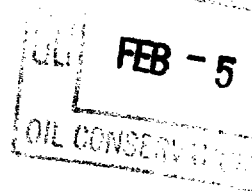


SANDSTONE OIL & GAS

1330 E. 8th St., Suite 304
Odessa, Texas 79761
915 334 8531

January 29, 1992

New Mexico Energy & Minerals Department
Oil Conservation Division
P. O. Box 2088
Santa Fe, NM 87504



Attention: David Catanach

Dear Mr. Catanach,

Enclosed please find our application for authorization to inject
for the Tom "36" State #2 in Section 36 T7S-R31E of Chaves
County, NM.

Sincerely,

David Moore
Engineer

Enclosures

APPLICATION FOR AUTHORIZATION TO INJECT

- I. Purpose: ☐ Secondary Recovery ☒ Pressure Maintenance ☐ Disposal ☐ Storage
Application qualifies for administrative approval? ☐ yes ☐ no
- II. Operator: Sandstone Oil & Gas
Address: 1330 East 8TH Street Ste. 304
Contact party: David Moore Phone: 915-334-8531
- 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 ☒ 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: David Moore Title: Partner

Signature:  Date: 1/27/91

- * 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.

Items # VI, VIII, & X Submitted To The State When well was
drilled in 1979. Item #XI Attached

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate Division
dennis 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.

C-108
APPLICATION FOR AUTHORIZATION TO INJECT
SANDSTONE OIL & GAS
TOM "36" STATE #2
CHAVES COUNTY, NEW MEXICO

- I. The purpose of converting this well is to make a disposal well for produced San Andres water into the San Andres formation.
- II. Operator: Sandstone Oil & Gas
1330 E. 8th St., Suite 304
Odessa, Texas 79761
- III. Well Data: See attached diagram.
- IV. This is not an expansion of an existing project.
- V. See attached map.
- VI. Wells within this area of review penetrate the proposed injection zone; well bore schematics are attached.
- VII. 1. Proposed daily injection volume approximately 200 BWPD. Maximum daily injection approximately 400 BWPD.
2. This will be a closed system.
3. Proposed average injection pressure: 0 - 300#. Proposed average maximum injection pressure: 800#.
4. Sources of injected water would be produced water from the San Andres zone on same lease with no compatibility problems.
5. Chemical analysis of produced water from existing wells is attached.
- VIII. 1. The proposed injection interval is the portion of the San Andres formation consisting of dolomite from estimated depths of 3950' to 4300'.
2. There are no fresh water wells within one mile.
- IX. No initial stimulation is required, because the well will take fluid on vacuum.
- X. Logs were filed with the State of New Mexico when the well was drilled in 1979.
- XI. No windmills or fresh water wells exist within one mile of radius of the subject location.

XII. Sandstone Oil & Gas has examined geologic and engineering data and has found that there is no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.

XIII. Proof of Notice

A. Certified letters sent to the offset operators.

B. Copy of legal advertisement. (Attached)

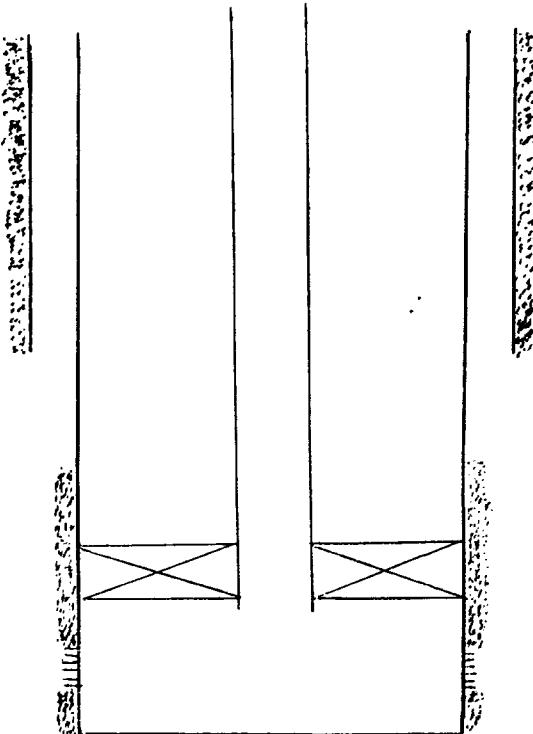
XIV. Certification is signed.

INJECTION WELL DATA SHEET

SANDSTONE OIL & GAS

TOM "36" STATE

OPERATOR		LEASE		
2	1980' FNL & 660 FEL	36	7-South	31-East
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE
Unite Letter H	State Lease #L-5120			

SchematicTabular DataSurface Casing

Size 8 5/8 " Cemented with 750 sx.
TOC Surface feet determined by Sight
Hole size 12 1/4"

Intermediate Casing

Size _____ " Cemented with _____ sx.
TOC _____ feet determined by _____
Hole size _____

Long string

Size 5 1/2 " Cemented with 400 sx.
TOC 2500' feet determined by Calculation
Hole size 7 7/8"
Total depth 4305'

Injection interval (Perforated)

4197 feet to 4217 feet
(perforated or open-hole, indicate which)

CHAVES COUNTY

NEW MEXICO

TOM TOM FIELD

Well: UNION OIL CO OF CALIFORNIA 2 Tom "36" State
Loc'n: 15 mi SE/Boaz, 1980' FNL, 660' FEL Sec 36-7S-31E

Result: OIL DO

Spud: 7-17-79; Comp: 8-5-79; Elev: 4438' Grd; TD: 4305' San And; PE: 4260'
Casing: 8-5/8" 1654' /750 sx; 5-1/2" 4305' /400 sx
Prod Zone: (San And), T/Pay 4197', Prod thru Perfs 4197-4217'
IPP: 240 BOPD + 32 BW, Grav 23, GOR 432
Comp Info: Perf (San And) 4197-4200', 4207-10', 4214-17' w/2 SPF, A/2200 gal.
S/25 BW w/SSO&G/3 hrs & S/Dry, ran GRL, DILL, SN, PDC logs, C/WFF
Tops: (EL) Rustler Anhydrite 1753', Salt 1779', Base Salt 2168', Yates 2182', San And
3331'
API No: 30-005-20687

Oilfield Information Corporation
ON PROHIBITED

Tubing size 2 3/8 lined with Plastic Coating set in a
(material)
Guiberson UNI VI packer at 4150 feet
(brand and model)

(or describe any other casing-tubing seal).

Other Data

- Name of the injection formation San Andres
- Name of Field or Pool (if applicable) Tomahawk San Andries
- Is this a new well drilled for injection? ☐ Yes ☒ No
If no, for what purpose was the well originally drilled? Producing Oil Well
- Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) NO
- Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. None

Sandstone Oil & Gas

TOM "36" STATE # 1

Chaves County, New Mexico

Unit letter A, 660' FNL + 660' FEL

Sec. 36, Twp 7-S, RGE 31-E

CHAVES COUNTY

NEW MEXICO

UNDESIGNATED

ell: UNION OIL CO. OF CALIFORNIA 1 Tom "36" State Result: OIL DO
 con: 15 mi SE/Boaz, 660' FNL, 660' FEL Sec 36-7S-31E

Spud: 7-9-79; Comp: 7-23-79; Elev: 4420' Grd; TD: 4295' San And; PB: 4252'
 Casing: 8-5/8" 1749' / 750sx; 5-1/2" 4293' / 400sx

Prod Zone: (San And), T/Pay 4104', Prod thru Perfs 4104-38'

IPF: 518 BOPD + 58 BW/24 hr test thru 24/64" ch, Grav 23, GOR 432,

CP Pkr, TP 240#

Comp Info: Perf (San And) 4104-07, 4111-13, 4122-28, 41-38' w/2 SPF,

S/4 BO + 7 BW/5 hrs, A/4200 gals, F/185 BO + 4 BW/24 hrs thru

18/64" ch, TP 245#, ran DILL log, C/WEK

Tops: (EL) Rustler Anhydrite 1760', Salt 1780', Base Salt 2060',

Yates 2168', San And 3340'

12 3/4" Hole
 8 3/8" 24# c 1749'
 CMT w/ 750sx
 Cement Cize. TO Surface
 7/10/79

EST. TOC 2,500' +/-

Refractations
 4104-4138
 (36 Holes)

7 7/8" Hole
 5 1/2" 15.5# c 4295'
 CMT w/ 400sx 50/50 P13
 7/10/79

CHAVES COUNTY NEW MEXICO TOMAHAWK
Well: UNION OIL OF CALIF, 4 Tom "36" State DO
Loc'n: 15 mi SE/Boaz; 1980'FSL, 1980'FEL Sec 36-7S-31E
Spud: 3-2-85; Comp: 4-17-85; Elev: 4393' Grd; TD: 4395' SADR; PB: 4340'
Casing: 8-5/8" 1670' / 800sx; 5 1/4" 4395' / 400 sx; 2-3/8" 4010'
Prod Zone: (San And), Prod thru Perfs 3994-4300'
IPP: 16 BOPD + 24 BW, Grav 19.9, GOR 530
Comp Info: randLL, MSFL, GRU, CNL, LDT logs, Rig Rel 3-13-85;
no cores or DSTs; Perf (San And) 3994-4300', A/30, 000 gals
28% HCN + 7500 gals, 2% KCL; C/Rhymes #3
Tops EL: Rustler Anyh 1510', Yates 2128', San And 3272'
API No: 30-005-21015

SANDSTONE OIL & GAS
Tom "36" STATE #4
CHAVES COUNTY, NEW MEXICO

UNIT LETTER J, 1980' FSL + 1980' FEL
Sec 36, TWP 7-S, RGE 31-E

12 1/4" Hile
8 5/8" 24# @ 1670'
CMT W/ 800SX
CEMENT CIRC. TO SURFACE
3/3/85

Est TOC 2500' +/-

Perforations
3994'-4300'
(176 holes)

7 7/8" Hile
5 1/2" 15.5# @ 4395'
CMT W/ 400 SX CLASS C
3/14/85

Sandstone Oil + Gas
TOWN 36 STATE #5
CHAVES COUNTY, NEW MEX. CO
UNIT LETTER P, 660 FEL, 660 FSL
Sec 36, TWP 7-S, RGE. 31-E

12 1/4" Hole
898 24# @ 1570'
Cmt w/ 765 sz
Cement Lin. to Surface
11/ 191

Est. TOC 2,500' + 1'

Refractations
4089' 4180'
(37 Holes)

7 7/8" Hole
5 1/2" 15.5# @ 4300'
Cmt w/ 400 sz 50/50 ppg
11/ 191

Spud: 2-14-80; Comp: 5-3-80; Elev: 4422' Grd; TD: 4290' SADR; PB: 4250'
 Casing: 8-5/8" 1710' / 700sx; 4-1/2" 4290' / 300sx; 2-3/8" 4232'
 Prod Zone: (San And) T/Pay 4090', Prod thru perfs 4090-4162'
 IFF: 40 BOPD + 65 BW; GOR 536; Grav 24
 Comp Info: Ran SNP, DILL logs, Perf (San And) 4090', 4095', 4100', 4106-
 17', 4121-23', 4127', 4134', 4139', 4154-62' w/ 1 SPF, A/3000 gals (20%)
 C/WEK
 Tops: (EL) Rustler 1712', Salt 1748', Base Salt 2148', Base Salt
 2148', San And 3290'

CHAVES COUNTY NEW MEXICO TOMAHAWK
 YATES PETROLEUM CORP. 1 Loveless "LQ" State Result: OIL DO
 19 mi E/Elkins, 660' FNL, 1980' FEL of Sec 36-7S-31E

YATES Petroleum Corp.
 Loveless "LQ" STATE #1
 Chaves County, New Mexico
 660' FNL + 1980' FEL
 Sec. 36, TWP. 7-S, R6E. 31-E

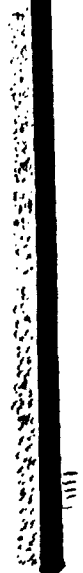


12 1/4" Hole
 8 5/8" @ 1710'
 Cmt wt 70054
 Cement Acc. to Surface
 2/80

Est. TOC 3100' +/-

Restrictions

4090'-4162'



9 7/8" Hole
 4 1/2" @ 4290'
 Cmt wt 300 sx 50/50 p2
 2/80

API no: 30-005-20787

Well: YATES PETROLEUM CORP. 2 Loveless "LQ" State Result: OIL DO
Loc: 15 mi SE/Boaz, Sec 36, 7S-31E-1980 FNL-1980 FWL Sec

CHAVES COUNTY

NEW MEXICO

TOMAHAWK FIELD

YATES Petroleum Corp.
Loveless "LQ" STATE #2
Chaves County, New Mexico
1980' FNL + 1980' FWL
Sec. 36, Twp. 7-S, RGE. 31-E

Spud: 7-16-81, Comp: 8-21-81, Elev: 4417' GL, TD: 4298' (SADR) PB: 4251
Casing: 8 5/8" 1679' / 650sx, 4 1/2" 4298' / 300sx-2 3/8" 4108
Prod Zone: (SADR) T/Pay 4058', Prod thru Perfs 4058-4179'
IPP: 35 BOPD+38 BW, Gty 32, GOR 1000
Comp Info: Perf (SADR) 4058-4179 (OA) A/3000 gals, C/La Rue #2
Tops: (EL) Rustler 1693', Salado 1716', Yates 2117', Queen 2780',
SADR 3261'

Perforations
4058'-4179'

12 1/4" Hole
8 5/8" @ 1679'
Cmt w/ 650 sx
Cement to Surface
7/81

Est. TOC 3100' +/-

7 7/8" Hole
4 1/2" @ 4298'
Cmt w/ 300sx 50/50 p02
7/81

Murphy Operating Company
Cone Federal # 5
Roosevelt County, New Mexico
1980' FNL & 660' FWL
Sec. 31, Twp 7-5, RGE. 32E

oleum Information Corporation
ON PROHIBITED

Well: SUNDANCE OIL CO. 5 Cone Federal
Loc: 15-1/2 mi S/Kenna; Sec 31-7S-32E; 1980' FNL 660' FWL of Sec;
Roosevelt County NEW MEXICO TOMAHAWK FIELD
Result: OIL DO

Spud: 10-25-78; Comp: 12-5-78; Elev: 4442' Grd; TD: 4330' San And; PB: 4289'
Casing: 8-5/8" 1750'/600 sx; 4-1/2" 4330'/300 sx;
Prod Zone: (San And) T/Pay 4210', Prod thru Perfs 4210-58'
IPP: 200 BOPD + 10 BW, GOR 441-J, Grav (NR);
Comp Info: Perf (San And) 4210-58', A/5000 gals (20%); C/WEK Drfg.
Tops (TL) Rustler 1763', Salado 1798', Yates 2190', San Andres 3340', P1 Marker
3896', P-1 4044', P-2 4126', P-3 4238'.
API No: 30-041-20464

Replaces Card 19 dated 1-10-79 to show correct producing interval & add log tops;
Orig reported 4210-48'.

12 1/4" Hole
8 5/8" @ 1950'
Cmt w/ 600 sx
Cement to Surface
10/78

EST. TOC 3100' +/-

Reformations
4210'-58'

7 7/8" Hole
4 1/2" @ 4330'
Cmt w/ 300 sx 50/150 P02
11/78

Murphy Operating Company
Cone Federal # 12
Roosevelt County, New Mexico
1980 FNL, 1901 FWL
Sec 31, TWP 7-S, 32-E

Well: SUNDANCE OIL CO. 12 Cone Federal
Loc'n: 19 mi S/Elda, 1980' FNL, 1901' FWL Sec 31-7S-32E
ROOSEVELT COUNTY NEW MEXICO TOMAHAWK FIELD
Result: OIL DO

Spud: 6-6-79; Comp: 7-24-79; Elev: 4428' Grd; ID: 4305' San And; FB: 4260'
Casing: 8-5/8" 1775' / 450 sx; 4-1/2" 4305' / 300 sx
Prod Zone: (San And), T/Pay 4133', Prod thru Perfs 4133-4211'
IPP: 34 BOPD + 40 BW, Grav 38, GOR NR
Comp Info: Perf (San And) 4123-36', 4139-41', 4155-59', 4164-69', 4171', 4187', 4192',
4207-11' w/2 SP, A/5000 gals, C/WEK
Topso (EL) Rustler 1758', Salado 1780', Yates 2196', San And 3337'
API No: 30-041-20488

Perforations
4133-4211

12 1/4" Hole
8 5/8" @ 1775'
CMT / 450 sx
Cement to Surface
6/79

EST. TOC 3100' +/-

7 7/8" Hole
4 1/2" @ 4305'
CMT w/ 300 sx 50/50 A2
6/79

Murphy Operating Company
CONE Federal #13
460' FWL + 1980' FSL
Sec. 31 - Twp 7-S, RGE 32-E
Roosevelt County, New Mexico

ROOSEVELT COUNTY NEW MEXICO TOMAHAWK FIELD

Well: SUNDANCE OIL CO. 13 Cone Federal "OWWO" Result: OIL DO
Locn: 19 mi SW/Elida; Sec 31-7S-32E; 1980' FSL 660' FWL of Sec;
(Orig Casldo, Inc., 1 Shell-Federal, D&A 10, 2-67, OTD 4295);

Re-Spud: 6-29-79; Comp: 8-26-79; Elev: 4476' DF; TD: 4300' SA; PB: 4231'
Casing: 8-5/8" 330' / 150sx; 4-1/2" 4300' / 760sx;
Prod. Zone: (SanAnd) T/Pay 4147', Prod thru Perfs 4147-4232'
IPP: 23 BOPD + 18 BW, GOR 695-1, Grav NR
Comp Info: Deepened 4295-4300', Perf (San And) 4147-54', 4160-66',
4169-78', 4210-15', 4228-32' w/2SPF; A/6000 Gals (20%);
Tops: NR
API No: MX 20049

12 1/4" Hole
8 5/8" @ 330'
Cmt w/ 150 SX
Cement Cure TO Surface
9/67

EST. TOL 1400' +/-

Perforations
4147'-4232'

7 7/8" Hole
4 1/2" @ 4300'
Cmt w/ 760 SX 50/50 POZ
7/79

PRODUCTION
TOPS; (EL) San And 3306'
API No: 30-041-20509

Casing: 8-5/8" 1764' / 500sx; 4-1/2" 4270' / 300sx
Prod Zone: (San And), T/Pay 4094', Prod thru Perfs 4094-4175'
IPP: 96 BOPD + 47 BW, Grav NR, GOR NR
Comp Info: Perf (San And) 4094-4112; 4119-38; 4171-75', A/5000 gals,
C/WEK

ROOSEVELT COUNTY NEW MEXICO TOMAHAWK FIELD
Well: SUNDANCE OIL CO. 20 Cone Federal
Loc: 12 mi SE/Kenna, 660' FNL, 374' FWL of Sec 31-7S-32E
Result OIL DO

Spud: 11-27-79; Comp: 2-4-80; Elev: 4410' Grd; TD: 4270' San And; PB: 4230'

Perforations
4094-4175

Murphy Operating Company
Cone Federal #20
Roosevelt County, New Mexico
660' FNL + 374' FWL
Sec. 31, TWP 7-S, RGE 32 E



12 1/4" Hole
8 5/8" @ 1764'
Cmt w/ 500sx
Cement to surface
11/79

EST. TOC 3100' +/-

7 7/8" Hole
4 1/2" @ 4270'
Cmt w/ 300sx 50/50 por
12/79

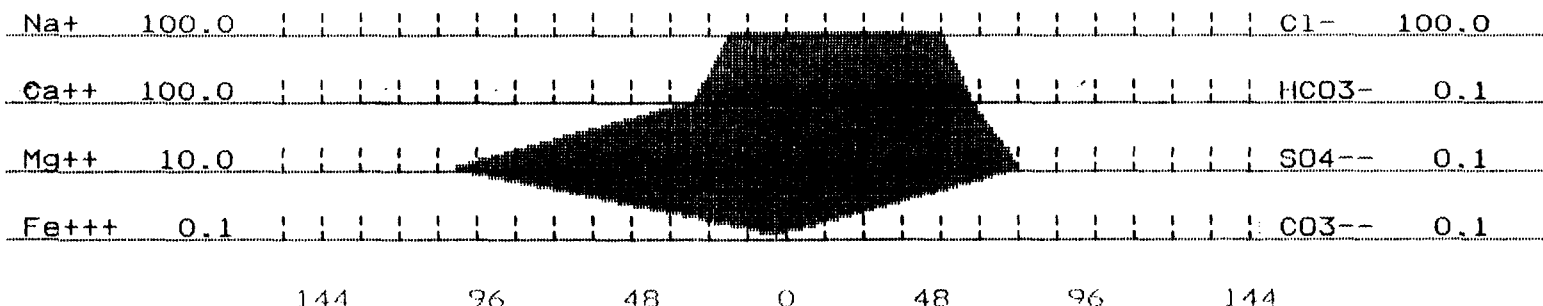


WATER ANALYSIS for Union oil of Calif

Date of Analysis: MARCH 23, 1987
Company: Union oil of Calif
State: NM
Lease: Tom St. 36
Oil (bbl/day): N/D
Type of Water: N/D
Sample Source: Wellhead
Representative: Joe Lewis

Analysis #: 1961
Company Address: Lovington
Field: N/D
Well #: #1
Water (bbl/day): N/D
Temp., C: 20
Date of Sampling: MARCH 20, 1987
Analysis By: Bob Wallace

WATER ANALYSIS PATTERN (number beside ion symbol indicates me/l scale unit)



DISSOLVED SOLIDS

CATIONS	me/l	mg/l
Total Hardness	: 3560.00	
Calcium, (Ca++)	: 2560.00	51323.18
Magnesium, (Mg++)	: 1000.00	12151.40
Iron, (Fe+++)	: 0.05	1.00
Barium, (Ba++)	: 0.00	0.00
Sodium, Na+(calc)	: 1523.86	35048.73
Manganese, (Mn++)	: 0.00	0.00

ANIONS

Chloride, Cl-	: 5070.42	179993.61
Sulfate, SO4--	: 7.49	360.00
Carbonate, CO3--	: 0.00	0.00
Bicarbonate, HCO3-	: 6.00	366.08
Hydroxyl, OH-	: 0.00	0.00
Sulfide, S--	: 0.00	0.00
TOTAL SOLIDS (quant.)	: 456877.90	

DISSOLVED GASES

Hydrogen sulfide:	50.00	mg/l
Carbon dioxide	: 198.00	mg/l
Oxygen	: 0.50	mg/l

PHYSICAL PROPERTIES

pH	: 5.25
Spec Grav.	: 1.190
TDS (calc.)	: 279250.00

SCALE STABILITIES

Temp., C	CaCO3	CaSO4	BaSO4
20.0	N/D	N/D	N/D
20.0	N/D	N/D	N/D
20.0	N/D	N/D	N/D
Max entity, (calc.)	1910		0
RESIDUAL HYDROCARBONS:	N/D		

N/D : not determined

Remarks: At 20' C severe Calcium Carbonate scaling
At 20' c Calcilum Sulfate scaling is unlikely

HALLIBURTON DIVISION LABORATORY

HALLIBURTON SERVICES

MIDLAND DIVISION

HOBBS, NEW MEXICO 88240

LABORATORY WATER ANALYSIS

No. W79-761To Union Oil Company of CaliforniaDate 8-3-79Box 671Midland, Texas

This report is the property of Halliburton Company and neither it nor any part thereof nor a copy thereof is to be published or disclosed without first securing the express written approval of laboratory management; it may however, be used in the course of regular business operations by any person or concern and employees thereof receiving such report from Halliburton Company.

Submitted by _____ Date Rec. 8-2-79Well No. ~~W-79~~ "36" State #2 Depth _____ Formation San Andres

County _____ Field _____ Source _____

Resistivity	<u>0.064 @ 74°F.</u>	
Specific Gravity	<u>1.157</u>	
pH	<u>5.6</u>	
Calcium (Ca)	<u>26,000</u>	*MPL
Magnesium (Mg)	<u>6,480</u>	
Chlorides (Cl)	<u>138,000</u>	
Sulfates (SO ₄)	<u>Light</u>	
Bicarbonates (HCO ₃)	<u>Nil</u>	
Soluble Iron (Fe)	<u>Medium</u>	

Remarks:

*Milligrams per liter

Respectfully submitted,

Analyst: Jackson

HALLIBURTON COMPANY

By

W. L. Brewer

CHEMIST

NOTICE

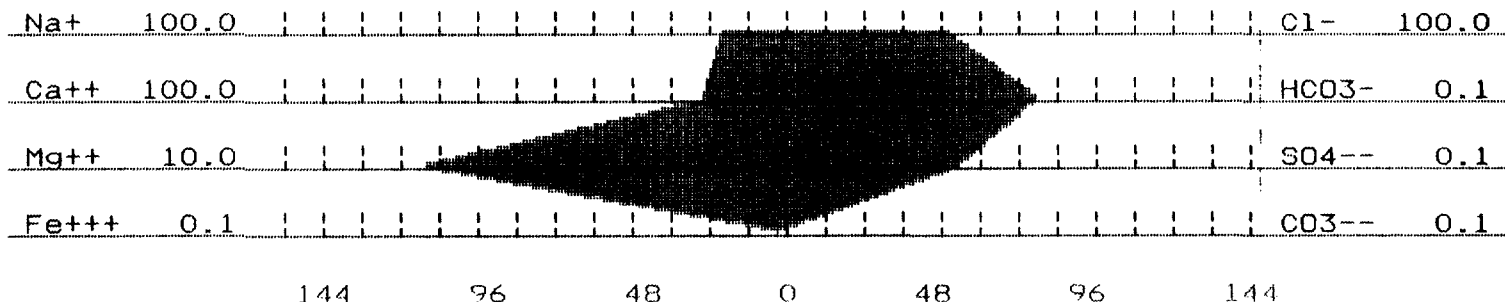
THIS REPORT IS LIMITED TO THE DESCRIBED SAMPLE TESTED. ANY USER OF THIS REPORT AGREES THAT HALLIBURTON SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE, WHETHER IT BE TO ACT OR OMISSION, RESULTING FROM SUCH REPORT OR ITS USE.



WATER ANALYSIS for Union Oil of Calif

Date of Analysis:	MARCH 23, 1987	Analysis #:	1962
Company:	Union Oil of Calif	Company Address:	Lovington
State:	NM	Field:	N/D
Lease:	Tom St 36	Well #:	#4
Oil (bbl/day):	N/D	Water (bbl/day):	N/D
Type of Water:	N/D	Temp., C:	20
Sample Source:	Wellhead	Date of Sampling:	MARCH 20, 1987
Representative:	Joe Lewis	Analysis By:	Bob Wallace

WATER ANALYSIS PATTERN (number beside ion symbol indicates me/l scale unit)



DISSOLVED SOLIDS

CATIONS	me/l	mg/l
Total Hardness :	3500.00	
Calcium, (Ca++) :	2400.00	48115.48
Magnesium, (Mg++) :	1100.00	13366.54
Iron, (Fe+++)	0.05	1.00
Barium, (Ba++) :	0.00	0.00
Sodium, Na+(calc):	1809.33	41614.70
Manganese, (Mn++) :	0.00	0.00

ANIONS

Chloride, Cl-	:	5295.77	187993.25
Sulfate, SO4--	:	5.62	270.00
Carbonate, CO3--	:	0.00	0.00
Bicarbonate, HCO3-	:	8.00	488.10
Hydroxyl, OH-	:	0.00	0.00
Sulfide, S--	:	0.00	0.00
TOTAL SOLIDS (quant.):			466849.00

DISSOLVED GASES

Hydrogen sulfide:	50.00	mg/l
Carbon dioxide :	237.60	mg/l
Oxygen :	0.20	mg/l

PHYSICAL PROPERTIES

pH	:	5.30
Spec Grav.	:	1.190
TDS (calc.)	:	291857.06

SCALE STABILITIES

Temp., C	CaCO3	CaSO4	BaSO4
20.0	N/D	N/D	N/D
20.0	N/D	N/D	N/D
20.0	N/D	N/D	N/D

Max entity, (calc.) 1910 0

RESIDUAL HYDROCARBONS: N/D

N/D : not determined
Remarks: At 20'C severe calcium carbonate scaling
At 20'C Calcium sulfate scaling is unlikely

Legal Notice to be published

Notice of application for injection permit

Sandstone Oil & Gas of 1330 E. 8th Street #304, Odessa, Texas 79761 has applied with the State of New Mexico Oil Conservation Division for a permit to inject fluid into a formation. Which is productive of oil or gas.

The applicant proposes to inject fluid into the Tom 36 State #2. The proposed injection well is located 18 miles SW of Elida, New Mexico in the Tomahawk field in Chaves County, New Mexico. Fluid will be injected into the subsurface interval from 4197' to 4217'.

Request for a public hearing from persons who can show they are adversely affected, or request for further information concerning any aspect of the application should be submitted in writing within fifteen days of this publication to New Mexico Oil Conservation Division, P.O. Box 1980, Hobbs, New Mexico 88210.

SANDSTONE OIL & GAS

1330 E. 8th St., Suite 304
Odessa, Texas 79761
915 334 8531

January 29, 1992

CERTIFIED RETURN RECEIPT


Strata Production Company
648 Petroleum Bldg.
Roswell, New Mexico 88201

Gentlemen:

Enclosed please find a copy of form C-108 (Application for Authority to Inject) on Sandstones' Tom "36" State #2 in Section 36 T7S-R31E of Chaves County, NM.

You may contact me at 915 334 8531 for any discussion regarding this project.

Sincerely,



David Moore
Engineer

Enclosure

SANDSTONE OIL & GAS

1330 E. 8th St., Suite 304
Odessa, Texas 79761
915 334 8531

January 29, 1992

CERTIFIED RETURN RECEIPT

Petroleum Development Corporation
9720-B Candalaria NE
Albuquerque, NM 88172

Gentlemen:

Enclosed please find a copy of form C-108 (Application for Authority to Inject) on Sandstones' Tom "36" State #2 in Section 36 T7S-R31E of Chaves County, NM.

You may contact me at 915 334 8531 for any discussion regarding this project.

Sincerely,



David Moore
Engineer

Enclosure

SANDSTONE OIL & GAS

1330 E. 8th St., Suite 304
Odessa, Texas 79761
915 334 8531

January 29, 1992

CERTIFIED RETURN RECEIPT

Murphy Operating Company
P. O. Box 2648
Roswell, New Mexico 88201

Gentlemen:

Enclosed please find a copy of form C-108 (Application for Authority to Inject) on Sandstones' Tom "36" State #2 in Section 36 T7S-R31E of Chaves County, NM.

You may contact me at 915 334 8531 for any discussion regarding this project.

Sincerely,



David Moore
Engineer

Enclosure

SANDSTONE OIL & GAS

1330 E. 8th St., Suite 304
Odessa, Texas 79761
915 334 8531

January 29, 1992

CERTIFIED RETURN RECEIPT

Yates Petroleum Corporation
105 South Fourth Street
Artesia, New Mexico 88210

Gentlemen:

Enclosed please find a copy of form C-108 (Application for Authority to Inject) on Sandstones' Tom "36" State #2 in Section 36 T7S-R31E of Chaves County, NM.

You may contact me at 915 334 8531 for any discussion regarding this project.

Sincerely,



David Moore
Engineer

Enclosure

AFFIDAVIT OF PUBLICATION

County of Chaves }
State of New Mexico, }

I, Jean M. Pettit
Bus. Manager,

Of the Roswell Daily Record, a daily newspaper published at Roswell, New Mexico, do solemnly swear that the clipping hereto attached was published once a week in the regular and entire issue of said paper and not in a supplement thereof for a period

of three times

weeks

beginning with the issue dated 27th

January, 1992

and ending with the issue dated 29th

January, 1992

Jean M. Pettit
Manager

Sworn and subscribed to before me

this 29th day of

January, 1992

Marilyn L. Shippey
Notary Public

My commission expires

July 21, 1994
(Seal)

Publish January 27, 28, 29, 1992
NOTICE OF APPLICATION
FOR INJECTION PERMIT
Sandstone Oil & Gas, of 1330 E.
8th Street, #304, Odessa, Texas
79761 has applied with the State
of New Mexico Oil Conservation
Division for a permit to inject fluid
into a formation which is produc-
tive of oil or gas.
The applicant proposes to inject
fluid into the Tom 36 State #2. The
proposed injection well is located
18 miles SW of Elida, New Mexico
in the Tomahawk field in Chaves
County, New Mexico. Fluid will be
injected into the subsurface inter-
val from 4197 to 4217 feet.
Request for a public hearing from
persons who can show they are
adversely affected, or request for
further information concerning any
aspect of the application should be
submitted in writing within fifteen
days of this publication to New
Mexico Oil Conservation Division,
P.O. Box 1980, Hobbs, New Mex-
ico 88210.

ILLEGIBLE



STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
HOBBS DISTRICT OFFICE

RECEIVED
OIL CONSERVATION DIVISION
FEB 8 AM 9 43

2-5-92

BRUCE KING
GOVERNOR

POST OFFICE BOX 1980
HOBBS, NEW MEXICO 88241-1980
(505) 393-6161

OIL CONSERVATION DIVISION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

RE: Proposed:

MC	_____
DHC	_____
NSL	_____
NSP	_____
SWD	<u>X</u> _____
WFX	_____
PMX	_____

Gentlemen:

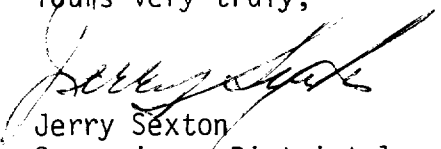
I have examined the application for the:

<u>Sandstone oil & Gas</u>	<u>Tom 36 State #2 H</u>	<u>30-7-91</u>
Operator	Lease & Well No.	Unit S-T-R

and my recommendations are as follows:

OK

Yours very truly,


Jerry Sexton
Supervisor, District 1

/ed

UNDESIGN

9 31

SANDSTONE OIL & GAS

1330 E. 8th St., Suite 304
Odessa, Texas 79761
915 334 8531

February 21, 1992

CERTIFIED RETURN RECEIPT

New Mexico Energy & Minerals Dept.
Oil Conservation Division
P. O. Box 2088
Santa Fe, NM 87504

Attention: David Catanach

RE: Tom "36" State Well N. 2, Chaves County, NM.

Dear Mr. Catanach,

This letter is to notify you that we are amending our C-108 Application for Authority to Inject dated January 29, 1992 for the referenced well to change the injection interval. The new application will include the perforations from 4,125' to 4,160'. The original application intervals were from 4,197' to 4,217'. All of these perfs are in the same zone. We are also reducing our injection volumes from 150 BWPD with a maximum of 400 BWPD to 75 BWPD with a maximum of 150 BWPD.

You may contact me at 915 334 8531 for any discussion regarding this project.

Sincerely,



David Moore
Engineer

DM\dh

C-108
APPLICATION FOR AUTHORIZATION TO INJECT
SANDSTONE OIL & GAS
TOM "36" STATE #2
CHAVES COUNTY, NEW MEXICO

- I. The purpose of converting this well is to make a disposal well for produced San Andres water into the San Andres formation.
- II. Operator: Sandstone Oil & Gas
1330 E. 8th St., Suite 304
Odessa, Texas 79761
- III. Well Data: See attached diagram.
- IV. This is not an expansion of an existing project.
- V. See attached map.
- VI. Wells within this area of review penetrate the proposed injection zone; well bore schematics are attached.
- VII. 1. Proposed daily injection volume approximately 75 BWPD. Maximum daily injection approximately 150 BWPD.
2. This will be a closed system.
3. Proposed average injection pressure: 0 - 300#. Proposed average maximum injection pressure: 800#.
4. Sources of injected water would be produced water from the San Andres zone on same lease with no compatibility problems.
5. Chemical analysis of produced water from existing wells is attached.
- VIII 1. The proposed injection interval is the portion of the San Andres formation consisting of dolomite from estimated depths of 3950' to 4300'.
2. There are no fresh water wells within one mile.
- IX. No initial stimulation is required, because the well will take fluid on vacuum.
- X. Logs were filed with the State of New Mexico when the well was drilled in 1979.
- XI. No windmills or fresh water wells exist within one mile of radius of the subject location.

XII. Sandstone Oil & Gas has examined geologic and engineering data and has found that there is no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.

XIII Proof of Notice

A. Certified letters sent to the offset operators.

B. Copy of legal advertisement. (Attached)

XIV Certification is signed.

Legal Notice to be published

Notice of application for injection permit

Sandstone Oil & Gas, 1330 E. 8th St., Suite 304, Odessa, Texas, 79761 has applied with the State of New Mexico Oil Conservation Division for a permit to inject fluid into a formation which is oil and gas producing.

The applicant proposes to inject fluid into the Tom 36 State #2. The proposed injection well is located 18 miles SW of Elida, NM in the Tomahawk field in Chaves County. Fluid will be injected into the subsurface interval from 4125' to 4160'.

Request for a public hearing from persons who can show they are adversely affected, or request for further information concerning any aspect of the application should be submitted in writing within fifteen days of this publication to the New Mexico Oil Conservation Division, P. O. Box 1980, Hobbs, NM 88210.

PLEASE PLACE THIS NOTICE IN YOUR PAPER MONDAY, FEBRUARY 24 AND TUESDAY, FEBRUARY 25, 1992.

INJECTION WELL DATA SHEET

SANDSTONE OIL & GAS

TOM "36" STATE

OPERATOR	LEASE		
2	1980' FNL & 660 FEL	36	7-South
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP
Unite Letter H	State Lease #L-5120		31-East
			RANGE

Schematic

Tabular Data

Surface Casing

Size 8 5/8 " Cemented with 750 sx.
TOC Surface feet determined by Sight
Hole size 12 1/4"

Intermediate Casing

Size " Cemented with sx.
TOC feet determined by
Hole size

Long string

Size 5 1/2 " Cemented with 400 sx.
TOC 2500' feet determined by Calculation
Hole size 7 7/8"
Total depth 4305'

Injection interval (Perforated)

4125 TO 4160 feet to 4197 TO 4217 feet
(perforated or open-hole, indicate which)

CHAVES COUNTY

NEW MEXICO

TOM TOM FIELD

Well: UNION OIL CO OF CALIFORNIA 2 Tom "36" State
Loc'n: 15 mi SE/Boaz, 1980' FNL, 660' FEL Sec 36-7S-31E

Result: OIL DOseum information Corporation
ON PROHIBITED

Spud: 7-17-79; Comp: 8-5-79; Elev: 4438' Grd; TD: 4305' San And; 4260'
Casing: 8-5/8" 1654' /750 sx; 5-1/2" 4305' /400 sx
Prod Zone: (San And), T/Pay 4197', Prod thru Perfs 4197-4217'
IPP: 240 BOPD + 32 BW, Grav 23, GOR 432
Comp Info: Perf (San And) 4197-4200', 4207-10', 4214-17' w/2 SPF, A/2200 ga.
S/25 BW w/SSO&G/3 hrs & S/Dry, ran GRL, DILL, SN, PDC logs, C/WTR
Tops: (EL) Rustler Anhydrite 1753', Salt 1779', Base Salt 2168', Yates 2182', San And
3331'
API No: 30-005-20687

Tubing size 2 3/8 lined with Plastic Coating set in a
(material)
Guiberson UNI VI packer at 4075 feet
(brand and model)

(or describe any other casing-tubing seal).

Other Data

- Name of the injection formation San Andres
- Name of Field or Pool (if applicable) Tomahawk San Andres
- Is this a new well drilled for injection? ☐ Yes ☒ No
If no, for what purpose was the well originally drilled? Producing Oil Well
- Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) No
- Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. None



MURPHY OPERATING CORPORATION
UNITED BANK PLAZA, SUITE 300
400 NORTH PENNSYLVANIA AVENUE
POST OFFICE BOX 2648
ROSWELL, NEW MEXICO 88202-2648

TELEPHONE
505 623-7210

February 24, 1992

VIA TELEFAX (505-827-5741)/HARD COPY BY U.S. MAIL

New Mexico Energy & Minerals Department
Oil Conservation Division
Post Office Box 2088
Santa Fe, New Mexico 87504

Attention: David Catanach

Re: Sandstone Oil & Gas ("Sandstone")
C-108 Application dated January 27, 1991

Dear David:

Pursuant to my telephone conversation with David Moore, Engineer for Sandstone Oil & Gas ("Sandstone"), I have been advised by Sandstone that they are revising certain aspects of the above-referenced C-108 application. These revisions are as follows:

<u>Provision</u>	<u>Revision</u>
VII.1.	The proposed daily injection volume shall be 75 BWPD. The maximum injection volume shall not exceed 150 BWPD.
VIII.1.	The proposed injection interval shall include the San Andres formation upper P-2 interval from 4125' - 4160'. This interval is in addition to the original proposed injection interval being the San Andres formation lower P-2 interval from 4197' - 4217'.

Murphy Operating Corporation ("Murphy") hereby withdraws its objection to said C-108 Application assuming Sandstone agrees to the following:

1. Sandstone agrees to notify Murphy if the actual injection rate exceeds 150 BWPD or if Sandstone reasonably believes that said injection rate will exceed 150 BWPD in the foreseeable future.


2. If Murphy reasonably believes that the injection, at any volume, is adversely affecting Murphy's producing wells then upon notification by Murphy, Sandstone agree's to a) either reduce injection to amount mutually agreed upon by Murphy and Sandstone, or b) failing such agreement to cease injection.

3. Sandstone agree's to notify Murphy if Sandstone plans to perforate any additional interval into which Sandstone plans to inject. Sandstone further agree's that if Murphy objects then Sandstone will not proceed with the proposed operation.

If Sandstone accepts the terms and conditions herein, and executes and returns one copy of this Agreement, Murphy will withdraw its objection to the above-referenced C-108 Application as amended.

Sincerely,

MURPHY OPERATING CORPORATION

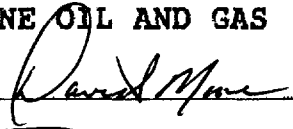

Mark B. Murphy
President

MBM/ck

cc: Sandstone Oil & Gas
1330 East Eight Street, Suite 304
Odessa, Texas 79761
Attention: Mr. David Moore
Via Telefax (915-333-3109)

Accepted and Agreed to this 25 day
of February, 1992.

SANDSTONE OIL AND GAS

By: 

Name: David Moore

Title: PARTNER

SANDSTONE OIL & GAS

1330 E. 8th St., Suite 304
Odessa, Texas 79761
915 334 8531

February 21, 1992

CERTIFIED RETURN RECEIPT

Murphy Operating Company
P. O. Box 2648
Roswell, NM 88201

RE: Tom "36" State Well N. 2, Chaves County, NM.

Gentlemen:

This letter is to notify you that we are amending our C-108 Application for Authority to Inject dated January 29, 1992 for the referenced well to change the injection interval. The new application will include the perforations from 4,125' to 4,160'. The original application intervals were from 4,197' to 4,217'. All of these perfs are in the same zone. We are also reducing our injection volumes from 150 BWPD with a maximum of 400 BWPD to 75 BWPD with a maximum of 150 BWPD.

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Sincerely,


David Moore
Engineer

DM\dh

SANDSTONE OIL & GAS

1330 E. 8th St., Suite 304
Odessa, Texas 79761
915 334 8531

February 21, 1992

CERTIFIED RETURN RECEIPT

Strata Production Company
648 Petroleum Bldg.
Roswell, NM 88201

RE: Tom "36" State Well N. 2, Chaves County, NM.

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Sincerely,



David Moore
Engineer

DM\dh

SANDSTONE OIL & GAS

1330 E. 8th St., Suite 304
Odessa, Texas 79761
915 334 8531

February 21, 1992

CERTIFIED RETURN RECEIPT

Yates Petroleum Corporation
105 South Fourth Street
Artesia, New Mexico 88210

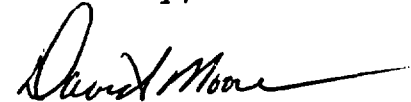
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David Moore
Engineer

DM\dh

SANDSTONE OIL & GAS

1330 E. 8th St., Suite 304
Odessa, Texas 79761
915 334 8531

February 21, 1992

CERTIFIED RETURN RECEIPT

Production Development Corporation
9720-B Candalaria NE
Albuquerque, NM 88172

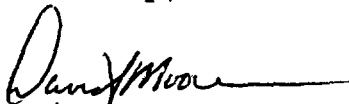
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Sincerely,


David Moore
Engineer

DM\dh

AFFIDAVIT OF PUBLICATION

County of Chaves
State of New Mexico,

I, Jean H. Pettit
Bus. Manager,

Of the Roswell Daily Record, a daily newspaper published at Roswell, New Mexico, do solemnly swear that the clipping hereto attached was published once a week in the regular and entire issue of said paper and not in a supplement thereof for a period

of two times

..... weeks

beginning with the issue dated 24th

.....February....., 1992

and ending with the issue dated 25th

..... February, 19 92

John M. Kottel
Manager

Sworn and subscribed to before me

this 25th day of

February 19 92

Margaret Shipper
Notary Public

My commission expires

(Seal) July 21, 1994

Publish February 24, 25, 1992

NOTICE OF APPLICATION FOR INJECTION PERMIT

Sensatone Oil & Gas of 1330 E. 8th Street #304, Odessa, Texas 79761 has applied with the State of New Mexico Oil Conservation Division for a permit to inject fluid into a formation. Which is productive of oil or gas.

The applicant proposes to inject fluid into the Tom 36 State #2. The proposed injection well is located 18 miles SW of Elida, New Mexico in the Tomahawk field in Chaves County, New Mexico. Fluid will be injected into the subsurface interval from 4125' to 4160' and 4197' to 4217'.

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