WFX

8/9/96

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devon
ENERGY CORPORATION

20 North Broadway, Suite 1500
Oklahoma City, Oklahoma 73102-8260

Telephone 405/235-3611
FAX 405/552-4550

July 22, 1996

Certified Mail No. Z 737 086 290

State of New Mexico
Energy, Minerals and Natural Resources Department
Oil Conservation Division
2040 South Pacheco
Santa Fe, NM 88505

RE: West Red Lake Unit #8
Section 7-T18S-R27E
Eddy County, New Mexico

Gentlemen:

Concerning the referenced, enclosed please find our Application for Authorization to Inject and one copy of same. A copy of this submittal is being sent to the OCD office in Artesia.

Please direct inquiries concerning this matter to Ernie Buttross, Jr., at (405) 235-3611, X4509.

Yours truly,

DEVON ENERGY CORPORATION (NEVADA)

Candace R. Graham

Ms. Candace R. Graham
Engineering Tech

/cg
Enclosures
copy: NMOCD, Artesia
EB, File

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 [ ] Pressure Maintenance [ ] Disposal [ ] Storage
Application qualifies for administrative approval? [X] yes [ ] no

II. Operator: Devon Energy Corporation (Nevada)

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

Contact party: E.L. Buttross, Jr. Phone: (405) 235-3611 X4509

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.
Refer to Attachment III

IV. Is this an expansion of an existing project? [X] yes [ ] no R-3469
If yes, give the Division order number authorizing the project _____.

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. Acidize perfs w/5000 gals 15% acid.

* X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division they need not be resubmitted.) Filed at the time of drlg (in 1957) as Malco Refineries--Gant Federal #1.

* 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 fresh water wells in this area.

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 XIII

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: E.L. Buttross, Jr. Title District Engineer

Signature: E.L. Buttross Jr. Date: July 12, 1996

* 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

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
XIII

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.

West Red Lake Unit #8 (Conversion)	**ATTACHMENT III (tabular)**

WELL DATA

A. (1) West Red Lake Unit #8
Section G-7-T18S-R27E
1980' FNL & 1980' FEL
Eddy County, New Mexico

(2) Please refer to the wellbore schematic labeled Attachment III-(schematic). Cement was circulated back to surface on the surface string. Top of cement on the production string is 790' determined by Temperature Survey.

(3) We will be using 2 3/8" fiberglass or internally coated tubing. The tubing will be set at 1000' (±).

(4) We will use a 5 1/2" x 2 3/8" plastic coated AD-1 tension packer to be set at 1000'±.

B. (1) The injection formation will be the Grayburg-San Andres in the Red Lake (Q-GB-SA) Field.

(2) The injection intervals will be through existing perforations as follows:
Premier at 1084-1098'
San Andres "A" at 1610-1682'
San Andres "B" at 1697-1764'.

(3) This well was originally drilled as a Grayburg-San Andres oil well.

(4) Please refer to the wellbore schematic labeled Attachment III (schematic).

(5) There are no lower oil or gas zones in the area of this well.

Red Lake O GB/SA

West Red Lake Unit #8 (Conversion) **ATTACHMENT III (schematic)**

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SHEET NO. _____ OF _____

FILE originally drld by Malco Refining and named Grant Federal #1

SUBJECT: West Red Lake Unit #8
1980' FNL & 1980' FSL
Section 7-18S-27E Unit G

DATE June 1996 BY Eddy Cnty, NM

KB 8' AGL GL 3360'

Present

Spud 6-12-57

8 5/8" 24# J-55 set @ 979' cmt'd w/ 460 sx; TOC @ surface

3/13/70

= 1084-88' w/ 8 holes } Premier
= 1094-98' w/ 8 holes }

6/23/57

= 1610-12' w/ 4 holes } SA "A"
= 1645-47' w/ 4 holes
= 1662-82' w/ 40 holes
= 1697-1704' w/ 14 holes
= 1708-12' w/ 8 holes
= 1722-24' w/ 4 holes
= 1732-36' w/ 8 holes
= 1756-58' w/ 4 holes
= 1760-64' w/ 8 holes } SA "B"

5 1/2" 14# J-55 set @ 1797' w/ 225 sx cmt; TOC @ 796' (Temp Svy)

TD 1799'
PBTD 1782'

Proposed

2 3/8" IPC or fiberglass TBG

5 1/2" x 2 3/8" plastic coated AD-1 tension packer set @ ± 1000'

1084'
1098'

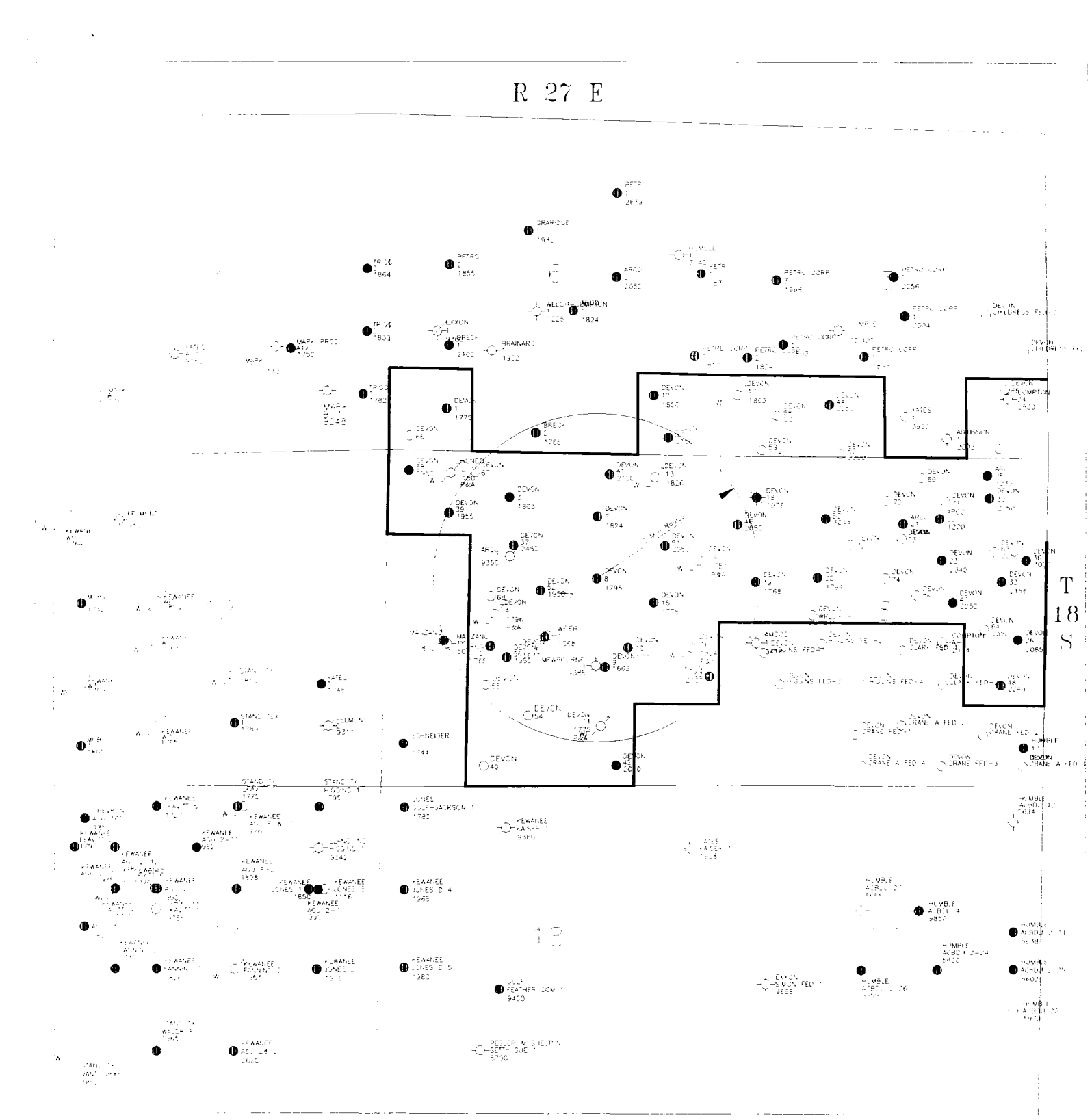
1610'
1682'

1697'
1764'

TD 1799'
PBTD 1782'

R 27 E

T 18 S



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ENERGY CORPORATION

WEST RED LAKE AREA

EDDY COUNTY, NEW MEXICO

ATTACHMENT V

WEST RED LAKE UNIT 8

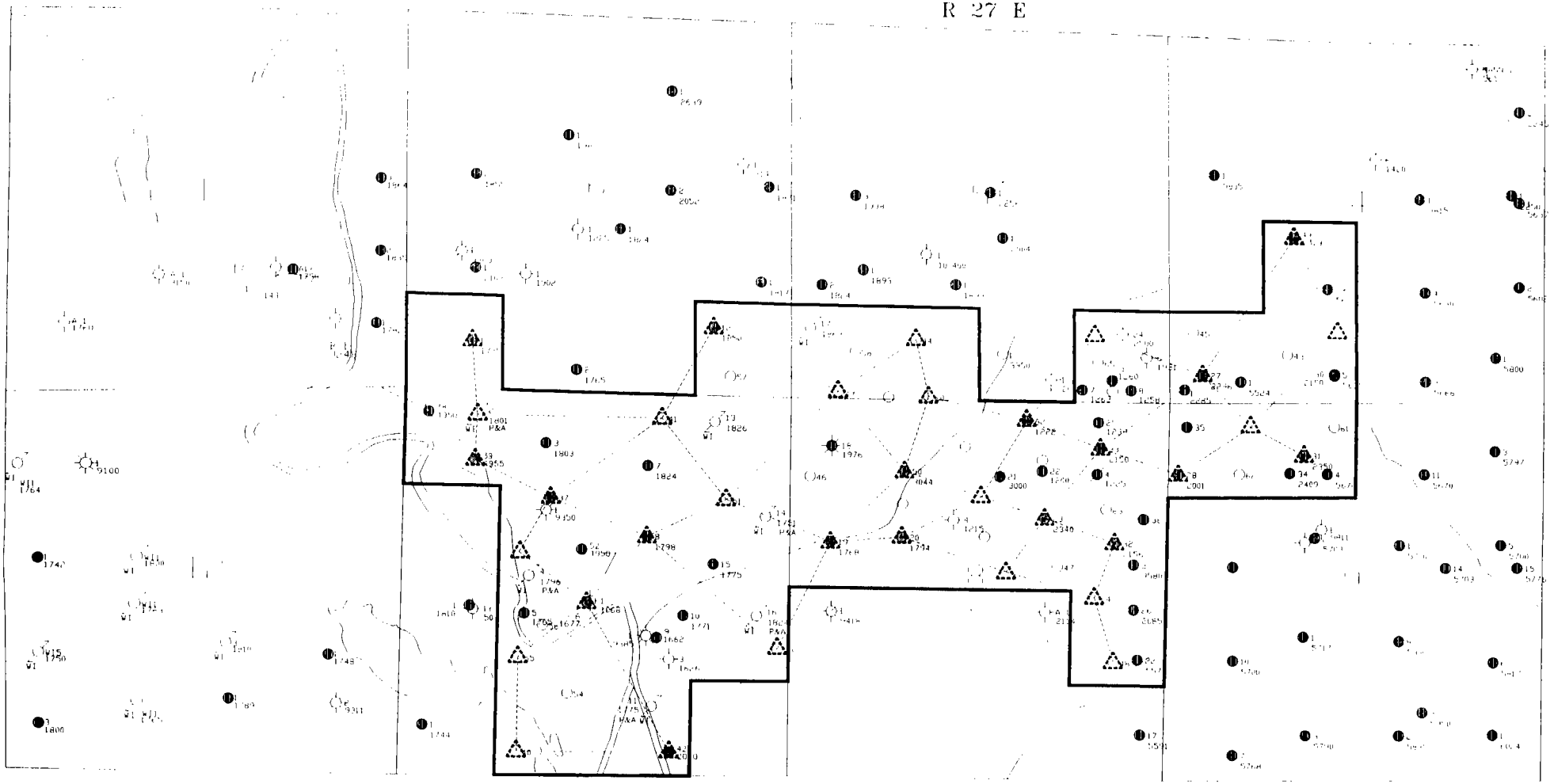
Scale in Feet

1000 0 1000 2000 3000 4000

R 26 E

R 27 E

T 18 S



EXISTING PRODUCER

EXISTING INJECTOR

PROPOSED INJECTOR

PROPOSED PRODUCER

PROPOSED CONVERSION

N

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WEST RED LAKE AREA

EDDY COUNTY, NEW MEXICO

ATTACHMENT V(B)

WEST RED LAKE UNIT #8

4000

West Red Lake Unit #8 (Conversion) **ATTACHMENT VI**

WELL NAME (Operator)	*Eddy Cnty, NM LOCATION*	*TD PBTD*	*SPUD DATE*	*CPLN DATE*	*WELL TYPE*	*COMPLETION RECORD* *CASING,*	*lbs*	*SET*	*SX CMT*	*TOC*	*PERFS*
West Red Lake Unit #3 (Devon)	660' FNL & 1980' FWL Sec. C-7-T18S-R27E	TD 1803' PB 1791'	06-01-57	06-14-57 06-02-70 02-22-92	OIL	8 5/8" 5 1/2"	24 14	919' 1801'	350 225	Surface 860' (Temp Svy)	1596-1709' 1042-1052' 1772-1784'
West Red Lake Unit #4 (Devon)	2310' FNL & 1650' FWL Sec. F-7-T18S-R27E	TD 1796' PB 1767'	06-24-57	12-18-57 09-23-68 03-19-80	OIL WIW P&A	8 5/8" 5 1/2"	24 14	874' 1774'	360 250	Surface 368' (CBL 3/80) injection pkr 1080' cmt retainers at 902', 1497', 1703' filled 5 1/2" csg w/cmt to P&A	1724-1734' 998-1012' 1578-1676' 1032-1036' all perfs sqzd perfs to P&A at 340-341'
West Red Lake Unit #5 (Devon)	2280' FSL & 1710' FWL Sec. K-7-T18S-R27E	TD 1765'	07-29-57	08-17-57 12-17-70	OIL P&A	7" 4 1/2"		879' 1765'	175 105	Surface 630' (Temp Svy sqzd 4 1/2" csg then shot off at 80' & pulled for P&A	cored 985-1035' pf'd 1000-06' all perfs sqzd set cmt plug 123' to surf
West Red Lake Unit #6 (Devon)	2460' FSL & 2580' FWL Sec. K-7-T18S-R27E	TD 1677' TD 1776' PB 1771'	1948	05-27-48 02-22-57 03-09-70 02-29-92	OIL	9 5/8" 7" 4 1/2"	9.5	163' 1105' 1776'	50 100 135	Surface 490' (Calc) 1450' (Temp Svy)	1582-92' OH 1640-58' OH 1688-1691' 998-1007' 1740-1754'
West Red Lake Unit #7 (Devon)	1980' FSL & 990' FWL Sec. B-7-T18S-R27E	TD 1824' PB 1821'	07-30-58	09-24-58 03-20-70	OIL	7" 4 1/2"	20 9.5	928' 1824'	292 75	260' (Temp Svy) 1262' (calculated)	1690-1784' 1103-1115'
West Red Lake Unit #8 (Devon)	1980' FNL & 1980' FEL Sec. G-7-T18S-R27E	TD 1799' PB 1782'	06-12-57	06-24-57 03-13-70	OIL	8 5/8" 5 1/2"	24 14	979' 1797'	460 225	Surface 796' (Temp Svy)	1610-1764' 1084-1098'
West Red Lake Unit #9 (Devon)	2310' FSL & 2026' FEL Sec. J-7-T18S-R27E	TD 1662' TD 1759'	12-22-47	03-16-48 04-18-57	OIL	10" 8 5/8" 7" 4"	40 28 20	107' 836' 1151' 1737'	50 160 80	Surface Surface 398' (calculated)	1151-1662' OH 1615-76'
West Red Lake Unit #10 (Devon)	2310' FSL & 1650' FEL Sec. I-7-T18S-R27E	TD 1670' TD 1770' PB 1710'	1932	1932 01-02-59 03-18-70	OIL	7" 4 1/2"	20 9.5	876' 1750'	210	Surface Surface (sqzd after testing)	876-1670' OH 1602-1622' 1642-1674' 1034-1047'

WELL NAME (Operator)	*Eddy Cnty, NM LOCATION*	*TD PBTD*	*SPUD DATE*	*CPLN DATE*	*WELL TYPE*	*COMPLETION RECORD* *CASING,*	*lbs*	*SET*	*SX CMT*	*TOC*	*PERFS*
West Red Lake Unit #11 (Devon)	990' FSL & 1810' FEL Sec. O-7-T18S-R27E	TD 1775' PB 1760'	12-04-57	12-18-57 03-05-70 03-18-80	OIL WIW P&A	7" 4 1/2"	20 9.5 & 10.5	863' 1772'	225 115	Surface 695' (Temp Svy) injection pkr 1089' cmt retainers at 1617' and 980' filled 4 1/2" csg w/cmt to P&A	1642-1737' 1038-1047' perfs to P&A at 724-725' all perfs sqzd
West Red Lake Unit #13 (Devon)	330' FSL & 990' FEL Sec. A-7-T18S-R27E	TD 1826' PB 1819'	04-57	04-10-57 09-27-68	OIL WIW	7" 20# 4 1/2"	& 23 9.5 & 11	1205' 1826'	200 120	Surface 610' (Temp Svy) injection pkr 1071'	1716-1760' 1129-1174'
West Red Lake Unit #14 (Devon)	1650' FNL & 330' FEL Sec. I-7-T18S-R27E	TD 1750' PB 1747'	11-52	11-52 06-10-57 09-27-68 03-14-80	OIL WIW P&A	7" 4 1/2"	20 9.5	1011' 1751'	75 80	Surface 972' (CBL) cmt'd csg ann, TOC at surface injection pkr 1152' cmt retainers at 1496' and 961' filled 4 1/2" csg w/cmt to P&A	1664-1720' OH 959-960' 1057-1096' all perfs sqzd
West Red Lake Unit #15 (Devon)	2310' FNL & 990' FEL Sec. H-7-T18S-R27E	TD 1775' PB 1737'	10-17-62	12-15-62	OIL	4 1/2"	9.5	1760'	530	Surrace cored perf'd	1040-89' 1044-1064' 1628-1720'
West Red Lake Unit #16 (Devon)	2240' FSL & 400' FEL Sec. I-7-T18S-R27E	TD 1824'	06-17-57	07-30-57 09-23-68 03-17-80	OIL WIW P&A	8 5/8" 5 1/2"	24 14	925' 1820'	300 225	Surface 430' injection pkr 1175' cmt retainers at 881' and 1511' filled 5 1/2" csg w/cmt to P&A	1683-1774' 1090-1124' perfs to P&A at 493' all perfs sqzd
West Red Lake Unit #19 (Devon)	1980' FNL & 660' FWL Sec. E-8-T18S-R27E	TD 1768' PB 1767'	07-07-57	07-18-57 12-05-57	OIL	8 5/8" 5 1/2"	24 14	918' 1739'	325 225	Surface 618' (Temp Svy)	1615-1746' 1079-89'
West Red Lake Unit #37 (Devon)	1490' FNL & 2050' FWL Sec. F-7-T18S-R27E	TD 2450' PB 2394'	08-26-93	01-21-94	OIL	8 5/8" 5 1/2"	24 15.5	889' 2449'	625 435	Surface Surface	1535-1750'
West Red Lake Unit #39 (Devon)	990' FNL & 990' FWL Sec. D-7-T18S-R27E	TD 1955' PB 1889'	01-14-95	03-25-95 06-11-95	OIL	8 5/8" 5 1/2"	24 15.5	922' 1954'	500 350	Surface Surface	1548-1808' 1358-1440'
West Red Lake Unit #41 (Devon)	330' FNL & 1800' FEL Sec. B-7-T18S-R27E	TD 2100' PB 2054'	10-20-95	11-09-95	OIL	8 5/8" 5 1/2"	24 15.5	971' 2100'	500 425	Surface Surface	1526-1956'

WELL NAME (Operator)	*Eddy Cnty, NM LOCATION*	*TD PBTD*	*SPUD DATE*	*CPLN DATE*	*WELL TYPE*	*COMPLETION RECORD*					
						CASING,	*lbs*	*SET*	*SX CMT*	*TOC*	*PERFS*
West Red Lake Unit #46 (Devon)	1090' FNL & 820' FWL Sec. D-8-T18S-R27E	TD 2050' PB 1954'	02-04-95	03-12-95 08-06-95	OIL	8 5/8" 5 1/2"	24 15.5	1025' 2049'	550 350	Surface Surface	1662-1912' 1498-1570'
West Red Lake Unit #51 (Devon)	1450' FNL & 890' FEL Sec. H-7-T18S-R27E	TD 2050' PB 1982'	10-26-95	11-17-95	OIL	8 5/8" 5 1/2"	24 15.5	964' 2049'	675 425	Surface Surface	1498-1908'
West Red Lake Unit #52 (Devon)	2200' FNL & 2500' FWL Sec. F-7-T18S-R27E	TD 1950' PB 1873'	01-21-95	04-15-95	OIL	13 3/8" 8 5/8" 5 1/2"	48 24 15.5	204' 915' 1949'	200 450 400	60' Surface Surface	1018-1818'
West Red Lake Unit #53 (Devon)	1780' FSL & 155' FEL Sec. I-7-T18S-R27E	TD 2100' PB 2019'	10-02-95	10-20-95	OIL	8 5/8" 5 1/2"	24 15.5	949' 2096'	650 375	Surface Surface	1512-1913'
West Red Lake Unit #56 (Devon)	2100' FSL & 1980' FWL Sec. K-7-T18S-R27E	TD 1950' PB 1883'	11-01-95	11-22-95	OIL	13 3/8" 8 5/8" 5 1/2"	48 24 15.5	201' 899' 1949'	551 500 340	Surface Surface Surface	1374-1807'
West Red Lake Unit #57 (Devon)	280' FSL & 850' FEL Sec. P-6-T18S-R27E	TD 2150' PB 2086'	10-13-95	10-07-95	OIL	8 5/8" 5 1/2"	24 15.5	999' 2149'	500 425	Surface Surface	1529-1962'
Stirling Com #1 (ARCO)	1650' FNL & 1980' FWL Sec. K-7-T18S-R27E	TD 9350'	05-20-75	07-02-75 03-30-80	Morrow GAS P&A	13 3/8" 8 5/8" 5 1/2"		890' 1900' 9350'	700 810 850	Surface 87' (calculated) 4817' (calculated) set cmt retainers at 8824', 8720', 5112' and spotted cmt plugs + 30' cmt plug at surface	9035-9174' for P&A perf'd 8770-77', 5160-61', 2675-77', 2600', and 1950-52' all perfs sqzd
Paton-Federal #2 (Break Operating)	330' FSL & 2290' FWL Sec. N-6-T18S-R27E	TD 1765' PB 1747'	08-10-57	09-01-57 02-26-69	OIL WIW	8 5/8" 5 1/2"	28 14	917' 1765'	300 125	Surface 900'	1690-1726' 1662-1699'
Johnston-Federal #1Y (Manzano)	2340' FSL & 990' FWL Sec. L-7-T18S-R27E	TD 1810'	04-07-58	08-19-58	OIL	18" 8 5/8" 5 1/2"	24 14	50' 872' 1810'	50 590 225	Surface Surface 800' (Temp Svy)	990-1670'
Johnston #1 (Nearburg & Ingram)	2390' FSL & 990' FWL Sec. L-7-T18S-R27E	TD 150'	04-58	04-12-58	J&A	N/A				hole increased from 11" to 8' at 150'; skidded rig; cmt'd hole and surface w/150 sx to J&A	N/A

WELL NAME (Operator)	*Eddy Cnty, NM LOCATION*	*TD PBTD*	*SPUD DATE*	*CPLN DATE*	*WELL TYPE*	*COMPLETION RECORD*				
						CASING, lbs	*SET*	*SX CMT*	*TOC*	*PERFS*
Gilbert #1 (Weier Drilling)	2460' FSL & 2622' FWL Sec. K-7-T18S-R27E	TD 1068'	04-05-48	04-18-48	D&A	9 5/8"	190'	25	Surface set cmt plugs at 820' and 760', filled hole w/mud, cmt plug at top	for P&A left 9 5/8" in hole
A.A. Kaiser #3 (Weier Drilling)	1650' FSL & 1650' FEL Sec. J-7-T18S-R27E	TD 1626'	11-16-48	12-22-48	D&A	9 5/8" 7"	114' 1255'	80 50	Surface 550' (estimated) spotted cmt plugs 820' to surface (cut off 7" csg, at 547')	1240-1626'
Peterson Com #1 (Mewbourne Oil)	1980' FSL & 1980' FEL Sec. J-7-T18S-R27E	TD 9385'	08-19-73	10-08-73	Penn GAS	16" 11 3/4" 8 5/8" 4 1/2"	200' 900' 1971' 9385'	250 540 475 325	Surface Surface Surface 7860' (Temp Svy)	9142-9251'

Logs: GR/N 7-6-57 TempSurvey 4-3-69 Treatment Report 9-19-68
Inj Profile 4-2-69 CBL 3/19/80

Devon

ENGINEERING CHART

Laterolog 7/6/57
P&A'D 3/19/80

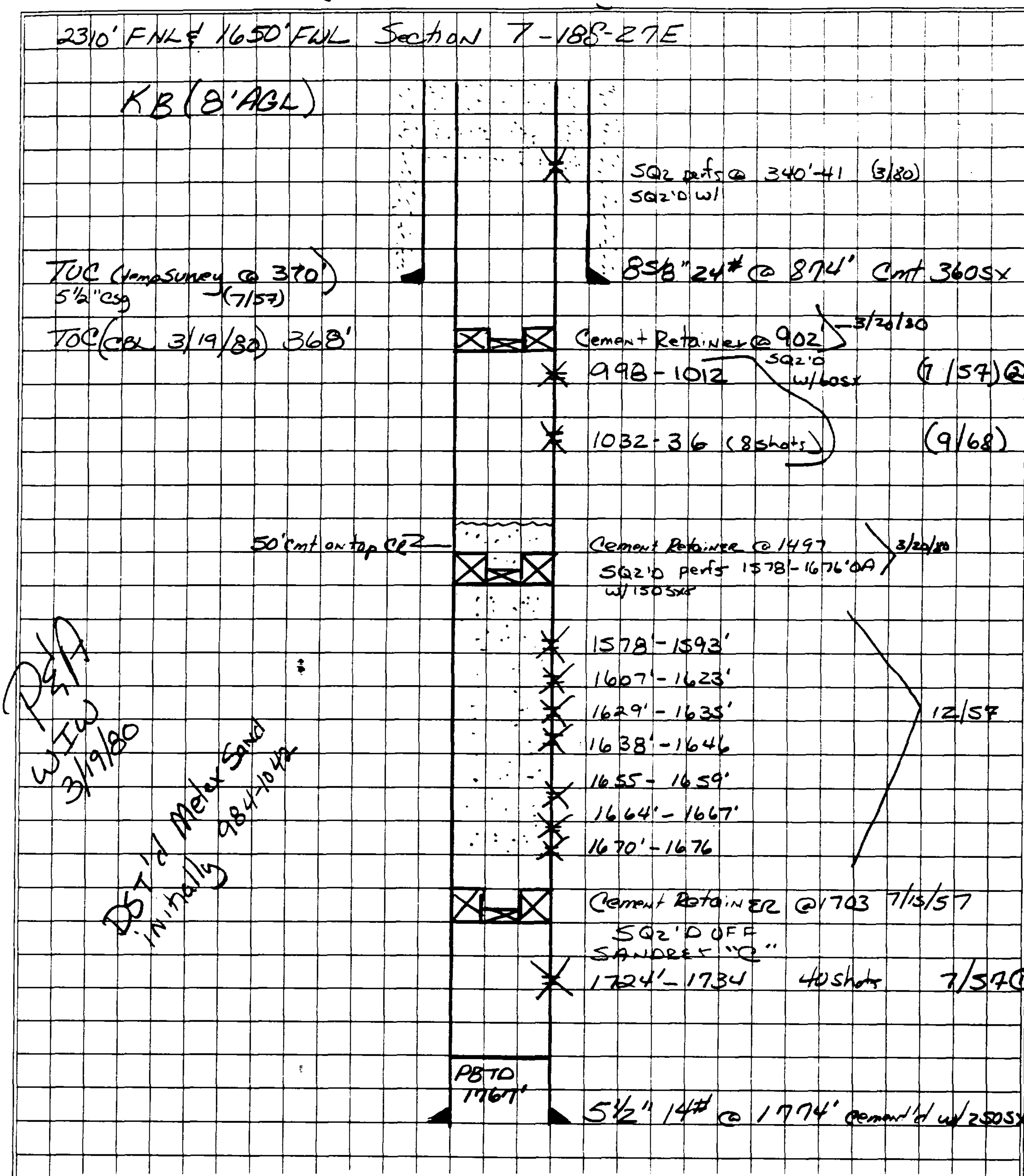
SHEET NO OF

FILE

DATE 10/12/92

BY LS Powell

SUBJECT: WRLU #4 (Malco Ref. W. Stirling #4)



2310' FNL & 1650' FWL Section 7-18S-27E
KB (8' AGL)
SQZ perfs @ 340'-41 (3/80)
SQZ'D w/
TOC (TempSurvey @ 370') 5½" csg (7/57)
8 5/8" 24# @ 874' Cmt 360sx
TOC (CBL 3/19/80) 368'
Cement Retainer @ 902' 3/20/80
998-1012 SQZ'D w/60sx (7/57) ②
1032-36 (8 shots) (9/68)
50' cmt on top CR
Cement Retainer @ 1497 3/20/80
SQZ'D perfs 1578'-1676' OA w/150sx
1578'-1593'
1607'-1623'
1629'-1635'
1638'-1646
1655-1659'
1664'-1667'
1670'-1676
12/57
P&A WIW 3/19/80
DST'd Metex Sand initially 984-1042
Cement Retainer @ 1703 7/15/57
SQZ'D OFF SANDREF "C"
1724'-1734 40 shots 7/57 ①
PBTD 1767'
5½" 14# @ 1774' cemented w/ 250sx

West Red Lake Unit #8 (Conversion) **ATTACHMENT VI (schematic)**

* NOTE ALL INFO FROM SCOUT CARDS No well file found.

Devon

ENGINEERING CHART

P&A 12/11/90

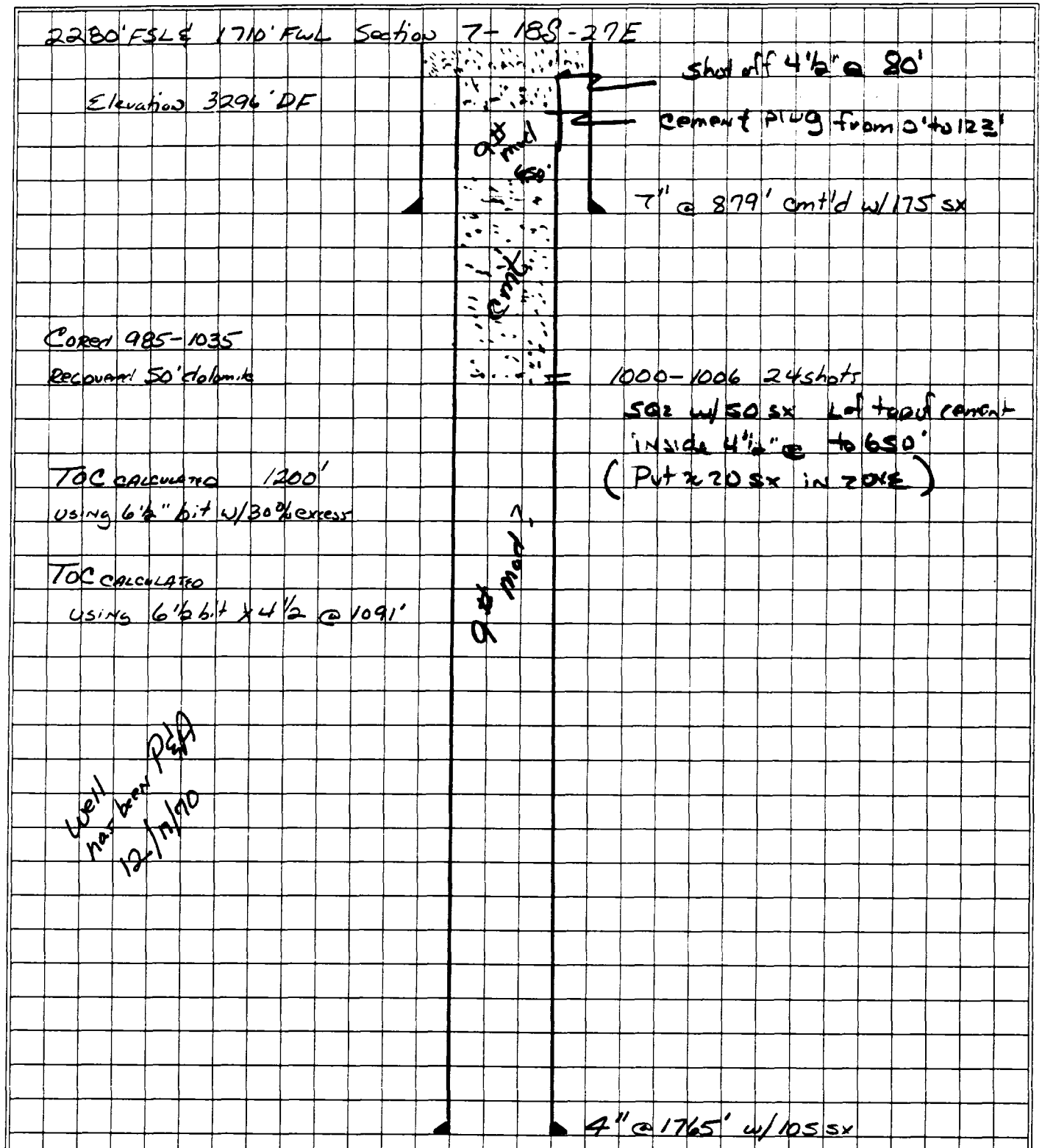
SHEET NO. OF

FILE

DATE 10/12/92

BY L S Powell

SUBJECT: WRLU #5 (Wier Drlg Co. - Gilbert #2)



West Red Lake Unit #8 (Conversion) ATTACHMENT VI (schematic)

Logs: CBL 3/17/80
Temp Injection profile 11/24/70

P & A 3/18/80 injection

Treatment Report 3-3-70
GR/N 12-14-70

SHEET NO OF

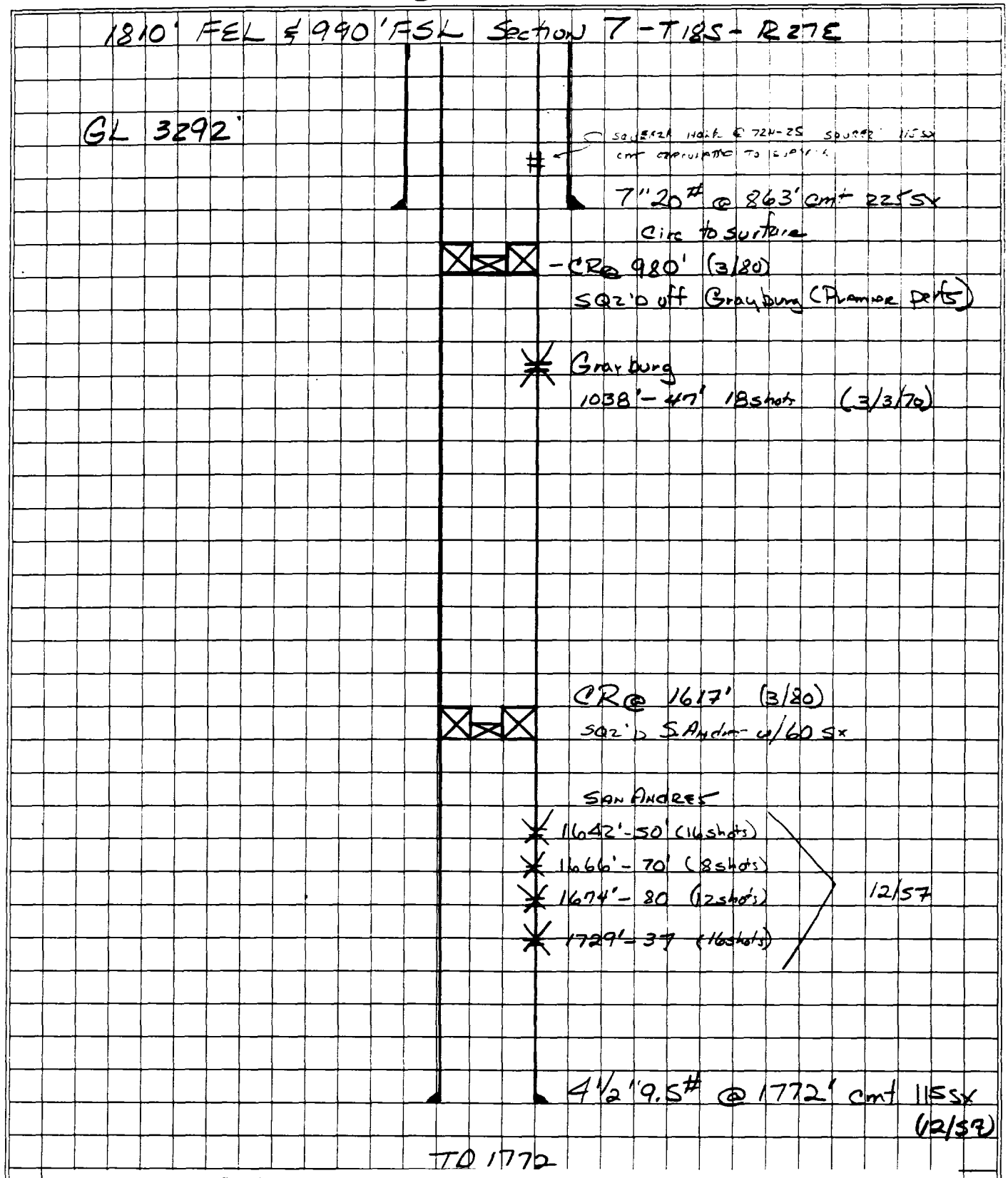
Devon ENGINEERING CHART

FILE

DATE 10/13/92

BY LSPowell

SUBJECT: WRLU #11 (Weir Drlg - Kaiser #4)



West Red Lake Unit #8 (Conversion) **ATTACHMENT VI (schematic)**

GR/N 6/8/57 CBL 9/18/68 Injection Profile 4/2/69
Csg inspection 5/18/72

Devon ENGINEERING CHART

P & A 3/14/80

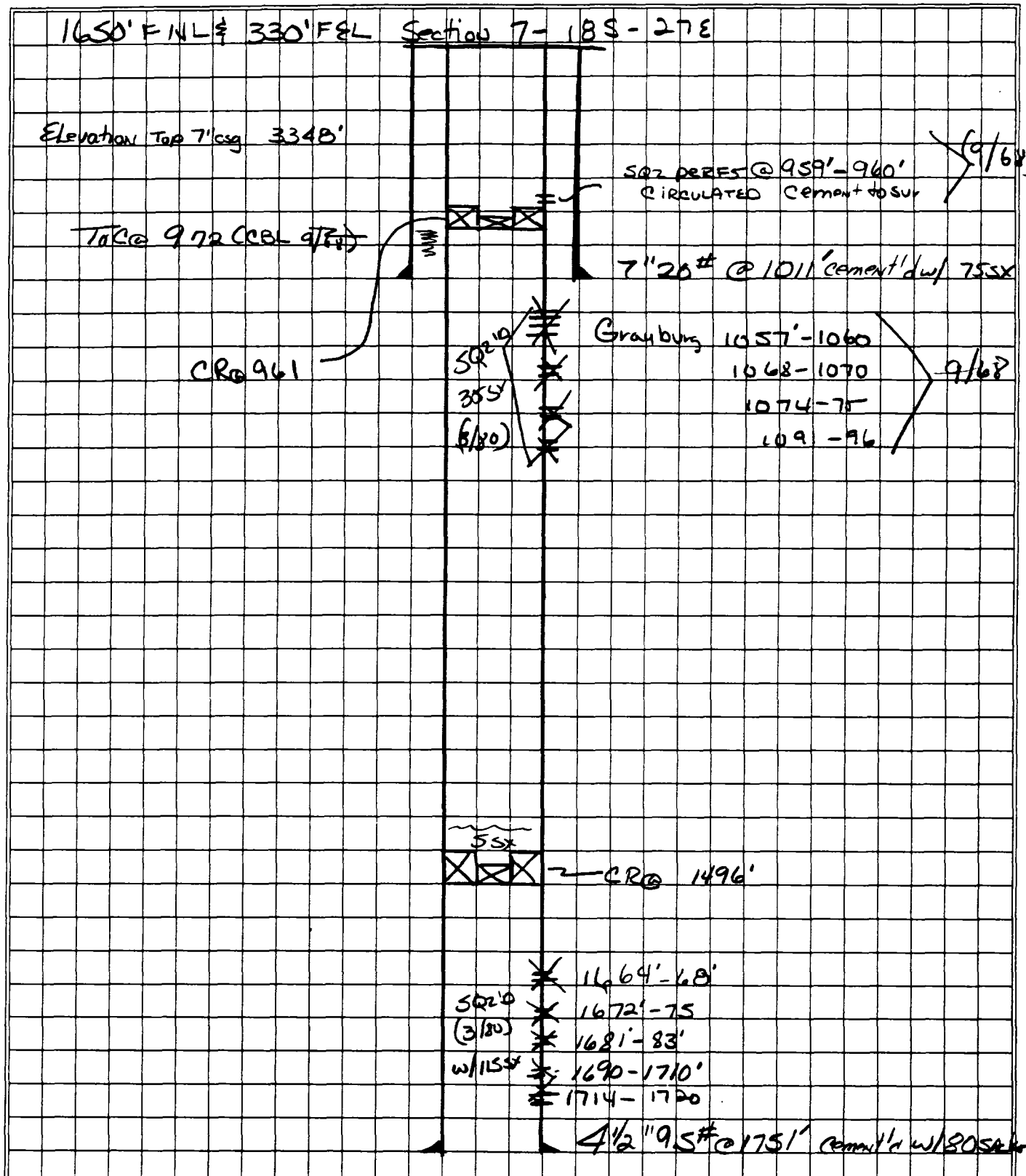
SHEET NO. OF

FILE

DATE 10/23/92

BY L S Powell

SUBJECT: WRLU # 14 (Mildred Crane - Hudson - Vandergriff #2)



West Red Lake Unit #8 (Conversion) **ATTACHMENT VI (schematic)**

Cored 1075-1127'

devon ENGINEERING CHART

P&A 3/17/80

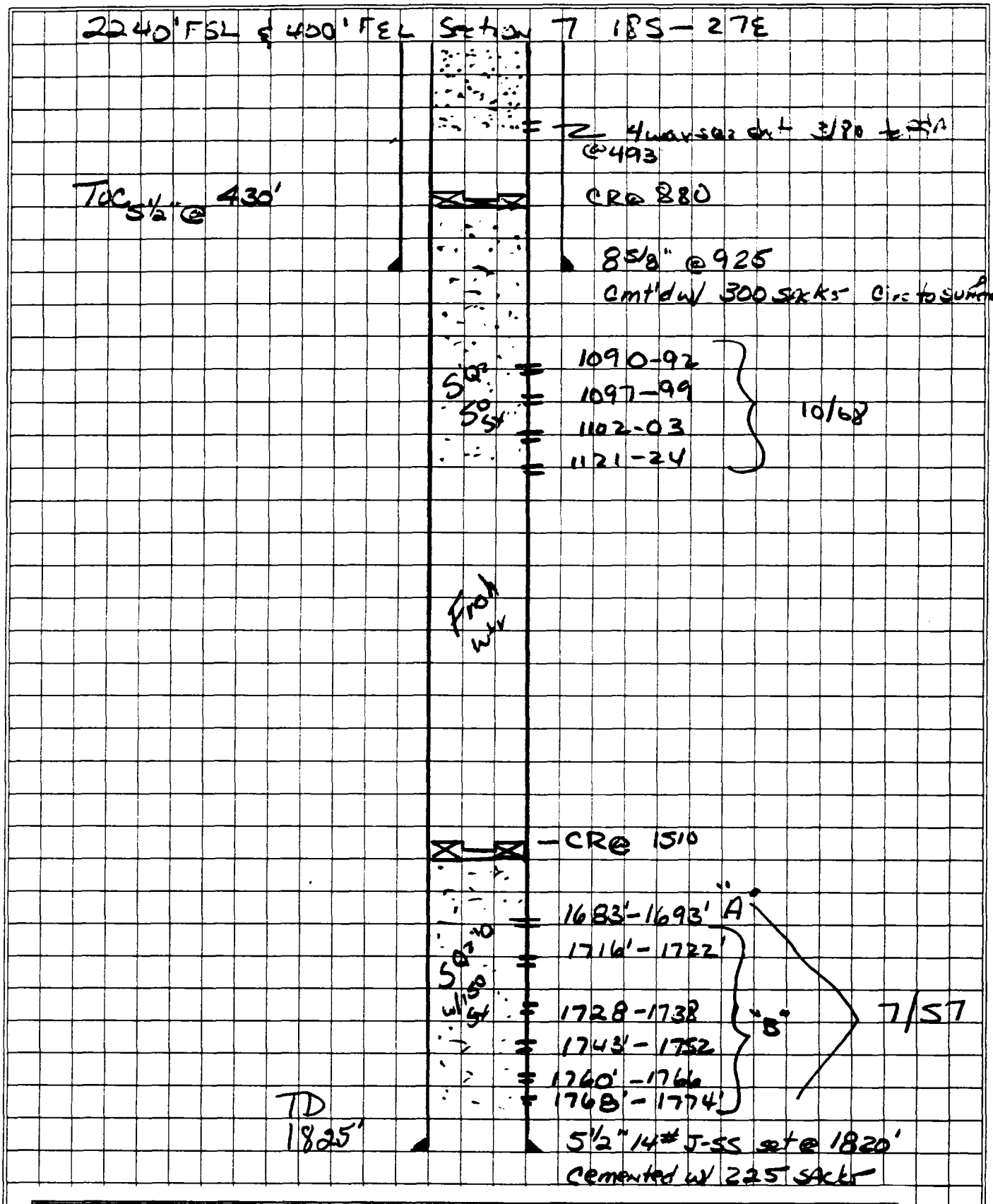
SHEET NO. OF

FILE

DATE

BY L. Powell

SUBJECT: West Red Lake #16



West Red Lake Unit #8 (Conversion) **ATTACHMENT VI (schematic)**

devon
ENERGY CORPORATION

SHEET NO. _____ OF _____

FILE ARCO
Eddy Cnty, NM

SUBJECT: Stirling Com #1
1650' FNL & 1980' FWL
Sec. 7-18S-27E Unit K

DATE _____ BY _____

GL 3288'

Spud 5-20-75
Gas Well 7-2-75
P&A 3-30-80

20" csg @ 37'

30' cmt plug

13 3/8" csg at 890' w/700 sx cmt; TOC @ surface

35 sx cmt plug @ 1800'

8 5/8" csg @ 1900' w/810 sx cmt; TOC @ 87' (calc)

* 1950-1952' sqz perfs (3-80)

* 2600' sqz perf (3-80)

* 2675-2677' sqz perfs (3-80)

TOC @ 2700'
Temp Surv (3-80)

950 sx cmt plug above rtnr.

Cmt Rtnr @ 5112'

* 5160-5161' sqz perfs (3-80)

TOC @ 5190'
CBL (3-80)

24 sx cmt plug above

4 sx cmt below rtnr @ 8720'

Cmt Rtnr @ 8720'

40 sx cmt

* 8770-8777' sqz perfs (w/12 sx cmt) 3-80

Cmt Rtnr @ 8824'

* 9032-9174' Production perfs 7775 (3-80 Sqzd w/50 sx)

5 1/2" csg @ 9350' w/850 sx cmt; TOC @ 4817' (calc)

TD 9350'

West Red Lake Unit #8 (Conversion)	**ATTACHMENT VI (schematic)**

devon
ENERGY CORPORATION

SHEET NO. _____ OF _____

FILE Nearburg & Ingram
Eddy Cnty, NM

SUBJECT: Johnston #1
2390' FSL & 990' FWL
Section 7-18S-27E Unit L

DATE _____ BY _____

Spud 4-58
J&A 4-12-58

Depth 150'

upon reaching 150' the hole size increased from 11" to 8'

cemented hole to surface w/150 sx and set marker

West Red Lake Unit #8 (Conversion) **ATTACHMENT VI (schematic)**

devon
ENERGY CORPORATION

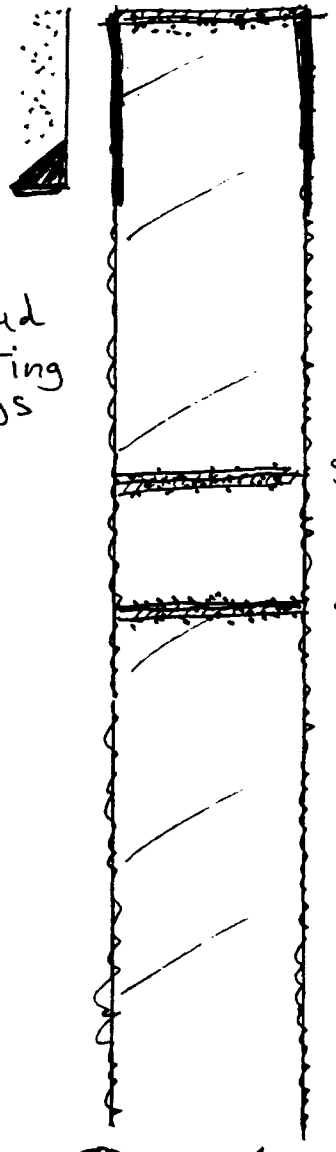
SHEET NO. _____ OF _____

FILE Weier Drlg
Eddy Cnty, NM

SUBJECT: Gilbert #1
2460' FSL & 2622' FWL
Sec. 7-18S-27E Unit K

DATE _____ BY _____

Spud 4-5-48
D&A 4-18-48



set cmt plug at top to P&A

9 5/8" csg set @ 190'
w/ 25 sx cmt (left in hole)
TOC @ surf

filled hole w/heavy mud after spotting cement plugs

Set 30 sx cmt plug @ 760'

set 20 sx cmt plug @ 820'

TD 1068'

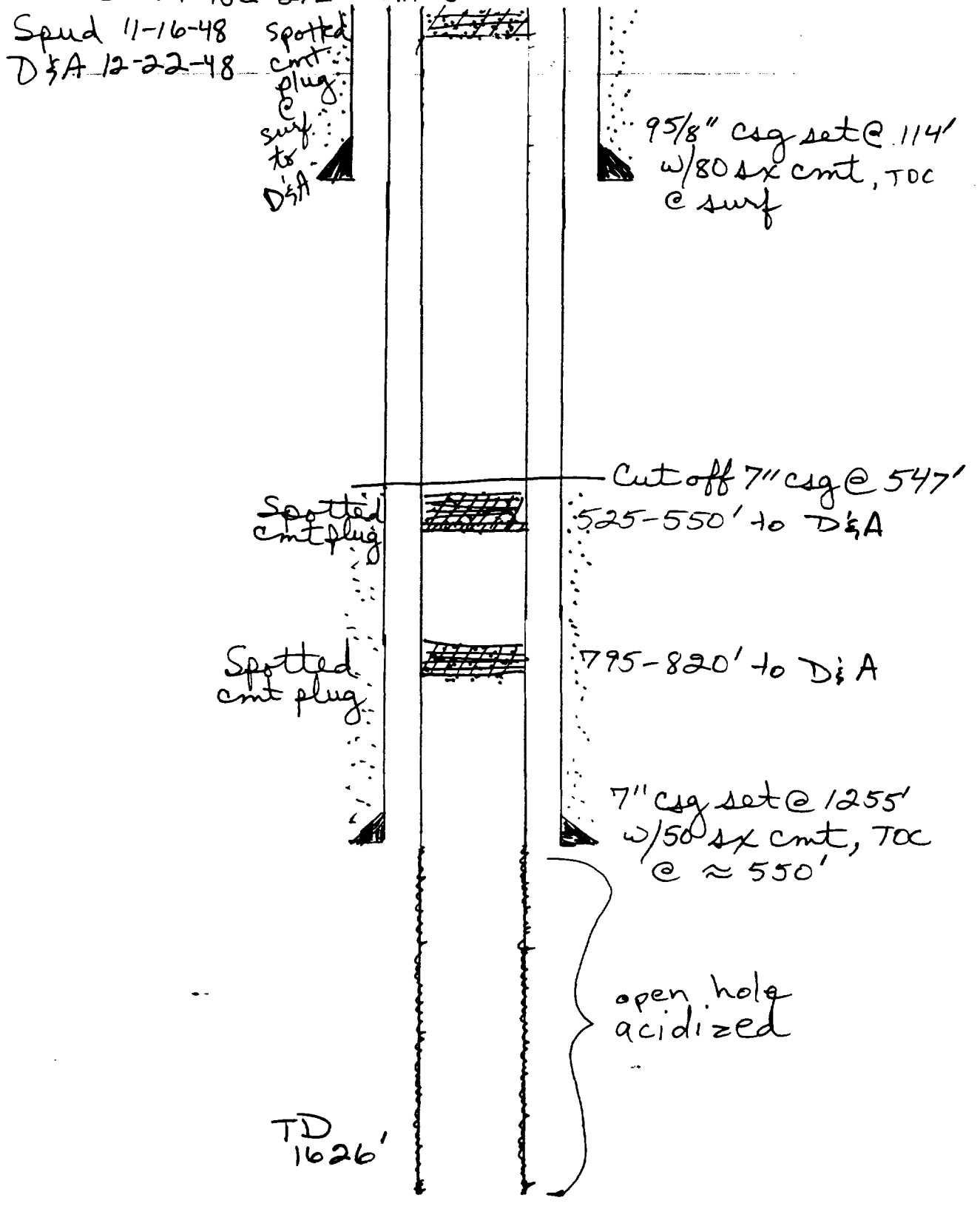
devon
ENERGY CORPORATION

SHEET NO. _____ OF _____

FILE Weier Drlg
Eddy Cnty, NM

SUBJECT: A.A. Kaiser #3
1650' FSL & 1650' FEL
Sec. 7-18S-27E Unit J

DATE _____ BY _____



West Red Lake Unit #8 (Conversion) **ATTACHMENT VI (schematic)**

West Red Lake Unit #8 (Conversion)	**ATTACHMENT VII**

PROPOSED OPERATION

1. Plans are to inject 1800 bbls of produced water per day.

2. The injection system will be a closed system.

3. The proposed injection pressure is 800 psig. Maximum pressure will be 1000 psig.

4. The injection fluid will be reinjected produced water.

5. A sample of produced water from the West Red Lake Unit battery was analyzed by the Pro-Kem, Inc. lab. Please refer to Attachment VII (5) for a copy of the analysis.

Pro-Kem, Inc.

WATER ANALYSIS REPORT

SAMPLE

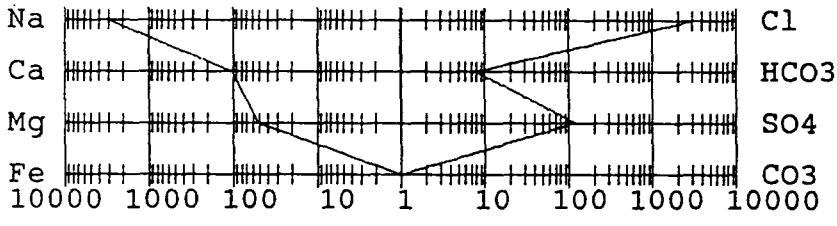
Oil Co. : **Devon Energy Corp.**
Lease : **West Red Lake**
Well No.: **Injection Pump**
Salesman:

Sample Loc. :
Date Analyzed: **05-April-1995**
Date Sampled :

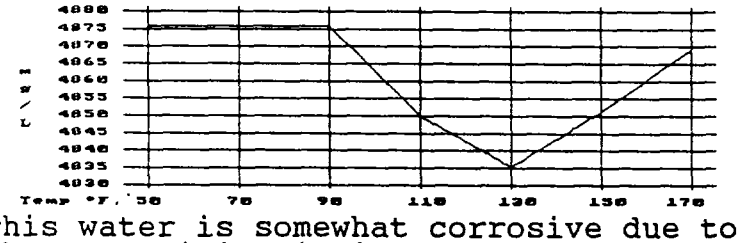
ANALYSIS

1.	pH		5.900		
2.	Specific Gravity 60/60 F.		1.130		
3.	$CaCO_3$ Saturation Index	@ 80 F.	-0.385		
		@ 140 F.	+0.605		
	Dissolved Gasses		**MG/L**	**EQ. WT.**	***MEQ/L**
4.	Hydrogen Sulfide		150		
5.	Carbon Dioxide		200		
6.	Dissolved Oxygen		Not Determined		
	Cations				
7.	Calcium	(Ca^{++})	2,004	/ 20.1 =	99.70
8.	Magnesium	(Mg^{++})	608	/ 12.2 =	49.84
9.	Sodium	(Na^{+}) (Calculated)	70,719	/ 23.0 =	3,074.74
10.	Barium	(Ba^{++})	Not Determined		
	Anions				
11.	Hydroxyl	(OH^{-})	0	/ 17.0 =	0.00
12.	Carbonate	($CO_3^{=}$)	0	/ 30.0 =	0.00
13.	Bicarbonate	(HCO_3^{-})	459	/ 61.1 =	7.51
14.	Sulfate	($SO_4^{=}$)	5,600	/ 48.8 =	114.75
15.	Chloride	(Cl^{-})	109,975	/ 35.5 =	3,097.89
16.	Total Dissolved Solids		189,365		
17.	Total Iron (Fe)		2	/ 18.2 =	0.11
18.	Total Hardness As $CaCO_3$		7,507		
19.	Resistivity @ 75 F. (Calculated)		0.009 /cm.		

LOGARITHMIC WATER PATTERN
***meq/L.**



Calcium Sulfate Solubility Profile



PROBABLE MINERAL COMPOSITION

COMPOUND	EQ. WT.	X *meq/L =	mg/L.
$Ca(HCO_3)_2$	81.04	7.51	609
$CaSO_4$	68.07	92.19	6,275
$CaCl_2$	55.50	0.00	0
$Mg(HCO_3)_2$	73.17	0.00	0
$MgSO_4$	60.19	22.56	1,358
$MgCL_2$	47.62	27.27	1,299
$NaHCO_3$	84.00	0.00	0
$NaSO_4$	71.03	0.00	0
NaCl	58.46	3,070.62	179,508

***Milli Equivalents per Liter**

This water is somewhat corrosive due to the pH observed on analysis.
The corrosivity is increased by the content of mineral salts, and the presence of H2S, CO2 in solution.

West Red Lake Unit #8 (Conversion)	**ATTACHMENT VIII**

GEOLOGY AND LITHOLOGY

Injection zones are sand and dolomite lenses within the Grayburg-San Andres formation at an average depth of 1084-1764' feet. Specifically they are:

Grayburg	1084-1098'	(14')
San Andres	1610-1764'	(154')

Fresh Water Zones

Base of near surface aquifer is estimated to be at approximately 500 feet.
No fresh water zones exist below the proposed injection intervals.

West Red Lake Unit #8 (Conversion)	**ATTACHMENT XII**

No evidence of fault communication between the shallow aquifers and the proposed injection zones has been encountered as the result of detailed studies of formations in the West Red Lake Unit.

West Red Lake Unit #8 (Conversion)	**ATTACHMENT XIII**

PROOF OF NOTICE

Devon Energy Corporation (Nevada) operates the West Red Lake Unit in Sections 4, 5, 6, 7, 8 and 9 of T18S, R27E, Eddy County, New Mexico.
Breck Operating Corporation, Manzano Oil Corporation, and Mewbourne Oil operate wells within the area of review. Each of these operators were provided a copy of our application by certified mail. Proof of notice is enclosed.
The Bureau of Land Management is the surface owner. They have been notified by BLM Form 3160-5 Sundry Notice.

PROOF OF PUBLICATION

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

Affidavit of Publication

№ 17871

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:

June 27, 19 96
_____, 19___
_____, 19___
_____, 19___
_____, 19___
_____, 19___

That the cost of publication is $25.11, and that payment thereof has been made and will be assessed as court costs.

Amy McKay

Subscribed and sworn to before me this
30th day of June, 1996

Donna Crump

My commission expires 08-01-98
Notary Public

June 27, 1996

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

West Red Lake Unit #8
1980' FNL & 1980' FEL
Section G-7-T18S-R27E
Eddy County, NM

The intended purpose of this well is to inject produced waters into the Grayburg-San Andres sand to enhance oil production through secondary recovery. Maximum injection rates of 1500 BWPD and a maximum pressure of 1000 psig are expected.

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

New Mexico
Oil Conservation Division
2040 South Pacheco
Sante Fe, NM 87505

E.L. Buttross, Jr.
District Engineer
Devon Energy Corporation
(Nevada)
20 North Broadway,
Suite 1500
Oklahoma City, OK
(405) 552-4509

Is your RETURN ADDRESS completed on the reverse side?

SENDER: WRLU 8 (7-12-96) AAI

- 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 will show to whom the article was delivered and the date delivered.

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:

Mewbourne Oil Company
Post office Box 5270
Hobbs, New Mexico 88241

4a. Article Number
Z 731 696 418

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

7. Date of Delivery
7-16-96

5. Signature (Addressee)
Connie Sullivan

6. Signature (Agent)

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

PS Form 3811, December 1991 ☆U.S. GPO: 1993—352-714 **DOMESTIC RETURN RECEIPT**

Thank you for using Return Receipt Service.

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SENDER: WRLU 8 (7-12-96) AAI

- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
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- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

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:

Breck Operating Corporation
Post Office Box 911
Breckenridge, Texas 76424

4a. Article Number
Z 731 696 416

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

7. Date of Delivery

5. Signature (Addressee)

6. Signature (Agent)
Tina Wilson

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

PS Form 3811, December 1991 ☆U.S. GPO: 1993—352-714 **DOMESTIC RETURN RECEIPT**

Thank you for using Return Receipt Service.

Is your RETURN ADDRESS completed on the reverse side?

SENDER: WRLU 8 (7-12-96) AAI

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- The Return Receipt will show to whom the article was delivered and the date delivered.

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:

Manzano Oil Corporation
Post Office Box 2107
Roswell, NM 88202-2107

4a. Article Number
Z 731 696 417

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

7. Date of Delivery
7/15/96

5. Signature (Addressee)

6. Signature (Agent)

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

PS Form 3811, December 1991 ☆U.S. GPO: 1993—352-714 **DOMESTIC RETURN RECEIPT**

Thank you for using Return Receipt Service.