806, 807, 808, 812, 814, 836, 837, 838, 839, 840, 841, 843

ARCO Permian
Post Office Box 1710
Hobbs, New Mexico 88240

Map ID No. 861

Don Benscoter
6105 East Sage Drive
Scottsdale, Arizona 85253

Map ID Nos. 856, 857

Robert G. Cox
4230 LBJ Freeway, Suite 409
Dallas, Texas 75234

Map ID No. 772

Durham, Inc.
P. O. Drawer 273
Midland, Texas 79702

ATTACHMENT C (Continued)

Map ID Nos. 162, 859, 860, 861, 862, 864, 866, 868, 869, 870, 878, 879

The Eastland Oil Company
P. O. Drawer 3488
Midland, Texas 79702

Map ID Nos. 881, 882, 897

GP II Energy, Inc.
Post Office Box 50682
Midland, Texas 79710

Map ID No.884

David G. Hammond
Post Office Box 1538
Artesia, New Mexico 88211

Map ID No. 144, 161

Mewbourne Oil Company
Post Office Box 7698
Tyler, Texas 75711

Map ID No. 858

Rhonda Operating Company
511 North Main
Midland, Texas 79701

Map ID No. 855

Rising Star Energy, LLC
3141 Hood Street, Suite 350
Dallas, Texas 75219

ATTACHMENT C (Continued)

Map ID No. 861

Summit Exploration LLC
525 South Main Street, Suite 1200
Tulsa, Oklahoma 74102

Map ID Nos. 157, 158, 159, 751, 755, 781, 842, 844, 846, 848, 849, 850, 851, 852, 853, 854, 863, 865, 867, 871, 872, 873, 874, 875, 876, 877, 880, 883, 885, 886, 888, 895, 896, 901, 910

P&A'd Wells

Map ID Nos. 754, 792, and 795

Mis-spotted wells

All Wells on Federal Land

Bureau of Land Management
New Mexico State Office
Post Office and Federal Building
Post Office Box 1449
Santa Fe, New Mexico 87504-1449

Bureau of Land Management
Roswell Field Office
2909 West Second Street
Roswell, New Mexico 88201
Attn: Mr. David Glass

Bureau of Land Management
Carlsbad Field Office
Post Office Box 1778
Carlsbad, New Mexico 88221-1778
Attn: Mr. Joe Lara

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VOLUME I

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ATTACHMENTS

ATTACHMENTS

TABLE OF CONTENTS (Continued)

TABLE OF CONTENTS (Continued)

ATTACHMENTS

TABLE OF CONTENTS (Continued)

DATE IN	SUSPENSE	ENGINEER	LOGGED BY	TYPE

ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION

- Engineering Bureau -

ADMINISTRATIVE APPLICATION COVER SHEET

THIS COVERSHEET IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS

Application Acronyms:

[NSP-Non-Standard Proration Unit] [NSL-Non-Standard Location]
[DD-Directional Drilling] [SD-Simultaneous Dedication]
[DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]
[PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]
[WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]
[SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]
[EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

[1] **TYPE OF APPLICATION** - Check Those Which Apply for [A]

[A] Location - Spacing Unit - Directional Drilling

❑ NSL ❑ NSP ❑ DD ❑ SD

Check One Only for [B] and [C]

[B] Commingling - Storage - Measurement

❑ DHC ❑ CTB ❑ PLC ❑ PC ❑ OLS ❑ OLM

[C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery

❑ WFX ❑ PMX ❑ SWD ❑ IPI ❑ EOR ❑ PPR Class I Effluent Disposal Wells

[2] **NOTIFICATION REQUIRED TO:** - Check Those Which Apply, or ❑ Does Not Apply

[A] ❑ Working, Royalty or Overriding Royalty Interest Owners

[B] ☒ Offset Operators, Leaseholders or Surface Owner

[C] ☒ Application is One Which Requires Published Legal Notice

[D] ☒ Notification and/or Concurrent Approval by BLM or SLO
U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office

[E] ❑ For all of the above, Proof of Notification or Publication is Attached, and/or,

[F] ❑ Waivers are Attached

[3] **INFORMATION / DATA SUBMITTED IS COMPLETE** - Statement of Understanding

I hereby certify that I, or personnel under my supervision, have read and complied with all applicable Rules and Regulations of the Oil Conservation Division. Further, I assert that the attached application for administrative approval is accurate and complete to the best of my knowledge and where applicable, verify that all interest (WI, RI, ORRI) is common. I understand that any omission of data (including API numbers, pool codes, etc.), pertinent information and any required notification is cause to have the application package returned with no action taken.

Note: Statement must be completed by an individual with supervisory capacity.

Darrell Moore	Darrell Moore	Env. Mgr. for Water & Waste	4/27/99
Print or Type Name	Signature	Title	Date

District I - (505) 393-6161
P. O. Box 1980
Hobbs, NM 88241-1980
District II - (505) 748-1283
811 S. First
Artesia, NM 88210
District III - (505) 334-6178
1000 Rio Brazos Road
Aztec, NM 87410
District IV - (505) 827-7131

New Mexico
Energy Minerals and Natural Resources Department
Oil Conservation Division
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

Revised 12/1/95

Submit Original
Plus 1 Copies
to Santa Fe
1 Copy to appropriate
District Office

DISCHARGE PLAN APPLICATION FOR SERVICE COMPANIES, GAS PLANTS, REFINERIES, COMPRESSOR, AND CRUDE OIL PUMP STATIONS

(Refer to the OCD Guidelines for assistance in completing the application)

☐ New ☐ Renewal ☒ Modification

1. Type: Proposed Class I Well Nos. WDW-1, WDW-2, and WDW-3
2. Operator: Navajo Refining Company

   Address: Post Office Box 159, Highway 82 East, Artesia, New Mexico 88211

   Contact Person: Darrell Moore Phone: 505/748-3311
3. Location: attached /4 _____/4 Section _____ Township _____ Range _____
   Submit large scale topographic map showing exact location.
4. Attach the name, telephone number and address of the landowner of the facility site.
5. Attach the description of the facility with a diagram indicating location of fences, pits, dikes and tanks on the facility.
6. Attach a description of all materials stored or used at the facility.
7. Attach a description of present sources of effluent and waste solids. Average quality and daily volume of waste water must be included.
8. Attach a description of current liquid and solid waste collection/treatment/disposal procedures.
9. Attach a description of proposed modifications to existing collection/treatment/disposal systems.
10. Attach a routine inspection and maintenance plan to ensure permit compliance.
11. Attach a contingency plan for reporting and clean-up of spills or releases.
12. Attach geological/hydrological information for the facility. Depth to and quality of ground water must be included.
13. Attach a facility closure plan, and other information as is necessary to demonstrate compliance with any other OCD rules, regulations and/or orders.
14. *CERTIFICATION*

I herby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

NAME: Darrell Moore Title: Env. Mgr. for Water and Waste

Signature: Darrell Moore Date: 4/27/99

DISCHARGE PLAN APPLICATION FOR SERVICE COMPANIES, GAS PLANTS, REFINERIES, COMPRESSOR, AND CRUDE OIL PUMP STATIONS

1. **Type**
   Class I Wells WDW-1 and proposed WDW-2 and WDW-3

2. **Operator**
   Navajo Refining Company
   Post Office Box 159
   Highway 82 East
   Artesia, New Mexico 88211

   Contact
   Darrell Moore
   Environmental Manager of Water and Waste
   Navajo Refining Company
   Post Office Box 159
   Artesia, New Mexico 88211
   505-748-3311

3. **Location**
   The locations of WDW-1 and proposed WDW-2 and WDW-3 are detailed on accompanying Forms C-102. The well locations are shown on Attachment V-2 of the Application for Authorization to Inject, Per OCD Form C-108, Into Proposed WDW-1, WDW-2, and WDW-3 (the "Application to Inject").

4. **Facility Ownership**
   Navajo Refining Company owns the sites of WDW-1 and proposed WDW-3. The site of proposed WDW-2 is owned by the United States government. Navajo is applying to the Bureau of Land Management for a right-of-way permit to use the site of proposed WDW-2.

5. **Facilities**
   The facilities currently planned for each wellsite include the wellhead, the well annulus monitoring system, and monitoring and recording instrumentation. The waste water to be injected will be delivered to each well from Navajo's refinery in Artesia by a pipeline system. Tankage to store up to 10,000 barrels may be constructed at the site of WDW-1.

6. **Materials Storage**
   No materials storage is planned.

7. **Waste Stream**
The waste stream to be injected is described in Section VII of the "Application to Inject."

8. **Current Treatment and Disposal**
The waste stream to be injected is currently managed in evaporation ponds at Navajo's refinery in Artesia. A portion of the stream is sent to a publicly owned treatment works.

9. **Modifications**
Not applicable; this application is for planned facilities.

10. **Inspection and Maintenance Plan**
Navajo will operate instrumentation that will monitor and record continuously the injection pressure, flow rate, flow volume, and casing-tubing annulus pressure.

The injection well system will be equipped with a pressure-limiting device that will prevent the wellhead pressure from exceeding the permitted maximum surface injection pressure.

A well annulus monitoring system will be installed and maintained at each wellsite to monitor for tubing and casing leaks.

Mechanical integrity testing will be conducted annually and any time the tubing is pulled or the packer is reseated, in accordance with OCD testing procedures.

11. **Contingency Plan**
Navajo will notify the OCD District Office in Artesia within 24 hours of failures of the tubing, casing, or packer and will correct failures in a timely manner.

12. **Geological and Hydrological Information**
Geological and hydrogeological information is included in Sections VIII and XI of the "Application to Inject."

13. **Closure Plan**
The proposed closure plan for the wells is included as Attachment III-4 of the "Application to Inject."

Submit to Appropriate District Office
State Lease — 6 copies
Fee Lease — 5 copies
DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

2040 Pacheco St.
Santa Fe, NM 87505

Revised 1-1-89

WELL API NO.
30-015-27592

5. Indicate Type of Lease STATE [XX] FEE [ ]

6. State Oil & Gas Lease No.
B-2071-28

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

1a. Type of Well:
OIL WELL [ ] GAS WELL [ ] DRY [ ] OTHER Class I Disposal

b. Type of Completion:
NEW WELL [ ] WORK OVER [ ] DEEPEN [ ] PLUG BACK [ ] DIFF RESVR [ ] OTHER Reentry

RECEIVED
SEP 1998
OCD - ARTESIA

7. Lease Name or Unit Agreement Name

2. Name of Operator
Navajo Refining Company

8. Well No.
WDW-1

3. Address of Operator
Post Office Box 159, Artesia, New Mexico 88211

9. Pool name or Wildcat
Cisco

4. Well Location
Unit Letter O : 2310 Feet From The East Line and 660 Feet From The South Line

Section 31 Township 17S Range 28E NMPM Eddy County

10. Date Spudded	11. Date T.D. Reached	12. Date Compl. (Ready to Prod.)	13. Elevations (DF & RKB, RT, GR, etc.)	14. Elev. Casinghead
8/4/93	9/9/93	8/4/98	3678 feet GR	--

15. Total Depth	16. Plug Back T.D.	17. If Multiple Compl. How Many Zones?	18. Intervals Drilled By	Rotary Tools	Cable Tools
10,200 feet	9004 feet	1		All	

19. Producing Interval(s), of this completion - Top, Bottom, Name
7924 feet to 8476 feet (Cisco)

20. Was Directional Survey Made
Yes

21. Type Electric and Other Logs Run
Dual Laterlog, Density Neutron, Sonic (already submitted)

22. Was Well Cored
No

23. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT LB./FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
13-3/8"	48	390	17-1/2	375 sacks "C" Lite + 150 sacks "C" Neet	None
9-5/8"	36	2555	12-1/4	800 sacks "C" Lite + 200 sacks "C" Neet	None
7"	26 & 29	9094	8-3/4	220 sx "C" Lite + 1150 sx "H" Lite	N

24. LINER RECORD

SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN

25. TUBING RECORD

SIZE	DEPTH SET	PACKER SET
4-1/2	7879	7879

26. Perforation record (interval, size, and number) 2 jspf, total = 542 holes
7924-42, 7974-8030, 8050-56, 8066-80, 8132-40, 8118-8127, 8160-64, 8170-88, 8220-54, 8260-70, 8280-8302, 8370-78, 8360-66, 8400-10, 8419-23, 8430-46, 8460-64, and 8470-76

27. ACID, SHOT, FRACTURE, CEMENT, SQUEEZE, ETC.

DEPTH INTERVAL	AMOUNT AND KIND MATERIAL USED
7924 - 8188	5000 gal 15% HCl + salt
8220 - 8476	5000 gal 15% HCl + salt

28. PRODUCTION

Date First Production	Production Method (Flowing, gas lift, pumping - Size and type pump)	Well Status (Prod. or Shut-in)
N/A	N/A	Shut in

Date of Test	Hours Tested	Choke Size	Prod'n For Test Period	Oil - Bbl.	Gas - MCF	Water - Bbl.	Gas - Oil Ratio

Flow Tubing Press.	Casing Pressure	Calculated 24-Hour Rate	Oil - Bbl.	Gas - MCF	Water - Bbl.	Oil Gravity - API - (Corr.)

29. Disposition of Gas (Sold, used for fuel, vented, etc.)

Test Witnessed By

30. List Attachments
Reentry and completion report to follow.

31. I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief

Signature Darrell Moore Printed Name Darrell Moore Title Env. Mgr. for Water Waste Date 9/21/98

OCD FORMS C-101 AND C-102
SUBMITTED TO THE NEW MEXICO OIL CONSERVATION DIVISION ON APRIL 22, 1999

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 South First, Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources

OIL CONSERVATION DIVISION
2040 South Pacheco
Santa Fe, NM 87505

Form C-101
Revised March 12, 1999

Submit to Appropriate District Office
State Lease - 6 Copies
Fee Lease - 5 Copies

☐ AMENDED REPORT

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

[1] Operator Name and Address.	[2] OGRID Number
Navajo Refining Company Post Office Box 159 Artesia, New Mexico 88211	[3] API Number 30 – 015-20894

[4] Property Code	[5] Property Name	[6] Well No.
	WDW-2	

[7] Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	12	18S	27E		1980	North	660	West	Eddy

[8] Proposed Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

[9] Proposed Pool 1	[10] Proposed Pool 2
Lower Wolfcamp-Cisco-Canyon Injection Zone	

[11] Work Type Code	[12] Well Type Code	[13] Cable/Rotary	[14] Lease Type Code	[15] Ground Level Elevation
E-Reentry	Class I Injection	R	Federal	3607' GR, 3623' KB
[16] Multiple	**[17] Proposed Depth**	**[18] Formation**	**[19] Contractor**	**[20] Spud Date**
No	9200'	Strawn		5/15/99

[21] Proposed Casing and Cement Program

Hole Size	Casing Size	Casing weight/foot	Setting Depth	Sacks of Cement	Estimated TOC
11"	8-5/8"	32 lb/ft	1995 feet	800	Surface
7-7/8"	5-1/2"	17 lb/ft	9200 feet	Caliper vol. +20%	Surface

[22] Describe the proposed program. If this application is to DEEPEN or PLUG BACK give the data on the present productive zone and proposed new productive zone. Describe the blowout prevention program, if any. Use additional sheets if necessary.

Proposed Reentry of The Eastland Oil Company (originally Fred Pool Drilling, Inc.) Chukka Federal No. 2 (PBTD 1912 feet, September 10, 1985) formerly Amoco Production Company Diamond Federal Gas Com. No. 1 (OTD 10,372 feet, P&A August 31, 1973). The well currently produces oil and gas from perforations from 1446 feet to 1462 feet (Penrose.)

Navajo will squeeze the perforations from 1446 feet to 1462 feet, drill out cement plugs, and clean out the well to 9200 feet, set 5-1/2 inch casing at 9200 feet and cement to the surface, perforate porous intervals in the Lower Wolfcamp, Cisco, and Canyon Formations between 7270 feet and 9200 feet, and conducted injectivity tests.

Attached are the Well Location Plat and Drilling Program.

[23] I hereby certify that the information given above is true and complete to the best of my knowledge and belief.

Signature: Darrell Moore
Printed name: Darrell Moore
Title: Env. Mgr. for Water & Waste
Date: 4/21/99
Phone: 505-748-3311

OIL CONSERVATION DIVISION

Approved by:
Title:
Approval Date:
Expiration Date:
Conditions of Approval :
Attached ☐

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 South First, Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
2040 South Pacheco
Santa Fe, NM 87505

Form C-102
Revised March 17, 1999

Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-015-20894		Lower Wolfcamp-Cisco-Canyon Injection Zone

[4] Property Code	[5] Property Name	[6] Well Number
	WDW-2	

[7] OGRID No.	[8] Operator Name	[9] Elevation
	Navajo Refining Company	3607' GR

[10] Surface Location

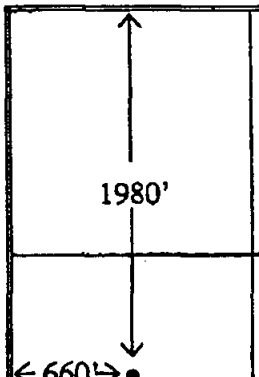
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	12	18S	27E		1980	North	660	West	Eddy

[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



[17] OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief

Signature: Darrell Moore

Printed Name: Darrell Moore

Title: Env. Mgr. for Water & Waste

Date: 4/21/99

[18] SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

Date of Survey

Signature and Seal of Professional Surveyer:

Well is active. Location was not re-surveyed by Navajo.

Certificate Number

BLM FORM 3160-3
SUBMITTED TO THE BUREAU OF LAND MANAGEMENT
ON APRIL 13, 1999

Form 3160-3
(July 1992)

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

FORM APPROVED
OMB NO. 1004-0136
Expires: February 28, 1995

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR DEEPEN

5. LEASE DESIGNATION AND SERIAL NO.: NM 6852

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

1a. TYPE OF WORK: DRILL ☐ DEEPEN ☐ Reenter

b. TYPE OF WELL: OIL WELL ☐ GAS WELL ☐ OTHER Class I Waste Disposal Well SINGLE ZONE ☐ MULTIPLE ZONE ☒

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME, WELL NO.: WDW-2

2. NAME OF OPERATOR: Navajo Refining Company

9. API WELL NO.: 30-015-20894

3. ADDRESS AND TELEPHONE NO.: Post Office Box 159, Artesia, New Mexico 88211

10. FIELD AND POOL, OR WILDCAT: L. Wolfcamp-Cisco-Canyon Injection Zone

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface: 1980' FNL and 660' FWL Unit Letter E
At proposed prod. zone:

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: 12-T18S-R27E

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*: 11 air miles east-southeast of Artesia

12. COUNTY OR PARISH: Eddy

13. STATE: NM

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any)	16. NO. OF ACRES IN LEASE	17. NO. OF ACRES ASSIGNED TO THIS WELL
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.	**19. PROPOSED DEPTH**	**20. ROTARY OR CABLE TOOLS**
	9200'	Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.): 3607' GR, 3623' KB

22. APPROX. DATE WORK WILL START*: May 1, 1999

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	GRADE, SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
11"	8-5/8"	32 lb/ft	1995'	800 sx circulated
7-7/8"	5-1/2"	17 lb/ft	9200'	Caliper volume + 20% excess

Proposed reentry of the Eastland Oil Company (originally Fred Pool Drilling, Inc.) Chukka Federal No. 2 (PBTD 1912 feet, September 10, 1985) formerly Amoco Production Company Diamond Federal Gas Com. No. 1 (OTD 10,372 feet, P&A August 31, 1973). The well currently produces oil and gas from perforations from 1446 feet to 1462 feet (Penrose).

Navajo will squeeze the perforations from 1446 feet to 1462 feet, drill out cement plugs and clean out the well to 9200 feet, set 5-1/2 inch casing at 9200 feet and cement to the surface, perforate porous intervals in the Lower Wolfcamp, Cisco, and Canyon Formations between 7270 feet and 9200 feet, and conduct injectivity tests.

Attached are the Well Location Plat, Drilling Program, and Surface Use Plan.

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.

SIGNED _____ TITLE _____ DATE _____

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations there

CONDITIONS OF APPROVAL, IF ANY:

APPROVED BY _____ TITLE _____ DATE _____

*See Instructions On Reverse Side

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 South First, Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
2040 South Pacheco
Santa Fe. NM 87505

Form C-102
Revised March 17, 1999

Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-015-20894		Lower Wolfcamp-Cisco-Canyon Injection Zone

[4] Property Code	[5] Property Name	[6] Well Number
	WDW-2	

[7] OGRID No.	[8] Operator Name	[9] Elevation
	Navajo Refining Company	3607' GR

[10] Surface Location

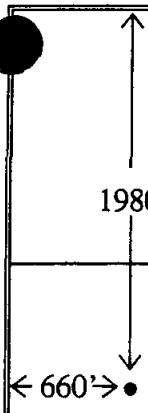
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	12	18S	27E		1980	North	660	West	Eddy

[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



[17] OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief

Signature

Printed Name

Title

Date

[18] SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

Date of Survey
Signature and Seal of Professional Surveyer:

Well is active. Location was not re-surveyed by Navajo.

Certificate Number

DRILLING PROGRAM

FOR NAVAJO REFINING COMPANY'S PROPOSED WDW-2
1980' FNL, 660' FWL of 12-T18S-R27E
Eddy County, New Mexico

1. Obtain all permits and approvals for the reentry, testing and completion of a currently existing well. Construct the lined reserve pits, dig out the cellar, and install a mousehole and rathole.

2. Move in and rig up a workover unit. Remove the pumping equipment and pull the tubing out of the well after tagging the plugged-back total depth (PBTD).

3. Squeeze the perforations from 1446 feet to 1462 feet with 100 sacks of Class "H" cement. Allow the cement to cure.

4. Drill out the cement to PBTD, circulate the well clean, and pressure test the squeezed perforations at 500 psig for 30 minutes.

   Drilling Fluid

   a. Freshwater-based gel chemical fluid.
   b. Density range: 8.6 ppg to 9.5 ppg. Requirement for weighting material is not anticipated.
   c. Viscosity range: 35 sec/qt to 45 sec/qt.
   d. Pit volumes to be monitored visually.

5. Conduct a CBL/VDL survey from 1912 feet to the surface. Submit the results of the pressure test and CBL/VDL survey to the OCD and the BLM for their review and approval prior to mobilizing the drilling rig.

6. After receiving approval from the OCD and the BLM to continue the reentry, prepare the location for the selected drilling rig.

7. Move in and rig up the rotary drilling rig and install the blowout preventers (BOPs).

BOP Minimum Requirements

a. 11-inch, 3000-psi working pressure double-hydraulic BOP.
b. 11-inch, 3000-psi working pressure annular BOP.
c. 3-inch, 3000-psi working pressure manual choke manifold.

A schematic of the BOP stack is included as Exhibit A.

8. Drill out the following cement plugs and conduct deviation surveys every 1000 feet or on trips:

a. 1912 feet to 2045 feet, 40 sacks
b. 3620 feet to 3720 feet, 50 sacks
c. 5456 feet to 5556 feet, 40 sacks
d. 7435 feet to 7535 feet, 50 sacks

Estimated Tops of Geologic Formations

San Andres	2005'	Lower Wolfcamp	7270'
Yeso	4210'	Cisco	7645'
Abo	5506'	Canyon	8390'
Wolfcamp	6728'	Strawn	8894'

No fresh water or hydrocarbons are expected to be encountered.

Expected Bottom-Hole Pressure and Hazards

The expected bottom-hole pressure is 3500 psia at the total depth of 9200 feet. The bottom-hole pressure was determined from the pressure measured in Navajo's WDW-1, or 2928 psia, at 7924 feet. Navajo's WDW-1 is completed in the same interval proposed for WDW-2 and is located 11,000 feet northeast of WDW-2 in 31-T17S-R28E. The average specific gravity of the fluid between 7924 feet and 9200 feet is expected to be 1.034, which is the specific gravity of the fluid swabbed from the interval between 8220 feet and 8476 feet in WDW-1. The expected bottom-hole pressure at 9200 feet in proposed WDW-2 is calculated below:

$$\text{BHP (9200 feet)} = 2928 \text{ psia} + (9200 \text{ feet} - 7924 \text{ feet}) \times 0.433 \text{ psi/ft} \times 1.034$$
$$= 3500 \text{ psia}$$

No abnormal pressures or temperatures or other hazards are expected while drilling or testing the well. Hydrogen sulfide monitoring equipment will be set up prior to swabbing operations.

9. Clean the well out to a depth of 9200 feet and circulate and condition the hole for logging. Make a wiper trip to the base of the 8-5/8 inch surface casing while strapping the drillpipe.

10. Conduct a formation microimager (FMI) survey with gamma ray from the well's total depth to 4000 feet. Continue the four-arm caliper survey to the 8-5/8 inch casing shoe. Process the FMI for fracture identification over the lower 200 feet of the confining zone and zones of interest in the injection zone, if warranted.

11. Spot a gelled pill at 9200 feet and lay down the drillpipe.

12. Run the 5-1/2 inch, 17-lb/ft, J-55, LT&C casing with a packoff shoe and float collar to 9200 feet. Install a "DV" tool at approximately 5800 feet. Run centralizers at approximately 120-foot intervals.

13. Cement the 5-1/2 inch casing in place. Use a minimum of 20% excess cement as calculated from the caliper log. Circulate cement to the surface and allow to cure.

    Cement Program

    a. Stage 1 Cement (total depth to 5800 feet): Lightweight Class H with fly ash, gel, friction reducer, and salt mixed with fresh water.

    b. Stage 2 Lead Cement (5200 feet to the surface): Lightweight Class C with gel and bridging agents mixed with fresh water.

    c. Stage 2 Tail Cement (5800 feet to 5200 feet): Class C mixed with fresh water.

14. Clean out the mud pits and release the drilling rig 12 hours after cementing the 5-1/2 inch casing in place.

15. Stabilize the 5-1/2 inch casing at the surface using ready-mix cement.

16. Move in and rig up the completion rig pump, tank, power swivel, and work string. Install the blowout preventer.

17. Run in the well with a 4-3/4 inch bit to the "DV" tool and test the casing to 1500 psig for 30 minutes.

18. Drill out the "DV" tool and clean out the wellbore to the float collar. Test the casing to 1500 psig for 30 minutes. Circulate the wellbore with clean brine, preceded by 15% HCL to clean the casing. Trip the work string out of the well.

19. Conduct the casing inspection, CBL/VDL, and differential temperature surveys.

20. Perforate the selected injection interval as determined from the open hole logs. Depending on the height of the perforated interval, the interval may be perforated in two stages, as Zone Nos. 1 and 2.

21. Run in the well with a packer and tailpipe. Set the packer above the top perforation and swab test the perforated interval. Recover at minimum two tubing volumes of the reservoir fluid for analysis (Note: Set up H_2S monitoring equipment prior to swabbing operations).

22. Acidize the perforated zone (Zone 1) using diverters. Pull the packer out of the well.

23. Perforate the next selected injection interval (Zone 2) as determined from the open hole logs.

24. Run a retrievable bridge plug and packer into the well and isolate Zone 2.

25. Acidize Zone 2 using diverters. Pull the retrievable bridge plug and packer out of the well, laying down the work string.

26. Conduct an injection test down the 5-1/2 inch casing at 420 gpm for 12 hours, followed by a pressure falloff test.

27. Conduct a differential temperature survey and radioactive tracer survey to determine the injection profile.

28. Run the injection tubing and packer. Fill the annulus with corrosion inhibited brine.

29. Wait for the well system to come to thermal stabilization (approximately 24 hours).

30. Conduct an annulus pressure test witnessed by the OCD.

31. Rig down and move out all equipment and close the reserve pit.

32. Install the annulus monitoring system and return the well to the client.

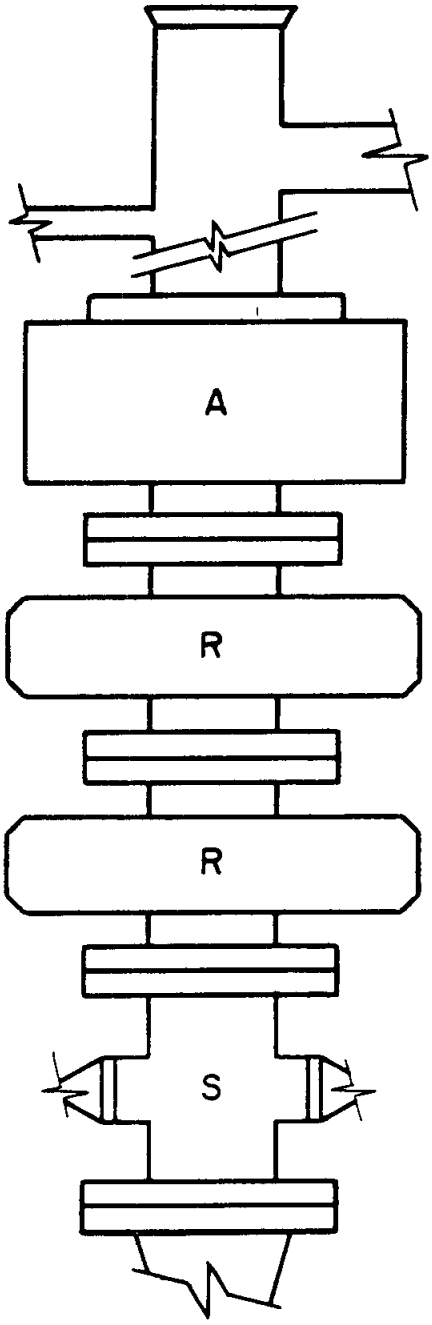
Logging, Testing, And Coring Program

A formation fluid sample will be retrieved from the proposed injection zone in proposed WDW-2. Navajo will conduct injectivity testing in the injection zone of proposed WDW-2.

No coring is planned.

The proposed logging program is described below:

HOLE/CASING	OPEN-HOLE LOGS	CASED-HOLE LOGS
Proposed WDW-2		
11 inch Surface Borehole (8-5/8 inch Casing) 1995 feet		Logs Run in 1973: Gamma Ray Logs Proposed on Reentry: Cement Bond/Variable Density Casing Inspection Log
7-7/8 inch Long-String Borehole (5-1/2 inch Casing) 9200 feet	Logs Run on August 27, 1973: Dual Induction-Laterolog/ Spontaneous Potential Compensated Neutron/ Formation Density Caliper Gamma Ray Logs Proposed on Reentry: Fracture Identification Log 4-Arm Caliper	Logs Proposed on Reentry: Cement Bond/Variable Density Casing Inspection Log Differential Temperature Log Radioactive Tracer Survey



A = ANNULAR-TYPE BLOWOUT PREVENTER
11-inch throughbore, 3000-psi working pressure

R = RAM-TYPE BLOWOUT PREVENTER
11-inch throughbore, 3000-psi working pressure

S = DRILLING SPOOL WITH SIDE OUTLET CONNECTIONS
FOR CHOKE AND KILL LINES

MANUAL CHOKE MANIFOLD
3-inch throughbore, 3000-psi working pressure

Source: API RP 53: Recommended Practices for
Blowout Prevention Equipment Systems

ENVIROCORP ®
ENVIROCORP SERVICES & TECHNOLOGY, INC.
HOUSTON, TX.
SOUTH BEND, IN.
BATON ROUGE, LA.

EXHIBIT A

BLOWOUT PREVENTER STACK AND MINIMUM REQUIREMENTS

DATE: 4/7/98	CHECKED BY: JDB	JOB NO:
DRAWN BY: NLN	APPROVED BY:	DWG. NO:

SURFACE USE PLAN

NAVAJO REFINING COMPANY
PROPOSED WDW-2
1980' FSL, 660' FWL of 12-T18S-R27E
EDDY COUNTY, NEW MEXICO

1. Existing Roads: Existing roads that lead to the proposed drillsite are shown on Exhibit A.

2. Access Roads To Be Constructed: No new access road is proposed.

3. Location of Existing Wells: Existing wells within one mile of proposed WDW-2 are shown on Exhibit B.

4. Location of Proposed Facilities If Well Is Completed: The well will be shut in after completion and testing.

5. Location and Type of Water Supply: Water for reentry, testing, and completion operations will be purchased from a commercial water hauler.

6. Source of Construction Materials: Materials required for construction of the site will be taken from a state-owned pit.

7. Methods of Handling Waste Disposal:

   A. Drill cuttings will be disposed of in the drilling pits.

   B. Drilling fluids will be allowed to evaporate in the drilling pits until the pits are dry.

   C. Water produced during tests will be disposed of in the drilling pits.

   D. Trash, waste paper, garbage, and junk will be buried in a trash pit and covered with a minimum of 24 inches of dirt. All waste material will be contained to prevent scattering by the wind. Location of the trash pit is shown on Exhibit C.

E. All trash and debris will be buried or removed form the wellsite after finishing drilling and/or completion operations.

8. Ancillary Facilities: None anticipated.

9. Wellsite Layout:

A. The wellsite will be surveyed, and a 400' x 400' area will be staked and flagged.

B. The dimensions and relative location of the drill pad, mud pit, and trash pit, with respect to the wellbore, are shown on Exhibit C.

C. Existing topsoil to a depth of 6 inches will be lifted and stockpiled at the northeastern (uphill) end of the well pad. The stockpiled topsoil will be located uphill to avoid mixing with subsurface materials.

D. The well pad will be surfaced with material found in place.

E. The pits for mud and cuttings will be lined with 6-mil plastic.

10. Plans for Restoration of Surface:

A. After completion of drilling and/or completion operations, all equipment and other material not needed for operations will be removed. Pits will be filled and the location cleaned of all trash and junk.

B. Any unguarded pits containing fluids will be fenced until they are filled.

C. After abandonment, all equipment, trash, and junk will be removed and the location cleaned.

D. The stockpiled topsoil will be spread over the surface of the location.

11. Surface Ownership: U.S. Department of Interior, Bureau of Land Management.

12. Archaeological Survey: An archaeological survey of the drill pad was submitted to the BLM on July 31, 1985, on behalf of Fred Pool Drilling Company. An archeological survey was conducted by Navajo Refining Company and will be submitted by Navajo under separate cover.

13. Operator's Representatives: Representatives responsible for assuring compliance with the approved Surface Use Plan:

Mr. Darrell Moore
Navajo Refining Company
Post Office Box 159
Artesia, New Mexico 88211
505/748-3311

Mr. Jim Bundy
Subsurface Technology, Inc.
7020 Portwest Drive, Suite 100
Houston, Texas 77024
713/880-4640

Exhibits

A. Topographic Map
B. Oil and Gas Map
C. Sketch of Well Pad

14. Certification:

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drillsite and access route; that I am familiar with the conditions that exist; that the statements made in this plan are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed by Navajo Refining Company and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved.

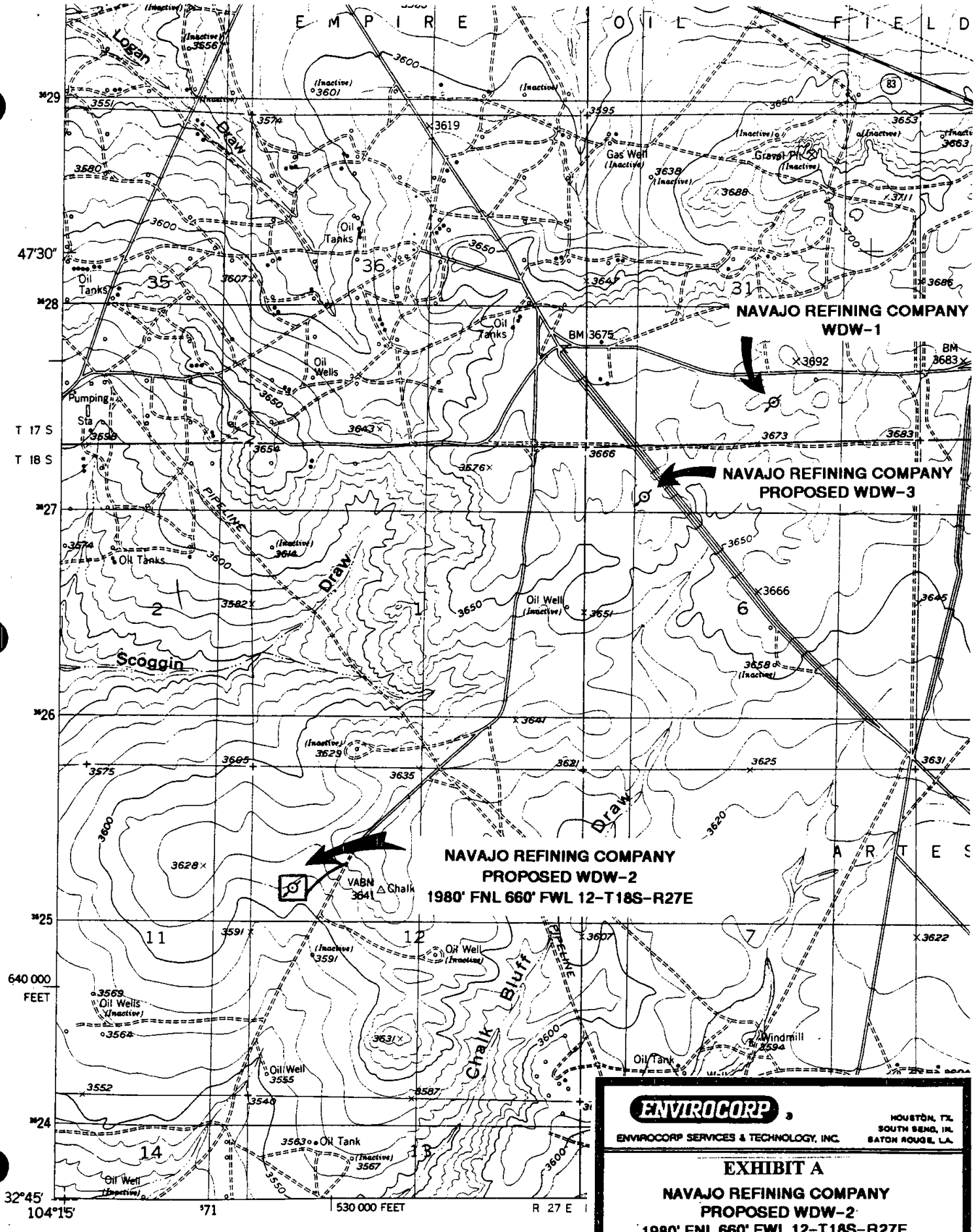
Date

Signature

Name

Title

Navajo Refining Company
Company



RED LAKE QUADRANGLE

ENVIROCORP

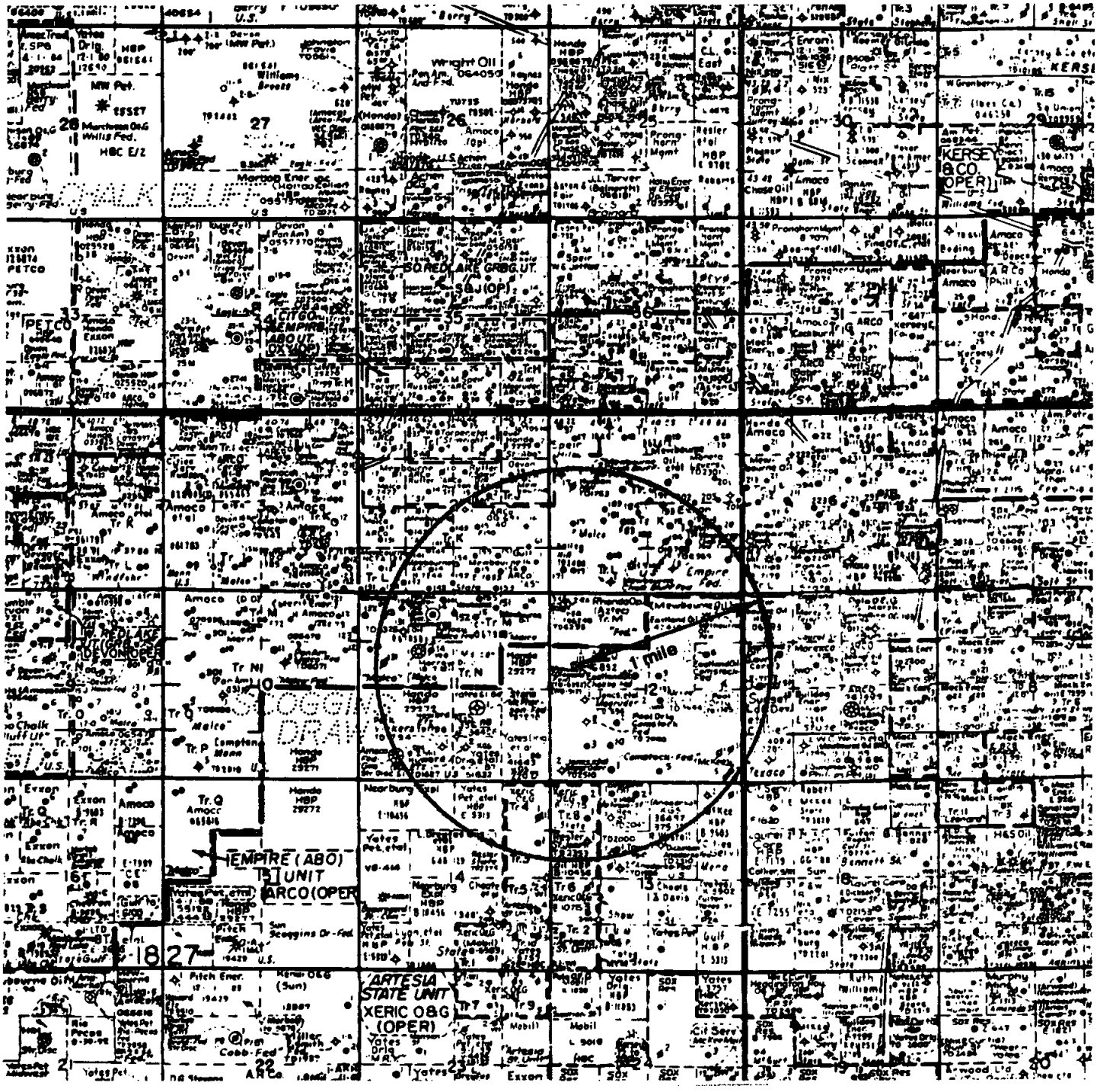
ENVIROCORP SERVICES & TECHNOLOGY, INC.

HOUSTON, TX.
SOUTH BEND, IN.
BATON ROUGE, LA.

EXHIBIT A

NAVAJO REFINING COMPANY
PROPOSED WDW-2
1980' FNL 660' FWL 12-T18S-R27E
EDDY COUNTY, NM

DATE:	CHECKED BY:	JOB NO:
DRAWN BY:	APPROVED BY:	DWG. NO:



Map courtesy of Midland Map Company

ENVIROCORP

ENVIROCORP SERVICES & TECHNOLOGY, INC.

HOUSTON, TX.
SOUTH BEND, IN.
BATON ROUGE, LA.

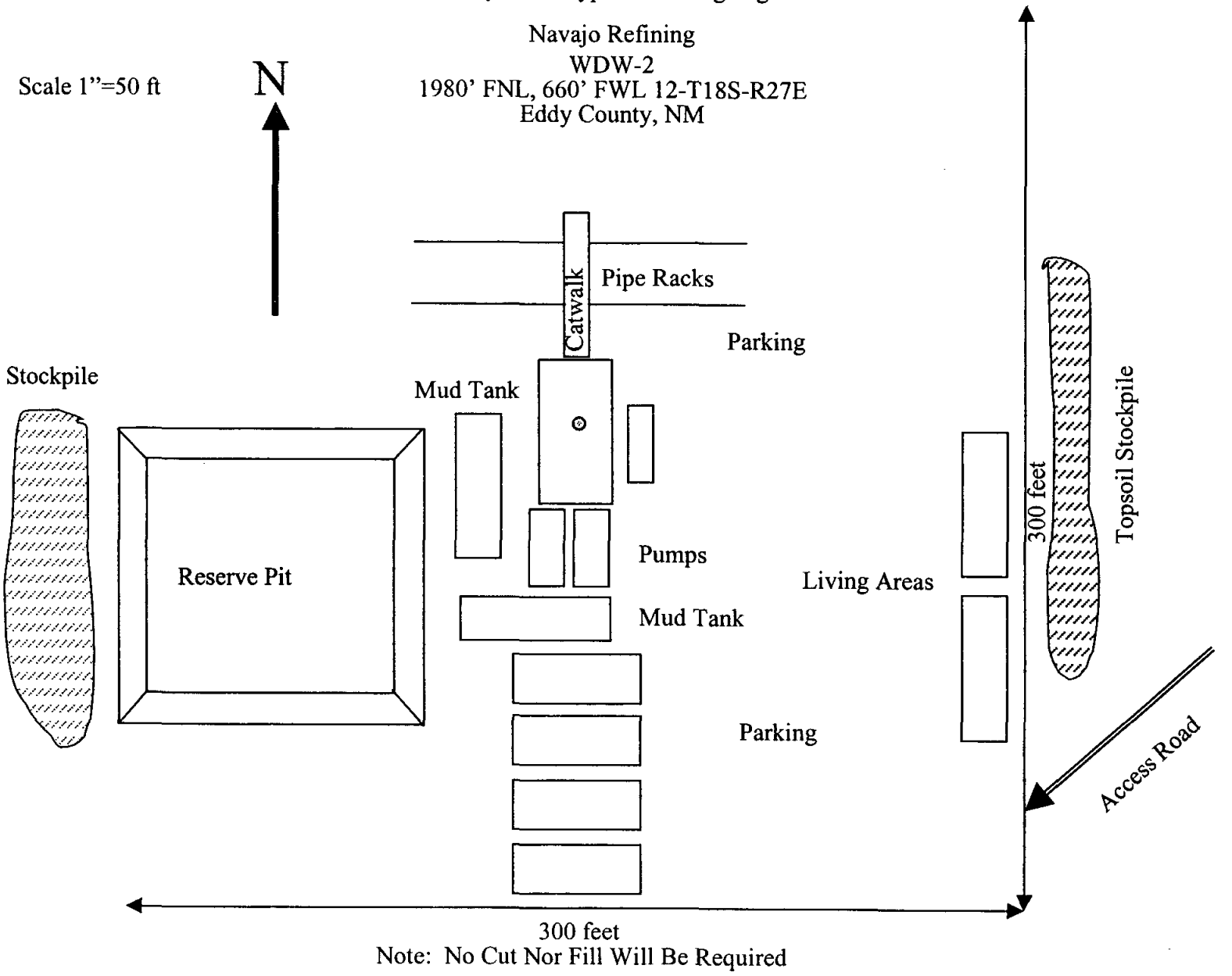
EXHIBIT B
WELLS WITHIN 1 MILE OF
NAVAJO REFINING COMPANY'S
PROPOSED WDW-2
1980' FNL, 660' FWL 12-T18S-R27E

DATE: 4/7/99	CHECKED BY:	JOB NO:
DRAWN BY: NLN	APPROVED BY:	DWG. NO:

Layout of Typical Drilling Rig

Navajo Refining
WDW-2
1980' FNL, 660' FWL 12-T18S-R27E
Eddy County, NM

Scale 1"=50 ft



Note: No Cut Nor Fill Will Be Required

Subsurface Technology, Inc.

EXHIBIT C

STATE OF NEW MEXICO
ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

Oil Conservation Div.
2040 Pacheco St.
Santa Fe, NM 87505

FORM C-108
Revised 7-1-81

APPLICATION FOR AUTHORIZATION TO INJECT

I. PURPOSE: ____ Secondary Recovery ____ Pressure Maintenance __X__ Disposal ____ Storage
Application qualifies for administrative approval? __Yes __X__No

II. OPERATOR: Navajo Refining Company

ADDRESS: Post Office Box 159, Highway 82 East, Artesia, New Mexico 88211

CONTACT PARTY: Darrell Moore, Environmental Mgr. Water and Waste PHONE: 505/748-3311

III. WELL DATA: Complete the data required on the reverse side of this form for each well processed for injection. Additional sheets may be attached if necessary.

IV. Is this an expansion of an existing project: __X__ Yes ___ No
If yes, give the Division order number authorizing the project Discharge Plan Permit UIC-CLI-008-1

V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.

VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected;
2. Whether the system is open or closed;
3. Proposed average and maximum injection pressure;
4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and
5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).

*VIII. Attach appropriate geological data on the injection zone including appropriate lithologic detail, geological name, thickness and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval.

IX. Describe the proposed stimulation program, if any.

* X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted.)

XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.

XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.

XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.

XIV. Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

NAME: Darrell Moore TITLE: Env. Mgr. for Water + Waste

SIGNATURE: Darrell Moore DATE: 4/27/99

* If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted. Please show the date and circumstance of the earlier submittal. _____

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate District Office

I. PURPOSE

Navajo Refining Company (Navajo) submits this application to construct and operate three nonhazardous Class I effluent disposal wells. The waste stream proposed for injection is exempt and nonexempt nonhazardous oilfield wastes that are generated exclusively by Navajo at its refinery in Artesia, New Mexico. The waste water will be transported to the injection wellsites by pipeline.

In February 1998, Navajo submitted an application to the New Mexico Oil Conservation Division (OCD) for permission to reenter, test, and complete the Mewbourne Oil Company's Chalk Bluff 31 State No. 1 well, which is located in Section 31, T17S, R28E, Unit Letter O, in Eddy County, New Mexico. Approval for the reentry and testing was granted by the OCD by letter dated May 21, 1998. The reentry and testing was completed on August 4, 1998. The reentry and completion report for Navajo's WDW-1 was prepared by Subsurface Technology, Inc. (Subsurface), formerly Envirocorp Services & Technology, Inc., and submitted to the OCD in September 1998.

On May 1, 1998, Navajo submitted the original version of this discharge plan application and application for authorization to inject. On July 14, 1998, OCD wrote "Approval of Discharge Plan UIC-CLI-008-1" for Navajo's proposed wells. The approval was revised by OCD on August 4, 1998.

Navajo now requests a modification of the discharge plan to revise the location of proposed WDW-2. The location of proposed WDW-2 that was approved on July 14, 1998, was 2310 feet FNL and 1500 feet FWL of Section 6, T18S, and R28E. Instead, Navajo proposes to convert an existing well to proposed WDW-2. The well is The Eastland Oil Company's Chukka Federal No. 2 well (formerly Fred Pool Drilling, Inc., originally the Amoco Production Diamond Federal Gas Com. No. 1). The well is located 1980 feet FNL and 660 feet FWL of Section 12, T18S, R27E. The Chukka Federal No. 2 is an active oil producer, with perforations from 1446 feet to 1462 feet. Originally, a 7-7/8 inch hole was drilled to 10,372 feet and then plugged back to 1912 feet. Surface casing is set at 1995 feet and cemented to the surface with 800 sacks of cement.

In addition, Navajo proposes to drill a new well, proposed WDW-3, in the northwest quarter of Section 6, T18S, R28E.

The proposed injection zone consists of porous intervals in the lower Wolfcamp Formation and the Cisco and Canyon Formations between 7450 feet and 9016 feet below the kelly bushing (KB) elevation in WDW-1 and between 7270 feet and 8894 feet below the KB elevation in proposed WDW-2.

III. WELL DATA

The injection well data form and well schematic for WDW-1 are provided as Attachment III-1. The injection well data forms, schematics, and drilling and completion procedures for proposed WDW-2 and WDW-3 are provided as Attachments III-2 and III-3.

A closure plan for the wells, with the estimated cost to plug and abandon, is included as Attachment III-4.

ATTACHMENT III-1

WDW-1 INJECTION WELL DATA SHEET AND WELL SCHEMATIC

ATTACHMENT III-1

INJECTION WELL DATA SHEET

OPERATOR: Navajo Refining Company

LEASE: WDW-1 (formerly Mewbourne Oil Company Chalk Bluff 31 State No. 1)

660' FSL, 2310' FEL | 31-T17SR28E

Footage Location | Section | Township | Range

WELL CONSTRUCTION DATA

Surface Casing

Size 13-3/8" Cemented with 525 sx

TOC Surface feet determined by Circulated 86 sx to surface

Hole Size 17-1/2" Set at 390 feet

Intermediate Casing

Size 9-5/8" Cemented with 1000 sx

TOC Surface feet determined by Circulated 133 sx to surface

Hole Size 12-1/4" Set at 2555 feet

Long String

Size 7" Cemented with 1390 sacks

TOC Surface feet determined by Temperature log, cement bond log

Hole Size 8-3/4" Set at 9094 feet

Total Depth 10,200', Plugged back to 9004 feet

Injection Interval

7450 feet to 9016 feet, permitted

8220 feet to 8476 feet, perforated

(perforated or open-hole; indicate which)

Tubing size 4-1/2" lined with not lined set in a 7" x 3.5" retrievable packer at 7879 feet. Other type of tubing/casing seal if applicable None

OTHER DATA

1. Is this a new well drilled for injection? ___ Yes X No

   If no, for what purpose was the well originally drilled? The well was drilled in 1993 as an exploratory well.

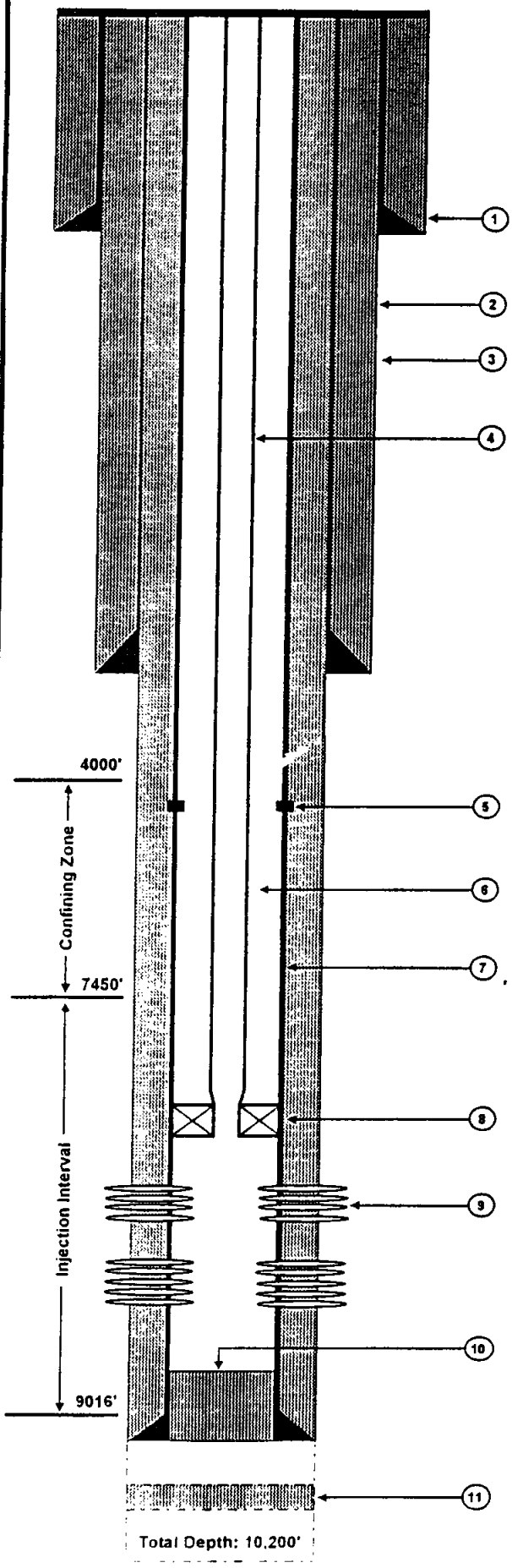
2. Name of the injection formation: Lower Wolfcamp, Cisco, and Canyon Formations

3. Name of Field or Pool (if applicable): Not applicable

4. Has the well ever been perforated in any other zones(s)? List all such perforated intervals and give plugging detail, i.e., sacks of cement or plug(s) used. No

5. Give the names and depths of any over or underlying oil or gas zones (pools) in the area:

Within one mile: Yates (500 feet), Seven Rivers (600 feet), Grayburg (1600 feet to 1900 feet), San Andres (2000 feet), Abo (5400 feet to 6200 feet), and Morrow (9900 feet)



BELOW GROUND DETAIL

All depths are referenced to the kelly bushing elevation of 12.5 feet. Surface elevation is 3678 feet.

1. Surface Casing: 13-3/8", 48 lb/ft, J-55, ST&C set at 390' in a 17-1/2" hole. Cemented with 150 sx Class C with 3% calcium chloride, 375 sx Class C Litewate w/ 3% calcium chloride and 1/2 lb/sx flocele. Circulated 86 sx to surface.

2. Intermediate Casing: 9-5/8", 36 lb/ft, J-55, ST&C set at 2555' in a 12-1/4" hole. Cemented w/ 800 sx of Class C Lite w/ 1/2 lb/sx flocele and 2 lb/sx Gilsonite and 12% salt. Followed by 200 sx of Class C w/ 2% calcium chloride. Circulated 133 sx to surface.

3. Base of the USDW at 493'.

4. Injection Tubing: 4-1/2", 11.6 lb/ft, N-80, SMLS, R3, LT&C set at 7879'.

5. DV Tool: at 5498'.

6. Annulus Fluid: 8.7 lb/gal brine water mixed w/ UniChem Techni-Hib 370 corrosion inhibitor.

7. Protection Casing: 7", 29 lb/ft, N-80, LT&C: 9094' to 7031'. 7", 29 lb/ft, P-110, LT&C: 7031' to 5845'. 7", 26 lb/ft, P-110, LT&C; 5845' to surface. Set in 8-3/4" hole. Casing cemented in two stages as follows:

First Stage
600 sx modified Class H w/ 0.4% CFR-3, 5 lb/sx Gilsonite, 0.5% Halad-344, and 1 lb/sx salt mixed at 13.0 ppg. Opened DV tool at 5498' and circulated 142 sx to surface.

Second Stage
Lead Slurry: 220 sx Interfill 'C' (35:65:6) mixed at 11.7 ppg. Tail Slurry: 550 sx modified Class H w/ 0.4% CFR-3, 5 lb/sx, Gilsonite, 0.5% Halad-344, 0.1% HR-7, and 1 lb/sx salt mixed at 13.0 ppg. Circulated 75 sx to surface. Top out w/ 20 sx premium plus 3% calcium chloride.

8. Packer: 7" x 3.5" EVI Oil Tools (Arrow), Model X-1 retrievable packer set at 7879'. Minimum I.D. is 3.0". Wireline reentry guide on bottom. To release: turn 1/4 turn to the right and pick up.

9. Perforations (2 SPF):

Upper Zone:

7924-7942', 7974-8030', 8050-8056', 8066-8080', 8118-8127', 8132-8140', 8160-8164', 8170-8188'.

Lower Zone:

8220-8254', 8260-8270', 8280-8302', 8360-8366', 8370-8378', 8400-8410', 8419-8423', 8430-8446', 8460-8464', 8470-8476'.

10. PBTD: 9004'

11. Cement Plug: 45 sx Class H from 9624' to 9734'.

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ATTACHMENT III-1
NAVAJO REFINING COMPANY
WDW-1
ARTESIA, NEW MEXICO

Date: 09/15/98	Checked By: B.R.	Job No.: 70A4614
Drawn By: LKM	Approved By: B.R.	File: WDW1.DS4

ATTACHMENT III-2

PROPOSED WDW-2 INJECTION WELL DATA SHEET, WELL SCHEMATICS, AND DRILLING PROGRAM

ATTACHMENT III-2

INJECTION WELL DATA SHEET

OPERATOR: Navajo Refining Company

LEASE: WDW-2 (to be converted from The Eastland Oil Company's Chukka Federal No. 2, formerly Fred Pool Drilling, Inc., originally Amoco Production Company Diamond Federal Gas Com. No. 1)

1980' FNL, 650' FWL	12	T18S	R27E
Footage Location	Section	Township	Range

WELL CONSTRUCTION DATA

Surface Casing

Size	N/A	Cemented with	
TOC		feet determined by	
Hole Size		Set at	

Intermediate Casing

Size	8-5/8"	Cemented with	800 sx
TOC	Surface	feet determined by	Circulated 200 sacks to surface
Hole Size	11"	Set at	1995 feet

Long String (Proposed)

Size	5-1/2"	Cemented with	Caliper volume plus 20%
TOC	Surface	feet determined by	Temperature log if cement does not reach surface
Hole Size	7-7/8"	Set at	9200 feet (proposed)
Total Depth	10,372', Plugged back to 9200'		

Injection Interval

7270 feet to 8894 feet, perforated

(perforated or open-hole; indicate which)

Tubing size 3-1/2" lined with not lined set in a retrievable full bore packer at approximately 7170* feet. Other type of tubing/casing seal if applicable to be determined.

ATTACHMENT III-2 (Continued)

OTHER DATA

1. Is this a new well drilled for injection? ___ Yes _X_ No

   If no, for what purpose was the well originally drilled? The well was drilled in 1973 as an exploratory well and is currently an active oil producer with perforations from 1446 feet to 1462 feet.

2. Name of the injection formation: Lower Wolfcamp, Cisco, and Canyon Formations

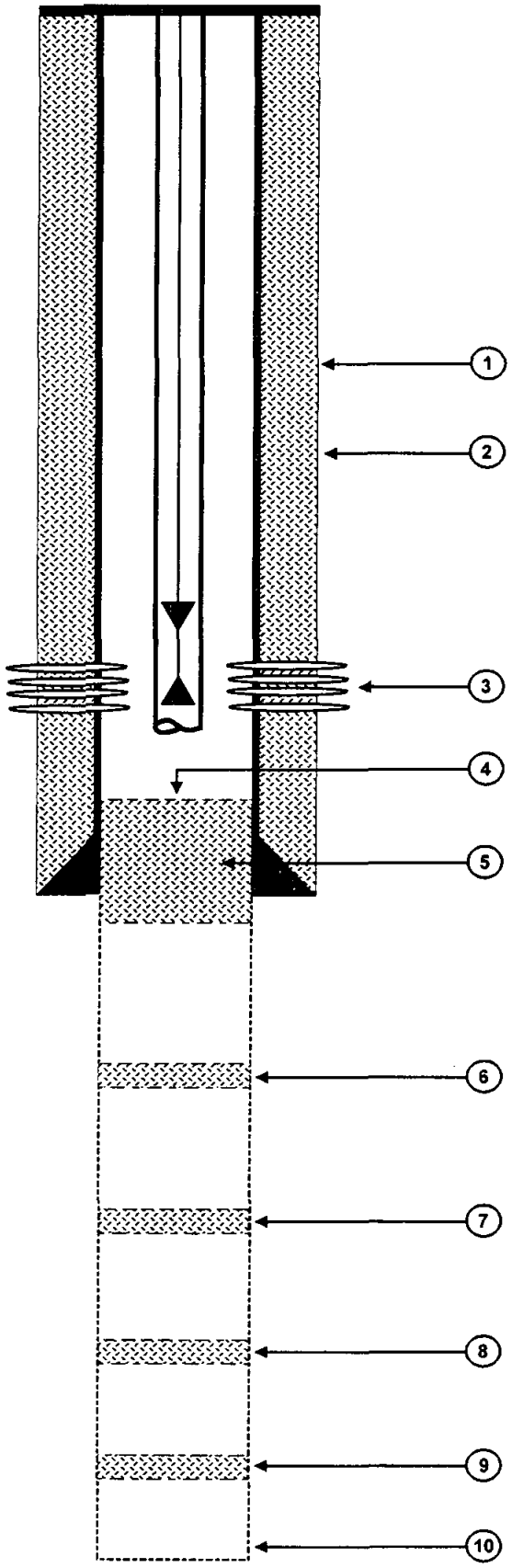
3. Name of Field or Pool (if applicable): Not applicable

4. Has the well ever been perforated in any other zones(s)? List all such perforated intervals and give plugging detail, i.e., sacks of cement or plug(s) used. Yes. 1446 feet to 1456 feet, 1459 feet to 1462 feet. Perforations will be squeezed when Navajo reenters the well.

5. Give the names and depths of any over or underlying oil or gas zones (pools) in the area:

   Within one mile: Queen and Grayburg (1450 feet to 2000 feet), San Andres (200 feet to 3600 feet), Abo (5400 feet to 6300 feet, and Morrow (9900 feet)

* Depends on injection perforations selected.



BELOW GROUND DETAIL

All depths are referenced to the kelly bushing elevation of 13 feet. The surface elevation is 3610 feet.

1. Base of the USDW at 473'.

2. Casing: 8-5/8", 32 lb/ft, set at 1995' in an 11" hole. Cemented to surface with 800 sacks of cement.

3. Perforations: 1446' - 1462'.

4. PBTD: 1912'.

5. Cement Plug: 40 sacks from 1912' to 2045'.

6. Cement Plug: 50 sacks from 3620' to 3720'.

7. Cement Plug: 40 sacks from 5456' to 5556'.

8. Cement Plug: 50 sacks from 7435' to 7535'.

9. Cement Plug: 45 sacks from 9675' to 9775'.

10. Hole Size: 7-7/8".

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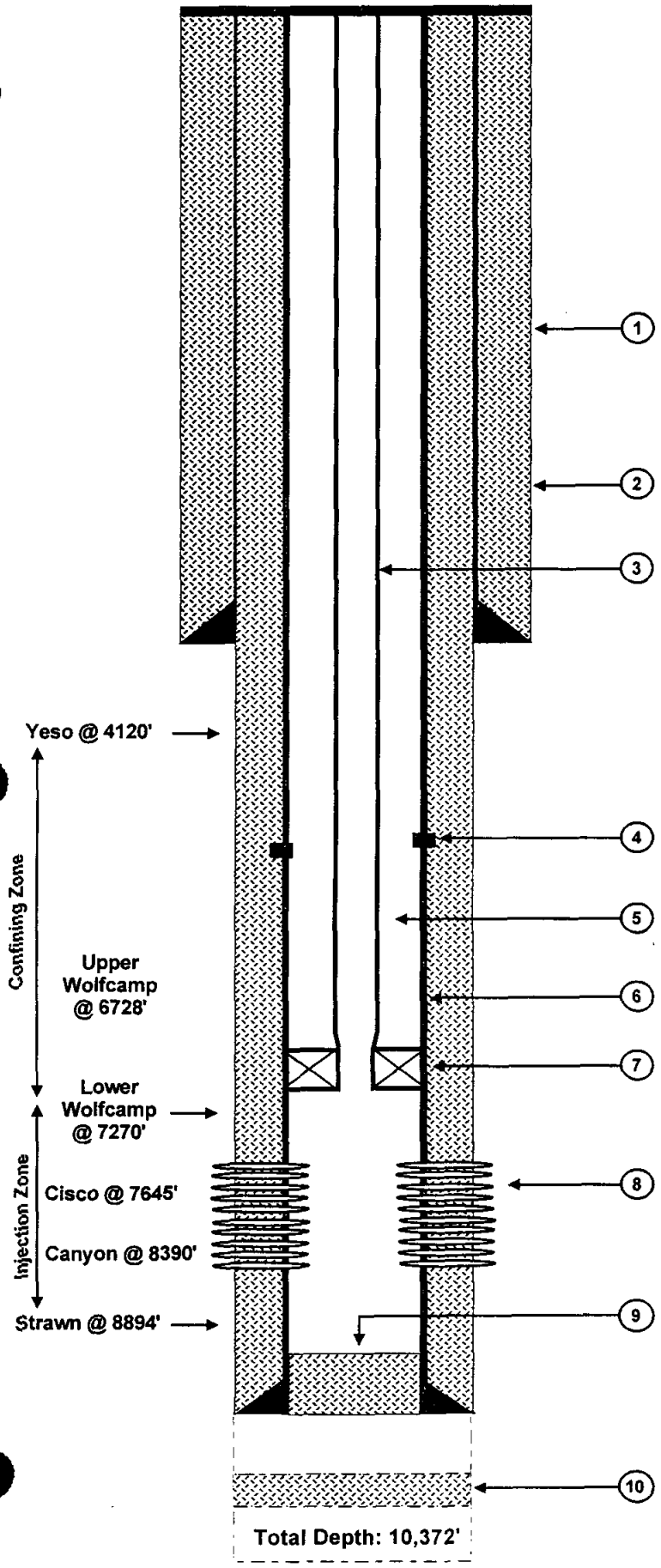
ATTACHMENT III-2
NAVAJO REFINING COMPANY
CURRENT WELL CONFIGURATION
CHUKKA FEDERAL No. 2

Date: 03/10/99	Checked By: NLN	Job No.: 60A4937
Drawn By: LKM	Approved By: NLN	File: WDW2A.DS4



BELOW GROUND DETAIL

All depths are referenced to the kelly bushing elevation of 13 feet. Surface elevation is 3610 feet.

1. Base of the USDW at 473'.

2. Casing: 8-5/8", 32 lb/ft, set at 1995' in an 11" hole. Cemented to surface with 800 sacks of cement.

3. Injection Tubing: 3-1/2".

4. DV Tool: at 5500'.

5. Annulus Fluid: Corrosion inhibited brine water.

6. Protection Casing: 5-1/2" set in a 7-7/8" hole. Casing cemented to surface. Calipered hole volume plus 20% excess.

7. Packer: Fullbore retrievable packer set 100' above the top perforated injection interval.

8. Perforations: Perforated in two intervals between 7270' and 8894'.

9. PBTD: 9200'

10. Cement Plug: 45 sacks from 9675' to 9775'.

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BATON ROUGE, LA.

ATTACHMENT III-2
NAVAJO REFINING COMPANY
PROPOSED WDW-2
ARTESIA, NEW MEXICO

Date: 03/11/99	Checked By: NLN	Job No.: 60A4937
Drawn By: LKM	Approved By: NLN	File: WDW2B.DS4

DRILLING PROGRAM

FOR NAVAJO REFINING COMPANY'S PROPOSED WDW-2
1980' FNL, 660' FWL of 12-T18S-R27E
Eddy County, New Mexico

1. Obtain all permits and approvals for the reentry, testing and completion of a currently existing well. Construct the lined reserve pits, dig out the cellar, and install a mousehole and rathole.

2. Move in and rig up a workover unit. Remove the pumping equipment and pull the tubing out of the well after tagging the plugged-back total depth (PBTD).

3. Squeeze the perforations from 1446 feet to 1462 feet with 100 sacks of Class "H" cement. Allow the cement to cure.

4. Drill out the cement to PBTD, circulate the well clean, and pressure test the squeezed perforations at 500 psig for 30 minutes.

   Drilling Fluid
   a. Freshwater-based gel chemical fluid.
   b. Density range: 8.6 ppg to 9.5 ppg. Requirement for weighting material is not anticipated.
   c. Viscosity range: 35 sec/qt to 45 sec/qt.
   d. Pit volumes to be monitored visually.

5. Conduct a CBL/VDL survey from 1912 feet to the surface. Submit the results of the pressure test and CBL/VDL survey to the OCD and the BLM for their review and approval prior to mobilizing the drilling rig.

6. After receiving approval from the OCD and the BLM to continue the reentry, prepare the location for the selected drilling rig.

7. Move in and rig up the rotary drilling rig and install the blowout preventers (BOPs).

BOP Minimum Requirements

a. 11-inch, 3000-psi working pressure double-hydraulic BOP.
b. 11-inch, 3000-psi working pressure annular BOP.
c. 3-inch, 3000-psi working pressure manual choke manifold.

A schematic of the BOP stack is included as Exhibit A.

8. Drill out the following cement plugs and conduct deviation surveys every 1000 feet or on trips:

a. 1912 feet to 2045 feet, 40 sacks
b. 3620 feet to 3720 feet, 50 sacks
c. 5456 feet to 5556 feet, 40 sacks
d. 7435 feet to 7535 feet, 50 sacks

Estimated Tops of Geologic Formations

San Andres	2005'	Lower Wolfcamp	7270'
Yeso	4210'	Cisco	7645'
Abo	5506'	Canyon	8390'
Wolfcamp	6728'	Strawn	8894'

No fresh water or hydrocarbons are expected to be encountered.

Expected Bottom-Hole Pressure and Hazards

The expected bottom-hole pressure is 3500 psia at the total depth of 9200 feet. The bottom-hole pressure was determined from the pressure measured in Navajo's WDW-1, or 2928 psia, at 7924 feet. Navajo's WDW-1 is completed in the same interval proposed for WDW-2 and is located 11,000 feet northeast of WDW-2 in 31-T17S-R28E. The average specific gravity of the fluid between 7924 feet and 9200 feet is expected to be 1.034, which is the specific gravity of the fluid swabbed from the interval between 8220 feet and 8476 feet in WDW-1. The expected bottom-hole pressure at 9200 feet in proposed WDW-2 is calculated below:

$$\text{BHP (9200 feet)} = 2928 \text{ psia} + (9200 \text{ feet} - 7924 \text{ feet}) \times 0.433 \text{ psi/ft} \times 1.034$$
$$= 3500 \text{ psia}$$

No abnormal pressures or temperatures or other hazards are expected while drilling or testing the well. Hydrogen sulfide monitoring equipment will be set up prior to swabbing operations.

9. Clean the well out to a depth of 9200 feet and circulate and condition the hole for logging. Make a wiper trip to the base of the 8-5/8 inch surface casing while strapping the drillpipe.

10. Conduct a formation microimager (FMI) survey with gamma ray from the well's total depth to 4000 feet. Continue the four-arm caliper survey to the 8-5/8 inch casing shoe. Process the FMI for fracture identification over the lower 200 feet of the confining zone and zones of interest in the injection zone, if warranted.

11. Spot a gelled pill at 9200 feet and lay down the drillpipe.

12. Run the 5-1/2 inch, 17-lb/ft, J-55, LT&C casing with a packoff shoe and float collar to 9200 feet. Install a "DV" tool at approximately 5800 feet. Run centralizers at approximately 120-foot intervals.

13. Cement the 5-1/2 inch casing in place. Use a minimum of 20% excess cement as calculated from the caliper log. Circulate cement to the surface and allow to cure.

    Cement Program

    a. Stage 1 Cement (total depth to 5800 feet): Lightweight Class H with fly ash, gel, friction reducer, and salt mixed with fresh water.

    b. Stage 2 Lead Cement (5200 feet to the surface): Lightweight Class C with gel and bridging agents mixed with fresh water.

    c. Stage 2 Tail Cement (5800 feet to 5200 feet): Class C mixed with fresh water.

14. Clean out the mud pits and release the drilling rig 12 hours after cementing the 5-1/2 inch casing in place.

15. Stabilize the 5-1/2 inch casing at the surface using ready-mix cement.

16. Move in and rig up the completion rig pump, tank, power swivel, and work string. Install the blowout preventer.

17. Run in the well with a 4-3/4 inch bit to the "DV" tool and test the casing to 1500 psig for 30 minutes.

18. Drill out the "DV" tool and clean out the wellbore to the float collar. Test the casing to 1500 psig for 30 minutes. Circulate the wellbore with clean brine, preceded by 15% HCL to clean the casing. Trip the work string out of the well.

19. Conduct the casing inspection, CBL/VDL, and differential temperature surveys.

20. Perforate the selected injection interval as determined from the open hole logs. Depending on the height of the perforated interval, the interval may be perforated in two stages, as Zone Nos. 1 and 2.

21. Run in the well with a packer and tailpipe. Set the packer above the top perforation and swab test the perforated interval. Recover at minimum two tubing volumes of the reservoir fluid for analysis (Note: Set up H_2S monitoring equipment prior to swabbing operations).

22. Acidize the perforated zone (Zone 1) using diverters. Pull the packer out of the well.

23. Perforate the next selected injection interval (Zone 2) as determined from the open hole logs.

24. Run a retrievable bridge plug and packer into the well and isolate Zone 2.

25. Acidize Zone 2 using diverters. Pull the retrievable bridge plug and packer out of the well, laying down the work string.

26. Conduct an injection test down the 5-1/2 inch casing at 420 gpm for 12 hours, followed by a pressure falloff test.

27. Conduct a differential temperature survey and radioactive tracer survey to determine the injection profile.

28. Run the injection tubing and packer. Fill the annulus with corrosion inhibited brine.

29. Wait for the well system to come to thermal stabilization (approximately 24 hours).

30. Conduct an annulus pressure test witnessed by the OCD.

31. Rig down and move out all equipment and close the reserve pit.

32. Install the annulus monitoring system and return the well to the client.

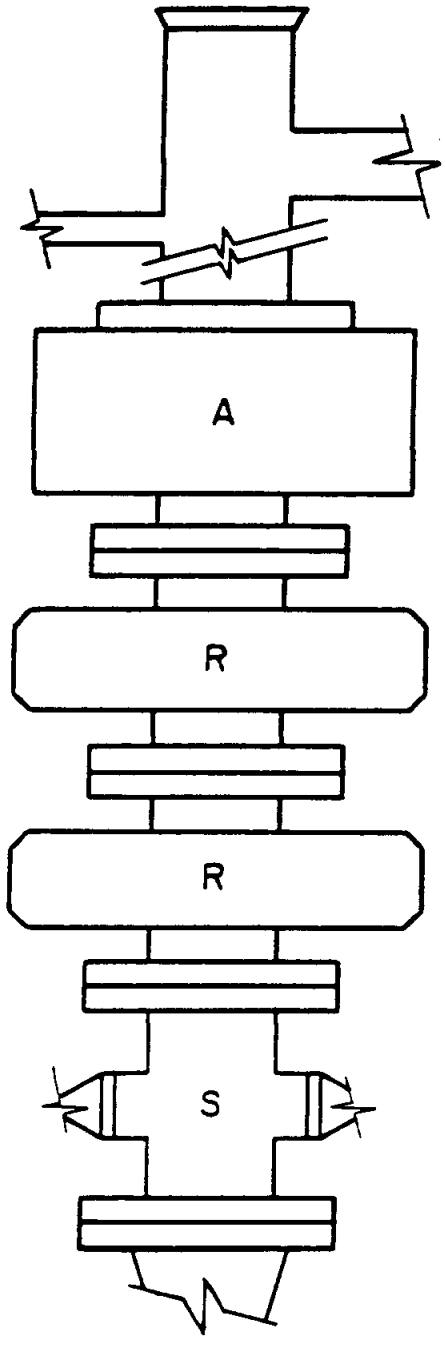
Logging, Testing, And Coring Program

A formation fluid sample will be retrieved from the proposed injection zone in proposed WDW-2. Navajo will conduct injectivity testing in the injection zone of proposed WDW-2.

No coring is planned.

The proposed logging program is described below:

HOLE/CASING	OPEN-HOLE LOGS	CASED-HOLE LOGS
Proposed WDW-2		
11 inch Surface Borehole (8-5/8 inch Casing) 1995 feet		Logs Run in 1973: Gamma Ray Logs Proposed on Reentry: Cement Bond/Variable Density Casing Inspection Log
7-7/8 inch Long-String Borehole (5-1/2 inch Casing) 9200 feet	Logs Run on August 27, 1973: Dual Induction-Laterolog/ Spontaneous Potential Compensated Neutron/ Formation Density Caliper Gamma Ray Logs Proposed on Reentry: Fracture Identification Log 4-Arm Caliper	Logs Proposed on Reentry: Cement Bond/Variable Density Casing Inspection Log Differential Temperature Log Radioactive Tracer Survey



A = ANNULAR-TYPE BLOWOUT PREVENTER
11-inch throughbore, 3000-psi working pressure

R = RAM-TYPE BLOWOUT PREVENTER
11-inch throughbore, 3000-psi working pressure

S = DRILLING SPOOL WITH SIDE OUTLET CONNECTIONS
FOR CHOKE AND KILL LINES

MANUAL CHOKE MANIFOLD
3-inch throughbore, 3000-psi working pressure

Source: API RP 53: Recommended Practices for
Blowout Prevention Equipment Systems

ENVIROCORP
ENVIROCORP SERVICES & TECHNOLOGY, INC.
HOUSTON, TX.
SOUTH BEND, IN.
BATON ROUGE, LA.

EXHIBIT A

BLOWOUT PREVENTER STACK AND MINIMUM REQUIREMENTS

DATE: 4/7/98	CHECKED BY: JDB	JOB NO:
DRAWN BY: MLN	APPROVED BY:	DWG. NO:

ATTACHMENT III-3

PROPOSED WDW-3 INJECTION WELL DATA SHEET, WELL SCHEMATIC, AND DRILLING AND COMPLETION PROCEDURE

ATTACHMENT III-3

INJECTION WELL DATA SHEET

OPERATOR: Navajo Refining Company **LEASE:** WDW-3 (Proposed)

778' FNL, 995' FWL 6-T18S-R28E
Footage Location Section Township Range

WELL CONSTRUCTION DATA

Surface Casing
Size 13-3/8" Cemented with 600 sacks (caliper volume plus 50%)
TOC Surface feet determined by Circulating to surface
Hole Size 17-1/2" Set at 400 feet

Intermediate Casing
Size 9-5/8" Cemented with 1000 sacks (caliper volume plus 20%)
TOC Surface feet determined by Circulating to surface
Hole Size 12-1/4" Set at 2550 feet

Long String (Proposed)
Size 7" Cemented with Multi-stage: 2000 sacks (caliper plus 20%)
TOC Surface feet determined by Temperature log if cement does not reach surface
Hole Size 8-1/2" Set at 9000 feet
Total Depth

Injection Interval
7392 feet to 8957 feet, perforated
(perforated or open-hole; indicate which)

Tubing size 3-1/2 lined with not lined* set in a retrievable full bore packer at approximately 6000** feet. Other type of tubing/casing seal if applicable latch-in seal assembly

OTHER DATA

1. Is this a new well drilled for injection? X Yes ___ No

2. Name of the injection formation: Wolfcamp, Cisco, and Canyon Formations

3. Name of Field or Pool (if applicable): Not applicable

4. Has the well ever been perforated in any other zones(s)? List all such perforated intervals and give plugging detail, i.e., sacks of cement or plug(s) used. No

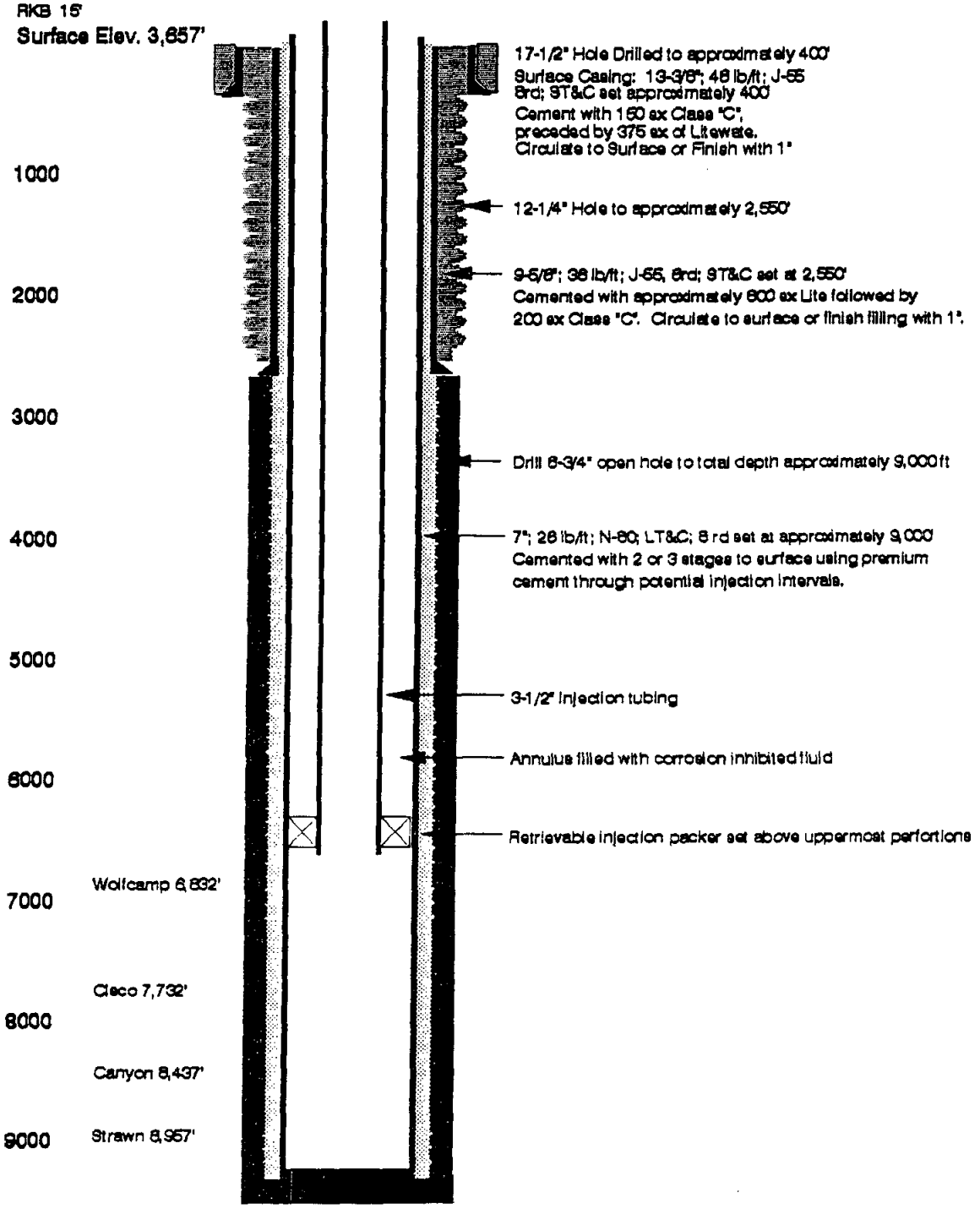
5. Give the names and depths of any over or underlying oil or gas zones (pools) in the area:

Within one mile: Yates (500 feet), Seven Rivers (600 feet), Grayburg (1600 feet to 1900 feet), San Andres (2000 feet), Abo (5400 feet to 6200 feet), and Morrow (9900 feet)

* Waiting on fluid analysis to determine corrosivity. Tubing or lining will be adjusted to address corrosion problems.

** Depends on injection interval selected.

Proposed Navajo Disposal Well No. 3



DRILLING AND COMPLETION PROCEDURE FOR PROPOSED WDW-3

1. Obtain all permits and approvals for the installation of a Class I Nonhazardous injection well.

2. Build the location and all weather road. Dig and line drilling mud reserve pits.

3. Set approximately 50 feet of 20 inch conductor casing with auger rig. Grout the annulus to the surface with ready mix.

4. Mobilize all drilling equipment and install a flow line to the circulating tanks.

5. Drill a 17-1/2 inch hole to approximately 400 feet. Run open hole logs to determine the base of the USDW and caliper the open hole for cement volume determination.

6. Run 13-3/8 inch, 68 lb/ft, H-40 casing to total depth. Cement the casing to the surface with a low density lead cement followed by 100 sacks of premium cement. Cement volumes to be calculated on a minimum of 20% excess above the calipered hole volume.

7. Allow 24 hours for the cement to cure. If cement returns were not observed, run a temperature log after eight hours to determine the cement top. Finish filling the annulus with premium cement through 1 inch pipe lowered into the annulus.

8. Install a casinghead and blowout preventers, flow line, and solids control equipment. Drill a 12-1/4 inch hole to approximately 2550 feet. Maintain drilling fluid properties to minimize hole enlargement and salt dissolution and to maximize hole cleaning and penetration rate. Run open-hole wireline logs with a 4-arm caliper to determine required cement volumes. Run a cement bond log on the 13-3/8 inch casing.

9. Run 9-5/8 inch, 36 lb/ft, J-55 casing to 2550 feet. Cement the casing to surface with a low-density lead cement followed by 200 sacks of premium cement. Cement volumes to be calculated on a minimum of 20% excess above the calipered hole volume.

10. Allow 24 hours for the cement to cure. If cement returns were not observed, run a temperature log after eight hours to determine the cement top. Finish filling the annulus with premium cement through 1 inch pipe lowered into the annulus.

11. Install and test the blowout preventers. Pressure test the intermediate casing to 1500 psig for 30 minutes. Drill out the casing and drill an 8-3/4 inch hole to total depth (approximately 9000 feet). Cut 30-foot core in the injection zone as directed. Maintain

drilling fluid properties to minimize hole enlargement and maximize hole cleaning and penetration rates.

12. At total depth, run open-hole wireline logs to evaluate potential injection intervals and determine the amount of cement required to fill the casing/open-hole annulus.

13. Determine from drilling conditions, hole conditions, and electric logs whether to use a 2-stage or a 3-stage cement procedure. Run 7 inch, 26 lb/ft, N-80, LT&C casing to total depth. Run a cement bond log on the intermediate casing. Cement the annulus as determined from total depth to surface.

14. Demobilize all drilling equipment and begin the cleanup of reserve pits and the location.

15. Mobilize completion equipment. Pick up a bit and a work string. Test the casing above the stage tool to 2000 psi for 30 minutes. Drill out the stage tool and clean out the well to bottom. Retest the casing to 2000 psi for 30 minutes.

16. Run a baseline casing inspection log and a cement bond log over the long-string casing. Perforate, stimulate, and test the desired injection intervals.

17. Run injection tubing with a retrievable packer set above the uppermost perforated interval. Conduct mechanical integrity testing, as required.

18. Secure the well, install surface equipment, and prepare for injection service upon receipt of a permit to inject nonhazardous industrial waste.

ATTACHMENT III-4

CLOSURE PLAN FOR WDW-1 AND PROPOSED WDW-2 AND WDW-3

ATTACHMENT III-4

CLOSURE PLAN FOR WDW-1 AND PROPOSED WDW-2 AND WDW-3

Plug and Abandonment Procedures

The balance plug method will be employed to plug and abandon the wells. This technique involves displacing the cement through a work string which has been run into the casing. The cement slurry is pumped down the work string and up the annulus to a calculated height which would balance the cement inside and outside the work string. Then the work string is slowly pulled out of the cement leaving a solid uniform plug.

Heavy drilling mud is placed between the cement plugs. This mud establishes a hydrostatic gradient that will exceed the static bottom-hole pressure at the time of plugging and any anticipated pressures which would result from future injection activity in these particular formations.

Finally, after all cement plugs are set, the well casings will be cut off 3 feet below grade and capped by welding a 1/2 inch steel plate to the outermost casing string.

The plugging and abandonment plan is described as follows:

1. Submit Form C-103 to notify the OCD of the proposed plugging plan.
2. Prepare the well and location for plugging. Remove the wellhouse (if present), well monitoring equipment, and wellhead injection piping.
3. Move in and rig up the well service unit with BOP equipment and a 2-7/8 inch work string.
4. Remove the wellhead and install the BOP equipment and stripper head.
5. Unlatch the seal assembly from the packer and displace annular fluid by flushing annulus with brine.
6. Trip out of the hole laying down the injection tubing.
7. Pick up the 2-7/8 inch work string and packer retrieving tool and unseat the packer. Trip out of the hole with the packer.
8. Pick up and run a wireline set cast iron bridge plug to the top of the injection zone. Rig down the wireline unit.

9. Trip in hole to the top of the bridge plug and displace wellbore with heavy mud.
10. Set the 2-7/8 inch work string to the top of the bridge plug.
11. Rig up cement service equipment. Cement shall be densified Class "H" (or comparable), weighing 16.4 pounds/gallon. Pressure test the surface lines as required.
12. Spot sufficient Class "H" (or comparable) cement slurry to develop a cumulative 100-foot column (minimum). Pull the tubing up 200 feet and reverse out excess cement. Catch a sample of cement to check curing time and compressive strength. Allow the cement to set overnight (8-hour minimum) before tagging top of plug to confirm proper setup and location. Pressure test the plug to the pressure recommended by the OCD. If cement is set adequately, proceed to Step 13. Otherwise, spot additional cement on top of the first plug, as before, to achieve a cumulative 100-foot cement plug. Allow cement to set for a longer period, if necessary.
13. Displace the casing with heavy mud from top of plug to 50 feet below the base of the intermediate casing.
14. Pull tubing up to 50 feet below the base of the intermediate casing. Place densified Class "H" (or comparable) cement plug from 50 feet below to 50 feet above the base of the intermediate casing. Pull the tubing up 200 feet and reverse out excess cement. Shut down for 8 hours, or as required; then, tag the plug to confirm location. Pressure test the plug.
15. Displace the casing with heavy mud from the top of the plug to 100 feet below the surface.
16. Pull the work string to 100 feet below the surface and spot 100 feet of densified Class "H" cement as the surface plug. Lay down remaining tubing and remove the bradenhead. Cut casing strings 3 feet below ground level.
17. Weld a ½-inch steel plate across the 8-5/8 inch casing. The location of the well will be marked with a steel marker 4 inches in diameter and 4 feet high above mean ground level. The marker will show the operator name, lease name, well number, section, township, range and unit letter.
18. Release all equipment and clean up the location.
19. Submit closure data to the OCD, and arrange for inspection of the well and location.

ATTACHMENT III-4 (Continued)

Estimated Cost to Plug and Abandon

Consultant	
Wellsite (8 days at $800/day)	$ 6,400.00
Preparation and Report	3,000.00
Workover Rig (8 days at $6000 day)	48,000.00
Mechanical Bridge	3,000.00
Welding	500.00
Cement	5,000.00
Mud (450 barrels at $15/barrel)	6,750.00
Procurement and Consultant Markup on Third-Party Charges (15%)	9,488.00
TOTAL (Rounded Up to Nearest $1000)	$83,000.00

IV. EXISTING PROJECT

Navajo recompleted and tested WDW-1 in July and August 1998 in the Cisco portion of the injection interval. The well is currently shut in pending construction of necessary surface facilities and a pipeline system that will carry the injectate to the well.

Navajo intends to reenter, test, and recomplete a producing oil well, The Eastland Oil Company's Chukka Federal No. 2 (formerly Fred Pool Drilling, Inc., originally Amoco Production Company Diamond Federal Gas Com. No. 1). Pending successful tests, Navajo proposes to convert the well to its effluent disposal well WDW-2.

Navajo also intends to drill proposed WDW-3. WDW-1 and proposed WDW-2 and WDW-3 will be used for the disposal of exempt and nonexempt nonhazardous oilfield waste by injection into porous intervals of the lower portion of the Wolfcamp Formation and the Cisco and Canyon Formations.

V. AREA OF REVIEW

A map that shows all non-freshwater wells in the vicinity of the proposed Class I wells is provided as Attachment V-1. Also shown on Attachment V-1 is the area of review (AOR), which consists of the area within 1 mile of the proposed Class I wells. The wells within the AOR are marked with map identification numbers (Map ID Nos.) that are keyed to the list of wells in Attachment VI-1.

All freshwater wells in the vicinity of the proposed injection wells are shown in Attachment V-2. The freshwater wells are keyed to the list of wells in Attachment XI-1.

VI. INJECTION ZONE WELLS

VI.A Protocol for Identifying Wells

Search Protocol for Non-Freshwater Artificial Penetrations

As Navajo's agent, Envirocorp employed the services of Federal Abstract Company in the research and acquisition of data concerning non-freshwater wells. Federal Abstract understands the necessity for complete records and makes every diligent effort to complete this task. Envirocorp and Federal Abstract examined public and private sources of data to identify producing and abandoned oil and gas wells and disposal wells in the AOR.

The Oil Conservation Division (OCD) is the primary agency in which files are researched for oil and gas well records. The OCD is the state repository for oil and gas well and Class II well records, as the state regulatory authority for the oil and gas industry. In order to retrieve well records, the following general procedure is used for researching each well within a given area:

Map Review

Before the retrieval process can begin, it is necessary to know the operator, lease name, county in which the well is located, and the township, range, and section in which the well is found. This information is normally found on commercially prepared oil and gas base maps. Maps are produced by commercial firms, who obtained the data to build the oil and gas bases from "scout" tickets (completion information received from individual oil companies) in the early years and then, in later years, from the OCD itself. The commercial firms continually update the maps by plotting information filed by oil and gas operators with the OCD. Changes in the status of existing wells are noted, as well as information on new wells. Attachment V-1 is a modified version of the oil and gas base map provided by Midland Map Company, a recognized commercial supplier of oil and gas base maps for southeastern New Mexico.

Well Records Review

The OCD filing system is the best source of oil and gas well data in New Mexico. Microfiche and microfilm files of historical well records are searched as well as the

hard copy files of well records not yet placed on microfilm. These files are organized by quarter-quarter section, township, and range.

Scout Tickets

Scout tickets were available for the wells in the AOR from IHS Energy Group (formerly Petroleum Information Dwights LLC). Information about nearly every well in the AOR was available, including some wells for which records were not available from the OCD. Scout tickets were also available from The Subsurface Library, Midland, Texas.

VI.B Well Data Tabulations and Well Records

Two hundred fifty-four (254) well locations have been identified within or slightly beyond one mile of WDW-1 and proposed WDW-2 and WDW-3. The well locations are shown in Attachment V-1. A tabulation of total depth, status, and drill date for all of the wells in the one-mile AOR is provided in Attachment VI-1. Wells in Attachment VI-1 are identified with Map ID numbers that are keyed to the map in Attachment V-1. Scout tickets for the wells in the AOR of proposed WDW-2 for which no records were available from the OCD are presented as Attachment VI-2A.

Wells That Do Not Penetrate the Injection Zone (232 Wells)

Two hundred thirty-two (232) of the wells are documented to have been drilled to depths of less than 7270 feet, which coincides with the top of the injection zone in proposed WDW-2. The top of the injection zone in WDW-1 is at 7450 feet. The wells did not penetrate the proposed injection zone. These wells are:

Map ID Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 82, 84, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 121, 122, 123, 125, 126, 127, 128, 129, 130, 131, 133, 135, 136, 138, 139, 140, 141, 142, 143, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 158, 159, 160,

162, 163, 164, 165, 166, 168, 169, 170, 171, 172, 173, 751, 752, 753, 755, 756, 772, 781, 785, 786, 789, 791, 793, 796, 797, 799, 800, 801, 802, 805, 806, 807, 808, 812, 814, 836, 837, 838, 839, 840, 841, 842, 843, 844, 846, 849, 850, 852, 853, 854, 856, 857, 858, 859, 860, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 888, 895, 896, 897, 901, and 910.

Mis-Plotted or Duplicate Locations (9 Well Spots)

Nine (9) well locations appear on Attachment V-1 for which well records could not be found in the files of the OCD and for which scout tickets were not available. All of these well locations are mis-plotted or duplicate locations.

Six (6) of these locations (Map ID Nos. 30, 85, 108, 119, 132, and 137 within one mile of WDW-1 and proposed WDW-3) appear only on a commercial base map prepared by the Midland Map Company (Attachment V-1). These locations do not appear on a commercial base map prepared by the Geomap Company or on the lease map prepared by Midland Map Company. A representative of Midland Map Company confirmed that five of the six well locations on the oil and gas base map, Map ID Nos. 85, 108, 119, 132, and 137, are duplicate locations for existing wells. The Midland Map representative stated that the locations will be removed from the map. Map ID No. 30 is the incorrect, duplicate location plotted on the Midland Map base map for Map ID No. 14, the Arco Empire Abo Unit G No. 20 (formerly the Kersey Ramapo No. 5). The correct location of Map ID No. 14 is shown on the Midland Map lease map.

Within one mile of proposed WDW-2, three well locations are mis-plotted on Attachment V-1. These mis-plotted locations are incorrect duplicate locations for other wells, as discussed below.

Map ID No. 754 is the incorrect location for Map ID No. 756, the ARCO Permian Empire Abo Unit K No. 17. The well spot on the Midland Map map for Map ID No. 754 is labeled "17." The form "Sundry Notices and Reports on Wells" that was filed on May 18, 1959, for Map ID No. 756 states that the form was "Filed to show change in well location..." A copy of the original "Notice of Intention to Drill" with the

originally permitted location was not available from the files of the OCD in Santa Fe. The Midland Map Company's lease and oil and gas base maps show the incorrect location of the well as Map ID No. 754. Subsurface plotted the correct location for this well as Map ID No. 756 on Attachment V-1. A representative of Midland Map Company confirmed that Map ID No. 756 is the correct location for the well. The representative stated that the well will be correctly spotted on the company's new maps and that the well spot for Map ID No. 754 will be removed. Information to support the conclusion that Map ID No. 754 is mis-plotted is included in Attachment VI-2B.

Map ID No. 792 is an incorrect location on the Midland Map oil and gas base map for Map No. 814, the ARCO Permian Empire Abo Unit K No. 141. Midland Map Company's lease map shows Map ID No. 814 but not Map ID No. 792. A representative of Midland Map Company confirmed that the correct location for the well is the location of Map ID No. 814. The representative said that the well spot for Map ID No. 792 will be removed from the oil and gas base map and that the location for Map ID No. 814 will be added to the oil and gas base map.

Map ID No. 795 is an incorrect location for Map ID No. 765. Midland Map shows the location of Map ID No. 795 on both their lease map and their oil and gas base map. Map ID No. 795 is labeled on Midland Map Company's lease map as Well No. 1. A representative of Midland Map Company concluded after examining their series of historical maps that Map ID No. 795 was permitted sometime between 1959 and 1960. Map ID No. 765 was permitted in 1959 as the William Hudson Hudson-State Abo No. 1. A discrepancy in the location of Map ID No. 765 is evident upon examination of the "Notice of Intention to Drill." The location for Map ID No. 765 was typed in on the "Notice of Intention to Drill" as 990 feet from the South line and 330 feet from the East line of the section, which is the location of Map ID No. 795. On this form, the word South was crossed out, and North was written in by hand. On the plat of the section in the upper left portion of the same form, the well is spotted at the location of Map ID No. 765. Map ID No. 795 was spotted by Midland Map Company on their maps at the typed-in location on the "Notice of Intention to Drill." The same well was also spotted at the correct location, that of Map ID No. 765.

Information to support the conclusion that Map ID No. 795 is mis-plotted is included in Attachment VI-2C.

The mis-plotted well locations are:

Map ID Nos. 30, 85, 108, 119, 132, 137, 754, 792, and 795.

One (1) Map ID No., No. 120, was not used.

Injection Zone Penetrations (13 Wells)

Thirteen (13) wells reached total depths of 7270 feet or greater and penetrated the proposed injection zone. Each of these wells is discussed in detail in Sections VI.C through VI.E. The wells that penetrated the injection zone are:

Map ID Nos. 59, 81, 83, 124, 134, 144, 157, 161, 167, 848, 851, 855, and 861.

Attachment VI-1 includes construction details, total depth, status, and drill date for the injection zone penetrations in the AOR. Well records available from the OCD for these wells are provided in Attachment VI-2.

VI.C Well Schematics

Map ID Nos. 59, 81, 83, 124, 134, 144, 157, 161, 167, 848, 851, 855, and 861 penetrated the injection zone within one mile of WDW-1 and proposed WDW-2 and WDW-3. Schematics of all plugged and abandoned wells within one mile of WDW-1 and proposed WDW-2 and WDW-3 that penetrate the injection zone are included with the well records in Attachment VI-2.

VI.D Condition of Artificial Penetrations

Each of the wells that penetrates the injection zone was evaluated to determine if it will allow movement of fluids into or between USDWs. For the purpose of this demonstration, the artificial penetrations may be categorized as follows:

Class I Waste Disposal Well (1 well):

Map ID No. 59 is Navajo's WDW-1, a Class I nonhazardous oilfield waste disposal well. The well was constructed by Navajo in July and August 1998. Injection into the Lower Wolfcamp-Cisco-Canyon injection zone via Navajo's WDW-1 is permitted by OCD Discharge Plan UIC-CLI-008-1. No waste water has been injected into the well to date.

Class II Saltwater Disposal Wells (1 well):

Map ID No. 83, the I&W Inc., Walter Solt SWD-1, is a Class II saltwater disposal well that is currently active. The well injects into the Wolfcamp in four sets of perforations: 7518 to 7534 feet, 7742 to 7756 feet, 7778 to 7787 feet, and 7810 to 7812 feet. The injection zone coincides with the shallowest formation proposed for injection by the proposed Navajo injection wells. The well has surface and intermediate or production casing set to prevent contamination of the USDW. The casing/formation annulus is cemented across the injection zone, as presented in Attachment VI-3. At the end of the well's useful life, the operator will plug and abandon the well according to OCD regulations with cement plugs set to protect the USDW and with heavy mud left in the wellbore. The Class II well in the AOR is listed below:

Map ID No. 83.

No corrective action is required for this well.

Active Producing Wells (8 wells):

Active producing wells include producing and shut-in oil and gas wells. The mechanical integrity of active producing wells is monitored by the OCD. These wells have surface and intermediate or production casing set to prevent contamination of the USDW. In all wells, except Map ID No. 861, the casing/formation annulus is cemented across the injection zone. Reported top of cement, where available, or calculated top of cement for each casing string in each well is presented in Attachment VI-3. Map ID No. 861, with casing only to 1995 feet and mud-filled open hole from 1995 feet to 10,372 feet, is not cased through the

injection zone. At the end of the wells' useful lives, the operators will plug and abandon the wells according to OCD regulations with cement plugs set to protect the USDW and with heavy mud left in the wellbore. The active producing wells within the AOR are listed below:

Map ID Nos. 81, 124, 134, 144, 161, 167, 855, and 861.

Navajo proposes to reenter Map ID No. 861 and convert the well to a Class I well, the Navajo WDW-2, as discussed in Section III.

No corrective action is required for these wells.

Plugged and Abandoned Producing Wells (2 wells):

Plugged and abandoned producing wells are former producing wells with surface and intermediate or production casing set that have been plugged with cement plugs and heavy mud. The cement plugs were placed between the injection zone and the USDWs. The plugged and abandoned producing wells within the AOR are listed below:

Map ID No. 157 and 848

No corrective action is required for these wells.

Plugged and Abandoned Dry Holes (1 well):

Plugged and abandoned dry holes have surface casing and may have intermediate or long-string casing set through the injection zone. Dry holes were plugged with heavy mud and cement plugs. The cement plugs were placed between the requested injection zone and the USDWs. The plugged and abandoned dry hole is listed below:

Map ID No. 851.

No corrective action is required for this well.

VI.E Cone of Influence and Area of Review Determination

The cone of influence is defined here as the area within which increased injection zone pressures caused by injection of wastes would be sufficient to cause fluid movement through any well or other conduit into a USDW. This demonstration shows that the extremely conservative worst-case cone of influence of the proposed injection operations is smaller than the one-mile radius AOR in which artificial penetrations were investigated.

In the worst case, an undocumented abandoned well is imagined to be open to both the injection zone and the base of the USDW. In addition, the well is imagined to be filled to within 100 feet of the ground surface with formation brine from the injection zone and fresh water from the base of the USDW. The cone of influence can be calculated by comparing the hydraulic heads of the injection zone and the lowermost USDW. It is only where the injection zone head is above the USDW head that fluid movement from the injection zone into the USDW could occur. This worst-case model of the potential effect of injection upon the USDW is extremely conservative, because no wells within one mile of the proposed injection wells are open to both the injection zone and the USDW and filled with brine.

The injection zone for Navajo's proposed injection wells has a native pressure such that the resulting hydraulic head is lower than the head of the lowermost USDW. The pre-injection pressure of the injection interval was measured on July 30, 1998, in Navajo's WDW-1 to be 2928 psia at 7924 feet (7911 feet below ground level, BGL) (Attachment VIII-9B).

A sample of fluid was retrieved from formation fluid swabbed on July 25, 1998, from the perforations of the deeper Cisco interval, from 8220 feet to 8476 feet in Navajo's WDW-1. The total dissolved solids (TDS) concentration of the sample was 33,000 mg/l, and the specific gravity of the sample at room temperature was 1.034. Formation fluid was swabbed on July 29, 1998, from the perforations of the shallower Cisco interval, from 7924 feet to 8188 feet in Navajo's WDW-1. The analysis of a sample of this fluid indicated that the TDS concentration of the sample was 18,000 mg/l, and the specific gravity at room temperature was 1.018. The chemical analysis of the formation fluid samples is included as Attachment

VII-4. These values compare favorably with information from the analysis of fluid retrieved during drillstem test (DST) No. 5, which was conducted on August 26, 1993, in WDW-1 (see Attachment VIII-9). The salinity of the formation fluid retrieved during DST No. 5 was reported in Attachment VIII-9 as a chlorides concentration of 25,000 ppm. The formation fluid is therefore assumed to have a sodium chloride concentration of 25,000 ppm. The specific gravity of such a fluid is approximately 1.02.

The pre-injection pressure, P_i, at the top of the injection zone in proposed WDW-2 at 7270 feet BKB (7257 feet BGL) is 2635 psia, as calculated below, based on a formation fluid specific gravity of 1.018. Using the lightest specific gravity in this calculation yields a high P_i, which is conservative.

$$\begin{aligned} P_i(7257 \text{ feet}) &= P_i(7911 \text{ feet}) - (7911 \text{ feet} - 7257 \text{ feet})\ (0.433 \text{ psi/ft})\ (1.018) \\ &= 2928 \text{ psia} - 288 \text{ psi} \\ &= 2640 \text{ psia} \end{aligned}$$

The head of the lowermost USDW is estimated to be 100 feet BGL. This estimate is reasonably conservative, as it is based on a static water level measurement of 81 feet in Water Well No. 18.28.8.330 (Attachment XI-1). The total depth of the well is unknown.

The critical pressure, P_c, at 7257 feet BGL that would be necessary to raise the hydrostatic head of the injection interval to the head of the lowermost USDW at 100 feet BGL is 3152 psia, as calculated below:

$$\begin{aligned} P_c = &\ (\text{Top of Injection Zone} - \text{Base of USDW})\ (0.433 \text{ psi/ft})(1.018) \\ &+ (\text{Base of USDW} - \text{Head of USDW})\ (0.433 \text{ psi/ft}) \\ = &\ (7257 \text{ feet} - 473 \text{ feet})\ (0.433 \text{ psi/ft})\ (1.018) \\ &+ (473 \text{ feet} - 100 \text{ feet})\ (0.433 \text{ psi/ft}) \\ = &\ 3152 \text{ psia} \end{aligned}$$

The critical increase in reservoir pressure, ΔP_c, above the native pressure, that is necessary to raise the hydrostatic head of the injection interval to the head of the lowermost USDW is, therefore, 512 psi, as calculated below:

$$\begin{aligned}\Delta P_c &= P_c - P_i \\ &= 3152 \text{ psia} - 2640 \text{ psia} \\ &= 512 \text{ psi}\end{aligned}$$

An increase in reservoir pressure greater than 512 psi would be sufficient to raise the head of the injection zone above the head of the lowermost USDW. The cone of influence is the area around the injection wells within which the increase in reservoir pressure caused by injection is greater than 512 psi.

Contour plots of the predicted pressure increase in the injection zone (Attachment VI-5) were generated using the maximum injection rates proposed for WDW-1, WDW-2, and WDW-3 in Section VII. A Visual Basic program, PREDICTW, was used to calculate the pressure increase throughout the injection zone at the end of 20 years of injection into the proposed wells. The theoretical basis for PREDICTW is discussed in Attachment VI-6. The gridded pressure increases created by PREDICTW are contoured using SURFER, a commercial contouring software package.

Conservative values for reservoir thickness and permeability were used to overestimate the predicted increase in reservoir pressure. The reservoir was assumed to have a thickness of 85 feet. The permeability of the reservoir was assumed to be 250 md. The modeled kh, 21,250 md-ft (= 250 md x 85 feet), is less than 10% of the kh, 284,839 md-ft, that was determined from the pressure falloff test conducted in Navajo's WDW-1 on July 30 and 31, 1998 (See Section VIII and Attachment VIII-9B). Using a low kh will yield a predicted pressure increase that is much greater than expected and a cone of influence that is much larger than expected.

The porosity was assumed to be 10%.

The viscosity of the formation fluid with TDS concentration of 25,000 ppm at 130°F is 0.53 cp (Attachment VI-7). The compressibility of the pore volume of the

formation (Canyon Reef as shown on Attachment VI-8), c_r, is 5.5×10^{-6} psi^{-1}. The compressibility of the formation fluid (distilled water as shown on Attachment VI-8), c_w, is 2.9×10^{-6} psi^{-1}. The total compressibility ($c_t = c_r + c_w$) is 8.4×10^{-6} psi^{-1}.

WDW-1 and proposed WDW-2 and WDW-3 are modeled as injecting for 20 years from August 1, 1999 through July 31, 2019, at a maximum total rate of 1000 gallons per minute (gpm) distributed among the three wells. The maximum per-well injection rate modeled is 500 gpm for 20 years.

The I & W, Inc. Walter Solt SWD-1 (Map ID No. 83), a Class II well, injects into the lower Wolfcamp through four sets of perforations between 7518 and 7812 feet. Historical injection records available from the OCD for 1994 through 1997 indicate that the average injection rate is 17.6 gpm. This rate is used for the historical injection period from June 1, 1988, through July 31, 1999. For the future injection period, from August 1, 1999 through July 31, 2019, the Walter Solt SWD-1 is expected to inject at 58.3 gpm, or 2000 barrels per day (bpd), the maximum rate requested by the original permit application for the Walter Solt SWD-1.

The 512-psi pressure-increase contour, which defines the outline of the worst-case cone of influence, is located less than one mile from WDW-1 and proposed WDW-2 and WDW-3, as shown in Attachment VI-5. An improperly abandoned wellbore or other conduit filled with formation fluid that is located farther than one mile from the proposed wells would not transmit sufficient pressure from the injection zone to move fluids into the USDW. Navajo researched public and private sources of information about wells within the one-mile AOR. Only 13 of 254 wells drilled in the AOR penetrated the injection zone. Information was presented in Section VI.D that demonstrates that each of the injection zone penetrations is properly constructed to prevent migration of fluids into the USDW.

ATTACHMENT VI-1

CONSTRUCTION DATA FOR WELLS WITHIN 1 MILE OF THE PROPOSED INJECTION WELLS

ID NO.	OPERATOR/LEASE	TYPE	TOTAL DEPTH (ft)	CASING			DATE COMPLETED OR PLUGGED	PLUGGING		MUD DATA		REMARKS
				DIAMETER (in)	DEPTH (ft)	SX OF CEMENT		DEPTH (ft)	SX OF CEMENT	FILLED (Y/N)	MUD WEIGHT (lb/gal)	
144	Mewbourne Oil Company Chalk Bluff Federal Com No. 3 North Illinois Camp Morrow 1-18S-27E Unit I	Active Gas	10150	13-3/8 9-5/8 7 4-1/2 2-3/8	400 2600 8968 8600 - 10150 9972	100 250 1200 200	1/16/93	NA	NA	NA	NA	Perfs (Morrow): 9950 - 9954 feet 9957 - 9972 feet
145	Humble Oil & Refining Co. Federal Empire Abo No. 2 1-18S-27E Unit I	Active Oil	6185				9/29/59					
146	Atlantic Richfield Co. Empire Abo Unit K No. 193 1-18S-27E Unit J	Active Oil	6225				10/26/78					
147	Humble Oil & Refining Co. Federal Empire Abo No. 1 1-18S-27E Unit J	Active Oil	6180				8/20/59					
148	Atlantic Richfield Co. Empire Abo Unit K No. 192 1-18S-27E Unit J	Active Oil	6250				6/25/78					
149	Atlantic Richfield Co. Empire Abo Unit K No. 191 1-18S-27E Unit J	Active Oil	6350				9/23/76					

ATTACHMENT VI-1 (Continued)

CONSTRUCTION DATA FOR WELLS WITHIN 1 MILE OF THE PROPOSED INJECTION WELLS

ID NO.	OPERATOR/LEASE	TYPE	TOTAL DEPTH (ft)	CASING			DATE COMPLETED OR PLUGGED	PLUGGING		MUD DATA		REMARKS
				DIAMETER (in)	DEPTH (ft)	SX OF CEMENT		DEPTH (ft)	SX OF CEMENT	FILLED (Y/N)	MUD WEIGHT (lb/gal)	
157	Mewbourne Oil Company Chalk Bluff Fed. Com No. 1 North Illinois Camp Morrow 1-18S-27E Unit N	P&A Gas	10120	13-3/8 9-5/8 7 4-1/2	400 2604 9450 9051 - 10119	425 1025 1350 175	3/7/91 5/25/91 P&A	7010 2650 450 0-50	8, CIBP 17 17 8	Y	Unknown	Perfs (Morrow): 9936 - 9946 feet 9964 - 9967 feet
158	Humble Oil & Refining Co. Empire ABO Federal No. 5 1-18S-27E Unit O	P&A Oil	6300				4/9/71					
159	Humble Oil & Refining Co. Federal Empire Abo No. 3 1-18S-27E Unit O	P&A SWD	6365				11/8/59					
160	Humble Oil & Refining Co. Federal Empire Abo No. 4 1-18S-27E Unit P	Active Oil	6250				12/2/61					
161	Mewbourne Oil Company Federal T No. 1 North Illinois Camp Morrow 12-18S-27E Unit A	Active Shut In	10141	13-3/8 8-5/8 5-1/2 4	472 2589 9473 10140 (liner)	450 900 430 80	9/13/90					Long-string casing is cemented from 10141 to 6000 feet (Attachment VI-3).
162	Collier Energy, Inc. Crossfire Federal No. 1 12-18S-27E Unit H	Active Oil	1652				9/11/85					

CONSTRUCTION DATA FOR WELLS WITHIN 1 MILE OF THE PROPOSED INJECTION WELLS

ID NO.	OPERATOR/LEASE LOCATION	TYPE	TOTAL DEPTH	CASING			DATE DRILLED	PLUGS		FILLED (Y/N)	WEIGHT (lb/gal)	REMARKS
				DIA	DEPTH	SX		DEPTH	CEMENT			
751	ARCO Oil and Gas Company Empire Abo Unit J No. 17 (was Pan American Petroleum Corp. Malco Refineries No. F-2) 1-18S-27E Unit F	P&A	5960				03/26/59 01/22/87					
752	ARCO Permian Empire Abo Unit K No. 17 1-18S-27E Unit L	O&G	6091				05/22/95					
753	ARCO Oil and Gas Company Empire Abo Unit L No. 171 1-28S-27E Unit M	O&G	6300				05/22/79					
754	Mis-Plotted Location for Map ID No. 756 1-18S-27E Unit M											
755	Valley Refining Co. Hill No. 1 1-18S-27E Unit N	D&A	2404				10/20/43 12/20/43					
756	ARCO Permian Empire Abo Unit L No. 17 (was Pan American Petroleum Corp. Malco Refineries No. F-3) 1-18S-27E Unit M	O&G	6150				06/25/59					
772	Fred Turner, Jr. State H No. 1 2-18S-27E Unit H	O&G	6140				03/09/59					
781	Malco Refining Company State B No. 2 2-18S-27E Unit J	D&A	4164				08/12/46					
785	ARCO Permian Empire Abo Unit K No. 16 (was Atlantic Refining Company State AO No. 2) 2-18S-27E Unit I	O&G	6114				02/06/95					

CONSTRUCTION DATA FOR WELLS WITHIN 1 MILE OF THE PROPOSED INJECTION WELLS

ID NO.	OPERATOR/LEASE LOCATION	TYPE	TOTAL DEPTH	CASING			DATE DRILLED	PLUGS		FILLED (Y/N)	WEIGHT (lb/gal)	REMARKS
				DIA	DEPTH	SX		DEPTH	CEMENT			
786	ARCO Permian Empire Abo Unit K No. 15 (was Atlantic Refining Company State AO No. 1) 2-18S-27E Unit J	O&G	6100				03/23/59					
789	ARCO Permian Empire Abo Unit K No. 143 2-18S-27E Unit K	O&G	6108				05/13/79					
791	ARCO Permian Empire Abo Unit K No. 161 2-18S-27E Unit I	O&G	6225				09/13/79					
792	Mis-Plotted Location for Map ID No. 814 2-18S-27E Unit J											
793	ARCO Permian Empire Abo Unit L No. 143 2-18S-27E Unit N	O&G	6093				12/20/78					
795	Mis-Plotted Location for Map ID No. 765 2-18S-27E Unit P											
796	ARCO Permian Empire Abo Unit L No. 151 2-18S-27E Unit O	O&G	6285				11/04/75					
797	ARCO Permian Empire Abo Unit L No. 155 2-18S-27E Unit O	O&G	6202				05/01/79					
799	ARCO Permian Empire Abo Unit L No. 16 (was Gulf Oil Corporation Eddy State No. I-1) 2-18S-27E Unit P	O&G	6115				01/20/59					
800	ARCO Permian Empire Abo Unit L No. 156 2-18S-27E Unit P	O&G	6225				04/12/79					

CONSTRUCTION DATA FOR WELLS WITHIN 1 MILE OF THE PROPOSED INJECTION WELLS

ID NO.	OPERATOR/LEASE LOCATION	TYPE	TOTAL DEPTH	CASING			DATE DRILLED	PLUGS		FILLED (Y/N)	WEIGHT (lb/gal)	REMARKS
				DIA	DEPTH	SX		DEPTH	CEMENT			
801	*ARCO Permian* Empire Abo Unit L No. 15 (was Pan American Petroleum Corp. State AS No. 1) 2-18S-27E Unit O	*O&G*	*6220*				*11/19/58*					
802	ARCO Permian Empire Abo Unit L No. 154 2-18S-27E Unit O	O&G	6200				12/04/78					
805	ARCO Permian Empire Abo Unit L No. 153 2-18S-27E Unit O	Gas Injection	6303				04/20/77					
806	ARCO Permian Empire Abo Unit L No. 152 2-18S-27E Unit O	O&G	6335				06/17/76					
807	ARCO Permian Empire Abo Unit L No. 142 2-18S-27E Unit N	O&G	6200				01/12/79					
808	ARCO Oil and Gas Company Empire Abo Unit L No. 132 2-18S-27E Unit M	Gas	6200				07/01/76					
812	ARCO Permian Empire Abo Unit L No. 14 (was Pan American Petroleum Corp. State AR No. 1) 2-18S-27E Unit N	O&G	6112				10/21/58					
814	ARCO Permian Empire Abo Unit K No. 141 2-18S-27E Unit K	O&G	6203				05/17/77					
836	ARCO Oil and Gas Company Empire Abo Unit M No. 16 (was Pan American Petroleum Corp. Malco Refineries No. J-1) 11-18S-27E Unit A	O&G	6211				07/01/59					

CONSTRUCTION DATA FOR WELLS WITHIN 1 MILE OF THE PROPOSED INJECTION WELLS

ID NO.	OPERATOR/LEASE LOCATION	TYPE	TOTAL DEPTH	CASING			DATE DRILLED	PLUGS		FILLED (Y/N)	WEIGHT (lb/gal)	REMARKS
				DIA	DEPTH	SX		DEPTH	CEMENT			
837	ARCO Oil and Gas Company Empire Abo Unit M No. 151 11-18S-27E Unit A	O&G	6310				08/01/78					
838	ARCO Oil and Gas Company Empire Abo Unit M No. 153 11-18S-27E Unit B	O&G	6252				05/06/79					
839	ARCO Oil and Gas Company Empire Abo Unit M No. 15 (was Pan American Petroleum Corp. Malco Refineries No. C-1) 11-18S-27E Unit B	O&G	6260				04/06/58					
840	ARCO Oil and Gas Company Empire Abo Unit M No. 152 11-18S-27E Unit B	O&G	6300				08/23/78					
841	ARCO Oil and Gas Company Empire Abo Unit M No. 141 11-18S-27E Unit C	O&G	6225				05/21/79					
842	ARCO Oil and Gas Company Empire Abo Unit M No. 14 (was Pan American Petroleum Corp. Malco Refineries No. A-1) 11-18S-27E Unit C	P&A	6315				09/05/57					
843	ARCO Oil and Gas Company Empire Abo Unit M No. 133 11-18S-27E Unit C	O&G	6225				05/23/79					
844	ARCO Oil and Gas Company Empire Abo Unit M No. 13 (was Pan American Petroleum Corp. Malco Refineries B-2) 11-18S-27E Unit D	P&A	6114				04/26/58 12/03/88					
846	ARCO Oil and Gas Company Empire Abo Unit M No. 131 11-18S-27E Unit E	P&A	6325				07/10/78 05/11/85					

CONSTRUCTION DATA FOR WELLS WITHIN 1 MILE OF THE PROPOSED INJECTION WELLS

ID NO.	OPERATOR/LEASE LOCATION	TYPE	TOTAL DEPTH	CASING DIA	CASING DEPTH	CASING SX	DATE DRILLED	PLUGS DEPTH	PLUGS CEMENT	FILLED (Y/N)	WEIGHT (lb/gal)	REMARKS
848	Amoco Production Company Malco S No. 1 11-18S-27E Unit F	P&A	10168	11-3/4 8-5/8 5-1/2	1000 6348 6277- 10138	970 300 855	10/16/71 12/03/85	9495 7863-7613 6995 5350-5250 1050-950 Surface	NA 25 15 40 350 10	Y		Cement plug is present at the top of the liner, which is set above the top of the injection zone.
849	ARCO Oil and Gas Company Empire Abo Unit N No. 14 (was Pan American Petroleum Corp. Malco Refineries No. A-2) 11-18S-27E Unit F	P&A	6208				02/03/61 06/15/90					
850	ARCO Oil and Gas Company Empire Abo Unit N No. 131 (was Pan American Petroleum Corp. Malco Refineries No. B-1) 11-18S-27E Unit E	P&A	6120				03/27/58 12/03/88					
851	Amoco Production Company Smith-McPherson No. 1 (was Stanolind Oil and Gas Co. Ruth C. McPherson No. 1) 11-18S-27E Unit J	P&A	7270	13-3/8 9-5/8 4-1/2	572 960-1790 2990-4500	700 250 NA	09/01/56 06/06/73	4119-3735 3040-2900 2040-1922 1010-910 602-502 Surface	30 30 40 50 60 10	Y		Injection zone is not cased and is mud-filled.
852	Oscar Howard An Etz No. 3 11-18S-27E Unit N	D&A	1828				03/15/27 04/15/27					
853	Oscar Howard An Etz No. 2 11-18S-27E Unit O	D&A	1827				10/18/26 02/04/27					
854	B. R. Polk, Jr. Vickers No. 1 11-18S-27E Unit N	D&A	1794				09/08/49 10/14/49					

CONSTRUCTION DATA FOR WELLS WITHIN 1 MILE OF THE PROPOSED INJECTION WELLS

ID NO.	OPERATOR/LEASE LOCATION	TYPE	TOTAL DEPTH	CASING			DATE DRILLED	PLUGS		FILLED (Y/N)	WEIGHT (lb/gal)	REMARKS
				DIA	DEPTH	SX		DEPTH	CEMENT			
855	Amoco Production Company Federal DH Gas Com. No. 1 11-18S-27E Unit M	Oil	11915	13-3/8 9-5/8 5-1/2	502 2200 11915	700 1400 2720	05/18/84	11610 10700	55 55			Long-string casing is cemented from total depth to above the top of the confining zone. Perfs (Strawn, Morrow): 9295-9308 feet 9789-9846 feet
856	Robert G. Cox Federal EA No. 2 12-18S-27E Unit D	Shut in	6248				11/27/71					
857	Robert G. Cox Federal EA No. 1 12-18S-27E Unit D	Oil	6253				07/08/75					
858	Rhonda Operating Company Federal EA No. 3 12-18S-27E Unit D	D&A	6295				03/16/80					
859	Fred Pool Drilling, Inc. Comstock Federal No. 9 12-18S-27E Unit G	O&G	1586				04/25/87					
860	Fred Pool Drilling, Inc. Chukka Federal No. 1 12-18S-27E Unit F	Oil	1600				04/23/85					
861	Navajo Refining Company Proposed WDW-2 (was Fred Pool Drilling, Inc. Chukka Federal No. 2) (was Amoco Production Co. *Diamond Federal Gas Com. 1*) 12-18S-27E Unit E	Proposed Class I Well	10372	8-5/8	1995	800	07/18/73			Y		Plugged-back total depth is 1912 feet. Proposed recompletion is detailed in Section III, Well Data.
862	Fred Pool Drilling, Inc. White Oak Federal No. 2 (was McKee McGruder No. 3) 12-18S-27E Unit J	O&G	3664				06/29/48					
863	McKee-Jones Magruder No. 1 12-18S-27E Unit L	D&A	594				02/18/43					

CONSTRUCTION DATA FOR WELLS WITHIN 1 MILE OF THE PROPOSED INJECTION WELLS

ID NO.	OPERATOR/LEASE LOCATION	TYPE	TOTAL DEPTH	CASING			DATE DRILLED	PLUGS		FILLED (Y/N)	WEIGHT (lb/gal)	REMARKS
				DIA	DEPTH	SX		DEPTH	CEMENT			
864	Collier Energy, Inc. Comstock Federal No. 2 12-18S-27E Unit K	O&G	1600				03/16/85					
865	Fred Pool Drilling, Inc. Comstock Federal No. 8 12-18S-27E Unit L	D&A	2000				10/10/86 01/01/87					
866	Fred Pool Drilling, Inc. Comstock Federal No. 3 12-18S-27E Unit M+B40	O&G	1530				05/19/86					
867	R. E. McKee, et al. Magruder No. 2 12-18S-27E Unit M	D&A	2510				12/14/44 02/27/45					
868	The Eastland Oil Company Comstock Federal No. 10 (was Fred Pool Drilling, Inc.) 12-18S-27E Unit N	Shut in	2040				12/16/89					
869	The Eastland Oil Company Comstock Federal No. 1 (was Collier Energy, Inc.) 12-18S-27E Unit N	O&G	2400				12/10/84					
870	The Eastland Oil Company Comstock Federal No. 5 (was Collier Energy, Inc. White Oak Federal No. 1) 12-18S-27E Unit O	O&G	1625				04/19/85					
871	Picher Oil & Gas Michael Cronin No. 3 12-18S-27E Unit P	P&A	2200				05/20/26 02/15/32					
872	Picher Oil & Gas Michael Cronin No. 1 12-18S-27E Unit P	P&A	2002				11/27/23 02/15/32					
873	Cities Service Oil Company Magruder No. B-4 (was Robert E. McKee Magruder No. 4) 12-18S-27E Unit P	P&A	2000				07/30/52 06/15/66					

CONSTRUCTION DATA FOR WELLS WITHIN 1 MILE OF THE PROPOSED INJECTION WELLS

ID NO.	OPERATOR/LEASE LOCATION	TYPE	TOTAL DEPTH	CASING			DATE DRILLED	PLUGS		FILLED (Y/N)	WEIGHT (lb/gal)	REMARKS
				DIA	DEPTH	SX		DEPTH	CEMENT			
874	Robert E. McKee Magruder No. 5 12-18S-27E Unit P	P&A	1994				02/08/54 08/02/62					
875	Picher Oil & Gas Michael Cronin No. 2 12-18S-27E Unit P	P&A	2004				02/22/26 02/15/32					
876	Hassenfush-Donnelly State No. 1 13-18S-27E Unit A	P&A	2030				01/01/26					
877	Eastland Oil State No. 2 13-18S-27E Unit A	D&A	2696				01/01/26					
878	Fred Pool Drilling, Inc. Artesia State No. 2 13-18S-27E Unit C	O&G	1613				09/28/85					
879	Fred Pool Drilling, Inc. Artesia State No. 1 13-18S-27E Unit C	O&G	1575				04/13/85					
880	Dale Resler State No. 3 13-18S-27E Unit C	P&A	2047				01/29/45 03/07/45					
881	Anadarko Petroleum Corp. Tract 8 No. 2 13-18S-27E Unit D	Oil	1608				08/27/85					
882	Dale Resler, Stanley L. Jones Tract 8 No. 1 (was State No. 2) 13-18S-27E Unit D	Oil	1950				12/11/44					
883	Dale Resler - Jones State No. 1 13-18S-27E Unit E	P&A	2353				01/26/45 03/07/45					
884	Casa Petroleum, Inc. Federal No. 1 13-18S-27E Unit F	Oil	3020				06/18/84					
885	Ralph Nix and Jerry Curtis Page No. 1 13-18S-27E Unit F	P&A	2000				11/28/54 03/19/55					

CONSTRUCTION DATA FOR WELLS WITHIN 1 MILE OF THE PROPOSED INJECTION WELLS

ID NO.	OPERATOR/LEASE LOCATION	TYPE	TOTAL DEPTH	CASING			DATE DRILLED	PLUGS		FILLED (Y/N)	WEIGHT (lb/gal)	REMARKS
				DIA	DEPTH	SX		DEPTH	CEMENT			
886	Dale Resler Jones-Govt. No. 1 13-18S-27E Unit F	D&A	2000				03/14/45					
888	Dickson Petroleum, Inc. Anadarko 13 Federal No. 1 13-18S-27E Unit G	D&A	2150				12/30/84 01/25/85					
895	Anadarko Petroleum Corp. Artesia State Unit Tract 4 No. 1 (was Stanley L. Jones State No. 1) 14-18S-27E Unit A	P&A	2060				06/30/44 11/23/92					
896	Resler State No. 1 14-18S-27E Unit G	D&A	2375									
897	Dale Resler State No. 2 14-18S-27E Unit H	O&G	1888				02/08/45					
901	William and Edward Hudson Hill No. 1 1-18S-27E Unit L	D&A	1763				06/18/48					
910	Compton-Smith State No. 1 2-18S-27E Unit G	D&A	1080									

MAP ID NO. 848

AMOCO PRODUCTION COMPANY
MALCO S FEDERAL NO. 1

ENVIROCORP.

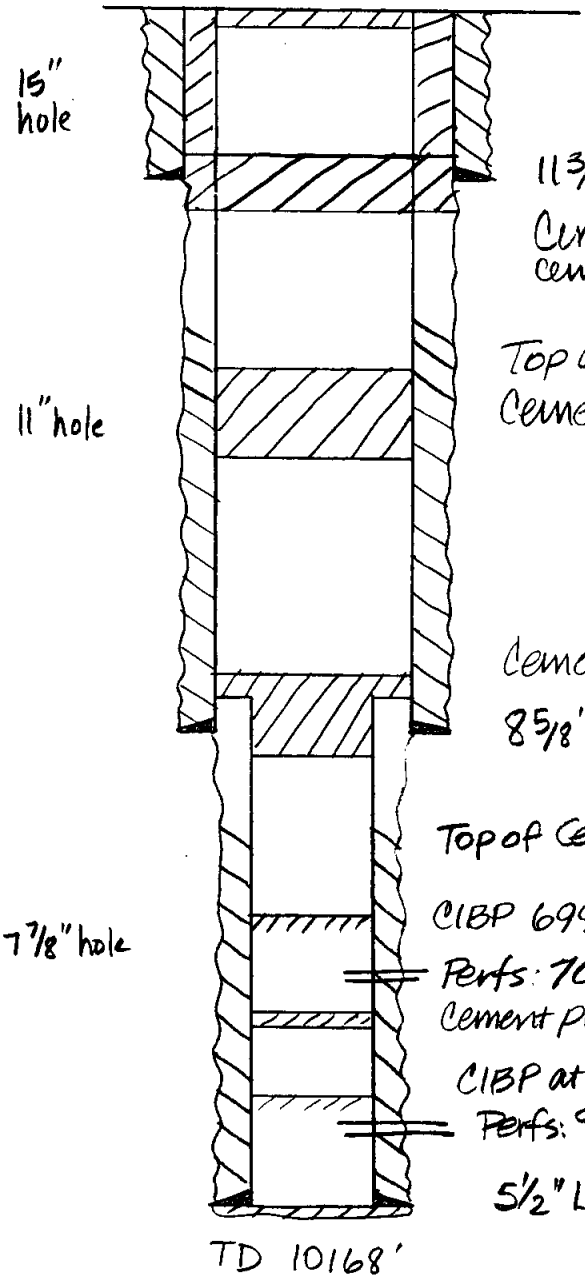
Artificial Penetration Review
Number 848

OPERATOR Amoco Production Co.
LEASE Malco S Federal
WELL NUMBER 1
DRILLED 10/16/71
PLUGGED 12/3/85

STATUS P & A was AP
DIST FROM INJECT
LOCATION 11-18S-27E, F
MUD FILLED BOREHOLE Yes
REPORTED MUD WEIGHT Gelled brine

API NO.

REMARKS:



Cement plug, 10 sx.

11 3/4" Casing at 1000' cemented w/ 970 sx.
Cement Plug 1050'-950' w/350sx. Squeezed cement behind pipe to surface.

Top of cement at 5100' per operator's schematic
Cement plug 5350'-5250', 26 sx.

Cement plug 6400'-6225', 40 sx.
8 5/8" Casing at 6348' Cemented w/ 300 sx.

Top of Cement at 6860' per operator's schematic.

CIBP 6995' w/15 sx.
Perfs: 7046'-7388'
Cement plug 7863'-7613'
CIBP at 9495'
Perfs: 9621'-9929'

5 1/2" Liner 6277'-10138' Cemented w/855 sx.

Form 9-331 C
(May 1963)

(Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1425.

30-015-20510

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

AP

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

5. LEASE DESIGNATION AND SERIAL NO.: LC-067858

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

1a. TYPE OF WORK: DRILL ☒ DEEPEN ☐ PLUG BACK ☐

b. TYPE OF WELL: OIL WELL ☒ GAS WELL ☐ OTHER — SINGLE ZONE ☒ MULTIPLE ZONE ☐

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OCT 8 1971
O. C. C.

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: MALCO A FEDERAL

9. WELL NO.: 3

2. NAME OF OPERATOR: Amoco Production Company

3. ADDRESS OF OPERATOR: BOX 68, HOBBS, N. M. 88240

10. FIELD AND POOL, OR WILDCAT: WILDCAT

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface: 1650' FNL x 1653' FWL Sec. 11 (F, SE/4 NW/4)
At proposed prod. zone

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: 11-18-27 NMPM

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*

12. COUNTY OR PARISH: EDDY — 13. STATE: NM

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any)	16. NO. OF ACRES IN LEASE	17. NO. OF ACRES ASSIGNED TO THIS WELL: 40
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.	19. PROPOSED DEPTH: 10,500'	20. ROTARY OR CABLE TOOLS: ROTARY

21. ELEVATIONS (Show whether DF, RT, GR, etc.)

22. APPROX. DATE WORK WILL START*

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
13 3/4"	11 3/4"	42-47#	1000'	Circ
11"	8 5/8"	24-36#	6200'	Fill 600' above Glo
7 7/8"	5 1/2" Liner	14-17#	6200-TD	Squeeze behind liner.

After drilling well logs will be run and evaluation made, perforating and/or stimulating as necessary in attempting commercial production.

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U. S. GEOLOGICAL SURVEY
ARTESIA, NEW MEXICO

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.

SIGNED _____ TITLE AREA SUPERINTENDENT DATE 10-6-71

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

APPROVED
OCT - 7 1971
R. L. BEEKMAN
ACTING DISTRICT ENGINEER

THIS APPROVAL IS RESCINDED IF OPERATIONS ARE NOT COMMENCED WITHIN 3 MONTHS.
EXPIRES JAN - 7 1972

*See Instructions On Reverse Side

4 - USGS - ART
1 - AC Jr
1 - SUSP
1 - RRY
1 - ARCO - Roswell
Doug Kirkland

Form 9-330
(Rev. 5-63)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN DUPLICATE* (See other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R355.5.

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

5. LEASE DESIGNATION AND SERIAL NO.: LC-067858
6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
7. UNIT AGREEMENT NAME:
8. FARM OR LEASE NAME: MALCO "A" FEDERAL
9. WELL NO.: 3
10. FIELD AND POOL, OR WILDCAT: Morgan Lea Memorial Gas WILDCAT E 4291
11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: 5-1-72 11-18-27 NMPM
12. COUNTY OR PARISH: EDDY
13. STATE: N.M.

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JAN 7 1972
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ARTESIA, OFFICE

a. TYPE OF WELL: OIL WELL ☐ GAS WELL ☒ DRY ☐ Other
b. TYPE OF COMPLETION: NEW WELL ☒ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF. RESVR. ☐ Other

2. NAME OF OPERATOR: Amoco Production Company
3. ADDRESS OF OPERATOR: BOX 68, HOBBS, N. M. 88240
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)*
At surface: 1650 FNL & 1653 FWL Sec. 11 (F, SW/4 NW/4)
At top prod. interval reported below
At total depth

14. PERMIT NO.: — DATE ISSUED:

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (Ready to prod.)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
10-16-71	12-5-71	12-20-71	3587 R.D.B.	—

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
10,168	10,000		→	0-TD	—

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*: 9621-9929'
25. WAS DIRECTIONAL SURVEY MADE: No
26. TYPE ELECTRIC AND OTHER LOGS RUN: GR-N, PROX, POROSITY, ETC.
27. WAS WELL CORED: No

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
11 3/4"	47#	1000'	15"	970 Sx	
8 5/8"	32#	6348'	11"	300 "	
5 1/2" LINER	17#	6277-10138'	7 7/8"	855 "	

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2 3/8	9504	9491

31. PERFORATION RECORD (Interval, size and number)
9621-27, 67-72, 82, 86
9735, 39, 42, 72, 75-84, 91-95
9851-56, 58, 64, 66;
9929'
W/2 JSPF

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
9735-9929'	300 gal 10% HCF x 3% HCL

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump)	WELL STATUS (Producing or shut-in)
12-16-71	FLW	SHUT-IN

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
1-2-72	4	VARIOUS		9.3	708	0	76,136

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)
2035-2689	PKR		56	OAOF 10785	0	54°

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.): TO BE SOLD - MARKET PENDING
TEST WITNESSED BY:
35. LIST OF ATTACHMENTS: NONE
36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records.

SIGNED _____ TITLE AREA SUPERINTENDENT DATE 1/6/72

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ARTESIA, NEW MEXICO

*(See Instructions and Spaces for Additional Data on Reverse Side)

- USGS- ARTESIA
- Div
- well file
- PA

Form 9-331
(May 1963)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1424.

5. LEASE DESIGNATION AND SERIAL NO.
LC-067858

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL ☐ GAS WELL ☐ OTHER DRILLING

7. UNIT AGREEMENT NAME

2. NAME OF OPERATOR
Amoco Production Company ✓

8. FARM OR LEASE NAME
MALCO "A" Federal

3. ADDRESS OF OPERATOR
BOX 68, HOBBS, N. M. 88240

9. WELL NO.
3

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.)
At surface
1650' FNL x 1653' FWL Sec 11 (Unit F, SE/4 NW/4)

10. FIELD AND POOL, OR WILDCAT
WILDCAT

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
11-18-27 NMPM

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.)

12. COUNTY OR PARISH
EDDY

13. STATE
NM

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☒	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other) Spudding			☒
(Other)			☐	(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Noble Drlg Co spudded 15" hole 2:30 PM 10-16-71. On 2-18-71, 11 3/4" OD 47# K-55 casing was set @ 1000' w/ 970 Sx Incor + 2% CACL + 570# Tof plug. Cement circ. After WOC 18 hours. Tested csg w/ 2000 psi for 30 min. Test O.K.

Reduced hole to 11" @ 1000' and resumed drilling.

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OCT 25 1971
ARTESIA, NEW MEXICO

18. I hereby certify that the foregoing is true and correct

SIGNED _____ TITLE AREA SUPERINTENDENT DATE OCT 20 1971

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

APPROVED
OCT 21 1971
BEEKMAN
DISTRICT ENGINEER

4- USGS-ARTESIA
1- ACJr
1- SUSP
2- HONDO-ROSWELL

*See Instructions on Reverse Side

Form 9-331
(May 1963)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1424.

5. LEASE DESIGNATION AND SERIAL NO.
LC-067858

6. IF INDIAN, ALLOTTEE OR TRIBE NAME
1

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME
MALCO "A" Federal

9. WELL NO.
3

10. FIELD AND POOL, OR WILDCAT
WILDCAT

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
11-18-27 NMPM

12. COUNTY OR PARISH
EDDY

13. STATE
NM

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

OIL WELL ☐ GAS WELL ☐ OTHER DRILLING

2. NAME OF OPERATOR
Amoco Production Company

3. ADDRESS OF OPERATOR
BOX 68, HOBBS, N. M. 88240

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.)
At surface
1650' FNL x 1653' FWL Sec. 11 (F, SE/4 NW/4)

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.)
3587' R. D. B.

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☒	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other)			☐
(Other)	☐		☐	(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

On 11-9-71, 8 5/8" OD 24-36# Casing was set @ 6348' w/ 300 sx. Class H. neat. After WOC 18 hours, tested casing w/ 1500 psi for 30 min Test O.K.

Reduced hole to 7 7/8" @ 6348' and resumed drilling

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U. S. GEOLOGICAL SURVEY
ARTESIA, NEW MEXICO

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[illegible]
ARTESIA, OFFICE

18. I hereby certify that the foregoing is true and correct

SIGNED _____ TITLE AREA SUPERINTENDENT DATE NOV 13 1971

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

APPROVED
ARTESIA
NOV 15 1971
[illegible]

4- USGS-ARTESIA
1- DIC
1- SUSP
1- RRA
2- HOBBS-ROSWELL

*See Instructions on Reverse Side

Form 9-331
(May 1963)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1424

5. LEASE DESIGNATION AND SERIAL NO.
LC-[illegible]

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL ☐ GAS WELL ☒ OTHER

7. UNIT AGREEMENT NAME

2. NAME OF OPERATOR
[illegible] Production Company

8. FARM OR LEASE NAME
[illegible] A [illegible]

3. ADDRESS OF OPERATOR
Box [illegible], HOBBS, N. M. 88240

9. WELL NO.
3

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.)
At surface
1980' FNL & 1980' FWL Sec. 11 (F, SE/4 NW/4)

10. FIELD AND POOL, OR WILDCAT
[illegible]

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
11-[illegible]-[illegible] NMPM

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.)
[illegible] R.D.B.

12. COUNTY OR PARISH
[illegible]

13. STATE
N.M.

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☒	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other) Completion [illegible]	☒		
(Other)							

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

On [illegible]-71, 5½" Casing Liner set from 6277' to 10165' and cemented w/ [illegible] Class H 4% Gel [illegible] CFR-2 plus 330 sx. Class H w/ [illegible] CFR-2. [illegible] 75 sx. TOC at 7135 - Temp Survey. Tested casing w/ 2000 psi for 30 mins. Test O.K. Sq. Top Liner w/ 125 sx Class C + [illegible]% CFR-2 Test Csg 2000 psi. OK. Perf [illegible] 9521-27, 67-72, 82, 86 w/ 2SPF.

Evaluating.

RECEIVED
DEC 29 1971
U. S. GEOLOGICAL SURVEY
ARTESIA, N. M.

TD-10,165'

[illegible]

18. I hereby certify that the foregoing is true and correct

SIGNED ______ TITLE AREA SUPERINTENDENT DATE ______

(This space for Federal or State office use)

APPROVED BY [signature] TITLE [illegible] ENGINEER DATE DEC 2[illegible] 1971
CONDITIONS OF APPROVAL, IF ANY:

USGS-[illegible]
OIY
[illegible]
[illegible]

*See Instructions on Reverse Side

Form 9-330
(Rev. 5-63)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN DUPLICATE* (See other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R355.5.

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

5. LEASE DESIGNATION AND SERIAL NO.: LC-067858

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

1a. TYPE OF WELL: OIL WELL ☐ GAS WELL ☒ DRY ☐ Other

b. TYPE OF COMPLETION: NEW WELL ☒ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF. RESVR. ☐ Other

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: MALCO "A" FEDERAL

2. NAME OF OPERATOR: Amoco Production Company

9. WELL NO.: 3

3. ADDRESS OF OPERATOR: BOX 68, HOBBS, N. M. 88240

10. FIELD AND POOL, OR WILDCAT: Seven Rivers-Queen-Penrose WILDCAT Penn

4. LOCATION OF WELL (*Report location clearly and in accordance with any State requirements*)*
At surface: 1650 FNL & 1653 FWL Sec. 11 (F, SW/4 NW/4)
At top prod. interval reported below
At total depth

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: 5-1-72 — 11-18-27 NMPM

14. PERMIT NO. | DATE ISSUED

12. COUNTY OR PARISH: EDDY | 13. STATE: N.M.

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (*Ready to prod.*)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
10-16-71	12-5-71	12-20-71	3587 R.D.B.	—

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
10,168	10,000		→	0-TD	—

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*: 9621-9929'

25. WAS DIRECTIONAL SURVEY MADE: No

26. TYPE ELECTRIC AND OTHER LOGS RUN: GR-N, Prox, Porosity, Etc.

27. WAS WELL CORED: No

28. CASING RECORD (*Report all strings set in well*)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
11 3/4"	47 #	1000'	15"	970 Sx	
8 5/8"	32 #	6348'	11"	300 "	
5 1/2" LINER	17 #	6277-10138'	7 7/8"	855 "	

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2 3/8	9504	9491

31. PERFORATION RECORD (*Interval, size and number*)
9621-27, 67-72, 82, 86
9735, 39, 42, 72, 75-84, 91-95
9851-56, 58, 64, 66,
9929'
w/2 JSPF

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
9735-9929'	300 gal 10% HCF x 3% HCL

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (*Flowing, gas lift, pumping—size and type of pump*)	WELL STATUS (*Producing or shut-in*)
12-16-71	FLW	SHUT-IN

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
1-2-72	4	VARIOUS		9.3	708	0	76136

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)
2035-2689	PKR		56	AOF 10785	0	54°

34. DISPOSITION OF GAS (*Sold, used for fuel, vented, etc.*): To Be Sold - Market Pending

TEST WITNESSED BY

35. LIST OF ATTACHMENTS: None

RECEIVED
JAN - 6 1972
U. S. GEOLOGICAL SURVEY
ARTESIA, NEW MEXICO

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records.

SIGNED _____ TITLE AREA SUPERINTENDENT

*(See Instructions and Spaces for Additional Data on Reverse Side)

1-USGS-ART
1-DIV
1-Well file
1-ROY

DISTRIBUTION			
SANTA FE		1	
FILE		1	✓
U.S.G.S.			
LAND OFFICE			
TRANSPORTER	OIL	1	
	GAS	1	
OPERATOR		1	
PRORATION OFFICE			

NEW MEXICO OIL CONSERVATION COMMISSION
REQUEST FOR ALLOWABLE
AND
AUTHORIZATION TO TRANSPORT OIL AND NATURAL GAS

Form C-104
Supersedes Old C-104 and C-110
Effective 1-1-65

RECEIVED

Operator
AMOCO PRODUCTION COMPANY

Address
P.O. Drawer A, Levelland, Texas 79336

Reason(s) for filing *(Check proper box)*

New Well ☐ Change in Transporter of: Oil ☐ Dry Gas ☒ Casinghead Gas ☐ Condensate ☐
Recompletion ☐
Change in Ownership ☐

Other *(Please explain)* Eff. 8-1-76
From: Gas Company of New Mexico
To: Amoco Produciton Company

If change of ownership give name and address of previous owner _____

DESCRIPTION OF WELL AND LEASE

Lease Name	Well No.	Pool Name, Including Formation	Kind of Lease	Lease No.
Malco "S" Federal	1	Scoggin Draw-Morrow	State, Federal or Fee Federal	LC-067858

Location
Unit Letter F ; 1650 Feet From The North Line and 1653 Feet From The West

Line of Section 11 Township 18-S Range 27-E , NMPM, Eddy County

DESIGNATION OF TRANSPORTER OF OIL AND NATURAL GAS

Name of Authorized Transporter of Oil ☐ or Condensate ☒ — Address *(Give address to which approved copy of this form is to be sent)*
Amoco Production Company - Trucks — Box 1183, Houston, Texas 77001

Name of Authorized Transporter of Casinghead Gas ☐ or Dry Gas ☒ — Address *(Give address to which approved copy of this form is to be sent)*
Amoco Production Company — P.O. Drawer A, Levelland, Texas 79336

If well produces oil or liquids, give location of tanks.	Unit	Sec.	Twp.	Rge.	Is gas actually connected?	When
	F	11	18	27	Yes	12-27-72

If this production is commingled with that from any other lease or pool, give commingling order number: _____

COMPLETION DATA

Designate Type of Completion – (X)	Oil Well	Gas Well	New Well	Workover	Deepen	Plug Back	Same Resv.	Diff. Resv.

Date Spudded	Date Compl. Ready to Prod.	Total Depth	P.B.T.D.
Elevations *(DF, RKB, RT, GR, etc.)*	Name of Producing Formation	Top Oil/Gas Pay	Tubing Depth
Perforations			Depth Casing Shoe

TUBING, CASING, AND CEMENTING RECORD

HOLE SIZE	CASING & TUBING SIZE	DEPTH SET	SACKS CEMENT

TEST DATA AND REQUEST FOR ALLOWABLE

(Test must be after recovery of total volume of load oil and must be equal to or exceed top allowable for this depth or be for full 24 hours)

OIL WELL

Date First New Oil Run To Tanks	Date of Test	Producing Method *(Flow, pump, gas lift, etc.)*	
Length of Test	**Tubing Pressure**	**Casing Pressure**	**Choke Size**
Actual Prod. During Test	**Oil-Bbls.**	**Water-Bbls.**	**Gas-MCF**

POSTED ID-3 1-24-77 Change 2-4-77

GAS WELL

Actual Prod. Test-MCF/D	Length of Test	Bbls. Condensate/MMCF	Gravity of Condensate
Testing Method *(pitot, back pr.)*	**Tubing Pressure (Shut-in)**	**Casing Pressure (Shut-in)**	**Choke Size**

CERTIFICATE OF COMPLIANCE

I hereby certify that the rules and regulations of the Oil Conservation Commission have been complied with and that the information given above is true and complete to the best of my knowledge and belief.

Ray W Cox
(Signature)
Administrative Assistant
(Title)
1-26-77
(Date)

OIL CONSERVATION COMMISSION

APPROVED JAN 31 1977, 19____
BY W.A. Gressett
TITLE _____

This form is to be filed in compliance with RULE 1104.

If this is a request for allowable for a newly drilled or deepened well, this form must be accompanied by a tabulation of the deviation tests taken on the well in accordance with RULE 111.

All sections of this form must be filled out completely for allowable on new and recompleted wells.

Fill out only Sections I, II, III, and VI for changes of owner, well name or number, or transporter, or other such change of condition.

Separate Forms C-104 must be filed for each pool in multiply completed wells.

cc: O&4 NMOCC-Art
1-Div 1-Hondo

Form 9-331
(May 1963)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE (Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1424.

5. LEASE DESIGNATION AND SERIAL NO.: LC-067258

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

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1972
U. S. GEOLOGICAL SURVEY
ARTESIA, NEW MEXICO

7. UNIT AGREEMENT NAME:

OIL WELL ☐ GAS WELL ☒ OTHER

2. NAME OF OPERATOR: Amoco Production Company

8. FARM OR LEASE NAME: MALCO S Federal

3. ADDRESS OF OPERATOR: BOX 68, HOBBS, N. M. 88240

9. WELL NO.: 1

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface

1650' FNL x 1655' FWL Sec. 11 (Unit F, SE/4 NW/4)

10. FIELD AND POOL, OR WILDCAT: Wildcat

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: 11-18-27 NMPM

14. PERMIT NO.:

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 3587' RDB

12. COUNTY OR PARISH: EDDY

13. STATE: N.M.

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other)			
(Other)				(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Well name and number changed
From: MALCO A Federal Well No. 3
To: MALCO S Federal Well No. 1

Completion horizon and type well occasioned changes.

18. I hereby certify that the foregoing is true and correct

SIGNED _____ TITLE AREA SUPERINTENDENT DATE JAN 19 1972

(This space for Federal or State office use)

APPROVED BY _____ TITLE DISTRICT ENGINEER DATE FEB 2 1972

CONDITIONS OF APPROVAL, IF ANY:

- USGS- ROT
- DIV
- CONSERV
- RRV
- HONDO

*See Instructions on Reverse Side

Form 9–331
Dec. 1973

Form Approved.
Budget Bureau No. 42–R1424

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use Form 9–331–C for such proposals.)

1. oil well ☐ gas well ☒ other

2. NAME OF OPERATOR
Amoco Production Company

3. ADDRESS OF OPERATOR
P. O. Box 68, Hobbs, NM 88240

4. LOCATION OF WELL (REPORT LOCATION CLEARLY. See space 17 below.)
AT SURFACE: 1650' FNL X 1653' FWL, Unit F
AT TOP PROD. INTERVAL: Sec. 11, T-18-S, R-27-E
AT TOTAL DEPTH:

5. LEASE
LC-067858

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME
Malco "S" Federal

9. WELL NO.
1

10. FIELD OR WILDCAT NAME
Scoggin Draw - Morrow Gas

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
11-18-27

12. COUNTY OR PARISH
Eddy

13. STATE
NM

14. API NO.

15. ELEVATIONS (SHOW DF, KDB, AND WD)
3587' RDB

16. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

REQUEST FOR APPROVAL TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF	☐		☐
FRACTURE TREAT	☐		☐
SHOOT OR ACIDIZE	☒		☐
REPAIR WELL	☐		☐
PULL OR ALTER CASING	☐		☐
MULTIPLE COMPLETE	☐		☐
CHANGE ZONES	☐		☐
ABANDON*	☐		☐
(other)			

RECEIVED
DEC 24 1981
OIL & GAS
U.S. GEOLOGICAL SURVEY
ROSWELL, NEW MEXICO

NOTE: Report results of multiple completion or zone change on Form 9–330.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Propose to acidize to increase production as follows: Install Tree Saver. Acidize with 8000 gal. 7-1/2% HCL NEFE acid staged with 150 ball sealers at a rate of 3-5 BPM as follows: (a) Run gamma ray-temp base log; (b) Pump 2000 gal. of acid; (c) inject 25 ball sealers; (d) Pump 1000 gall of acid (e) Repeat (c) and (d) until all acid is pumped; (f) Flush with 37 bbl. of treated 2% KCL water; (g) Run after job gamma ray-temp. treatment evaluation log; and (h) Swab back to recover load. Place well back on production.

0+4- USGS, A 1-Hou 1-Susp 1-CLF

Subsurface Safety Valve: Manu. and Type _____ Set @ _____ Ft.

18. I hereby certify that the foregoing is true and correct

SIGNED Cathy L. Forman TITLE Ast. Adm. Analyst DATE 12-21-81

(This space for Federal or State office use)

APPROVED

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL IF ANY:

DEC 28 1981

for JAMES A. GILLHAM
DISTRICT SUPERVISOR

*See Instructions on Reverse Side

Form 9-331
Dec. 1973

Form Approved.
Budget Bureau No. 42-R1424

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use Form 9-331-C for such proposals.)

1. oil well ☐ gas well ☒ other

2. NAME OF OPERATOR
Amoco Production Company

3. ADDRESS OF OPERATOR
P. O. Box 68, Hobbs, New Mexico 88240

4. LOCATION OF WELL (REPORT LOCATION CLEARLY. See space 17 below.)
AT SURFACE: 1650' FNL x 1653' FWL, Unit F
AT TOP PROD. INTERVAL: Sec. 11, T-18-S, R-27-E
AT TOTAL DEPTH:

5. LEASE
LC-067858

RECEIVED
MAY

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME
Malco "S" Federal

9. WELL NO.
1

10. FIELD OR WILDCAT NAME
Scoggin Draw-Morrow Gas

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
11-18-27

12. COUNTY OR PARISH
Eddy

13. STATE
NM

14. API NO.

15. ELEVATIONS (SHOW DF, KDB, AND WD)
3587' RDB

16. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

REQUEST FOR APPROVAL TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF	☐		☐
FRACTURE TREAT	☐		☐
SHOOT OR ACIDIZE	☐		☒
REPAIR WELL	☐		☐
PULL OR ALTER CASING	☐		☐
MULTIPLE COMPLETE	☐		☐
CHANGE ZONES	☐		☐
ABANDON*	☐		☐
(other)			

(NOTE: Report results of multiple completion or zone change on Form 9-330.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Moved in service unit 3-2-82. Ran swab for 8 hrs. with initial fluid level 2100 ft. from surface. Final fluid level 9400 ft. from surface. Ran gamma ray temp. log. Pumped 8000 gal 7-1/2% HCL NEFE acid with additives staged with 150 ball sealers. Ran after gamma ray and temp. treatment log. Ran swab with light show of gas. Moved out service unit 3-8-82. Flow tested for 48 hrs. and flowed 342 MCF. Returned well to production.

ACCEPTED FOR RECORD
APR 27 1982
U.S GEOLOGICAL SURVEY
ROSWELL, NEW MEXICO

0+4-USGS, A 1-Hou 1-Susp 1-CLF

Subsurface Safety Valve: Manu. and Type _____ Set @ _____ Ft.

18. I hereby certify that the foregoing is true and correct

SIGNED Cathy L. Forman TITLE Ast. Adm. Analyst DATE 3-16-82

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

MAR 22 1982

*See Instructions on Reverse Side

NM OIL CONS. COM.
Artesia, NM 88210

Form 9-331
Dec. 1973

Form Approved.
Budget Bureau No. 42-R1424

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

c/SF

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use Form 9-331-C for such proposals.)

1. oil well ☐ gas well ☒ other

2. NAME OF OPERATOR
Amoco Production Company /

3. ADDRESS OF OPERATOR
P. O. Box 68, Hobbs, New Mexico 88240

4. LOCATION OF WELL (REPORT LOCATION CLEARLY. See space 17 below.)
AT SURFACE: 1650' FNL x 1653' FWL, Unit F
AT TOP PROD. INTERVAL: Sec. 11, T-18-S, R-27-E
AT TOTAL DEPTH:

5. LEASE
LC-067858

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME
Malco "S" Federal C. C. D.

9. WELL NO.
1

10. FIELD OR WILDCAT NAME
Scoggin Draw-Morrow Gas

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
11-18-27

12. COUNTY OR PARISH
Eddy

13. STATE
NM

14. API NO.

15. ELEVATIONS (SHOW DF, KDB, AND WD)
3587' RDB

16. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

REQUEST FOR APPROVAL TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF	☐		☐
FRACTURE TREAT	☐		☐
SHOOT OR ACIDIZE	☐		☒
REPAIR WELL	☐		☐
PULL OR ALTER CASING	☐		☐
MULTIPLE COMPLETE	☐		☐
CHANGE ZONES	☐		☐
ABANDON*	☐		☐
(other)			

(NOTE: Report results of multiple completion or zone change on Form 9-330.)

MAY 3 1982

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Moved in service unit 4-5-82. Swabbed 6 hrs., with initial fluid level 5000 ft. from surface. Final fluid level 9000 ft. from surface. Pumped 5500 gal XL-4 gel, 2750 gal CO2, and 2310# 20/40 sand. Pumped 2500 gal XL-4 gel, 1-1/4 gal CO2, and 2310# 20/40 sand. Flushed with 48 bbls 10# gel. Flow tested for 96 hrs. and flowed 12 BC, 12 BLW, 4 BW, and 3108 MCF. Returned well to production.

0+4-USGS, A 1-Hou 1-Susp 1-CLF

Subsurface Safety Valve: Manu. and Type _____ Set @ _____ Ft.

18. I hereby certify that the foregoing is true and correct

SIGNED Cathy L. Iverson TITLE Ast. Adm. Analyst DATE 4-19-82

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

ACCEPTED FOR RECORD
PETER W. CHESTER
MAY 3 1982
U.S. GEOLOGICAL SURVEY
ROSWELL, NEW MEXICO

See Instructions on Reverse Side

NM OIL CON. COMMISSION
Drawer DD
Artesia, NM 88210

Form 9-331
Dec. 1973

Form Approved.
Budget Bureau No. 42-R1424

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

RECEIVED
DEC 9 1982

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use Form 9-331-C for such proposals.)

1. oil well ☐ gas well ☒ other

2. NAME OF OPERATOR
Amoco Production Company

3. ADDRESS OF OPERATOR
P. O. Box 68, Hobbs, NM 88240

4. LOCATION OF WELL (REPORT LOCATION CLEARLY. See space 17 below.)
AT SURFACE: 1650' FNL X 1653' FWL, Unit F
AT TOP PROD. INTERVAL: Sec. 11, T-18-S, R-27-E
AT TOTAL DEPTH:

5. LEASE
LC-067858

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME
Malco "S" Federal

9. WELL NO.
1

10. FIELD OR WILDCAT NAME
Scoggin Draw Morrow Gas

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
11-18-27

12. COUNTY OR PARISH
Eddy

13. STATE
NM

14. API NO.

15. ELEVATIONS (SHOW DF, KDB, AND WD)
3587' RDB

16. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

REQUEST FOR APPROVAL TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF	☐		☐
FRACTURE TREAT	☒		☐
SHOOT OR ACIDIZE	☐		☐
REPAIR WELL	☐		☐
PULL OR ALTER CASING	☐		☐
MULTIPLE COMPLETE	☐		☐
CHANGE ZONES	☐		☐
ABANDON*	☐		☐
(other)			

RECEIVED
DEC 3 1982
OIL & GAS
MINERALS MGMT. SERVICE
ROSWELL, NEW MEXICO

(NOTE: Report results of multiple completion or zone change on Form 9-330.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Propose to fracture stimulate Morrow interval 9621'-9929' (non-continuous) as follows: Pull tubing and packer. Set a packer at apx. 9520'. Fracture stimulate with 20000 gal 40# gelled 2% KCl water commingled with 10000 gal CO2 carrying 20500# 20/40 sand. Flush with 3000 gal 2% KCl brine water and 1000 gal CO2. Flow and kick off well. If well won't flow, pull packer and run 3 joints tubing as tailpipe with 1.81" profile nipple 1 joint off bottom, landing tubing at apx. 9530'. Set a packer in 5½" liner at apx. 9430'. Run on-off tool with 1.875" profile nipple in seal mandrel. Run 2-3/8" tubing to surface and hydro test tubing. Flow test and return well to production.

0+4-MMS,A 1-HOU 1-SUSP 1-CLF

Subsurface Safety Valve: Manu. and Type _____ Set @ _____ Ft.

18. I hereby certify that the foregoing is true and correct

SIGNED Cathy L. Iserman TITLE Ast. Adm. Analyst DATE 11-30-82

(This space for Federal or State office use)

APPROVED
(Orig. Sgd.) PETER W. CHESTER
DEC 8 1982
FOR
JAMES A. GILLHAM
DISTRICT SUPERVISOR

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

NO. OF COPIES RECEIVED	5	
DISTRIBUTION		
SANTA FE	1	
FILE	1	✓
U.S.G.S.		
LAND OFFICE		
TRANSPORTER OIL	1	
TRANSPORTER GAS	1	
OPERATOR	1	
PRORATION OFFICE		

NEW MEXICO OIL CONSERVATION COMMISSION
REQUEST FOR ALLOWABLE
AND
AUTHORIZATION TO TRANSPORT OIL AND NATURAL GAS
(DEVIATION SURVEYS - BACK SIDE)

Form C-104
Supersedes Old C-104 and C-11
Effective 1-1-65

API-30-015-20510

Operator: Amoco Production Company

Address: BOX 68, HOBBS, N. M. 88240

Reason(s) for filing (check proper box)

New Well	X	Change in Transporter of:			
Recompletion		Oil		Dry Gas	X
Change in Ownership		Casinghead Gas		Condensate	

Other (Please explain)

If change of ownership give name and address of previous owner _____

I. DESCRIPTION OF WELL AND LEASE

Lease Name	Well No.	Pool Name, Including Formation	Kind of Lease	Lease No.
MALCO "S" FEDERAL	1	SCOGGIN DRAW-MORROW Gas	State, Federal or Fee FED	LC-067858

Location

Unit Letter F ; 1650 Feet From The NORTH Line and 1653 Feet From The WEST

Line of Section 11 Township 18-S Range 27-E , NMPM, EDDY County

I. DESIGNATION OF TRANSPORTER OF OIL AND NATURAL GAS

Name of Authorized Transporter of Oil ☐ or Condensate ☒	Address (Give address to which approved copy of this form is to be sent)
Amoco Production Company (Trucks)	P. O. Box 3119, Midland, Texas 79701
Name of Authorized Transporter of Casinghead Gas ☐ or Dry Gas ☒	Address (Give address to which approved copy of this form is to be sent)
Amoco Production Company (DAU)	P. O. Box 68, Hobbs, New Mexico 88240

If well produces oil or liquids, give location of tanks.	Unit	Sec.	Twp.	Rge.	Is gas actually connected?	When
	F	11	18-S	27-E	Yes	12-27-72

If this production is commingled with that from any other lease or pool, give commingling order number: _____

V. COMPLETION DATA

Designate Type of Completion – (X)	Oil Well	Gas Well	New Well	Workover	Deepen	Plug Back	Same Res'v.	Diff. Res'v.
		X	X					

Date Spudded	Date Compl. Ready to Prod.	Total Depth	P.B.T.D.
10-16-71	12-20-71	10,168'	10,000'
Elevations (DF, RKB, RT, GR, etc.)	**Name of Producing Formation**	**Top Oil/Gas Pay**	**Tubing Depth**
3587' RDB	Penn-Morrow	9,621	9,504'

Perforations	Depth Casing Shoe
9621'-27', 67'-72', 82', 86', 9735', 39', 42', 72', 75'-84', 91'-95', 9851'-56', 58', 64', 66', 9929'	10,138'

TUBING, CASING, AND CEMENTING RECORD

HOLE SIZE	CASING & TUBING SIZE	DEPTH SET	SACKS CEMENT
15"	11-3/4"	1000'	970 SX
11"	8-5/8"	6348'	300 SX
7-7/8"	5-1/2"	6277'-10138'	855 SX
	2 3/8"	9504 Pkr @ 9491	

V. TEST DATA AND REQUEST FOR ALLOWABLE

(Test must be after recovery of total volume of load oil and must be equal to or exceed top allowable for this depth or be for full 24 hours)

OIL WELL

Date First New Oil Run To Tanks	Date of Test	Producing Method (Flow, pump, gas lift, etc.)	
Length of Test	**Tubing Pressure**	**Casing Pressure**	**Choke Size**
Actual Prod. During Test	**Oil-Bbls.**	**Water-Bbls.**	**Gas-MCF**

GAS WELL

Actual Prod. Test-MCF/D	Length of Test	Bbls. Condensate/MMCF	Gravity of Condensate
AAOF - 10785	4 Hr.	12	54°
Testing Method (pitot, back pr.)	**Tubing Pressure (Shut-in)**	**Casing Pressure (Shut-in)**	**Choke Size**
4 - Pt.	2862	PKR	VARIOUS

VI. CERTIFICATE OF COMPLIANCE

I hereby certify that the rules and regulations of the Oil Conservation Commission have been complied with and that the information given above is true and complete to the best of my knowledge and belief.

(Signature) AREA ~~SUPERINTENDENT~~ Engineer

(Title)

12-27-72
(Date)

OIL CONSERVATION COMMISSION

APPROVED DEC 29 1972, 19____

BY W. A. Gressett

TITLE OIL AND GAS INSPECTOR

This form is to be filed in compliance with RULE 1104.

If this is a request for allowable for a newly drilled or deepened well, this form must be accompanied by a tabulation of the deviation tests taken on the well in accordance with RULE 111.

All sections of this form must be filled out completely for allowable on new and recompleted wells.

Fill out only Sections I, II, III, and VI for changes of owner, well name or number, or transporter, or other such change of condition.

C-104 must be filed for each pool in multipl

) & 4 - NMOCC-Artesia
1 - Div
1 - JEL
1 - OBP
1 - Susp
1 - RRY
2 - Hondo

NM OIL CONS. COMMISSION
Drawer DD
Artesia, NM 88210

Form 9-331
Dec. 1973

Form Approved.
Budget Bureau No. 42-R1424

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use Form 9-331-C for such proposals.)

RECEIVED
JUL 11 1983
ARTESIA, OFFICE

1. oil well ☐ gas well ☒ other

2. NAME OF OPERATOR
Amoco Production Company

3. ADDRESS OF OPERATOR
P. O. Box 68, Hobbs, New Mexico 88240

4. LOCATION OF WELL (REPORT LOCATION CLEARLY. See space 17 below.)
AT SURFACE: 1650' FNL X 1653' FWL, Unit F
AT TOP PROD. INTERVAL:
AT TOTAL DEPTH:

5. LEASE
LC-067858

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME
Malco "S" Federal

9. WELL NO.
1

10. FIELD OR WILDCAT NAME
Scoggin Draw Morrow Gas

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
11-18-27

12. COUNTY OR PARISH
Eddy

13. STATE
NM

14. API NO.

15. ELEVATIONS (SHOW DF, KDB, AND WD)
3587' RDB

16. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

REQUEST FOR APPROVAL TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF	☐		☐
FRACTURE TREAT	☐		☒
SHOOT OR ACIDIZE	☐		☐
REPAIR WELL	☐		☐
PULL OR ALTER CASING	☐		☐
MULTIPLE COMPLETE	☐		☐
CHANGE ZONES	☐		☐
ABANDON*	☐		☐
(other)			

(NOTE: Report results of multiple completion or zone change on Form 9-330.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Moved in service unit 1-11-83. Killed well with 50 bbls 10# 2% KCL water. Pulled tubing and packer. Ran packer and 2-7/8" tubing and tested to 8000 psi. Packer set at 9515'. Fractured with 20,000 gal 40# gelled 2% KCL water and 10,000 gals. CO2 carrying 20,500# sand. Flushed with 71 bbl 10# 2% KCL water. Flowed well on 32/64" choke for 1/2 hrs. at 75 psi. Flowed 3 hrs. on 48/64" choke at 50 psi. Well died. Pulled tubing and packer. Ran 2-3/8" tubing, F-nipple, 2-3/8" tubing, packer, on-off tool and 2-3/8" tubing. Packer set at 9432' and tailpipe landed at 9527'. Swabbed 8 hrs. and recovered 60 BLW with Strong show of gas. Moved out service unit 1-16-83. Moved in and rigged up Swab unit 1-16-83. Swabbed 12 days. Moved out Swab unit 2-1-83. Connected well to gas sales line 2-2-83. Flowed 144 hrs. and produced 0 BF and 701 MCF. Last 24 hrs flowed 0 BF and 120 MCF. Returned well to production

Subsurface Safety Valve: Manu. and Type 0+4 BLM, R, 1-HOU, 1-SUSP 1-CMH 1-W. Stafford, HOU Set @ _____ Ft.

18. I hereby certify that the foregoing is true and correct

SIGNED Charles McKenzie TITLE Ast. Adm. Analyst DATE 7-11-83

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

ACCEPTED FOR RECORD
JUL 7 1983
ROSWELL, NEW MEXICO

*See Instructions on Reverse Side

Form 3160-3
(November 1983)
(formerly 9-331C)

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0136
Expires August 31, 1985

Artesia, NM 88210

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

5. LEASE DESIGNATION AND SERIAL NO.: LC-067858
6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
7. UNIT AGREEMENT NAME:

1a. TYPE OF WORK: DRILL ☐ DEEPEN ☐ PLUG BACK ☐

b. TYPE OF WELL: OIL WELL ☒ GAS WELL ☐ OTHER Recomplete SINGLE ZONE ☐ MULTIPLE ZONE ☐

8. FARM OR LEASE NAME: Molco 'S' Federal

2. NAME OF OPERATOR: Amoco Production Company ✓

9. WELL NO.: 1

3. ADDRESS OF OPERATOR: P.O. Box 68, Hobbs NM 88240

10. FIELD AND POOL, OR WILDCAT: Chalk Bluff Wolfcamp

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface: 1650' FNL x 1653' FWL
At proposed prod. zone: (SE/4 NW/4 Unit F)

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: 11-18-27

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*

12. COUNTY OR PARISH: Eddy | 13. STATE: NM

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any)	16. NO. OF ACRES IN LEASE	17. NO. OF ACRES ASSIGNED TO THIS WELL: 40
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.	19. PROPOSED DEPTH: 7610'	20. ROTARY OR CABLE TOOLS: Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.): 3587 RDB

22. APPROX. DATE WORK WILL START*

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
15"	11 3/4"	47#	1000'	570 sks
11"	8 5/8"	32#	6348'	300 sks
7 7/8"	5 1/2" liner	17#	6277-10138'	855 sks

Propose to abandon the Morrow and recomplete to the Wolfcamp as follows:
1) POH with production equipment
2) RIH and set CIBP at 9500' and cap with 35' (5 sks) class 'H' neat cmt. Top of Mor is at 9490'.
3) Spot a 250' (25 sx) class 'H' neat plug from 7860-7610. x Place mud between p
4) Run CBL from 7500-6500'.
5) If there is not a good cmt. bond between 7000'-7400' a supplemental procedure to

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.
SIGNED Tony C. Clark TITLE Asst. Admin. Analyst DATE 1-7-84

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

APPROVED BY Mark Hyley for Andy TITLE _____ DATE 1-9-85

CONDITIONS OF APPROVAL, IF ANY:

045 BLM,C 1-JRB 1-FJN 1-GCC 2-NMOCD,A

*See Instructions On Reverse Side

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

place cmt. behind pipe will be issued.

⑥ Perforate Wolfcamp intervals 7046-62, 7090 - 7100, and 7382-88 w/4 DPJSPF using a 3⅛" gun.

⑦ RIH with RBP, tbg, and pkr. Set RBP at 7450', pkr. at 7280'.

⑧ Swab and flow test well

⑨ Stimulate Wolfcamp 7382-88' with 1000 gals 15% NEFE HCl gelled acid w/add. and 1000 gals non gelled 15% NEFE HCl w/add. Flush with 30 bbls fresh water.

⑩ Swab and flow test well

⑪ Release pkr, lower and latch onto RBP. Pull up RBP to 7200' and spot 10' sand on top. Set pkr at 6850'.

⑫ Swab and flow test gross interval 7046-7100'.

⑬ Stimulate Wolfcamp 7046-62' and 7090-7100' as follows:

* Tag all acid w/RA material

a) Run before treatment GR Temp survey 7170'-6800'.

b) Pump 4000 gals 15% NEFE HCl gelled acid w/add in 2 equal stgs

c) Pump 1000 gals 15% NEFE HCl acid w/add

d) flush acid with 29 bbls fresh water

e) Run after treatment survey 7170'-6800'

⑭ Swab and flow test well

⑮ Release pkr and POH with RBP, pkr, and tbg.

⑯ RIH with 2⅜" tbg with seating nipple on bottom. Land tbg at 7450' and anchor at 7350'

⑰ Run rods and pump and return well to production.

Artesia, NM 88210

Form 3160-5
November 1983)
Formerly 9-331)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0135
Expires August 31, 1985

RECEIVED BY

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

5. LEASE DESIGNATION AND SERIAL NO.: LC-067858

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT AGREEMENT NAME:

1. OIL WELL ☐ GAS WELL ☒ OTHER Recompletion

8. FARM OR LEASE NAME: Malco S Federal

2. NAME OF OPERATOR: Amoco Production Company

9. WELL NO.: 1

3. ADDRESS OF OPERATOR: P.O. Box 68, Hobbs, NM 88240

10. FIELD AND POOL, OR WILDCAT: Chalk Bluff Wolfc

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 1650'FNL X 1653'FWL (SE/4, NW/4, Unit F)

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: 11-18-27

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 3587'RDB

12. COUNTY OR PARISH: Eddy

13. STATE: NM

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other)			
(Other)				(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

MISU 1-21-85. Released pkr. and pulled tbg. Ran cast iron bridge plug and set at 9495'. Pumped 5 sx Class H cmt. Spotted gel plug 9432'-9683'. Spotted 25 sx Class H plug 7863'-7613'. Pulled tbg. Perf'd 7046'-7062', 7090'-7100', 7382'-7388' with 4 SPF. Ran tbg., pkr. and set retrievable bridge plug at 7444'. Pulled tbg. and set pkr. at 7280'. Swbd. Acidized with 1000 gals. 15% NEFE HCL and 1000 gals. 5% HCL Swbd. Released pkr. and reset at 6842'. Tested pkr. to 500 PSI and OK. Set retrievable bridge plug at 7200'. Tested RBP to 500 PSI and OK. Swbd. Ran before-treatment survey and acidized with 5000 gals. gelled 15% NEFE HCL. Jagged Radio Active material. Ran after-treatment survey. Swbd. Released pkr. and pulled tbg. and ran retrievable head, seating nipple and tbg. to 7188'. Cleaned out sand to 7200'. Ran seating nipple,

D+5-BLM, C 1-JRB 1-FJN 1-GCC 2-NMOCD, A

18. I hereby certify that the foregoing is true and correct

SIGNED Bonita Cobble TITLE Administrative Analyst DATE 2-22-85

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

Post FD 3-35

*See Instructions on Reverse Side

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

tail-pipe, tbg., and tbg. anchor. Seating nipple landed at 7441', and set tbg. anchor at 7005'. Ran rods and pmp. MOSU 1-30-85. Built wellhead and connected to flow line on 1-31-85. Began pmp testing 2-1-85. Pump tested approx. 8 days. Last 24 hrs. pmpd 0 BO X 180 BW X 0 MCF. MISU 2-11-85. Pulled rods and pmp. Pulled tbg. and ran plug., seating nipple and tbg. Retrievable bridge plug set at 7150'. Tested RBP to 1000 PSI and OK. Set pkr. at 7073'. Swbd. Released pkr ran tbg. and latched on to RBP. Pulled tbg. Ran Cast iron bridge plug and set at 7080'. Ran cmt. ret. and set at 6962'. Pumped 75 sx Class H Neat. Reversed out 5 sx cmt. POOH. Drilled out cmt. to 7070'. Ran tbg. and tagged cast iron bridge plug at 7080'. Pulled tbg., drill collar and bit. Ran cmt. retainer and set at 6955'. Squeezed 125 sx Class H cmt and 10 sx below retainer and 103 sx formation. Reversed out 12 sx and pulled tbg.

Form 3150-5
November 1983
Formerly 9-331)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0135
Expires August 31, 1985

5. LEASE DESIGNATION AND SERIAL NO.: LC-067858

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL [X] GAS WELL [ ] OTHER

7. UNIT AGREEMENT NAME:

2. NAME OF OPERATOR: Amoco Production Company ✓

8. FARM OR LEASE NAME: Malco S Federal

3. ADDRESS OF OPERATOR: P.O. Box 68, Hobbs NM 88240

9. WELL NO.: 1

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 1650' FNL X 1653' FWL (Unit F, SE/4 NW/4)

10. FIELD AND POOL, OR WILDCAT: Chalk Blvd Wolfcamp

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: 11-18-27

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 3587' RDB

12. COUNTY OR PARISH: Eddy

13. STATE: NM

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	[ ]	PULL OR ALTER CASING	[ ]	WATER SHUT-OFF	[ ]	REPAIRING WELL	[ ]
FRACTURE TREAT	[ ]	MULTIPLE COMPLETE	[ ]	FRACTURE TREATMENT	[ ]	ALTERING CASING	[ ]
SHOOT OR ACIDIZE	[ ]	ABANDON*	[ ]	SHOOTING OR ACIDIZING	[ ]	ABANDONMENT*	[ ]
REPAIR WELL	[ ]	CHANGE PLANS	[ ]	(Other) Production start-up			[X]
(Other)				(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

This is to inform you that production from pump testing began on the Malco S Federal No. 1 2-26-85. Produced 9 BO, 150 bbls W, and 0 gas. The subject well is currently being recompleted from the Morrow to the Wolfcamp.

0+5 BLM,R 1-JRB 1-FJN 1-GCC cc-BLM,C

18. I hereby certify that the foregoing is true and correct

SIGNED Gary C. Clark TITLE Asst. Admin. Analyst DATE 2-27-85

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

Form 3160-5
November 1983)
(Formerly 9-331)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

RECEIVED BY
APR 12 1985
ARTESIA, OFFICE

Form approved.
Budget Bureau No. 1004-0135
Expires August 31, 1985

5. LEASE DESIGNATION AND SERIAL NO.: LC-067858

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL ☒ GAS WELL ☐ OTHER

7. UNIT AGREEMENT NAME:

2. NAME OF OPERATOR: Amoco Production Company

8. FARM OR LEASE NAME: Molco S Federal

3. ADDRESS OF OPERATOR: P.O. Box 68, Hobbs NM 88240

9. WELL NO.: 1

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 1650' FNL x 1653' FWL (Unit F, SE/4 NW/4)

10. FIELD AND POOL, OR WILDCAT: Chalk Bluff Wolfcamp

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: 11-18-27

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 3587' RDB

12. COUNTY OR PARISH: Eddy

13. STATE: NM

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other) Status Update			☒
(Other)	☐			(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Drilled out cmt retainer to 7071' and pressure tested to 1000 psi for 30 min, OK. Drilled out and cleaned out to 7504'. Circulated clean. POH. Ran production equipment, tail pipe landed at 7432'. Began pump testing 2-23-85 Pump tested apx 20 days, last 24 hrs pumped 0 BO, 110 BW, and 0 MCF. Well is currently shut in for evaluation.

DTS BLM, C 1-JRB 1-FJN 1-GCC

18. I hereby certify that the foregoing is true and correct

SIGNED Gary C. Clark TITLE Asst. Admin. Analyst DATE 4-2-85

(This space for Federal or State office use)

APPROVED BY ACCEPTED FOR RECORD TITLE DATE

CONDITIONS OF APPROVAL, IF ANY:

APR 11 1985

*See Instructions on Reverse Side

CARLSBAD, NEW MEXICO

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

Form 3160-4
(November 1983)
(formerly 9-330)

NM OIL CONS. COMMISSION
Drawer DD
Artesia, NM 88210

SUBMIT IN DUPLICATE*
(See other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0137
Expires August 31, 1985

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

5. LEASE DESIGNATION AND SERIAL NO.: LC-067858
6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
7. UNIT AGREEMENT NAME:
8. FARM OR LEASE NAME: Malco "S" Federal
9. WELL NO.: 1
10. FIELD AND POOL, OR WILDCAT: Chalk Bluff Wolfcamp
11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: 11-18-27
12. COUNTY OR PARISH: EDDY
13. STATE: N.M

1a. TYPE OF WELL: OIL WELL [X] GAS WELL [ ] DRY [ ] Other
b. TYPE OF COMPLETION: NEW WELL [ ] WORK OVER [ ] DEEP EN [ ] PLUG BACK [X] DIFF. RESVR. [ ] Other

2. NAME OF OPERATOR: Amoco Production Company
3. ADDRESS OF OPERATOR: P.O. Box 68 Hobbs, NM 88240
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)*
At surface: 1650' FNL x 1653' FWL (Unit F, SE/4 NW/4)
At top prod. interval reported below
At total depth

14. PERMIT NO.: O/C
DATE ISSUED:

15. DATE SPUDDED: 1-21-85
16. DATE T.D. REACHED:
17. DATE COMPL. (Ready to prod.):
18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*: 3587' RDB
19. ELEV. CASINGHEAD:

20. TOTAL DEPTH, MD & TVD: 10,168'
21. PLUG, BACK T.D., MD & TVD: 7613'
22. IF MULTIPLE COMPL., HOW MANY*:
23. INTERVALS DRILLED BY: →
ROTARY TOOLS:
CABLE TOOLS:

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*: 7046' - 7388' Wolfcamp
25. WAS DIRECTIONAL SURVEY MADE: No
26. TYPE ELECTRIC AND OTHER LOGS RUN: CBL
27. WAS WELL CORED: No

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
11-3/4"	47#	1000'	15"	970 SX	CIRC
8-5/8"	32#	6348'	11"	300 SX	UNKNOWN
5-1/2"	17#	6277'-10,138'	7 7/8"	855 SX	7165'

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)

31. PERFORATION RECORD (Interval, size and number)
7046'-62', 7090'-7100', 7382'-88'
W/ 4 DPJSPF (.380")

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
7382'-88'	1000 Gal 15% NEFE HCL
7046'-7100'	4000 Gal Gelled 15% NEFE HCL w/ Ball Sealers and 1000 Gal 15% NEFE HCL

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump)	WELL STATUS (Producing or shut-in)
2-26-85	Pumping	Shut-IN

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
3-18-85	24			0			0

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)

ACCEPTED FOR RECORD
MAY 10 1985

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.):
TEST WITNESSED BY:

35. LIST OF ATTACHMENTS
Logs Mailed 1-31-85

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED: [signature] TITLE: Administrative Analyst DATE: 6 MAY 1985

CARLSBAD, NEW MEXICO

*(See Instructions and Spaces for Additional Data on Reverse Side)

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(November 1983) (formerly 9-330)

UNITED STATES ~~Artesia NM 88210~~ SUBMIT IN DUPLICATE* (See other instructions on reverse side)

DEPARTMENT OF THE INTERIOR

BUREAU OF LAND MANAGEMENT

Form approved. Budget Bureau No. 1004-0137 Expires August 31, 1985

MAY 13 1985

ARTESIA, OFFICE

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

5. LEASE DESIGNATION AND SERIAL NO.: LC-067858

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

1a. TYPE OF WELL: OIL WELL ☒ GAS WELL ☐ DRY ☐ Other

b. TYPE OF COMPLETION: NEW WELL ☐ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☒ DIFF. RESVR. ☐ Other

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: Malco "S" Federal

9. WELL NO.: 1

2. NAME OF OPERATOR: Amoco Production Company ✓

10. FIELD AND POOL, OR WILDCAT: Chalk Bluff Wolfcamp

3. ADDRESS OF OPERATOR: P.O. Box 68 Hobbs, NM 88240

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)*

At surface (1650' FNL x 1653' FWL (Unit F, SE/4 NW/4))

At top prod. interval reported below

At total depth

11-18-27

14. PERMIT NO.	DATE ISSUED	12. COUNTY OR PARISH	13. STATE
o/c		EDDY	N.M

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (Ready to prod.)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
1-21-85			3587' RDB	

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
10,168'	7613'		→		

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*: 7046'-7388' Wolfcamp

25. WAS DIRECTIONAL SURVEY MADE: No

26. TYPE ELECTRIC AND OTHER LOGS RUN: CBL

27. WAS WELL CORED: No

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
11-3/4"	47#	1000'	15"	970 SX	CIRC
8-5/8"	32#	6348'	11"	300 SX	UNKNOWN
5-1/2"	17#	6277'-10,138'	7 7/8"	855 SX	7165'

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)

31. PERFORATION RECORD (Interval, size and number)

7046'-62', 7090'-7100', 7382'-88'
W/ 4 DPJSPF (.380")

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
7382'-88'	1000 Gal 15% NEFE HCL
7046'-7100'	4000 Gal Gelled 15% NEFE HCL w/ Ball Sealers and 1000 Gal 15% NEFE HCL

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump)	WELL STATUS (Producing or shut-in)
2-26-85	Pumping	Shut-IN

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
3-18-85	24			0			0

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)

ACCEPTED FOR RECORD

MAY 10 1985

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.)

TEST WITNESSED BY

35. LIST OF ATTACHMENTS: Logs Mailed 1-31-85

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

CARLSBAD, NEW MEXICO

SIGNED Mark L. Kobar TITLE Administrative Analyst DATE 6 MAY 1985

*(See Instructions and Spaces for Additional Data on Reverse Side)

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

Form 3160-5
~~November~~ 1983)
(Formerly 9-331)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE (Other instructions on reverse side)

Budget Bureau No. 1004-0135
Expires August 31, 1985

5. LEASE DESIGNATION AND SERIAL NO.
LC-067858

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL ☒ GAS WELL ☐ OTHER

7. UNIT AGREEMENT NAME

2. NAME OF OPERATOR
AMOCO PRODUCTION COMPANY

8. FARM OR LEASE NAME
Malco "S" Federal

3. ADDRESS OF OPERATOR
P.O. BOX 68 HOBBS, NEW MEXICO 88240

9. WELL NO.
1

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.)
At surface
1650' FNL x 1653' FWL
(UNIT F, SE/4, NW/4)

10. FIELD AND POOL, OR WILDCAT
Chalk Bluff Wolfcamp

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
11-18-27

14. PERMIT NO.
3001520510

15. ELEVATIONS (Show whether DF, RT, GR, etc.)
3587' RDB

12. COUNTY OR PARISH
Eddy

13. STATE
NM

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☒	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other)			
(Other)				(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Propose to permanently Plug & Abandon as follows: Notify BLM prior commencing operations.

1. MISU and POH with rods, pump, and tubing.
2. RIH with CIBP and set at 6995'. Cap CIBP with 35' class H cement. Run CBL from 6000' to TOC
3. Displace hole from 6960' to surface with 9#/gal gelled brine (at least 25 sx gel/100 Bbl brine).
4. Spot 32 SX class H Neat cement from 6400'-6225'. (Cover 8 5/8" csg. shoe and top of 5 1/2" liner.)
5. Spot 26 SX class C Neat cement (±100') across the TCMT found in step 2 above.
6. Perforate 8 5/8" casing from 1050'-1049' with 4 JSPF.
7. RIH with 8 5/8" cement retainer. Set retainer at ±950'. Sting into retainer and pump 300 SX class C Neat cement and circulate to surface thru 8 5/8" and 11 3/8" braden head outlet.
8. Spot 10 SX Class C Neat cement from 40' to Surface. Remove well head and install P&A Marker.

0 + 5 BLM, 1 - JRB, 1 - FJN, 1 - CMH

18. I hereby certify that the foregoing is true and correct

SIGNED Carla M. Herring TITLE Administrative Analyst (SG) DATE 9/30/85

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE 11-14-85

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

Amoco Production Company

ENGINEERING CHART

SHEET NO. ___ OF ___

FILE

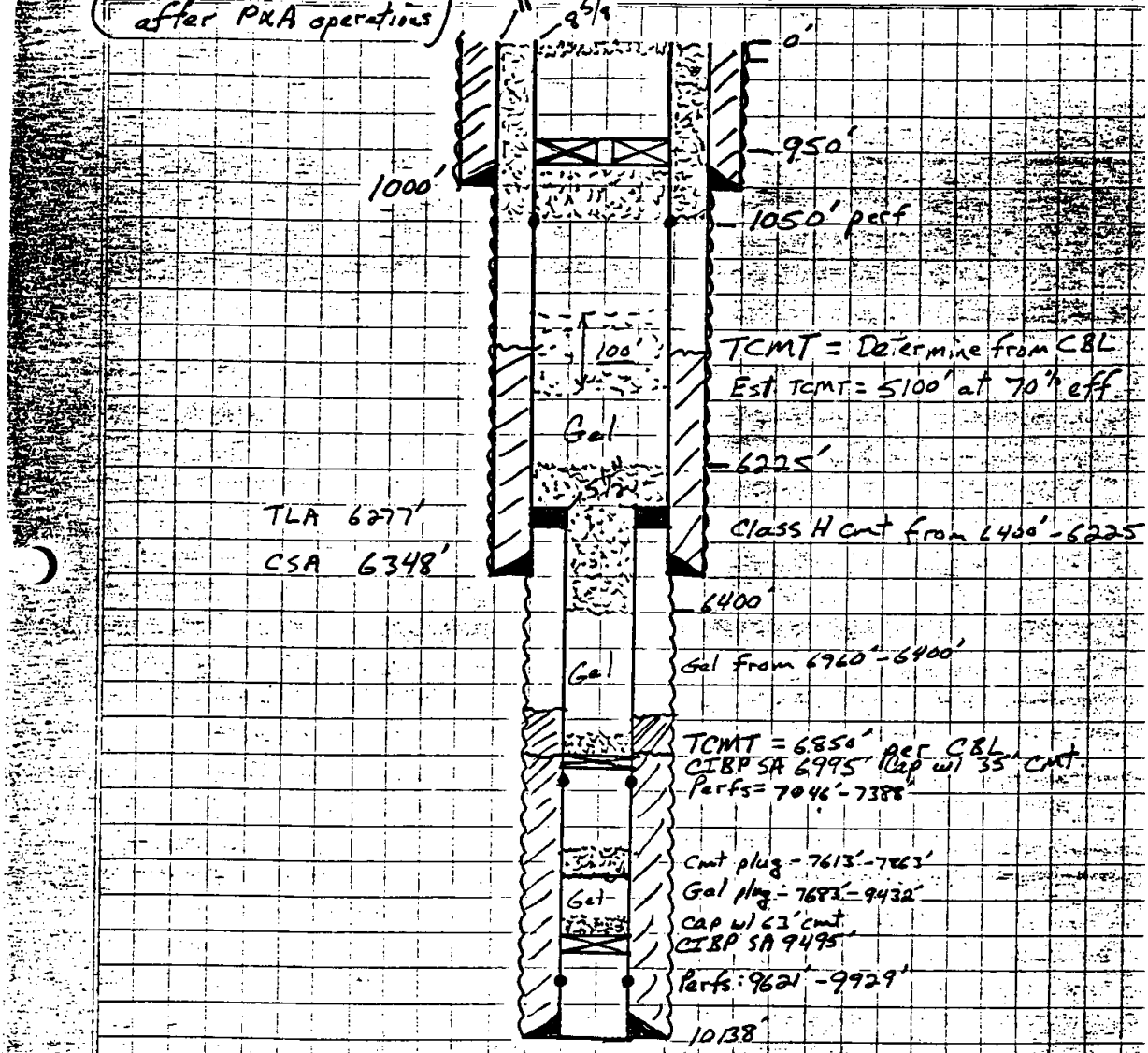
APPN

DATE 9/27/85

BY RER

SUBJECT Malco 'S' Federal No 1

(Proposed Wellbore after PxA operations)



November 1983)
(Formerly 9-331)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Expires August 31, 1985

5. LEASE DESIGNATION AND SERIAL NO.: LC-067858

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL ☐ GAS WELL ☐ OTHER D&A

7. UNIT AGREEMENT NAME:

2. NAME OF OPERATOR: AMOCO PRODUCTION COMPANY

8. FARM OR LEASE NAME: Malco "S" Federal

3. ADDRESS OF OPERATOR: P.O. BOX 68 HOBBS, NEW MEXICO 88240

9. WELL NO.: 1

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 1650' FNL x 1653' FWL (UNIT F, SE/4, NW/4)

10. FIELD AND POOL, OR WILDCAT: Chalk Bluff Wolfcamp

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: 11-18-27

14. PERMIT NO.: 3001520510

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 3587' RDB

12. COUNTY OR PARISH: Eddy

13. STATE: NM

MAR 17 1986
O. C. D.
ARTESIA, OFFICE
BUREAU OF LAND MANAGEMENT
Roswell, New Mexico

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☒
REPAIR WELL	☐	CHANGE PLANS	☐	(Other)			
(Other)				(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

1. MIRU 11-25-85 and POH with rods, pump, and tubing.
2. Ran CIBP and set at 6995'.
3. Ran free point log.
4. RIH w/tubing to 6950' and pumped 80 BBls brine gel. Capped CIBP with 15 sx Class H cement.
5. Displaced hole with 150 BBL brine gel
6. Spotted 40 sx class H Neat cement from 6400-6225'. WOC. Tagged cement at 6211'.
7. Pulled tubing to 5350' and pumped 26 sx class C cement. Displaced w/brine gel.
8. Perforated 1049-50' w/4 DPJSPF. Established circulation out 11 3/4" casing.
9. Set Cement retainer at 950'. Squeezed w/350 sx class C cement. Circulated 175 sx out 11 3/4 Casing.

O + 5 BLM-CA, 1 - JRB, 1 - FJN, 1- CMH

18. I hereby certify that the foregoing is true and correct

SIGNED Charles M. Herring TITLE Administrative Analyst (SG) DATE 12/5/85

(This space for Federal or State office use)

APPROVED BY Area Manager TITLE _____ DATE 3-14-86

CONDITIONS OF APPROVAL, IF ANY:

Post ID-2
3-21-86
PWH

*See Instructions on Reverse Side

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

Welex

ACOUSTIC CEMENT BOND LOG

COMPANY	Amoco Production Company
WELL	Malco "S" Federal No. 1
FIELD	Scoggin Draw
COUNTY	Eddy STATE NM

COMPANY AMOCO PRODUCTION COMPANY
WELL MALCO "S" FEDERAL NO. 1
FIELD SCOGGIN DRAW
COUNTY EDDY STATE NEW MEXICO
API No.
Location 1650' FNL & 1653' FWL
Other Services
Sec 11 Twp 18-S Rge 27-E

Permanent Datum Ground Level Elev 3569'
Log Measured From R.D.B. - 18 Ft Above Perm Datum
Drilling Measured From Rotary Drive Bushing
Elev KB 3587'
DF
GL 3569'

Date & Time Logged	1-23-85 11:00 AM	Type of Fluid in Hole	Water
Run No	- One -	Density of Fluid	
Depth—Driller	7600	Fluid Level	Full
Depth—Logger	7500	Cement Top Est—Logged	
Btm Logged Interval	7500	Equipment-Location	4554-Hobbs
Top Logged Interval	6100	Recorded By	Paulk & Swinney
Max Temp °F		Witnessed By	Mr. Andel

CEMENTING DATA	Surface String	Protection String	Production String	Liner
Date/Time Cemented	10-18-71	11-9-71	12-7-71	12-7-71
Primary/Squeeze	Primary	Primary	Primary	Primary
Expected Comp Strength	psi	psi	psi	psi
Cement Volume				
Cement Type/Weight	11-3/4" 47#	8-5/8" 32# LS	5-1/2" 17# N80	5-1/2" 17#
FORMULATION	K-55: 570 sx Cl	70: 300sx	500sx Cl H +	N-80
	C 2% Gel+1# Tuff plug/sx	Incor Neat	4% Gel.	Same
Mud Type Mud Wt				

RUN No	Bit	BOREHOLE RECORD From	To	CASING & TUBING RECORD Size	Wgt	From	To
1-?				11-3/4"	47#	0	1,000'
				8-5/8"	32#	0	6,348'
				5-1/2"	17#	0	10,138'

Fold Here Part Number 20127

Service Ticket No 207560 API Serial No PGM Version

The Well Name, Location, Cementing Data & Borehole Description Furnished By Client

CEMENTING DATA

Cement pumped ____ bbl/min @ ____ psi
Preceding fluid ____ volume ____ bbl
Returns? ☐ full ☐ partial ☐ none
Pipe rotated/reciprocated during pumping? ☐ yes ☐ no
after plug down? ☐ yes ☐ no
Plug bumped? ☐ yes ☐ no
Plug landing pressure ____ psi
Pressure held ____ psi ____ hrs after pumping

Centralizers ____ / Joint from ____ to ____ (×3)
Scratches ____ / Joint from ____ to ____ (×3)

EQUIPMENT DATA

GAMMA		NEUTRON		ACOUSTIC	
Run No	- One -	Run No		Run No	- One -
Serial No	28167	Serial No		Serial No	28167
Model No	507	Model No		Model No	307 A
Diameter	3-1/2"	Diameter		No of Cent	1
Detector Model No	507 A	Log Type		Spacing	4'
Type	Scint.	Source Type			
Length		Serial No			
Distance to Source		Strength			

LOGGING DATA

Run No	Depths From	Depths To	Well head Pressure, psi	Speed ft/min	GAMMA Scale L	GAMMA Scale R	NEUTRON Scale L	NEUTRON Scale R	ACOUSTIC Scale L	ACOUSTIC Scale R
-1-	6100'	7500'		34	0	100			100	1100

Remarks No correction made on depth to Open Hole Log.

GAMMA	DEPTH	AMPLITUDE	MICRO-SEISMOGRAM® LOG
API Gamma Ray Units 0 — 100		Pipe Gate	

MAP ID NO. 851

AMOCO PRODUCTION COMPANY
SMITH-McPHERSON NO. 1

ENVIROCORP.

Artificial Penetration Review
Number 851

OPERATOR Stanolind Oil & Gas Company
STATUS P&A AP2

LEASE Ruth C. McPherson
DIST FROM INJECT

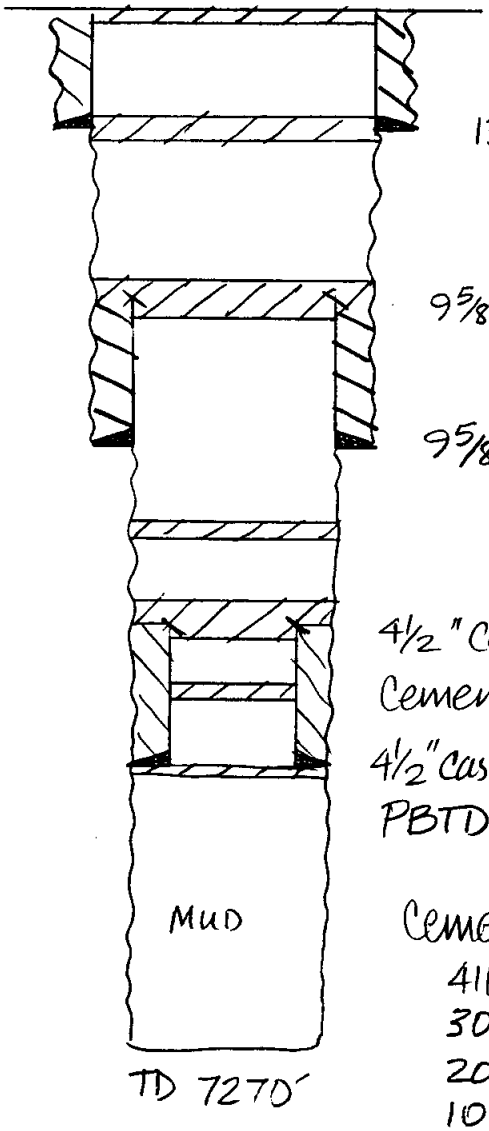
WELL NUMBER 1
LOCATION 11-18S-27E, J

DRILLED 9/1/56
MUD FILLED BOREHOLE YES

PLUGGED 6/6/73
REPORTED MUD WEIGHT

API NO.

REMARKS: Renamed Amoco Production Co. Smith-McPherson No. 1



13 3/8" Casing at 572' Cemented w/ 700 sx

9 5/8" Casing cut at 960' and pulled

9 5/8" Casing at 1790' Cemented w/ 250 sx.

4 1/2" Casing cut at 2990' and pulled
Cement plug 4119'-3735', 30 sx.
4 1/2" Casing at 4500'
PBTD 4500'

Cement Plugs
4119'-3735', 30 sx.
3040'-2900', 30 sx.
2040'-1922', 40 sx.
1010'-910', 50 sx.
602'-502', 60 sx.
Surface, 10 sx.

Budget Bureau 42-R358.4
Approval expires 12-31-46.

Form 9-331a
(Feb. 1951)

(SUBMIT IN TRIPLICATE)

Land Office Las Cruces

Lease No.

Unit

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL	X	SUBSEQUENT REPORT OF WATER SHUT-OFF	
NOTICE OF INTENTION TO CHANGE PLANS		SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF		SUBSEQUENT REPORT OF ALTERING CASING	
NOTICE OF INTENTION TO RE-DRILL OR REPAIR WELL		SUBSEQUENT REPORT OF RE-DRILLING OR REPAIR	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE		SUBSEQUENT REPORT OF ABANDONMENT	
NOTICE OF INTENTION TO PULL OR ALTER CASING		SUPPLEMENTARY WELL HISTORY	
NOTICE OF INTENTION TO ABANDON WELL			

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

Ruth C. McPherson August 29, 1956

Well No. 1 is located 1980 ft. from [S] line and 1980 ft. from [E] line of sec. 11

NW/4 of SE/4 Sec. 11 (¼ Sec. and Sec. No.) 7-16-E (Twp.) 34-E (Range) N M P M (Meridian)

Wildcat (Field) Eddy (County or Subdivision) New Mexico (State or Territory)

The elevation of the derrick floor above sea level is ..... ft. To be reported later.

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

We propose to drill the above well with rotary tools to an approximate depth of 7,000' to test abo and top of Wolfcamp. Casing program will be as follows:

Size of Hole	Size of Casing	Depth	Cement
17-1/2"	13-3/8	550	200% of theoretical amount to circulate to surface.
12-1/4"	9-5/8	2000	150% to top of Queen from Caliper survey containing 6% gel, ¼ lb flo plug per sack + 100 sacks neat.
8-3/4"	5-1/2	7000	300 sacks slack cement.

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company Phillips Oil and Gas Company

Address Box 66

Hobbs

New Mexico

By Joseph L. Lendenakon

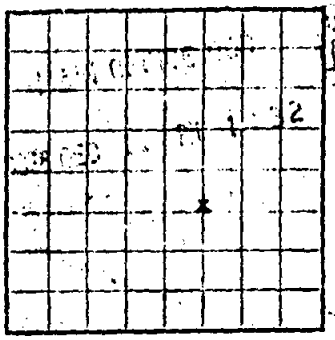
Title Field Superintendent

Form 9-330

U. S. Land Office Las Cruces
Serial Number LC 066051
Lease or Permit to Prospect

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

LOG OF OIL OR GAS WELL



LOCATE WELL CORRECTLY

Company Stanolind Oil and Gas Company Address Box 68 Hobbs, New Mexico
Lessor or Tract Ruth C. McPherson Field Wildcat State New Mexico
Well No. 1 Sec. 11 T. 18-S R. 27-E Meridian N M P M County Eddy
Location 1980 ft. [N.] of South Line and 1980 ft. [W.] of East Line of Sec. 11, T-18-S, R-27-E Elevation 3593

The information given herewith is a complete and correct record of the well and all work done thereon so far as can be determined from all available records.

Signed

Date November 26, 1956 Title Production Foreman

The summary on this page is for the condition of the well at above date.

Commenced drilling 9-1, 1956 Finished drilling 11-5, 1956

OIL OR GAS SANDS OR ZONES

(Denote gas by G)

No. 1, from to No. 4, from to
No. 2, from to No. 5, from to
No. 3, from to No. 6, from to

IMPORTANT WATER SANDS

No. 1, from to No. 3, from to
No. 2, from to No. 4, from to

CASING RECORD

Size casing	Weight per foot	Threads per inch	Make	Amount	Kind of shoe	Cut and pulled from	Perforated From	Perforated To	Purpose
13-3/8	48&36	8 Rd	H-40 Armco	563	Guide	None			Surface
9-5/8	32.3	8 Rd	H-40	1975	Guide	None			Intermc

MUDDING AND CEMENTING RECORD

Size casing	Where set	Number sacks of cement	Method used	Mud gravity	Amount of mud used
13-3/8	572	700 sx neat	Howco		
9-5/8	1790	250 sx 8% gel + 1/4# flo plug per sk.	Howco		
5-1/2	Casing was not run in this well.				

FOLD | MARK

PLUGS AND ADAPTERS

Heaving plug—Material Length Depth set
Adapters—Material Size

SHOOTING RECORD

Size	Shell used	Explosive used	Quantity	Date	Depth shot	Depth cleaned out

TOOLS USED

Rotary tools were used from 0 feet to 7270 feet, and from feet to
Cable tools were used from feet to feet, and from feet to

DATES

, 19 Put to producing Dry Hole , 19

CASING RECORD

Size casing	Weight per foot	Threads per inch	Make	Amount	Kind of shoe	Cut and pulled from	Perforated From	Perforated To	Purpose
13-3/8	48&36	8 Rd	H-40 Armco	563	Guide	None			Surface
9-5/8	32.3	8 Rd	H-40	1975	Guide	None			Intermedi

MUDDING AND CEMENTING RECORD

Size casing	Where set	Number sacks of cement	Method used	Mud gravity	Amount of mud used
13-3/8	572	700 sx neat	Howco		
9-5/8	1790	250 sx 6% gal + 1#/sx plug per sk.	Howco		
5-1/2	Casing was not run in this well.				

FOLD | MARK

PLUGS AND ADAPTERS

Heaving plug—Material ..... Length ..... Depth set .....

Adapters—Material ..... Size .....

SHOOTING RECORD

Size	Shell used	Explosive used	Quantity	Date	Depth shot	Depth cleaned out

TOOLS USED

Rotary tools were used from ..0.. feet to ..7270.. feet, and from ..... feet to ..... feet

Cable tools were used from ..... feet to ..... feet, and from ..... feet to ..... feet

DATES

....., 19.... Put to producing ..Dry Hole....., 19.....

The production for the first 24 hours was ..... barrels of fluid of which ....% was oil; ....% emulsion; ....% water; and ....% sediment. Gravity, °Bé. .....

If gas well, cu. ft. per 24 hours ..... Gallons gasoline per 1,000 cu. ft. of gas .....

Rock pressure, lbs. per sq. in. .....

EMPLOYEES

H. L. Gilbert, Driller — Z. Carr, Driller

George Wheat, Driller — Bob Minnick, Driller

FORMATION RECORD

FROM—	TO—	TOTAL FEET	FORMATION
0	312	312	Red Bed
312	360	48	Anhy. & lime
360	482	122	Anhy.
482	539	57	Anhy. sand
539	630	91	Lime anhy.
630	835	205	Shale & Lime
835	1460	625	Lime Anhy.
1460	1679	219	Shale & Lime
1679	1726	47	Shale Anhy. Dolomite
1726	1828	102	Anhy. Shale Sand
1828	2118	290	Lime
2118	2696	578	Lime & Dolomite
2696	2790	94	Anhy. & Dolomite
2790	2947	157	Dolomite & Chert
2947	3026	79	Anhy. & Dolomite
3026	3434	408	Dolomite
3434	4154	720	Dolomite Anhy.
4154	4505	351	Dolomite & Chert
4505	4558	53	Dolomite
4558	4685	127	Sand & Dolomite
4685	5093	408	Dolomite
5093	5214	121	Dolomite & Chert
5214	5722	508	Dolomite & Shale
5722	5858	136	Dolomite & Chert
5858	6055	197	Dolomite
6055	6349	294	Dolomite & Lime

FORMATION RECORD—Continued

FROM	TO	TOTAL FEET	FORMATION
6349	6502	153	Dolomite & Shale
6502	6631	129	Dolomite
6631	6850	219	Dolomite & Shale
6850	6911	61	Dolomite Lime Shale
6911	6932	21	Dolomite & Lime
6932	7066	134	Dolomite & Shale
7066	7074	8	Dolomite & Lime
7074	7270	196	Dolomite & Shale

Core #1 1758-1758 Rec. 8' light brown to tan fine crystallin lime and dolomite and very thin streak of gray shale and anhy. inclusion.

Core #2 1758-1780 Rec. 20', 1758-1775 limy dolomite w/streaks gray shale 1775-1778 brown sand w/good stain flourescent and porocity.

Core #3 2509-2512 Rec. 11' brown fine to medium crystallin dolomite w/large anhy. nelusions & vuggy to pin point porosity & poor to good scattered oil stain & odor.

Core #4 6723-6737 Rec. 10-1/2, 7' dark dense fine crystallin shaly dolomite and 3-1/2' sh micro x l N dolomite. No show.

DST #1 2455-2512 tool open 2 hrs. fair blow of air 1-1/2 hr. & died. Rec. 30' drl mud, no show oil, gas, or water. 3/4 hr. Final BHPSI 65#, Init. FBHP 55# Final FBHP 65#

DST #2 6264-6304 tool open 2-1/2 hrs. fair blow throughout test. Rec. 1350' of salty sulphur water, slightly gas cut-30 min. initial BHSIP 2390, final 30 min. Initial flowing 60 PSIG. Final flowing 600 PSIG.

DST #3 6685-6739 tool open 2-1/2 hrs. Rec. 180' drl mud, 370' sulphur water, no show oil or gas.20 min. Initial SIP 2665# Final 2120#. Initial flow 75# Final 315#.

DST #4 6915-6957 tool open 2 hrs. 5 min. Rec. 60' drlg mud and 180' sulphur water, no show oil or gas.20 min. SIBHP 2750 Final SIBHP failed. Initial FBHP 60#

Form C-103
(Revised 3-55)

NEW MEXICO OIL CONSERVATION COMMISSION
MISCELLANEOUS REPORTS ON WELLS

(Submit to appropriate District Office as per Commission Rule 1106)

HOBBS OFFICE OCC
1957 JAN 31 PM 2:36
AM 1:10

COMPANY Pan American Petroleum Corporation, Box 68, Hobbs, New Mexico
(Address)

LEASE Ruth C. McPherson WELL NO. 1 UNIT J S 11 T 18 R 27

DATE WORK PERFORMED _____ POOL Undesignated

This is a Report of: (Check appropriate block)

- ☐ Beginning Drilling Operations
- ☐ Plugging
- ☐ Results of Test of Casing Shut-off
- ☐ Remedial Work
- ☒ Other Change in Company name

Detailed account of work done, nature and quantity of materials used and results obtained.

Change in operating name from "Stanolind Oil and Gas Company" to "Pan American Petroleum Corporation" effective February 1, 1957.

FILL IN BELOW FOR REMEDIAL WORK REPORTS ONLY

Original Well Data:

DF Elev. _____ TD _____ PBD _____ Prod. Int. _____ Compl Date _____

Tbng. Dia _____ Tbng Depth _____ Oil String Dia _____ Oil String Depth _____

Perf Interval (s) _____

Open Hole Interval _____ Producing Formation (s) _____

RESULTS OF WORKOVER:	BEFORE	AFTER
Date of Test		
Oil Production, bbls. per day		
Gas Production, Mcf per day		
Water Production, bbls. per day		
Gas-Oil Ratio, cu. ft. per bbl.		
Gas Well Potential, Mcf per day		

Witnessed by _____ _____ (Company)

OIL CONSERVATION COMMISSION

Name M L Armstrong
Title OIL AND GAS INSPECTOR
Date FEB 1 1957

I hereby certify that the information given above is true and complete to the best of my knowledge.

Name Ralph L Henderson
Position Field Superintendent
Company Pan American Petroleum Corporation

N. M. O. C. C. COPY

APPROVED
DEC 1 1959
CONSERVATION COMMISSION

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

RECEIVED
MAR 7 1962
O. C. C.
ARTESIA, OFFICE

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL		SUBSEQUENT REPORT OF WATER SHUT-OFF	
NOTICE OF INTENTION TO CHANGE PLANS		SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF		SUBSEQUENT REPORT OF ALTERING CASING	
NOTICE OF INTENTION TO RE-DRILL OR REPAIR WELL		SUBSEQUENT REPORT OF RE-DRILLING OR REPAIR	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE		SUBSEQUENT REPORT OF ABANDONMENT	XX
NOTICE OF INTENTION TO PULL OR ALTER CASING		SUPPLEMENTARY WELL HISTORY	
NOTICE OF INTENTION TO ABANDON WELL			

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

Ruth C. McPherson December 2, 1959

Well No. 1 is located 1980 ft. from [N/S] line and 1980 ft. from [E/W] line of sec. 11

NW/4-SE/4, Sec. 11 (Qtr. Sec. and Sec. No.) T-18-S (Twp.) R-27-E (Range) NMPM (Meridian)

Wildcat (Field) Eddy (County or Subdivision) New Mexico (State or Territory)

RECEIVED
JAN 29 1962
U. S. GEOLOGICAL SURVEY
ARTESIA, NEW MEXICO

The elevation of the derrick floor above sea level is 3593 ft. KB

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

On 11-11-59 P X A operations were completed. Work done and plugs set as follows:

1. Cut and pulled 9 5/8" casing @ 960'.
2. Set 25 sx cement plug @ 960'; 15 sx cement in bottom of 13 3/8" casing @ 572'; 10 sx cement plug at surface. All intervals filled with heavy mud laden fluid.
3. Set P X A marker; restored ground to natural contour.

RECEIVED
DEC 7 1959
U. S. GEOLOGICAL SURVEY
ARTESIA, NEW MEXICO

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company Pan American Petroleum Corporation

Address Box 68

Hobbs, New Mexico

By

Title Area Superintendent

Form 9-331 C
(May 1963)

N. M. O. C. C. COPY

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 42 R1425.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

AM 3 SEP 10

5. LEASE DESIGNATION AND SERIAL NO.	NM-6850
6. IF INDIAN, ALLOTTEE OR TRIBE NAME	
7. UNIT AGREEMENT NAME	
8. FARM OR LEASE NAME	Ruth C. McPherson
9. WELL NO.	1
10. FIELD AND POOL, OR WILDCAT	Artesia
11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA	Section 11, T-18-S R-27-E
12. COUNTY OR PARISH	Eddy
13. STATE	New Mexico

1a. TYPE OF WORK: DRILL ☐ DEEPEN ☐ PLUG BACK ☐

b. TYPE OF WELL: OIL WELL ☐ GAS WELL ☐ OTHER Re-Entry SINGLE ZONE ☒ MULTIPLE ZONE ☐

2. NAME OF OPERATOR: Bill J. Smith

3. ADDRESS OF OPERATOR: 1504 Stagecoach Dr., Arlington, Texas, 76013

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface: 1980' FS&EL Section 11, T-18-S, R-27-E
At proposed prod. zone:

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*: 14 miles east of Artesia

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any)	660'	16. NO. OF ACRES IN LEASE: 40	17. NO. OF ACRES ASSIGNED TO THIS WELL: 40
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.	none	19. PROPOSED DEPTH: 1800	20. ROTARY OR CABLE TOOLS: Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.)

22. APPROX. DATE WORK WILL START*: September 15, 1970

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
17"	13 3/8"	N/A*	572'	400 sacks
11	9 5/8"	N/A*	1990	450 sacks

Propose to clean out plugs to about 1900', tie onto 9 5/8" casing stub with casing bowl and 32.3 # 9 5/8" casing, perforate indicated pay in Grayburg formation, stimulate as necessary and test.

* [illegible]
Casing set when well originally drilled in 1956. 13 3/8" casing was not pulled. 9 5/8" casing cut at 960' and pulled.

RECEIVED
SEP 3, 1970
[illegible]

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.

SIGNED Bill J. Smith TITLE _____ DATE 9-1-70

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

APPROVED
SEP 8 - 1970
R. L. BEEKMA
DISTRICT ENGINEER

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

THIS APPROVAL IS RESCINDED IF NOT COMMENCED WITHIN 3 MONTHS.
DEC 8 1970
EXPIRES

RECEIVED
SEP 3 1970
U. S. GEOLOGICAL SURVEY
ARTESIA, NEW MEXICO

*See Instructions On Reverse Side

NEW MEXICO OIL CONSERVATION COMMISSION

WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102
Supersedes C-128
Effective 14-65

All distances must be from the outer boundaries of the Section.

Operator	Lease	Well No.
Bill J. Smith	Ruth C. McPherson	1

Unit Letter	Section	Township	Range	County
J	11	18-S	27-E	Eddy

Actual Footage Location of Well:
1980 feet from the South line and 1980 feet from the East line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
3580	Grayburg	Artesia	40 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

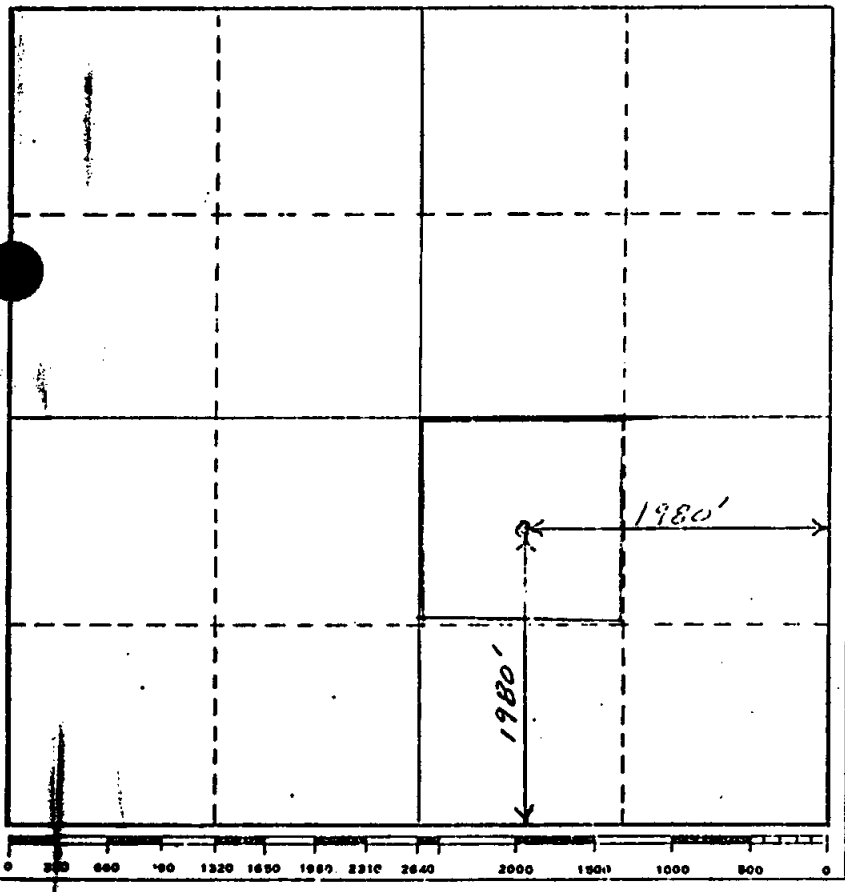
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling. etc?

☐ Yes ☐ No If answer is "yes," type of consolidation _____

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.



CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Name: Bill J. Smith

Position

Company

Date

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed
Refer to Original Plat

Registered Professional Engineer and/or Land Surveyor

Certificate No.

COUNTY FDDY FIELD Artesia STATE NM

OPR SMITH, BILL J. MAP

I McPherson, Ruth C.

Sec 11, T-18-S, R-27-E CO ORD

1980' FSL, 1980' FEL of Sec

CLASS CWDF EL 3572

Re-Comp 4-19-71

CSG & SX TUBING	FORMATION	DATUM	FORMATION	DATUM
13 3/8" at 572' w/700 sx				
9 5/8" at 1990' w/450 sx (Pulled)				
4 1/2" at 4500'				
LOGS EL GR RA IND HC A	TD 7270'; PBD 4500'			

TEMPORARILY ABANDONED

CONT PROJ DEPTH 1800' TYPE

DATE

F.R. 9-15-70; Opr's Elev. 3580' Gr.
PD 1800' WO (Grayburg)
(Orig. Stanolind Oil & Gas #1 McPherson-Federal)
P&A 11-7-56, OTD 7270')

9-22-70 TD 7270'; PBD 4500'; Prep Pb to Grayburg
Cleaned Out to 4500'
Ran 4 1/2" casing
Perf (Yeso) 4070-4100'
Acid (4070-4100') 3000 gals
Swbd blk salt wtr (4070-4100')

9-28-70 TD 7270', PBD 4500', SI

10-26-70 TD 7270', PBD 4500'; SI

1-8-71 TD 7270', PBD 4500'; SI

EDDY Artesia NM Sec 11,T18S,R2[illegible]
SMITH, BILL J. 1 McPherson, Ruth C. Page #2

2-22-71 TD 7270'; PBD 4500'; SI
4-12-71 TD 7270'; PBD 4500'; SI
4-19-71 TD 7270'; PBD 4500'; TEMPORARILY ABANDONED
4-22-71 COMPLETION REPORTED

N. M. O. C. C. COPY

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE (Other instructions on reverse side)

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT —" for such proposals.)

OTHER: DRY HOLE - RE-ENTRY

Amoco Production Company — Agent for Bill Smith

ADDRESS OF OPERATOR: BOX 68, HOBBS, N. M. 88240

LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface:

1980' FSL x 1980' FEL Sec 11 (Unit J, NW/4 SE/4)

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 3593' D.F.

8. FARM OR LEASE NAME: Smith-Fed
10. FIELD AND POOL, OR WILDCAT: Wildcat
11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: 11-18-31 ...
12. COUNTY OR PARISH: Eddy
13. STATE: N.M.

RECEIVED MAY 25 1973 O. C. C. ARTESIA, OFFICE

RECEIVED MAY 29 1973 OIL CONSERVATION COMM. Santa Fe

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:			SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF	PULL OR ALTER CASING		WATER SHUT-OFF	REPAIRING WELL
FRACTURE TREAT	MULTIPLE COMPLETE		FRACTURE TREATMENT	ALTERING CASING
SHOOT OR ACIDIZE	ABANDON*	X	SHOOTING OR ACIDIZING	ABANDONMENT*
REPAIR WELL	CHANGE PLANS		(Other)	
(Other)			(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)	

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Amoco proposes to P&A hole reentered by Bill Smith. Due to unknown downhole conditions propose to plug and abandon as follows:

Spot 30 sx cement plug from est PBD 4400 - 3950'.
(line by plugs 4070 - 4100')
Shoot & pull 4½" casing from free point (Est TCMT 3000')
Spot 30 sx cement plug in & out of 4½" stub
" 40 " " " " @ 9⅝" CSA 1990
Shoot & pull intermediate casing (8⅝ - 9⅝)
Spot 35 sx plug in & out of stub.
Spot 60 sx " " " @ 13⅜" CSA 572'.
Spot 10 sx @ surface & erect P&A marker.
All intervals to be filled w/ heavy mud. (25# gal.)
Clean & level location.

If unforeseen hole conditions prevail will seek verbal approval to deviate from above procedure.

RECEIVED MAY 22 1973 U. S. GEOLOGICAL SURVEY ARTESIA, NEW MEXICO

18. I hereby certify that the foregoing is true and correct

SIGNED ______ TITLE AREA SUPERINTENDENT DATE ______

(This space for Federal or State office use)

APPROVED BY ______ TITLE ______ DATE ______
CONDITIONS OF APPROVAL, IF ANY:

APPROVED MAY 24 1973 R. L. BEEKMAN ACTING DISTRICT ENGINEER

*See Instructions on Reverse Side

HECO-Minard

N. M. O. C. C. COPY

Form approved.
Budget Bureau No. 42 R1424

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

5. LEASE DESIGNATION AND SERIAL NO.: LC-068051

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT —" for such proposals.)

7. UNIT AGREEMENT NAME:

1. OIL WELL ☐ GAS WELL ☐ OTHER DRY-HOLE RE-ENTRY

8. FARM OR LEASE NAME: SMITH McPHERSON

2. NAME OF OPERATOR: Amoco Production Company

9. WELL NO.: 1

3. ADDRESS OF OPERATOR: BOX 68, HOBBS, N. M. 88240

10. FIELD AND POOL, OR WILDCAT: WILDCAT

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements. See also space 17 below.)
1980' FSL x 1980' EEL Sec. 11 (Unit J, NW/4 SE/4)

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: 11-18-27 NMPM

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 3593' D.F.

12. COUNTY OR PARISH: EDDY

13. STATE: N.M.

RECEIVED JUL 13 1973 O. C. C. ARTESIA, OFFICE
RECEIVED JUN 13 1973 U. S. GEOLOGICAL SURVEY ARTESIA, NEW MEXICO

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF	PULL OR ALTER CASING	WATER SHUT-OFF	REPAIRING WELL
FRACTURE TREAT	MULTIPLE COMPLETE	FRACTURE TREATMENT	ALTERING CASING
SHOOT OR ACIDIZE	ABANDON*	SHOOTING OR ACIDIZING	ABANDONMENT* X
REPAIR WELL	CHANGE PLANS	(Other)	

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Physical abandonment of well concluded 6-6-73.
Plugged and abandoned as follows:
Filled hole w/ mud. (PBD- 4365')
Spotted 30 sx cement plug 4119'-3735' (BLIN. PERS. 4100'-4070')
Shot & pulled 4½" csg. from 2990'.
Spotted 30 Sx cement plug 30-40-2900' (in & Out of 4½" stub)
" 40 Sx " " 2040-1922'
No 9 5/8" Casing found in Hole.
Spotted 50 Sx. cement plug 1010-910'
" 60 " " " 602-502' (13⅜" CSA 572')
" 10 " " " @ surface & erected P&A marker.
Location shall be cleaned & Levelled

18. I hereby certify that the foregoing is true and correct

SIGNED [signature] TITLE AREA ENGINEER DATE 6-15-73

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

APPROVED
JUL 13 1973
/s/ J. L. BEEKMAN
DISTRICT ENGINEER

4- USGS-ART
1- DIV
1- SUSA
1- RRY
2- ARCO MIDLAND

*See Instructions on Reverse Side

MAP ID NO. 855

AMOCO PRODUCTION COMPANY
FEDERAL DH GAS COM. NO. 1

ENVIROCORP.

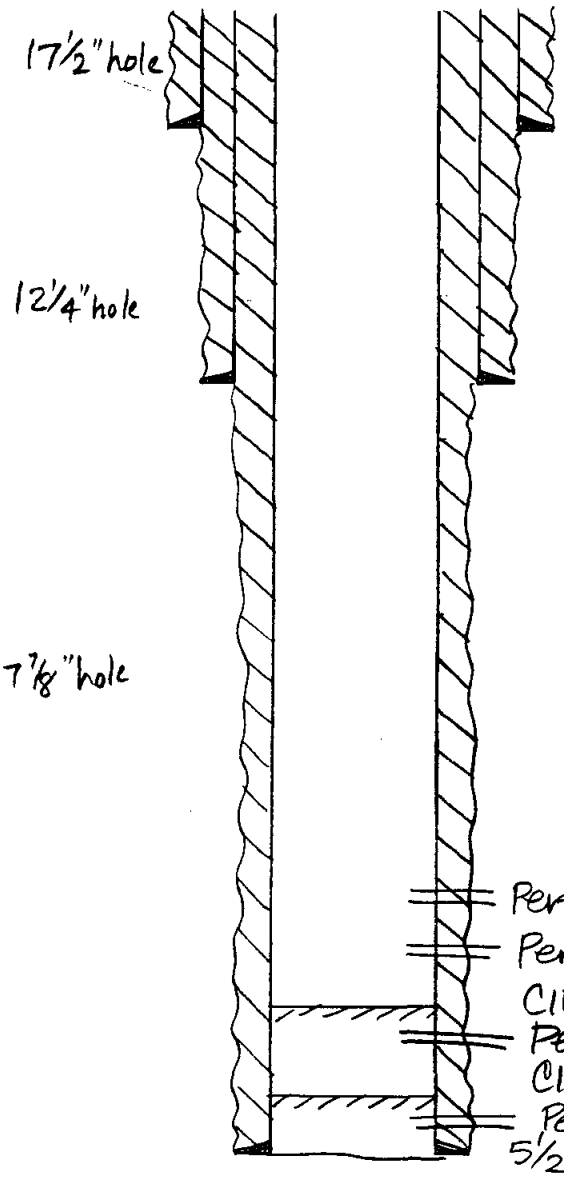
Artificial Penetration Review
Number 855

OPERATOR Amoco Production Co.
LEASE Federal DH Gas Com.
WELL NUMBER 1
DRILLED 5|18|84
PLUGGED

STATUS Active – Oil API
DIST FROM INJECT
LOCATION 11-18S-28E, M
MUD FILLED BOREHOLE
REPORTED MUD WEIGHT

API NO. 30-015-248757

REMARKS:



13⅜" Casing at 502' cemented w/700 sx. to surface

9⅝" Casing at 2200' cemented w/1400 sx. to surface

Perfs: 9295'-9308'
Perfs: 9789'-9846'
CIBP at 10700' w/35' cement, 55 sx.
Perfs: 10774'-10792'
CIBP at 11610' w/35' cement, 55 sx.
Perfs: 11645'-11908'
5½ Casing at 11915' Cemented w/2720 sx. to surface

Form 3160-5
(November 1983)
(Formerly 9-331)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Budget Bureau No. 1004-0135
Expires August 31, 1985

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

RECEIVED
JUN 04 1984
O. C. D.
ARTESIA, OFFICE

5. LEASE DESIGNATION AND SERIAL NO.: NM-29272

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT AGREEMENT NAME:

OIL WELL ☐ GAS WELL ☒ OTHER

2. NAME OF OPERATOR: Amoco Production Company

8. FARM OR LEASE NAME: Federal DH Gas Com

3. ADDRESS OF OPERATOR: P. O. Box 68, Hobbs, New Mexico 88240

9. WELL NO.: 1

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 700' FSL X 990' FWL Sec. 11 (Unit M, SW/4 SW/4)

10. FIELD AND POOL, OR WILDCAT: Wildcat Glorieta

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: 11-18-27

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 3546.0' GR

12. COUNTY OR PARISH: Eddy

13. STATE: NM

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other) spud and casing setting			X
(Other)	☐			(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Well was spud 5-18-84 and drilled to a total depth of 33'. On 5-18-84 set 33' of 20" 52.74# conductor. Cemented with 3yds redi-mix. Sharp rig #36 moved in and began continuous drilling operations on 5-23-84 with a 17.5" bit. Drilled to a total depth of 502' and on 5-25-84 set 502' of 13-3/8", 48# H-40 casing. Casing set at 502' by casing strap. Cemented with 500 sx class C with additives and 200 sx class C thixset with additives. Plug down at 11:30 am 5-25-84. Circulated out 270 sx. Waited on cement 18 hrs. and pressure tested casing to 600 psi, tested OK. Reduced bit to 12-1/4" and resumed drilling.

0+6- BLM, C 1-J. R. Barnett, HOU Rm. 21.156 1-F. J. Nash, HOU Rm. 4.206 1-GCC 1-Yates 1-Arco

I hereby certify that the foregoing is true and correct

SIGNED Gary C. Clark TITLE Assist. Admin. Analyst DATE 5-30-84

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

ACCEPTED FOR RECORD
MAY 31 1984

*See Instructions on Reverse Side

Form 3160-5
November 1983)
Formerly 9-331)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Budget Bureau No. 1004-0135
Expires August 31, 1985

5. LEASE DESIGNATION AND SERIAL NO.
NM-29272

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

7. UNIT AGREEMENT NAME

OIL WELL ☐ GAS WELL ☒ OTHER

JUN 12 1984
O. C. D.
ARTESIA, OFFICE

2. NAME OF OPERATOR
Amoco Production Company

8. FARM OR LEASE NAME
Federal "DH" Gas Com

3. ADDRESS OF OPERATOR
P. O. Box 68, Hobbs, NM 88240

9. WELL NO.
1

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.)
At surface
700' FSL x 990' FWL Sec. 11
(Unit M, SW/4 SW/4)

10. FIELD AND POOL, OR WILDCAT
Wildcat Glorieta

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
11-18-27

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.)
3546' GR

12. COUNTY OR PARISH
Eddy

13. STATE
NM

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other) csg. setting			X
(Other)	☐			(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Drilled to a total depth of 2200'; on 6/1/84 set 9-5/8", 40.5#, K-55-csg. Casing set at 2200'. Set external csg. pkr. at 1021' and DV tool at 973'. Cemented 1st stage with 950 sxs class 'C' neat. Displaced with 160 BW and circulated 199 sxs cmt. to pit. Plug was down at 12:00 PM, 6/1/84. Started to nipple down and well began to flow. Dropped bomb and opened DV tool and cemented 2nd stage with 450 sxs class 'C' w/2% CaCl. Circulated out 106 sxs and displaced with 73 BFW. WOC for 18 hrs., tested csg. to 800 psi for 30 min., tested OK. Reduced bit to 7-7/8" and resumed drilling.

+6 BLM,C 1-J.R. Barnett, Hou Rm 21.156 1-F.J. Nash, Hou Rm 4.206 1-GCC 1-Yates 1-ARCO

18. I hereby certify that the foregoing is true and correct
SIGNED Gary C. Clark TITLE Assistant Admin. Analyst DATE 6/5/84

(This space for Federal or State office use)
APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY: JUN 8 1984

*See Instructions on Reverse Side

NEW MEXICO

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

Form 3160-5
November 1983)
Formerly 9-331)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0135
Expires August 31, 1985

5. LEASE DESIGNATION AND SERIAL NO.: NM-29272

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

7. UNIT AGREEMENT NAME:

OIL WELL ☐ GAS WELL ☒ OTHER

2. NAME OF OPERATOR: AMOCO PRODUCTION COMPANY

8. FARM OR LEASE NAME: Federal DH Gas Com

3. ADDRESS OF OPERATOR: P. O. Box 68, Hobbs, New Mexico 88240

9. WELL NO.: 1

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 700' FSL X 990' FWL Sec. 11 (Unit M, SW/4SW/4)

10. FIELD AND POOL, OR WILDCAT: Wildcat - Ellenburger

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: 11-18-27

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 3546' GR

12. COUNTY OR PARISH: Eddy

13. STATE: NM

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other) Remedial work			X
(Other)				(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Tested BOP to 5000 psi, tested OK and resumed drilling. Ran Gyroscope survey from surface to 6480'. Ran steering tool to correct deviation. Drilled to 7729', and spotted 20#/bbl LCM pill. TOH and laid down tools, TIH to 6902' and pumped 80 bbls 18#/bbl LCM pill. Lost returns at 8377' and pumped 150 bbl 16#/bbl LCM pill #1. No returns while drilling to 8395', pumped 200 bbl 15#/bbl LCM pill #2. 75% returns to 8402', pumped 250 bbls 17#/bbl LCM pill #3. Lost full returns at 8411' and dry drilled to 8700'. Spotted 250 bbls 25#/bbl LCM pill. WO LCM pill and unable to load hole, pumped 250 bbl 30#/bbl LCM pill, no returns. Pumped 600 bbls FW and TOH. TIH with open ended drill pipe to 8290' and pumped 120 bbl FW, 15 bbl Diesel, 100 sx class H, 100 sx bentonite, 10 bbl diesel and 12.5 bbl FW. WOC and loaded hole with 55 BFW, regained full returns. Tested squeeze to 250 psi, did not hold. Drilled to 8814' losing apx 8-25 bbl/hr. No returns, pumped 200 bls 30#/bbl LCM pill #1. WO pill and unable to load hole. Pumped 200 bbl 53#/bbl LCM pill #2. Returns for 2 min then no returns, mixed 200 bbls 24#/bbl LCM pill. Drilled with no returns to 8877'. TIH with open ended drill pipe to 8164' and pumped 150 sx class H cement, 150 sx bentonite, and 75 bbl diesel. Drilled out and tested squeeze, did not hold. TIH with open ended drill pipe and pumped 405 sx thick set class H cement. Displaced with 104 bbl mud. Drilled to 9059' losing apx 17 bbl/hr and spotted 60 bbl LCM pill. Started losing at 9876', drilled to 9895' with 5% returns. Pumped 250 bbl 19#/bbl LCM pill and got 30% returns. Pumped 2nd 250 bbl 20#/bbl LCM pill and regained

O+5-BLM, C 1-J. R. Barnett, HOU rm. 21.156 1-F. J. Nash, HOU Rm 4.206 1-GCC 1-Yates 1-ARCO

18. I hereby certify that the foregoing is true and correct

SIGNED Gary C. Clark TITLE Assist. Admin. Analyst DATE 8-1-84

ACCEPTED FOR RECORD

(This space for Federal or State office use)

APPROVED BY TITLE DATE

CONDITIONS OF APPROVAL, IF ANY:

AUG 31 1984

*See Instructions on Reverse Side

NEW MEXICO

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

full returns. Lost 60% returns at 9995' and pumped 3rd 250 bbl 20#/bbl LCM pill. Mixed 250 bbl 30#/bbl LCM pill and regained circulation after pumping 35 bbls. RIH with RTTS packer, set at 2128' and tested casing to 1000 psi for 30 min, held OK. POH with packer and tested BOP to 5000 psi, held OK. Drilled to TD of 11915', currently logging and evaluating.

November 1983)
Formerly 9-331)

DEPARTMENT OF THE INTERIOR (Other instructions on reverse side)

BUREAU OF LAND MANAGEMENT

Expires August 31, 1985

5. LEASE DESIGNATION AND SERIAL NO.: NM-29272

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL ☐ GAS WELL ☒ OTHER

AUG [illegible]

7. UNIT AGREEMENT NAME:

2. NAME OF OPERATOR: AMOCO PRODUCTION COMPANY

[illegible] OFFICE

8. FARM OR LEASE NAME: Federal DH Gas Com

3. ADDRESS OF OPERATOR: P. O. Box 68, Hobbs, New Mexico 88240

9. WELL NO.: 1

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface

700' FSL X 990' FWL Sec. 11 (Unit M, SW/4 SW/4)

10. FIELD AND POOL, OR WILDCAT: Wildcat - Pennsylvanian

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: 11-18-27

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 3546' GR

12. COUNTY OR PARISH: Eddy

13. STATE: NM

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other) casing setting			X
(Other)				(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Drilled to TD of 11915'. On 8-4-84 set 5-1/2" 17# N-80, 5-1/2" 17# K-55 & 5-1/2" 15.5# K-55 casing. Casing set at 11915'. Cemented 1st stage with 420 sx class H lite w/ additives and 900 sx class H with additives. Plug down 3:30 am 8-4-84. Opened DV tool and circulated 73 sx off top DV tool. DV tool at 6417'. Cemented 2nd stage with 1000 sx class H with additives and 400 sx class H neat. Plug down 10:45 am 8-4-84. Circulated out 218 sx. Rig released 1:00 am 8-5-84, no further report until MI completion unit.

O+5-NMOCD,H 1-J. R. Barnett, HOU Rm. 21.156 1-F. J. Nash, HOU Rm. 4.206 1-B-GCC 1-ARCO 1-Yates

18. I hereby certify that the foregoing is true and correct

SIGNED Gary C. Clark TITLE Assist. Admin. Analyst DATE 8-6-84

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

AUG 10 1984

*See Instructions on Reverse Side

NEW MEXICO

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

Form 3160-5
(November 1983)
(Formerly 9-331)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0135
Expires August 31, 1985

5. LEASE DESIGNATION AND SERIAL NO.: NM-29272

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

OIL WELL ☐ GAS WELL ☒ OTHER

SEP 24 1984
O. C. D.

7. UNIT AGREEMENT NAME:

2. NAME OF OPERATOR: AMOCO PRODUCTION COMPANY ✓

8. FARM OR LEASE NAME: Federal DH Gas Com

3. ADDRESS OF OPERATOR: P. O. Box 68, Hobbs, New Mexico 88240

9. WELL NO.: 1

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 700' FSL X 990' FWL Sec. 11 (Unit M, SW/4 SW/4)

10. FIELD AND POOL, OR WILDCAT: Wildcat Silurian

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: 11-18-27

14. PERMIT NO.:

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 3546' GR

12. COUNTY OR PARISH: Eddy

13. STATE: NM

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other) Completion Operations			X
(Other)				(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

MISU 8-18-84 and drilled out to 11832' , circulated hole clean and tested casing to 1000 psi for 30 min, tested OK. Drilled out float collar 11832'-33' and drilled out cement to 11913'. Displaced hole with 280 bbls brine and tested casing to 1000 psi for 30 min, tested OK. Ran mill and milled thru DV tool. Ran Gr/CCL correlation log 11913'-9200'. Perfed 11908,11901, 11896,11887,11874, 11858, 11854, 11852, 11844, 11835,11833, 11831, 11324, 11816,11808,11786,11741,11713, 11711, 11704, and 11645' with 1 JSPF. RIH with packer, seating nipple and tubing. Packer set at 11560'. Ran base GR/Temp survey and acidized with 2500 gals of 15% NEFE HCL with additives, flushed with 34 bbl brine. Ran after acid survey, swabbed and evaluated. POH with tubing and packer. RIH with CIBP set at 11610' pressure tested to 1000 psi, OK. Capped CIBP with 35' cleass H cement. Perfed 10774'-792' with 4 SPF. RIH with packer, seating nipple, and tubing. Packer set at 10653'. Currently swab testing.

O+5-BLM, C 1-J. R. Barnett, HOU 21.156 1-F. J. Nash, HOU Rm. 4.206 1-GCC 1-Yates 1-ARCO

18. I hereby certify that the foregoing is true and correct

SIGNED Gary C. Clark TITLE Assist. Admin. Analyst DATE 9-18-84

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

SEP 21 1984

*See Instructions on Reverse Side

NEW MEXICO

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

Form 3160-5
(November 1983)
(Formerly 9-331)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0135
Expires August 31, 1985

5. LEASE DESIGNATION AND SERIAL NO.: NM-29272

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL ☐ GAS WELL ☒ OTHER

7. UNIT AGREEMENT NAME:

2. NAME OF OPERATOR: AMOCO PRODUCTION COMPANY

8. FARM OR LEASE NAME: Federal DH Gas Com

3. ADDRESS OF OPERATOR: P. O. Box 68, Hobbs, New Mexico 88240

9. WELL NO.: 1

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 700' FSL X 990' FWL Sec. 11 (Unit M, SW/4 SW/4)

10. FIELD AND POOL, OR WILDCAT: Wildcat Silurian

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: 11-18-27

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 3546' GR

12. COUNTY OR PARISH: Eddy | 13. STATE: NM

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☒	(Other)			☐
(Other) Test Silurian			☐	(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Propose to abandon the Ellenburger and test the Silurian as follows:

Kill well with brine water. POH with tubing and packer. RIH with CIBP, set at 11640' and cap with 35' class H cement. Perforate the Silurian interval 10774'-792' with 4 DPJSPF using a 3-1/8" gun. RIH with 3 jts of tailpipe, packer, and tubing. Set packer at 10580', swab and flow test well. Run base GR/Temp survey from 10500'-10900' and pump 1000 gals 15% NEFE HCL acid with additives. Flush acid to perf with 45 bbls brine water. Run after acid treatment survey from 10500'-10900'. Tag all acid with R/A material. Swab and flow test well.

O+5- BLM, C 1-J. R. Barnett, HOU 21.156 1-F. J. Nash, HOU Rm. 4.206 1-GCC 1-ARCO 1-Yates

18. I hereby certify that the foregoing is true and correct

SIGNED Gary C. Clark TITLE Assist. Admin. Analyst DATE 8-31-84

(This space for Federal or State office use)

APPROVED BY [illegible] TITLE AREA MANAGER CARLSBAD RESOURCE AREA DATE 9-11-84

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

Section 1001, makes it a crime for any person knowingly and willfully to make to any department

Form 3160-5
November 1983)
Formerly 9-331)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0135
Expires August 31, 1985

5. LEASE DESIGNATION AND SERIAL NO.: NM-29272

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: Federal DH Gas Com

9. WELL NO.: 1

10. FIELD AND POOL, OR WILDCAT: Wildcat Strawn

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: 11-18-27

12. COUNTY OR PARISH: Eddy

13. STATE: NM

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

OIL WELL ☐ GAS WELL ☒ OTHER

2. NAME OF OPERATOR: Amoco Production Company

3. ADDRESS OF OPERATOR: P.O. Box 68, Hobbs NM 88240

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 700' FSL x 990' FWL Sec. 11 (Unit M, SW/4 SW/4)

ARTESIA OFFICE

14. PERMIT NO.:

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 3546' GR

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☒	(Other)			
(Other) Test Strawn				(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Propose to abandon the Silurian and test the Strawn as follows: Kill well and POH with tbg. and pkr. RIH with CIBP, set at 10700' and cap with 35' cmt. (55 sxs class H) Strap in hole with Vann assembly. RIH with Vann guns w/90' of tbg on top, tbg release, pkr. actuated vent, br.) and an on/off tool on top. Run GR correlation log inside tbg to correlate guns on depth. Use subs to space out and set pkr. Pressure test annulus. Pkr set appx 9130'. Drop a bar and fire gun to perforate Strawn interval 9295-9308' w/4 DPJSPF. Swab and flow test well. If swab has a minimum fluid entry acidize as follows: Tag all

BLM,C 1-J.R.Barnett,Hou 1-F.J. Nash, Hou 1-GCC 1-Arco 1-Yates

18. I hereby certify that the foregoing is true and correct

SIGNED Gary C. Clark TITLE Asst. Admin. Analyst DATE 9-18-84

(This space for Federal or State office use)

APPROVED BY _____ TITLE AREA MANAGER CARLSBAD DATE 5-3-85

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within

acid with R/A material. Run base GR/Temp survey from 9100 – 9450'. Pump 1300 gals of 7½% HCl w/additives. Flush acid to perfs with 40 bbls of brine water. Run after treatment survey from 9100' – 9450'. Swab and flow test well.

Form 3160-5 (November 1983) (Formerly 9-331)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0135
Expires August 31, 1985

5. LEASE DESIGNATION AND SERIAL NO.: NM-29272

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

OIL WELL ☐ GAS WELL ☒ OTHER

OCT 22 1984
O. C. D.

7. UNIT AGREEMENT NAME:

2. NAME OF OPERATOR: Amoco Production Company

8. FARM OR LEASE NAME: Federal DH Gas Com

3. ADDRESS OF OPERATOR: P.O. Box 68, Hobbs, NM 88240

9. WELL NO.: 1

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 700' FSL x 990' FWL Sec. 11 (Unit M, SW/4 SW/4)

10. FIELD AND POOL, OR WILDCAT: Wildcat Strawn

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: 11-18-27

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 3546' GR

12. COUNTY OR PARISH: Eddy

13. STATE: NM

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☒
REPAIR WELL	☐	CHANGE PLANS	☐	(Other) Completion Work			
(Other)				(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

MIRU 10-5-84 released pkr. and pulled tbg. RIH with CIBP and set @ 10700'. Capped with 35' cmt. RIH with 4" guns, tbg., tbg release pkr., on-off tool, and tbg.. Pkr set at 9130', tested to 500 psi, tested OK in GR correlation log, dropped bar and perfed 9295'-9308' w/4SPF. Gas to surf in 5 min: Ran BHP bombs to apx 9150' and shut-in for 24 hrs. Pulled up BHP bombs, TPC 2525 PSI. Began flow testing on a 18/64 choke. Ran 5000 psi BHP bomb, set at 9160'. Ran 4-pt test and shut well in waiting on gas contract and pipeline connection.

5 BLM, C 1-J.R. Barnett, Hou Rm 21.156 1-F.J. Nash, Hou Rm 4.206 1-GCC 1-Yates 1-Arco

18. I hereby certify that the foregoing is true and correct

SIGNED Mary C. Clark TITLE Asst. Admin. Analyst DATE 10-17-84

(This space for Federal or State office use)

APPROVED BY ACCEPTED FOR RECORD TITLE DATE

CONDITIONS OF APPROVAL, IF ANY:

OCT 22 1984

*See Instructions on Reverse Side

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

Form 3100-4
(November 1983)
(formerly 9-330)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN DUPLICATE* (See other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0137
Expires August 31, 1985

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

5. LEASE DESIGNATION AND SERIAL NO.: NM - 29272
6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
7. UNIT AGREEMENT NAME:
8. FARM OR LEASE NAME: Federal "DH" Gas Com
9. WELL NO.: 1
10. FIELD AND POOL, OR WILDCAT: Wildcat Strawn
11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: 11-18-27
12. COUNTY OR PARISH: Eddy
13. STATE: N.M.

1a. TYPE OF WELL: OIL WELL ☐ GAS WELL ☒ DRY ☐ Other
b. TYPE OF COMPLETION: NEW WELL ☒ WORK OVER ☐ DEEP EN ☐ PLUG BACK ☐ DIFF. RESVR. ☐ Other

2. NAME OF OPERATOR: Amoco Production Company
3. ADDRESS OF OPERATOR: P.O. Box 68, Hobbs NM 88240
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)*
At surface: 700' FSL x 990' FWL Sec. 11
At top prod. interval reported below: (Unit M, SW/4 SW/4)
At total depth:

14. PERMIT NO. | DATE ISSUED

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (Ready to prod.)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
5-18-84	7-31-84	10-15-84	3546' GR	

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
11915	10666		→	0-TD	

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*: 9295 - 9308 Strawn

25. WAS DIRECTIONAL SURVEY MADE: Yes

26. TYPE ELECTRIC AND OTHER LOGS RUN: Borehole Comp. Sonic Log, Comp. Neutron Litho Density, Temp log, Dual Laterolog Micro-SFL, Continuous Dipmeter

27. WAS WELL CORED: No

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
20"	52.74	33'		3 yds. Redi-mix	
13 3/8"	48	502'	17.5	500 'C' 200 'C' +hixset	270 sx
9 5/8	40.5	2200	12 1/4	950 'C' neat 450 'C' w/add	305 sx
5 1/2	17 & 15.5	11915'	7 7/8	420 'H' Lt, 1900 'H' w/add 400 'H' neat	218 sx

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2 3/8	9308	9130'

31. PERFORATION RECORD (Interval, size and number)
11695 - 11908 W/1SPF (CIBP at 11610')
10774 - 10792 W/4SPF (CIBP at 10700')
9295 - 9308 W/4SPF

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
11695 - 11908	2500 gals 15% NEFE HCl

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump)	WELL STATUS (Producing or shut-in)
10-12-84	Flowing	Shut-in

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
10-13-84	24	18/64		74	3932	0.5	53135

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)
			74	3932	0.5	

ACCEPTED FOR RECORD

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.): To be sold
TEST WITNESSED BY:

35. LIST OF ATTACHMENTS: 4-pt test, Directional survey, Deviation Report. Logs mailed 8-7, 10-84

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED: Mary C. Clark TITLE: Asst. Admin. Analyst DATE: 10-17-84

*(See Instructions and Spaces for Additional Data on Reverse Side)

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

RECEIVED BY
FEB 19 1987
O. C. D.
ARTESIA, OFFICE

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

NO. OF COPIES RECEIVED		
DISTRIBUTION		
SANTA FE	✓	✓
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	GAS	✓
OPERATOR		✓
PRORATION OFFICE		

OIL CONSERVATION DIVISION

P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

Form C-104
Revised 10-01-78
Format 06-01-83
Page 1

REQUEST FOR ALLOWABLE AND AUTHORIZATION TO TRANSPORT OIL AND NATURAL GAS

I.

Operator: AMOCO PRODUCTION COMPANY

Address: P.O. BOX 68 HOBBS, NEW MEXICO 88240

Reason(s) for filing (Check proper box)
- [X] New Well
- [ ] Recompletion
- [ ] Change in Ownership
- Change in Transporter of: [ ] Oil [ ] Dry Gas [ ] Casinghead Gas [ ] Condensate

Other (Please explain): Update gas purchaser ref C-104 Approved 11-14-86

If change of ownership give name and address of previous owner: _____

II. DESCRIPTION OF WELL AND LEASE

Lease Name	Well No.	Pool Name, Including Formation	Kind of Lease	Lease No.
Federal "DH" Gas Com	1	Scoggin Draw (Strawn)	State, Federal or Fee Fed NM	29272

Location
Unit Letter M : 700 Feet From The South Line and 990 Feet From The West

Line of Section 11 Township 18-S Range 27-E , NMPM, Eddy County

III. DESIGNATION OF TRANSPORTER OF OIL AND NATURAL GAS

Name of Authorized Transporter of Oil [ ] or Condensate [X]	Address (Give address to which approved copy of this form is to be sent)
Permian Corporation	Box 1183 Houston, TX 77001
Name of Authorized Transporter of Casinghead Gas [ ] or Dry Gas [XX]	Address (Give address to which approved copy of this form is to be sent)
Phillips Petroleum Co	Frank Phillips bldg, Bartlesville, OK 74004

If well produces oil or liquids, give location of tanks.	Unit	Sec.	Twp.	Rge.	Is gas actually connected?	When
	M	11	18-S	27-E	yes	11-7-86

If this production is commingled with that from any other lease or pool, give commingling order number: 2-12-87

NOTE: *Complete Parts IV and V on reverse side if necessary.*

mud ut; pl

VI. CERTIFICATE OF COMPLIANCE

I hereby certify that the rules and regulations of the Oil Conservation Division have been complied with and that the information given is true and complete to the best of my knowledge and belief.

S. Brownlee
(Signature)
Administative Analyst
(Title)
2-16-87
(Date)

OIL CONSERVATION DIVISION

APPROVED FEB 24 1987, 19__

BY Original Signed By
Mike Williams

TITLE Oil & Gas Inspector

This form is to be filed in compliance with RULE 1104.

If this is a request for allowable for a newly drilled or deepened well, this form must be accompanied by a tabulation of the deviation tests taken on the well in accordance with RULE 111.

All sections of this form must be filled out completely for allowable on new and recompleted wells.

Fill out only Sections I, II, III, and VI for changes of owner, well name or number, or transporter, or other such change of condition.

Separate Forms C-104 must be filed for each pool in multiply completed wells.

Form 3160-3
(November 1983)
(formerly 9-331C)

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0136
Expires August 31, 1985

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK: DRILL ☐ DEEPEN ☒ PLUG BACK ☐

b. TYPE OF WELL: OIL WELL ☐ GAS WELL ☒ OTHER — SINGLE ZONE ☒ MULTIPLE ZONE ☐

2. NAME OF OPERATOR: Amoco Production Company

3. ADDRESS OF OPERATOR: P. O. Box 3092, Houston, TX 77253

SEP 13 '89
O. C. D.
ARTESIA, OFFICE

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface: 700'FSL x 990'FWL (Unit M, SW/4 SW/4)
At proposed prod. zone

5. LEASE DESIGNATION AND SERIAL NO.: NM 29272
6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
7. UNIT AGREEMENT NAME:
8. FARM OR LEASE NAME: Federal -DH- Gas Com
9. WELL NO.: 1
10. FIELD AND POOL, OR WILDCAT: Scoggins Draw Morrow
11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: 11-18-27

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*: 14 Miles Southeast of Artesia, NM

12. COUNTY OR PARISH: Eddy
13. STATE: NM

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any)	16. NO. OF ACRES IN LEASE	17. NO. OF ACRES ASSIGNED TO THIS WELL
698'	320	320
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.	**19. PROPOSED DEPTH**	**20. ROTARY OR CABLE TOOLS**
	11,915	Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.): 3546.0' GR

22. APPROX. DATE WORK WILL START*: 9-15-89

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
17½"	13 3/8"	48#	502'	700 sxs.
12¼"	9 5/8"	36#	2200'	1400 sxs.
7 7/8"	5½"	15.5 & 17#	11915'	2720 sxs.

1. MI X RUSU.
2. Release PKR X Lower Production TBG X Release Vann Guns X Set PKR at 9500'.
3. Attempt to load backside. Perfs in the Strawn from 9295'-9308' are open. Test packer by pressure testing down Tbg.
4. Swab Tbg down X install lubricator.
5. Perf 9789'-9795' and 9835'-9846' at 4 JSPF W/ a decentralized thru Tbg Gun at 0 degree phasing. Correlate to Schlumberger compensated Neutron-Litho density log dated 7-31-84. Estimated bottom hole pressure in the Morrow may be as high as 3700 PSI.
6. Flow to test well X obtain a 4 point AOF test.
7. Following AOF test, shut in well until notified by division office.

Note: Strawn perfs from 9295'-9308' are open. If the Morrow recompletion is successful, we will need to either cement squeeze the Strawn or obtain approval to leave the Strawn shut-in on the backside. During this time, the well is to be shut in.

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.

SIGNED H. I. Black (H. I. Black) TITLE Staff Administrative Analyst DATE 8-17-89
713-584-7213

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

APPROVED BY (ORIG. SGD.) DAVID R. GLASS TITLE _____ DATE SEP 12 '89

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions On Reverse Side

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the

IV. COMPLETION DATA

Designate Type of Completion – (X)	Oil well	Gas well	New well	Workover	Deepen	Plug back	Same res'v.	Diff.
		X						

Date Spudded	Date Compl. Ready to Prod.	Total Depth	P.B.T.D.
5-18-84	10-15-84	11915	10666
Elevations (DF, RKB, RT, GR, etc.)	**Name of Producing Formation**	**Top Oil/Gas Pay**	**Tubing Depth**
3546' GR	Strawn	9295	9308
Perforations			**Depth Casing Shoe**
9295-9308 W/1 SPF			

TUBING, CASING, AND CEMENTING RECORD

HOLE SIZE	CASING & TUBING SIZE	DEPTH SET	SACKS CEMENT
17.5"	13-3/8"	502'	700 sx
12.25"	9-5/8"	2200	1400 sx
7-7/8"	5-1/2"	11915	2720 sx

V. TEST DATA AND REQUEST FOR ALLOWABLE *(Test must be after recovery of total volume of load oil and must be equal to or exceed top allowable for this depth or be for full 24 hours)*

OIL WELL

Date First New Oil Run To Tanks	Date of Test	Producing Method (Flow, pump, gas lift, etc.)	
10-12-84	10-13-84	Flowing	
Length of Test	**Tubing Pressure**	**Casing Pressure**	**Choke Size**
Actual Prod. During Test	**Oil-Bbls.**	**Water-Bbls.**	**Gas-MCF**

GAS WELL

Actual Prod. Test-MCF/D	Length of Test	Bbls. Condensate/MMCF	Gravity of Condensate
3932	24 hrs	18.82	
Testing Method (pitot, back pr.)	**Tubing Pressure (Shut-in)**	**Casing Pressure (Shut-in)**	**Choke Size**
flowing			18/64

Form 3160-5
November 1983)
Formerly 9-331)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0135
Expires August 31, 1985

5. LEASE DESIGNATION AND SERIAL NO.: NM 29272

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL ☐ GAS WELL ☒ OTHER

7. UNIT AGREEMENT NAME:

2. NAME OF OPERATOR: Amoco Production Company

8. FARM OR LEASE NAME: Federal-DH-Gas Com

3. ADDRESS OF OPERATOR: P. O. Box 3092, Houston, TX 77253

9. WELL NO.: 1

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 700' FSL X 900' FWL (Unit M, SW/4 SW/4)

10. FIELD AND POOL, OR WILDCAT: Scoggins Draw Morrow

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: 11/18/27

14. PERMIT NO.	15. ELEVATIONS (Show whether DF, RT, GR, etc.)	12. COUNTY OR PARISH	13. STATE
	3546.0' GR	Eddy	NM

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other) Mirusu			☒
(Other)				(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.) *

12/11/89 Move in and rig up service unit with tubing pressure closed ØPSI and casing pressure closed slight blow. Load tubing with 36 barrels of water and remove tree and install blowout preventer and released packer. Ran 15 joints 2-3/8 tubing and test 8ØØØPSI above slips.

RECEIVED
JAN 15 11 03 AM '90
BLM
ROSWELL, NEW MEXICO

ACCEPTED FOR RECORD
JAN 29 1990
CARLSBAD, NEW MEXICO

18. I hereby certify that the foregoing is true and correct

SIGNED Cleo W. Allen TITLE Asst. Admin. Analyst DATE 01/15/90

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

(November 1983)
(formerly 9-330)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN DUPLICATE* (See other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0137
Expires August 31, 1985

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

RECEIVED
FEB 26 1990
OIL CON. DIV.
DIST. 6
Carlsbad, New Mexico

5. LEASE DESIGNATION AND SERIAL NO.: NM 29272

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: Federal DH Gas Com

9. WELL NO.: 1

10. FIELD AND POOL, OR WILDCAT: Scoggins Draw Morrow

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: 11/18/27

1a. TYPE OF WELL: OIL WELL ☐ GAS WELL [X] DRY ☐ Other

b. TYPE OF COMPLETION: NEW WELL ☐ WORK OVER ☐ DEEP EN [X] PLUG BACK ☐ DIFF. RESVR ☐ Other

2. NAME OF OPERATOR: Amoco Production Company

3. ADDRESS OF OPERATOR: P. O. Box 3092 Houston, TX 77253

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)
At surface: 700' FSL x 990' FWL (Unit M, SW/4 SW/4)
At top prod. interval reported below
At total depth

14. PERMIT NO.	DATE ISSUED	12. COUNTY OR PARISH	13. STATE
		Eddy	NM

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (Ready to prod.)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
		01/05/90	3546.0' GR	

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
11915	10,666'		→	11900-15'	

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*: 9789'- 9846' Morrow

25. WAS DIRECTIONAL SURVEY MADE:

ACCEPTED FOR RECORD
MAR 7 1990
CARLSBAD, NEW MEXICO

26. TYPE ELECTRIC AND OTHER LOGS RUN:

27. WAS WELL CORED:

28. Existing CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
13-3/8"	48#	502'	17-1/2	700 sxs	
8-5/8"	36#	2200'	12-1/4"	1400 sxs	
5-1/2'	15.5 & 17#	11915'	7-7/8"	2720 sxs	

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2-3/8	10,649'	9627'

31. PERFORATION RECORD (Interval, size and number)
9295' - 9308'
9789' - 9895'
9835'-9846'

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
9789' - 9846'	Acidized with 2000 gal of 7-1/2% MS Acid

* Unsuccessful recompletion

PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump)	WELL STATUS (Producing or shut-in)
		Shut in

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)

DISPOSITION OF GAS (Sold, used for fuel, vented, etc.)

TEST WITNESSED BY

LIST OF ATTACHMENTS

I hereby certify that the foregoing and attached information is complete and correct as determined from all available records.

SIGNED Peggy W. Hill TITLE Asst. Admin. Analyst DATE 2/22/90

*(See Instructions and Spaces for Additional Data on Reverse Side)

Form 3160-5
November 1983)
ormerly 9-331)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0135
Expires August 31, 1985

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

RECEIVED
BUREAU OF LAND MANAGEMENT
FEB 26 1990
ARTESIA, NEW MEXICO
DIST. 6 N.M.
Carlsbad, New Mexico

5. LEASE DESIGNATION AND SERIAL NO.: NM 29272

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

1. OIL WELL ☐ GAS WELL ☒ OTHER

7. UNIT AGREEMENT NAME:

2. NAME OF OPERATOR: Amoco Production Company

8. FARM OR LEASE NAME: Federal DH Gas Com.

3. ADDRESS OF OPERATOR: P. O. Box 3092 Houston, TX 77253

9. WELL NO.: 1

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 700' FSL x 990' FWL (Unit M. SW/4 SW/4)

10. FIELD AND POOL, OR WILDCAT: Scoggins Draw Morrow

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: 11/18/27

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 3546.C' GR

12. COUNTY OR PARISH: Eddy

13. STATE: NM

16. **Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data**

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other) Recompletion			X
(Other)			☐	(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

oved rig on 12/11/89. Load tubing with 368 BW rotary tool and install blowout preventer and released packer. Set packer @ 9627'. Run shifting tool on wireline to 9655' and release Vann guns and run wireline to 10,000' and pull out of hole. Perfed with 1-9/16" guns: 9789-9895, 9835-9846. Install tree saver and pump 88 bbl of mud down casing. Acidized down tubing with 2000 gal. 7-1/2% MS acid and 150 ball sealers. Flush with 41 BW.

Shut well in and rig down service unit 01/04/90.

Unsuccessful recompletion to the Morrow.

Well is presently shut in.

ACCEPTED FOR RECORD
Acr
MAR [illegible]
CARLSBAD, NEW MEXICO

18. I hereby certify that the foregoing is true and correct

SIGNED Phillip W Hill TITLE Asst. Admin. Analyst DATE 2/20/90

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

makes it a crime for any person knowingly and willfully to make to any department or agency of the

ORM 3160-5

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUNDRY NOTICES AND REPORTS ON WELLS

Lease Designation & Serial No.
NM-29272 (COMM # 84C409)

If Indian, Allottee or Tribe Name

Unit Agreement Name

il Well [ ] Gas Well [X] Other

ame of Operator
AMOCO PRODUCTION COMPANY

Farm or Lease Name
FEDERAL DH GAS COM

ddress of Operator/Telephone No. (713) 596-7614
P.O. BOX 3092
HOUSTON, TX 77253

Well No. 1

Field and Pool
SCOGGINS DRAW MORROW

ocation of Well 700'FSL X 990'FWL
HL: (UNIT M, SW/4, SW/4)

Sec. T., R., M,. or BLK
11-18-27

PI No. 3001524857 | Elevation 3546.0' GR | County EDDY | State NM

Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

Notice of Intention To:				Subsequent Report Of:			
st Water Shut Off	[ ]	Alter Csg	[ ]	Water Shut Off	[ ]	Repair	[ ]
acture Treatment	[ ]	Mult Comp	[ ]	Fracture Treatment	[ ]	Alt Csg	[ ]
oot/Acidize	[ ]	Abandon	[ ]	Shoot/Acidize	[ ]	Abandon	[ ]
pair Well	[ ]	Chg Plans	[ ]				
ther)			[ ]	(Other)	CORRECTION TO MMS RECOR		[X]

scribe Proposed or Completed Operations:

IE FEDERAL /DH/ WAS UNSUCCESSFULLY RECOMPLETED FROM THE STRAWN DOWN
THE MORROW FORMATION 12-14-89.
PA R WAS PLACED BETWEEN THE STRAWN FORMATION AND THE MORROW.
E STRAWN PERFSS WERE SHUT IN ON THE BACKSIDE (THE PERFS WERE NOT SQUEEZED).
N TUBING DOWN THROUGH THE PACKER AND INTO THE MORROW FORMATION.
E TO THE POOR SHOWING OF GAS THE MORROW FORMATION WAS SHUT IN.
PRESENT THE WELL IS SHUT IN PENDING ADDITIONAL FUTURE WORKOVER OPERATIONS.

RECEIVED
JUL 27 '90
ARTESIA, OFFICE

THE MMS SHOULD SHOW THE FOLLOWING:

	FORMATION	API #
FEDERAL DH GAS COM #1	STRAWN	30-015-24857-00-S1
FEDERAL DH GAS COM #1	MORROW	30-015-24857-00-D2

RECEIVED
JUL 23 10 29 AM '90
CARLSBAD AREA

eby certify that the foregoing is true and correct

ed Title AA ANALYST Date 07-19-90

space for Federal or State office use)

oved By Title Date

D NS OF APPROVAL, IF ANY:

(formerly 9-330)

DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

(See other instructions on reverse side)

Budget Bureau No. 1004-0137
Expires August 31, 1985

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

5. LEASE DESIGNATION AND SERIAL NO.: NM 29272

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

1a. TYPE OF WELL: OIL WELL ☐ GAS WELL ☒ DRY ☐ Other

b. TYPE OF COMPLETION: NEW WELL ☐ WORK OVER ☐ DEEP-EN ☒ PLUG BACK ☐ DIFF. RESVR. ☐ Other

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: Federal DH Gas Com

2. NAME OF OPERATOR: Amoco Production Company ✓

9. WELL NO.: 1

3. ADDRESS OF OPERATOR: P. O. Box 3092 Houston, TX 77253

10. FIELD AND POOL, OR WILDCAT: Scoggins Draw Morrow

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)*
At surface: 700' FSL x 990' FWL (Unit M, SW/4 SW/4)
At top prod. interval reported below
At total depth

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: 11/18/27

14. PERMIT NO. | DATE ISSUED

12. COUNTY OR PARISH: Eddy | 13. STATE: NM

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (Ready to prod.)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
		01/05/90	3546.0' GR	

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
11915	10,666'		→	11900-15'	

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*: 9789'- 9846' Morrow

25. WAS DIRECTIONAL SURVEY MADE

26. TYPE ELECTRIC AND OTHER LOGS RUN

27. WAS WELL CORED

28. Existing CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
13-3/8"	48#	502'	17-1/2	700 sxs	
8-5/8"	36#	2200'	12-1/4"	1400 sxs	
5-1/2'	15.5 & 17#	11915'	7-7/8"	2720 sxs	

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2-3/8	10,649'	9627'

31. PERFORATION RECORD (Interval, size and number)
9295' - 9308'
9789' - 9895'
9835'-9846'

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
9789' - 9846'	Acidized with 2000 gal of 7-1/2% MS Acid

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump)	WELL STATUS (Producing or shut-in)
		Shut in

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.)

TEST WITNESSED BY

35. LIST OF ATTACHMENTS

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED [signature] TITLE Asst. Admin. Analyst DATE 5/1/91

*(See Instructions and Spaces for Additional Data on Reverse Side)

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

Amoco Production Company

Diagrammatic Sketch

Well: Federal "DH" Gas Com Well No. 1

Location: 700/s x 990/w (M-11-18-27) Eddy Co., NM

Elevations

KB: 3566'

DF: 3565'

GL: 3546'

Date: (of first completic

5-18-84: Well spudded.
331' of 20" 52.74# csg cemented with
3 yards redimix.
5-26-84: 13 3/8" CSA 500'
in 17½" hole w/700 sx
Class C cement.
6-1-84: 9 5/8" CSA 2200' in
12¼" hole, DV tool at 973'.
Cmt 1st stage with 950 sx
Class C Neat. Displace cmt
w/160 bbls. Circ 199 sx to pit.
Open DV tool. Pmp 100 bbl of
9.4 mud and 450 sx Class C cmt
with 2% calcium chloride. Circ
106 sx cmt. Disp w/73 bbls fw.
8-4-84: 5½" CSA 11915' in 7⅞"
hole. DV tool at 6417'.
Cmt 1st stage with 420 sx
Class H Lite with additives
and with 900 sx Class H with
additives. Open DV tool and
circ 73 sx Cmt. 2nd stage
with 1,000 sx Class H with
additives and with 400 sx
Class H Neat. Circ 218 sx to pit.

DV TOOL AT 973'

DV TOOL AT 6417'

Strawn Perfs 9295'-9308'

Packer set at 9627'

Morrow Perfs 9789'-9795'
and 9835'-9846'

CIBP @ 10700' Cap w/35' CMT

Silurian
Perfs 10774-10792

CIBP @ 11610' Cap w/35' CMT

Ellenburger
Perf 11645'-11908' (non Continuous)

TD 11,915'

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-104
Revised 1-1-89
See Instructions at Bottom of Page

...n Dister Office
...TI
...ox 1980, Hobbs, NM 88240

DISTRICT II
P. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

REQUEST FOR ALLOWABLE AND AUTHORIZATION TO TRANSPORT OIL AND NATURAL GAS

...r: Amoco Production Company ✓ Well API No. 30-015-24857

Address: P.O. Box 3092, Houston, Tx 77253-3092 (Rm. 16.110)

Reason(s) for Filing (Check proper box) — Other (Please explain)

- New Well ☐
- Recompletion ☐
- Change in Operator ☐
- Change in Transporter of: Oil ☐ Dry Gas ☐ Casinghead Gas ☐ Condensate ☒

If change of operator give name and address of previous operator

II. DESCRIPTION OF WELL AND LEASE

Lease Name	Well No.	Pool Name, including Formation	Kind of Lease (State, Federal or Fee)	Lease No.
Federal - DH - Gas Com	1	Scoggins Draw Morrow		NM - 29272

Location
Unit Letter M : 700 Feet From The South Line and 990 Feet From The West Line
Section 11 Township 18S Range 27E NMPM, Eddy County

III. DESIGNATION OF TRANSPORTER OF OIL AND NATURAL GAS

Name of Authorized Transporter of Oil ☐ or Condensate ☒	Address (Give address to which approved copy of this form is to be sent)
Amoco Pipeline - ICT	502 N. West Avenue, Levelland, Tx 79336
Name of Authorized Transporter of Casinghead Gas ☐ or Dry Gas ☐	Address (Give address to which approved copy of this form is to be sent)

If well produces oil or liquids, give location of tanks.	Unit	Sec.	Twp.	Rge.	Is gas actually connected?	When ?
	M	11	18	27		

If this production is commingled with that from any other lease or pool, give commingling order number:

IV. COMPLETION DATA

Designate Type of Completion - (X)	Oil Well	Gas Well	New Well	Workover	Deepen	Plug Back	Same Res'v	Diff Res'v

Date Spudded	Date Compl. Ready to Prod.	Total Depth	P.B.T.D.
...n (DF, REB, RT, GR, etc.)	Name of Producing Formation	Top Oil/Gas Pay	Tubing Depth
Perforations			Depth Casing Shoe

TUBING, CASING AND CEMENTING RECORD

HOLE SIZE	CASING & TUBING SIZE	DEPTH SET	SACKS CEMENT

V. TEST DATA AND REQUEST FOR ALLOWABLE

OIL WELL *(Test must be after recovery of total volume of load oil and must be equal to or exceed top allowable for this depth or be for full 24 hours.)*

Date First New Oil Run To Tank	Date of Test	Producing Method (Flow, pump, gas lift, etc.)	
Length of Test	Tubing Pressure	Casing Pressure	Choke Size
Actual Prod. During Test	Oil - Bbls.	Water - Bbls.	Gas- MCF

GAS WELL

Actual Prod. Test - MCF/D	Length of Test	Bbls. Condensate/MMCF	Gravity of Condensate
Testing Method (pitot, back pr.)	Tubing Pressure (Shut-in)	Casing Pressure (Shut-in)	Choke Size

VI. OPERATOR CERTIFICATE OF COMPLIANCE

I hereby certify that the rules and regulations of the Oil Conservation Division have been complied with and that the information given above is true and complete to the best of my knowledge and belief.

H. J. Black
Signature
H. I. Black — Stf. Admin. Analyst
Name — Title
September 1, 1992 — 713-584-7213
Date — Telephone No.

OIL CONSERVATION DIVISION

Date Approved SEP 11 1992

By ORIGINAL SIGNED BY
MIKE WILLIAMS
SUPERVISOR, DISTRICT II

Title

INSTRUCTIONS: This form is to be filed in compliance with Rule 1104

1) Request for allowable for newly drilled or deepened well must be accompanied by tabulation of deviation tests taken in accordance with Rule 111.
2) All sections of this form must be filled out for allowable on new and recompleted wells.
3) Fill out only Sections I, II, III, and VI for changes of operator, well name or number, transporter, or other such changes.
4) Separate Form C-104 must be filed for each pool in multiply completed wells.

Drawer DD
Artesia, NM 88210

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

5. Lease Designation and Serial No.

6. If Indian, Allottee or Tribe Name

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals

SUBMIT IN TRIPLICATE

7. If Unit or CA, Agreement Designation

1. Type of Well
☐ Oil Well ☑ Gas Well ☐ Other

8. Well Name and No.
Federal DH Gas Com #1

2. Name of Operator
Amoco Production Company

9. API Well No.
30-015-248757

3. Address and Telephone No.
P. O. Box 3092 (Rm 17.182) Houston, TX 77253-3092 (713) 596-7686

10. Field and Pool, or Exploratory Area
Scoggin Draw-Strawn

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
700' FSL x 990' FWL, Unit M
Sec. 11, T-18-S, R-27-E

11. County or Parish, State
Eddy, NM

CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
☐ Notice of Intent	☐ Abandonment	☐ Change of Plans
☐ Subsequent Report	☐ Recompletion	☐ New Construction
☐ Final Abandonment Notice	☐ Plugging Back	☐ Non-Routine Fracturing
	☐ Casing Repair	☐ Water Shut-Off
	☐ Altering Casing	☐ Conversion to Injection
	☒ Other Disposal Permit	☐ Dispose Water

(Note: Report results of multiple completion on W
Completion or Recompletion Report and Log form

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally dri
give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Amoco hereby requests approval to amend our disposal site for the Federal DH. Shown below is detailed information on the site:

1.	Formation producing water:	Wolfcamp
2.	Average barrels of water per day:	1
3.	Water storage:	Two 500 Bbl Tanks
4.	How water is moved:	Trucked by various
5.	Disposal Site:	I & W Inc., SWD (Walter Solt State Well No. 1) Sec. 5, T-18-S, R-28-E Unit L (SWD - 318) Eddy County, NM

RECEIVED
APR 20 7 35 AM '93
CAR. AREA

14. I hereby certify that the foregoing is true and correct

Signed Norvella M. Prince Title Staff Assistant Date 4-19-93

(This space for Federal or State office use)

Approved by Joe G. Lara Title PETROLEUM ENGINEER Date 6/3/93

Conditions of approval, if any:
See attached

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

*See Instruction on Reverse Side

BUREAU OF LAND MANAGEMENT
CARLSBAD RESOURCE AREA

Disposal of Produced Water From Federal Wells

Conditions of Approval

Approval of the produced water disposal methodology is subject to the following conditions of approval:

1. This agency be notified of any change in your method or location of disposal.

2. Compliance with all provisions of NTL-2B.

3. This agency shall be notified of any spill or discharge as required by NTL-3A.

4. This agency reserves the right to modify or rescind approval whenever it determines continued use of the approved method may adversely affect the surface or subsurface environments.

5. All aboveground structures on the lease shall be painted sandstone brown, Federal Std. 595-20318, or 30313, within 90 days if you have not already done so.

6. Any on lease open top storage tanks or pits shall be covered with a wire screen or plastic/nylon netting to prevent entry by birds and other wildlife.

7. This approval does not constitute right-of-way approval for any off lease activities. If water is transported via a pipeline that extends beyond the lease boundary, then you need to submit within 30 days an application for right-of-way approval to the Realty Section in this office if you have not already done so.

API

SEC 11 TWP 18S RGE 27E
NMEX EDDY 700FSL 990FWL SEC
STATE---COUNTY-------FOOTAGE----------SPOT--------
AMOCO PROD WD WFD
OPERATOR----------WELL CLASS INIT--FIN-
1 FEDERAL"DH"GAS COM
WELL NO.-----LEASE NAME----------
3546GR
OPER ELEV----------FIELD/POOL/AREA----
API 30-015-24857-0000
----------LEASE NO.-----PERMIT OR WELL I.D. NO.--
05/18/1984 10/15/1984 ROTARY GAS
SPUD DATE----COMP. DATE--TYPE TOOL---HOLE TYPE---STATUS---
12100 STRAWN SHARP 36
PROJ. DEPTH--PROJ. FORM---CONTRACTOR----------
DTD 11915 PB 10666 FM/TD ELLNBRGR
DRILLERS TD---LOG TD---PLUG BACK TD--OLD TD--FORM TD------

LOCATION DESCRIPTION

16 MI SW/LOCO HILLS

CASING/LINER DATA

(CONTINUED)

30-015-24857-0000/AMOCO PROD/1 FEDERAL"DH"GAS COM
SEC 11 TWP 18S RGE 27E

CSG 20 @ 33 W/ 21 SACKS
CSG 13 3/8 @ 502 W/ 700 SACKS
CSG 9 5/8 @ 2200 W/ 1400 SACKS
CSG 5 1/2 @ 11915 W/ 2720 SACKS

TUBING DATA

TBG 2 3/8 @ 9308

INITIAL POTENTIAL

IPF 3535 MCFD 20/64CK
STRAWN W/ 4-FT 9295-9308
PERF 9295-9308
TP 2200 SICP 1968
@9301FT BHT 178F
10/64CK 1034MCFD TP1858
13/64CK 1499MCFD TP1792
16/64CK 2341MCFD TP1676
20/64CK 3535MCFD TP1462
BH 2013 FPCAOF 9293MCFD

(CONTINUED)

AP I

30-015-24857-0000/AMOCO PROD/1 FEDERAL"DH"GAS COM
SEC 11 TWP 18S RGE 27E

TOP PAY 9295 ORIG G CURR G
GTY 63.0 GOR 44000
GAS GTY 00.660

TYPE	FORMATION	LTH TOP	DEPTH/SUB	BSE DEPTH/SUB
LOG	SN ANDRS	1800	1746	
LOG	GLORIETA	3667	-121	
LOG	YESO	3913	-367	
LOG	BONE SPG	5046	-1500	
LOG	WOLFCAMP	6473	-2927	
LOG	CISCO	7683	-4137	
LOG	CANYON	8450	-4904	
LOG	STRAWN	8940	-5394	
LOG	ATOKA	9313	-5767	
LOG	MORROW	9599	-6053	
LOG	MSSP LM	10180	-6634	
LOG	WOODFORD	10710	-7164	
LOG	DEVONIAN	10732	-7186	
LOG	MONTOYA	11003	-7457	

(CONTINUED)

30-015-24857-0000/AMOCO PROD/1 FEDERAL"DH"GAS COM
SEC 11 TWP 18S RGE 27E

LOG	SIMPSON	11606 -8060
LOG	ELLNBRGR	11688 -8142

SUBSEA MEASUREMENTS FROM GR

PRODUCTION TEST DATA

PTS 229 BW 24HRS
ELLNBRGR PERF W/ 1-IT 11645-11908 GROSS
PERF 11645-11645 11704-11704 11711-11711 11713-11713
PERF 11741-11741 11786-11786 11808-11808 11816-11816
PERF 11824-11824 11831-11831 11833-11833 11835-11835
PERF 11844-11844 11852-11852 11854-11854 11858-11858
PERF 11874-11874 11887-11887 11896-11896 11901-11901
PERF 11908-11908
ACID 11645-11908 2500 GALS
ADDTV NTGN 1000 SCF/BBL
WTR
BRPG @ 11565 11645-11908
PTS 26 BW 2HRS
SILURIAN PERF W/ 4-FT 10774-10792

(CONTINUED)

AP 1

30-015-24857-0000/AMOCO PROD/1 FEDERAL"DH"GAS COM
SEC 11 TWP 18S RGE 27E

PERF 10774-10792
WTR
BRPG @ 10666 10774-10792

LOGS AND SURVEYS /INTERVAL,TYPE/

LOGS	GR	NEC	DNCP
LOGS	LLD	AVC	MFSF
LOGS	CA	CORL	CCL
LOGS	TM	DM3	

DRLG SHOWS OR POROSITY ZONES /INTERVAL,FORMATION,DESC

6502 -6552	WOLFCAMP	OIL	7067- 7072	WOLFCAMP	OIL		
9295 -9308	STRAWN	GAS	10846-10950	DEVONIAN	GAS		

DRILLING MEDIA /TYPE,DEPTH

3436	9.0	6685	8.9	8714	8.9	9065	8.8
9999	9.1	11050	9.4				

Southeast New Mexico - March 1997
Full Entity Yearly Production Report

Entity : FEDERAL DH GAS COM (020631)
Field : SCOGGIN DRAW (50700)
Reservoir: STRAWN (PENN) (471)
Operator : ALTURA ENERGY LTD (134885)
Location : S11 T18S R27E M EDDY
Basin : PERMIAN (430)
Zone : STRAWN (404STRN)
API : 30015248570000

Product: GAS
Start : 198408
Stop : 199111
Status : INACTIVE
Dist : ARTESIA
Well# : 1

Well Information

API	Well Number	Total Depth	Upper Perf	Lower Perf	BHP	Well Type	Devon Shale	Tight HRZ	Tight Sand
30015248570000	1	11915	9295	9308		PRORATED	NO	NO	NO

Test Information

Well Nbr	Test Date	Upper Perf	Lower Perf	Gas MCFD	Liq BPD	Wtr BPD	GOR	Pressures SITP	FTP	Liq Grav	Gas Grav	Mt
1	19841015	9295	9308	3535	0.0		44000	2200	1968	63.0	0.660	IP
1	19850817	9295	9308		0.0			1050		0.0	0.660	
1	19860114	9295	9308		0.0			1000		0.0	0.660	
1	19870804	9295	9308		0.0			45		0.0	0.660	
1	19880817	9295	9308		0.0			45		0.0	0.660	
1	19910925	9295	9308		0.0			1500		0.0	0.660	
1	19921012	9295	9308		0.0			1225		0.0	0.660	

Yearly Production

Year	Year To Date Gas	Year To Date Liquid	Year To Date Water	Opening Cumulatives Gas	Opening Cumulatives Liquid	Opening Cumulatives Water
84	0	165	669	0	0	0
85	0	0	0	0	165	669
86	5534	194	0	0	165	669
87	137	0	0	5534	359	669
88	0	0	0	5671	359	669
89				5671	359	669
91	10703	84	0	5671	359	669
92	0	0	0	16374	443	669
93	0	0	0	16374	443	669

AMOCO FEDERAL DH Gas Com No. 1

Petroleum Information\Dwights Production Data on CD-ROM
Southeast New Mexico - March 1997
Full Entity Yearly Production Report

Entity : FEDERAL DH GAS COM (020631)
Field : SCOGGIN DRAW (50700)
Reservoir: MORROW (PENN) (435)
Operator : ALTURA ENERGY LTD (134885)
Location : S11 T18S R27E M EDDY
Basin : PERMIAN (430)
Zone : MORROW (402MRRW)
API : 30015248570000

Product: GAS
Start : 199108
Stop : 199703
Status : ACTIVE
Dist : ARTESIA
Well# : 1

Well Information

API	Well Number	Total Depth	Upper Perf	Lower Perf	BHP	Well Type	Devon Shale	HRZ	Tight Sand
30015248570000	1	11915	9295	9308		PRORATED	NO	NO	NO

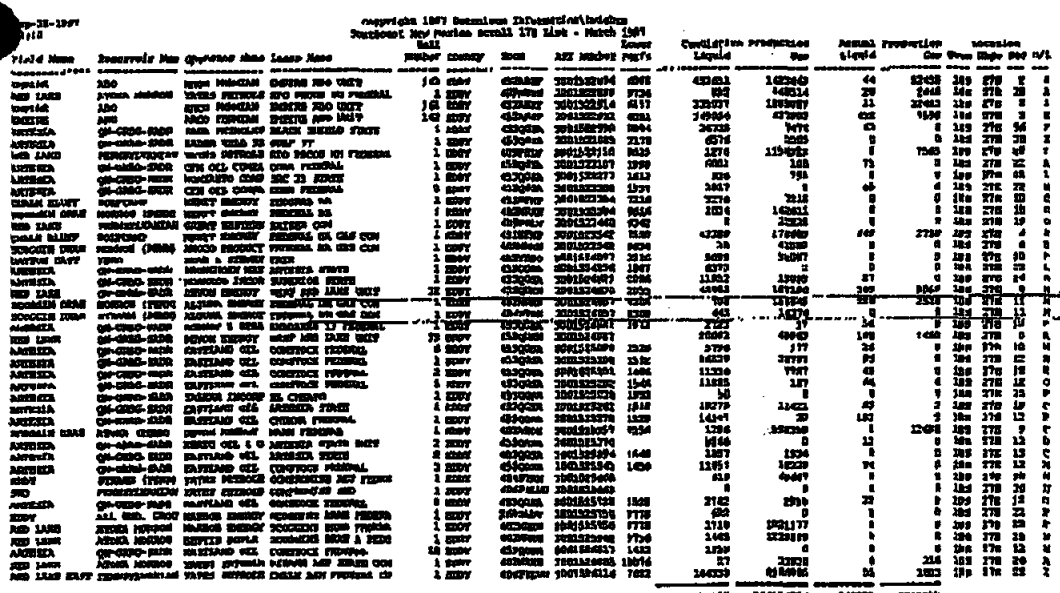
? Morrow

Test Information

Well Nbr	Test Date	Upper Perf	Lower Perf	Gas MCFD	Liq BPD	Wtr BPD	GOR	Pressures SITP	FTP	Liq Grav	Gas Grav	Mt
1	19841015	9295	9308	3535	0.0		44000	2200	1968	63.0	0.660	IP
1	19921012	9295	9308		0.0			1225		0.0	0.000	
1	19930923	9295	9308		0.0			1050		0.0	0.000	

Yearly Production

	Year To Date			Opening Cumulatives		
Year	Gas	Liquid	Water	Gas	Liquid	Water
91	15167	0	0	0	0	0
92	43505	142	0	15167	0	0
93	39355	130	0	58672	142	0
94	45913	41	0	98027	272	0
95	2964	15	0	143940	313	0
96	10521	152	0	146904	328	0
97	2520	228	0	157425	480	0



Fed DH #1
Prod from Morrow
in 3-97

MAP ID NO. 861

THE EASTLAND OIL COMPANY
CHUKKA FEDERAL NO. 2

Subsurface Technology, Inc.

ENVIROCORP®

ENVIROCORP.

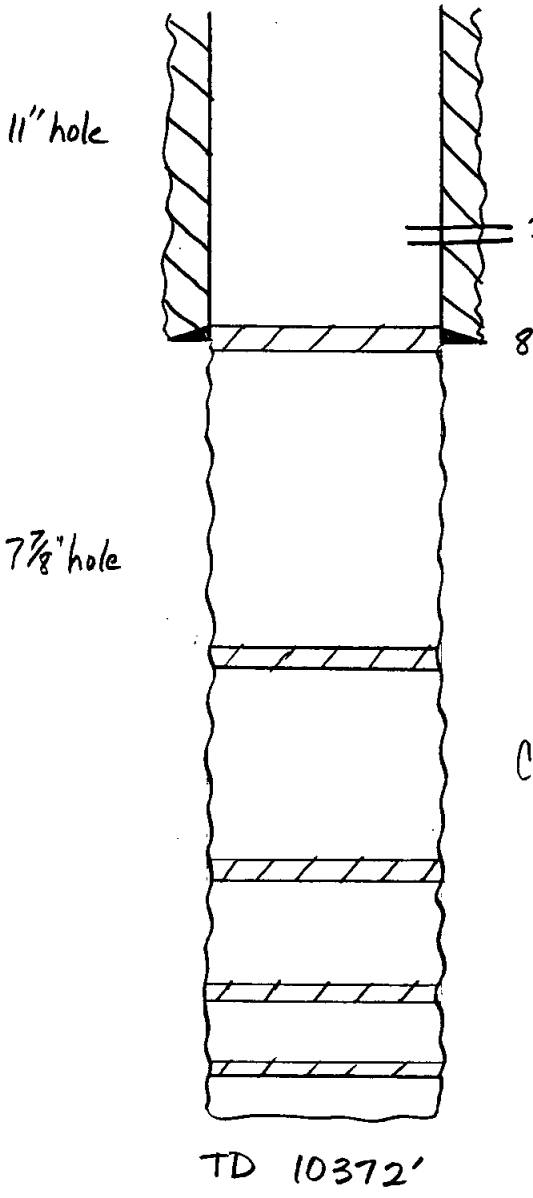
Artificial Penetration Review Number 861

OPERATOR Amoco Production Co.
LEASE Diamond Federal Gas Com.
WELL NUMBER 1
DRILLED 7/18/73
PLUGGED

STATUS Active Oil (AQ)
DIST FROM INJECT
LOCATION 12-18S-27E, E
MUD FILLED BOREHOLE
REPORTED MUD WEIGHT

API NO.

REMARKS: Reentered 9/5/85 New Name Fred Pool Drilling Inc. Chukka Federal No. 2



CEMENT PLUGS
9775'-9675', 45 sx.
7535'-7435', 50 sx.
5556'-5456', 40 sx.
3720'-3620', 50 sx.
2045'-1912', 40 sx.

Form 9-331
(May 1963)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Budget Bureau No. 42-R1424

5. LEASE DESIGNATION AND SERIAL NO.: NM-6852

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT —" for such proposals.)

7. UNIT AGREEMENT NAME:

OIL WELL ☐ GAS WELL ☐ OTHER DRILLING

8. FARM OR LEASE NAME: DIAMOND FED. GAS COM

2. NAME OF OPERATOR: Amoco Production Company

9. WELL NO.: 1

3. ADDRESS OF OPERATOR: BOX 68, HOBBS, N. M. 88240

10. FIELD AND POOL, OR WILDCAT: SCOGGIN DRAW-MORROW

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface

1980' FNL x 660' FWL SEC. 12 (UNIT E, SE/4 NW/4)

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: 12-18-27-NMPM

14. PERMIT NO.	15. ELEVATIONS (Show whether DF, RT, GR, etc.)	12. COUNTY OR PARISH	13. STATE
	3607' GL 3623' R.D.B.	EDDY	N.M.

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☒	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other) Spudding			☒
(Other)				(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Delta Drlg Co. spudded 11" hole 3:PM 7-18-73.
On 7-22-73. 8⅝" OD 32# 8R K-55 Casing was set
@ 1955 w/ 700Sx Incor 2% Gel + 100 sx neat. Circ. 200 Sx.
After WOC 18 hours, tested casing w/ 500 psi for 30 min.
Test O.K.
Reduced hole to 7⅞" @ 1955 and resumed drilling.

RECEIVED
JUL 24 1973
U. S. GEOLOGICAL SURVEY
ARTESIA, NEW MEXICO

18. I hereby certify that the foregoing is true and correct

SIGNED: R. L. Yoakum TITLE: ADMINISTRATIVE ASSISTANT DATE: JUL 23 1973

(This space for Federal or State office use)

APPROVED BY: _____ TITLE: _____ DATE: _____

CONDITIONS OF APPROVAL, IF ANY:

APPROVED
JUL 24 1973
/s/ L. SEEKMAN
DISTRICT ENGINEER

*See Instructions on Reverse Side

1- USGS-ABT
1- DIV
1- SUSP
1- RKV
1- ARCO

U TED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

5. LEASE DESIGNATION AND SERIAL NO.: NM-6857
6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

1a. TYPE OF WORK: DRILL ☒ DEEPEN ☐ PLUG BACK ☐

b. TYPE OF WELL: OIL WELL ☐ GAS WELL ☒ OTHER — SINGLE ZONE ☒ MULTIPLE ZONE ☐

7. UNIT AGREEMENT NAME: DIAMOND FEDERAL GAS Com

2. NAME OF OPERATOR: Amoco Production Company (Old Pet A well)

8. FARM OR LEASE NAME:

3. ADDRESS OF OPERATOR: BOX 68, HOBBS, N. M. 88240 (Just Corby)

9. WELL NO.: 1

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface: 1980 FNL x 660' FWL Sec. 12 (Unit E, SW/4 NW/4)
At proposed prod. zone:

10. FIELD AND POOL, OR WILDCAT: SCOGGIN DRAW MORROW

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: 12-18-27 NMPM

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*

12. COUNTY OR PARISH: EDDY — 13. STATE: N.M.

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any)	16. NO. OF ACRES IN LEASE	17. NO. OF ACRES ASSIGNED TO THIS WELL: 320
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.	19. PROPOSED DEPTH: 10,000	20. ROTARY OR CABLE TOOLS: ROTARY

21. ELEVATIONS (Show whether DF, RT, GR, etc.): 3607' GL

22. APPROX. DATE WORK WILL START*: 7-1-73

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
11"	8 5/8"	32 ~~24~~#	~~1200~~ 1000	Circ.
7 7/8"	4 1/2"	9.5 - 11.6#	10000	SUFFICIENT TO FILL 500' ABOVE UPPERMOST PAY.

cc 6-22-73
6-22-73

After drilling well, logs will be run and evaluations made. Perforating and/or stimulating as necessary in attempting commercial production.

BOP program attached.

Mud Program:
0 - 1000' Native mud & water
1000 - 9000 " "
9000 - 10000 Min. quality, low solids gel water as necessary for satisfactory operations & samples.

OPERATIONS ON
☐ RECORD LESSEE
☐ O. OF O. ON FILE
☐ O. OF O. ATTACHED
BOND COVERAGE
☐ $5,000 ATTACHED
☐ $5,000 ON FILE
☒ LESSEE'S NATION-WIDE
☐ Blanket bond on file

RECEIVED
JUN 22 1973
U. S. GEOL. SURVEY
ROSWELL, NEW MEXICO

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.

SIGNED J. E. York — TITLE AREA ENGINEER — DATE JUN 21 1973

(This space for Federal or State office use)

PERMIT NO. — APPROVAL DATE JUL 6 1973

APPROVED BY — TITLE DISTRICT ENGINEER — DATE JUL 6 1973

CONDITIONS OF APPROVAL, IF ANY: Subject to attached "Notice" dated 6-22-73

5. USGS-Art
1-Div
1-
1-ARCO

*See Instructions On Reverse Side

... PRODUCTION COMPANY ... DIAMOND Federal Gas Com ... 1

... 19 ... 19 South ... 27 East ... EDDY

1980 ... NORTH ... 660 ... WEST

... MORROW ... Scoggin Draw Morrow (Gas) ... 320

... the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

... have the interests of all owners been consolidated by communitization agreement or otherwise?

... If answer is "yes" type of consolidation ...

... If answer is "no" list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) ...

... No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling) or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.

NM-6852
Amoco 100%
160 Acres

660'

NM-6853
Amoco 100%
160 Acres

STATE OF NEW MEXICO
JOHN W. ...

J. E. York
AREA ENGINEER

Amoco Production Company

JUN 21 1973

RECEIVED
JUN 22 1973
U.S. ...

JUNE 20, 1973

John W. West

United States Department of the Interior

GEOLOGICAL SURVEY

P. O. Drawer U
Artesia, New Mexico 88210

June 22, 1973

NOTICE

DRILLING WELL CONTROL REQUIREMENTS FOR DEEP WELLS DRILLED ON FEDERAL OIL AND GAS LEASES IN THE ARTESIA DISTRICT

The following requirements are established in accordance with 30 CFR 221.24, 221.36, and 221.37. Blowout preventer equipment, choke equipment, drilling fluid characteristics, drilling fluid monitors, and the conduct of drilling procedures shall be such as are necessary to prevent the blowout of any well. In addition to all other applicable rules, regulations, and accepted good operating practices, drilling shall be in accordance with the following safety requirements:

1. After setting the 8-5/8 inch casing string and before drilling into the Wolfcamp formation, the blowout preventers and related control equipment shall be pressure tested to rated working pressures by an independent service company. Any equipment failing to test satisfactorily shall be repaired or replaced. This office should be notified in sufficient time for a representative to witness the tests and shall be furnished a copy of the pressure test report. In addition, the pipe rams and bag-type preventer shall be actuated at least once each 24 hours and the blind rams each time the drill pipe is out of the hole.

2. Accumulators shall maintain a pressure capacity reserve at all times to provide for repeated operation of hydraulic preventers.

3. A drill string safety valve in the open position shall be maintained on the rig floor at all times while drilling operations are being conducted.

4. Blowout prevention drills shall be conducted as necessary to insure that each drilling crew is properly trained to carry out emergency duties.

5. Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be installed and operating before

drilling into the Wolfcamp formation and used until production casing is run and cemented. Monitoring equipment shall consist of the following:

(1) A recording pit level indicator to determine pit volume gains and losses.

(2) A mud volume measuring device for accurately determining mud volume necessary to fill the hole on trips.

(3) A flow sensor on the flow-line to warn of any abnormal mud returns from the well.

6. When coming out of the hole with drill pipe, the annulus shall be filled with mud before the mud level drops below 150 feet. The volume of mud required to fill the hole shall be watched, and any time there is an indication of swabbing, or influx of formation fluids, proper blowout prevention precautions must be taken. The mud shall not be circulated and conditioned except on or near bottom, unless well conditions prevent running the pipe to bottom.

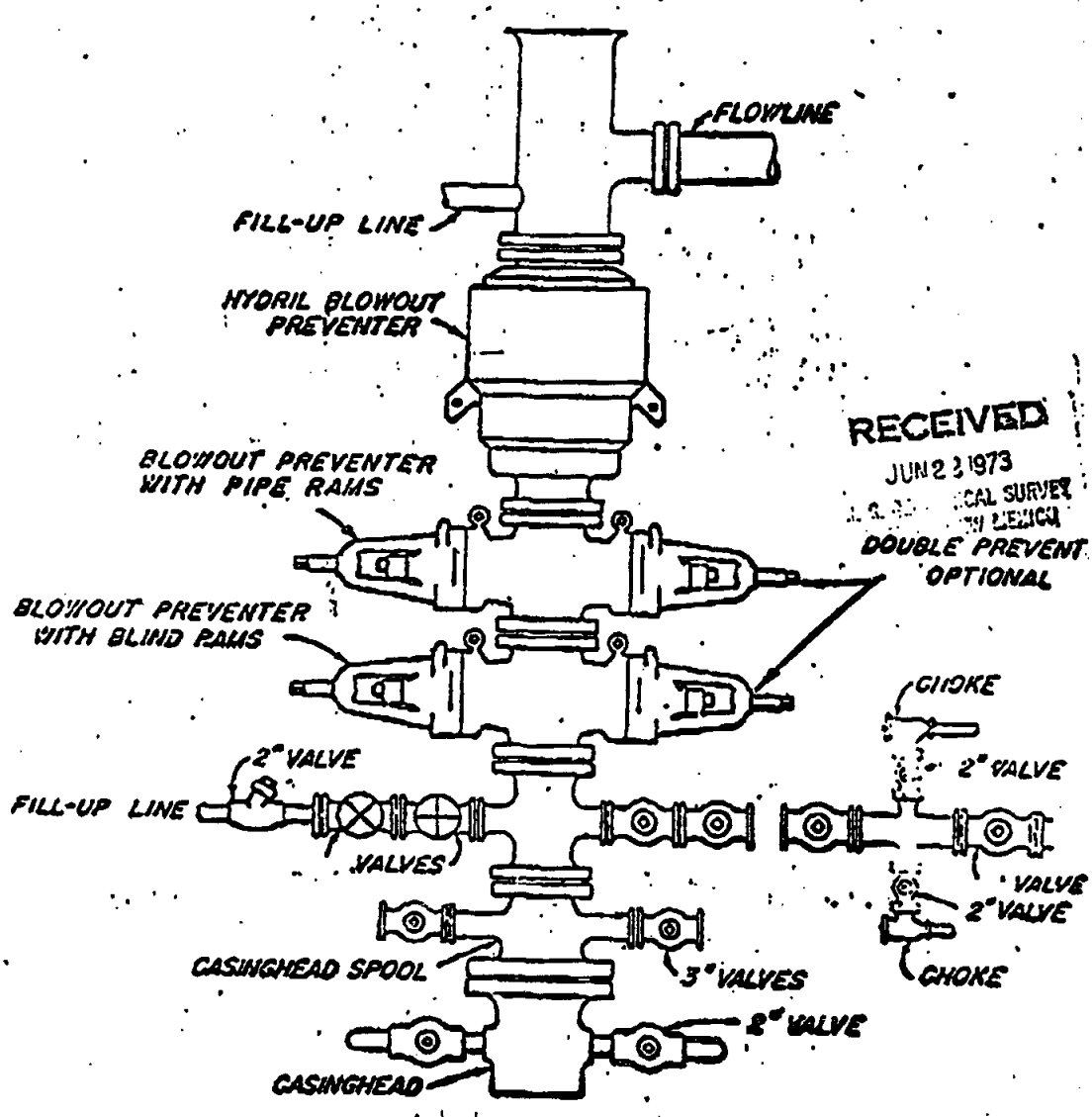
7. A copy of these requirements shall be posted on the rig floor or in the dog house during the drilling of the well.

James A. Knauf
District Engineer

Lease No. NM-6852
Well Amoco Production Co. 1-Diamond Federal Gas Com.
Drillsite 1980/N 660/W 12-18S-27E
Depth 10,000' Morrow
Approved July 6, 1973

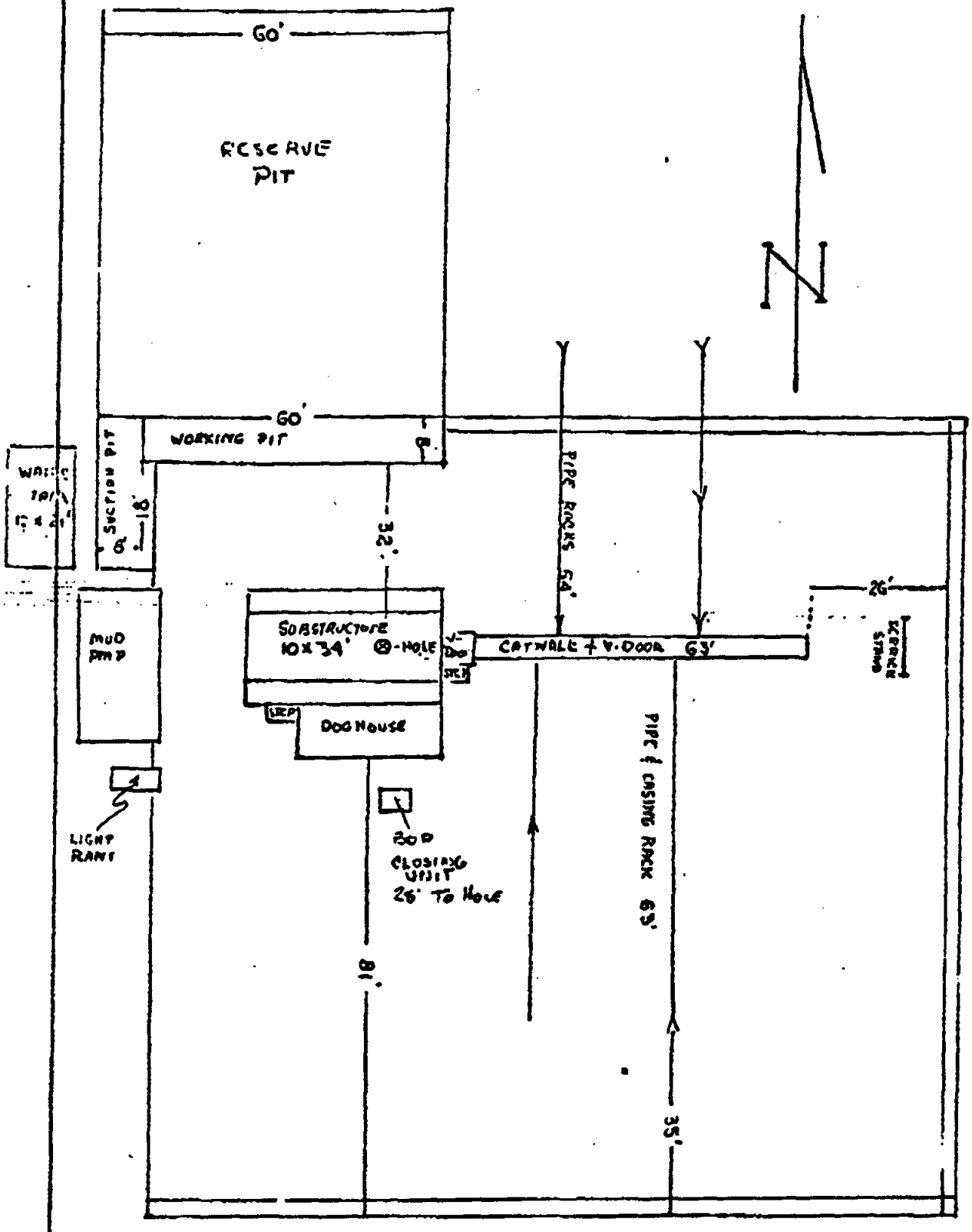
BLOWOUT PREVENTER HOOK-UP FOR DRILLING BELOW INTERMEDIATE CASING

1. BLOWOUT PREVENTERS AND MASTER VALVE TO BE FLUID OPERATED AND ALL FITTINGS MUST BE IN GOOD CONDITION (MINIMUM: WP - 3000 PSI, TEST - 6000 PSI).
2. EQUIPMENT THROUGH WHICH BIT MUST PASS SHALL BE AS LARGE AS THE INSIDE DIAMETER OF CASING THAT IS BEING DRILLED THROUGH.
3. KELLY COCK REQUIRED (MINIMUM: 3000 PSI WP, 6000 PSI TEST)
4. OHSCO OR COMPARABLE SAFETY VALVE MUST BE AVAILABLE ON RIG FLOOR AT ALL TIMES WITH PROPER CONNECTION OR SUB. (MINIMUM: 3000 PSI WP, 6000 PSI TEST)



AMOCO PRODUCTION COMPANY

APRIL 13, 1973

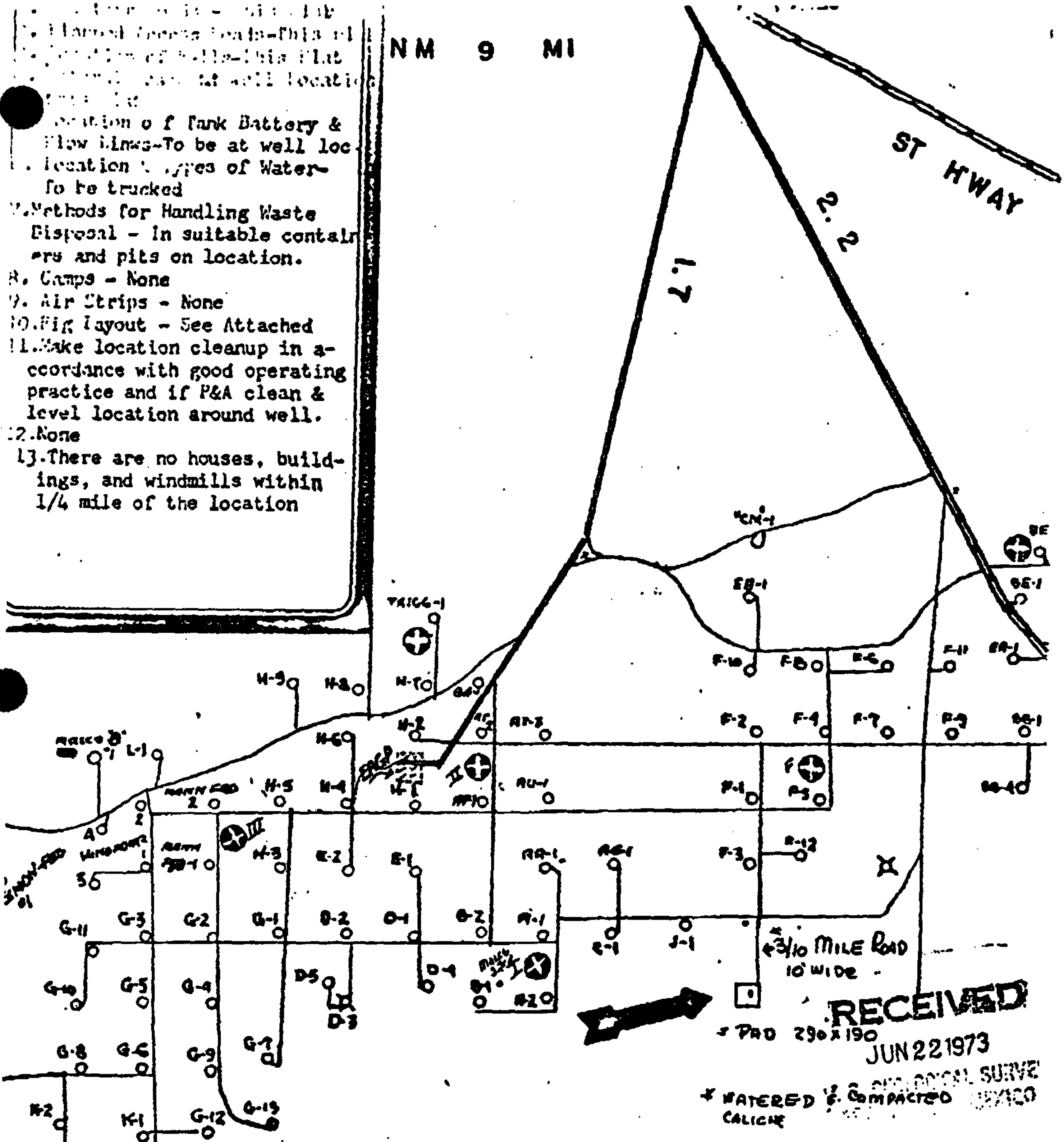


Amoco Production Company	SCALE:
GENERAL RIG LAYOUT	DRG. NO.

Location of Tank Battery & Flow Lines-To be at well loc.

Location & Types of Water-To be trucked

7. Methods for Handling Waste Disposal - In suitable containers and pits on location.
8. Camps - None
9. Air Strips - None
10. Rig Layout - See Attached
11. Make location cleanup in accordance with good operating practice and if P&A clean & level location around well.
12. None
13. There are no houses, buildings, and windmills within 1/4 mile of the location



Amoco Production Company

DIAMOND FEDERAL GAS COM No. 1
SCOGGIN DRAW- MORROW
UNIT E, SEC 12, T-18-S, R-27-E
EDDY CO. N.M.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved. Budget Bureau No. 42-R1424.

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL ☐ GAS WELL ☐ OTHER DRILLING - DRY HOLE

2. NAME OF OPERATOR
Amoco Production Company

RECEIVED
SEP 1 2 1973
O. C. C.
ARTESIA, OFFICE

3. ADDRESS OF OPERATOR
BOX 68, HOBBS, N. M. 88240

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.)
At surface
1980' FNL x 660' FWL Sec. 12 (Unit E, SE/4 NW/4)

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.)
3623 R.D.B.

5. LEASE DESIGNATION AND SERIAL NO.
NM - 0 ~~~~

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME
DIAMOND FEDERAL GAS COM

8. FARM OR LEASE NAME

9. WELL NO.
1

10. FIELD AND POOL, OR WILDCAT
SCOGGIN DRAW MORROW

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
12-18-27 NMPM

12. COUNTY OR PARISH
EDDY

13. STATE
N.M.

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF ☐	PULL OR ALTER CASING ☐	WATER SHUT-OFF ☐	REPAIRING WELL ☐
FRACTURE TREAT ☐	MULTIPLE COMPLETE ☐	FRACTURE TREATMENT ☐	ALTERING CASING ☐
SHOOT OR ACIDIZE ☐	ABANDON* ☒	SHOOTING OR ACIDIZING ☐	ABANDONMENT* ☐
REPAIR WELL ☐	CHANGE PLANS ☐	(Other)	
(Other)		(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)	

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Drilled to a TD of 10,372' without encountering oil or Gas. Logs and evaluations confirmed Dry Hole.
* Propose to P+A as follows: Cement Plugs - Class H

INTERVAL	LENGTH	FORMATION	SX CEMENT
9775-9675'	100'	MORROW	45
7535-7435'	100'	CISCO	50
5556-5456'	100'	ABO	40
3720-3620'	100'	YESO	50
2045-1945'	100'	8⅝" CSA 1995	40
Surface	10-20'	Erect P+A Marker	10 sx

All intervals to be filled w/ Drlg mud.
Location to be cleaned & levelled.

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ARTESIA, NEW MEXICO

* Pursuant to Mr. Leon Beekmans verbal approval 8-29-73.

18. I hereby certify that the foregoing is true and correct

SIGNED ______ TITLE AREA ENGINEER DATE AUG 3 1 1973

(This space for Federal or State office use)

APPROVED BY ______ TITLE ______ DATE ______
CONDITIONS OF APPROVAL, IF ANY:

APPROVED
SEP 11 1973
L. BEEKMAN
DISTRICT ENGINEER

4 USGS - Art
1 - [illegible]
1 - [illegible]
1 - [illegible]

*See Instructions on Reverse Side

Form 9-331
(May 1963)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE (Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1424.

5. LEASE DESIGNATION AND SERIAL NO.: NM-6852

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

RECEIVED
SEP - 6 1974
O. C. C.

OIL WELL ☐ GAS WELL ☐ OTHER: DRY HOLE

7. UNIT AGREEMENT NAME: DIAMOND FED. GAS COM

2. NAME OF OPERATOR: Amoco Production Company

8. FARM OR LEASE NAME:

3. ADDRESS OF OPERATOR: BOX 68, HOBBS, N. M. 88240

9. WELL NO.: 1

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 1980' FNL & 660' FWL Sec. 12 (UNIT E, SE/4 NW/4)

10. FIELD AND POOL, OR WILDCAT: SCOGGIN DRAW-MORROW

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: 12-18-27 NMPM

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 3623' R.D.B.

12. COUNTY OR PARISH: EDDY

13. STATE: NM

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☒
REPAIR WELL	☐	CHANGE PLANS	☐	(Other)			
(Other)				(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Physical abandonment of well concluded 8-31-73.
Plugged and abandoned as follows:

Sx CEMENT	INTERVAL	LENGTH	FORMATION
45	9775 - 9765	100'	MORROW
50	7535 - 7435	100'	CLOCO
40	5556 - 5456	100'	ABO
50	3720 - 3620	100'	YESO
40	2045 - 1945	8⅝" CSA 1995 - circ.	
10	Surface & erected P&A marker.		

All intervals filled w/ mud.
Location to be cleaned & levelled.

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SEP - 6 1973
U.S. GEOLOGICAL SURVEY
ROSWELL, NEW MEXICO

18. I hereby certify that the foregoing is true and correct

SIGNED: Ray L. Goodson TITLE: ADMINISTRATIVE ASSISTANT DATE: SEP 5 1973

(This space for Federal or State office use)

APPROVED BY: RECEIVED SEP 6 1973 TITLE: DATE:

CONDITIONS OF APPROVAL, IF ANY:

4- USGS Alet
1- Div
1- Susp
1- RRW

*See Instructions on Reverse Side

Form 9-330
(Rev. 5-63)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN DUPLICATE* (See other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R355.5.

5. LEASE DESIGNATION AND SERIAL NO.: NM-6852

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

a. TYPE OF WELL: OIL WELL ☐ GAS WELL ☐ DRY ☒ Other

b. TYPE OF COMPLETION: NEW WELL ☐ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF. RESVR. ☐ Other

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SEP 24 1973
ARTESIA, OFFICE

7. UNIT AGREEMENT NAME: DIAMOND FED. GAS COM

8. FARM OR LEASE NAME:

9. WELL NO.: 1

2. NAME OF OPERATOR: Amoco Production Company

3. ADDRESS OF OPERATOR: BOX 68, HOBBS, N. M. 88240

10. FIELD AND POOL, OR WILDCAT: SCOGGIN DRAW-MORROW

4. LOCATION OF WELL (*Report location clearly and in accordance with any State requirements*)*
At surface: 1980' FNL x 660' FWL Sec 12. (Unit E, SE/4 NW/4)
At top prod. interval reported below
At total depth

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: 12-18-27 NMPM

14. PERMIT NO.	DATE ISSUED	12. COUNTY OR PARISH	13. STATE
		EDDY	N.M.

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (*Ready to prod.*)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
7-18-73	8-27-73	P&A	3623' RDB	-

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
10,372	P&A		→	0-TD	-

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*: NONE

25. WAS DIRECTIONAL SURVEY MADE: No

26. TYPE ELECTRIC AND OTHER LOGS RUN: GR-N - DUAL IND LL

27. WAS WELL CORED: No

28. CASING RECORD (*Report all strings set in well*)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
8 5/8	32#	1955	11"	800 Sx	NONE

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)

31. PERFORATION RECORD (*Interval, size and number*)

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (*Flowing, gas lift, pumping—size and type of pump*)	WELL STATUS (*Producing or shut-in*)

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)

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SEP 10 1973
U. S. GEOLOGICAL SURVEY
ARTESIA, NEW MEXICO

34. DISPOSITION OF GAS (*Sold, used for fuel, vented, etc.*)

TEST WITNESSED BY

35. LIST OF ATTACHMENTS

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED Ray L. Yoakum TITLE ADMINISTRATIVE ASSISTANT DATE 9-10-73

(See Instructions and Spaces for Additional Data on Reverse Side)

3- USGS-Art
1- W7
- Div

INSTRUCTIONS

General: This form is designed for submitting a complete and correct well completion report and log on all types of lands and leases to either a Federal agency or a State agency, or both, pursuant to applicable Federal and/or State laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from, the local Federal and/or State office. See instructions on items 22 and 24, and 33, below regarding separate reports for separate completions.

If not filed prior to the time this summary record is submitted, copies of all currently available logs (drillers, geologists, sample and core analysis, all types electric, etc.), formation and pressure tests, and directional surveys, should be attached hereto, to the extent required by applicable Federal and/or State laws and regulations. All attachments should be listed on this form, see item 35.

Item 4: If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local State or Federal office for specific instructions.

Item 18: Indicate which elevation is used as reference (where not otherwise shown) for depth measurements given in other spaces on this form and in any attachments.

Items 22 and 24: If this well is completed for separate production from more than one interval zone (multiple completion), so state in item 22, and in item 24 show the producing interval, or intervals, top(s), bottom(s) and name(s) (if any) for only the interval reported in item 33. Submit a separate report (page) on this form, adequately identified, for each additional interval to be separately produced, showing the additional data pertinent to such interval.

Item 29: *"Sacks Cement":* Attached supplemental records for this well should show the details of any multiple stage cementing and the location of the cementing tool.

Item 33: Submit a separate completion report on this form for each interval to be separately produced. (See instruction for items 22 and 24 above.)

37. SUMMARY OF POROUS ZONES: SHOW ALL IMPORTANT ZONES OF POROSITY AND CONTENTS THEREOF; CORED INTERVALS; AND ALL DRILL-STEM TESTS, INCLUDING DEPTH INTERVAL TESTED, CUSHION USED, TIME TOOL OPEN, FLOWING AND SHUT-IN PRESSURES, AND RECOVERIES				38. GEOLOGIC MARKERS		
FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.	NAME	TOP MEAS. DEPTH	TOP TRUE VERT. DEPTH
			NO OIL OR GAS	T ABO	5506	
				T WOLFCAMP	6728	
				T CISCO	7485	
				T STRAWN	8820	
				T ATOKA	9460	
				T MORROW	9725	
				T CHESTER	10158	
				T MISS LM	10338	

OIL CONSERVATION COMM. Santa Fe SEP 29 1999 RECEIVED

Form 9-331 C
(May 1963)

Drawer DD

(Other instructions on reverse side)

Budget Bureau No. 42-R1425.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

30-015-20894

5. LEASE DESIGNATION AND SERIAL NO.: NM-6852

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: Chukka Federal

9. WELL NO.: 2

10. FIELD AND POOL, OR WILDCAT: ~~Wildcat~~ Artesia ~~Oil Pool~~

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 12, T-18-S, R-27-E

12. COUNTY OR PARISH: Eddy

13. STATE: NM

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

a. TYPE OF WORK: DRILL [X] DEEPEN [ ] PLUG BACK [ ]

b. TYPE OF WELL: OIL WELL [X] GAS WELL [ ] OTHER Re-entry SINGLE ZONE [X] MULTIPLE ZONE [ ]

2. NAME OF OPERATOR: Fred Pool Drilling, Inc.

3. ADDRESS OF OPERATOR: P. O. Box 1393, Roswell, N.M. 88201

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface: 1980' FNL & 660' FWL (Unit E)
At proposed prod. zone: (SW¼NW¼)

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*: 11 air miles east-southeast of Artesia, N.M.

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any)	16. NO. OF ACRES IN LEASE	17. NO. OF ACRES ASSIGNED TO THIS WELL
660'	160	40
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.	**19. PROPOSED DEPTH**	**20. ROTARY OR CABLE TOOLS**
1650'	1945'	Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.): 3607 GR

22. APPROX. DATE WORK WILL START*: 8-31-85

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
~~11"~~ 12¼" plug	8 5/8"	32#	2000	Circ.

This is a re-entry of Diamond Fed. Gas Com #1 plugged and abandoned 8-31-73.

OTD: 10,372

Attached are:
1) Well location & acreage dedication plat
2) Supplemental drilling data
3) Surface use plan
4) Designation of operator
5) Original approved application by Amoco Production Co. for Diamond Federal Gas Com #1

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.

SIGNED Fred Pool Jr. TITLE President DATE 8-16-85

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

APPROVED BY _____ TITLE _____ DATE 8-29-85

CONDITIONS OF APPROVAL, IF ANY:

APPROVAL SUBJECT TO GENERAL REQUIREMENTS AND SPECIAL STIPULATIONS

*See Instructions On Reverse Side

OIL CONSERVATION DIVISIC

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

Form C-102
Revised 10-1-78

All distances must be from the outer boundaries of the Section.

Operator	Lease	Well No.
Fred Pool Drilling, Inc.	Chukka Federal	2

Unit Letter	Section	Township	Range	County
E	12	18-S	27-E	Eddy

Actual Footage Location of Well:
1980 feet from the North line and 660 feet from the West line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage
3607		Artesia	40 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

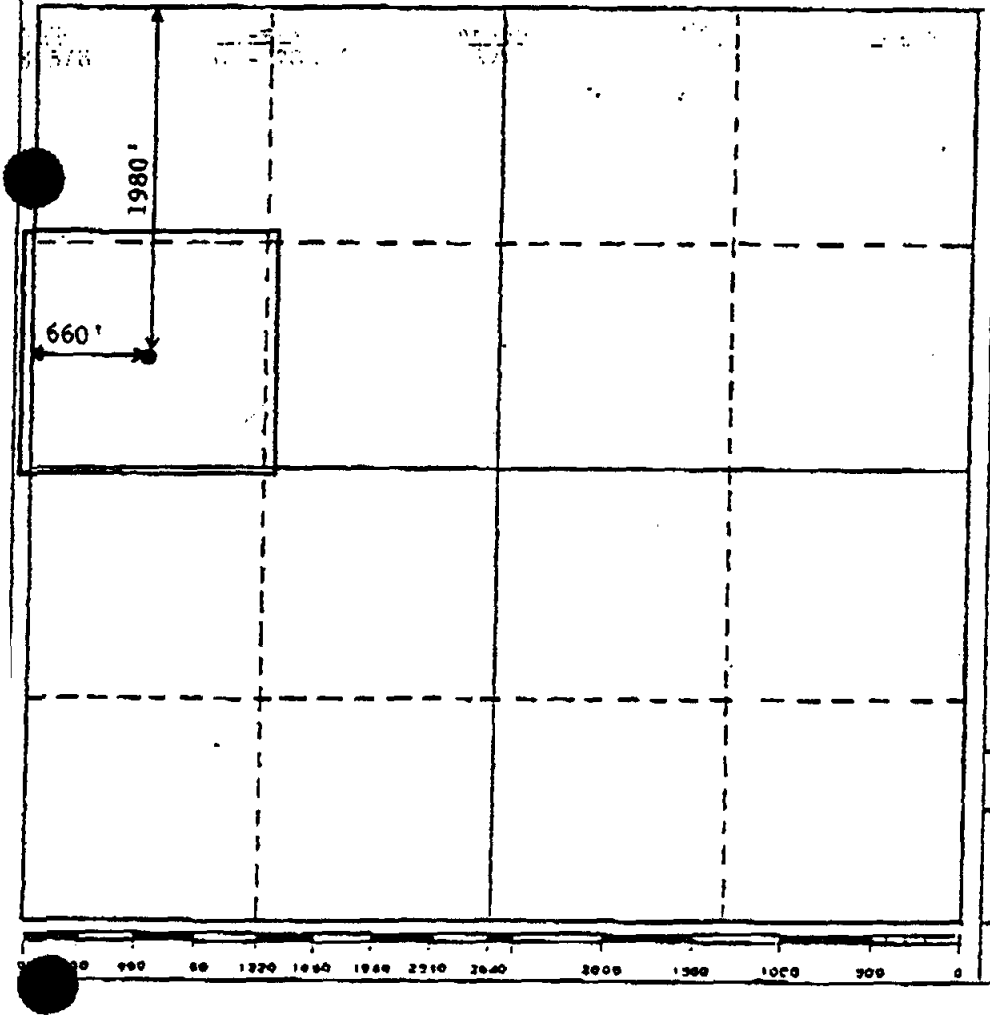
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling. etc?

☐ Yes ☒ No If answer is "yes," type of consolidation _____

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Division.



CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Name: Fred Pool

Position: President

Company: Fred Pool Drilling, Inc.

Date: 8-16-85

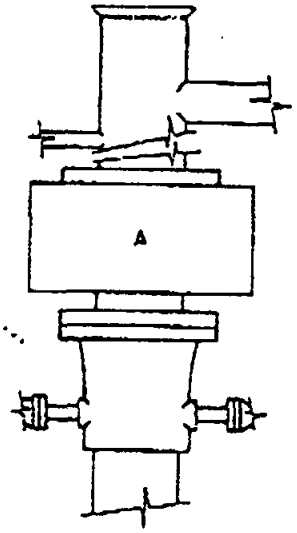
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed

Registered Professional Engineer and/or Land Surveyor

Certificate No.

BLOWOUT PREVENTER ARRANGEMENT
FRED POOL DRILLING, INC.
WELL #2 CHUKKA FEDERAL
SW¼NW¼, Sec. 12, T-18-S, R-27-E
EDDY COUNTY, NEW MEXICO



ARRANGEMENT A

SURFACE USE PLAN

FOR

DRILLING, COMPLETING AND PRODUCING

FRED POOL DRILLING, INC.
WELL #2 CHUKKA FEDERAL
SW¼NW¼, Sec. 12: T-18-S, R-27-E
EDDY COUNTY, NEW MEXICO

LOCATION:	11 air miles east-southeast of Artesia, New Mexico
OIL & GAS LEASE:	NM-6852
RECORD LESSEE:	Don Benscoter
OPERATORS AUTHORITY:	Designation of Operator from lessee.
BOND COVERAGE:	
ACRES IN LEASE:	160 acres
SURFACE OWNER:	U. S. Government with a grazing permit issued to Bogle Farms, P. O. Box 358, Dexter, N.M. 88230
WELL SPACING:	40-acre (Artesia Oil Pool)
EXHIBITS:	A. County Road Map B. Topographic Map C. Oil & Gas Map D. Sketch of Well Pad

THIRTEEN POINT PROGRAM

1. EXISTING ROADS: Existing roads, which lead to the proposed drillsite are shown on Exhibit "A".

2. PROPOSED NEW ROAD: No new road is proposed.

3. LOCATION OF EXISTING WELLS: Existing wells in the vacinity of the proposed drillsite are shown and Exhibit "C".

4. LOCATION OF EXISTING AND/OR PROPOSED FACILITIES:

   A. This is a producing lease and there are production facilities at the Chukka Federal #1 2310' FNL & 2310' FWL.

   B. If the well is productive, production and storage will be located at the Chukka Federal #1 2310' FNL & 2310' FWL.

5. LOCATION AND TYPE OF WATER SUPPLY: It is not planned to drill a water supply well. Water for leasehold operations will be purchased from a commercial water hauler.

6. SOURCE OF CONSTRUCTION MATERIALS: Materials needed for construction of the proposed location are at the location. This is a re-entry.

7. METHODS OF HANDLING WASTE DISPOSAL:

   A. Drill cuttings will be disposed of in the drilling pits.

   B. Drilling fluids will be allowed to evaporate in the drilling pits until the pits are dry.

   C. Water produced during tests will be disposed of in the drilling pits.

   D. Oil produced during tests will be stored in test tanks until sold.

   E. Trash, waste paper, garbage, and junk will be buried in a trash pit and covered with a minimum of 24 inches of dirt. All waste material will be contained to prevent scattering by the wind. Location of the trash pit is shown on Exhibit "D".

   F. All trash and debris will be buried or removed from the wellsite within 45 days after finishing drilling and/or completion operations.

8. AUXILLIARY FACILITIES: None anticipated.

9. WELLSITE LAYOUT:

A. The wellsite has been surveyed and a 400' x 400' area has been staked and flagged.

B. Due to the natural contour of the drillsite, the well pad and reserve pit will be rotated 90°. The dimensions and relative location of the drill pad, mud pit, and trash pit with respect to the well bore are shown on Exhibit "D".

C. The well pad wil be surfaced with material found in place.

10. PLANS FOR RESTORATION OF SURFACE:

A. After completion of drilling and/or completion operations, all equipment and other material not needed for operations will be removed. Pits will be filled and the location cleaned of all trash and junk to leave the wellsite in as aesthetically pleasing condition as possible.

B. Any unguarded pits containing fluids will be fenced until they are filled.

C. After abandonment, all equipment, trash and junk will be removed and the location cleaned.

11. OTHER INFORMATION:

A. Topography: The undisturbed wellsite is at an elevation of 3607 feet and is situated on the southwest slope of a gentle hill. Regional slope is to the southwest toward the Pecos River.

B. Soil: Top soil at the wellsite is gyppy loam.

C. Land Type & Use: The vacinity surrounding the drillsite is semi-arid rangeland and its primary use is for grazing and for the production of oil and gas.

D. Flora: Vegetative cover is sparse. Flora consists primarily of broomweed and grass interspersed with greasewood, javalena and desert weeds.

E. Fauna: No wildlife was observed, however fauna for this type of habitat normally consists of lizards, snakes, rabbits, rodents, quail, dove and other small birds.

F. Ponds & Streams: None.

G. Water Wells: Nearest water well is 1½ miles to the southeast.

H. Residences & Other Structures: Nearest occupied dwelling is 1½ miles to the north-northwest.

I. Archaeological, Historical & Cultural Sites: An archaeological survey has been made by Archaeological Survey Consultants, P. O. Box D, Roswell, New Mexico 88201.

12. OPERATOR'S REPRESENTATIVE: Representative responsible for assuring compliance with the approved Surface Use Plan:

Fred Pool, Jr.
P. O. Box 1393
Roswell, N.M. 88201
Office Phone (505)623-8202
Home Phone (505)653-4137

13. CERTIFICATION:

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drillsite and access route; that I am familiar with the conditions which presently exist; that the statements made in this plan are, to the best of my knowledge true and correct; and, that the work associated with the operations proposed herein will be performed by FRED POOL DRILLING, INC. and its sub-contractors in conformity with this plan and the terms and conditions under which it is approved.

8-16-85
Date

Fred Pool, Jr.
President
FRED POOL DRILLING, INC.

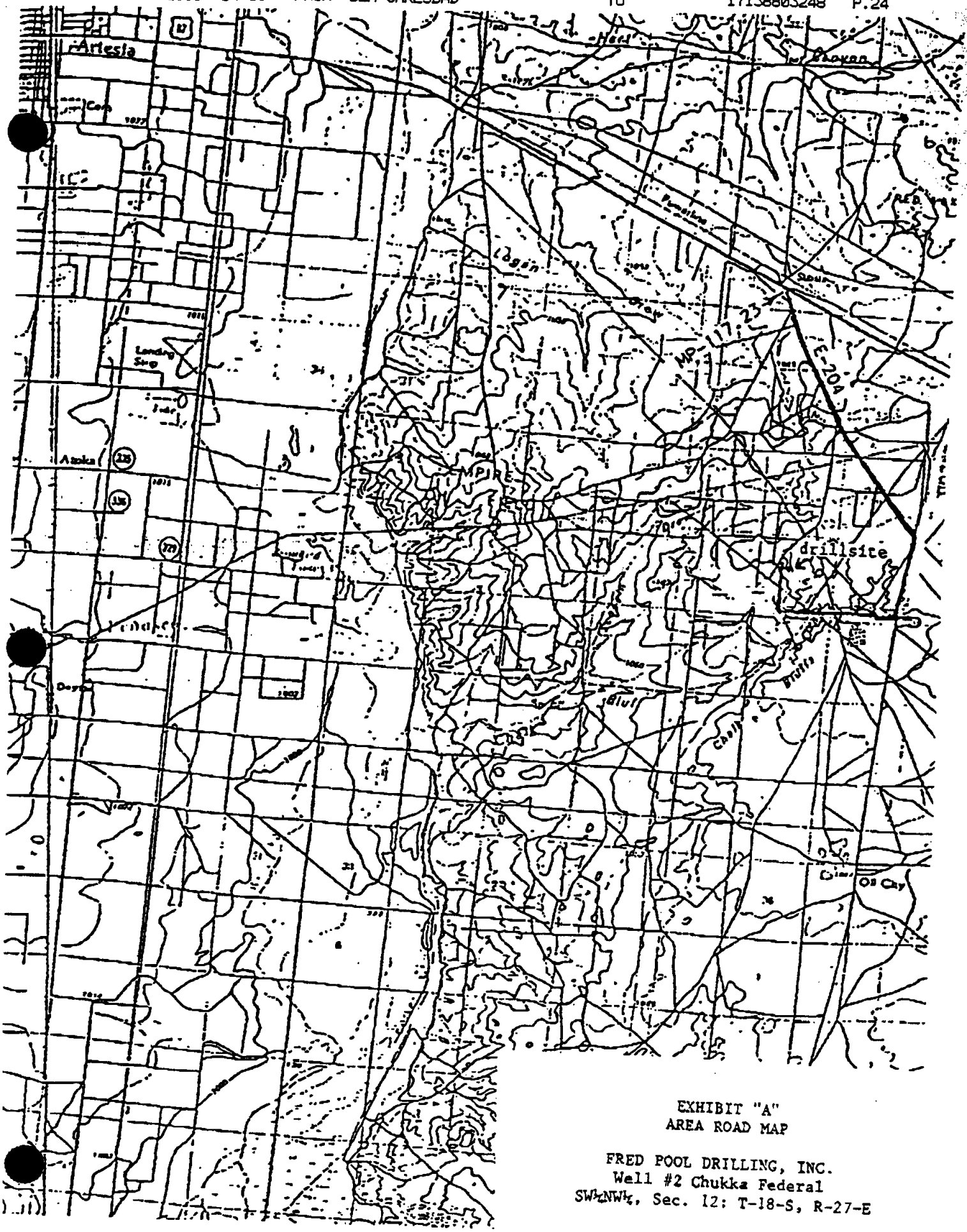


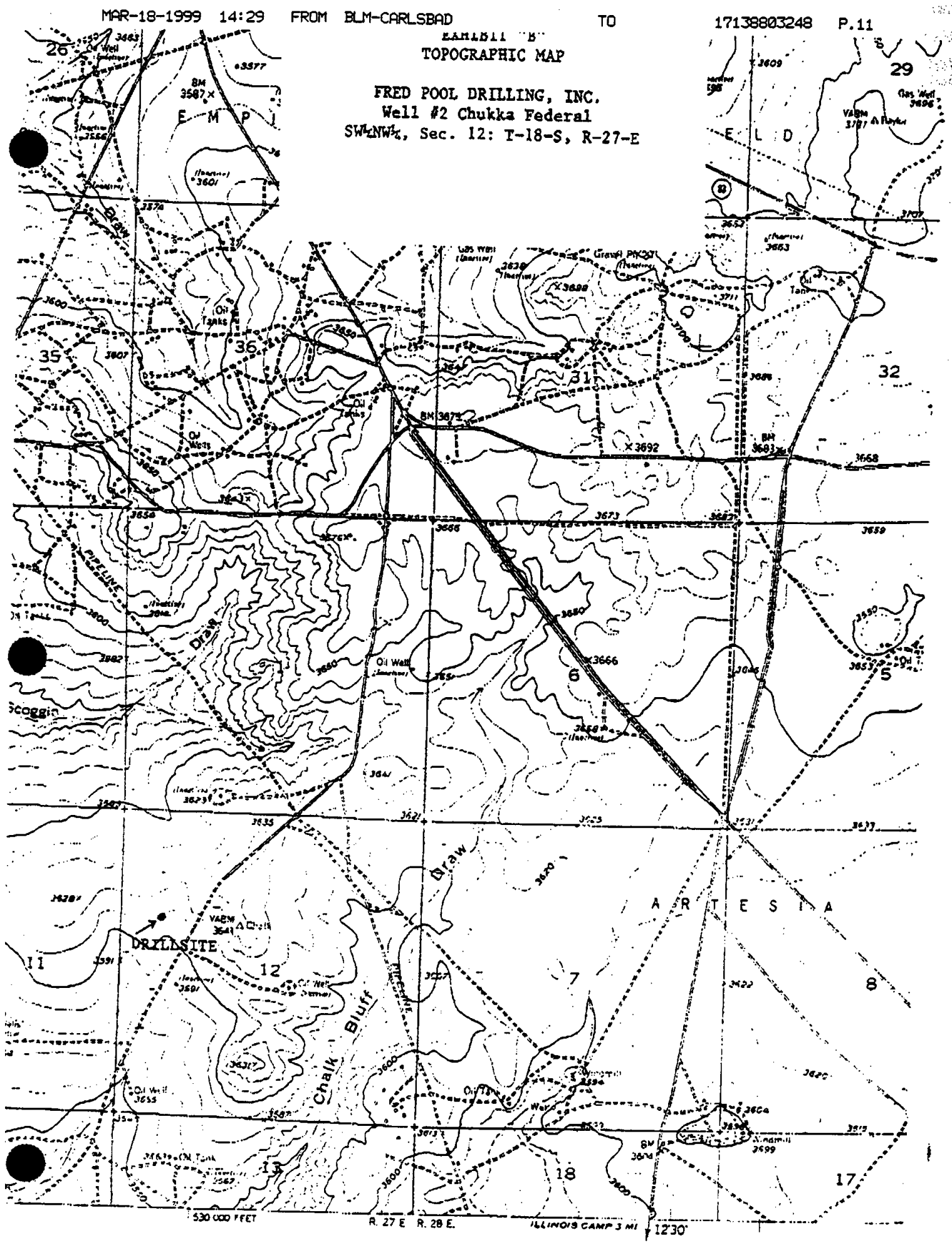
EXHIBIT "A"
AREA ROAD MAP

FRED POOL DRILLING, INC.
Well #2 Chukka Federal
SW¼NW¼, Sec. 12: T-18-S, R-27-E

EXHIBIT "B"

TOPOGRAPHIC MAP

FRED POOL DRILLING, INC.
Well #2 Chukka Federal
SW¼NW¼, Sec. 12: T-18-S, R-27-E



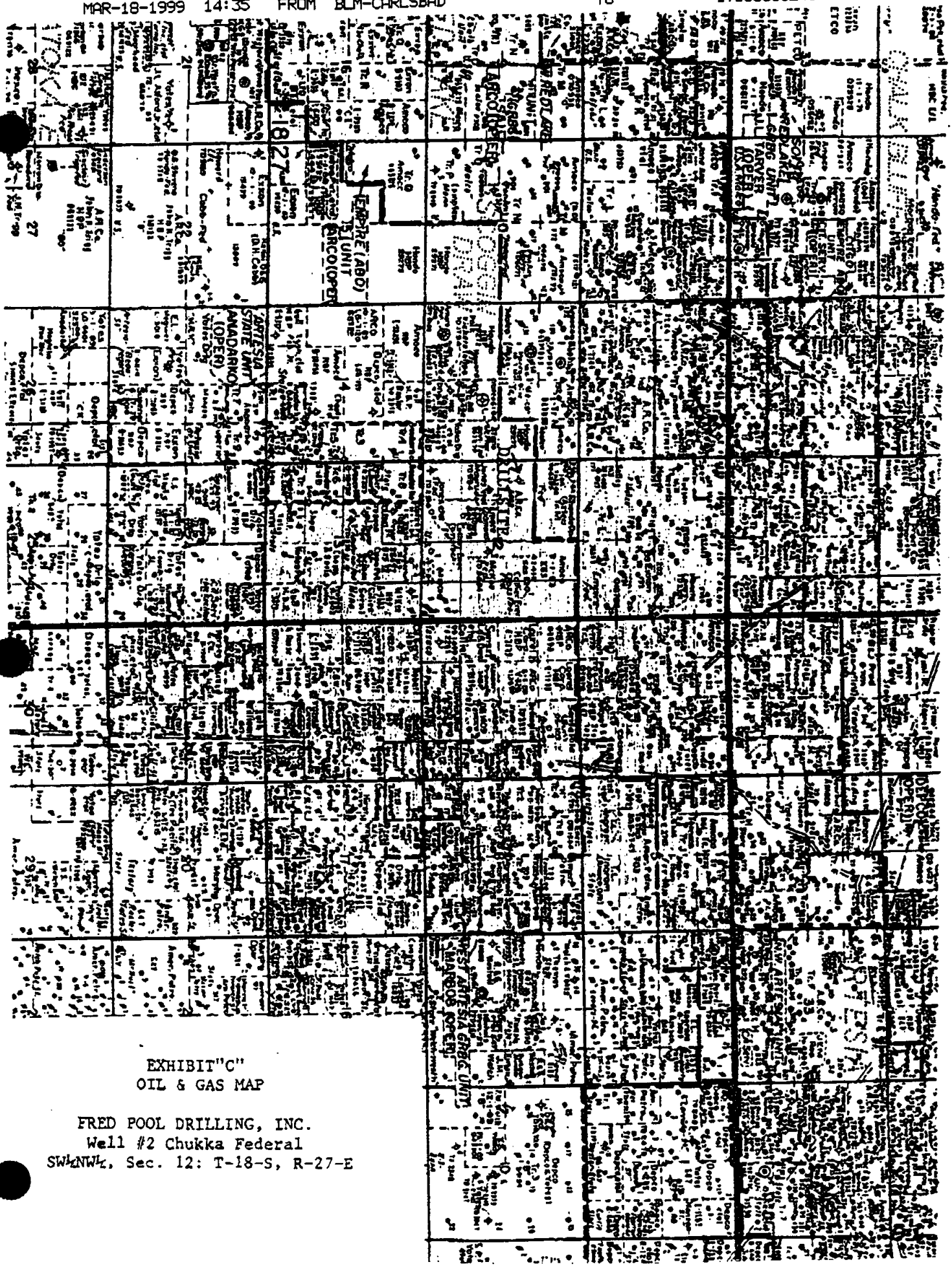


EXHIBIT "C"
OIL & GAS MAP

FRED POOL DRILLING, INC.
Well #2 Chukka Federal
SW¼NW¼, Sec. 12: T-18-S, R-27-E

SECTION PLATS Form 2

Scale 1" to 800'

SECTION 12 TOWNSHIP 18-S RANGE 27-E

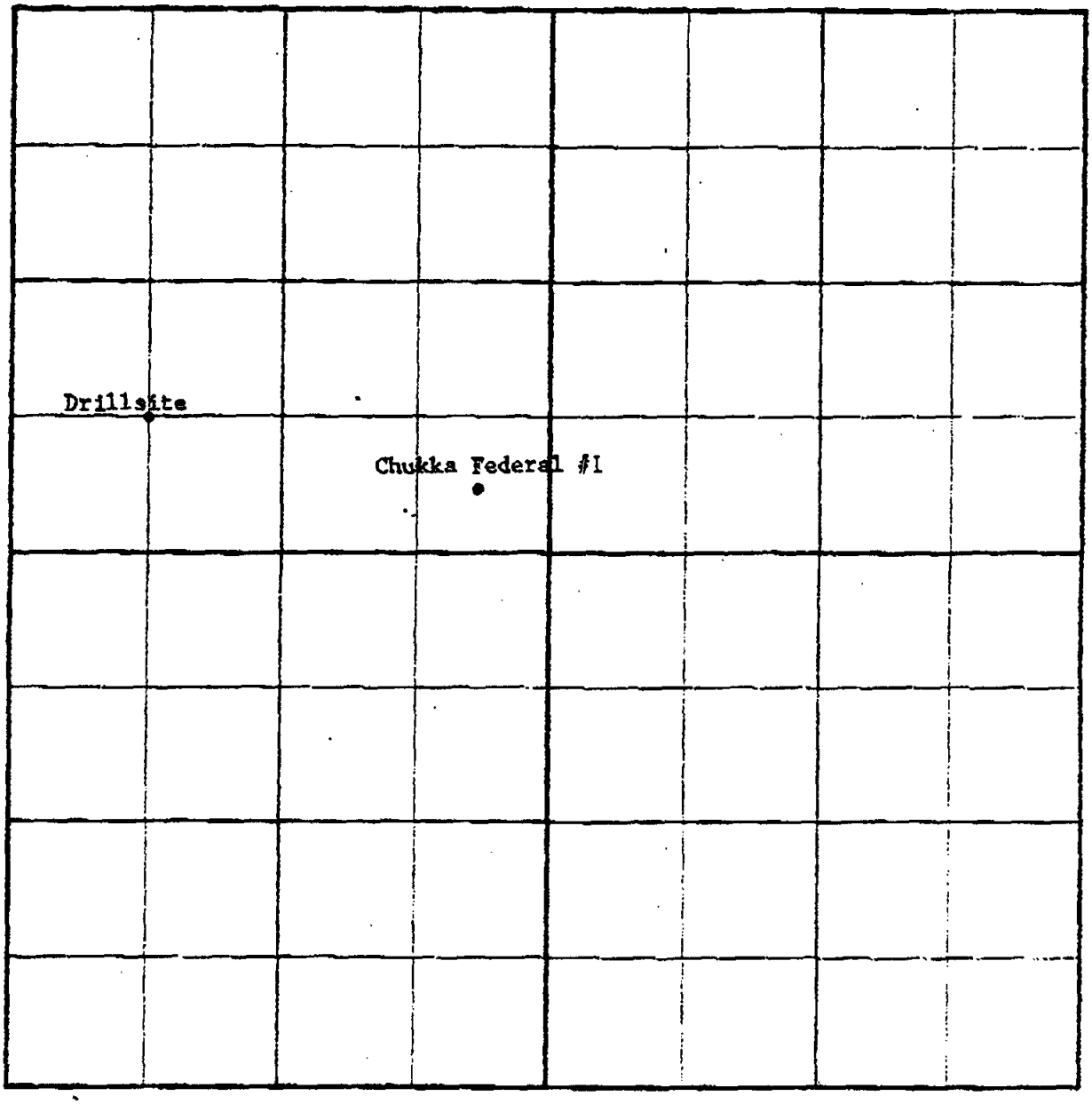
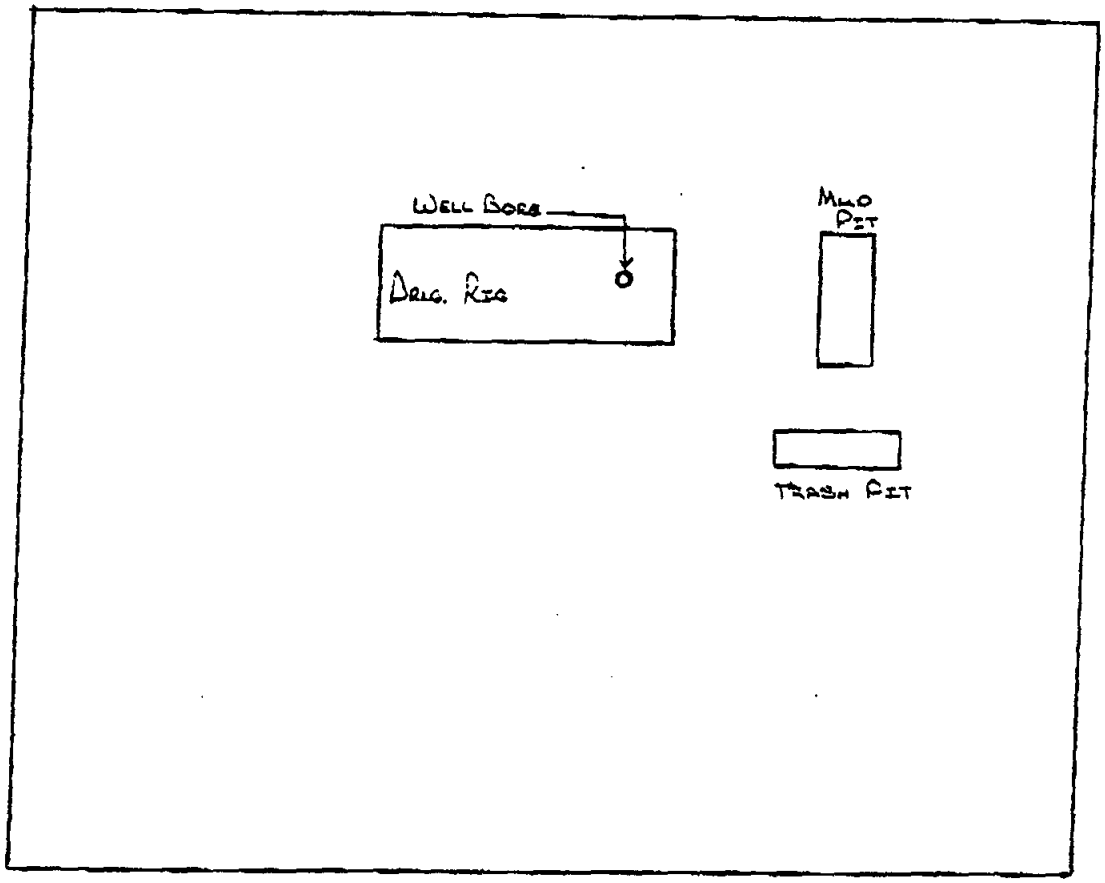


EXHIBIT "C1"
WELL LOCATION MAP

FRED POOL DRILLING, INC.
Well #2 Chukka Federal
SW¼NW¼, Sec. 12: T-18-S, R-27-E

EXHIBIT "D"
SKETCH OF WELL PAD

FRED POOL DRILLING, INC.
Well #2 Chukka Federal
SW¼NW¼, Sec. 12: T-18-S, R-27-E



Form 3160-8
(November 1983)
(Formerly 9-1123)

(Submit in triplicate to appropriate BLM District Office)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

DESIGNATION OF OPERATOR

The undersigned is, on the records of the Bureau of Land Management, holder of lease

STATE OFFICE: /
SERIAL NO.: NM 6852

and hereby designates

NAME: Fred Pool, Jr.
ADDRESS: P. O. Box 1393
Roswell, New Mexico 88201

as his operator and local agent, with full authority to act in his behalf in complying with the terms of the lease and regulations applicable thereto and on whom the authorized officer may serve written or oral instructions in securing compliance with the Operating Regulations (43 CFR 3160) with respect to (describe acreage to which this designation is applicable):

SW¼NW¼ Section 12, Township 18 South, Range 27 East, limited to a subsurface depth of 3500 feet.

It is understood that this designation of operator does not relieve the lessee of responsibility for compliance with the terms of the lease and the Operating Regulations. It is also understood that this designation of operator does not constitute an assignment of any interest in the lease.

In case of default on the part of the designated operator, the lessee will make full and prompt compliance with all regulations, lease terms, or orders of the Secretary of the Interior or his representative.

The lessee agrees promptly to notify the authorized officer of any change in the designated operator.

Don L Benscoter
(Signature of lessee)
Don L. Benscoter

August 6, 1985
(Date)

6105 East Sage Drive
(Address)
Scottsdale, Arizona 85253

This form does not constitute an information collection as defined by 44 U.S.C. 3502 and thereto does not require OMB approval.

* U.S. Government Printing Office: 1985-776-009/4704 R6

Form 9-331
(May 1963)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1424.

5. LEASE DESIGNATION AND SERIAL NO.: NM 6852

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL [X] GAS WELL [ ] OTHER

SEP 11 1985
O. C. D.
ARTESIA, OFFICE

7. UNIT AGREEMENT NAME:

2. NAME OF OPERATOR: FRED POOL DRILLING, INC.

8. FARM OR LEASE NAME: Chukka Federal

3. ADDRESS OF OPERATOR: P.O.Box 1393 Roswell, N.M. 88201

9. WELL NO.: 2

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface

1980 FNL 660 FWL
Unit E SW¼ NW¼

10. FIELD AND POOL, OR WILDCAT: ~~Wildcat~~ Artesia ~~Oil Pool~~

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec.12-T 18S- R 27E

14. PERMIT NO.	15. ELEVATIONS (Show whether DF, RT, GR, etc.)	12. COUNTY OR PARISH	13. STATE
	3607 GR	Eddy	NM

16. **Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data**

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	[ ]	PULL OR ALTER CASING	[ ]	WATER SHUT-OFF	[ ]	REPAIRING WELL	[ ]
FRACTURE TREAT	[ ]	MULTIPLE COMPLETE	[ ]	FRACTURE TREATMENT	[ ]	ALTERING CASING	[ ]
SHOOT OR ACIDIZE	[ ]	ABANDON*	[ ]	SHOOTING OR ACIDIZING	[ ]	ABANDONMENT*	[ ]
REPAIR WELL	[ ]	CHANGE PLANS	[ ]	(Other)			
(Other)				(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.) *

9-5-85: Drilled cement out of surface from 0-30 ft.
Stringers of cement to 50 ft.
Tagged No. 2 plug at 1912 ft. Pulled tubing back to 1804 ft.; circulated hole with fresh water.
Preparing to log and perforate well.

SEP 09 1985

18. I hereby certify that the foregoing is true and correct

SIGNED Senta Sosa TITLE Clerk DATE 9-6-85

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

SEP 10 1985

*See Instructions on Reverse Side

Form 3-331
(May 1963)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Artesia, NM 88210

Form approved.
Budget Bureau No. 42-R1424.

5. LEASE DESIGNATION AND SERIAL NO.: NM 6852

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

OIL WELL [X] GAS WELL [ ] OTHER re-entry

SEP 18 1985

O. C. D.

7. UNIT AGREEMENT NAME:

2. NAME OF OPERATOR: Fred Pool Drilling, Inc.

8. FARM OR LEASE NAME: Chukka Federal

3. ADDRESS OF OPERATOR: P.O.Box 1393 Roswell, N.M. 88201

9. WELL NO.: 2

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.)
At surface
1980 FNL 660 FWL Unit E
SW¼ NW¼

10. FIELD AND POOL, OR WILDCAT: Artesia Oil Pool

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec, 12-T18S-R27E

14. PERMIT NO.: 3001520894

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 3607 GR

12. COUNTY OR PARISH: Eddy

13. STATE: NM,

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	[ ]	PULL OR ALTER CASING	[ ]	WATER SHUT-OFF	[ ]	REPAIRING WELL	[ ]
FRACTURE TREAT	[ ]	MULTIPLE COMPLETE	[ ]	FRACTURE TREATMENT	[ ]	ALTERING CASING	[ ]
SHOOT OR ACIDIZE	[ ]	ABANDON*	[ ]	SHOOTING OR ACIDIZING	[X]	ABANDONMENT*	[ ]
REPAIR WELL	[ ]	CHANGE PLANS	[ ]	(Other)			
(Other)	[ ]			(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.) *

September 8,1985

Perforations: 1446-56 ft. and 1459-62
14 shots.
Acidized with 1000 gallons NE 15%; and30,000 gallons Versagel; 30,000# 20/40 sand and 12,000 # 10/20 sand.

Pumping well back to test.

SEP 23 1985

18. I hereby certify that the foregoing is true and correct

SIGNED Peter Pool TITLE Vice - president DATE 9-11-85

(This space for Federal or State office use)

APPROVED BY ACCEPTED FOR RECORD TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

SEP 16 1985

*See Instructions on Reverse Side

Form 9-330
(Rev. 5-63)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN DUPLICATE* (See other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R355.5.

5. LEASE DESIGNATION AND SERIAL NO.: NM 6852

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: Chukka Federal

9. WELL NO.: 2

10. FIELD AND POOL, OR WILDCAT: Artesia ~~Oil Pool~~

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: Sec. 12-T18S-R27E

12. COUNTY OR PARISH: Eddy

13. STATE: NM

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

1a. TYPE OF WELL: OIL WELL [X] GAS WELL [ ] DRY [ ] Other RE-entry

b. TYPE OF COMPLETION: NEW WELL [X] WORK OVER [ ] DEEP-EN [ ] PLUG BACK [ ] DIFF. RESVR. [ ] Other

2. NAME OF OPERATOR: Fred Pool Drilling, Inc. ✓

3. ADDRESS OF OPERATOR: P.O.Box 1393 Roswell, N.M.88201

4. LOCATION OF WELL (*Report location clearly and in accordance with any State requirements*)*
At surface 1980 FNL660 FWL SW¼ NW¼ Unit E
At top prod. interval reported below 1446- ft.
At total depth 1912 ft.

14. PERMIT NO.: 3001520894 | DATE ISSUED: 9-30-85

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (*Ready to prod.*)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
8-30-85	9-6-85	9-10-85	3607 GR	3607 GR

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
1912 ft.	1912 ft		→	x	

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*
1446-1462 ft.
Penrose

25. WAS DIRECTIONAL SURVEY MADE: No

26. TYPE ELECTRIC AND OTHER LOGS RUN: Compensated Neutron

27. WAS WELL CORED: no

28. CASING RECORD (*Report all strings set in well*)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
8 5/8	32#	2000	11"	circulated	0

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2 3/8	1804 ft.	

31. PERFORATION RECORD (*Interval, size and number*)
1446-56 ft.
1459-62 ft. 14 holes

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
1446-56	1000 gal. NE 15%, 30,000
1459-62	gal. Versagel; 30,000 #
	20/40 sand; 12,000# 10/20
	sand.

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (*Flowing, gas lift, pumping—size and type of pump*)	WELL STATUS (*Producing or shut-in*)
9-12-85	Pumping	Producing

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
9-12-85	24	none		31	TSTM	0	

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)
40#	40#		31	TSTM	0	35

34. DISPOSITION OF GAS (*Sold, used for fuel, vented, etc.*): vented

TEST WITNESSED BY: Fred Pool, Jr.

35. LIST OF ATTACHMENTS: Compensated Neutron log, mailed 9-10-85

SEP 19 1985

I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED Fred Pool TITLE Vice President DATE 9-13-85

*(See Instructions and Spaces for Additional Data on Reverse Side)

INSTRUCTIONS

General: This form is designed for submitting a complete and correct well completion report and log on all types of lands and leases to either a Federal agency or a State agency, or both, pursuant to applicable Federal and/or State laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from, the local Federal and/or State office. See instructions on items 22 and 24, and 33, below regarding separate reports for separate completions.

If not filed prior to the time this summary record is submitted, copies of all currently available logs (drillers, geologists, sample and core analysis, all types electric, etc.), formation and pressure tests, and directional surveys, should be attached hereto, to the extent required by applicable Federal and/or State laws and regulations. All attachments should be listed on this form, see item 35.

Item 4: If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local State or Federal office for specific instructions.

Item 18: Indicate which elevation is used as reference (where not otherwise shown) for depth measurements given in other spaces on this form and in any attachments.

Items 22 and 24: If this well is completed for separate production from more than one interval zone (multiple completion), so state in item 22, and in item 24 show the producing interval, or intervals, top(s), bottom(s) and name(s) (if any) for only the interval reported in item 33. Submit a separate report (page) on this form, adequately identified, for each additional interval to be separately produced, showing the additional data pertinent to such interval.

Item 29: "*Sacks Cement*": Attached supplemental records for this well should show the details of any multiple stage cementing and the location of the cementing tool.

Item 33: Submit a separate completion report on this form for each interval to be separately produced. (See instruction for items 22 and 24 above.)

37. SUMMARY OF POROUS ZONES:
SHOW ALL IMPORTANT ZONES OF POROSITY AND CONTENTS THEREOF; CORED INTERVALS; AND ALL DRILL-STEM TESTS, INCLUDING DEPTH INTERVAL TESTED, CUSHION USED, TIME TOOL OPEN, FLOWING AND SHUT-IN PRESSURES, AND RECOVERIES

FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.
	0	65	Caliche and red bed
	65	1100	Salt, red bed and anhydrite
	1100	1365	Dolomite and anhydrite
Queen & Grayburg	1365	1570	Sand dolomite
TD	1570	1912	dolomite

38. GEOLOGIC MARKERS

NAME	TOP MEAS. DEPTH	TOP TRUE VERT. DEPTH

(Formerly 9-331) DEPARTMENT OF THE INTERIOR (verso side)
BUREAU OF LAND MANAGEMENT

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

5. LEASE DESIGNATION AND SERIAL NO.: NM 6852
6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
7. UNIT AGREEMENT NAME:
8. FARM OR LEASE NAME: CHUKKA FEDERAL
9. WELL NO.: 2
10. FIELD AND POOL, OR WILDCAT: ARTESIA Q-G-SA
11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: SEC. 12, TWP 18S, RGE. 27E
12. COUNTY OR PARISH: EDDY
13. STATE: NM

1. OIL WELL [X] GAS WELL [ ] OTHER
2. NAME OF OPERATOR: THE EASTLAND OIL COMPANY
3. ADDRESS OF OPERATOR: P. O. DRAWER 3488, MIDLAND, TX 79702
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: UNIT LETTER E, 1980 FT. FNL AND 660 FWL, SECTION 12, TS 18S, RG. 27E, EDDY CO., NM
14. PERMIT NO.: 30-015-20894
15. ELEVATIONS (Show whether DF, RT, GR, etc.)

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	[ ]	PULL OR ALTER CASING	[ ]	WATER SHUT-OFF	[ ]	REPAIRING WELL	[ ]
FRACTURE TREAT	[ ]	MULTIPLE COMPLETE	[ ]	FRACTURE TREATMENT	[ ]	ALTERING CASING	[ ]
SHOOT OR ACIDIZE	[ ]	ABANDON*	[ ]	SHOOTING OR ACIDIZING	[ ]	ABANDONMENT*	[ ]
REPAIR WELL	[ ]	CHANGE PLANS	[ ]	(Other) CHANGE OF OPERATOR			[X]
(Other)				(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

LEASE PURCHASED FROM FRED POOL DRILLING, INC. 09/01/90.

RECEIVED
Oct 17 11 09 AM '90
CARLSBAD, NEW MEXICO AREA

18. I hereby certify that the foregoing is true and correct
SIGNED Travis Leek TITLE PRODUCTION SUPERINTENDENT DATE 10/11/90

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

GY AND MINERALS DEPARTMENT

NO. OF COPIES RECEIVED		
DISTRIBUTION		
SANTA FE	✓	
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U.S.G.S.		
LAND OFFICE		
TRANSPORTER OIL	✓	
TRANSPORTER GAS	✓	
OPERATOR	✓	
PRORATION OFFICE		

Operator

OIL CONSERVATION DIVISION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

Form C-104
Revised 10-1-78

AQ

REQUEST FOR ALLOWABLE
AND
AUTHORIZATION TO TRANSPORT OIL AND NATURAL GAS

Fred Pool Drilling, Inc.
Address

P O Box 1393 Roswell, N.M. 88201
Reason(s) for filing (Check proper box)

New Well [X] Re-entry
Recompletion [ ]
Change in Ownership [ ]

Change in Transporter of:
Oil [ ] Dry Gas [ ]
Casinghead Gas [ ] Condensate [ ]

Other (Please explain)
CASINGHEAD GAS MUST NOT BE
[illegible] 10-24-85
[illegible] AN EXCEPTION FROM
[illegible] IS OBTAINED

If change of ownership give name and address of previous owner

DESCRIPTION OF WELL AND LEASE

Lease Name	Well No.	Pool Name, Including Formation	Kind of Lease	Lease
Chukka Federal	2	Artesia ~~Oil Pool~~	State, Federal or Fee Federal	6852

Location

Unit Letter E : 1980 Feet From The North Line and 660 Feet From The West

Line of Section 12 Township 18S Range 27E , NMPM, Eddy County

DESIGNATION OF TRANSPORTER OF OIL AND NATURAL GAS

Name of Authorized Transporter of Oil [X] or Condensate [ ]	Address (Give address to which approved copy of this form is to be sent)
Navajo Crude Oil Purchasing	Box 159 Artesia, N.M. 88210
Name of Authorized Transporter of Casinghead Gas [X] or Dry Gas [ ]	Address (Give address to which approved copy of this form is to be sent)
Phillips Petroleum	Bartlesville, Okla.

If well produces oil or liquids, give location of tanks.	Unit	Sec.	Twp.	Rge.	Is gas actually connected?	When
	E	12	18S	27E	no	

If this production is commingled with that from any other lease or pool, give commingling order number:

COMPLETION DATA

Designate Type of Completion – (X)	Oil Well	Gas Well	New Well	Workover	Deepen	Plug Back	Same Res'v.	Diff. Res'v.
	X			X				X

Date Spudded	Date Compl. Ready to Prod.	Total Depth	P.B.T.D.
8-30-85	9-10-85	1912 ft.	1912 ft.
Elevations (DF, RKB, RT, GR, etc.)	**Name of Producing Formation**	**Top Oil/Gas Pay**	**Tubing Depth**
GR 3607	Penrose	1446 ft.	1804
Perforations 1446-56 1459-62			**Depth Casing Shoe** –

TUBING, CASING, AND CEMENTING RECORD

HOLE SIZE	CASING & TUBING SIZE	DEPTH SET	SACKS CEMENT
11"	8 5/8	[illegible]	[illegible]
	2 3/8	1804	

Post ID-2
9-27-85

TEST DATA AND REQUEST FOR ALLOWABLE (Test must be after recovery of total volume of load oil and must be equal to or exceed top allowable for this depth or be for full 24 hours)

OIL WELL

Date First New Oil Run To Tanks	Date of Test	Producing Method (Flow, pump, gas lift, etc.)
9-12-85	9-12-85	pumping

Length of Test	Tubing Pressure	Casing Pressure	Choke Size
24 hrs.	40#	40#	none

Actual Prod. During Test	Oil-Bbls.	Water-Bbls.	Gas-MCF
31 bbls	31	0	TSTM

GAS WELL

Actual Prod. Test-MCF/D	Length of Test	Bbls. Condensate/MMCF	Gravity of Condensate
TSTM	24hrs.	TSTM	–
Testing Method (pitot, back pr.)	**Tubing Pressure (Shut-in)**	**Casing Pressure (Shut-in)**	**Choke Size**
			none

CERTIFICATE OF COMPLIANCE

I hereby certify that the rules and regulations of the Oil Conservation Division have been complied with and that the information given above is true and complete to the best of my knowledge and belief.

Dewitt Pool
(Signature)
Vice President
(Title)
9-16-85
(Date)

OIL CONSERVATION DIVISION

APPROVED SEP 24 1985, 19

BY Original Signed By
Les A. Clements

TITLE Supervisor District II

This form is to be filed in compliance with RULE 1104.

If this is a request for allowable for a newly drilled or deepened well, this form must be accompanied by a tabulation of the deviation tests taken on the well in accordance with RULE 111.

All sections of this form must be filled out completely for allowable on new and recompleted wells.

Fill out only Sections I, II, III, and VI for changes of well name or number, or transporter, or other such change of condition. Separate Form C-104 must be filed for each pool in

Submit 5 Copies
Appropriate District Office
DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

RECEIVED
OCT 18 '90
O. C. D.
ARTESIA, OFFICE

Form C-104
Revised 1-1-89
See Instructions
at Bottom of Page

I. REQUEST FOR ALLOWABLE AND AUTHORIZATION TO TRANSPORT OIL AND NATURAL GAS

Operator	Well API No.
THE EASTLAND OIL COMPANY	30-015-20894

Address: P. O. DRAWER 3488, MIDLAND, TEXAS 79702

Reason(s) for Filing (Check proper box)

New Well	☐	Change in Transporter of:	
Recompletion	☐	Oil ☐ Dry Gas ☐	
Change in Operator	☒	Casinghead Gas ☐ Condensate ☐	EFFECTIVE 09/01/90

Other (Please explain)

If change of operator give name and address of previous operator: FRED POOL DRILLING, INC., P. O. DRAWER 1393, ROSWELL, NM 88201

II. DESCRIPTION OF WELL AND LEASE

Lease Name	Well No.	Pool Name, Including Formation	Kind of Lease (State, Federal or Fee)	Lease No.
CHUKKA FEDERAL	2	ARTESIA Q-G-SA		6852

Location: Unit Letter E : 1980 Feet From The North Line and 660 Feet From The West Line

Section 12 Township 18S Range 27E NMPM, EDDY County

III. DESIGNATION OF TRANSPORTER OF OIL AND NATURAL GAS

Name of Authorized Transporter of Oil or Condensate	Address (Give address to which approved copy of this form is to be sent)
NAVAJO CRUDE OIL PURCHASING ☒	BOX 159, ARTESIA, NM 88210
Name of Authorized Transporter of Casinghead Gas or Dry Gas	Address (Give address to which approved copy of this form is to be sent)
PHILLIPS PETROLEUM ☒	BARTLESVILLE, OK

If well produces oil or liquids, give location of tanks.	Unit	Sec.	Twp.	Rge.	Is gas actually connected?	When ?
	E	12	18S	27E	NO	

If this production is commingled with that from any other lease or pool, give commingling order number:

IV. COMPLETION DATA

Designate Type of Completion - (X)	Oil Well	Gas Well	New Well	Workover	Deepen	Plug Back	Same Res'v	Diff Res'v

Date Spudded	Date Compl. Ready to Prod.	Total Depth	P.B.T.D.
Elevations (DF, RKB, RT, GR, etc.)	Name of Producing Formation	Top Oil/Gas Pay	Tubing Depth
Perforations			Depth Casing Shoe

TUBING, CASING AND CEMENTING RECORD

HOLE SIZE	CASING & TUBING SIZE	DEPTH SET	SACKS CEMENT

V. TEST DATA AND REQUEST FOR ALLOWABLE

OIL WELL (Test must be after recovery of total volume of load oil and must be equal to or exceed top allowable for this depth or be for full 24 hours)

Date First New Oil Run To Tank	Date of Test	Producing Method (Flow, pump, gas lift, etc.)	
Length of Test	Tubing Pressure	Casing Pressure	Choke Size
Actual Prod. During Test	Oil - Bbls.	Water - Bbls.	Gas- MCF

GAS WELL

Actual Prod. Test - MCF/D	Length of Test	Bbls. Condensate/MMCF	Gravity of Condensate
Testing Method (pitot, back pr.)	Tubing Pressure (Shut-in)	Casing Pressure (Shut-in)	Choke Size

VI. OPERATOR CERTIFICATE OF COMPLIANCE

I hereby certify that the rules and regulations of the Oil Conservation Division have been complied with and that the information given above is true and complete to the best of my knowledge and belief.

Travis Reed
Signature
TRAVIS REED PRODUCTION SUPERINTENDENT
Printed Name Title
10/08/90 915/683-6293
Date Telephone No.

OIL CONSERVATION DIVISION

Date Approved OCT 23 1990

By Mike Williams

Title SUPERVISOR, DISTRICT II

INSTRUCTIONS: This form is to be filed in compliance with Rule 1104

1) Request for allowable for newly drilled or deepened well must be accompanied by tabulation of deviation tests taken in accordance with Rule 111.
2) All sections of this form must be filled out for allowable on new and recompleted wells.
3) Fill out only Sections I, II, III, and VI for changes of operator, well name or number, transporter, or other such changes.
4) Separate Form C-104 must be filed for each pool in multiply completed wells.

ATTACHMENT VI-2A

SCOUT TICKETS FOR WELLS IN THE AOR WITHOUT AVAILABLE RECORDS AT THE OCD:

MAP ID NOS. 755, 781, 852, 853, 854, 856, 863, 867, 876, 877, 886, 901, 910

SEC 1 TWP 18S RGE 27E N

NMEX EDDY 330FSL 1650FWL SEC

STATE---COUNTY-------FOOTAGE----------SPOT--------

VALLEY RFG CO D D

OPERATOR----------WELL CLASS INIT--FIN-

1 HILL

WELL NO.-----LEASE NAME----------

3629ES ARTESIA

OPER ELEV----------FIELD/POOL/AREA----

API 30-015-00714-0000

----------LEASE NO.-----PERMIT OR WELL I.D. NO.--

10/20/1943 12/20/1943 CABLE D&A-O

SPUD DATE----COMP. DATE--TYPE TOOL---HOLE TYPE---STATUS---

DTD 2404

DRILLERS TD---LOG TD---PLUG BACK TD--OLD TD--FORM TD------

CASING/LINER DATA

CSG 10 @ 419

CSG 8 @ 1120 W/ 20 SACKS

DRLG SHOWS OR POROSITY ZONES /INTERVAL,FORMATION,DESC

	-605	OIL	235-	240	SWTR
325	-330	WET			

T	R
18S	37E

County Eddy
State N.M.
Operator Malco Ref. Co., Inc.
Farm State-B
Well No. 2
Sec. 2 T. 18S R. 27E Area Empire Dist. 8
N. 2310 S. 2310
Sec. Blk. Twp. Survey
PB
Spud Comp. TD. T.P.
Contractor Tools
Shot C.T.
Shot
Acid Gal.
Acid Gal.
Acid Gal.
I.P. Bbl. oil per
MCF Gas thru
G.O.R. Grav.
Fl. Press.: Casing Tubing
S.I. Press.: Casing Tubing
Remarks: 500' Test

FORM	DEPTH	DATA

Casing:

SIZE	DEPTH	CEMENT

Tbg. Pkr.

Elev. By

AUG
AUG 26
SEP 2
SEP 30
OCT

ATTN: NANCY NIEMANN

FROM: DOREEN @ MIDLAND MAP CO.

AS PER YOUR REQUEST.

FULL WELL REPORT FOR WELLS IN 18S-27E SEC 11-13 EDDY NM

CUST80 ********** MAR 08, 1999 13:41:02 ********** WELL 22

API Nbr: 30015012010000 State: NMEX County: EDDY
Meridian: NEW MEXICO Meridn Code: 21
Province: PERMIAN BASIN Prov Code: 430
Oper: HOWARD, OSCAR Oper Code: 099999
Lease: AN ETZ Well: 3 Lease Code:
Field: Field Code:

T018S R027E SEC11 Spot:
FOOTAGES: 1980FSL 2310FEL CNGRS T-R-SEC /FULL SEC

Other Depths: DRLR 1828 WSTD PBTD OLDTD

Status: D&A-O Spud Date: 03 15 1927
Hole Dir: VERTICAL Comp Date: 04 15 1927
Numeric Class: INL-6 FNL-0
Alpha Class: INL-D FNL-D

Latitude: 32.76019 Source: USGS NAD27 Longitude: 104.24765

INITIAL POTENTIAL TESTS:

FORMATION TOPS: (Source,Names,Depths,Shows)

DLR
453RDSD 1045

CORE DESCRIPTIONS:

FORMATION TESTS:

PRODUCTION TESTS:

OTHER WELL INFO:

DRILLING SHOWS:
#-1738 # OIL # -

*** Proposed Bottom Hole Location ***

*** Actual Bottom Hole Location ***

*** Horizontal Drilling Data ***

FULL WELL REPORT FOR WELLS IN 18S-27E SEC 11-13 EDDY NM

CUST80 ********** MAR 08, 1999 13:41:02 ********** WELL 23

API Nbr: 30015012020000 State: NMEX County: EDDY
Meridian: NEW MEXICO Meridn Code: 21
Province: PERMIAN BASIN Prov Code: 430
Oper: HOWARD, OSCAR Oper Code: 099999
Lease: AN ETZ Well: 2 Lease Code:
Field: Field Code:
SURVEY: District: 2

T018S R027E SEC11 Spot:
FOOTAGES: 1070FSL 2390FEL CNGRS T-R-SEC /FULL SEC

Other Depths: DRLR 1827 WSTD PBTD OLDTD

Status: OIL Spud Date: 10 18 1926
Hole Dir: VERTICAL Comp Date: 02 04 1927
Numeric Class: INL-6 FNL-0
Alpha Class: INL-D FNL-D

Latitude: 32.75769 Source: USGS NAD27 Longitude: 104.24793

CASING:
10 @ 345 W/ #SX

INITIAL POTENTIAL TESTS:
IP 10BOPD CUT % /64CK HRS
OPENHOLE / 1827-1827
FIELD: PROD ZN CODE: OPER KEY: 1

FORMATION TOPS: (Source,Names,Depths,Shows)

DLR
453RDSD 1040

CORE DESCRIPTIONS:

FORMATION TESTS:

PRODUCTION TESTS:
XPLO 1727-1754 60 QTS FBRKP:

XPLO 1788-1798 20 QTS FBRKP:

OTHER WELL INFO:

DRILLING SHOWS:
215-220 # WET # 270-275 # FWTR

*** Proposed Bottom Hole Location ***

*** Actual Bottom Hole Location ***

*** Horizontal Drilling Data ***

FULL WELL REPORT FOR WELLS IN 18S-27E SEC 11-13 EDDY NM

CUST80 ********** MAR 08, 1999 13:41:02 ********** WELL 1

API Nbr: 30015008630000 State: NMEX County: EDDY
Meridian: NEW MEXICO Meridn Code: 21
Province: PERMIAN BASIN Prov Code: 430
Oper: POLK BR JR Oper Code: 099999
Lease: VICKERS Well: 1 Lease Code:
Field: ARTESIA Field Code: 005344

T018S R027E SEC11 Spot:
FOOTAGES: 990FSL ~~3310~~ 2310? FWL CNGRS T-R-SEC /FULL SEC

Oper Elev: 3559ES RIG HT: Log Td:

Other Depths: DRLR 1794 WSTD PBTD OLDTD

Status: D&A-G Spud Date: 09 08 1949
Hole Dir: VERTICAL Comp Date: 10 14 1949
Numeric Class: INL-6 FNL-0
Alpha Class: INL-D FNL-D

Latitude: 32.75746 Source: USGS NAD27 Longitude: 104.24632

CASING:

10	@	423 W/	#SX
8	@	886 W/	#SX
7	@	1776 W/	#SX

INITIAL POTENTIAL TESTS:

CORE DESCRIPTIONS:

FORMATION TESTS:

PRODUCTION TESTS:

OTHER WELL INFO:

DRILLING SHOWS:
#-1765 # SULW # 1762-1766 # GAS

*** Proposed Bottom Hole Location ***

*** Actual Bottom Hole Location ***

*** Horizontal Drilling Data ***

FULL WELL REPORT FOR WELLS IN 18S-27E SEC 11-13 EDDY NM

CUST80 ********** MAR 08, 1999 13:41:02 ********** WELL 30

API Nbr: 30015205350000 State: NMEX County: EDDY
Meridian: NEW MEXICO Meridn Code: 21
Province: PERMIAN BASIN Prov Code: 430
Oper: COX ROBERT G Oper Code: 109308
Lease: FEDERAL EA Well: 2 Lease Code:
Field: EMPIRE Field Code: 029611

T018S R027E SEC12 Spot:
FOOTAGES: 330FNL 425FWL CNGRS T-R-SEC /FULL SEC

Oper Elev: 3609GR RIG HT: Log Td:
Form@TD: 452ABO

Other Depths: DRLR 6248 WSTD PBTD OLDTD

Status: TA Spud Date: 11 27 1971
Hole Dir: VERTICAL Comp Date: 09 10 1972
Numeric Class: INL-6 FNL-0
Alpha Class: INL-D FNL-D
Prod Form: 452ABO

Latitude: 32.76825 Source: USGS NAD27 Longitude: 104.23868

CASING:
8 5/8 @ 1497 W/ 200SX
5 1/2 @ 6248 W/ 200SX

Contr: Tools: ROTARY RIG Nbr:

INITIAL POTENTIAL TESTS:

CORE DESCRIPTIONS:

FORMATION TESTS:

PRODUCTION TESTS:

PTP			175BW	CUT %	/64CK	24HRS
452ABO	PERF			/	6242-6245	
PERF	6242-6245	C	-	-	-	
ACID	6242-6245		250 GALS A	FBRKP:		
PTS	1UG			CUT %	/64CK	HRS
452ABO	PERF			/	6170-6184	
PERF	6170-6178	A	6180-6184 A	-	-	
ACID	6170-6184		3000 GALS A	FBRKP:		
PTP			172BW	CUT %	/64CK	24HRS
452ABO	PERF			/	6202-6208	
PERF	6202-6208	C	-	-	-	
ACID	6202-6208		500 GALS A	FBRKP:		
PTP			5BW	CUT %	/64CK	24HRS
452ABO	PERF			/	6170-6184	
ACID	6170-6184		8000 GALS A	FBRKP:		

FIELD: EMPIRE PROD ZN CODE: OPER KEY: 1

FULL WELL REPORT FOR WELLS IN 18S-27E SEC 11-13 EDDY NM

CUST80 ********** MAR 08, 1999 13:41:02 ********** WELL 43

API Nbr: 30015008720000 State: NMEX County: EDDY
Meridian: NEW MEXICO Meridn Code: 21
Province: PERMIAN BASIN Prov Code: 430
Oper: MCKEE-JONES Oper Code: 099999
Lease: MAGRUDER Well: 1 Lease Code:
Field: ARTESIA Field Code: 005344

T018S R027E SEC12 Spot:
FOOTAGES: 2310FSL 990FWL CNGRS T-R-SEC /FULL SEC

Other Depths: DRLR 594 WSTD PBTD OLDTD

Status: TA-OG Spud Date: 02 18 1943
Hole Dir: VERTICAL Comp Date: 01 04 1944
Numeric Class: INL-6 FNL-0
Alpha Class: INL-D FNL-D

Latitude: 32.76102 Source: USGS NAD27 Longitude: 104.23691

CASING:
8 @ 442 W/ 125SX
7 @ 552 W/ 50SX

INITIAL POTENTIAL TESTS:

CORE DESCRIPTIONS:

FORMATION TESTS:

DST 01 BLRT 572-594
REC 1BLR O
FINAL OP: 1H IFP: FFP: BHT: F

PRODUCTION TESTS:
PTP 63GO CUT % /64CK HRS
OPENHOLE / 552-594
ACID 552-594 2000 GALS A FBRKP:
FIELD: ARTESIA QN-GRAY-SAD PROD ZN CODE: OPER KEY: 1

OTHER WELL INFO:

DRILLING SHOWS:
#-260 # WET H #-444 # GAS
#-486 # O&G # 572-594 # OIL

*** Proposed Bottom Hole Location ***

*** Actual Bottom Hole Location ***

*** Horizontal Drilling Data ***

FULL WELL REPORT FOR WELLS IN 18S-27E SEC 11-13 EDDY NM

CUST80 ********** MAR 08, 1999 13:41:02 ********** WELL 44

API Nbr: 30015008730000 State: NMEX County: EDDY
Meridian: NEW MEXICO Meridn Code: 21
Province: PERMIAN BASIN Prov Code: 430
Oper: MCKEE R E ETAL Oper Code: 099999
Lease: MAGRUDER Well: 2 Lease Code:
Field: Field Code:

T018S R027E SEC12 Spot:
FOOTAGES: 330FSL 330FWL CNGRS T-R-SEC /FULL SEC

Oper Elev: 3555ES RIG HT: Log Td:

Other Depths: DRLR 2510 WSTD PBTD OLDTD

Status: D&A-O Spud Date: 12 14 1944
Hole Dir: VERTICAL Comp Date: 02 27 1945
Numeric Class: INL-6 FNL-0
Alpha Class: INL-D FNL-D

Latitude: 32.75562 Source: USGS NAD27 Longitude: 104.23910

CASING:
10 @ 290 W/ #SX
8 1/4 @ 952 W/ #SX

INITIAL POTENTIAL TESTS:

CORE DESCRIPTIONS:

FORMATION TESTS:

PRODUCTION TESTS:
XPLO 1788-1880 290 QTS FBRKP:

OTHER WELL INFO:

DRILLING SHOWS:
#-282 # OIL # #-680 # SULW

*** Proposed Bottom Hole Location ***

*** Actual Bottom Hole Location ***

*** Horizontal Drilling Data ***

FULL WELL REPORT FOR WELLS IN 18S-27E SEC 11-13 EDDY NM

CUST80 ********** MAR 08, 1999 13:41:02 ********** WELL 72

API Nbr: 30015012000000 State: NMEX County: EDDY
Meridian: NEW MEXICO Meridn Code: 21
Province: PERMIAN BASIN Prov Code: 430
Oper: HASSENFUSH-DONNELLY Oper Code: 099999
Lease: STATE Well: 1 Lease Code:
Field: Field Code:
SURVEY: District: 2

T018S R027E SEC13 Spot:
FOOTAGES: 250FNL 250FEL CNGRS T-R-SEC /FULL SEC

Oper Elev: 3615ES RIG HT: Log Td:

Other Depths: DRLR 2030 WSTD PBTD OLDTD

Status: OIL Spud Date: 01 01 1926
Hole Dir: VERTICAL Comp Date: 05 15 1926
Numeric Class: INL-6 FNL-1
Alpha Class: INL-D FNL-DO

Latitude: 32.75374 Source: USGS NAD27 Longitude: 104.22386

INITIAL POTENTIAL TESTS:

IP	25BOPD	CUT %	/64CK	HRS
	OPENHOLE	/	2030-2030	

CORE DESCRIPTIONS:

FORMATION TESTS:

PRODUCTION TESTS:

XPLO	1996-2014	100 QTS	FBRKP:

OTHER WELL INFO:

*** Proposed Bottom Hole Location ***

*** Actual Bottom Hole Location ***

*** Horizontal Drilling Data ***

FULL WELL REPORT FOR WELLS IN 18S-27E SEC 11-13 EDDY NM

CUST80 ********** MAR 08, 1999 13:41:02 ********** WELL 66

API Nbr: 30015061370000 State: NMEX County: EDDY
Meridian: NEW MEXICO Meridn Code: 21
Province: PERMIAN BASIN Prov Code: 430
Oper: EASTLAND OIL Oper Code: 025180
Lease: STATE Well: 2 Lease Code:
Field: Field Code:
SURVEY: District: 2

T018S R027E SEC13 Spot:
FOOTAGES: 250FNL 990FEL CNGRS T-R-SEC /FULL SEC

Oper Elev: 3604ES RIG HT: Log Td:

Other Depths: DRLR 2696 WSTD PBTD OLDTD

Status: D&A Spud Date: 01 01 1926
Hole Dir: VERTICAL Comp Date: 09 28 1926
Numeric Class: INL-5 FNL-0
Alpha Class: INL-WF FNL-WF

Latitude: 32.75378 Source: USGS NAD27 Longitude: 104.22627

INITIAL POTENTIAL TESTS:

CORE DESCRIPTIONS:

FORMATION TESTS:

PRODUCTION TESTS:

OTHER WELL INFO:

*** Proposed Bottom Hole Location ***

*** Actual Bottom Hole Location ***

*** Horizontal Drilling Data ***

FULL WELL REPORT FOR WELLS IN 18S-27E SEC 11-13 EDDY NM

CUST80 ********** MAR 08, 1999 13:41:02 ********** WELL 68

API Nbr: 30015008790000 State: NMEX County: EDDY
Meridian: NEW MEXICO Meridn Code: 21
Province: PERMIAN BASIN Prov Code: 430
Oper: RESLER, DALE Oper Code: 099999
Lease: JONES-GOVT Well: 1 Lease Code:
Field: ARTESIA Field Code: 005344

T018S R027E SEC13 Spot:
FOOTAGES: 2310FNL 1650FWL CNGRS T-R-SEC /FULL SEC

Oper Elev: 3529ES RIG HT: Log Td:

Other Depths: DRLR 2000 WSTD PBTD OLDTD

Status: D&A-O Spud Date: 03 14 1945
Hole Dir: VERTICAL Comp Date: 04 13 1945
Numeric Class: INL-6 FNL-0
Alpha Class: INL-D FNL-D

Latitude: 32.74828 Source: USGS NAD27 Longitude: 104.23470

CASING:
8 1/4 @ 392 W/ #SX

INITIAL POTENTIAL TESTS:

CORE DESCRIPTIONS:

FORMATION TESTS:

PRODUCTION TESTS:

PTB	1BO		CUT %	/64CK	24HRS
	OPENHOLE		/	1916-1916	
XPLO	1856-1916	240 QTS	FBRKP:		
XPLO	1905-1916	500 QTS	FBRKP:		

FIELD: ARTESIA QN-GRAY-SAD PROD ZN CODE: OPER KEY: 1

OTHER WELL INFO:

DRILLING SHOWS:
#-180 # WET # 1895-1905 # OIL

*** Proposed Bottom Hole Location ***

*** Actual Bottom Hole Location ***

*** Horizontal Drilling Data ***

SEC 1 TWP 18S RGE 27E L
NMEX EDDY 1650FSL 330FWL SEC
STATE---COUNTY-------FOOTAGE----------SPOT--------
HUDSON WILLIAM & EDWARD D D
OPERATOR----------WELL CLASS INIT--FIN-
1 HILL
WELL NO.-----LEASE NAME----------
3614ES RED LAKE
OPER ELEV----------FIELD/POOL/AREA----
API 30-015-00695-0000
----------LEASE NO.-----PERMIT OR WELL I.D. NO.--
06/18/1948 07/19/1948 CABLE D&A-OG
SPUD DATE----COMP. DATE--TYPE TOOL---HOLE TYPE---STATUS---
DTD 1763
DRILLERS TD---LOG TD---PLUG BACK TD--OLD TD--FORM TD------
CASING/LINER DATA
CSG 8 5/8 @ 1057
FORMATION TEST DATA
DST01 245 -245
REC 3 BBL W

(CONTINUED)

30-015-00695-0000/HUDSON WILLIAM & EDWARD/1 HILL
SEC 1 TWP 18S RGE 27E

FINAL OP 1H
DRLG SHOWS OR POROSITY ZONES /INTERVAL,FORMATION,DESC
1742 -1763 O&G

FULL WELL REPORT FOR WELLS IN 18S-27E SEC2 EDDY NM

CUST80 ********** MAR 08, 1999 13:34:31 ********** WELL 58

API Nbr: 30015007440000 State: NMEX County: EDDY
Meridian: NEW MEXICO Meridn Code: 21
Province: PERMIAN BASIN Prov Code: 430
Oper: COMPTON-SMITH Oper Code: 099999
Lease: STATE Well: 1 Lease Code:
Field: Field Code:

T018S R027E SEC2 Spot:
FOOTAGES: 2310FSL 1640FEL CNGRS T-R-SEC /FULL SEC

Oper Elev: 3551ES 3550GR RIG HT: Log Td:

Other Depths: DRLR 1080 WSTD PBTD OLDTD

Status: D&A-O Spud Date: 01 01 1801
Hole Dir: VERTICAL Comp Date: 01 01 1801
Numeric Class: INL-5 FNL-0
Alpha Class: INL-WF FNL-WF

Latitude: 32.77559 Source: USGS NAD27 Longitude: 104.24553

CASING:
8 5/8 @ 880 W/ #SX

INITIAL POTENTIAL TESTS:

CORE DESCRIPTIONS:

FORMATION TESTS:

PRODUCTION TESTS:

OTHER WELL INFO:

DRILLING SHOWS:
#-430 # OIL # -

*** Proposed Bottom Hole Location ***

*** Actual Bottom Hole Location ***

*** Horizontal Drilling Data ***

ATTACHMENT VI-2B

MAP ID NO. 754
(MIS-PLOTTED LOCATION FOR MAP ID NO. 756)

NOTE FROM MIDLAND MAP COMPANY
RECORDS FOR MAP ID NO. 756

754

Midland Map Co.

Fax

To:	NANCY NIEMANN	From:	DOREEN DEVORE
Fax:	(713) 880-3248	Date:	March 12, 1999
Phone:		Pages:	1
Re:	EDDY COUNTY WELLS	CC:	

☐ Urgent x For Review ☐ Please Comment ☐ Please Reply ☐ Please Recycle

Comments: AFTER INVESTIGATING YOUR FAX, I AM ONLY ABLE TO GIVE YOU PART OF THE INFORMATION YOU REQUESTED. AS I TOLD YOU BEFORE, WE DON'T HAVE PERMIT AND COMPLETION INFORMATION FOR NEW MEXICO, SO I CAN ONLY GIVE YOU BASIC INFORMATION ABOUT THE WELLS YOU REQUESTED. I SUGGEST THAT YOU CONTACT EITHER THE SUBSURFACE LIBRARY HERE IN MIDLAND AT (915) 683-5588 (THIS IS WHERE I FOUND YOUR INFORMATION YESTERDAY) OR CALL HERROLDS AT (915) 682-7773 AND ASK FOR "DOC". I AM NOT CERTAIN WHETHER THEY WILL OR WILL NOT CHARGE YOU FOR THE INFORMATION.

1.) 2-18S-27E 2310FN, 1650FE

WELL#: 2, ORIG. OPERATOR: RUTTER & WILBANKS FEE: Hudson

THIS WELL WAS COMPLETED BEFORE 1957

2.) 2-18S-27E 990FS, 330FE

WELL#: 1 ORIG. OPERATOR: ATLANTIC RICHFIELD (ARCO) FEE: State "AS"

THIS WELL WAS PERMITTED SOMEWHERE BETWEEN 1959-1960

3.) 1-18S-27E 660FS, 660FW

WELL#: 17 ORIG. OPERATOR: HONDO OR PAM AM FEE: Malco

THIS WELL WAS COMPLETED SOMEWHERE AROUND 1975

Map ID No. ← 754

I WISH YOU LUCK IN YOUR INVESTIGATION.

756

SF

OIL CONSERVATION DIVISION
RECEIVED
94 JUN 7 AM 8 50

District I
PO Box 1980, Hobbs, NM 88241-1980
District II
PO Drawer DD, Artesia, NM 88211-0719
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
PO Box 2088, Santa Fe, NM 87504-2088

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

Form C-104
Revised February 10, 1994
Instructions on back
Submit to Appropriate District Office
5 Copies

☐ AMENDED REPORT

I. REQUEST FOR ALLOWABLE AND AUTHORIZATION TO TRANSPORT

¹ Operator name and Address	¹ OGRID Number
ARCO Permian A Unit of Atlantic Richfield Co. P.O. Box 1710 Hobbs, NM 88240	000990
	¹ Reason for Filing Code JUN 1 1994 CH

¹ API Number	¹ Pool Name	¹ Pool Code
30 - 015-00705	Empire ABO	22040
¹ Property Code	¹ Property Name	¹ Well Number
001475	Empire ABO Unit "L"	17

II. ¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South Line	Feet from the	East/West line	County
M	1	18S	27E		990	S	660	W	Eddy

¹¹ Bottom Hole Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

¹³ Lse Code	¹⁴ Producing Method Code	¹⁵ Gas Connection Date	¹⁶ C-129 Permit Number	¹⁷ C-129 Effective Date	¹⁸ C-129 Expiration Date
F	F				

III. Oil and Gas Transporters

¹⁹ Transporter OGRID	²⁰ Transporter Name and Address	²¹ POD	²² O/G	²³ POD ULSTR Location and Description
000734	AMOCO Pipeline 502 NW Avenue Levelland, TX 79336	2811057	O	D-10 E-T-18S-27E
000756	AMOCO Production Co. P.O. Box 68 Hobbs, NM 88240	2811047	G	F-1-18S-27E
009171	GPM Gas Corp. 4001 Penbrook Odessa TX 79760	2811047	G	"

IV. Produced Water

²⁴ POD	²⁵ POD ULSTR Location and Description

V. Well Completion Data

²⁶ Spud Date	²⁷ Ready Date	²⁸ TD	²⁹ PB TD	³⁰ Perforations

³¹ Hole Size	³² Casing & Tubing Size	³³ Depth Set	³⁴ Sacks Cement

VI. Well Test Data

³⁵ Date New Oil	³⁶ Gas Delivery Date	³⁷ Test Date	³⁸ Test Length	³⁹ Tbg. Pressure	⁴⁰ Csg. Pressure

⁴¹ Choke Size	⁴² Oil	⁴³ Water	⁴⁴ Gas	⁴⁵ AOF	⁴⁶ Test Method

⁴⁷ I hereby certify that the rules of the Conservation Division have been complied with and that the information given above is true and complete to the best of my knowledge and belief.

Signature: Kellie D. Murrish

Printed name: Kellie D. Murrish

Title: Records CLerk II

Date: 6-1-94 Phone: 505-393-1649

OIL CONSERVATION DIVISION

Approved by: SUPERVISOR, DISTRICT II

Title:

Approval Date: JUN - 6 1994

⁴⁸ If this is a change of operator fill in the OGRID number and name of the previous operator

NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico

(Form C-104)
Revised 7/1/57

JUL 23 1959

REQUEST FOR (OIL) ~~/(GAS)~~ ALLOWABLE

New Well
~~Recompletion~~

This form shall be submitted by the operator before an initial allowable will be assigned to any completed Oil or Gas well. Form C-104 is to be submitted in QUADRUPLICATE to the same District Office to which Form C-101 was sent. The allowable will be assigned effective 7:00 A.M. on date of completion or recompletion, provided this form is filed during calendar month of completion or recompletion. The completion date shall be that date in the case of an oil well when new oil is delivered into the stock tanks. Gas must be reported on 15.025 psia at 60° Fahrenheit.

Hobbs, New Mexico (Place) 7-21-59 (Date)

WE ARE HEREBY REQUESTING AN ALLOWABLE FOR A WELL KNOWN AS:

Pan American Petroleum Corp. (Company or Operator) – Malco Refineries "F" (Lease), Well No. 3, in SW ¼ SW ¼,

M (Unit Letter), Sec. 1, T. 18S, R. 27E, NMPM., Empire Abo Pool

Eddy County. Date Spudded 6-25-59 Date Drilling Completed 7-17-59

Please indicate location:

D	C	B	A
E	F	G	H
L	K	J	I
M *	N	O	P

Section 1, T-18-S, R-27-E

Elevation 3602 RDB Total Depth 6150 PBTD 6140

Top Oil/~~Gas~~ Pay 6030 Name of Prod. Form. Abo

PRODUCING INTERVAL -

Perforations 6110-6135 with 2 shots per foot

Open Hole – Depth Casing Shoe 6150 Depth Tubing 6023

OIL WELL TEST -

Natural Prod. Test: ____ bbls.oil, ____ bbls water in ____ hrs, ____ min. Choke Size ____

Test After Acid or ~~Fracture~~ Treatment (after recovery of volume of oil equal to volume of load oil used): 110 bbls.oil, – bbls water in 24 hrs, ____ min. Choke Size 11/64

GAS WELL TEST -

Natural Prod. Test: ____ MCF/Day; Hours flowed ____ Choke Size ____

Method of Testing (pitot, back pressure, etc.): ____

Test After Acid or Fracture Treatment: ____ MCF/Day; Hours flowed ____

Choke Size ____ Method of Testing: ____

Acid or ~~Fracture~~ Treatment (Give amounts of materials used, such as acid, water, oil, and sand): 1000 gallons 15% regular acid

Casing Press. PKR Tubing Press. 665 Date first new oil run to tanks 7-20-59

Oil Transporter McWood Corporation (Trucks)

Gas Transporter ____

Tubing, Casing and Cementing Record

Size	Feet	Sax
8-5/8	1493	750
4-1/2	6174	800
2-3/8	6023	

Remarks: Completed 7-20-59

I hereby certify that the information given above is true and complete to the best of my knowledge.

Approved JUL 23 1959, 19____

OIL CONSERVATION COMMISSION

By: M L Armstrong

Title DISTRICT SUPERVISOR ~~AND GAS INSPECTOR~~

Pan American Petroleum Corporation (Company or Operator)

By: J. W. Brown (Signature)

Title Area Superintendent

Send Communications regarding well to:

Name J. W. Brown

Address Box 68 – Hobbs, New Mexico

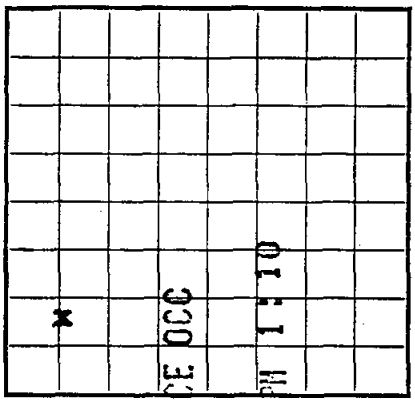
Form 9-330

Budget Bureau No. 42-R355.4.
Approval expires 12-31-60.

U. S. LAND OFFICE Las Cruces
SERIAL NUMBER LC 062412
LEASE OR PERMIT TO PROSPECT

RECEIVED
JUL 27 1959
U. S. GEOLOGICAL SURVEY
ARTESIA, NEW MEXICO

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY



LOCATE WELL CORRECTLY

LOG OF OIL OR GAS WELL

Company Pan American Petroleum Corporation Address Box 68 - Hobbs, New Mexico
Lessor or Tract USA-Malco Refineries "F" Field Empire Abo State New Mexico
Well No. 3 Sec. 1 T. 18S R. 27E Meridian NMPM County Eddy
Location 990 ft. {N.} of S Line and 660 ft. {E.} of W Line of Section 1 Elevation 3602 RDB
(Derrick floor relative to sea level)

The information given herewith is a complete and correct record of the well and all work done thereon so far as can be determined from all available records.

Signed Original Signed J. W. BROWN

Date July 24, 1959 Title Area Superintendent

The summary on this page is for the condition of the well at above date.

Commenced drilling 6-25-59, 19 Finished drilling 7-17-59, 19

OIL OR GAS SANDS OR ZONES

(*Denote gas by G*)

No. 1, from 6110 to 6135 No. 4, from ____ to ____
No. 2, from ____ to ____ No. 5, from ____ to ____
No. 3, from ____ to ____ No. 6, from ____ to ____

IMPORTANT WATER SANDS

No. 1, from ____ to ____ No. 3, from ____ to ____
No. 2, from ____ to ____ No. 4, from ____ to ____

CASING RECORD

Size casing	Weight per foot	Threads per inch	Make	Amount	Kind of shoe	Cut and pulled from	Perforated From—	Perforated To—	Purpose
8-5/8	24	8	J-55	1493	Float				Surface
4-1/2	9.5	8	J-55	6174	Float		6110	6135	Oil string 4/2 shots per foot

MUDDING AND CEMENTING RECORD

Size casing	Where set	Number sacks of cement	Method used	Mud gravity	Amount of mud used
8-5/8	1496	750	HOWCO		
4-1/2	6150	300	HOWCO		

MARK

FOLD

PLUGS AND ADAPTERS

Heaving plug—Material ..... Length ..... Depth set .....

Adapters—Material ..... Size .....

SHOOTING RECORD

Size	Shell used	Explosive used	Quantity	Date	Depth shot	Depth cleaned out

TOOLS USED

Rotary tools were used from Surface feet to 6150 feet, and from ..... feet to ..... feet

Cable tools were used from ..... feet to ..... feet, and from ..... feet to ..... feet

DATES

Completed July 20, 1959 Put to producing July 20, 1959

The production for the first 24 hours was 110 barrels of fluid of which 100 % was oil; ..... % emulsion; ..... % water; and ..... % sediment. Gravity, °Bé. 42

If gas well, cu. ft. per 24 hours ..... Gallons gasoline per 1,000 cu. ft. of gas .....

Rock pressure, lbs. per sq. in. .....

EMPLOYEES

B.J. Wright, Driller R.E. Mills, Driller

J.W. Martin, Driller Calvin H. Davis, Driller

FORMATION RECORD

FROM—	TO—	TOTAL FEET	FORMATION
0	1496	1496	Anhy Gyp
1496	1593	97	Lime & Anhy
1593	5100	3507	Lime
5100	5280	180	Lime & Sand
5280	5326	46	Lime
5326	5375	49	Lime & Sand
5375	5440	65	Lime
5440	5477	37	Lime & Sand
5477	5633	156	Lime & Dolomite
5633	5685	52	Sand & Dolomite
5685	5731	46	Lime & Dolomite
5731	5809	78	Dolomite
5809	5849	40	Dolomite & Lime
5849	6065	216	Dolomite
6065	6150	85	Lime

TOPS

San Andres	1885
Glorieta	3320
Abo Reef	6030

16—43004—4

Form 9-331a
(Feb. 1951)

Budget Bureau No. 42-R358.4.
Approval expires 12-31-60.

(SUBMIT IN TRIPLICATE)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Land Office Las Cruces
Lease No. LC 062412
Unit

APPROVED
MAY 21 1959
ROGER E. EVANS
ACTING DISTRICT ENGINEER

RECEIVED
MAY 25 1959

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL	X	SUBSEQUENT REPORT OF WATER SHUT-OFF	
NOTICE OF INTENTION TO CHANGE PLANS		SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF		SUBSEQUENT REPORT OF ALTERING CASING	
NOTICE OF INTENTION TO RE-DRILL OR REPAIR WELL		SUBSEQUENT REPORT OF RE-DRILLING OR REPAIR	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE		SUBSEQUENT REPORT OF ABANDONMENT	
NOTICE OF INTENTION TO PULL OR ALTER CASING		SUPPLEMENTARY WELL HISTORY	
NOTICE OF INTENTION TO ABANDON WELL			

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

DRA MALCO SPRINGERS NFR May 18, 19 59

Well No. 3 is located 990 ft. from {S} line and 660 ft. from {W} line of sec. 1

SW/4 SW/4 Section 1 (¼ Sec. and Sec. No.) | 18 - S (Twp.) | 27 - E (Range) | NMPM (Meridian)

Undesignated (Field) | Eddy (County or Subdivision) | New Mexico (State or Territory)

The elevation of the derrick floor above sea level is ..... ft. furnish later.

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

Filed to show change in well location only. Casing program will remain as previously reported on Form 9-331a approved 3-26-59.

RECEIVED
MAY
ARTESIA, NEW MEXICO

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company Pan American Petroleum Corporation

Address Box 68

Hobbs, New Mexico

Original Signed by
[illegible]

By .....

Title Area Superintendent

GPO 9 18 507

NEW MEXICO OIL CONSERVATION COMMISSION

FORM C-128
Revised 5/1/57

WELL LOCATION AND ACREAGE DEDICATION PLAT

SEE INSTRUCTIONS FOR COMPLETING THIS FORM ON THE REVERSE SIDE

SECTION A

RECEIVED
MAY 25 1959

Operator	Lease	Well No.
PAN AMERICAN PET. CORP.	U. S. A. Mal Co Federal	

Unit Letter	Section	Township	Range	County
M	1	18 S.	27 E.	Eddy

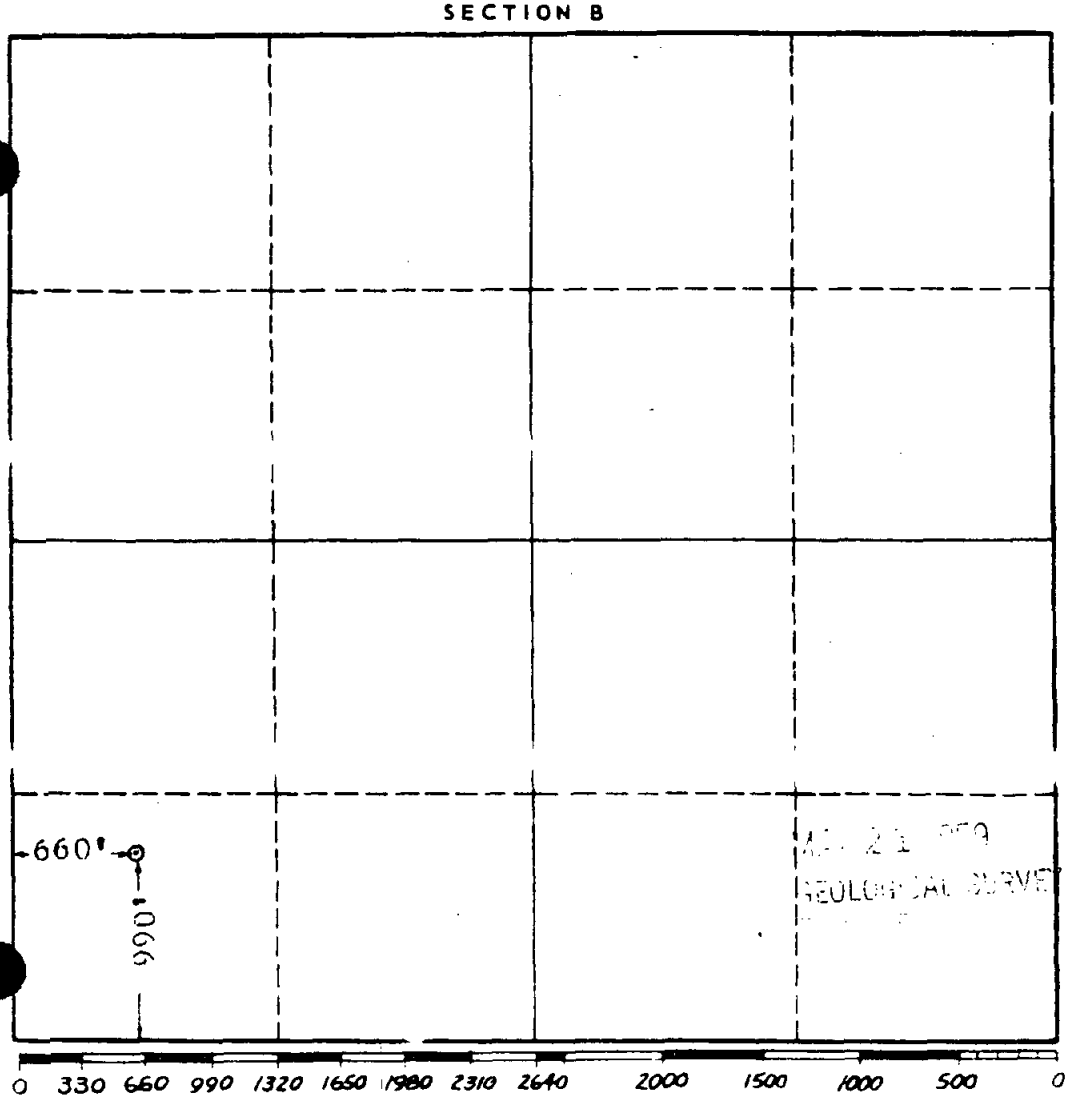
Actual Footage Location of Well:
990 feet from the South line and 660 feet from the West line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
furnish later	Abo	Empire Abo	40 Acres

1. Is the Operator the only owner in the dedicated acreage outlined on the plat below? YES X NO _____. *("Owner" means the person who has the right to drill into and to produce from any pool and to appropriate the production either for himself or for himself and another. (65-3-29 (e) NMSA 1935 Comp.)*
2. If the answer to question one is "no," have the interests of all the owners been consolidated by communitization agreement or otherwise? YES _____ NO _____. If answer is "yes," Type of Consolidation _____
3. If the answer to question two is "no," list all the owners and their respective interests below:

Owner	Land Description

SECTION B



MAY 21 1959
GEOLOGICAL SURVEY

CERTIFICATION

I hereby certify that the information

plete to the best of my knowledge and
belief.

Name

Position
Area Superintendent

Company
Pan American Petr. Corp.

Date
May 18, 1959

I hereby certify that the well location shown on the plat in *SECTION B* was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true

and belief.

Date Surveyed
5-1-59

Registered Professional Engineer
and/or Land Surveyor, JOHN W. WEST

John W. West

Certificate No.
N.M. - P.E. & L.S. NO. 676

SEC 1 TWP 18S RGE 27E M
NMEX EDDY 990FSL 660FWL SEC
STATE---COUNTY-------FOOTAGE----------SPOT--------
PAN AMERICAN D DO
OPERATOR----------WELL CLASS INIT--FIN-
3 MALCO REFINING-FED
WELL NO.-----LEASE NAME----------
3601DF EMPIRE
OPER ELEV----------FIELD/POOL/AREA----
API 30-015-00705-0000
----------LEASE NO.-----PERMIT OR WELL I.D. NO.--
06/25/1959 07/20/1959 OIL
SPUD DATE----COMP. DATE--TYPE TOOL---HOLE TYPE---STATUS---
DTD 6150 PB 6140 FM/TD ABO B RF
DRILLERS TD---LOG TD---PLUG BACK TD--OLD TD--FORM TD------

CASING/LINER DATA

CSG 8 5/8 @ 1496 W/ 725 SACKS
CSG 4 1/2 @ 6150 W/ 700 SACKS

INITIAL POTENTIAL

IPF 110 BOPD 4 BW 11/64CK 24HRS

(CONTINUED)

30-015-00705-0000/PAN AMERICAN/3 MALCO REFINING-FED
SEC 1 TWP 18S RGE 27E

ABO PERF 6110-6135
TP 665
EMPIRE ABO
TOP PAY 6110 ORIG O CURR O FLD CD 29611D
GTY 42.0 GOR 144

TYPE	FORMATION	LTH	TOP DEPTH/SUB	BSE DEPTH/SUB
LOG	QUEEN	1075	2526	
LOG	SN ANDRS	1885	1716	
LOG	GLORIETA	3325	276	
LOG	ABO	6030	-2429	

SUBSEA MEASUREMENTS FROM DF

PRODUCTION TEST DATA

PTF 3 BW 25/64CK 4HRS
PERF 6110-6135
PERF 6110-6135
ACID 6110-6135 1000 GALS

LOGS AND SURVEYS /INTERVAL,TYPE/

(CONTINUED)

30-015-00705-0000/PAN AMERICAN/3 MALCO REFINING-FED
SEC 1 TWP 18S RGE 27E

---- --- ------- ---------------

LOGS NE

ATTACHMENT VI-2C

MAP ID NO. 795
(MIS-PLOTTED LOCATION FOR MAP ID NO. 765)

NOTE FROM MIDLAND MAP COMPANY
RECORDS FOR MAP ID NO. 765

795

Midland Map Co.

Fax

To:	NANCY NIEMANN	From:	DOREEN DEVORE
Fax:	(713) 880-3248	Date:	March 12, 1999
Phone:		Pages:	1
Re:	EDDY COUNTY WELLS	CC:	

☐ Urgent x For Review ☐ Please Comment ☐ Please Reply ☐ Please Recycle

Comments: AFTER INVESTIGATING YOUR FAX, I AM ONLY ABLE TO GIVE YOU PART OF THE INFORMATION YOU REQUESTED. AS I TOLD YOU BEFORE, WE DON'T HAVE PERMIT AND COMPLETION INFORMATION FOR NEW MEXICO, SO I CAN ONLY GIVE YOU BASIC INFORMATION ABOUT THE WELLS YOU REQUESTED. I SUGGEST THAT YOU CONTACT EITHER THE SUBSURFACE LIBRARY HERE IN MIDLAND AT (915) 683-5588 (THIS IS WHERE I FOUND YOUR INFORMATION YESTERDAY) OR CALL HERROLDS AT (915) 682-7773 AND ASK FOR "DOC". I AM NOT CERTAIN WHETHER THEY WILL OR WILL NOT CHARGE YOU FOR THE INFORMATION.

1.) 2-18S-27E 2310FN, 1650FE

WELL#: 2, ORIG. OPERATOR: RUTTER & WILBANKS FEE: Hudson

THIS WELL WAS COMPLETED BEFORE 1957

2.) 2-18S-27E 990FS, 330FE

Map ID No. 795

WELL#: 1 ORIG. OPERATOR: ATLANTIC RICHFIELD (ARCO) FEE: State "AS"

THIS WELL WAS PERMITTED SOMEWHERE BETWEEN 1959-1960

3.) 1-18S-27E 660FS, 660FW

WELL#: 17 ORIG. OPERATOR: HONDO OR PAM AM FEE: Malco

THIS WELL WAS COMPLETED SOMEWHERE AROUND 1975

I WISH YOU LUCK IN YOUR INVESTIGATION.

765

ST

District I
PO Box 1980, Hobbs, NM 88241-1980
District II
PO Drawer DD, Artesia, NM 88211-0719
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
PO Box 2088, Santa Fe, NM 87504-2088

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
PO Box 2088
Santa Fe, NM 87504-2088

L CONSERVATION DIVISION RECEIVED
94 JUN 25 AM 8 50

Form C-104
Revised February 10, 1994
Instructions on back
Submit to Appropriate District Office
5 Copies

☐ AMENDED REPORT

I. REQUEST FOR ALLOWABLE AND AUTHORIZATION TO TRANSPORT

¹ Operator name and Address	¹ OGRID Number
ARCO Permian A Unit of Atlantic Richfield Co. P.O. Box 1710 Hobbs, NM 88240	000990
	¹ Reason for Filing Code JUN 1 1994 CH

³ API Number	⁴ Pool Name	⁵ Pool Code
30 - 015-00724	Empire ABO	22040
⁷ Property Code	⁸ Property Name	⁹ Well Number
001472	Empire ABO Unit "I"	16

II. ¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot.Idn	Feet from the	North/South Line	Feet from the	East/West line	County
A	2	18S	27E		990	N	330	E	Eddy

¹¹ Bottom Hole Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South Line	Feet from the	East/West line	County

¹² Lse Code	¹³ Producing Method Code	¹⁴ Gas Connection Date	¹⁵ C-129 Permit Number	¹⁶ C-129 Effective Date	¹⁷ C-129 Expiration Date
S	F				

III. Oil and Gas Transporters

¹⁸ Transporter OGRID	¹⁹ Transporter Name and Address	²⁰ POD	²¹ O/G	²² POD ULSTR Location and Description
000734	AMOCO Pipeline 502 NW Avenue Levelland, TX 79336	28 1057	O	D-10- ~~F~~ T-18S-27E
000756	AMOCO Production Co. P.O. Box 68 Hobbs, NM 88240	28 1047	G	F-1-18S-27E
009171	GPM Gas Corp. 4001 Penbrook Odessa, TX 79760	28 1047	G	"

IV. Produced Water

²³ POD	²⁴ POD ULSTR Location and Description

V. Well Completion Data

²⁵ Spud Date	²⁶ Ready Date	²⁷ TD	²⁸ PBTD	²⁹ Perforations

³⁰ Hole Size	³¹ Casing & Tubing Size	³² Depth Set	³³ Sacks Cement

VI. Well Test Data

³⁴ Date New Oil	³⁵ Gas Delivery Date	³⁶ Test Date	³⁷ Test Length	³⁸ Tbg. Pressure	³⁹ Csg. Pressure

⁴⁰ Choke Size	⁴¹ Oil	⁴² Water	⁴³ Gas	⁴⁴ AOF	⁴⁵ Test Method

⁴⁶ I hereby certify that the rules of the Oil Conservation Division have been complied with and that the information given above is true and complete to the best of my knowledge and belief.

Signature: Kellie D. Murrish

Printed name: Kellie D. Murrish

Title: Records CLerk II

Date: 6-1-94 Phone: 505-391-1649

OIL CONSERVATION DIVISION

Approved by: SUPERVISOR, DISTRICT II

Title:

Approval Date: JUN 06 1994

⁴⁷ If this is a change of operator fill in the OGRID number and name of the previous operator

NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico

(Form C-104)
Revised 7/1/5

REQUEST FOR (OIL) - (GAS) ALLOWABLE

SEP 4 1959

New Well
Recompletic

This form shall be submitted by the operator before an initial allowable will be assigned to any completed Oil or Gas we
Form C-104 to be submitted in QUADRUPLICATE to the same District Office to which Form C-101 was sent. The allow
able will be assigned effective 7:00 A.M. on date of completion or recompletion, provided this form is filed during calend
month of completion or recompletion. The completion date shall be that date in the case of an oil well when new oil is del
ered into the stock tanks. Gas must be reported on 15.025 psia at 60° Fahrenheit.

ARTESIA, NEW MEXICO (Place) 9/4/59 (Date)

WE ARE HEREBY REQUESTING AN ALLOWABLE FOR A WELL KNOWN AS:

WILLIAM HUDSON (Company or Operator) Hudson State Abo (Lease), Well No. #1, in NE ¼ NE ¼,

A (Unit Letter) Sec. 2, T. 18-S, R. 27-E, NMPM., EDDY-ABO Po

EDDY County. Date Spudded 8/1/59 Date Drilling Completed 8/30/59

Please indicate location:

D	C	B	A
E	F	G	H
L	K	J	I
M	N	O	P

Elevation 3618 Total Depth 5920 PBTD

Top Oil/Gas Pay 5490 Name of Prod. Form. Empire Abo

PRODUCING INTERVAL -

Perforations 5773-5795; 5810-5818; 5831-5834; 5843-5852; 5863-5872

Open Hole - Depth Casing Shoe 5920 Depth Tubing 5812

OIL WELL TEST -

Natural Prod. Test: Show bbls.oil, - bbls water in - hrs, - min. Choke Size

Test After Acid or Fracture Treatment (after recovery of volume of oil equal to volume o
load oil used): 80 bbls.oil, - bbls water in 24 hrs, - min. Choke Size 1

GAS WELL TEST -

Natural Prod. Test: - MCF/Day; Hours flowed - Choke Size -

Method of Testing (pitot, back pressure, etc.):

Test After Acid or Fracture Treatment: MCF/Day; Hours flowed

Choke Size Method of Testing:

Acid or Fracture Treatment (Give amounts of materials used, such as acid, water, oil, and
sand): 2,000 gallons 15% acid.

Casing Press. 220 Tubing Press. 250 Date first new oil run to tanks 9/3/59

Oil Transporter McWood Corporation, Midland, Texas

Gas Transporter -

Tubing, Casing and Cementing Record

Size	Feet	Sax
8-5/8"	976	250 Pozmix 50 Neat
5-1/2"	5920	300
2"	5812	Set on Packer

Remarks:

I hereby certify that the information given above is true and complete to the best of my knowledge.

Approved SEP 4 1959, 19

OIL CONSERVATION COMMISSION

By: W. A. Gressett

Title OIL AND GAS INSPECTOR

WILLIAM HUDSON (Company or Operator)

By: William Hudson (Signature)

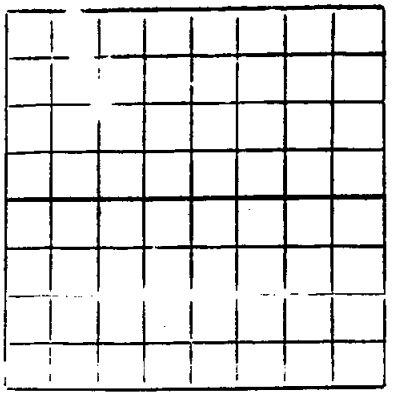
Title Owner

Send Communications regarding well to:

Name WILLIAM HUDSON

Address BOX 106, ARTESIA, NEW MEXICO

Revised 7/1/
Form C-1



AREA 640 ACRES
LOCATE WELL CORRECTLY

NEW MEXICO OIL CONSERVATION COMMISSION

Santa Fe, New Mexico

RECEIVED

DEC 22 1959

O. C. C.
ARTESIA, OFFICE

WELL RECORD

Mail to District Office, Oil Conservation Commission, to which Form C-101 was sent n later than twenty days after completion of well. Follow instructions in Rules and Regulatio of the Commission. Submit in QUINTUPLICATE. If State Land submit 6 Copies

WILLIAM HUDSON (Company or Operator) Lease STATE (Lease)

Well No. #1, in NE ¼ of NE ¼, of Sec. 2, T. 18-S, R. 27-E, NMPM

EMPIRE ABO Pool, EDDY County

Well is 990 feet from NORTH line and 330 feet from EAST line of Section 2. If State Land the Oil and Gas Lease No. is B-9299

Drilling Commenced August 1st, 1959 Drilling was Completed August 30th, 19 5

Name of Drilling Contractor CARPER DRILLING COMPANY

Address ARTESIA, NEW MEXICO

Elevation above sea level at Top of Tubing Head 3618 The information given is to be kept confidential un

....., 19.....

OIL SANDS OR ZONES

No. 1, from 5590 to 5890 No. 4, from ..... to .....

No. 2, from ..... to ..... No. 5, from ..... to .....

No. 3, from ..... to ..... No. 6, from ..... to .....

IMPORTANT WATER SANDS

Include data on rate of water inflow and elevation to which water rose in hole.

No. 1, from ..... to ..... feet. .....

No. 2, from ..... to ..... feet. .....

No. 3, from ..... to ..... feet. .....

No. 4, from ..... to ..... feet. .....

CASING RECORD

SIZE	WEIGHT PER FOOT	NEW OR USED	AMOUNT	KIND OF SHOE	CUT AND PULLED FROM	PERFORATIONS	PURPOSE
8-5/8"	28#	New	976'	Cemented	250 sxs.	Pozmix & 500 sxs. neat	
5-1/2"	17#	New	5920'	Cemented	300 sxs.		
2"	Upset	New	5812'	Set on Packer			

Perforations 5773-5795; 5810-5818; 5831-5834; 5843-5852; 5863-5872

MUDDING AND CEMENTING RECORD

SIZE OF HOLE	SIZE OF CASING	WHERE SET	NO. SACKS OF CEMENT	METHOD USED	MUD	AMOUNT OF

NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico

Form C-101
Revised 12/1/

MAIN OFFICE

NOTICE OF INTENTION TO DRILL

AUG 5 1959

Notice must be given to the District Office of the Oil Conservation Commission and approval obtained before drilling or recon begins. If changes in the proposed plan are considered advisable, a copy of this notice showing such changes will be returned to the Submit this notice in QUINTUPLICATE. One copy will be returned following approval. See additional instructions in Rules and tions of the Commission. If State Land submit 6 Copies Attach Form C-128 in triplicate to first 3 copies of for on all wells

Artesia, New Mexico (Place) August 1, 1959 (Date)

OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

Gentlemen:

You are hereby notified that it is our intention to commence the Drilling of a well to be known as

William Hudson (Company or Operator)

Hudson-State Abo (Lease), Well No. 1, in A (Unit) The

located 990 feet from the South line and 330 feet fr

East line of Section 2, T. 18S, R. 27E, NMPM.

(GIVE LOCATION FROM SECTION LINE) Empire-Abo Pool, Eddy

If State Land the Oil and Gas Lease is No. B-9299

If patented land the owner is

Address

We propose to drill well with drilling equipment as follows: Rotary tools

The status of plugging bond is William Hudson

Drilling Contractor Carper Drilling Company, Inc.

We intend to complete this well in the Abo formation at an approximate depth of 5800

D	C	B	A X
E	F	G	H
L	K	J	I
M	N	O	P

CASING PROGRAM

We propose to use the following strings of Casing and to cement them as indicated:

Size of Hole	Size of Casing	Weight per Foot	New or Second Hand	Depth	Sacks Cement
11"	8 5/8"	28#	new	975'	to surface
7 7/8"	5 1/2	17#	"	5800"	300

If changes in the above plans become advisable we will notify you immediately.

ADDITIONAL INFORMATION

Application for permit to drill has been sent to State Water Engineers.

AUG 5 1959

Approved ....., 19.....
Except as follows:

OIL CONSERVATION COMMISSION

By M L Armstrong

Sincerely yours,

WILLIAM HUDSON (Company or Operator)

By William Hudson

Position Owner

Send Communications regarding well to

Name William Hudson

Address Box 476. Artesia, N. M.

NEW MEXICO OIL CONSERVATION COMMISSION

FORM C-1
Revised 5/1/

WELL LOCATION AND ACREAGE DEDICATION PLAT

SEE INSTRUCTIONS FOR COMPLETING THIS FORM ON THE REVERSE SIDE

SECTION A

Operator	Lease	Well No.
William Hudson	State ABO	1

Unit Letter	Section	Township	Range	County
A	2	18 S	27 E	Eddy

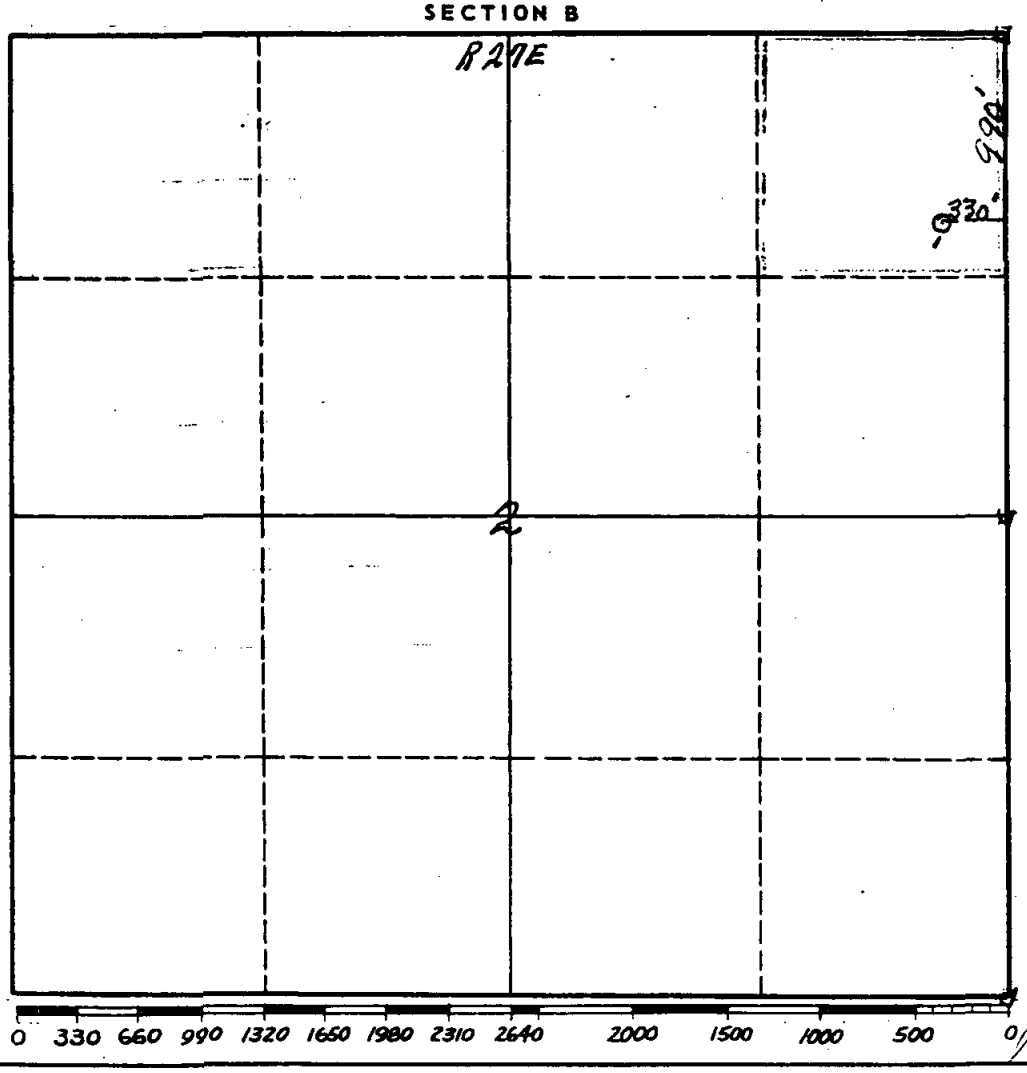
Actual Footage Location of Well:
990 feet from the North line and 330 feet from the East line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
3618			40 Ac

1. Is the Operator the only owner in the dedicated acreage outlined on the plat below? YES _____ NO _____. *("Owner" means the p who has the right to drill into and to produce from any pool and to appropriate the production either for himself or for himself and another. (65-3-29 (e) NMSA 1935 Comp.)*
2. If the answer to question one is "no," have the interests of all the owners been consolidated by communitization agreement or othe wise? YES_____ NO _____. If answer is "yes," Type of Consolidation _____
3. If the answer to question two is "no," list all the owners and their respective interests below:

Owner	Land Description

SECTION B



CERTIFICATION

I hereby certify that the informatic in *SECTION A* above is true and c plete to the best of my knowledge belief.

Name

Position

Company

Date

I hereby certify that the well locat shown on the plat in *SECTION B* v plotted from field notes of actual surveys made by me or under my supervision, and that the same is t and correct to the best of my know and belief.

Date Surveyed
July 25th 1959

Registered Professional Engineer and/or Land Surveyor

James H. Brown

Certificate No.
542

1.E.3

765

FORM 572

SCOUT TICKET

9 1959

Co 23

No acg. immed. vic.

COUNTY Eddy FIELD Empire Abo

SECTION 2 TWP. 18S RANGE 27E

SEC. BLK. SUR. ABST.

OPERATOR William Hudson

WELL NUMBER 1 FARM NAME Hudson State Abo

FEET FROM LINE N. 990 E. 330 S. W.

ELEVATION 3630 df METHOD

CONTRACTOR Carper Ø SCOUT C. Schellinger

CASING	DEPTH	CEMENT
8-5/8	970	300
5½	5917	300

SHOT & ACID RECORD

QTS. TO

QTS. TO

QTS. TO

GALS.

GALS.

GALS.

PERFORATIONS

44/5773-95
16/5810-18
6/5831-34
20/5842-52
24/5863-75

5800' Abo test
Lse: NE NE

The Subsurface Library
P. O. Box 942
~~Midland, Texas~~

ac 2000

MARKERS 4

Abo Reef-5590
3630
1960

Abo -5360
Abo Reef-5600

COMPLETION DATA

TD 5920 ls PB 5917

TP 5773 (Abo) BP

IP FLOW 80 BO 24 hrs.
PUMP

CHOKE 12/64

GAS

GOR

TBG. PRES. 100 CSG. PRES. Pkr

BHP GRAVITY 46

D & A

COMPLETED 9-3-59

DATE		DATE	
	FIRST REPORT: 8-5-59		24/5863-75
	SPUDDED: 7-31-59		
8-5-59	TD 970 a & dol WOC		ac 2000
AUG 12 1959	Ø 2740 ls		
AUG 19 1959	Ø 4944 Anh		
AUG 26 1959	Ø 5167 dol		
SEP 2 1959	TD 5920 ls WOC		
SEP ~~1~~ 9 1959	TD 5920 ls PB 5917		
	pf 44/5773-95		
	16/5810-18		
	6/5831-34		
	20/5842-52		

ATTACHMENT VI-3

TOP OF CEMENT IN INJECTION ZONE WELLS IN THE AREA OF REVIEW

Map ID No.	Casing Diameter (inches)	Setting Depth (feet)	Cement Volume (sacks)	Hole Diameter (inches)	Cement Factor (cu ft/sacks)	Hole Rugosity	Cement Height (feet)	Top of Cement (feet below ground)
81	13.375	663	650	17.5	1.1	0.8	823	Surface
	8.625	4000	1400	11	1.1	0.8	4846	Surface
	5.5	10450	2007	7.875	1.1	0.8	10194	256
83[1]	13.375	354	350	17.5	1.1	0.8	443	Surface
	8.625	1745	650	.11	1.1	0.8	2250	Surface
	5.5	8466	520	7.875	--	--	--	6250[1]
124[2]	13.375	400	500	17.5	1.1	0.8	633	Surface
	9.625	2600	1100	12.25	1.1	0.8	3091	Surface
	7	9445	1895	7.875	1.1	0.8	23491	Surface
	4.5	10198	175	6.125	1.1	0.8	1635	Top of Liner
134	13.375	416	450	17.5	1.1	0.8	570	Surface
	9.625	2610	1025	12.25	1.1	0.8	2880	Surface
	5.5	10148	1020	8.75	1.1	0.8	3554	6594
144	13.375	400	100	17.5	1.1	0.8	127	273
	9.625	2600	250	12.25	1.1	0.8	702	1898
	7	8968	1200	8.75	1.1	0.8	7025	1943
	4.5	10150	200	6.125	1.1	0.8	1869	Top of Liner
157	13.375	400	425	17.5	1.1	0.8	538	Surface
	9.625	2604	1025	12.25	1.1	0.8	2880	Surface
	7	9450	1350	8.75	1.1	0.8	7903	1547
	4.5	10119	175	6.125	1.1	0.8	1635	Top of Liner
161	13.375	472	450	17.5	1.1	0.8	570	Surface
	8.625	2589	900	12.25	1.1	0.8	1919	670
	5.5	9473	430	7.875	--	--	--	6000[3]
	4.5	10140	80	5.5	1.1	0.8	1291	Top of Liner
167	13.375	418	500	17.5	1.1	0.8	633	Surface
	8.625	2600	1150	11	1.1	0.8	3981	Surface
	5.5	10400	1000	7.875	1.1	0.8	5079	5321

Revised April 12, 1999

ATTACHMENT VI-3 (Continued)

Map ID No.	Casing Diameter (inches)	Setting Depth (feet)	Cement Volume (sacks)	Hole Diameter (inches)	Cement Factor (cu ft/sacks)	Hole Rugosity	Cement Height (feet)	Top of Cement (feet below ground)
848	11.75	1000	970	17.5	1.1	0.8	931	69
	8.625	6348	300	12.25	--	--	--	5400[4]
	5.5	10138	855	7.875	--	--	--	6850[4]
851	13.375	572	700	17.5	1.1	0.8	887	Surface
	9.625	1790	250	12.25	1.1	0.8	702	1088
	5.5	4500	Unknown	6.125	--	--	--	Unknown
855	13.375	502	700	17.5	1.1	0.8	887	Surface
	9.625	2200	1400	12.25	1.1	0.8	3934	Surface
	5.5	11,915	2720	7.875	1.1	0.8	13816	Surface
861[5]	8.625	1995	800	11.000	--	--	--	Surface[5]

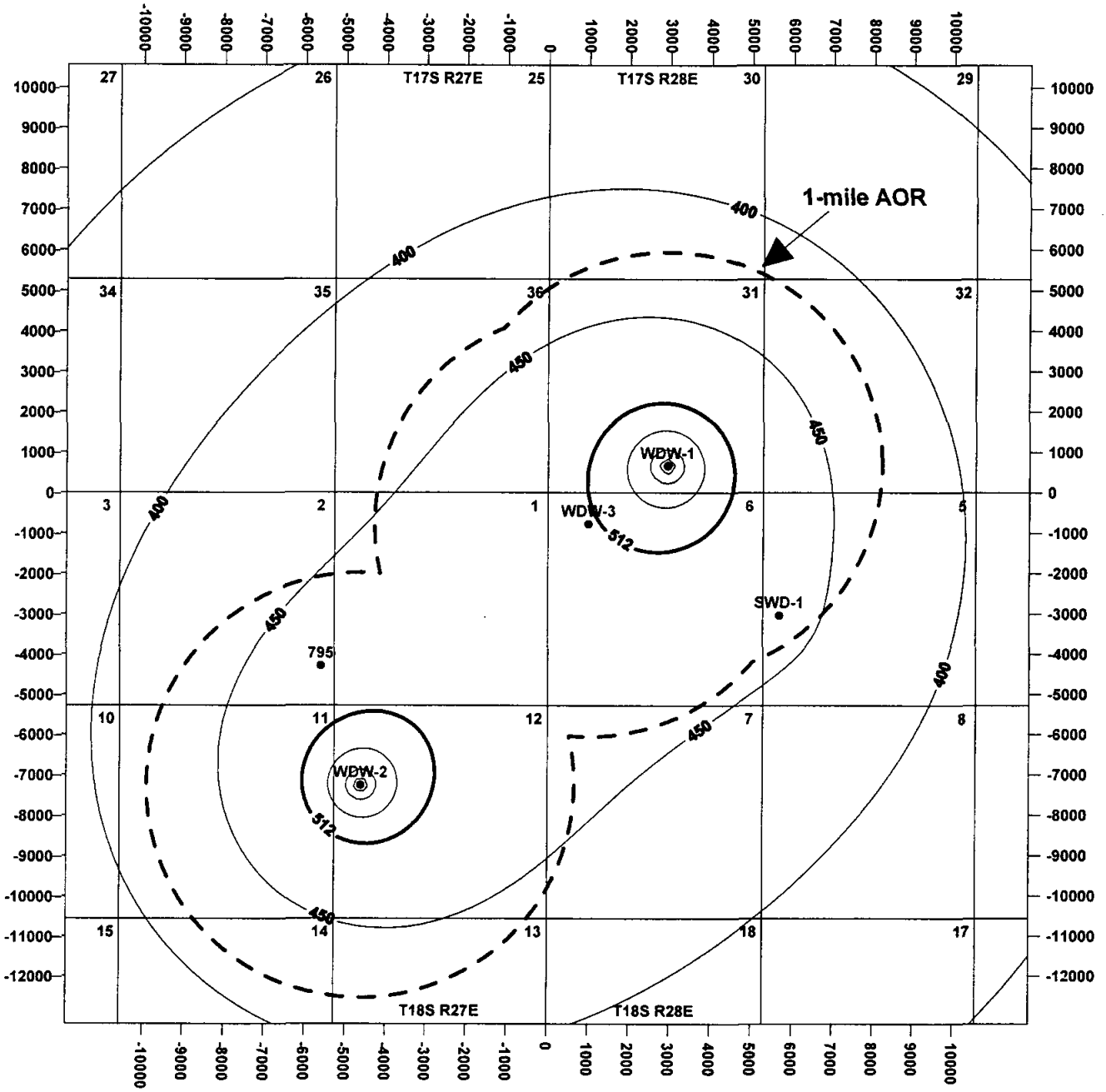
Cement Height = Cement Volume * Cement Factor * Hole Rugosity * 1/(PI*(Hole Radius^2 - Casing Radius^2))

[1] For Map ID No. 83, cement volume for 5-1/2 inch casing includes squeezes. Top of cement per temperature survey conducted on May 9, 1991.
[2] For Map ID No. 124, hole diameter for 4-1/2 inch liner was not reported; 6.125 inches is estimated.
[3] For Map ID No. 161, per cement bond log on July 20, 1993. Log is included in Attachment VI-2.
[4] For Map ID No. 848, top of cement for 8-5/8 inch casing is 5100 feet per operator's well schematic. Top of cement for 5-1/2 inch liner is 6850 feet per operator's well schematic.
[5] Map ID No. 861 is Navajo's proposed WDW-2. Cement was circulated to the surface per operator.

ATTACHMENT VI-5

NAVAJO REFINING COMPANY

PRESSURE INCREASE MODELING RESULTS



Critical Pressure Increase = 512 psi = Edge of the Cone of Influence

WDW-1 at 500 gpm for 8/1/99 to 7/31/2019 (20 years)
WDW-2 at 500 gpm for 8/1/99 to 7/31/2019 (20 years)
WDW-3 at 0 gpm for 8/1/99 to 7/31/2019 (20 years)

k = 250 md
h = 85 ft

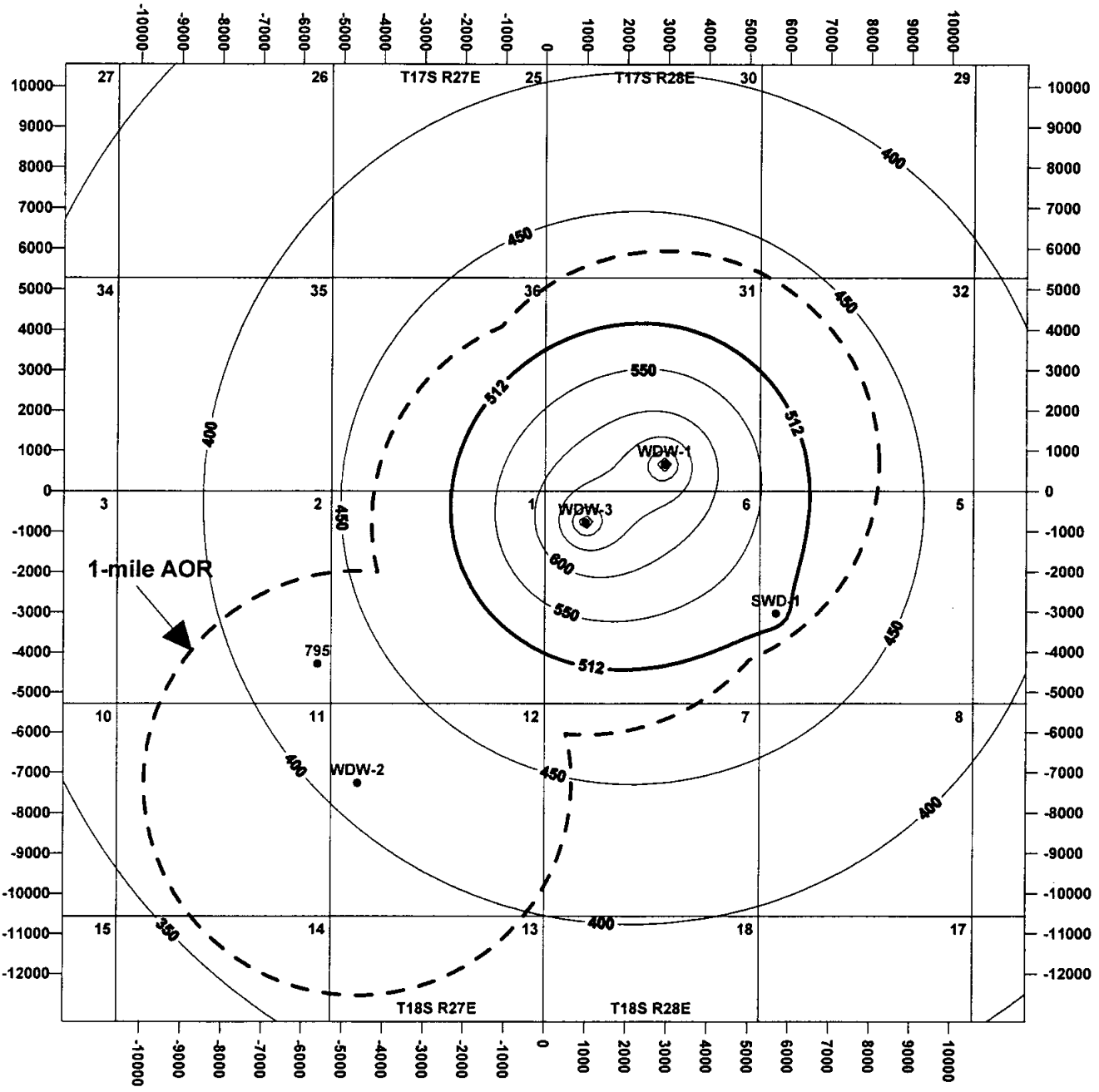
SWD-1 at 17.6 gpm for 6/1/88 to 7/31/99
SWD-1 at 58.3 gpm for 8/1/99 to 7/31/2019 (20 years)

NLN/predictw/navajo/1&2.srf 4/22/99

ATTACHMENT VI-5

NAVAJO REFINING COMPANY

PRESSURE INCREASE MODELING RESULTS



Critical Pressure Increase = 512 psi = Edge of the Cone of Influence

WDW-1 at 500 gpm for 8/1/99 to 7/31/2019 (20 years)
WDW-2 at 0 gpm for 8/1/99 to 7/31/2019 (20 years)
WDW-3 at 500 gpm for 8/1/99 to 7/31/2019 (20 years)

k = 250 md
h = 85 ft

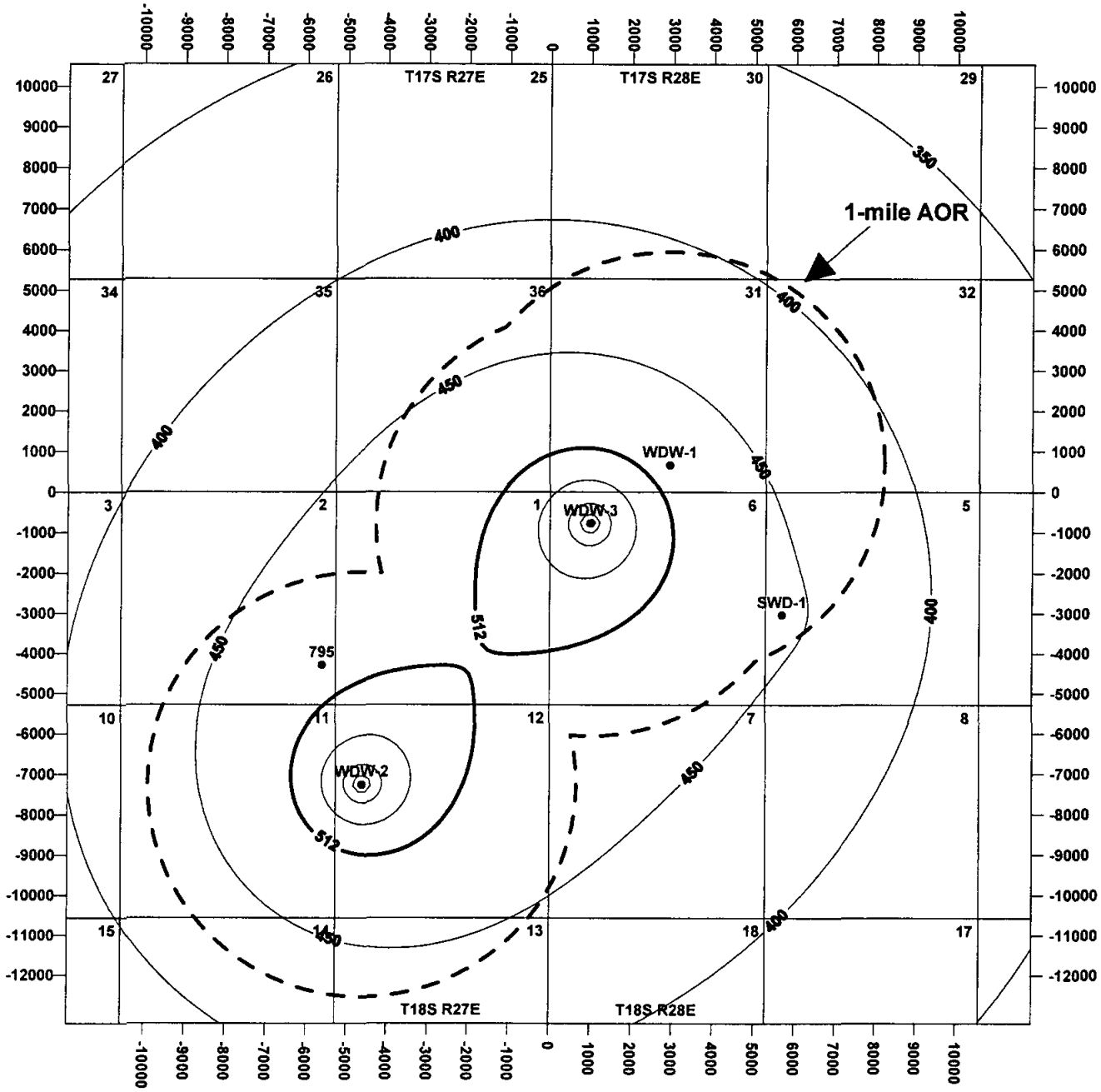
SWD-1 at 17.6 gpm for 6/1/88 to 7/31/99
SWD-1 at 58.3 gpm for 8/1/99 to 7/31/2019 (20 years)

NLN/predictw/navajo/1&3.srf 4/22/99

ATTACHMENT VI-5

NAVAJO REFINING COMPANY

PRESSURE INCREASE MODELING RESULTS



Critical Pressure Increase = 512 psi = Edge of the Cone of Influence

WDW-1 at 0 gpm for 8/1/99 to 7/31/2019 (20 years)
WDW-2 at 500 gpm for 8/1/99 to 7/31/2019 (20 years)
WDW-3 at 500 gpm for 8/1/99 to 7/31/2019 (20 years)

k = 250 md
h = 85 ft

SWD-1 at 17.6 gpm for 6/1/88 to 7/31/99
SWD-1 at 58.3 gpm for 8/1/99 to 7/31/2019 (20 years)

NLN/predictw/navajo/2&3.srf 4/22/99

VII. PROPOSED OPERATIONS

1. Proposed Injection Rate and Volume

The proposed maximum injection rate for WDW-1 and proposed WDW-2 and WDW-3 combined is 1000 gpm or 34,286 bpd. The proposed maximum injection volume in any given month is that volume calculated by multiplying 1000 gpm by 60 minutes per hour by 24 hours per day by the number of days in the month.

The proposed maximum rate of injection into any one well is 500 gpm.

2. Whether the System Is Open or Closed

The operations for the proposed Class I wells will be restricted to injection from a closed system. Fluids to be injected will be generated on site at Navajo's refinery in Artesia and will be transported to the injection wells by pipeline.

3. Proposed Injection Pressure

The maximum injection pressure at the wellhead will not exceed 0.2 psi per foot of depth to the top of the injection zone, as required by OCD Proposed Rule 21.B(7), dated October 6, 1997. The maximum injection pressure at the wellhead may vary, depending on the depth of the injection formation. For example, if WDW-1 is completed at the top of the injection zone at 7450 feet, then the requested maximum injection pressure is 1490 psi, as calculated below:

Maximum Injection Pressure at the Top of the Injection Zone

= Top of the Injection Zone x 0.2 psi/ft
= 7450 feet x 0.2 psi/ft
= 1490 psi

If the top of the injection formation coincides with the top of the Cisco or Canyon Formations, both of which are deeper than the Wolfcamp Formation, then the proposed injection pressure will be higher. The proposed injection pressure for each injection formation is summarized in the following table:

PROPOSED INJECTION PRESSURE			
Injection Formation	**Top of Injection Formation**	**Maximum Injection Pressure Gradient**	**Proposed Injection Pressure**
WDW-1			
Wolfcamp Cisco Canyon	7450 feet 7816 feet 8475 feet	0.2 psi/ft 0.2 psi/ft 0.2 psi/ft	1490 psi 1563 psi 1695 psi
WDW-2			
Wolfcamp Cisco Canyon	7270 feet 7645 feet 8390 feet	0.2 psi/ft 0.2 psi/ft 0.2 psi/ft	1454 psi 1529 psi 1678 psi
WDW-3			
Wolfcamp Cisco Canyon	7392 feet (est.) 7732 feet (est.) 8437 feet (est.)	0.2 psi/ft 0.2 psi/ft 0.2 psi/ft	1478 psi 1548 psi 1687 psi

4. Wastestream Information and Compatibility with the Injection Zone

Navajo proposes to inject exempt and nonexempt nonhazardous oilfield waste that is generated at its refinery in Artesia. Waste waters from process units, cooling towers and boilers, streams from water purification units and desalting units, and general wash waters will be blended to make up the proposed waste stream. The sources of the individual waste streams are listed below:

a. process waste waters from crude oil fractionation, catalytic cracking, alkylation, and desulfurization units;
b. cooling tower blowdown water;
c. waste waters from water purification and desalting units;
d. general wash waters;
e. boiler blowdown water; and
f. recovered and treated ground water.

A recent chemical analysis of the waste water proposed for injection is included as Attachment VII-1 (Pond Outfall). Average concentration levels for major constituents are listed in Attachment VII-2, along with the expected pH range and specific gravity.

5. Injection Zone Fluid Analysis

The composition of the native formation fluid in the proposed Wolfcamp, Cisco, and Canyon injection zone is expected to be similar to that in these formations in other parts of southeastern New Mexico. The salinity of Wolfcamp, Cisco, and Canyon formation brines from hydrocarbon producing areas in northern Lea County, to the east of Eddy County, was reported by Meyer (1966, Table 4). Attachment VII-3 summarizes the salinity data reported by Meyer (1966, Table 4) for Wolfcamp, Cisco, and Canyon formation brines from limestones that were deposited in a shelf environment similar to that of the proposed injection site. The salinity of the formation brines range from 67,098 to 119,909 parts per million (ppm). The formation brines were produced from intervals that occur between 9001 feet and 10742 feet below ground. Also listed in Attachment VII-7 are data from Strawn limestones that were deposited in a platform environment and that occur at 7700 feet below ground; the salinity of the Strawn formation brine is 39,374 ppm. DST data from WDW-1 indicate that the salinity of fluid recovered from the Cisco Formation in DST No. 5 is 25,000 ppm (Attachment VIII-9).

Formation fluid samples were obtained from the Cisco injection interval upon completion of Navajo's WDW-1 in July 1998. The sample from the lower Cisco perforations (8220 feet to 8476 feet) had a TDS concentration of 33,000 mg/l. The sample from the upper Cisco perforations (7924 feet to 8188 feet) had a TDS concentration of 18,000 mg/l. The report of the chemical analysis is included as Attachment VII-4.

Navajo will attempt to retrieve a sample of formation brine during the well testing operations of proposed WDW-2 and WDW-3. Formation brine samples will be retrieved prior to any stimulation treatments or injection into the wells.

ATTACHMENT VII-4

ANALYSIS OF FORMATION FLUID FROM THE CISCO IN WDW-1

TRACE ANALYSIS, INC.
6701 Aberdeen Avenue Lubbock, Texas 79424 806•794•1296 FAX 806•794•1298

September 16, 1998
Receiving Date: 08/01/98
Sample Type: Water
Project No: NA
Project Location: Wastewater Wells - Artesia

ANALYTICAL RESULTS FOR
NAVAJO REFINING
Attention: Darrell Moore
501 E. Main
Artesia, NM 88210

Prep Date: 09/02/98
Analysis Date: 09/11/98
Sampling Date: 07/31/98
Sample Condition: Intact & Cool
Sample Received by: MS
Project Name: NA

After 16 hours @ 130 F

TA#	Field Code	POTASSIUM (mg/L)	MAGNESIUM (mg/L)	CALCIUM (mg/L)	SODIUM (mg/L)
T103911	Upper Zone	120	152	215	4,470
T103912	Lower Zone	403	166	372	11,000
T103993	Upper Zone 2:1	92	111	175	2,960
T103994	Upper Zone 1:1	74	91	156	2,280
T103995	Upper Zone 1:2	55	70	170	1,630
T103996	Lower Zone 2:1	264	122	314	8,300
T103997	Lower Zone 1:1	203	98	272	6,230
T103998	Lower Zone 1:2	139	77	237	4,400
ICV		24	25	26	25
CCV		24	26	25	26
Reporting Limit		0.50	0.50	0.50	0.50
METHOD BLANK		<0.50	<0.50	<0.50	<0.50
RPD		2	1	1	5
% Extraction Accuracy		120	93	94	105
% Instrument Accuracy		99	102	104	104

METHODS: EPA 200.7.
CHEMIST: RR
SPIKE: 1,000 mg/L POTASSIUM, MAGNESIUM, CALCIUM, SODIUM.
CV: 25 mg/L POTASSIUM, MAGNESIUM, CALCIUM, SODIUM.

Director, Dr. Blair Leftwich

5-16-98
Date

ATTACHMENT VII-4

TRACE ANALYSIS, INC.
6701 Aberdeen Avenue Lubbock, Texas 79424 806•794•1296 FAX 806•794•1298

September 16, 1998
Receiving Date: 08/01/98
Sample Type: Water
Project No: NA
Project Location: Wastewater Wells - Artesia

ANALYTICAL RESULTS FOR
NAVAJO REFINING
Attention: Darrell Moore
501 E. Main
Artesia, NM 88210

Prep Date: 08/11/98
Analysis Date: 08/16/98
Sampling Date: 07/31/98
Sample Condition: Intact & Cool
Sample Received by: MS
Project Name: NA

ROOM TEMPERATURE

TA#	Field Code	POTASSIUM (mg/L)	MAGNESIUM (mg/L)	CALCIUM (mg/L)	SODIUM (mg/L)
T103911	Upper Zone	61	126	276	4,785
T103912	Lower Zone	213	143	390	12,770
T103993	Upper Zone 2:1	26	80	214	3,114
T103994	Upper Zone 1:1	18	66	282	2,491
T103995	Upper Zone 1:2	5.3	39	213	1,675
T103996	Lower Zone 2:1	138	99	384	8,920
T103997	Lower Zone 1:1	89	70	277	6,778
T103998	Lower Zone 1:2	54	43	291	4,547
ICV		25	25	25	26
CCV		25	25	25	26
Reporting Limit		0.50	0.50	0.50	0.50
METHOD BLANK		<0.50	<0.50	<0.50	<0.50
RPD		2*	0*	0*	0*
% Extraction Accuracy		98*	100*	104*	101*
% Instrument Accuracy		100	100	100	104

*NOTE: Used LCS for Extraction Accuracy and RPD due to high concentration in sample.
METHODS: EPA 200.7.
CHEMIST: RR
SPIKE: 100 mg/L POTASSIUM, MAGNESIUM, CALCIUM, SODIUM.
CV: 25 mg/L POTASSIUM, MAGNESIUM, CALCIUM, SODIUM.

Director, Dr. Blair Leftwich

9-16-98
Date

TRACEANALYSIS, INC.

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E-Mail: lab@traceanalysis.com

ANALYTICAL RESULTS FOR NAVAJO REFINING

September 18, 1998
Receiving Date: 08/01/98
Sample Type: Water
Project No: NA
Project Location: Wastewater Wells - Artesia

Attention: Darrell Moore
501 E. Main
Artesia, NM 88210

Sampling Date: 07/31/98
Sample Condition: I & C
Sample Received by: MS
Project Name: NA

ROOM TEMPERATURE

TA#	FIELD CODE	NO3-N* (mg/L)	TSS (mg/L)	TDS (mg/L)	FLUORIDE (mg/L)	CHLORIDE (mg/L)	SULFATE (mg/L)
T103911	Upper Zone	<10	46	16,000	3.7	8,500	1,800
T103912	Lower Zone	<10	170	33,000	2.6	19,000	2,200
T103994	Upper Zone 1:1	<10	230	9,000	16	3,900	1,200
ICV		4.8	---	---	0.97	12	12
CCV		4.8	---	---	0.94	12	12
RPD		4	0	8	8	0	1
% Extraction Accuracy		96	---	---	104	96	99
% Instrument Accuracy		97	---	98	97	98	98
REPORTING LIMIT		10	---	---	0.1	0.5	0.5
PREP DATE		08/06/98	08/09/98	08/06/98	08/07/98	08/06/98	08/06/98
ANALYSIS DATE		08/06/98	08/09/98	08/06/98	08/07/98	08/06/98	08/06/98

TA#	FIELD CODE	ALKALINITY (mg/L as CaCo3) HCO3	ALKALINITY (mg/L as CaCo3) CO3	SPECIFIC GRAVITY (g/mL)	SPECIFIC CONDUCTANCE (uMHOS/cm)	pH (s.u.)
T103911	Upper Zone	1,400	<1.0	1.018	27,000	7.6
T103912	Lower Zone	1,000	<1.0	1.034	52,000	8.1
T103994	Upper Zone 1:1	410	6	1.006	13,000	8.5
ICV		1,100	1,100	---	1,396	7.0
CCV		1,130	1,080	---	1,387	7.0
RPD		1	1	0	1	0
% Extraction Accuracy		---	---	---	98	---
% Instrument Accuracy		91	91	---	99	100
REPORTING LIMIT		---	---	---	---	---
PREP DATE		08/11/98		08/06/98	08/07/98	08/09/98
ANALYSIS DATE		08/11/98		08/06/98	08/07/98	08/09/98

***NOTE: Out of holding time for NO3-N.**
METHODS: EPA 150.1, 300.0, 160.2, 160.1, 340.2, 120.1, 310.1; ASTM D854-92.
CHEMIST: pH/TSS: BP NO3-N/FLUORIDE/CHLORIDE/SULFATE/SPECIFIC GRAVITY: JS
TDS/SPECIFIC CONDUCTANCE/ALKALINITY: RS

NO3-N SPIKE: 125 mg/L NO3-N.
FLUORIDE SPIKE: 10 mg/L FLUORIDE.
CHLORIDE SPIKE: 312.5 mg/L CHLORIDE.
SULFATE SPIKE: 312.5 mg/L SULFATE.

NO3-N CV: 5.0 mg/L NO3-N.
FLUORIDE CV: 1.0 mg/L FLUORIDE.
CHLORIDE CV: 12.5 mg/L CHLORIDE.
SULFATE CV: 12.5 mg/L SULFATE.

Director, Dr. Blair Leftwich

9-16-98
DATE

TRACEANALYSIS, INC.

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4725 Ripley Avenue, Suite A El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
E-Mail: lab@traceanalysis.com

ANALYTICAL RESULTS FOR
NAVAJO REFINING

September 16, 1998
Receiving Date: 08/01/98
Sample Type: Water
Project No: NA
Project Location: Wastewater Wells - Artesia

Attention: Darrell Moore
501 E. Main
Artesia, NM 88210

Sampling Date: 07/31/98
Sample Condition: I & C
Sample Received by: MS
Project Name: NA

ROOM TEMPERATURE

TA#	FIELD CODE	N03-N* (mg/L)	TSS (mg/L)	TDS (mg/L)	FLUORIDE (mg/L)	CHLORIDE (mg/L)	SULFATE (mg/L)
T103993	Upper Zone 2:1	<10	560	11,000	14	6,000	1,400
ICV		4.8	—	—	0.97	11	12
CCV		4.8	—	—	0.94	11	12
RPD		4	0	8	8	5	1
% Extraction Accuracy		96	—	—	104	93	99
% Instrument Accuracy		97	—	98	97	93	98
REPORTING LIMIT		10	—	—	0.1	0.5	0.5
PREP DATE		08/06/98	08/09/98	08/06/98	08/07/98	08/10/98	08/06/98
ANALYSIS DATE		08/06/98	08/09/98	08/06/98	08/07/98	08/10/98	08/06/98

TA#	FIELD CODE	ALKALINITY (mg/L as CaCo3) HC03	ALKALINITY (mg/L as CaCo3) C03	SPECIFIC GRAVITY (g/mL)	SPECIFIC CONDUCTANCE (uMHOS/cm)	pH (s.u.)
T103993	Upper Zone 2:1	700	<1.0	1.010	16,000	8.2
ICV		1,100	1,100	—	1,396	7.0
CCV		1,130	1,060	—	1,387	7.0
RPD		1	1	0	1	0
% Extraction Accuracy		—	—	—	98	—
% Instrument Accuracy		91	91	—	99	100
REPORTING LIMIT		—	—	—	—	—
PREP DATE		08/11/98		08/06/98	08/07/98	08/09/98
ANALYSIS DATE		08/11/98		08/06/98	08/07/98	08/09/98

*NOTE: Out of holding time for N03-N.

METHODS: EPA 150.1, 300.0, 160.2, 160.1, 340.2, 120.1, 310.1; ASTM D854-92.
CHEMIST: pH/TSS: BP N03-N/FLUORIDE/CHLORIDE/SULFATE/SPECIFIC GRAVITY: JS
TDS/SPECIFIC CONDUCTANCE/ALKALINITY: RS

N03-N SPIKE: 125 mg/L N03-N.
FLUORIDE SPIKE: 10 mg/L FLUORIDE.
CHLORIDE SPIKE: 1,260 mg/L CHLORIDE.
SULFATE SPIKE: 312.5 mg/L SULFATE.

N03-N CV: 5.0 mg/L N03-N.
FLUORIDE CV: 1.0 mg/L FLUORIDE.
CHLORIDE CV: 12.5 mg/L CHLORIDE.
SULFATE CV: 12.5 mg/L SULFATE.

Director, Dr. Blair Leftwich

9-16-98
DATE

TRACE ANALYSIS, INC.

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E-Mail: lab@traceanalysis.com

ANALYTICAL RESULTS FOR
NAVAJO REFINING

September 16, 1998
Receiving Date: 08/01/98
Sample Type: Water
Project No: NA
Project Location: Wastewater Wells - Artesia

Attention: Darrell Moore
501 E. Main
Artesia, NM 88210

Sampling Date: 07/31/98
Sample Condition: I & C
Sample Received by: MS
Project Name: NA

ROOM TEMPERATURE

TA#	FIELD CODE	NO3-N* (mg/L)	TSS (mg/L)	TDS (mg/L)	FLUORIDE (mg/L)	CHLORIDE (mg/L)	SULFATE (mg/L)
T103995	Upper Zone 1:2	<10	320	6,000	24	2,600	960
T103996	Lower Zone 2:1	<10	630	23,000	13	14,000	1,700
T103997	Lower Zone 1:1	<10	430	18,000	20	12,000	1,500
T103998	Lower Zone 1:2	<10	230	13,000	23	13,000	1,100
ICV		4.8	—	—	0.97	12	12
CCV		4.8	—	—	0.94	12	12
RPD		1	0	8	8	1	4
% Extraction Accuracy		106	—	—	104	90	109
% Instrument Accuracy		97	—	98	97	97	97
REPORTING LIMIT		10	—	—	0.1	0.5	0.5
PREP DATE		08/06/98	08/06/98	08/06/98	08/07/98	08/06/98	08/06/98
ANALYSIS DATE		08/06/98	08/06/98	08/06/98	08/07/98	08/06/98	08/06/98

TA#	FIELD CODE	ALKALINITY (mg/L as CaCo3) HCO3	ALKALINITY (mg/L as CaCo3) CO3	SPECIFIC GRAVITY (g/mL)	SPECIFIC CONDUCTANCE (uMHOS/cm)	pH (s.u.)
T103995	Upper Zone 1:2	340	4	1.010	9,300	8.5
T103996	Lower Zone 2:1	570	<1.0	1.018	44,000	8.2
T103997	Lower Zone 1:1	540	2.0	1.023	34,000	8.4
T103998	Lower Zone 1:2	370	10	1.009	20,000	8.6
ICV		1,100	1,100	—	1,396	7.0
CCV		1,130	1,060	—	1,387	7.0
RPD		1	1	0	1	0
% Extraction Accuracy		—	—	—	98	—
% Instrument Accuracy		91	91	—	99	100
REPORTING LIMIT		—	—	—	—	—
PREP DATE		08/11/98		08/06/98	08/07/98	08/09/98
ANALYSIS DATE		08/11/98		08/06/98	08/07/98	08/09/98

*NOTE: Out of holding time for NO3-N.
METHODS: EPA 150.1, 300.0, 160.2, 160.1, 340.2, 120.1, 310.1; ASTM D854-92.
CHEMIST: pH/TSS: BP NO3-N/FLUORIDE/CHLORIDE/SULFATE/SPECIFIC GRAVITY: JS
TDS/SPECIFIC CONDUCTANCE/ALKALINITY: RS

NO3-N SPIKE: 125 mg/L NO3-N.
FLUORIDE SPIKE: 10 mg/L FLUORIDE.
CHLORIDE SPIKE: 312.5 mg/L CHLORIDE.
SULFATE SPIKE: 312.5 mg/L SULFATE.

NO3-N CV: 5.0 mg/L NO3-N.
FLUORIDE CV: 1.0 mg/L FLUORIDE.
CHLORIDE CV: 12.5 mg/L CHLORIDE.
SULFATE CV: 12.5 mg/L SULFATE.

Director, Dr. Blair Leftwich

9-16-98
DATE

TRACEANALYSIS, INC.

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E-Mail: lab@traceanalysis.com

ANALYTICAL RESULTS FOR
NAVAJO REFINING

September 16, 1998
Receiving Date: 08/01/98
Sample Type: Water
Project No: NA
Project Location: Wastewater Wells - Artesia

Attention: Darrell Moore
501 E. Main
Artesia, NM 88210

Sampling Date: 07/31/98
Sample Condition: I & C
Sample Received by: MS
Project Name: NA

After 16 hours @ 130 °F

TA#	FIELD CODE	NO3-N* (mg/L)	TSS (mg/L)	TDS (mg/L)	FLUORIDE (mg/L)	CHLORIDE (mg/L)	SULFATE (mg/L)
T103911	Upper Zone	<10	3,200	17,000	2.7	7,200	1,800
T103912	Lower Zone	<10	1,040	38,000	2.0	22,000	2,100
T103993	Upper Zone 2:1	<10	1,900	11,000	12	49,000	1,300
ICV		4.7	---	---	0.97	11	12
CCV		4.7	---	---	0.96	11	11
RPD		3	3	1	0	5	0
% Extraction Accuracy		105	---	---	100	93	110
% Instrument Accuracy		96	---	101	97	93	97
REPORTING LIMIT		10	---	---	0.1	0.5	0.5
PREP DATE		08/26/98	08/12/98	08/10/98	08/12/98	08/10/98	08/10/98
ANALYSIS DATE		08/28/98	08/12/98	08/10/98	08/12/98	08/10/98	08/10/98

TA#	FIELD CODE	ALKALINITY (mg/L as CaCo3) HCO3	ALKALINITY (mg/L as CaCo3) CO3	SPECIFIC GRAVITY (g/mL)	SPECIFIC CONDUCTANCE (uMHOS/cm)	pH (s.u.)
T103911	Upper Zone	720	36	1.018	27,000	8.6
T103912	Lower Zone	570	8.0	1.036	68,000	8.4
T103993	Upper Zone 2:1	480	24	1.016	18,000	8.6
ICV		1,080	1,100	---	1,335	7.0
CCV		1,040	1,120	---	1,327	7.0
RPD		1	1	0	2	0
% Extraction Accuracy		---	---	---	94	---
% Instrument Accuracy		90	90	---	94	100
REPORTING LIMIT		---	---	---	---	---
PREP DATE		08/14/98		08/11/98	08/10/98	08/12/98
ANALYSIS DATE		08/14/98		08/11/98	08/10/98	08/12/98

*NOTE: Out of holding time for NO3-N.
METHODS: EPA 150.1, 300.0, 160.2, 160.1, 340.2, 120.1, 310.1; ASTM D854-92.
CHEMIST: pH/TSS: BP NO3-N/FLUORIDE/CHLORIDE/SULFATE/SPECIFIC GRAVITY: JS
TDS/SPECIFIC CONDUCTANCE/ALKALINITY: RS

NO3-N SPIKE: 125 mg/L NO3-N.
FLUORIDE SPIKE: 10 mg/L FLUORIDE.
CHLORIDE SPIKE: 1,250 mg/L CHLORIDE.
SULFATE SPIKE: 1,250 mg/L SULFATE.

NO3-N CV: 5.0 mg/L NO3-N.
FLUORIDE CV: 1.0 mg/L FLUORIDE.
CHLORIDE CV: 12.5 mg/L CHLORIDE.
SULFATE CV: 12.5 mg/L SULFATE.

Director, Dr. Blair Leftwich

9-16-98
DATE

TRACEANALYSIS, INC.

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E-Mail lab@traceanalysis.com

ANALYTICAL RESULTS FOR
NAVAJO REFINING

September 16, 1998
Receiving Date: 08/01/98
Sample Type: Water
Project No: NA
Project Location: Wastewater Wells - Artesia

Attention: Darrell Moore
601 E. Main
Artesia, NM 88210

Sampling Date: 07/31/98
Sample Condition: I & C
Sample Received by: MS
Project Name: NA

After 16 hours @ 130 °F

TA#	FIELD CODE	NO3-N* (mg/L)	TSS (mg/L)	TDS (mg/L)	FLUORIDE (mg/L)	CHLORIDE (mg/L)	SULFATE (mg/L)
T103994	Upper Zone 1:1	<10	370	8,700	17	3,500	1,100
T103995	Upper Zone 1:2	<10	300	6,600	24	2,400	880
T103996	Lower Zone 2:1	<10	300	27,000	12	14,000	1,600
ICV		4.7	—	—	0.97	11	11
CCV		4.7	—	—	0.96	11	11
RPD		3	3	1	0	2	2
% Extraction Accuracy		105	—	—	100	92**	95**
% Instrument Accuracy		98	—	101	97	93	95
REPORTING LIMIT		10	—	—	0.1	0.5	0.5
PREP DATE		08/26/98	08/12/98	08/10/98	08/12/98	08/10/98	08/10/98
ANALYSIS DATE		08/26/98	08/12/98	08/10/98	08/12/98	08/10/98	08/10/98

TA#	FIELD CODE	ALKALINITY (mg/L as CaCo3) HCO3	CO3	SPECIFIC GRAVITY (g/mL)	SPECIFIC CONDUCTANCE (uMHOS/cm)	pH (s.u.)
T103994	Upper Zone 1:1	520	58	1.012	14,000	8.7
T103995	Upper Zone 1:2	370	20	1.004	11,000	9.0
T103996	Lower Zone 2:1	430	8.0	1.021	48,000	8.5
ICV		1,080	1,100	—	1,335	7.0
CCV		1,040	1,120	—	1,327	7.0
RPD		1	1	0	2	0
% Extraction Accuracy		—	—	—	94	—
% Instrument Accuracy		90	90	—	94	100
REPORTING LIMIT		—	—	—	—	—
PREP DATE		08/14/98		08/11/98	08/10/98	08/12/98
ANALYSIS DATE		08/14/98		08/11/98	08/10/98	08/12/98

*NOTE: Out of holding time for NO3-N.
**NOTE: Chloride and Sulfate spikes % Extraction Accuracy low. LRB spikes % Extraction Accuracy used due to matrix difficulties. LRB spikes in range.
METHODS: EPA 150.1, 300.0, 160.2, 160.1, 340.2, 120.1, 310.1; ASTM D854-92.
CHEMIST: pH/TSS: SP NO3-N/FLUORIDE/CHLORIDE/SULFATE/SPECIFIC GRAVITY: JS
TDS/SPECIFIC CONDUCTANCE/ALKALINITY: RS

NO3-N SPIKE: 125 mg/L NO3-N.
FLUORIDE SPIKE: 10 mg/L FLUORIDE.
CHLORIDE SPIKE: 312.5 mg/L CHLORIDE.
SULFATE SPIKE: 312.5 mg/L SULFATE.

NO3-N CV: 5.0 mg/L NO3-N.
FLUORIDE CV: 1.0 mg/L FLUORIDE.
CHLORIDE CV: 12.5 mg/L CHLORIDE.
SULFATE CV: 12.5 mg/L SULFATE.

Director, Dr. Blair Leftwich

5-16-98
DATE

TRACE ANALYSIS, INC.

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4725 Ripley Avenue, Suite A El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
E-Mail: lab@traceanalysis.com

ANALYTICAL RESULTS FOR
NAVAJO REFINING

September 16, 1998
Receiving Date: 08/01/98
Sample Type: Water
Project No: NA
Project Location: Wastewater Wells - Artesia

Attention: Darrell Moore
501 E. Main
Artesia, NM 88210

Sampling Date: 07/31/98
Sample Condition: I & C
Sample Received by: MS
Project Name: NA

After 16 hours @ 130 °F

TA#	FIELD CODE	NO3-N* (mg/L)	TSS (mg/L)	TDS (mg/L)	FLUORIDE (mg/L)	CHLORIDE (mg/L)	SULFATE (mg/L)
T103997	Lower Zone 1:1	<10	160	22,000	16	11,000	1,500
T103998	Lower Zone 1:2	<10	340	15,000	22	7,100	1,000
ICV		4.7	—	—	0.97	11	11
CCV		4.7	—	—	0.98	11	12
RPD		3	3	1	0	1	1
% Extraction Accuracy		105	—	—	100	91	93
% Instrument Accuracy		98	—	101	97	94	97
REPORTING LIMIT		10	—	—	0.1	0.5	0.5
PREP DATE		08/26/98	08/12/98	08/10/98	08/12/98	08/10/98	08/10/98
ANALYSIS DATE		08/26/98	08/12/98	08/10/98	08/12/98	08/10/98	08/10/98

TA#	FIELD CODE	ALKALINITY (mg/L as CaCo3) HCO3	ALKALINITY (mg/L as CaCo3) CO3	SPECIFIC GRAVITY (g/mL)	SPECIFIC CONDUCTANCE (uMHOS/cm)	pH (s.u.)
T103997	Lower Zone 1:1	340	32	1.012	37,000	8.8
T103998	Lower Zone 1:2	300	16	1.009	26,000	8.8
ICV		1,080	1,100	—	1,335	7.0
CCV		1,040	1,120	—	1,327	7.0
RPD		1	1	0	2	0
% Extraction Accuracy		—	—	—	94	—
% Instrument Accuracy		90	90	—	94	100
REPORTING LIMIT		—	—	—	—	—
PREP DATE		08/14/98		08/11/98	08/10/98	08/12/98
ANALYSIS DATE		08/14/98		08/11/98	08/10/98	08/12/98

*NOTE: Out of holding time for NO3-N.

METHODS: EPA 150.1, 300.0, 160.2, 160.1, 340.2, 120.1, 310.1; ASTM D854-92.
CHEMIST: pH/TSS: BP NO3-N/FLUORIDE/CHLORIDE/SULFATE/SPECIFIC GRAVITY: JS
TDS/SPECIFIC CONDUCTANCE/ALKALINITY: RS

NO3-N SPIKE: 125 mg/L NO3-N.
FLUORIDE SPIKE: 10 mg/L FLUORIDE.
CHLORIDE SPIKE: 62.5 mg/L CHLORIDE.
SULFATE SPIKE: 62.5 mg/L SULFATE.

NO3-N CV: 5.0 mg/L NO3-N.
FLUORIDE CV: 1.0 mg/L FLUORIDE.
CHLORIDE CV: 12.5 mg/L CHLORIDE.
SULFATE CV: 12.5 mg/L SULFATE.

Director, Dr. Blair Leftwich

5-16-98
DATE

ANALYSYS INC.

4221 Freidrich Lane, Suite 190, Austin, TX 78744
& 9320 Up River Road, Corpus Christi, TX 78409
(512) 444-5896 • FAX (512) 447-4716

Client: Trace Analysis, Inc.
Attn: Nell Green
Address: 6701 Aberdeen Ave, Ste. 9
Lubbock, Tx 79424

Phone: (806) 794-1296 FAX: (806) 794-1298

Report #/Lab ID#: 92840 Report Date: 8/31/98
Project ID:
Sample Name: 103911
Sample Matrix: water
Date Received: 8/5/98 Time: 10:00:00
Date Sampled: Not specifie Time: 00:00:00

REPORT OF ANALYSIS **QUALITY ASSURANCE DATA[1]**

Parameter	Result	Units	RQL[5]	Blank	Date	Method	Prec.[2]	Recov.[3]	CCV[4]	LCS[4]
Viscosity	0.6	cps			8/26/98	Brookfield				

Room Temperature - Upper Zone
Note: Could not run heated sample due to sulfide hazard.

This analytical report respectfully submitted by AnalySys, Inc. The enclosed results have been reviewed and to the best of my knowledge the analytical results are consistent with AnalySys, Inc.'s Quality Assurance/Quality Control Program.

Respectfully Submitted,

Richard Laster

Richard Laster

1. Quality assurance data reported is for the lot analyzed which included this sample
2. Precision (Prec.) is the absolute value of the relative percent (%) difference between duplicate measurements.
3. Recovery (Recov.) is the percent (%) of analyte recovered from a spiked sample.
4. Calibration Verification (CCV) and Lab Control Sample (LCS) results expressed as the percent (%) recovery of analyte from a known standard.
5. Reporting Quantitation Limit. The Practical Quantitation Limit (PQL) or the Method Detection Limit (MDL) reported for the analyte.
6. Method numbers typically denote USEPA procedures. Less than ("<") values reflect nominal quantitation limits, adjusted for any required dilution.

ANALYSYS INC.

4221 Freidrich Lane, Suite 190, Austin, TX 78744
& 9320 Up River Road, Corpus Christi, TX 78409
(512) 444-5896 • FAX (512) 447-4766

Client: Trace Analysis, Inc.
Attn: Nell Green
Address: 6701 Aberdeen Ave, Ste. 9
Lubbock, Tx 79424

Phone: (806) 794-1296 FAX: (806) 794-1298

Report #/Lab ID#: 92841 Report Date: 8/31/98
Project ID:
Sample Name: 103912
Sample Matrix: water
Date Received: 8/5/98 Time: 10:00:00
Date Sampled: Not specific Time: 00:00:00

REPORT OF ANALYSIS — **QUALITY ASSURANCE DATA**[1]

Parameter	Result	Units	RQL[5]	Blank	Date	Method	Prec.[2]	Recov.[3]	CCV[4]	LCS[4]
Viscosity	0.7	cps			8/26/98	Brookfield				

Room Temperature - Lower Zone
Note: Could not run heated sample due to sulfide hazard

This analytical report respectfully submitted by AnalySys, Inc. The enclosed results have been reviewed and to the best of my knowledge the analytical results are consistent with AnalySys, Inc.'s Quality Assurance/Quality Control Program.

Respectfully Submitted,

Richard Laster

Richard Laster

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3. Recovery (Recov.) is the percent (%) of analyte recovered from a spiked sample.
4. Calibration Verification (CCV) and Lab Control Sample (LCS) results expressed as the percent (%) recovery of analyte from a known standard.
5. Reporting Quantitation Limit. The Practical Quantitation Limit (PQL) or the Method Detection Limit (MDL) reported for the analyte.
6. Method numbers typically denote USEPA procedures. Less than ("<") values reflect nominal quantitation limits, adjusted for any required dilution.

ANALYSYS INC.

4211 Freidrich Lane, Suite 108, Austin, TX 78744
& 9320 Up River Road, Corpus Christi, TX 78409
(512) 444-5896 • FAX (512) 447-4766

Client: Trace Analysis, Inc.
Attn: Nell Green
Address: 6701 Aberdeen Ave, Ste. 9
Lubbock, Tx 79424
Phone: (806) 794-1296 FAX: (806) 794-1298

Report #/Lab ID#: 92842 Report Date: 8/31/98
Project ID:
Sample Name: 103993
Sample Matrix: water
Date Received: 8/5/98 Time: 10:00:00
Date Sampled: Not specific Time: 00:00:00

REPORT OF ANALYSIS

QUALITY ASSURANCE DATA[1]

Parameter	Result	Units	RQL[5]	Blank	Date	Method	Prec.[2]	Recov.[3]	CCV[4]	LCS[4]
Viscosity	0.6	cps			8/26/98	Brookfield				

Room Temp – Applied Dil 2:1
Note: Could not run heated sample due to sulfide hazard

This analytical report respectfully submitted by AnalySys, Inc. The enclosed results have been reviewed and to the best of my knowledge the analytical results are consistent with AnalySys, Inc.'s Quality Assurance/Quality Control Program.

Respectfully Submitted,

Richard Laster

Richard Laster

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5. Reporting Quantitation Limit. The Practical Quantitation Limit (PQL) or the Method Detection Limit (MDL) reported for the analyte.
6. Method numbers typically denote USEPA procedures. Less than ("<") values reflect nominal quantitation limits, adjusted for any required dilution.

ANALYSYS INC.

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(512) 444-5896 - FAX (512) 447-4766

Client: Trace Analysis, Inc.
Attn: Nell Green
Address: 6701 Aberdeen Ave, Ste. 9
Lubbock, Tx 79424

Phone: (806) 794-1296 FAX: (806) 794-1298

Report #/Lab ID#: 92843 Report Date: 8/31/98
Project ID:
Sample Name: 103994
Sample Matrix: water
Date Received: 8/5/98 Time: 10:00:00
Date Sampled: Not specifie Time: 00:00:00

REPORT OF ANALYSIS

QUALITY ASSURANCE DATA[1]

Parameter	Result	Units	RQL[5]	Blank	Date	Method	Prec.[2]	Recov.[3]	CCV[4]	LCS[4]
Viscosity	0.6	cps			8/26/98	Brookfield				

Room Temperature - Upper Zone 1:1
Note: Could not run heated sample due to Sulfide hazard

Respectfully Submitted,

Richard Laster

Richard Laster

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3. Recovery (Recov.) is the percent (%) of analyte recovered from a spiked sample.
4. Calibration Verification (CCV) and Lab Control Sample (LCS) results expressed as the percent (%) recovery of analyte from a known standard.
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6. Method numbers typically denote USEPA procedures. Less than ("<") values reflect nominal quantitation limits, adjusted for any required dilution.

ANALYSYS INC.

4221 Freidrich Lane, Suite 190, Austin, TX 78744
& 9320 Up River Road, Corpus Christi, TX 78409
(512) 444-5896 • FAX (512) 447-4766

Client: Trace Analysis, Inc.
Attn: Neil Green
Address: 6701 Aberdeen Ave, Ste. 9
Lubbock, Tx 79424

Phone: (806) 794-1296 FAX: (806) 794-1298

Report #/Lab ID#: 92844 Report Date: 8/31/98
Project ID:
Sample Name: 103995
Sample Matrix: water
Date Received: 8/5/98 Time: 10:00:00
Date Sampled: Not specific Time: 00:00:00

REPORT OF ANALYSIS

QUALITY ASSURANCE DATA[1]

Parameter	Result	Units	RQL[5]	Blank	Date	Method	Prec.[2]	Recov.[3]	CCV[4]	LCS[4]
Viscosity	0.6	cps			8/26/98	Brookfield				

Room Temperature - Upper Zone 1:2

Note: Could not run heated sample due to sulfide hazard

Respectfully Submitted,

Richard Laster

Richard Laster

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2. Precision (Prec.) is the absolute value of the relative percent (%) difference between duplicate measurements.
3. Recovery (Recov.) is the percent (%) of analyte recovered from a spiked sample.
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6. Method numbers typically denote USEPA procedures. Less than ("<") values reflect nominal quantitation limits, adjusted for any required dilution.

ANALYSYS INC.

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& 9320 Up River Road, Corpus Christi, TX 78409
(512) 444-5894 • FAX (512) 447-8766

Client: Trace Analysis, Inc.
Attn: Nell Green
Address: 6701 Aberdeen Ave, Ste. 9
Lubbock, Tx 79424

Phone: (806) 794-1296 FAX: (806) 794-1298

Report #/Lab ID#: 92845 Report Date: 8/31/98
Project ID:
Sample Name: 103996
Sample Matrix: water
Date Received: 8/5/98 Time: 10:00:00
Date Sampled: Not specific Time: 00:00:00

REPORT OF ANALYSIS

QUALITY ASSURANCE DATA[1]

Parameter	Result	Units	RQL[5]	Blank	Date	Method	Prec.[2]	Recov.[3]	CCV[4]	LCS[4]
Viscosity	0.1	cps			8/26/98	Brookfield				

Room Temperature – Lower Zone 2:1
Note: Could not run heated sample due to sulfide hazard

This analytical report respectfully submitted by AnalySys, Inc. The enclosed results have been reviewed and to the best of my knowledge the analytical results are consistent with AnalySys, Inc.'s Quality Assurance/Quality Control Program.

Respectfully Submitted,

Richard Laster

Richard Laster

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5. Reporting Quantitation Limit. The Practical Quantitation Limit (PQL) or the Method Detection Limit (MDL) reported for the analyte.
6. Method numbers typically denote USEPA procedures. Less than ("<") values reflect nominal quantitation limits, adjusted for any required dilution.

ANALYSYS INC.

4121 Fredrick Lane, Suite 190, Austin, TX 78744
& 9320 Up River Road, Corpus Christi, TX 78409
(512) 444-5896 - FAX (512) 447-4766

Client: Trace Analysis, Inc.	Report #/Lab ID#: 92846 Report Date: 8/31/98
Attn: Nell Green	Project ID:
Address: 6701 Aberdeen Ave, Ste. 9	Sample Name: 103997
Lubbock, Tx 79424	Sample Matrix: water
	Date Received: 8/5/98 Time: 10:00:00
Phone: (806) 794-1296 FAX: (806) 794-1298	Date Sampled: Not specific Time: 00:00:00

REPORT OF ANALYSIS — **QUALITY ASSURANCE DATA**[1]

Parameter	Result	Units	RQL[5]	Blank	Date	Method	Prec.[2]	Recov.[3]	CCV[4]	LCS[4]
Viscosity	0.6	cps			8/26/98	Brookfield				

Room Temp - Lower Zone 1:1

Note: Could not run heated sample due to sulfide hazard

This analytical report respectfully submitted by AnalySys, Inc. The enclosed results have been reviewed and to the best of my knowledge the analytical results are consistent with AnalySys, Inc.'s Quality Assurance/Quality Control Program.

Respectfully Submitted,

Richard Laster

Richard Laster

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4. Calibration Verification (CCV) and Lab Control Sample (LCS) results expressed as the percent (%) recovery of analyte from a known standard.
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6. Method numbers typically denote USEPA procedures. Less than ("<") values reflect nominal quantitation limits, adjusted for any required dilution.

ANALYSYS Inc.

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& 9320 Up River Road, Corpus Christi, TX 78409
(512) 444-5896 - FAX (512) 447-4766

Client: Trace Analysis, Inc.
Attn: Nell Green
Address: 6701 Aberdeen Ave, Ste. 9
Lubbock, Tx 79424

Phone: (806) 794-1296 FAX: (806) 794-1298

Report #/Lab ID#: 92847 Report Date: 8/31/98
Project ID:
Sample Name: 103998
Sample Matrix: water
Date Received: 8/5/98 Time: 10:00:00
Date Sampled: Not specifie Time: 00:00:00

REPORT OF ANALYSIS

QUALITY ASSURANCE DATA[1]

Parameter	Result	Units	RQL[5]	Blank	Date	Method	Prec.[2]	Recov.[3]	CCV[4]	LCS[4]
Viscosity	0.5	cps			8/26/98	Brookfield				

Room Temp - Lower Zone 1:2

Note: Could not run heated sample due to Sulfide Hazard

This analytical report respectfully submitted by AnalySys, Inc. The enclosed results have been reviewed and to the best of my knowledge the analytical results are consistent with AnalySys, Inc's Quality Assurance/Quality Control Program

Respectfully Submitted,

Richard Lester

Richard Lester

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6. Method numbers typically denote USEPA procedures. Less than ("<") values reflect nominal quantitation limits, adjusted for any required dilution.

ENVIROCORP®

DISCHARGE PLAN APPLICATION AND APPLICATION FOR AUTHORIZATION TO INJECT, PER OIL CONSERVATION DIVISION FORM C-108, INTO CLASS I WELLS WDW-1 AND PROPOSED WDW-2 AND WDW-3

VOLUME II
SECTIONS VIII THROUGH REFERENCES

NAVAJO REFINING COMPANY
Artesia, New Mexico

Subsurface Project No. 60A4305
Subsurface Project No. 60A4937

April 1999

Prepared By:

SUBSURFACE TECHNOLOGY, INC.
Houston, Texas

ENVIROCORP WELL SERVICES, INC.

7020 PORTWEST DRIVE, #100 HOUSTON, TEXAS 77024 713/880-4640 FAX 713/880-3248

TABLE OF CONTENTS

VOLUME II

ATTACHMENTS

TABLE OF CONTENTS (Continued)

ATTACHMENTS

TABLE OF CONTENTS (Continued)

VIII. GEOLOGY

VIII.A Injection Zone Lithology, Depth, Thickness, Porosity, and Permeability

The proposed injection zones are porous carbonates of the lower portion of the Wolfcamp Formation and the Cisco and Canyon Formations. These formations occur in WDW-1 and proposed WDW-2 and WDW-3 at the depths shown in the table below. The proposed injection zone is shown on the logs of WDW-1 and proposed WDW-2 in Attachments VIII-1, VIII-1A, VIII-2, and VIII-2A and in cross sections in Attachments VIII-3 and VIII-4.

Injection Zone Formation	WDW-1 (KB height = 3693 feet)		PROPOSED WDW-2 (KB height = 3623 feet)		PROPOSED WDW-3 (KB height = 3672 feet, estimated)	
	Measured Depth below KB (feet)	Subsea Depth (feet)	Measured Depth below KB (feet)	Subsea Depth (feet)	Measured Depth below KB (feet)	Subsea Depth (feet)
Lower Wolfcamp	7450	-3757	7270	-3647	7392	-3720
Cisco	7816	-4123	7645	-4022	7732	-4060
Canyon	8475	-4782	8390	-4767	8437	-4765
Base of Injection Zone (base of Canyon)	9016	-5323	8894	-5271	8957	-5285

The lower portion of the Wolfcamp Formation (the Lower Wolfcamp) is the shallowest porous unit in the proposed injection interval. The Wolfcamp Formation (Permian - Wolfcampian age) consists of light brown to tan, fine- to medium-grained, fossiliferous limestones with variegated shale interbeds (Meyer, 1966, page 69). The top of the Wolfcamp Formation was correlated for this study to be below the base of the massive, dense dolomites of the overlying Abo Formation. The base of the Wolfcamp coincides with the top of the Cisco Formation. Attachment VIII-5 shows that the thickness of log porosity greater than 5% in the entire Wolfcamp Formation ranges from 0 feet to 295 feet in a band 3 miles wide that trends

northeast-southwest across the study area. Attachment VIII-5 indicates that the Wolfcamp will have porosity at proposed WDW-2 and WDW-3 that is similar to that at Navajo's WDW-1.

The upper portion of the Wolfcamp Formation from 6890 feet to 7450 feet in WDW-1, has low permeability, as indicated by DSTs run in WDW-1 in 1993 (see Section VIII.B). Logs of the upper portion of the Wolfcamp in proposed WDW-2 show that it includes bands of low porosity, such as the interval from 7120 feet to 7180 feet. The upper portion of the Wolfcamp Formation is not included in the proposed injection zone.

The Lower Wolfcamp is the same interval used for injection in the I&W, Inc., Walter Solt SWD-1 (Map ID No. 83), which is completed between 7518 feet and 7812 feet in that well. The caliper log run in WDW-1 in 1993 in the Lower Wolfcamp (Attachment VIII-1A) shows several intervals of hole enlargement in carbonates, for example from 7640 feet to 7670 feet. These intervals may have sufficient permeability and lateral extent to accept injected fluids. In proposed WDW-2, the lower 80 feet of the Lower Wolfcamp, from 7565 feet to 7645 feet, is porous carbonate that is similar in log character to the underlying Cisco Formation. Navajo has demonstrated that the Cisco Formation has injection capacity in WDW-1.

The Cisco Formation (Pennsylvanian - Virginian age) of the Northwest Shelf is described by Meyer (1966, page 59) as consisting of uniform, light-colored, chalky, fossiliferous limestones interbedded with variegated shales. Meyer (1966, page 59) also describes the Cisco at the edge of the Permian Basin as consisting of biohermal (mound) reefs composed of thick, porous, coarse-grained dolomites. Locally, the Cisco consists of porous dolomite that is 745 feet thick in proposed WDW-2 and 659 feet thick in WDW-1. The total thickness of intervals with log porosity greater than 5% is approximately 310 feet in WDW-1 and 580 feet in proposed WDW-2. The total thickness with log porosity greater than 10% is approximately 100 feet in WDW-1 and 32 feet in proposed WDW-2. Attachment VIII-6 shows that the thickness of the porous intervals in the Cisco ranges from 0 feet in the northwestern part of the study area to nearly 700 feet in a band 3 miles wide that trends northeast-

southwest. In proposed WDW-3, the thickness of intervals in the Cisco with porosity greater than 5% is expected to be 320 feet; the thickness with porosity greater than 10% is expected to be 100 feet.

The Canyon Formation (Pennsylvanian - Missourian age) consists of white to tan to light brown fine-grained, chalky, fossiliferous limestone with gray and red shale interbeds (Meyer, 1966, page 53). Locally, the Canyon occurs between the base of the Cisco dolomites and the top of the Strawn Formation of Pennsylvanian (Desmoinesian) age. The total thickness of intervals with log porosity greater than 5% is 34 feet in WDW-1, 30 feet in proposed WDW-2, and 50 feet in proposed WDW-3. No intervals appear to have log porosity greater than 10% in any of the three injection wells.

Permeability measurements that range from less than 100 md to 1126 md are available for the Lower Wolfcamp-Cisco-Canyon injection zone. Permeability measurements from hydrocarbon-producing intervals in the Wolfcamp, Cisco, and Canyon from Meyer (1966, Table 4) are summarized in Attachment VIII-7. Meyer reported permeabilities in the Cisco of up to 114 millidarcies (md), up to 38 md in the Canyon, and up to 200 md in the Wolfcamp.

Permeability was estimated to be 597 md from DST No. 5 conducted in WDW-1 on August 26, 1993. DST No. 5 was conducted near the top of the Cisco Formation from 7817 feet to 7851 feet. Test data for DST No. 5 and calculation of permeability are included in Attachments VIII-9 and VIII-9A, respectively.

A pressure buildup/pressure falloff test was conducted in WDW-1 on July 30 and 31, 1998, after WDW-1 was recompleted to the Cisco injection zone. The transmissibility (kh, or product of permeability and thickness) determined from the pressure falloff test data was 284,839 md-ft. The average permeability of the Cisco injection zone is determined by dividing kh by the thickness of the interval that was perforated, as shown below:

$$k = \frac{kh}{h}$$

$$= \frac{284{,}839\,\text{md–ft}}{253\,\text{feet}}$$

$$= 1126\,\text{md}$$

where

k = permeability
kh = transmissibility from pressure falloff test
h = thickness of perforated interval

The WDW-1 pressure buildup/pressure falloff test data and analysis are included as Attachment VIII-9B.

In summary, permeability values in the proposed injection zone from producing fields in the region range up to 200 md, as discussed above. Based on test data for WDW-1, however, permeability values as high as 1126 md or higher occur in intervals in the injection zone. Permeabilities of up to 200 md and greater are also expected in the injection zone in proposed WDW-2 and WDW-3.

VIII.B Confining Zone

The confining zone extends from 4000 feet to 7450 feet in WDW-1 and from 4120 feet to 7270 feet in proposed WDW-2. The confining zone includes massive low-porosity carbonate beds and layers of shale that will confine the injected fluids to the proposed injection zone (Lower Wolfcamp, Cisco, and Canyon Formations). The formations that comprise the confining zone are described below. The confining zone extends throughout the AOR, as shown in the cross sections in Attachments VIII-3 and VIII-4.

The proposed injection zone is directly overlain by the confining layers of the upper portion of the Wolfcamp Formation. Three (3) DSTs were conducted in the upper portion of the Wolfcamp in WDW-1, in the interval from 7016 feet to 7413 feet, that indicate that the interval has low permeability and can confine injected fluids to

the injection zone. The DSTs, DST Nos. 2, 3, and 4, are summarized in the daily drilling reports in Attachment VIII-8. Reports of the data from DST Nos. 3 and 4 are presented in Attachment VIII-9. Although the data from DST No. 4 are not analyzable, an average permeability of 0.36 md was calculated from the data from DST No. 3, as shown below:

$$k = 162.6 \frac{q\ B\ \mu}{mh}$$

$$= 162.6 \frac{(20\ \text{bbl}/89\ \text{min} \times 1440\ \text{min/day})(1)(0.53\ \text{cp})}{(570.883\ \text{psi/cycle})(7382\ \text{feet} - 7230\ \text{feet})}$$

$$= 162.6 \frac{(323.6\ \text{bpd})(1)(0.53\ \text{cp})}{(570.883\ \text{psi/cycle})(152\ \text{feet})}$$

$$= 0.36\ \text{md}$$

A permeability on the order of 0.1 md is at the low end of the permeability range for carbonates, and is at the high end of the permeability range for shales, according to Freeze and Cherry (1979, p. 29). Therefore, the low-permeability carbonates of the upper Wolfcamp will provide the first level of confinement for the injection zone.

The Abo Formation overlies the Wolfcamp and extends from 5400 feet to 6890 feet in WDW-1 and from 5506 feet to 6728 feet in proposed WDW-2. Although the Abo is well known as a major oil producer in the AOR, the producing intervals lie in the upper Abo, whose equivalents are above 6100 feet in WDW-1 and above 6200 feet in proposed WDW-2. The deepest Abo test well in the AOR, Map ID No. 126, located 3900 feet southeast (downdip) of proposed WDW-3, was drilled to 6412 feet. No Abo production in the AOR has been established below 6298 feet, the producing interval in Map ID No. 112, located 3800 feet east (downdip) of proposed WDW-3. The base of the producing interval within the Abo Formation in the AOR, therefore, is over 900 feet above the top of the proposed injection zone. The lower 600 feet of the Abo Formation (below the deepest producing interval in the AOR), consisting primarily of dolomite with average porosity less than 5% and

interbedded shale, will serve as the secondary confining layer above the proposed injection zone.

The Yeso Formation, which will provide additional confining capabilities, directly overlies the Abo Formation. The top of the Yeso is not consistently identified in the AOR, according to well records submitted to the OCD and available scout tickets. However, the top of the confining zone can be considered to extend to the top of the low-porosity limestone interval below the higher-porosity dolomites below the Glorieta Member of the San Andres Formation (at 4000 feet in WDW-1 and 4120 feet in proposed WDW-2). The Yeso consists of low-porosity carbonates and clastic beds. The Tubb shale, a shale interval that is up to 150 feet thick in some wells in the study area, also occurs in this interval. Although no faults are known to exist in the confining zone within the AOR, the Tubb shale will serve to prevent movement of fluids through a hypothetical unknown fault.

VIII.C Structure

The proposed injection well is located on the southern flank of the Artesia-Vacuum anticline (also called the Vacuum Arch), which trends east-west across the study area. The Vacuum Arch is shown clearly on Attachment VIII-10, a structure map drawn on the Rio Bonito member of the San Andres Formation. The top of the Rio Bonito member occurs at approximately 2260 feet in WDW-1 and at 2320 feet in proposed WDW-2, or 300 feet to 320 feet below the top of the San Andres Formation, and over 4600 feet above the top of the proposed injection interval (Lower Wolfcamp, Cisco, and Canyon Formations). The general structure of the injection zone is shown on Attachment VIII-11, a regional structure map of the Strawn Formation, drawn on a horizon that is approximately 375 feet below the top of the Strawn (base of the proposed injection zone), as it is recognized in records and scout tickets for wells in the local study area. The top of the proposed injection zone is conformable with the structure of the Strawn Formation. Attachment VIII-11 shows the trend of the Vacuum arch, as well as the southeasterly dip of the beds at approximately 100 feet per mile in the vicinity of the proposed injection wells. No faults exist in the study area, and faulting occurs no closer than 16 miles to the proposed injection wells. The nearest fault is the K-M fault, which is located 6 miles northwest of Artesia and trends northeast-southwest, as shown on Attachment

VIII-10. Attachments VIII-12, VIII-13, VIII-14, and VIII-15 are local structure maps drawn on the Wolfcamp, Cisco, Canyon, and Strawn Formations.

VIII.D Underground Sources of Drinking Water (USDWs)

The base of the USDWs, in which the total dissolved solids (TDS) concentration of the formation water is less than 10,000 milligrams/liter (mg/l) or the equivalent, 10 g/l, occurs at approximately 3200 feet above sea level at WDW-1 and 3150 feet above sea level at proposed WDW-2, as shown on Attachment VIII-16. In WDW-1, the base of the USDWs occurs at a measured depth of 493 feet below kelly bushing (KB; 493' KB = 3693' - 3200', where 3693' is the elevation of the kelly bushing of WDW-1), or the base of the Tansill Formation (Permian - Guadalupean age). In proposed WDW-2, the base of the USDWs occurs at a measured depth of 473 feet below KB (473' KB = 3623' - 3150'). In the eastern part of the study area, at depth, the Tansill Formation is overlain by the Salado Formation (Permian - Ochoan age). The Salado consists of halite, polyhalite, anhydrite, and potassium salts, which are soluble. The Salado is overlain by the Rustler Formation (Permian - Ochoan age). In the AOR, which straddles the outcrop area of the Salado, and to the east, the Salado has been removed by solution by ground water flowing through the Rustler.

To the east, where the Rustler is present, the Rustler is the USDW. To the west, where the Rustler has been removed by erosion and the Salado has been removed by solution, the Tansill is the USDW. The Tansill Formation and the underlying Yates Formation comprise the Three Twins Member of the Chalk Bluff Formation known in outcrops in the region (Hendrickson and Jones, 1952, page 20), and listed as a freshwater-producing interval in Attachment XI-1. The proposed injection zone (Lower Wolfcamp, Cisco, and Canyon Formations) is separated from the USDWs by 6957 feet (6957 feet = 7450 feet - 493 feet, where 7450 feet is the depth of the top of the injection zone) of carbonates, siltstones, and shales in WDW1. In proposed WDW-2, the USDWs are separated from the injection zone by 6797 feet (= 7270 feet - 473 feet).

VIII.E Compatibility Issues

The integrity of the carbonates of the injection zone and the confining zone is not threatened by the injected waste. The monitoring system and physical limitations on injection established by state and federal regulations are adequate checks to identify and address any problems that may arise. Operating limits on maximum injection pressure and monitoring requirements for well annular pressure versus injection pressure and annular fluid volume force the operator to be as protective of his wellbore and the injection zone as is possible. Furthermore, events such as tubing failures and packer failures that are caused by the injection of corrosive materials would require that the well be shut down and that a workover be performed. The proposed monitoring methods are capable of detecting wellbore integrity and injection problems before they could threaten human health and the environment.

The proposed waste stream will have a pH range of 6.0 to 9.0, that is, near neutral to slightly alkaline. The reactions of alkaline solutions with carbonates are slow or non-existent, so no significant loss of formation is expected from injection of this waste stream. Therefore, no chemical incompatibility between the proposed waste stream and the formation is expected to occur that could allow wastes to migrate out of the injection zone.

ATTACHMENT VIII-1A

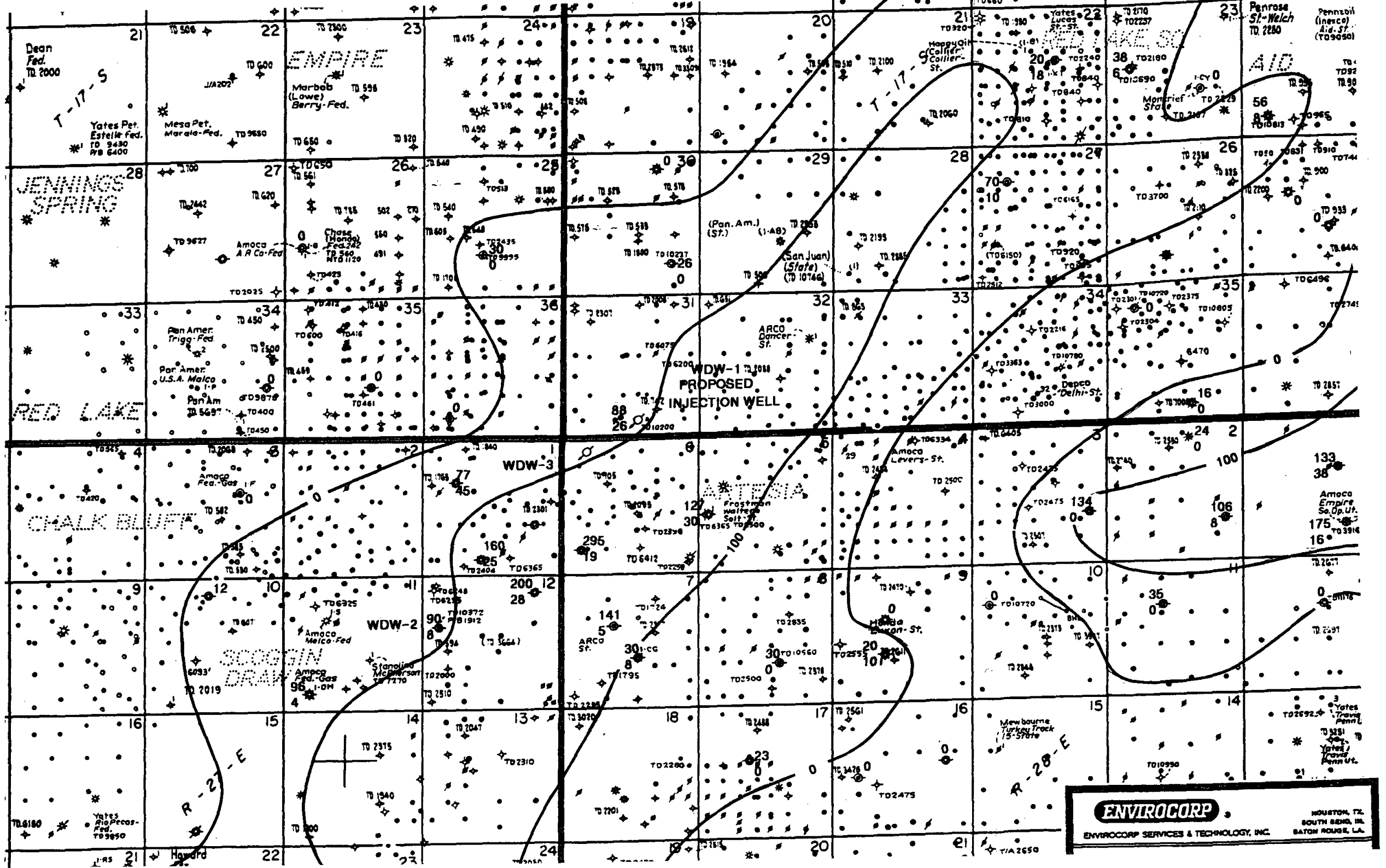
POROSITY LOG OF WDW-1

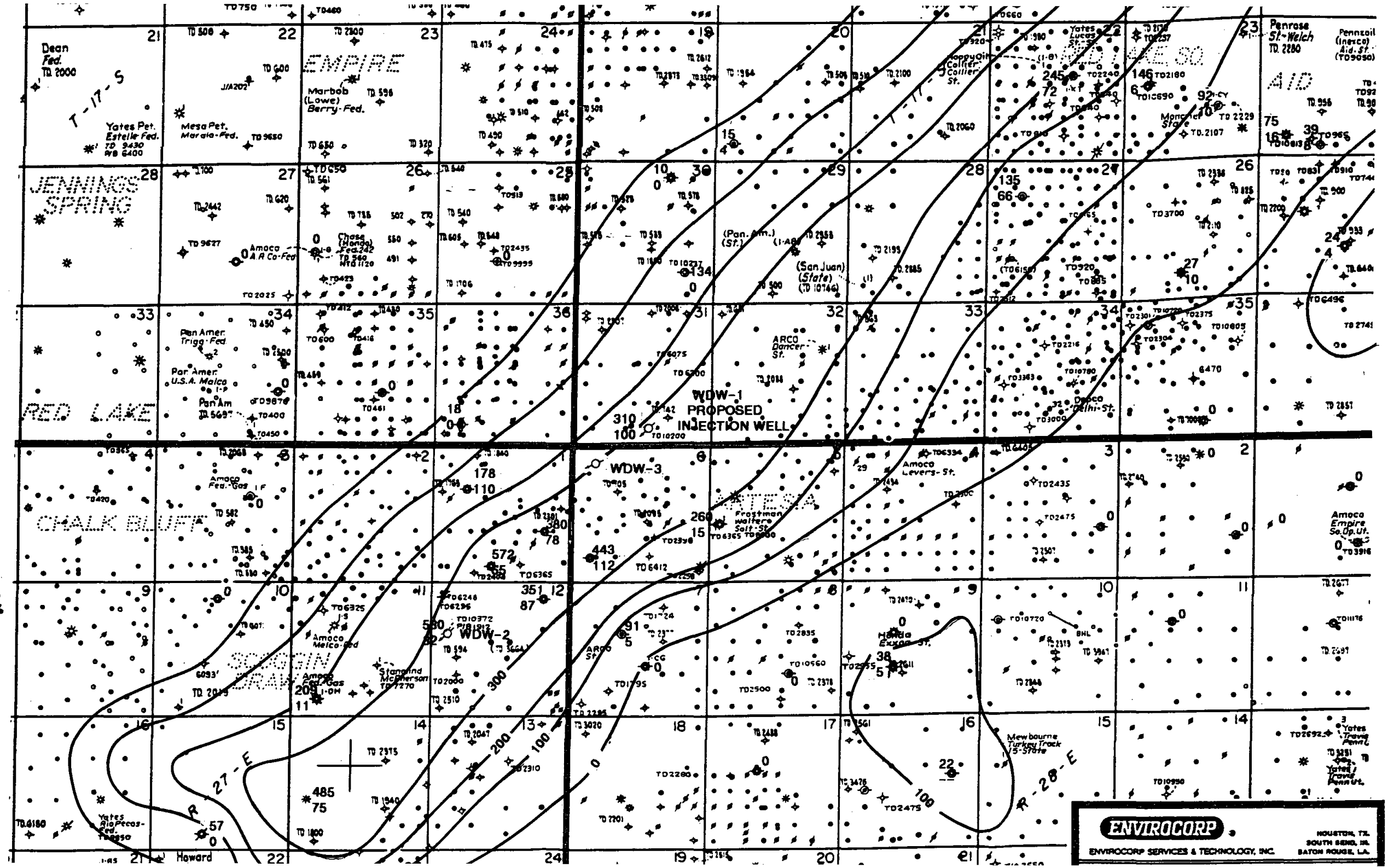
ATTACHMENT VIII-2

RESISTIVITY LOG OF PROPOSED WDW-2

ATTACHMENT VIII-2A

POROSITY LOG OF PROPOSED WDW-2


T-17-S
R-27-E
R-28-E
EMPIRE
JENNINGS SPRING
RED LAKE
CHALK BLUFF
SCOGGIN DRAW
ARTESIA
RED LAKE SE
AID
WDW-1
PROPOSED
INJECTION WELL
WDW-3
WDW-2
Yates Pet. Estelle Fed. TD 9430 PB 6400
Mesa Pet. Morale-Fed. TD 9650
Marbob (Lowe) Berry-Fed. TD 596
Amoco A R Co-Fed TD 9627
Chase (Harvey) Fed. 242 TD 560
Pan Amer. Trigg-Fed
Pan Amer. U.S.A. Malco
Pan Am TD 5497
Amoco Fed.-Gas
Amoco Malco-Fed
Stanolind McPherson
(Pan. Am.) (St.)
(San Juan) (State) (TD 10746)
ARCO Dancer St.
Frostman Walker Salt
Amoco Levers-St.
Hanagan Collier-St.
Penrose St-Welch TD 2280
Pennzoil (Inexco) Aid St (TD9950)
Amoco Empire So. Dp. Ut.
Depco Delhi-St.
Mewbourne Turkey Track 15-State
Yates Rio Pecos-Fed. TD 9850
Yates Trans Penn L
Yates Penn Penn Ut.
380 FEET WITH POROSITY OVER 5%
78 FEET WITH POROSITY OVER 10%
CONTOUR INTERVAL
100 FEET WITH POROSITY OVER 5%
ENVIROCORP
ENVIROCORP SERVICES & TECHNOLOGY, INC.
HOUSTON, TX.
SOUTH BEND, IN.
BATON ROUGE, LA.


WDW-1
PROPOSED
INJECTION WELL
WDW-2
WDW-3
EMPIRE
JENNINGS SPRING
RED LAKE
CHALK BLUFF
SEMIN DRAW
T-17-S
R-27-E
R-28-E
380 FEET WITH POROSITY OVER 5%
78 FEET WITH POROSITY OVER 10%
CONTOUR INTERVAL
100 FEET WITH POROSITY OVER 5%
ENVIROCORP
ENVIROCORP SERVICES & TECHNOLOGY, INC.
HOUSTON, TX.
SOUTH BEND, IN.
BATON ROUGE, LA.

ATTACHMENT VIII-9A

CALCULATION OF PERMEABILITY FROM DST NO. 5 IN WDW-1

ATTACHMENT VIII-9A

CALCULATION OF PERMEABILITY
FROM DST NO. 5
MEWBOURNE OIL COMPANY, CHALK BLUFF 31, STATE NO. 1

The permeability of the interval tested is calculated to be 597 md, as follows from test data in Attachment VIII-9:

$$k = 162.6 \frac{q\ B\ \mu}{mh}$$

where

- k = permeability, md
- q = production rate, (bbl/day)
- B = formation volume factor, (reservoir bbl)/(stock tank bbl)
- μ = viscosity, centipoise (cp)
- m = slope of Horner plot, psi/cycle
- h = reservoir thickness, feet

The production rate, q, is calculated from the total volume of fluid, 78.7 bbl, produced during DST No. 5, which lasted for 90 minutes (the sum of the lengths of the first and second flow periods). Using these values, q is equal to 1259 bbl/day. The formation volume factor, B, is assumed to be 1. The viscosity, μ, of reservoir brine with 25,000 ppm chlorides (approximately 2% salinity) at a bottom-hole temperature of 130°F is 0.53 cp, taken from the chart in Attachment VI-7. The slope of the Horner plot, m, is taken from the Horner plot for the second flow period of DST No. 5, or 5.348 psi/cycle (Page 22 of Attachment VIII-9). The reservoir thickness, h, is the thickness of the interval tested during DST No. 5, or 34 feet (7851 feet - 7817 feet). Substituting these values into the equation above gives:

$$k = 162.6 \frac{(1259)(1)(0.53)}{(34)(5.348)}$$

$$= 597 \text{ md}$$

ATTACHMENT VIII-9B

WDW-1 PRESSURE FALLOFF TEST ANALYSIS
JULY 30-31, 1998

Source: Reentry and Completion Report, Waste Disposal Well No. 1, Navajo Refining Company, September 1998, prepared by Envirocorp Services & Technology, Inc.

ATTACHMENT VIII-9B

WDW-1 PRESSURE FALLOFF TEST ANALYSIS
JULY 30-31, 1998

TABLE OF CONTENTS

4.0 RESERVOIR EVALUATION

4.1 Bottom-Hole Pressure Testing

The bottom-hole pressure testing which was conducted on WDW-1, following the completion of the well, was designed to obtain the best estimate of permeability and transmissibility in the reservoir. The pressure testing on WDW-1 consisted of a static gradient survey and an injectivity/falloff test. Appendix 4.1-1 lists the time and pressure data recorded during the static gradient survey, injection period, and falloff period.

4.1.1 Static Gradient Survey and Bottom-Hole Pressure Analysis

On July 31, 1998, static gradient measurements were performed after conducting the injection/falloff test on WDW-1. Pressure data from the gradient stops made at the surface, 1700 feet, 3000 feet, 6000 feet, and 7924 feet are shown on Table 4.1.1-I. The gradient data are presented graphically as Figure 4.1.1-1. The static fluid gradient at 7924 feet was determined to be 0.456 psi per foot. The fluid level was at approximately 1500 feet.

4.1.2 Analysis of the Falloff Test

On July 30, 1998, an Eccossetex surface readout digital quartz pressure transducer was positioned at 7924 feet in WDW-1 and allowed to stabilize for approximately 45 minutes. Injection into WDW-1 commenced at 0920 hours at an injection rate of 420 gallons per minute (gpm). WDW-1 was shut in at 2153 hours and the bottom-hole pressure and temperature were recorded for 9.2 hours.

The pressure data obtained during the falloff test were analyzed with the assistance of the commercially available pressure transient analysis software program "PanSystem2, Version 2.5". Appendix 4.1.2-1 contains the output from this software program. Figure 4.1.2-1 shows the pressure response recorded by the surface pressure tool from the time the tool was in place through the 9.2-hour shutin period. Figure 4.1.2-2 is a log-log diagnostic plot of the falloff data, showing change in pressure and pressure derivative versus equivalent shutin time. The radial flow period is denoted on Figure 4.1.2-2.

The reservoir permeability was determined from the radial flow region of the superposition Horner plot (Figure 4.1.2-3). The radial flow regime begins at a Horner time of 23.9 and continues to 12.0. Figure 4.1.2-4 shows an expanded view of the

superposition Horner plot. The slope of the radial flow period was determined to be 4.356711 psi per cycle.

An estimate of mobility-thickness, kh/μ, for the reservoir was determined from the following equation:

$$\frac{kh}{\mu} = 162.6 \frac{qB}{m}$$

where,

kh/μ	=	transmissibility, md-ft/cp
q	=	flow rate, barrels per day
μ	=	viscosity, centipoise
B	=	formation volume factor, reservoir vol/surface vol
m	=	slope of semi-log straight line, psi/cycle

Using an injection rate of 420 gpm (14,400 barrels per day) and the information previously mentioned results in a transmissivity of 537,433 md-ft/cp:

$$\frac{kh}{\mu} = 162.6 \frac{(14,400)(1.0)}{4.356711}$$

$$= 537,433 \text{ md-ft/cp}$$

Multiplying this value by the viscosity, μ, results in transmissibility, kh:

$$kh = \left(\frac{kh}{\mu} \right) \mu$$

$$= (537,433)(0.53)$$

$$= 284,839 \text{ md-ft}$$

And finally, permeability is determined by dividing transmissibility by the formation thickness. The formation thickness is 253 feet, which results in a permeability of 1126 md.

$$k = \frac{(kh)}{h}$$

$$= \frac{284,839}{253}$$

$$= 1126 \text{ md}$$

The skin factor was determined from the following equation:

$$s = 1.151\left[\frac{p_{wf} - p_{1\,hr}}{m_1} - \log\left(\frac{k_p}{\phi \mu c_t r_w^2}\right) + 3.23\right]$$

where,

s	=	formation skin damage at open perforations, dimensionless
1.151	=	constant
p_{wf}	=	flowing pressure immediately prior to shutin, psi
$p_{1\,hr}$	=	pressure determined by extrapolating the first radial flow semi-log line to a Δt of one hour, psi
m_1	=	slope of the first radial flow semi-log line, psi/cycle
k_p	=	permeability of the formation opposite the open perforations, md
ϕ	=	porosity of the injection interval, fraction
μ	=	viscosity of the fluid the pressure transient is traveling through, centipoise
c_t	=	total compressibility of the formation plus fluid, psi^{-1}
r_w	=	radius of the wellbore, feet
3.23	=	constant

The final flowing pressure, p_{wf}, was 3071.61 psia. The pressure determined by extrapolating the radial flow semi-log line to a Δt of one hour, $p_{1\,hr}$, was 2930.27 psi. The porosity of the injection interval, ϕ, is 0.10 and the total compressibility, c_t, is 8.4 x 10^{-6} psi^{-1}. The wellbore radius, r_w, is 0.3646 feet. Using these values in addition to the previously determined parameters, m and k, results in a skin of 29.23:

$$s = 1.151\left[\frac{3071.61 - 2930.27}{4.356711} - \log\left(\frac{1126}{(0.10)(0.53)(8.4 \times 10^{-6})(0.3646)^2}\right) + 3.23\right]$$

$$= 29.23$$

The "Auto-Match" feature of PanSystem2 was used to improve upon the reservoir parameters. The final results of the auto-match are shown on Figures 4.1.2-5 through 4.1.2-7. These figures show the falloff data in cartesian, superposition Horner, and log-log formats with the simulated pressures overlaid.

TABLE 4.1.1-I

Bottom-Hole Pressure Survey, Static Gradient Measurement

DEPTH (feet)	PRESSURE (psia)	PRESSURE GRADIENT (psi/ft)	TEMPERATURE (°F)	TEMPERATURE GRADIENT (°F/ft)
0	14.12	--	82.82	--
1700	85.30	0.042	83.40	0.0003
3000	679.62	0.457	87.81	0.0034
6000	2050.61	0.457	102.63	0.0049
7924	2928.40	0.456	104.06	0.0007

Note: Static gradient survey performed following the pressure buildup/falloff test.

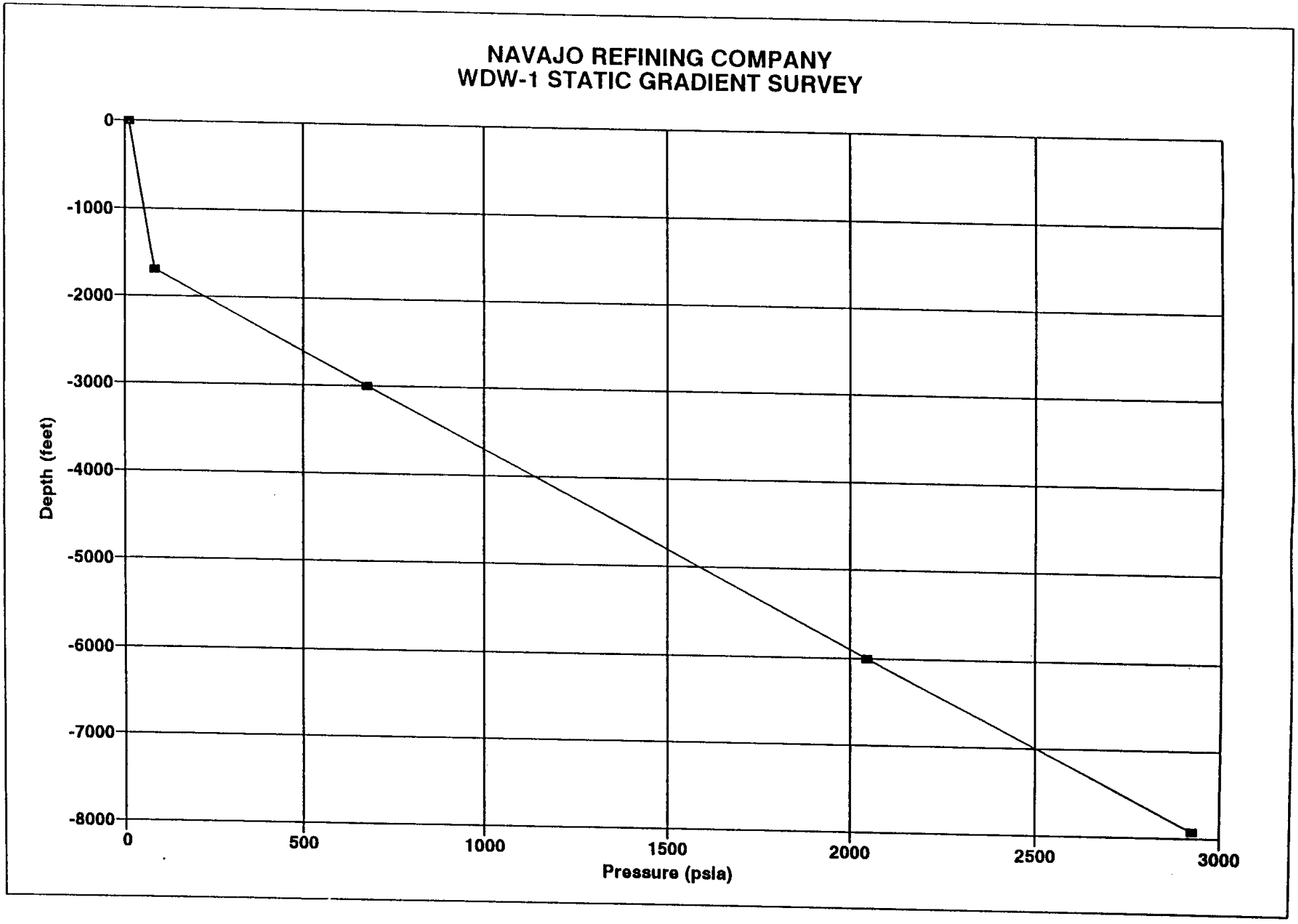

NAVAJO REFINING COMPANY
WDW-1 STATIC GRADIENT SURVEY
Depth (feet)
0
-1000
-2000
-3000
-4000
-5000
-6000
-7000
-8000
0
500
1000
1500
2000
2500
3000
Pressure (psia)

FIGURE 4.1.1-1

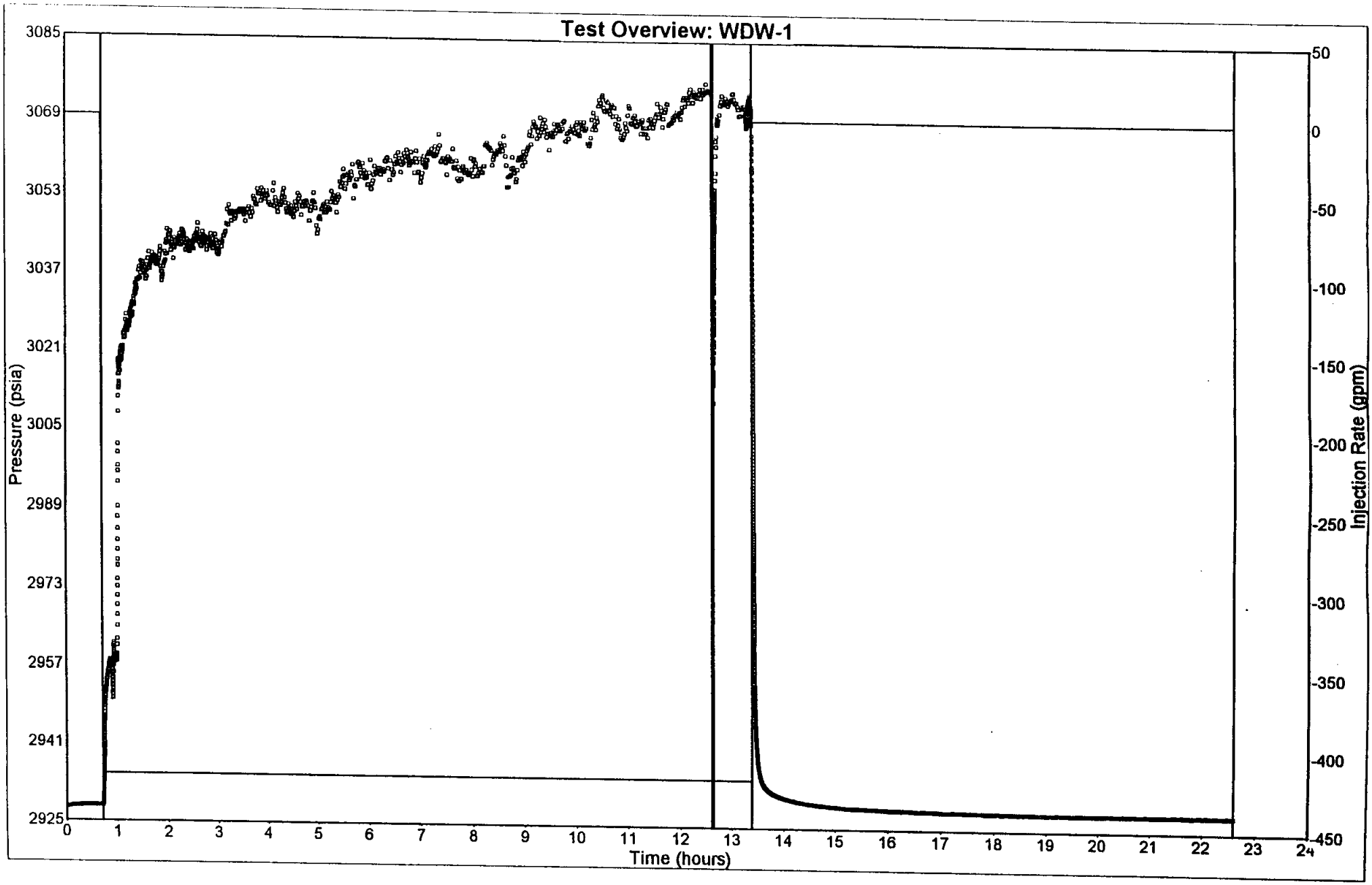

Test Overview: WDW-1
Pressure (psia)
3085
3069
3053
3037
3021
3005
2989
2973
2957
2941
2925
Injection Rate (gpm)
50
0
-50
-100
-150
-200
-250
-300
-350
-400
-450
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Time (hours)

FIGURE 4.1.2-1

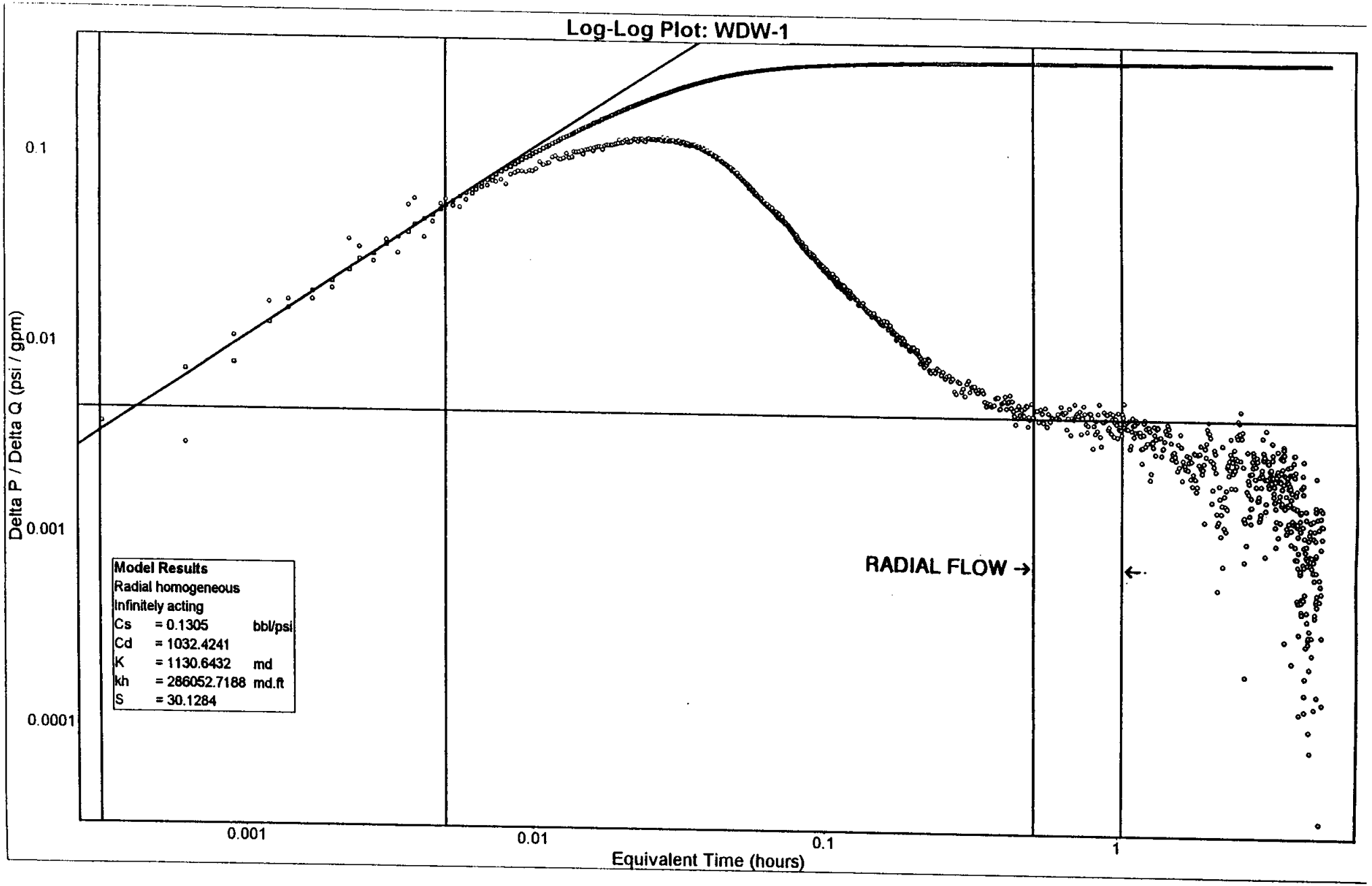

Log-Log Plot: WDW-1
Delta P / Delta Q (psi / gpm)
0.1
0.01
0.001
0.0001
Model Results
Radial homogeneous
Infinitely acting
Cs = 0.1305 bbl/psi
Cd = 1032.4241
K = 1130.6432 md
kh = 286052.7188 md.ft
S = 30.1284
RADIAL FLOW →
←
0.001
0.01
0.1
1
Equivalent Time (hours)

FIGURE 4.1.2–2

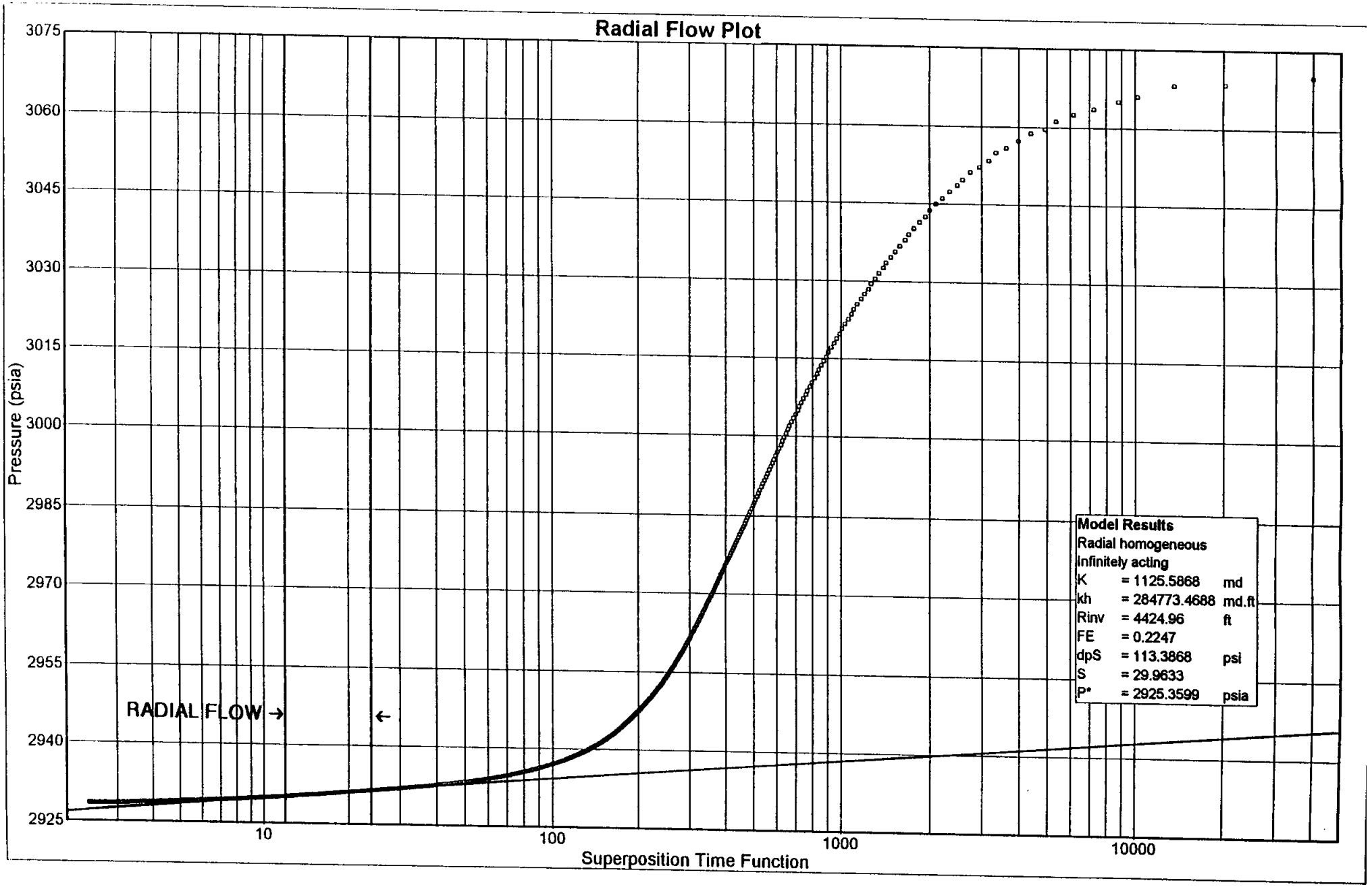

Radial Flow Plot
Pressure (psia)
3075
3060
3045
3030
3015
3000
2985
2970
2955
2940
2925
10
100
1000
10000
Superposition Time Function
RADIAL FLOW →
←
Model Results
Radial homogeneous
Infinitely acting
K = 1125.5868 md
kh = 284773.4688 md.ft
Rinv = 4424.96 ft
FE = 0.2247
dpS = 113.3868 psi
S = 29.9633
P* = 2925.3599 psia

FIGURE 4.1.2–3

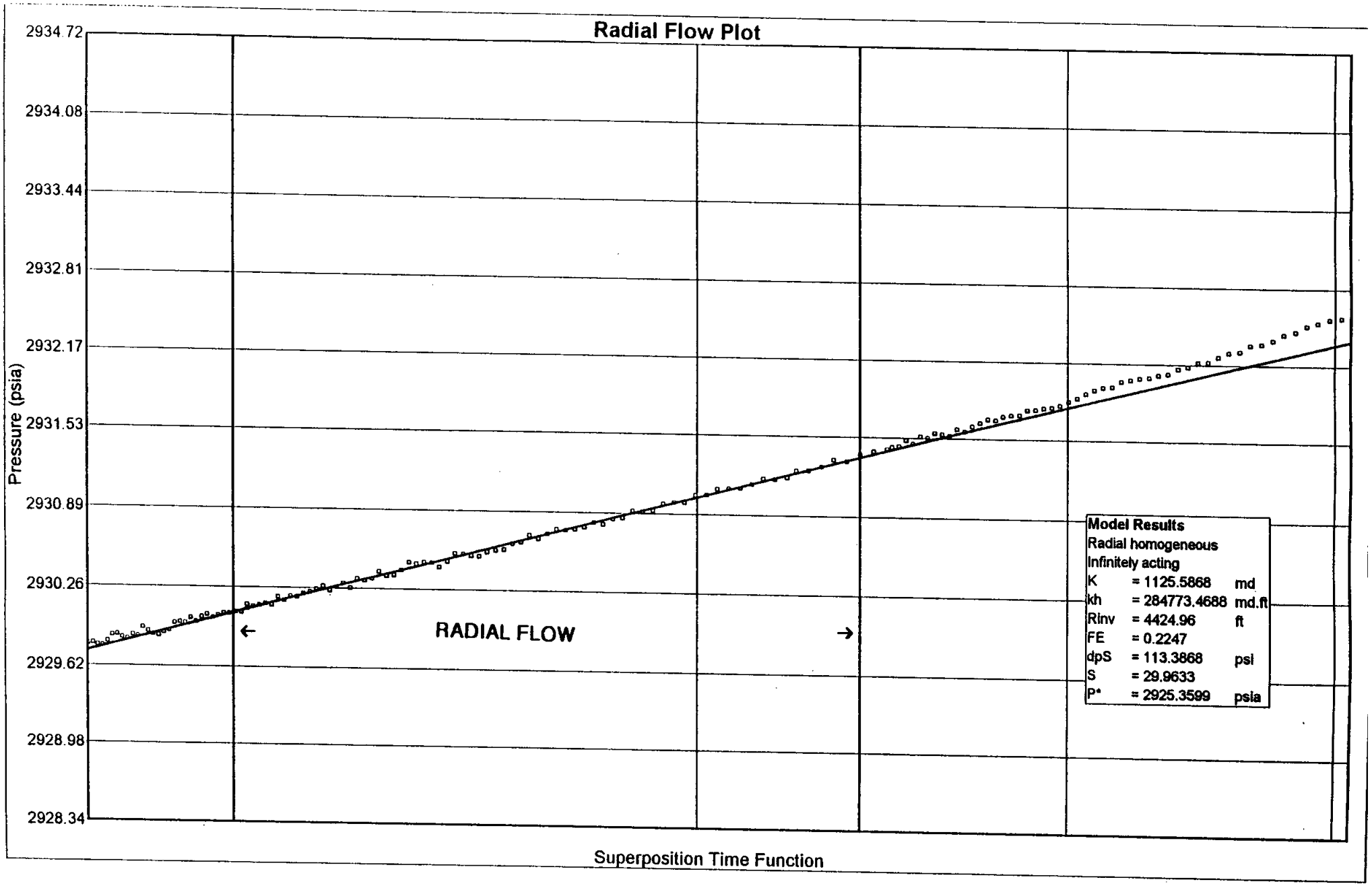

Radial Flow Plot
2934.72
2934.08
2933.44
2932.81
2932.17
2931.53
2930.89
2930.26
2929.62
2928.98
2928.34
Pressure (psia)
RADIAL FLOW
Model Results
Radial homogeneous
Infinitely acting
K = 1125.5868 md
kh = 284773.4688 md.ft
Rinv = 4424.96 ft
FE = 0.2247
dpS = 113.3868 psi
S = 29.9633
P* = 2925.3599 psia
Superposition Time Function

FIGURE 4.1.2–4

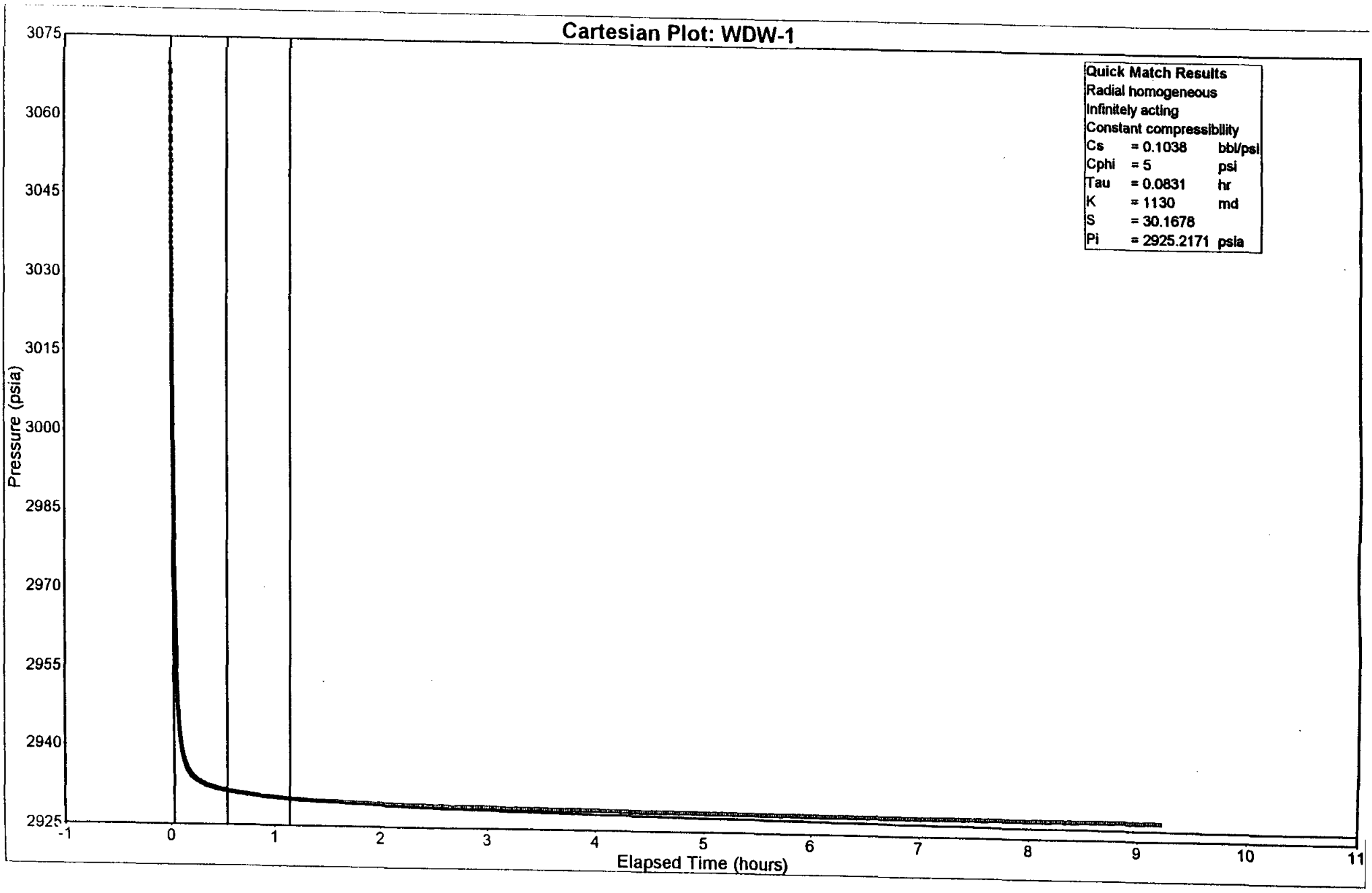

Cartesian Plot: WDW-1
Quick Match Results
Radial homogeneous
Infinitely acting
Constant compressibility
Cs = 0.1038 bbl/psi
Cphi = 5 psi
Tau = 0.0831 hr
K = 1130 md
S = 30.1678
Pi = 2925.2171 psia
Pressure (psia)
3075
3060
3045
3030
3015
3000
2985
2970
2955
2940
2925
-1
0
1
2
3
4
5
6
7
8
9
10
11
Elapsed Time (hours)

FIGURE 4.1.2–5

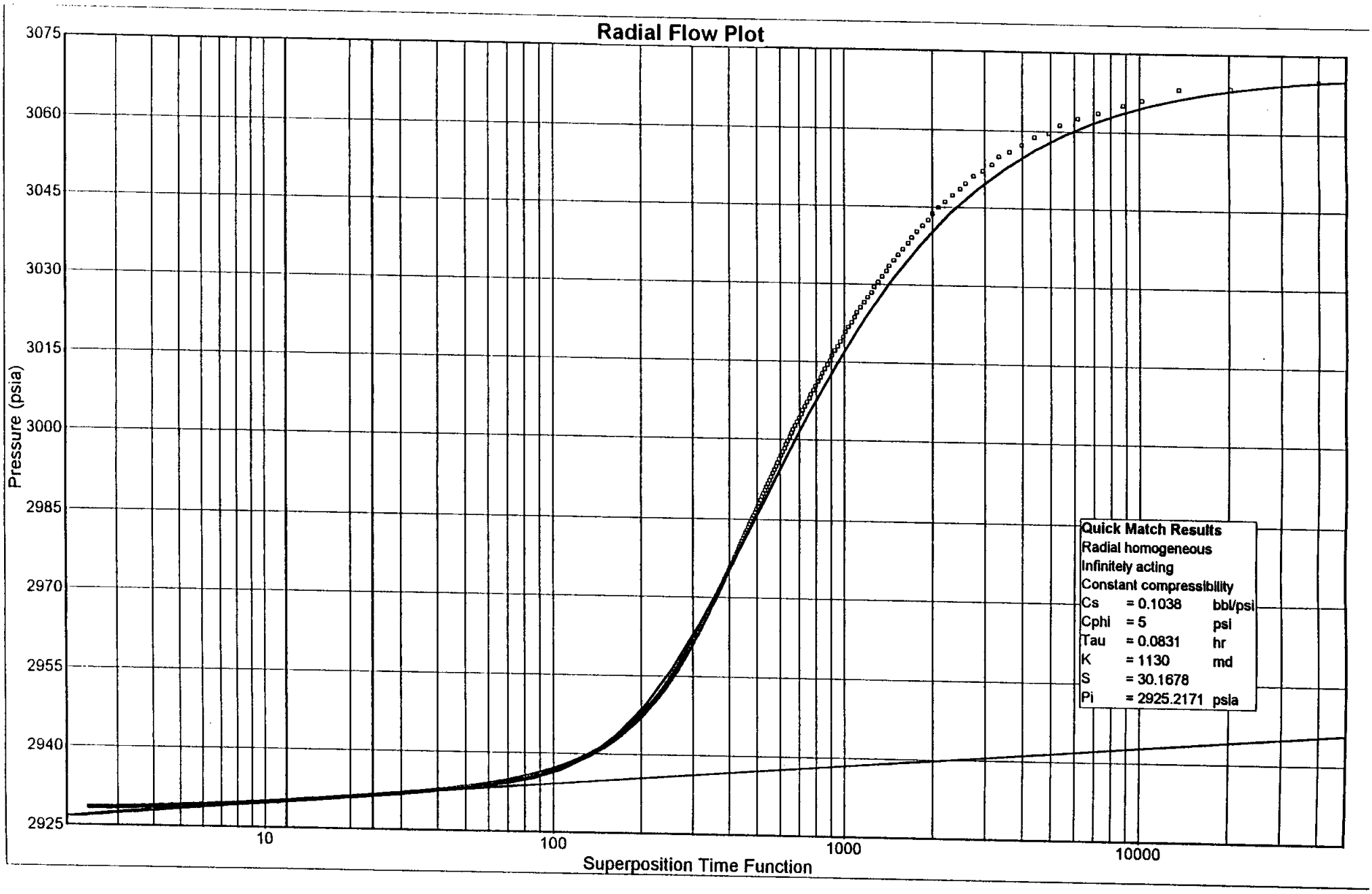

Radial Flow Plot
Pressure (psia)
3075
3060
3045
3030
3015
3000
2985
2970
2955
2940
2925
10
100
1000
10000
Superposition Time Function
Quick Match Results
Radial homogeneous
Infinitely acting
Constant compressibility
Cs = 0.1038 bbl/psi
Cphi = 5 psi
Tau = 0.0831 hr
K = 1130 md
S = 30.1678
Pi = 2925.2171 psia

FIGURE 4.1.2-6

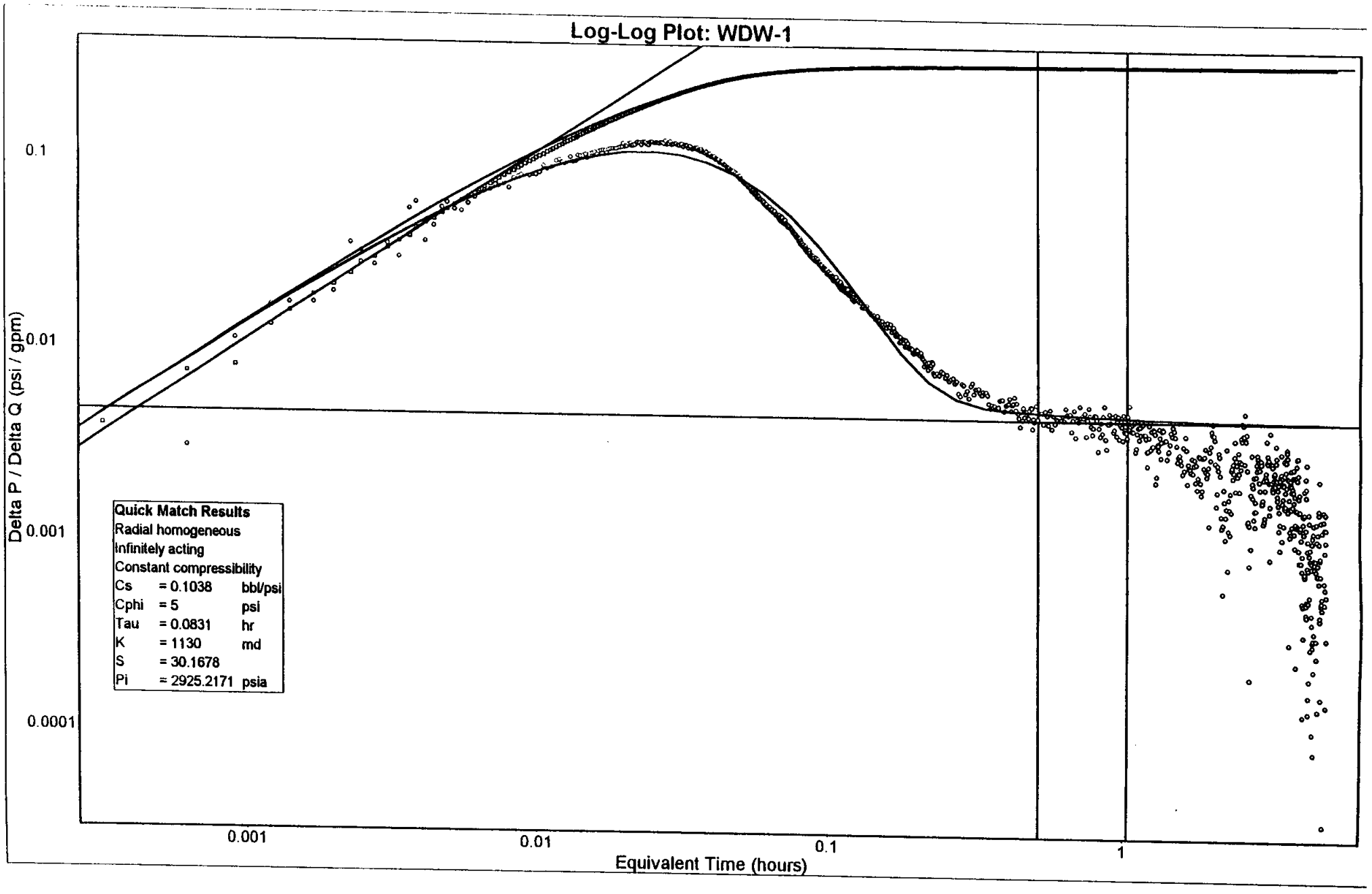

Log-Log Plot: WDW-1
Delta P / Delta Q (psi / gpm)
0.1
0.01
0.001
0.0001
0.001
0.01
0.1
1
Equivalent Time (hours)
Quick Match Results
Radial homogeneous
Infinitely acting
Constant compressibility
Cs = 0.1038 bbl/psi
Cphi = 5 psi
Tau = 0.0831 hr
K = 1130 md
S = 30.1678
Pi = 2925.2171 psia

FIGURE 4.1.2–7

APPENDIX 4.1-1

BOTTOM-HOLE PRESSURE FIELD DATA RECORDED DURING THE INJECTIVITY/FALLOFF TEST FOR WDW-1

APPENDIX 4.1-1
Navajo Refining Company
Pressure Falloff Data

Well Name : WDW-1
Started on : 07/30/1998
Ended on : 07/31/1998

Time	Pressure (Psia)	Temperature (°F)
0.0000	2927.912	123.434
0.0003	2927.912	123.439
0.0006	2927.904	123.444
0.0008	2927.904	123.444
0.0011	2927.903	123.459
0.0014	2927.899	123.457
0.0017	2927.899	123.467
0.0019	2927.877	123.462
0.0022	2927.894	123.474
0.0025	2927.886	123.485
0.0028	2927.889	123.487
0.0031	2927.892	123.500
0.0033	2927.881	123.497
0.0200	2927.845	123.822
0.0367	2927.879	124.129
0.0533	2927.914	124.377
0.0700	2927.958	124.595
0.0867	2928.012	124.782
0.1033	2928.041	124.924
0.1200	2928.073	125.036
0.1367	2928.096	125.124
0.1533	2928.120	125.208
0.1700	2928.117	125.256
0.1867	2928.131	125.299
0.2033	2928.158	125.352
0.2200	2928.158	125.379
0.2367	2928.162	125.410
0.2533	2928.178	125.438
0.2700	2928.169	125.448
0.2867	2928.184	125.470
0.3033	2928.195	125.483
0.3200	2928.211	125.501
0.3367	2928.202	125.506
0.3533	2928.191	125.508
0.3700	2928.208	125.521
0.3867	2928.207	125.526
0.4033	2928.193	125.521
0.4200	2928.203	125.534
0.4367	2928.205	125.541
0.4533	2928.190	125.546
0.4700	2928.199	125.559
0.4867	2928.220	125.574
0.5033	2928.196	125.556
0.5200	2928.189	125.556
0.5367	2928.209	125.572
0.5481	2928.219	125.584
0.5647	2928.232	125.594
0.5814	2928.215	125.582
0.5981	2928.202	125.572
0.6147	2928.205	125.574
0.6314	2928.212	125.579
0.6481	2928.219	125.584
0.6647	2928.218	125.594
0.6650	2928.214	125.587
0.6653	2928.214	125.587
0.6656	2928.208	125.577
0.6658	2928.218	125.594
0.6661	2928.221	125.592
0.6664	2928.218	125.589
0.6667	2928.201	125.577
0.6669	2928.218	125.594
0.6672	2928.221	125.592
0.6675	2928.214	125.587
0.6678	2928.214	125.587
0.6681	2928.211	125.584
0.6683	2928.211	125.589
0.6686	2928.214	125.587
0.6689	2928.238	125.604
0.6692	2928.183	125.569
0.6694	2928.231	125.599
0.6697	2928.208	125.582
0.6700	2928.221	125.597
0.6703	2928.208	125.582
0.6706	2928.225	125.594
0.6708	2928.214	125.592
0.6711	2928.214	125.587
0.6714	2928.214	125.587
0.6717	2928.207	125.587
0.6719	2928.225	125.594
0.6722	2928.207	125.587
0.6725	2928.236	125.597
0.6728	2928.194	125.577
0.6731	2928.235	125.602
0.6733	2928.211	125.584
0.6736	2928.221	125.592
0.6739	2928.204	125.584
0.6742	2928.232	125.594
0.6744	2928.214	125.592
0.6747	2928.221	125.592
0.6750	2928.218	125.589
0.6753	2928.214	125.587
0.6756	2928.221	125.592
0.6758	2928.207	125.587
0.6761	2928.228	125.597
0.6764	2928.214	125.592
0.6767	2928.207	125.587
0.6769	2928.228	125.597
0.6772	2928.204	125.584
0.6775	2928.221	125.597
0.6778	2928.207	125.587
0.6781	2928.228	125.597
0.6783	2928.214	125.592
0.6786	2928.211	125.589
0.6789	2928.214	125.592
0.6792	2928.218	125.594
0.6794	2928.214	125.592
0.6797	2928.218	125.589
0.6800	2928.210	125.594
0.6803	2928.214	125.587
0.6806	2928.224	125.599
0.6808	2928.214	125.592
0.6811	2928.214	125.592
0.6814	2928.214	125.592
0.6817	2928.221	125.597
0.6819	2928.203	125.589
0.6822	2928.218	125.594
0.6825	2928.221	125.597
0.6828	2928.200	125.587
0.6831	2928.228	125.602
0.6833	2928.204	125.584
0.6836	2928.217	125.599
0.6839	2928.211	125.589
0.6842	2928.235	125.607
0.6844	2928.196	125.584
0.6847	2928.211	125.589
0.6850	2928.207	125.592
0.6853	2928.231	125.604
0.6856	2928.207	125.592
0.6858	2928.218	125.594
0.6861	2928.203	125.589
0.6864	2928.218	125.594
0.6867	2928.210	125.594
0.6869	2928.231	125.604
0.6872	2928.200	125.587
0.6875	2928.214	125.592
0.6878	2928.224	125.599
0.6881	2928.210	125.594
0.6883	2928.207	125.592
0.6886	2928.211	125.589
0.6889	2928.224	125.604
0.6892	2928.214	125.592
0.6894	2928.218	125.594
0.6897	2928.199	125.592
0.6900	2928.214	125.592
0.6903	2928.220	125.602
0.6906	2928.218	125.594
0.6908	2928.207	125.592
0.6911	2928.210	125.594
0.6914	2928.224	125.599
0.6917	2928.213	125.597
0.6919	2928.203	125.589
0.6922	2928.218	125.594
0.6925	2928.213	125.597
0.6928	2928.220	125.602
0.6931	2928.221	125.597
0.6933	2928.203	125.589
0.6936	2928.213	125.597
0.6939	2928.224	125.599
0.6942	2928.217	125.599
0.6944	2928.207	125.592
0.6947	2928.218	125.594
0.6950	2928.217	125.599
0.6953	2928.210	125.594
0.6956	2928.227	125.607
0.6958	2928.218	125.594
0.6961	2928.203	125.589
0.6964	2928.224	125.604
0.6967	2928.213	125.597
0.6969	2928.224	125.599
0.6972	2928.200	125.587
0.6975	2928.220	125.602
0.6978	2928.217	125.599
0.6981	2928.210	125.594
0.6983	2928.220	125.602
0.6986	2928.207	125.592
0.6989	2928.224	125.604
0.6992	2928.210	125.594
0.6994	2928.224	125.599
0.6997	2928.196	125.589
0.7000	2928.234	125.612
0.7003	2928.213	125.597
0.7006	2928.213	125.597
0.7008	2928.210	125.594

Time	Pressure (Psia)	Temperature (°F)
0.7011	2928.217	125.599
0.7014	2928.220	125.602
0.7017	2928.220	125.602
0.7019	2928.210	125.594
0.7022	2928.207	125.592
0.7025	2928.230	125.610
0.7028	2928.209	125.599
0.7031	2928.220	125.602
0.7033	2928.210	125.594
0.7036	2928.217	125.599
0.7039	2928.213	125.602
0.7042	2928.217	125.599
0.7044	2928.217	125.599
0.7047	2928.213	125.597
0.7050	2928.220	125.602
0.7053	2928.224	125.604
0.7056	2928.217	125.599
0.7058	2928.202	125.594
0.7061	2928.224	125.604
0.7064	2928.220	125.602
0.7067	2928.220	125.602
0.7069	2928.202	125.594
0.7072	2928.213	125.597
0.7075	2928.224	125.604
0.7078	2928.217	125.599
0.7081	2928.209	125.599
0.7083	2928.217	125.599
0.7086	2928.209	125.599
0.7089	2928.228	125.602
0.7092	2928.213	125.602
0.7094	2928.209	125.599
0.7097	2928.224	125.604
0.7100	2928.217	125.599
0.7103	2928.217	125.599
0.7106	2928.209	125.599
0.7108	2928.220	125.602
0.7111	2928.213	125.597
0.7114	2928.227	125.607
0.7117	2928.210	125.594
0.7119	2928.235	125.607
0.7122	2928.218	125.594
0.7125	2928.238	125.610
0.7128	2928.228	125.597
0.7131	2928.235	125.602
0.7133	2928.231	125.599
0.7136	2928.260	125.610
0.7139	2928.236	125.597
0.7142	2928.250	125.597
0.7144	2928.261	125.604
0.7147	2928.262	125.599
0.7150	2928.279	125.607
0.7153	2928.280	125.602
0.7156	2928.298	125.604
0.7158	2928.292	125.594
0.7161	2928.313	125.610
0.7164	2928.332	125.607
0.7167	2928.275	125.554
0.7169	2928.406	125.640
0.7172	2928.380	125.610
0.7175	2928.381	125.599
0.7178	2928.410	125.604
0.7181	2928.412	125.594
0.7183	2928.469	125.615
0.7186	2928.464	125.594
0.7189	2928.514	125.615
0.7192	2928.527	125.597
0.7194	2928.560	125.604
0.7197	2928.594	125.602
0.7200	2928.634	125.610
0.7203	2928.657	125.599
0.7206	2928.716	125.610
0.7208	2928.736	125.597
0.7211	2928.783	125.610
0.7214	2928.822	125.599
0.7217	2928.884	125.607
0.7219	2928.915	125.602
0.7222	2928.981	125.607
0.7225	2929.026	125.607
0.7228	2929.083	125.599
0.7231	2929.138	125.607
0.7233	2929.192	125.597
0.7236	2929.276	125.615
0.7239	2929.315	125.599
0.7242	2929.375	125.599
0.7244	2929.449	125.599
0.7247	2929.526	125.612
0.7250	2929.580	125.602
0.7253	2929.672	125.615
0.7256	2929.719	125.594
0.7258	2929.803	125.607
0.7261	2929.867	125.604
0.7264	2929.938	125.602
0.7267	2930.021	125.597
0.7269	2930.105	125.610
0.7272	2930.187	125.610
0.7275	2930.252	125.602
0.7278	2930.335	125.597
0.7281	2930.427	125.604
0.7283	2930.517	125.604
0.7286	2930.602	125.612
0.7289	2930.693	125.597
0.7292	2930.771	125.599
0.7294	2930.876	125.599
0.7297	2930.986	125.615
0.7300	2931.084	125.604
0.7303	2931.164	125.592
0.7306	2931.282	125.602
0.7308	2931.387	125.602
0.7311	2931.502	125.610
0.7314	2931.596	125.607
0.7317	2931.684	125.589
0.7319	2931.802	125.599
0.7322	2931.902	125.602
0.7325	2931.999	125.607
0.7328	2932.064	125.589
0.7331	2932.160	125.604
0.7333	2932.232	125.597
0.7336	2932.313	125.607
0.7339	2932.345	125.587
0.7342	2932.398	125.582
0.7344	2932.513	125.617
0.7347	2932.568	125.602
0.7350	2932.628	125.592
0.7353	2932.710	125.597
0.7356	2932.789	125.594
0.7358	2932.859	125.597
0.7361	2932.930	125.594
0.7364	2933.021	125.594
0.7367	2933.082	125.584
0.7369	2933.191	125.599
0.7372	2933.271	125.592
0.7375	2933.372	125.594
0.7378	2933.469	125.584
0.7381	2933.596	125.589
0.7383	2933.711	125.592
0.7386	2933.853	125.592
0.7389	2933.992	125.584
0.7392	2934.154	125.582
0.7394	2934.347	125.587
0.7397	2934.537	125.589
0.7400	2934.721	125.582
0.7403	2934.927	125.579
0.7406	2935.135	125.584
0.7408	2935.341	125.582
0.7411	2935.516	125.584
0.7414	2935.723	125.572
0.7417	2935.905	125.579
0.7419	2936.066	125.577
0.7422	2936.261	125.577
0.7425	2936.384	125.574
0.7428	2936.534	125.574
0.7431	2936.687	125.572
0.7433	2936.808	125.584
0.7436	2936.935	125.562
0.7439	2937.105	125.572
0.7442	2937.249	125.562
0.7444	2937.452	125.574
0.7447	2937.648	125.564
0.7450	2937.816	125.562
0.7453	2938.067	125.559
0.7456	2938.285	125.572
0.7458	2938.499	125.564
0.7461	2938.740	125.549
0.7464	2938.964	125.554
0.7467	2939.239	125.559
0.7469	2939.503	125.567
0.7472	2939.693	125.541
0.7475	2940.009	125.554
0.7478	2940.275	125.546
0.7481	2940.555	125.554
0.7483	2940.929	125.549
0.7486	2941.198	125.539
0.7489	2941.552	125.546
0.7492	2941.918	125.546
0.7494	2942.199	125.539
0.7497	2942.610	125.539
0.7500	2942.928	125.536
0.7503	2943.233	125.541
0.7506	2943.578	125.531
0.7508	2943.777	125.529
0.7511	2944.113	125.529
0.7514	2944.344	125.534
0.7517	2944.557	125.526
0.7519	2944.823	125.519
0.7522	2944.906	125.513
0.7525	2945.171	125.544
0.7528	2945.240	125.501
0.7531	2945.321	125.506
0.7533	2945.559	125.521
0.7536	2945.596	125.526
0.7539	2945.647	125.498
0.7542	2945.746	125.516
0.7544	2945.845	125.496
0.7547	2945.852	125.506
0.7550	2945.953	125.503
0.7553	2945.980	125.496
0.7556	2945.995	125.496
0.7558	2946.076	125.501
0.7561	2946.059	125.488
0.7564	2946.064	125.481
0.7567	2946.118	125.498
0.7569	2946.123	125.486
0.7583	2946.342	125.470
0.7597	2946.994	125.450
0.7611	2947.771	125.445
0.7625	2948.461	125.420
0.7639	2948.858	125.415
0.7653	2948.980	125.385
0.7667	2949.150	125.372
0.7681	2949.417	125.321
0.7694	2949.969	125.326
0.7708	2950.390	125.296
0.7722	2950.584	125.268
0.7736	2950.593	125.258
0.7750	2950.695	125.213
0.7764	2950.717	125.190
0.7778	2951.029	125.167
0.7792	2951.606	125.142
0.7806	2952.135	125.124
0.7819	2952.151	125.081
0.7833	2952.090	125.053
0.7847	2952.004	125.023
0.7861	2952.313	124.987
0.7875	2952.483	124.937
0.7889	2952.800	124.912

Time	Pressure (Psia)	Temperature (°F)
0.7903	2952.953	124.876
0.7917	2953.042	124.838
0.7931	2953.086	124.805
0.7944	2953.169	124.767
0.7958	2953.278	124.722
0.7972	2953.527	124.696
0.7986	2953.581	124.643
0.8000	2953.920	124.613
0.8014	2954.069	124.575
0.8028	2954.117	124.534
0.8042	2954.151	124.494
0.8056	2954.156	124.443
0.8069	2954.193	124.405
0.8083	2954.189	124.370
0.8097	2954.570	124.316
0.8111	2954.921	124.278
0.8125	2955.347	124.235
0.8139	2955.368	124.169
0.8153	2955.231	124.152
0.8167	2954.919	124.093
0.8181	2955.019	124.053
0.8194	2955.359	123.997
0.8208	2955.763	123.954
0.8222	2955.726	123.901
0.8236	2955.528	123.855
0.8250	2955.282	123.797
0.8264	2955.435	123.761
0.8278	2955.962	123.700
0.8292	2956.361	123.660
0.8306	2956.432	123.604
0.8319	2956.200	123.566
0.8333	2955.780	123.500
0.8347	2955.514	123.459
0.8361	2955.708	123.406
0.8375	2956.395	123.342
0.8389	2956.842	123.304
0.8403	2957.140	123.251
0.8417	2956.879	123.198
0.8431	2956.312	123.144
0.8444	2956.119	123.076
0.8458	2956.432	123.027
0.8472	2957.045	122.997
0.8486	2957.226	122.903
0.8500	2957.202	122.875
0.8514	2956.952	122.814
0.8528	2956.556	122.761
0.8542	2956.357	122.715
0.8556	2957.170	122.651
0.8569	2957.904	122.611
0.8583	2958.026	122.544
0.8597	2957.821	122.483
0.8611	2957.392	122.422
0.8625	2956.841	122.382
0.8639	2956.793	122.305
0.8653	2956.997	122.265
0.8667	2957.455	122.198
0.8681	2957.569	122.132
0.8694	2957.542	122.081
0.8708	2957.231	122.020
0.8722	2957.063	121.959
0.8736	2957.150	121.916
0.8750	2957.417	121.852
0.8764	2957.461	121.788
0.8778	2957.437	121.725
0.8792	2957.331	121.681
0.8806	2957.143	121.613
0.8819	2957.406	121.557
0.8833	2957.795	121.501
0.8847	2957.838	121.442
0.8861	2957.710	121.383
0.8875	2957.324	121.322
0.8889	2957.073	121.256
0.8903	2957.414	121.192
0.8917	2957.747	121.138
0.8931	2957.890	121.072
0.8944	2957.880	121.019
0.8958	2957.673	120.957
0.8972	2957.375	120.911
0.8986	2957.168	120.830
0.9000	2957.337	120.771
0.9014	2957.499	120.723
0.9028	2957.574	120.656
0.9042	2957.307	120.595
0.9056	2956.637	120.528
0.9069	2955.792	120.460
0.9083	2955.081	120.411
0.9097	2954.180	120.355
0.9111	2953.331	120.288
0.9125	2952.516	120.219
0.9139	2951.436	120.143
0.9153	2950.818	120.112
0.9167	2950.159	120.028
0.9181	2950.051	119.984
0.9194	2950.249	119.915
0.9208	2950.860	119.869
0.9222	2951.833	119.800
0.9236	2952.802	119.754
0.9250	2953.647	119.649
0.9264	2954.265	119.613
0.9278	2955.349	119.565
0.9292	2956.813	119.501
0.9306	2958.861	119.439
0.9319	2960.637	119.391
0.9333	2961.325	119.311
0.9347	2961.391	119.255
0.9361	2960.984	119.186
0.9375	2960.515	119.150
0.9389	2959.948	119.083
0.9403	2959.645	119.019
0.9417	2959.294	118.973
0.9431	2958.920	118.901
0.9444	2958.670	118.832
0.9458	2958.468	118.791
0.9472	2958.429	118.740
0.9486	2958.353	118.668
0.9500	2958.032	118.627
0.9514	2957.896	118.545
0.9528	2957.842	118.463
0.9542	2958.121	118.440
0.9556	2958.234	118.381
0.9569	2958.132	118.312
0.9583	2957.911	118.268
0.9597	2957.622	118.204
0.9611	2957.602	118.140
0.9625	2957.599	118.073
0.9639	2957.851	118.027
0.9653	2957.711	117.963
0.9667	2957.627	117.927
0.9681	2957.565	117.850
0.9694	2957.845	117.783
0.9708	2958.126	117.737
0.9722	2958.239	117.678
0.9736	2958.267	117.631
0.9750	2958.097	117.572
0.9764	2957.674	117.513
0.9778	2957.626	117.457
0.9792	2958.149	117.403
0.9806	2958.800	117.325
0.9819	2959.014	117.290
0.9833	2958.896	117.225
0.9847	2958.507	117.179
0.9861	2958.154	117.127
0.9875	2957.775	117.063
0.9889	2957.828	117.019
0.9903	2958.438	116.955
0.9917	2958.908	116.906
0.9931	2958.983	116.852
0.9944	2958.689	116.796
0.9958	2958.214	116.747
0.9972	2957.764	116.690
0.9986	2957.772	116.631
1.0000	2958.427	116.577
1.0014	2959.110	116.551
1.0028	2959.156	116.469
1.0042	2958.985	116.389
1.0056	2958.925	116.345
1.0069	2960.832	116.339
1.0083	2962.101	116.333
1.0097	2964.754	116.327
1.0111	2966.967	116.255
1.0125	2968.985	116.211
1.0139	2970.896	116.180
1.0153	2972.739	116.137
1.0167	2974.210	116.095
1.0181	2976.977	116.049
1.0194	2978.117	115.998
1.0208	2980.255	115.952
1.0222	2982.153	115.911
1.0236	2984.456	115.832
1.0250	2986.898	115.721
1.0264	2988.887	115.525
1.0278	2993.896	115.296
1.0292	2995.964	115.027
1.0306	2997.171	114.998
1.0319	2999.813	114.735
1.0333	3001.492	115.290
1.0347	3011.142	115.320
1.0361	3015.741	115.377
1.0375	3007.901	116.068
1.0389	3018.019	116.347
1.0403	3018.755	117.125
1.0417	3018.801	117.119
1.0431	3017.091	117.473
1.0444	3017.476	117.980
1.0458	3017.145	117.703
1.0472	3017.984	117.881
1.0486	3012.824	117.259
1.0500	3012.926	117.698
1.0514	3013.444	117.466
1.0528	3013.021	117.467
1.0542	3015.803	117.279
1.0556	3018.625	117.169
1.0569	3014.113	117.325
1.0583	3018.374	116.198
1.0597	3017.375	116.322
1.0611	3016.556	116.394
1.0625	3018.841	116.978
1.0639	3013.757	116.861
1.0653	3017.574	117.857
1.0667	3016.946	117.635
1.0681	3017.526	117.771
1.0694	3018.244	117.516
1.0708	3019.199	116.794
1.0722	3019.124	116.383
1.0736	3019.331	116.438
1.0742	3019.550	116.744
1.0783	3018.981	116.123
1.0825	3016.417	115.808
1.0867	3020.184	115.714
1.0908	3020.730	115.556
1.0950	3018.411	111.400
1.0992	3021.348	111.126
1.1033	3018.552	111.506
1.1075	3019.752	111.173
1.1117	3019.509	111.124
1.1158	3018.809	110.957
1.1200	3021.578	110.478
1.1242	3020.136	109.912
1.1283	3020.964	109.987
1.1325	3021.163	109.687
1.1367	3020.681	109.491
1.1408	3021.506	108.302
1.1450	3024.089	107.316
1.1492	3023.971	105.586
1.1533	3023.281	105.557

Time	Pressure (Psia)	Temperature (°F)
1.1575	3023.140	106.178
1.1617	3023.929	107.811
1.1658	3024.548	107.693
1.1700	3023.795	107.720
1.1742	3023.765	107.105
1.1783	3023.355	106.822
1.1825	3024.549	106.277
1.1867	3025.226	105.650
1.1908	3026.732	105.276
1.1950	3024.874	105.712
1.1992	3027.866	105.525
1.2033	3025.389	105.162
1.2075	3025.660	104.956
1.2117	3025.544	104.650
1.2158	3025.892	104.426
1.2200	3026.531	104.151
1.2242	3024.534	103.890
1.2283	3025.066	103.615
1.2325	3025.537	103.493
1.2367	3025.488	103.102
1.2408	3026.308	102.850
1.2450	3025.981	102.585
1.2492	3025.807	102.578
1.2533	3026.400	102.114
1.2575	3026.094	101.867
1.2617	3025.542	101.700
1.2658	3028.294	101.440
1.2700	3026.430	101.187
1.2742	3028.150	100.922
1.2783	3028.556	100.696
1.2825	3028.904	100.483
1.2867	3027.725	100.185
1.2908	3027.367	99.996
1.2950	3027.972	99.941
1.2992	3029.438	99.524
1.3033	3029.510	99..570
1.3075	3029.722	99.386
1.3117	3030.407	98.881
1.3158	3027.983	98.609
1.3200	3027.677	98.406
1.3242	3028.238	98.230
1.3283	3028.190	98.080
1.3325	3029.915	97.797
1.3367	3030.180	97.633
1.3408	3030.952	97.616
1.3450	3031.439	97.160
1.3492	3029.839	96.921
1.3533	3029.834	96.720
1.3575	3032.410	96.490
1.3617	3030.239	96.299
1.3658	3032.472	96.084
1.3700	3034.314	95.870
1.3742	3032.960	95.671
1.3783	3031.984	95.469
1.3825	3033.338	95.335
1.3867	3034.104	94.999
1.3908	3032.794	94.889
1.3950	3033.671	94.765
1.3992	3033.674	94.320
1.4033	3033.823	94.326
1.4058	3035.134	94.186
1.4142	3033.250	93.776
1.4225	3035.015	93.296
1.4308	3034.955	93.005
1.4392	3035.091	92.594
1.4475	3037.052	92.270
1.4514	3035.447	92.118
1.4597	3037.855	91.782
1.4681	3035.232	91.517
1.4764	3035.322	91.674
1.4847	3036.387	90.845
1.4931	3038.930	90.623
1.5014	3037.500	90.405
1.5097	3037.682	90.215
1.5181	3038.093	89.995
1.5264	3038.751	89.824
1.5347	3038.824	89.686
1.5431	3036.912	89.571
1.5514	3036.623	89.490
1.5597	3037.738	89.373
1.5681	3036.297	89.286
1.5764	3037.434	89.394
1.5847	3035.125	89.082
1.5931	3035.666	89.038
1.6014	3037.004	89.003
1.6097	3035.659	88.916
1.6181	3038.110	88.829
1.6264	3039.499	88.961
1.6347	3037.330	88.752
1.6431	3037.409	88.583
1.6514	3040.908	88.510
1.6597	3038.173	88.412
1.6681	3037.366	88.284
1.6764	3038.583	88.232
1.6847	3038.404	88.090
1.6931	3039.049	87.850
1.7014	3039.678	87.796
1.7097	3039.370	87.637
1.7181	3040.737	87.512
1.7264	3039.796	87.373
1.7347	3038.973	87.184
1.7431	3040.045	87.017
1.7514	3039.806	86.903
1.7597	3039.804	86.766
1.7681	3040.195	86.673
1.7764	3039.878	86.473
1.7847	3038.912	86.356
1.7931	3038.322	86.328
1.8014	3039.569	86.241
1.8097	3038.612	86.090
1.8181	3038.244	85.907
1.8264	3038.553	85.855
1.8347	3038.958	85.721
1.8431	3039.434	85.630
1.8514	3039.398	85.526
1.8597	3040.171	85.441
1.8681	3041.009	85.359
1.8764	3041.993	85.318
1.8847	3037.846	85.175
1.8931	3036.729	85.327
1.9014	3034.890	85.085
1.9097	3035.590	84.925
1.9181	3036.662	84.873
1.9264	3036.072	84.020
1.9347	3037.825	84.785
1.9431	3038.485	84.799
1.9514	3038.499	84.684
1.9597	3038.805	84.645
1.9681	3041.017	84.591
1.9764	3039.103	84.544
1.9847	3040.425	84.522
1.9931	3042.733	84.500
2.0014	3043.406	84.407
2.0097	3040.577	84.398
2.0181	3045.565	84.913
2.0264	3042.995	84.321
2.0347	3043.057	84.723
2.0431	3044.380	84.231
2.0514	3042.977	84.102
2.0597	3045.221	84.192
2.0681	3044.350	84.168
2.0764	3045.273	84.137
2.0847	3045.161	84.099
2.0931	3041.219	84.030
2.1014	3042.338	84.113
2.1097	3042.890	84.014
2.1181	3043.374	83.994
2.1264	3042.878	83.978
2.1347	3041.991	83.975
2.1431	3039.606	83.382
2.1514	3041.945	83.582
2.1597	3043.861	83.937
2.1681	3041.760	83.981
2.1764	3043.330	83.917
2.1847	3042.952	83.956
2.1931	3043.226	83.538
2.2014	3042.726	83.909
2.2097	3043.066	83.917
2.2181	3043.071	83.162
2.2264	3043.461	83.417
2.2347	3043.209	83.699
2.2431	3043.886	83.931
2.2514	3042.495	83.926
2.2597	3044.604	83.989
2.2681	3044.086	83.950
2.2764	3043.688	83.753
2.2847	3042.371	83.989
2.2931	3043.476	83.994
2.3014	3045.483	83.948
2.3097	3045.507	84.000
2.3181	3044.056	84.005
2.3264	3045.295	84.137
2.3347	3044.419	84.033
2.3431	3045.022	84.000
2.3514	3044.383	84.258
2.3597	3043.324	84.077
2.3681	3042.898	84.077
2.3764	3041.400	84.195
2.3847	3041.271	84.397
2.3931	3042.685	84.484
2.4014	3043.691	84.191
2.4097	3043.496	84.297
2.4181	3042.208	84.228
2.4264	3041.602	84.297
2.4347	3041.343	84.310
2.4431	3041.845	84.360
2.4514	3042.751	84.228
2.4597	3041.123	84.277
2.4681	3043.033	84.255
2.4764	3042.552	84.165
2.4847	3041.961	84.449
2.4931	3043.229	84.121
2.5014	3042.517	84.066
2.5097	3042.448	84.091
2.5181	3041.935	83.992
2.5264	3042.856	83.945
2.5347	3043.422	83.901
2.5431	3041.623	83.857
2.5514	3044.156	83.761
2.5597	3044.138	83.711
2.5681	3043.213	83.667
2.5764	3043.504	83.585
2.5847	3044.707	83.576
2.5931	3044.258	83.447
2.6014	3043.549	83.464
2.6097	3044.815	83.414
2.6181	3045.537	83.312
2.6264	3046.855	83.296
2.6347	3043.623	83.221
2.6431	3043.977	83.656
2.6514	3043.534	83.133
2.6597	3042.998	83.100
2.6681	3044.393	83.056
2.6764	3043.873	83.252
2.6847	3042.308	83.252
2.6931	3043.370	83.131
2.7014	3042.106	83.147
2.7097	3042.819	82.861
2.7181	3045.122	82.852
2.7264	3043.116	82.167
2.7347	3044.347	82.862
2.7431	3044.093	82.811
2.7514	3043.776	82.657
2.7597	3043.144	82.615
2.7681	3042.837	82.778

Time	Pressure (Psia)	Temperature (°F)
2.7764	3044.088	82.728
2.7847	3043.743	82.972
2.7931	3043.438	82.000
2.8014	3041.471	82.624
2.8097	3042.180	82.739
2.8181	3043.030	82.329
2.8264	3043.897	82.025
2.8347	3043.851	82.665
2.8431	3043.827	82.646
2.8514	3043.657	82.704
2.8597	3042.292	82.759
2.8681	3043.461	82.720
2.8764	3042.224	82.772
2.8847	3044.702	82.912
2.8931	3042.674	82.748
2.9014	3042.667	82.726
2.9097	3042.508	82.753
2.9181	3043.637	82.511
2.9264	3041.833	82.753
2.9347	3042.665	82.411
2.9431	3041.757	82.814
2.9514	3042.854	82.593
2.9597	3042.363	82.717
2.9681	3044.638	82.830
2.9764	3044.493	82.087
2.9847	3043.438	82.367
2.9931	3043.282	82.872
3.0014	3041.746	82.186
3.0097	3040.899	82.833
3.0181	3041.585	82.951
3.0264	3042.053	82.954
3.0347	3040.582	82.913
3.0431	3041.713	83.034
3.0514	3041.299	83.062
3.0597	3042.729	83.064
3.0644	3042.914	83.380
3.0811	3043.342	83.180
3.0978	3042.185	83.252
3.1144	3043.144	83.610
3.1311	3044.276	83.758
3.1478	3044.367	83.788
3.1644	3045.007	83.810
3.1811	3045.209	83.214
3.1978	3046.833	83.656
3.2144	3049.644	83.964
3.2311	3046.539	84.394
3.2478	3050.614	84.244
3.2644	3049.021	84.151
3.2811	3048.756	84.574
3.2978	3047.335	84.750
3.3133	3049.331	84.997
3.3300	3048.990	84.873
3.3467	3049.280	85.038
3.3633	3047.765	84.871
3.3800	3048.272	85.008
3.3967	3049.124	85.019
3.4133	3049.177	85.038
3.4300	3049.410	85.052
3.4467	3049.138	85.052
3.4633	3049.792	85.158
3.4800	3049.545	86.048
3.4967	3049.490	85.952
3.5133	3049.762	85.723
3.5300	3049.841	85.308
3.5467	3048.697	85.074
3.5633	3049.177	85.368
3.5800	3047.381	85.378
3.5967	3049.007	85.019
3.6133	3049.731	85.180
3.6300	3049.625	85.661
3.6467	3050.298	85.159
3.6633	3049.042	85.148
3.6800	3048.232	85.139
3.6967	3049.957	85.183
3.7133	3049.163	85.268

Time	Pressure (Psia)	Temperature (°F)
3.7300	3052.430	85.282
3.7467	3051.838	85.257
3.7633	3051.778	85.216
3.7800	3050.998	85.282
3.7967	3050.755	85.608
3.8133	3054.032	85.397
3.8300	3053.021	85.414
3.8467	3052.927	85.739
3.8633	3053.045	85.504
3.8800	3051.540	85.564
3.8967	3054.196	85.685
3.9133	3052.310	85.723
3.9300	3053.646	85.479
3.9467	3052.703	86.174
3.9633	3051.997	86.008
3.9800	3052.528	86.454
3.9967	3053.634	86.317
4.0133	3052.678	86.224
4.0300	3051.165	86.153
4.0467	3051.147	87.085
4.0633	3050.755	87.012
4.0800	3050.658	87.173
4.0967	3051.353	87.378
4.1133	3053.614	87.392
4.1300	3055.224	87.463
4.1467	3050.471	87.386
4.1633	3052.273	87.446
4.1800	3051.510	87.304
4.1967	3050.180	87.405
4.2133	3049.304	87.045
4.2300	3051.355	86.864
4.2467	3050.774	86.673
4.2633	3050.729	86.534
4.2800	3051.275	86.348
4.2967	3052.208	86.194
4.3133	3053.225	86.049
4.3300	3054.157	85.896
4.3467	3052.284	85.729
4.3633	3051.154	85.767
4.3800	3049.935	85.611
4.3967	3049.195	85.493
4.4133	3049.593	85.430
4.4300	3051.028	85.375
4.4467	3049.987	85.403
4.4633	3049.325	85.246
4.4800	3048.921	85.183
4.4803	3050.515	85.268
4.4969	3049.733	85.252
4.5136	3048.830	85.145
4.5303	3048.368	85.175
4.5469	3049.562	85.244
4.5636	3051.426	85.194
4.5803	3050.590	85.213
4.5969	3049.895	85.271
4.6136	3053.192	85.255
4.6303	3052.078	85.312
4.6469	3052.681	85.353
4.6636	3051.436	85.463
4.6803	3048.765	85.562
4.6969	3050.467	85.564
4.7136	3050.647	85.737
4.7303	3051.339	85.838
4.7469	3051.653	86.057
4.7636	3050.594	86.181
4.7803	3051.686	86.298
4.7969	3051.355	86.440
4.8136	3050.615	86.539
4.8303	3047.648	86.605
4.8469	3047.671	86.695
4.8636	3049.646	86.709
4.8803	3050.338	86.758
4.8969	3051.481	86.752
4.9136	3051.716	86.763
4.9303	3053.402	86.791
4.9469	3051.347	86.725

Time	Pressure (Psia)	Temperature (°F)
4.9636	3050.159	86.700
4.9803	3046.631	86.689
4.9969	3045.079	86.670
5.0136	3045.848	86.624
5.0303	3048.133	86.646
5.0469	3048.508	86.575
5.0636	3048.016	86.564
5.0803	3049.940	86.577
5.0969	3050.082	86.605
5.1136	3050.649	86.553
5.1303	3051.024	86.512
5.1469	3049.343	86.479
5.1636	3050.472	86.523
5.1803	3049.409	86.509
5.1969	3051.556	86.539
5.2136	3049.948	86.536
5.2303	3050.280	86.575
5.2469	3049.901	86.580
5.2636	3051.438	86.640
5.2803	3053.698	86.657
5.2969	3052.255	86.719
5.3136	3052.829	86.780
5.3303	3052.729	86.867
5.3469	3052.330	86.930
5.3636	3051.326	86.985
5.3803	3049.407	87.105
5.3969	3051.986	87.247
5.4136	3053.035	87.310
5.4303	3052.592	87.531
5.4469	3055.729	87.752
5.4636	3054.580	87.313
5.4803	3055.518	88.338
5.4969	3056.766	88.281
5.5136	3058.369	88.515
5.5303	3056.976	88.624
5.5469	3054.276	88.712
5.5636	3055.348	88.657
5.5803	3057.091	88.600
5.5969	3057.154	88.420
5.6136	3057.515	88.235
5.6303	3056.112	88.066
5.6469	3056.574	87.823
5.6636	3057.765	87.615
5.6803	3056.989	87.463
5.6969	3059.323	87.250
5.7136	3052.330	87.080
5.7303	3055.072	86.930
5.7469	3054.807	86.799
5.7636	3056.186	86.621
5.7803	3056.285	86.525
5.7969	3059.622	86.312
5.8136	3059.826	86.457
5.8303	3059.311	86.233
5.8389	3058.792	86.167
5.8556	3057.597	86.142
5.8722	3056.813	86.098
5.8889	3059.578	86.044
5.9056	3057.426	85.970
5.9222	3058.054	85.923
5.9389	3056.522	85.940
5.9556	3057.658	85.923
5.9722	3056.761	85.882
5.9889	3055.153	85.920
6.0056	3055.280	85.940
6.0222	3057.643	85.923
6.0389	3060.250	85.978
6.0556	3054.375	86.033
6.0722	3055.430	86.098
6.0889	3055.999	86.208
6.1056	3057.295	86.276
6.1222	3059.083	86.438
6.1389	3057.820	86.558
6.1556	3057.509	86.763
6.1722	3057.783	86.933
6.1889	3058.601	87.151

Time	Pressure (Psia)	Temperature (°F)
6.2056	3058.084	87.394
6.2222	3058.719	87.637
6.2389	3057.404	87.894
6.2556	3058.265	88.197
6.2722	3057.987	88.398
6.2889	3058.386	88.551
6.3056	3057.976	88.703
6.3222	3060.124	88.684
6.3389	3060.048	88.793
6.3556	3060.656	88.758
6.3722	3060.785	88.638
6.3889	3058.583	88.592
6.4056	3056.252	88.475
6.4222	3060.231	88.379
6.4389	3058.454	88.267
6.4556	3058.410	88.180
6.4722	3057.377	88.047
6.4889	3057.845	87.992
6.5056	3059.517	87.899
6.5222	3061.076	87.831
6.5389	3059.939	87.738
6.5556	3059.673	87.651
6.5722	3061.874	87.667
6.5889	3060.659	87.561
6.6056	3060.060	87.525
6.6222	3057.875	87.457
6.6389	3059.385	87.435
6.6556	3060.672	87.424
6.6722	3059.781	87.337
6.6889	3061.686	87.345
6.7056	3061.056	87.433
6.7222	3060.234	87.400
6.7389	3062.373	87.482
6.7556	3061.115	87.452
6.7722	3060.753	87.515
6.7889	3059.322	87.539
6.8056	3059.726	87.599
6.8222	3061.977	87.678
6.8389	3060.193	87.763
6.8556	3060.230	87.842
6.8722	3059.938	87.976
6.8889	3057.843	88.142
6.9056	3060.619	88.284
6.9222	3062.188	88.436
6.9389	3059.951	88.660
6.9556	3057.811	88.842
6.9722	3058.086	88.973
6.9889	3060.646	89.125
7.0056	3055.850	89.229
7.0222	3056.868	89.272
7.0389	3057.698	89.332
7.0556	3059.821	89.376
7.0722	3061.181	89.406
7.0889	3059.448	89.362
7.1056	3060.363	89.435
7.1075	3058.949	89.446
7.1242	3059.304	89.425
7.1408	3060.328	89.433
7.1575	3061.714	89.571
7.1742	3062.085	89.493
7.1908	3061.729	89.529
7.2075	3061.807	89.877
7.2242	3062.704	89.520
7.2408	3061.664	89.230
7.2575	3061.543	89.152
7.2742	3061.263	89.040
7.2908	3063.188	89.672
7.3075	3061.533	89.691
7.3242	3062.009	89.740
7.3408	3062.764	89.735
7.3575	3065.635	89.941
7.3742	3063.368	89.941
7.3908	3060.067	90.012
7.4075	3060.302	90.115
7.4242	3060.878	90.215
7.4408	3060.812	90.308
7.4575	3060.811	90.615
7.4742	3060.176	90.617
7.4908	3059.929	90.631
7.5075	3057.564	90.861
7.5242	3061.129	91.062
7.5408	3061.180	91.208
7.5575	3060.650	91.909
7.5742	3060.746	91.975
7.5908	3060.177	91.590
7.6075	3060.307	91.674
7.6242	3062.727	91.723
7.6408	3059.009	91.739
7.6575	3058.792	91.726
7.6742	3058.808	91.769
7.6908	3060.375	91.780
7.7075	3056.728	91.799
7.7242	3059.133	91.777
7.7408	3056.258	91.834
7.7575	3058.459	91.799
7.7742	3056.764	91.476
7.7908	3056.631	91.077
7.8075	3058.991	91.842
7.8242	3059.292	91.869
7.8408	3058.386	91.985
7.8575	3058.021	91.991
7.8742	3058.444	91.512
7.8908	3058.608	92.021
7.9075	3058.002	92.067
7.9242	3057.604	92.280
7.9408	3057.931	92.215
7.9575	3057.931	92.251
7.9742	3060.932	92.318
7.9908	3058.629	92.903
8.0075	3057.258	92.475
8.0242	3060.492	92.440
8.0408	3060.750	92.616
8.0575	3059.308	92.718
8.0742	3059.817	92.824
8.0908	3057.458	92.894
8.1075	3057.320	92.219
8.1242	3057.928	92.345
8.1408	3058.671	92.994
8.1575	3058.861	93.283
8.1742	3058.028	93.648
8.1908	3058.168	93.585
8.2075	3058.067	93.771
8.2242	3059.409	93.916
8.2408	3059.373	94.035
8.2575	3063.637	94.226
8.2742	3063.749	94.927
8.2908	3064.091	94.898
8.3075	3063.377	95.155
8.3242	3063.190	95.155
8.3408	3062.925	95.381
8.3575	3063.098	95.970
8.3742	3062.569	95.714
8.3908	3059.613	95.348
8.4075	3060.685	95.940
8.4242	3061.353	95.756
8.4408	3061.834	95.534
8.4575	3062.265	95.347
8.4742	3061.771	94.751
8.4908	3062.548	94.690
8.5075	3062.693	94.443
8.5242	3062.338	93.930
8.5408	3063.956	93.556
8.5575	3063.528	93.194
8.5742	3063.386	92.725
8.5908	3062.462	92.656
8.6075	3065.505	92.418
8.6242	3063.634	92.686
8.6408	3061.454	92.053
8.6575	3059.610	91.977
8.6742	3055.146	91.574
8.6908	3057.271	91.495
8.7075	3055.253	91.352
8.7242	3057.361	91.295
8.7408	3057.642	91.195
8.7575	3058.939	91.075
8.7742	3061.209	91.000
8.7908	3059.166	91.013
8.8075	3058.057	90.964
8.8242	3058.193	90.812
8.8408	3056.277	90.823
8.8575	3056.803	90.900
8.8742	3058.675	90.062
8.8908	3060.719	90.766
8.9075	3061.221	90.810
8.9242	3061.086	90.850
8.9408	3060.782	90.403
8.9575	3061.430	90.703
8.9742	3059.534	91.021
8.9908	3062.381	91.162
9.0075	3061.406	91.238
9.0242	3060.401	91.387
9.0408	3061.894	91.571
9.0575	3062.645	91.815
9.0742	3063.075	92.026
9.0908	3063.479	92.286
9.1075	3065.755	92.613
9.1242	3066.590	92.918
9.1408	3063.935	93.261
9.1575	3065.623	93.650
9.1742	3067.499	93.946
9.1908	3068.557	94.216
9.2075	3068.100	94.436
9.2242	3067.748	94.485
9.2408	3067.413	94.480
9.2575	3065.157	94.412
9.2742	3066.536	94.318
9.2908	3067.631	94.170
9.3075	3065.674	93.968
9.3242	3069.410	93.747
9.3408	3067.098	93.528
9.3575	3066.980	93.364
9.3742	3068.198	93.126
9.3908	3066.476	92.940
9.4075	3068.926	92.778
9.4242	3067.596	92.553
9.4408	3065.438	92.410
9.4575	3066.773	92.213
9.4742	3066.150	92.156
9.4908	3062.874	92.091
9.5075	3066.233	91.939
9.5242	3065.744	91.969
9.5408	3066.357	91.904
9.5575	3065.514	91.845
9.5742	3066.710	91.788
9.5908	3068.191	91.761
9.6075	3066.280	91.728
9.6242	3066.925	91.777
9.6408	3068.180	91.755
9.6575	3067.760	91.774
9.6742	3068.075	91.758
9.6908	3067.114	91.717
9.7075	3066.758	91.810
9.7242	3068.269	91.926
9.7408	3067.216	91.926
9.7575	3068.622	91.945
9.7742	3068.853	92.013
9.7908	3064.671	91.967
9.8075	3064.622	92.159
9.8242	3066.186	92.459
9.8408	3066.512	92.261
9.8575	3065.120	92.386
9.8742	3066.778	92.562
9.8908	3067.148	92.586
9.9075	3066.679	92.645
9.9242	3067.773	92.834

Time	Pressure (Psia)	Temperature (°F)
9.9408	3067.109	92.897
9.9575	3067.073	93.202
9.9742	3066.307	93.315
9.9908	3066.481	93.404
10.0075	3068.025	93.590
10.0242	3068.577	94.022
10.0408	3066.137	93.935
10.0575	3066.909	94.178
10.0742	3065.875	94.315
10.0908	3068.625	94.375
10.1075	3068.123	94.528
10.1242	3067.381	94.407
10.1408	3067.812	94.275
10.1575	3068.601	94.224
10.1742	3066.908	94.059
10.1908	3067.231	93.854
10.2075	3067.318	93.650
10.2242	3064.288	93.539
10.2408	3064.215	93.339
10.2575	3063.793	93.194
10.2742	3064.216	93.372
10.2908	3065.438	92.807
10.3075	3069.127	92.713
10.3242	3067.208	92.345
10.3408	3070.536	92.383
10.3575	3067.712	92.253
10.3742	3068.163	92.029
10.3908	3067.055	92.004
10.4075	3069.578	92.099
10.4242	3068.679	91.785
10.4408	3071.913	91.820
10.4575	3073.201	91.677
10.4742	3072.445	91.647
10.4908	3072.565	91.878
10.5075	3073.824	91.711
10.5242	3074.177	91.590
10.5408	3071.608	91.471
10.5575	3070.959	91.509
10.5742	3070.764	91.531
10.5908	3073.096	91.506
10.6075	3071.159	91.653
10.6242	3072.777	91.682
10.6408	3071.086	91.746
10.6575	3070.939	91.948
10.6742	3070.328	92.056
10.6908	3071.822	92.307
10.7075	3072.232	92.656
10.7242	3069.797	92.678
10.7408	3071.714	93.072
10.7575	3071.573	93.196
10.7742	3068.343	93.391
10.7908	3069.877	93.493
10.8075	3067.356	93.520
10.8242	3068.069	93.582
10.8408	3069.349	93.428
10.8575	3067.341	93.516
10.8742	3065.518	93.053
10.8908	3066.575	92.848
10.9075	3065.131	92.540
10.9242	3065.492	92.310
10.9408	3066.298	91.905
10.9575	3068.507	91.923
10.9742	3067.556	91.617
10.9908	3066.910	91.425
11.0075	3070.101	91.214
11.0242	3072.009	90.964
11.0408	3071.600	90.897
11.0575	3068.523	90.739
11.0742	3068.605	90.571
11.0908	3068.361	90.452
11.1075	3069.621	90.376
11.1242	3068.267	90.245
11.1408	3070.100	90.142
11.1575	3068.823	90.090
11.1742	3067.900	90.001
11.1908	3068.090	89.974
11.2075	3069.125	89.968
11.2242	3068.899	89.947
11.2408	3068.394	89.933
11.2575	3066.408	89.903
11.2742	3068.777	89.952
11.2908	3069.252	89.985
11.3075	3067.561	90.020
11.3242	3066.398	90.066
11.3408	3067.536	90.126
11.3575	3066.323	90.237
11.3742	3067.538	90.226
11.3908	3065.623	90.367
11.4075	3069.189	90.419
11.4242	3067.737	90.571
11.4408	3069.502	90.758
11.4575	3068.592	90.910
11.4742	3068.419	91.162
11.4908	3067.618	91.206
11.5075	3068.415	91.422
11.5242	3069.106	91.615
11.5408	3069.803	92.031
11.5575	3070.423	92.315
11.5742	3072.575	92.456
11.5908	3070.472	92.664
11.6075	3069.708	92.156
11.6242	3070.427	92.691
11.6408	3071.865	92.575
11.6575	3071.152	92.191
11.6742	3067.785	91.985
11.6908	3069.490	91.685
11.7075	3070.776	91.390
11.7242	3070.897	91.272
11.7408	3071.436	90.538
11.7575	3072.568	90.139
11.7742	3072.516	89.773
11.7908	3068.239	89.318
11.8075	3068.467	89.226
11.8242	3068.557	88.613
11.8408	3068.895	88.352
11.8575	3068.670	88.082
11.8742	3069.740	87.831
11.8908	3069.286	87.689
11.9075	3070.070	87.444
11.9242	3070.297	87.244
11.9408	3070.239	87.072
11.9575	3070.832	86.884
11.9742	3070.095	86.025
11.9908	3070.566	86.692
12.0075	3070.772	86.446
12.0242	3069.519	86.389
12.0408	3070.886	86.265
12.0575	3071.867	86.230
12.0742	3073.390	86.186
12.0908	3073.844	86.096
12.1075	3072.016	86.030
12.1242	3073.813	86.014
12.1408	3073.938	85.953
12.1575	3073.434	85.948
12.1742	3072.785	85.899
12.1908	3074.881	85.929
12.2075	3075.575	85.893
12.2242	3074.177	85.948
12.2408	3074.501	85.915
12.2575	3072.843	85.983
12.2742	3074.960	86.087
12.2908	3074.526	86.559
12.3075	3074.018	86.202
12.3242	3074.554	86.265
12.3408	3073.849	86.337
12.3575	3074.641	86.391
12.3742	3074.731	86.482
12.3908	3075.619	86.575
12.4075	3073.700	86.462
12.4242	3074.443	86.781
12.4408	3075.559	86.577
12.4575	3074.530	86.618
12.4742	3074.979	86.607
12.4908	3074.833	86.575
12.5075	3076.600	86.643
12.5242	3075.087	86.498
12.5408	3075.438	86.064
12.5575	3075.022	86.465
12.5742	3075.219	86.446
12.5908	3075.122	86.367
12.6075	3074.793	86.353
12.6242	3046.591	86.339
12.6408	3011.372	86.287
12.6433	3015.056	86.427
12.6436	3015.329	86.175
12.6439	3016.249	86.435
12.6442	3017.002	86.369
12.6444	3017.489	86.167
12.6447	3017.918	86.735
12.6450	3019.651	86.525
12.6453	3020.694	86.317
12.6456	3021.832	86.484
12.6458	3022.917	86.424
12.6461	3023.740	86.304
12.6464	3024.128	86.296
12.6467	3025.468	86.375
12.6469	3026.277	86.263
12.6472	3026.679	86.337
12.6475	3027.435	86.317
12.6478	3028.048	86.334
12.6481	3028.619	86.328
12.6483	3029.769	86.274
12.6486	3030.742	86.399
12.6489	3030.997	86.293
12.6492	3032.000	86.298
12.6494	3032.051	86.298
12.6497	3032.223	86.326
12.6500	3034.044	86.378
12.6503	3034.468	86.320
12.6506	3035.256	86.309
12.6508	3035.795	86.306
12.6511	3035.959	86.383
12.6514	3035.105	86.304
12.6517	3035.654	86.287
12.6519	3036.930	86.353
12.6522	3037.325	86.304
12.6525	3038.330	86.246
12.6528	3037.590	86.405
12.6531	3037.941	86.326
12.6533	3038.054	86.334
12.6536	3037.840	86.334
12.6539	3040.107	86.290
12.6542	3040.824	86.555
12.6544	3041.117	86.408
12.6547	3041.216	86.290
12.6550	3039.648	86.315
12.6553	3039.240	86.279
12.6556	3041.112	86.304
12.6558	3041.673	86.380
12.6561	3042.608	86.298
12.6564	3042.223	86.331
12.6567	3040.360	86.153
12.6569	3041.516	86.383
12.6572	3044.474	86.410
12.6575	3044.411	86.356
12.6578	3043.845	86.304
12.6581	3043.241	86.317
12.6583	3043.338	86.315
12.6586	3043.965	86.372
12.6589	3044.060	86.282
12.6592	3045.908	86.339
12.6594	3046.452	86.268
12.6597	3045.627	86.421
12.6600	3043.927	86.233
12.6603	3044.240	86.430

Time	Pressure (Psia)	Temperature (°F)
12.6606	3045.188	86.246
12.6608	3047.291	86.276
12.6611	3045.929	86.350
12.6614	3044.858	86.378
12.6617	3046.621	86.328
12.6619	3047.507	86.263
12.6622	3048.854	86.402
12.6625	3047.634	86.290
12.6628	3046.591	86.309
12.6631	3047.244	86.331
12.6633	3049.520	86.213
12.6636	3050.042	86.416
12.6639	3048.207	86.372
12.6642	3046.919	86.323
12.6644	3047.677	86.241
12.6647	3048.662	86.342
12.6650	3049.281	86.380
12.6653	3048.211	86.265
12.6656	3048.174	86.337
12.6658	3049.965	86.309
12.6661	3050.420	86.361
12.6664	3049.830	86.323
12.6667	3049.143	86.317
12.6669	3049.823	86.293
12.6672	3051.353	86.271
12.6675	3051.499	86.424
12.6678	3051.413	86.339
12.6681	3051.346	86.290
12.6683	3049.452	86.265
12.6686	3050.276	86.378
12.6689	3051.744	86.391
12.6692	3050.750	86.260
12.6694	3050.261	86.326
12.6697	3051.317	86.361
12.6700	3051.896	86.312
12.6703	3051.111	86.331
12.6706	3050.756	86.293
12.6708	3052.371	86.378
12.6711	3052.109	86.282
12.6714	3053.111	86.279
12.6717	3053.347	86.369
12.6719	3053.159	86.345
12.6722	3053.638	86.394
12.6725	3053.599	86.224
12.6728	3053.090	86.298
12.6731	3052.095	86.372
12.6733	3052.649	86.358
12.6736	3052.337	86.282
12.6739	3051.995	86.317
12.6742	3052.445	86.408
12.6744	3052.358	86.375
12.6747	3052.650	86.265
12.6750	3053.396	86.342
12.6753	3054.092	86.285
12.6756	3053.952	86.254
12.6758	3055.238	86.367
12.6761	3055.096	86.369
12.6764	3054.914	86.378
12.6819	3057.137	86.364
12.6875	3058.577	86.345
12.6931	3062.026	86.342
12.6986	3064.924	86.287
12.7042	3063.784	86.361
12.7097	3065.968	86.369
12.7153	3068.587	86.315
12.7208	3069.581	86.293
12.7264	3070.134	86.413
12.7319	3068.316	86.345
12.7375	3069.079	86.389
12.7431	3069.067	86.405
12.7486	3068.654	86.304
12.7539	3069.175	86.181
12.7706	3070.451	86.391
12.7872	3072.322	86.479
12.8039	3073.071	86.740
12.8206	3074.289	86.451
12.8372	3072.556	86.479
12.8539	3072.593	86.050
12.8706	3072.926	86.183
12.8872	3073.772	86.629
12.9039	3073.265	86.304
12.9206	3072.788	86.047
12.9372	3072.335	86.156
12.9539	3072.764	86.065
12.9706	3073.509	86.843
12.9872	3073.217	87.037
13.0039	3073.426	87.863
13.0206	3074.675	87.411
13.0372	3074.774	87.626
13.0539	3073.653	87.801
13.0706	3072.921	88.210
13.0872	3072.715	88.682
13.1039	3072.923	88.464
13.1206	3072.149	88.611
13.1372	3071.611	88.580
13.1539	3070.229	89.085
13.1706	3070.311	89.748
13.1872	3070.243	89.762
13.2039	3072.074	89.868
13.2206	3071.697	90.058
13.2372	3072.195	90.240
13.2539	3071.670	90.270
13.2706	3070.499	90.384
13.2808	3070.002	90.443
13.2811	3069.367	90.538
13.2814	3070.407	90.706
13.2817	3070.317	90.639
13.2819	3069.654	90.492
13.2822	3069.954	90.495
13.2825	3069.402	90.457
13.2828	3070.206	90.465
13.2831	3071.059	90.503
13.2833	3071.066	90.121
13.2836	3070.441	90.075
13.2839	3070.478	90.484
13.2842	3069.869	90.378
13.2844	3069.871	90.563
13.2847	3070.993	90.484
13.2850	3070.322	90.541
13.2853	3068.969	90.400
13.2856	3069.504	90.560
13.2858	3069.268	90.441
13.2861	3070.569	90.509
13.2864	3069.676	90.427
13.2867	3069.070	90.606
13.2869	3069.522	90.473
13.2872	3069.510	90.479
13.2875	3068.922	90.479
13.2878	3069.363	90.525
13.2881	3068.579	90.557
13.2883	3067.832	90.433
13.2886	3067.821	90.492
13.2889	3068.227	90.776
13.2892	3068.537	90.536
13.2894	3068.986	90.435
13.2897	3069.264	90.557
13.2900	3068.574	90.471
13.2903	3068.401	90.522
13.2906	3068.964	90.509
13.2908	3069.057	90.503
13.2911	3068.759	90.544
13.2914	3069.484	90.400
13.2917	3069.204	90.595
13.2919	3068.122	90.465
13.2922	3069.531	90.620
13.2925	3069.530	90.500
13.2928	3069.532	90.498
13.2931	3069.757	90.538
13.2933	3068.249	90.593
13.2936	3069.409	90.457
13.2939	3069.575	90.528
13.2942	3069.670	90.519
13.2944	3069.802	94.049
13.2947	3069.184	90.259
13.2950	3070.109	90.587
13.2953	3069.957	90.454
13.2956	3069.531	90.536
13.2958	3069.372	90.598
13.2961	3068.524	90.525
13.2964	3068.657	90.487
13.2967	3069.673	90.598
13.2969	3069.434	90.741
13.2972	3069.800	90.568
13.2975	3069.961	90.449
13.2978	3069.702	90.682
13.2981	3070.522	90.465
13.2983	3069.889	90.576
13.2986	3070.079	90.522
13.2989	3070.661	90.568
13.2992	3069.390	90.566
13.2994	3069.108	90.568
13.2997	3070.416	90.460
13.3000	3070.476	90.617
13.3003	3069.779	90.473
13.3006	3069.455	90.650
13.3008	3070.208	90.574
13.3011	3070.461	90.506
13.3014	3070.071	90.736
13.3017	3070.646	90.430
13.3019	3070.682	90.571
13.3022	3070.068	90.528
13.3025	3070.764	90.541
13.3028	3070.467	90.655
13.3031	3070.667	90.533
13.3033	3070.667	90.625
13.3036	3069.729	90.509
13.3039	3070.599	90.536
13.3042	3070.308	90.642
13.3044	3070.141	90.528
13.3047	3069.710	90.579
13.3050	3069.780	90.547
13.3053	3068.718	90.568
13.3056	3068.103	90.666
13.3058	3068.517	90.506
13.3061	3068.611	90.582
13.3064	3068.005	90.604
13.3067	3069.465	90.536
13.3069	3069.089	90.666
13.3072	3068.582	90.471
13.3075	3068.493	90.008
13.3078	3069.941	90.511
13.3081	3070.290	90.609
13.3083	3071.036	90.495
13.3086	3069.990	90.560
13.3089	3070.781	90.650
13.3092	3071.708	90.623
13.3094	3070.735	90.595
13.3097	3071.178	90.492
13.3100	3071.630	90.701
13.3103	3070.523	90.650
13.3106	3070.687	90.555
13.3108	3071.382	90.606
13.3111	3071.364	90.593
13.3114	3071.017	90.639
13.3117	3071.611	90.549
13.3119	3071.335	90.582
13.3122	3070.794	90.633
13.3125	3071.451	90.585
13.3128	3072.054	90.669
13.3131	3071.106	90.547
13.3133	3071.513	90.663
13.3136	3071.556	90.647
13.3139	3071.853	90.579
13.3142	3072.236	90.606
13.3144	3071.521	90.552

Time	Pressure (Psia)	Temperature (°F)
13.3147	3071.910	90.655
13.3150	3071.950	90.614
13.3153	3071.626	90.614
13.3156	3071.582	90.642
13.3158	3071.233	90.617
13.3161	3071.527	90.628
13.3164	3072.310	90.633
13.3167	3072.359	90.806
13.3169	3072.615	90.666
13.3172	3073.032	90.726
13.3175	3072.551	90.525
13.3178	3071.914	90.623
13.3181	3071.242	90.865
13.3183	3071.472	90.669
13.3186	3070.440	90.587
13.3189	3071.830	90.644
13.3192	3070.719	90.606
13.3194	3072.298	90.723
13.3197	3071.280	90.614
13.3200	3070.990	90.571
13.3203	3071.301	90.717
13.3206	3072.342	90.492
13.3208	3072.041	90.723
13.3211	3072.632	90.701
13.3214	3072.503	90.623
13.3217	3072.404	90.617
13.3219	3072.592	90.623
13.3222	3071.956	90.652
13.3225	3072.437	90.631
13.3228	3072.603	90.914
13.3231	3072.569	90.828
13.3233	3072.177	90.755
13.3236	3070.609	90.652
13.3239	3071.866	90.590
13.3242	3070.756	90.717
13.3244	3070.059	90.631
13.3247	3071.240	90.582
13.3250	3070.960	90.720
13.3253	3072.051	90.644
13.3256	3072.136	90.696
13.3258	3071.254	90.536
13.3261	3072.923	90.761
13.3264	3071.907	90.631
13.3267	3071.183	90.644
13.3269	3072.694	90.623
13.3272	3073.576	90.764
13.3275	3071.804	90.669
13.3278	3072.288	90.541
13.3281	3072.269	90.731
13.3283	3072.280	90.717
13.3286	3072.791	90.658
13.3289	3073.411	90.647
13.3292	3072.596	90.671
13.3294	3072.946	90.704
13.3297	3072.418	90.563
13.3300	3073.240	90.723
13.3303	3073.102	90.647
13.3306	3072.812	90.780
13.3308	3072.222	90.487
13.3311	3072.007	90.254
13.3314	3072.266	90.745
13.3317	3071.675	90.701
13.3319	3071.292	90.636
13.3322	3071.146	90.957
13.3325	3071.188	90.628
13.3328	3071.021	90.617
13.3331	3070.834	90.739
13.3333	3071.907	90.677
13.3336	3071.655	90.680
13.3339	3072.379	90.992
13.3342	3072.880	90.612
13.3344	3072.479	90.791
13.3347	3072.470	90.506
13.3350	3073.574	90.812
13.3353	3072.510	90.642
13.3356	3073.063	90.723
13.3358	3072.561	90.726
13.3361	3072.314	90.685
13.3364	3072.953	90.704
13.3367	3073.070	90.696
13.3369	3072.678	90.652
13.3372	3073.070	90.742
13.3375	3073.074	90.709
13.3378	3072.919	90.682
13.3381	3073.368	90.655
13.3383	3072.508	90.736
13.3386	3072.826	90.745
13.3389	3071.836	90.938
13.3392	3071.487	90.734
13.3394	3071.719	90.636
13.3397	3071.895	90.693
13.3400	3070.984	90.717
13.3403	3072.567	90.717
13.3406	3072.669	90.709
13.3408	3071.512	90.693
13.3411	3072.524	90.680
13.3414	3073.234	90.758
13.3417	3072.316	90.709
13.3419	3073.399	90.717
13.3422	3072.999	90.693
13.3425	3072.632	90.793
13.3428	3072.188	90.685
13.3431	3072.635	90.734
13.3433	3072.490	90.685
13.3436	3073.628	90.745
13.3439	3072.609	90.693
13.3442	3072.521	90.987
13.3444	3073.098	90.699
13.3447	3072.117	90.952
13.3450	3072.268	90.769
13.3453	3072.299	90.666
13.3456	3072.048	90.777
13.3458	3071.503	90.685
13.3461	3073.305	90.753
13.3464	3072.059	90.690
13.3467	3072.586	90.731
13.3469	3071.616	90.051
13.3472	3071.948	90.663
13.3475	3072.968	90.769
13.3478	3073.152	90.769
13.3481	3072.666	90.650
13.3483	3072.729	90.005
13.3486	3072.888	90.712
13.3489	3071.948	90.821
13.3492	3072.975	90.761
13.3494	3071.426	90.579
13.3497	3072.203	90.804
13.3500	3072.961	90.981
13.3503	3072.862	90.829
13.3506	3072.838	90.701
13.3508	3072.983	90.685
13.3511	3073.257	90.804
13.3514	3072.966	90.726
13.3517	3073.173	90.761
13.3519	3072.042	90.720
13.3522	3074.347	90.766
13.3525	3073.709	90.726
13.3528	3072.673	90.742
13.3531	3073.166	90.761
13.3533	3073.366	90.769
13.3536	3073.170	90.682
13.3539	3073.973	90.875
13.3542	3073.092	90.576
13.3544	3073.581	90.878
13.3547	3073.711	90.807
13.3550	3072.915	90.707
13.3553	3073.027	90.769
13.3556	3073.229	90.747
13.3558	3073.411	90.758
13.3561	3072.304	90.761
13.3564	3072.208	90.734
13.3567	3072.393	90.807
13.3569	3071.941	90.736
13.3572	3072.363	90.807
13.3575	3072.122	90.712
13.3578	3071.525	90.723
13.3581	3071.989	90.769
13.3583	3071.733	90.859
13.3586	3072.027	90.766
13.3589	3073.179	90.726
13.3592	3071.512	90.785
13.3594	3073.951	90.755
13.3597	3071.780	90.717
13.3600	3071.980	90.826
13.3603	3073.267	90.745
13.3606	3073.303	90.810
13.3608	3073.177	90.747
13.3611	3073.146	90.804
13.3614	3072.789	90.799
13.3617	3072.714	90.783
13.3619	3071.960	90.750
13.3622	3071.389	90.764
13.3625	3071.282	90.769
13.3628	3071.109	90.902
13.3631	3070.774	90.696
13.3633	3070.261	90.774
13.3636	3070.659	90.728
13.3639	3071.628	90.861
13.3642	3071.328	90.766
13.3644	3071.444	90.769
13.3647	3070.918	90.736
13.3650	3071.435	90.945
13.3653	3072.828	90.704
13.3656	3072.598	90.845
13.3658	3071.085	90.701
13.3661	3072.975	90.880
13.3664	3071.448	90.717
13.3667	3070.678	90.769
13.3669	3072.225	90.842
13.3672	3071.919	90.810
13.3675	3070.810	90.761
13.3678	3071.555	90.804
13.3681	3071.622	90.785
13.3683	3071.564	90.812
13.3686	3071.424	90.008
13.3689	3071.700	90.826
13.3692	3071.726	90.831
13.3694	3070.622	90.747
13.3697	3071.402	90.766
13.3700	3070.584	90.878
13.3703	3070.550	90.745
13.3706	3071.424	90.793
13.3708	3070.618	90.853
13.3711	3070.915	90.796
13.3714	3071.677	90.864
13.3717	3070.410	90.745
13.3719	3071.514	90.736
13.3722	3071.595	90.929
13.3725	3070.450	90.796
13.3728	3070.915	90.804
13.3731	3070.496	90.878
13.3733	3070.295	90.723
13.3736	3070.061	90.850
13.3739	3069.498	90.818
13.3742	3069.464	90.823
13.3744	3068.753	90.856
13.3747	3068.567	90.766
13.3750	3069.693	90.878
13.3753	3069.207	90.777
13.3756	3070.271	90.818
13.3758	3070.700	90.861
13.3761	3070.093	90.755
13.3764	3070.892	90.861
13.3767	3070.747	90.793
13.3769	3069.943	90.869

Time	Pressure (Psia)	Temperature (°F)
13.3772	3070.879	90.747
13.3775	3071.741	90.840
13.3778	3070.426	90.772
13.3781	3070.447	90.727
13.3783	3070.613	90.490
13.3786	3071.313	90.812
13.3789	3070.718	90.821
13.3792	3070.975	90.859
13.3794	3071.262	90.840
13.3797	3070.486	90.834
13.3800	3071.297	90.796
13.3803	3071.384	90.826
13.3806	3070.873	90.848
13.3808	3070.546	90.842
13.3811	3071.594	90.840
13.3814	3070.604	90.780
13.3817	3071.435	90.918
13.3819	3071.062	90.823
13.3822	3071.571	90.859
13.3825	3071.262	90.812
13.3828	3070.750	90.707
13.3831	3070.846	90.964
13.3833	3071.309	90.864
13.3836	3070.924	90.886
13.3839	3071.764	90.783
13.3842	3071.922	90.861
13.3844	3071.323	90.883
13.3847	3071.607	90.804
13.3850	3070.648	90.880
13.3853	3070.995	90.823
13.3856	3070.919	90.845
13.3858	3069.965	90.878
13.3861	3070.609	90.902
13.3864	3071.626	90.826
13.3867	3071.226	90.867
13.3869	3070.879	90.812
13.3872	3071.850	90.869
13.3875	3071.864	90.842
13.3878	3071.812	90.880
13.3881	3071.630	90.812
13.3883	3071.161	90.883
13.3886	3071.898	90.856
13.3889	3071.538	90.872
13.3892	3071.067	90.872
13.3894	3071.090	90.853
13.3897	3070.029	90.872
13.3900	3068.561	90.848
13.3903	3068.290	90.883
13.3906	3066.185	90.845
13.3908	3065.160	90.875
13.3911	3063.679	90.867
13.3914	3062.587	90.869
13.3917	3061.271	90.867
13.3919	3059.736	90.872
13.3922	3058.903	90.872
13.3925	3057.352	90.869
13.3928	3055.996	90.880
13.3931	3055.061	90.861
13.3933	3053.468	90.875
13.3936	3052.206	90.878
13.3939	3051.227	90.878
13.3942	3049.744	90.872
13.3944	3048.665	90.886
13.3947	3047.397	90.869
13.3950	3046.087	90.878
13.3953	3044.987	90.872
13.3956	3043.783	90.886
13.3958	3042.563	90.875
13.3961	3041.499	90.888
13.3964	3040.290	90.880
13.3967	3039.149	90.880
13.3969	3038.077	90.886
13.3972	3036.920	90.886
13.3975	3035.850	90.880
13.3978	3034.775	90.888

Time	Pressure (Psia)	Temperature (°F)
13.3981	3033.661	90.883
13.3983	3032.650	90.886
13.3986	3031.605	90.894
13.3989	3030.531	90.883
13.3992	3029.541	90.897
13.3994	3028.481	90.878
13.3997	3027.510	90.894
13.4000	3026.536	90.897
13.4003	3025.527	90.897
13.4006	3024.527	90.878
13.4008	3023.626	90.907
13.4011	3022.622	90.883
13.4014	3021.716	90.902
13.4017	3020.773	90.894
13.4019	3019.857	90.905
13.4022	3018.929	90.897
13.4025	3018.019	90.894
13.4028	3017.140	90.897
13.4031	3016.289	90.910
13.4033	3015.372	90.888
13.4036	3014.528	90.902
13.4039	3013.694	90.905
13.4042	3012.827	90.902
13.4044	3012.013	90.907
13.4047	3011.157	90.891
13.4050	3010.393	90.915
13.4053	3009.568	90.907
13.4056	3008.742	90.899
13.4058	3007.959	90.902
13.4061	3007.222	90.921
13.4064	3006.424	90.915
13.4067	3005.640	90.902
13.4069	3004.879	90.905
13.4072	3004.163	90.915
13.4075	3003.410	90.918
13.4078	3002.660	90.907
13.4081	3001.946	90.915
13.4083	3001.205	90.913
13.4086	3000.505	90.921
13.4089	2999.763	90.902
13.4092	2999.085	90.921
13.4094	2998.377	90.921
13.4097	2997.673	90.918
13.4100	2996.990	90.915
13.4103	2996.326	90.926
13.4106	2995.643	90.924
13.4108	2994.960	90.913
13.4111	2994.327	90.929
13.4114	2993.680	90.929
13.4117	2992.993	90.913
13.4119	2992.371	90.926
13.4122	2991.738	90.926
13.4125	2991.114	90.932
13.4128	2990.475	90.921
13.4131	2989.851	90.918
13.4133	2989.271	90.934
13.4136	2988.654	90.924
13.4139	2988.091	90.945
13.4142	2987.448	90.913
13.4144	2986.904	90.937
13.4147	2986.342	90.940
13.4150	2985.760	90.940
13.4153	2985.143	90.913
13.4156	2984.662	90.951
13.4158	2984.069	90.937
13.4161	2983.524	90.937
13.4164	2982.951	90.918
13.4167	2982.467	90.951
13.4169	2981.926	90.945
13.4172	2981.393	90.940
13.4175	2980.867	90.934
13.4178	2980.367	90.943
13.4181	2979.861	90.948
13.4183	2979.341	90.937
13.4186	2978.853	90.948

Time	Pressure (Psia)	Temperature (°F)
13.4189	2978.349	90.943
13.4192	2977.880	90.948
13.4194	2977.377	90.943
13.4197	2976.900	90.940
13.4200	2976.460	90.964
13.4203	2975.983	90.953
13.4206	2975.476	90.934
13.4208	2975.065	90.959
13.4211	2974.611	90.956
13.4214	2974.144	90.951
13.4217	2973.687	90.943
13.4219	2973.285	90.956
13.4222	2972.864	90.967
13.4225	2972.401	90.948
13.4228	2972.004	90.964
13.4231	2971.576	90.956
13.4233	2971.155	90.959
13.4236	2970.767	90.964
13.4239	2970.341	90.953
13.4242	2969.931	90.951
13.4244	2969.589	90.981
13.4247	2969.171	90.962
13.4250	2968.763	90.956
13.4253	2968.385	90.959
13.4256	2968.047	90.975
13.4258	2967.659	90.972
13.4261	2967.243	90.951
13.4264	2966.917	90.970
13.4267	2966.577	90.981
13.4269	2966.213	90.975
13.4272	2965.832	90.964
13.4275	2965.496	90.970
13.4278	2965.155	90.972
13.4281	2964.834	90.986
13.4283	2964.470	90.964
13.4286	2964.146	90.972
13.4289	2963.825	90.978
13.4292	2963.521	90.989
13.4294	2963.160	90.962
13.4297	2962.855	90.975
13.4300	2962.583	90.991
13.4303	2962.263	90.986
13.4306	2961.953	90.978
13.4308	2961.632	90.975
13.4311	2961.380	90.994
13.4314	2961.083	90.989
13.4317	2960.775	90.978
13.4319	2960.496	90.986
13.4322	2960.221	90.989
13.4325	2959.956	90.997
13.4328	2959.653	90.981
13.4331	2959.386	90.983
13.4333	2959.151	91.000
13.4336	2958.871	90.991
13.4339	2958.621	91.000
13.4342	2958.334	90.981
13.4344	2958.097	90.991
13.4347	2957.872	91.005
13.4350	2957.629	91.005
13.4353	2957.345	90.983
13.4356	2957.145	91.002
13.4358	2956.913	91.008
13.4361	2956.667	91.002
13.4364	2956.420	90.989
13.4367	2956.215	91.005
13.4369	2955.984	91.000
13.4372	2955.781	91.013
13.4375	2955.557	91.008
13.4378	2955.316	90.997
13.4381	2955.128	91.010
13.4383	2954.931	91.016
13.4386	2954.705	91.005
13.4389	2954.509	91.010
13.4392	2954.301	91.013
13.4394	2954.116	91.013

Time	Pressure (Psia)	Temperature (°F)
13.4397	2953.925	91.021
13.4400	2953.693	91.000
13.4403	2953.527	91.013
13.4406	2953.336	91.013
13.4408	2953.205	91.046
13.4411	2952.921	90.989
13.4414	2952.818	91.032
13.4417	2952.609	91.019
13.4419	2952.427	91.016
13.4422	2952.268	91.021
13.4425	2952.075	91.013
13.4428	2951.954	91.035
13.4431	2951.755	91.027
13.4433	2951.618	91.032
13.4436	2951.400	91.010
13.4439	2951.276	91.027
13.4442	2951.147	91.040
13.4444	2950.964	91.029
13.4447	2950.807	91.024
13.4450	2950.645	91.024
13.4453	2950.543	91.048
13.4456	2950.361	91.029
13.4458	2950.216	91.035
13.4461	2950.098	91.043
13.4464	2949.914	91.027
13.4467	2949.801	91.037
13.4469	2949.664	91.043
13.4472	2949.511	91.032
13.4475	2949.404	91.054
13.4478	2949.246	91.032
13.4481	2949.139	91.054
13.4483	2948.978	91.035
13.4486	2948.861	91.043
13.4489	2948.734	91.046
13.4492	2948.630	91.054
13.4494	2948.483	91.046
13.4497	2948.360	91.043
13.4500	2948.238	91.048
13.4503	2948.142	91.056
13.4506	2948.017	91.056
13.4508	2947.879	91.046
13.4511	2947.771	91.051
13.4514	2947.666	91.054
13.4517	2947.568	91.065
13.4519	2947.450	91.065
13.4522	2947.312	91.046
13.4525	2947.231	91.062
13.4528	2947.119	91.065
13.4531	2946.995	91.054
13.4533	2946.895	91.059
13.4536	2946.797	91.062
13.4539	2946.709	91.070
13.4542	2946.599	91.070
13.4544	2946.498	91.067
13.4547	2946.365	91.051
13.4550	2946.307	91.075
13.4553	2946.183	91.065
13.4556	2946.128	91.086
13.4558	2945.977	91.056
13.4561	2945.931	91.084
13.4564	2945.783	91.059
13.4567	2945.750	91.089
13.4569	2945.601	91.065
13.4572	2945.546	91.078
13.4575	2945.438	91.075
13.4578	2945.349	91.075
13.4581	2945.286	91.089
13.4583	2945.160	91.073
13.4586	2945.099	91.084
13.4589	2945.003	91.084
13.4592	2944.918	91.089
13.4594	2944.856	91.092
13.4597	2944.723	91.075
13.4600	2944.662	91.086
13.4603	2944.579	91.089

Time	Pressure (Psia)	Temperature (°F)
13.4606	2944.488	91.084
13.4608	2944.435	91.103
13.4611	2944.295	91.067
13.4614	2944.273	91.103
13.4617	2944.176	91.094
13.4619	2944.123	91.105
13.4622	2944.010	91.092
13.4625	2943.936	91.092
13.4628	2943.870	91.100
13.4631	2943.814	91.113
13.4633	2943.720	91.103
13.4636	2943.598	91.073
13.4639	2943.579	91.113
13.4642	2943.479	91.092
13.4644	2943.481	91.132
13.4647	2943.292	91.078
13.4650	2943.298	91.113
13.4653	2943.220	91.111
13.4656	2943.098	91.089
13.4658	2943.110	91.127
13.4661	2942.991	91.103
13.4664	2942.912	91.100
13.4667	2942.904	91.127
13.4669	2942.785	91.103
13.4672	2942.749	91.119
13.4675	2942.677	91.116
13.4678	2942.604	91.108
13.4681	2942.572	91.127
13.4683	2942.478	91.116
13.4686	2942.462	91.135
13.4689	2942.361	91.116
13.4692	2942.279	91.108
13.4694	2942.233	91.119
13.4697	2942.227	91.143
13.4700	2942.133	91.124
13.4703	2942.066	91.124
13.4706	2941.977	91.108
13.4708	2941.956	91.124
13.4711	2941.922	91.138
13.4714	2941.868	91.141
13.4717	2941.776	91.119
13.4719	2941.753	91.138
13.4722	2941.696	91.135
13.4725	2941.632	91.132
13.4728	2941.588	91.132
13.4731	2941.549	91.143
13.4733	2941.472	91.130
13.4736	2941.413	91.130
13.4739	2941.415	91.154
13.4742	2941.330	91.141
13.4744	2941.301	91.149
13.4747	2941.219	91.132
13.4750	2941.178	91.138
13.4753	2941.149	91.146
13.4756	2941.100	91.151
13.4758	2941.079	91.159
13.4761	2940.981	91.135
13.4764	2940.920	91.130
13.4767	2940.949	91.165
13.4769	2940.870	91.154
13.4772	2940.853	91.165
13.4775	2940.761	91.143
13.4778	2940.706	91.138
13.4781	2940.700	91.162
13.4783	2940.664	91.162
13.4786	2940.620	91.162
13.4789	2940.558	91.157
13.4792	2940.485	91.138
13.4794	2940.502	91.170
13.4797	2940.453	91.168
13.4800	2940.396	91.165
13.4803	2940.374	91.173
13.4806	2940.285	91.149
13.4808	2940.263	91.157
13.4811	2940.259	91.178

Time	Pressure (Psia)	Temperature (°F)
13.4814	2940.177	91.162
13.4817	2940.168	91.173
13.4819	2940.129	91.176
13.4822	2940.060	91.162
13.4825	2940.053	91.178
13.4828	2939.999	91.173
13.4831	2939.982	91.184
13.4833	2939.945	91.184
13.4836	2939.835	91.149
13.4839	2939.847	91.178
13.4842	2939.823	91.181
13.4844	2939.788	91.187
13.4847	2939.744	91.187
13.4850	2939.695	91.176
13.4853	2939.652	91.173
13.4856	2939.628	91.184
13.4858	2939.609	91.189
13.4861	2939.575	91.195
13.4864	2939.496	91.176
13.4867	2939.479	91.178
13.4869	2939.465	91.195
13.4872	2939.425	91.189
13.4875	2939.411	91.206
13.4878	2939.366	91.197
13.4881	2939.299	91.181
13.4883	2939.250	91.178
13.4886	2939.293	91.214
13.4889	2939.189	91.181
13.4892	2939.225	91.216
13.4894	2939.153	91.197
13.4897	2939.104	91.187
13.4900	2939.086	91.197
13.4903	2939.055	91.200
13.4906	2939.058	91.214
13.4908	2938.988	91.200
13.4911	2938.976	91.206
13.4914	2938.935	91.203
13.4917	2938.893	91.200
13.4919	2938.898	91.219
13.4922	2938.836	91.206
13.4925	2938.842	91.216
13.4928	2938.772	91.203
13.4931	2938.753	91.208
13.4933	2938.734	91.214
13.4936	2938.692	91.211
13.4939	2938.713	91.230
13.4942	2938.638	91.214
13.4944	2938.605	91.208
13.4947	2938.554	91.200
13.4950	2938.587	91.230
13.4953	2938.550	91.230
13.4956	2938.518	91.225
13.4958	2938.473	91.216
13.4961	2938.449	91.219
13.4964	2938.410	91.214
13.4967	2938.406	91.227
13.4969	2938.409	91.241
13.4972	2938.346	91.227
13.4975	2938.329	91.230
13.4978	2938.280	91.219
13.4981	2938.261	91.225
13.4983	2938.258	91.235
13.4986	2938.240	91.241
13.4989	2938.192	91.235
13.4992	2938.175	91.238
13.4994	2938.113	91.216
13.4997	2938.113	91.233
13.5000	2938.116	91.246
13.5003	2938.117	91.262
13.5006	2938.037	91.235
13.5008	2938.008	91.235
13.5011	2937.980	91.233
13.5014	2937.958	91.233
13.5017	2937.954	91.246
13.5019	2937.930	91.249

Time	Pressure (Psia)	Temperature (°F)
13.5022	2937.928	91.260
13.5025	2937.879	91.249
13.5028	2937.852	91.246
13.5031	2937.797	91.233
13.5033	2937.812	91.249
13.5036	2937.801	91.262
13.5039	2937.763	91.254
13.5042	2937.767	91.268
13.5044	2937.664	91.225
13.5047	2937.695	91.257
13.5050	2937.673	91.257
13.5053	2937.656	91.260
13.5056	2937.646	91.271
13.5058	2937.619	91.268
13.5061	2937.547	91.241
13.5064	2937.549	91.254
13.5067	2937.538	91.260
13.5069	2937.515	91.260
13.5072	2937.516	91.276
13.5075	2937.489	91.273
13.5078	2937.469	91.271
13.5081	2937.410	91.254
13.5083	2937.405	91.260
13.5086	2937.406	91.276
13.5089	2937.376	91.268
13.5092	2937.392	91.292
13.5094	2937.316	91.260
13.5097	2937.317	91.276
13.5100	2937.280	91.268
13.5103	2937.275	91.273
13.5106	2937.264	91.279
13.5108	2937.257	91.287
13.5111	2937.235	91.287
13.5114	2937.187	91.273
13.5117	2937.180	91.281
13.5119	2937.150	91.273
13.5122	2937.143	91.281
13.5125	2937.137	91.290
13.5128	2937.122	91.298
13.5131	2937.089	91.284
13.5133	2937.062	91.281
13.5136	2937.016	91.276
13.5139	2937.026	91.281
13.5142	2937.031	91.300
13.5144	2936.979	91.284
13.5147	2937.009	91.309
13.5150	2936.962	91.295
13.5153	2936.920	91.284
13.5156	2936.926	91.295
13.5158	2936.881	91.287
13.5172	2936.817	91.300
13.5186	2936.735	91.311
13.5200	2936.641	91.309
13.5214	2936.558	91.311
13.5228	2936.462	91.311
13.5242	2936.409	91.330
13.5256	2936.333	91.333
13.5269	2936.247	91.330
13.5283	2936.176	91.336
13.5297	2936.128	91.349
13.5311	2936.051	91.352
13.5325	2935.985	91.360
13.5339	2935.927	91.368
13.5353	2935.838	91.360
13.5367	2935.785	91.371
13.5381	2935.689	91.363
13.5394	2935.672	91.390
13.5408	2935.604	91.393
13.5422	2935.553	91.401
13.5436	2935.489	91.398
13.5450	2935.443	91.409
13.5464	2935.407	91.425
13.5478	2935.315	91.411
13.5492	2935.302	91.436
13.5506	2935.232	91.430

Time	Pressure (Psia)	Temperature (°F)
13.5519	2935.153	91.420
13.5533	2935.137	91.447
13.5547	2935.086	91.447
13.5561	2935.052	91.460
13.5575	2934.968	91.447
13.5589	2934.949	91.460
13.5603	2934.890	91.460
13.5617	2934.883	91.485
13.5631	2934.802	91.468
13.5644	2934.785	91.487
13.5658	2934.691	91.468
13.5672	2934.677	91.485
13.5686	2934.636	91.490
13.5700	2934.581	91.485
13.5714	2934.565	91.504
13.5728	2934.541	91.514
13.5742	2934.479	91.509
13.5756	2934.448	91.520
13.5769	2934.416	91.523
13.5783	2934.375	91.528
13.5797	2934.346	91.536
13.5811	2934.329	91.547
13.5825	2934.302	91.552
13.5839	2934.273	91.560
13.5853	2934.216	91.558
13.5867	2934.194	91.566
13.5881	2934.180	91.574
13.5894	2934.133	91.577
13.5908	2934.094	91.579
13.5922	2934.060	91.585
13.5936	2934.003	91.574
13.5950	2934.012	91.598
13.5964	2933.959	91.590
13.5978	2933.943	91.601
13.5992	2933.931	91.615
13.6006	2933.867	91.596
13.6019	2933.883	91.628
13.6033	2933.836	91.623
13.6047	2933.809	91.628
13.6061	2933.809	91.644
13.6075	2933.775	91.650
13.6089	2933.740	91.647
13.6103	2933.714	91.653
13.6117	2933.687	91.658
13.6131	2933.668	91.663
13.6144	2933.641	91.669
13.6158	2933.632	91.680
13.6172	2933.605	91.685
13.6186	2933.575	91.685
13.6200	2933.556	91.690
13.6214	2933.540	91.701
13.6228	2933.510	91.701
13.6242	2933.490	91.707
13.6256	2933.483	91.715
13.6269	2933.466	91.726
13.6278	2933.442	91.720
13.6319	2933.394	91.742
13.6361	2933.330	91.755
13.6403	2933.254	91.758
13.6444	2933.246	91.801
13.6486	2933.187	91.810
13.6528	2933.129	91.818
13.6569	2933.048	91.818
13.6611	2932.994	91.828
13.6653	2932.968	91.850
13.6694	2932.946	91.875
13.6736	2932.871	91.877
13.6778	2932.844	91.891
13.6819	2932.782	91.893
13.6861	2932.774	91.921
13.6903	2932.753	91.945
13.6944	2932.689	91.942
13.6986	2932.677	91.964
13.7028	2932.638	91.975
13.7069	2932.566	91.964

Time	Pressure (Psia)	Temperature (°F)
13.7111	2932.555	91.994
13.7153	2932.523	92.004
13.7194	2932.497	92.010
13.7236	2932.450	92.013
13.7278	2932.426	92.031
13.7319	2932.377	92.029
13.7361	2932.343	92.034
13.7403	2932.334	92.053
13.7444	2932.282	92.053
13.7486	2932.270	92.067
13.7528	2932.236	92.072
13.7569	2932.192	92.072
13.7611	2932.190	92.091
13.7653	2932.151	92.094
13.7694	2932.131	92.099
13.7736	2932.090	92.096
13.7778	2932.080	92.115
13.7819	2932.058	92.123
13.7861	2932.051	92.140
13.7903	2932.037	92.148
13.7944	2932.023	92.156
13.7986	2931.978	92.156
13.8028	2931.969	92.167
13.8069	2931.949	92.172
13.8111	2931.917	92.175
13.8153	2931.878	92.178
13.8194	2931.851	92.175
13.8236	2931.817	92.180
13.8278	2931.797	92.186
13.8319	2931.790	92.202
13.8361	2931.778	92.207
13.8403	2931.772	92.224
13.8444	2931.732	92.218
13.8486	2931.727	92.232
13.8528	2931.716	92.245
13.8569	2931.684	92.240
13.8611	2931.692	92.264
13.8653	2931.662	92.264
13.8694	2931.632	92.264
13.8736	2931.591	92.261
13.8778	2931.609	92.283
13.8819	2931.554	92.270
13.8861	2931.565	92.291
13.8903	2931.573	92.307
13.8944	2931.533	92.302
13.8986	2931.544	92.324
13.9028	2931.486	92.305
13.9069	2931.512	92.334
13.9111	2931.463	92.324
13.9153	2931.456	92.332
13.9181	2931.440	92.332
13.9264	2931.421	92.345
13.9347	2931.395	92.359
13.9431	2931.338	92.356
13.9514	2931.346	92.388
13.9597	2931.290	92.378
13.9681	2931.258	92.388
13.9764	2931.256	92.416
13.9825	2931.199	92.397
13.9908	2931.185	92.413
13.9992	2931.188	92.434
14.0075	2931.141	92.437
14.0158	2931.110	92.440
14.0242	2931.103	92.464
14.0325	2931.100	92.483
14.0408	2931.051	92.472
14.0492	2931.049	92.491
14.0575	2930.987	92.478
14.0658	2930.986	92.497
14.0742	2930.973	92.510
14.0825	2930.919	92.505
14.0908	2930.909	92.516
14.0992	2930.913	92.537
14.1075	2930.854	92.529
14.1158	2930.846	92.545

Time	Pressure (Psia)	Temperature (°F)
14.1242	2930.802	92.537
14.1325	2930.815	92.564
14.1408	2930.778	92.564
14.1492	2930.758	92.570
14.1575	2930.752	92.586
14.1658	2930.754	92.599
14.1742	2930.720	92.597
14.1825	2930.678	92.594
14.1908	2930.706	92.621
14.1992	2930.649	92.610
14.2075	2930.634	92.618
14.2158	2930.588	92.613
14.2242	2930.580	92.621
14.2325	2930.566	92.629
14.2408	2930.531	92.626
14.2492	2930.534	92.648
14.2575	2930.549	92.672
14.2658	2930.552	92.686
14.2742	2930.483	92.672
14.2825	2930.439	92.664
14.2908	2930.474	92.699
14.2992	2930.477	92.721
14.3075	2930.462	92.729
14.3158	2930.475	92.764
14.3242	2930.411	92.745
14.3325	2930.367	92.745
14.3408	2930.360	92.761
14.3492	2930.395	92.797
14.3575	2930.341	92.783
14.3658	2930.323	92.786
14.3742	2930.336	92.805
14.3825	2930.259	92.783
14.3908	2930.297	92.824
14.3992	2930.265	92.818
14.4075	2930.236	92.818
14.4158	2930.273	92.851
14.4242	2930.249	92.853
14.4325	2930.224	92.856
14.4408	2930.209	92.864
14.4492	2930.185	92.875
14.4575	2930.190	92.894
14.4658	2930.158	92.888
14.4742	2930.181	92.913
14.4825	2930.119	92.899
14.4908	2930.127	92.915
14.4992	2930.114	92.921
14.5075	2930.105	92.932
14.5158	2930.118	92.951
14.5242	2930.059	92.934
14.5325	2930.058	92.942
14.5408	2930.047	92.956
14.5492	2930.049	92.969
14.5575	2930.030	92.975
14.5658	2930.012	92.978
14.5742	2930.037	93.007
14.5825	2930.015	93.007
14.5908	2929.976	93.002
14.5992	2930.008	93.032
14.6075	2929.967	93.021
14.6158	2929.974	93.045
14.6242	2929.967	93.053
14.6325	2929.907	93.037
14.6408	2929.888	93.034
14.6492	2929.865	93.042
14.6575	2929.874	93.067
14.6658	2929.898	93.096
14.6742	2929.926	93.131
14.6825	2929.857	93.110
14.6908	2929.869	93.137
14.6992	2929.835	93.134
14.7075	2929.848	93.161
14.7158	2929.870	93.185
14.7242	2929.863	93.202
14.7325	2929.816	93.196
14.7408	2929.780	93.188
14.7492	2929.787	93.212
14.7575	2929.802	93.237
14.7658	2929.794	93.245
14.7742	2929.795	93.261
14.7825	2929.776	93.266
14.7908	2929.739	93.258
14.7992	2929.711	93.264
14.8075	2929.741	93.288
14.8158	2929.734	93.296
14.8242	2929.744	93.318
14.8325	2929.737	93.326
14.8408	2929.690	93.320
14.8492	2929.702	93.339
14.8575	2929.710	93.355
14.8658	2929.690	93.361
14.8742	2929.683	93.369
14.8825	2929.671	93.374
14.8908	2929.671	93.391
14.8992	2929.651	93.396
14.9075	2929.659	93.412
14.9158	2929.624	93.409
14.9242	2929.632	93.426
14.9325	2929.646	93.450
14.9408	2929.625	93.450
14.9492	2929.622	93.461
14.9533	2929.590	93.447
14.9700	2929.652	93.517
14.9867	2929.605	93.520
15.0033	2929.588	93.539
15.0200	2929.598	93.569
15.0264	2929.524	93.544
15.0431	2929.535	93.582
15.0597	2929.495	93.593
15.0764	2929.495	93.633
15.0931	2929.500	93.668
15.1097	2929.498	93.703
15.1264	2929.466	93.714
15.1431	2929.496	93.771
15.1597	2929.459	93.795
15.1764	2929.422	93.811
15.1931	2929.412	93.838
15.2097	2929.402	93.873
15.2264	2929.400	93.908
15.2431	2929.410	93.954
15.2597	2929.397	94.000
15.2764	2929.371	94.022
15.2931	2929.380	94.076
15.3097	2929.357	94.108
15.3264	2929.362	94.159
15.3431	2929.318	94.183
15.3597	2929.330	94.243
15.3764	2929.346	94.305
15.3931	2929.352	94.356
15.4097	2929.300	94.380
15.4264	2929.284	94.428
15.4431	2929.310	94.488
15.4597	2929.266	94.504
15.4764	2929.263	94.539
15.4931	2929.292	94.587
15.5097	2929.250	94.617
15.5264	2929.249	94.649
15.5431	2929.249	94.681
15.5597	2929.266	94.743
15.5764	2929.230	94.781
15.5931	2929.244	94.846
15.6097	2929.214	94.886
15.6264	2929.204	94.921
15.6431	2929.203	94.945
15.6597	2929.222	94.964
15.6764	2929.198	94.967
15.6931	2929.197	94.991
15.7097	2929.192	95.012
15.7264	2929.169	95.029
15.7431	2929.178	95.058
15.7597	2929.173	95.080
15.7764	2929.175	95.101
15.7931	2929.149	95.160
15.8097	2929.159	95.252
15.8264	2929.128	95.332
15.8431	2929.106	95.402
15.8597	2929.083	95.459
15.8764	2929.095	95.531
15.8931	2929.101	95.580
15.9097	2929.110	95.625
15.9264	2929.104	95.663
15.9431	2929.112	95.709
15.9597	2929.154	95.773
15.9764	2929.106	95.808
15.9931	2929.051	95.851
16.0097	2929.066	95.913
16.0264	2929.008	95.942
16.0431	2928.961	96.015
16.0597	2928.970	96.168
16.0764	2928.959	96.302
16.0931	2928.970	96.398
16.1097	2928.983	96.468
16.1264	2929.030	96.535
16.1431	2929.050	96.575
16.1597	2929.071	96.600
16.1764	2929.063	96.600
16.1931	2929.006	96.567
16.2097	2929.017	96.648
16.2264	2928.983	96.720
16.2431	2928.968	96.790
16.2597	2929.011	96.851
16.2764	2929.035	96.881
16.2931	2929.026	96.905
16.3097	2929.044	96.932
16.3264	2929.015	96.916
16.3431	2929.023	96.916
16.3597	2928.985	96.894
16.3764	2929.009	96.908
16.3931	2929.040	96.913
16.4097	2929.016	96.892
16.4264	2929.015	96.841
16.4431	2928.954	96.774
16.4597	2929.056	96.843
16.4764	2928.976	96.827
16.4931	2928.930	96.843
16.5097	2928.960	96.897
16.5264	2928.909	96.926
16.5431	2928.883	97.036
16.5597	2928.848	97.170
16.5764	2928.859	97.310
16.5931	2928.814	97.409
16.6097	2928.822	97.529
16.6264	2928.850	97.612
16.6431	2928.871	97.636
16.6597	2928.902	97.657
16.6764	2928.897	97.647
16.6931	2928.889	97.625
16.7097	2928.845	97.639
16.7264	2928.887	97.724
16.7431	2928.841	97.786
16.7597	2928.819	97.853
16.7764	2928.828	97.895
16.7931	2928.825	97.936
16.8097	2928.823	97.930
16.8264	2928.859	97.909
16.8431	2928.886	97.845
16.8597	2928.908	97.778
16.8764	2928.874	97.692
16.8931	2928.862	97.660
16.9097	2928.803	97.660
16.9264	2928.821	97.708
16.9431	2928.798	97.732
16.9597	2928.779	97.751
16.9764	2928.808	97.797
16.9931	2928.766	97.831
17.0097	2928.750	97.914

Time	Pressure (Psia)	Temperature (°F)
17.0264	2928.783	97.970
17.0431	2928.787	98.010
17.0597	2928.756	98.064
17.0764	2928.758	98.166
17.0931	2928.716	98.267
17.1097	2928.730	98.371
17.1264	2928.758	98.425
17.1431	2928.803	98.446
17.1597	2928.802	98.417
17.1764	2928.798	98.414
17.1931	2928.799	98.406
17.2097	2928.779	98.411
17.2264	2928.802	98.417
17.2431	2928.824	98.395
17.2597	2928.790	98.393
17.2764	2928.757	98.433
17.2931	2928.722	98.497
17.3097	2928.739	98.540
17.3264	2928.768	98.540
17.3431	2928.785	98.516
17.3597	2928.759	98.438
17.3764	2928.758	98.358
17.3931	2928.744	98.313
17.4097	2928.746	98.296
17.4264	2928.741	98.264
17.4431	2928.722	98.232
17.4597	2928.731	98.200
17.4764	2928.700	98.166
17.4931	2928.681	98.184
17.5097	2928.693	98.187
17.5264	2928.704	98.168
17.5431	2928.701	98.171
17.5597	2928.731	98.141
17.5764	2928.716	98.149
17.5931	2928.694	98.208
17.6097	2928.674	98.243
17.6264	2928.642	98.305
17.6431	2928.663	98.379
17.6597	2928.676	98.403
17.6764	2928.659	98.398
17.6931	2928.637	98.435
17.7097	2928.644	98.494
17.7158	2928.624	98.521
17.7325	2928.663	98.585
17.7492	2928.646	98.588
17.7658	2928.680	98.561
17.7825	2928.680	98.532
17.7992	2928.676	98.529
17.8158	2928.624	98.588
17.8325	2928.615	98.692
17.8492	2928.629	98.759
17.8658	2928.640	98.799
17.8825	2928.608	98.801
17.8992	2928.614	98.788
17.9158	2928.652	98.772
17.9325	2928.652	98.743
17.9492	2928.660	98.764
17.9658	2928.586	98.823
17.9825	2928.595	98.916
17.9992	2928.609	98.953
18.0158	2928.621	98.927
18.0325	2928.662	98.908
18.0492	2928.644	98.889
18.0658	2928.653	98.903
18.0825	2928.664	98.884
18.0992	2928.668	98.873
18.1158	2928.638	98.852
18.1325	2928.611	98.871
18.1492	2928.529	98.879
18.1658	2928.617	98.916
18.1825	2928.625	98.879
18.1992	2928.596	98.849
18.2158	2928.587	98.865
18.2325	2928.577	98.868
18.2492	2928.622	98.868
18.2658	2928.583	98.825
18.2825	2928.605	98.855
18.2992	2928.583	98.884
18.3158	2928.583	98.913
18.3325	2928.571	98.940
18.3492	2928.536	98.967
18.3658	2928.542	98.991
18.3825	2928.542	98.991
18.3992	2928.576	99.007
18.4158	2928.563	98.999
18.4325	2928.530	98.980
18.4492	2928.552	99.039
18.4658	2928.537	99.089
18.4814	2928.558	99.097
18.4981	2928.573	99.097
18.5147	2928.564	99.084
18.5314	2928.527	99.063
18.5481	2928.540	99.087
18.5647	2928.574	99.119
18.5814	2928.529	99.119
18.5981	2928.562	99.167
18.6147	2928.544	99.177
18.6314	2928.563	99.188
18.6481	2928.540	99.167
18.6647	2928.582	99.170
18.6814	2928.507	99.177
18.6981	2928.538	99.255
18.7147	2928.538	99.263
18.7314	2928.493	99.271
18.7481	2928.530	99.300
18.7647	2928.557	99.316
18.7814	2928.522	99.322
18.7981	2928.509	99.407
18.8147	2928.497	99.497
18.8314	2928.498	99.540
18.8481	2928.498	99.612
18.8647	2928.536	99.676
18.8814	2928.524	99.695
18.8981	2928.521	99.676
18.9147	2928.508	99.681
18.9314	2928.452	99.721
18.9481	2928.487	99.852
18.9647	2928.488	99.937
18.9814	2928.476	99.985
18.9981	2928.509	99.996
19.0147	2928.472	99.932
19.0314	2928.487	99.966
19.0481	2928.492	99.948
19.0647	2928.508	99.961
19.0814	2928.517	100.009
19.0981	2928.456	100.004
19.1147	2928.473	100.030
19.1314	2928.490	100.006
19.1481	2928.499	99.977
19.1647	2928.518	99.937
19.1814	2928.510	99.852
19.1981	2928.522	99.804
19.2147	2928.575	99.796
19.2314	2928.477	99.719
19.2481	2928.515	99.711
19.2647	2928.521	99.727
19.2814	2928.517	99.716
19.2981	2928.479	99.724
19.3147	2928.487	99.716
19.3314	2928.454	99.684
19.3481	2928.501	99.703
19.3647	2928.452	99.679
19.3814	2928.506	99.727
19.3981	2928.454	99.684
19.4147	2928.463	99.711
19.4314	2928.492	99.761
19.4481	2928.458	99.801
19.4647	2928.420	99.817
19.4814	2928.429	99.823
19.4981	2928.441	99.897
19.5147	2928.435	99.932
19.5314	2928.454	99.934
19.5481	2928.407	99.916
19.5647	2928.425	99.927
19.5814	2928.479	99.910
19.5981	2928.476	99.892
19.6147	2928.462	99.913
19.6314	2928.445	99.929
19.6481	2928.432	99.934
19.6647	2928.484	99.956
19.6814	2928.513	99.977
19.6981	2928.432	99.956
19.7147	2928.460	99.993
19.7314	2928.490	99.993
19.7481	2928.478	100.004
19.7647	2928.386	100.036
19.7814	2928.400	100.129
19.7981	2928.448	100.246
19.8147	2928.387	100.283
19.8314	2928.404	100.331
19.8481	2928.464	100.374
19.8647	2928.409	100.411
19.8814	2928.403	100.509
19.8981	2928.447	100.595
19.9147	2928.392	100.605
19.9314	2928.428	100.712
19.9481	2928.442	100.754
19.9647	2928.437	100.738
19.9814	2928.480	100.746
19.9981	2928.508	100.741
20.0147	2928.440	100.693
20.0314	2928.427	100.733
20.0481	2928.433	100.770
20.0647	2928.419	100.783
20.0814	2928.447	100.813
20.0981	2928.467	100.794
20.1147	2928.446	100.743
20.1314	2928.470	100.693
20.1481	2928.481	100.661
20.1647	2928.492	100.629
20.1814	2928.464	100.571
20.1981	2928.486	100.557
20.2147	2928.460	100.525
20.2314	2928.478	100.536
20.2481	2928.480	100.563
20.2647	2928.459	100.597
20.2814	2928.385	100.597
20.2981	2928.428	100.648
20.3147	2928.419	100.664
20.3314	2928.400	100.696
20.3481	2928.443	100.767
20.3647	2928.448	100.762
20.3814	2928.372	100.786
20.3981	2928.386	100.884
20.4147	2928.427	100.951
20.4314	2928.425	100.932
20.4481	2928.445	100.906
20.4647	2928.447	100.890
20.4814	2928.455	100.868
20.4981	2928.458	100.866
20.5147	2928.423	100.948
20.5314	2928.378	101.047
20.5481	2928.387	101.150
20.5647	2928.411	101.190
20.5814	2928.412	101.225
20.5981	2928.430	101.227
20.6147	2928.453	101.227
20.6314	2928.445	101.193
20.6481	2928.455	101.155
20.6647	2928.474	101.145
20.6814	2928.451	101.089
20.6981	2928.469	101.031
20.7147	2928.479	101.028
20.7314	2928.442	101.070
20.7481	2928.409	101.094

Time	Pressure (Psia)	Temperature (°F)
20.7647	2928.421	101.166
20.7814	2928.409	101.206
20.7981	2928.396	101.211
20.8147	2928.423	101.248
20.8314	2928.436	101.264
20.8481	2928.411	101.267
20.8647	2928.445	101.339
20.8814	2928.432	101.365
20.8981	2928.431	101.331
20.9147	2928.475	101.317
20.9314	2928.462	101.344
20.9481	2928.406	101.410
20.9647	2928.394	101.541
20.9814	2928.377	101.618
20.9981	2928.382	101.620
21.0147	2928.434	101.607
21.0314	2928.464	101.599
21.0481	2928.405	101.633
21.0647	2928.406	101.716
21.0814	2928.413	101.750
21.0981	2928.408	101.769
21.1147	2928.407	101.846
21.1314	2928.456	101.883
21.1481	2928.432	101.947
21.1647	2928.410	101.994
21.1814	2928.412	102.047
21.1981	2928.428	102.066
21.2147	2928.430	102.045
21.2314	2928.479	102.013
21.2481	2928.459	101.976
21.2647	2928.455	101.952
21.2814	2928.440	101.939
21.2981	2928.431	101.933
21.3147	2928.433	101.952
21.3314	2928.447	101.973
21.3481	2928.403	101.973
21.3647	2928.380	102.016
21.3814	2928.395	102.098
21.3981	2928.385	102.148
21.4147	2928.388	102.172
21.4314	2928.418	102.220
21.4481	2928.425	102.241
21.4647	2928.452	102.222
21.4814	2928.446	102.201
21.4981	2928.476	102.193
21.5147	2928.366	102.233
21.5314	2928.406	102.381
21.5481	2928.385	102.456
21.5647	2928.377	102.538
21.5814	2928.384	102.585
21.5981	2928.454	102.596
21.6147	2928.431	102.570
21.6314	2928.407	102.577
21.6481	2928.463	102.628
21.6647	2928.431	102.609
21.6814	2928.415	102.577
21.6981	2928.430	102.617
21.7147	2928.393	102.652
21.7314	2928.393	102.699
21.7481	2928.421	102.816
21.7647	2928.403	102.927
21.7814	2928.376	103.033
21.7981	2928.347	103.186
21.8147	2928.350	103.345
21.8314	2928.334	103.432
21.8481	2928.428	103.501
21.8647	2928.449	103.496
21.8814	2928.434	103.469
21.8981	2928.433	103.451
21.9147	2928.445	103.406
21.9314	2928.454	103.358
21.9481	2928.450	103.361
21.9647	2928.449	103.395
21.9814	2928.397	103.430
21.9981	2928.426	103.504

Time	Pressure (Psia)	Temperature (°F)
22.0147	2928.415	103.541
22.0314	2928.435	103.536
22.0481	2928.441	103.530
22.0647	2928.461	103.485
22.0814	2928.449	103.443
22.0981	2928.446	103.419
22.1147	2928.447	103.525
22.1314	2928.375	103.610
22.1481	2928.393	103.673
22.1647	2928.393	103.734
22.1814	2928.421	103.795
22.1981	2928.425	103.758
22.2147	2928.440	103.744
22.2314	2928.438	103.713
22.2481	2928.442	103.702
22.2647	2928.470	103.697
22.2814	2928.416	103.660
22.2981	2928.415	103.747
22.3147	2928.374	103.784
22.3314	2928.364	103.840
22.3481	2928.420	103.921
22.3647	2928.430	103.932
22.3814	2928.391	103.948
22.3981	2928.397	104.035
22.4147	2928.374	104.122
22.4314	2928.354	104.212
22.4481	2928.354	104.304
22.4647	2928.411	104.326
22.4814	2928.453	104.289
22.4981	2928.419	104.194
22.5147	2928.449	104.141
22.5314	2928.446	104.091
22.5481	2928.409	104.104
22.5647	2928.360	104.101
22.5814	2928.426	104.101
22.5981	2928.395	104.056
22.6147	2909.964	104.386
22.6208	2889.494	104.885
22.7767	2051.202	105.796
22.7850	2051.117	105.415
22.7933	2051.041	105.040
22.8017	2050.997	104.721
22.8100	2050.933	104.415
22.8183	2050.896	104.159
22.8267	2050.861	103.927
22.8350	2050.813	103.697
22.8433	2050.780	103.506
22.8517	2050.720	103.313
22.8600	2050.720	103.171
22.8683	2050.680	103.020
22.8767	2050.665	102.893
22.8850	2050.661	102.792
22.8933	2050.630	102.670
22.8964	2050.609	102.628
23.1733	680.106	91.531
23.1817	680.042	91.124
23.1900	679.972	90.728
23.1983	679.937	90.408
23.2067	679.880	90.082
23.2150	679.814	89.786
23.2233	679.770	89.528
23.2317	679.731	89.291
23.2400	679.708	89.093
23.2483	679.678	88.902
23.2567	679.647	88.725
23.2650	679.740	88.570
23.2733	679.716	88.445
23.2817	679.704	88.316
23.2900	679.684	88.197
23.2983	679.667	88.093
23.3067	679.658	87.997
23.3150	679.623	87.886
23.3233	679.621	87.812
23.4244	85.500	85.570
23.4328	85.556	85.296

Time	Pressure (Psia)	Temperature (°F)
23.4411	85.526	85.027
23.4494	85.494	84.783
23.4578	85.449	84.560
23.4661	85.433	84.382
23.4744	85.419	84.217
23.4828	85.384	84.052
23.4911	85.372	83.906
23.4994	85.356	83.774
23.5078	85.333	83.651
23.5161	85.325	83.554
23.5244	85.316	83.458
23.5269	85.313	83.428
23.5283	85.301	83.398
23.5339	83.839	86.632
23.5353	82.457	86.807
23.5367	80.235	85.931
23.5381	79.278	86.640
23.5394	75.037	83.340
23.5408	73.573	83.398
23.5422	72.016	83.337
23.5436	70.467	83.296
23.5450	68.907	83.232
23.5464	67.458	83.307
23.5478	65.966	83.331
23.5492	64.377	83.243
23.5533	59.712	83.070
23.5561	56.716	83.097
23.5589	53.779	83.142
23.5603	52.276	83.144
23.5617	50.721	83.086
23.5644	47.538	82.902
23.5658	46.125	83.020
23.5672	44.639	83.053
23.5686	43.036	82.938
23.5756	35.452	82.935
23.5769	33.793	82.761
23.5797	30.942	82.979
23.5811	29.313	82.841
23.5825	27.830	82.885
23.5839	26.189	82.734
23.5853	24.766	82.841
23.5867	23.335	82.949
23.5881	21.688	82.789
23.5894	20.172	82.794
23.5908	18.675	82.814
23.5922	17.123	82.767
23.5936	15.603	82.759
23.5950	14.123	82.800
23.5964	14.123	82.808
23.5978	14.123	82.731
23.5992	14.123	82.819
23.5997	14.123.	82.818

APPENDIX 4.1.2-1

PANSYSTEM2 VERSION 2.5, WELL TEST ANALYSIS REPORT, WDW-1

ENVIROCORP	Envirocorp Services & Technology, Inc.	Report File:	WDW1.PAN
	PanSystem Version 2.5	Analysis Date:	9/15/1998
	Well Test Analysis Report		

Company	Navajo Refining Company
Location	Artesia, New Mexico
Well	WDW-1
Test Type	Injection/Falloff
Test Date	July 30 - 31, 1998
Gauge Type/Serial #	Eccossetex/009
Gauge Depth	7924 Feet
Injection Interval	7924 - 8115 Feet; 8220 - 8476 Feet
Completion Type	Perforated
Top of Fill	8997 Feet
Last Stabilization	New Completion
Analyst	LKM
Envirocorp Project No.	70A4614

Reservoir Description

Fluid type : Water
Well orientation : Vertical
Number of wells : 1
Number of layers : 1

Layer Parameters Data

	Layer 1
Formation thickness	253.00 ft
Average formation porosity	0.10
Water saturation	0.00
Gas saturation	0.00
Formation compressibility	0.0000 psi-1
Total system compressibility	8.4000e-6 psi-1
Layer pressure	2925.3599 psia
Temperature	0.0000 deg F

Well Parameters Data

	WDW-1
Well radius	0.3696 ft
Distance from observation to active well	0.0000 ft
Wellbore storage coefficient	0.1038 bbl/psi
Well offset - x direction	0.00 ft
Well offset - y direction	0.00 ft

Fluid Parameters Data

	Layer 1
Oil gravity	0.0000 API
Gas gravity	0.0000 sp grav
Gas-oil ratio (produced)	0.0000 scf/STB
Water cut	0.0000
Water salinity	0.0000 ppm
Check Pressure	0.0000 psia
Check Temperature	0.0000 deg F
Gas-oil ratio (solution)	0.0000 scf/STB
Bubble-point pressure	0.0000 psia
Oil density	0.000 lb/ft3
Oil viscosity	0.000 cp
Oil formation volume factor	0.000 RB/STB

Fluid Parameters Data (cont)

	Layer 1
Gas density	0.000 lb/ft3
Gas viscosity	0.0 cp
Gas formation volume factor	0.000 ft3/scf
Water density	0.000 lb/ft3
Water viscosity	0.530 cp
Water formation volume factor	1.000 RB/STB
Oil compressibility	0.0000 psi-1
Initial Gas compressibility	0.0000 psi-1
Water compressibility	0.0000 psi-1

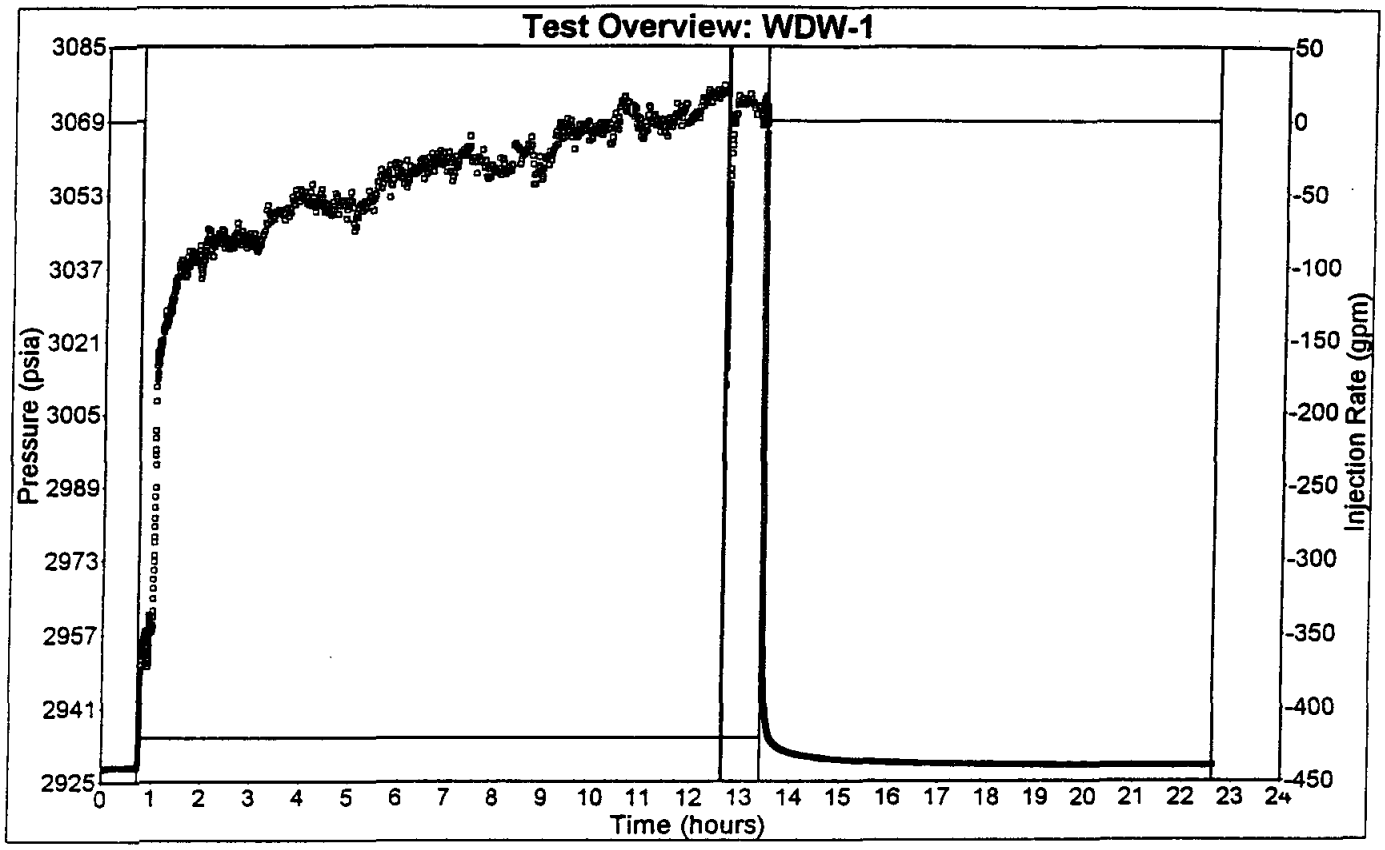
Layer 1 Correlations
Not Used

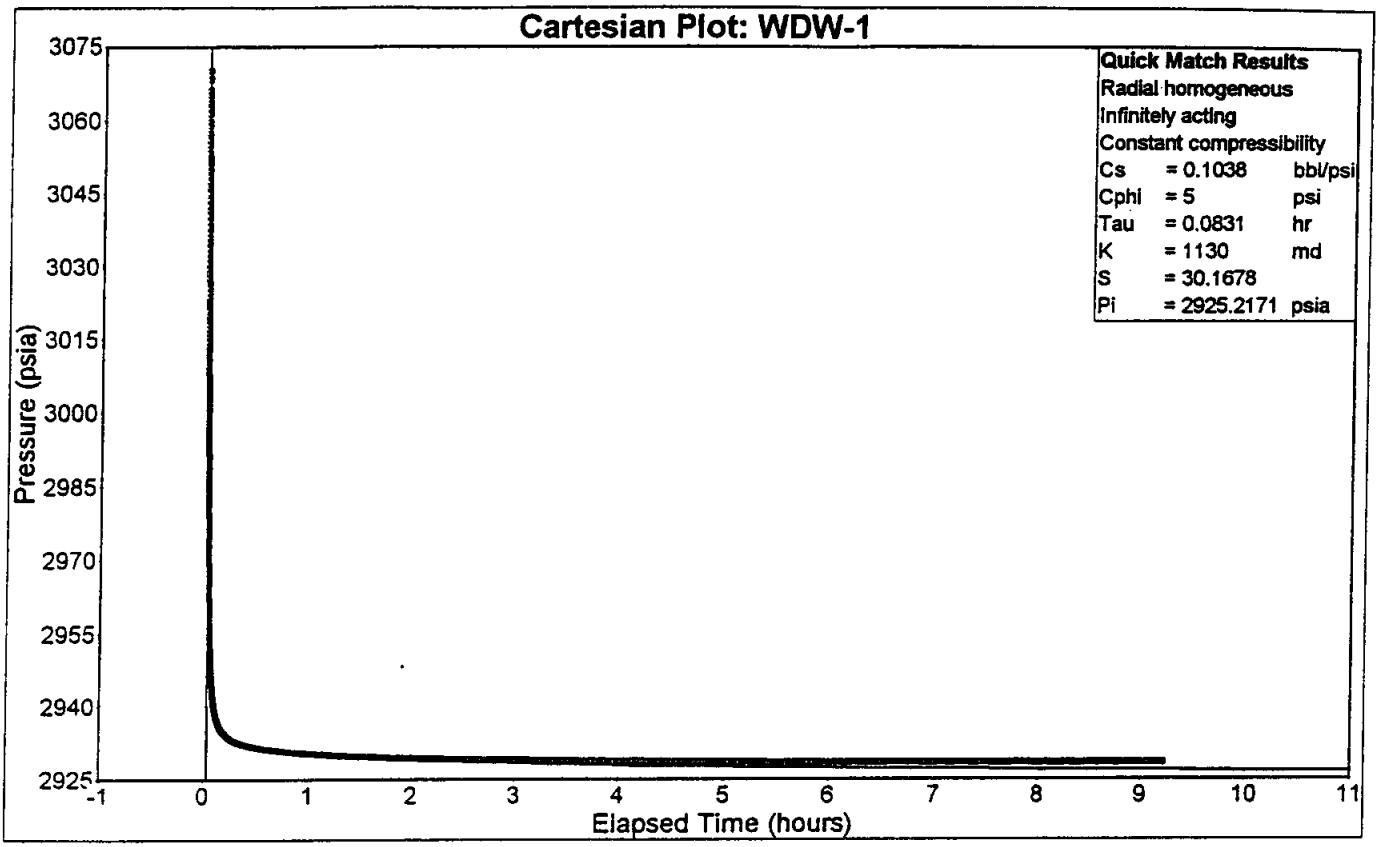
Layer 1 Model Data
Layer 1 Model Type : Radial homogeneous

	Layer 1
Permeability	1130.00 md
Skin factor (Well 1)	30.1678

Rate Change Data

Time Hours	Pressure psia	Rate gpm
0.71330	2928.2310	0.0000
12.60750	3074.7930	-420.0000
12.64080	3011.3721	-200.0000
13.38939	3071.6079	-420.0000
22.59810	2928.3950	0.0000



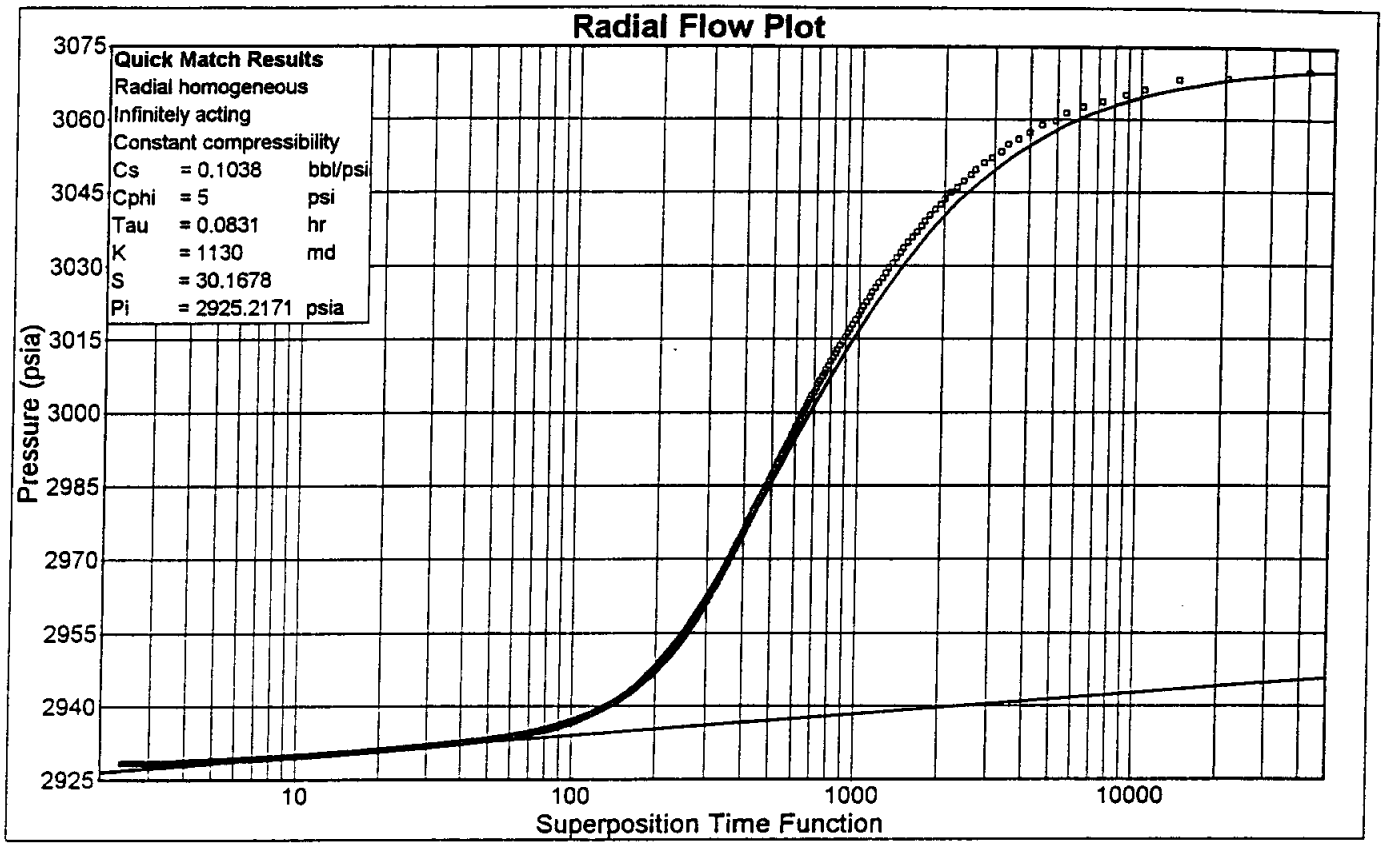


Cartesian Plot: WDW-1 Model Results
Radial homogeneous
Infinitely acting

	Value
Wellbore storage coefficient	0.1309 bbl/psi
Dimensionless wellbore storage	1035.9075

Cartesian Plot: WDW-1 Line Details
Line type : Wellbore storage
Slope : -4582.2
Intercept : 3071.68
Coefficient of Determination : 0.997527

Number of Intersections = 0



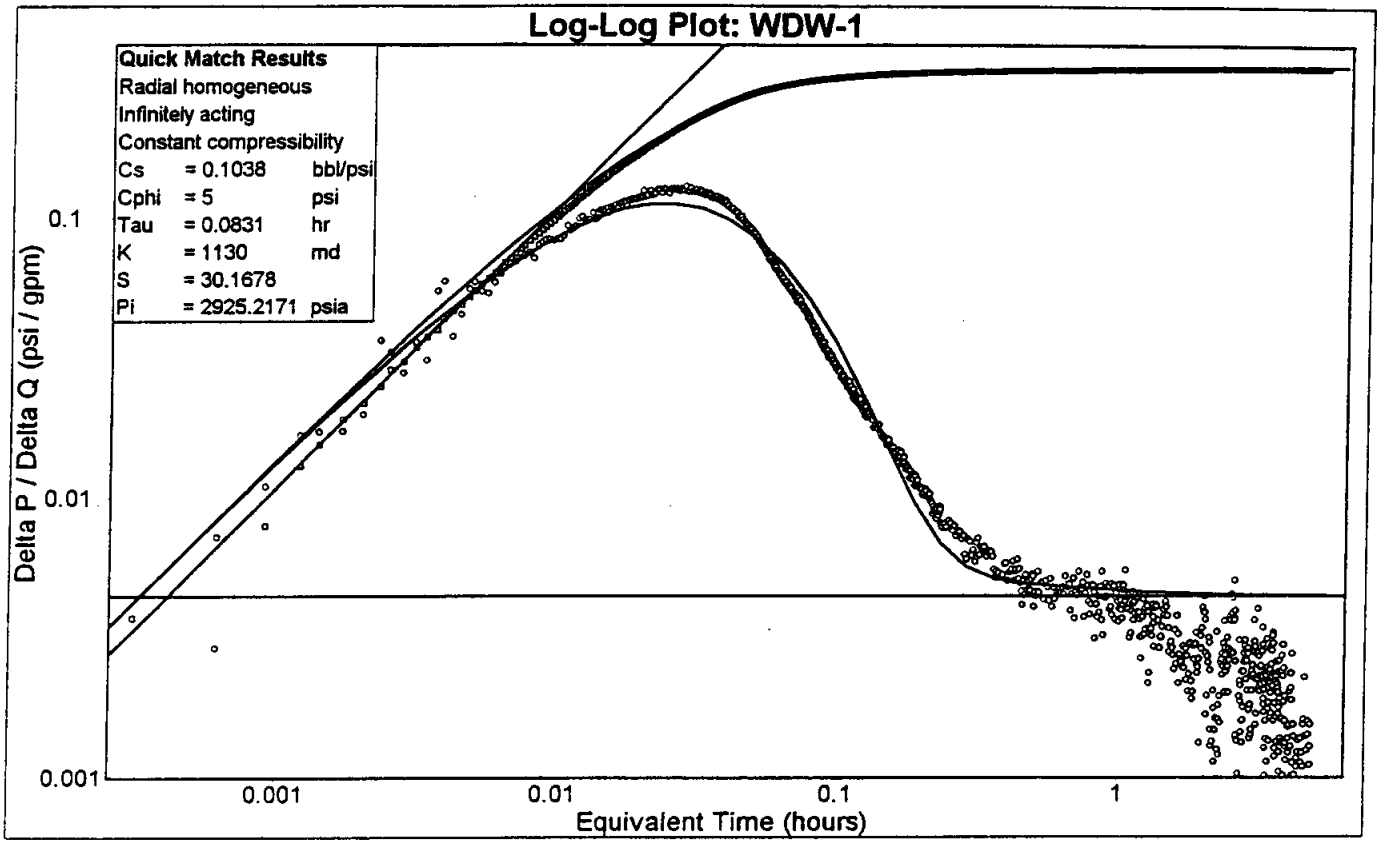
Radial Flow Plot Model Results
Radial homogeneous
Infinitely acting

	Value
Permeability	1125.5867 md
Permeability-thickness	2.8477e5 md.ft
Radius of investigation	4424.9595 ft
Flow efficiency	0.2247
dP skin (constant rate)	113.3868 psi
Skin factor	29.9633
Extrapolated pressure	2925.3599 psia

Radial Flow Plot Line Details
Line type : Radial flow
Slope : 4.35671
Intercept : 2925.36
Coefficient of Determination : 0.996956

	Radial flow
Extrapolated pressure	2925.3599 psia
Pressure at dt = 1 hour	2930.2690 psia

Number of Intersections = 0



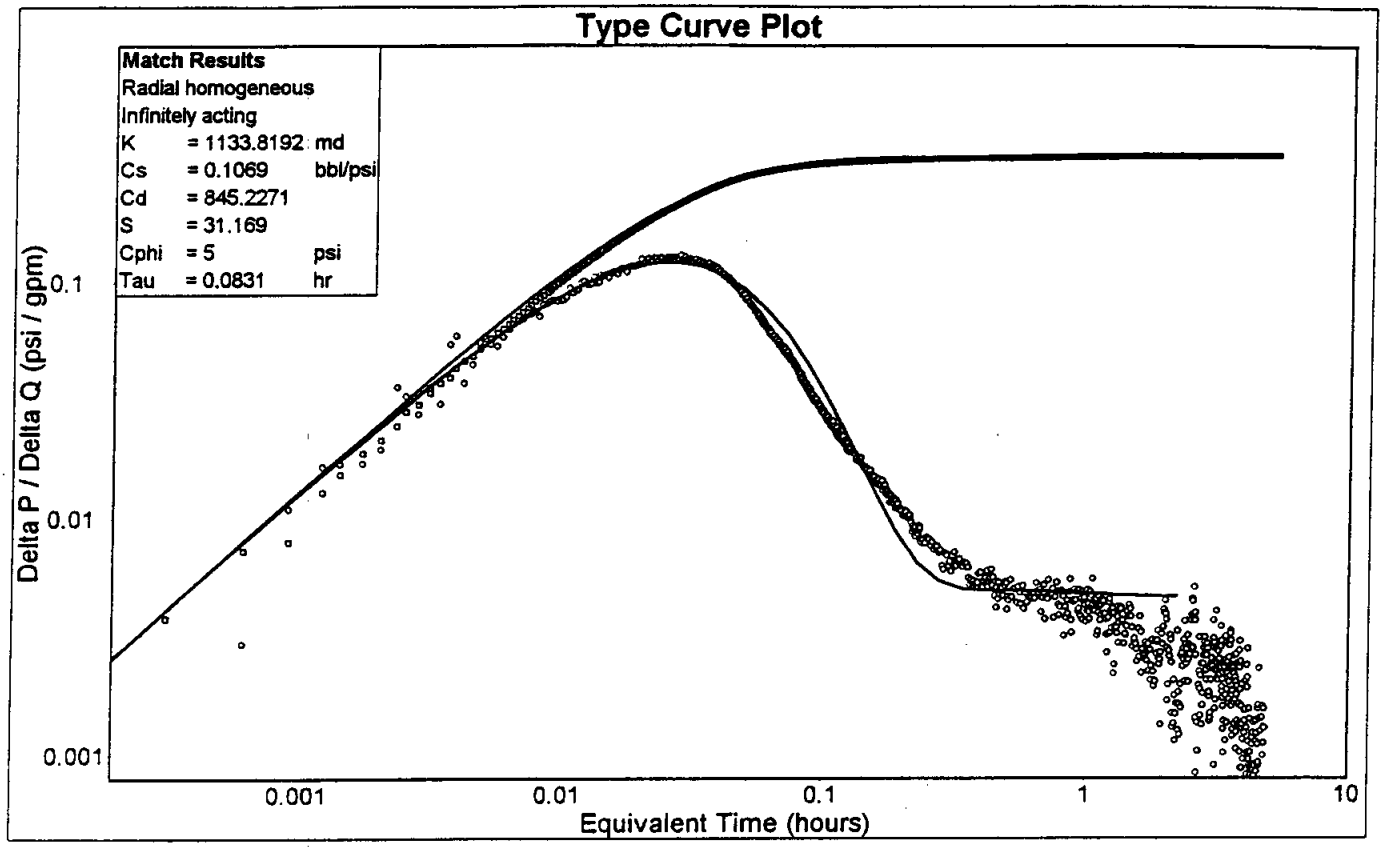
Log-Log Plot: WDW-1 Model Results
Radial homogeneous
Infinitely acting

	Value
Wellbore storage coefficient	0.1305 bbl/psi
Dimensionless wellbore storage	1032.4241
Permeability	1130.6444 md
Permeability-thickness	2.8605e5 md.ft
Skin factor	30.1285

Log-Log Plot: WDW-1 Line Details
Line type : Radial flow
Slope : 0
Intercept : 0.00448484
Coefficient of Determination : Not Used

Line type : Wellbore storage
Slope : 1
Intercept : 10.9468
Coefficient of Determination : Not Used

Number of Intersections = 0

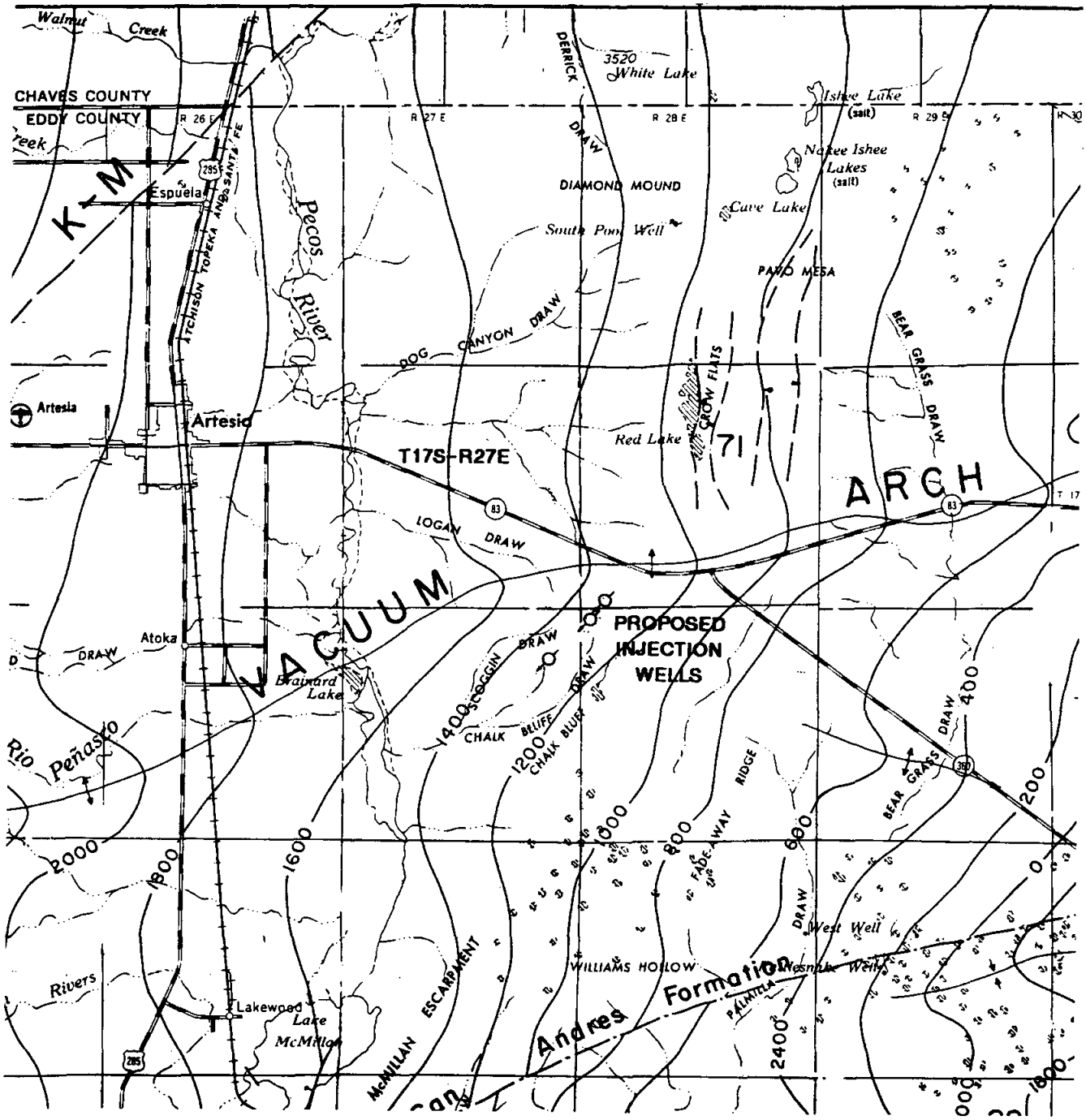


Type Curve Plot Model Results
Radial homogeneous
Infinitely acting

	Value
Permeability	1133.8192 md
Wellbore storage coefficient	0.1069 bbl/psi
Dimensionless wellbore storage	845.2271
Skin factor	31.169

Type Curve Details
Stage 1 File Name : C:\pan25\typecurv\radhomog.tch
Axis Type : Td/Cd

	Stage 1
Match point - X	-3.1743
Match point - Y	3.5836
Curve Number	13.0000
Curve Value	1.0000e30



0 6 miles

SCALE

N

SOURCE: KELLEY, 1971, PLATE 5S

ENVIROCORP

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HOUSTON, TX.
SOUTH BEND, IN.
BATON ROUGE, LA.

NAVAJO REFINING CO.

ATTACHMENT VIII-10

STRUCTURE OF THE RIO BONITO MEMBER OF THE SAN ANDRES FM.

DATE:	CHECKED BY:	JOB NO:
DRAWN BY:	APPROVED BY:	DWG. NO:

REV 4/99

RED LAKE S, 64

U.S.C.G.S. BAYL. @

32-4d-09
104-11-56

PROPOSED INJECTION WELL

WDW-1

WDW-2

BRAYBURG-JACKSON, 29

EMPIRE, 24

CHALK BLUFF, 82

ARTESIA LAKE

SKOOGIN DRAW, 72

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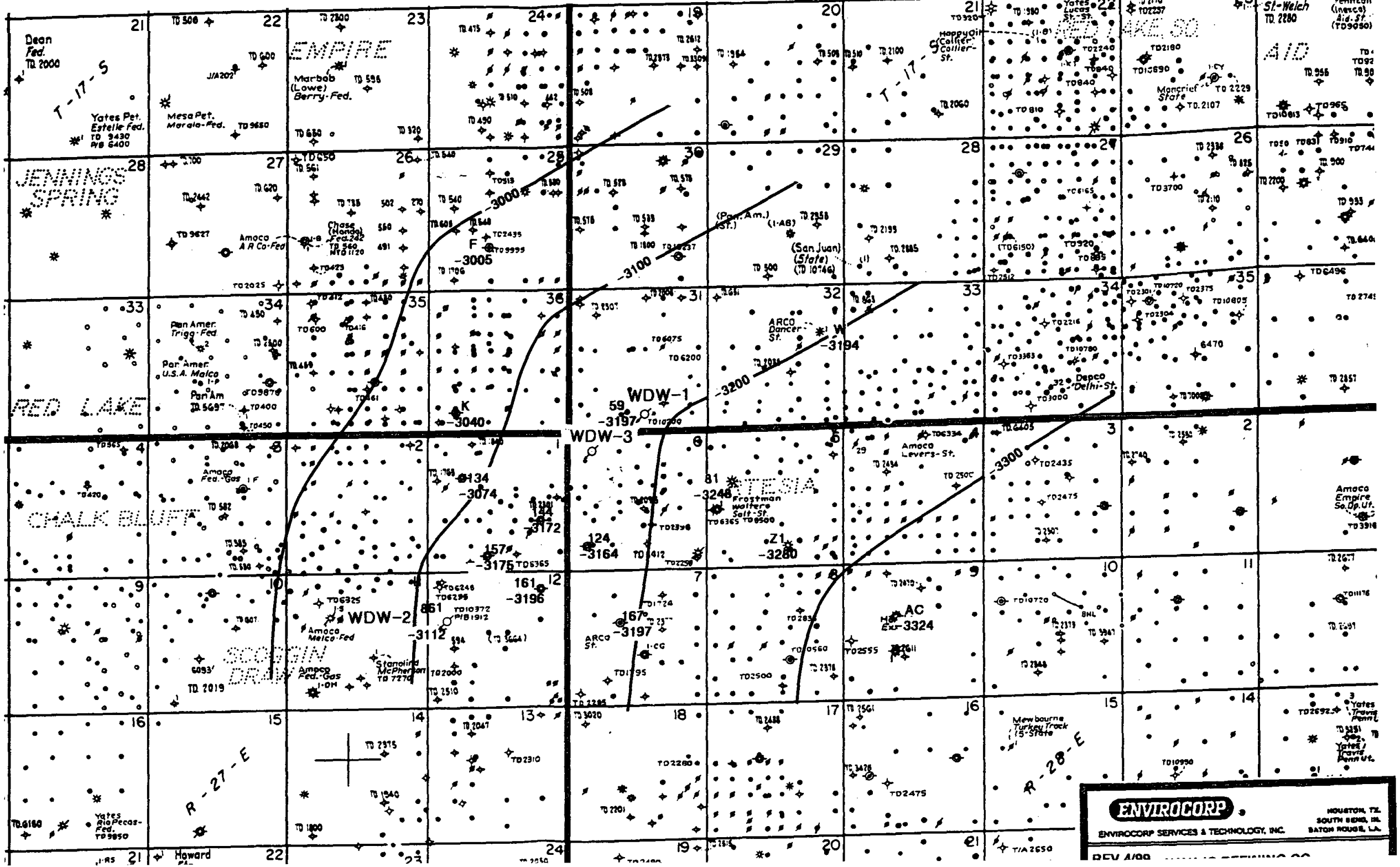
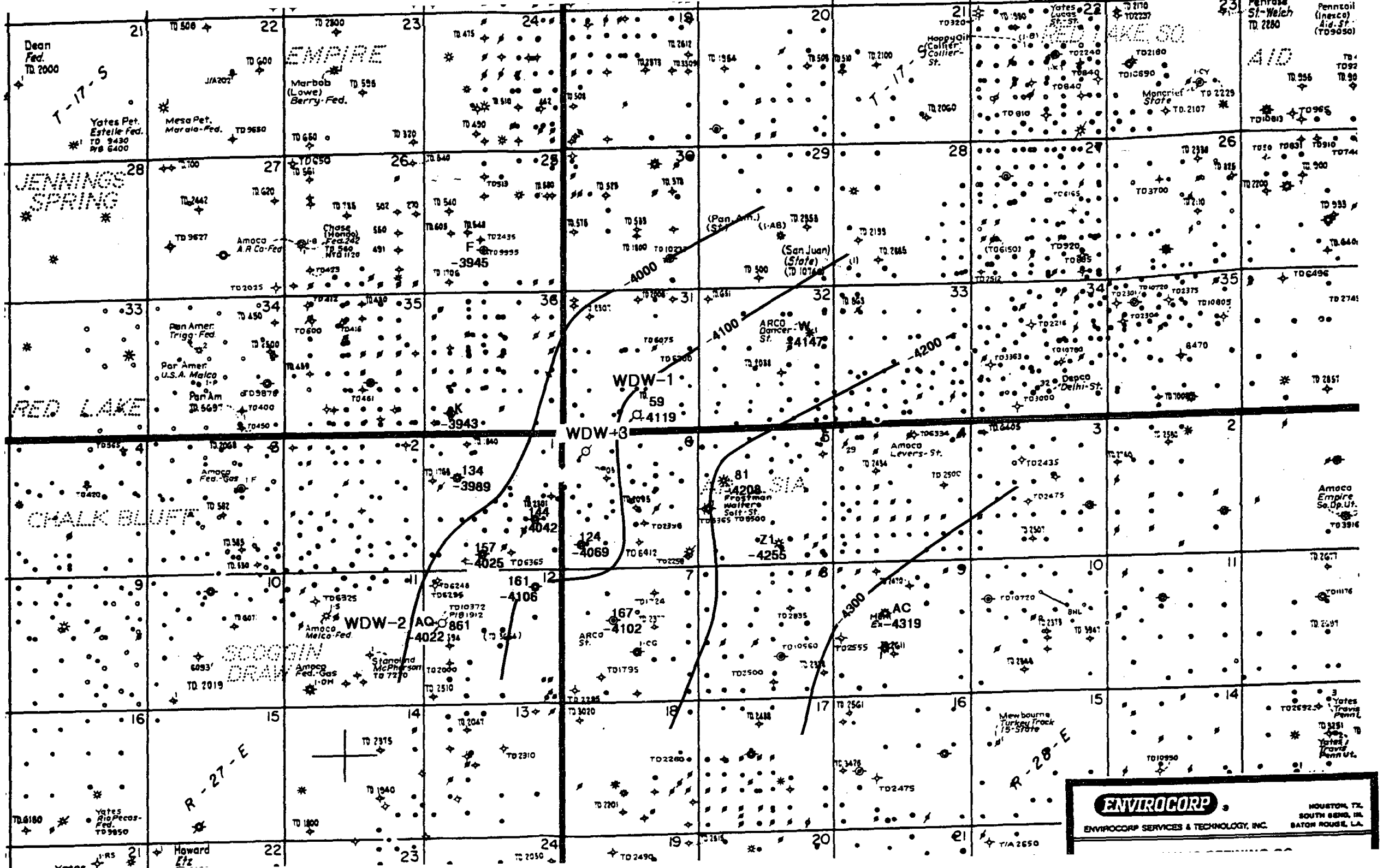
SOUTH BEND, IN.
BATON ROUGE, LA.

NAVAJO REFINING CO



157 ID NO.
-4025 SUBSEA DEPTH

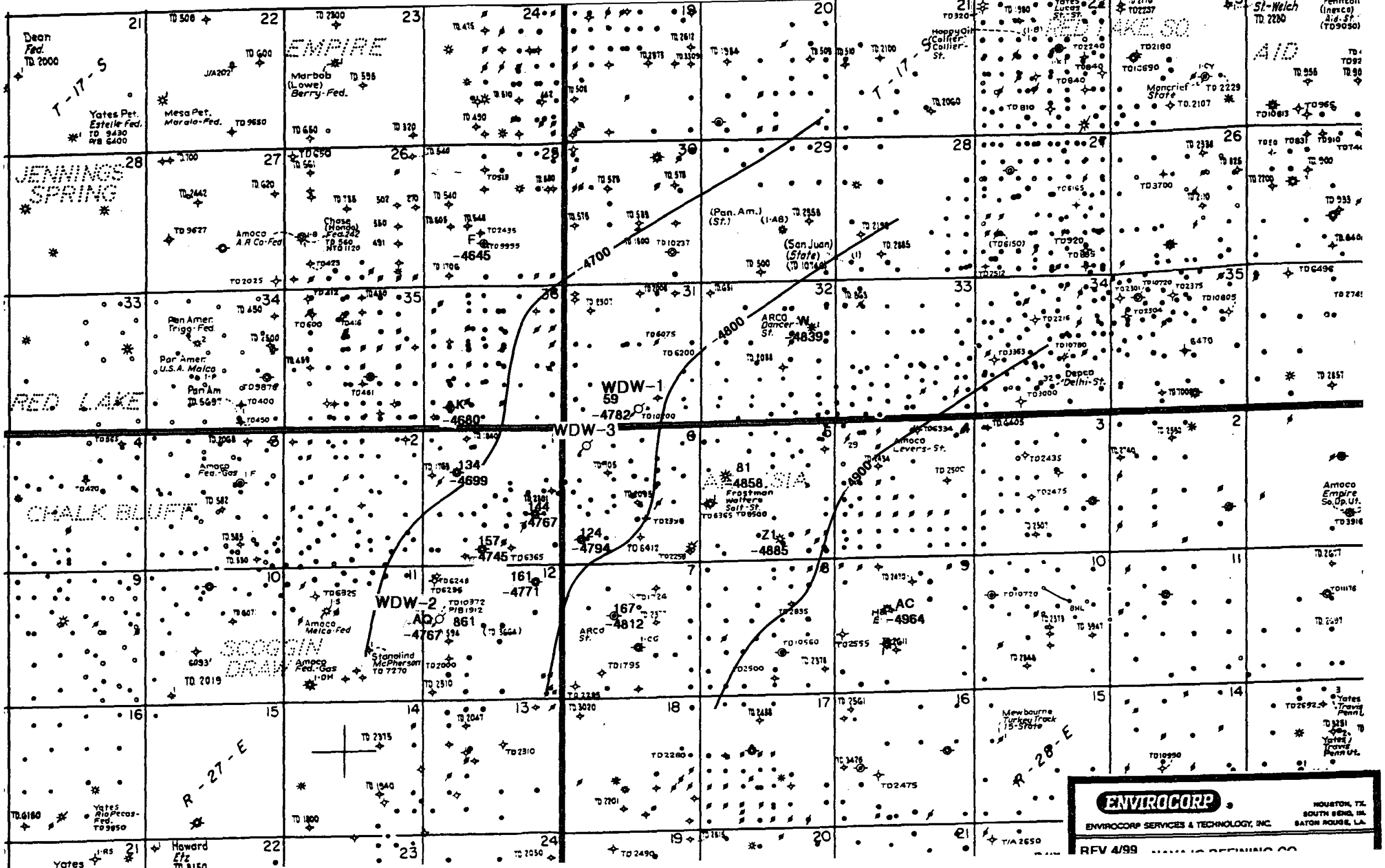


157 -4025 — ID NO. / SUBSEA DEPTH

ENVIROCORP

ENVIROCORP SERVICES & TECHNOLOGY, INC.

HOUSTON, TX.
SOUTH BEND, IN.
BATON ROUGE, LA.



157 ID NO.
-4025 SUBSEA DEPTH

ENVIROCORP

ENVIROCORP SERVICES & TECHNOLOGY, INC.

HOUSTON, TX.
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BATON ROUGE, LA.

WDW-1
WDW-2
WDW-3

ID NO.
SUBSEA DEPTH

X. LOGGING AND TESTING

WDW-1: Two (2) formation fluid samples were retrieved from the Cisco injection interval when WDW-1 was completed in July 1998. The sampling procedure was detailed in the "Reentry and Completion Report, Waste Disposal Well No. 1" (the completion report was submitted to the OCD in September 1998). The results of the analysis of the fluid samples are also discussed in Section VI.E and included as Attachment VII-4 of this application.

No cores were taken from WDW-1.

The WDW-1 logging program is described fully in the completion report, and the logs are included in the completion report. The logs run in WDW-1 are listed below:

TYPE OF LOG	TYPE OF HOLE LOGGED	INTERVAL (ft)
	Intermediate Casing	
Cement Bond Log Variable Density Log Gamma Ray	Cased Hole	0 to 2548
	Long-String Casing	
Dual Laterolog Gamma Ray Micro-Spherically Focused Electric Log	Open Hole	2546 to 10,182
Spectral Density Dual Spaced Neutron Log Gamma Ray	Open Hole	350 to 10,139
Compensated Sonic Log Gamma Ray	Open Hole	350 to 10,181
Formation Microscanner Imaging Results	Open Hole	4000 to 9143
Caliper Log Gamma Ray	Open Hole	2553 to 9143
Cement Bond Log Variable Density Log Gamma Ray	Cased Hole	0 to 8990
Casing Evaluation Log w/Multi-Finger Caliper Tool w/Electromagnetic Casing Caliper Thickness Tool	Cased Hole	0 to 8997
Temperature Log	Cased Hole	0 to 8997
Temperature Log	Cased Hole	0 to 8997

The mechanical integrity of WDW-1 was demonstrated by the use of: a casing inspection log, a casing pressure test, and a cement bond log of the 7-inch casing; a cement bond log of the 9-5/8 inch casing; and a radioactive tracer survey, an annulus pressure test, and a differential temperature survey. These tests are detailed in the completion report for WDW-1.

Proposed WDW-2: A formation fluid sample will be retrieved from the proposed injection zone in proposed WDW-2. Navajo will conduct injectivity testing in the injection zone of proposed WDW-2.

No coring is planned.

The proposed logging program is described below:

HOLE/CASING	OPEN-HOLE LOGS	CASED-HOLE LOGS
Proposed WDW-2		
11 inch Surface Borehole (8-5/8 inch Casing) 1995 feet		Logs Run in 1973: Gamma Ray Logs Proposed on Reentry: Cement Bond/Variable Density Casing Inspection Log
7-7/8 inch Long-String Borehole (5-1/2 inch Casing) 9200 feet	Logs Run on August 27, 1973: Dual Induction-Laterolog/ Spontaneous Potential Compensated Neutron/ Formation Density Caliper Gamma Ray Logs Proposed on Reentry: Fracture Identification Log 4-Arm Caliper	Logs Proposed on Reentry: Cement Bond/Variable Density Casing Inspection Log Differential Temperature Log Radioactive Tracer Survey

Proposed WDW-3: A formation fluid sample will be retrieved from the injection zone in proposed WDW-3. Navajo will conduct injectivity testing in permeable intervals of proposed WDW-3.

A conventional formation core will be collected from the injection zone while drilling proposed WDW-3. A 30-foot core will be retrieved from the proposed injection zone. Should the first attempt be unsuccessful, a second attempt will be made to retrieve a core of the injection zone. Sidewall cores may be obtained from the injection zone if a conventional core is not retrieved.

The proposed logging program is described below:

HOLE/CASING	OPEN-HOLE LOGS	CASED-HOLE LOGS
Proposed WDW-3		
17-1/2 inch Surface Borehole (13-3/8 inch Casing) 400 feet	Spontaneous Potential Induction-Resistivity Caliper Gamma Ray	Temperature/Cement Bond/Variable Density
12-1/4 inch Intermediate Borehole (9-5/8 inch Casing) 2550 feet	Spontaneous Potential Induction-Resistivity Gamma Ray Caliper	Temperature/Cement Bond/Variable Density
8-3/4 inch Long-String Borehole (7 inch Casing) 9000 feet	Spontaneous Potential Dual Induction/Microlog Compensated Neutron/ Formation Density Gamma Ray 4-Arm Caliper Fracture Identification Log	Temperature/Cement Bond/Variable Density Casing Inspection Log Differential Temperature Log

XI. FRESHWATER CHEMISTRY

The files of the New Mexico State Engineer Office in Roswell, New Mexico, were searched for records of water wells in the one-mile AOR. No records of water wells drilled in the AOR were found. According to the State Engineer Office personnel, records are not required to be filed on water wells that are not drilled in declared underground water basins. The western portion of the study area, which lies in T17S-R27E and T18S-R27E, as shown on Attachment V-2, has been part of the Roswell Underground Water Basin since August 21, 1946 (New Mexico State Engineer, 1995, pages 140-141); therefore, records for any water wells drilled in these townships after August 21, 1946, should be on file. The eastern part of the study area, in T17S-R28E and T18S-R28E, however, was declared part of the Roswell Underground Water Basin on February 8, 1993 (New Mexico State Engineer, 1995, page 142). Records for any water wells drilled in these townships after February 8, 1993, should be on file.

Although no records for water wells in the AOR are available from the State Engineer Office, several water wells have been drilled within the study area, according to the water well database of the State Engineer Office, Hendrickson and Jones (1952, Table 1), and as shown as windmills on the topographic map in Attachment V-2. Water wells indicated by these sources are listed in Attachment XI-1 and shown on Attachment V-2. Information from the water well database of the State Engineer Office for wells in T18S-R27E and T18S-R28E is included in Attachment XI-3. Well records from the files of the State Engineer Office for wells in the study area are included as Attachment XI-4.

Chloride concentrations are available from the water well database of the State Engineer Office for five of the wells in the study area. The available chloride concentrations are shown in Attachment XI-1. Additional information about chloride concentrations is included in Attachment XI-3. TDS and chloride concentrations for Water Well ID No. 18.28.7.430, located 2 miles south of the proposed injection well, are presented in Attachment XI-2. Attachment XI-2 is a letter report from the New Mexico State Engineer Office that lists the analyses of three samples taken from Water Well ID No. 18.28.7.430 in 1985, 1988, and 1994. The TDS concentrations in water samples from this well ranged from 1535 to 2209 mg/l.

ATTACHMENT XI-1

FRESHWATER WELLS IN THE VICINITY OF THE PROPOSED INJECTION WELLS

ATTACHMENT XI-1

FRESHWATER WELLS IN THE VICINITY OF THE PROPOSED INJECTION WELLS

WATER WELL ID NO.	OWNER	PRINCIPAL WATER-BEARING BED		LIFT METHOD	USE OF WELL/ CHLORIDE CONCENTRATIONS	WATER LEVEL[1] (feet below surface)	TOTAL DEPTH (feet below surface)
		LITHOLOGY	FORMATION				
17.28.19.200[2]	Hal Bogle	Redbeds, gypsum	Chalk Bluff or Rustler	Windmill	Stock	224.3 (P)	Unknown
17.28.22.230[2]	Unknown	Redbeds	Dockum	None	Abandoned stock well	45.5	Unknown
18.27.11.410[3]	Stanolind	Unknown	Unknown	Unknown	Oil	Unknown	7270
18.27.14.441[4]	Western Oil Fields	Unknown	Unknown Perfs 198'-200'	Unknown	Oil Well Drilling	Unknown	1704
18.28.4.1313444[4]	Ibex Oil Co.	Unknown	Quaternary Alluvium	Unknown	Domestic, Commercial Chlorides 6-76 mg/l	Unknown	145
18.28.7.330[2]	Unknown	Redbeds, gypsum, limestone?	Chalk Bluff or Rustler	Windmill	Stock	Unknown	Unknown
18.28.7.430[4,5]	Unknown	Unknown	Quaternary Alluvium and Rustler	Windmill	Unknown Chlorides 1535-2209 mg/l	Unknown	140[4]
18.28.8.22[4]	Unknown	Unknown	Unknown	Unknown	Unknown Chlorides 1727-1783 mg/l	Unknown	Unknown
18.28.8.24300[4]	Unknown	Unknown	Rustler	Unknown	Oil	Unknown	Unknown
18.28.8.330[2]	Unknown	Unknown	Unknown	Windmill	Unknown	81.6	Unknown
18.28.8.333[3]	Unknown	Sand	Rustler Perfs 96'-112'	Unknown	Test Hole No. 6	Unknown	156
18.28.8.334[3]	Unknown	Sand, sandy, clay	Rustler Perfs 98'-126'	Unknown	Test Hole No. 1	Unknown	135
18.28.8.343[3]	Unknown	Sand	Rustler Perfs 126'-132'	Unknown	Test Hole No. 2	Unknown	144
18.28.17.11211[4]	Turkey Track Ranch	Unknown	Artesia Group	Unknown	Stock Chlorides 6-14 mg/l	Unknown	160

[1] (P) = Water level measured while pumping.

[2] Hendrickson and Jones (1952, Table 1).

[3] Source: Well record filed with State Engineer Office (see Attachment XI-4).

[4] Source: State Engineer Office water well database (see Attachment XI-3).

[5] Attachment XI-2 and topographic map data.

ATTACHMENT XI-2

CHEMICAL ANALYSIS OF SAMPLES FROM WATER WELL ID NO. 18.28.7.430 IN SECTION 7, T18S, R28E

ATTACHMENT XI-3

WATER WELLS IN THE VICINITY OF THE PROPOSED WELLS (DATA FROM THE STATE ENGINEER OFFICE WATER WELL DATABASE FROM MARCH 1999)

FILE_NO	FIL_SUF	REF_EAS	REF_NO	REF_SUF	OWNERSHIP	DEPTH	REF	DATE/ELEV	QLTR	USE	LOCATION	ELEV	PT_QLTR	CHLORIDES	CONDUCT	TDS	TEMP	ADD_DATA	CARD_DATE	SOURCE	DFN	METER
11707		RA	01858			871	PGR	68/05/23	GNR	IRR	185.26E.34.313244	3356.00	DP	12	1355	0	0		0482		15-10143	0
11708		RA	01859			871	PGR	69/04/02	SED	IRR	185.26E.34.313244	3356.00	DP	14	1404	0	73	*	0482		15-10143	0
11709		RA	01859			871	PGR	44/02/03	SED	IRR	185.26E.34.313244	3356.00	DP	18	1430	0	74	*	0482		15-10143	0
11710		RA	01859			871	PGR	47/08/09	SED	IRR	185.26E.34.313244	3356.00	DP	11	1392	0	73		0482		15-10143	0
11711		RA	01859			871	PGR	71/01/09	SED	IRR	185.26E.34.313244	3356.00	DP	17	1404	0	73		0482		15-10143	0
11712		RA	01859			871	PGR	71/04/05	SED	IRR	185.26E.34.313244	3356.00	DP	2	1448	0	73		0482		15-10143	0
11713		RA	01859			871	PGR	72/04/18	SED	IRR	185.26E.34.313244	3356.00	DP	14	1420	0	73		0482		15-10143	0
11714		RA	01859			871	PGR	73/04/26	SED	IRR	185.26E.34.313244	3356.00	DP	14	1303	0	74		0482		15-10143	0
11715		RA	01859			871	PGR	74/04/23	SED	IRR	185.26E.34.313244	3356.00	DP	13	1411	0	73		0482		15-10143	0
11716		RA	01859			871	PGR	74/08/06	USS	IRR	185.26E.34.313244	3356.00	DP	12	1261	0	73		0383	U	15-10143	0
11717		RA	01859			871	PGR	75/07/25	SED	IRR	185.26E.34.313244	3356.00	DP	15	1429	0	0		0184		15-10143	0
11718		RA	01859			0	PGR	85/07/04	SED	IRR	185.26E.34.313244	0.00	DP	14	1412	0	73		1183		15-10143	0
11719					WALDRIP STAN	871	PG	93/08/10	SED	IRR	185.26E.34.313244	0.00	SPRKLR	46	1360	0	0		0694		15-10143	0
11720						0	PGR	59/07/12	SED	OIL	185.26E.35.11100	0.00	DP HT	10900	190000	0	0	X	0482			0
11721						0	PGA	59/07/12	SED	OIL	185.26E.35.22000	0.00	DISPIT	129000	221300	0	0	X	0482			0
11722						0	PGR	59/07/12	SED	OIL	[illegible]12100	0.00	DP HT	81900	0	0	0	X	0482	U		0
11723	S					0	PGR	65/08/03	SED	OIL	[illegible]12000	0.00	DP HT	109800	171200	0	0		0482			0
11724	O					0	PGA	69/08/10	SED	OIL	[illegible]20000	0.00	DP HT	110000	191000	0	0		0482	U		0
11725						381	PAT	84/03/22	SED	OWD	[illegible]84422	3510.00	TS180	3366	12984	0	0		0185		15-10144	0
11726						100	DAL	88/11/23	SED	STK	[illegible]1423	0.00	DP	46	3264	0	0		0289			0
11727						120	PAT	85/11/22	SED	STK	[illegible]3323	3405.00	DP	323	3966	0	68		0186		15-10146	0
11728					TRIBB JOHN	120	PAT	94/07/10	SED	STK	[illegible]13223	3405.00	DP	254	3110	0	66		0694		15-10146	0
11729						395	DAL	85/05/05	SED	OWD	[illegible]47000	3277.00	YS8215	50	1181	0	0		0584		15-05132	0
11730						0	PAT	85/10/08	SED	STK	[illegible]42444	0.00	DP	170	3221	0	68		0186			0
11731					IBEX OIL CO	145	DAL	57/04/30	USS	DOM	[illegible]1313444	3640.00	YT	6	798	0	0	X	0685	U		0
11732					IBEX OIL CO	145	DAL	85/05/19	SED	COM	[illegible]1313444	3640.00	DP	41	980	0	0		0685			0
11733					IBEX OIL CO	145	DAL	90/09/19	SED	DOM	[illegible]1313444	3640.00	DP	76	1260	0	67		0191			0
11734					IBEX OIL	145	DAL	90/09/19	SED	D&C	[illegible]1313444	3640.00	DP	76	1260	0	0		0492		15-06080	0
11735						0	DAL	69/05/25	DCC	STK	[illegible]43113	0.00	DP	130	0	0	0			0		0
11736					TURKEY TRACK RANCH	140	DAL	85/10/08	SED	STK	[illegible]431311	3594.00	DP	255	1575	0	65		0187		15-06034	0
11737					TURKEY TRACK RANCH	140	DAL	88/11/23	SED	STK	[illegible]431311	3594.00	DP	280	2209	0	64		0289		15-06034	0
11738					TURKEY TRACK RANCH	140	FR	94/07/09	SED	STK	[illegible]431311	3549.00	DP	208	2010	0	65		0694		15-06034	0
11739						0	PGR	62/05/29	SED	OIL	[illegible]24300	0.00	BR2359	125000	212000	0	85	X	0482	U		0
11740						0		84/10/14	SED		[illegible]22	0.00		1727	0	0	59	X	0997			
11741						0		85/10/15	SED		[illegible]22	0.00		1799	0	0	52	X	0997			
11742						0		85/05/08	SED		[illegible]22	0.00		1783	0	0	66	X	0997			
11743					TURKEY TRACK RANCH	160	PAT	85/10/08	SED	STK	[illegible]111211	3599.00	DP	6	275	0	0		0187		15-06037	0
11744					TURKEY TRACK RANCH	160	PAT	88/11/23	SED	STK	[illegible]111211	3599.00	DP	13	473	0	0		0289		15-06037	0
11745					TURKEY TRACK RANCH	160	PAT	90/09/19	SED	STK	[illegible]111211	3599.00	DP	14	610	0	0		0191		15-06037	0
11746					TURKEY TRACK RANCH	160	PAT	90/09/19	SED	STK	[illegible]111211	3599.00		14	610	0	0		0492		15-06037	0
11747					TURKEY TRACK RANCH	250	PAT	85/11/22	SED	STK	[illegible]21212	3580.00	DP	109	866	0	70		0186			0
11748					TURKEY TRACK RANCH	150	PAT	89/04/10	DCC	STK	[illegible]21212	3580.00	DP	124	0	0	0	X	0875			0
11749					TURKEY TRACK RANCH	250	PAT	86/05/21	SED	STK	[illegible]21212	3580.00	DP	103	804	0	0		0187			0
11750					TURKEY TRACK RANCH	250	PAT	90/09/19	SED	STK	[illegible]21212	3580.00	DP	108	950	0	68		0191			0
11751					TURKEY TRACK RANCH	250	PAT	90/09/19	SED	STK	[illegible]21212	3580.00	DP	108	950	0	68		0492		15-06081	0
11752					BOBLE HAL	1	PAT	85/11/22	SED	DOM	[illegible]111123	3542.00	YT	79	819	0	0		0186		15-06142	0
11753					BOBLE HAL	1	PAT	85/05/24	SED	DOM	[illegible]111123	3515.00	DP	49	721	0	0		0187		15-06142	0
11754					BOBLE HAL	0	PAT	89/02/02	SED	STK	[illegible]111123	3542.00	DP	23	787	0	0		0539		15-06142	0
11755					BOBLE HAL	0	DAL	85/11/23	SED	STK	[illegible]2321411	3548.00	DP	23	512	0	67		0289			0
11756					BOBLE RANCH	0	DAL	94/05/29	SED	STK	[illegible]2321411	3548.00	DP	8	480	0	68		0694			0
11757					BOBLE HAL	245	TRC	69/08/14	DCC	STK	[illegible]34310	3478.00	DP	2020	6100	0	0			0	15-06170	0
11758					BOBLE HAL	245	TRC	78/10/20	SED	STK	[illegible]34310	3478.00	DP	2024	8733	0	67				15-06170	0
11759					BOBLE HAL	245	TRC	89/10/23	SED	STK	[illegible]34310	3478.00	DP	2032	0	0	0	X	1084	F	15-06170	0

ATTACHMENT XI-4

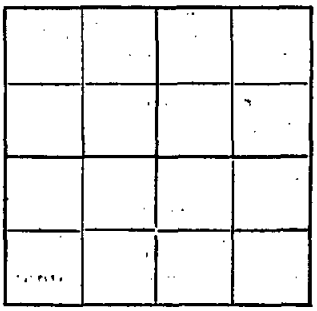
RECORDS ON FILE WITH THE STATE ENGINEER OFFICE FOR WATER WELLS IN THE VICINITY OF THE PROPOSED WELLS

Form WR-23 STATE ENGINEER OFFICE

WELL RECORD

INSTRUCTIONS: This form should be executed in triplicate, preferably typewritten, and submitted to the nearest district office of the State Engineer. All sections, except Section 5, shall be answered as completely and accurately as possible when any well is drilled, repaired or deepened. When this form is used as a plugging record, only Section 1A and Section 5 need be completed.

Section 1



(Plat of 640 acres)

(A) Owner of well Stanolind Oil and Gas Company

Street and Number Box 68

City Hobbs State New Mexico

Well was drilled under Permit No. O-2-E-99 and is located in the

¼ NW ¼ SE ¼ of Section 11 Twp. 18 S Rge. 27E

(B) Drilling Contractor License No.

Street and Number

City State

Drilling was commenced 9-1 1956

Drilling was completed 11-5 1956

Elevation at top of casing in feet above sea level Total depth of well 7270

State whether well is shallow or artesian Oil well Depth to water upon completion

Section 2 PRINCIPAL WATER-BEARING STRATA

No.	Depth in Feet From	Depth in Feet To	Thickness in Feet	Description of Water-Bearing Formation
1				
2				
3				
4				
5				

Section 3 RECORD OF CASING

Dia in.	Pounds ft.	Threads in	Depth Top	Depth Bottom	Feet	Type Shoe	Perforations From	Perforations To
13-3/8	48 & 36	8 Rd			563	Guide		
9-5/8	32.3	8 Rd			1975	Guide		

Section 4 RECORD OF MUDDING AND CEMENTING

Depth in Feet From	Depth in Feet To	Diameter Hole in in.	Tons Clay	No. Sacks of Cement	Methods Used
XXXXX	572	13-3/8		700 sx neat	Hwco
	1790	9-5/8		250 sx 8% gel + 1# tuf plug per sk.	Hwco
		5-1/2 Casing was not run in this well			

Section 5 PLUGGING RECORD

Name of Plugging Contractor License No.

Street and Number City State

Tons of Clay used Tons of Roughage used Type of roughage

Plugging method used Date Plugged 19

Plugging approved by:

Basin Supervisor

Cement Plugs were placed as follows:

No.	Depth of Plug From	Depth of Plug To	No. of Sacks Used

FOR USE OF STATE ENGINEER ONLY

Date Received December 3, 1956

File No. O-2-E-99 Use Oil Location No. 18.27.11.410

LOG OF WELL

Depth in Feet From	Depth in Feet To	Thickness in Feet	Color	Type of Material Encountered
0	312	312		Red bed
312	360	48		Anhy. & lime
360	482	122		Anhy
482	539	57		Anhy. sand
539	630	91		Lime anhy
630	835	205		Shale & Lime
835	1460	625		Lime Anhy.
1460	1679	219		Shale & Lime
1679	1726	47		Shale Anhy. Dolomite
1726	1828	102		Anhy. Shale Sand
1828	2118	290		Lime
2118	2696	578		Lime & Dolomite
2696	2790	94		Anhy. & Dolomite
2790	2947	157		Dolomite & Chert
2947	3026	79		Anhy. & Dolomite
3026	3434	408		Dolomite
3434	4154	720		Dolomite Anhy.
4154	4505	351		Dolomite & Chert
4505	4558	53		Dolomite
4558	4685	127		Sand U& Dolomite
4685	5093	408		Dolomite
5093	5214	121		Dolomite & Chert
5214	5722	508		Dolomite & Shale
5722	5858	136		Dolomite & Chert
5858	6055	197		Dolomite
6055	6349	294		Dolomite & Lime
6349	6502	153		Dolomite & Shale
6502	6631	139		Dolomite
6631	6850	219		Dolomite & Shale
6850	6911	61		Dolomite Lime Shale

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described well.

6911	6932	21		Dolomite & Lime
6932	7066	134		Dolomite & Shale
7066	7074	8		Dolomite & Lime Well Driller
7074	7270	196		Dolomite & Shale

CORE #1 1750-1758 Rec. 8' light brown to tan fine crystallin lime and dolomite and very thin streak of gray shale and anhy. inclusion.

CORE #2 1758-1780 Rec. 20', 1758-1775 limy dolomite w/streaks gray shale 1775-1778 brown w/good stain flourescent and porocity.

CORE #3 2800-2812 Rec. 11' brown fine to medium crystallin dolomite w/large anhy. inclusions & vuggy to pin point porosity & poor to good scattered oil stain & order.

CORE #4 6723-6737 Rec. 10 1/2, 7' dark dense fine crystallin shaly dolomite and 3 1/2' sh micro X l N dolomite. No show.

DST #1 2455-2812 tool open 2 hrs. fair blow of air 1 1/2 hr. & died. Rec. 30' drl mus, no show oil, gas, or water. 3/4 hr. Final BHPSI 65#, Init. FBHP 55# Final FBHP 65#

DST #2 6264-6304 tool open 2 1/2 hr. fair blow throughout test. Rec. 1350' of salty sulphur water, shightly gas cut-30 min. initital BHSIP 2390, final 30 min. Initial flowing 60 PSIG. Final flowing 600 PSIG.

DST #3 6685-6739 tool open 2 1/2 hrs. Rec. 180 drl mud, 370' sulphur water, no show oil or gas. 20 Min. Initial SIP 2665# Final 2120#. Initial flow 75# Final 315#.

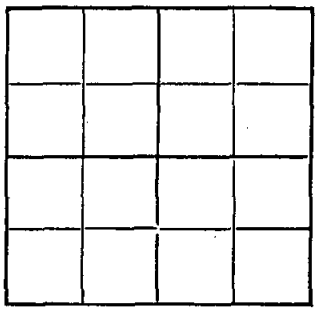
DST #4 6915-6957 tool open 2 hrs. 5 min. Rec. 60' drlg mud and 180' sulphur water, no show oil or gas 30 min. SIBHP 2750 Final SIBHP failed. Initial FBHP 80#.

Form WR-23 FIELD [illegible] LOG STATE ENGINEER OFFICE

WELL RECORD

INSTRUCTIONS: This form should be executed in triplicate, preferably typewritten, and submitted to the nearest district office of the State Engineer. All sections, except Section 5, shall be answered as completely and accurately as possible when any well is drilled, repaired or deepened. When this form is used as a plugging record, only Section 1A and Section 5 need be completed.

Section 1



(Plat of 640 acres)

(A) Owner of well Western Oil Fields, Inc.
Street and Number Box 1147
City Hobbs State New Mexico
Well was drilled under Permit No. RA-4048 and is located in the
NW ¼ SE ¼ SE ¼ of Section 14 Twp. 18S Rge. 27E
(B) Drilling Contractor Stanley Jones License No.
Street and Number
City Artesia State New Mexico
Drilling was commenced November 5, 19 47
Drilling was completed January 3, 19 48

Elevation at top of casing in feet above sea level 3514 Total depth of well 2096
State whether well is shallow or artesian artesian Depth to water upon completion

Section 2 PRINCIPAL WATER-BEARING STRATA

No.	Depth in Feet From	Depth in Feet To	Thickness in Feet	Description of Water-Bearing Formation
1				this well to be retained for O.W.D.
2				will not sell water no meter required.
3				
4				
5				

Section 3 RECORD OF CASING

Dia in.	Pounds ft.	Threads in	Depth Top	Depth Bottom	Feet	Type Shoe	Perforations From	Perforations To
7			0	1704	1704		none	
							200	198 ripped

Section 4 RECORD OF MUDDING AND CEMENTING

Depth in Feet From	Depth in Feet To	Diameter Hole in in.	Tons Clay	No. Sacks of Cement	Methods Used
1704	1000	8¼		50	Halliburton

Section 5 PLUGGING RECORD

Name of Plugging Contractor Halliburton License No.
Street and Number City Artesia State New Mexico
Tons of Clay used Tons of Roughage used Type of roughage
Plugging method used neat cement pumped Date Plugged 19
Plugging approved by: Howard E. Lobley Basin Supervisor

Cement Plugs were placed as follows:

No.	Depth of Plug From	Depth of Plug To	No. of Sacks Used
3	350	390	8
2	1725	1690	30
1	2096	2075	15

FOR USE OF STATE ENGINEER ONLY

Date Received June 2, 1959

File No. RA-4048 Use O.W.D. Location No. 18.27.14.441

Section 6

LOG OF WELL

Depth in Feet From	Depth in Feet To	Thickness in Feet	Color	Type of Material Encountered

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described well.

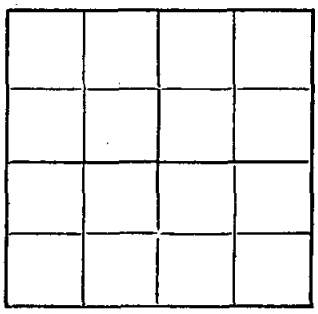
Well Driller

Form WR-23 STATE ENGINEER OFFICE

WELL RECORD

INSTRUCTIONS: This form should be executed in triplicate, preferably typewritten, and submitted to the nearest district office of the State Engineer. All sections, except Section 5, shall be answered as completely and accurately as possible when any well is drilled, repaired or deepened. When this form is used as a plugging record, only Section 1A and Section 5 need be completed.

Section 1



(Plat of 640 acres)

(A) Owner of well_____

Street and Number_____

City _____ State _____

Well was drilled under Permit No. test hole #6 and is located in the ____ ¼ SW ¼ SW ¼ of Section 8 Twp. 18 Rge. 28

(B) Drilling Contractor_____ License No._____

Street and Number_____

City _____ State _____

Drilling was commenced_____ 19____

Drilling was completed_____ 19____

Elevation at top of casing in feet above sea level_____ Total depth of well_____

State whether well is shallow or artesian_____ Depth to water upon completion_____

Section 2 PRINCIPAL WATER-BEARING STRATA

No.	Depth in Feet From	Depth in Feet To	Thickness in Feet	Description of Water-Bearing Formation
1				
2				
3				
4				
5				

Section 3 RECORD OF CASING

Dia in.	Pounds ft.	Threads in	Depth Top	Depth Bottom	Feet	Type Shoe	Perforations From	Perforations To

Section 4 RECORD OF MUDDING AND CEMENTING

Depth in Feet From	Depth in Feet To	Diameter Hole in in.	Tons Clay	No. Sacks of Cement	Methods Used

Section 5 PLUGGING RECORD

Name of Plugging Contractor_____ License No._____

Street and Number_____ City_____ State_____

Tons of Clay used_____ Tons of Roughage used_____ Type of roughage_____

Plugging method used_____ Date Plugged_____ 19____

Plugging approved by:

_____
Basin Supervisor

Cement Plugs were placed as follows:

No.	Depth of Plug From	Depth of Plug To	No. of Sacks Used

FOR USE OF STATE ENGINEER ONLY

Date Received ~~XX~~ July 5 1960

File No. test hole #6 Use_____ Location No. 18.28.6.333

Section 6

LOG OF WELL

Depth in Feet From	Depth in Feet To	Thickness in Feet	Color	Type of Material Encountered
0	1			soil
1	12			caliche
12	18			rock
18	30			caliche
30	60			dry sand
60	78			sandy clay
78	96			dry sand
96	112			water sand--perforated production pipe
112	132			red clay
132	144			rock
144	150			sand
150	151			yellow clay
151	156			red clay

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described well.

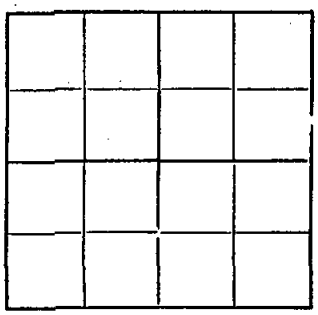
Well Driller

Form WR-23 STATE ENGINEER OFFICE

WELL RECORD

INSTRUCTIONS: This form should be executed in triplicate, preferably typewritten, and submitted to the nearest district office of the State Engineer. All sections, except Section 5, shall be answered as completely and accurately as possible when any well is drilled, repaired or deepened. When this form is used as a plugging record, only Section 1A and Section 5 need be completed.

Section 1



(Plat of 640 acres)

(A) Owner of well

Street and Number

City State

Well was drilled under Permit No. test hole No. 1 and is located in the SE ¼ SE. ¼ SW ¼ of Section 8 Twp. 18 Rge. 28

(B) Drilling Contractor License No.

Street and Number

City State

Drilling was commenced 19

Drilling was completed 19

Elevation at top of casing in feet above sea level Total depth of well

State whether well is shallow or artesian Depth to water upon completion

Section 2 PRINCIPAL WATER-BEARING STRATA

No.	Depth in Feet From	Depth in Feet To	Thickness in Feet	Description of Water-Bearing Formation
1				
2				
3				
4				
5				

Section 3 RECORD OF CASING

Dia in.	Pounds ft.	Threads in	Depth Top	Depth Bottom	Feet	Type Shoe	Perforations From	Perforations To

Section 4 RECORD OF MUDDING AND CEMENTING

Depth in Feet From	Depth in Feet To	Diameter Hole in in.	Tons Clay	No. Sacks of Cement	Methods Used

Section 5 PLUGGING RECORD

Name of Plugging Contractor License No.

Street and Number City State

Tons of Clay used Tons of Roughage used Type of roughage

Plugging method used Date Plugged 19

Plugging approved by:

Basin Supervisor

Cement Plugs were placed as follows:

No.	Depth of Plug From	Depth of Plug To	No. of Sacks Used

FOR USE OF STATE ENGINEER ONLY

Date Received July 5 1960

File No. test hole #1 Use Location No. 18.28.8.334

Section 6

LOG OF WELL

Depth in Feet From	Depth in Feet To	Thickness in Feet	Color	Type of Material Encountered
0	1			soil
1	22			caliche and sand
22	80			sandy clay
80	94			dry sand
94	98			sandy clay
98	106			water sand(
106	112			sandy clay{ Production pipe perforated
112	126			water sand(
126	130			sandy clay
130	135			red bed

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described well.

Well Driller

Form WR-23 STATE ENGINEER OFFICE

WELL RECORD

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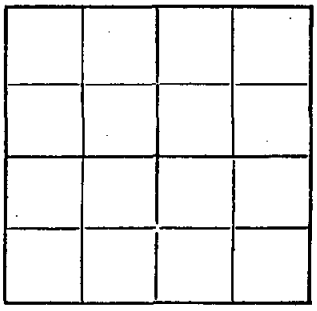
Section 1



(Plat of 640 acres)

(A) Owner of well_____

Street and Number_____

City _____ State _____

Well was drilled under Permit No. test hole # 2 and is located in the SW ¼ SE ¼ SW ¼ of Section 8 Twp. 18 Rge. 28

(B) Drilling Contractor_____ License No._____

Street and Number_____

City _____ State _____

Drilling was commenced_____ 19____

Drilling was completed_____ 19____

Elevation at top of casing in feet above sea level_____ Total depth of well_____

State whether well is shallow or artesian_____ Depth to water upon completion_____

Section 2 PRINCIPAL WATER-BEARING STRATA

No.	Depth in Feet From	Depth in Feet To	Thickness in Feet	Description of Water-Bearing Formation
1				
2				
3				
4				
5				

Section 3 RECORD OF CASING

Dia in.	Pounds ft.	Threads in	Depth Top	Depth Bottom	Feet	Type Shoe	Perforations From	Perforations To

Section 4 RECORD OF MUDDING AND CEMENTING

Depth in Feet From	Depth in Feet To	Diameter Hole in in.	Tons Clay	No. Sacks of Cement	Methods Used

Section 5 PLUGGING RECORD

Name of Plugging Contractor_____ License No._____

Street and Number_____ City_____ State_____

Tons of Clay used_____ Tons of Roughage used_____ Type of roughage_____

Plugging method used_____ Date Plugged_____ 19____

Plugging approved by:

_____
Basin Supervisor

Cement Plugs were placed as follows:

No.	Depth of Plug From	Depth of Plug To	No. of Sacks Used

FOR USE OF STATE ENGINEER ONLY

Date Received July 5 1960

File No. test hole #2 Use_____ Location No. 18.28.8.343

Section 6

LOG OF WELL

Depth in Feet From	Depth in Feet To	Thickness in Feet	Color	Type of Material Encountered
0	2			soil
2	12			caliche
12	18			rock
18	28			caliche
28	60			sandy clay
60	74			dry sand
74	96			sandy clay
96	122			dry sand
122	126			sandy clay
126	132			water sand --perforated
132	138			sandy clay
138	144			red bed

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described well.

Well Driller