Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

NM OIL CONS COMMISSION
Drawer DD
Artesia, NM 88210

c/SF

FORM APPROVED
Budget Bureau No. 1004-0135
Expires March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals

SUBMIT IN TRIPLICATE

1. Type of Well
☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator
DEVON ENERGY OPERATING CORPORATION

3. Address and Telephone No.
20 NORTH BROADWAY, SUITE 1500, OKLAHOMA CITY, OKLAHOMA 73102 (405)552-4560

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
890' FNL & 1980' FEL, Sec. 9-T17S-R31E

UT B

5. Lease Designation and Serial No.
LC 029426 B

6. If Indian, Allottee or Tribe Name
NA

7. If Unit or CA, Agreement Designation
NA

8. Well Name and No.
WEST "B" #47

9. API Well No.
30-015-26203

10. Field and Pool, or Exploratory Area
GRAYBURG-JACKSON

11. County or Parish, State
EDDY CO., NEW MEXICO

CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
☒ Notice of Intent	☐ Abandonment	☐ Change of Plans
☐ Subsequent Report	☐ Recompletion	☐ New Construction
☐ Final Abandonment Notice	☐ Plugging Back	☐ Non-Routine Fracturing
	☐ Casing Repair	☐ Water Shut-Off
	☐ Altering Casing	☒ Conversion to Injection
	☐ Other _____	☐ Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

This well is currently producing from 3265' to 3805'. A CIBP is set @ 3805'. Production casing (5 1/2") is set to 3922'. Devon Energy Operation Corperation plans to drill out (CIBP & shoe joint) to 3920'. Perforations from 3165' to 3920' will be acidized w/15% NEFE acid and the well converted to injection.

See attached state application for authority to inject.

DEC 14 '94

14. I hereby certify that the foregoing is true and correct

Signed Randy Jackson Title RANDY JACKSON DISTRICT ENGINEER Date 11/16/94

(This space for Federal or State office use)

Approved by _____ Title Petroleum Engineer Date 12/13/94

Conditions of approval, if any: Subject to Like Approval By State

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

*See Instruction on Reverse Side

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

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

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 15% NEFE acid will be used to clean up perfs before 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 Division

ATTACHMENT III (tabular)

WELL DATA

A. (1) H. E. West "B" #47
890' FNL & 1980' FEL
Section 9-T17S-R31E
Eddy County, NM

(2) Casing Data: Also see Attachment III (schematic).
Surface: 8 5/8" set @ 539' cemented with 350 sx. Circulated.
Production: 5 1/2" set @ 3922' cmt'd w/1400 sx. TOC @ 875' by CBL
Liners: None.

(3) Injection Tubing: 2 3/8", 4.7#, J-55, 8rd EUE plastic coated set at 3065'.

(4) Packer: Baker, tension (or equivalent) set @ 3065' 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 @ 3126'-3920'.

(3) Original Purpose of Well: The well was originally drilled, completed and tested in the Grayburg San Andres as a producer from perforations 3265'-3859'.

(4) Added Perforated Intervals: We will deepen well from 3805' to 3920', 4 3/4" bit in cased hole. We will inject thru perfs 3126' - 3920'.

(5) Higher/Lower Oil Zones: The top of the Seven Rivers is at +/- 2099' and there is no known lower oil zone.

Schematic: See Attachment III (schematic).

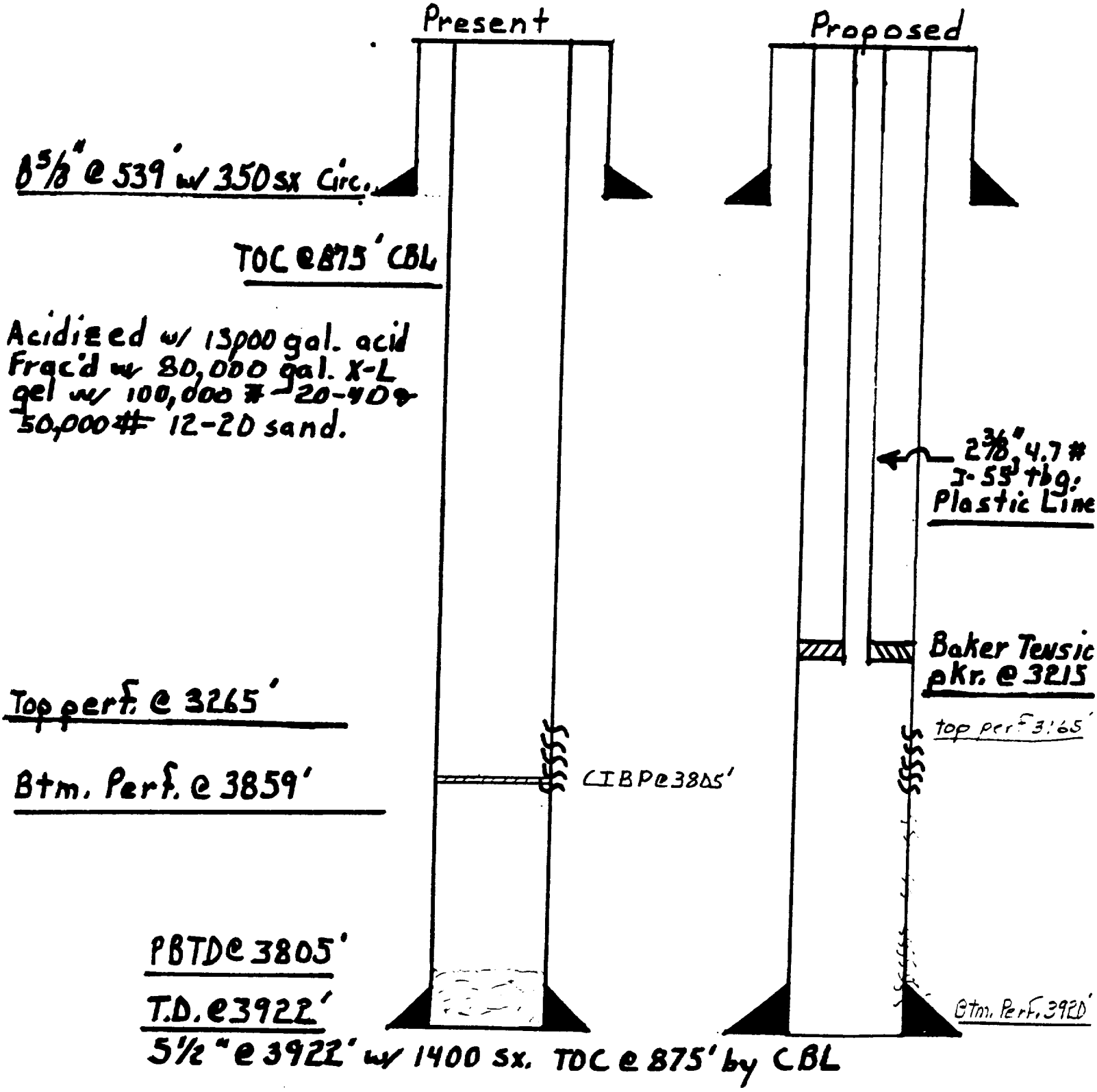
ATTACHMENT III (Schematic)

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. 47

LOCATION: 890' FNL & 1980' FEL
9-17S-31E
Eddy Co., N.M.



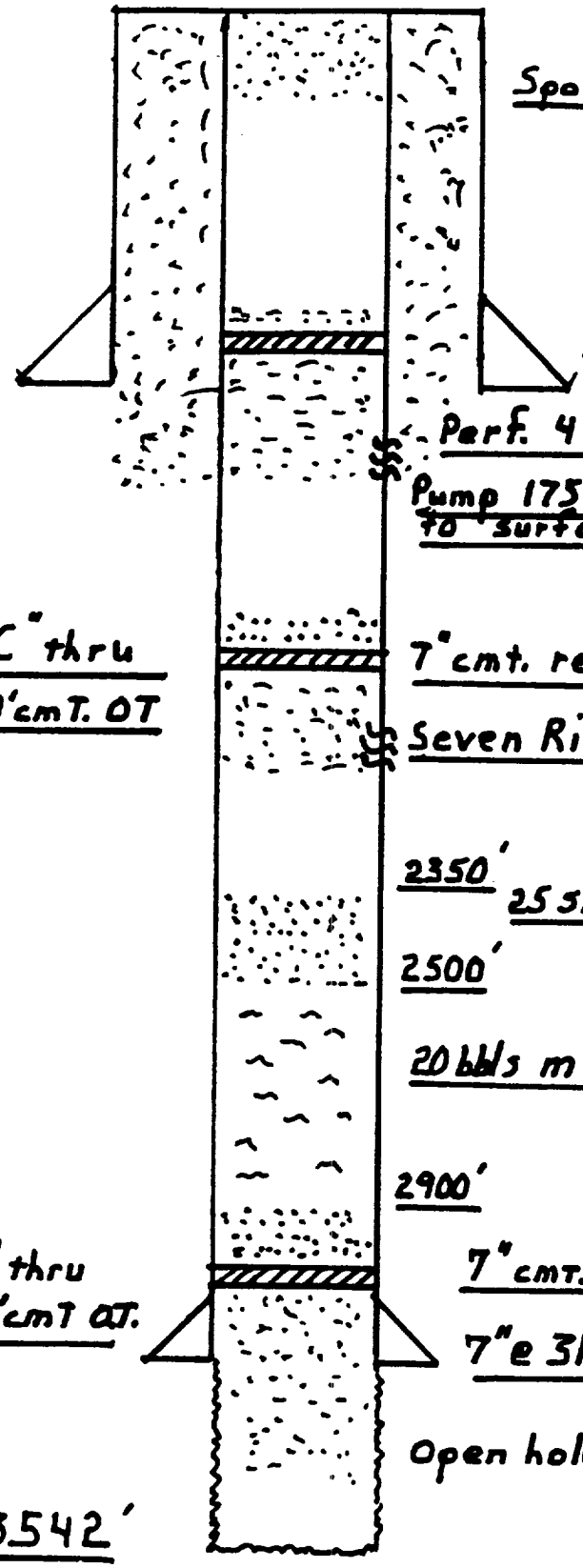
devon
OPERATING CORPORATION
20 North Broadway, Suite 1500
Oklahoma City, Oklahoma 73102-8260
Telephone: 405/235-3611
FAX: 405/552-4550

WELLBORE SCHEMATIC

WELL: H.E. West "B" No. 8

LOCATION: 660'FNL & 660'FWL
9-17S-31E
Eddy Co., N.M.

P.+A. 6-7-76



Spot 10sx. plug inside 7"

7" cmt. retainer @ 557'

Perf. 4 holes @ 700'.

Pump 175sx. class "C" up 7" * 8⅝" to surface

Pump 125 sx. Class "C" thru retainer @ 1744' 60' cmT. OT

7" cmt. retainer @ 1744'

Seven Rivers Perfs. @ 2100'-2261'

2350'

25 sx cmt. plug

2500'

20 bbls mud 2500' to 2900'

2900'

Pump 200sx. Class "C" thru retainer @ 3029.' 122' cmT OT.

7" cmt. retainer @ 3029'

7" @ 3109' w/ 200 Sx.

Open hole

T.D. 3542'

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 3126' to 3920'. 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.

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" #47
890' FNL & 1980' 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

Affidavit of Publication

№ 16136

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, 1994
_____, 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

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

ATTACHMENT VI

WELL NAME	LOCATION	SPUD DATE	COMPLETION DATE	TYPE OF WELL	DEPTH/PBTD TOC	COMPLETION RECORD
H. E. West "B" #8	660' FNL & 660' FWL Sec. 9-17S-31E	2/2/52	4/19/52	P & A (formerly a producer)	TD 3542'	8 5/8" @ 630' w/100 sx cmt. 7" @ 3105' w/200 sx cmt. Originally completed open hole as Grayburg San Andres producer. After downhole problems, well PB to 2446' and tested Seven Rivers. P&A'd as follows: 7" retainer @ 1744' w/125 sx below and 6 sx on top. Perf'd 4 holes @ 700'. Ran 7" retainer and set @ 557'. Circ'd 8 5/8" and 7" annulus w/175 sx and circ cmt to surface. Spotted 10 sx inside 7", installed DHM. P&A 6-7-76.
H. E. West "B" #46	1880' FSL & 1980' FEL Sec. 9-17S-31E	12/21/89	1/17/90	Producing oil	TD 3950' PBTD 3932'	8 5/8" @ 541' w/325 sx cmt. Circ to surface 5 1/2" @3938' w/950 sx cmt. Circ to surface. Perf'd 3267'-3906' (63 holes). Acidized w/13,000 gals acid. Frac'd w/56,100 gals 30# gal + 66,300# sand. Completed as a producer from the Grayburg San Andres.
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.
H. E. West "B" #29	660' FNL & 1980' FWL Sec. 9-17S-31E	12/11/63	1/22/64	Injection	TD 3810' PBTD 3810'	8 5/8" @ 559' w/240 sx cmt. Circ to surface. 5 1/2" @ 3810' w/300 sx cmt. Completed as producing oil well thru perfs 3232'-3804' (98 holes). Acidized w/3000 gals 15% acid. Reperf'd 3224'-3800' w/118 shots. Acidized w/16,000 gals 15% FENE.
H. E. West "B" #28	660' FNL & 660 FEL Sec. 9-17S-31E		12/63	Injection	TD 3850' PBTD 3850'	8 5/8" @ 550' w/240 sx. 5 1/2" @ 3850' w/300 sx. TOC @ 1600' (calc). Completed in the Grayburg San Andres as an injector thru perfs 3289'-3849'. Added new perfs from 3270'-3823'.

ATTACHMENT VI

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" #40	560' FNL & 660' FWL Sec. 10-17S-31E	12/22/88	2/2/89	Producing Oil	TD 4021' PBTD 3956'	8 5/8" @ 603' w/350 sx. Circ. to surface. 5 1/2" @ 402' w/1250 sx. Circ. to surface. The well was completed as a producer from the Grayburg San Andres thru perfs 3345'-3941' overall (170 holes). Acidized w/11,000 gals acid. Frac'd w/36,000 gals x-linked gelled water + 76,000# 20/40 sand.

2

ATTACHMENT VI

H. E. West

	SPUD DATE	COMPLETION DATE	TYPE OF WELL	DEPTH/PBTD TOC	COMPLETION RECORD
			P & A	TD 3542'	8 5/8" @ 630' w/100 sx cmt. 7" @ 3105' w/200 sx cmt. Originally completed open hole as Grayburg San Andres producer. After downhole problems, well PB to 2446' and P&A'd as follows: and 6 sx on top. Perf'd 4 Circ'd 8 5/8"

ATTACHMENT VI

H. E. West "B" #27	660 FSL & 1980 FWL Sec. 4 17S-31E	5/3/61	2/6/64	Producing Oil	TD 12,860' PBTD 3,922	13 3/8" @ 650' w/740 sx cmt. Circ. to surface. 9 5/8" @ 3800' W/1450 sx. Cement circ'd to surface. Well was drilled to a TD of 12,860'. The well was plugged back to 3922'. Completed in the Grayburg San Andres thru perfs 3180'-3546' & open hole interval 3800'-3885'.
H. E. West "A" #17	660' FSL & 660' FEL Sec. 4-17S-31E	12/12/89	1/6/90	Producing 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 formation thru perfs 3273'-3839'.
H. E. West "A" #14	720' FSL & 1980' FWL Sec. 4-17S-31E		12/88	Producer *Proposed injector	TD 3935' PBTD 3828'	8 5/8" @ 542' cmt'd w/350 sx, circ to surface. 5 1/2" @ 3935' w/1900 sx cmt, circ to surface. Completed in Grayburg San Andres as producer from 3214'-3467', 3492'-3678', and 3709'-3863'.
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).
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" #36	1980' FNL & 660' FEL Sec. 9-17S-31E	10/15/88	11/10/88	Producing Oil	TD 3883' PBTD 3861'	8 5/8" @ 541' w/400 sx. Circ to surface. 5 1/2" @ 3883' w/1300 sx. Circ. to surface. Completed as a producer from the Grayburg San Andres. Perfs 3199'-3821' (166 holes). Acidized w/6000 gals acid. Frac'd w/ 23,000 gals 30# gelled water + 15,000# 20/40 sand.

ATTACHMENT VI