

Shell Western E&P Inc.

A Subsidiary of Shell Oil Company



P.O. Box 576
Houston, TX 77001

October 31, 1988

State of New Mexico
Energy, Minerals and Natural Resources Department
Oil Conservation Division
310 Old Santa Fe Trail
Room 206
Santa Fe, NM 87503

Gentlemen:

SUBJECT: EXPANSION OF PRESSURE MAINTENANCE PROJECT
SHELL - NORTH HOBBS (GRAYBURG/SAN ANDRES) UNIT
WELL NO. 321-G
SECTION 32, T18S, R38E, NMPM
LEA COUNTY, NEW MEXICO

Shell Western E&P Inc. (SWEPI) respectfully requests administrative approval for expansion of the subject pressure maintenance project. Administrative Order No. R-6199 granted November 30, 1979, authorized Shell to conduct the North Hobbs (Grayburg/San Andres) Unit pressure maintenance project within the subject pool.

The following information is submitted in support of this request:

1. Plat of Unit identifying proposed injector and its project area.
2. Injection Well Data Sheet (with miscellaneous data attached).
3. An Affidavit of Publication certifying the newspaper legal notice.
4. List of offset operators and surface owner.
5. All entities in Item Four have been notified by certified mail.

If additional information is required, please advise.

Yours very truly,



A. J. Fore
Supervisor Regulatory and Permitting
Safety, Environmental and Administration
Western Division

JMW:SJK

Attachments

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

State of New Mexico
Office of Land Commissioner
P. O. Box 1148
Santa Fe, NM 87501-1148

APPLICATION FOR AUTHORIZATION TO INJECT

I. Purpose: Secondary Recovery Pressure Maintenance Disposal Storage
Application qualifies for administrative approval? yes no

II. Operator: SHELL WESTERN E&P INC.

Address: P. O. BOX 576, HOUSTON, TX 77001 (WCK 4435)

Contact party: A. J. FORE Phone: (713) 870-3787

III. Well data: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.

IV. Is this an expansion of an existing project? yes no
If yes, give the Division order number authorizing the project R-6199 (11-30-79)

V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.

* VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected;
2. Whether the system is open or closed;
3. Proposed average and maximum injection pressure;
4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and
5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).

*VIII. Attach appropriate geological data on the injection zone including appropriate lithologic detail, geological name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such source known to be immediately underlying the injection interval.

IX. Describe the proposed stimulation program, if any.

* X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division they need not be resubmitted.)

* XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.

XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.

XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.

XIV. Certification

I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

Name: A. J. FORE Title SUPV. REG. & PERMITTING

Signature: *A. J. Fore* Date: OCTOBER 31, 1988

* If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be duplicated and resubmitted. Please show the date and circumstance of the earlier submittal. HEARING OCTOBER 3, 1979; CASE NO. 6653, ORDER NO. R-6199

C-108 DATED 10-14-87 (PMX-151)

III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

- (1) Lease name; Well No.; location by Section, Township, and Range; and footage location within the section.
- (2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.
- (3) A description of the tubing to be used including its size, lining material, and setting depth.
- (4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

- (1) The name of the injection formation and, if applicable, the field or pool name.
- (2) The injection interval and whether it is perforated or open-hole.
- (3) State if the well was drilled for injection or, if not, the original purpose of the well.
- (4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.
- (5) Give the depth to and name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

- (1) The name, address, phone number, and contact party for the applicant;
- (2) the intended purpose of the injection well; with the exact location of single wells or the section, township, and range location of multiple wells;
- (3) the formation name and depth with expected maximum injection rates and pressures; and
- (4) a notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501 within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

INJECTION WELL DATA SHEET

SHELL WESTERN E&P INC. NORTH HOBBS (GRAYBURG/SAN ANDRES) UNIT

OPERATOR

LEASE

321
WELL NO.

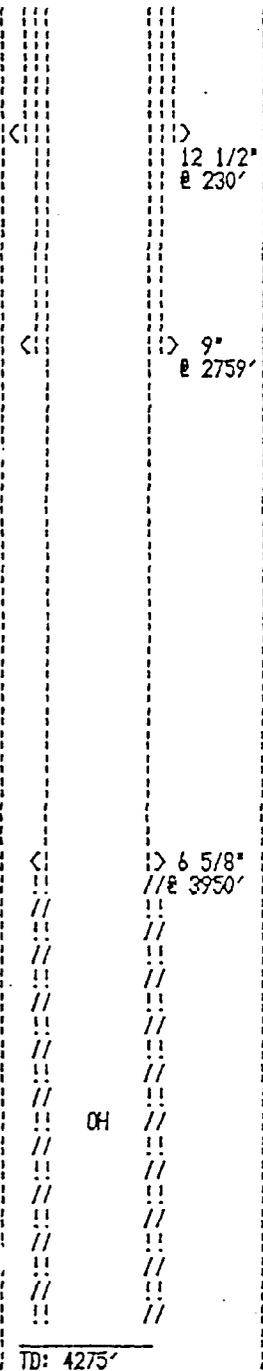
1650' FNL & 2310' FEL
FOOTAGE LOCATION

32
SECTION

18S
TOWNSHIP

38E
RANGE

Schematic



Tabular Data

Surface Casing

Size 12-1/2 " Cemented with 200 sx.
TOC NA feet determined by NA
Hole size NA

Intermediate Casing

Size 9 " Cemented with 600 sx.
TOC NA feet determined by NA
Hole size NA

Long string

Size 6-5/8 " Cemented with 225 sx.
TOC 2472 feet determined by CBL
Hole size NA
Total depth 4275'

Injection interval (Approximate)

4037 feet to 4260 feet PERF'D*
(perforated or open-hole, indicate which)

*TO PERFORATE THRU 3-1/2" LNR TO BE RAN FROM TD TO ±3824'. LNR TO BE CMT'D W/150 SX CLS "C" CMT.

TD: 4275'

Tubing size 2-3/8" lined with FIBERGLASS set in a
(material)

GUIBERSON UNI-PKR VI packer at ±3785 feet
(brand and model)

(or describe any other casing-tubing seal).

Other Data

- Name of the injection formation SAN ANDRES
- Name of Field or Pool (if applicable) HOBBS (G/SA)
- Is this a new well drilled for injection? Yes No
If no, for what purpose was the well originally drilled? PRODUCER

- Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) 4/45: CIBP SET @ 3900';
CAPPED W/24 SX CMT TO 3756'; 3/47: BP SET @ 3225', PERF'D 3094' & 3145'-50'; 5/47:
SQZD 3145'-50' W/100 SX CMT, PERF'D 3156'-72'; SOZD 3094' & 3156'-72' W/65 SX CMT;
3/87: BP SET @ 3840'
- Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. NEXT HIGHER OIL ZONE - QUEEN @ 3361'
NEXT LOWER OIL ZONE - DRINKARD @ ±6600'

ATTACHMENT TO FORM C-108
NORTH HOBBS (GRAYBURG/SAN ANDRES) UNIT
SECTION 32, T18S, R38E
WELL NO. 321
MISCELLANEOUS DATA

VII. PROPOSED OPERATION

1. Average Injection Rate 2000 BWPD
 Maximum Injection Rate 3500 BWPD

2. Closed Injection System

3. Average Injection Pressure 600 psi
 Maximum Injection Pressure Approximately 800 psi
 (will not exceed 0.2 psi/ft.
 to top perforation)

4. Source water - Reinjecting produced water

IX. STIMULATION PROGRAM

Acid treatments with total volume of 25 gals 15% HCl-NEA per perforation and diverting with ball sealers and rock salt.

AFFIDAVIT OF PUBLICATION

State of New Mexico,
County of Lea.

I, _____

William H. Shearman, Jr.

of the Hobbs Daily News-Sun, a daily newspaper published at Hobbs, New Mexico, do solemnly swear that the clipping attached hereto was published once a week in the regular and entire issue of said paper, and not a supplement thereof for a period

of _____

One weeks.
Beginning with the issue dated

January 31, 19 88
and ending with the issue dated

January 31, 19 88

Bill Shearman
Publisher.

Sworn and subscribed to before

me this 1 day of

February, 19 88
Vera Murphy
Notary Public.

My Commission expires _____

November 14, 19 88

(Seal)

This newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Laws of 1937, and payment of fees for said publication has been made.

43 LEGAL NOTICE
January 31, 1988
NOTICE is hereby given of the application of Shell Western E&P Inc., Attention: A. J. Fore, Supervisor Regulatory and Permitting, P.O. Box 576, Houston, TX 77001, (713) 870-3787, to the Oil Conservation Division, New Mexico Energy & Minerals Department, for approval of the following injection wells for the purpose of pressure maintenance and enhanced recovery.
Pool Name: Hobbs (Grayburg/San Andres)
Lease/Unit Name: North Hobbs (Grayburg/San Andres) Unit
Well No.: 32-321
Location: 1650' FNL & 2310' FEL Sec. 32, T18S, R38E; NMPM, Lea County, New Mexico
The injection formation is the San Andres at a depth of approximately 4040 feet below the surface of the ground. Expected maximum injection rate is 3500 barrels per day, and expected maximum injection pressure is 800 psi. Interested parties must file objections or requests for hearing with the Oil Conservation Division, P.O. Box 2088, Santa Fe, New Mexico 87501, within fifteen (15) days.

SERVICE LIST
SHELL - NORTH HOBBS (GRAYBURG/SAN ANDRES) UNIT
SECTION 32, T18S, R38E
WELL NO. 321
EXPANSION OF PRESSURE MAINTENANCE PROJECT

OFFSET OPERATORS

Amoco Production Co.
P. O. Box 4072
Odessa, TX 79762-4072

Chevron USA Inc.
P. O. Box 670
Hobbs, NM 88240-0670

Marathon Oil Co.
P. O. Box 552
Midland, TX 79702-0552

Exxon Company U.S.A.
P. O. Box 1600
Midland, TX 79702-1600

Conoco Inc.
P. O. Box 460
Hobbs, NM 88240-0460

Amerada Hess Corporation
P. O. Box 840
Seminole, TX 79360-0840

SURFACE OWNER

First Interstate Bank of Lea County,
As Executor and Trustee U/W/O William Cecil Grimes, Deceased,
and as Agent for Mary Evelyn Grimes Maddox, Cynthia June Grimes Grebe,
and William Cecil Grimes Maddox, Under Agency Agreement dated 2/13/79.
ATTN Mr. Ron Miller
P. O. Box 400
Hobbs, NM 88240-0400

PS Form 3811, July 1983 447-845

SENDER: Complete items 1, 2, 3 and 4.
 Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

- Show to whom, date and address of delivery.
- Restricted Delivery.

3. Article Addressed to:
 AMOCO PRODUCTION CO.
 P. O. BOX 4072
 ODESSA, TX 79762

4. Type of Service:	Article Number
<input type="checkbox"/> Registered <input type="checkbox"/> Insured <input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD <input type="checkbox"/> Express Mail	P 495 091 407

Always obtain signature of addressee or agent and **DATE DELIVERED.**

5. Signature - Addressee
 X

6. Signature - Agent
 X

7. Date of Delivery

8. Addressee's Address (ONLY if requested and fee paid)

DOMESTIC RETURN RECEIPT

PS Form 3811, July 1983 447-845

SENDER: Complete items 1, 2, 3 and 4.
 Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

- Show to whom, date and address of delivery.
- Restricted Delivery.

3. Article Addressed to:
 MARATHON OIL CO.
 P. O. BOX 552
 MIDLAND, TX 79702

4. Type of Service:	Article Number
<input type="checkbox"/> Registered <input type="checkbox"/> Insured <input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD <input type="checkbox"/> Express Mail	P 495 091 408

Always obtain signature of addressee or agent and **DATE DELIVERED.**

5. Signature - Addressee
 X

6. Signature - Agent
 X

7. Date of Delivery

8. Addressee's Address (ONLY if requested and fee paid)

DOMESTIC RETURN RECEIPT

PS Form 3811, July 1983 447-845

SENDER: Complete items 1, 2, 3 and 4.
 Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

- Show to whom, date and address of delivery.
- Restricted Delivery.

3. Article Addressed to:
 CHEVRON OIL CO.
 P. O. BOX 670
 HOBBS, NM 88240

4. Type of Service:	Article Number
<input type="checkbox"/> Registered <input type="checkbox"/> Insured <input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD <input type="checkbox"/> Express Mail	P 495 091 409

Always obtain signature of addressee or agent and **DATE DELIVERED.**

5. Signature - Addressee
 X

6. Signature - Agent
 X

7. Date of Delivery

8. Addressee's Address (ONLY if requested and fee paid)

DOMESTIC RETURN RECEIPT

PS Form 3811, July 1983 447-845

SENDER: Complete items 1, 2, 3 and 4.
 Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

- Show to whom, date and address of delivery.
- Restricted Delivery.

3. Article Addressed to:
 EXXON CO. U.S.A.
 P. O. BOX 1600
 MIDLAND, TX 79702-1600

4. Type of Service:	Article Number
<input type="checkbox"/> Registered <input type="checkbox"/> Insured <input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD <input type="checkbox"/> Express Mail	P. 495 091 410

Always obtain signature of addressee or agent and **DATE DELIVERED.**

5. Signature - Addressee
 X

6. Signature - Agent
 X

7. Date of Delivery

8. Addressee's Address (ONLY if requested and fee paid)

DOMESTIC RETURN RECEIPT

PS Form 3811, July 1983 447-845

SENDER: Complete items 1, 2, 3 and 4.
 Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

- Show to whom, date and address of delivery.
- Restricted Delivery.

3. Article Addressed to:
 CONOCO INC.
 P. O. BOX 460
 HOBBS, NM 88240

4. Type of Service: <input type="checkbox"/> Registered <input type="checkbox"/> Insured <input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD <input type="checkbox"/> Express Mail	Article Number P 495 091 412
--	---------------------------------

Always obtain signature of addressee or agent and **DATE DELIVERED.**

5. Signature - Addressee
 X

6. Signature - Agent
 X

7. Date of Delivery

8. Addressee's Address (*ONLY if requested and fee paid*)

DOMESTIC RETURN RECEIPT

PS Form 3811, July 1983 447-845

SENDER: Complete items 1, 2, 3 and 4.
 Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

- Show to whom, date and address of delivery.
- Restricted Delivery.

3. Article Addressed to:
 AMERADA HESS CORP.
 P. O. BOX 840
 SEMINOLE, TX 79360

4. Type of Service: <input type="checkbox"/> Registered <input type="checkbox"/> Insured <input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD <input type="checkbox"/> Express Mail	Article Number P 495 091 411
--	---------------------------------

Always obtain signature of addressee or agent and **DATE DELIVERED.**

5. Signature - Addressee
 X

6. Signature - Agent
 X

7. Date of Delivery

8. Addressee's Address (*ONLY if requested and fee paid*)

DOMESTIC RETURN RECEIPT

PS Form 3811, July 1983 447-845

SENDER: Complete items 1, 2, 3 and 4.
 Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.

- Show to whom, date and address of delivery.
- Restricted Delivery.

3. Article Addressed to:
 FIRST INTERSTATE BANK OF LEA COUNTY
 ATTN: MR. RON MILLER
 P. O. BOX 400
 HOBBS, NM 88240

4. Type of Service: <input type="checkbox"/> Registered <input type="checkbox"/> Insured <input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD <input type="checkbox"/> Express Mail	Article Number P 495 091 413
--	---------------------------------

Always obtain signature of addressee or agent and **DATE DELIVERED.**

5. Signature - Addressee
 X

6. Signature - Agent
 X

7. Date of Delivery

8. Addressee's Address (*ONLY if requested and fee paid*)

DOMESTIC RETURN RECEIPT



STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
 OIL CONSERVATION DIVISION
 HOBBS DISTRICT OFFICE

11-7-88

GARREY CARRUTHERS
 GOVERNOR

POST OFFICE BOX 1980
 HOBBS, NEW MEXICO 88241-1980
 (505) 393-6161

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

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

Gentlemen:

I have examined the application for the:

Shell Western E & P Inc. N. Hobbs L/S Azet. Sec 32 #321-G
 Operator Lease & Well No. Unit S-T-R 32-18-38

and my recommendations are as follows:

OK JS

Yours very truly,

Jerry Sexton
 Supervisor, District 1

/ed