KELLAHIN, KELLAHIN AND AUBREY
ATTORNEYS AT LAW
EL PATIO BUILDING
117 NORTH GUADALUPE
POST OFFICE BOX 2265
SANTA FE, NEW MEXICO 87504-2265

W. THOMAS KELLAHIN
KAREN AUBREY

CANDACE HAMANN CALLAHAN

JASON KELLAHIN
OF COUNSEL

TELEPHONE (505) 982-4285
TELEFAX (505) 982-2047

October 5, 1990

OIL CONS. DIV.
SANTA FE

Mr. William J. LeMay
Oil Conservation Division
Post Office Box 2088
Santa Fe, New Mexico 87504

HAND DELIVERED

Re: Application of OXY USA, Inc.
for approval of its Mescalero
San Andres Waterflood Project,
Lea County, New Mexico

Dear Mr. LeMay:

On September 25, 1990 we filed an application for a salt water disposal approval for the "BN" No. 5 Well in Section 14, T10S, R32E, Lea County, New Mexico.

The subject well is the injection well for a lease waterflood project. Mr. Stogner of your office returned the application to us for clarification of this point.

Accordingly, please consider the enclosed Form C-108 as our amended application for approval of this lease waterflood project consisting of the SW/4 of Section 14, T10S, R32E, Lea County, New Mexico, with the injection well to be located at an unorthodox surface location 1405 feet FWL and 1410 feet FSL of said Section 14.

We would request that this matter be set on the Examiner's docket now scheduled for hearing on October 31, 1990.

Very truly yours,

W. Thomas Kellahin

WTK/tic
Enclosure

cc: Richard E. Foppiano
OXY USA, Inc.
Post Office Box 50250
Midland, Texas 79710

Certified mail return receipt

Parties shown on Form C-108

KELLAHIN, KELLAHIN AND AUBREY
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OF COUNSEL

TELEPHONE (505) 982-4285
TELEFAX (505) 982-2047

September 25, 1990

Mr. William J. LeMay
Oil Conservation Division
Post Office Box 2088
Santa Fe, New Mexico 87504

HAND DELIVERED

Re: Application of OXY USA, Inc. for Approval of its State "BN" No. 5 Well for Salt Water Disposal, Lea County New Mexico

Case 10140

Dear Mr. LeMay:

On behalf of OXY USA, Inc. we would appreciate you setting the referenced matter for hearing at the next available Examiner's docket now scheduled for October 17, 1990.

Enclosed is the completed Form C-108 with attachments which proposes the following:

> The subject well is to be a new drilled well at an unorthodox surface location 1405 feet FWL and 1410 feet FSL (NE/4SW/4) Section 14, T10S, R32E, N.M.P.M., Lea County, New Mexico for the disposal of produced water through perforations between 4100 feet and 4200 feet in the Mescalero San Andres Pool.

Please call me if you have any questions.

Very truly yours,

W. Thomas Kellahin

WTK/tic
Enclosure

cc: Richard E. Foppiano
OXY USA, Inc.
Post Office Box 50250
Midland, Texas 79710

Oil Conservation Division
District Office
Post Office Box 1980
Hobbs, New Mexico 88240

Certified mail return receipt
Notice List attached to C-108

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

Case 1014

RECEIVED
SEP 25 1990
OIL CONSERVATION DIVISION

APPLICATION FOR AUTHORIZATION TO INJECT

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

II. Operator: OXY USA Inc.

Address: P. O. Box 50250, Midland, TX 79710

Contact party: Richard E. Foppiano Phone: 915/685-5913

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 [X] no
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.

* 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: Richard E. Foppiano Title Regulatory Affairs Advisor

Signature: Richard E. Foppiano Date: 9-19-90

* 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 district office.

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.

OXY USA Inc./State "BN"#5
Mescalero San Andres Waterflood Pilot Project
NOTICE LIST

1. Operators offsetting Section 14-T10S-R32E, Lea County, NM, including those within 1/2 mile of the well location:

OXY USA Inc.

Tipperary Corporation
P. O. Box 3179
Midland, Texas 79702

Mobil Producing Texas & New Mexico, Inc.
P. O. Box 633
Midland, Texas 79702

Yates Petroleum Corp.
105 South 4th
Artesia, New Mexico 88210

Penroc Oil Corp.
P. O. Box 5970
Hobbs, New Mexico 88240

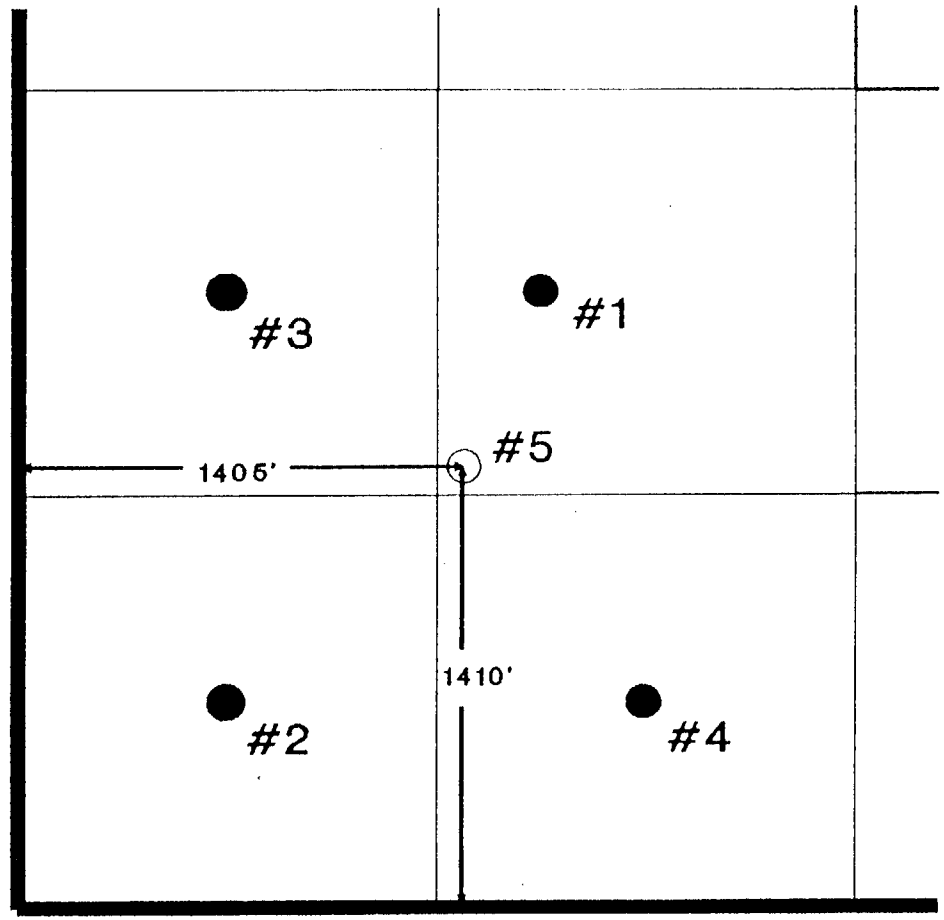
2. Surface owner of the land on which this well is located:

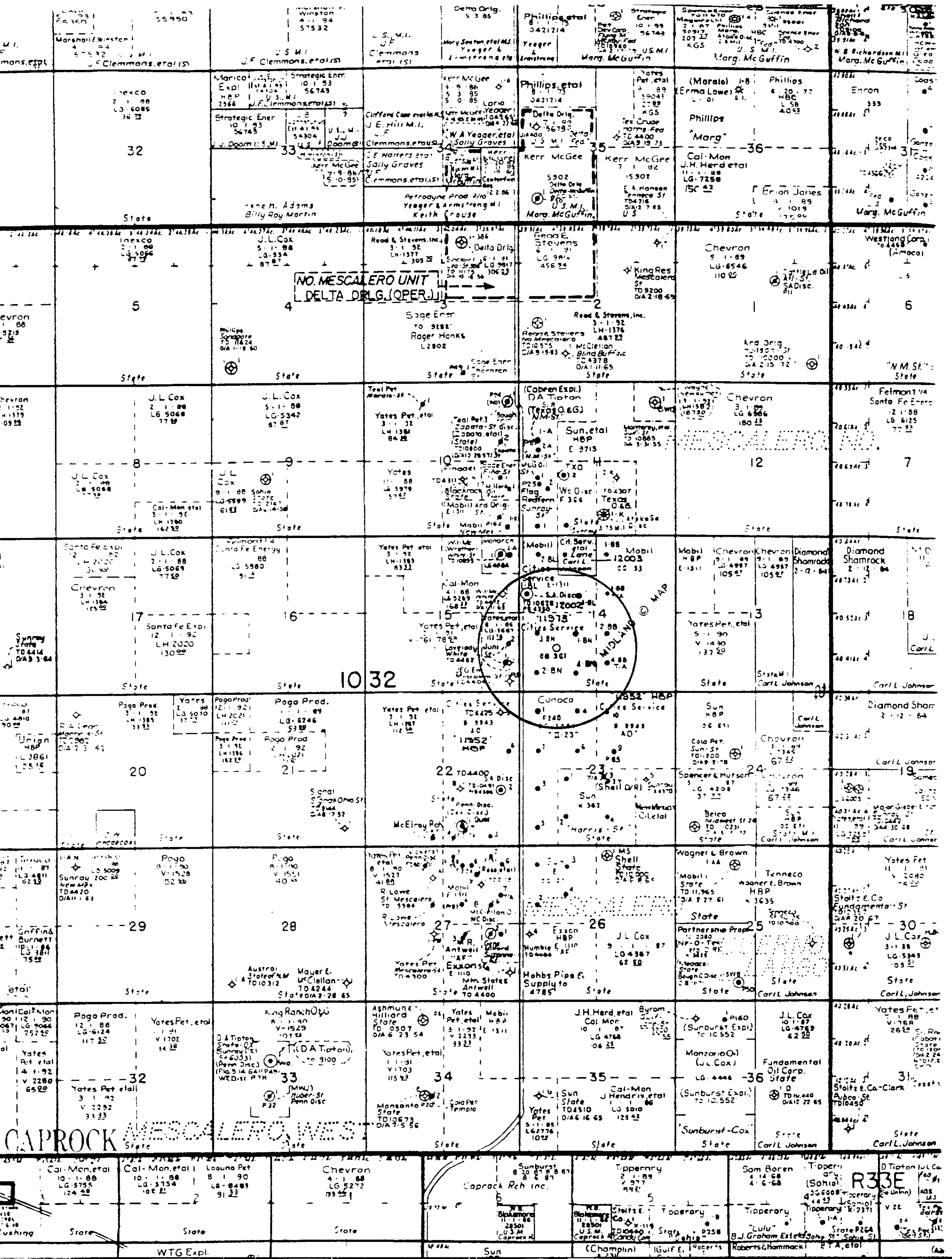
Oil and Gas Division
State Land Office
P. O. Box 1148
Santa Fe, New Mexico 87504-1148

Mescalero San Andres Field

OXY USA Inc./State "BN" Lease

Southwest Quarter of 14-T10S-R32E




NO. MESCALERO UNIT
DELTA DRLG. (OPER.)
MIDLAND © MAP
CAPROCK
R33E
Caprock Rch. Inc.
WTG Expl.
Chevron
Phillips, etal
Kerr McGee
Strategic Ener
J.L. Cox
Cities Service
Conoco
Yates Pet. etal
Pogo Prod.
Santa Fe Expl.
Cal-Mon
Sun
Diamond Shamrock
Wagner & Brown
Tenneco
Hobbs Pipe & Supply to
King Ranch O&G
Fundamental Oil Corp.
Sunburst-Cox
Carl L. Johnson
Marg. McGuffin
State

Submit to Appropriate
District Office
State Lease - 4 copies
Fee Lease - 3 copies

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Form C-102
Revised 1-1-89

WELL LOCATION AND ACREAGE DEDICATION PLAT

All Distances must be from the outer boundaries of the section

Operator			Lease		Well No.
OXY USA, INC			STATE BN		5
Unit Letter	Section	Township	Range		County
K	14	10 SOUTH	32 EAST	NMPM	LEA
Actual Footage Location of Well: 1410 feet from the south line and 1405 feet from the west line					
Ground level Elev.	Producing Formation		Pool		Dedicated Acreage:
4331.3'					Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

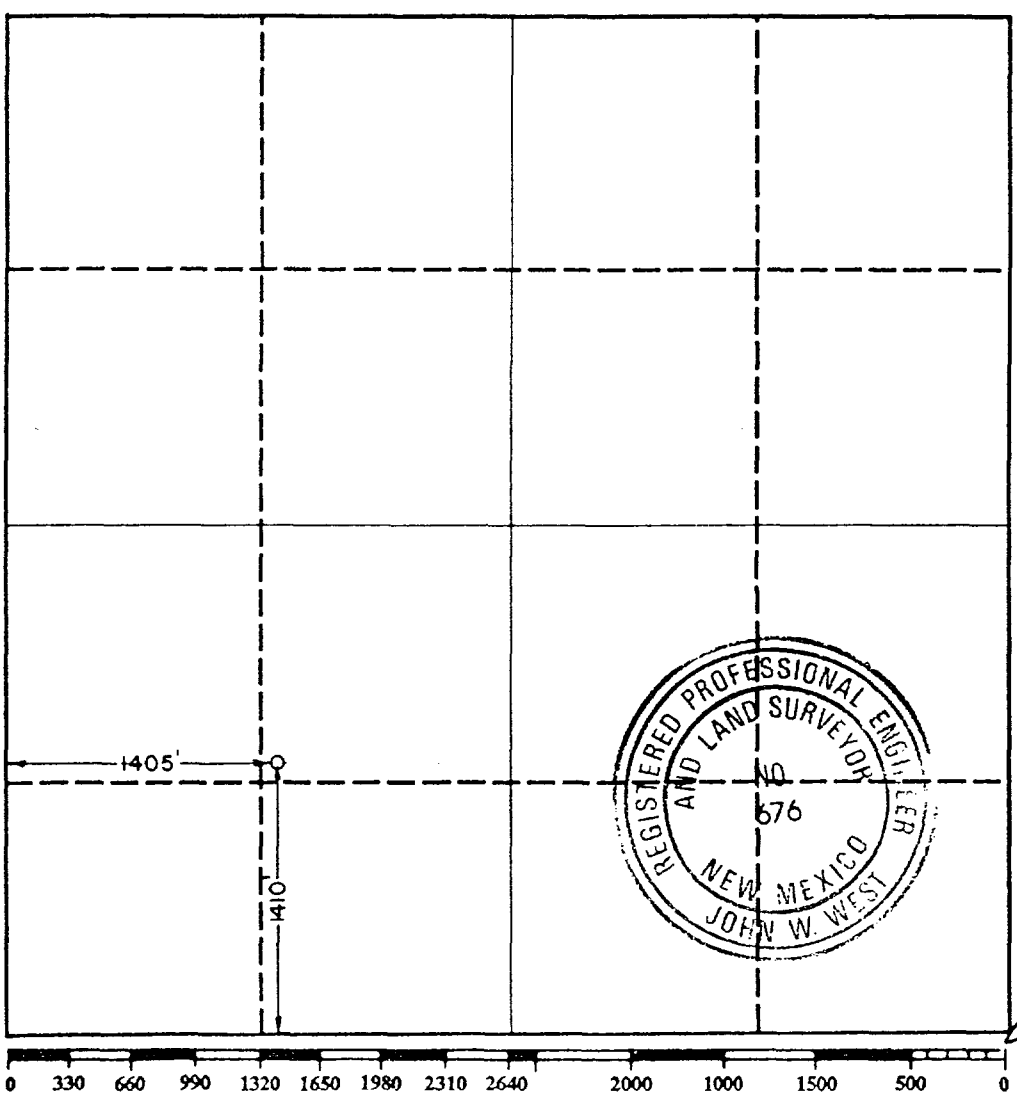
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interest of all owners been consolidated by communitization, unitization, force-pooling, etc.?

☐ Yes ☐ No If answer is "yes" type of consolidation _____

If answer is "no" list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if neccessary. _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interest, has been approved by the Division.



OPERATOR CERTIFICATION

I hereby certify that the information contained herein in true and complete to the best of my knowledge and belief.

Signature

Printed Name

Position

Company

Date

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervison, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed
July 14, 1990

Signature & Seal of
Professional Surveyor

Certificate No. JOHN W. WEST, 676
RONALD J. EIDSON, 3239

OXY USA Inc./State "BN" #5
Mescalero San Andres Waterflood Pilot Project
Form C-108 Attachments

III. A. Well data (The following reflects our current plans for the proposed injection well.)

1. Well Name: State BN #5
   Located 1410' FSL, 1405' FWL, Section 14, T-10S, R-32E, Lea County, NM.
2. Casing/Cementing plans: 8-5/8" 24# casing set at 400' in a 12-1/4" hole cemented with 350 sacks (designed to circulate).
   5-1/2" 15.5# casing set at 4500' in a 7-7/8" hole cemented with 350 sx (designed to reach 3000').
3. 2-3/8" plastic-lined tubing will be set at 4050'.
4. Guiberson Unipacker VI will be set at 4050'.

B.

1. Name of Injection Formation: San Andres, Mescalero Field.
2. Injection Interval: 4100-4200', perforated.
3. The State BN #5 well will be drilled for injection.
4. There will be no other perforated intervals.
5. There are no known oil reservoirs overlying the San Andres in Mescalero Field. The Permo Penn, the only known underlying oil reservoir, is found at an approximate depth of 8500' (4150' below sea level).

VI. Wells within 1/2 mile of proposed injection well

1. C.H. Juni White #1 Type: P&A
   Location: 965' FSL, 330' FEL, Sec 15, T-10S, R-32E, Lea Co
   Date drilled: 3/4/64 Depth: 4452'
   Construction: 8-5/8" casing at 1490' cemented with 575 sx
   5-1/2" casing at 4452' cemented with 350 sx
   Bridge plug at 4340'
   Completion: San Andres perforations 4138-4157', 7 shots

2. C.H. Juni White #2 Type: P&A
   Location: 1650' FSL, 330' FEL, Sec 15, T-10S, R-32E, Lea Co
   Date drilled: 8/18/64 Depth: 4409'
   Construction: 9-5/8" 36# casing at 252' cement circulated
   5-1/2" 14# casing at 4409' cemented with 150 sx, top of cement at 3100'
   Bridge plug at 4350'
   Completion: San Andres perforations 4140-4162', 32 shots

3. OXY USA Inc State AD #10 Type: temp. abandoned
   Location: 660' FNL, 2310' FEL, Sec 23, T-10S, R-32E, Lea Co
   Date drilled: 7/27/65 Depth: 4350'
   Construction: 7-5/8" 24# casing at 1694', cement circulated
   4-1/2" 9.5# casing at 4348' cemented with 250 sx, top of cement at 3160' (survey)
   Bridge plug at 4274'
   Completion: San Andres perforations 4130-4218', 8 shots

4. OXY USA Inc State BL #1 Type: temp. abandoned
   Location: 300' FWL, 2006' FNL, Sec 14, T-10S, R-32E, Lea Co
   Date drilled: 8/11/62 Depth: 10631'
   Construction: 13-3/8" 48# casing at 396', cement circulated
   8-5/8" 32 & 24# casing at 3443', cement circulated
   5-1/2" 17# casing at 8865' cemented with 300 sx, top of cement at 3000' (survey)
   Bridge plug at 8175'
   Completion: Cement squeezed San Andres perforations 4324-4330', 24 shots

5. OXY USA Inc State BL #3 Type: producer
   Location: 1980' FNL, 1980' FWL, Sec 14, T-10S, R-32E, Lea Co
   Date drilled: 8/29/64 Depth: 4496'
   Construction: 8-5/8" 24# casing at 389', cement circulated
   4-1/2" 9.5# casing at 4495' cemented with 250 sx, top of cement at 3230' (calculated)
   Completion: San Andres perforations 4076-4161', 12 shots

6. OXY USA Inc State BN #1 Type: producer
Location: 1980' FSL, 1650' FWL, Sec 14, T-10S, R-32E, Lea Co
Date drilled: 4/8/63 Depth: 4465'
Construction: 8-5/8" 24# casing at 370', cement circulated
5-1/2" 14# casing at 4496' cemented with 350 sx, top of cement at 3170' (survey)
Completion: San Andres perforations 4415-4421, 24 shots

7. OXY USA Inc State BN #2 Type: producer
Location: 660' FSL, 660' FWL, Sec 14, T-10S, R-32E, Lea Co
Date drilled: 9/25/63 Depth: 4500'
Construction: 8-5/8" 24# casing at 384', cement circulated
4-1/2" 9.5# casing at 4498' cemented with 350 sx, top of cement at 3147' (calculated)
Completion: San Andres perforations 4074-4368, 360 shots

8. OXY USA Inc State BN #3 Type: producer
Location: 1980' FSL, 660' FWL, Sec 14, T-10S, R-32E, Lea Co
Date drilled: 7/24/64 Depth: 4500'
Construction: 8-5/8" 24# casing at 393', cement circulated
4-1/2" 9.5# casing at 4486' cemented with 400 sx, top of cement at 2840' (survey)
Completion: San Andres perforations 4069-4156', 55 shots

9. OXY USA Inc State BN #4 Type: producer
Location: 660' FSL, 1980' FWL, Sec 14, T-10S, R-32E, Lea Co
Date drilled: 12/24/64 Depth: 4531'
Construction: 7-5/8" 24# casing at 1685', cement circulated
4-1/2" 9.5# casing at 4531' cemented with 250 sx, top of cement at 3230' (survey)
Completion: San Andres perforations 4382-4441', 16 shots

10. Penroc Oil Corp State II-23 #1 Type: producer
Location: 660' FNL, 660' FWL, Sec 23, T-10S, R-32E, Lea Co
Date drilled: 2/5/64 Depth: 4401'
Contruction: 7-5/8" 24# casing at 390', cement circulated
4-1/2" 9.5# casing at 4401' cemented with 385 sx, top of cement at 2700' (survey)
Completion: San Andres perforations 4077-4174', 10 shots

11. Penroc Oil Corp State II-23 #2 Type: producer
Location: 1980' FNL, 660' FWL, Sec 23, T-10S, R-32E, Lea Co
Date drilled: 2/5/64/64 Depth: 4319'
Construction: 7-5/8" 24# casing at 1577', cement circulated
4-1/2" 9.5# casing at 4319', cemented with 200 sx, top of cement at 2800' (survey)
Completion: San Andres perforations 4080-4165', 8 shots

12. Tipperary Petroleum Co State BB #2 Type: producer
Location: 1980' FSL, 2310' FEL, Sec 14, T-10S, R-32E, Lea Co
Date drilled: 12/8/65 Depth: 4425'
Construction: 8-5/8" 29# casing at 1605', cement circulated
4-1/2" 9.5# casing at 4425', cemented with 200 sx, top of cement at 3200'
Completion: San Andres perforations 4101-4396', 32 shots

13. Tipperary Petroleum Co State BB #3 Type: temp. abandoned
Location: 1980' FNL, 2310' FEL, Sec 14, T-10S, R-32E, Lea Co
Date drilled: 1/31/66 Depth:

Construction: 8-5/8" 29# casing at 1585', cement circulated
4-1/2" 9.5# casing at 4485', cemented with 300 sx
Completion: San Andres perforations 4111-4453', 90 shots

VII. Proposed operations
1. Average injection rate: 250 BWPD
   Maximum injection rate: 400 BWPD
2. The injection system will be a closed system.
3. Average injection pressure: 200 psi
   Maximum injection pressure: 900 psi
4. The injection water will be collected from wells producing from the San Andres, the proposed injection zone.

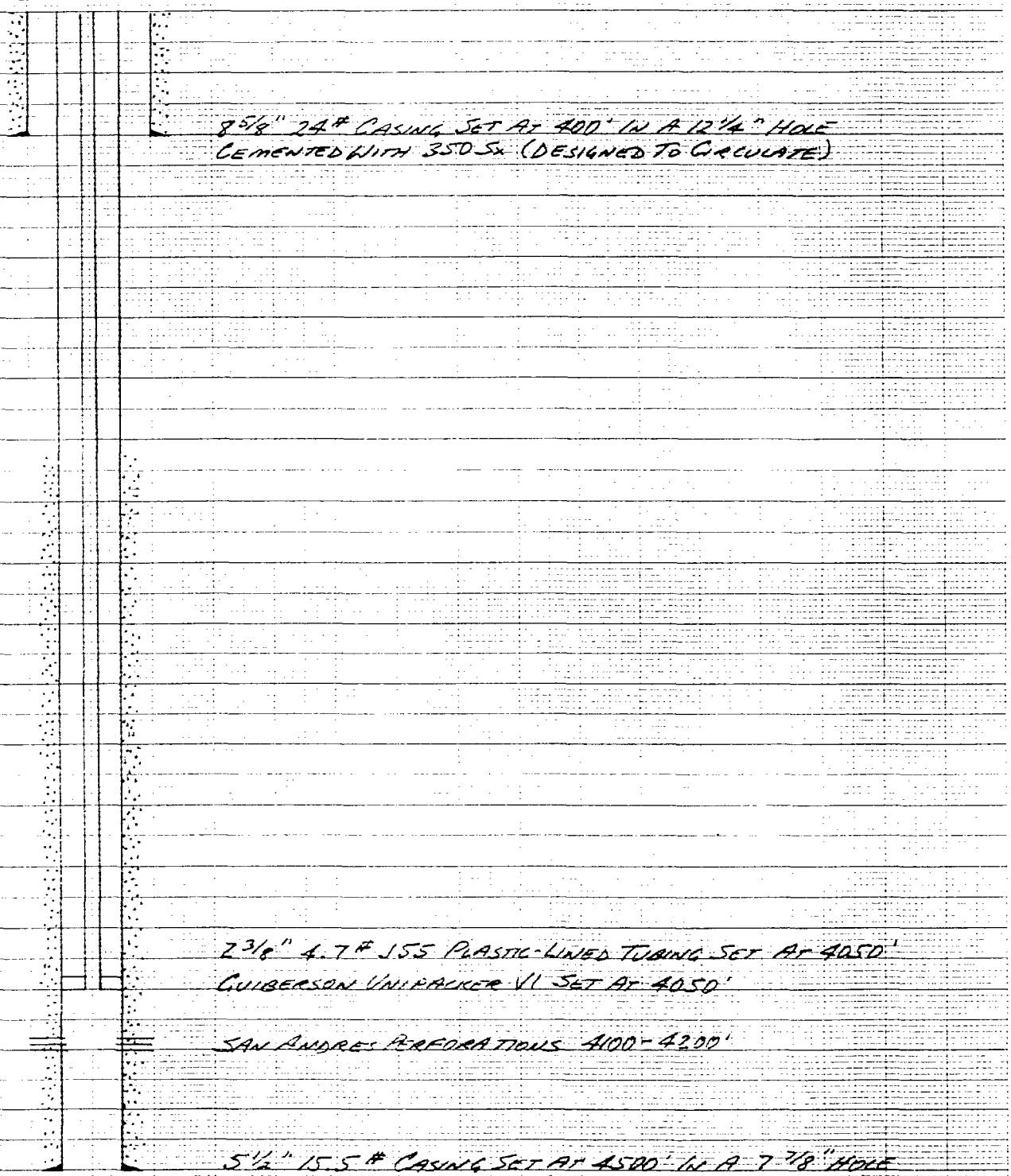
VIII. The proposed injection zone is the San Andres formation. In the Mescalero Field, the San Andres is a fractured dolomite. The top of the San Andres is found at an approximate depth of 3420' (930' above sea level). The San Andres is 1400' thick and typically includes 50' of net pay. The local underground source of drinking water is the Ogallala formation and it's base is at a depth of 150'.

IX. Proposed stimulation program:
The State BN #5 will be stimulated with 2000 gal 15% HCl with additives. The well will be evaluated for additional stimulation pending the results of the initial treatment.

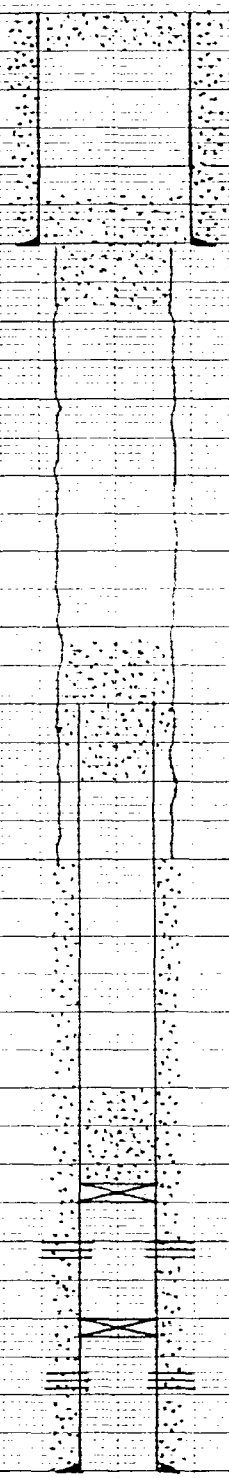
X. Logs and test data:
The planned injection well, the proposed State BN #5, has not yet been drilled. The logging program will include GR/CNL/LDT, CYBIL (sonic fracture locator), GR/DLL/MSFL, and GR/CCL/CBL.

XI. Fresh water analyses are attached.

(PROPOSED) OXY USA STATE BN #5
1410' FSL, 1405' FWL, SEC 14, T-10S, R32E



C.H. JUNI WHITE #1
965' FSL, 330' FEL, SEC. 15



10 SK CEMENT PLUG AT SURFACE

8 5/8" CASING AT 1490', CMTD W/ 575 SX

45 SK CEMENT PLUG

CASING SHOT AT 2600'

45 SK CEMENT PLUG

39 SK CEMENT PLUG

BRIDGE PLUG AT 4000'

SAN ANDRES PERFORATIONS 4138-4157'

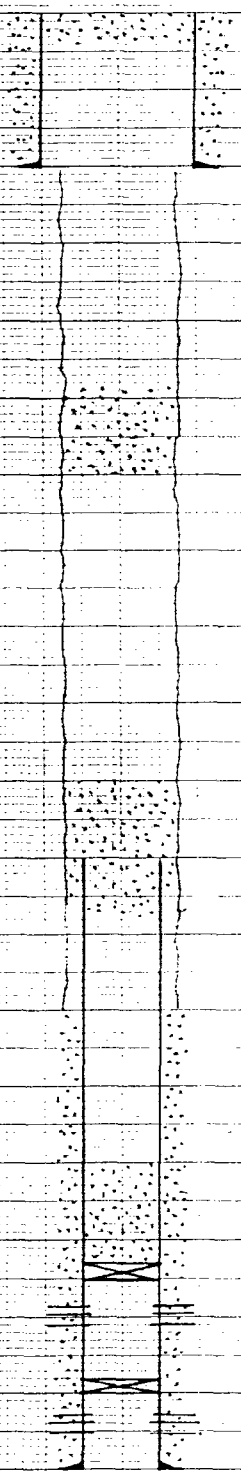
BRIDGE PLUG AT 4340'

SAN ANDRES PERFORATIONS 4359-4406' (UNSUCCESSFUL)

5 1/2" CASING AT 4452', CMTD W/ 350 SX

TD 4452'

C.H. JUNI WHITE #2
1650' FSL, 330' FEL, SEC 15



10 SK CEMENT PLUG AT SURFACE

9 5/8" 36# J55 CASING AT 252', CMTD W/ 250 SX, CIRC.

BASE OF 33 SK CEMENT PLUG AT 1500'

CASING SHOT AT 3420'
BASE OF 33 SK CEMENT PLUG AT 3345'

35 SK CEMENT PLUG
BRIDGE PLUG AT 4000'
SAN ANDRES PERFORATIONS 4140-4162'

BRIDGE PLUG @ 4350'
SAN ANDRES PERFORATIONS 4374-4380' (UNSUCCESSFUL)

5 1/2" 15 1/2# J55 CASING AT 4409', CMTD WITH 150 SX

TD 4409'

P. O. BOX 1468
MONAHANS, TEXAS 79756
PH. 943-3234 OR 563-1040

Martin Water Laboratories, Inc.

709 W. INDIANA
MIDLAND, TEXAS 79701
PHONE 683-4521

RESULT OF WATER ANALYSES

LABORATORY NO. 9907

TO: Mr. Ed Pittinger
P. O. Box 50250, Midland, TX

SAMPLE RECEIVED 9-4-90

RESULTS REPORTED 9-7-90

COMPANY Oxy U.S.A. LEASE As Listed

FIELD OR POOL

SECTION ___ BLOCK ___ SURVEY ___ COUNTY Lea STATE NM

SOURCE OF SAMPLE AND DATE TAKEN:

NO. 1 Raw water-taken from water well West of State "AD" #2 Battery @ 10:00 a.m.

NO. 2 Raw water-taken from water well West of State "AD" #2 Battery @ 11:30 a.m.

NO. 3 Raw water-taken from windmill West of State "BL" Battery @ 10:15 a.m.

NO. 4 Raw water-taken from windmill North of State "BN" Battery @ 10:30 a.m.

REMARKS: 1 & 2 0.4 mi. W. of State "BN". 3 & 4 0.7 mile. Samples taken 8-29-90.

CHEMICAL AND PHYSICAL PROPERTIES	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.0020	1.0025	1.0026	1.0014
pH When Sampled				
pH When Received	7.08	7.45	7.17	7.44
Bicarbonate as HCO_3	112	112	117	62
Supersaturation as $CaCO_3$				
Undersaturation as $CaCO_3$				
Total Hardness as $CaCO_3$	400	410	495	300
Calcium as Ca	136	139	182	101
Magnesium as Mg	15	15	9	12
Sodium and/or Potassium	134	143	129	8
Sulfate as SO_4	295	297	297	176
Chloride as Cl	207	227	263	60
Iron as Fe	0.20	0.20	0.40	0.40
Barium as Ba				
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	899	935	998	418
Temperature °F.				
Carbon Dioxide, Calculated				
Dissolved Oxygen,				
Hydrogen Sulfide	0.0	0.0	0.0	0.0
Resistivity, ohms/m at 77° F.	7.57	7.10	6.60	16.90
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml				
Nitrate, as N	3.2	2.6	11.3	1.2

Results Reported As Milligrams Per Liter

Additional Determinations And Remarks

Form No. 3

By ___

P. O. BOX 1468
MONAHANS, TEXAS 79756
PH. 943-3234 OR 563-1040

Martin Water Laboratories, Inc.

709 W. INDIANA
MIDLAND, TEXAS 79701
PHONE 683-4521

RESULT OF WATER ANALYSES

LABORATORY NO. 9907 (Page 2)
SAMPLE RECEIVED 9-4-90
RESULTS REPORTED 9-7-90

TO: Mr. Ed Pittinger
P. O. Box 50250, Midland, TX

COMPANY Oxy U.S.A. LEASE As Listed
FIELD OR POOL
SECTION ___ BLOCK ___ SURVEY ___ COUNTY Lea STATE NM
SOURCE OF SAMPLE AND DATE TAKEN:
NO. 1 Raw water-taken from windmill North of State "BN" Battery @ 11:00 a.m.
NO. 2
NO. 3
NO. 4
REMARKS: 0.7 mile. Sample taken 8-29-90.

CHEMICAL AND PHYSICAL PROPERTIES

	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.0013			
pH When Sampled				
pH When Received	7.50			
Bicarbonate as HCO_3	59			
Supersaturation as $CaCO_3$				
Undersaturation as $CaCO_3$				
Total Hardness as $CaCO_3$	290			
Calcium as Ca	102			
Magnesium as Mg	8			
Sodium and/or Potassium	11			
Sulfate as SO_4	176			
Chloride as Cl	60			
Iron as Fe	0.40			
Barium as Ba				
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	416			
Temperature °F.				
Carbon Dioxide, Calculated				
Dissolved Oxygen,				
Hydrogen Sulfide	0.0			
Resistivity, ohms/m at 77° F.	17.05			
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml				
Nitrate, as N	1.2			

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

By W. Reagan White
W. Reagan White, B.S.

McCORMACK SILURIAN
Allowable 187 GOR Limit 2,000
No Test Required
Casinghead Gas Limit 374 MCF
USA INC.
McComack
11 A 32-21-37 M

McCORMACK SILURIAN, SOUTH
Allowable 187 GOR Limit 2,000
No Test Required
Casinghead Gas Limit 374 MCF
PETROLEUM INC.
Hott 5 D 22-22-37 7A

McDONALD DEVONIAN
Allowable 600 GOR Limit 2,000
No Test Required
Casinghead Gas Limit 1200 MCF
S, CO., HARVEY E.
ald Unit
2 D 3-14-36 M

McDONALD UPPER PENNSYLVANIAN
Allowable 320 GOR Limit 2,000
No Test Required
Casinghead Gas Limit 640 MCF
, J.M. CORP.
ffin 1 A 4-14-36 M

McDONALD PENNSYLVANIAN, WEST
Allowable 320 GOR Limit 2,000
Casinghead Gas Limit 640 MCF
S, HARVEY E. CO.
ardson Fee
(6) 3 D 5-14-36 M 2000

MEDICINE ROCK DEVONIAN
(80 Acre Spacing)
Allowable 490 No GOR Limit
No Gas Test Required
Casinghead Gas Limit 980 MCF
LO, INC.
o-Stone
(16) 1 G 22-15-38 M

MESA QUEEN ASSOCIATED
ing Oil - 40 Gas - 160
Allowable 80 GOR Limit 5,000
Gas Allowable MCFD
- 400 Gas - 1600
DA OPERATING CO.
11 7 State Com.
1 E 7-16-32 MGW AF 1.00

terflood Project)
ELL, RUSSELL
444
imum Allowable Formula:
25 X 80 = 2000
Queen Unit
3 A 16-16-32
7 F "
13 I 17-16-32
14 L 16-16-32
15 K 16-16-32
17 M 17-16-32
2 B 16-16-32 Input
6 E " "
9 H " "
11 K 17-16-32 "
18 N " "
20 P " "
25 N 16-16-32 "

WESTALL, RAY
Mesa Queen 7 State
" 1 P 7-16-32 MGW AF 1.00

MESCALERO CISCO, NORTH
Top Allowable 230 GOR Limit 4,500
Top Casinghead Gas Limit 1035 MCF
BISON PETROLEUM CORP.
State 11(5) 1 L 11-10-32 M 3111

MESCALERO ESCARPE BONE SPRING
Top Allowable 230 GOR Limit 2,000
Top Casinghead Gas Limit 460 MCF
BISON PETROLEUM CORP.
Cavinesa 10 Federal
" (31) 2 O 10-18-33 M 2516

CHEVRON USA INC.
Cockburn G Federal
/" (26) 1 L 10-18-33 M 462
Lea XA State
" (50) 1 L 7-18-34 M 2160
" (28) 2 M " *207 1571
Acreage factor .900
*Acreage Factor Limits
" (39) 3 K 7-18-34 M 1128
" (12) 4 N " M 1083

ECHO PRODUCTION, INC.
Texaco 14 Federal
" (190) 1 C 14-18-33 M 421

MARATHON OIL CO.
State E-744-15
" (22) 1 I 15-18-33 M 1364

MERIDIAN OIL INC.
Cavinesa Federal
" (91) 1 K 11-18-33 M 714
" (25) 2 N " M 1120
" (122) 3 M 11-18-33 M 1122
" (86) 4 F 11-18-33 M 558
" (235) 5Y P 10-18-33 N230 779
" (57) 6 C 11-18-33 M 719

ORYX ENERGY COMPANY
Mescalero Ridge Federal
" (142) 1 B 13-18-33 M 1655
" (15) 3 A " M 6467
Mescalero Ridge B Federal
" (4) 1 C 13-18-33 M TSTM
" (4) 2 D 13-18-33 M TSTM
Mescalero Ridge C Federal
" (26) 1 D 18-18-34 *207 423
Acreage factor .900
*Acreage Factor Limits
Mescalero Ridge D Federal
" (41) 1 B 14-18-33 M 3512

OXY USA INC.
Federal AB
" (35) 1 H 11-18-33 M 1714
" (23) 2 I " M 1956
" (101) 3 J 11-18-33 M 1960
" (16) 4 P " M 1937
" (55) 5 G 11-18-33 M 1963
" (18) 6 B 11-18-33 M 1944
" (35) 7 O 11-18-33 M 1942
State DW(44) 1 J 12-18-33 M 1522
" (30) 2 K " M 2166

MESCALERO ESCARPE BONE SPRING CONT'D
OXY USA INC. CONT'D
State DW(73) 6 I 12-18-33 M 1602
" (45) 8 O " M 1622
" (34) 9 L " M 1088
" (60) 10 N " M 1600
" (10) 11 M 12-18-33 M 1000

TEXACO INC.
M.T.Keohane Federal
" (204) 3 D 14-18-33 M 898

YATES, HARVEY E. COMPANY
Cal-Mon 15 State
" (124) 1 D 15-18-33 M 903
" (126) 2 C 15-18-33 M 714
Cavinesa 10 Federal
" (263) 1 I 10-18-33 N230 1084
" (232) 3 H 10-18-33 N230 1086
/" 4 A 10-18-33 PA
Cavinesa 11 Federal
" (259) 1 L 11-18-33 N230 1189
" (246) 2 E " N230 796
" (62) 3 D 11-18-33 M 855
Corbin 15 Federal
" (44) 1 E 15-18-33 M 932
Sheldon 15 Federal
" (56) 1 A 15-18-33 M 1125

MESCALERO PERMO PENN
Top Allowable 230 GOR Limit 2,000
No Test Required
Top Casinghead Gas Limit 460 MCF
OXY USA INC.
State AD 11 O 22-10-32 M

TIPPERARY PETROLEUM CO.
N.M. B 2 A 27-10-32 M

MESCALERO SAN ANDRES
Top Allowable 80 GOR Limit 2,000
No Test Required
Top Casinghead Gas Limit 160 MCF
BOBCO INTERNATIONAL INC.
New Mexico E State
" 1 D 26-10-32 M
/" 2 E " No C-115
/" 3 C " "
/" 4 F " "
/" 5 D 26-10-32 No C-115

HEADINGTON OIL CO.
Harris State
" 1 K 23-10-32 M
" 2 N 23-10-32 M
" 3Y J " M
" 4 O " M

KERR-McGEE CORP.
Sunray St.
" 1 M 11-10-32 M
" 2 L " M

MILFORD OIL CO.
State 1 1 10-10-32 M
Suzanne State
" 1 I 27-10-32 M

MONARCH CORPORATION
White A State
" 2 A 15-10-32 M

OXY USA INC.
Lane 1 C 14-10-32 M
State AD 3 P 22-10-32 M
" 9 G 23-10-32 M
" 10 B " M
State BL 1 E 14-10-32 M
" 2 D " M
" 3 F " M
State BN 1 K 14-10-32 M
" 2 M " M
" 3 L " M
" 4 N " M

PENROC OIL CORP.
State 11-23
" 1 D 23-10-32 M
" 2 E " M
" 3 L 23-10-32 M
" 4 C " M
" 5 M 23-10-32 M
" 6 F " M

TIPPERARY PETROLEUM CO.
N.M. B 4 G 27-10-32 M
" 6 A " M
" 7 H 27-10-32 M
" 8 B " M
New Mexico X
" 1 P 10-10-32 M
State BB 1 B 14-10-32 M
" 2 J " M
" 3 G 14-10-32 M
" 4 O " M

TIPTON, DWIGHT A.
N.M. A State
" 1 E 11-10-32 M
" 2 E " M

TXO PRODUCTION CORP.
N.M. St. 1 N 11-10-32 M

MIDWAY ABO
Top Allowable 230 GOR Limit 2,000
No Test Required
Top Casinghead Gas Limit 460 MCF
BTA OIL PRODUCERS
Midway 8408 JV-P
" 1 G 13-17-36 N230
" 3 I 13-17-36 M
" 4 D 13-17-36 M
Midway B, 8408 JV-P
" 1 F 13-17-36 M

COLUMBUS ENERGY CORP.
Shipp A 1 G 17-17-37 M
" 3 D " M
So.Un.St. 1 D 16-17-37 M

CRUMP PETROLEUM CORP.
New Mexico DE State
" 1 F 18-17-37 M

LOVELADY, IKE INC.
Haas State 1 P 9-17-37 M

McNEELY, LUTHER
Lea KN St. 1 A 17-17-37 M
" 2 B " M

PENROC OIL CORP.
Lov. 16 St. 1 C 16-17-37 M

KELLAHIN, KELLAHIN AND AUBREY
ATTORNEYS AT LAW
EL PATIO BUILDING
117 NORTH GUADALUPE
POST OFFICE BOX 2265
SANTA FE, NEW MEXICO 87504-2265

W. THOMAS KELLAHIN
KAREN AUBREY

CANDACE HAMANN CALLAHAN

JASON KELLAHIN
OF COUNSEL

TELEPHONE (505) 982-4285
TELEFAX (505) 982-2047

October 5, 1990

Mr. William J. LeMay
Oil Conservation Division
Post Office Box 2088
Santa Fe, New Mexico 87504

HAND DELIVERED

Re: Application of OXY USA, Inc.
for approval of its Mescalero
San Andres Waterflood Project,
Lea County, New Mexico

Case 10140

Dear Mr. LeMay:

On September 25, 1990 we filed an application for a salt water disposal approval for the "BN" No. 5 Well in Section 14, T10S, R32E, Lea County, New Mexico.

The subject well is the injection well for a lease waterflood project. Mr. Stogner of your office returned the application to us for clarification of this point.

Accordingly, please consider the enclosed Form C-108 as our amended application for approval of this lease waterflood project consisting of the SW/4 of Section 14, T10S, R32E, Lea County, New Mexico, with the injection well to be located at an unorthodox surface location 1405 feet FWL and 1410 feet FSL of said Section 14.

We would request that this matter be set on the Examiner's docket now scheduled for hearing on October 31, 1990.

Very truly yours,

W. Thomas Kellahin

WTK/tic
Enclosure

cc: Richard E. Foppiano
OXY USA, Inc.
Post Office Box 50250
Midland, Texas 79710

Certified mail return receipt

Parties shown on Form C-108

KELLAHIN, KELLAHIN AND AUBREY
ATTORNEYS AT LAW
EL PATIO BUILDING
117 NORTH GUADALUPE
POST OFFICE BOX 2265
SANTA FE, NEW MEXICO 87504-2265

TELEPHONE (505) 982-4285
TELEFAX (505) 982-2047

W. THOMAS KELLAHIN
KAREN AUBREY

CANDACE HAMANN CALLAHAN

JASON KELLAHIN
OF COUNSEL

September 25, 1990

RECEIVED
SEP 25 1990
OIL CONSERVATION DIVISION

Mr. William J. LeMay
Oil Conservation Division
Post Office Box 2088
Santa Fe, New Mexico 87504

HAND DELIVERED

Re: Application of OXY USA, Inc. for Approval of its State "BN" No. 5 Well for Salt Water Disposal, Lea County New Mexico

Case 10140

Dear Mr. LeMay:

On behalf of OXY USA, Inc. we would appreciate you setting the referenced matter for hearing at the next available Examiner's docket now scheduled for October 17, 1990.

Enclosed is the completed Form C-108 with attachments which proposes the following:

> The subject well is to be a new drilled well at an unorthodox surface location 1405 feet FWL and 1410 feet FSL (NE/4SW/4) Section 14, T10S, R32E, N.M.P.M., Lea County, New Mexico for the disposal of produced water through perforations between 4100 feet and 4200 feet in the Mescalero San Andres Pool.

Please call me if you have any questions.

Very truly yours,

W. Thomas Kellahin

WTK/tic
Enclosure

RECEIVED
OCT - 5 1990
OIL CONSERVATION DIV.
SANTA FE

cc: Richard E. Foppiano
OXY USA, Inc.
Post Office Box 50250
Midland, Texas 79710

Oil Conservation Division
District Office
Post Office Box 1980
Hobbs, New Mexico 88240

Certified mail return receipt
Notice List attached to C-108

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

Case 10140

RECEIVED
SEP 25 1990
OIL CONSERVATION DIVISION

APPLICATION FOR AUTHORIZATION TO INJECT

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

II. Operator: OXY USA Inc.

Address: P. O. Box 50250, Midland, TX 79710

Contact party: Richard E. Foppiano Phone: 915/685-5913

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 [X] no
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.

* 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: Richard E. Foppiano Title Regulatory Affairs Advisor

Signature: Richard E. Foppiano Date: 9-19-90

* 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 district office.

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.

OXY USA Inc./State "BN"#5
Mescalero San Andres Waterflood Pilot Project
NOTICE LIST

1. Operators offsetting Section 14-T10S-R32E, Lea County, NM, including those within 1/2 mile of the well location:

OXY USA Inc.

Tipperary Corporation
P. O. Box 3179
Midland, Texas 79702

Mobil Producing Texas & New Mexico, Inc.
P. O. Box 633
Midland, Texas 79702

Yates Petroleum Corp.
105 South 4th
Artesia, New Mexico 88210

Penroc Oil Corp.
P. O. Box 5970
Hobbs, New Mexico 88240

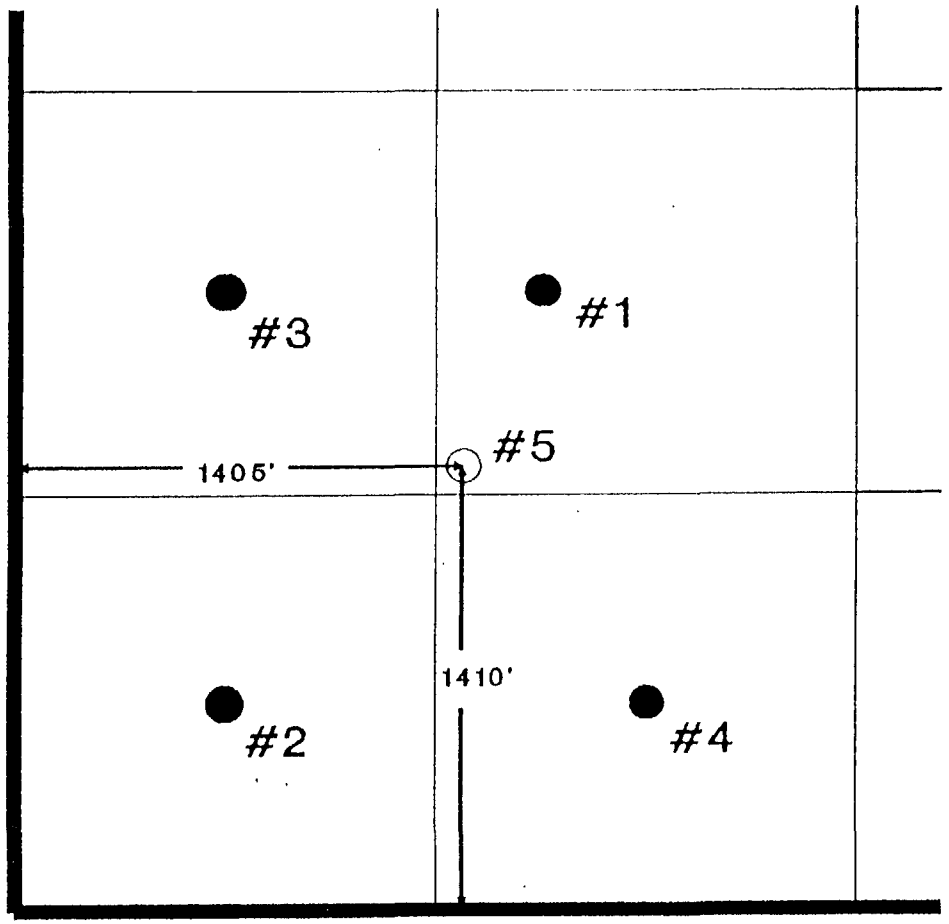
2. Surface owner of the land on which this well is located:

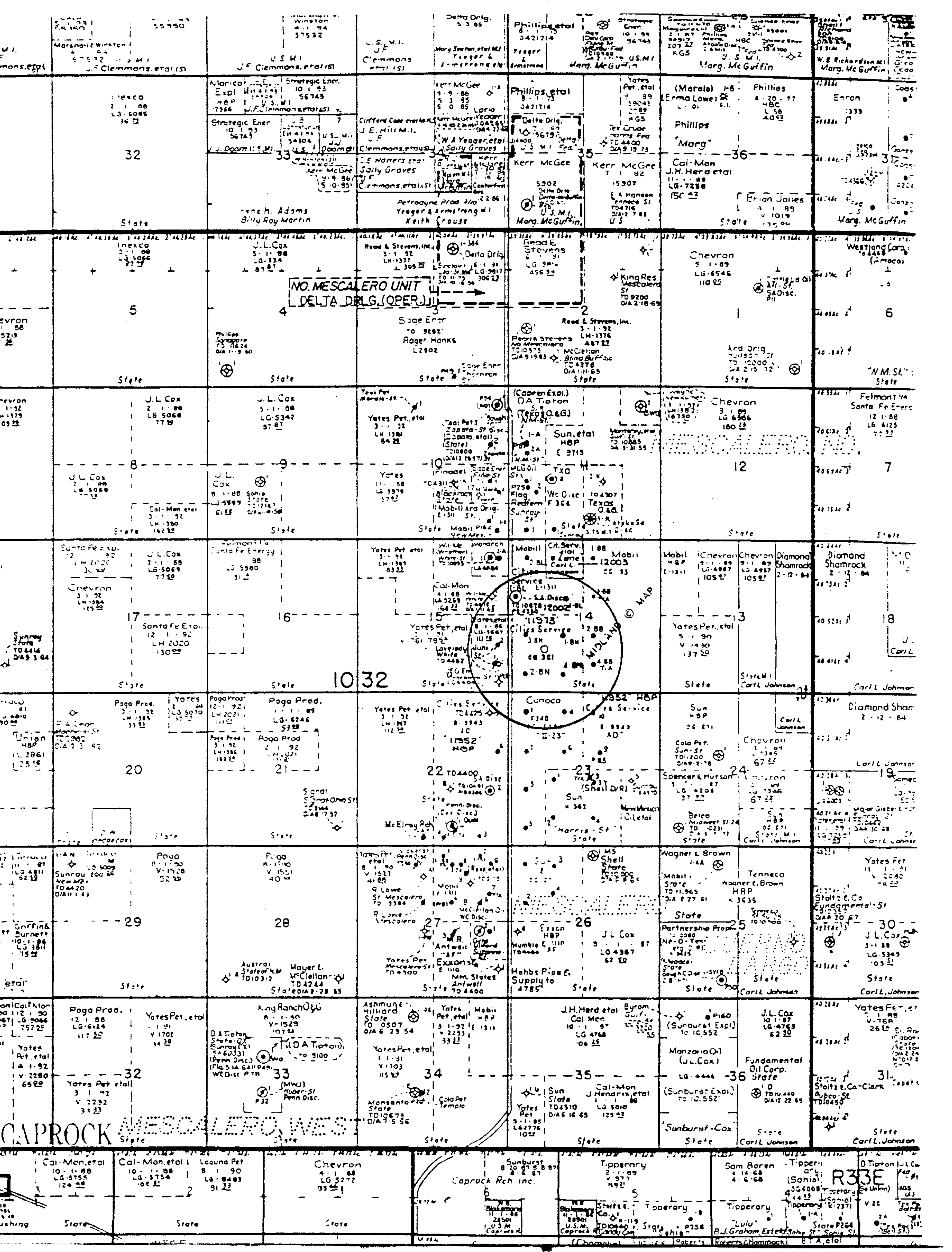
Oil and Gas Division
State Land Office
P. O. Box 1148
Santa Fe, New Mexico 87504-1148

Mescalero San Andres Field

OXY USA Inc./State "BN" Lease

Southwest Quarter of 14-T10S-R32E





NO. MESCALERO UNIT
DELTA DRLG. (OPER.)
10 32
MIDLAND © MAP
CAPROCK
R33E
32
33
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36
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3
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Inexco
Strategic Ener
Phillips, etal
Kerr McGee
Cal-Mon
J.H. Herd etal
Enron
Marg. McGuffin
J.F. Clemmons, etal (S)
U.S.M.I.
Billy Ray Martin
Keith Crouse
Erion Jones
J.L. Cox
Chevron
Geo. E. Stevens
Delta Drlg.
King Res.
Sage Ener
Roger Hanks
Westland Corp.
(Amoco)
Felmont
Santa Fe Ener.
Yates Pet., etal
Sun, etal
Texas
Mobil
Cities Service
Santa Fe Expl.
Diamond Shamrock
Carl L. Johnson
Conoco
Pogo Prod.
Union
Sun
Shell
Exxon
Tenneco
Wagner & Brown
Partnership Prop.
Hobbs Pipe & Supply Co.
McElroy Rch.
Pogo
Mayer E. McClellan
King Ranch O&G
Monsanto
Sunburst-Cox
Fundamental Oil Corp.
Manzano Oil
Tipperary
Sam Boren
Caprock Rch. Inc.
Cal-Mon, etal
Laguna Pet
State

Submit to Appropriate
District Office
State Lease - 4 copies
Fee Lease - 3 copies

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Form C-102
Revised 1-1-89

WELL LOCATION AND ACREAGE DEDICATION PLAT

All Distances must be from the outer boundaries of the section

Operator	Lease	Well No.
OXY USA, INC	STATE BN	5

Unit Letter	Section	Township	Range	County
K	14	10 SOUTH	32 EAST NMPM	LEA

Actual Footage Location of Well:
1410 feet from the south line and 1405 feet from the west line

Ground level Elev.	Producing Formation	Pool	Dedicated Acreage:
4331.3'			Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

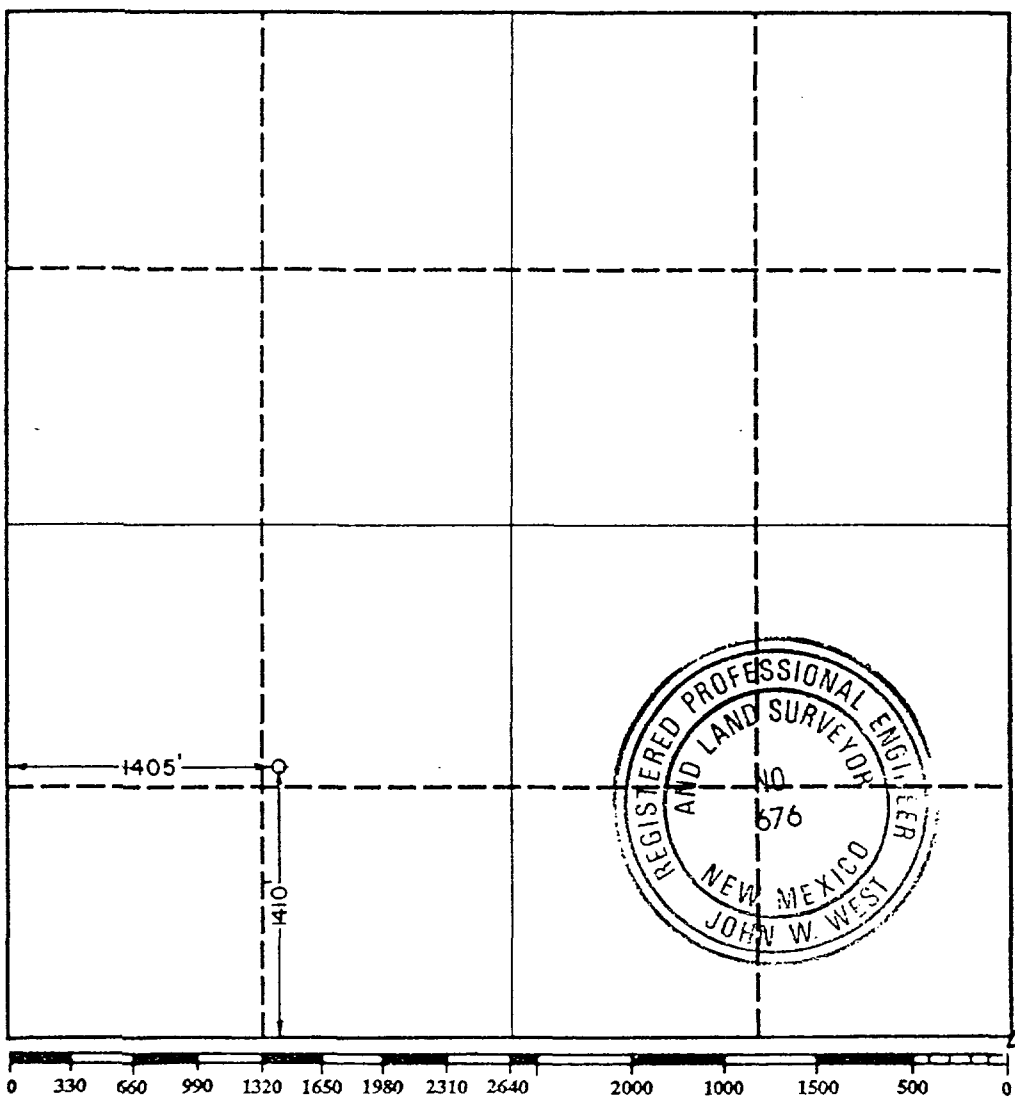
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interest of all owners been consolidated by communitization, unitization, force-pooling, etc.?

☐ Yes ☐ No If answer is "yes" type of consolidation _____

If answer is "no" list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if neccessary. _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interest, has been approved by the Division.



OPERATOR CERTIFICATION

I hereby certify that the information contained herein in true and complete to the best of my knowledge and belief.

Signature

Printed Name

Position

Company

Date

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervison, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed
July 14, 1990

Signature & Seal of
Professional Surveyor

Certificate No. JOHN W. WEST, 676
RONALD J. EIDSON, 3239

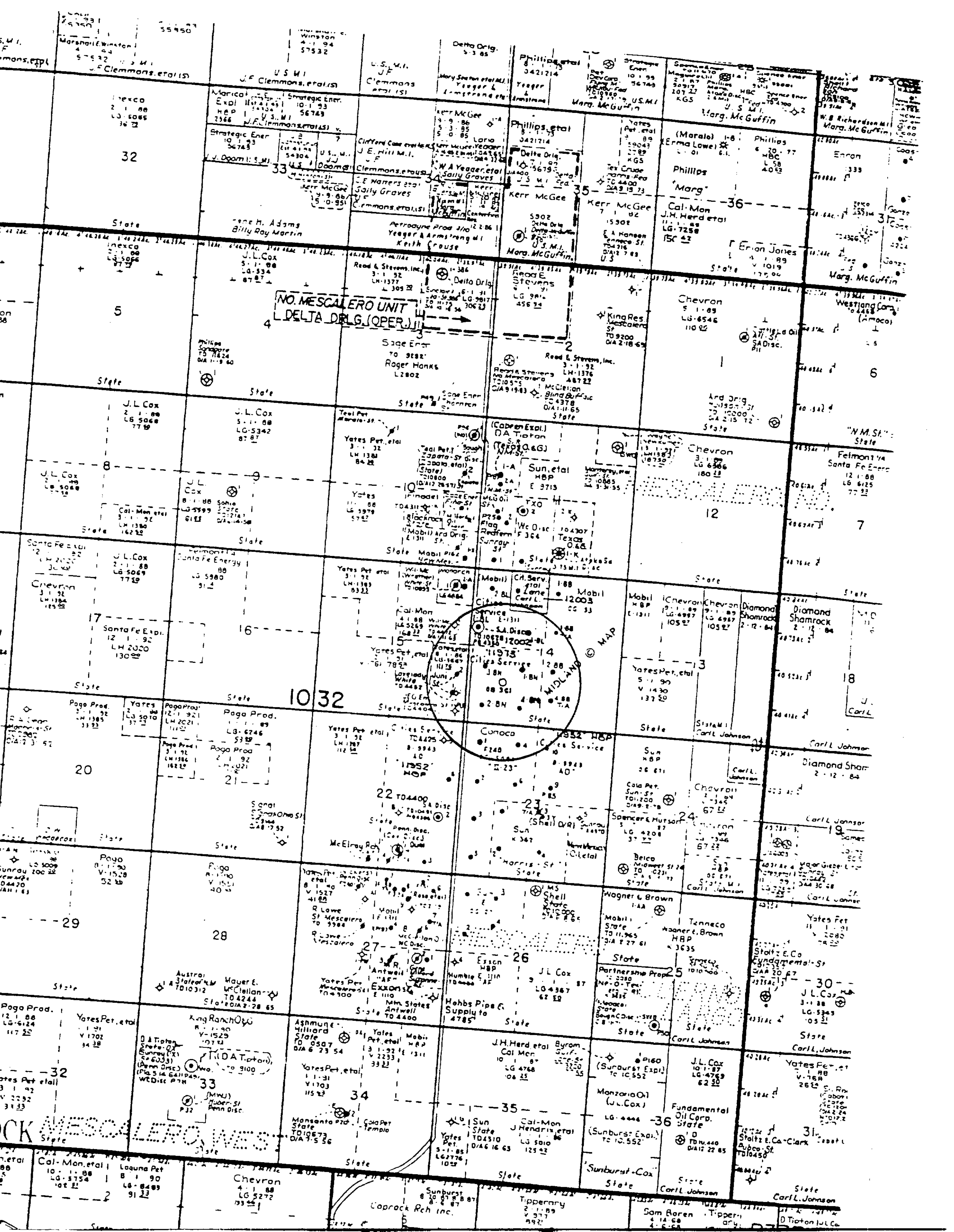
OXY USA Inc./State "BN" #5
Mescalero San Andres Waterflood Pilot Project
Form C-108 Attachments

III. A. Well data (The following reflects our current plans for the proposed injection well.)

1. Well Name: State BN #5
   Located 1410' FSL, 1405' FWL, Section 14, T-10S, R-32E, Lea County, NM.
2. Casing/Cementing plans: 8-5/8" 24# casing set at 400' in a 12-1/4" hole cemented with 350 sacks (designed to circulate).
   5-1/2" 15.5# casing set at 4500' in a 7-7/8" hole cemented with 350 sx (designed to reach 3000').
3. 2-3/8" plastic-lined tubing will be set at 4050'.
4. Guiberson Unipacker VI will be set at 4050'.

B.

1. Name of Injection Formation: San Andres, Mescalero Field.
2. Injection Interval: 4100-4200', perforated.
3. The State BN #5 well will be drilled for injection
4. There will be no other perforated intervals.
5. There are no known oil reservoirs overlying the San Andres in Mescalero Field. The Permo Penn, the only known underlying oil reservoir, is found at an approximate depth of 8500' (4150' below sea level).



NO. MESCALERO UNIT
DELTA DRLG. (OPER.)
10 32
MIDLAND © MAP
U.S.M.I.
J.F. Clemmons, etal (S)
Strategic Ener.
Kerr McGee
Phillips, etal
Marg. McGuffin
Delta Drlg.
Sally Graves
Yeager & Armstrong
Lario
Cal-Mon
J.H. Herd etal
Tex Crude
Inexco
J.L. Cox
Read & Stevens, Inc.
Sage Ener.
Roger Hanks
King Res. Mescalero
Chevron
Enron
Westland Corp. (Amoco)
Ard Drlg.
Yates Pet., etal
Teal Pet.
Zapata
Sun, etal
HBP
Texas O&G
Santa Fe Expl.
Santa Fe Energy
Felmont
Mobil
Citi. Service
Conoco
Diamond Shamrock
Pogo Prod.
Cities Service
Carl L. Johnson
Spencer & Hurson
Shell
Harris St.
Belco
Wagner & Brown
Tenneco
Exxon
Partnership Prop.
Stoltz & Co.
King Ranch O&G
D.A. Tipton
Ashmun & Hilliard
Monsanto Prd.
Sunburst Expl.
Manzano Oil
Fundamental Oil Corp.
Sunburst-Cox
Chevron
Laguna Pet.
Caprock Rch Inc.
Tipperary
Sam Boren
State

Wells within 1/2 mile of proposed injection well

1. C.H. Juni White #1 Type: P&A
   Location: 965' FSL, 330' FEL, Sec 15, T-10S, R-32E, Lea Co
   Date drilled: 3/4/64 Depth: 4452'
   Construction: 8-5/8" casing at 1490' cemented with 575 sx
   5-1/2" casing at 4452' cemented with 350 sx
   Bridge plug at 4340'
   Completion: San Andres perforations 4138-4157', 7 shots

2. C.H. Juni White #2 Type: P&A
   Location: 1650' FSL, 330' FEL, Sec 15, T-10S, R-32E, Lea Co
   Date drilled: 8/18/64 Depth: 4409'
   Construction: 9-5/8" 36# casing at 252' cement circulated
   5-1/2" 14# casing at 4409' cemented with 150 sx, top of cement at 3100'
   Bridge plug at 4350'
   Completion: San Andres perforations 4140-4162', 32 shots

3. OXY USA Inc State AD #10 Type: temp. abandoned
   Location: 660' FNL, 2310' FEL, Sec 23, T-10S, R-32E, Lea Co
   Date drilled: 7/27/65 Depth: 4350'
   Construction: 7-5/8" 24# casing at 1694', cement circulated
   4-1/2" 9.5# casing at 4348' cemented with 250 sx, top of cement at 3160' (survey)
   Bridge plug at 4274'
   Completion: San Andres perforations 4130-4218', 8 shots

4. OXY USA Inc State BL #1 Type: temp. abandoned
   Location: 300' FWL, 2006' FNL, Sec 14, T-10S, R-32E, Lea Co
   Date drilled: 8/11/62 Depth: 10631'
   Construction: 13-3/8" 48# casing at 396', cement circulated
   8-5/8" 32 & 24# casing at 3443', cement circulated
   5-1/2" 17# casing at 8865' cemented with 300 sx, top of cement at 3000' (survey)
   Bridge plug at 8175'
   Completion: Cement squeezed San Andres perforations 4324-4330', 24 shots

5. OXY USA Inc State BL #3 Type: producer
   Location: 1980' FNL, 1980' FWL, Sec 14, T-10S, R-32E, Lea Co
   Date drilled: 8/29/64 Depth: 4496'
   Construction: 8-5/8" 24# casing at 389', cement circulated
   4-1/2" 9.5# casing at 4495' cemented with 250 sx, top of cement at 3230' (calculated)
   Completion: San Andres perforations 4076-4161', 12 shots

6. OXY USA Inc State BN #1 Type: producer
Location: 1980' FSL, 1650' FWL, Sec 14, T-10S, R-32E, Lea Co
Date drilled: 4/8/63 Depth: 4465'
Construction: 8-5/8" 24# casing at 370', cement circulated
5-1/2" 14# casing at 4496' cemented with 350 sx, top of cement at 3170' (survey)
Completion: San Andres perforations 4415-4421, 24 shots

7. OXY USA Inc State BN #2 Type: producer
Location: 660' FSL, 660' FWL, Sec 14, T-10S, R-32E, Lea Co
Date drilled: 9/25/63 Depth: 4500'
Construction: 8-5/8" 24# casing at 384', cement circulated
4-1/2" 9.5# casing at 4498' cemented with 350 sx, top of cement at 3147' (calculated)
Completion: San Andres perforations 4074-4368, 360 shots

8. OXY USA Inc State BN #3 Type: producer
Location: 1980' FSL, 660' FWL, Sec 14, T-10S, R-32E, Lea Co
Date drilled: 7/24/64 Depth: 4500'
Construction: 8-5/8" 24# casing at 393', cement circulated
4-1/2" 9.5# casing at 4486' cemented with 400 sx, top of cement at 2840' (survey)
Completion: San Andres perforations 4069-4156', 55 shots

9. OXY USA Inc State BN #4 Type: producer
Location: 660' FSL, 1980' FWL, Sec 14, T-10S, R-32E, Lea Co
Date drilled: 12/24/64 Depth: 4531'
Construction: 7-5/8" 24# casing at 1685', cement circulated
4-1/2" 9.5# casing at 4531' cemented with 250 sx, top of cement at 3230' (survey)
Completion: San Andres perforations 4382-4441', 16 shots

10. Penroc Oil Corp State II-23 #1 Type: producer
Location: 660' FNL, 660' FWL, Sec 23, T-10S, R-32E, Lea Co
Date drilled: 2/5/64 Depth: 4401'
Contruction: 7-5/8" 24# casing at 390', cement circulated
4-1/2" 9.5# casing at 4401' cemented with 385 sx, top of cement at 2700' (survey)
Completion: San Andres perforations 4077-4174', 10 shots

11. Penroc Oil Corp State II-23 #2 Type: producer
Location: 1980' FNL, 660' FWL, Sec 23, T-10S, R-32E, Lea Co
Date drilled: 2/5/64/64 Depth: 4319'
Construction: 7-5/8" 24# casing at 1577', cement circulated
4-1/2" 9.5# casing at 4319', cemented with 200 sx, top of cement at 2800' (survey)
Completion: San Andres perforations 4080-4165', 8 shots

12. Tipperary Petroleum Co State BB #2 Type: producer
Location: 1980' FSL, 2310' FEL, Sec 14, T-10S, R-32E, Lea Co
Date drilled: 12/8/65 Depth: 4425'
Construction: 8-5/8" 29# casing at 1605', cement circulated
4-1/2" 9.5# casing at 4425', cemented with 200 sx, top of cement at 3200'
Completion: San Andres perforations 4101-4396', 32 shots

13. Tipperary Petroleum Co State BB #3 Type: temp. abandoned
Location: 1980' FNL, 2310' FEL, Sec 14, T-10S, R-32E, Lea Co
Date drilled: 1/31/66 Depth:

Construction: 8-5/8" 29# casing at 1585', cement circulated
4-1/2" 9.5# casing at 4485', cemented with 300 sx
Completion: San Andres perforations 4111-4453', 90 shots

VII. Proposed operations
1. Average injection rate: 250 BWPD
   Maximum injection rate: 400 BWPD
2. The injection system will be a closed system.
3. Average injection pressure: 200 psi
   Maximum injection pressure: 900 psi
4. The injection water will be collected from wells producing from the San Andres, the proposed injection zone.

VIII. The proposed injection zone is the San Andres formation. In the Mescalero Field, the San Andres is a fractured dolomite. The top of the San Andres is found at an approximate depth of 3420' (930' above sea level). The San Andres is 1400' thick and typically includes 50' of net pay. The local underground source of drinking water is the Ogallala formation and it's base is at a depth of 150'.

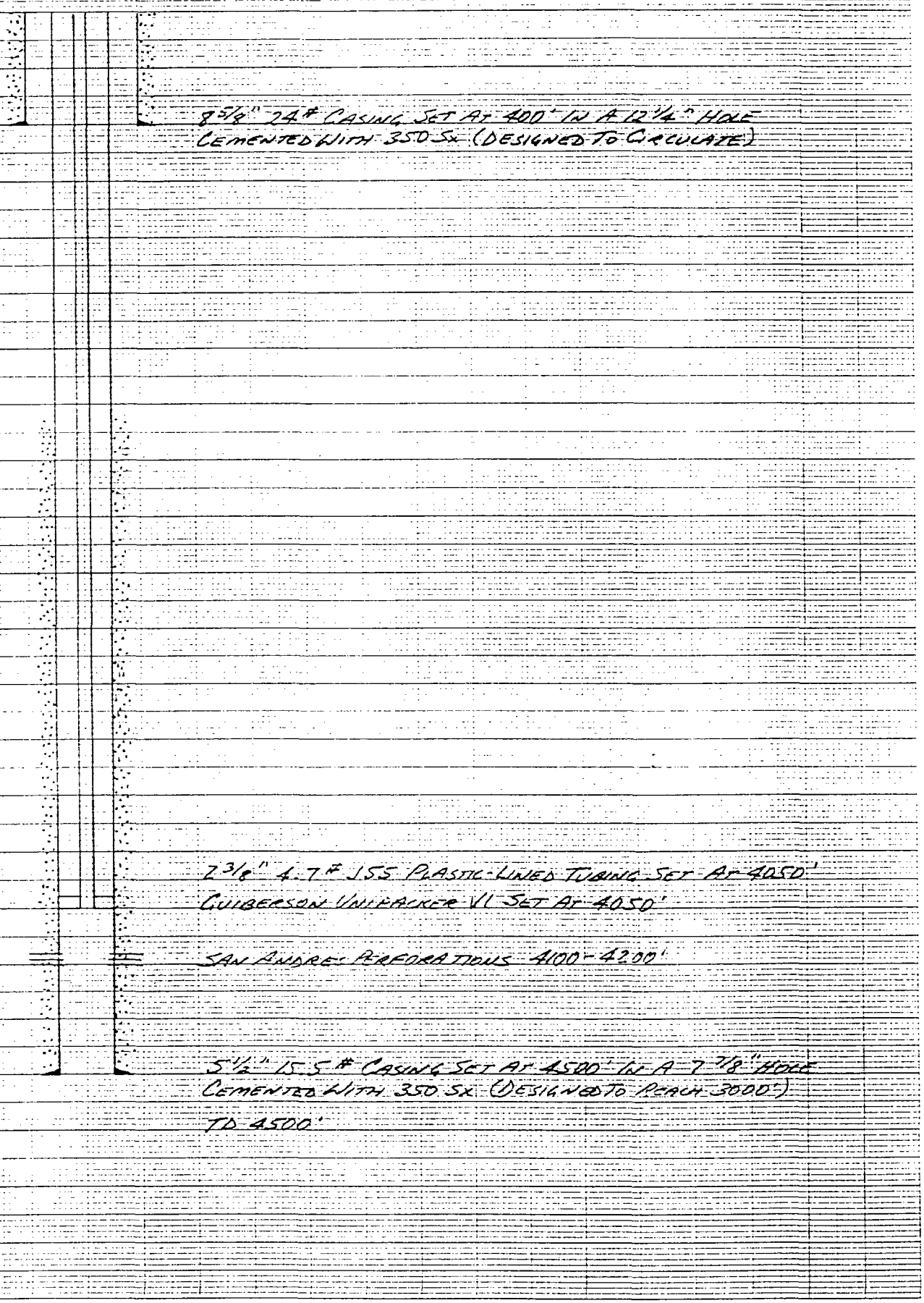
IX. Proposed stimulation program:
The State BN #5 will be stimulated with 2000 gal 15% HCl with additives. The well will be evaluated for additional stimulation pending the results of the initial treatment.

X. Logs and test data:
The planned injection well, the proposed State BN #5, has not yet been drilled. The logging program will include GR/CNL/LDT, CYBIL (sonic fracture locator), GR/DLL/MSFL, and GR/CCL/CBL.

XI. Fresh water analyses are attached.

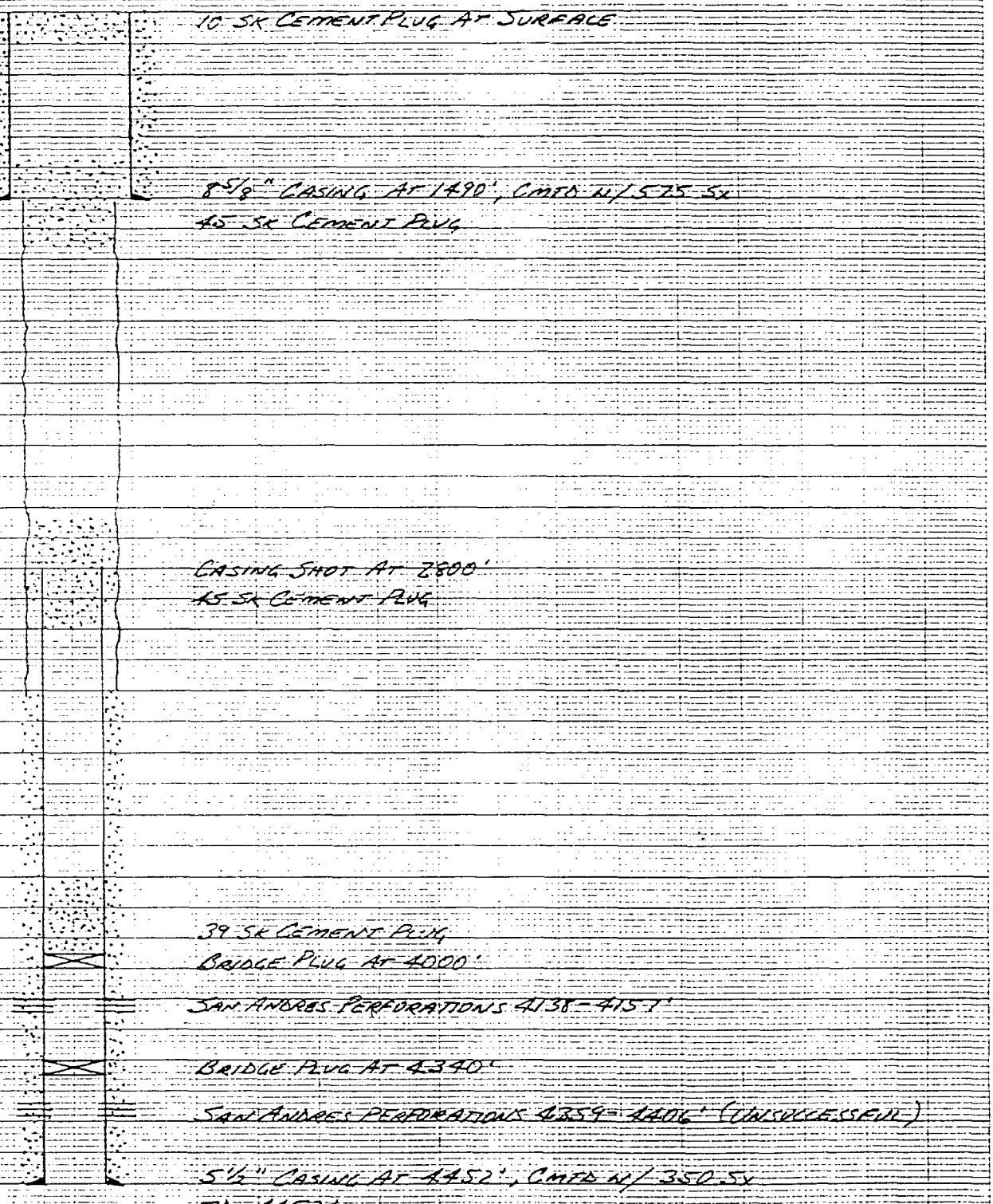
(PROPOSED) OXY USA STATE BN #5

1410' FSL, 1405' FWL, SEC 14, T-10S, R-32E



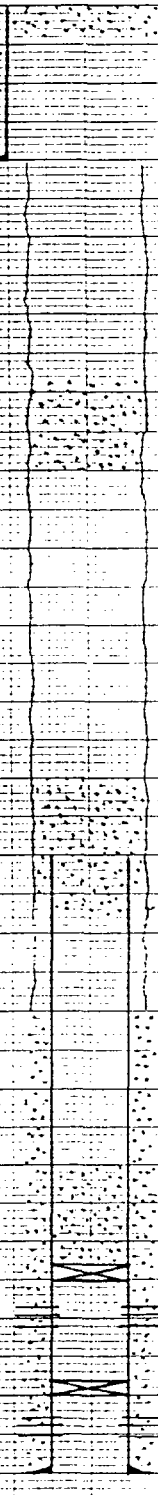
C.H. JUNE WHITE #1

965' FSL, 330' FEL, SEC 15



C.H. JUNI WHITE #2

1650' FSL, 330' FEL, SEC 15



10 SK CEMENT PLUG AT SURFACE

9 5/8" 36# J55 CASING AT 252', CMTD W/ 250 SX, CIRC.

BASE OF 33 SK CEMENT PLUG AT 1500'

CASING SHOT AT 3420'

BASE OF 33 SK CEMENT PLUG AT 3345'

35 SK CEMENT PLUG

BRIDGE PLUG AT 4000'

SAN ANDRES PERFORATIONS 4140-4162'

BRIDGE PLUG @ 4350'

SAN ANDRES PERFORATIONS 4374-4380' (UNSUCCESSFUL)

5 1/2" 15 1/2# J55 CASING AT 4409', CMTD WITH 150 SX

TD 4409'

P. O. BOX 1468
MONAHANS, TEXAS 79756
PH. 943-3234 OR 563-1040

Martin Water Laboratories, Inc.

709 W. INDIANA
MIDLAND, TEXAS 79701
PHONE 683-4521

RESULT OF WATER ANALYSES

LABORATORY NO. 9907

TO: Mr. Ed Pittinger
P. O. Box 50250, Midland, TX

SAMPLE RECEIVED 9-4-90

RESULTS REPORTED 9-7-90

COMPANY Oxy U.S.A. LEASE As Listed

FIELD OR POOL

SECTION ___ BLOCK ___ SURVEY ___ COUNTY Lea STATE NM

SOURCE OF SAMPLE AND DATE TAKEN:

NO. 1 Raw water-taken from water well West of State "AD" #2 Battery @ 10:00 a.m.

NO. 2 Raw water-taken from water well West of State "AD" #2 Battery @ 11:30 a.m.

NO. 3 Raw water-taken from windmill West of State "BL" Battery @ 10:15 a.m.

NO. 4 Raw water-taken from windmill North of State "BN" Battery @ 10:30 a.m.

REMARKS: 1 & 2 0.4 mi. W. of State "BN". 3 & 4 0.7 mile. Samples taken 8-29-90.

CHEMICAL AND PHYSICAL PROPERTIES	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.0020	1.0025	1.0026	1.0014
pH When Sampled				
pH When Received	7.08	7.45	7.17	7.44
Bicarbonate as HCO_3	112	112	117	62
Supersaturation as $CaCO_3$				
Undersaturation as $CaCO_3$				
Total Hardness as $CaCO_3$	400	410	495	300
Calcium as Ca	136	139	182	101
Magnesium as Mg	15	15	9	12
Sodium and/or Potassium	134	143	129	8
Sulfate as SO_4	295	297	297	176
Chloride as Cl	207	227	263	60
Iron as Fe	0.20	0.20	0.40	0.40
Barium as Ba				
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	899	935	998	418
Temperature °F.				
Carbon Dioxide, Calculated				
Dissolved Oxygen,				
Hydrogen Sulfide	0.0	0.0	0.0	0.0
Resistivity, ohms/m at 77° F.	7.57	7.10	6.60	16.90
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml				
Nitrate, as N	3.2	2.6	11.3	1.2

Results Reported As Milligrams Per Liter

Additional Determinations And Remarks

Form No. 3

By ___

P. O. BOX 1468
MONAHANS, TEXAS 79756
PH. 943-3234 OR 563-1040

Martin Water Laboratories, Inc.

709 W. INDIANA
MIDLAND, TEXAS 79701
PHONE 683-4521

RESULT OF WATER ANALYSES

LABORATORY NO. 9907 (Page 2)

TO: Mr. Ed Pittinger
P. O. Box 50250, Midland, TX

SAMPLE RECEIVED 9-4-90

RESULTS REPORTED 9-7-90

COMPANY Oxy U.S.A. LEASE As Listed

FIELD OR POOL

SECTION ___ BLOCK ___ SURVEY ___ COUNTY Lea STATE NM

SOURCE OF SAMPLE AND DATE TAKEN:

NO. 1 Raw water-taken from windmill North of State "BN" Battery @ 11:00 a.m.

NO. 2

NO. 3

NO. 4

REMARKS: 0.7 mile. Sample taken 8-29-90.

CHEMICAL AND PHYSICAL PROPERTIES

	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.0013			
pH When Sampled				
pH When Received	7.50			
Bicarbonate as HCO_3	59			
Supersaturation as $CaCO_3$				
Undersaturation as $CaCO_3$				
Total Hardness as $CaCO_3$	290			
Calcium as Ca	102			
Magnesium as Mg	8			
Sodium and/or Potassium	11			
Sulfate as SO_4	176			
Chloride as Cl	60			
Iron as Fe	0.40			
Barium as Ba				
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	416			
Temperature °F.				
Carbon Dioxide, Calculated				
Dissolved Oxygen,				
Hydrogen Sulfide	0.0			
Resistivity, ohms/m at 77° F.	17.05			
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml				
Nitrate, as N	1.2			

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

By W. Reagan White

W. Reagan White, B.S.

McCORMACK SILURIAN
Allowable 187 GOR Limit 2,000
No Test Required
Casinghead Gas Limit 374 MCF
USA INC.
McComack
11 A 32-21-37 M

McCORMACK SILURIAN, SOUTH
Allowable 187 GOR Limit 2,000
No Test Required
Casinghead Gas Limit 374 MCF
PETROLEUM INC.
Elliott 5 D 22-22-37 7A

McDONALD DEVONIAN
Allowable 600 GOR Limit 2,000
No Test Required
Casinghead Gas Limit 1200 MCF
CO., HARVEY E.
Unit
2 D 3-14-36 M

McDONALD UPPER PENNSYLVANIAN
Allowable 320 GOR Limit 2,000
No Test Required
Casinghead Gas Limit 640 MCF
J.M. CORP.
Griffin 1 A 4-14-36 M

McDONALD PENNSYLVANIAN, WEST
Allowable 320 GOR Limit 2,000
Casinghead Gas Limit 640 MCF
HARVEY E. CO.
Richardson Fee
(6) 3 D 5-14-36 M 2000

MEDICINE ROCK DEVONIAN
(80 Acre Spacing)
Allowable 490 No GOR Limit
No Gas Test Required
Casinghead Gas Limit 980 MCF
INC.
Coca-Stone
(16) 1 G 22-15-38 M

MESA QUEEN ASSOCIATED
Spacing Oil - 40 Gas - 160
Allowable 80 GOR Limit 5,000
Gas Allowable MCFD
Oil - 400 Gas - 1600
MESA OPERATING CO.
Mesa 7 State Com.
1 E 7-16-32 MGW AF 1.00

(Waterflood Project)
MITCHELL, RUSSELL
3446
Maximum Allowable Formula:
25 X 80 = 2000
Mesa Queen Unit
3 A 16-16-32
7 F "
13 I 17-16-32
14 L 16-16-32
15 K 16-16-32
17 M 17-16-32
2 B 16-16-32 Input
6 E " "
9 H " "
11 K 17-16-32 "
18 N " "
20 P " "
25 N 16-16-32 "

WESTALL, RAY
Mesa Queen 7 State
" 1 P 7-16-32 MGW AF 1.00

MESCALERO CISCO, NORTH
Top Allowable 230 GOR Limit 4,500
Top Casinghead Gas Limit 1035 MCF
BISON PETROLEUM CORP.
State 11(5) 1 L 11-10-32 M 3111

MESCALERO ESCARPE BONE SPRING
Top Allowable 230 GOR Limit 2,000
Top Casinghead Gas Limit 460 MCF
BISON PETROLEUM CORP.
Cavineas 10 Federal
" (31) 2 O 10-18-33 M 2516

CHEVRON USA INC.
Cockburn G Federal
/" (26) 1 L 10-18-33 M 462
Lea XA State
" (50) 1 L 7-18-34 M 2160
" (28) 2 M " *207 1571
Acreage factor .900
*Acreage Factor Limits
" (39) 3 K 7-18-34 M 1128
" (12) 4 N " M 1083

ECHO PRODUCTION, INC.
Texaco 14 Federal
" (190) 1 C 14-18-33 M 421

MARATHON OIL CO.
State E-744-15
" (22) 1 I 15-18-33 M 1364

MERIDIAN OIL INC.
Cavineas Federal
" (91) 1 K 11-18-33 M 714
" (25) 2 N " M 1120
" (122) 3 M 11-18-33 M 1122
" (86) 4 P 11-18-33 M 558
" (235) 5Y P 10-18-33 N230 779
" (57) 6 C 11-18-33 M 719

ORYX ENERGY COMPANY
Mescalero Ridge Federal
" (142) 1 B 13-18-33 M 1655
" (15) 3 A " M 6467
Mescalero Ridge B Federal
" (4) 1 C 13-18-33 M TSTM
" (4) 2 D 13-18-33 M TSTM
Mescalero Ridge C Federal
" (26) 1 D 18-18-34 *207 423
Acreage factor .900
*Acreage Factor Limits
Mescalero Ridge D Federal
" (41) 1 B 14-18-33 M 3512

OXY USA INC.
Federal AB
" (35) 1 H 11-18-33 M 1714
" (23) 2 I " M 1956
" (101) 3 J 11-18-33 M 1960
" (16) 4 P " M 1937
" (55) 5 G 11-18-33 M 1963
" (18) 6 B 11-18-33 M 1944
" (35) 7 O 11-18-33 M 1942
State DW(44) 1 J 12-18-33 M 1522
" (30) 2 K " M 2166

MESCALERO ESCARPE BONE SPRING CONT'D
OXY USA INC. CONT'D
State DW(73) 6 I 12-18-33 M 1602
" (45) 8 O " M 1622
" (34) 9 L " M 1088
" (60) 10 N " M 1600
" (10) 11 M 12-18-33 M 1000

TEXACO INC.
M.T.Keohane Federal
" (204) 3 D 14-18-33 M 898

YATES, HARVEY E. COMPANY
Cai-Mon 15 State
" (124) 1 D 15-18-33 M 903
" (126) 2 C 15-18-33 M 714
Cavineas 10 Federal
" (263) 1 I 10-18-33 N230 1084
" (232) 3 H 10-18-33 N230 1086
/" 4 A 10-18-33 PA
Cavineas 11 Federal
" (259) 1 L 11-18-33 N230 1189
" (246) 2 E " N230 796
" (62) 3 D 11-18-33 M 855
Corbin 15 Federal
" (44) 1 E 15-18-33 M 932
Sheldon 15 Federal
" (56) 1 A 15-18-33 M 1125

MESCALERO PERMO PENN
Top Allowable 230 GOR Limit 2,000
No Test Required
Top Casinghead Gas Limit 460 MCF
OXY USA INC.
State AD 11 O 22-10-32 M

TIPPERARY PETROLEUM CO.
N.M. B 2 A 27-10-32 M

MESCALERO SAN ANDRES
Top Allowable 80 GOR Limit 2,000
No Test Required
Top Casinghead Gas Limit 160 MCF
BOBCO INTERNATIONAL INC.
New Mexico E State
" 1 D 26-10-32 M
/" 2 E " No C-115
/" 3 C " "
/" 4 F " "
/" 5 D 26-10-32 No C-115

HEADINGTON OIL CO.
Harris State
" 1 K 23-10-32 M
" 2 N 23-10-32 M
" 3Y J " M
" 4 O " M

KERR-McGEE CORP.
Sunray St.
" 1 M 11-10-32 M
" 2 L " M

MILFORD OIL CO.
State 1 I 10-10-32 M
Suzanne State
" 1 I 27-10-32 M

MONARCH CORPORATION
White A State
" 2 A 15-10-32 M

OXY USA INC.
Lane 1 C 14-10-32 M
State AD 3 P 22-10-32 M
" 9 G 23-10-32 M
" 10 B " M
State BL 1 E 14-10-32 M
" 2 D " M
" 3 F " M
State BN 1 K 14-10-32 M
" 2 M " M
" 3 L " M
" 4 N " M

PENROC OIL CORP.
State 11-23
" 1 D 23-10-32 M
" 2 E " M
" 3 L 23-10-32 M
" 4 C " M
" 5 M 23-10-32 M
" 6 F " M

TIPPERARY PETROLEUM CO.
N.M. B 4 G 27-10-32 M
" 6 A " M
" 7 H 27-10-32 M
" 8 B " M
New Mexico X
" 1 P 10-10-32 M
State BB 1 B 14-10-32 M
" 2 J " M
" 3 G 14-10-32 M
" 4 O " M

TIPTON, DWIGHT A.
N.M. A State
" 1 E 11-10-32 M
" 2 E " M

TXO PRODUCTION CORP.
N.M. St. 1 N 11-10-32 M

MIDWAY ABO
Top Allowable 230 GOR Limit 2,000
No Test Required
Top Casinghead Gas Limit 460 MCF
BTA OIL PRODUCERS
Midway 8408 JV-P
" 1 G 13-17-36 N230
" 3 I 13-17-36 M
" 4 D 13-17-36 M
Midway B, 8408 JV-P
" 1 F 13-17-36 M

COLUMBUS ENERGY CORP.
Shipp A 1 G 17-17-37 M
" 3 D " M
So.Un.St. 1 D 16-17-37 M

CRUMP PETROLEUM CORP.
New Mexico DE State
" 1 F 18-17-37 M

LOVELADY, IKE INC.
Haas State 1 P 9-17-37 M

McNEELY, LUTHER
Lea KN St. 1 A 17-17-37 M
" 2 B " M

PENROC OIL CORP.
Lov. 16 St. 1 C 16-17-37 M

KELLAHIN, KELLAHIN AND AUBREY
ATTORNEYS AT LAW
EL PATIO BUILDING
117 NORTH GUADALUPE
POST OFFICE BOX 2265
SANTA FE, NEW MEXICO 87504-2265

W. THOMAS KELLAHIN
KAREN AUBREY

CANDACE HAMANN CALLAHAN

JASON KELLAHIN
OF COUNSEL

TELEPHONE (505) 982-4285
TELEFAX (505) 982-2047

October 5, 1990

Mr. William J. LeMay
Oil Conservation Division
Post Office Box 2088
Santa Fe, New Mexico 87504

HAND DELIVERED

Re: Application of OXY USA, Inc.
for approval of its Mescalero
San Andres Waterflood Project,
Lea County, New Mexico

Dear Mr. LeMay:

On September 25, 1990 we filed an application for a salt water disposal approval for the "BN" No. 5 Well in Section 14, T10S, R32E, Lea County, New Mexico.

The subject well is the injection well for a lease waterflood project. Mr. Stogner of your office returned the application to us for clarification of this point.

Accordingly, please consider the enclosed Form C-108 as our amended application for approval of this lease waterflood project consisting of the SW/4 of Section 14, T10S, R32E, Lea County, New Mexico, with the injection well to be located at an unorthodox surface location 1405 feet FWL and 1410 feet FSL of said Section 14.

We would request that this matter be set on the Examiner's docket now scheduled for hearing on October 31, 1990.

Very truly yours,

W. Thomas Kellahin

WTK/tic
Enclosure

cc: Richard E. Foppiano
OXY USA, Inc.
Post Office Box 50250
Midland, Texas 79710

Certified mail return receipt

Parties shown on Form C-108

KELLAHIN, KELLAHIN AND AUBREY
ATTORNEYS AT LAW
EL PATIO BUILDING
117 NORTH GUADALUPE
POST OFFICE BOX 2265
SANTA FE, NEW MEXICO 87504-2265

W. THOMAS KELLAHIN
KAREN AUBREY

CANDACE HAMANN CALLAHAN

JASON KELLAHIN
OF COUNSEL

TELEPHONE (505) 982-4285
TELEFAX (505) 982-2047

September 25, 1990

Case 10140

RECEIVED
SEP 25 1990
OIL CONSERVATION DIVISION

Mr. William J. LeMay
Oil Conservation Division
Post Office Box 2088
Santa Fe, New Mexico 87504

HAND DELIVERED

Re: Application of OXY USA, Inc. for Approval of its State "BN" No. 5 Well for Salt Water Disposal, Lea County New Mexico

Dear Mr. LeMay:

On behalf of OXY USA, Inc. we would appreciate you setting the referenced matter for hearing at the next available Examiner's docket now scheduled for October 17, 1990.

Enclosed is the completed Form C-108 with attachments which proposes the following:

> The subject well is to be a new drilled well at an unorthodox surface location 1405 feet FWL and 1410 feet FSL (NE/4SW/4) Section 14, T10S, R32E, N.M.P.M., Lea County, New Mexico for the disposal of produced water through perforations between 4100 feet and 4200 feet in the Mescalero San Andres Pool.

Please call me if you have any questions.

Very truly yours,

W. Thomas Kellahin

WTK/tic
Enclosure

NSL/NSP/DHC
OCT - 5 1990
OIL CONSERVATION DIV.
SANTA FE

cc: Richard E. Foppiano
OXY USA, Inc.
Post Office Box 50250
Midland, Texas 79710

Oil Conservation Division
District Office
Post Office Box 1980
Hobbs, New Mexico 88240

Certified mail return receipt
Notice List attached to C-108

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

Case 10148

RECEIVED
SEP 25 1990
OIL CONSERVATION DIVISION

APPLICATION FOR AUTHORIZATION TO INJECT

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

II. Operator: OXY USA Inc.

Address: P. O. Box 50250, Midland, TX 79710

Contact party: Richard E. Foppiano Phone: 915/685-5913

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 [X] no
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.

* 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: Richard E. Foppiano Title Regulatory Affairs Advisor

Signature: Richard E. Foppiano Date: 9-19-90

* 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 district office.

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.

OXY USA Inc./State "BN"#5
Mescalero San Andres Waterflood Pilot Project
NOTICE LIST

1. Operators offsetting Section 14-T10S-R32E, Lea County, NM, including those within 1/2 mile of the well location:

OXY USA Inc.

Tipperary Corporation
P. O. Box 3179
Midland, Texas 79702

Mobil Producing Texas & New Mexico, Inc.
P. O. Box 633
Midland, Texas 79702

Yates Petroleum Corp.
105 South 4th
Artesia, New Mexico 88210

Penroc Oil Corp.
P. O. Box 5970
Hobbs, New Mexico 88240

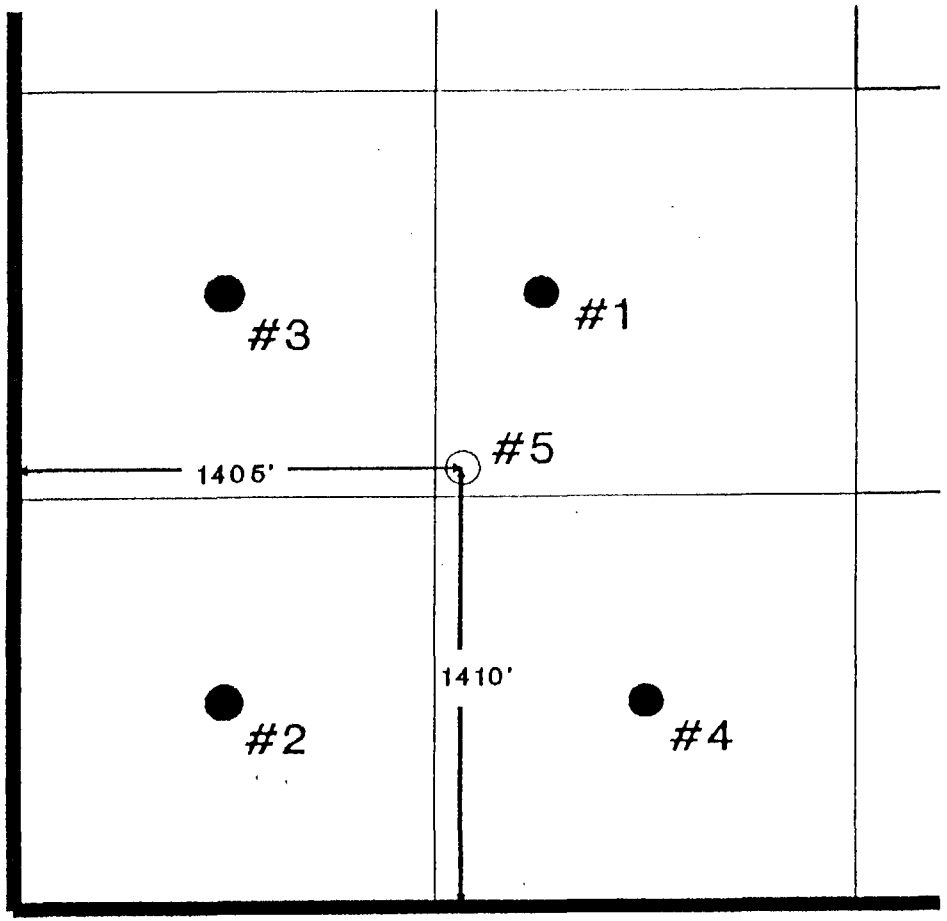
2. Surface owner of the land on which this well is located:

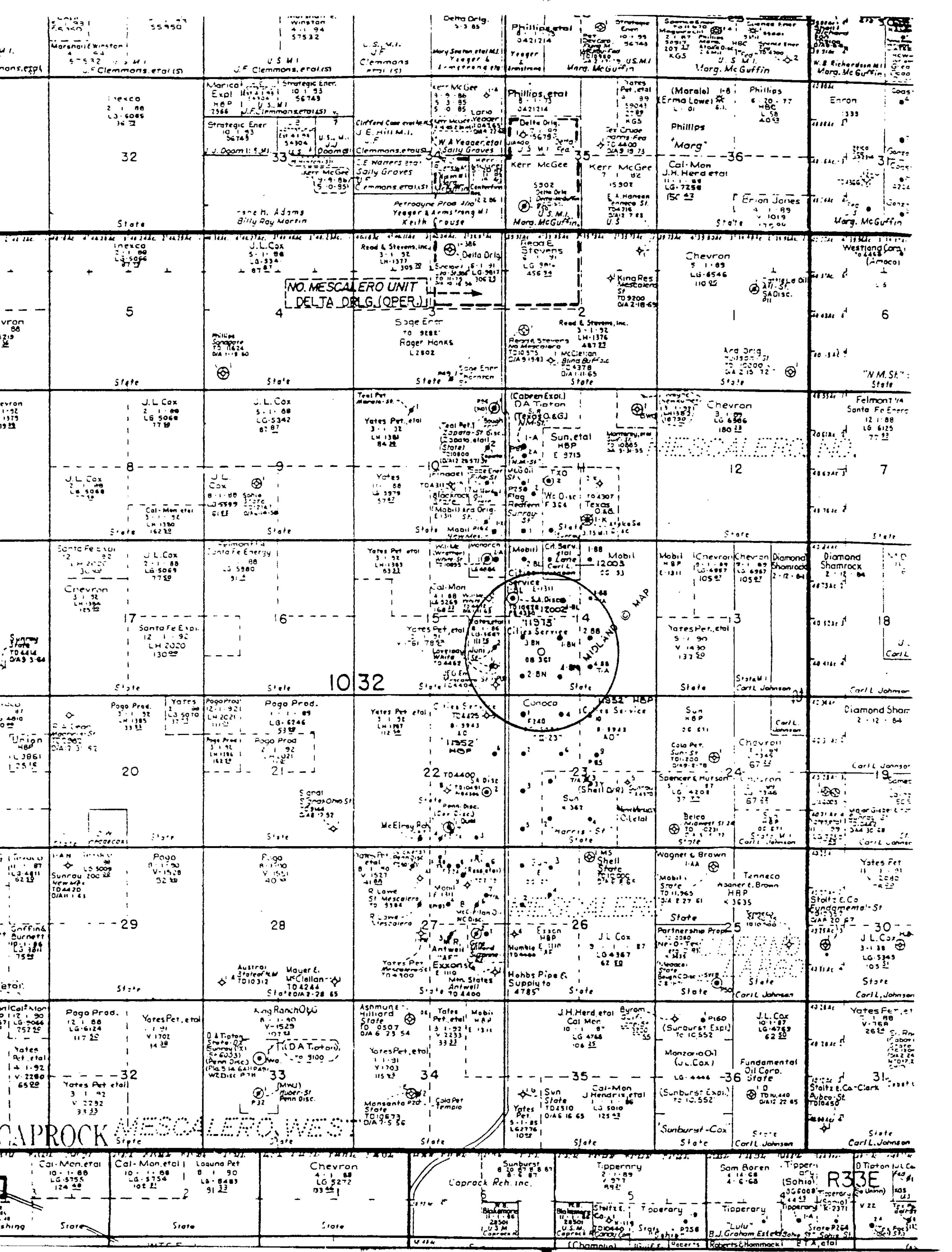
Oil and Gas Division
State Land Office
P. O. Box 1148
Santa Fe, New Mexico 87504-1148

Mescalero San Andres Field

OXY USA Inc./State "BN" Lease

Southwest Quarter of 14-T10S-R32E





NO. MESCALERO UNIT
DELTA DRLG.(OPER.)
MIDLAND © MAP
10 32
CAPROCK
R33E
Phillips, etal
Kerr McGee
Cal-Mon
J.H. Herd etal
Inexco
Strategic Ener
Delta Drlg.
Read & Stevens, Inc.
Chevron
Sage Ener
Roger Hanks
J.L. Cox
Yates Pet., etal
Sun, etal
Santa Fe Expl.
Mobil
Cities Service
Conoco
Pogo Prod.
Pogo
King Ranch Oil
Diamond Shamrock
Felmont
Wagner & Brown
Tenneco
Exxon
Hobbs Pipe & Supply to
Monzano Oil
Fundamental Oil Corp.
Sunburst-Cox
Carl L. Johnson
Tipperary
Sam Boren
Laguna Pet
Caprock Rch. Inc.
State
U.S.M.I.
Marg. McGuffin
J.F. Clemmons, etal (S)
Sally Graves
Keith Crouse
Erion Jones
Billy Ray Martin

Submit to Appropriate
District Office
State Lease - 4 copies
Fee Lease - 3 copies

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Form C-102
Revised 1-1-89

WELL LOCATION AND ACREAGE DEDICATION PLAT

All Distances must be from the outer boundaries of the section

Operator			Lease		Well No.
OXY USA, INC			STATE BN		5
Unit Letter	Section	Township	Range		County
K	14	10 SOUTH	32 EAST	NMPM	LEA
Actual Footage Location of Well: 1410 feet from the south line and 1405 feet from the west line					
Ground level Elev.	Producing Formation		Pool		Dedicated Acreage:
4331.3'					Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

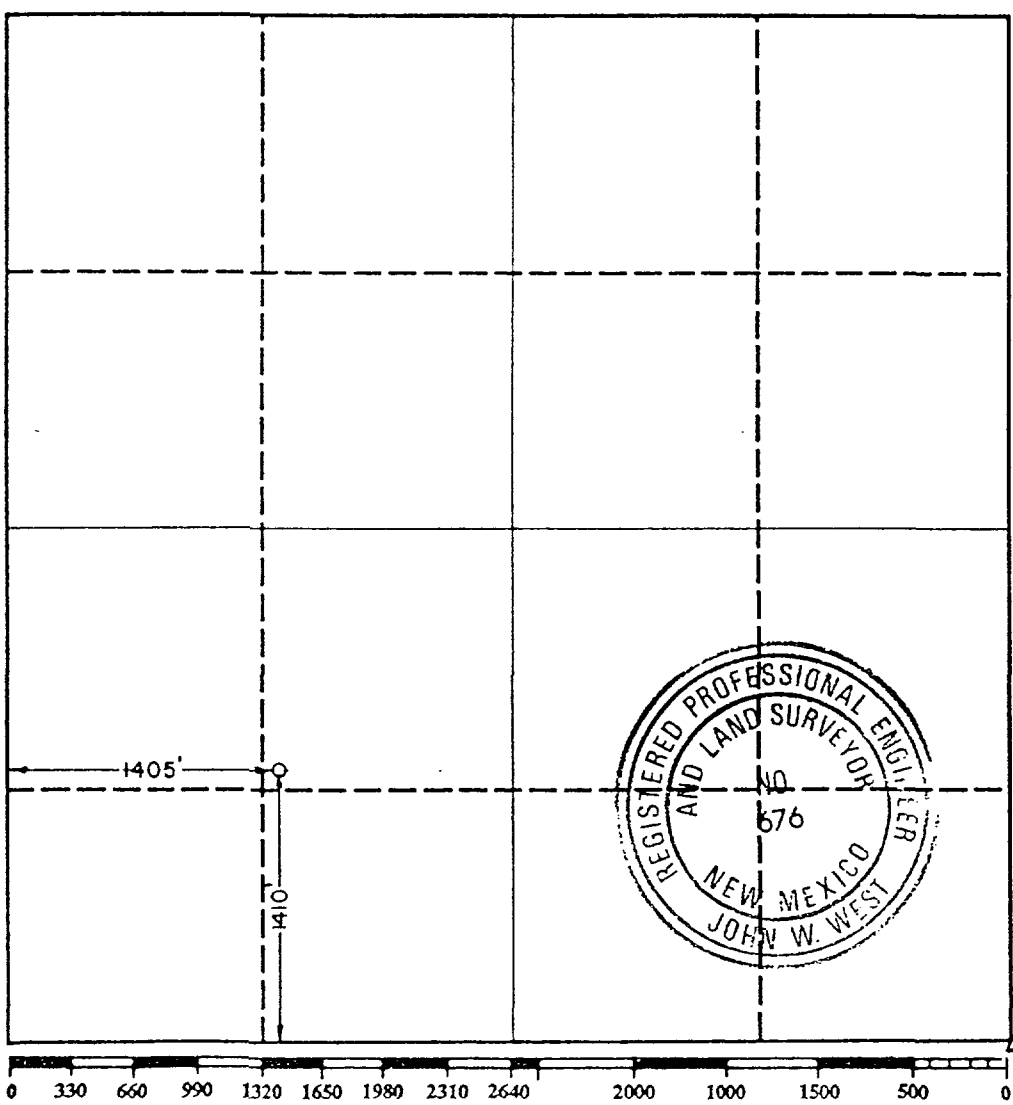
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interest of all owners been consolidated by communitization, unitization, force-pooling, etc.?

☐ Yes ☐ No If answer is "yes" type of consolidation _____

If answer is "no" list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if neccessary. _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interest, has been approved by the Division.



OPERATOR CERTIFICATION

I hereby certify that the information contained herein in true and complete to the best of my knowledge and belief.

Signature

Printed Name

Position

Company

Date

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervison, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed
July 14, 1990

Signature & Seal of
Professional Surveyor

Certificate No. JOHN W. WEST, 676
RONALD J. EIDSON, 3239

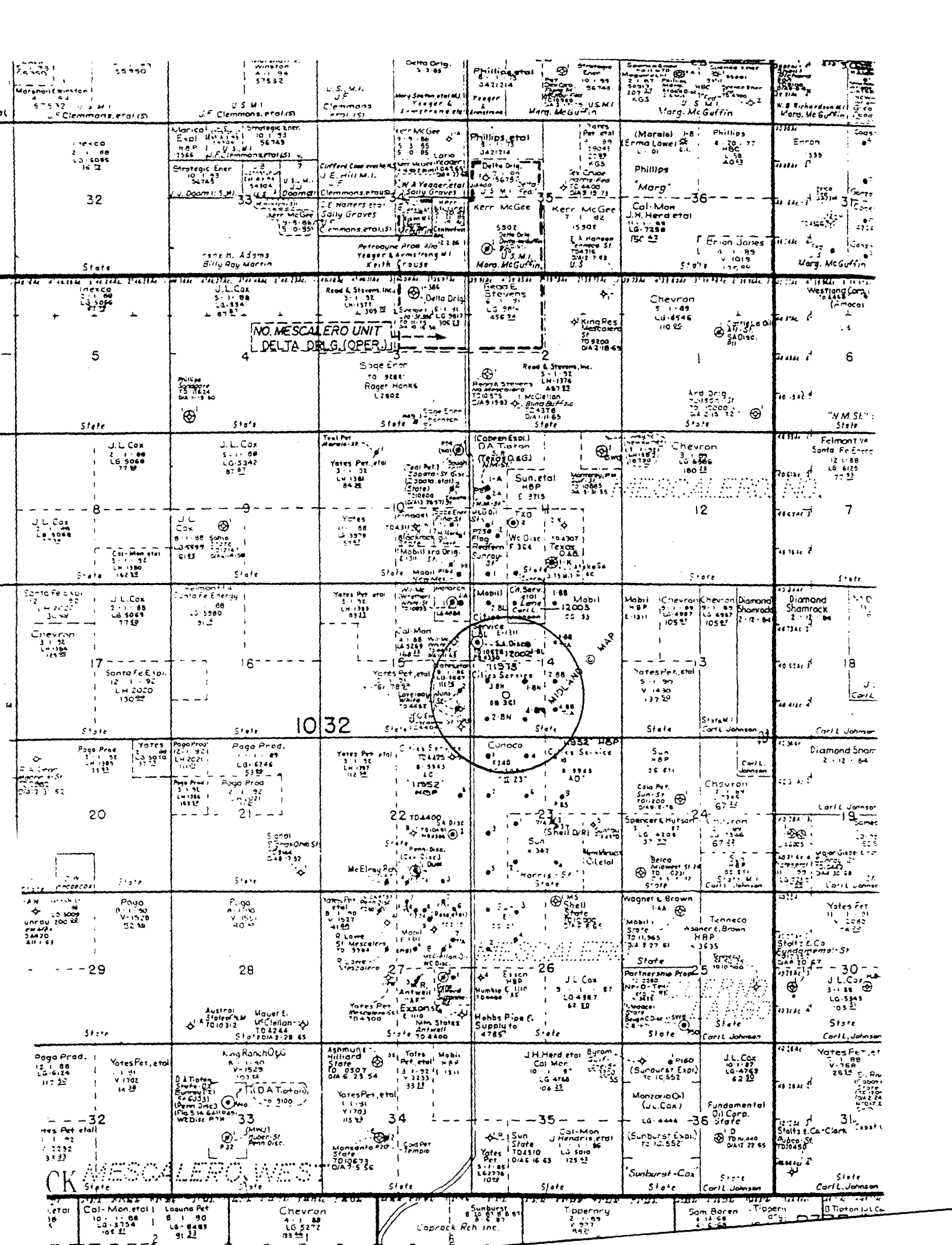
OXY USA Inc./State "BN" #5
Mescalero San Andres Waterflood Pilot Project
Form C-108 Attachments

III. A. Well data (The following reflects our current plans for the proposed injection well.)

1. Well Name: State BN #5
   Located 1410' FSL, 1405' FWL, Section 14, T-10S, R-32E, Lea County, NM.
2. Casing/Cementing plans: 8-5/8" 24# casing set at 400' in a 12-1/4" hole cemented with 350 sacks (designed to circulate).
   5-1/2" 15.5# casing set at 4500' in a 7-7/8" hole cemented with 350 sx (designed to reach 3000').
3. 2-3/8" plastic-lined tubing will be set at 4050'.
4. Guiberson Unipacker VI will be set at 4050'.

B.

1. Name of Injection Formation: San Andres, Mescalero Field.
2. Injection Interval: 4100-4200', perforated.
3. The State BN #5 well will be drilled for injection.
4. There will be no other perforated intervals.
5. There are no known oil reservoirs overlying the San Andres in Mescalero Field. The Permo Penn, the only known underlying oil reservoir, is found at an approximate depth of 8500' (4150' below sea level).


NO. MESCALERO UNIT
DELTA DRLG. (OPER.)
MIDLAND MAP
MESCALERO

Wells within 1/2 mile of proposed injection well

1. C.H. Juni White #1 Type: P&A
   Location: 965' FSL, 330' FEL, Sec 15, T-10S, R-32E, Lea Co
   Date drilled: 3/4/64 Depth: 4452'
   Construction: 8-5/8" casing at 1490' cemented with 575 sx
   5-1/2" casing at 4452' cemented with 350 sx
   Bridge plug at 4340'
   Completion: San Andres perforations 4138-4157', 7 shots

2. C.H. Juni White #2 Type: P&A
   Location: 1650' FSL, 330' FEL, Sec 15, T-10S, R-32E, Lea Co
   Date drilled: 8/18/64 Depth: 4409'
   Construction: 9-5/8" 36# casing at 252' cement circulated
   5-1/2" 14# casing at 4409' cemented with 150 sx, top of cement at 3100'
   Bridge plug at 4350'
   Completion: San Andres perforations 4140-4162', 32 shots

3. OXY USA Inc State AD #10 Type: temp. abandoned
   Location: 660' FNL, 2310' FEL, Sec 23, T-10S, R-32E, Lea Co
   Date drilled: 7/27/65 Depth: 4350'
   Construction: 7-5/8" 24# casing at 1694', cement circulated
   4-1/2" 9.5# casing at 4348' cemented with 250 sx, top of cement at 3160' (survey)
   Bridge plug at 4274'
   Completion: San Andres perforations 4130-4218', 8 shots

4. OXY USA Inc State BL #1 Type: temp. abandoned
   Location: 300' FWL, 2006' FNL, Sec 14, T-10S, R-32E, Lea Co
   Date drilled: 8/11/62 Depth: 10631'
   Construction: 13-3/8" 48# casing at 396', cement circulated
   8-5/8" 32 & 24# casing at 3443', cement circulated
   5-1/2" 17# casing at 8865' cemented with 300 sx, top of cement at 3000' (survey)
   Bridge plug at 8175'
   Completion: Cement squeezed San Andres perforations 4324-4330', 24 shots

5. OXY USA Inc State BL #3 Type: producer
   Location: 1980' FNL, 1980' FWL, Sec 14, T-10S, R-32E, Lea Co
   Date drilled: 8/29/64 Depth: 4496'
   Construction: 8-5/8" 24# casing at 389', cement circulated
   4-1/2" 9.5# casing at 4495' cemented with 250 sx, top of cement at 3230' (calculated)
   Completion: San Andres perforations 4076-4161', 12 shots

6. OXY USA Inc State BN #1 Type: producer
Location: 1980' FSL, 1650' FWL, Sec 14, T-10S, R-32E, Lea Co
Date drilled: 4/8/63 Depth: 4465'
Construction: 8-5/8" 24# casing at 370', cement circulated
5-1/2" 14# casing at 4496' cemented with 350 sx, top of cement at 3170' (survey)
Completion: San Andres perforations 4415-4421, 24 shots

7. OXY USA Inc State BN #2 Type: producer
Location: 660' FSL, 660' FWL, Sec 14, T-10S, R-32E, Lea Co
Date drilled: 9/25/63 Depth: 4500'
Construction: 8-5/8" 24# casing at 384', cement circulated
4-1/2" 9.5# casing at 4498' cemented with 350 sx, top of cement at 3147' (calculated)
Completion: San Andres perforations 4074-4368, 360 shots

8. OXY USA Inc State BN #3 Type: producer
Location: 1980' FSL, 660' FWL, Sec 14, T-10S, R-32E, Lea Co
Date drilled: 7/24/64 Depth: 4500'
Construction: 8-5/8" 24# casing at 393', cement circulated
4-1/2" 9.5# casing at 4486' cemented with 400 sx, top of cement at 2840' (survey)
Completion: San Andres perforations 4069-4156', 55 shots

9. OXY USA Inc State BN #4 Type: producer
Location: 660' FSL, 1980' FWL, Sec 14, T-10S, R-32E, Lea Co
Date drilled: 12/24/64 Depth: 4531'
Construction: 7-5/8" 24# casing at 1685', cement circulated
4-1/2" 9.5# casing at 4531' cemented with 250 sx, top of cement at 3230' (survey)
Completion: San Andres perforations 4382-4441', 16 shots

10. Penroc Oil Corp State II-23 #1 Type: producer
Location: 660' FNL, 660' FWL, Sec 23, T-10S, R-32E, Lea Co
Date drilled: 2/5/64 Depth: 4401'
Contruction: 7-5/8" 24# casing at 390', cement circulated
4-1/2" 9.5# casing at 4401' cemented with 385 sx, top of cement at 2700' (survey)
Completion: San Andres perforations 4077-4174', 10 shots

11. Penroc Oil Corp State II-23 #2 Type: producer
Location: 1980' FNL, 660' FWL, Sec 23, T-10S, R-32E, Lea Co
Date drilled: 2/5/64/64 Depth: 4319'
Construction: 7-5/8" 24# casing at 1577', cement circulated
4-1/2" 9.5# casing at 4319', cemented with 200 sx, top of cement at 2800' (survey)
Completion: San Andres perforations 4080-4165', 8 shots

12. Tipperary Petroleum Co State BB #2 Type: producer
Location: 1980' FSL, 2310' FEL, Sec 14, T-10S, R-32E, Lea Co
Date drilled: 12/8/65 Depth: 4425'
Construction: 8-5/8" 29# casing at 1605', cement circulated
4-1/2" 9.5# casing at 4425', cemented with 200 sx, top of cement at 3200'
Completion: San Andres perforations 4101-4396', 32 shots

13. Tipperary Petroleum Co State BB #3 Type: temp. abandoned
Location: 1980' FNL, 2310' FEL, Sec 14, T-10S, R-32E, Lea Co
Date drilled: 1/31/66 Depth:

Construction: 8-5/8" 29# casing at 1585', cement circulated
4-1/2" 9.5# casing at 4485', cemented with 300 sx

Completion: San Andres perforations 4111-4453', 90 shots

VII. Proposed operations

1. Average injection rate: 250 BWPD
   Maximum injection rate: 400 BWPD
2. The injection system will be a closed system.
3. Average injection pressure: 200 psi
   Maximum injection pressure: 900 psi
4. The injection water will be collected from wells producing from the San Andres, the proposed injection zone.

VIII. The proposed injection zone is the San Andres formation. In the Mescalero Field, the San Andres is a fractured dolomite. The top of the San Andres is found at an approximate depth of 3420' (930' above sea level). The San Andres is 1400' thick and typically includes 50' of net pay. The local underground source of drinking water is the Ogallala formation and it's base is at a depth of 150'.

IX. Proposed stimulation program:
The State BN #5 will be stimulated with 2000 gal 15% HCl with additives. The well will be evaluated for additional stimulation pending the results of the initial treatment.

X. Logs and test data:
The planned injection well, the proposed State BN #5, has not yet been drilled. The logging program will include GR/CNL/LDT, CYBIL (sonic fracture locator), GR/DLL/MSFL, and GR/CCL/CBL.

XI. Fresh water analyses are attached.

(PROPOSED) OXY USA STATE BN #5

1410' FSL, 1405' FWL, SEC 14, T-10S, R-32E

8 5/8" 24# CASING SET AT 400' IN A 12 1/4" HOLE
CEMENTED WITH 350 Sx (DESIGNED TO CIRCULATE)

2 3/8" 4.7# J55 PLASTIC-LINED TUBING SET AT 4050'
GUIBERSON UNI PACKER VI SET AT 4050'

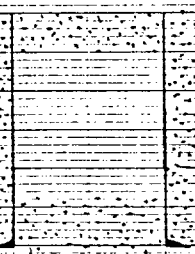
SAN ANDRES PERFORATIONS 4100-4200'

5 1/2" 15.5# CASING SET AT 4500' IN A 7 7/8" HOLE
CEMENTED WITH 350 Sx (DESIGNED TO REACH 3000')

TD 4500'

C.H. JUNE WHITE #1

965' FSL, 330' FEL, SEC 15



10 SX CEMENT PLUG AT SURFACE

8 5/8" CASING AT 1490', CMTD W/ 575 SX

45 SX CEMENT PLUG

CASING SHOT AT 2600'

45 SX CEMENT PLUG

39 SX CEMENT PLUG

BRIDGE PLUG AT 4000'

SAN ANDRES PERFORATIONS 4138-4157'

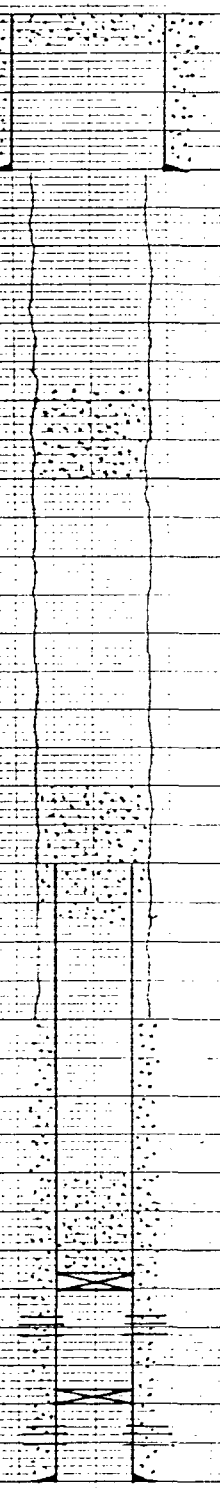
BRIDGE PLUG AT 4340'

SAN ANDRES PERFORATIONS 4359-4406' (UNSUCCESSFUL)

5 1/2" CASING AT 4452', CMTD W/ 350 SX

TD 4452'

C.H. JUNI WHITE #2
1650' FSL, 330' FEL, SEC 15



10 SK CEMENT PLUG AT SURFACE

9 5/8" 36# J-55 CASING AT 252', CMTD W/ 250 SX, CIRC

BASE OF 33 SK CEMENT PLUG AT 1500'

CASING SHOT AT 3420'
BASE OF 33 SK CEMENT PLUG AT 3345'

35 SK CEMENT PLUG
BRIDGE PLUG AT 4000'
SAN ANDRES PERFORATIONS 4140-4162'

BRIDGE PLUG @ 4350'
SAN ANDRES PERFORATIONS 4374-4380' (UNSUCCESSFUL)

5 1/2" 15 1/2# J55 CASING AT 4409', CMTD W/ 150 SX

TD 4409'

P. O. BOX 1468
MONAHANS, TEXAS 79756
PH. 943-3234 OR 563-1040

Martin Water Laboratories, Inc.

709 W INDIANA
MIDLAND, TEXAS 79701
PHONE 683-4521

RESULT OF WATER ANALYSES

LABORATORY NO. 9907

TO: Mr. Ed Pittinger
P. O. Box 50250, Midland, TX

SAMPLE RECEIVED 9-4-90
RESULTS REPORTED 9-7-90

COMPANY Oxy U.S.A. LEASE As Listed

FIELD OR POOL

SECTION ___ BLOCK ___ SURVEY ___ COUNTY Lea STATE NM

SOURCE OF SAMPLE AND DATE TAKEN:

NO. 1 Raw water-taken from water well West of State "AD" #2 Battery @ 10:00 a.m.

NO. 2 Raw water-taken from water well West of State "AD" #2 Battery @ 11:30 a.m.

NO. 3 Raw water-taken from windmill West of State "BL" Battery @ 10:15 a.m.

NO. 4 Raw water-taken from windmill North of State "BN" Battery @ 10:30 a.m.

REMARKS: 1 & 2 0.4 mi. W. of State "BN". 3 & 4 0.7 mile. Samples taken 8-29-90.

CHEMICAL AND PHYSICAL PROPERTIES

	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.0020	1.0025	1.0026	1.0014
pH When Sampled				
pH When Received	7.08	7.45	7.17	7.44
Bicarbonate as HCO_3	112	112	117	62
Supersaturation as $CaCO_3$				
Undersaturation as $CaCO_3$				
Total Hardness as $CaCO_3$	400	410	495	300
Calcium as Ca	136	139	182	101
Magnesium as Mg	15	15	9	12
Sodium and/or Potassium	134	143	129	8
Sulfate as SO_4	295	297	297	176
Chloride as Cl	207	227	263	60
Iron as Fe	0.20	0.20	0.40	0.40
Barium as Ba				
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	899	935	998	418
Temperature °F.				
Carbon Dioxide, Calculated				
Dissolved Oxygen,				
Hydrogen Sulfide	0.0	0.0	0.0	0.0
Resistivity, ohms/m at 77° F.	7.57	7.10	6.60	16.90
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml				
Nitrate, as N	3.2	2.6	11.3	1.2

Results Reported As Milligrams Per Liter

Additional Determinations And Remarks

Form No. 3

By ___

P. O. BOX 1468
MONAHANS, TEXAS 79756
PH. 943-3234 OR 563-1040

Martin Water Laboratories, Inc.

709 W. INDIANA
MIDLAND, TEXAS 79701
PHONE 683-4521

RESULT OF WATER ANALYSES

LABORATORY NO. 9907 (Page 2)

TO: Mr. Ed Pittinger
P. O. Box 50250, Midland, TX

SAMPLE RECEIVED 9-4-90

RESULTS REPORTED 9-7-90

COMPANY Oxy U.S.A. LEASE As Listed

FIELD OR POOL

SECTION ___ BLOCK ___ SURVEY ___ COUNTY Lea STATE NM

SOURCE OF SAMPLE AND DATE TAKEN:

NO. 1 Raw water-taken from windmill North of State "BN" Battery @ 11:00 a.m.

NO. 2

NO. 3

NO. 4

REMARKS: 0.7 mile. Sample taken 8-29-90.

CHEMICAL AND PHYSICAL PROPERTIES

	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.0013			
pH When Sampled				
pH When Received	7.50			
Bicarbonate as HCO_3	59			
Supersaturation as $CaCO_3$				
Undersaturation as $CaCO_3$				
Total Hardness as $CaCO_3$	290			
Calcium as Ca	102			
Magnesium as Mg	8			
Sodium and/or Potassium	11			
Sulfate as SO_4	176			
Chloride as Cl	60			
Iron as Fe	0.40			
Barium as Ba				
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	416			
Temperature °F.				
Carbon Dioxide, Calculated				
Dissolved Oxygen,				
Hydrogen Sulfide	0.0			
Resistivity, ohms/m at 77° F.	17.05			
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml				
Nitrate, as N	1.2			

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

By W. Reagan White

W. Reagan White, B.S.

McCORMACK SILURIAN
llowable 187 GOR Limit 2,000
No Test Required
singhead Gas Limit 374 MCF
USA INC.
McComack
11 A 32-21-37 M

McCORMACK SILURIAN, SOUTH
llowable 187 GOR Limit 2,000
No Test Required
singhead Gas Limit 374 MCF
PETROLEUM INC.
liott 5 D 22-22-37 7A

McDONALD DEVONIAN
Allowable 600 GOR Limit 2,000
No Test Required
Casinghead Gas Limit 1200 MCF
S, CO., HARVEY E.
ald Unit
2 D 3-14-36 M

McDONALD UPPER PENNSYLVANIAN
Allowable 320 GOR Limit 2,000
No Test Required
Casinghead Gas Limit 640 MCF
, J.M. CORP.
ffin 1 A 4-14-36 M

McDONALD PENNSYLVANIAN, WEST
Allowable 320 GOR Limit 2,000
Casinghead Gas Limit 640 MCF
S, HARVEY E. CO.
ardson Fee
(6) 3 D 5-14-36 M 2000

MEDICINE ROCK DEVONIAN
(80 Acre Spacing)
Allowable 490 No GOR Limit
No Gas Test Required
Casinghead Gas Limit 980 MCF
LO, INC.
ro-Stone
(16) 1 G 22-15-38 M

MESA QUEEN ASSOCIATED
ing Oil - 40 Gas - 160
Allowable 80 GOR Limit 5,000
Gas Allowable MCFD
- 400 Gas - 1600
DA OPERATING CO.
il 7 State Com.
1 E 7-16-32 MGW AF 1.00

terflood Project)
ELL, RUSSELL
444
imum Allowable Formula:
25 X 80 = 2000
a Queen Unit
3 A 16-16-32
7 F "
13 I 17-16-32
14 L 16-16-32
15 K 16-16-32
17 M 17-16-32
2 B 16-16-32 Input
6 E " "
9 H " "
11 K 17-16-32 "
18 N " "
20 P " "
25 N 16-16-32 "

WESTALL, RAY
Mesa Queen 7 State
" 1 P 7-16-32 MGW AF 1.00

MESCALERO CISCO, NORTH
Top Allowable 230 GOR Limit 4,500
Top Casinghead Gas Limit 1035 MCF
BISON PETROLEUM CORP.
State 11(5) 1 L 11-10-32 M 3111

MESCALERO ESCARPE BONE SPRING
Top Allowable 230 GOR Limit 2,000
Top Casinghead Gas Limit 460 MCF
BISON PETROLEUM CORP.
Cavineas 10 Federal
" (31) 2 O 10-18-33 M 2516

CHEVRON USA INC.
Cockburn G Federal
/" (26) 1 L 10-18-33 M 462
Lea XA State
" (50) 1 L 7-18-34 M 2160
" (28) 2 M " *207 1571
Acreage factor .900
*Acreage Factor Limits
" (39) 3 K 7-18-34 M 1128
" (12) 4 N " M 1083

ECHO PRODUCTION, INC.
Texaco 14 Federal
" (190) 1 C 14-18-33 M 421

MARATHON OIL CO.
State E-744-15
" (22) 1 I 15-18-33 M 1364

MERIDIAN OIL INC.
Cavineas Federal
" (91) 1 K 11-18-33 M 714
" (25) 2 N " M 1120
" (122) 3 M 11-18-33 M 1122
" (86) 4 F 11-18-33 M 558
" (235) 5Y P 10-18-33 N230 779
" (57) 6 C 11-18-33 M 719

ORYX ENERGY COMPANY
Mescalero Ridge Federal
" (142) 1 B 13-18-33 M 1655
" (15) 3 A " M 6467
Mescalero Ridge B Federal
" (4) 1 C 13-18-33 M TSTM
" (4) 2 D 13-18-33 M TSTM
Mescalero Ridge C Federal
" (26) 1 D 18-18-34 *207 423
Acreage factor .900
*Acreage Factor Limits
Mescalero Ridge D Federal
" (41) 1 B 14-18-33 M 3512

OXY USA INC.
Federal AB
" (35) 1 H 11-18-33 M 1714
" (23) 2 I " M 1956
" (101) 3 J 11-18-33 M 1960
" (16) 4 P " M 1937
" (55) 5 G 11-18-33 M 1963
" (18) 6 B 11-18-33 M 1944
" (35) 7 O 11-18-33 M 1942
State DW(44) 1 J 12-18-33 M 1522
" (30) 2 K " M 2166

MESCALERO ESCARPE BONE SPRING CONT'D
OXY USA INC. CONT'D
State DW(73) 6 I 12-18-33 M 1602
" (45) 8 O " M 1622
" (34) 9 L " M 1088
" (60) 10 N " M 1600
" (10) 11 M 12-18-33 M 1000

TEXACO INC.
M.T.Keohane Federal
" (204) 3 D 14-18-33 M 898

YATES, HARVEY E. COMPANY
Cal-Mon 15 State
" (124) 1 D 15-18-33 M 903
" (126) 2 C 15-18-33 M 714
Cavineas 10 Federal
" (263) 1 I 10-18-33 N230 1084
" (232) 3 H 10-18-33 N230 1086
/" 4 A 10-18-33 PA
Cavineas 11 Federal
" (259) 1 L 11-18-33 N230 1189
" (246) 2 E " N230 796
" (62) 3 D 11-18-33 M 855
Corbin 15 Federal
" (44) 1 E 15-18-33 M 932
Sheldon 15 Federal
" (56) 1 A 15-18-33 M 1125

MESCALERO PERMO PENN
Top Allowable 230 GOR Limit 2,000
No Test Required
Top Casinghead Gas Limit 460 MCF
OXY USA INC.
State AD 11 O 22-10-32 M

TIPPERARY PETROLEUM CO.
N.M. B 2 A 27-10-32 M

MESCALERO SAN ANDRES
Top Allowable 80 GOR Limit 2,000
No Test Required
Top Casinghead Gas Limit 160 MCF
BOBCO INTERNATIONAL INC.
New Mexico E State
" 1 D 26-10-32 M
/" 2 E " No C-115
/" 3 C " "
/" 4 F " "
/" 5 D 26-10-32 No C-115

HEADINGTON OIL CO.
Harris State
" 1 K 23-10-32 M
" 2 N 23-10-32 M
" 3Y J " M
" 4 O " M

KERR-McGEE CORP.
Sunray St.
" 1 M 11-10-32 M
" 2 L " M

MILFORD OIL CO.
State 1 I 10-10-32 M
Suzanne State
" 1 I 27-10-32 M

MONARCH CORPORATION
White A State
" 2 A 15-10-32 M

OXY USA INC.
Lane 1 C 14-10-32 M
State AD 3 P 22-10-32 M
" 9 G 23-10-32 M
" 10 B " M
State BL 1 E 14-10-32 M
" 2 D " M
" 3 P " M
State BN 1 K 14-10-32 M
" 2 M " M
" 3 L " M
" 4 N " M

PENROC OIL CORP.
State 11-23
" 1 D 23-10-32 M
" 2 E " M
" 3 L 23-10-32 M
" 4 C " M
" 5 M 23-10-32 M
" 6 F " M

TIPPERARY PETROLEUM CO.
N.M. B 4 G 27-10-32 M
" 6 A " M
" 7 H 27-10-32 M
" 8 B " M
New Mexico X
" 1 P 10-10-32 M
State BB 1 B 14-10-32 M
" 2 J " M
" 3 G 14-10-32 M
" 4 O " M

TIPTON, DWIGHT A.
N.M. A State
" 1 E 11-10-32 M
" 2 E " M

TXO PRODUCTION CORP.
N.M. St. 1 N 11-10-32 M

MIDWAY ABO
Top Allowable 230 GOR Limit 2,000
No Test Required
Top Casinghead Gas Limit 460 MCF
BTA OIL PRODUCERS
Midway 8408 JV-P
" 1 G 13-17-36 N230
" 3 I 13-17-36 M
" 4 D 13-17-36 M
Midway B, 8408 JV-P
" 1 F 13-17-36 M

COLUMBUS ENERGY CORP.
Shipp A 1 G 17-17-37 M
" 3 D " M
So.Un.St. 1 D 16-17-37 M

CRUMP PETROLEUM CORP.
New Mexico DE State
" 1 F 18-17-37 M

LOVELADY, IKE INC.
Haas State 1 P 9-17-37 M

McNEELY, LUTHER
Lea KN St. 1 A 17-17-37 M
" 2 B " M

PENROC OIL CORP.
Lov. 16 St. 1 C 16-17-37 M