

Sun Exploration and  
Production Company  
901 W Wall  
Post Office Box 1861  
Midland Texas 79702  
915 685 0300

July 29, 1982

State of New Mexico  
Energy and Minerals Department  
Oil Conservation Division  
P. O. Box 2088  
Santa Fe, New Mexico 87501

Attn: Michael E. Stogner

Re: Application for approval of downhole  
commingling of production in the  
Linam Hardy #1, Unit A, Sect. 29,  
T-21-S, R-37-E, Lea County, New Mexico

*Copy Osborne*  
*915-685-0335*

Dear Mr. Stogner:

Sun's Linam Hardy Com. #1 is a dually completed Blinebry gas and Tubb gas well. (Note: the Blinebry completion was named the V. Linam #3 until recently when it was renamed the Linam Hardy Com. #1 and reclassified as a gas well.) The two zones were produced separately thru two strings of 2-1/16" tubing. (See attached wellbore sketch). The upper Blinebry zone was on rod pump while the lower Tubb zone flowed. The most recent tests were as follows:

Blinebry: 2 BOPD X 1 BWPD X 130 MCFGPD (5-26-82)  
Tubb: 0 BOPD X 0 BWPD X 56 MCFGPD (5-28-82)

A recent problem that occurred has prompted Sun to seek permission for downhole commingling at this time.


Approximately four weeks ago, the wellhead on the subject well subsided about 10 inches. Upon closer inspection after digging down 5 feet around the wellhead, it was discovered that the 9-5/8" intermediate casing string had developed circumferential corrosion causing the casing to collapse. Downhole equipment including rods, pump, tubing, and packers were subsequently pulled from the well. The well is now secured and the casing has been repaired. It is Sun's intent to return the well to production. However, it is proposed to run only a single string of tubing and downhole commingle production from the Blinebry and Tubb pools. This production method should simplify our operations and ultimately reduce costs. Without downhole commingling, the Tubb zone cannot be produced economically. Also production may be increased when the hydrostatic head on the Tubb zone is reduced. No recent BHP's are available. Since the tubing and packer had to be pulled from the well, it is not possible to obtain a BHP now. (See attached data sheet for SIP's).

*what?*

*9 5/8"*

Administrative approval to downhole commingle is requested. The additional information concerning this application is attached for your consideration.

Sincerely yours,

  
Coby Osborne  
Production Engineer

CO/nc

cc: Tom Golden  
Fritz Brandes  
Julian McLean  
Deann Demp  
Well File

INFORMATION AS OUTLINED IN RULE 303-C

1. Commingling is necessary to permit the Tubb Zone to be produced which would not otherwise be economically producible.
2. There will be no crossflow between zones to be commingled.
3. Neither zone is producing from fluid-sensitive sands, thus there will be no damage from water or other produced liquids.
4. Production from the Tubb Zone is dry gas. Therefore, no problem exists concerning compatibility of fluids of the zones to be commingled.
5. Ownership of the zones to be commingled is common.
6. Recent bottom hole pressures are not available, refer to letter.

- A. OPERATOR:  
Sun Exploration and Production  
Sun Production Division  
P. O. Box 1861  
Midland, Texas 79702
- B. LEASE:  
Linam Hardy Com #1  
Unit A, Sec. 29, T-21-S, R-37-E  
Lea County, New Mexico
- C. Well is completed in the Blinebry and Tubb as a dual completion as per Order No. DC-411.
- D. The most recent productivity tests of the Blinebry and Tubb Zones are referenced in the letter.
- E. Production decline curves for both the Blinebry and Tubb Zones are attached.
- F. BOTTOM HOLE PRESSURE DATA:  
No recent BHP's are available, only surface SIP's  
Blinebry: SIP 675 psi (5-26-80)  
Tubb: SIP 465 psi (5-26-80)
- G. FLUID CHARACTERISTICS:  
There is no evidence of fluid incompatibility. The Blinebry Zone produces oil and gas whereas the Tubb Zone produces only dry gas.
- H. VALUE OF COMMINGLED FLUIDS:  
There will be no loss in value of the produced fluids due to commingling.
- I. ALLOCATION FORMULAS:  

$$X = \frac{Y}{Z} (100)$$
Where X = percent allocation of commingled production to desired zone  
Y = Latest daily gas rate of desired zone, MCFPD  
Z = Total combined Blinebry and Tubb daily gas rate, MCFPD
- Blinebry:  $X = \frac{130}{(130 + 56)} (100)$   
= 69.9%
- Tubb:  $X = \frac{56}{(130 + 56)} (100)$   
= 30.1%
- J. All offset operators have been notified by a copy of this application.
- |   |  |
|---|--|
| 1) Arco Oil and Gas Company<br>P. O. Box 1610<br>Midland, Texas 79702 | 4) Gulf Oil Exploration and Production Co.<br>P. O. Box 670<br>Hobbs, New Mexico 88240 |
| 2) Conoco, Inc.<br>P. O. Box 460<br>Hobbs, New Mexico 88240           | 5) Marathon Oil Company<br>P. O. Box 552<br>Midland, Texas 79701                       |
| 3) Getty Oil Company<br>P. O. Box 1231<br>Midland, Texas 79701        | 6) Mobil Producing Company<br>P. O. Box 633<br>Midland, Texas 79701                    |



V. LINAM #3

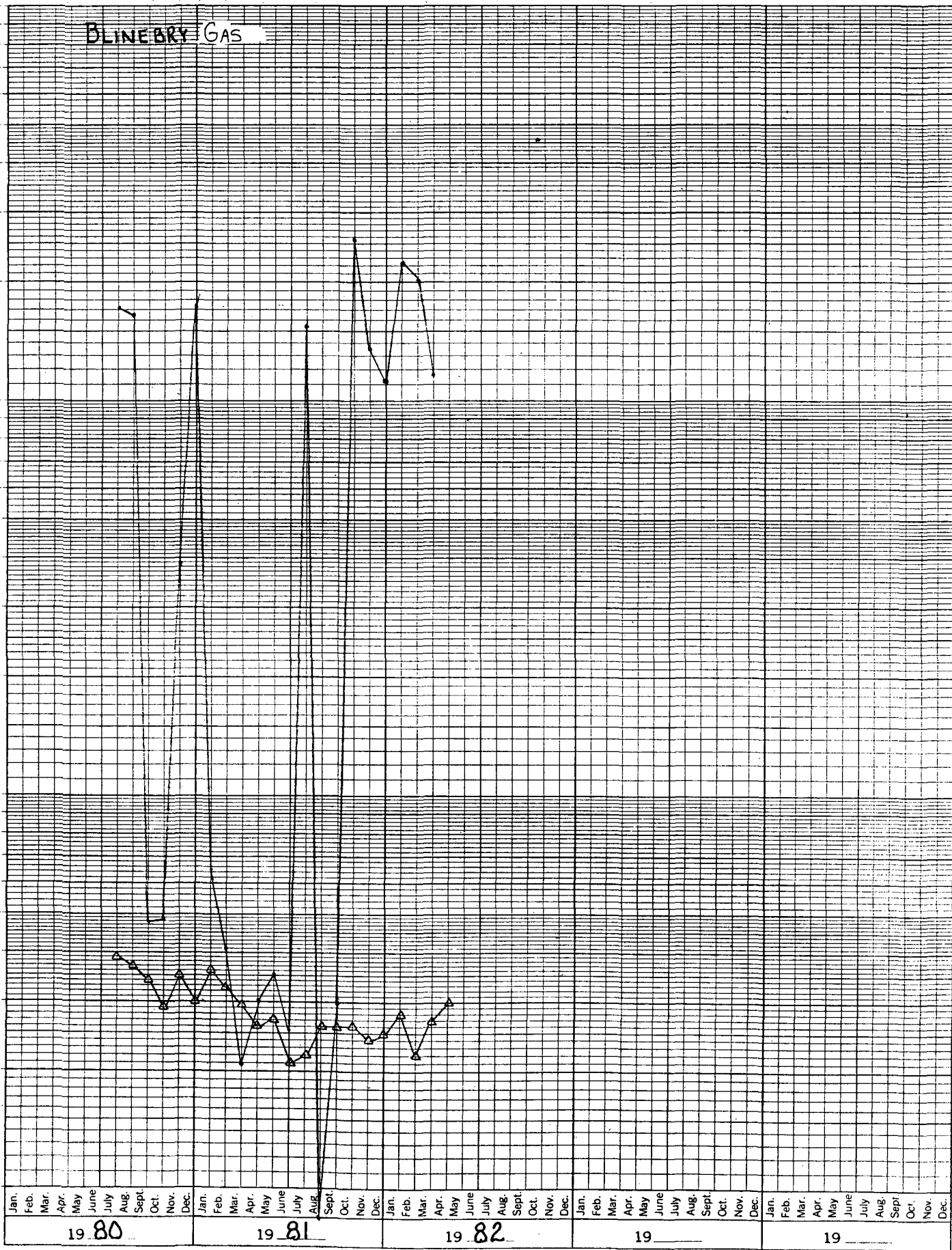
BLINEBRY GAS

46 6690

MCF/D

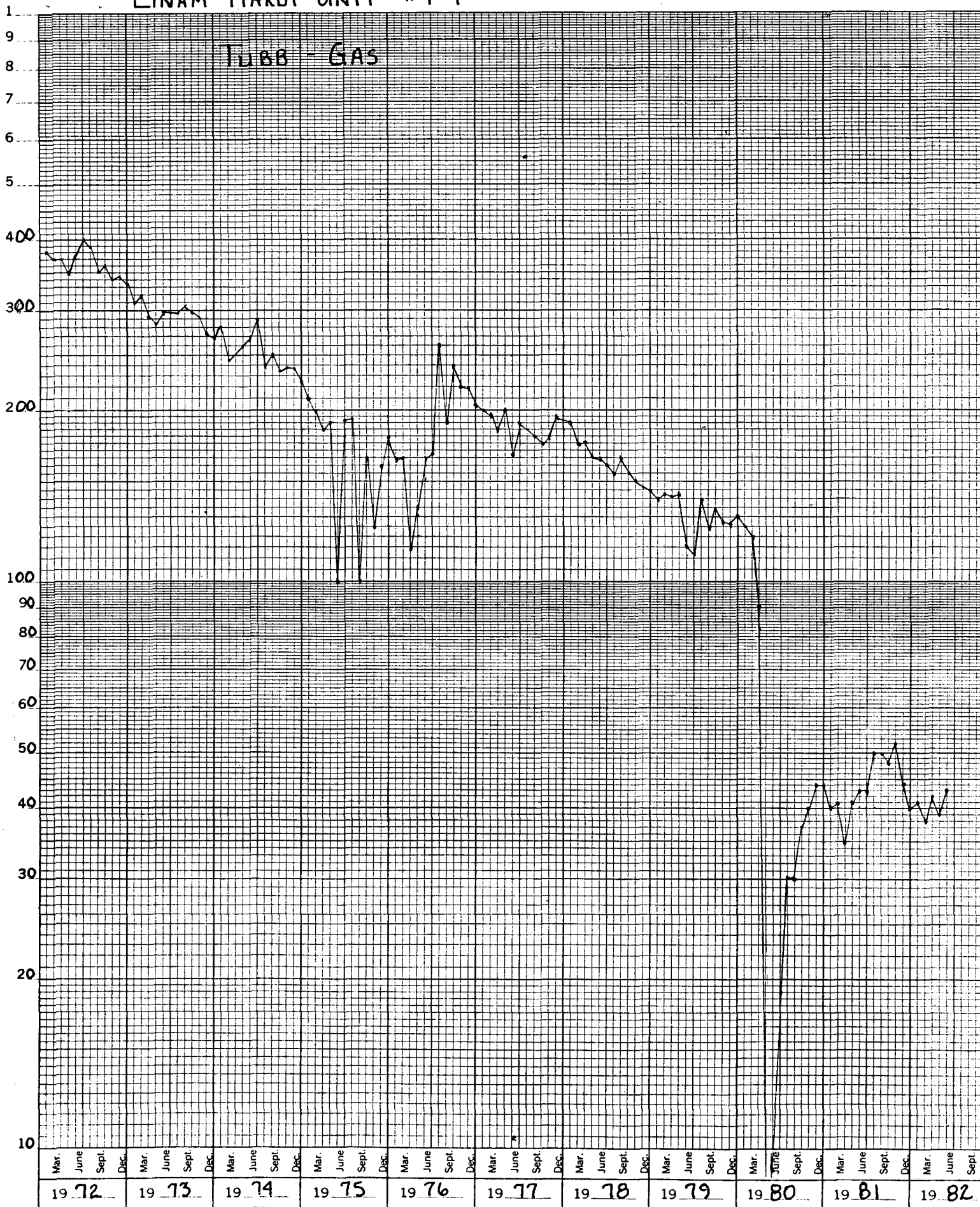
KEUFFEL & ESSER CO. MADE IN U.S.A.

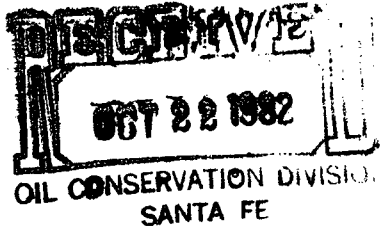
BOPD



# LINAM-HARDY UNIT #1-T

TUBB - GAS





Sun Production Division  
Southwestern District

Sun Exploration and  
Production Company  
901 W Wall  
Post Office Box 1861  
Midland Texas 79702  
915 685 0300

October 19, 1982

State of New Mexico  
Energy and Minerals Dept.  
Oil Conservation Division  
P. O. Box 2088  
Santa Fe, New Mexico 87501

Attn: Michael E. Stogner

Re: Application for approval of  
downhole commingling of production  
in the Linam Hardy #1, Unit A,  
Sect. 29, T-21-S, R-37-E  
Lea County, New Mexico

Dear Mr. Stogner:

In reference to our conversation on Oct. 18, 1982 concerning Rule 303-C (b) (1) information for our Linam Hardy #1 well, Sun does not believe production from the Tubb can be economically justified if downhole commingling is not permitted. To restore the Tubb to production without downhole commingling Sun would have to run a new 2-1/16" tubing string in the well. The 2-1/16" string previously pulled from the well is not considered reusable. The cost to replace the string would be \$25,955. With production from the Tubb being only 56 MCFGPD at \$0.45/MCF, a total daily income before operating expenses is \$25.20. Payout of the tubing replacement at this income rate would be 2.8 years. Sun does not feel the Tubb production can justify the tubing replacement expense. Therefore, Sun proposes to run a single string of 2-3/8" tubing and pump the downhole commingled Blinbry and Tubb zones.

Coby Osborne  
Coby Osborne  
Production Engineer

CO/nc

cc: Tom Golden  
Tom Fox  
Fritz Brandes  
Julian McLean  
Well file

WELL COMPLETION SKETCHES  
SUN-6641-A

V. LINAM #3 / LINAM HARDY UNIT #1  
WELL

7-6-78

DATE

SAG

FIELD

EL: 3488-KB  
3487-DP  
3471-GL



PRESENT COMPLETION



SUGGESTED COMPLETION



ORIGINAL COMP.

WELL CLASS

PERMANENT WELL BORE DATA

17 1/4" hole  
13 3/8", 72# N-80 @ 315' w/ 300 sy cmc  
12" hole  
5 1/2" CUT OFF + CSA BOWL TIE-  
BACK @ 387'  
9 5/8", 32# H-40 @ 2850' w/ 2000 sy cmc  
7 1/8" hole  
TOC: 5 1/2" hole 3350' BY T.O.

BLINERAT PORES: 3SPF

5600'-50'

5656, 62, 69, 5701, 04, 07, 10  
57, 85, 5818, 42, 43, 58, 77  
79, 5902, 15, 36, 57

TUBS PORES: 4SPF

6150-75, 6193-6230, 248 holes

PBTD 6965'

CINPE 6975' w/ 10' cmc down

WANTZ-ABD PORES:

7210-58, 6SPF, 288 holes

PBTD-7338'

5 1/2", 15.5 x 17" J-55 @ 7382' w/ 500 sy

PBTD-7725' (50 sy pore)  
TD-7941' (7725-7940)

DATA ON THIS COMPLETION

LONG STRING: LHGU #1  
SHORT STRING: V. LINAM #3

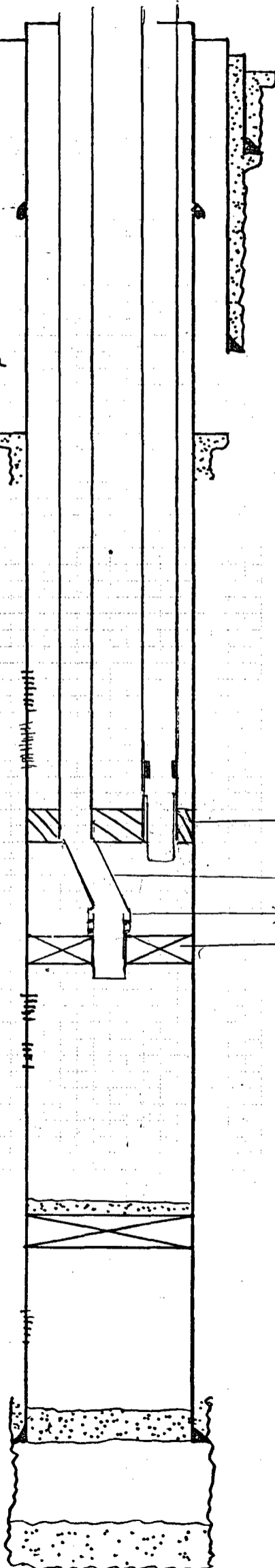
UT & LT: 2 1/16" STRINGS

PARALLEL ANCHOR 6008'

2 JT (34') 2 1/16" TBG

OS7SD

OTIS PERMALACH PAK  
@ 6052'



OIL CONSERVATION DIVISION  
DISTRICT I

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

DATE August 13, 1982

RE: Proposed MC \_\_\_\_\_  
Proposed DHC X \_\_\_\_\_  
Proposed NSL \_\_\_\_\_  
Proposed NSP \_\_\_\_\_  
Proposed SWD \_\_\_\_\_  
Proposed WFX \_\_\_\_\_  
Proposed PMX \_\_\_\_\_

Gentlemen:

I have examined the application for the:

<u>Sun Exploration &amp; Prod. Co.</u>	<u>Linam Hardy</u>	<u>No. 1-A</u>	<u>29-21-37</u>
Operator	Lease and Well No.	Unit, S - T - R	

and my recommendations are as follows:

O.K.----J.S.

\_\_\_\_\_

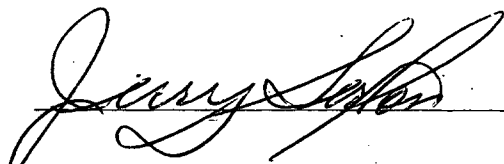
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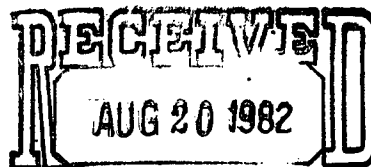
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\_\_\_\_\_

Yours very truly,



/mc



OIL CONSERVATION DIVISION  
SANTA FE