

OIL CONSERVATION DIVISION

RECEIVED

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**GIANT**

SWD 5-3-95

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**GIANT EXPLORATION &  
PRODUCTION COMPANY**

2200 Bloomfield Highway  
Post Office Box 2810  
Farmington, New Mexico  
87499-2810

505 326-3325      FAX 505 327-7987

April 17, 1995

New Mexico Oil Conservation Division  
State Land Office Building  
P.O. Box 2088  
Santa Fe, New Mexico 87504

Subject:        South Bisti 30L Well No. 1  
                  1650' FSL, 850' FWL  
                  Sec. 30, T26N, R13W  
                  San Juan County, New Mexico

Dear Sir:

Enclosed for your approval is our Application for Authorization to Inject for the above referenced well. Upon receipt, an Affidavit of Publication will be forwarded to you.

If you have any questions please call me at (505)326-3325.

Sincerely,



Diane G. Jaramillo  
Production/Regulatory Manager

DGJ/klb

Enclosure

Giant Exploration & Production Company  
Application for Authorization for Disposal  
Form C-108 Supplemental Information

South Bisti 30L Well No. 1  
NW/4, SW/4, Section 30, T26N, R13W  
San Juan County, New Mexico

- I. Shown on Application.
- II. Shown on Application.
- III. Well data attached.
- IV. Shown on Application.
- V. Area of review is shown on attached map.
- VI. Information for wells located in area of review are attached as follows:
  - South Bisti 30N Well No. 1
  - Elliott Well No. 2
- VII.
  1. Proposed average injection rate is 600 BWPD, expected maximum injection rate is 1200 BWPD.
  2. This system will be closed.
  3. Average injection pressures are expected to be in the 1025-1045 psi range. Maximum injection pressure will be 1045 psi.
  4. Water injected is previously produced water from the Gallup Formation.
  5. This well will be used for salt water disposal (analysis of water to be disposed of is attached).
- VIII. The injection zone is the First South Bisti Sand of the Lower Gallup sandstone. This zone is to be 34' in thickness with a top of 5200' as shown on the SP log previously submitted. No known sources of drinking water exist in this area. Water well drilling in this area has shown the Ojo Alamo to be dry.

Application for Authorization for Disposal  
Page 2

- IX. The well will be acidized if required to maintain injection rate and pressure.
- X. Logs were previously submitted.
- XI. No known sources of drinking water exist in this area.
- XII. This well will be used for salt water disposal. No known faults or other hydrologic connection exist.
- XIII. A copy of this application has been sent by certified mail to the following:

United States Department of Interior  
Bureau of Land Management  
Farmington District Office  
1235 La Plata Highway  
Farmington, New Mexico 87401

There are no offset leasehold operators within one-half mile of the well location.

- XIV. Certification shown on Application.

## APPLICATION FOR AUTHORIZATION TO INJECT

- I. Purpose:  Secondary Recovery  Pressure Maintenance  Disposal  Storage  
Application qualifies for administrative approval?  yes  no
- II. Operator: Giant Exploration & Production Company  
Address: P.O. Box 2810 Farmington, NM 87499  
Contact party: Gregory McIntosh Phone: (505) 326-3325
- 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: Paul R. Williams Title Area Engineer
- Signature: Paul R. Williams Date: 4/17/95
- \* 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.

## 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.

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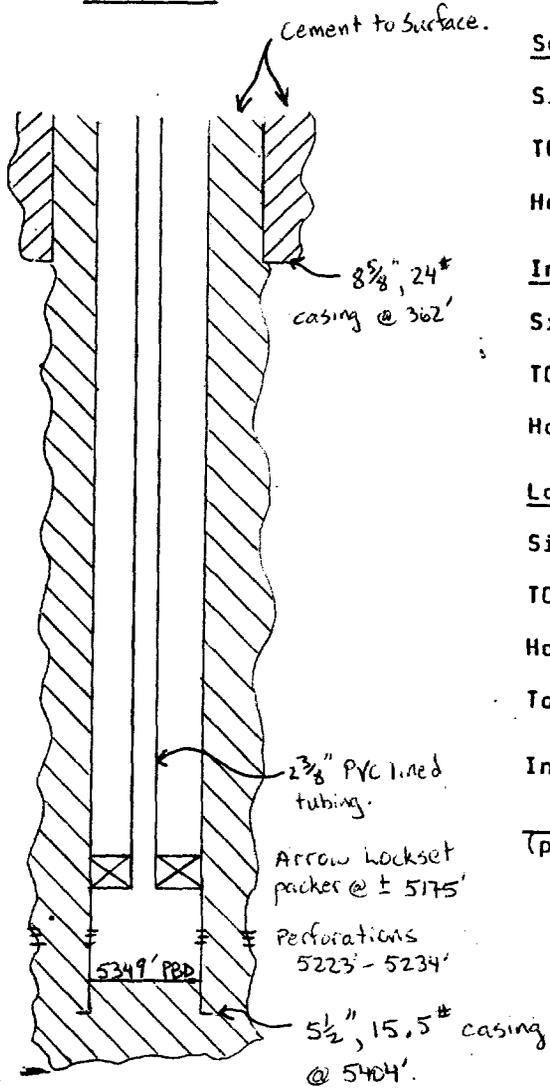
NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

# INJECTION WELL DATA SHEET

OPERATOR Giant Exploration & Production Company	LEASE South Bisti 30L			
WELL NO. 1	FOOTAGE LOCATION 1650' FSL, 850' FWL	SECTION 30	TOWNSHIP 26N	RANGE 13W

Schematic

Tubular Data



Surface Casing

Size 8-5/8 " Cemented with 230 sx.  
 TOC surface feet determined by circulation  
 Hole size 12-1/4"

Intermediate Casing

Size N/A " Cemented with \_\_\_\_\_ sx.  
 TOC \_\_\_\_\_ feet determined by \_\_\_\_\_  
 Hole size \_\_\_\_\_

Long string

Size 5-1/2 " Cemented with 700 sx.  
 TOC surface feet determined by circulation  
 Hole size 7-7/8"

Total depth 5425'

Injection interval

5223' feet to 5234' feet (perforated)  
 (perforated or open-hole, indicate which)

Tubing size 2-3/8" lined with PVC set in a  
 (material)  
Arrow Lockset packer at ± 5175 feet.  
 (brand and model)

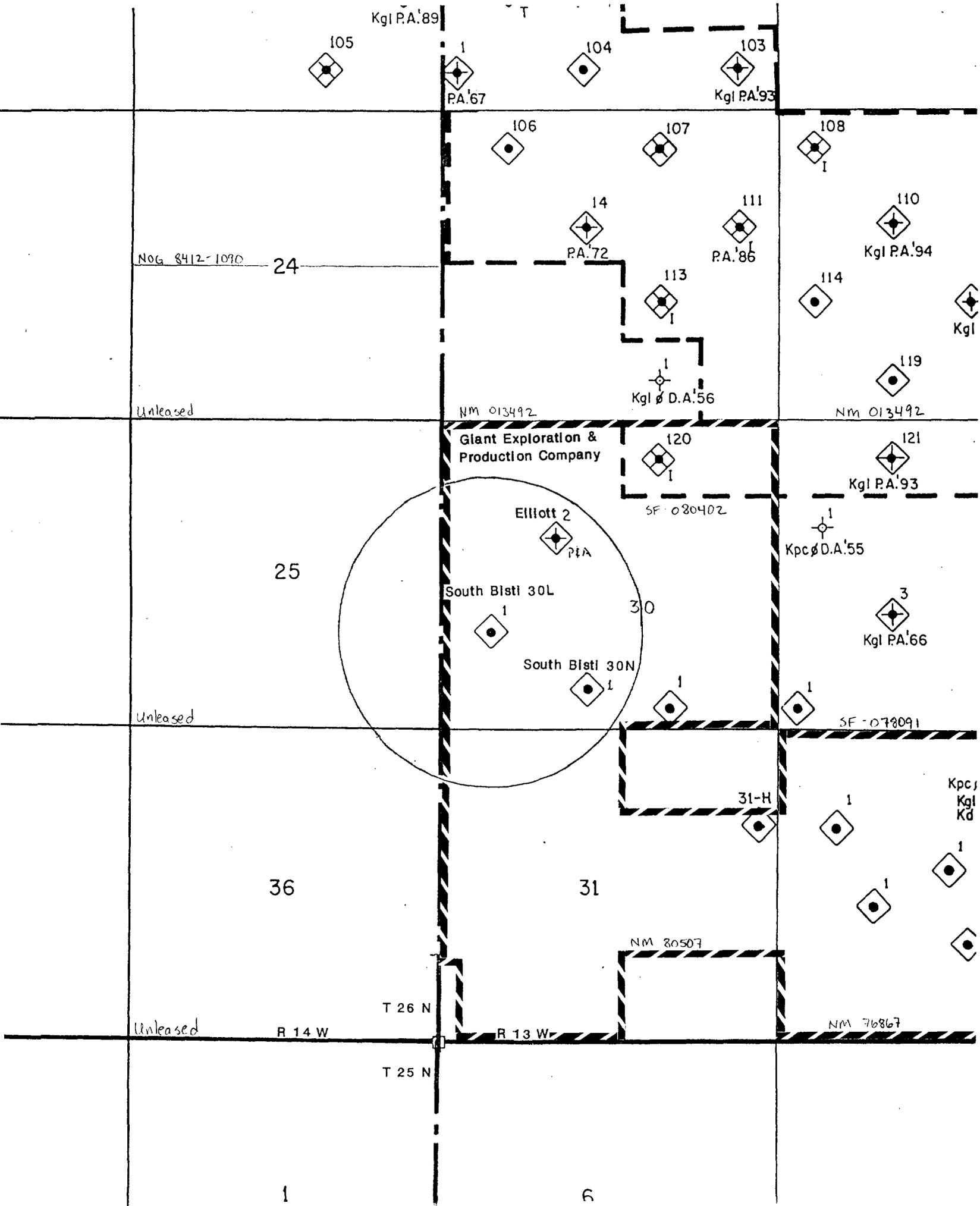
(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation Gallup
2. Name of Field or Pool (if applicable) Bisti Lower Gallup
3. Is this a new well drilled for injection?  Yes  No  
 If no, for what purpose was the well originally drilled? Developmental Well

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) No.

5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. Pictured Cliffs - 3648' above.



Kgl P.A.'89

105

1  
PA.'67

104

103  
Kgl P.A.'93

106

107

108  
1

Nog 8412-1090

24

14  
PA.'72

111  
PA.'86

110  
Kgl P.A.'94

113  
1

114

Kgl

Unleased

NM 013492

1  
Kgl D.A.'56

119  
Nm 013492

Giant Exploration & Production Company

120  
1

121  
Kgl P.A.'93

SF 080402

1  
Kpc D.A.'55

25

Elliott 2  
P.A.

South Bistl 30L

1

30

South Bistl 30N

1

3  
Kgl P.A.'66

Unleased

SF 078091

36

31

31-H  
1

Kpc,  
Kgl  
Kd

NM 80507

T 26 N

Unleased

R 14 W

R 13 W

NM 76867

T 25 N

1

6

## WELL DATA SHEET

Well Name:	South Bisti 30N #1
Legal Description:	660' FSL, 2520' FWL Sec. 30, T26N, R13W San Juan County, New Mexico
Well Type:	Oil Well
Spud Date:	6/21/90
Surface Casing Hole Size:	12-1/4"
Surface Casing Size:	8-5/8"
Surface Casing Depth:	362'
Cementing Record:	220 sks
Production Casing Hole Size:	7-7/8"
Production Casing Size:	5-1/2"
Production Casing Depth:	5369'
Cementing Record:	700 sks
Perforation:	5210'-5222'
Plug Back Depth:	5316'
Total Depth:	5375'

# Giant Exploration & Production Company

## Well Bore Diagram

**WELL NAME** Elliott Well No. 2  
**LOCATION** 1980' ENL, 2520' FWL (SE/4 NW/4) **SECTION** 30 **T** 26 N **R** 13 W  
**COUNTY** San Juan **STATE** New Mexico

**SURFACE CASING**

Hole Size: 13-3/4"  
 Casing: 10-3/4", 32.75#  
 Casing Set @ 187' with 200 sks  
cement.

**FORMATION TOPS**

Kirtland-Fruitland	455'
Farmington	1074'
Pictured Cliffs	1643'
Lewis	1782'
Cliffhouse	2574'
Point Lookout	4877'
Mancos	5001'
Gallup	5255'

**CEMENT TOP** 4450' (by calc)

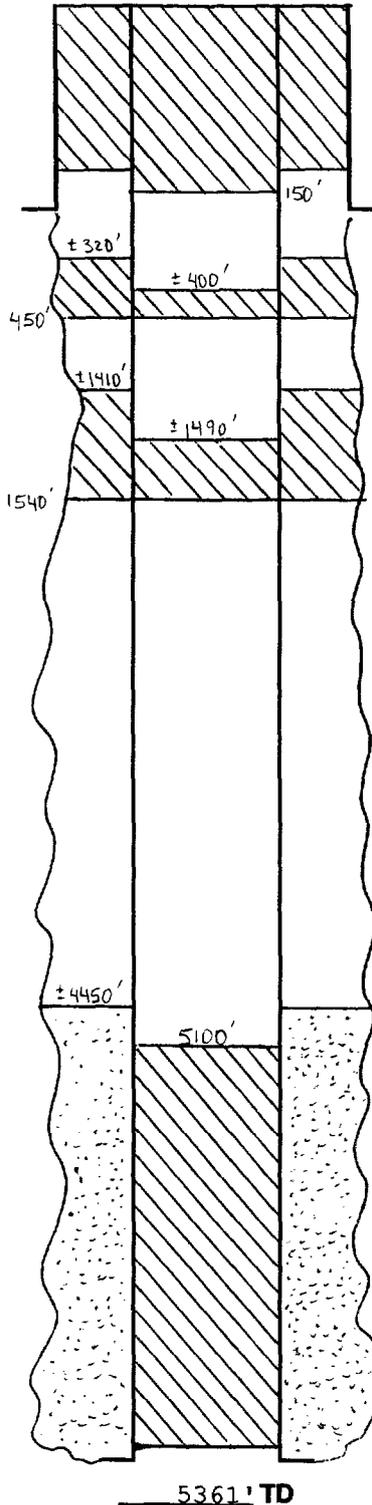
**PERFORATIONS**

5263'-97'

**PBD** 5359'

**PRODUCTION CASING**

Hole Size: 8-3/4"  
 Casing: 5-1/2", 15.5#  
 Casing Set @ 5359' with 200 sks  
cement.



**GLE** 6512'  
**KBE** \_\_\_\_\_  
**DF** \_\_\_\_\_

**WELL HISTORY**

Spud date: 6/23/56  
 Original owner: CM&W Drilling Co.  
 IP 7/25/56 BOPD 20 BWPD -  
 MCFD \_\_\_\_\_ GOR \_\_\_\_\_  
 Completion Treatment: \_\_\_\_\_  
Well was frac'd.

**CURRENT DATA**

Pumping Unit \_\_\_\_\_  
 Tubing \_\_\_\_\_  
 Pump Size \_\_\_\_\_  
 Rod string \_\_\_\_\_  
 Remarks \_\_\_\_\_  
Well was P&A's as follows:  
(Has steel plate 4' below GR)  
Plug #1: 5100' to 5359'  
Shot 4 holes at 1540'.  
Plug #2: Squeezed 35 sks into  
holes at 1540'. Left 50' of  
cement in casing.  
Shot 4 holes at 450'.  
Plug #3: Squeezed 35 sks into  
holes at 450'. Left 50' of  
cement in casing.  
Plug #4: 10 sks cement from  
surface to 150'.  
Pumped 40 sks down surface  
casing. (P&A'd 11/78).  
 Date Last Revised: 3/27/95

5361' TD

ANALYSIS NO. 91-06-91  
 FIELD RECEIPT NO. \_\_\_\_\_

API FORM 45-1

API WATER ANALYSIS REPORT FORM

Company <u>Giant</u>		Sample No.	Date Sampled <u>01-17-90</u>	
Field	Legal Description <u>330 T26N R13W</u>	County or Parish <u>San Juan</u>	State <u>NM</u>	
Lease or Unit <u>South Bisti</u>	Well <u>30-N</u>	Depth	Formation <u>Gallup</u>	Water. B/D
Type of Water (Produced, Supply, etc.)	Sampling Point			Sampled By

DISSOLVED SOLIDS

CATIONS	mg/l	me/l
Sodium, Na (calc)	<u>18544</u>	<u>806.24</u>
Calcium, Ca	<u>822</u>	<u>41.00</u>
Magnesium, Mg	<u>182</u>	<u>15.00</u>
Barium, Ba	—	—
Potassium, K <sup>+</sup>	<u>90</u>	<u>2.30</u>

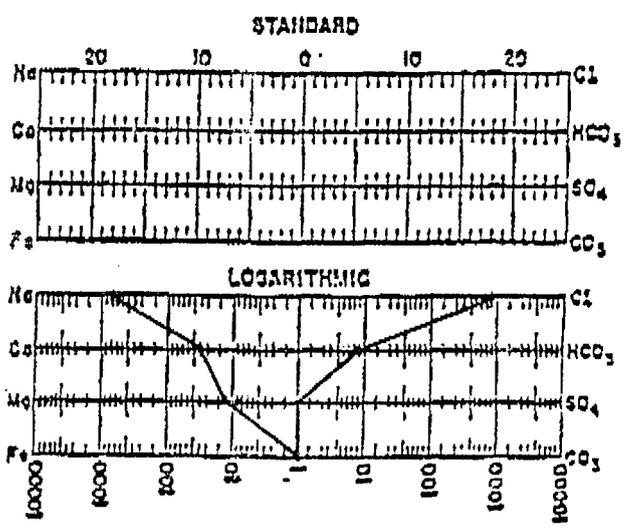
OTHER PROPERTIES

pH	<u>6.86</u>
Specific Gravity, 60/60 F.	<u>1.038</u>
Resistivity (ohm-meters) <u>76F.</u>	<u>.135</u>
Total hardness	<u>2800</u>

ANIONS

Chloride, Cl	<u>30348</u>	<u>856.06</u>
Sulfate, SO <sub>4</sub>	<u>0</u>	<u>0</u>
Carbonate, CO <sub>3</sub>	<u>0</u>	<u>0</u>
Bicarbonate, HCO <sub>3</sub>	<u>517</u>	<u>8.48</u>
OH	<u>0</u>	<u>0</u>

WATER PATTERNS — me/l



Total Dissolved Solids (calc) 50,503

Iron, Fe (total) #Att 10.0 ppm  
 Sulfide, as H<sub>2</sub>S neg

REMARKS & RECOMMENDATIONS:

ANALYST: Lee

THE WESTERN COMPANY OF  
 NORTH AMERICA, FARMINGTON, NM  
 (505) 327-6222

please refer any questions to: **BRIAN ADLT**, District Engineer



OIL CONSERVATION DIVISION  
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MAY 11 1995 AM 8 52

**GIANT EXPLORATION &  
PRODUCTION COMPANY**

2200 Bloomfield Highway  
Post Office Box 2810  
Farmington, New Mexico  
87499-2810

	FAX
505	505
326-3325	327-7987

May 11, 1995

New Mexico Oil Conservation Division  
State Land Office Building  
P.O. Box 2088  
Santa Fe, New Mexico 87504

Subject: South Bisti 30L Well No. 1

Dear Sir:

Enclosed please find the Affidavit of Publication for the above referenced wells pertaining to our Application for Authorization to Inject.

If you have any questions please call me at (505)326-3325.

Sincerely,

Diane G. Jaramillo  
Production/Regulatory Manager

DGJ/klb

Enclosure

**AFFIDAVIT OF PUBLICATION**

**COPY OF PUBLICATION**

No. 34666

**STATE OF NEW MEXICO**  
**County of San Juan:**

**ROBERT LOVETT** being duly sworn says: That he is the Classified Manager of THE DAILY TIMES, a daily newspaper of general circulation published in English at Farmington, said county and state, and that the hereto attached Legal Notice was published in a regular and entire issue of the said DAILY TIMES, a daily newspaper duly qualified for the purpose within the meaning of Chapter 167 of the 1937 Session Laws of the State of New Mexico for publication on the following day(s):

Saturday, April 22, 1995

and the cost of publication was: \$17.83

*Robert Lovett*

On *4/22/95* **ROBERT LOVETT** appeared before me, whom I know personally to be the person who signed the above document.

*Mary S. Smeal*

My Commission Expires

*March 21, 1998*

**Legals**



**NOTICE**

Giant Exploration & Production Company, P.O. Box 2810, Farmington, New Mexico 87499, (505) 326-3325, whose agent is Gregory E. McIntosh hereby notifies interested parties that the following well is to be converted to a water disposal well. Disposal will be into the Gallup perforated interval from 5223' - 5234'. Maximum rate will be 1200 BWPD at less than 1045 psi. Any request for information or objections should be filed with the Oil Conservation Division, State Land Office Building, P.O. Box 2088, Santa Fe, New Mexico 87504 within 15 days.

South Dist 30L Well No. 1  
NW/4, SW/4  
Sec. 30, T26N, R13W  
San Juan County, New Mexico

Legal No. 34666 published in  
The Daily Times, Farmington,  
New Mexico, Saturday, April  
22, 1995.