

ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION



GARREY CARRUTHERS  
GOVERNOR

April 1, 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. Fore

Re: Administrative Order NFL-159

Dear Mr. Fore:

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. 342 bottom hole location 450 feet from the South line and 1540 feet from the East line (Unit 0) of Section 34, 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 SW/4 SE/4 of Section 34, Township 18 South, Range 38 East, is currently dedicated to the North Hobbs Unit Well No. 341 located in Unit O of said Section 34.

(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 82,800 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. 342 as described above, as an infill well on the existing 40-acre oil proration unit comprising the SW/4 SE/4 of Section 34, 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

November 13, 1984

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

RECEIVED

NOV 15 1984

OIL CONSERVATION DIVISION

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. respectfully requests an administrative finding, that the following infill well is 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  
WELL NO. 34-342  
HOBBS (GRAYBURG/SAN ANDRES) POOL  
LEA COUNTY, NEW MEXICO.

N. Hobbs (G/SA) Unit No. 34-342 was drilled as a replacement well for well no. 34-441, which was plugged and abandoned due to irreparable casing damage at approximately 600'. NMOCD CASE No. 7856/Order No. R-7275 dated April 29, 1983, approved the directional drilling of 34-342 at an unorthodox location. Additional data in support of this request is attached.

The only operator of a proration or spacing unit offsetting the proration unit of well no. 34-342 is Amoco Production Company, which operates the South Hobbs (Grayburg/San Andres) Unit. Amoco has been notified by certified mail of this request.

If additional information is required, please advise.

Yours very truly,

A handwritten signature in cursive script, appearing to read "A. J. Fore", is located below the typed name.

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

DMU

Attachments

BNBG8429803

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

(CERTIFIED MAIL P 726 891 052)



Zone I - Based on Decline Curve Analysis

$$\begin{array}{l} q_i = 14 \text{ BOPD} \\ q_{ec} = 1 \text{ BOPD} \\ \text{Annual decline} = 15\% \end{array} \quad \frac{(14-1)365}{0.1625} = 29,200 \text{ BO Reserves}$$

Zone II Reserves - Based on Volumetric Calculation

$$\begin{array}{l} A = 20 \text{ ac.} \\ h = 20' \\ 1-SW = .65 \\ B_{oi} = 1.2 \\ R.E. = .17 \\ \emptyset = .14 \end{array} \quad \frac{7758 \times 20 \times 20 \times .14 \times .65 \times .17}{1.2} = 40,000 \text{ BO}$$

Gas Reserves - Based on Estimated Ultimate Oil Recovery  
Applied to the Current Average Producing GOR (August  
84) for the North Hobbs Unit

$$69,000 \text{ BO} \times 1200 \text{ cu ft/bbl} = 82,800 \text{ MCF}$$

Based on the foregoing, it is our opinion that the reserves developed by replacement well No. 34-342 are unique and would not be recovered by any other well in the existing proration unit. Therefore, we recommend an effective and efficient finding be made for North Hobbs Unit Well No. 34-342.

NEW MEXICO OIL CONSERVATION COMMISSION  
WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102  
Supersedes C-128  
Effective 1-4-65

All distances must be from the outer boundaries of the Section

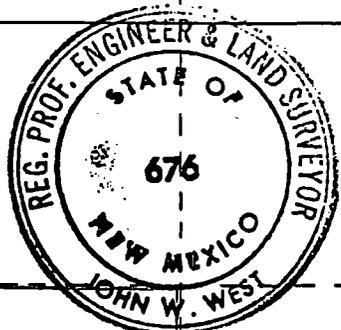
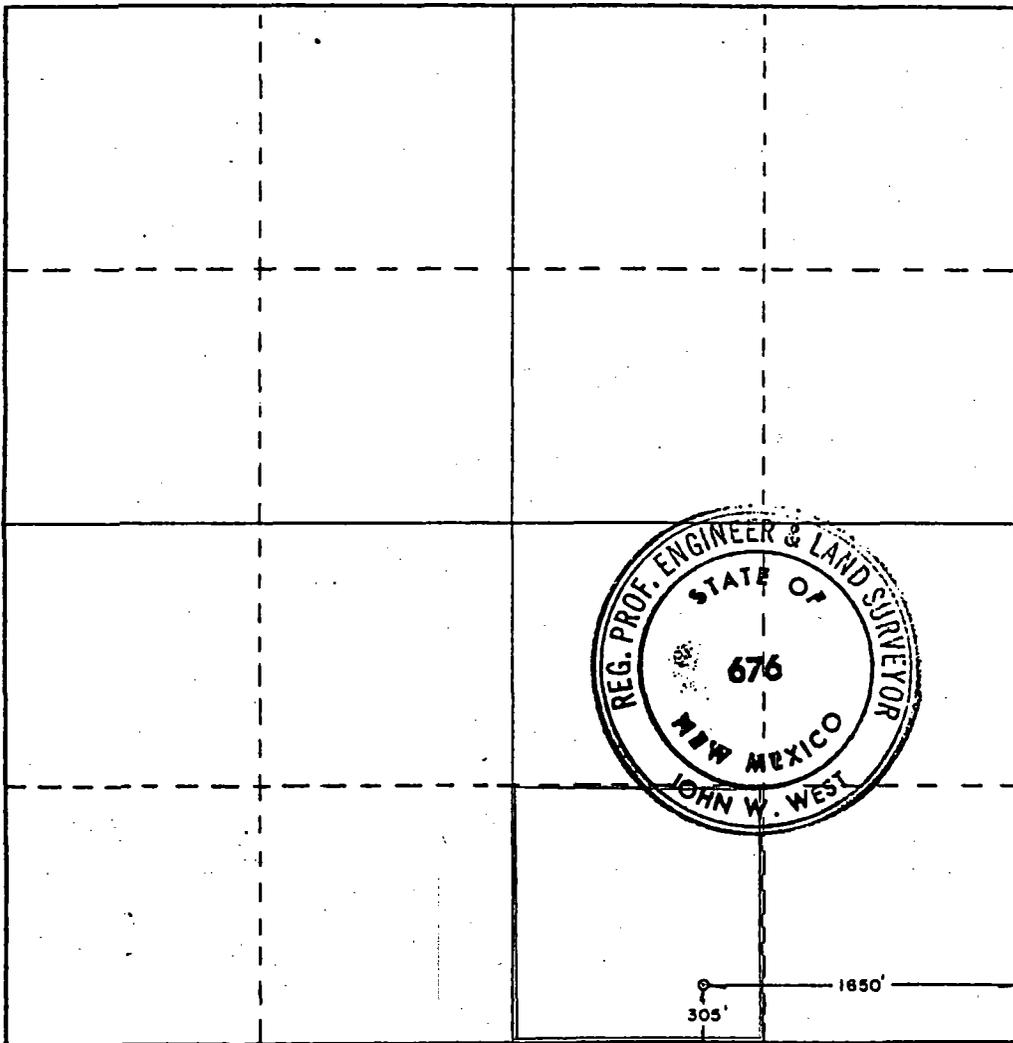
Operator <b>Shell Western E&amp;P Inc.</b>		Lease <b>North Hobbs Unit</b>			Well No. <b>34-342</b>
Unit Letter <b>0</b>	Section <b>34</b>	Township <b>18 South</b>	Range <b>38 East</b>	County <b>Lea</b>	
Actual Footage Location of Well: <b>305</b> feet from the <b>south</b> line and <b>1650</b> feet from the <b>east</b> line					
Ground Level Elev. <b>3607.5'</b>	Producing Formation <b>Grayburg/San Andres</b>		Pool <b>Hobbs (G/SA)</b>	Dedicated Acreage: <b>40</b> 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 SUPERVISOR REG. & PERMITTING  
 Company SHELL WESTERN E&P INC.  
 Date NOV 13 1984

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 March 22, 1983  
 Registered Professional Engineer and/or Land Surveyor

John W. West  
 Certificate No John W. West, NM L.S. 676

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.

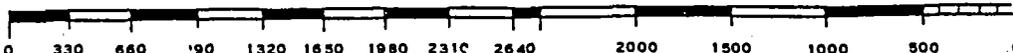
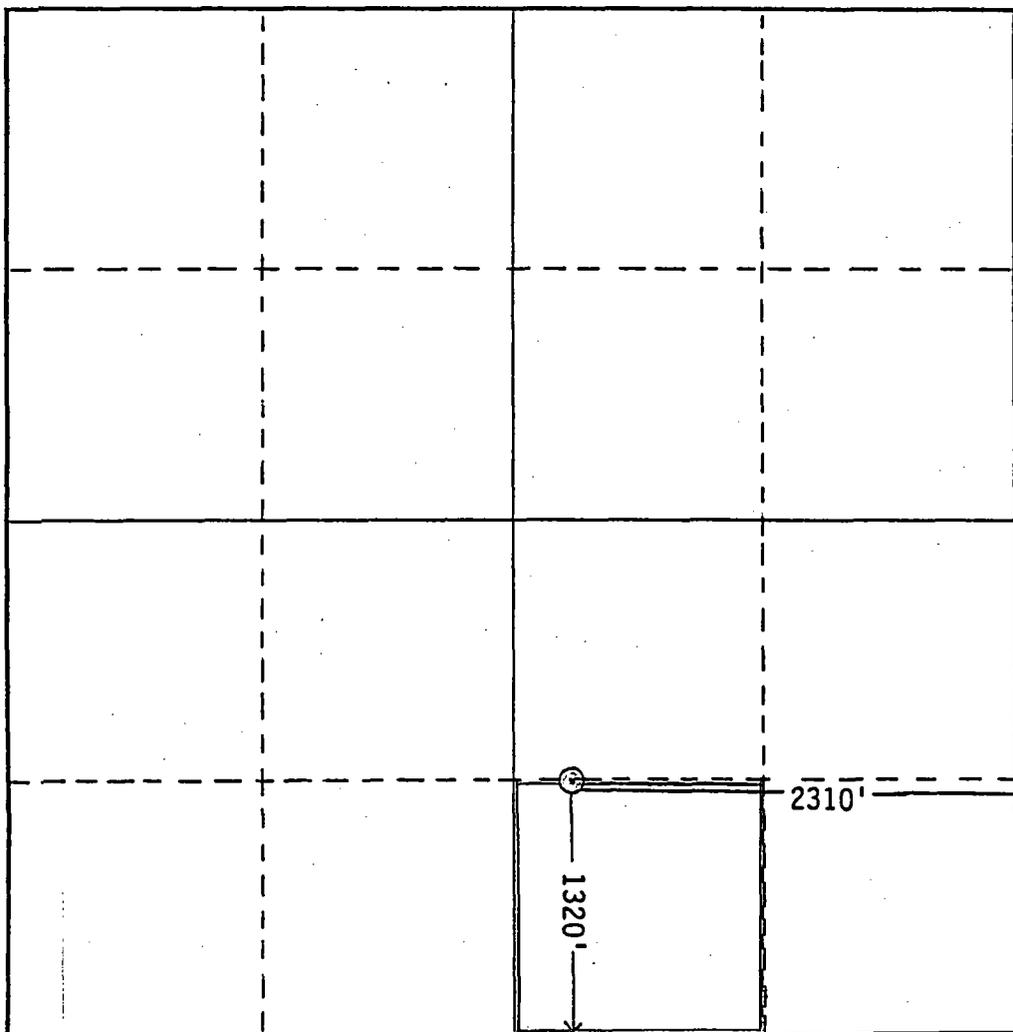
Operator <b>SHELL WESTERN E&amp;P INC.</b>		Lease <b>N. HOBBS (G/SA) UNIT</b>			Well No. <b>34-341</b>
Unit Letter <b>0</b>	Section <b>34</b>	Township <b>18-S</b>	Range <b>38-E</b>	County <b>LEA</b>	
Actual Footage Location of Well: <b>1320</b> feet from the <b>SOUTH</b> line and <b>2310</b> feet from the <b>EAST</b> line					
Ground Level Elev. <b>3620'</b>	Producing Formation <b>GRAYBURG/SAN ANDRES</b>		Pool <b>HOBBS (G/SA)</b>	Dedicated Acreage: <b>40</b> 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* **A. J. FORE**

Position  
**SUPERVISOR REG. & PERMITTING**

Company  
**SHELL WESTERN E&P INC.**

Date  
**NOV 13 1984**

---

*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. \_\_\_\_\_

SWEPI - N. HOBBS (G/SA) UNIT NO. 34-441  
UNIT LETTER "P", 400' FSL AND 1190' FEL, SECTION 34, T18S, R38E, NMPM  
LEA COUNTY, NEW MEXICO

SPUD DATE: 05-11-44  
COMPLETION DATE: 06-06-44  
TOTAL DEPTH: 4233'  
COMPLETION INTERVAL: 4150-4233' OPEN HOLE  
PLUGGED & ABANDONED:

Well No. 34-441 had a history of casing problems with attendant formation damage. During a workover in June 1982 to improve production, severe casing damage was encountered requiring attempts to swage the 5½" production string at tight spots from 589 to 633 feet. The continuous influx of Red Bed shale through severely corroded casing led to abandonment of workover operations.

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.

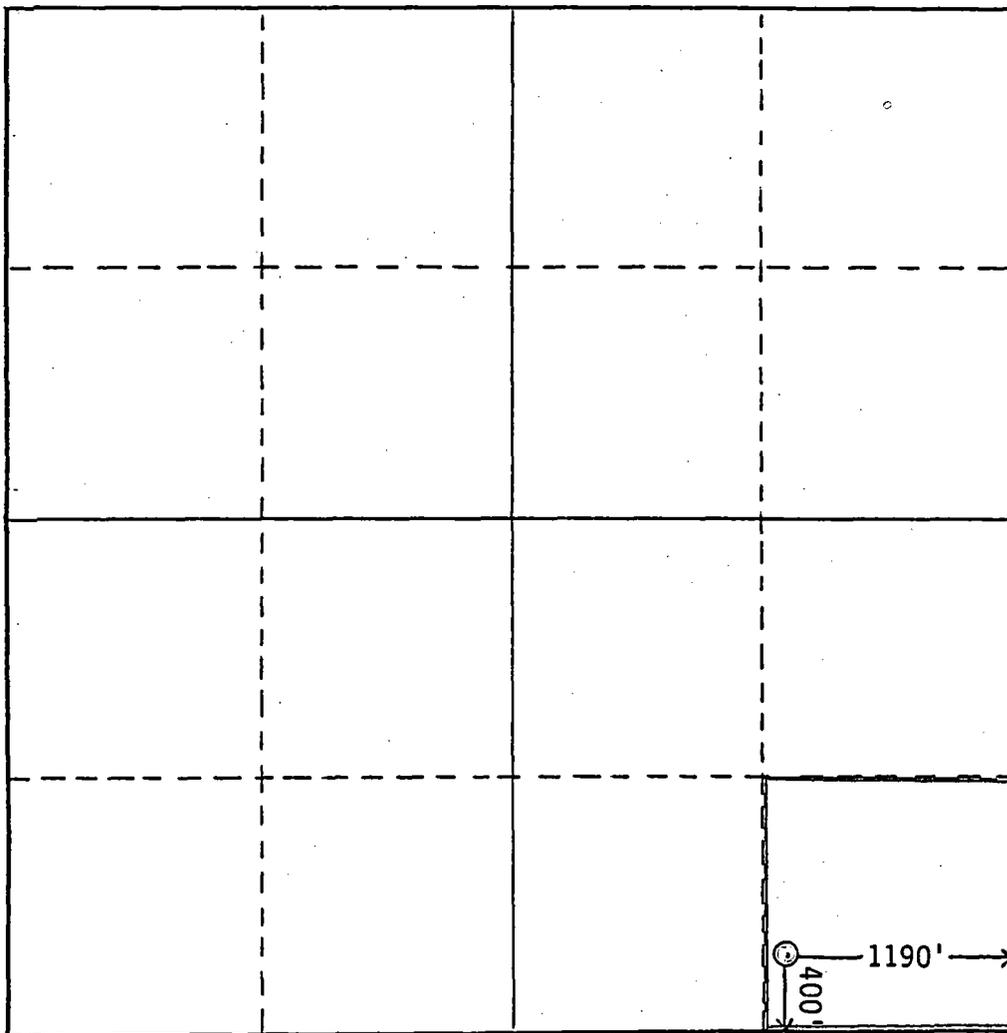
Operator <b>SHELL WESTERN E&amp;P INC.</b>		Lease <b>N. HOBBS (G/SA) UNIT</b>			Well No. <b>34-441</b>
Unit Letter <b>P</b>	Section <b>34</b>	Township <b>18-S</b>	Range <b>38-E</b>	County <b>LEA</b>	
Actual Footage Location of Well: <b>400</b> feet from the <b>SOUTH</b> line and <b>1190</b> feet from the <b>EAST</b> line					
Ground Level Elev. <b>3620'</b>	Producing Formation <b>GRAYBURG/SAN ANDRES</b>		Pool <b>HOBBS (G/SA)</b>	Dedicated Acreage: <b>40</b> 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.



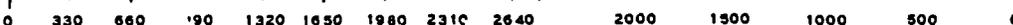
CERTIFICATION

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

Name  
*A. J. Fore*    **A. J. FORE**  
Position  
**SUPERVISOR REG. & PERMITTING**  
Company  
**SHELL WESTERN E&P INC.**  
Date  
**NOV 13 1984**

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.



STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION

cc R. W. Phillips  
W. R. Lancaster

IN THE MATTER OF THE HEARING  
CALLED BY THE OIL CONSERVATION  
DIVISION FOR THE PURPOSE OF  
CONSIDERING:

RECEIVED

NOV 15 1984

OIL CONSERVATION DIVISION CASE NO. 7856  
Order No. R-7275

APPLICATION OF SHELL OIL COMPANY  
FOR DIRECTIONAL DRILLING AND AN  
UNORTHODOX LOCATION, LEA COUNTY,  
NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on April 27, 1983, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this 29th day of April, 1983, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

- (1) That due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.
- (2) That the applicant, Shell Oil Company, seeks authority to directionally drill, as an infill well, its Shell-North Hobbs Unit Section 34 Well No. 342 at an unorthodox surface location 305 feet from the South line and 1650 feet from the East line of Section 34, Township 18 South, Range 38 East, to a point no more than 500 feet and no less than 400 feet from the South line and no more than 1590 feet or less than 1490 feet from the East line of Section 34, Township 18 South, Range 38 East at a true vertical depth of 4,400 feet, Hobbs Pool, Lea County, New Mexico.
- (3) That the SW/4 SE/4 of said Section 34 should be dedicated to the well.
- (4) That the applicant should be required to determine the subsurface location of the bottom of the hole by means of a continuous multi-shot directional survey conducted subsequent to said directional drilling, if said well is to be completed as a producing well.

(5) That approval of the subject application will prevent the drilling of unnecessary wells, avoid the augmentation of risk arising from the drilling of an excessive number of wells, and otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

(1) That the applicant, Shell Oil Company, is hereby authorized to directionally drill its Shell-North Hobbs Unit Section 34 Well No. 342, an infill well, at an unorthodox surface location, hereby approved, 305 feet from the South line and 1650 feet from the East line of Section 34, Township 18 South, Range 38 East, NMPM, Hobbs Pool, Lea County, New Mexico, to a point no more than 500 feet or less than 400 feet from the South line and no more than 1590 feet or less than 1490 feet from the East line of said Section 34.

PROVIDED HOWEVER, that prior to the above-described directional drilling, the applicant shall establish the location of the kick-off point by conducting a continuous multi-shot directional survey of the well.

PROVIDED FURTHER, that subsequent to the above-described directional drilling, should said well be a producer, a continuous multi-shot directional survey shall be made of the wellbore from total depth to the kick-off point with shot points not more than 100 feet apart; that the operator shall cause the surveying company to forward a copy of the survey report directly to the Santa Fe office of the Division, P. O. Box 2088, Santa Fe, New Mexico 87501, and that the operator shall notify the Division's Hobbs District Office of the date and time said survey is to be commenced.

(2) That Form C-105 shall be filed in accordance with Division Rule 1105 and the operator shall indicate thereon true vertical depth in addition to measured depths.

(3) That the SW/4 SE/4 of said Section 34 shall be dedicated to the subject well.

(4) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

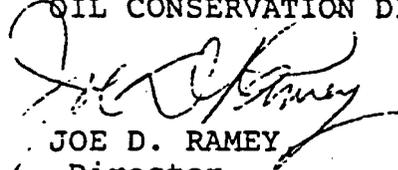
-3-

Case No. 7856

Order No. R-7275

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION



JOE D. RAMEY  
Director

S E A L

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

NO. OF COPIES DESIRED	
DISTRIBUTION	
SANTA FE	
FILE	
U.S.G.B.	
LAND OFFICE	
OPERATOR	

3a. Indicate Type of Lease  
 State  Fee   
 3. State Oil & Gas Lease No.

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

1.  OIL WELL  GAS WELL  OTHER

2. Name of Operator  
SHELL WESTERN E&P INC.

3. Address of Operator  
P. O. BOX 991, HOUSTON, TX 77001

4. Location of Well:  
 UNIT LETTER P 400 FEET FROM THE SOUTH LINE AND 1190 FEET FROM  
 THE EAST LINE, SECTION 34 TOWNSHIP 18S RANGE 38E N.M.P.M.

7. Unit Agreement Name  
N. HOBBS (G/SA) UNIT

8. Part of Lease Name  
SECTION 34

9. Well No.  
441

10. Field and Pool, or Windcat  
HOBBS (G/SA)

11. Elevation (Show whether DF, RT, GR, etc.)  
3620' GR

12. County  
LEA

16. Check Appropriate Box To Indicate Nature of Notice, Report or Other Data  
NOTICE OF INTENTION TO: SUBSEQUENT REPORT OF:

PERFORM REMEDIAL WORK <input type="checkbox"/>	PLUG AND ABANDON <input type="checkbox"/>	REMEDIAL WORK <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
TEMPORARILY ABANDON <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	COMMENCE DRILLING OPNS. <input type="checkbox"/>	PLUG AND ABANDONMENT <input checked="" type="checkbox"/>
PULL OR ALTER CASING <input type="checkbox"/>	OTHER <input type="checkbox"/>	CASING TEST AND CEMENT JOB <input type="checkbox"/>	
		OTHER _____ <input type="checkbox"/>	

17. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work; SEE RULE 1703.

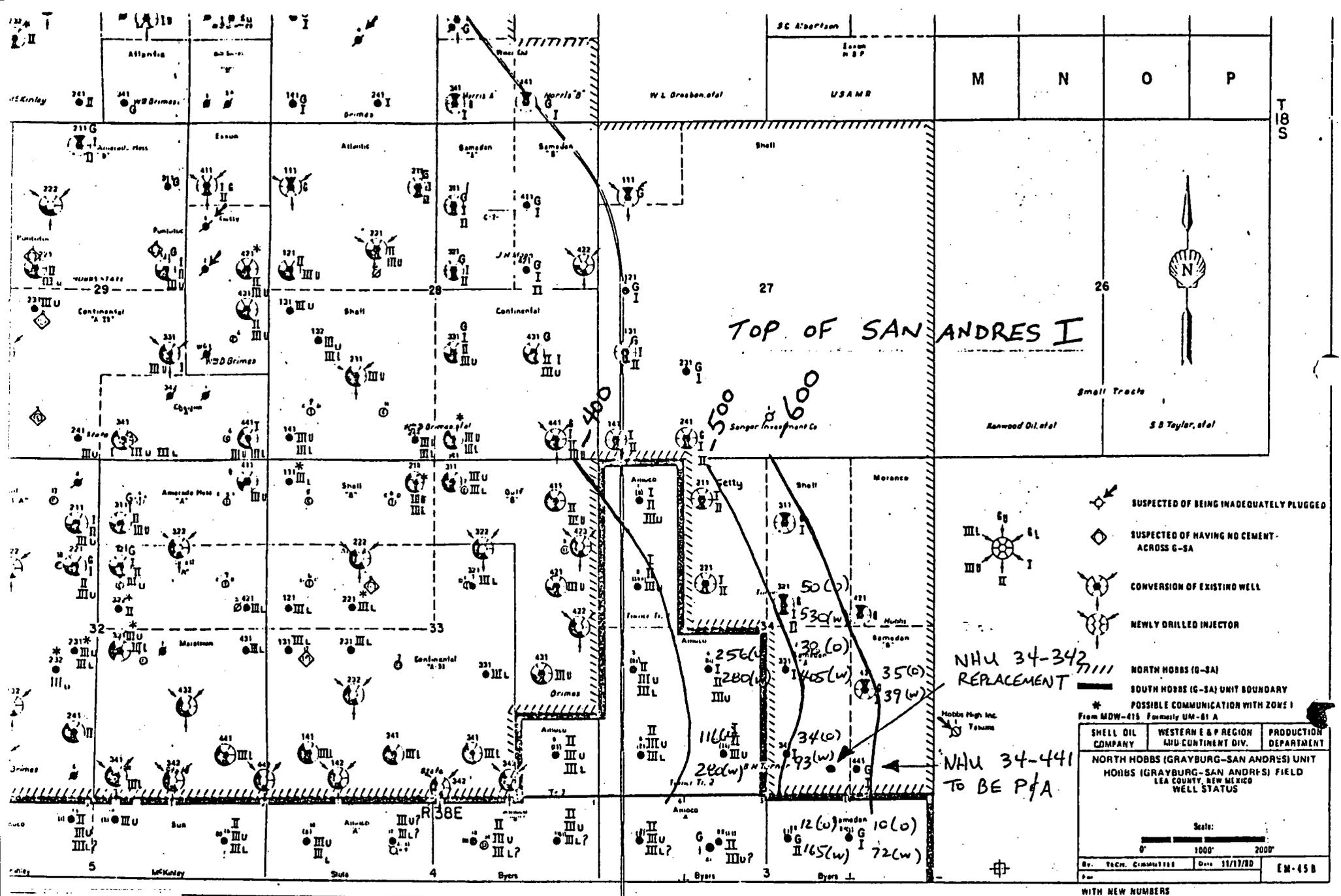
5-31-84: Filled hole w/10# brine water. Tagged TD @ 4233'. Spotted first plug w/45 sx Class "C" cmt. WOC 2 hrs. Tagged TOC @ 4150' (bottom of 5-1/2" csg). Spotted an additional 6 sx Class "C" cmt w/ bottom of tubing @ 4133'. TOC @ 3950'. Spotted second plug w/23 sx Class "C" cmt w/ bottom of tubing @ 3573'. TOC @ 3357'. Spotted third plug w/11 sx Class "C" cmt w/ bottom of tubing @ 2746'. TOC @ 2646'. Circulated hole clean.

6-01-84: Perforated @ Top of Salt (1750') w/ a 4-way jet gun. Spotted plug from 1765' to surface. Cut casing off 4' below surface and welded on a dry hole marker. Cleaned and leveled location. Well is now plugged and abandoned.

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

Signed A. J. FORE TITLE SUPERVISOR REG. & PERMITTING DATE OCTOBER 25, 1984

APPROVED BY \_\_\_\_\_ TITLE \_\_\_\_\_ DATE \_\_\_\_\_  
 CONDITIONS OF APPROVAL, IF ANY:



-  SUSPECTED OF BEING INADEQUATELY PLUGGED
-  SUSPECTED OF HAVING NO CEMENT ACROSS G-SA
-  CONVERSION OF EXISTING WELL
-  NEWLY DRILLED INJECTOR

NHU 34-342  
REPLACEMENT

NHU 34-441  
TO BE P/A

POSSIBLE COMMUNICATION WITH ZONE I  
From MDW-415 Formerly UM-81 A

SHELL OIL COMPANY	WESTERN E & P REGION LNU CONTINENT DIV.	PRODUCTION DEPARTMENT
NORTH HOBBS (GRAYBURG-SAN ANDRES) UNIT		
HOBBS (GRAYBURG-SAN ANDRES) FIELD		
LEA COUNTY, NEW MEXICO		
WELL STATUS		
Scale: 0' 1000' 2000'		
Dr. YeCh. Cimarron	Date 11/17/80	EM-45 B

WITH NEW NUMBERS



NEW MEXICO OIL CONSERVATION COMMISSION  
WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-122  
Supersedes C-120  
Effective 1-1-85

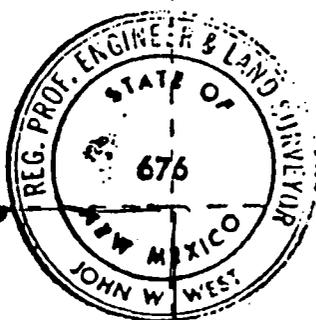
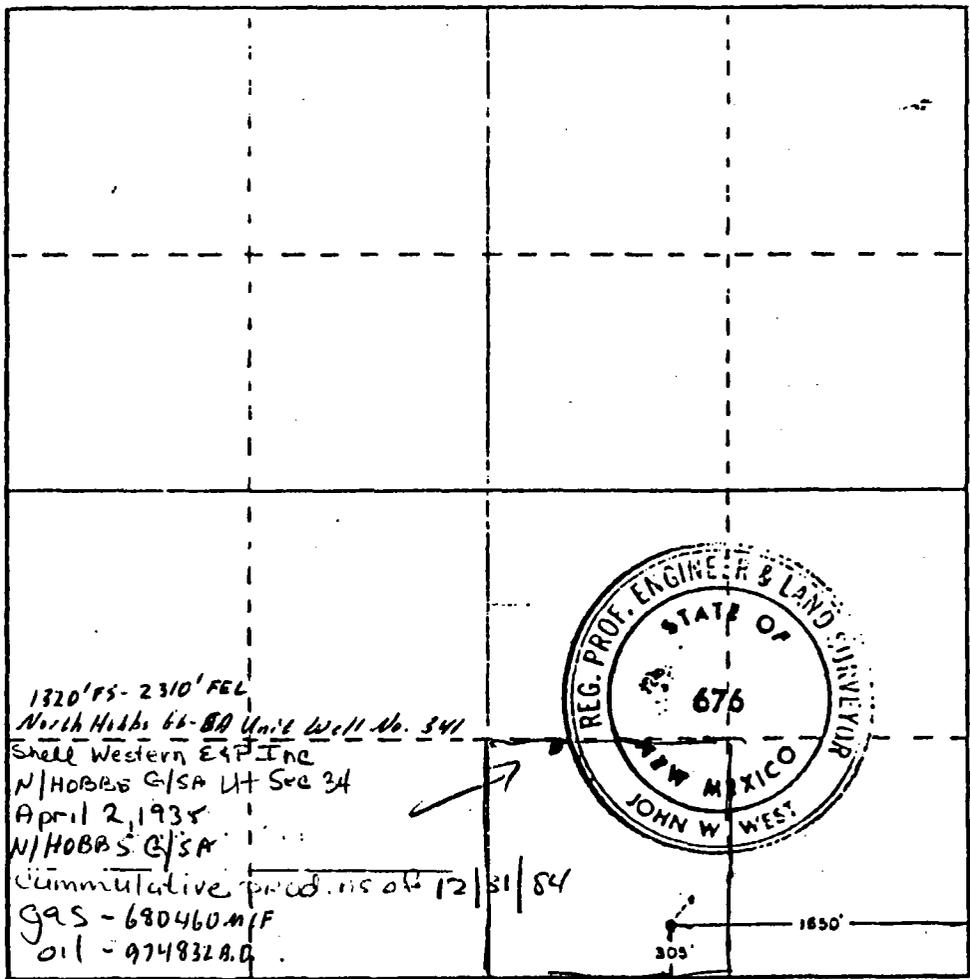
All distances must be from the outer boundaries of the Section

SHELL WESTERN E&P INC.		Lease North Hobbs Unit		34-342
0	34	18 South	38 East	Lea
SURFACE LOCATION/BOTTOMHOLE LOCATION				
305/450		1650/1540		
feet from the south		line and feet from the east		
3604.5'	GRAYBURG/SAN ANDRES	HOBBS (GRAYBURG/SAN ANDRES)	40	

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 (on reverse side of this form if necessary.)

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, force-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 hereon is true and complete to the best of my knowledge and belief.

*A. J. Fore* A. J. FORE  
SUPERVISOR REG. & PERMITTING  
SHELL WESTERN E&P INC.  
MAY 21, 1984

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: March 22, 1983  
Registered Professional Engineer and Land Surveyor  
*John W. West*  
Certificate No. 676

**Shell Western E&P Inc.**

A Subsidiary of Shell Oil Company



P.O. Box 991  
Houston, TX 77001

November 13, 1984

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

RECEIVED  
NOV 15 1984  
OIL CONSERVATION DIVISION

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. respectfully requests an administrative finding, that the following infill well is 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  
WELL NO. 34-342  
HOBBS (GRAYBURG/SAN ANDRES) POOL  
LEA COUNTY, NEW MEXICO.

N. Hobbs (G/SA) Unit No. 34-342 was drilled as a replacement well for well no. 34-441, which was plugged and abandoned due to irreparable casing damage at approximately 600'. NMOCD CASE No. 7856/Order No. R-7275 dated April 29, 1983, approved the directional drilling of 34-342 at an unorthodox location. Additional data in support of this request is attached.

The only operator of a proration or spacing unit offsetting the proration unit of well no. 34-342 is Amoco Production Company, which operates the South Hobbs (Grayburg/San Andres) Unit. Amoco has been notified by certified mail of this request.

If additional information is required, please advise.

Yours very truly,

A handwritten signature in cursive script, appearing to read "A. J. Fore", is located below the typed name.

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

DMU

Attachments

BNBG8429803

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

(CERTIFIED MAIL P 726 891 052)



Zone I - Based on Decline Curve Analysis

$$\begin{array}{l} q_i = 14 \text{ BOPD} \\ q_{ec} = 1 \text{ BOPD} \\ \text{Annual decline} = 15\% \end{array} \quad \frac{(14-1)365}{0.1625} = 29,200 \text{ BO Reserves}$$

Zone II Reserves - Based on Volumetric Calculation

$$\begin{array}{l} A = 20 \text{ ac.} \\ h = 20' \\ 1-SW = .65 \\ Boi = 1.2 \\ R.E. = .17 \\ \emptyset = .14 \end{array} \quad \frac{7758 \times 20 \times 20 \times .14 \times .65 \times .17}{1.2} = 40,000 \text{ BO}$$

Gas Reserves - Based on Estimated Ultimate Oil Recovery  
Applied to the Current Average Producing GOR (August  
84) for the North Hobbs Unit

$$69,000 \text{ BO} \times 1200 \text{ cu ft/bbl} = 82,800 \text{ MCF}$$

Based on the foregoing, it is our opinion that the reserves developed by replacement well No. 34-342 are unique and would not be recovered by any other well in the existing proration unit. Therefore, we recommend an effective and efficient finding be made for North Hobbs Unit Well No. 34-342.

SWEPI - N. HOBBS (G/SA) UNIT NO. 34-441  
UNIT LETTER "P", 400' FSL AND 1190' FEL, SECTION 34, T18S, R38E, NMPM  
LEA COUNTY, NEW MEXICO

SPUD DATE: 05-11-44  
COMPLETION DATE: 06-06-44  
TOTAL DEPTH: 4233'  
COMPLETION INTERVAL: 4150-4233' OPEN HOLE  
PLUGGED & ABANDONED:

Well No. 34-441 had a history of casing problems with attendant formation damage. During a workover in June 1982 to improve production, severe casing damage was encountered requiring attempts to swage the 5½" production string at tight spots from 589 to 633 feet. The continuous influx of Red Bed shale through severely corroded casing led to abandonment of workover operations.

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.

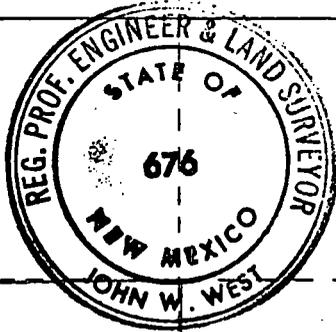
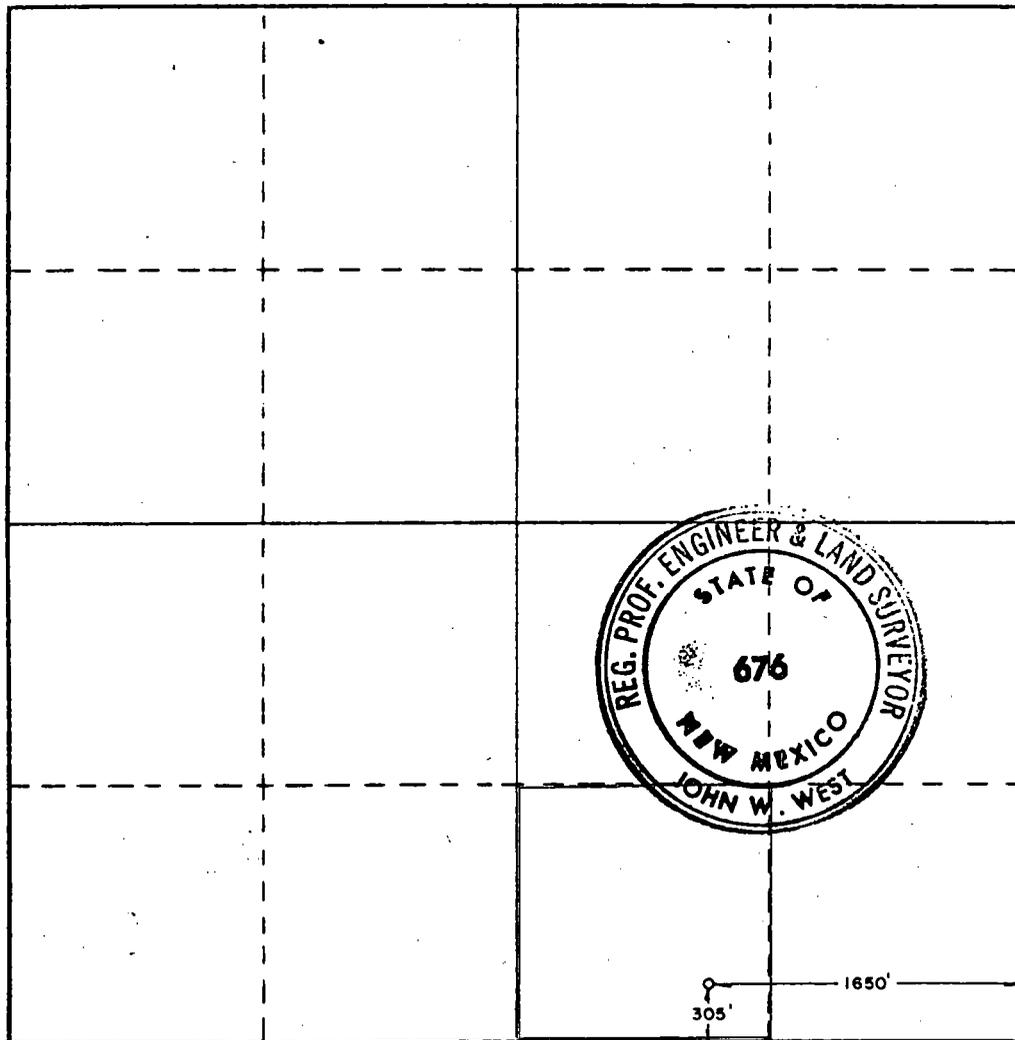
Operator <b>Shell Western E&amp;P Inc.</b>		Lease <b>North Hobbs Unit</b>			Well No. <b>34-342</b>
Unit Letter <b>0</b>	Section <b>34</b>	Township <b>18 South</b>	Range <b>38 East</b>	County <b>Lea</b>	
Actual Footage Location of Well: <b>305</b> feet from the <b>south</b> line and <b>1650</b> feet from the <b>east</b> line					
Ground Level Elev. <b>3607.5'</b>	Producing Formation <b>Grayburg/San Andres</b>		Pool <b>Hobbs (G/SA)</b>	Dedicated Acreage: <b>40</b> 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 SUPERVISOR REG. & PERMITTING  
Company SHELL WESTERN E&P INC.  
Date NOV 13 1984

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 March 22, 1983  
Registered Professional Engineer and/or Land Surveyor

John W. West  
Certificate No. John W. West, NM L.S. 676

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.

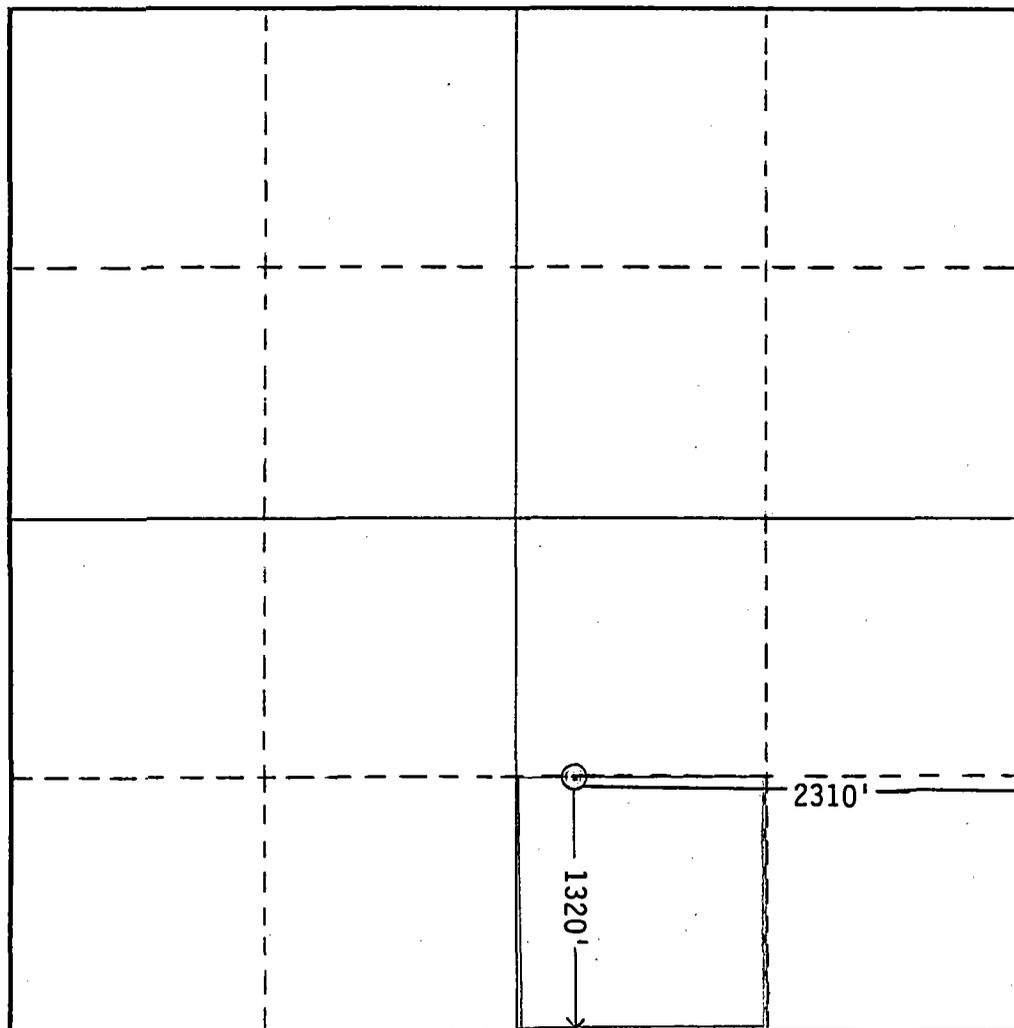
Operator <b>SHELL WESTERN E&amp;P INC.</b>		Lease <b>N. HOBBS (G/SA) UNIT</b>			Well No. <b>34-341</b>
Unit Letter <b>0</b>	Section <b>34</b>	Township <b>18-S</b>	Range <b>38-E</b>	County <b>LEA</b>	
Actual Footage Location of Well: <b>1320</b> feet from the <b>SOUTH</b> line and <b>2310</b> feet from the <b>EAST</b> line					
Ground Level Elev. <b>3620'</b>	Producing Formation <b>GRAYBURG/SAN ANDRES</b>		Pool <b>HOBBS (G/SA)</b>	Dedicated Acreage: <b>40</b> 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* A. J. FORE  
Position  
SUPERVISOR REG. & PERMITTING  
Company  
SHELL WESTERN E&P INC.  
Date  
NOV 13 1984

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.

0 330 660 990 1320 1650 1980 2310 2640 2000 1500 1000 500 0

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.

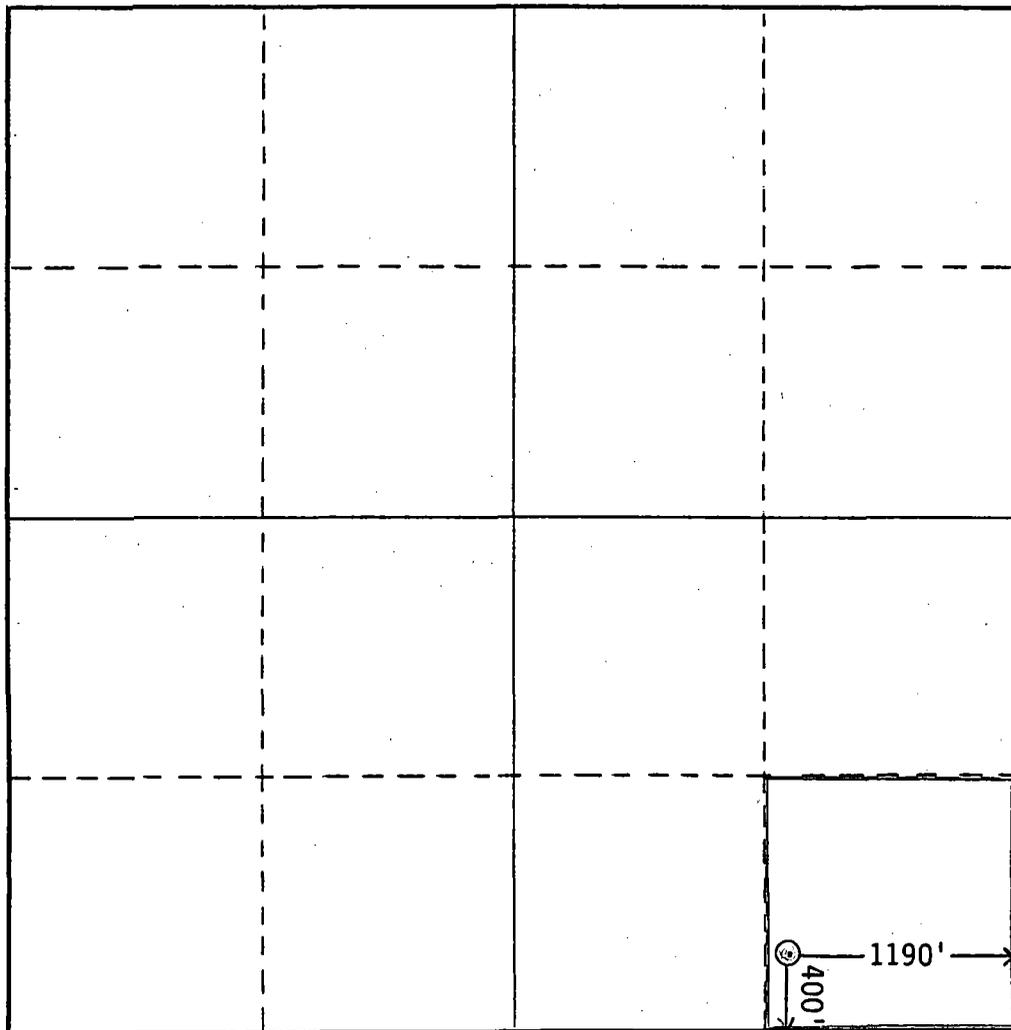
Operator <b>SHELL WESTERN E&amp;P INC.</b>		Lease <b>N. HOBBS (G/SA) UNIT</b>			Well No. <b>34-441</b>
Unit Letter <b>P</b>	Section <b>34</b>	Township <b>18-S</b>	Range <b>38-E</b>	County <b>LEA</b>	
Actual Footage Location of Well: <b>400</b> feet from the <b>SOUTH</b> line and <b>1190</b> feet from the <b>EAST</b> line					
Ground Level Elev. <b>3620'</b>	Producing Formation <b>GRAYBURG/SAN ANDRES</b>	Pool <b>HOBBS (G/SA)</b>			Dedicated Acreage: <b>40</b> 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 SUPERVISOR REG. & PERMITTING  
 Company SHELL WESTERN E&P INC.  
 Date NOV 13 1984

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. \_\_\_\_\_



STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION

cc R.W. Phillips  
W.R. Lancaster

IN THE MATTER OF THE HEARING  
CALLED BY THE OIL CONSERVATION  
DIVISION FOR THE PURPOSE OF  
CONSIDERING:

CASE NO. 7856  
Order No. R-7275

APPLICATION OF SHELL OIL COMPANY  
FOR DIRECTIONAL DRILLING AND AN  
UNORTHODOX LOCATION, LEA COUNTY,  
NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on April 27, 1983, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this 29th day of April, 1983, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

- (1) That due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.
- (2) That the applicant, Shell Oil Company, seeks authority to directionally drill, as an infill well, its Shell-North Hobbs Unit Section 34 Well No. 342 at an unorthodox surface location 305 feet from the South line and 1650 feet from the East line of Section 34, Township 18 South, Range 38 East, to a point no more than 500 feet and no less than 400 feet from the South line and no more than 1590 feet or less than 1490 feet from the East line of Section 34, Township 18 South, Range 38 East at a true vertical depth of 4,400 feet, Hobbs Pool, Lea County, New Mexico.
- (3) That the SW/4 SE/4 of said Section 34 should be dedicated to the well.
- (4) That the applicant should be required to determine the subsurface location of the bottom of the hole by means of a continuous multi-shot directional survey conducted subsequent to said directional drilling, if said well is to be completed as a producing well.

(5) That approval of the subject application will prevent the drilling of unnecessary wells, avoid the augmentation of risk arising from the drilling of an excessive number of wells, and otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

(1) That the applicant, Shell Oil Company, is hereby authorized to directionally drill its Shell-North Hobbs Unit Section 34 Well No. 342, an infill well, at an unorthodox surface location, hereby approved, 305 feet from the South line and 1650 feet from the East line of Section 34, Township 18 South, Range 38 East, NMPM, Hobbs Pool, Lea County, New Mexico, to a point no more than 500 feet or less than 400 feet from the South line and no more than 1590 feet or less than 1490 feet from the East line of said Section 34.

PROVIDED HOWEVER, that prior to the above-described directional drilling, the applicant shall establish the location of the kick-off point by conducting a continuous multi-shot directional survey of the well.

PROVIDED FURTHER, that subsequent to the above-described directional drilling, should said well be a producer, a continuous multi-shot directional survey shall be made of the wellbore from total depth to the kick-off point with shot points not more than 100 feet apart; that the operator shall cause the surveying company to forward a copy of the survey report directly to the Santa Fe office of the Division, P. O. Box 2088, Santa Fe, New Mexico 87501, and that the operator shall notify the Division's Hobbs District Office of the date and time said survey is to be commenced.

(2) That Form C-105 shall be filed in accordance with Division Rule 1105 and the operator shall indicate thereon true vertical depth in addition to measured depths.

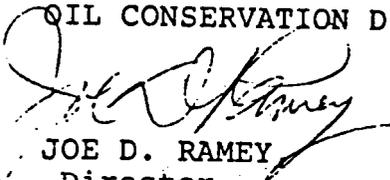
(3) That the SW/4 SE/4 of said Section 34 shall be dedicated to the subject well.

(4) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

-3-  
Case No. 7856  
Order No. R-7275

DONE at Santa Fe, New Mexico, on the day and year  
hereinabove designated.

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION

  
JOE D. RAMEY  
Director

S E A L

OIL CONSERVATION DIVISION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

Form C-103  
Revised 10-1-78

NO. OF COPIES RECEIVED	
DISTRIBUTION	
SANTA FE	
FILE	
U.S.G.S.	
LAND OFFICE	
OPERATOR	

3a. Indicate Type of Lease  
State  Fee

5. State Oil & Gas Lease No.

SUNDRY NOTICES AND REPORTS ON WELLS

DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE APPLICATION FOR PERMIT - (FORM C-101) FOR S.U.C. PROPOSALS.

1. OIL WELL  GAS WELL  OTHER \_\_\_\_\_

2. Name of Operator  
SHELL WESTERN E&P INC.

3. Address of Operator  
P. O. BOX 991, HOUSTON, TX 77001

4. Location of Well:  
UNIT LETTER P 400 FEET FROM THE SOUTH LINE AND 1190 FEET FROM THE EAST LINE, SECTION 34 TOWNSHIP 18S RANGE 38E B.M.P.M.

7. Unit Agreement Name  
N. HOBBS (G/SA) UNIT

8. Farm or Lease Name  
SECTION 34

9. Well No.  
441

10. Field and Pool, or Wildcat  
HOBBS (G/SA)

15. Elevation (Show whether: DF, RT, GR, etc.)  
3620' GR

12. County  
LEA

16. Check Appropriate Box To Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK <input type="checkbox"/>	PLUG AND ABANDON <input type="checkbox"/>	REMEDIAL WORK <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
TEMPORARILY ABANDON <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	COMMENCE DRILLING OPNS. <input type="checkbox"/>	PLUG AND ABANDONMENT <input checked="" type="checkbox"/>
PULL OR ALTER CASING <input type="checkbox"/>	OTHER <input type="checkbox"/>	CASING TEST AND CEMENT JOB <input type="checkbox"/>	OTHER <input type="checkbox"/>

17. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work; SEE RULE 1703.

5-31-84: Filled hole w/10# brine water. Tagged TD @ 4233'. Spotted first plug w/45 sx Class "C" cmt. WOC 2 hrs. Tagged TOC @ 4150' (bottom of 5-1/2" csg). Spotted an additional 6 sx Class "C" cmt w/ bottom of tubing @ 4133'. TOC @ 3950'. Spotted second plug w/23 sx Class "C" cmt w/ bottom of tubing @ 3573'. TOC @ 3357'. Spotted third plug w/11 sx Class "C" cmt w/ bottom of tubing @ 2746'. TOC @ 2646'. Circulated hole clean.

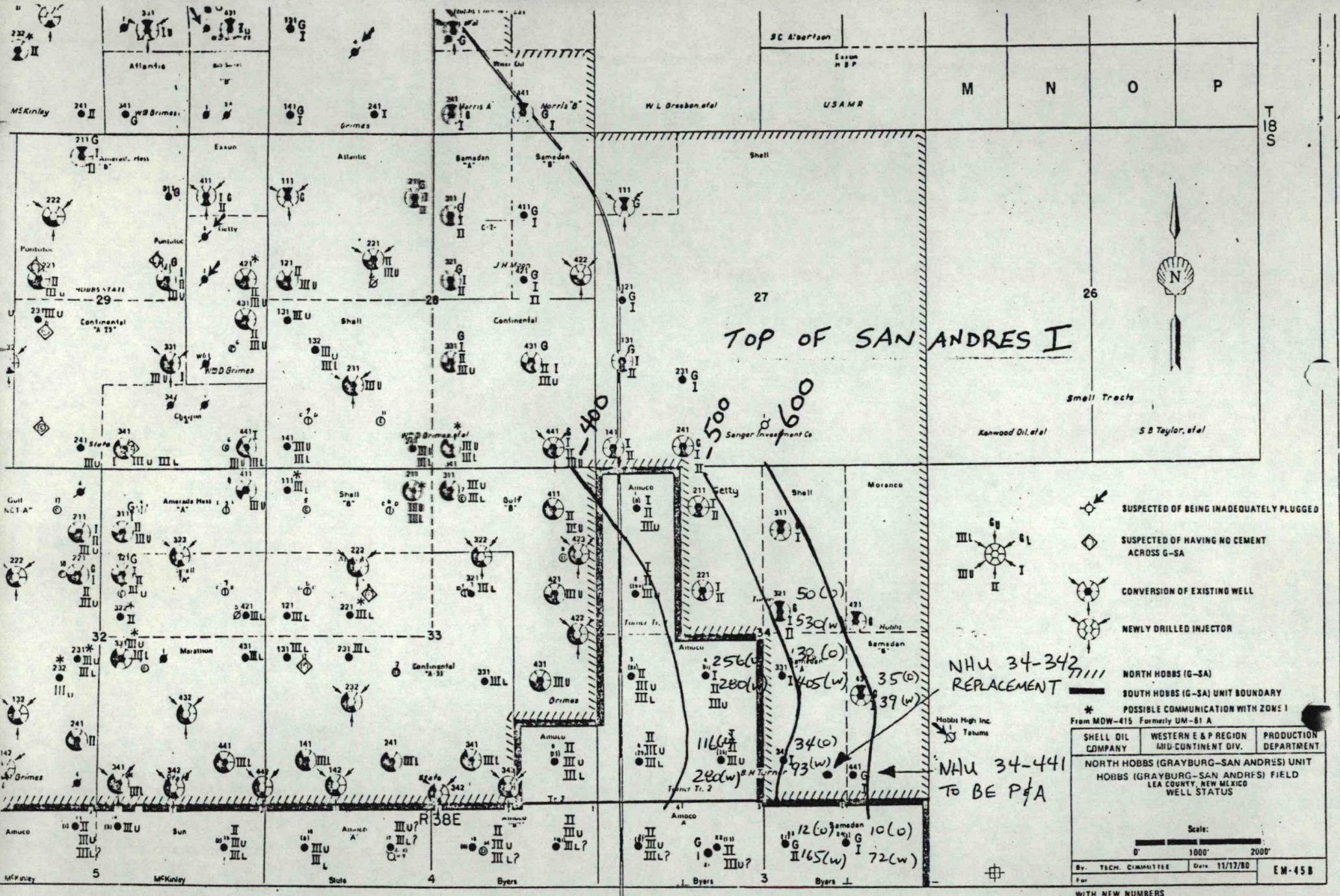
6-01-84: Perforated @ Top of Salt (1750') w/ a 4-way jet gun. Spotted plug from 1765' to surface. Cut casing off 4' below surface and welded on a dry hole marker. Cleaned and leveled location. Well is now plugged and abandoned.

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

Signed: A. J. FORE TITLE: SUPERVISOR REG. & PERMITTING DATE: OCTOBER 25, 1984

APPROVED BY: \_\_\_\_\_ TITLE: \_\_\_\_\_ DATE: \_\_\_\_\_

CONDITIONS OF APPROVAL, IF ANY:



NHU 34-342  
REPLACEMENT

NHU 34-441  
TO BE P/A

- SUSPECTED OF BEING INADEQUATELY PLUGGED
- SUSPECTED OF HAVING NO CEMENT ACROSS G-SA
- CONVERSION OF EXISTING WELL
- NEWLY DRILLED INJECTOR

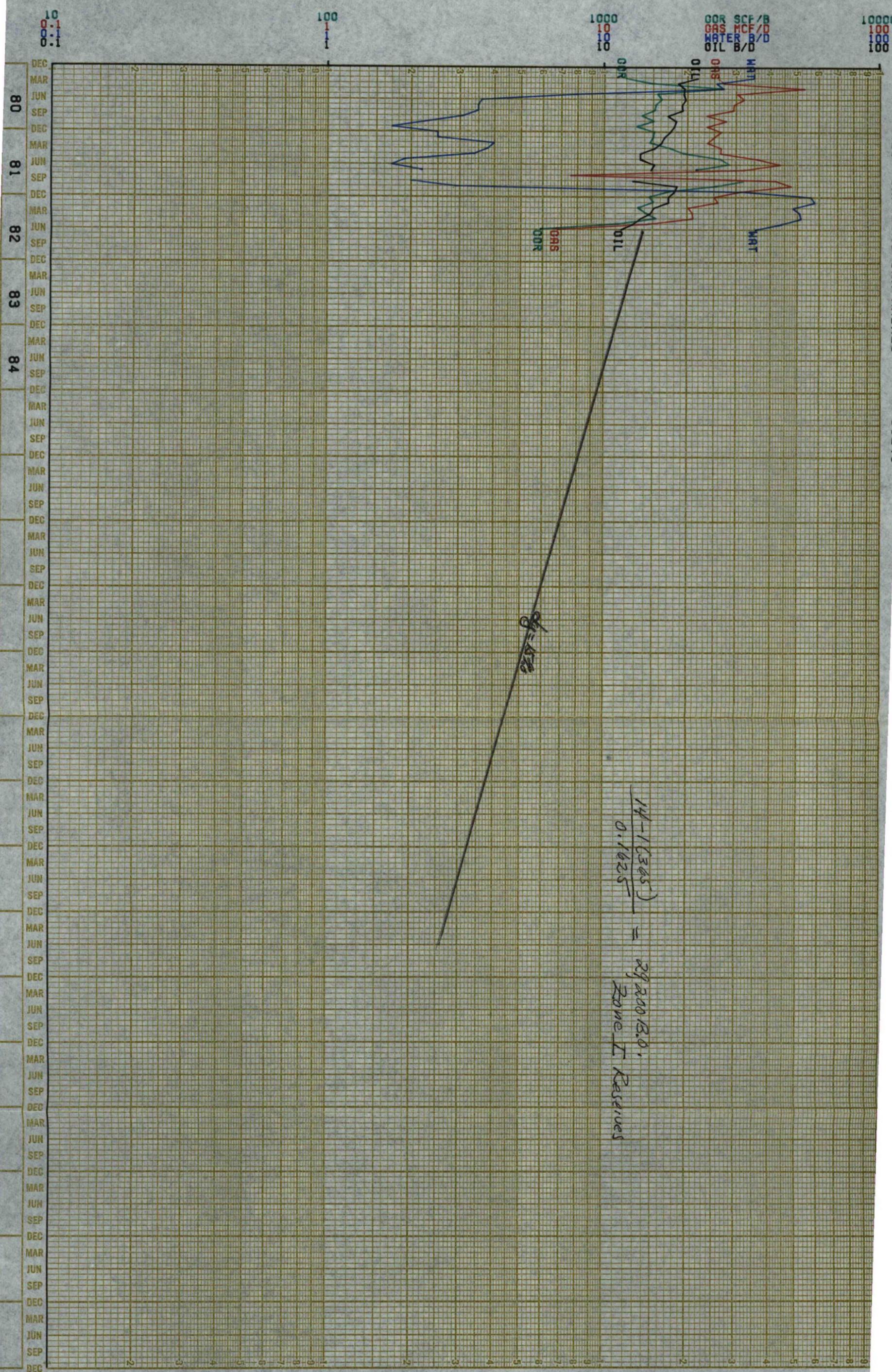
- NORTH HOBBS (G-SA)
- SOUTH HOBBS (G-SA) UNIT BOUNDARY
- POSSIBLE COMMUNICATION WITH ZONE 1

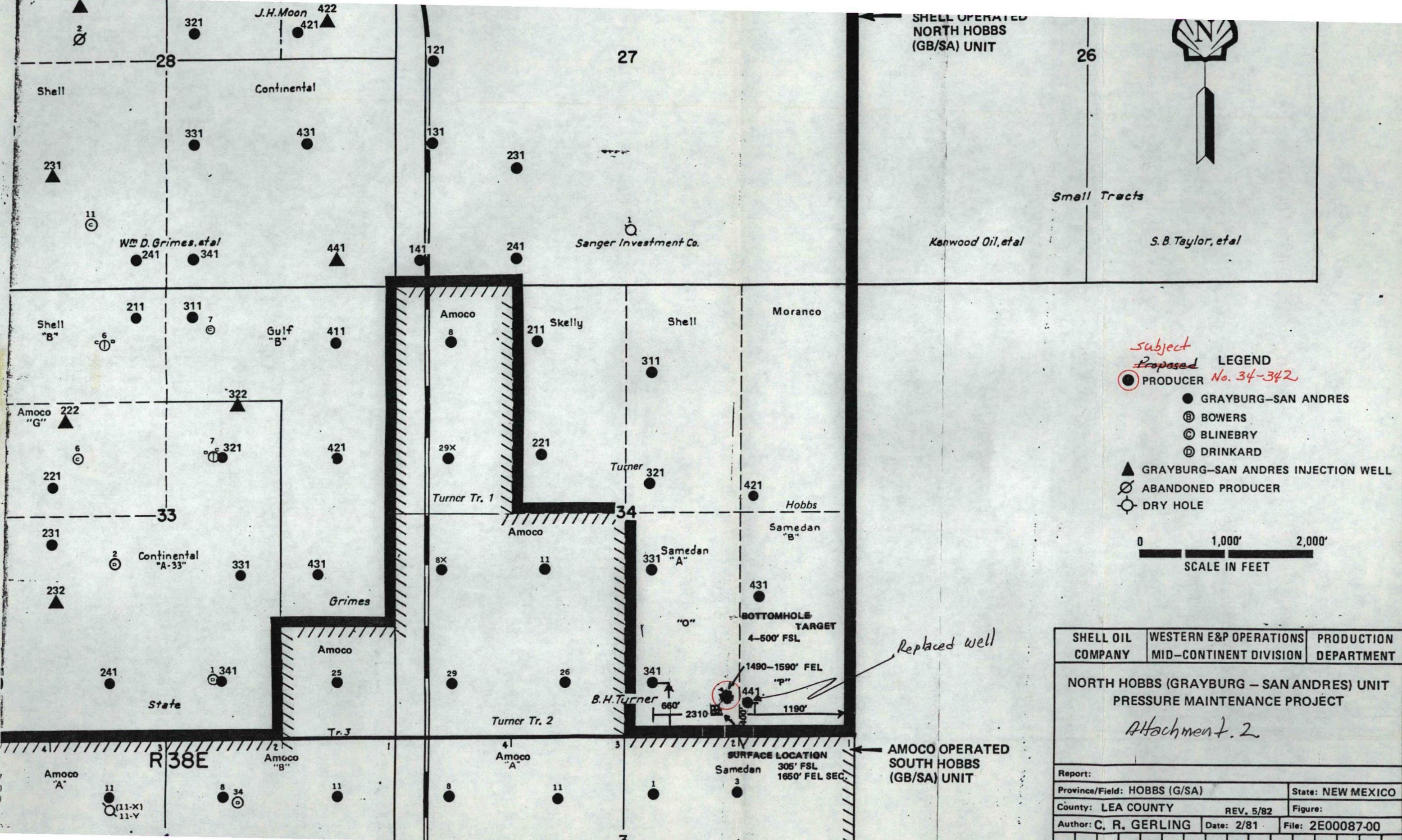
\* From MDW-415 Formerly UM-61 A

SHELL OIL COMPANY	WESTERN E & P REGION MID-CONTINENT DIV.	PRODUCTION DEPARTMENT
NORTH HOBBS (GRAYBURG-SAN ANDRES) UNIT		
HOBBS (GRAYBURG-SAN ANDRES) FIELD		
LEA COUNTY, NEW MEXICO		
WELL STATUS		
Scale:		
0' 1000' 2000'		
By. TECH. COMMITTEE	Date 11/17/80	EM-45B
WITH NEW NUMBERS		

Attachment 3







- subject*  
*Proposed* LEGEND *No. 34-342*
- GRAYBURG-SAN ANDRES
  - ⊙ BOWERS
  - ⊙ BLINEBRY
  - ⊙ DRINKARD
  - ▲ GRAYBURG-SAN ANDRES INJECTION WELL
  - ⊘ ABANDONED PRODUCER
  - ⊙ DRY HOLE



SHELL OIL COMPANY	WESTERN E&P OPERATIONS MID-CONTINENT DIVISION	PRODUCTION DEPARTMENT
NORTH HOBBS (GRAYBURG - SAN ANDRES) UNIT PRESSURE MAINTENANCE PROJECT		
<i>Attachment 2</i>		
Report:		
Province/Field: HOBBS (G/SA)		State: NEW MEXICO
County: LEA COUNTY		Figure:
Author: C. R. GERLING	Date: 2/81	File: 2E00087-00

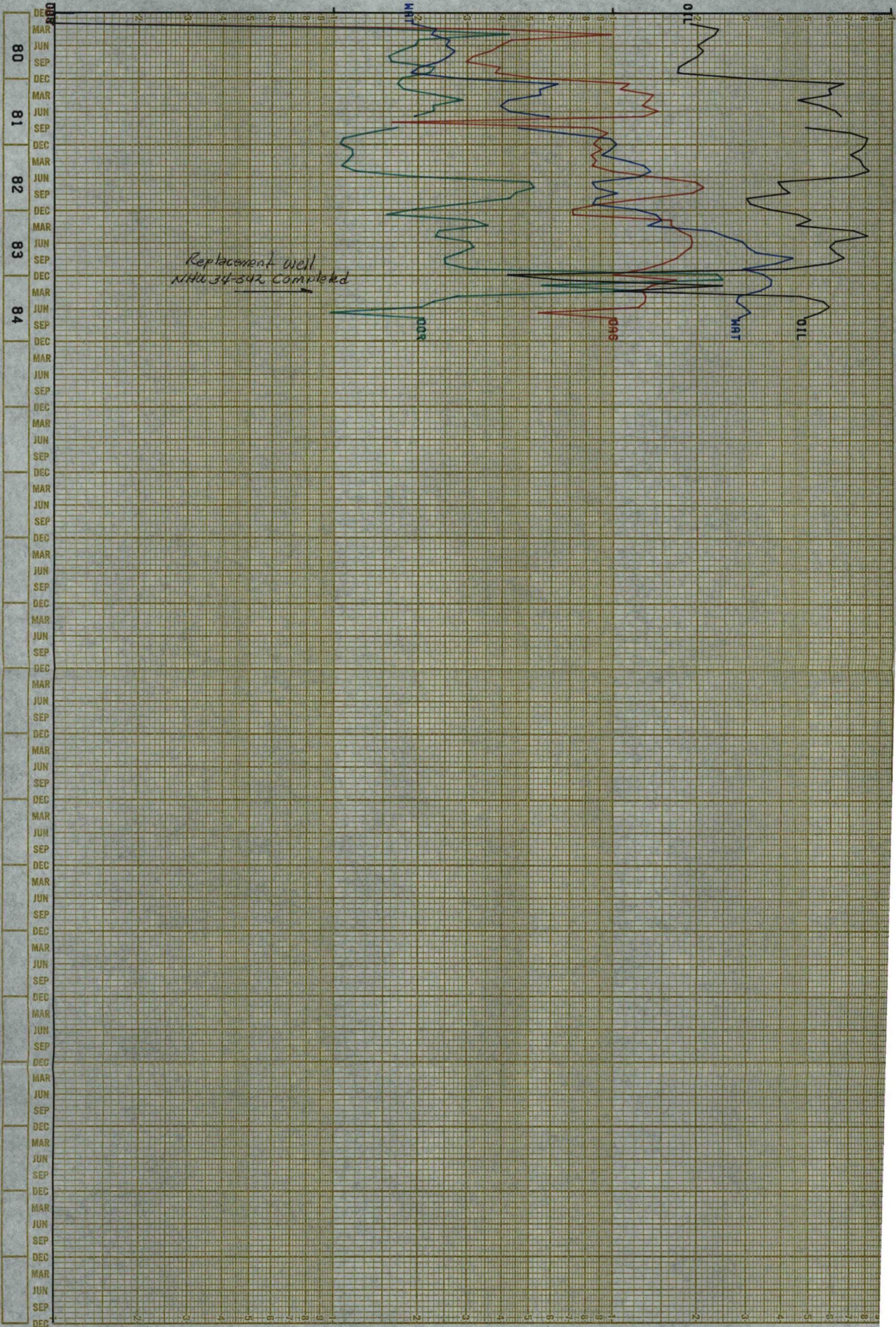
100  
1  
0.1

1000  
10  
1

10000  
100  
10

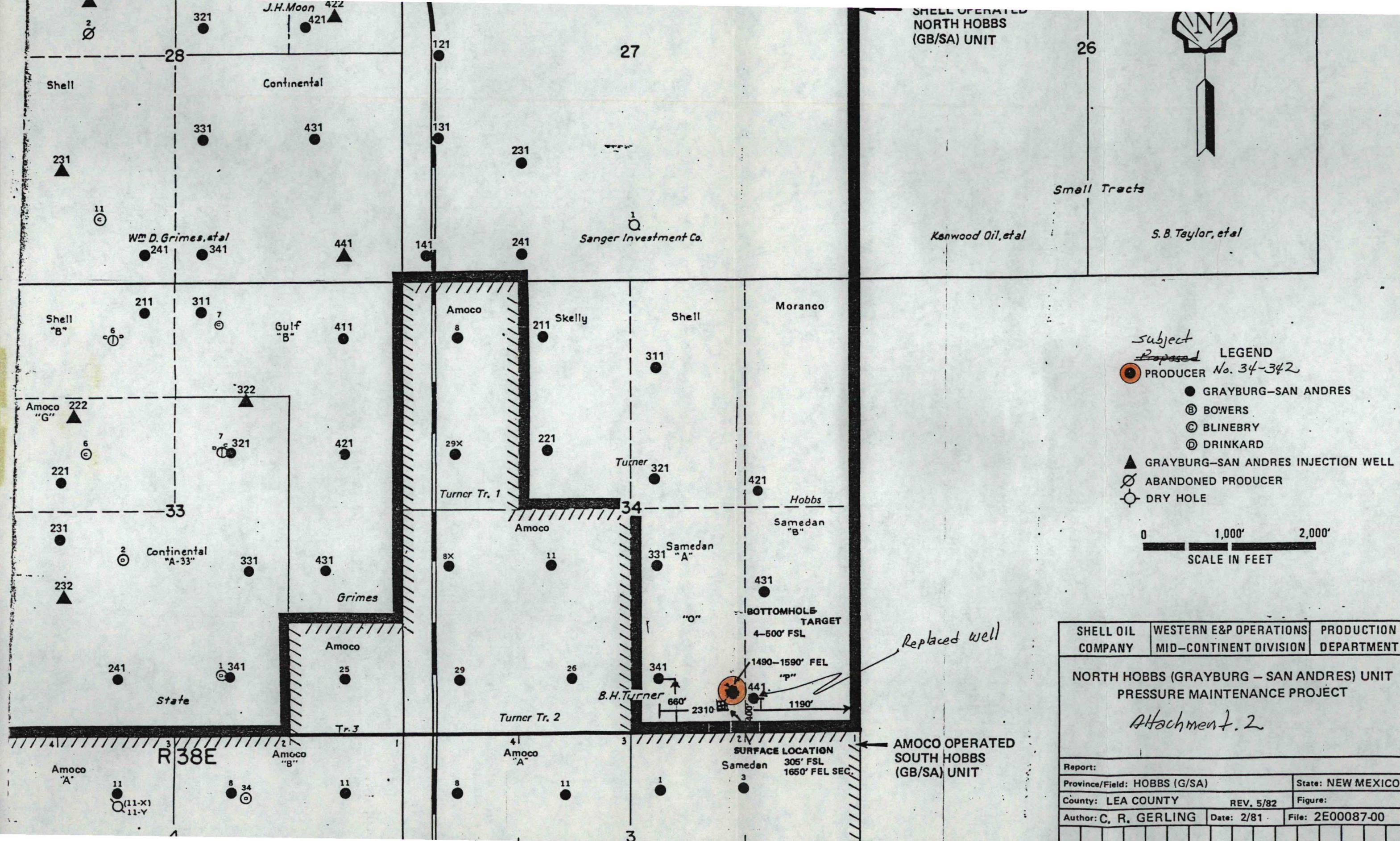
GOR SCF/B  
GAS MCF/D  
WATER B/D  
OIL B/D

100000  
1000  
100



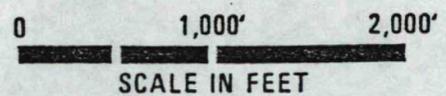
Replacement well  
NHO 34-542 completed

Abraham 5



subject  
~~Proposed~~ LEGEND No. 34-342

- GRAYBURG-SAN ANDRES
- ⊙ BOWERS
- ⊙ BLINEBRY
- ⊙ DRINKARD
- ▲ GRAYBURG-SAN ANDRES INJECTION WELL
- ⊘ ABANDONED PRODUCER
- ⊙ DRY HOLE



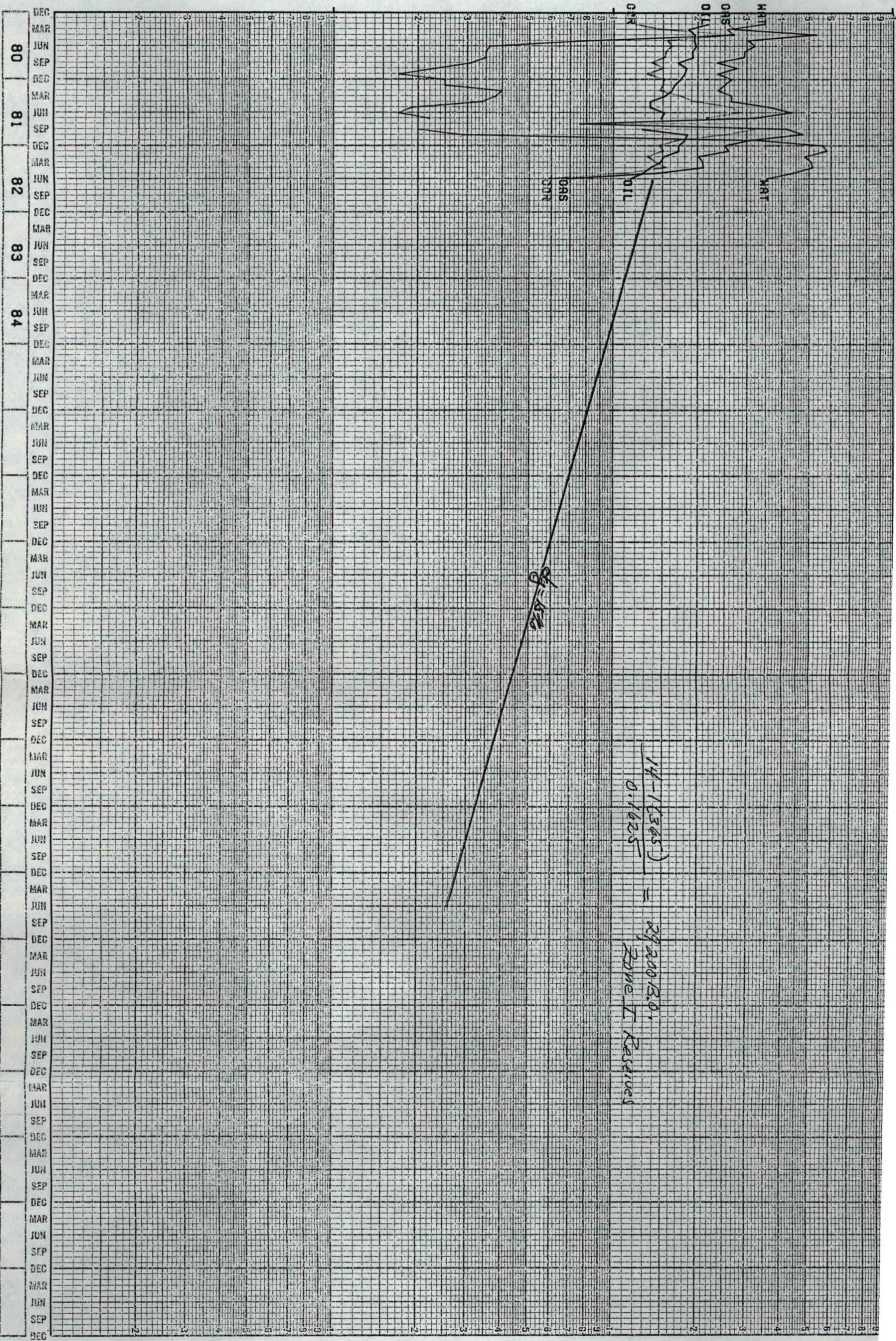
SHELL OIL COMPANY	WESTERN E&P OPERATIONS MID-CONTINENT DIVISION	PRODUCTION DEPARTMENT
NORTH HOBBS (GRAYBURG - SAN ANDRES) UNIT PRESSURE MAINTENANCE PROJECT		
<i>Attachment 2</i>		
Report:		
Province/Field: HOBBS (G/SA)		State: NEW MEXICO
County: LEA COUNTY		REV. 5/82
Author: C. R. GERLING		Date: 2/81
		Figure: 2E00087-00

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

1000  
 100  
 10

100  
 10  
 1

10  
 1  
 0.1



$(14 - 15345) / 0.1625 = 29200 \text{ B.O.}$   
 Zone I Reserves

Attachment 1

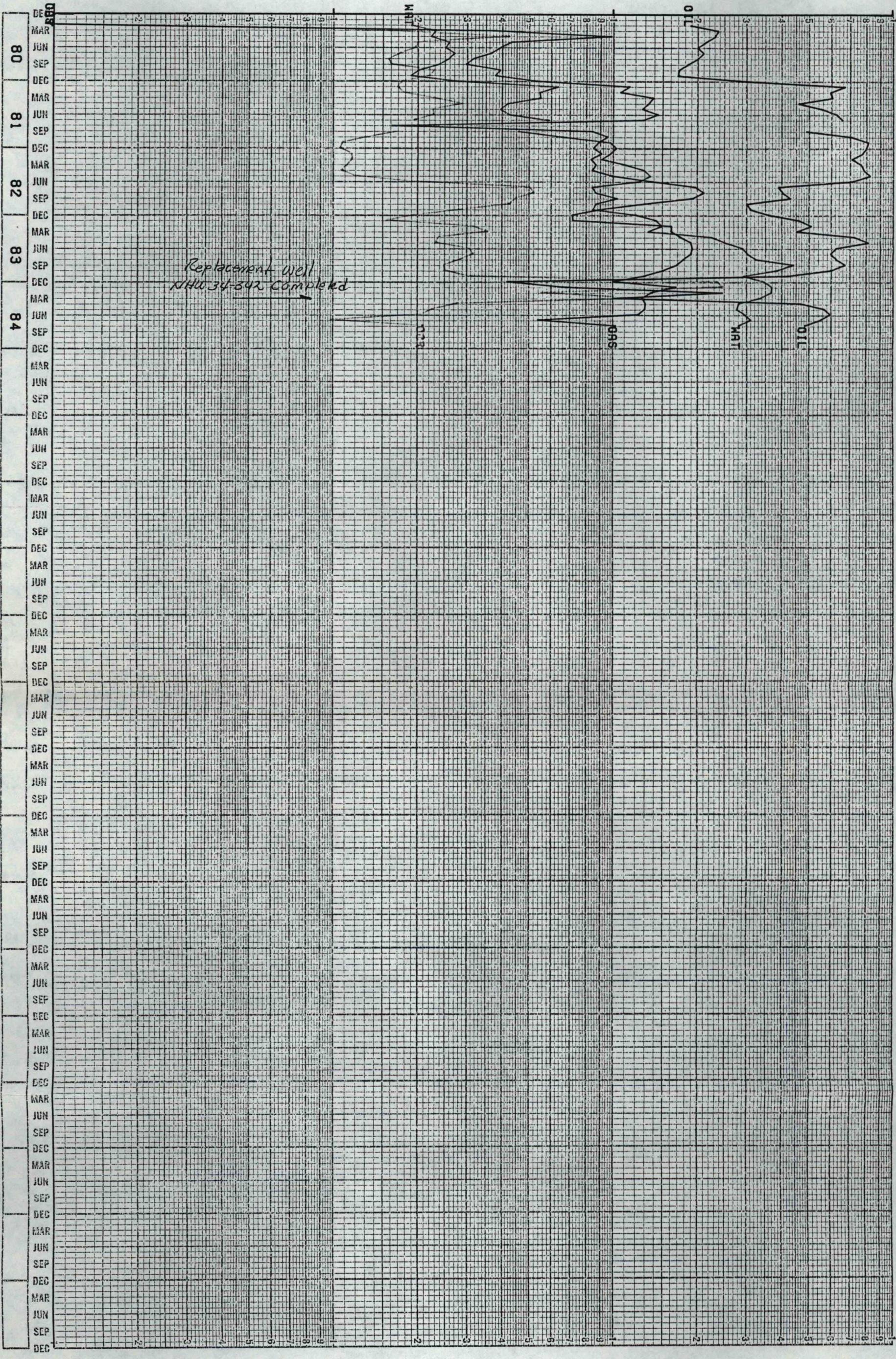
100  
1  
0.1

1000  
10  
1

10000  
100  
100  
10

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

1000  
100  
100  
10



Replacement well  
NHU 34-542 completed

NHU 34-541

NHU 34-543

GAS

GAS

WATER

OIL