

## APPLICATION FOR AUTHORIZATION TO INJECT

O'Brien "C" #9

Unit E, Section 1, Township 9 South,  
Range 28 East, Chaves

- I. Purpose:  Secondary Recovery  Pressure Maintenance  Disposal  Storage  
Application qualifies for administrative approval?  Yes  No
- II. Operator: STEVENS OPERATING CORPORATION
- Address: P. O. Box 2203, Roswell, New Mexico 88201
- Contact party: Donald G. Stevens Phone: 622-7273
- 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: Donald G. Stevens Title: President

Signature: Donald G. Stevens Date: 1-2-91

- \* 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 circumstances of the earlier submittal.

Case No. 10179  
Appl.

## 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, socks 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 socks 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 lessor/holder 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.

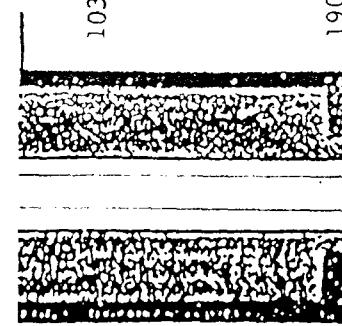
## INJECTION WELL DATA SHEET

SHEET 1

STEVENS OPERATING CORPORATION

WELL NUMBER  
9

UNIT NO.	Unit E	1870	FNL	80'	FWL	Sec. 1	SECTION	9S	TOWNSHIP	RANGE
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InstrumenticInhalular DataSurface Casing

Size 8 5/8"  
Set back  
 TOC 85' + 1" 4.5 yds.  
 Hole size 12 1/4"

Intermediate Casing

Size "  
 TOC "  
 Hole size "

Per 3300-3302, Squeeze  
 Cmt w/300 sxs, Drillout

Size 5 1/2"  
 TOC 5800 & 1030  
 Hole size 7 7/8"

5800' TOC  
 400 SXS CMT

Total depth 7468'

Injection interval

7160' PROPOSED PKR  
 7211' - 7245'  
 7392' - 7405'

Uncorrected or open-hole, indicate which feet.

Tubing size 2 3/8" lined with Corrosion Inhibitor  
7 mil material  
5 1/2" Baker Lockset Nickel Plated Packer set 7160 feet  
 (brand and model)

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation Twin Lakes Devonian

2. Name of Field or Pool (if applicable) \_\_\_\_\_

3. Is this a new well drilled for injection? / Yes / No

If no, for what purpose was the well originally drilled? Oil Production in Devonian

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used)

3300' - 3302' = Set CIBP @ 3380' w/ 300 SXS Cement Bond Log Showed TOC @ 1030'

5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. San Andres 1900' ± Mississippian 6970' ± Devonian 7201' ±

# C-108 PARAGRAPH V

	Pelto Oil P.O. 7-84 Harlow Corp. 11-16-83	Pelto Oil S-10-90 S-12-90	<img alt="Map showing oil wells and leasehold boundaries for Pelto Oil, Harlow Corp., and Stevens Oil. Key features include Sandoval, Sonoco, and O'Brien fields, along with various lease numbers like 26, 25, 30, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 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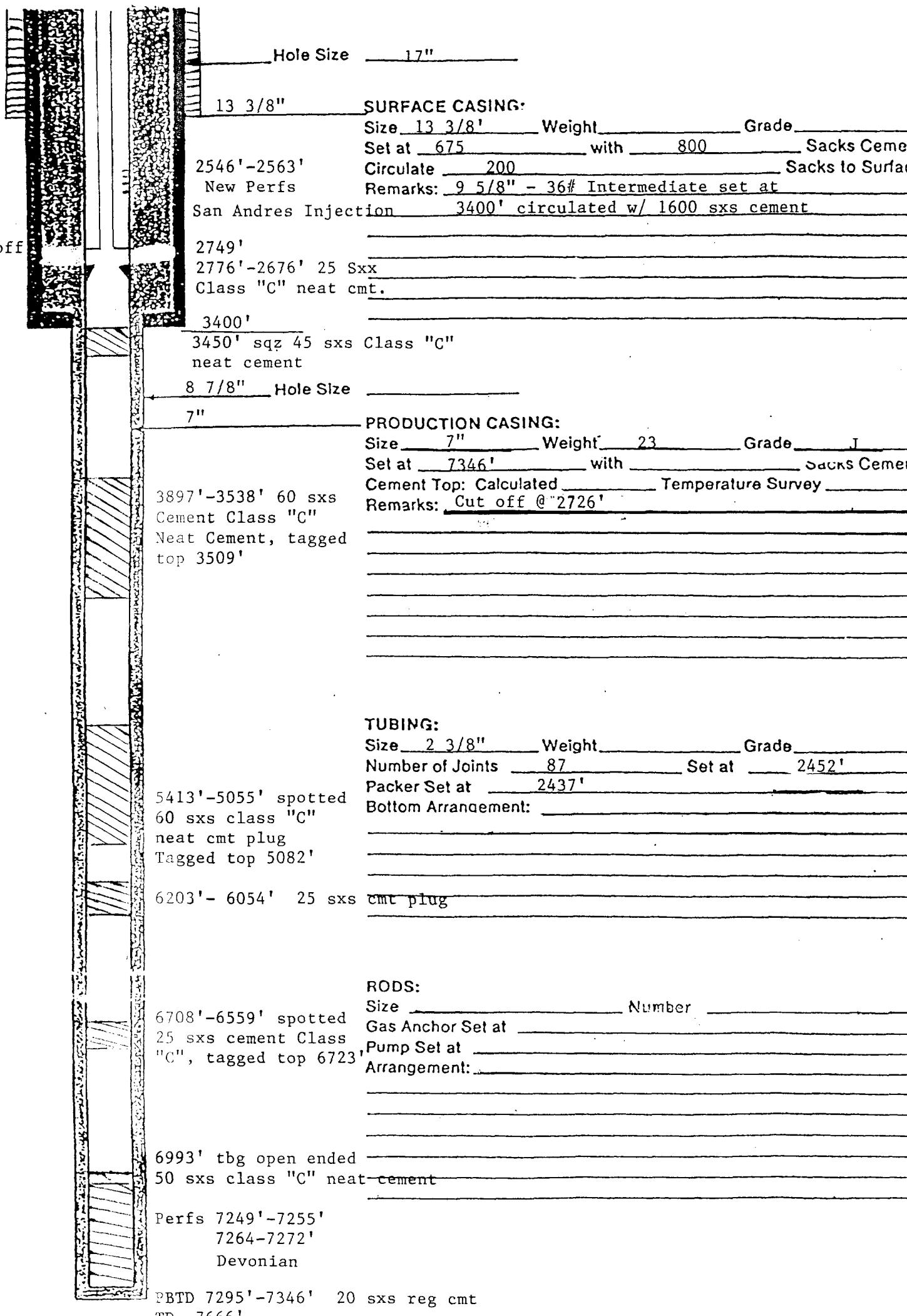
## **C-108 PARAGRAPH VI**

**Attached tabulation of all wells with schematic.**

# WELL BORE SKETCH

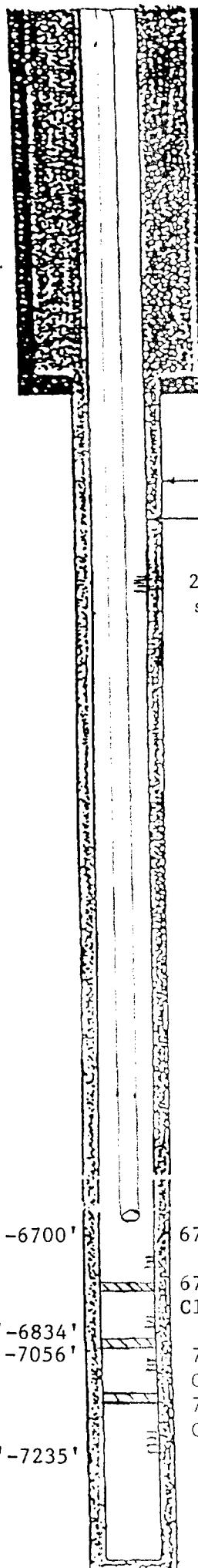
(Stevens Oper.  
Corp. orig)

OPERATOR/LEASE/WELL Energy Development Corporation/O'Brien "C" #2  
 LOCATION Unit D, 660' FNL, 660' FWL, Section 1, Township 9 South, Range 28 East  
 FIELD/POOL Twin Lakes / Devonian, San Andres  
 PLUG BACK DEPTH 2676' KB 3947' ELEVATION 3936 GL



# WELL BORE SKETCH

**OPERATOR/LEASE/WELL** Stevens Operating Corporation/O'Brien "C" #4  
**LOCATION** Unit L, Section 1, Township 9S, Range 28 East, 1980' FSL, 745' FWL  
**FIELD/POOL** Twin Lakes / Devonian, Atoka, Pennsylvanian  
**PLUG BACK DEPTH** \_\_\_\_\_ KB \_\_\_\_\_ **ELEVATION** 3938GL



Hole Size 12 1/2"

**SURFACE CASING:**

Size 8 5/8" Weight \_\_\_\_\_ Grade \_\_\_\_\_  
 Set at 1970' with 870 Sacks Cement  
 Circulate \_\_\_\_\_ Sacks to Surface  
 Remarks: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Hole Size 7 7/8"

**PRODUCTION CASING:**

Size 5 1/2" Weight \_\_\_\_\_ Grade \_\_\_\_\_  
 Set at 7235' with 700 Sacks Cement  
 2690' Squeeze w/150 Cement Top: Calculated \_\_\_\_\_ Temperature Survey \_\_\_\_\_  
 sws Class "H" Cmt Remarks: San Andres, Squeeze w/150 sxs Class H  
 Cement. Atoka - Squeeze w/75 sxs Class H Cement  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**TUBING:**

Size 2 3/8" Weight 4.7# Grade \_\_\_\_\_  
 Number of Joints 205 Set at 6744'.  
 Packer Set at \_\_\_\_\_  
 Bottom Arrangement: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**RODS:**

Size \_\_\_\_\_ Number \_\_\_\_\_  
 Gas Anchor Set at \_\_\_\_\_  
 Pump Set at \_\_\_\_\_  
 Arrangement: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Perf 6694'-6700'

6744' tbg open ended

6760' Retainer, 75 sxs  
Class "H" Cement

Perf 6831'-6834'

Perf 7038'-7056'

7000' CIBP W/bailer  
Cement

7106' CIBP W/bailer  
Cement

Perf 7199'-7235'

# WELL BORE SKETCH

(Stevens Operating

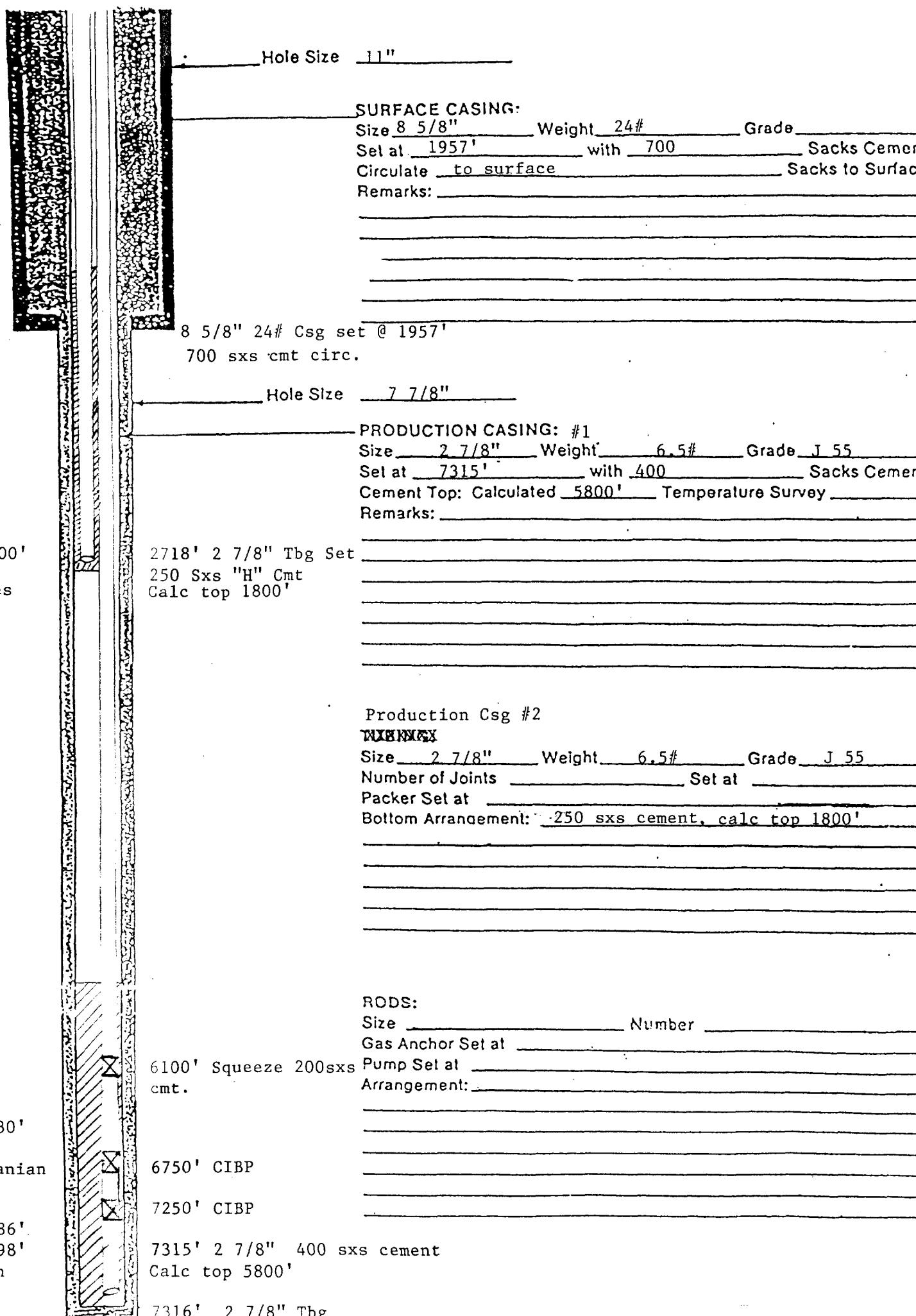
OPERATOR/LEASE/WELL Energy Development Corporation/O'Brien "C" #3 (Corp. orig.)

LOCATION Unit K, 1980' ESL, 1980 FWL, Section 1, Township 9 South, Range 28 East

FIELD/POOL Twin Lakes / Devonian/San Andres

PLUG BACK DEPTH \_\_\_\_\_ KB \_\_\_\_\_

ELEVATION 3951 RT



# WELL BORE SKETCH

OPERATOR/LEASE/WELL Stevens Operating Corporation/ O'Brien "B" #3  
 LOCATION Unit I, 1980' ESL, 660' FEI, Section 2, Township 9 South, Range 28 East  
 FIELD/POOL Twin Lakes / Mississippian  
 PLUG BACK DEPTH \_\_\_\_\_ KB \_\_\_\_\_ ELEVATION 3950 GR



Hole Size 17 1/2"

**SURFACE CASING:**

Size 11 3/4" Weight 42# Grade J  
 Set at 380' with 350 Sacks Cement  
 Circulate \_\_\_\_\_ Sacks to Surface  
 Remarks: \_\_\_\_\_

1800' TOC  
750 SXS

2580'-2610'  
San Andres Squeezed  
W/25 SXS CMT  
2758' Drill out

Hole Size 12 1/4"

Intermediate

**PRODUCTION CASING:**

Size 8 5/8" Weight \_\_\_\_\_ Grade J  
 Set at 2758' with 750 Sacks Cement  
 Cement Top: Calculated 1800' Temperature Survey \_\_\_\_\_  
 Remarks: \_\_\_\_\_

5000' TOC

**PRODUCTION CASING:**

Size 4.5 Weight 11.6# Grade J  
 Set at 7350' ~~7350'~~ ~~5000'~~ SACKS/500 SXS Cement  
 Packer Set at Calculated top 5000', After Perf 6165', 6173'  
 Bottom Arrangement: \_\_\_\_\_ Squeeze w/150 sxs Class C  
 Cement top 5000'

**RODS:**

Size \_\_\_\_\_ Number \_\_\_\_\_  
 Gas Anchor Set at \_\_\_\_\_  
 Pump Set at \_\_\_\_\_  
 Arrangement: \_\_\_\_\_

6165.5'-6173.5'

Squeeze Cmt W/150 sxs Class "C"

Drillout to 7138'

Reperf 7114-20 T/A

7114'-7162' PERFS

Mississippian Squeezed

7235' PBTD

7350' TD

## **C-108 PARAGRAPH VII**

- 1. Proposed average daily rate: 600 BOPD**  
Proposed maximum daily rate: 1800 BOPD
- 2. The system is closed with a gas blanket on all storage tanks**
- 3. Proposed average injection pressure is 0**  
Proposed maximum injection pressure is 750
- 4. Analysis of injection water is attached**
- 5. The disposal zone (Siluro-Devonian) formation water is the same as the produced formation water 1/2 mile south. The Fusselman, Devonian and Montoya formation water characteristics are substantially the same in Chaves, Roosevelt and northern Lea Counties.**

# PERMIAN

Treating Chemicals, Inc.

P. O. BOX 815  
TATUM, NM 88267  
PHONE (505) 398-4111

## WATER ANALYSIS REPORT

Company Stevens Operating Corporation Date Samples 12-4-90

Field \_\_\_\_\_ County \_\_\_\_\_

Lease O'Brien C State NM

Well #1 Formation \_\_\_\_\_

Type of Water Produced Water, B/D \_\_\_\_\_

Sampling Point Water Knockout Sampled By Nailon

### DISSOLVED SOLIDS

<u>CATIONS</u>	<u>mg/l</u>	<u>meq/l</u>	<u>OTHER PROPERTIES</u>
Sodium, Na+(Calc)	<u>23046</u>	<u>÷ 23</u> <u>1002</u>	PH <u>6.4</u>
Calcium, Ca++	<u>4600</u>	<u>÷ 20</u> <u>230</u>	Specific Gravity <u>1.07</u>
Magnesium, Mg++	<u>2551</u>	<u>÷ 12.2</u> <u>209</u>	H <sub>2</sub> S <u>Negative</u>
Barium, Ba++		<u>÷ 68.7</u> _____	Total Dissolved Solids <u>81,956</u>
Iron, Fe (Total)			Total Hardness <u>22,000</u>
_____	_____	_____	_____
_____	_____	_____	_____

### ANIONS

Chloride, Cl-	<u>50000</u>	<u>÷ 35.5</u> <u>1408</u>
Sulfate, SO <sub>4</sub> =	<u>1125</u>	<u>÷ 48</u> <u>23</u>
Carbonate, CO <sub>3</sub> =		<u>÷ 30</u> _____
Bicarbonate, HCO <sub>3</sub> -	<u>634</u>	<u>÷ 61</u> <u>10</u>
_____	_____	_____

Remarks and Recommendations \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## **C-108 PARAGRAPH VIII**

Attached CNL-FDC, DLL, MFSL shows injection zone lithology to be very porous, highly permeable Fusselman and Montoya Dolomite 289' thick @ 7211' to 7468'. No known underground sources of drinking water are nearby on the basis of long-term local rancher knowledge and recorded testimony in saltwater disposal exception Application hearing in 1969.

Schlumberger

**SIMULTANEOUS  
COMPENSATED NEUTRON-  
LITHO-DENSITY**

COMPANY	STEVENS OPERATING COMPANY		
WELL	O'BRIEN "C" NO. 9		
FIELD	TWIN LAKE DEVONIAN		
COUNTY	CHAVES	STATE	NEW MEXICO
Other Services:			
UNIT E	1870' FNL & 80' FWL		
AM BORAL NO.	***TIGHT HOLE**	SECT.	TWP.
		1	9-S
			28-E
LSS	•		
Permanent Datum	GL	Elev.	3834.4 F
Log Measured From	KB	80 F	above Permanent Datum
Dressing Measured From	KB		GL 3834.4 F
Date	22-JAN-1960		
Run No.	ONE		
Depth Driller	7468.0 F		
Depth Logger (SONI)	7468.0 F		
Btm. Log Interval	7468.0 F		
Top Log Interval	0.0 F		
Casing-Driller	8 5/8" @ 1000 F		
Casing-Logger	1805.0 F		
Bit Size	7 7/8"		
Type Fluid in Hole	SALT GEL		
Done:	Visc.	10.00 LB/G	400 S
pH	PH. Loss	8.0	8.0 C3
Source of Sample	PT		
Rmt & Mass. Temp.	100 OHMM	0 62.0 DEOF	0
Rmt & Mass. Temp.	187 OHMM	0 62.0 DEOF	0
Rmt & Mass. Temp.	186 OHMM	0 62.0 DEOF	0
Sources: Rmt   Run	PRESS	PRESS	
Run & BMT	1048 OHMM	0 123 DEOF	0
Oreduction Ended	22:00 1/21/88		
Logger on Bottom	SEE LOG		
Max. Res. Temp.	123 DEOF		
Equip. Location	8234 ROSWELL		
Powered By	SULLIVAN		
Witnessed By	CHO/AHLEN		

NMOCD Form C108  
Para. VIII

Schlumberger

**SIMULTANEOUS  
COMPENSATED NEUTRON-  
LITHO-DENSITY**

COMPANY	STEVENS OPERATING COMPANY		
WELL	O'BRIEN "C" NO. 9		
FIELD	TWIN LAKE DEVONIAN		
COUNTY	CHAVES	STATE	NEW MEXICO
Other Services:			
UNIT E	1870' FNL & 80' FWL		
AM BORAL NO.	***TIGHT HOLE**	SECT.	TWP.
		1	9-S
			28-E
LSS	•		
Permanent Datum	GL	Elev.	3834.4 F
Log Measured From	KB	9.0 F	above Permanent Datum
Dressing Measured From	KB		GL 3834.4 F
Date	22-JAN-1960		
Run No.	ONE		
Depth Driller	7468.0 F		
Depth Logger (SONI)	7468.0 F		
Btm. Log Interval	7468.0 F		
Top Log Interval	0.0 F		
Casing-Driller	8 5/8" @ 1000 F		
Casing-Logger	1805.0 F		
Bit Size	7 7/8"		
Type Fluid in Hole	SALT GEL		
Done:	Visc.	10.00 LB/G	400 S
pH	PH. Loss	9.0	8.0 C3
Source of Sample	PT		
Rmt & Mass. Temp.	100 OHMM	0 62.0 DEOF	0
Rmt & Mass. Temp.	187 OHMM	0 62.0 DEOF	0
Rmt & Mass. Temp.	186 OHMM	0 62.0 DEOF	0
Sources: Rmt   Run	PRESS	PRESS	
Run & BMT	1048 OHMM	0 123 DEOF	0
Oreduction Ended	22:00 1/21/88		
Logger on Bottom	SEE LOG		
Max. Res. Temp.	123 DEOF		
Equip. Location	8234 ROSWELL		
Powered By	SULLIVAN		
Witnessed By	CHO/AHLEN		

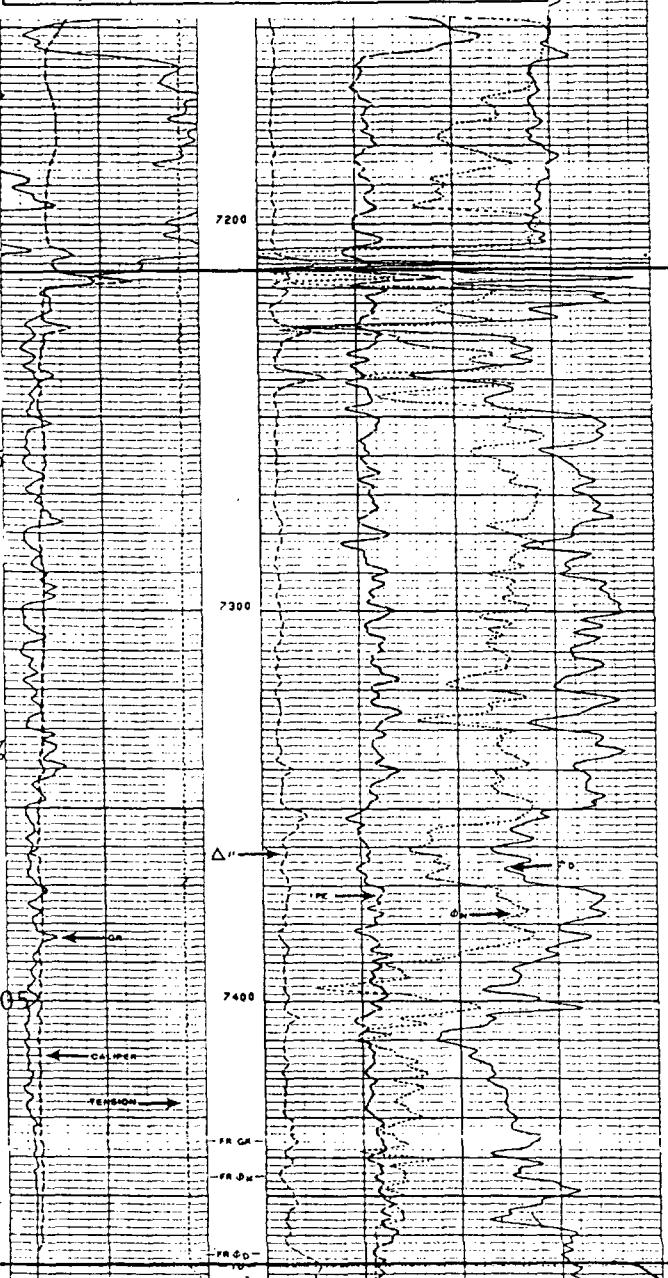
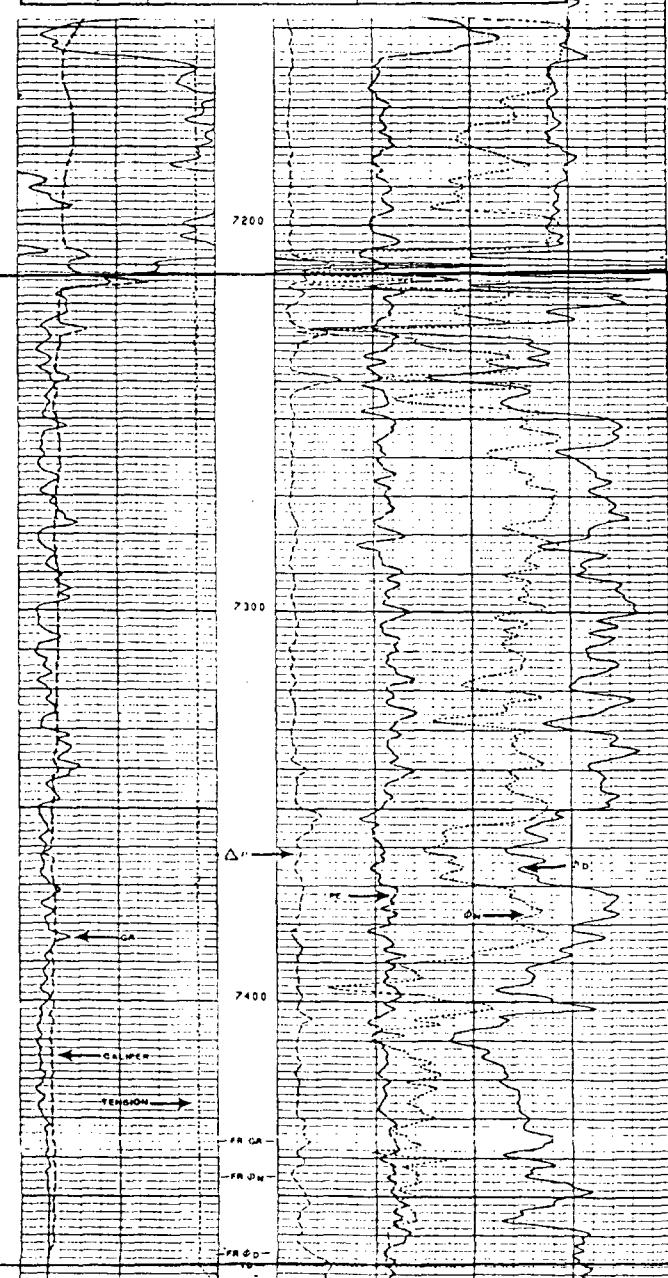
Mississippian Lime  
and Shale

Top Siluro-  
Devonian

Perfs  
7211-45  
A/5000  
Gallons  
Produced  
1185 BO, 3995  
MCF, 6583BW  
T&A  
New Perfs  
7272-76,  
7392-7405  
Re/A all  
perfs 5000  
gallons  
Pumped 100%  
Saltwater

Perfs  
7392-7405

289' Total  
Dolomite



## **C-108 PARAGRAPH IX**

The stimulation program on the injection zone was a total of 10,000 gallons 15% acid.

## **PARAGRAPH X**

Logs and tests on file OCD.

## **PARAGRAPH XI**

No fresh water wells are nearby.

## **PARAGRAPH XII**

Applicant has examined available geologic and engineering data and believes there are no open faults within five miles. In any case, there are no nearby underground drinking water wells.