

Called A.J. Fore
8/4/83 @ 2:41 P.

Informed him that the
pressure differences
between both zones
was too great. He
said they hadn't been
adjusted to a common
datum. He will resubmit the
calculated pressures.

(JAF)

Shell Oil Company

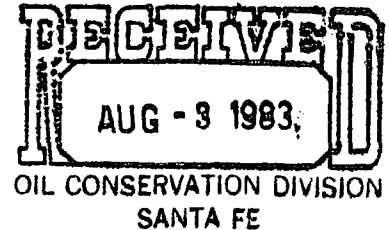


713 - 870-3787

July 29, 1983

P.O. Box 991
Houston, Texas 77001

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



Gentlemen:

SUBJECT: APPLICATION TO DOWNHOLE COMMINGLE
SHELL - TURNER NO. 8
1740' FSL AND 350' FWL, UNIT LETTER "L"
SECTION 22, T-21-S, R-37-E
DRINKARD POOL
LEA COUNTY, NEW MEXICO

Shell Oil Company respectfully requests administrative approval under the provisions of Rule 303-C, to commingle within the wellbore, production from the Drinkard and Hare Simpson Pools in the subject well. Turner No. 8 was drilled as a Hare Simpson producer in 1950 and re-completed to the Drinkard in 1964. With the indicated marginal production, installation of dual equipment cannot be justified. In the interest of conservation and prevention of waste, we now propose to downhole commingle the production from the Hare Simpson and Drinkard Pools in the subject well.

This well qualifies for administrative approval in accordance with Statewide Rule 303, Paragraph C; and in support thereof, the following facts are submitted:

1. The attached plat shows the Turner lease.
2. The latest tests are as follows:

 Drinkard: (5-03-83) 6 B0 + 1 BW + 163 MCFG

 Hare Simpson: (7-21-83) 8 B0 + 12 BW + 27 MCFG
3. Neither zone produces more water than the combined oil limit as determined in Rule 303, Paragraph C, (d).
4. Shell Oil Company has commingled these fluids at the surface and has encountered no incompatibility problems; therefore, no reservoir damage will result from downhole commingling.
5. Surface commingling resulted in no reduction of oil value; therefore, downhole commingling will not reduce oil value. (PC-180, 2-11-74)
6. The ownership of both zones to be commingled is common.

7. A resume of the well's completion history is attached.
8. The bottom hole pressures are:
Drinkard: 114.2 psig
Hare Simpson: 424.1 psig
 We do not anticipate cross flow of fluids since the well will be maintained at pumped off conditions.
9. Commingling will not jeopardize the efficiency of future secondary operations in either zone.
10. Copies of this application have been furnished to all offset operators by certified mail.
11. Recommended oil and gas allotments would be as follows:

<u>Drinkard</u>		<u>Hare Simpson</u>
36%	Oil	64%
86%	Gas	14%

Other supporting data attached are C-116 for each zone and a schematic of the present and proposed downhole configuration.

If additional information is required, please advise.

Yours very truly,



A. J. Fore
 Supervisor Regulatory and Permitting
 Mid-Continent Division

DMU

Attachments

cc: State of New Mexico
 Energy and Minerals Department
 Oil Conservation Division
 P. O. Box 1980
 Hobbs, New Mexico 88240

Welton D. Moore
 New Mexico Production Unit

COMPLETION HISTORY

SHELL - TURNER NO. 8

12-18-49 to 1-24-50: Drilled to Total Depth of 7885'.
2-06-50: Opened and tested McKee zone 7696' to 7880'.
3-29-55: Opened additional pay in McKee zone 7724' to 7828'.
1-28-64: Set CIBP @ 7600' and capped w/1 sx cement. Re-completed from McKee to Drinkard interval. Perforated Drinkard 6489' to 6647'.
2-15-72: Opened additional pay in Drinkard zone 6423' to 6647'.
12-04-82: Drinkard - 5 B0 + 1 BW + 228 MCFG.

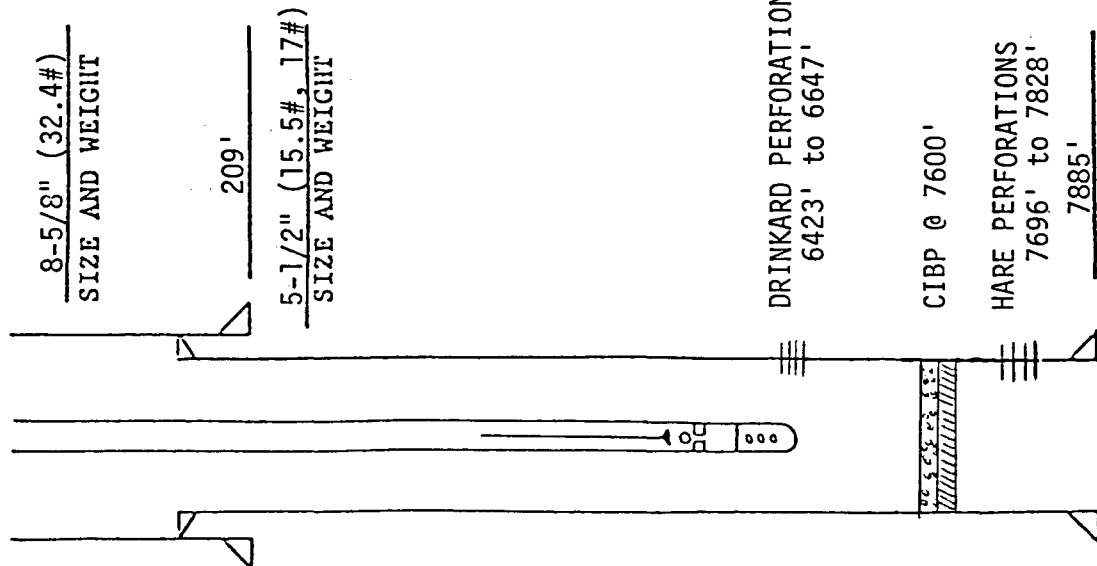
MECHANICAL CONFIGURATION

WELL SHELL - TURNER NO. 8

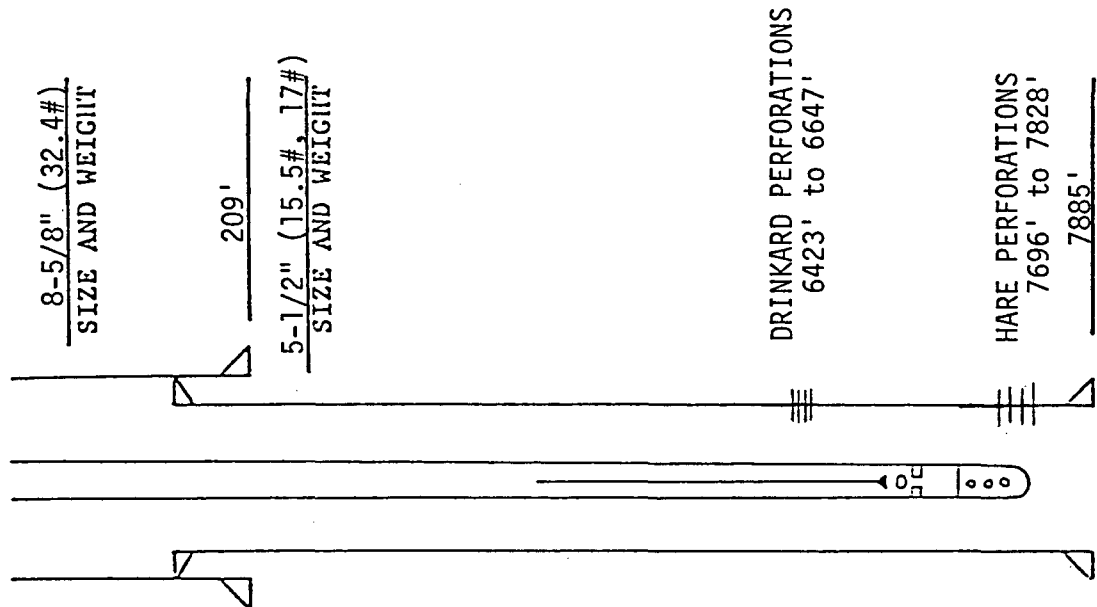
FIELD DRINKARD

DATE MAY, 1983

PRESENT



PROPOSED



GAS-OIL RATIO TESTS

SHELL OIL COMPANY		Pool DRINKARD - HARE SIMPSON		County LEA															
P.O. BOX 576 HOUSTON TX 77001		TYPE OF TEST - (X)		Completion ☐ Special ☒															
LEASE NAME	WELL NO.	LOCATION			DATE OF TEST	CHOKE SIZE	TBG. PRESS.	DAILY ALLOWABLE	LENGTH OF TEST HOURS	PROD. DURING TEST			GAS - OIL RATIO CU.FT./BB						
		U	S	T						A	WATER DBLS.	GRAV. OIL		OIL DBLS.	GAS M.C.F.				
TURNER	8	L	22	21	37	7-21-83 P	40	6 BOPD HARE-SIMPSON 649% 100%	24	38.6	14	190	13571						
														DRINKARD	36%	8 BOPD			
																	HARE-SIMPSON	649%	8 BOPD
HARE-SIMPSON	14%	27 MCF																	
			DRINKARD	100%	14 BOPD														
HARE-SIMPSON	100%	190 MCF																	

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 allowable when authorized by the Division.

Gas volumes must be reported in MCF measured at a pressure base of 15.023 psia and a temperature of 60° F. Specific gravity base will be 0.55.

Report casing pressure in flow 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 Division in accordance with Rule 351 and appropriate pool rules.

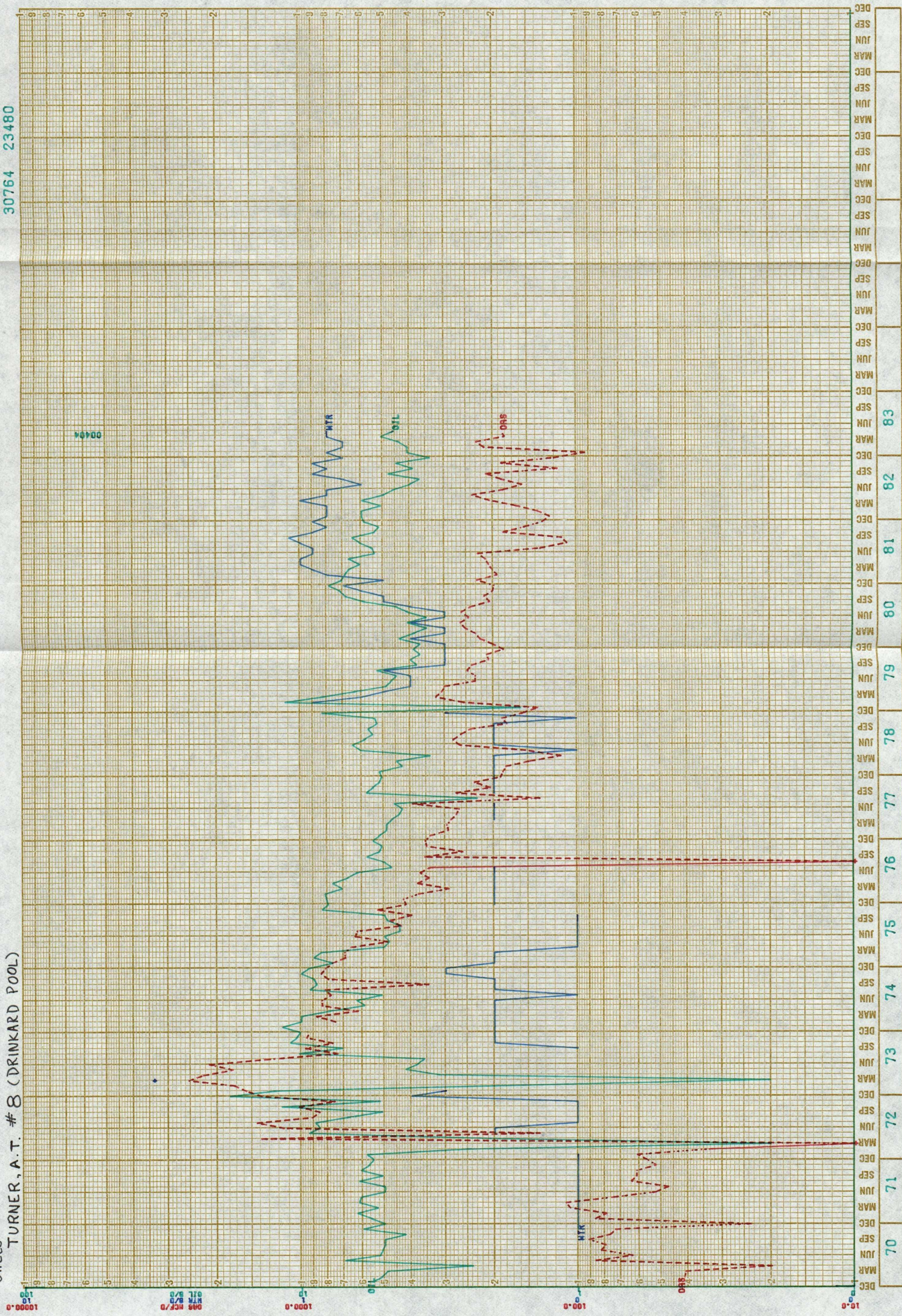
I hereby certify that the above information is true and complete to the best of my knowledge and belief.

[Signature]
(Signature)

SECT. SURV. BILL ACCOUNTING

7-75-02

30764 23480



OFFSET OPERATORS

SHELL - TURNER LEASE

GETTY OIL COMPANY
P. O. BOX 1231
MIDLAND, TEXAS 79702

MILLARD DECK OIL COMPANY
LOOP 18
EUNICE, NEW MEXICO 88231

CONOCO INC.
5 GREENWAY PLAZA EAST
HOUSTON, TEXAS 77001

GULF EXPLORATION AND PRODUCTION COMPANY
P. O. BOX 670
HOBBS, NEW MEXICO 88240

J. R. CONE
P. O. BOX 871
LUBBOCK, TEXAS 79408

SUN EXPLORATION AND PRODUCTION COMPANY
P. O. BOX 2880
DALLAS, TEXAS 75221

P 454 554 849

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED—
NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to GETTY OIL COMPANY	
Street and No. P. O. BOX 1231	
P.O., State and ZIP Code MIDLAND, TX 79702	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	
Return Receipt Showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	\$
Postmark or Date D. M. UPSON 4435 JULY 29, 1983	

PS Form 3800, Feb. 1982

P 454 554 850

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED—
NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to MILLARD DECK OIL CO.	
Street and No. LOOP 18	
P.O., State and ZIP Code EUNICE, NM 88231	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	
Return Receipt Showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	\$
Postmark or Date D. M. UPSON WCK 4435 JULY 29, 1983	

PS Form 3800, Feb. 1982

P 454 554 851

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED—
NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to CONOCO INC.	
Street and No. 5 GREENWAY PLAZA E.	
P.O., State and ZIP Code HOUSTON, TX 77001	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	
Return Receipt Showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	\$
Postmark or Date D. M. UPSON WCK 4435 JULY 29, 1983	

PS Form 3800, Feb. 1982

CERTIFIED

P 454 554 849

MAIL**CERTIFIED**

P 454 554 850

MAIL**CERTIFIED**

P 454 554 851

MAIL

P 454 554 852

RECEIPT FOR CERTIFIED MAILNO INSURANCE COVERAGE PROVIDED—
NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to GULF OIL EXPL. & PROD. CO.	
Street and No. P. O. BOX 670	
P.O., State and ZIP Code HOBBS, NM 88240	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	
Return Receipt Showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	\$
Postmark or Date D. M. UPSON WCK 4435 JULY 29, 1983	

PS Form 3800, Feb. 1982

CERTIFIED

P 454 554 852

MAIL

P 454 554 853

RECEIPT FOR CERTIFIED MAILNO INSURANCE COVERAGE PROVIDED—
NOT FOR INTERNATIONAL MAIL

(See Reverse)

Sent to J. R. CONE	
Street and No. P. O. BOX 871	
P.O., State and ZIP Code LUBBOCK, TX 79408	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	
Return Receipt Showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	\$
Postmark or Date D. M. UPSON WCK 4435 JULY 29, 1983	

PS Form 3800, Feb. 1982

CERTIFIED

P 454 554 853

MAIL

P 454 554 854

RECEIPT FOR CERTIFIED MAILNO INSURANCE COVERAGE PROVIDED—
NOT FOR INTERNATIONAL MAIL

(See Reverse)

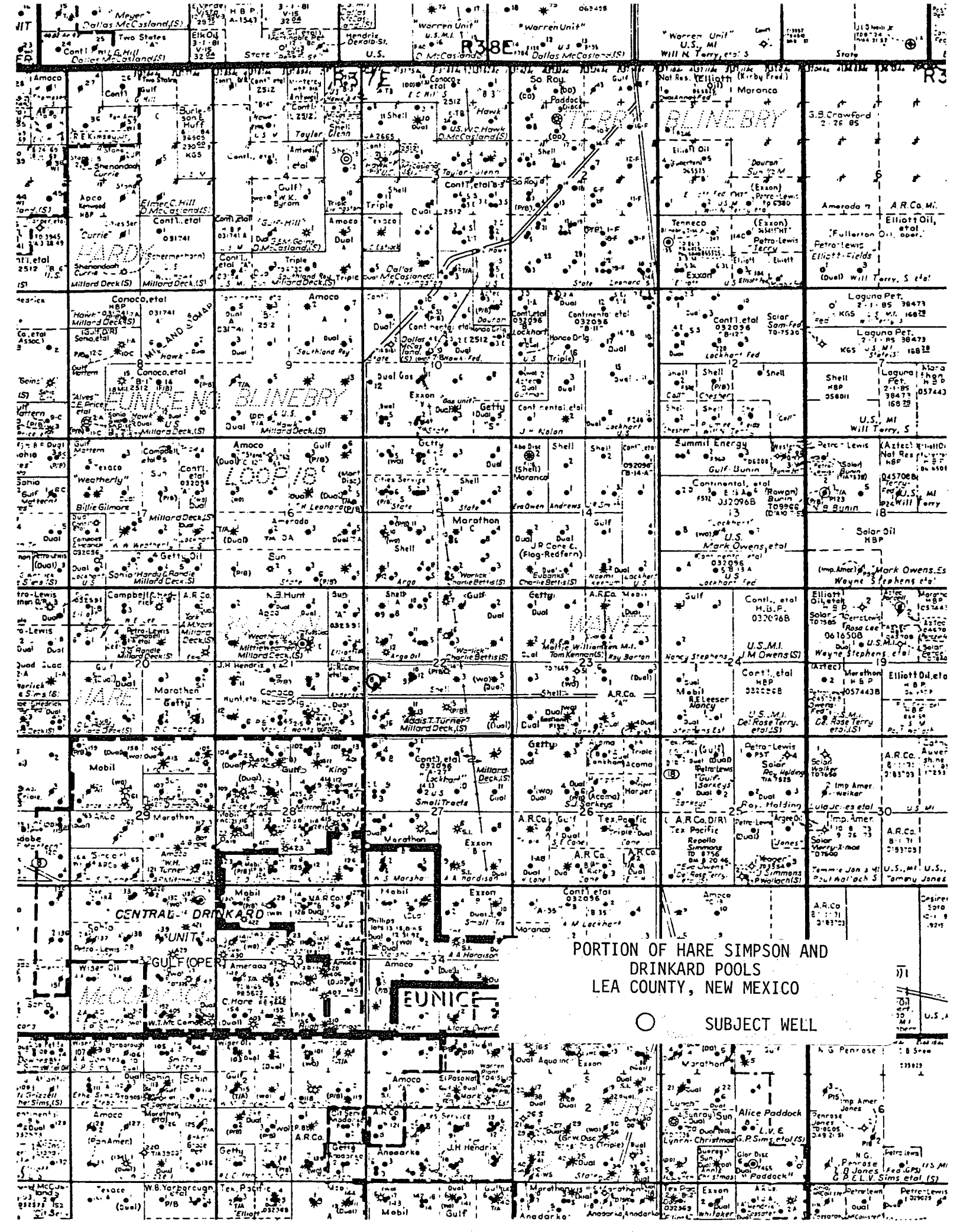
Sent to SUN EXPL. & PROD. CO.	
Street and No. P. O. BOX 2880	
P.O., State and ZIP Code DALLAS, TX 75221	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	
Return Receipt Showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	\$
Postmark or Date D. M. UPSON WCK 4435 JULY 29, 1983	

PS Form 3800, Feb. 1982

CERTIFIED

P 454 554 854

MAIL



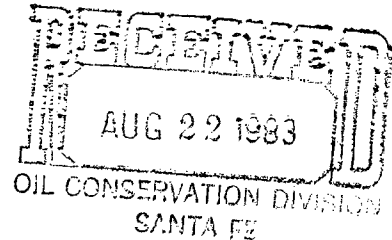
Shell Oil Company



P.O. Box 991
Houston, Texas 77001

August 17, 1983

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



Gentlemen:

SUBJECT: APPLICATION TO DOWNHOLE COMMINGLE
SHELL - TURNER NO. 8
DRINKARD AND HARE SIMPSON POOLS
LEA COUNTY, NEW MEXICO

Attached please find the calculations to correct the Hare Simpson BHP to the Drinkard BHP per your conversation request.

If additional information is required, please advise.

Yours very truly,

A. J. Fore
Supervisor Regulatory and Permitting
Mid-Continent Division

DMU

Attachments

SHELL - TURNER NO. 8
DRINKARD & HARE SIMPSON POOLS
LEA COUNTY, NEW MEXICO

<u>DRINKARD</u>		<u>HARE</u>
0	SITP	0
114 psig @ 6537'	BHP	424 psig @ 7792'
6428' - 6647'	Perforations	7696' - 7880'
0.212 psi/ft	Observed Gradient	0.413 psi/ft

Calculations to correct Hare Simpson BHP from 7792' to Drinkard @ 6647' using observed data.

$$\Delta P = 103 \text{ psi}$$

$$\Delta D = 249 \text{ feet}$$

Assuming: 0.465 water pressure gradient P_{GW}

0.335 oil pressure gradient P_{GO}

0.0 gas pressure gradient - SITP "0" psig

Calculate fluid level - observed pressure of 0.413 is a mix of oil and water

$$P_{GW}(X) + P_{GO}(249-X) = 103 \text{ psig} \quad \text{Where "X" = height of water column}$$

$$0.465 X + 83 - 0.335 X = 103$$

$$X = 154' \text{ height of water column above 7792' or at 7638'}$$

$$\text{Pressure due to water column} = 0.465 (154) = 72 \text{ psi}$$

$$\text{Pressure due to oil column} = 424 - 72 = 352 \text{ psi}$$

$$\frac{352}{.335} \text{ psi} = 1050' \text{ height of oil column above 7638' or at 6588'}$$

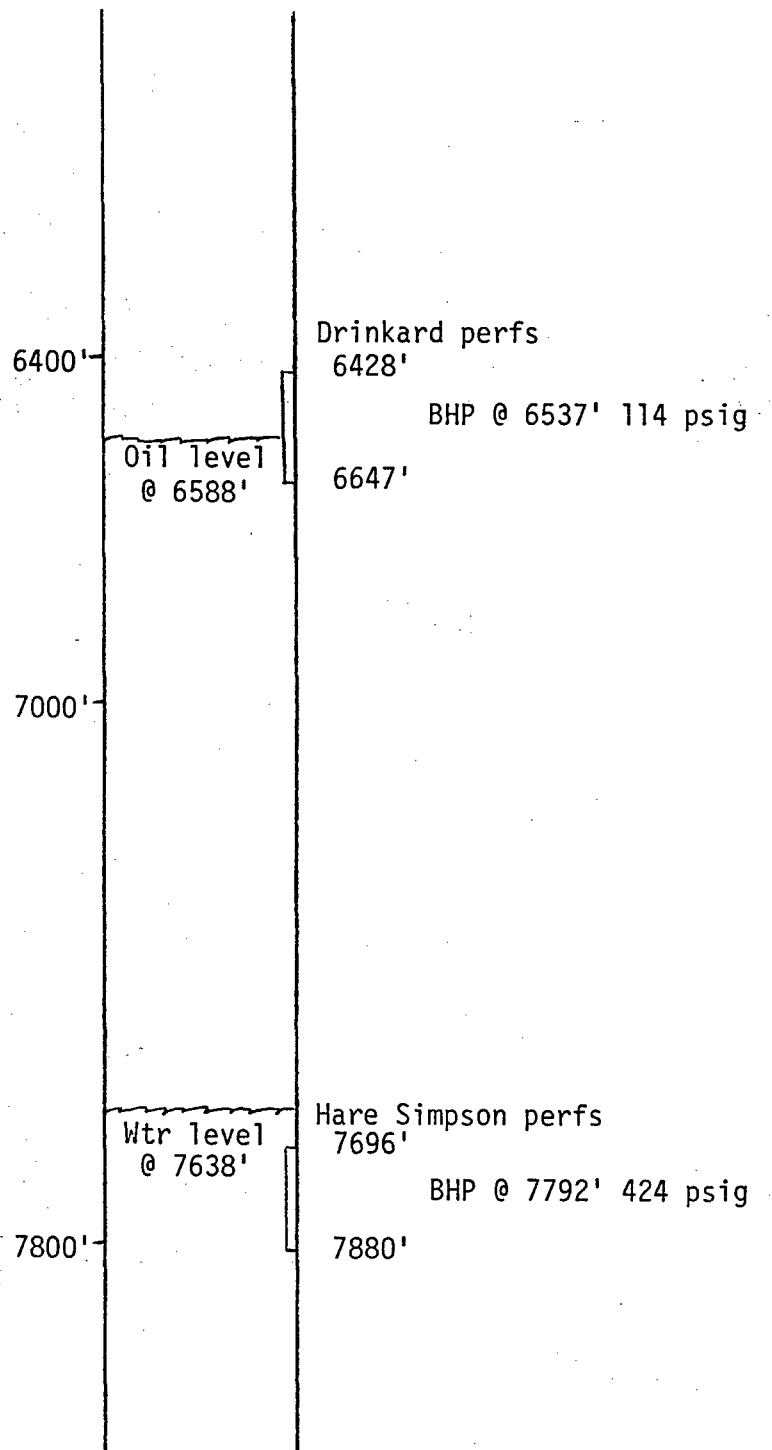
Therefore, Hare Simpson pressure at lowest Drinkard perfs

$$6637' - 6588' = 59'$$

$$59' \times .335 \text{ psi/ft} = 20 \text{ psi.}$$

Conclusion: Crossflow will not occur because Drinkard zone has a pressure of 114 psi and Hare Simpson pressure is only 20 psi at the lowest Drinkard perforation.

SHELL - TURNER NO. 8



Copies to:
3 - Engr. R. IRLAND
~~1 - Forman CY JONES~~
1 - R. G. Stuteville
1 - File

Company Shell Oil Co.
Lease TURNER Well No. 8
Field DRINKARD State NEW MEXICO
Test Date 5-27-83

Producing Formation	HARE
Elevation (CHF,DF,KB,etc)	
Datum subsea, or	
Tubing Obstruction at	2 3/8" Tbg.
Production Packer at	7580'
Perforations	7696-7880'

<u>Instrument Data</u>	
Company Running Survey	Shell Oil
Element - Range & No.	4500 / 8409
Glock - Range & No.	3 HR / 1388
Calibration Date	5 / 1 / 83
<u>Static Pressure Data</u>	
Test Depth	7792 (GL) ft
Pressure at 7792' (GL)	424.1 psig
Shut-in Time	hrs
T. D. Check	7793 GL ft
Starting Tubing Pressure	psig
Starting Casing Pressure	psig
Shut-in Tubing Pressure	psig
Shut-in Casing Pressure	psig
Temperature at _____ ft.	°F
Date of Last Test	/ /
Pressure @ Datum, Last Test	psig
Shut-in Time, Last Test	hrs

Flow Test Data		(x) Not Applicable
Test Date		/ /
Choke Size		in
Period of Stabilized Flow		hrs
Stabilized Production(q)		
Oil		bbls/day
Gas		MCF/day
Water		bbls/day
Flowing Tubing Pressure		psig
Flowing Casing Pressure		psig
Cumulative Production (q)		
Oil		bbls
Gas		MCF
Water		bbls
Effect. Prod' Life, t=24 Q/q		hrs

Remarks: Tagged bottom at 7793' GL.

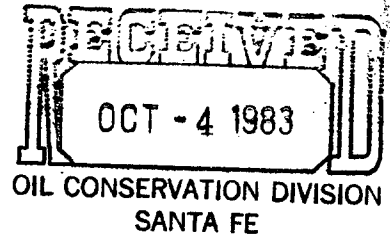
[illegible][illegible]

SURVEYOR *R. A. Hutterall*

SHELL OIL COMPANY
SUBSURFACE PRESSURE SURVEY

Remarks:

[illegible]

OIL CONSERVATION DIVISION
DISTRICT 1OIL CONSERVATION DIVISION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501DATE August 4, 1983RE: Proposed MC
Proposed DHC X
Proposed NSL
Proposed NSP
Proposed SWD
Proposed WFX
Proposed PMX

Gentlemen:

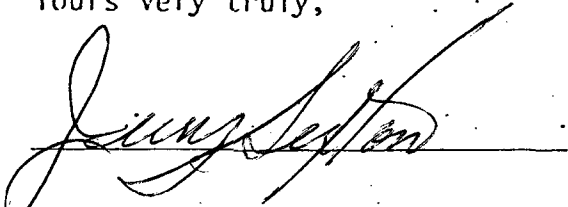
I have examined the application for the:

<u>Shell Oil Company</u>	<u>Turner</u>	<u>No. 8-L</u>	<u>22-21-37</u>
<u>Operator</u>	<u>Lease and Well No.</u>	<u>Unit, S - T - R</u>	

and my recommendations are as follows:

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

Yours very truly,


/mc