

STATE OF NEW MEXICO

ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION



GARREY CARRUTHERS
GOVERNOR

April 2, 1987

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-5800

Shell Western E & P Inc.
P. O. Box 991
Houston, Texas 77001

Attention: A.J. Ford

Re: Administrative Order NFL-160

Dear Mr. Fox:

Reference is made to your application for an Infill Well Finding and Well-Spacing Waiver made pursuant to Section 271.305(b) of the Federal Energy Regulatory Commission regulations, Natural Gas Policy Act of 1978, and Oil Conservation Division Order No. R-6013 for the following described well:

North Hobbs Unit Well No. 223 located 1770 feet from the North line and 2405 feet from the West line (Unit F) of Section 30, Township 18 South, Range 38 East, NMPM, Lea County, New Mexico.

THE DIVISION FINDS THAT:

(1) Section 271.305(b) of the Federal Energy Regulatory Commission Interim Regulations promulgated pursuant to the Natural Gas Policy Act of 1978 provides that, in order for an infill well to qualify as a new onshore production well under Section 103 of said Act, the Division must find, prior to the commencement of drilling, that the well is necessary to effectively and efficiently drain a portion of the reservoir covered by the proration unit which cannot be so drained by any existing well within that unit, and must grant a waiver of existing well-spacing requirements.

(2) By Division Order No. R-6013, dated June 7, 1979, the Division established an administrative procedure whereby the Division Director and the Division Examiners are empowered to act for the Division and find that an infill well is necessary.

(3) The well for which a finding is sought is to be completed in the Hobbs Grayburg San Andres Pool, and the standard spacing unit in said pool is 40 acres.

(4) A standard 40-acre oil proration unit comprising the SE/4 NW/4 of Section 30, Township 18 South, Range 38 East, is currently dedicated to the North Hobbs Unit Wells Nos. 221 & 222 both located in Unit F of said Section 30.

(5) Said unit is not being effectively and efficiently drained by the existing wells on the unit.

(6) The drilling and completion of the well for which a finding is sought should result in the production of an additional 120,000 MCF of gas from the proration unit which would not otherwise be recovered.

(7) All requirements of Division Order No. R-6013 have been complied with, and the well for which a finding is sought is necessary to effectively and efficiently drain a portion of the reservoir covered by said proration unit which cannot be so drained by any existing well within the unit.

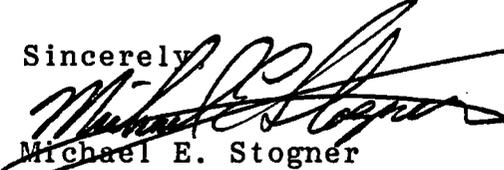
(8) In order to permit effective and efficient drainage of said proration unit, the subject application should be approved as an exception to the standard well-spacing requirements for the pool.

IT IS THEREFORE ORDERED THAT:

(1) The applicant is hereby authorized to drill the North Hobbs Unit Well No. 223 as described above, as an infill well on the existing 40-acre oil proration unit comprising the SE/4 NW/4 of Section 30, Township 18 South, Range 38 East, NMPM, Hobbs Grayburg San Andres Pool, Lea County, New Mexico. The authorization for infill drilling granted by this order is an exception to applicable well spacing requirements and is necessary to permit the drainage of a portion of the reservoir covered by said proration unit which cannot be effectively and efficiently drained by any existing well thereon.

(2) Jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

Sincerely


Michael E. Stogner
Examiner

MES/et

xc: Oil Conservation Division - Hobbs

Shell Western E&P Inc.

A Subsidiary of Shell Oil Company



P.O. Box 991
Houston, TX 77001

May 20, 1985

State of New Mexico
Energy and Minerals Department
Oil Conservation Division
ATTN R. L. Stamets, Director
P. O. Box 2088
Santa Fe, NM 87501

Gentlemen:

SUBJECT: INFILL DRILLING FINDING
PURSUANT TO SECTION 271.305(b)
FEDERAL ENERGY REGULATORY COMMISSION REGULATIONS,
NATURAL GAS POLICY ACT OF 1978 AND
OIL CONSERVATION DIVISION ORDER NO. R-6013-A

Shell Western E&P Inc. (SWEPI), respectfully requests an administrative finding that the following infill wells are necessary to effectively and efficiently drain a portion of the Grayburg/San Andres reservoir:

SHELL WESTERN E&P INC. OPERATED
NORTH HOBBS (GRAYBURG/SAN ANDRES) UNIT
HOBBS (GRAYBURG/SAN ANDRES) POOL
LEA COUNTY, NEW MEXICO

<u>WELL NO.</u>		<u>LOCATION</u>
24-413	A-24-18S-37E	1200' FNL & 206' FEL
29-242	N-29-18S-38E	100' FSL & 1400' FWL
30-312	F-30-18S-38E	1770' FNL & 2405' FWL
33-142	M-33-18S-38E	1250' FSL & 185' FWL
33-233	K-33-18S-38E	2380' FSL & 2472' FWL.

Administrative Order NSL-1749 dated October 4, 1983 and amended December 13, 1983, approved the above-described unorthodox locations. Additional data in support of this request is attached.

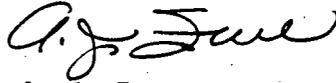
Based on the results of these initial five (5) infill wells, the Division issued Order No. R-7670 dated September 21, 1985 approving Shell Western's proposal to drill thirty-eight (38) additional producers and five (5) injectors and found that the 38 wells were necessary to effectively and efficiently drain portions of the Grayburg/San Andres reservoir. Shell Western is now requesting an Effective and Efficient finding for the initial five wells.

The only operator of a proration or spacing unit offsetting the subject unit is Amoco Production Company, which operates the South Hobbs (Grayburg/San Andres) Unit. Amoco has been notified by certified mail of this request.

BNBG8512703

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, NM 88240

Amoco Production Company
P. O. Box 3092
Houston, TX 77253

INFILL DRILLING FINDING

SHELL WESTERN E&P INC. OPERATED
NORTH HOBBS (GRAYBURG/SAN ANDRES) UNIT
HOBBS (GRAYBURG/SAN ANDRES) POOL
LEA COUNTY, NEW MEXICO

<u>WELL NO.</u>		<u>LOCATION</u>
24-413	A-24-18S-37E	1200' FNL & 206' FEL
29-242	N-29-18S-38E	100' FSL & 1400' FWL
30-312	F-30-18S-38E	1770' FNL & 2405' FWL
33-142	M-33-18S-38E	1250' FSL & 185' FWL
33-233	K-33-18S-38E	2380' FSL & 2472' FWL.

The North Hobbs (G/SA) Unit and pressure maintenance project which was authorized by Division Order No. R-6198 and R-6199, became effective on February 1, 1980. Prior to drilling the subject wells, the Unit was developed by 189 producers and 74 injectors, utilizing a modified 5-spot flood pattern (Figure No. 1). Average daily oil production amounted to 9849 barrels of oil and 50,408 barrels of water in January 1984. For the same period, water injection averaged 57,629 barrels per day. The Unit development plans as originally proposed were essentially completed with the drilling of the line injection wells on the boundary between the North and South Hobbs (G/SA) Units in 1983.

About 85 percent of the wells drilled in the central portion of the Unit are located off-center, usually 330+ feet from the lease line. The sweep efficiencies with this off-center configuration were reviewed and 48+ potential infill well locations were identified. It was determined that the drilling of 48± infill wells would develop an estimated 6.0± MMB of reserves that would not be produced with the existing well configuration. The five (5) subject infill wells were drilled to confirm the unique oil potential of the infill drilling program in the subject Unit. Order No. R-7670 dated September 21, 1984, approved the unorthodox locations of the 38 remaining infill wells as necessary to effectively and efficiently drain a portion of the Grayburg/San Andres reservoir which could not be drained by any existing well within the proration unit.

Each of these wells is the second or subsequent well drilled on an established proration unit. The completion of these five (5) infill wells had no appreciable affect on the oil production of the first or subsequent wells as shown by the attached production decline curves.

Based on the foregoing, it is our opinion that the reserves developed by these five (5) infill wells are unique and would not be recovered by any other wells in the existing proration unit. Therefore, we recommend an effective and efficient finding be made for each of these wells.

GAS RESERVE CALCULATION

The North Hobbs (G/SA) Unit average producing GOR is currently 1100 cu ft per barrel. However, we expect with continued response to the water injection program the GOR will decline to near the solution GOR of 645 cu ft per barrel.

To determine gas reserves attributable to each well, we have assumed a lifetime GOR of 800 cu ft per barrel.

Estimated Ultimate Oil Recovery = 150,000 bbls per well

150,000 X 800 = 120 MMCFGas per well.

ADDITIONAL DATA - SECOND OR SUBSEQUENT WELLS

<u>LOCATION</u>		<u>SPUD DATE</u>	<u>FORMER OPERATOR/WELL NAME & NO.</u>
<u>N. Hobbs Unit</u> <u>No. 24-413</u>			
24-411	A/24-18S-37E	990' FNL & 990' FEL	6-10-70
24-412	A/24-18S-37E	330' FNL & 330' FEL	7-02-32
Gulf - Graham State (NCT A) #6 Gypsy - Graham State A #2			
<u>N. Hobbs Unit</u> <u>No. 29-242</u>			
29-241	N/29-18S-38E	330' FSL & 2310' FWL	7-25-30
Conoco - State A-29 #2			
<u>N. Hobbs Unit</u> <u>No. 30-223</u>			
30-221	F/30-18S-38E	2310' FNL & 2310' FWL	4-20-30
30-222W	F/30-18S-38E	1470' FNL & 1395' FWL	6-23-80
Amerada - H. D. McKinley #2 Shell - N. Hobbs (G/SA) Unit #30-222 (Converted to injector 11-29-82)			
<u>N. Hobbs Unit</u> <u>No. 33-142</u>			
33-141	M/33-18S-38E	660' FSL & 660' FWL	7-05-30
Conoco - State A-33 #1			
<u>N. Hobbs Unit</u> <u>No. 33-233</u>			
33-231	K/33-18S-38E	2310' FSL & 1320' FWL	8-13-30
33-232W	K/33-18S-38E	2595' FSL & 1370' FWL	8-15-80
Conoco - State A-33 #3 Shell - N. Hobbs (G/SA) Unit #33-232 (Completed as an injector 6-16-81)			

NEW MEXICO OIL CONSERVATION COMMISSION
WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102
Supersedes C-128
Effective 1-1-65

All distances must be from the outer boundaries of the Section.

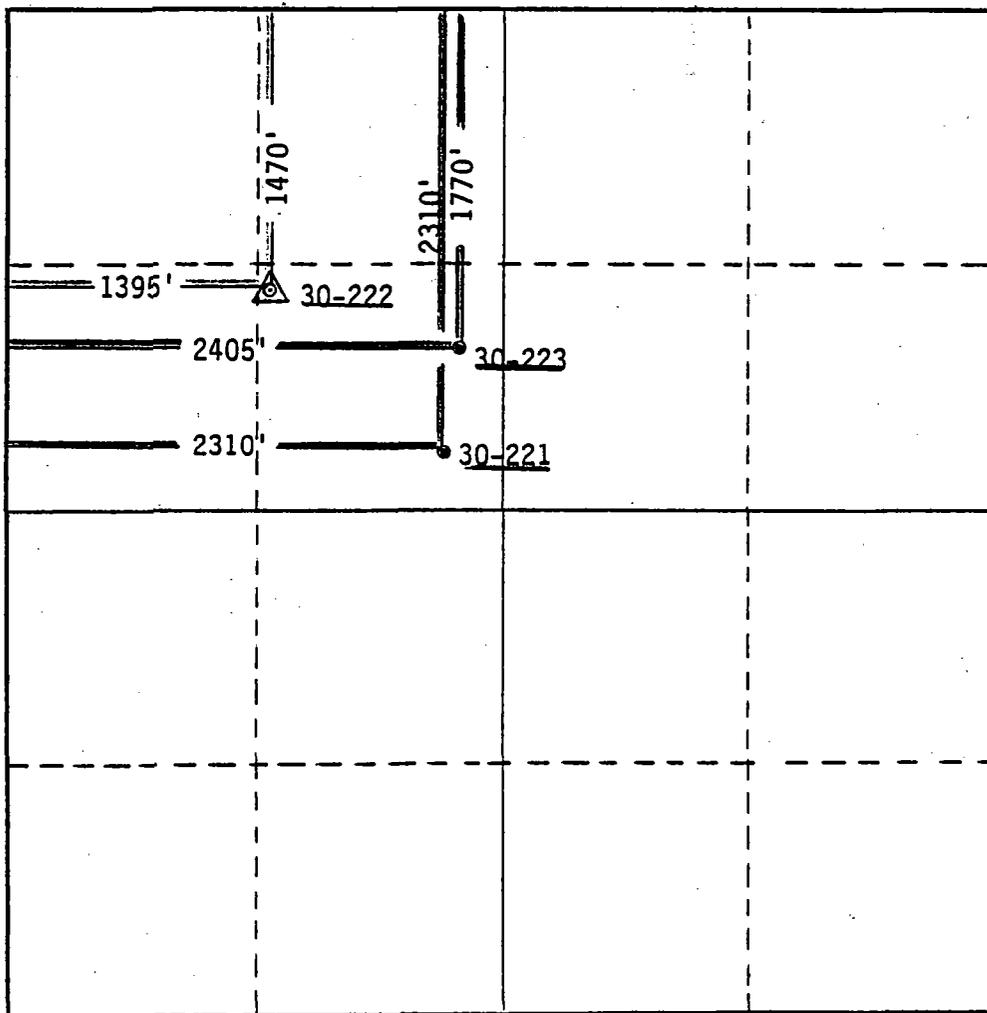
Operator SHELL WESTERN E&P INC.		Lease N. HOBBS (G/SA) UNIT SECTION 30			Well No. 221, 222W, 223
Unit Letter F	Section 30	Township 18-S	Range 38-E	County LEA	
Actual Footage Location of Well:					
feet from the		line and		feet from the	
Ground Level Elev:	Producing Formation GRAYBURG/SAN ANDRES	Pool HOBBS (G/SA)	Dedicated Acreage: Acres		

- Outline the acreage dedicated to the subject well by colored pencil or hachure 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 interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

Yes No If answer is "yes," type of consolidation UNITIZATION

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 interests, has been approved by the Commission.



CERTIFICATION

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

Name	A. J. FORE
Position	SUPV. REGULATORY & PERMITTING
Company	SHELL WESTERN E&P INC.
Date	MAY 20 1985

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	
Registered Professional Engineer and/or Land Surveyor	
Certificate No.	



100000
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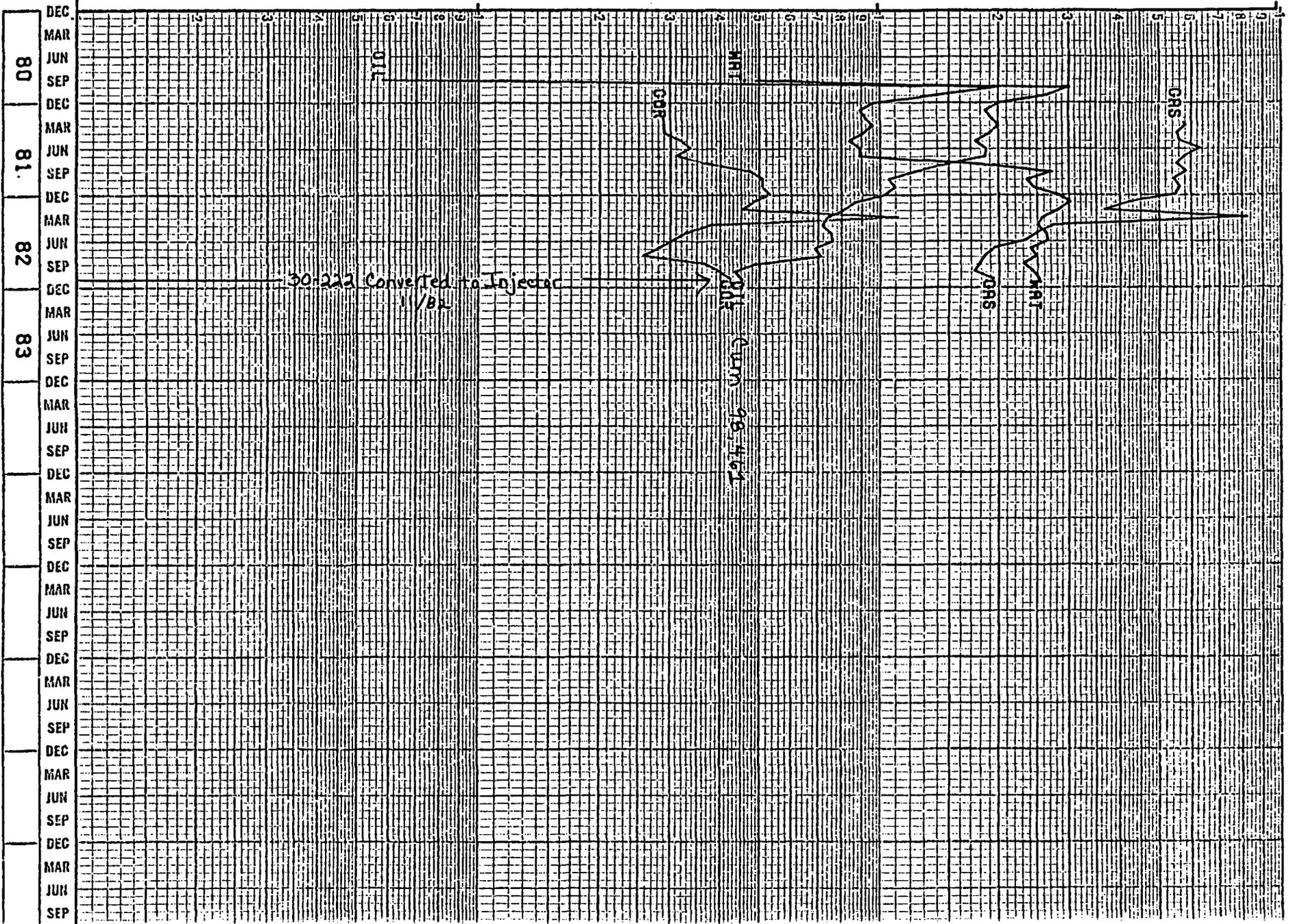
GOR SCF/B
GAS MCF/D
WATER B/D
OIL B/D

10000
1000
100
10

1000
100
10

100
10
1

PRODUCTION UNIT OF FIELD HEADQUARTERS
LSE: HOBBS NORTH UNIT
RES: GRAYBURG-SAN ANDRES
33601
31249
FLU: HOBBS N.
MLL: 222-30



PRODUCTION UNIT 1047: NEW MEXICO
 LSE: HOBBS NORTH UNIT
 RES: GRAYBURG-SAN ANDRES

33601
 31249

FLD: HOBBS N.
 WLL: 221-30

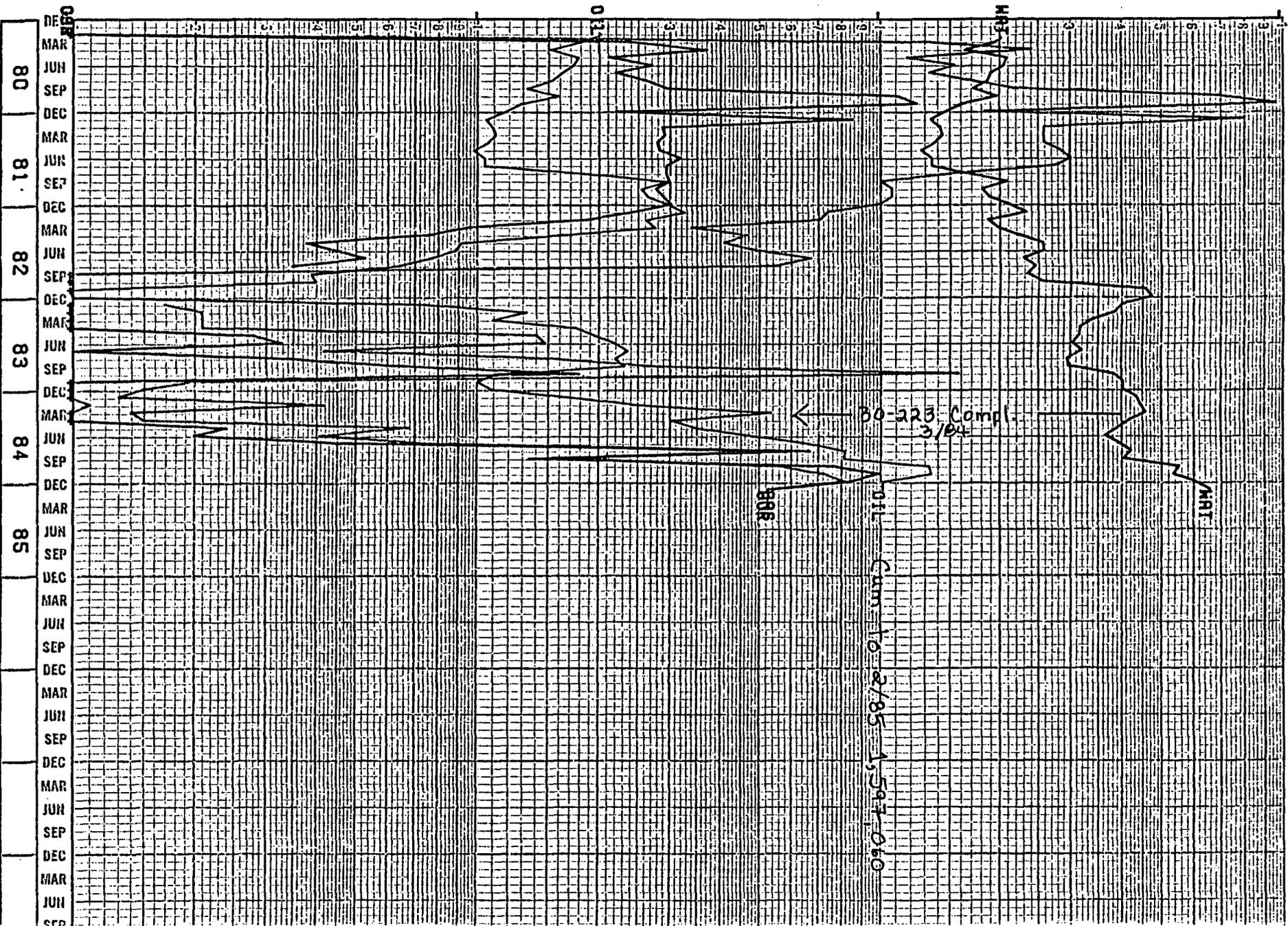
GOR SCF/B
 GAS MCF/D
 WATER B/D
 OIL B/D

10000
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P 658 011 764

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL

(See Reverse)

* U.S.G.P.O. 1983-403-517

Sent to **AMOCO PRODUCTION COMPANY**
ATTN: H. L. McDONALD

Street and No.
P. O. BOX 3092

P.O., State and ZIP Code
HOUSTON, TX 77253

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
5-20-85

PS Form 3800, Feb. 1982

CERTIFIED

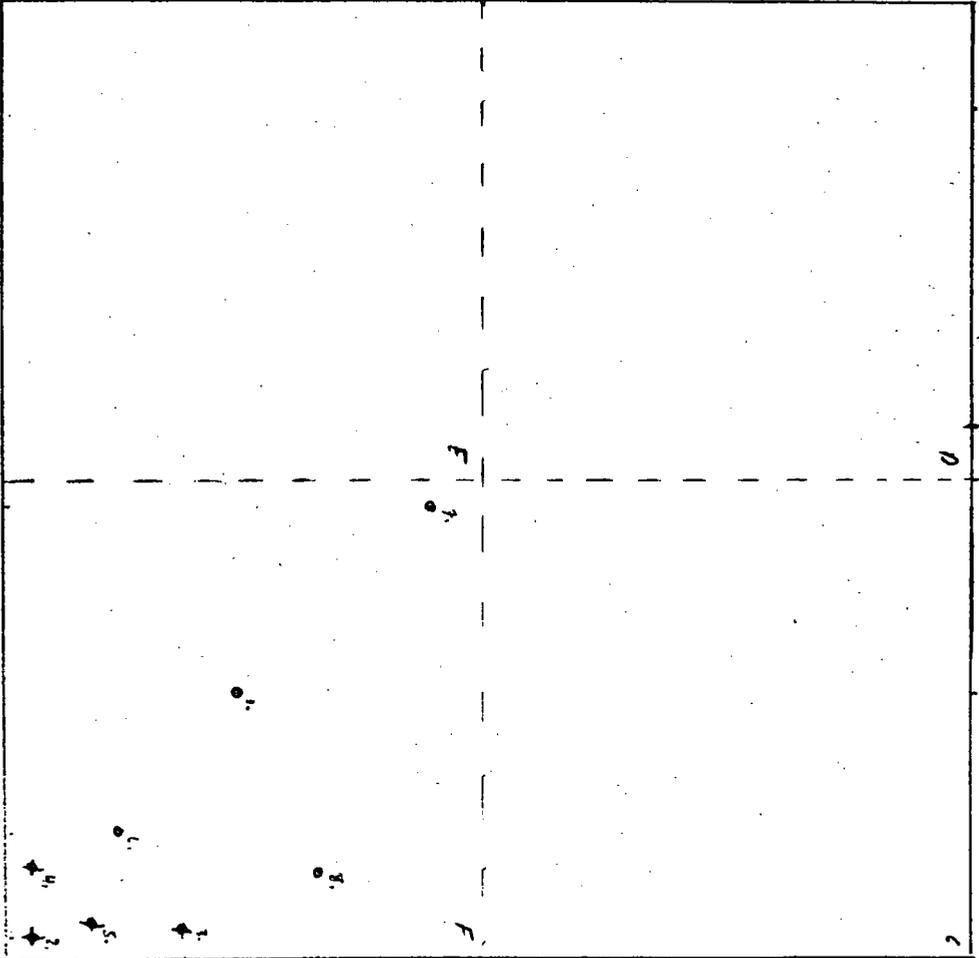
P 658 011 764

MAIL



42-381 50 SHEETS 5 SQUARE
42-382 100 SHEETS 5 SQUARE
42-389 200 SHEETS 5 SQUARE

4114
Section 30
Township 18 South
Range 38 East
Hca County, New Mexico





42-381 50 SHEETS 4 SQUARE
42-382 100 SHEETS 8 SQUARE
42-383 200 SHEETS 16 SQUARE
42-389 200 SHEETS 16 SQUARE
MADE IN U.S.A.

1. Amerada Hess Corporation
N.D. McKinley Well No. 5
1980' FWL - 1909' FWL
Spud: 2/12/47
Bowers Seven Rivers Completion
2. Rotary Oil & Gas Company
McKinley Well No. 7
2590' FWL - 2590' FWL
Spud: 12/16/65
P.R. Id.: Feb. 1983
Ogalalla completion
3. Rotary Oil & Gas Company
McKinley Well No. 8
2445' FWL - 2540' FWL
Spud: 2/1/66
P.R. Id.: Feb. 1983
Ogalalla completion
4. Rotary Oil & Gas Company
McKinley Well No. 9
2557.5' FWL - 2392.5' FWL
Spud: 6/29/67
P.R. Id.: Feb. 1983
Ogalalla completion
5. Rotary Oil & Gas Company
McKinley Well No. 10
2392.5' FWL - 2557.5' FWL
Spud: 6/30/67
P.R. Id.: Feb. 1983
Ogalalla completion



42.381 50 SHEETS 5 SQUARE
42.382 100 SHEETS 5 SQUARE
42.389 200 SHEETS 5 SQUARE
MAY 1954

6. Skull Western Exp. Inc.

North Hobbs (68150) Unit Well No. 221

2310' FWH

Spud: 4/20/80

Hobbs Grayburg San Andres completion

Cumulative Production as of 12/31/80

Gas - 533777 MCF

Oil - 1592056 B.O.

7. Skull Western Exp. Inc.

North Hobbs (68150) Unit Well No. 222

1470' FWH - 1395' FWH

Spud: 6/23/80

Hobbs Grayburg San Andres completion

Cumulative production

Gas - 257789 MCF

Oil - 98461 B.O.

Converted to water Injection well 1981

8. Subject Well

Skull Western Exp. Inc.

North Hobbs (68150) Unit Well No. 223

1770' FWH - 2405' FWH

Spud: 11/11/84

Hobbs Grayburg San Andres completion

Cumulative Production as of 12/31/84

Gas - 42537 MCF

Oil - 10812 BO

Shell Western E&P Inc.

A Subsidiary of Shell Oil Company



P.O. Box 991
Houston, TX 77001

May 20, 1985

State of New Mexico
Energy and Minerals Department
Oil Conservation Division
ATTN R. L. Stamets, Director
P. O. Box 2088
Santa Fe, NM 87501

Gentlemen:

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PURSUANT TO SECTION 271.305(b)
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HOBBS (GRAYBURG/SAN ANDRES) POOL
LEA COUNTY, NEW MEXICO

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BNBG8512703

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, NM 88240

Amoco Production Company
P. O. Box 3092
Houston, TX 77253

INFILL DRILLING FINDING

SHELL WESTERN E&P INC. OPERATED
NORTH HOBBS (GRAYBURG/SAN ANDRES) UNIT
HOBBS (GRAYBURG/SAN ANDRES) POOL
LEA COUNTY, NEW MEXICO

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GAS RESERVE CALCULATION

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Estimated Ultimate Oil Recovery = 150,000 bbls per well

$150,000 \times 800 = 120 \text{ MMCFGas per well.}$

ADDITIONAL DATA - SECOND OR SUBSEQUENT WELLS

<u>LOCATION</u>		<u>SPUD DATE</u>	<u>FORMER OPERATOR/WELL NAME & NO.</u>
<u>N. Hobbs Unit</u> <u>No. 24-413</u>			
24-411	A/24-18S-37E	990' FNL & 990' FEL	6-10-70
24-412	A/24-18S-37E	330' FNL & 330' FEL	7-02-32
			Gulf - Graham State (NCT A) #6 Gypsy - Graham State A #2
<u>N. Hobbs Unit</u> <u>No. 29-242</u>			
29-241	N/29-18S-38E	330' FSL & 2310' FWL	7-25-30
			Conoco - State A-29 #2
<u>N. Hobbs Unit</u> <u>No. 30-223</u>			
30-221	F/30-18S-38E	2310' FNL & 2310' FWL	4-20-30
30-222W	F/30-18S-38E	1470' FNL & 1395' FWL	6-23-80
			Amerada - H. D. McKinley #2 Shell - N. Hobbs (G/SA) Unit #30-222 (Converted to injector 11-29-82)
<u>N. Hobbs Unit</u> <u>No. 33-142</u>			
33-141	M/33-18S-38E	660' FSL & 660' FWL	7-05-30
			Conoco - State A-33 #1
<u>N. Hobbs Unit</u> <u>No. 33-233</u>			
33-231	K/33-18S-38E	2310' FSL & 1320' FWL	8-13-30
33-232W	K/33-18S-38E	2595' FSL & 1370' FWL	8-15-80
			Conoco - State A-33 #3 Shell - N. Hobbs (G/SA) Unit #33-232 (Completed as an injector 6-16-81)

**NEW MEXICO OIL CONSERVATION COMMISSION
WELL LOCATION AND ACREAGE DEDICATION PLAT**

Form C-102
Supersedes C-128
Effective 1-1-65

All distances must be from the outer boundaries of the Section.

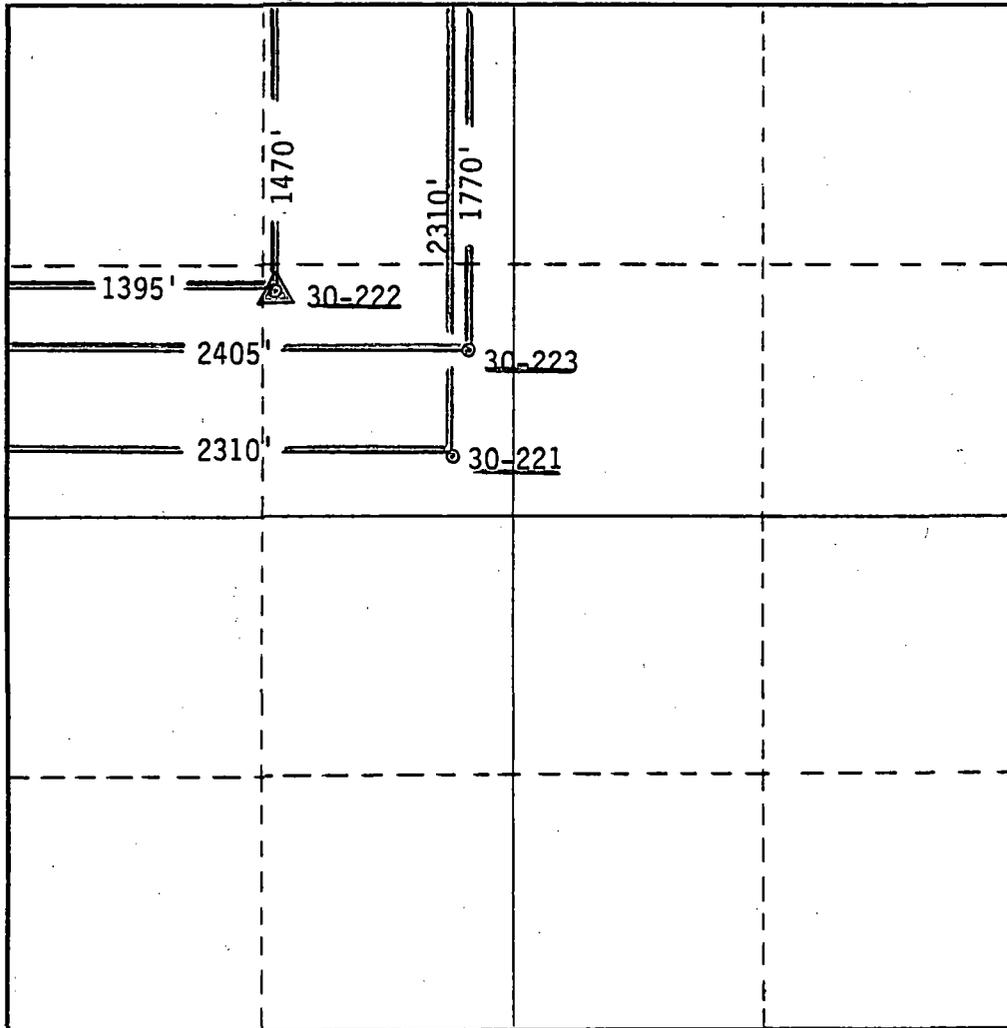
Operator SHELL WESTERN E&P INC.		Lease N. HOBBS (G/SA) UNIT SECTION 30			Well No. 221, 222W, 223
Unit Letter F	Section 30	Township 18-S	Range 38-E	County LEA	
Actual Footage Location of Well:					
feet from the		line and		feet from the	
Ground Level Elev.		Producing Formation GRAYBURG/SAN ANDRES		Pool HOBBS (G/SA)	
				Dedicated Acreage: Acres	

1. Outline the acreage dedicated to the subject well by colored pencil or hachure 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 interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

Yes No If answer is "yes," type of consolidation UNITIZATION

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 interests, has been approved by the Commission.



CERTIFICATION

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

Name
A. J. FORE

Position
SUPV. REGULATORY & PERMITTING

Company
SHELL WESTERN E&P INC.

Date
MAY 20 1985

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

Registered Professional Engineer
and/or Land Surveyor

Certificate No.



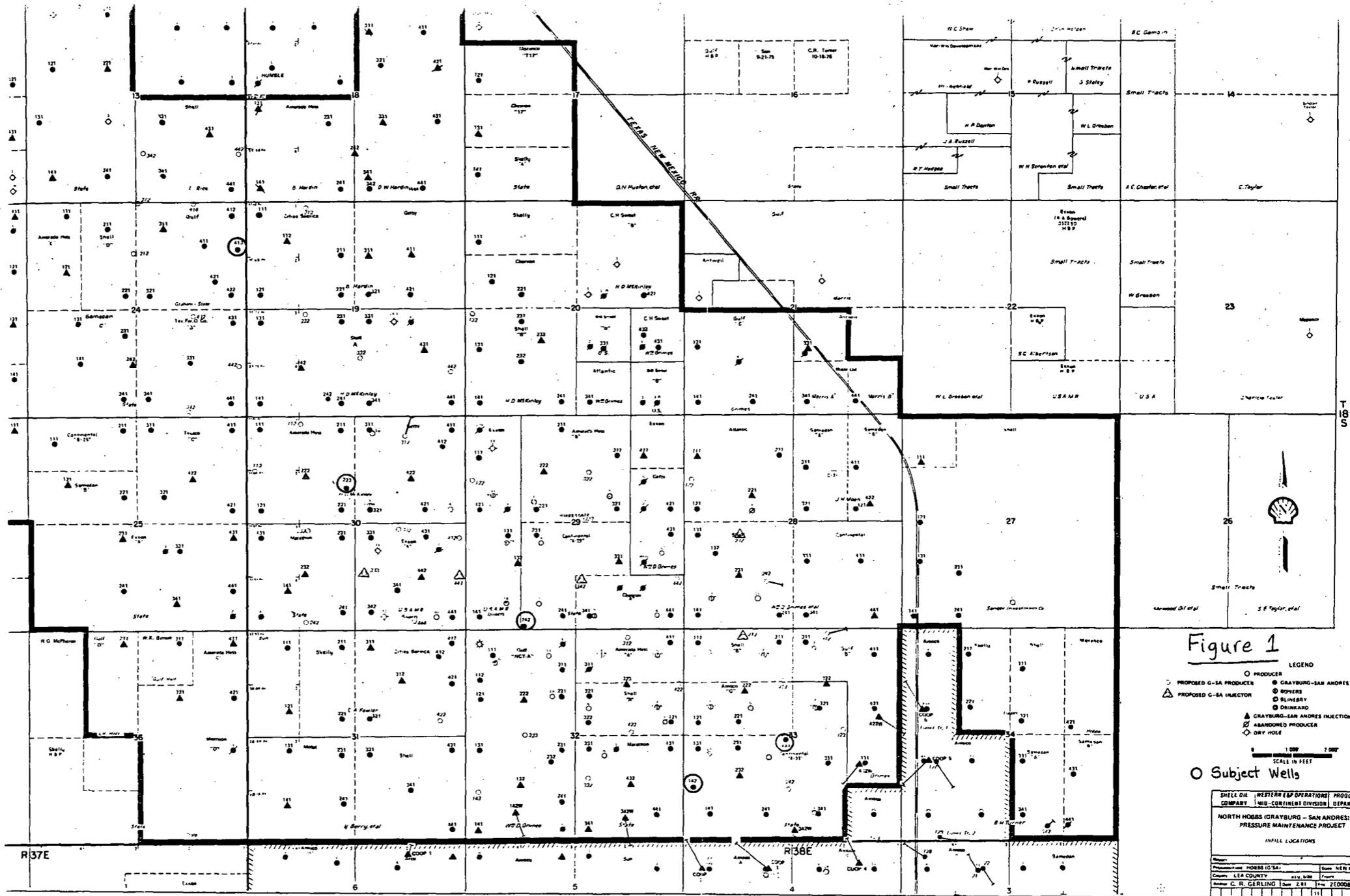


Figure 1

- LEGEND
- PRODUCER
 - PROPOSED G-SA PRODUCER
 - △ PROPOSED G-SA INJECTOR
 - GRAYBURG-SAN ANDRÉS INJECTION WELL
 - ◇ ABANDONED PRODUCER
 - ◇ DRY HOLE
 - GRAYBURG-SAN ANDRÉS
 - BOWERS
 - BLENBERRY
 - ONWARD

SCALE IN FEET
0 1000 2000

○ Subject Wells

SHELL OIL (WESTERN OPERATIONS) PRODUCTION COMPANY
MID-CONTINENT DIVISION DEPARTMENT
NORTH HOBBS (GRAYBURG - SAN ANDRÉS) UNIT
PRESSURE MAINTENANCE PROJECT
INFILL LOCATIONS

Map No.	20008700
Section	13-27
County	LEA COUNTY
State	NEW MEXICO
Author	C. R. GERLING
Date	2-21-70
Scale	2000 FT. = 1 IN.

*RUB-1E NO. 1 (STAINING REBATS) (1/15/68)

P 658 011 764

RECEIPT FOR CERTIFIED MAIL

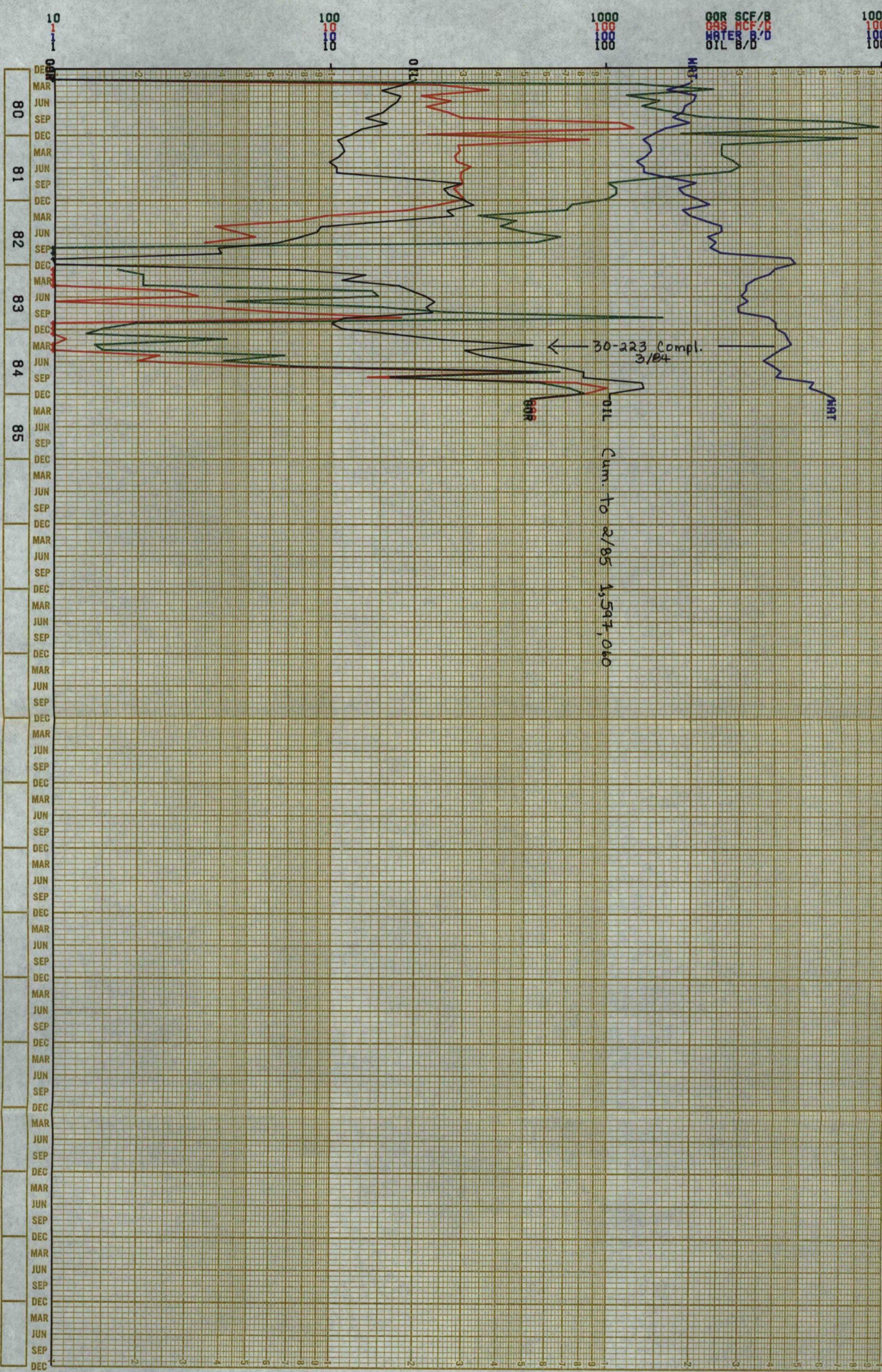
NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL

(See Reverse)

PS Form 3800, Feb. 1982
* U.S.G.P.O. 1983-403-517

Sent to AMOCO PRODUCTION COMPANY ATTN: H. L. McDONALD	
Street and No. P. O. BOX 3092	
P.O., State and ZIP Code HOUSTON, TX 77253	
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 5-20-85	





100
10
10

1000
10
10

10000
100
100

GOR SCF/B
GAS MCF/D
WATER B/D
OIL B/D

10000
1000
1000
1000

