STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION
POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501

36

FORM C-108
Revised 7-1-81

APPLICATION FOR AUTHORIZATION TO INJECT

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

II. Operator: Devon Energy Operating Corporation

Address: 20 N. Broadway, Suite 1500, Oklahoma City, OK 73102-8260

Contact party: Randy Jackson Phone: (405) 552-4560

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? [X] yes [ ] no
If yes, give the Division order number authorizing the project R-2268.

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. Refer to Attachment V

* 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. Refer to Attachment VI

VII. Attach data on the proposed operation, including: Refer to Attachment VII

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. Refer to Attachment VIII

IX. Describe the proposed stimulation program, if any. We anticipate acidizing the perfs 3199' to 3821' prior to initial injection.

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

* 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. There are no known producing fresh water wells within one mile of the proposed injection well.

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. Refer to Attachment XII

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

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: Randy Jackson Title District Engineer

Signature: Randy Jackson Date: 11/18/94

* 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.

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate District

ATTACHMENT III (tabular)

WELL DATA

A. (1) H. E. West "B" #36
1980' FNL & 660' FEL
Section 9-T17S-R31E
Eddy County, NM

(2) Casing Data: Also see Attachment III (schematic).
Surface: 8 5/8" set @ 541', cemented with 400 sx. Circulated.
Production: 5 1/2" set @ 3883', cmt'd w/1300 sx. Est. TOC @ surface. Circ'd.
Liners: None.

(3) Injection Tubing: 2 3/8", 4.7#, 8rd EUE plastic coated set at 3088'.

(4) Packer: Baker tension (or equivalent) set @ 3088' in tension.

B. (1) Injection Formation: The injection formation will be the Grayburg San Andres.

(2) Injection Interval: The injection interval is to be from perforations @ 3138' to 3883' and open hole from 3883' to 4100'.

(3) Original Purpose of Well: The well was originally drilled, completed and tested as a producer from perforations 3199'-3821'.

(4) Added Perforated Intervals: None.

(5) Higher/Lower Oil Zones: The top of the Seven Rivers is at +/- 2177' and there is no known lower oil zone.

Schematic: See Attachment III (schematic).

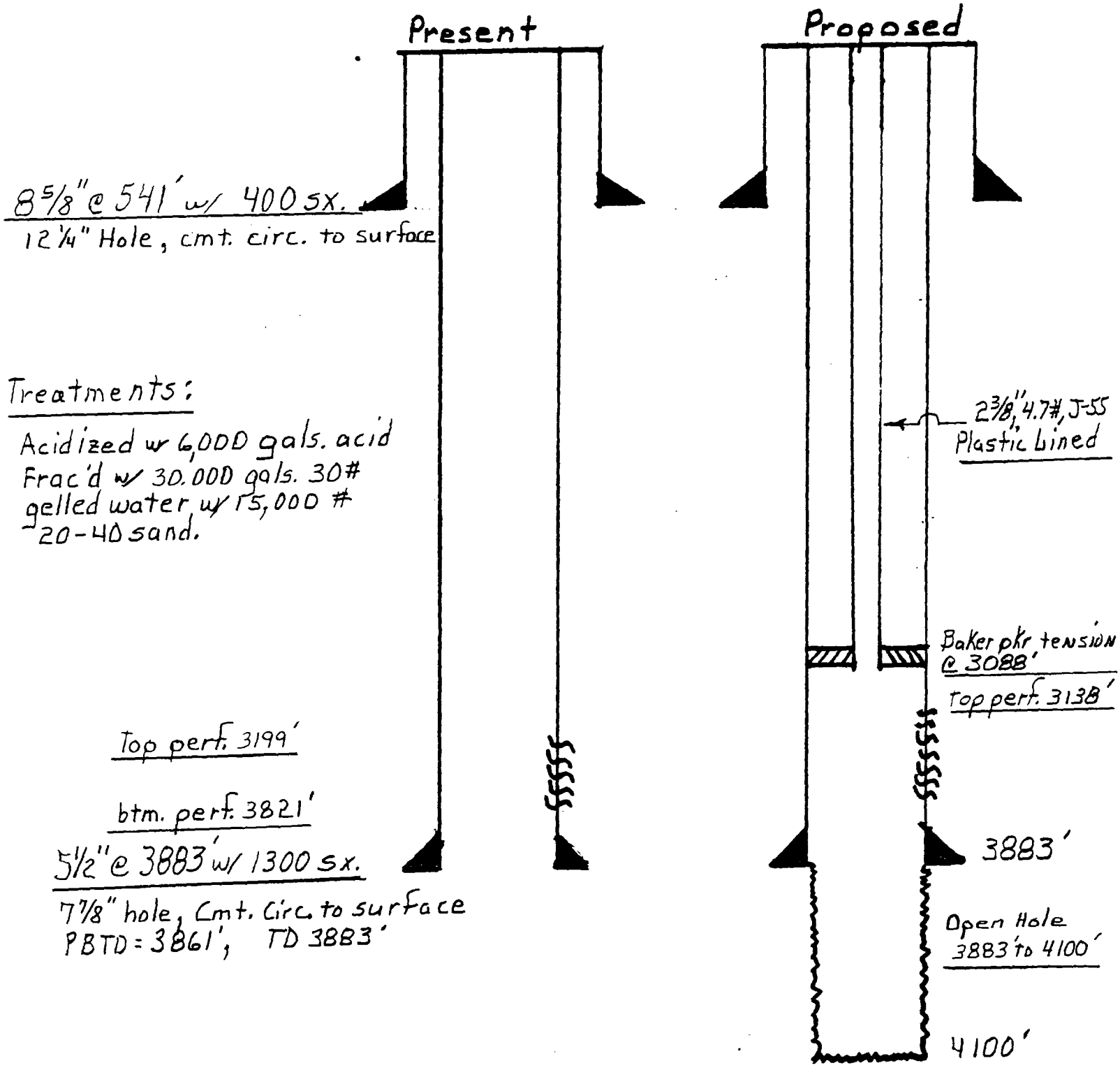
ATTACHMENT III (Schematic)

devon
OPERATING CORPORATION
20 North Broadway, Suite 1500
Oklahoma City, Oklahoma 73102-8260
Telephone:405/235-3611
FAX:405/552-4550

WELLBORE SCHEMATIC

WELL: H. E. West "B" No. 36

LOCATION: 1980' FNL & 660' FEL
9-17S-31E
Eddy Co., N. Mex.



LARGE FORMAT EXHIBIT HAS BEEN REMOVED AND IS LOCATED IN THE NEXT FILE

ATTACHMENT VI

WELL NAME	LOCATION	SPUD DATE	COMPLETION DATE	TYPE OF WELL	DEPTH/PBTD	COMPLETION RECORD
H. E. West "B" #39	1980' FNL & 1980' FWL Sec. 9-17S-31E	12/13/88	1/26/89	Producting Oil	TD 3868' PBTD 3819'	8 5/8" @ 488' w/350 sx cmt. Circ to surface. 5 1/2" @ 3868' w/1150 sx cmt. Circ to surface Well completed as a producer from Grayburg San Andres thru perforations 3253'-3815' (163 holes). Acidized w/13,000 gals acid.
H. E. West "B" #51	1337' FNL & 1363' FWL Sec. 10-17S-31E	3/16/93	9/1/93	Producing Oil	TD 4372' PBTD 4321'	8 5/8" @ 575' w/250 sx. Circ to surface. 5 1/2" @ 4372' w/1300 sx. Circ to surface. Completed in the Grayburg San Andres as a producer thru perfs 3308'-3898' overall (118 holes)
H. E. West "B" #52	1250' & 100' FWL Sec. 10-17S-31E	3/21/93	5/17/93	Producing Oil	TD 4335' PBTD 4284'	8 5/8" @ 626' w/500 sx. Circ. to surface. 5 1/2" @ 4335' w/1200 sx. Circ. to surface. Completed in the Grayburg San andres as a producer thru perfs 4080'-4198' overall (145 holes).
H. E. West "B" #54	75' FNL & 1370' FEL Sec. 9-17S-31E	3/10/93	5/11/93	Producing Oil	TD 4310' PBTD 4256'	8 5/8" @ 618' w/300 sx cmt. Circ to surface. 5 1/2" @4310' w/1850 sx cmt. Circ to surface. Completed as a Grayburg San Andres producer thru perfs 4031'-4132' (63 holes). Additional perfs 3230'-3520', 3766'-3871' and 4048'-4250'. Acidized w/3000 gals 15% NEFE. Acid frac'd w/15,000 gals gelled Super X emulsified acid.

ATTACHMENT VI

WELL NAME	LOCATION	SPUD DATE	COMPLETION DATE	TYPE OF WELL	DEPTH/PBTD	COMPLETION RECORD
H. E. West "A" #17	660' FSL & 660' FEL Sec. 4-17S-31E	12/12/89	1/6/90	Producting Oil	TD 3954' PBTD 3906'	8 5/8" @ 575' w/350 sx cmt circ to surface. 5 1/2" @ 3948' w/1150 sx cmt circ. to surface. Completed as a producer from the Grayburg San Andres fromation thru perfs 3273'-3839'.
H. E. West "A" #23	140' FSL & 35' FEL Sec. 4-17S-31E	3/1/93	9/8/93	Producing Oil	TD 4308' PBTD 4287'	13 3/8" @ 595' w/ 250 sx. Circ. to surface. 5 1/2" @ 4308' w/ 1600 sx cmt. Circ. to surface. Completed as an oil producer in the Grayburg San Andres from perfs 3259'-3530' (48 holes).

ATTACHMENT VI

WELL NAME	LOCATION	SPUD DATE	COMPLETION DATE	TYPE OF WELL	DEPTH/PBTD	COMPLETION RECORD
H. E. West "B" #53	1350' FNL & 1250' FEL Sec. 9-17S-31E	9/20/93	12/7/93	Producting Oil	TD 4310' PBTD 4152'	8 5/8" @ 584' w/300 sx cmt. Circ. 5 1/2" @ 4310' w/1300 sx cmt. Circ. Well completed as a producer from Grayburg San Andres thru perforations 3228'-3438'.
H. E. West "B" #38	2085' FNL & 1980' FWL Sec. 10-17S-31E		12/85	Producing Oil	TD 3960' PBTD 3930'	8 5/8" @ 596' w/400 sx. Circ to surface. 5 1/2" @ 3960' w/1300 sx. Circ to surface. Completed in the Grayburg San Andres as a producer from perfs 3364'-3562', 3587'-3727', and 3757'-3910'.
H. E. West "B" #12	1980' FNL & 1980' FEL Sec. 9-17S-31E	6/29/56	9/20/56	Injection	TD 3864' PBTD 3660'	9 5/8" @ 668' w/100 sx cmt. 7" @ 3158' w/200 sx cmt. TOC @ 1440' by T.S. 5" @ 3864' w/500 sx. Circ to surface. Originally completed as a producer from open hole 3158' to 3800'. Later the well was deepened to 3864' and a 5" csg string was cemented in place w/cmt circ to surface. The well is perf'd 3260'-3330' (18 shots), 3350'-3633' (34 shots), and 3676'-3830' (30 shots). The Grayburg San Andres interval has been acidized w/10,000 glas acid & frac'd w/25,000 gals x-linked gel + 40,000# 20/40 sand. A CIBP was set @ 3660'. Present injection interval is 3260'-3633'.
H. E. West "B" #13	1980' FNL & 660' FWL Sec. 10-17S-31E		10/57	Injection	TD 3900' PBTD 3720' CIBP	10 3/4" @ 739' w/100 sx. 7" @ 3525' w/100 sx. 5" liner set from 3094'-3897' w/150 sx cmt. Completed in the Grayburg San Andres as a producer from perforations 3318'-26' and 3356'-74'. Well was deepened to 3900' and a 5" liner set. The well was perf'd 3737'-3864', 3568'-3696' and 3312'-3559'. A cast iron bridge plug was set @ 3720' and the well converted to water injection.

ATTACHMENT VII

PROPOSED OPERATION

1. Average daily injection rate - 500 BWPD.
   Maximum daily injection rate - 600 BWPD.

2. Type of system - closed.

3. Average injection pressure - 1900 psi.
   Maximum injection pressure - 2500 psi.

4. Source of injection water - Produced water from the Keel West plus make up water from Keel West fresh water system.

5. N. A.

ATTACHMENT VIII

GEOLOGY AND LITHOLOGY

The proposed injection zone is in the Greyburg San Andres from 3138' to 4100'. The Greyburg formation consists primarily of quartz sand with cementation. The San Andres formation consists primarily of dolomite with intermingled stringers of quartz sand with dolomite cementation.

Surface formation is cretaceous and has no known source of drinking water. Also, there are no known sources of drinking water overlying or underlying the proposed injection zone.

ATTACHMENT XII

Upon examination of the available geologic and engineering data, no evidence of open faults or any other hydrologic connection between the injection zone and any underground source of drinking water was found.

ATTACHMENT XIV

PROOF OF NOTICE

Devon Energy Operating Corporation (applicant) is the operator of all wells within the area of review. The Bureau of Land Management is the surface owner. They have been notified by BLM Sundry Notice.

PROOF OF PUBLICATION

Proof of publication from the Carlsbad Current-Argus is enclosed.

Affidavit of Publication

№ 16141

State of New Mexico,
County of Eddy, ss.

Amy McKay,
being first duly sworn, on oath says:

That she is Business Manager of the Carlsbad Current-Argus, a newspaper published daily at the City of Carlsbad, in said county of Eddy, state of New Mexico and of general paid circulation in said county; that the same is a duly qualified newspaper under the laws of the state wherein legal notices and advertisements may be published; that the printed notice attached hereto was published in the regular and entire edition of said newspaper and not in supplement thereof on the date as follows, to wit:

November 15, 19 94
_____, 19____
_____, 19____
_____, 19____
_____, 19____
_____, 19____

That the cost of publication is $25.70, and that payment thereof has been made and will be assessed as court costs.

Amy McKay

Subscribed and sworn to before me this

16th day of November, 1994

Donna Crump

My commission expires 8/01/98

Notary Public

November 15, 1994

Legal Advertisement

Notice is hereby given that Devon Energy Operating Corporation is applying to the New Mexico Oil Conservation Division to convert the following well to an injection well for secondary recovery purposes:

H.E. West "B" #36
1980' FNL & 660' FEL
Section 9-T17S-R31E
Eddy County, NM

The intended purpose of this well is to inject produced waters into the Grayburg-San Andres formations to enhance oil production through secondary recovery. Maximum injection rates of 600 bwpd and a maximum pressure of 2500 psig are expected.

Interested parties must file objections or requests for hearing within 15 days to the following commission:

Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87501

Randy Jackson
District Engineer
Devon Energy Operating Corporation
20 North Broadway, Suite 1500
Oklahoma City, OK
(405) 552-4560

WEST B 36, 38, 40, 44 +47 AAI package

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt Fee will provide you the signature of the person delivered to and the date of delivery.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Bureau of Land Management
P.O. Box 1778
Carlsbad, NM 88221-1778

4a. Article Number
P 080 276 169

4b. Service Type
☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☐ Return Receipt for Merchandise

7. Date of Delivery
11-21-94

5. Signature (Addressee)

6. Signature (Agent)

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

PS Form **3811**, November 1990 ★U.S. GPO: 1991—287-066 **DOMESTIC RETURN RECEIPT**

PS Form 3800,

& Fees

Postmark or Date
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