

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND AMANGEMENT

VRB
4-6-96
FORM APPROVED

Budget Bureau No. 1004-0135

Expires: March 31, 1993

5. Lease Designation and Serial No.

NM-57285

6. If Indian, Allottee or Tribe Name

7. If Unit or CA, Agreement Designation

8. Well Name and No.

Stivason Federal #1

9. API Well No.

30-025-28745

10. Field and Pool, or Exploratory Area

Pearl Queen

11. County or Parish, State

Lea County, New Mexico

SUNDRY NOTICES AND REPORTS ON WELLS

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

SUBMIT IN TRIPLICATE

1. Type of Well

Oil ☒ Gas ☐
Well ☒ Well ☐ Other ☐

2. Name of Operator

STRATA PRODUCTION COMPANY

3. Address and Telephone No. P.O. Box 1030

Roswell, New Mexico 88202-1030

505-622-1127

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

330' FNL & 330' FEL

Section 33-19S-34E

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

TYPE OF SUBMISSION

☒ Notice of Intent
☐ Subsequent Report
☐ Final Abandonment Notice

TYPE OF ACTION

☐ Abandonment
☐ Recompletion
☐ Plugging Back
☐ Casing Repair
☐ Altering Casing
☐ OTHER

☒ Change of Plans
☐ New Construction
☐ Non-Routine Fracturing
☐ Water Shut-Off
☐ Conversion to Injection
☒ Dispose Water

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

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

Strata Production Company requests approval to change plans from plugging and abandoning well to converting to water disposal. The OCD Form C-108 Application For Authorization To Inject is being processed. A copy of said Application is attached.

Subject to
Like Approval
by State

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

Signed Carol J. Garcia

Title Production Records Manager

Date 3/7/96

(This space for Federal or State office use)

Approved by (ONE. SCD.) JOE G. LARA

Title PETROLEUM ENGINEER

Date 7/5/96

Conditions of approval, if any:

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

* See Instruction or Revers Side

APPLICATION FOR AUTHORIZATION TO INJECT

- I. Purpose: ☐ Secondary Recovery ☐ Pressure Maintenance ☒ Disposal ☐ Storage
Application qualifies for administrative approval? ☒ yes ☐ no
- II. Operator: Strata Production Company
Address: P.O. Box 1030, Roswell, New Mexico 88202-1030
Contact party: Frank S. Morgan, Vice President Phone: 505-622-1127
- 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: Frank S. Morgan Title Vice President/Operations
Signature: Frank S. Morgan Date: February 29, 1996
- * If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be duplicated and resubmitted. Please show the date and circumstance of the earlier submittal. Refer to Stivason Federal #3 SWD-420 application dated

April 3, 1991.

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

ANSWERS TO FORM C-108:

III. See attached well diagram.

IV. No.

V. See attached plat. There are eleven (11) wells within the area of review.

VI. Proposed Injection Well:

Stivason Federal #1: Located 330' FNL and 330' FEL of Section 33, Township 19 South, Range 34 East, Lea County, New Mexico. Spud 6/1/84. TD 5207'. Set 8 5/8" 24# casing at 1535' with 600 sacks cement. Set 4 1/2" 10 .5# casing at 5207' with 600 sacks cement. Set 1" tubing in annulus between 8 5/8" casing and 4 1/2" casing. Circulated cement from base of 8 5/8" casing to surface with 300 sacks cement. Perforated 5022'-5028'. Acidize with 500 gallons 7 1/2% acid. Frac with 16,000 gallons gel water and 18,000# 20/40 sand. Perforated 4511'-4532'. Acidize with 500 gallons 7 1/2% acid. Frac with 20,000 gallons 30# gel KCL and 24,500# 20/40 sand. Set bridge plug and perforated 3908'-4100'. Acidized with 3500 gallons 7 1/2% DS-30 acid. Produced from the Seven Rivers formation. Squeezed 3098'-4100' with 250 sacks cement. Produced from the Queen formation. Current status Shut-in.

Off-Set Wells in Area of Review:

Stivason Federal #3: Located 330' FNL and 1650' FEL of Section 33, Township 19 South, Range 34 East, Lea County, New Mexico. Spud 12/15/85. TD 4630'. Set 8 5/8" 24# casing at 1597' with 550 sacks cement. Circulated 25 sacks to pit. Set 5 1/2" 15.5# casing at 4630' with 375 sacks cement. Perforated 4291'-4294' and 4092'-4108'. Squeezed perfs with 75 sacks cement. Perforated 3926'-3932'. Squeezed perfs with 75 sacks cement. Perforated Queen 4527'-4536'. Set CIBP at 4500' with 35' cement on top. Perforated 3901'-3908'. Produced from Seven Rivers 3901'-3908'. Squeezed with 150 sacks cement. Drilled out cement and CIBP. Perforated 4546'-4556'. Acidize with 3000 gallons 15% NEFE. Converted to SWD.

Stivason Federal #2: Located 330' FSL and 1650' FEL of Section 28, Township 19 South, Range 34 East, Lea County, New Mexico. Spud 12/20/84. TD 4610'. Set 8 5/8" 24# casing at 1562' with 550 sacks cement. Circulated 50 sacks to pit. Set 5 1/2" 14.8# casing at 4610' with 450 sacks cement. Perforated 4523'-4531'. Acidize with 350 gallons 7 1/2% acid. Produced from the Queen formation. Current status Shut-in. Plan to Plug and Abandon.

Stivason Federal #4: Located 660' FSL and 760' FEL of Section 28, Township 19 South, Range 34 East, Lea County, New Mexico. Spud 6/13/89. TD 5125'. Set 8 5/8" 23# casing at 1330' with 650 sacks cement. Set 5 1/2" 15.5# casing at 5125' with 550 sacks cement. Perforated 4668-4469', 4804'-4805', 4851'-4861' and 4508'-4831'. Acidize with 2700 gallons 15% acid. Frac with 30,000 gallons gel and 59,000# sand. Current status Producing.

Stivason Federal #5: Located 660' FSL and 550' FWL of Section 27, Township 19 South, Range 34 East, Lea County, New Mexico. Spud 11/5/89. TD 5115'. Set 8 5/8" 24# casing at 1318' with 600 sacks cement. Circulated 175 sacks cement to pit. Set 5 1/2" 15.5# casing at 5115' with 830 sacks cement. Perforated 4794'-4844'. Acidize with 1200 gallons 7 1/2% acid. Frac with 40,000 gallons gel and 70,000# sand. Perforated 4518'-4537'. Acidize with 2,000 gallons 7 1/2% acid. Frac with 35,000 gallons gel and 50,000# 20/40 sand. Current status Producing.

Sun Pearl Federal #1: Located 1650' FSL and 1650' FEL of Section 28, Township 19 South, Range 34 East, Lea County, New Mexico. Spud 6/2/89. TD 5152'. Set 8 5/8" 23# casing at 1342' with 700 sacks cement. Set 4 1/2" casing at 5150' with 1600 sacks cement. Perforated 5070'-5080'. Acidize with 1000 gallons 15% acid. Frac with 29,500# sand. Perforated 4844'-4846', 4795'-4797', 4505'-4517' and 4525'-4532'. Current status Producing.

Sun Pearl Federal #2: Located 1850' FSL and 550' FEL of Section 28, Township 19 South, Range 34 East, Lea County, New Mexico. Spud 11/17/89. TD 5153'. Set 8 5/8" 23# casing at 1359' with 400 sacks cement. Set 5 1/2" casing at 5153' with 1100 sacks cement. Perforated 4782'-4788', 4829'-4835', 4520'-4530' and 4535'-4540'. Acidize with 800 gallons 15% acid. Frac with 300,000 gallons gel and 45,000# 20/40 sand and 20,000# 16/30 sand. Current status Producing.

West Pearl Federal #1: Located 1980' FSL and 660' FWL of Section 27, Township 19 South, Range 34 East, Lea County, New Mexico. Spud 4/5/91. TD 5300'. Set 8 5/8" casing at 1310' with 700 sacks cement. Set 5 1/2" casing at 5300' with 1075 sacks cement. Perforated 4670'-4673'. Acidize with 1000 gallons 15% acid. Perforated 4784'-4945'. Acidize with 7000 gallons 15% acid. Frac with 50,000 gallons gel and 116,000# sand. Perforated 4515'-4541'. Acidize with 4,000 gallons 15% acid. Squeezed perfs with 100 sacks cement. Produced from Queen formation. Set RBP at 4400'. Perforated 3884'-3989'. Acidize with 5,000 gallons 7 1/2% acid. Frac with 25,000 gallons gel and 53,000# sand. Current status Producing.

Mallon "34" Federal #1: Located 660' FNL and 990' FWL of Section 34, Township 19 South, Range 34 East, Lea County, New Mexico. Spud 8/3/94. TD 6306'. Set 9 5/8" casing at 1501' with 950 sacks cement. Set 5 1/2" casing at 6306' with 1410 sacks cement. Perforated 5094'-5138'. Frac with 2000 gallons gel and 54,500# sand. Produced from Grayburg formation. Squeezed perfs with 157 sacks cement. 8/20/95 convert to SWD. Perforated 6180'-6260'. Acidize with 3000 gallons 15% acid. Frac with 24,000# sand. Current status SWD.

VII/VIII. Injection Zone/Procedure

Zone to be Injected: 4511'-5028'
Cased hole

This interval produces oil in the vicinity. The sandstone to be injected in to is down dip from oil-water contact.

TYPE INJECTION SYSTEM:	Closed
PROPOSED DAILY INJECTION RATE:	350 barrels initial (1 BPM)
MAXIMUM DAILY INJECTION RATE:	650 barrels (1.5 BPM)
AVERAGE INJECTION PRESSURE:	650 psi Estimated
MAXIMUM INJECTION PRESSURE:	880 psi

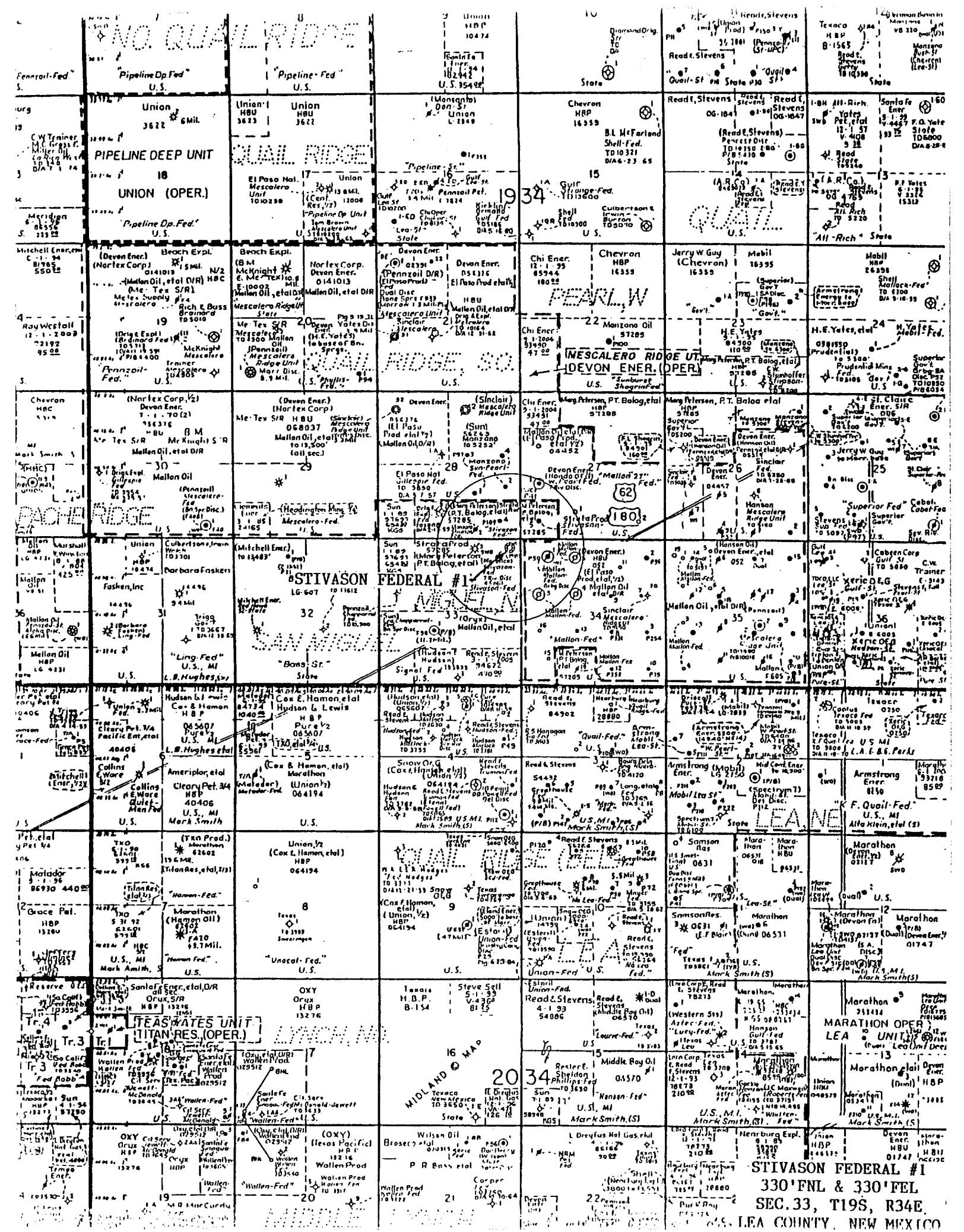
Water Compatibility: The water to be injected will initially be produced from adjacent Strata and Manzano operated wells producing from the Queen and Penrose sandstone. Currently the field produces approximately 110 BOPD and 190 BWPD. No additional drilling or workovers in the Queen formation are scheduled at this time.

IX. Stimulation Program: Inject 2500 gallons 15% NEFE in zone, if necessary.

X. See attached log showing open-hole.

XI. Water Analysis attached.

XII. Strata Production Company has examined all available geologic and engineering data in this area and finds no evidence of open faults or other hydrologic connections between the disposal zone and any potable aquifers.



PRODUCTION COMPANY

STIVASON FEDERAL #1

330' FNL & 330' FEL

SECTION 33-T19S-R34E

LEA COUNTY, NEW MEXICO

LEASE No.: NM-57285

SPUD DATE: 5/31/84

1" ANNULUS BETWEEN 4 1/2" & 3 5/8" CASING W/300 SX PACESETTER LITE

3 5/8" - 24 W/FT., J-55, @ 1533'

CMT. W/400 SX PACESETTER LITE & 200 SX CLASS "C" W/ 2% CACL. CIRC. 160 SX.

RUSTLER @ 1684'

SALT @ 1774'

APPROX. T.O.C. @ 2700'

TANSILL @ 3310'

YATES @ 3500'

SEVEN RIVERS @ 3807'

3906, 7 & 9, 10, 11, 12, 13, & 14

4010, 11, 12, 19, 20, 21, 22, 23, 24, & 25; 4095-4100'

QUEEN @ 4483'

4511, 12, 13, 14, 28, 29, 30, 31 & 32

PENROSE @ 4796'

5022, 23, 24, 25, 26, 27, & 28

4 1/2" 10.5 LB/FT., J-55 ST.&C @ 5200'

CMT. W/600 SX CLASS "C" 3% CACL

INJECTION WELL DATA SHEET

Strata Production Company
OPERATORStivason Federal
LEASE

#1

330' FNL & 330' FEL

33

19S

34E

WELL NO.

FOOTAGE LOCATION

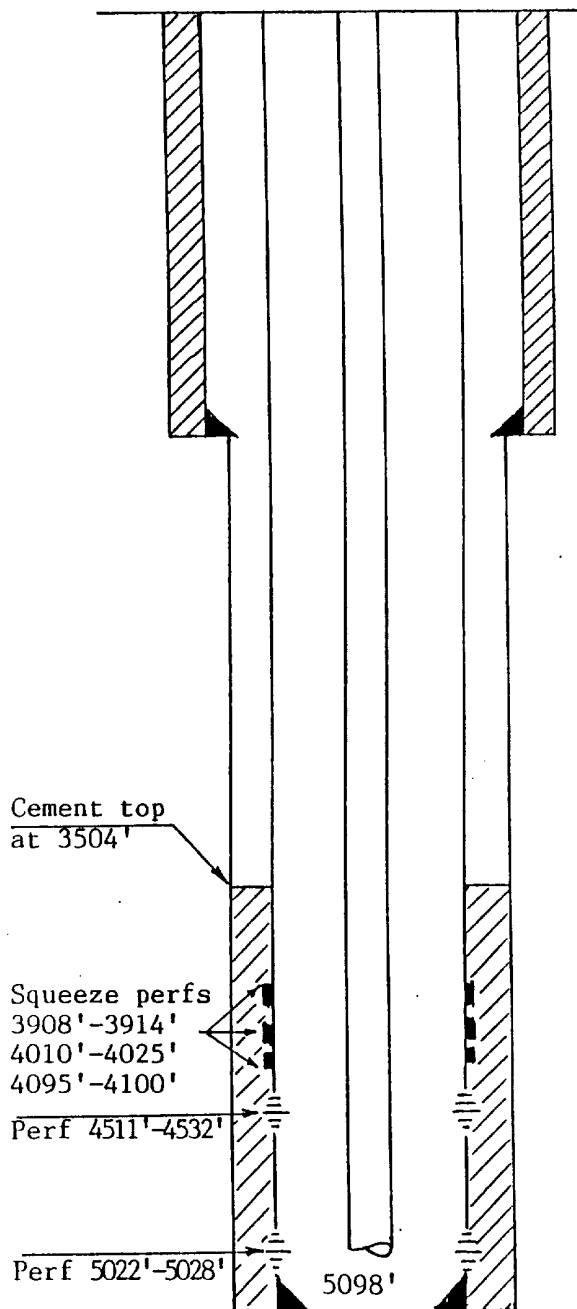
SECTION

TOWNSHIP

RANGE

Schematic

Tabular Data



Surface Casing

Size 8 5/8 " Cemented with 600 sx.TOC Circulated feet determined by CirculatedHole size 12 1/4"

Intermediate Casing

Size _____ " Cemented with _____ sx.

TOC _____ feet determined by _____

Hole size _____

Long string

Size 4 1/2 " Cemented with 600 sx.TOC 3504 feet determined by SurveyHole size 7 7/8"Total depth 5207'

Injection interval

4511 feet to 5028 feet
(perforated or open-hole, indicate which)

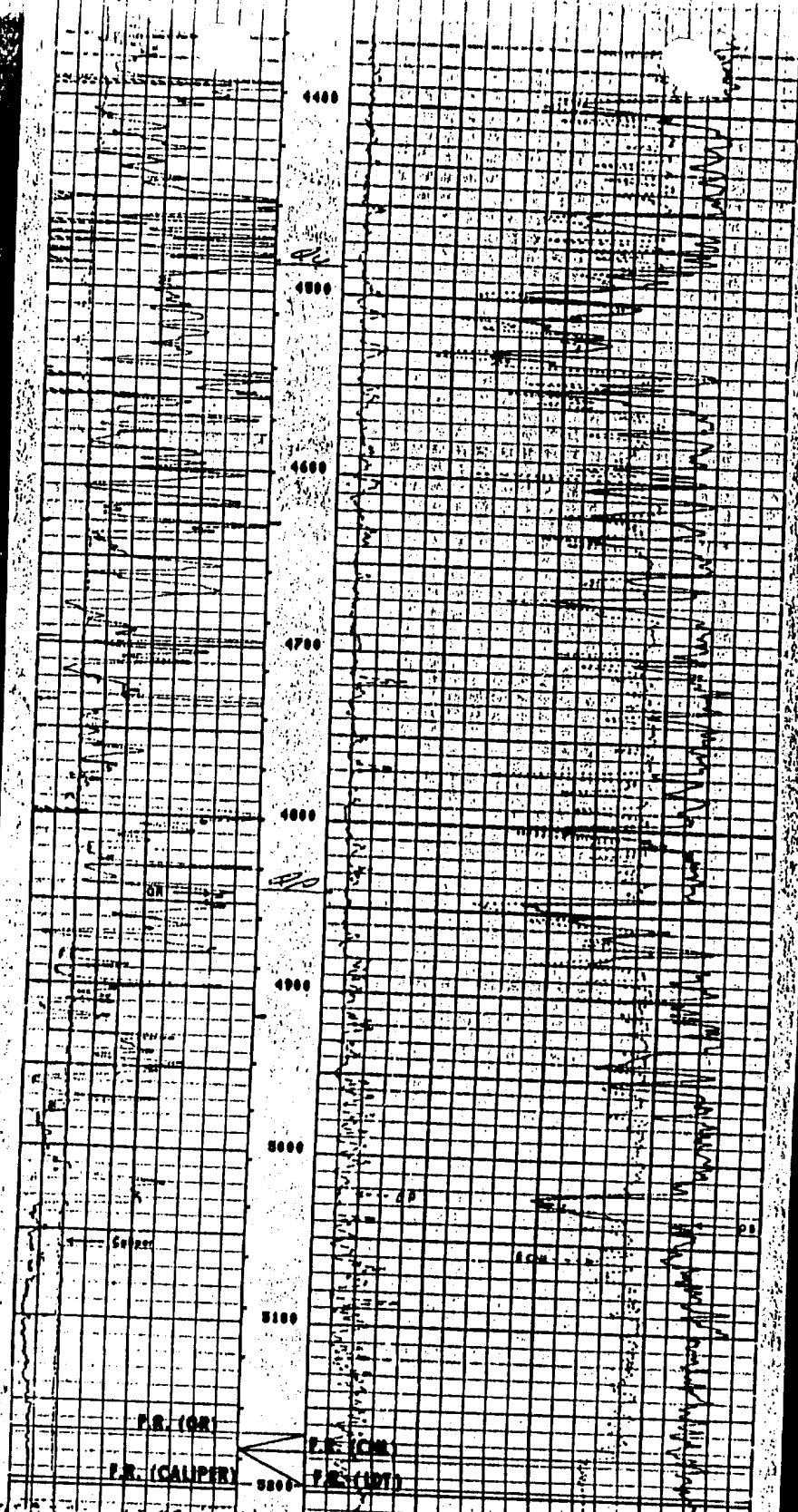
Squeeze with:
250 sx Class "C" cement.
Drill out and test to
1500# for 15 minutes.
No decrease in pressure.

Tubing size 2 3/8" lined with plastic coating set in a
(material)
zinc coated Mylar Tension 4 1/2 packer at 4400 feet
(brand and model)

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation Queen
2. Name of field or Pool (if applicable) Pearl Queen
3. Is this a new well drilled for injection? ☐ Yes ☒ No
If no, for what purpose was the well originally drilled? The well was originally drilled for oil and gas reserves.
4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (packs of cement or bridge plug(s) used) Yes, as indicated on diagram.
5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. As indicated in format.



FILE 3 14-JUN-94 02:36

CAL (IN)	6.0000	16.000
GR (GAP)	0.0	100.00
GR (GAP)	100.00	200.00
PRHD (A/C3)	-.0000	.45000
RHDS (G/C3)	2.0000	3.0000
NPMI	.70000	.30000
NPMI	.30000	-.1000

SENSOR MEASURE POINT TO TOOL ZERO

STSD 27.6 FEET	GR 32.2 FEET
NCNL 23.2 FEET	SCNL 23.2 FEET
SSR 2.0 FEET	PCNL 23.2 FEET
LITH 2.5 FEET	SSI 2.0 FEET
LU 2.5 FEET	LS 2.5 FEET
CALI 2.6 FEET	LL 2.5 FEET
NRAT 23.2 FEET	TENS -.9 FEET

PARAMETERS

NAME	VALUE	UNIT	NAME	VALUE	UNIT
BHT	100.000	DEGF	TD	5200.00	F
PSNR	2.20900		BHT	88.0869	DEGF
NATR LINE			NC	CALI	
NDEN	2.71000	G/C3	TD	2.10600	G/C3
LPCS THIN			PRHD	0.00000	LS/G
DHS	OPEN		PRHD	0.00000	LS/G

AFFIDAVIT OF PUBLICATION

State of New Mexico,
County of Lea.

I, Kathi Bearden

Publisher

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

of _____

1 weeks.

Beginning with the issue dated

March 7, 1996

and ending with the issue dated

March 7, 1996

Kathi Bearden
Publisher

Sworn and subscribed to before

me this 18th day of

April, 1996

Emilio S. Riquien
Notary Public.

My Commission expires
March 24, 1998

(Seal)

This newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Laws of 1937, and payment of fees for said publication has been made.

LEGAL NOTICE

March 7, 1996

PUBLIC NOTICE
APPLICATION FOR
WATER DISPOSAL

Strata Production Company, P. O. Box 1030, Roswell, New Mexico 88202-1030, (Contact: Frank S. Morgan, 505-622-1127), has filed Application with the Oil Conservation Division, Energy, Minerals and Natural Resources Department, State of New Mexico, for Administrative Approval and authority to inject salt water into the Stivason Federal #1 well located 330' FNL and 330' FEL of Section 33, Township 19 South, Range 34 East, NMPM, Lea County, New Mexico.

The purpose of the water injection well is to dispose of salt water produced from the producing Queen and Penrose formations as currently designated by the Oil Conservation Division and as may be extended by additional drilling.

Water to be disposed will be injected into the Upper Queen formation at an interval between 4511 feet to 5028 feet beneath the surface.

The minimum injection rate is expected to be approximately 350 barrels of water per day. The maximum injection rate is expected to be approximately 650 barrels of water per day.

Minimum injection pressure is expected to be approximately 650 PSI. The maximum injection pressure is expected to be approximately 880 PSI.

Any Interested party may file an objection to the Application or may request a public hearing. Any objection or request for hearing must be filed with the Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87504-2088 within 15 days from the date of publication.

STRATA PRODUCTION

COMPANY

By: Carol J. Garcia

P. O. Box 1030

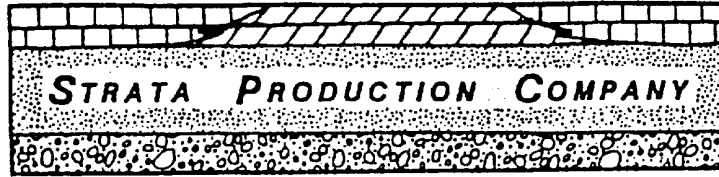
Roswell, New Mexico

88202-1030

Telephone 505-622-1127

#14427

POST OFFICE DRAWER 1030
ROSWELL, NM 88202-1030



TELEPHONE (505) 622-1127
FACSIMILE (505) 623-3533

200 WEST FIRST STREET, ROSWELL PETROLEUM BUILDING, SUITE 700
ROSWELL, NEW MEXICO 88201

March 4, 1996

Hobbs Daily Sun
P. O. Box 860
Hobbs, New Mexico 88241-0860

Re: Legal Publications

Gentlemen:

Enclosed herewith please find a Legal Notice to be published in your newspaper at the earliest possible date.

Please publish the notice one (1) time only and forward an Affidavit of Publication along with your invoice to:

Strata Production Company
ATTN: Carol J. Garcia
P. O. Box 1030
Roswell, New Mexico 88202-1030

Should you have any questions regarding this matter, please contact this office.
Thank you for your cooperation.

Sincerely,

STRATA PRODUCTION COMPANY

A handwritten signature in cursive script that reads "Carol J. Garcia".

Carol J. Garcia
Production Records Manager

CJG:ms
Enclosure

PUBLIC NOTICE

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STRATA PRODUCTION COMPANY

By: Carol J. Garcia

Carol J. Garcia

P. O. Box 1030

Roswell, New Mexico 88202-1030.

Telephone 505-622-1127

TRETOLITE®

Chemicals and Services

PETROLITE

16010 Barker's Point Lane • Houston, Texas 77079
713 558-5200 • Telex: 4620346 • FAX: 713 589-4737

Reply to: P.O. Box 5250
Hobbs, New Mexico 88241
(505) 392-6711 Phone
(505) 392-3759 Fax

WATER ANALYSIS REPORT

Company : STRATA PRODUCTION
Address : LOCO HILLS, NM
Lease : STIVANSON
Well : #4
Sample Pt. : WELLHEAD

Date : 02/07/92
Date Sampled : 02/05/92
Analysis No. : 136

ANALYSIS		mg/L	* meq/L	
-----		----	-----	
1.	pH	6.2		
2.	H2S	5 PPM		
3.	Specific Gravity	1.125		
4.	Total Dissolved Solids	180272.1		
5.	Suspended Solids			
6.	Dissolved Oxygen			
7.	Dissolved CO2	180 PPM		
8.	Oil In Water			
9.	Phenolphthalein Alkalinity (CaCO3)			
10.	Methyl Orange Alkalinity (CaCO3)	100.0		
11.	Bicarbonate	HCO3 122.0	HCO3	2.0
12.	Chloride	Cl 110377.1	Cl	3113.6
13.	Sulfate	SO4 2000.0	SO4	41.6
14.	Calcium	Ca 7262.5	Ca	362.4
15.	Magnesium	Mg 4200.8	Mg	345.6
16.	Sodium (calculated)	Na 56308.2	Na	2449.2
17.	Iron	Fe 1.5		
18.	Barium	Ba 0.0		
19.	Strontium	Sr 0.0		
20.	Total Hardness (CaCO3)	35431.9		

PROBABLE MINERAL COMPOSITION

*milli equivalents per Liter				Compound Equiv wt X meq/L = mg/L			
+-----+				-----			
362	*Ca <-----	*HCO3	2	Ca (HCO3) 2	81.0	2.0	162
-----	/----->		-----	CaSO4	68.1	41.6	2835
346	*Mg ----->	*SO4	42	CaCl2	55.5	318.8	17687
-----	<----->	/	-----	Mg (HCO3) 2	73.2		
2449	*Na ----->	*Cl	3114	MgSO4	60.2		
+-----+				MgCl2	47.6	345.6	16452
Saturation Values Dist. Water 20 C				NaHCO3	84.0		
CaCO3		13 mg/L		Na2SO4	71.0		
CaSO4 * 2H2O		2090 mg/L		NaCl	58.4	2449.2	143134
BaSO4		2.4 mg/L					

REMARKS:

----- D. CANADA / MLAB / FILE

Petrolite Oilfield Chemicals Group

Respectfully submitted,
ROZANNE JOHNSON

SCALE TENDENCY REPORT -----

Company	: STRATA PRODUCTION	Date	: 02/07/92
Address	: LOCO HILLS, NM	Date Sampled	: 02/05/92
Lease	: STIVANSON	Analysis No.	: 136
Well	: #4	Analyst	: ROZANNE JOHNSON
Sample Pt.	: WELLHEAD		

STABILITY INDEX CALCULATIONS (Stiff-Davis Method) CaCO3 Scaling Tendency

S.I. =	-0.1	at	60 deg. F	or	16 deg. C
S.I. =	-0.0	at	80 deg. F	or	27 deg. C
S.I. =	0.0	at	100 deg. F	or	38 deg. C
S.I. =	0.1	at	120 deg. F	or	49 deg. C
S.I. =	0.1	at	140 deg. F	or	60 deg. C

CALCIUM SULFATE SCALING TENDENCY CALCULATIONS (Skillman-McDonald-Stiff Method) Calcium Sulfate

S =	2239	at	60 deg. F	or	16 deg C
S =	2468	at	80 deg. F	or	27 deg C
S =	2614	at	100 deg. F	or	38 deg C
S =	2681	at	120 deg. F	or	49 deg C
S =	2728	at	140 deg. F	or	60 deg C

Petrolite Oilfield Chemicals Group

Respectfully submitted,
ROZANNE JOHNSON

TRETOLINE®

Chemicals and Services

PETROLITE

16010 Barker's Point Lane • Houston, Texas 77079
713 558-5200 • Telex: 4620346 • FAX: 713 589-4737

Reply to: P.O. Box 5250
Hobbs, New Mexico 88241
(505) 392-6711 Phone
(505) 392-3759 Fax

WATER ANALYSIS REPORT

Company : STRATA PRODUCTION
Address : LOCO HILLS, NM
Lease : STIVANSON
Well : #5
Sample Pt. : WELLHEAD

Date : 02/07/92
Date Sampled : 02/05/92
Analysis No. : 139

ANALYSIS		mg/L		* meq/L
1. pH	6.1			
2. H2S	5 PPM			
3. Specific Gravity	1.120			
4. Total Dissolved Solids		169420.4		
5. Suspended Solids				
6. Dissolved Oxygen				
7. Dissolved CO2		140 PPM		
8. Oil In Water				
9. Phenolphthalein Alkalinity (CaCO3)				
10. Methyl Orange Alkalinity (CaCO3)		100.0		
11. Bicarbonate	HCO3	122.0	HCO3	2.0
12. Chloride	Cl	103329.7	Cl	2914.8
13. Sulfate	SO4	2050.0	SO4	42.7
14. Calcium	Ca	6990.0	Ca	348.8
15. Magnesium	Mg	3471.5	Mg	285.6
16. Sodium (calculated)	Na	53453.8	Na	2325.1
17. Iron	Fe	3.5		
18. Barium	Ba	0.0		
19. Strontium	Sr	0.0		
20. Total Hardness (CaCO3)		31748.5		

PROBABLE MINERAL COMPOSITION

*milli equivalents per Liter

349	*Ca <-----	*HCO3	2
286	/----->		43
	*Mg <-----	*SO4	
	<----->		
2325	*Na <-----	*Cl	2915

Saturation Values Dist. Water 20 C

CaCO3	13 mg/L
CaSO4 * 2H2O	2090 mg/L
BaSO4	2.4 mg/L

Compound	Equiv wt	X meq/L	= mg/L
Ca(HCO3)2	81.0	2.0	162
CaSO4	68.1	42.7	2906
CaCl2	55.5	304.1	16875
Mg(HCO3)2	73.2		
MgSO4	60.2		
MgCl2	47.6	285.6	13596
NaHCO3	84.0		
Na2SO4	71.0		
NaCl	58.4	2325.1	135878

REMARKS:

----- D. CANADA / MLAB / FILE

Petrolite Oilfield Chemicals Group

Respectfully submitted,
ROZANNE JOHNSON

SCALE TENDENCY REPORT

Company	: STRATA PRODUCTION	Date	: 02/07/92
Address	: LOCO HILLS, NM	Date Sampled	: 02/05/92
Lease	: STIVANSON	Analysis No.	: 139
Well	: #5	Analyst	: ROZANNE JOHNSON
Sample Pt.	: WELLHEAD		

STABILITY INDEX CALCULATIONS (Stiff-Davis Method) CaCO3 Scaling Tendency

S.I. =	-0.2	at	60 deg.	F or	16 deg.	C
S.I. =	-0.2	at	80 deg.	F or	27 deg.	C
S.I. =	-0.1	at	100 deg.	F or	38 deg.	C
S.I. =	-0.1	at	120 deg.	F or	49 deg.	C
S.I. =	-0.0	at	140 deg.	F or	60 deg.	C

CALCIUM SULFATE SCALING TENDENCY CALCULATIONS (Skillman-McDonald-Stiff Method) Calcium Sulfate

S =	2318	at	60 deg.	F or	16 deg	C
S =	2551	at	80 deg.	F or	27 deg	C
S =	2699	at	100 deg.	F or	38 deg	C
S =	2771	at	120 deg.	F or	49 deg	C
S =	2824	at	140 deg.	F or	60 deg	C

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