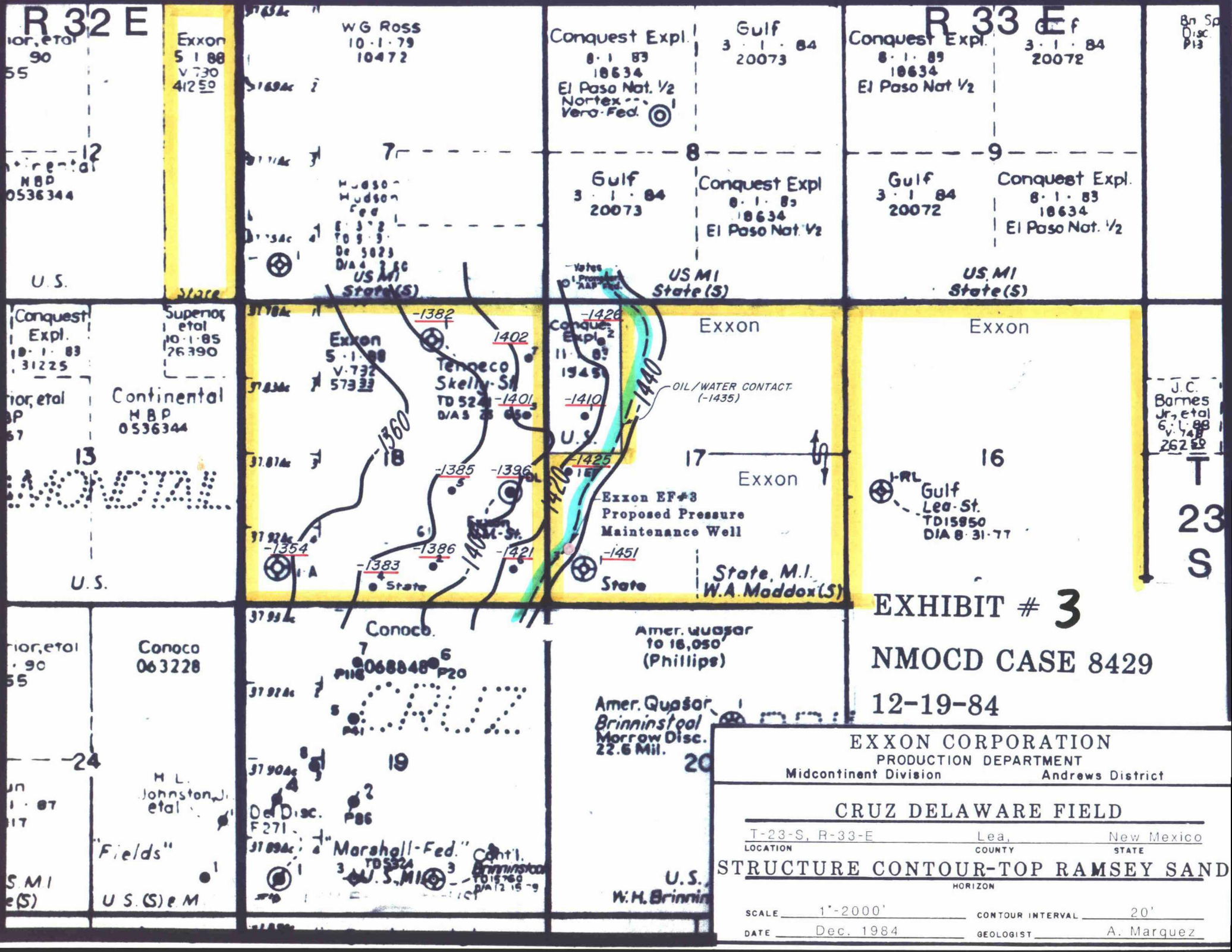
R 32 E
R 33 E
T 23 S
Exxon 5-1-88 V-730 41250
W G Ross 10-1-79 10472
Conquest Expl. 8-1-83 18634 El Paso Nat. 1/2 Nortex Vero-Fed.
Gulf 3-1-84 20073
Gulf 3-1-84 20072
Conquest Expl. 8-1-83 18634 El Paso Nat. 1/2
Hudson Hudson Fed
US MI State(S)
Conquest Expl. 8-1-83 31225
Superior etal 10-1-85 26390
Continental HBP 0536344
Exxon 5-1-88 V-732 57333
Texaco Skelly-St TD 5241 D/A 5-25-65
-1382
1402
-1401
-1360
-1385
-1396
-1354
-1386
-1383
-1421
State
Exxon
-1426
-1410
-1425
-1451
OIL/WATER CONTACT (-1435)
-1440
-1420
Exxon EF#3 Proposed Pressure Maintenance Well
State, M.I. W.A. Maddox(S)
Exxon
Gulf Lea-St. TD15850 DIA 8-31-77
J.C. Barnes Jr, etal 6-1-88 V-748 26250
Conoco 063228
Conoco
068848
Amer. Quasar to 16,050 (Phillips)
Amer. Quasar Brinninstool Morrow Disc. 22.6 Mil.
H L Johnston, J. etal "Fields"
Del Disc. F271
"Marshall-Fed." TD5324
Cont'l. Brinninstool TD15760 D/A 12-15-9
U.S. W.H. Brinnin
U.S. (S) e M
U.S.
State
EXHIBIT # 3
NMOCD CASE 8429
12-19-84
EXXON CORPORATION
PRODUCTION DEPARTMENT
Midcontinent Division
Andrews District
CRUZ DELAWARE FIELD
T-23-S, R-33-E
LOCATION
Lea,
COUNTY
New Mexico
STATE
STRUCTURE CONTOUR-TOP RAMSEY SAND
HORIZON
SCALE 1"-2000'
CONTOUR INTERVAL 20'
DATE Dec. 1984
GEOLOGIST A. Marquez

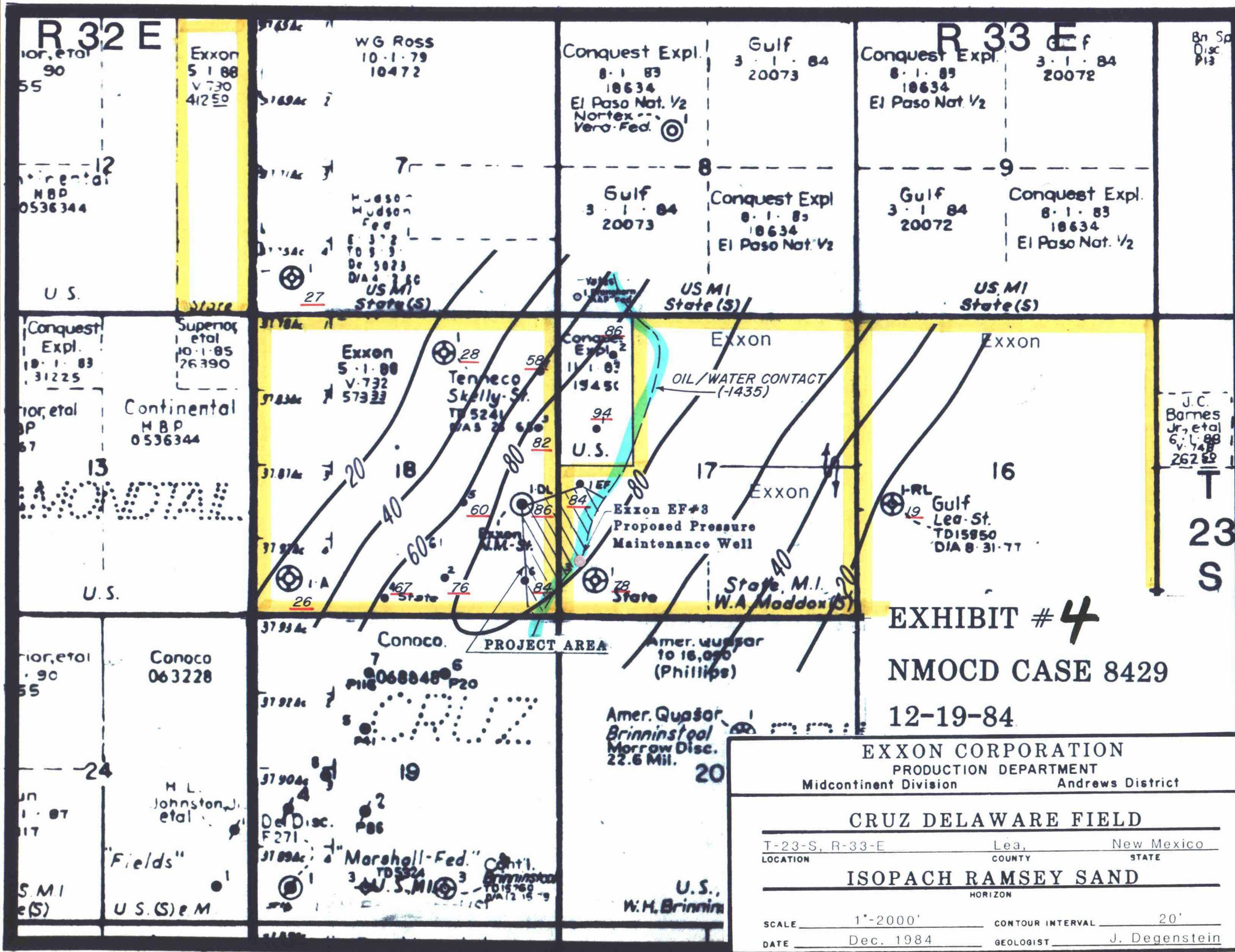
R 32 E
R 33 E
T 23 S
Exxon
OIL/WATER CONTACT (-1435)
Exxon EF#8 Proposed Pressure Maintenance Well
PROJECT AREA
CRUZ
20
40
60
80
WG Ross 10-1-79 10472
Conquest Expl. 8-1-83 18634 El Paso Nat. 1/2
Gulf 3-1-84 20073
Gulf 3-1-84 20072
Conquest Expl. 8-1-83 18634 El Paso Nat. 1/2
Exxon 5-1-88 V-732 57333
Tenneco Skelly St.
Continental HBP 0536344
Conoco 063228
Conoco
Amer. Quasar to 16,000 (Phillips)
Amer. Quasar Brinninstool Morrow Disc. 22.6 Mil.
Gulf Lea St. TD15850 DIA 8-31-77
State M.I. W.A. Maddox (S)
J.C. Barnes Jr., etal
US MI State (S)
U.S.
7
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EXHIBIT #4

NMOCD CASE 8429

12-19-84

EXXON CORPORATION
PRODUCTION DEPARTMENT
Midcontinent Division — Andrews District

CRUZ DELAWARE FIELD

LOCATION	COUNTY	STATE
T-23-S, R-33-E	Lea,	New Mexico

ISOPACH RAMSEY SAND
HORIZON

SCALE 1"-2000' — CONTOUR INTERVAL 20'
DATE Dec. 1984 — GEOLOGIST J. Degenstein

12-19-84
Case 8429

EXHIBIT 5

APPLICATION FOR AUTHORIZATION TO INJECT
FOR THE EXXON NEW MEXICO STATE EF #3

Attached is a chemical analysis of fresh water produced from the Graham water well located in Section 17, T23SD, R33E, approximately 3/4 mile east of the Exxon New Mexico State EF #3 proposed injection well. Also attached is a topographic map showing both locations.

JAD/sjs

P O BOX 1468
BIG SPRING TEXAS 79720
PH 263-3234 OR 263-1048

Martin Water Laboratories, Inc.

700 W INDIANA
MIDLAND TEXAS 79701
PHONE 683-4521

RESULT OF WATER ANALYSES

LABORATORY NO. 78491

TO: Mr. Joe Hossley
1700 West Broadway, Andrews, Texas

SAMPLE RECEIVED 7-3-84

RESULTS REPORTED 7-16-84

COMPANY Exxon Company, U.S.A. LEASE New Mexico State "DL"

FIELD OR POOL Cruz

SECTION 17 BLOCK ____ SURVEY T-23 S & R-33 E COUNTY Lea STATE NM

SOURCE OF SAMPLE AND DATE TAKEN:

NO. 1 Fresh water - taken from Graham Water well, 7-3-84

NO. 2

NO. 3

NO. 4

REMARKS: Located ½ mile East of "DL" tank battery.

CHEMICAL AND PHYSICAL PROPERTIES	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.0019			
pH When Sampled				
pH When Received	7.66			
Bicarbonate as HCO_3	304			
Supersaturation as $CaCO_3$				
Undersaturation as $CaCO_3$				
Total Hardness as $CaCO_3$	196			
Calcium as Ca	29			
Magnesium as Mg	30			
Sodium and/or Potassium	66			
Sulfate as SO_4	51			
Chloride as Cl	27			
Iron as Fe	0.27			
Barium as Ba				
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	506			
Temperature °F.				
Carbon Dioxide, Calculated				
Dissolved Oxygen, Winkler				
Hydrogen Sulfide	0.0			
Resistivity, ohms/m at 77° F.	17.00			
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml				

Results Reported As Milligrams Per Liter

Additional Determinations And Remarks The undersigned certifies the above to be true and correct to the best of his knowledge and belief.

Form No. 3

cc: Mr. O. W. Davenport, Midland
Mr. Ralph King, Andrews, TX

By _____
Waylan C. Martin, M. A.

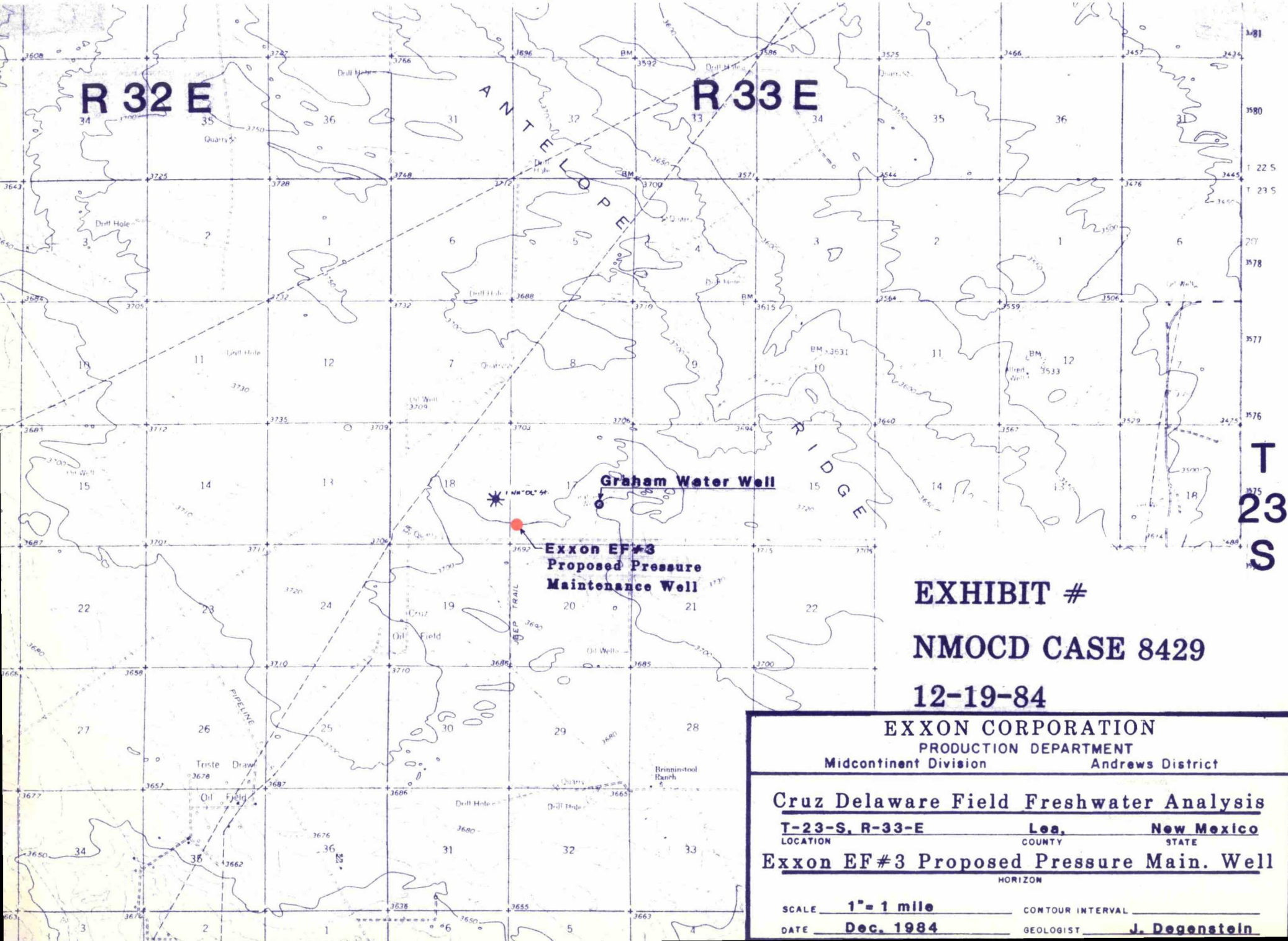


EXHIBIT #

NMOCD CASE 8429

12-19-84

EXXON CORPORATION
PRODUCTION DEPARTMENT
Midcontinent Division — Andrews District

Cruz Delaware Field Freshwater Analysis

T-23-S, R-33-E	Lea,	New Mexico
LOCATION	COUNTY	STATE

Exxon EF#3 Proposed Pressure Main. Well
HORIZON

SCALE 1" = 1 mile — CONTOUR INTERVAL

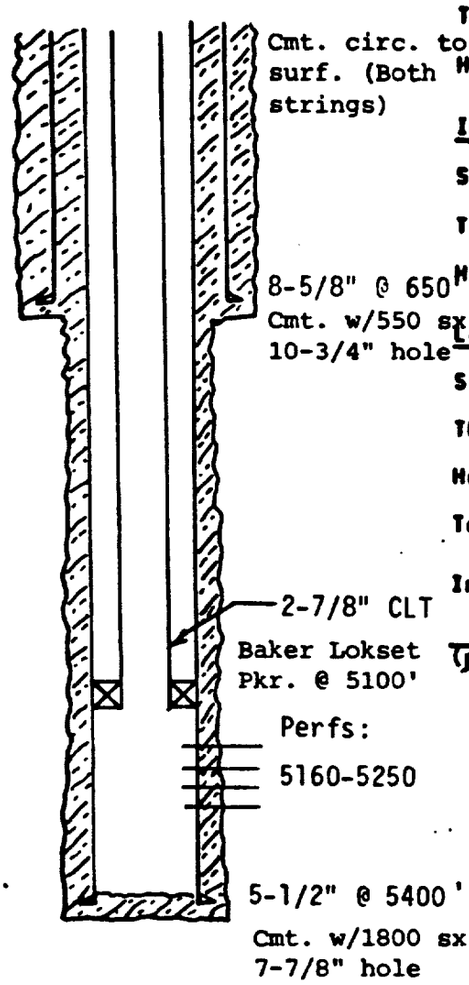
DATE Dec. 1984 — GEOLOGIST J. Degenstein

INJECTION WELL DATA SHEET

OPERATOR	LEASE			
Exxon Corporation	New Mexico "EF" State			
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE
3	990' FSL & 330' FWL	17	23S	33E

Schematic

(Proposed)



Tubular Data (Proposed)

Surface Casing

Size 8-5/8" Cemented with 550 sx.

TOC Surf feet determined by Circ

Hole size 10-3/4"

Intermediate Casing

Size _____" Cemented with _____ sx.

TOC _____ feet determined by _____

Hole size _____

Long string

Size 5-1/2" Cemented with 1800 sx.

TOC Surf feet determined by Circ

Hole size 7-7/8"

Total depth 5350±

Injection interval

5160+ feet to 5250+ feet

(perforated or ~~open hole~~, indicate which)

Natural Completion

Fresh Water Zone:

Santa Rosa - Top 500'
Bottom1100'

Tubing size 2-7/8" lined with cement (material) set in a

Baker lokset (brand and model) packer at 5100 feet

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation Ramsey Sand
2. Name of Field or Pool (if applicable) Cruz Delaware
3. Is this a new well drilled for injection? [X] Yes [ ] No

   If no, for what purpose was the well originally drilled? N/A
4. 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) N/A
5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. New Mexico State DL #1 produced oil @ ±8300' from the brushy canyon formation ; produced for approximately 3 months. Morrow gas production from the Brinninstool field is at a depth of +15580-640'.

APPLICATION FOR AUTHORIZATION TO INJECT
EXXON NEW MEXICO STATE "EF" #3

INJECTION WELL DATA

A. 1. Exxon New Mexico State "EF" #3, located 990' FSL and 330' FWL, Sec. 17, T-23S, R-33E, Lea County, New Mexico.

2. Proposed Casing Program: 8-5/8" set in a 10-3/4" hole at 650' and cemented to surface with approximately 550 sx. 5-1/2" casing set in a 7-7/8" hole at 5400' and cemented to surface with approximately 1800 sx.

3. Approximately 5100' of 2-7/8", J-55, EUE, 8-rd, cement-lined tubing will be used for the injection string.

4. Tubing will be set in a Baker Lok-set packer at 5100'.

B. 1. The injection formation will be the Delaware Ramsey Sand. The Pool name in the area is Cruz.

2. The approximate injection interval will be from 5160' to 5250'. Injection will be through perforated 5-1/2" casing.

3. There is no productive interval overlying the Ramsey Sand. The New Mexico State DL #1 produced oil from the Brushy Canyon formation underlying the Ramsey Sand at $\pm$8300'.

APPLICATION FOR AUTHORIZATION TO INJECT
EXXON NEW MEXICO STATE "EF" #3

Tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone.

Well: Conquest Federal #1
Location: E, S17, T-23-S, R-33-E

Spud: 2-7-84 Completed: 4-18-84
Casing: 8-5/8" @ 510', 300 sx, 5-1/2" @ 5300', 775 sx.
Prod. Zone: Ramsey Sand
Completion: Perfs 5122'-5155'

Well: PM Oil Texaco State #1
Location: M, S17, T-23-S, R-33-E

Spud: 6-13-64 D&A: 6-23-64
Casing: 7" @ 331', 150 sx
Completion: Drilled 6-1/4" hole to 5415'. Set four 25 sack plugs at 5415', 4950-5150', 1220'-1320' and 281'-381'. Set 10 sack plug at surface.

Well: Exxon N. M. State "EF" #1
Location: L, S17, T-23-S, R-33-E

Spud: 4-23-84 Completed: 5-24-84
Casing: 8-5/8" @ 646', 300 sx, 5-1/2" @ 5249', 2200 sx
Prod. Zone: Ramsey Sand
Completion: Perf 5142'-5156', no stimulation.

Well: Exxon N. M. State "DL" #1
Location: I, S18, T-23-S, R-33-E

Spud 6-24-83 Completed: 12-15-83
Casing: 13-3/8" @ 600', 760 sx, 8-5/8" @ 5076', 1850 sx, 5-1/2" @ 9028, 1900 sx.
Prod. Zone: Ramsey Sand
Completion: Perf 8280'-8310', acidize with 1700 gals 15% HCl, frac with 8000 gals 15% HCl, 25,000 gals frac fluid, 46,000# 20-40 sd. 24 HPT 24 oil, 141 water. Perf 8660'-8742' selectively, acidize with 5000 gals 15% HCl, frac with 34,000 gals YF PSD. 24 HPT 24 oil, 201 water. Set CIBP @ 8600' and 8230'. Perf 5110'-5140'.

Well: Exxon N. M. State "DL" #2
Location, O, S-18, T-23-S, R-33-E

Spud: 3-11-84 Completed: 5-25-84
Casing: 8-5/8" @ 669', 550 sx, 5-1/2" @ 5426', 2250 sx.
Prod. Zone: Ramsey Sand
Completion: Perf 5091'-5136'

Exhibit #7
Case# 8429
12-19-84

APPLICATION FOR AUTHORIZATION TO INJECT
EXXON NEW MEXICO STATE "EF" #3

Well: Exxon N. M. State "DL" #3
Location: H, S-18, T-23-S, R-33-E

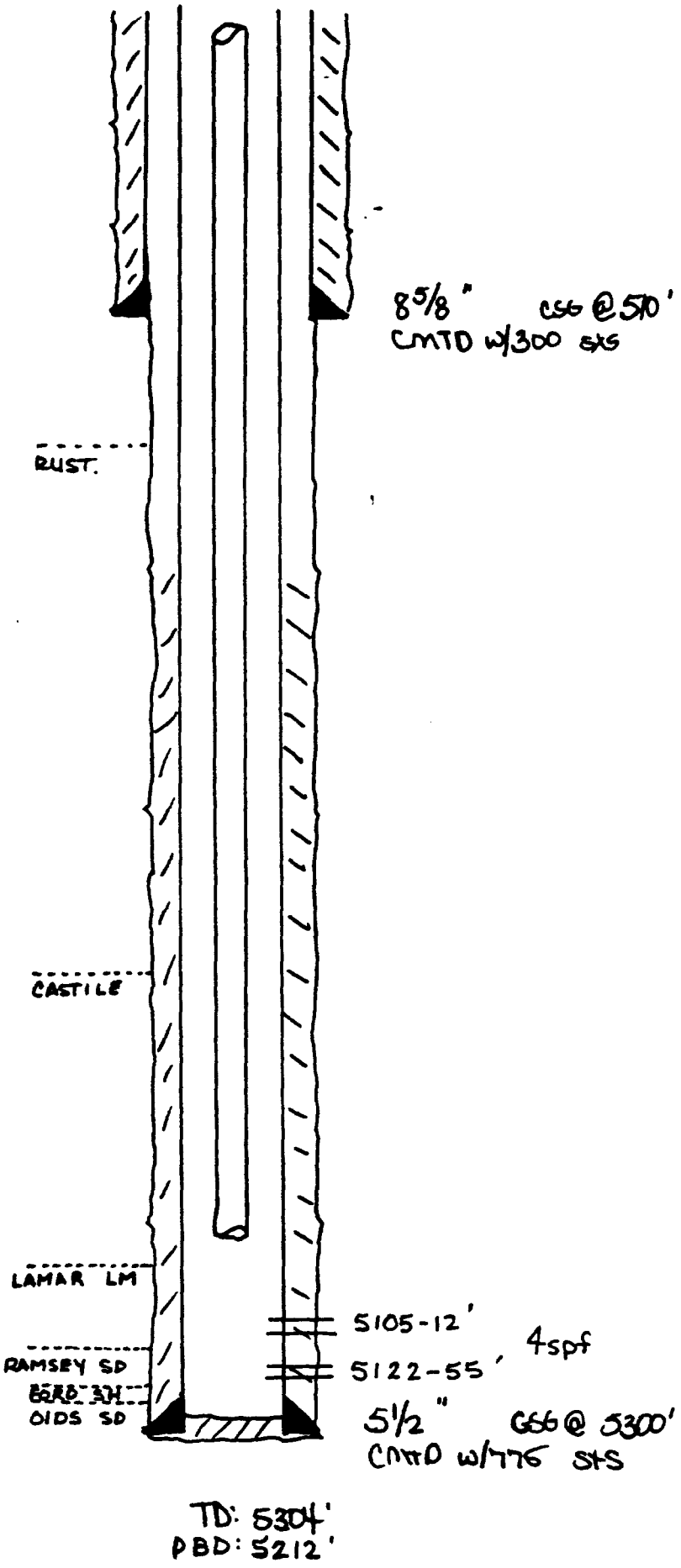
Spud: 3-20-84 Completed: 4-30-84
Casing: 8-5/8" @ 632', 550 sx, 5-1/2" @ 5301', 1300 sx
Prod. Zone: Ramsey Sand
Completion: Perf 5118'-5142', found channel. Perf 5190'-5192', found communication, squeezed with 60 sx. Drill out to 5175', perf 5118'-5142'.

Well: Exxon N. M. State "DL" #5
Location: J, S-18, T-23-S, R-33-E

Spud: 3-22-84 Completed: 5-12-84
Casing: 8-5/8" @ 691', 550 sx, 5-1/2" @ 5319', 600 sx
Prod. Zone: Ramsey Sand
Completion: Perf 5110'-5144'

Well: Exxon N. M. State "DL" #6
Location: P, S-18, T-23-S, R-33-E

Spud: 4-18-84 Completed: 5-29-84
Casing: 8-5/8" @ 680', 550 sx, 5-1/2" 5275', 2050 sx
Prod. Zone: Ramsey Sand
Completion: Perf 5120'-5132'

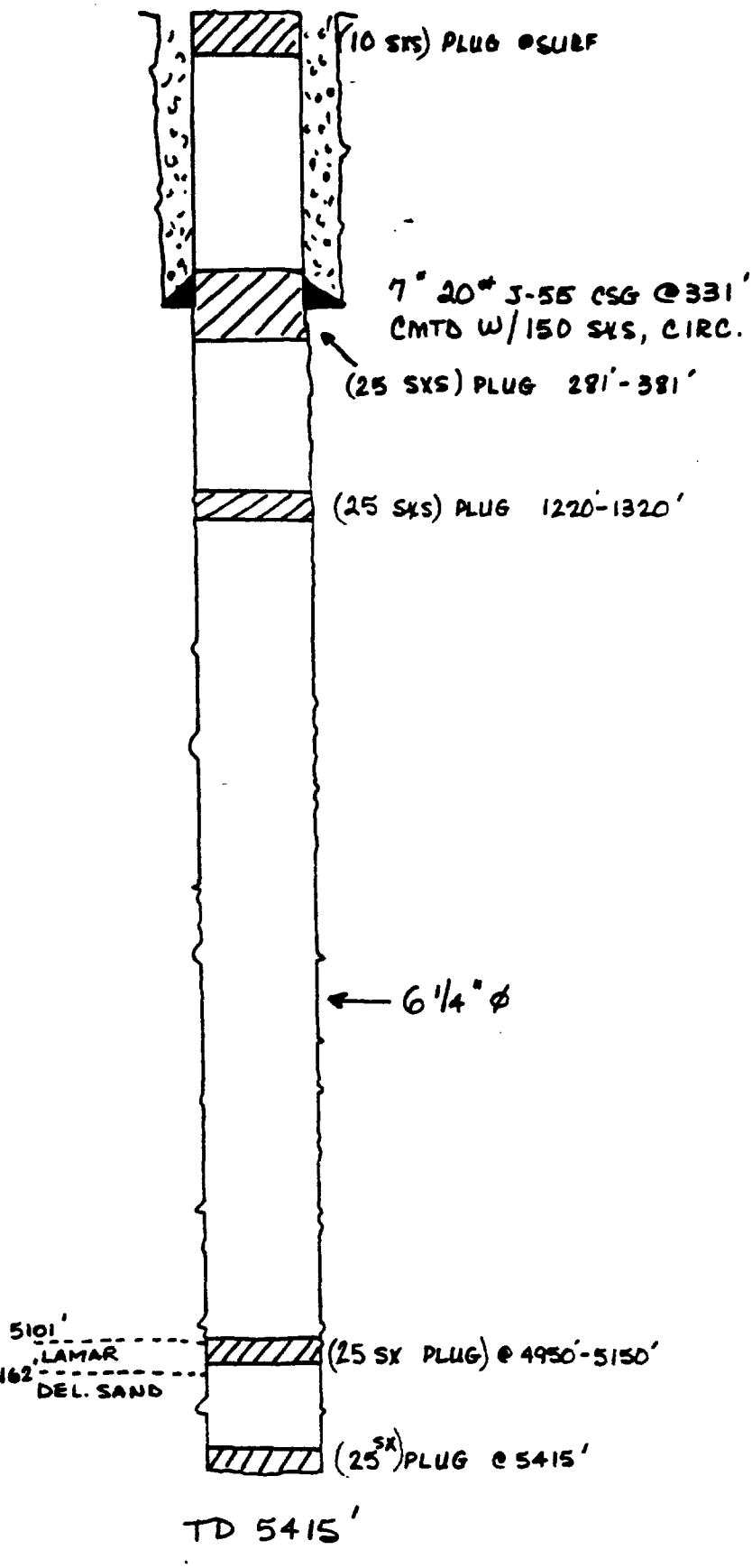


Conquest Federal #1
Cruz-Delaware
17, T-23-S, R-32-E
Lea County, New Mexico
GL = 3710'

IP: P 145 BO/62 BW
206 GOR

JRW: 4/18/84

LOG MARKERS:
RUST. (1308)
CASTILE (3708)
LAMAR LM (5063)
RAMSEY SD (5121)
FORD SH (5222)
OLDS SD (5232)



TEXACO STATE #1
M-17, T-23-S, R-33-E
LEA COUNTY, N.M.
GL - 3703'

SPUD 6/13/64
D+A 6/23/64

LOG TOPS:

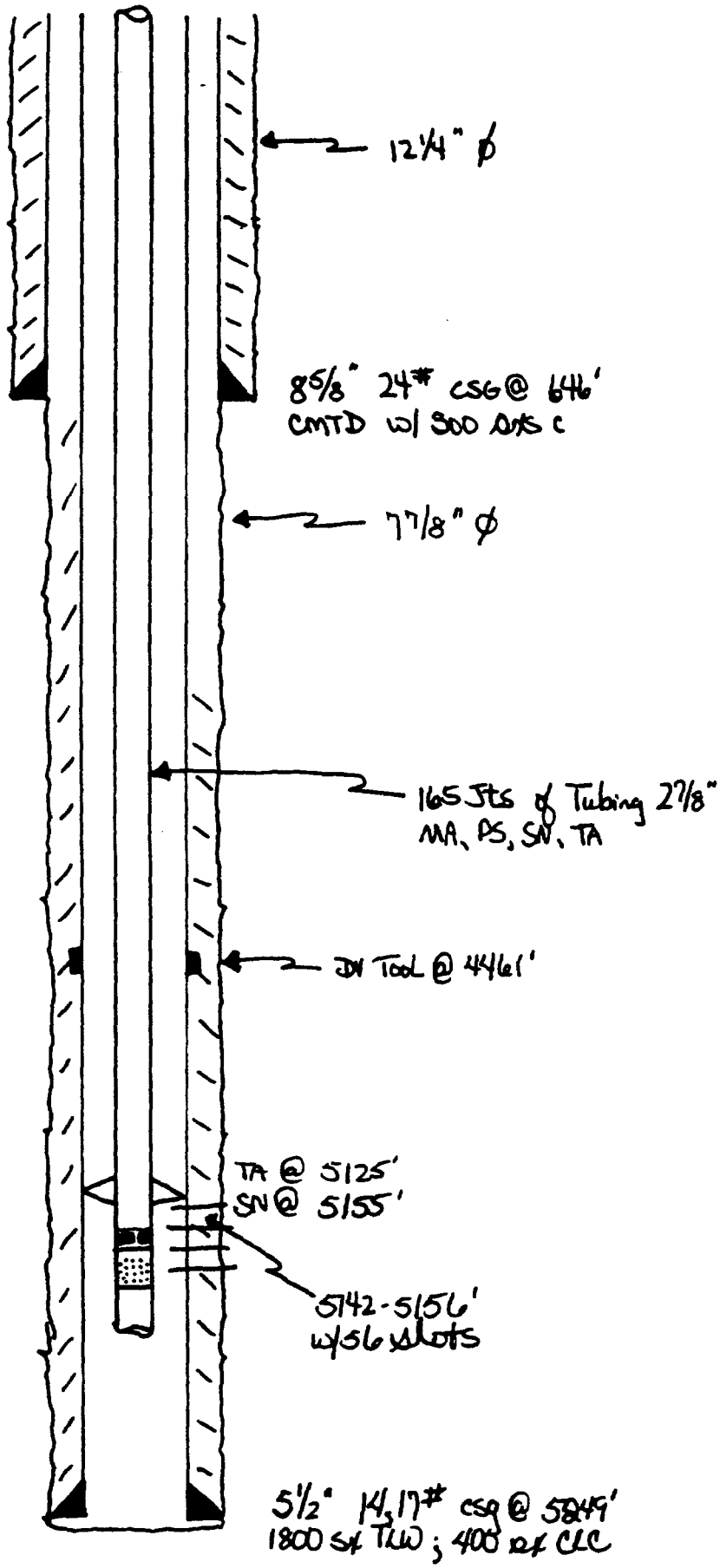
LAMAR 5101'
DELAWARE SAND 5162'

KSM
8/2/84

New Mexico 'EF' State #1
Cruz-Delaware
WIW, T-23-S, R-23-E
Lea County, N.M.

JP: P 48 BO/186 BW
25 MCF

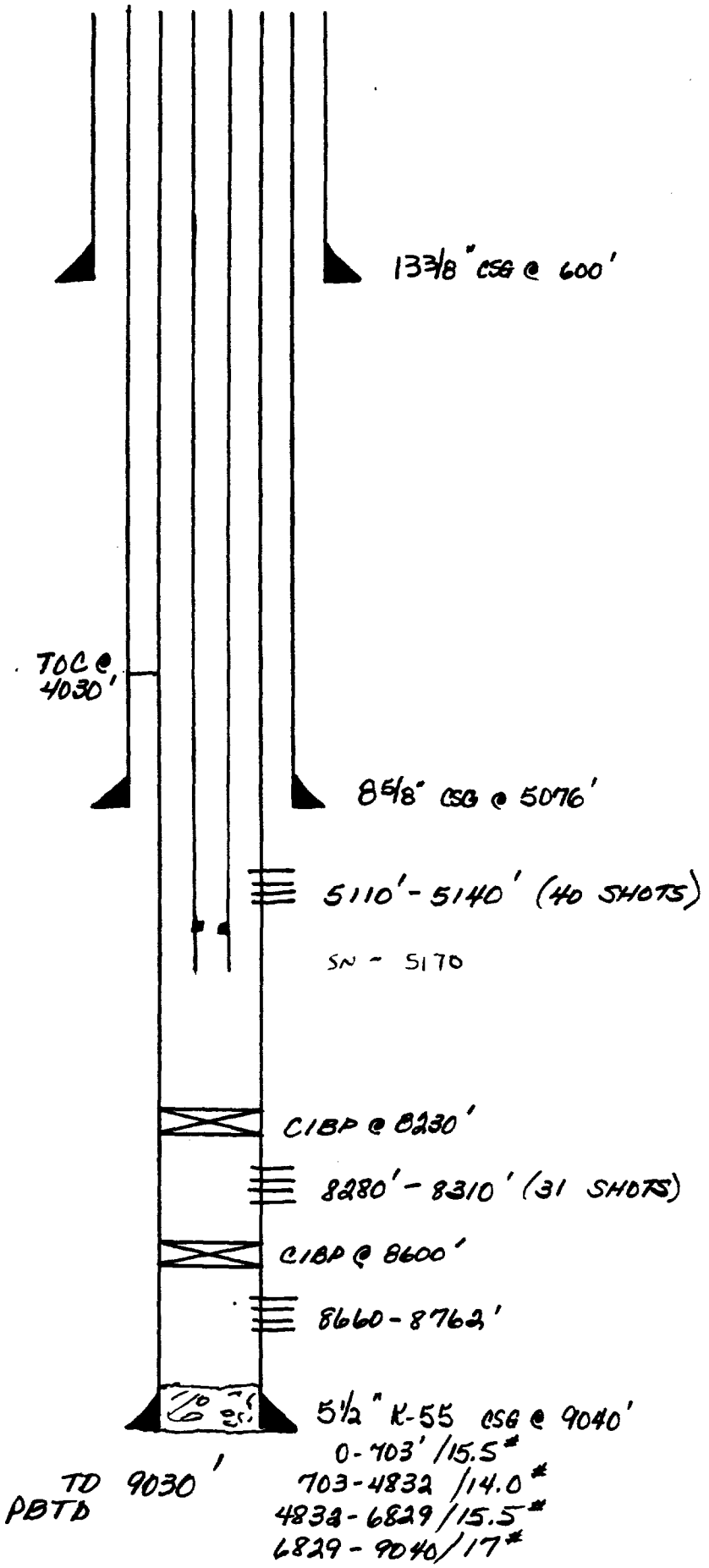
IRW: 5/24/84 48 BO/ 186 BW



LSC
6/29/84

ANDREWS DISTRICT

WELLBORE SKETCH



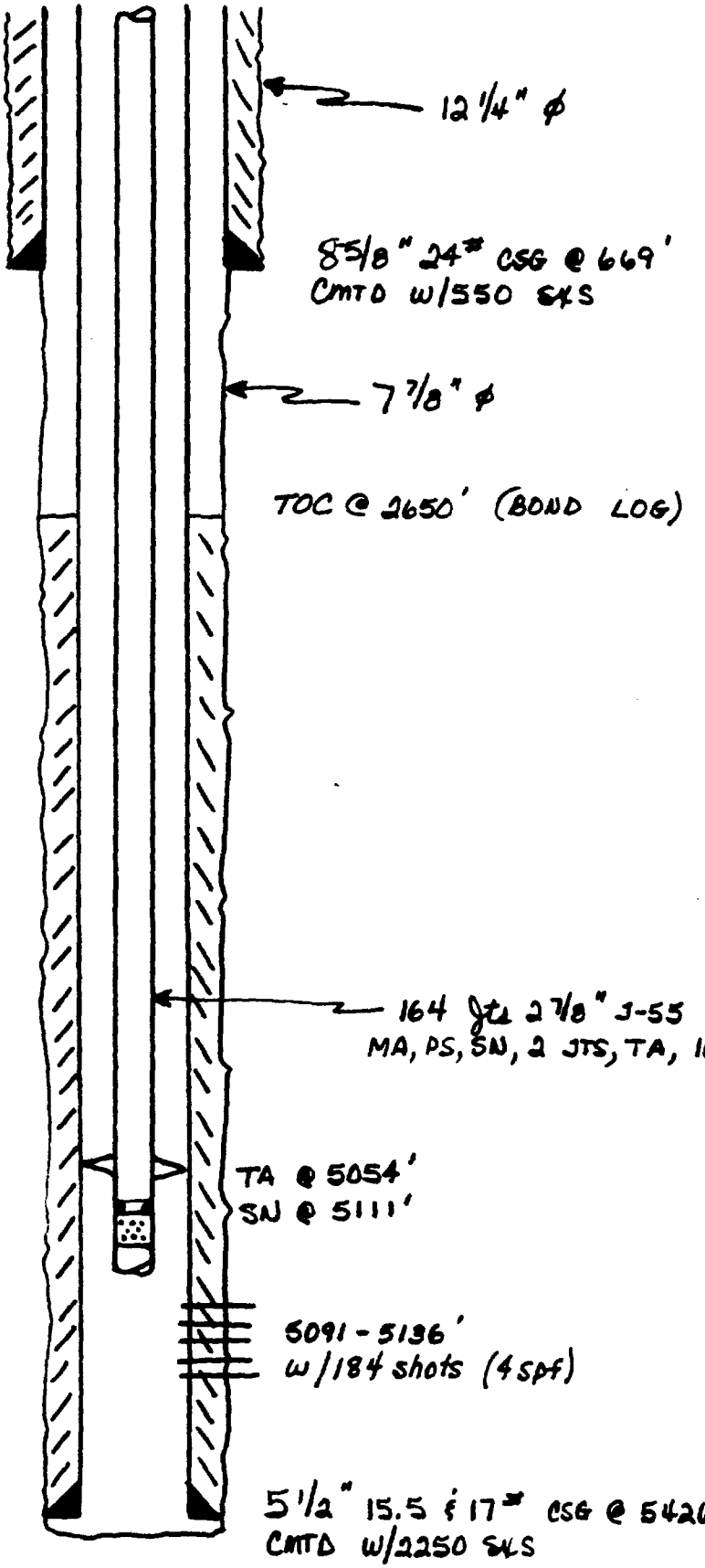
NEW MEXICO 'DL' ST #1
BRUSHY CANYON DELAWARE
LEA COUNTY, N.M.
I - SEC. 18, T. 23S, R. 33E
ELEV: 3706 +12'

8/83 DIC. PERF 8280 - 8310'.
ACDZ W/1700 GAL ACID
FRAC W/8000 ACID,
25,000 GAL GELLED WTR,
46,000 # SAND

9/83 PERF 8660-64, 80-84
8698-8706, 12-16, 39-42, 56-62
ACDZ W/5000 GAL 15% HCl
FRAC W/28,000 YFPSD
23,000 # 20/40

11/83 PERF 6110 - 40'

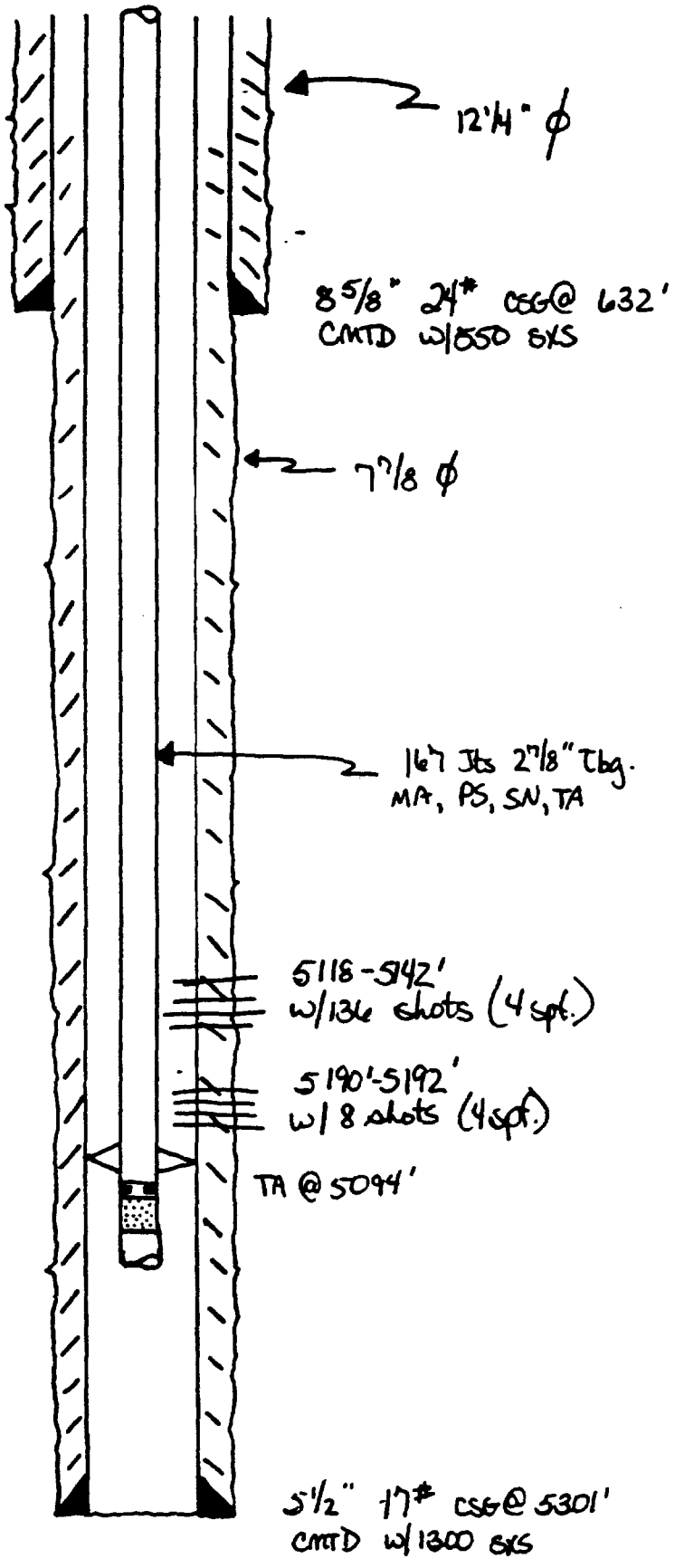
12/A/83
KSM



NEW MEXICO 'DL' STATE #2
CRUZ - DELAWARE
S18 - T-23-S, R-33-E
LEA COUNTY, N.M.

ID: P 30 BO/120 BW
32 MCF
FRW 5/25/84 68 BO/112 BW

KSM
6/26/84

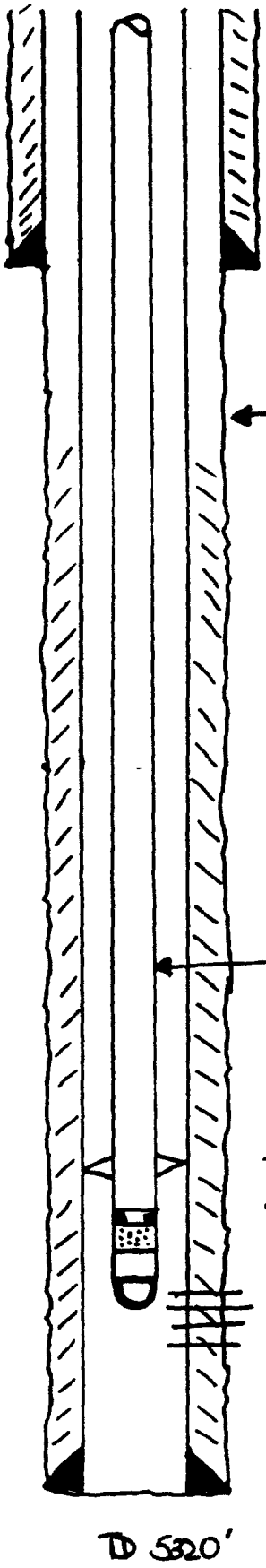


New Mexico 'DL' State #3
Cruz-Delaware
S-18; T-23-S; R-33-E
Lea County, N.M.

IP: P 107 BO/69 BW
63 MCF

IRW: 4/29/84 107 BO/69 BW

LJC
6/29/84



12 1/4" ∅

8 5/8" 24# Csg @ 691'
CMTD w/550 SXS

7 7/8" ∅

164 Jts 2 7/8" J-55 EUE TBG.
Bull plug, MA, SN, PS, 2 JTS 2 7/8", TA

TA @ 5056'
SN @ 5118'

5110 - 5144'
w/136 shots (4 spf.)

5 1/2" 15.5 & 17# Csg @ 5319'
CMTD w/600 SXS

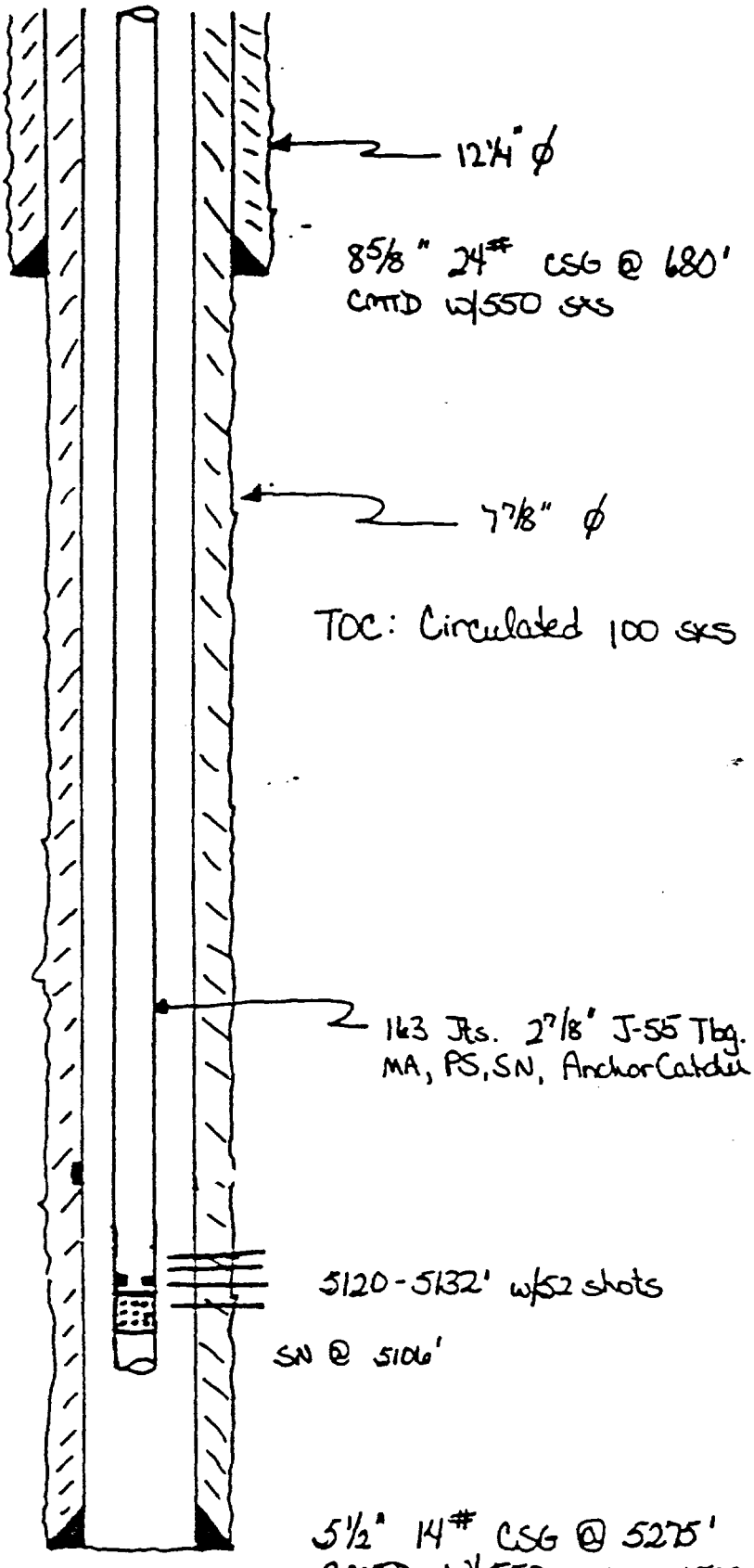
TD 5320'

New Mexico 'DL' State #5
Craig - Delaware
S/8, T-23-S, R-33-E
Lea County, N.M.

IP: P 94 BO / 106 BW
67 MCF

FRW 5/12/84 94 BO/106 BW

LJC
6-26-84



New Mexico 'DL' State #6
Cruz-Delaware
S-18, T-23-S, R-33-E
Lea County, N.M.

IP: P 49 BO/133 BW
34 MCF

FRW 5/29/84 49 BO/133 BW

TD: 5275'

LJC
6/28/84

APPLICATION FOR AUTHORIZATION TO INJECT
EXXON NEW MEXICO STATE "EF" #3

Data on the proposed injection operation

1. Average daily rate: 800 BPD
   Maximum daily rate: 1500 BPD

2. The system will be closed.

3. Proposed average injection pressure: 500 psi
   Proposed maximum injection pressure: 2600 psi

4. The source of injection water will be produced water from New Mexico State "DL" and "EF" leases.

Exhibit #8
Case# 8429
12-19-84

MONAHANS TEXAS 79756
PH 943 3234 OR 943 1040

MIDLAND TEXAS
PHONE 683 4931

RESULT OF WATER ANALYSES

LABORATORY NO. 1283316

TO Mr. Ralph King
1700 W. Broadway, Andrews, Texas

SAMPLE RECEIVED 12-27-83
RESULTS REPORTED 12-28-83

COMPANY Exxon Company, U.S.A. LEASE New Mexico State "DL"
FIELD OR POOL Cruz
SECTION ___ BLOCK ___ SURVEY ___ COUNTY Lea STATE NM
SOURCE OF SAMPLE AND DATE TAKEN:
NO. 1 Produced water - taken from New Mexico State "DL" #1, 12-16-83 Sec. 12-23S-33E
NO. 2
NO. 3
NO. 4
REMARKS: Bell Canyon

CHEMICAL AND PHYSICAL PROPERTIES

	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.0690			
pH When Sampled				
pH When Received	5.19			
Bicarbonate as HCO_3	10			
Supersaturation as $CaCO_3$				
Undersaturation as $CaCO_3$				
Total Hardness as $CaCO_3$	81,000			
Calcium as Ca	27,600			
Magnesium as Mg	2,916			
Sodium and/or Potassium	68,893			
Sulfate as SO_4	427			
Chloride as Cl	163,344			
Iron as Fe	46.8			
Barium as Ba				
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	263,190			
Temperature °F.				
Carbon Dioxide, Calculated				
Dissolved Oxygen, Winkler				
Hydrogen Sulfide	0.0			
Resistivity, ohms/m at 77° F.	0.050			
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml				

Results Reported As Milligrams Per Liter

Additional Determinations And Remarks: When we compare the above with our area records, we conclude that this water is very likely composed of natural connate Delaware

Exhibit #9
Case #8429
12-19-84

Form No. 3

By _____
Waylan C. Martin, M. A.

cc: Mr. O. W. Davenport, Midland

APPLICATION FOR AUTHORIZATION TO INJECT
EXXON NEW MEXICO STATE "EF" #3

Recovery Estimate:

Project area oil in place = $Vp\ (1-Sw_c)/Bo$ = 434 MSTB

Where: Vp = Pore volume = 1.30×10^6 bbls

Primary and secondary reserves = $Vp\ (1-SW_c-So_r)EV/Bo$ = 76.1 MSTB

Where: EV = .36

From Cruz production history, primary recovery accounts for approximately 7% OOIP.

Secondary reserves = 76.1 MSTB - (.07 x 434 MSTB)

= 45.7 MSTB

Project Area Reservoir Data:

ϕ = 25%

Sw_c = 59%

K = 34md

Bo = 1.23 (1400 psi)

Initial GOR = 700 mcf/bbl

Oil Gravity = 43.2

Gas Gravity = .716

P_{BP} = 2049

Initial Reservoir Pressure = 2100 psi

Project Area Pressure = 1400 psi

Exhibit #10
Case # 8429
12-19-84