

DATE IN 9/20/99	SUSPENSE 10/12/99	ENGINEER DC	LOGGED MW	TYPE DHC
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ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION
- Engineering Bureau -

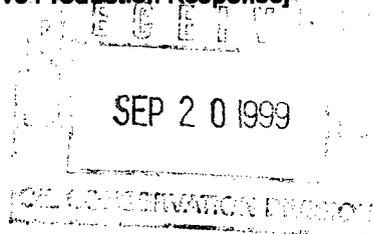
ADMINISTRATIVE APPLICATION COVERSHEET

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]

2478



[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

[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, information or notification is cause to have the application package returned with no action taken.

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

David B. Richardson
Print or Type Name

David B. Richardson JR
Signature

President
Title

9-14-99
Date



RICHARDSON OPERATING COMPANY

1700 Lincoln, Suite 1700
Denver, Colorado 80203 (303) 830-8000
FAX (303) 830-8009

September 14, 1999

Mr. Jim Lovato
Bureau of Land Management
Farmington District Office
1235 LaPlata Hwy, Suite A
Farmington, NM 87402

Mr. William LeMay, Director
State of New Mexico
Energy, Minerals & Natural Resources Department
Oil Conservation Division
P. O. Box 2088
Santa Fe, NM 87504-2088

**Re: Navajo H #5
Commingle Production
San Juan County, New Mexico**

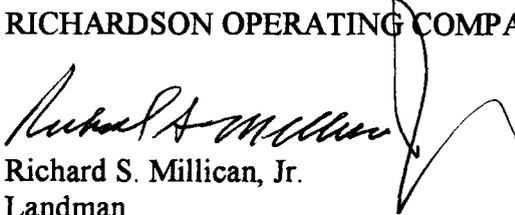
Gentlemen:

Enclosed, please find Richardson Operating Company's original applications plus five (5) copies to the BLM and (2) copies to the State to commingle the production from the Fruitland Coal and the Pictured Cliffs Formations under the referenced well.

If you should need any additional information, please don't hesitate to call me at 1-303-830-8000.

Sincerely,

RICHARDSON OPERATING COMPANY


Richard S. Millican, Jr.
Landman

Enclosures

Cc: Mr. Frank Chavez
New Mexico Oil Conservation Division
1000 Brazos Rd
Aztec, NM 87410

DISTRICT I
1825 N. French Dr., Hobbs, NM 88240

DISTRICT II
811 South First St., Artesia, NM 88210-2835

DISTRICT III
1000 Rio Brazos Rd, Aztec, NM 87410-1693

DISTRICT IV
2040 S. Pacheco, Santa Fe NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

2040 S. Pacheco
Santa Fe, New Mexico 87505-6429

APPLICATION FOR DOWNHOLE COMMINGLING

Form C-107-A
Revised August 1999

APPROVAL PROCESS:

Administrative Hearing

EXISTING WELLBORE

YES NO

RICHARDSON OPERATING COMPANY 1700 LINCOLN STREET, SUITE 1700, DENVER, CO 80203

Operator Address
NAVAJO FEDERAL H 5 M 13-29N-14W SAN JUAN

Lease Well No. Unit Ltr. - Sec - Twp - Rge County
OGRID NO. 019219 Property Code API NO. 30-045-13101 Spacing Unit Lease Types: (check 1 or more)
Federal , State , (and/or) Fee

The following facts are submitted in support of downhole commingling:	Upper Zone	Intermediate Zone	Lower Zone
1. Pool Name and Pool Code	71629 BASIN FRUITLAND COAL		86620 TWIN MOUNDS FRUITLAND PICTURED CLIFFS
2. Top and Bottom of Pay Section (Perforations)	876 - 882		890 - 904
3. Type of production (Oil or Gas)	GAS		GAS
4. Method of Production (Flowing or Artificial Lift)	PUMPING		PUMPING
5. Bottomhole Pressure Oil Zones - Artificial Lift: Gas & Oil - Flowing: All Gas Zones: Estimated Current Measured Current Estimated Or Measured Original	a. (Current)	a.	a.
	b. (Original) 200	b.	b. 200
6. Oil Gravity (° API) or Gas BTU Content	1000		1000
7. Producing or Shut-In?			
Production Marginal? (yes or no)	YES		YES
* If Shut-In, give date and oil/gas/water rates of last production <small>Note: For new zones with no production history, applicant shall be required to attach production estimates and supporting data</small>	Date: Rates:	Date: Rates:	Date: Rates:
* If Producing, give date and oil/gas/water rates of recent test (within 60 days)	Date: Rates:	Date: Rates:	Date: Rates:
8. Fixed Percentage Allocation Formula - % for each zone	Oil: % Gas: %	Oil: % Gas: %	Oil: % Gas: %

9. If allocation formula is based upon something other than current or past production, or is based upon some other method, submit attachments with supporting data and/or explaining method and providing rate projections or other required data.
10. Are all working, overriding, and royalty interests identical in all commingled zones? Yes No
If not, have all working, overriding, and royalty interests been notified by certified mail? Yes No
11. Will cross-flow occur? Yes No If yes, are fluids compatible, will the formations not be damaged, will any cross-flowed production be recovered, and will the allocation formula be reliable. Yes No (If No, attach explanation)
12. Are all produced fluids from all commingled zones compatible with each other? Yes No
13. Will the value of production be decreased by commingling? Yes No (If Yes, attach explanation)
14. If this well is on, or communitized with, state or federal lands, either the Commissioner of Public Lands or the United States Bureau of Land Management has been notified in writing of this application. Yes No
15. NMOCD Reference Cases for Rule 303(D) Exceptions: ORDER NO(S). _____
16. ATTACHMENTS:
* C-102 for each zone to be commingled showing its spacing unit and acreage dedication.
* Production curve for each zone for at least one year. (If not available, attach explanation.)
* For zones with no production history, estimated production rates and supporting data.
* Data to support allocation method or formula.
* Notification list of working, overriding, and royalty interests for uncommon interest cases.
* Any additional statements, data, or documents required to support commingling.

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

SIGNATURE David B. Richardson / RSM TITLE PRESIDENT DATE 9-14-99

TYPE OR PRINT NAME DAVID B. RICHARDSON TELEPHONE NO. (303) 830-8000

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-102

Revised March 17, 1994

Submit to Appropriate District Office

State Lease - 4 Copies

Fee Lease - 3 Copies

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-045-13101		² Pool Code 86620		³ Pool Name KUTZ WEST PICTURED CLIFFS	
⁴ Property Code		⁵ Property Name NAVAHO H			⁶ Well Number 5
⁷ OGRID No. 019219		⁸ Operator Name RICHARDSON OPERATING COMPANY			⁹ Elevation 5278

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	13	29N	14W		705	South	660	West	San Juan

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 160	¹³ Joint or Infill Y	¹⁴ Consolidation Code	¹⁵ Order No.
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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

<p>16</p>	<p>17 OPERATOR CERTIFICATION</p> <p>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief</p> <p><i>David B. Richardson / RSM</i> Signature</p> <p>Printed Name David B. Richardson Title President Date 9-19-99</p>			
	<p>18 SURVEYOR CERTIFICATION</p> <p>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.</p> <p>Date of Survey Signature and Seal of Professional Surveyer:</p>			
	<p>Original on File</p> <p>Certificate Number</p>			
	<p>660'</p> <p>705'</p>			

District I
1625 N. French Dr., Hobbs, NM 88240

State of New Mexico
Energy, Minerals & Natural Resources

Form C-102
Revised March 17, 1994

District II
811 South First, Artesia, NM 88210

OIL CONSERVATION DIVISION
2040 South Pacheco
Santa Fe, NM 87505

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

District III
1000 Rio Brazos Rd., Artec, NM 87410

District IV
2040 South Pacheco, Santa Fe, NM 87505

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-045-13101		² Pool Code 71629		³ Pool Name BASIN FRUITLAND COAL			
⁴ Property Code		⁵ Property Name NAVAJO H				⁶ Well Number 5	
⁷ OGRID No. 019219		⁸ Operator Name RICHARDSON OPERATING COMPANY				⁹ Elevation 5278	

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	13	29N	14W		705	South	660	West	San Juan

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 320	¹³ Joint or Infill Y	¹⁴ Consolidation Code	¹⁵ Order No.
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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 CERTIFICATION <i>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief</i>  Signature Printed Name <u>David B. Richardson</u> Title <u>President</u> Date <u>7-18-99</u>			
	¹⁸ SURVEYOR CERTIFICATION <i>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.</i> Date of Survey Signature and Seal of Professional Surveyer:			
	Original on File Certificate Number			

District I
 PO Box 1908, Hobbs, NM 88241-1908
 District II
 PO Drawer DD, Artesia, NM 88211-4719
 District III
 1009 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

RECEIVED
 BUM

Form C-102
 Revised February 10, 1994
 Instructions on back
 Submit to Appropriate District Office
 State Lease - 4 Copies
 Fee Lease - 3 Copies
 AMENDED REPORT

OIL CONSERVATION DIVISION
 PO Box 2088
 Santa Fe, NM 87504-2088

59 APR 21 AM 8:00
 070 FARMINGTON, NM

WELL LOCATION AND ACREAGE DEDICATION PLAT

' API Number	' Pool Code 71629	' Pool Name Basin Fruitland Coal
' Property Code	' Property Name Navajo H	' Well Number 5
' OGRID No. 019219	' Operator Name Richardson Operating Company	' Elevation 5278' GL

10 Surface Location

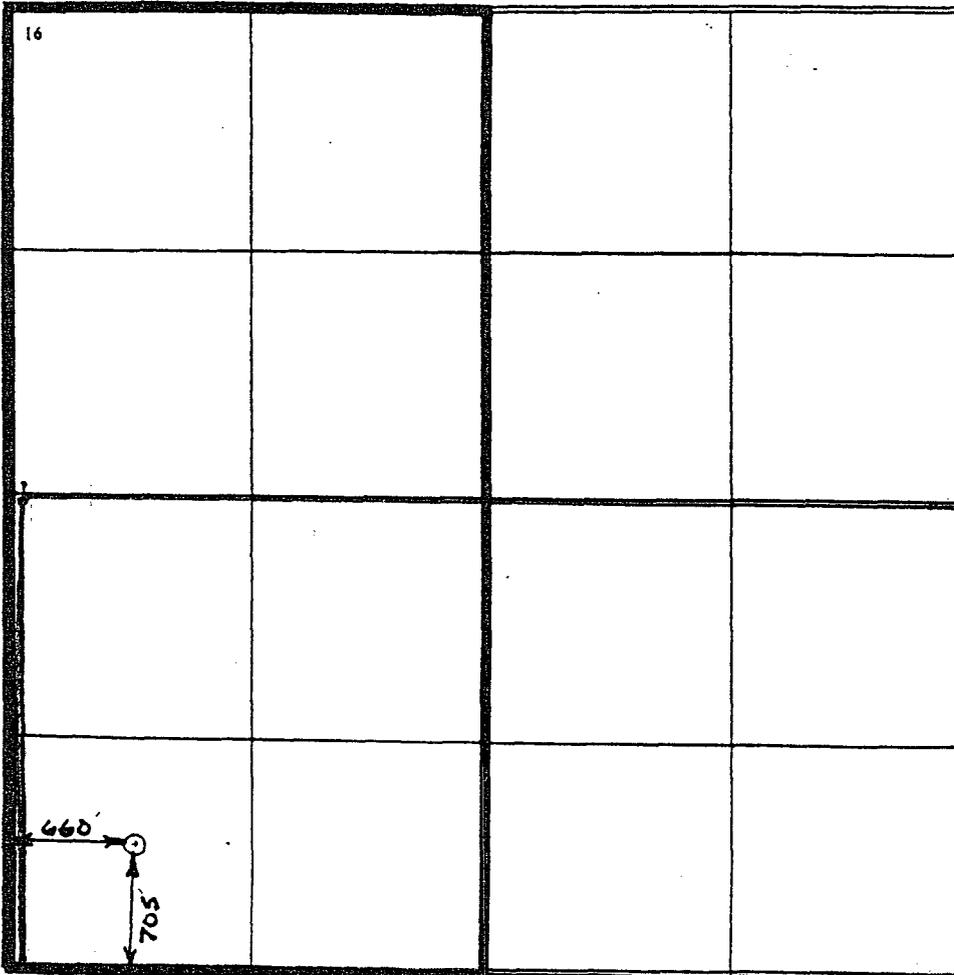
UL or lot no.	Section	Township	Range	Lot Ida	Foot from the	North/South Line	Foot from the	East/West Line	County
M	13	29N	14W		705	S	660	W	San Juan

11 Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Ida	Foot from the	North/South Line	Foot from the	East/West Line	County

" Deduct : Acres 320	" Joint or Infill Y	" Consolidation Code	" Order No.
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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

Paul C. Thompson
 Signature
 Paul C. Thompson
 Printed Name
 Agent
 Title
 4/20/99
 Date

18 SURVEYOR CERTIFICATION
 I hereby certify that the well location shown on this plat was placed 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:
 8-20-99
 Telephone conversation w/
 Jim Lavato (Farmington BUM)
 acreage dedication changed
 Certificate Number to 5/2-13-29U-14u

RICHARDSON OPERATING COMPANY

Navajo H #5

Section 13, T29N, R14W

Commingling Application

Allocation Formula

The proposed well was plugged back from the Wildcat Mesa Verde and re-completed in the Basin Fruitland Coal and Twin Mounds Fruitland Sand - Pictured Cliffs. No production data is currently available. The Navajo Tribal H #15 located in the same section is the only Twin Mounds Fruitland Sand - Pictured Cliffs well that has recently produced (P&A 1998) in this township. There are two marginal Fruitland Coal wells that began producing in October 1997 in Section 36 of this township, the Camp David Commission #1 (cum 12,961 MCF) and the Henry #1 (Cum = 2,449 MCF).

As the Navajo H 15, the Camp David Commission #1 and the Henry #1 wells were only capable of marginal production from the Fruitland Coal and Pictured Cliffs formations, Richardson Operating Company proposes to down hole commingle the production in the Navajo H #5 well.

Based on the Bushman #1 (6-29N-14W) both the Pictured Cliffs and the Fruitland Coal zones have very similar bottom hole pressures of approximately 180 psig. Therefore, cross flow will not be a factor. It is anticipated that both zones will produce some water with no liquid hydrocarbons. Neither zone is fluid sensitive and the fluids from the two zones should be compatible.

Due to the lack of production data from the two zones, Richardson Operating Company proposes to allocate the production according to the following method.

- A. From the attached rate / time graph, the initial production of the neighboring Navajo Tribal H #15 in Section 13 can be calculated as 49 MCF/D with a decline rate of approximately 18%, therefore:
- B. **Pictured Cliffs Initial Rate from the Navaho #5** = $49 \text{ MCF/D} \times e^{-Dt}$, where $D = 18\% / \text{year}$ and $t = \text{time in years since first production}$.
- C. **Fruitland Coal Production** = Total Production – Pictured Cliffs Production.

Rate/Time Graph

Project: C:\Program Files\HS Energy\PTools30\PROJECTS\ropco.MDB

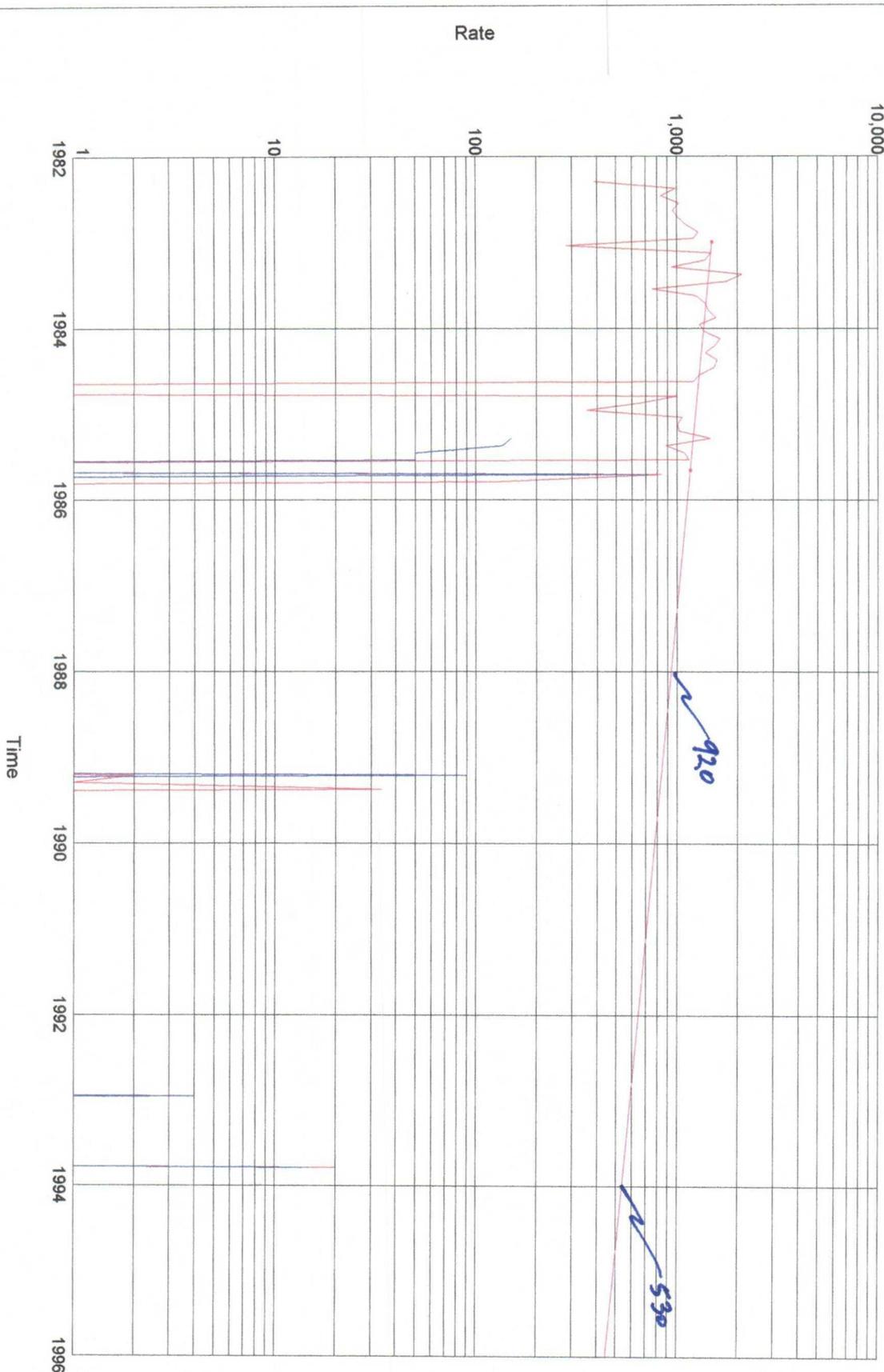
Date: 8/27/1999
Time: 3:17 PM

Lease Name:
County, ST:
Location:

NAVAJO TRIBAL H (15)
SAN JUAN, NM
29N-14W-13

Field Name:
Operator:

KUTZ WEST (PICTURED CLIFFS) PC
BAYLESS ROBERT L



$$\frac{1500 \text{ Mcf/mo}}{30.4 \frac{\text{D}}{\text{mo}}} = 49 \text{ (MCF)} \text{ NAVAJO TRIBAL H - KUTZ WEST (PICTURED CLIFFS) PC}$$

$$D = \frac{LW \frac{920}{530}}{3}$$

$$= .1838$$

$$\approx .18$$

R14W

R13W

