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GIANT EXPLORATION &
PRODUCTION COMPANY

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

	FAX
505	505
326-3325	327-7987

August 27, 1993

Mr. Frank Chavez
New Mexico Oil Conservation Division
1000 Rio Brazos Road
Aztec, New Mexico 87410

RECEIVED
AUG 31 1993
OIL CON. DIV
DIST. 3

Subject: Carson Unit Well No. 44-13
735' FSL, 735' FEL
P Sec. 13, T25N, R12W
San Juan County, New Mexico

Dear Mr. Chavez:

Enclosed for your information is our Application for Authorization to Inject for the above referenced well. The original Application has been sent to the New Mexico Oil Conservation Division in Santa Fe for approval.

Sincerely,

A handwritten signature in cursive script that reads "Diane G. Jaramillo".

Diane G. Jaramillo
Administrative Manager

/dgj

Enclosure

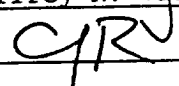
RECEIVED

FORM C-108
Revised 7-1-81

AUG 31 1993

OIL CON. DIV
DIST. 3

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, New Mexico 87499
CONTACT PARTY: Jeffrey R. Vaughan PHONE: (505) 326-3325
- III. WELL DATA: Complete the data required on the reverse side of this form for each well processed 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 sources 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: Jeffrey R. Vaughan TITLE: Vice President/Operations
SIGNATURE:  DATE: August 10, 1993
- * If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted. Please show the date and circumstance of the earlier submittal. _____

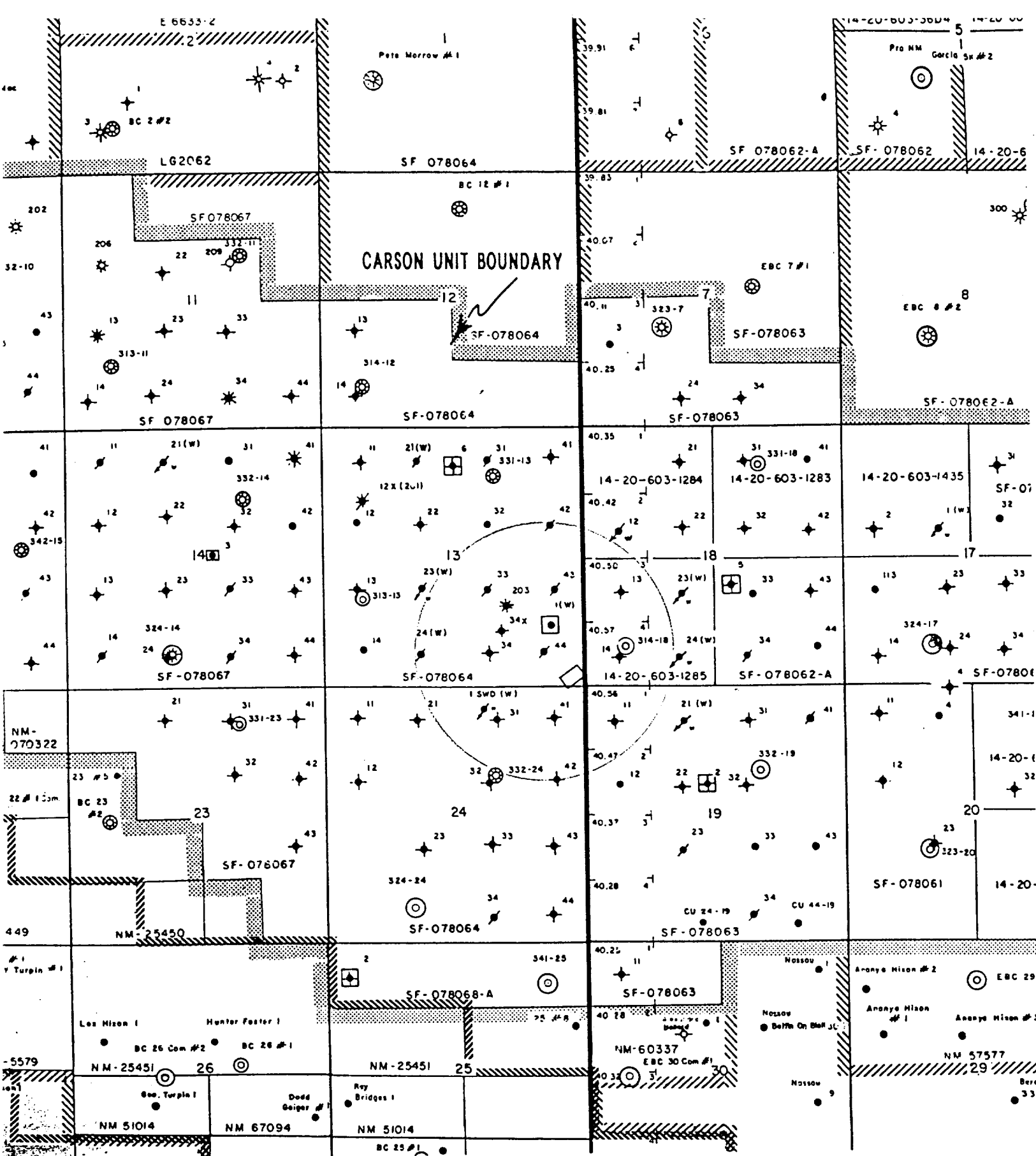
DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate District Office

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

Carson Unit Well No. 44-13
SE/4, SE/4, Sec. 13, T25N, R12W
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 as follows:
 - Carson Unit No. 11-19
 - Carson Unit No. 13-18
 - Carson Unit No. 14-18
 - Carson Unit No. 24-13
 - Carson Unit No. 31-24
 - Carson Unit No. 33-13
 - Carson Unit No. 34-13
 - Carson Unit No. 41-24
 - Carson Unit No. 42-13
 - Carson Unit No. 42-24
 - Carson Unit No. 43-13
- 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 954 - 979 psi range. Maximum injection pressure will be 979 psi.
 - 4. Refer to the attached water analysis report. Since the formation water to be encountered is primarily previously injected water, no problems are expected in mixing the two waters.
 - 5. This well is part of an extensive waterflood project active in the Carson Unit since 1959. All produced water is reinjected into the oil productive Lower Gallup sand to maintain pressure. Injection into the Lower Gallup sand is for waterflooding, not disposal.

- VIII. The injection zone is the Lower Gallup sandstone. This zone is to be 26' in thickness with a top of 4869' 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.
- 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 is part of the existing approved waterflood operation for the Carson Unit. It is not a disposal well.
- XIII. Proof of notification is attached.
- XIV. Certification shown on Application.



Giant Exploration & Production
Company
Well Bore Diagram

WELL NAME Carson Unit Well No. 44-13
LOCATION 735' FSL, 735' FEL SECTION 13 T 25 N R 12 W
COUNTY San Juan STATE New Mexico

SURFACE CASING

Hole Size: 12-1/4"
Casing: 8-5/8", 24#, J-55
Casing Set @ 106' with 100 sx
cement containing 2% CaCl.

FORMATION TOPS

<u>Pictured Cliffs</u>	<u>1211'</u>
<u>Lewis</u>	<u>1418'</u>
<u>Cliffhouse</u>	<u>1584'</u>
<u>Menefee</u>	<u>2096'</u>
<u>Point Lookout</u>	<u>3688'</u>
<u>Mancos</u>	<u>3848'</u>
<u>Upper Gallup</u>	<u>4774'</u>

CEMENT TOP 4240' (Calc.)

PERFORATIONS

4869'-95'

PBD 4900' Proposed

PRODUCTION CASING

Hole Size: 7-7/8"
Casing: 4-1/2", 9.5#, J-55
Casing Set @ 5013' with 150 sx
cement containing 4% gel.

GLE 6412.28'

KBE 6420.88'

DF 6419.68'

WELL HISTORY

Spud date: 7/11/59

Original owner: Shell Oil Co.

IP 7/29/59 BOPD 137 BWPD -

MCFD 266 GOR 1940

Completion Treatment:

Spot 200 gal acid. Frac with
50,000 gal crude, 1#/gal sand

CURRENT DATA

Pumping Unit

Tubing 2-3/8" @4852'

Pump Size

Rod string

Remarks

Proposed water injection
schematic.

Packer
@4770'

5025' TD

Date Last Revised: 8/18/93

WELL DATA SHEET

Well Name:	Carson Unit #44-13
Legal Description:	735' FSL, 735' FEL Sec. 13, T25N, R12W San Juan County, N.M.
Well Type:	Water Injection Well (Waiting on Approval)
Spud Date:	07-11-59
Surface Casing Hole Size:	12-1/4"
Surface Casing Size:	8-5/8"
Surface Casing Depth:	106'
Cementing Record:	100 sks.
Production Casing Hole Size:	7-7/8"
Production Casing Size:	4-1/2"
Production Casing Depth:	5013'
Cementing Record:	150 sks.
Perforation:	4869' - 4895'
Plug Back Depth:	4900'
Total Depth:	5025'

Hixon Development Company
Well Bore Diagram

WELL NAME Carson Unit Well No. 13-18

LOCATION 1980' FSL, 750' FWL

SECTION 18 T 25 N R 11 W

COUNTY San Juan

STATE New Mexico

SURFACE CASING

Hole Size: 12-1/4"

Casing: 8-5/8, 24#

Casing Set @ 109'

FORMATION TOPS

Pictured Cliffs 1190'

Lewis 1407'

Cliff House 1575'

Allison-Menefee 2030'

Point Lookout 3702'

Mancos 3863'

Gallup 4773'

CEMENT TOP

PERFORATIONS

4874'-90'

4892'-98'

4904'-12'

4954'-68'

4974'-84'

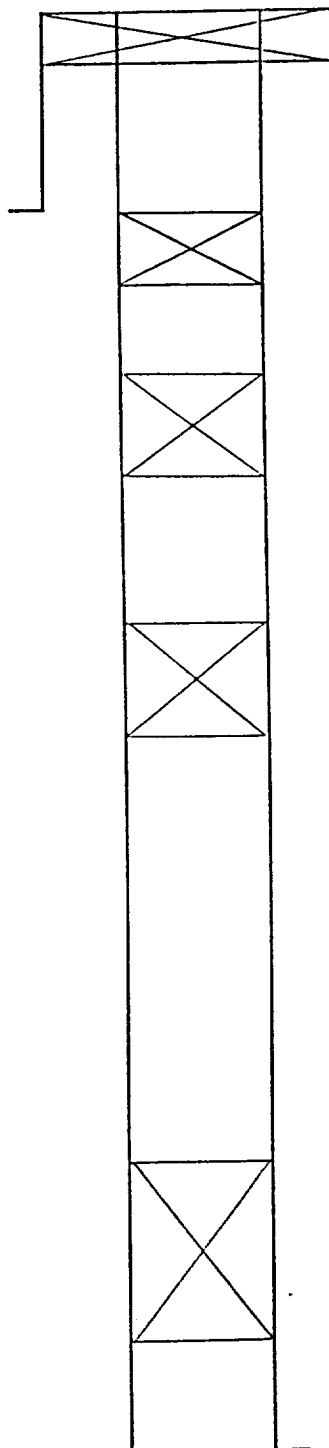
PBD 5038'

PRODUCTION CASING

Hole Size: 7-7/8"

Casing: 4-1/2", 9.5#

Casing Set @ 5038'



5040' TD

GLE 6386.3'

KBE 6395.3'

DF 6393.8'

WELL HISTORY

Spud date: 1/11/60

Original owner: Shell Oil Co.

IP 3/7/60 BOPD 25 BWPD 0

MCFD 57 GOR 2280

Completion Treatment: _____
Fraced with 50,000 gal crude,
1 #/gal sand and 120 balls

CURRENT DATA

Pumping Unit _____

Tubing _____

Pump Size _____

Rod string _____

Remarks _____

Plug and abandoned 10/12/77

10 sk cmt plug at surface

25 sk cmt plug set at 180'

35 sk cmt plug set at 380'

50 sk cmt plug set at 1240'

20 sk cmt plug set across
perforations (4874'-4984')

Date Last Revised: 2/2/90

WELL DATA SHEET

Well Name: Carson Unit #24-13

Legal Description: 660' FSL, 1980' FWL
Sec. 13, T25N, R12W
San Juan County, N.M.

Well Type: Water Injection

Spud Date: 12-01-59

Surface Casing Hole Size: 12-1/4"
Surface Casing Size: 8-5/8"
Surface Casing Depth: 111'

Cementing Record: 100 sks.

Production Casing Hole Size: 7-7/8"
Production Casing Size: 4-1/2"
Production Casing Depth: 5031'

Cementing Record: 150 sks.

Perforation: 4864' - 4888'
4897' - 4905'
4932' - 4938'
4946' - 4958'
4964' - 4978'

Plug Back Depth: 5031'

Total Depth: 5035'

WELL DATA SHEET

Well Name:	Carson Unit #33-13
Legal Description:	1980' FSL, 1980' FEL Sec. 13, T25N, R12W San Juan County, N.M.
Well Type:	Oil Well
Spud Date:	07-03-59
Surface Casing Hole Size:	12-1/4"
Surface Casing Size:	8-5/8"
Surface Casing Depth:	104'
Cementing Record:	100 sks.
Production Casing Hole Size:	7-7/8"
Production Casing Size:	4-1/2"
Production Casing Depth:	5038'
Cementing Record:	150 sks.
Perforation:	4876' - 4898' 4907' - 4914' 4945' - 4951' 4959' - 4968' 4978' - 4982'
Plug Back Depth:	5000'
Total Depth:	5040'

Giant Exploration & Production
Company
Well Bore Diagram

WELL NAME Carson Unit Well No. 34-13
LOCATION 660' FSL, 1976' FEL SECTION 13 T 25 N R 12 W
COUNTY San Juan STATE New Mexico

SURFACE CASING

Hole Size: 12-1/4"
Casing: 8-5/8", 24#, J-55
Casing Set @ 218' with 130 sks
cement containing 2% CaCl.

FORMATION TOPS

Pictured Cliffs 1213'
Lewis 1417'
Cliffhouse 1590'
Menefee 2068'
Point Lookout 3693'
Mancos 3874'
Gallup 4778'

CEMENT TOP 4100' (Calc.)

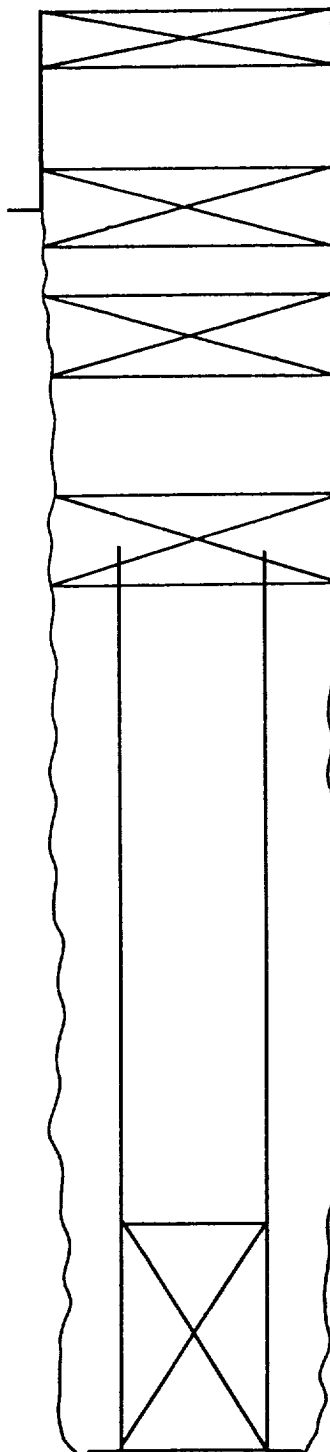
PERFORATIONS

4876'-4900'
4908'-16'
4944'-52'
4958'-72'
4976'-94'

PBD 5036'

PRODUCTION CASING

Hole Size: 7-7/8"
Casing: 4-1/2", 9.5#
Casing Set @ 5096' with 150 sks
cement containing 4% gel.



GLE 6412.1'

KBE 6421.1'

DF 6420'

WELL HISTORY

Spud date: 5/13/57
Original owner: Shell Oil Co.
IP 2/13/58 BOPD 100 BWPD -
MCFD 360 GOR 356
Completion Treatment: 2 Stage frac w/72,000 gal oil
and 1 #/gal 20/40 mesh sand.

CURRENT DATA

Pumping Unit _____
Tubing _____
Pump Size _____
Rod string _____
Remarks Well was P&A'd in 1977.
Gallup perforations were
plugged in 1975. Cement top
in casing calculated at
4585'.
Casing shot off at 1180'
50 sk plug set across casing
stub, Pictured Cliffs, and
Fruitland Coal.
35 sk plug placed over Ojo
Alamo.
25 sk plug placed over surface
casing shoe.
10 sk plug set at surface.
Date Last Revised: 8/9/93

5104' TD

WELL DATA SHEET

Well Name: Carson Unit #42-13

Legal Description: 1980' FNL, 660' FEL
Sec. 13, T25N, R12W
San Juan County, N.M.

Well Type: Oil Well

Spud Date: 08-09-59

Surface Casing Hole Size: 12-1/4"
Surface Casing Size: 8-5/8"
Surface Casing Depth: 106'

Cementing Record: 100 sks.

Production Casing Hole Size: 7-7/8"
Production Casing Size: 4-1/2"
Production Casing Depth: 4903'

Cementing Record: 150 sks.

Perforation: 4886' - 4898'

Plug Back Depth: 4902'

Total Depth: 4903'

WELL DATA SHEET

Well Name: Carson Unit #43-13

Legal Description: 1980' FSL, 660' FEL
Sec. 13, T25N, R12W
San Juan County, N.M.

Well Type: Oil Well

Spud Date: 01-12-57

Surface Casing Hole Size: 12-1/4"
Surface Casing Size: 8-5/8"
Surface Casing Depth: 234'

Cementing Record: 150 sks.

Production Casing Hole Size: 7-7/8"
Production Casing Size: 4-1/2"
Production Casing Depth: 5033'

Cementing Record: 200 sks.

Perforation: 4889' - 4897'
4900' - 4914'
4922' - 4927'

Plug Back Depth: 4965'

Total Depth: 5054'

Giant Exploration & Production
Company
Well Bore Diagram

WELL NAME Carson Unit Well No. 42-24
LOCATION 1880' FSL, 560' FEL SECTION 24 T 25N R 12W
COUNTY San Juan STATE New Mexico

SURFACE CASING

Hole Size: 12-1/4"
Casing: 8-5/8", 24#, J-55
Casing Set @ 110' with 100 sks
cement containing 2% CaCl.

FORMATION TOPS

<u>Pictured Cliffs</u>	<u>1247'</u>
<u>Lewis</u>	<u>1426'</u>
<u>Cliffhouse</u>	<u>1591'</u>
<u>Menefee</u>	<u>2479'</u>
<u>Point Lookout</u>	<u>3680'</u>
<u>Mancos</u>	<u>3862'</u>
<u>Gallup</u>	<u>4782'</u>

CEMENT TOP

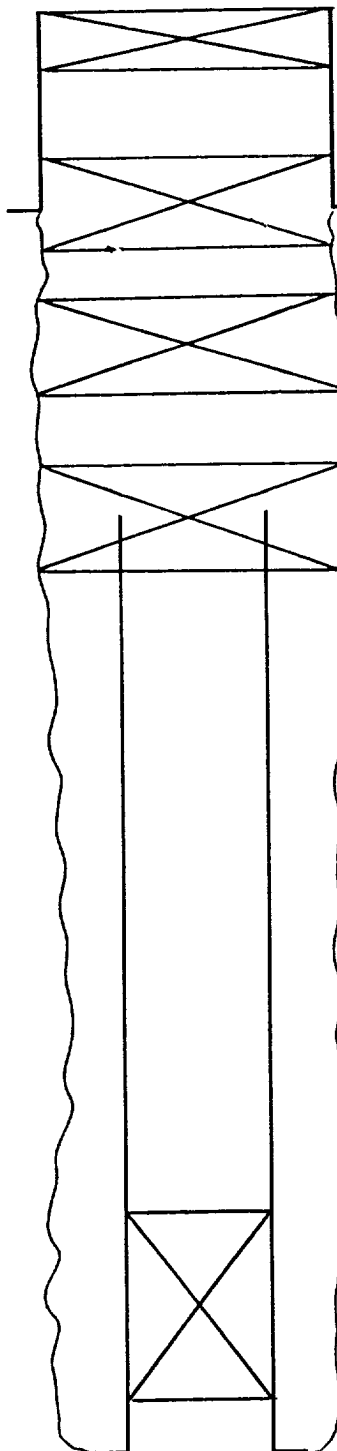
PERFORATIONS

4880'-99'
4913'-26'
4944'-55'
4964'-72'
4982'-86'

PBD

PRODUCTION CASING

Hole Size: 7-7/8"
Casing: 4-1/2", 9.5#
Casing Set @ 5009' with 150 sks
cement containing 4% gel
(220 cu.ft.)



GLE 6456.27'

KBE 6464.97'

DF 6463.77'

WELL HISTORY

Spud date: 8/17/59
Original owner: Shell Oil Co.
IP 9/11/59 BOPD 101 BWPD 0
MCFD 440 GOR 4350
Completion Treatment: Fracs w/ 50,000 gal crude and
1 #/gal sand.

CURRENT DATA

Pumping Unit _____
Tubing _____
Pump Size _____
Rod string _____
Remarks _____
Well was plug and abandoned
in 10/75 as follows:
Set a 35 sk plug across the
Gallup perforations.
Shot the casing off at 1131'.
Placed a 35 sk plug across
the casing stub.
Set a 45 sk plug at 400'.
Set a 35 sk plug at 180'.
Set a 10 sk plug at surface.

5010' TD

Date Last Revised: 8/12/93

Hixon Development Company,
Well Bore Diagram

WELL NAME Carson Unit Well No. 41-24

LOCATION 660 FNL, 660' FEL

SECTION 24 T 25 N R 12 W

COUNTY San Juan

STATE New Mexico

SURFACE CASING

Hole Size: _____
Casing: 8-5/8", 32#
Casing Set @ 228' with 100 sks
of cement

FORMATION TOPS

Pictured Cliffs	1259'
Lewis	1428'
Cliff House	1580'
Allison-Menefee	2057'
Point Lookout	3700'
Mancos	3872'
Gallup	4772'
Sanastee	5232'
Greenhorn	5597'
Dakota	5680'
Morrison	5906'

CEMENT TOP _____

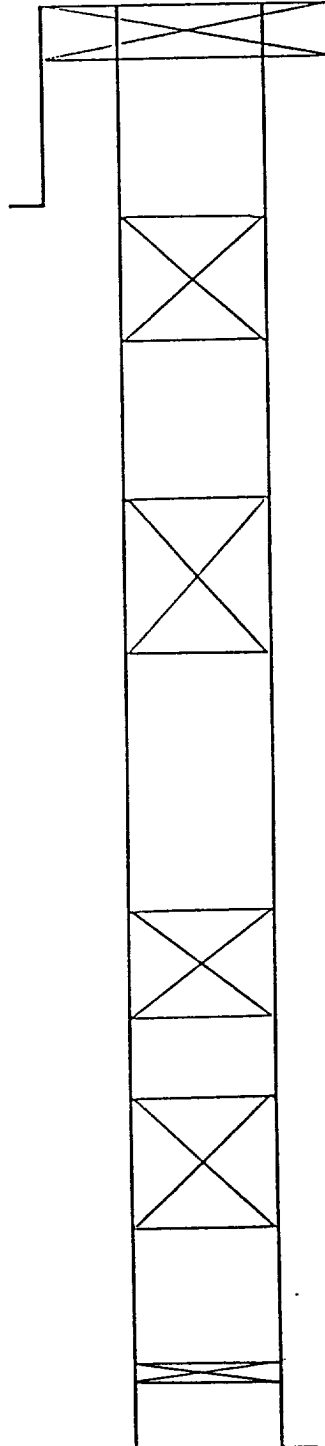
PERFORATIONS

5585'-77'
4875'-95'

PBD 5924'

PRODUCTION CASING

Hole Size: _____
Casing: 5-1/2", 14.5#, J-55
Casing Set @ 5967' with 300
sks of cement



GLE 6427.80'

KBE 6436.89'

DF 6436.02'

WELL HISTORY

Spud date: 7/19/56

Original owner: Shell Oil Co.

IP _____ BOPD _____ BWPD _____

MCFD _____ GOR _____

Completion Treatment: _____

CURRENT DATA

Pumping Unit _____

Tubing _____

Pump Size _____

Rod string _____

Remarks _____

Plug and abandoned 10/12/77

10 sk cmt plug at surface

50 sk cmt plug set at 380'

50 sk cmt plug set at 1247'

11/11/76: 35 sk cmt plug set

at 3900'

Squeezed Gallup perfs with

150 sks cmt 11/5/76

Bridge plug with 1 sk cmt at

5100'

Date Last Revised: 2/2/90

5983' TD

Hixon Development Company,
Well Bore Diagram

WELL NAME Carson Unit Well No. 31-24
LOCATION 660' FNL, 1980' FEL SECTION 24 T 25 N R 12 W
COUNTY San Juan STATE New Mexico

SURFACE CASING

Hole Size: _____
Casing: 8-5/8", 32#, J-55
Casing Set @ 105'

FORMATION TOPS

Pictured Cliffs	1227'
Lewis	1415'
Cliff House	1587'
Allison-Menefee	2070'
Point Lookout	3694'
Mancos	3859'
Gallup	4780'

CEMENT TOP

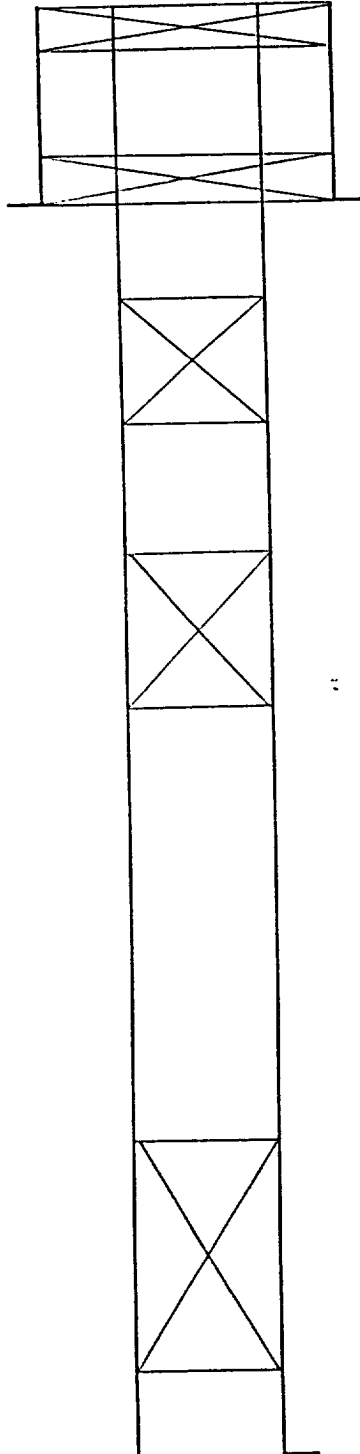
PERFORATIONS

4876'-94'
4919'-24'
4943'-51'
4960'-68'
4976'-86'

PBD 5029

PRODUCTION CASING

Hole Size: _____
Casing: 4-1/2", 9.5#
Casing Set @ 5029'



5030' TD

GLE 6429.0'

KBE 6438.2'

DF 6436.7'

WELL HISTORY

Spud date: 3/21/60
Original owner: Shell Oil Co.
IP 4/15/60 BOPD 196 BWPD 0
MCFD 643 GOR 3280
Completion Treatment: _____
Fraced with 50,000 gal crude,
1#/gal sand, and 100 balls.

CURRENT DATA

Pumping Unit _____
Tubing _____
Pump Size _____
Rod string _____
Remarks _____
Plug and abandoned 8/8/77
10 sk cmt plug at surface
35 sk cmt plug set at 177'
50 sk cmt plug set at 275'
50 sk cmt plug set at 1182'
20 sk cmt plug set across
perforations (4876'-4986')

Date Last Revised: 2/1/90

Hixon Development Company,
Well Bore Diagram

WELL NAME Carson Unit Well No. 11-19
LOCATION 660' FNL, 662.8' FWL SECTION 19 T 25 N R 11 W
COUNTY San Juan STATE New Mexico

SURFACE CASING

Hole Size: 12-1/4"
Casing: 8-5/8", 24#, J-55
Casing Set @ 103' with 100 sks
of cement

FORMATION TOPS

Pictured Cliffs	1234'
Lewis	1406'
Cliff House	1576'
Allison-Menefee	2050'
Point Lookout	3686'
Mancos	3858'
Gallup	4761'

CEMENT TOP

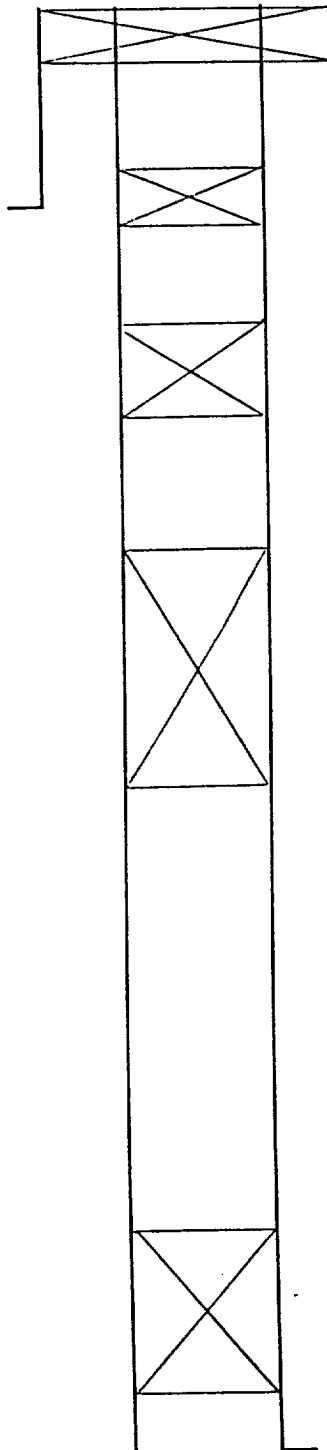
PERFORATIONS

4854'-80'
4889'-96'
4927'-32'
4940'-52'
4959'-70'

PBD 5016'

PRODUCTION CASING

Hole Size: 7-7/8"
Casing: 4-1/2", 9.5#
Casing Set @ 5016' with 150
sks of cement



GLE 6422.6'

KBE 6431.6'

DF 6430.1'

WELL HISTORY

Spud date: 6/9/59
Original owner: Shell Oil Co.
IP 6/26/59 BOPD 96 BWPD 0
MCFD 89 GOR 930
Completion Treatment: fraced with 50,000 gal crude,
1 #/gal sand, and 270 balls

CURRENT DATA

Pumping Unit _____
Tubing _____
Pump Size _____
Rod string _____
Remarks Plug and abandoned 10/19/77
Casing shot off at 1225'
10 sk cmt plug at surface
25 sk cmt plug set at 172'
35 sk cmt plug set at 375'
50 sk cmt plug set at 1225'
25 sk cmt plug set across
perforations (4854'-4970')

5020' TD

Date Last Revised: 2/2/90

San. in testing laboratory, inc.

907 WEST APACHE

P O BOX 2079

FARMINGTON, NEW MEXICO

PHONE

327-4966

Date June 10, 1977

Report to Hixon Development Company
Requested by A. Kuchera, Mgr. Sampled by Hixon Personnel
Project CBU #5 Location NW NW Sec. 6, T25N, R12W
Source of Material Lower Gallup Produced Water
Lab No. 24509 Water Analysis for Petroleum Engineering

TEST RESULTS

WATER ANALYSIS FOR PETROLEUM
ENGINEERING

Constituent

Total Solids 2263 ppm
7.25
Resistivity 2.94 ohms/meter @70°F
Conductivity 3,400 micromhos/cm @ 70°F

Constituents

	Meg/L	ppm
<u>Cations</u>		
Sodium	29.3	674
Calcium	2.3	45
Magnesium	0.5	6
Iron	neg.	3
Barium	0	0

Comments

Essentially this is a 0.2% sodium sulfate solution.

Anions

Chloride	4.1	145
Bicarbonate	4.0	244
Carbonate	0	0
Hydroxide	0	0
Sulfate	24.0	1150

Copies to Hixon Development Co. (3)
P.O. Box 2810
Farmington, New Mexico 87401

Certified by:

