

PECOS PETROLEUM ENGINEERING, Inc.

200 W. FIRST ST., SUITE 536
P.O. BOX 2885
ROSWELL, NEW MEXICO 88202
505-624-2800

N.M. Oil Corp
P 1980
Hobbs, NM 88241

SUBJECT
LIKE APPROVE
BY STAT

December 11, 1997

Mr. Tony Ferguson
Bureau of Land Management
2909 West Second Street
Roswell, New Mexico 88201

NM - 0381550-C
Re: Armstrong Energy Corporation
Mobil "24" Federal #1
Section 24, T19S-R34E
Lea County, New Mexico

Dear Mr. Ferguson:

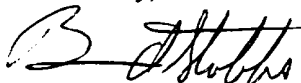
Armstrong Energy Corporation has attempted a completion of a Delaware zone in the Mobil "24" Federal #1. This zone tested at 11 BOPD and 93 BWPD from a depth of 8,130'-8,156'. Because of high costs associated with water disposal and lifting fluid from over 8,000', this zone was determined to have marginal economics.

To improve the economics of this project and maximize recovery, we have decided to make an application to commingle the new Delaware zone and the existing Bone Spring zone. Total production from the combined zones is anticipated to be 19 BOPD, 115 BWPD and gas volumes to small to measure.

Attached are six (6) copies of Form 3106-5, Sundry Notice and Reports on Wells, outlining the workover on the well, Form 3106-4, Well Completion or Recompletion Report and Log, for the completion in the Delaware zone, Form C-102, Well Location and Acreage Dedication Plat, showing the acreage dedicated to the Delaware zone, and a Form C-107-A, Application for Downhole Commingling, filed with the New Mexico Oil Conservation Division.

Should you require any additional information concerning this project, please contact me at your convenience.

Sincerely,


Bruce A. Stubbs

(ORIG. SGD.) ALEXIS C. SWOBODA

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

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

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87401

State of New Mexico
Energy, Minerals and Natural Resource Department

OIL CONSERVATION DIVISION
2040 S. Pacheco
Santa Fe, New Mexico 87505-6429
APPLICATION FOR DOWNHOLE COMMINGLING

Form C-107-A
New 3-12-96

APPROVAL PROCESS:
☒ Administrative ☐ Hearing
EXISTING WELLBORE
☒ Yes ☐ No

Operator Armstrong Energy Corporation P.O. Box 1973 Roswell, New Mexico 88202
Address

Lease Mobil "24" Federal Well No. 1 Unit Ltr. - Sec - Twp - Rge K-24-19S-34E County Lea

OGRID NO. 001092 Property Code 018462 API NO. 30-025-30839 Spacing Unit Lease Type: (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	Undesignated		Lea Bone Spring 37570
2. Top and Bottom of Pay Section (Perforations)	8130 - 8156		9546 - 9590
3. Type of Production (Oil or Gas)	Oil		Oil
4. Method of Production (Flowing or Artificial Lift)	Artificial Lift Rod Pumping		Artificial Lift Rod Pumping
5. Bottomhole Pressure Oil Zones - Artificial lift: Estimate Current	a. (Current) 3090 psi	a.	a. 500 psi
Gas & Oil - Flowing: Measured Current All Gas Zones: Estimated Or Measured Originals	b. (Original) 3090 psi	b.	b. 3820 psi
6. Oil Gravity (° API) or Gas BTU Content	39.7° @ 60° F		38.5° @ 60° F
7. Producing or Shut-in?	Shut-in		Shut-in
Production Marginal? (yes or no)	Yes		Yes
If shut-in, give date and oil/gas/water rates of last production Note: For new zones with no production history, applicant shall be required to attach production data and supporting data	Date: 11-14-97 Rates: 11 BOPD, 0 MCFG, & 93 BWPD	Date: Rates:	Date: 10-14-97 Rates: 7.8 BOPD, 0 MCFG, & 22 BWPD
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: 58.5 % Gas: 0 %	Oil: % Gas: %	Oil: 41.5 % Gas: 0 %

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 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
Have all offset operators been given written notice of the proposed downhole commingling? ☒ 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. NMOC Reference Cases for Rule 303(C) Exceptions: ORDER NO(S). DHC-1434, DHC-1559, DHC-1563, DHC-1639 & DHC-1665
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, estimate production rates and supporting data.
Data to support allocation method or formula.
Notification list of all offset operators.
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 B. Stubbs TITLE Engineer DATE 12-10-97

TYPE OR PRINT NAME Bruce A. Stubbs TELEPHONE NO. (505) 623-8726

Attachment to Application for Downhole Commingling
Armstrong Energy Corporation
Mobil "24" Federal #1
Section 24, T19S-R34E
Lea County, New Mexico

9. The allocation formula is based on the historical production from the Bone Spring Zone and test rates from the Delaware Zone. The historical production from the Bone Spring has followed a predictable hyperbolic decline since completion in 1990. The attached decline curve indicates the historical production and a curve fit of the data. The Delaware Zone has approximately two weeks of production tests, that show a stabilized rate of 11 BOPD, 93 BWPD and gas rates TSTM. A proposed allocation for the oil production would be based on a total oil rate of 18.8 BOPD and individual zone allocations of: Delaware Zone $11/18.8=58.5\%$ and Bone Spring Zone $7.8/18.8=41.5\%$.
11. Although the existing Bone Spring Zone is in a depleted condition with an estimated BHP of 500 psi and the new Delaware Zone has an estimated BHP of 3090 psi, cross-flow will not occur due to artificial lift equipment maintaining a pumped-off condition. Annular pressure will be maintained as low as surface production equipment can efficiently function.
13. Both zone produce sweet crude with similar gravities. No reduction in the price received for this product will result from the commingling.

OIL CONSERVATION DIVISION

P.O. Box 2088

Santa Fe, New Mexico 87504-2088

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

All Distances must be from the outer boundaries of the section

Operator Armstrong Energy Corporation			Lease Mobil Federal 24		Well No. 1
Unit Letter K	Section 24	Township 19 South	Range 34 East	County Lea	
Actual Footage Location of Well: 1650 feet from the South line and 2310 feet from the West line					
Ground level Elev. 3798.6	Producing Formation Delaware		Pool Undesignated	Dedicated Acreage: 40 Acres	

1. Outline the acreage dedicated to the subject well by colored pencil or hatchure 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.?

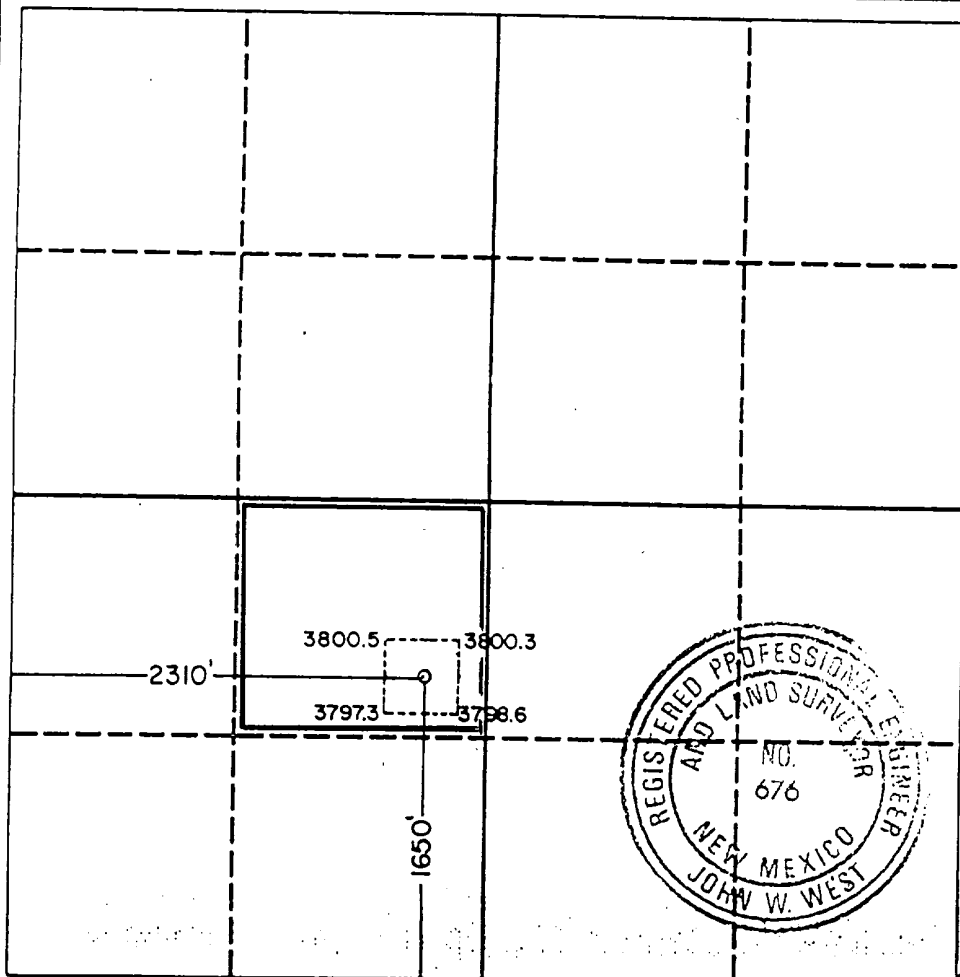
☐ Yes

☐ 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

Robert G. Armstrong

Printed Name

President

Position

Armstrong Energy Corp.

Company

March 6, 1990

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 supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed

February 15, 1990

Signature & Seal of
Professional Surveyor

John W. West

Certificate No. JOHN W. WEST, 676

RONALD J. EIDSON, 3239

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

Energy, Minerals and Natural Resources Department

Revised 1-1-89

OIL CONSERVATION DIVISION

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

RECEIVED

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

All Distances must be from the outer boundaries of the section

MAR 9 10 39 AM '90

Operator ARMSTRONG ENERGY CORP.			Lease Mobil Federal 24		CART. AREA AREA	Well No. 08185
Unit Letter K	Section 24	Township 19 South	Range 34 East	County NM		Lea
Actual Footage Location of Well: 1650 feet from the South line and 2310 feet from the West line						
Ground level Elev. 3798.6	Producing Formation Bone Springs		Pool Lea Bone Springs		Dedicated Acreage: 80 Acres	

- Outline the acreage dedicated to the subject well by colored pencil or hatchure marks on the plat below.
- If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
- 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

Printed Name

Position

Company

Date

SURVEYOR CERTIFICATION

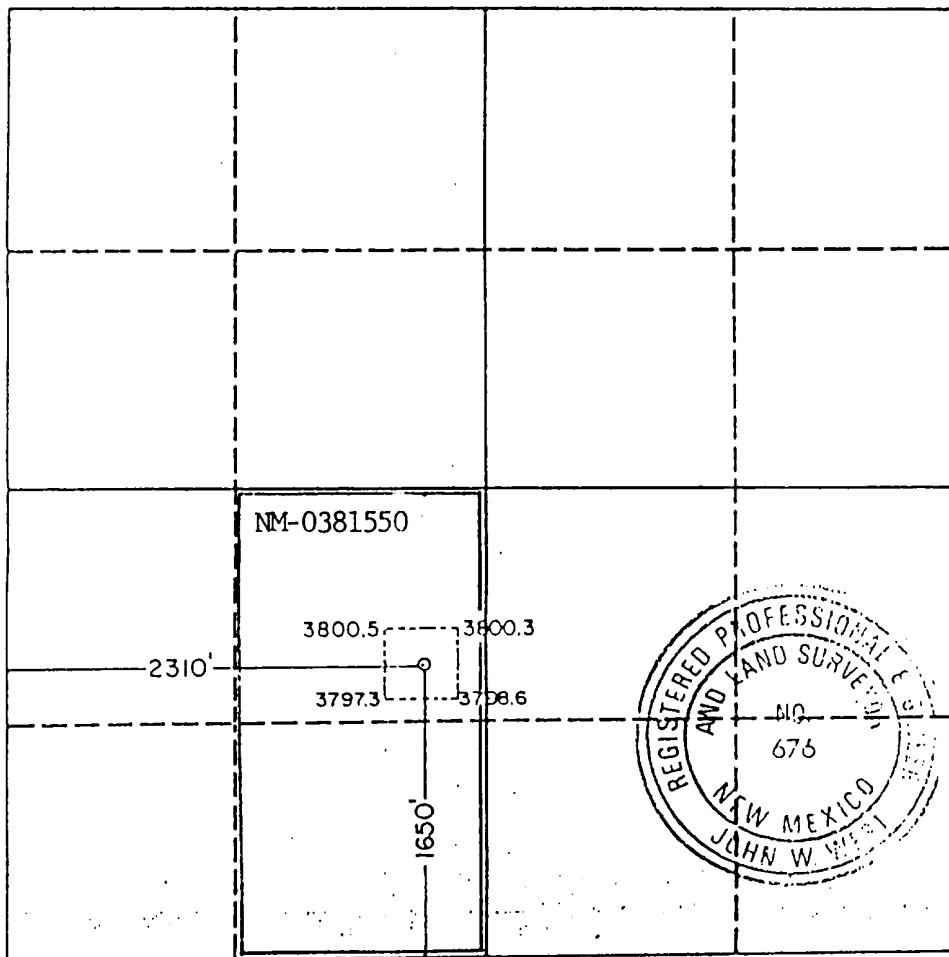
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed

February 15, 1990

Signature & Seal of Professional Surveyor

Certificate No. **JOHN W. WEST, 676**
RONALD J. EIDSON, 3239



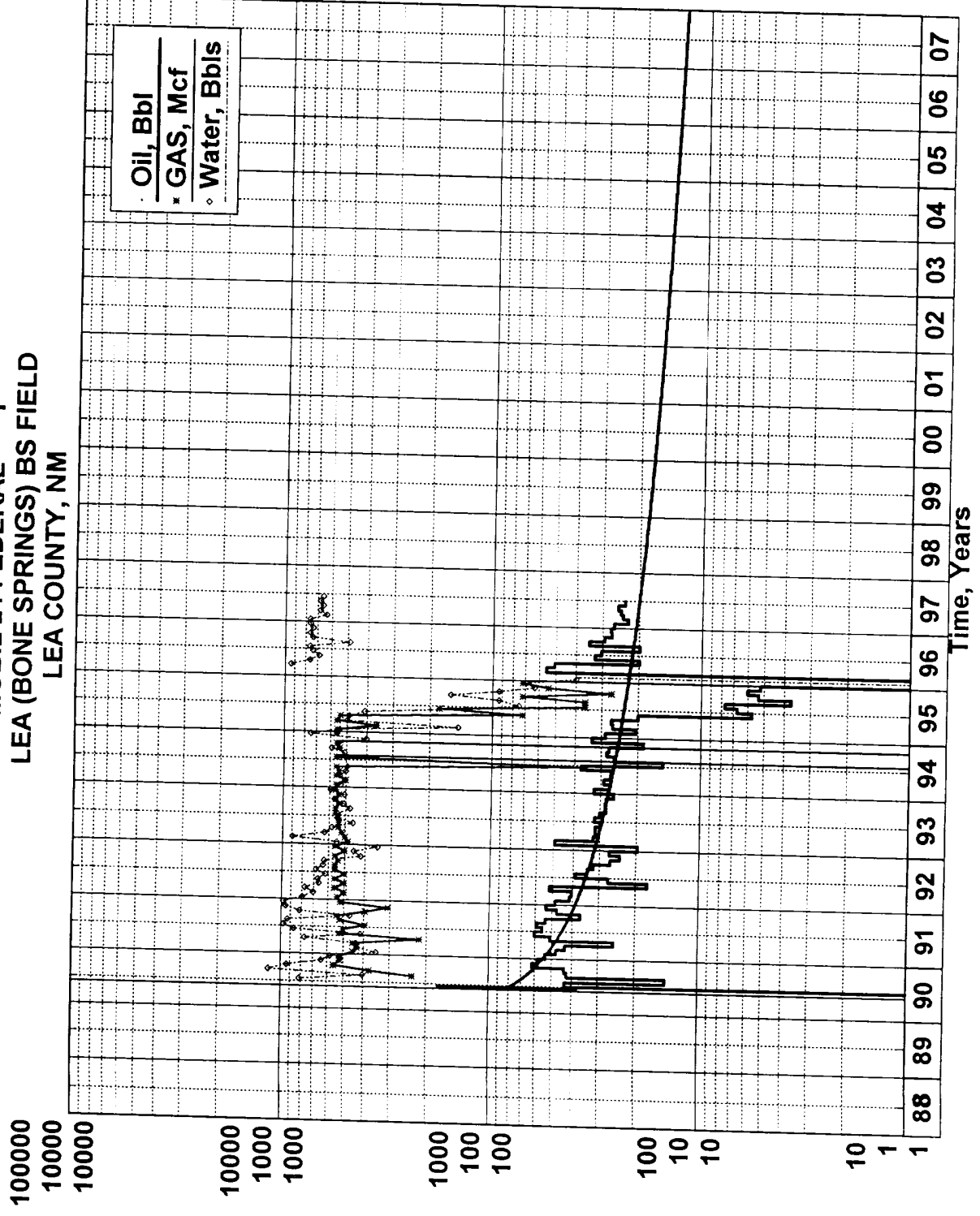
138430

MOBIL 24 FEDERAL 1
LEA (BONE SPRINGS) BS FIELD
LEA COUNTY, NM

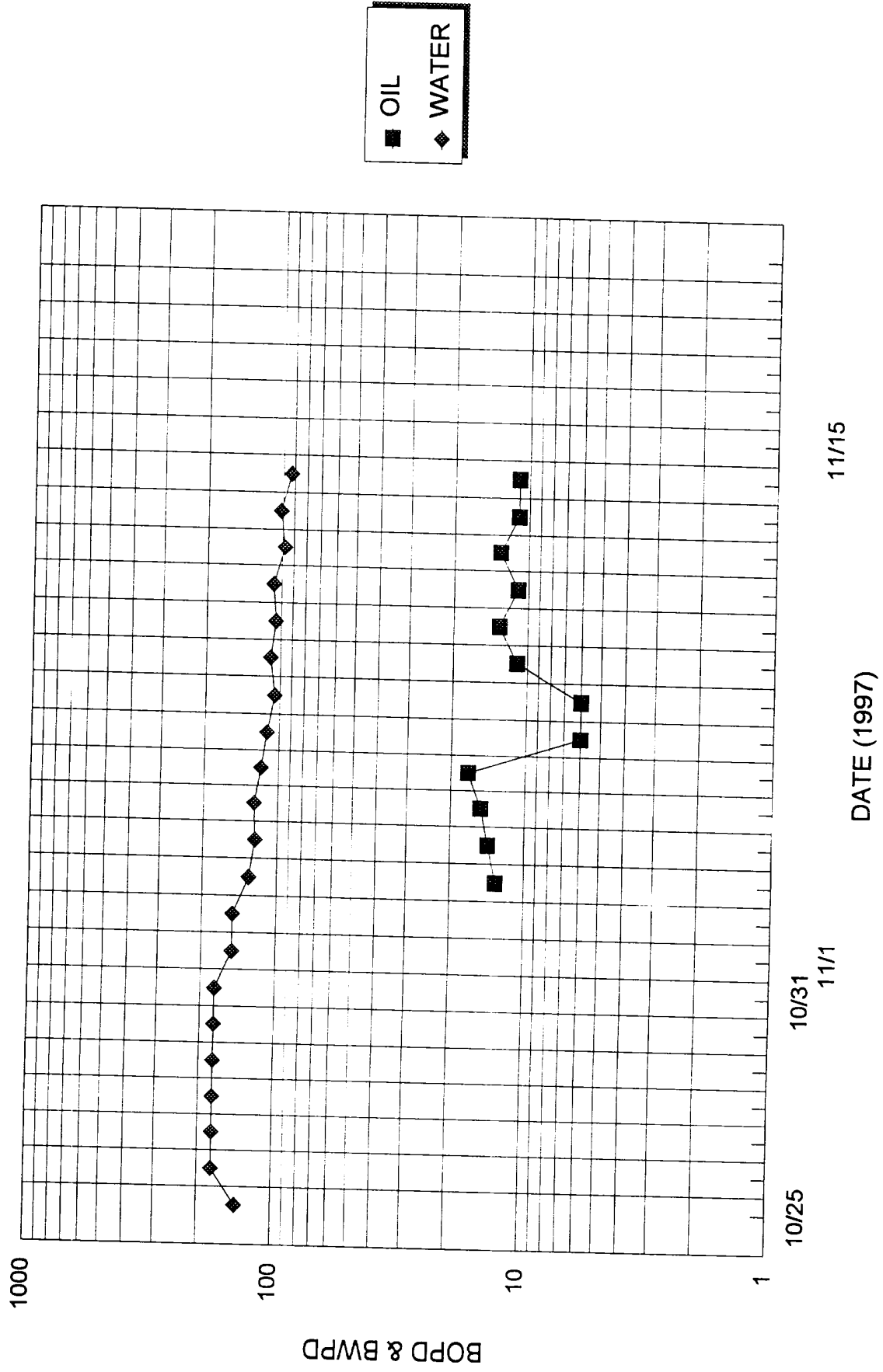
PSD	06/01/1990
Phase	OIL
Type	Hyp-200%
Decline(%)	70.0
qi	852
Cum(M) 06/1997	25.840
Remaining(M)	49.190
Ultimate(M)	49.190
OGRE Cum(M)	0.000
OGRE Ut(M)	49.190

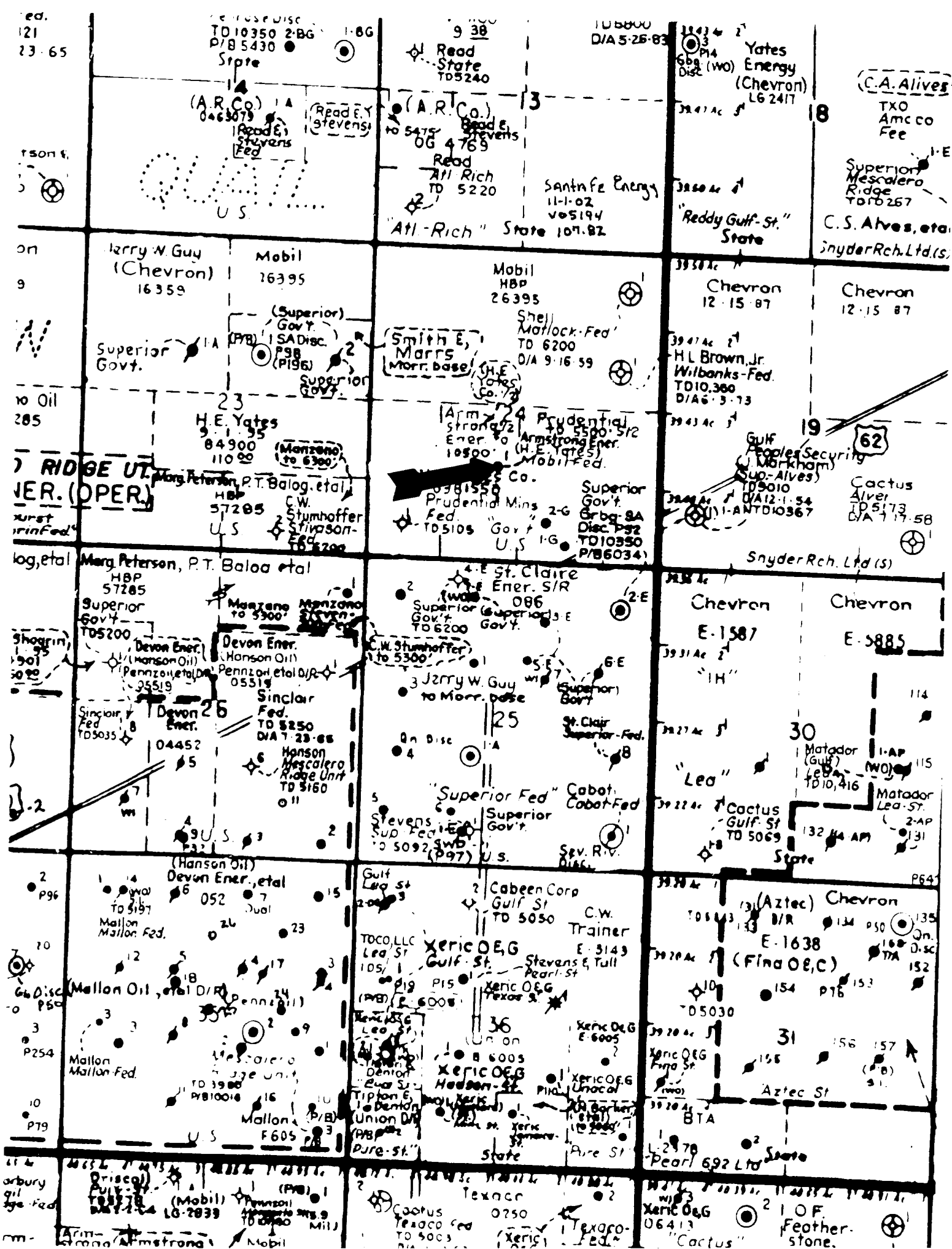
Segment	*01
Type	Hyp-
Decline(%)	70.0
qi	852
Limit	240 IMOS

Forecast	06/01/1990
Decline(%)	70.0
q	813
q actual	0
Cum(M) 05/1990	0.000
Remaining(M)	49.190
OGRE Cum(M)	0.000



MOBIL "24" #1
DELAWARE





Notification List of Offset Operators

Downhole Commingling Application

Armstrong Energy Corporation
Mobil "24" Federal #1
Section 24, T19S-R34E
Lea County, New Mexico

Guy's Oil & Gas, Ltd., Co.
P.O. Box 5115
Hobbs, New Mexico 88241-5115
Attn: Jerry Guy

St. Clair Energy Corporation
P.O. Box 1392
Midland, Texas 79702
Attn: D.W. St. Clair

Manzano Oil Corporation
P.O. Box 2107
Roswell, New Mexico 88202-2107
Attn: Ken D. Reynolds

Smith & Marrs, Inc.
P.O. Box 863
Kermit, Texas 79745
Attn: Rickey Smith

Mobil Exploration & Producing U.S. Inc.
12450 Greenpoint Drive
Houston, Texas 77060-1991
Attn: David Collins

Bureau Of Land Management Notification

Mr. Tony Ferguson
Bureau of Land Management
2909 West Second Street
Roswell, New Mexico 88201