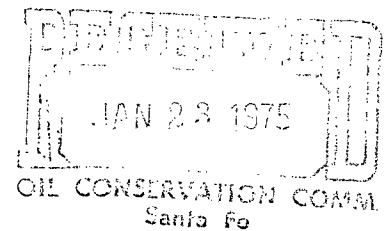


SHELL OIL COMPANY

PETROLEUM BUILDING
P.O. BOX 1509
MIDLAND, TEXAS 79701

DHC-153-
Due - 2/11/75



January 17, 1975

Subject: Application for Downhole Commingling
for State Section 2 Lease Well No. 7,
Unit Letter V, Located 660' FNL &
1980' FWL, Section 2, T-21-S, R-37-E,
Lea County, New Mexico

New Mexico Oil Conservation Commission (3)
P. O. Box 2088
Santa Fe, New Mexico 87501

Attention Mr. J. E. Kapteina

Gentlemen:

Shell Oil Company respectfully requests administrative approval for downhole commingling for State Section 2 Well No. 7 in the Blinebry and Drinkard Pools according to Rule 303, C. The subject well is presently producing eight barrels of oil per day (at or near the economical limit for this well) from the Drinkard Pool. The Blinebry (Upper Zone) Pool presently is being produced by State Section 2 Well No. 20 located in Unit Letter V, 990' FSL & 2300' FWL, Section ~~20~~, T-21-S, R-37-E, (460' northeast of the subject well on the same 40-acre unit) and is producing approximately 13 barrels of oil per day. Both wells are classified as oil wells as required by Rule 303, C, 1 (a). It is believed that upon commingling downhole, the subject well will not exceed the maximum total daily production (40 barrels of oil per day for lowermost pool 6800-6999') as required by Rule 303, C, 1, (b).

Pertaining to Rule 303, C, 1, (c), the Drinkard Zone is presently being pumped, and the Blinebry is flowing. It is proposed to install a packer, check valve and side door choke above the Drinkard Zone and utilize the Blinebry gas to gas lift the Drinkard according to the attached down-hole drawing. The check valve will eliminate crossflow of the Blinebry into the Drinkard Zone. This mechanical arrangement [presently in service in Shell's Livingston No. 8 (Commission Order No. DHC-104) and No. 10 (Commission Order DHC-68) respectively located Unit Letter N. Section 3, and Unit Letter P Section 4] will allow the Drinkard to be produced without pumping equipment. This will allow the Drinkard to be produced to a much lower limit, thereby increasing recoverable oil and also will allow the pumping equipment to be more effectively used in another location.

Presently State Section 2 Well No. 20 (Blinebry) produces approximately one-half (1/2) barrel of water per day, and No. 7 (Drinkard) produces

one-third (1/3) barrel of water per day. Upon commingling the pools, it is believed that the two zones will continue to produce similar amounts of water being in the limits of Rule 303, C, 1, (d).

The fluids from each zone are compatible with the fluids from the other as indicated by other wells being produced by this manner in this field. Shell's Livingston No. 8 is commingled downhole (Order No. DHC-104) located (Unit Letter N, 2970' FSL & 2308' FWL, Section 3, T-21-S, R-37-E, Lea County, New Mexico) approximately one mile from the subject well, thereby complying with Rule 303, C, 1, (e).

The total value of the crude will remain the same because the crude is presently being commingled in the surface facilities by Order R-2100, complying with Rule 303, C, 1, (f).

The ownership of the two zones to be commingled is common to comply with Rule 303, C, 1, (g).


The two zones are not in a secondary recovery operation and will not jeopardize the efficiency of a future secondary operation in either zone, complying with Rule 303, C, 1, (h).

Attached are data and forms to comply with Rule 303, C, 2.

With the Oil Conservation Commission's approval and success of this venture, there are three (Drinkard) forty-acre (40) units (Unit Letters K, N and S) north of the subject well that have in the past indicated to be non-commercial production. It is believed that these can be made economical producers by this method. Therefore, this operation may lead to increased recoverable oil other than under the subject location.

In view of the above, Shell Oil Company is respectfully requesting administrative approval of downhole commingling of the Blinebry and Drinkard Pools in their State Section 2 Lease Well No. 7. The offset operators to this lease have been notified by a copy of this application.

Yours very truly,


For: Jack L. Mahaffey
Division Production Manager
Mid-Continent Division

BWB:DCW

Attachments

cc - Offset Operators

New Mexico Oil Conservation Commission
P. O. Box 1980
Hobbs, New Mexico 88240

OFFSET OPERATORS

State Section 2 No. 7

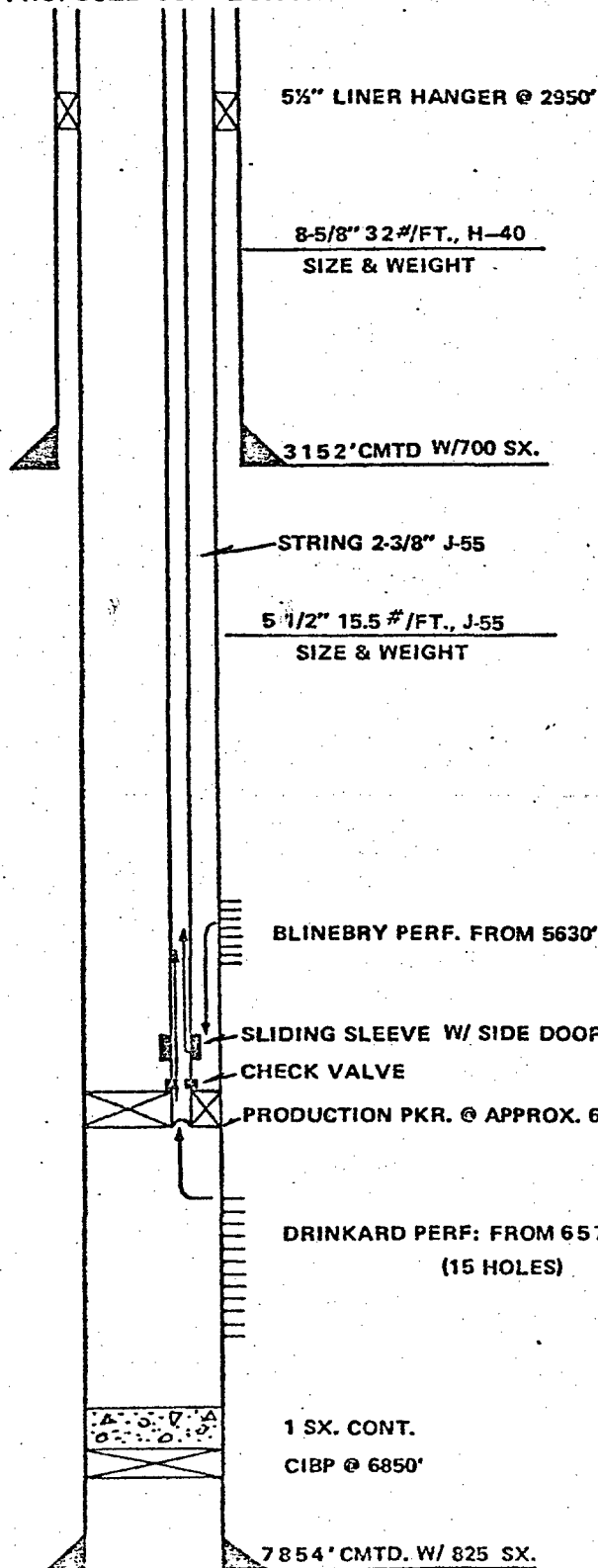
Continental Oil Company
Box 460
Hobbs, New Mexico 88240

Aztec Oil & Gas Company
Box 337
Hobbs, New Mexico 88240

Gulf Oil Company - U. S.
Box 670
Hobbs, New Mexico 88240

SHELL OIL COMPANY
DOWN-HOLE COMMINGLING BLINEBRY & DRINKARD POOLS
STATE SEC. 2 WELL NO. 7
660' FNL & 1980' FWL, SEC. 2, T-21-S, R-37-E
LEA COUNTY, NEW MEXICO

DOWN HOLE DRAWING
OF PROPOSED COMPLETION



ELEVATION 3473'
TD 7854'

PERF: BLINEBRY : 5630' TO 6105'
AS REQUIRED

DRINKARD: 6577', 6591', 6611', 6617', 6627',
6648', 6655', 6662', 6671', 6684',
6700', 6706', 6714', 6729', 6735',
(15 HOLES)

CSG: 8-5/8" CEMENT TO SURFACE
5-1/2" CALCULATED CEMENT TOP
AT 3100'

BLINEBRY PERF. FROM 5630' TO 6105' PROPOSED ZONE

SLIDING SLEEVE W/ SIDE DOOR CHOKE

CHECK VALVE

PRODUCTION PKR. @ APPROX. 6550'

DRINKARD PERF: FROM 6577 TO 6735
(15 HOLES)

1 SX. CONT.
CIBP @ 6850'

7854' CMTD. W/ 825 SX.

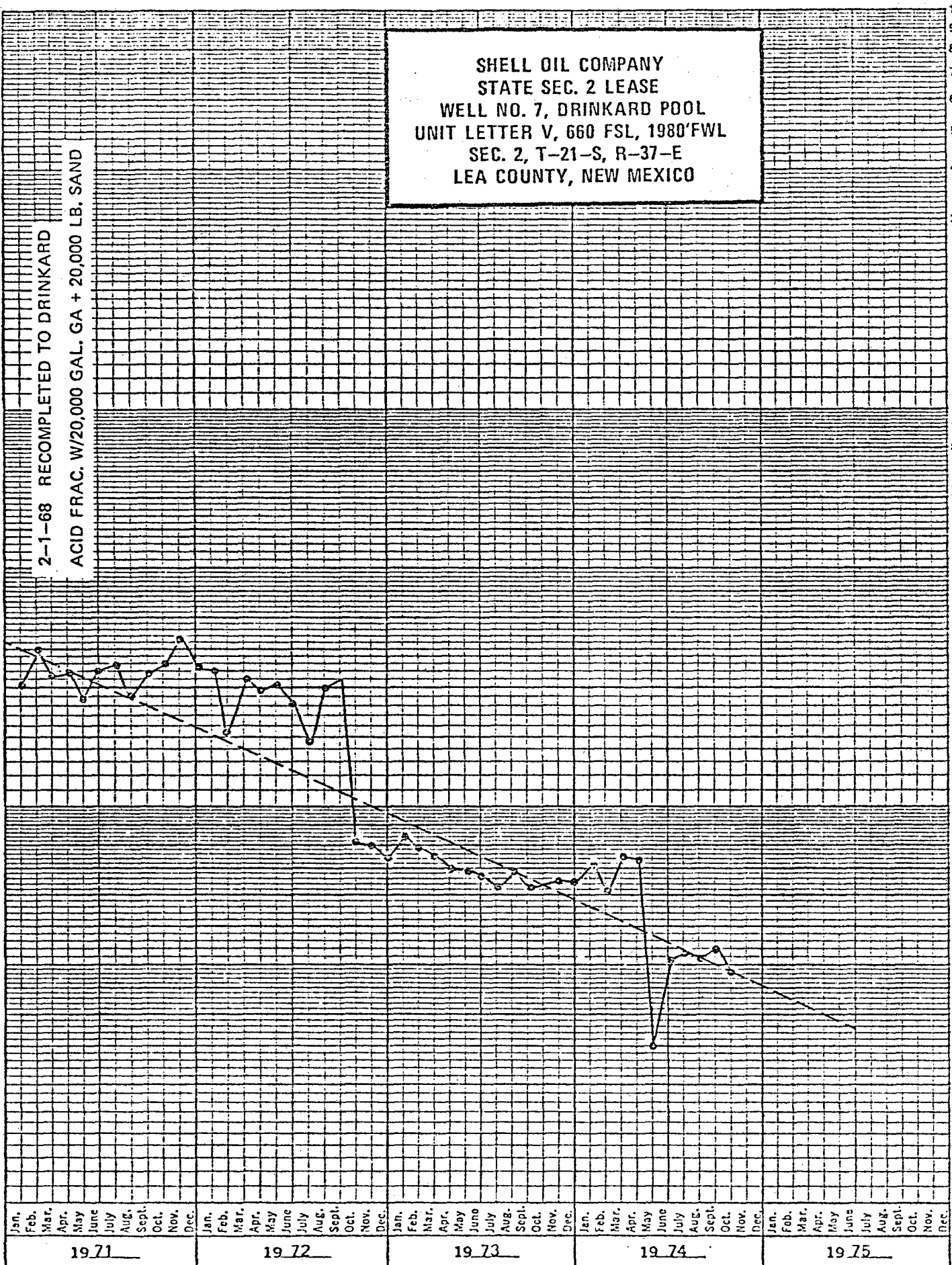
SHELL OIL COMPANY
STATE SEC. 2 LEASE
WELL NO. 7, DRINKARD POOL
UNIT LETTER V, 660 FSL, 1980'FWL
SEC. 2, T-21-S, R-37-E
LEA COUNTY, NEW MEXICO

2-1-68 RECOMPLETED TO DRINKARD
ACID FRAC. W/20,000 GAL. GA + 20,000 LB. SAND

BOPM

1000

100



SHELL OIL COMPANY
STATE SEC. 2 LEASE
WELL NO. 20, BLINEBRY POOL
UNIT LETTER V, 990' FSL
2300' FWL, SEC. 2 T-21-S, R-37-E
LEA COUNTY, NEW MEXICO

BOPM

4-23-58 FRAC. W/50,000 GAL. L.C. + 50,000 LB. SAND
1-13-59 CLEAN OUT FRAC. SAND

5-1-74 OAP + ACID W/7,600 GAL.

1000

100

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
19 71												19 72												19 73												19 74												19 75											

**NEW MEXICO OIL CONSERVATION COMMISSION
GAS-OIL RATIO TESTS**

C-116
Revised 1-1-65

Operator Shell Oil Company		Pool Blinebry Oil		County Lea											
Address P. O. Box 1509, Midland, Texas 79701				Type of Test - (X) <input checked="" type="checkbox"/> TEST - (X)											
				Scheduled <input type="checkbox"/> Special <input checked="" type="checkbox"/>											
LEASE NAME State Sec. 2	WELL NO. 20	LOCATION			DATE OF TEST 12-28-74	STATUS PI	CHOKE SIZE 32	TBG. PRESS. 200	DAILY ALLOW-ABLE 11	LENGTH OF TEST HOURS 24	Completion <input type="checkbox"/> Special <input checked="" type="checkbox"/>				
		U	S	T							R	WATER BBLs.	PROD. DURING TEST GRAV. OIL BBLs.	GAS M.C.F.	GAS - OIL RATIO CU.FT./BBL.
		V	2	21	37						1/2	35.6	13	390	30,000

No well will be assigned an allowable greater than the amount of oil produced on the official test.


During gas-oil ratio test, each well shall be produced at a rate not exceeding the top unit allowable for the pool in which well is located by more than 25 percent. Operator is encouraged to take advantage of this 25 percent tolerance in order that well can be assigned increased allowables when authorized by the Commission.

Gas volumes must be reported in MCF measured at a pressure base of 15.025 psia and a temperature of 60° F. Specific gravity base will be 0.60.

Report casing pressure in lieu of tubing pressure for any well producing through casing.

Mail original and one copy of this report to the district office of the New Mexico Oil Conservation Commission in accordance with Rule 301 and appropriate pool rules.

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


N. W. Harrison (Signature)
 Staff Production Engineer
 1-17-75
 (Date)

**NEW MEXICO OIL CONSERVATION COMMISSION
GAS-OIL RATIO TESTS**

C-116
Revised 1-1-65

Operator Shell Oil Company		Pool Drinkard		County Lea											
Address P. O. Box 1509, Midland, Texas 79701				TYPE OF TEST - (X) <input type="checkbox"/> Scheduled <input type="checkbox"/> Completion <input type="checkbox"/> Special <input checked="" type="checkbox"/>											
LEASE NAME	WELL NO.	LOCATION				DATE OF TEST	CHOKE SIZE	TBG. PRESS.	DAILY ALLOW-ABLE	LENGTH OF TEST HOURS	PROD. DURING TEST			GAS - OIL RATIO CU.FT./BBL	
		U	S	T	R						WATER BBLs.	GRAV. OIL BBLs.	GAS M.C.F.		
State Sec. 2	7	V	2	21	37	12-20-74	P	-	6	24	0	36.5	8	53	6,625

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Mail original and one copy of this report to the district office of the New Mexico Oil Conservation Commission in accordance with Rule 301 and appropriate pool rules.

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

N. W. Harrison
N. W. Harrison (Signature)
 Staff Production Engineer

1-17-75

(Date)

SHELL OIL COMPANY
Subsurface Pressure Survey

Producing Formation Blimeberry
Elevation (CHF, DF, KB, etc.) 3467 (CHF)
Datum - 2250 subsea, or 5717 (CHF)
Tubing Construction at SN 5833
Production Packer at —
Perforations —

Company Shell Oil Co
Lease State Sec 2 Well No. 20
Field DR. D. K. H. P. D. State W. M. O. I. A. D.
Test Date 12/16/19-74

Instrument Data

Company Running Survey
Element - Range & No.
Clock - Range & No.
Calibration Date

Shell unit #1922
2600# 21035
72 hr - 19906
5-20-74

Static Pressure Data

Pressure at Datum @) * 454 psig
Shut-in Time) 72 hrs
 P_i at Datum — psig
Shut-in Tubing Pressure 328 psig
Shut-in Casing Pressure 380 psig
Top of Oil 5460
Top of Water —
Temperature at 5700 feet 99 °F
Date of Last Test Unknown
Pressure @ Datum, Last Test — psig
Shut-in Time, Last Test —

Flow Test Data

Choke Size 2 3/64 in
Period of Stabilized Flow 72 hrs
Stabilized Production (q)
Oil 3 bbls/day
Gas 221 MCF/day
Water 10 bbls/day
Flowing Tubing Pressure 163 psig
Flowing Casing Pressure 400 psig
Cumulative Production (Q)
Oil — bbls
Gas — MCF
Water — bbls
Effect. Prod. Life, $t = 24 Q/q$ — hrs

Remarks:

Well plunger lift
1 hr down Flow 1 hr before
SI.

Operator

L. K. Baswell

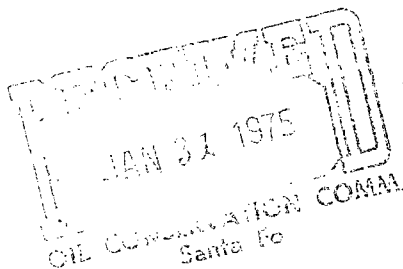
Depth D	Time	Press., P, psig	ΔP	Static Test		
				ΔD	Gradient	
0		328				
2000		355	27	2000	1.35	
4200		381	26	2200	1.18	
5500		394	13	1300	1.00	
5700		448	54	200	2.7	
5800		485	37	100	3.7	
Time	Press. @ 5700 ft	Build-up Test		Tubing Press.	Casing Press.	Height of Fluid
		Δt hrs	$\frac{t}{\Delta t} + 1$			
	388	0		163	400	
	405	33				
	410	44				
	404	1				
	398	15				
	401	2				
	404	3				
	408	4				
	411	5				
	413	6				
	417	9				
	422	12				
	429	12				
	435	24				
	438	30				
	441	36				
	446	42				
	445	48				
	447	54				
	448	60				
	448	66				
	448	70		328	380	

OIL CONSERVATION COMMISSION
Hobbs DISTRICT

OIL CONSERVATION COMMISSION
BOX 2088
SANTA FE, NEW MEXICO

DATE January 28, 1975

RE: Proposed MC _____
Proposed DHC _____ X
Proposed NSL _____
Proposed SWD _____
Proposed WFX _____
Proposed PMX _____



Gentlemen:

I have examined the application dated _____
for the Shell Oil Co. State Sec. 2 #7-V 2-21-37
Operator Lease and Well No. Unit, S-T-R

and my recommendations are as follows:

O.K.---J.D.R.

Yours very truly,