August 20, 1987

New Mexico Oil Conservation Commission
State Land Office Building
P.O. Box 2088
Santa Fe, New Mexico 87501

Subject: Carson Unit Well No. 21-19
660' FNL, 1930' FWL
Section 19, T 25N, R 11W

Dear Sir:

Enclosed for your approval is our Application for Authorization to Inject for the above referenced well.

Very truly yours,

Aldrich L. Kuchera
President

Enclosures

EJB:res

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION
POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501

FORM C-108
Revised 7-1-81

APPLICATION FOR AUTHORIZATION TO INJECT

I. Purpose: ☐ Secondary Recovery ☒ Pressure Maintenance ☐ Disposal ☐ Storage
Application qualifies for administrative approval? ☒ yes ☐ no

II. Operator: Hixon Development Company

Address: P.O. Box 2810, Farmington, New Mexico

Contact party: Aldrich L. Kuchera 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: Aldrich L. Kuchera Title President

Signature: Aldrich L. Kuchera Date: _____

* 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. _____

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

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.

Hixon Development Company
Application for Authorization to Inject
Form C-108 Supplemental Information

Carson Unit Well No. 21-19
NE/4 NW/4, Section 19, T 25N, R 11W
San Juan County, New Mexico

I. Shown on Application.

II. Shown on Application.

III. Well data attached.

IV. This well is located in Federal and State approved waterflood project operational since 1959.

V. Area of review is shown on attached map.

VI. Information for well's located in area of review are attached as follows:

Carson Unit Well No. 14-18
Carson Unit Well No. 23-18
Carson Unit Well No. 24-18
Carson Unit Well No. 34-18
Carson Unit Well No. 11-19
Carson Unit Well No. 12-19
Carson Unit Well No. 22-19
Carson Unit Well No. 23-19
Carson Unit Well No. 31-19
Carson Unit Well No. 32-19
Carson Unit Well No. 41-19
Carson Unit Well No. 41-24

VII. 1. Proposed average injection rate is 600 BWPD, expected maximum injection rate is 1000 BWPD.

2. The injection system will be closed.

3. Average injection pressures are expected to be in the 800-973 psi range. Maximum injection pressure will be 973 psi.

4. Refer to the attached water analysis report. Since the formation water to be encounted 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 shown to be 51' in thickness with a top of 4860' KBE as shown on SP log previously submitted. No known sources of underground drinking water exist in this area. Water well drilling in the area has shown the Ojo Alamo to be dry.

IX. The well will be acidized if required to maintain injection rate and pressure.

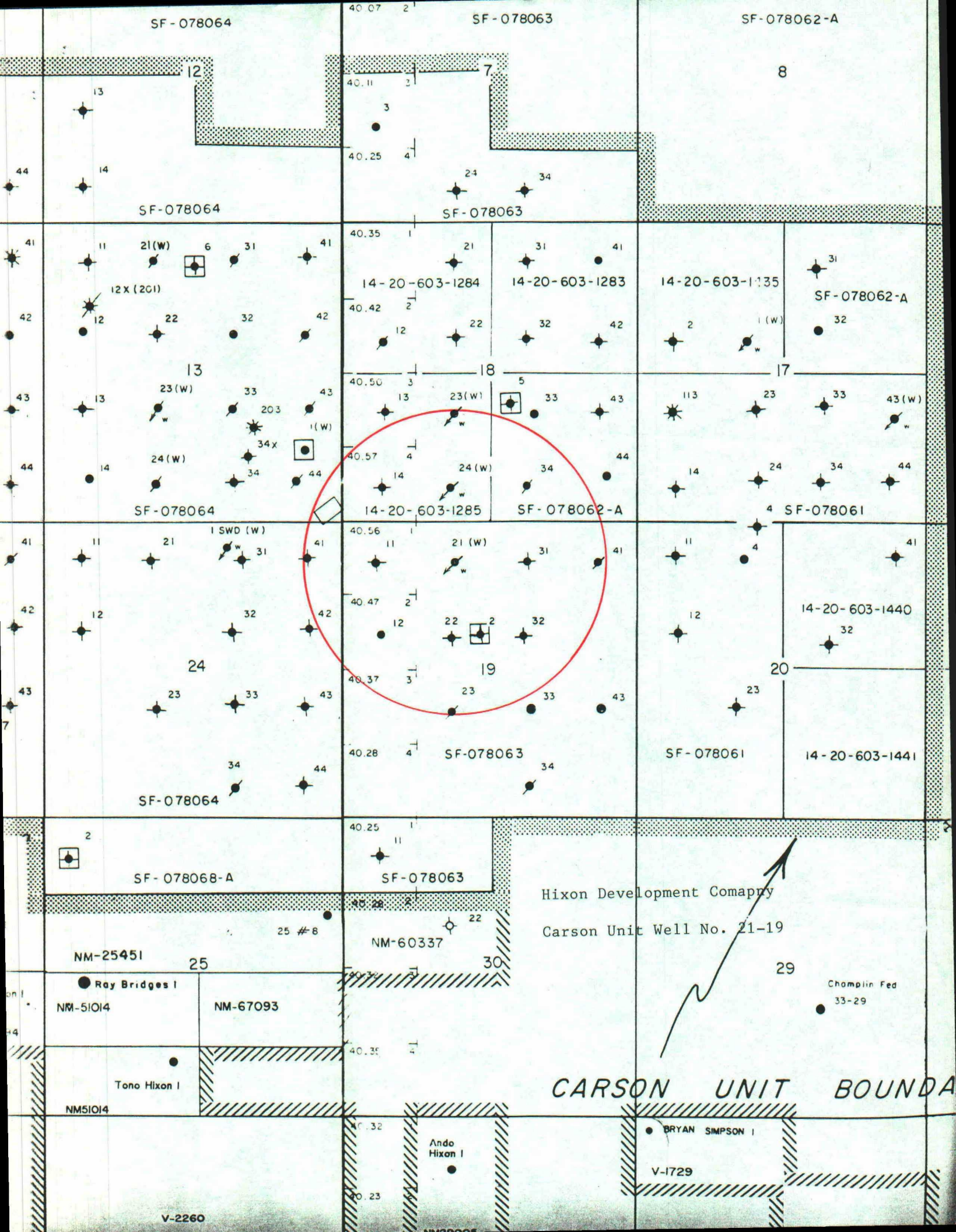
X. Logs were previously submitted.

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 attached.

XIV. Certification shown on application.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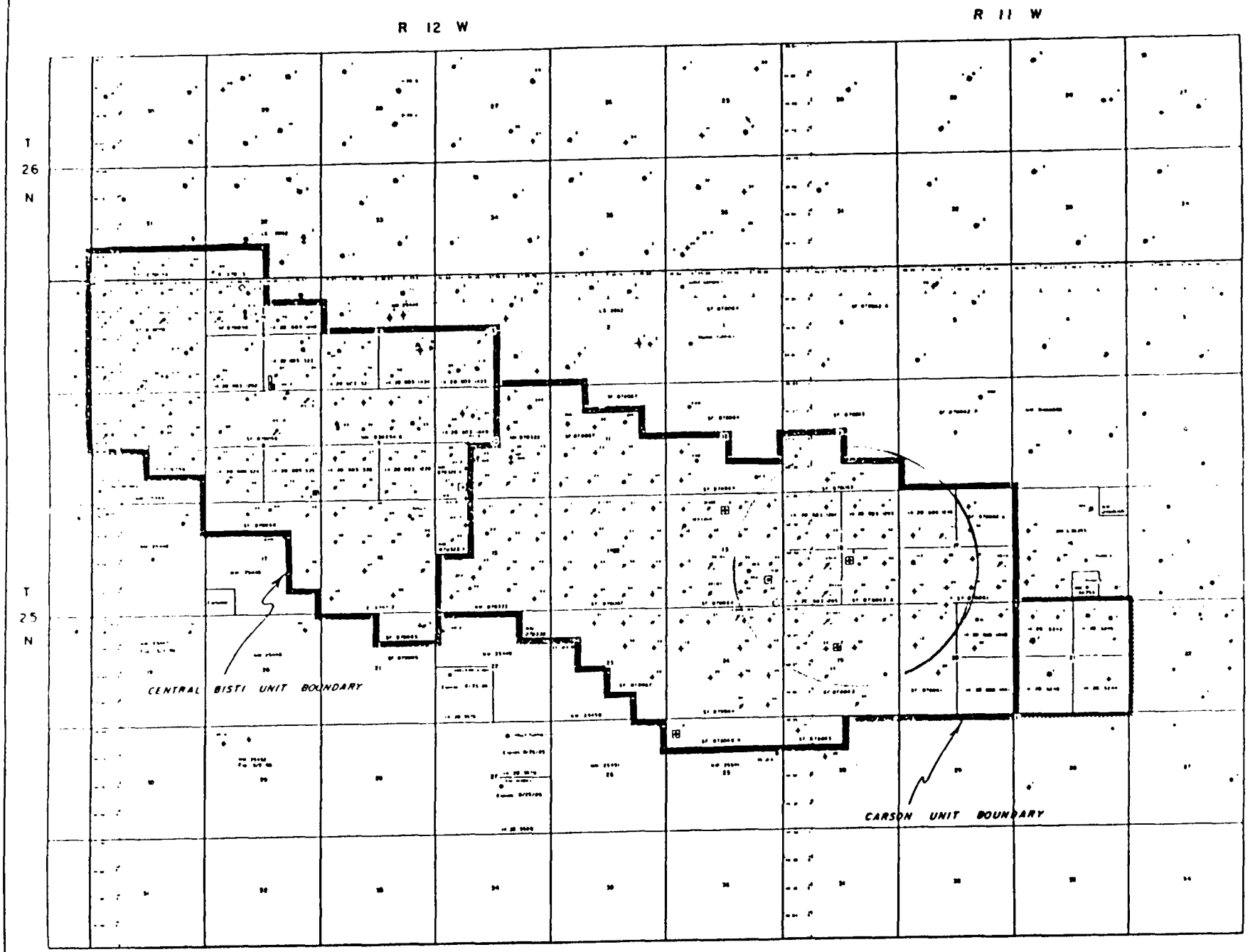
SF-078064
SF-078068-A
SF-078063
NM-25451
NM-60337
Ray Bridges I
NM-51014
NM-67093
Tono Hixon I
NM51014
Ando Hixon I
V-2260
BRYAN SIMPSON I
V-1729
Champlin Fed 33-29
Hixon Development Comapny
Carson Unit Well No. 21-19
CARSON UNIT BOUNDA



NIXON DEVELOPMENT COMPANY

CENTRAL BISTI - CARSON UNIT AREA

San Juan County, New Mexico

San Juan 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

onstituent	
otal Solids	2263 ppm
H	7.25
esistivity	2.94 ohms/meter @70°F
onductivity	3,400 micromhos/cm @ 70°F

Constituents		
Cations	Meg/L	ppm
Sodium	29.3	674
Calcium	2.3	45
Magnesium	0.5	6
Iron	neg.	3
Barium	0	0
Anions		
Chloride	4.1	145
Bicarbonate	4.0	244
Carbonate	0	0
Hydroxide	0	0
Sulfate	24.0	1150

Comments

ssentially this is a 0.2% sodium ulfate solution.

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

Certified by:

LAWRENCE A. BREWER
REGISTERED
PROFESSIONAL ENGINEER AND LAND SURVEYOR
3122
STATE OF NEW MEXICO

INJECTION WELL

DATA SHEET

III. WELL DATA

PART A

1. Carson Unit Well No. 21-19
   660' FNL, 1980' FWL
   Section 19, T 25N, R 11W

2. Surface Casing
   - Hole Size: 12-1/4"
   - Casing: 8-5/8", 24#
   - Setting Depth: 203'

   Production Casing
   - Hole Size: 7-7/8"
   - Casing: 4-1/2"
   - Setting Depth: 5012'

   PBD: 5022'

3. Tubing: 2-3/8"
   Setting Depth: 4803'

4. Packer: Baker Model "AD-1" Packer
   Set at 4665'

PART B

1. Injection Formation: Bisti Lower Gallup
   Field or Pool Name: Bisti Lower Gallup

2. Perforated Injection Intervals: 4866'-4892', 4900'-4908', 4939'-4944', 4951'-4962', 4969'-4978'

3. Well was drilled as a producing well.

4. None

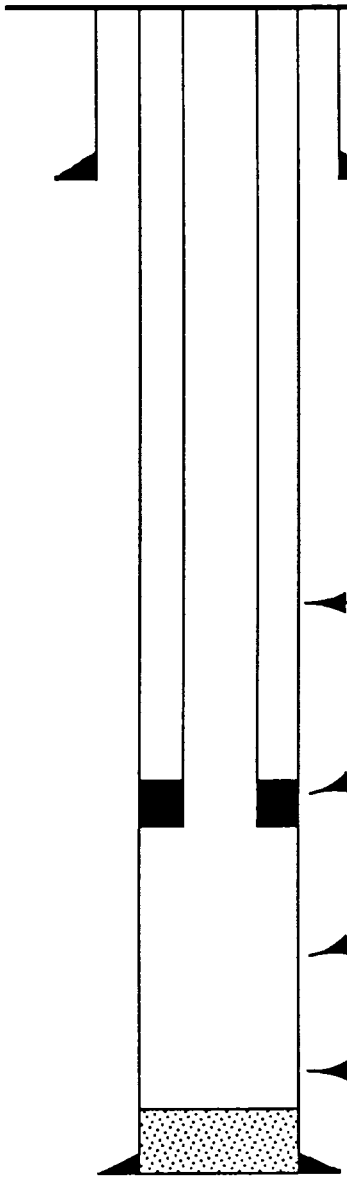
5. Next Higher Oil and Gas Zone: Pictured Cliffs at 1238'
   Next Lower Oil and Gas Zone: Dakota at Unknown Depth

Hixon Development Company

Injection Well Schematic

Well Name: Carson Unit Well No. 21-19

Legal Location: 660' FNL, 1980' FWL
Section 19, T 25N, R 11W
San Juan County, New Mexico



Surface Casing:

8-5/8", 24#, J-55 casing set at 203' with 100 sacks cement.

Tubing:
2-3/8" tubing set at 4803'

Packer:
Baker Model AD-1 Packer set at 4665'.

Perforations:
4866'-4892', 4900'-4908', 4939'-4944', 4951'- 4962', 4969'- 4978'

TD: 5026' **PBD:** 5022'

Production Casing:
4-1/2", 9.5# casing set at 5012' with 150 sacks cement.

NOTICE

Hixon Development Company, P.O. Box 2810, Farmington, New Mexico 87499, (505) 326-3325 whose agent is Aldrich L. Kuchera hereby notifies interested parties that the following well is to be converted to a water injection well. Maximum rate will be 1000 BWPD at less than 973 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 87501 within 15 days.

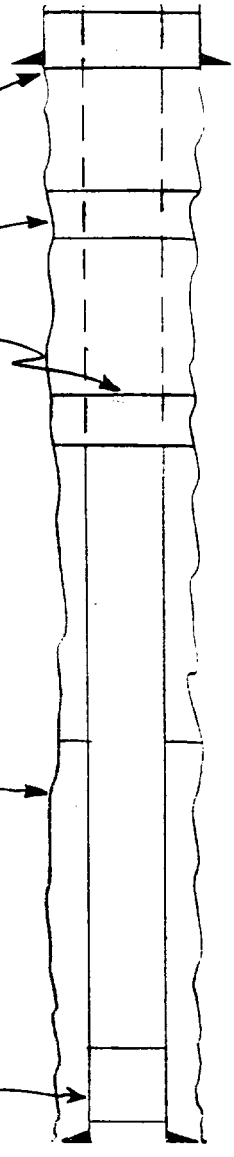
Carson Unit Well 21-19, NE/4 NW/4, Section 19, T 25N, R 11W

This Legal notice will be published in the Farmington Daily Times on Friday August 21, 1987. The Affidavit of Publication will be forwarded to your office as soon as received.

Legal No. :

WELL DATA SHEET

Well Name:	Carson Unit #14-18
Legal Description:	660' FSL, 662.8' FWL Sec. 18, T25N-R11W San Juan County, N.M.
Well Type:	P & A
Spud Date:	01/17/58
Surface Casing Hole Size:	12-1/4"
Surface Casing Size:	8-5/8"
Surface Casing Depth:	100.5'
Cementing Record:	100 sx.
Production Casing Hole Size:	7-7/8"
Production Casing Size:	4-1/2"
Production Casing Depth:	5023'
Cementing Record:	150 sx.
Perforations:	4877'-4904' 4911'-4923' 4951'-4957' 4962'-4976' 4980'-4997'
Plug-Back Depth:	5020'
Total Depth:	5025'



WELL DATA SHEET

Well Name:	Carson Unit #23-18
Legal Description:	1980' FSL, 1888' FWL Sec. 18, T25N-R11W San Juan County, N.M.
Well Type:	Water Injection Well (awaiting approval)
Spud Date:	02/16/58
Surface Casing Hole Size:	12-1/4"
Surface Casing Size:	8-5/8"
Surface Casing Depth:	102'
Cementing Record:	100 sx.
Production Casing Hole Size:	7-7/8"
Production Casing Size:	4-1/2"
Production Casing Depth:	5006'
Cementing Record:	150 sx.
Perforations:	4875'-4891' 4901'-4913' 4944'-4951' 4965'-4970' 4974'-4984'
Plug-Back Depth:	5006'
Total Depth:	5010'

WELL DATA SHEET

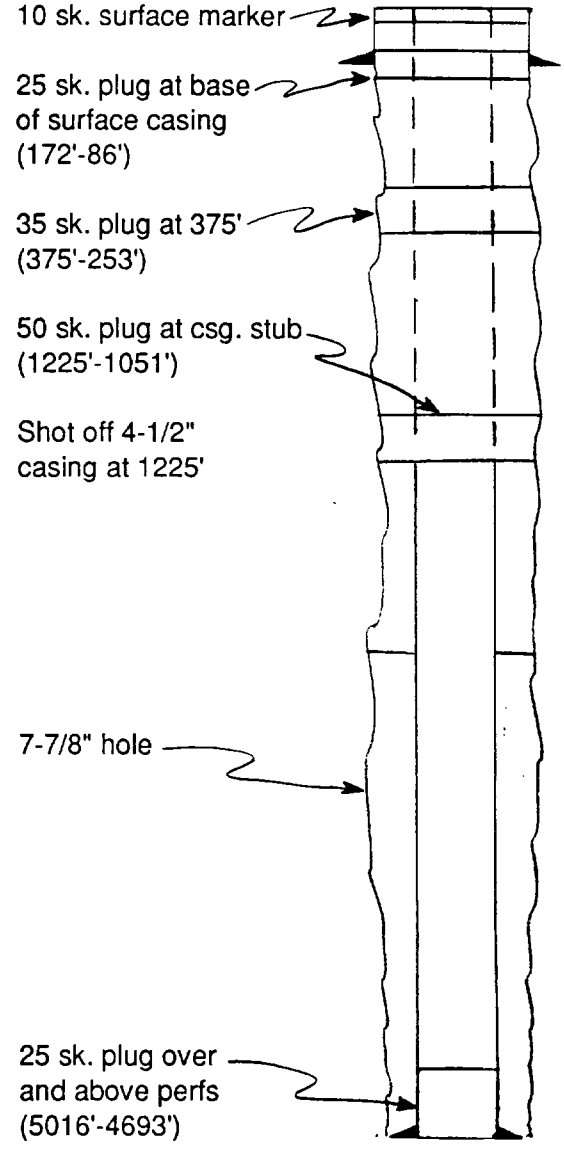
Well Name:	Carson Unit #24-18
Legal Description:	660' FSL, 1930' FWL Sec. 18, T25N-R11W San Juan County, N.M.
Well Type:	Water Injection Well (awaiting approval)
Spud Date:	04/28/59
Surface Casing Hole Size:	12-1/4"
Surface Casing Size:	8-5/8"
Surface Casing Depth:	106'
Cementing Record:	100 sx.
Production Casing Hole Size:	7-7/8"
Production Casing Size:	4-1/2"
Production Casing Depth:	5007'
Cementing Record:	150 sx.
Perforations:	4861'-4889' 4894'-4902' 4934'-4941' 4946'-4960' 4963'-4976'
Plug-Back Depth:	5007'
Total Depth:	5010'

WELL DATA SHEET

Well Name:	Carson Unit #34-18
Legal Description:	660' FSL, 1980' FEL Sec. 18, T25N-R11W San Juan County, N.M.
Well Type:	Oil Well
Spud Date:	08/17/57
Surface Casing Hole Size:	12-1/4"
Surface Casing Size:	8-5/8"
Surface Casing Depth:	176'
Cementing Record:	100 sx.
Production Casing Hole Size:	7-7/8"
Production Casing Size:	4-1/2"
Production Casing Depth:	5010'
Cementing Record:	150 sx.
Perforations:	4869'-4886' 4900'-4908' 4952'-4958' 4971'-4978'
Plug-Back Depth:	4995'
Total Depth:	5014'

WELL DATA SHEET

Well Name:	Carson Unit #11-19
Legal Description:	660' FNL, 662.8' FWL Sec. 19, T25N-R11W San Juan County, N.M.
Well Type:	P & A
Spud Date:	06/09/59
Surface Casing Hole Size:	12-1/4"
Surface Casing Size:	8-5/8"
Surface Casing Depth:	103'
Cementing Record:	100 sx.
Production Casing Hole Size:	7-7/8"
Production Casing Size:	4-1/2"
Production Casing Depth:	5016'
Cementing Record:	150 sx.
Perforations:	4854'-4880' 4889'-4896' 4927'-4932' 4940'-4952' 4959'-4970'
Plug-Back Depth:	5016'
Total Depth:	5020'

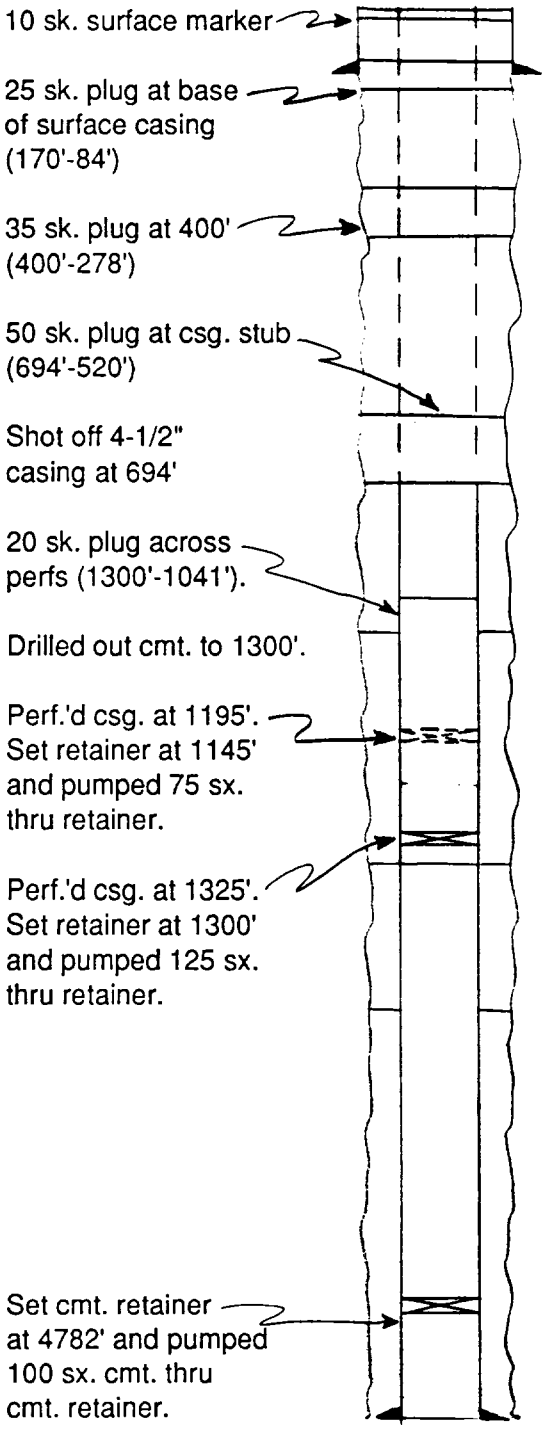


WELL DATA SHEET

Well Name:	Carson Unit #12-19
Legal Description:	1977' FNL, 660' FWL Sec. 19, T25N-R11W San Juan County, N.M.
Well Type:	Oil Well
Spud Date:	08/25/57
Surface Casing Hole Size:	12-1/4"
Surface Casing Size:	8-5/8"
Surface Casing Depth:	173'
Cementing Record:	100 sx.
Production Casing Hole Size:	7-7/8"
Production Casing Size:	4-1/2"
Production Casing Depth:	5022'
Cementing Record:	150 sx.
Perforations:	4866'-4881' 4897'-4903' 4932'-4939' 4947'-4959' 4965'-4974'
Plug-Back Depth:	4980'
Total Depth:	5030'

WELL DATA SHEET

Well Name:	Carson Unit #22-19
Legal Description:	1980' FNL, 1980' FWL Sec. 19, T25N-R11W San Juan County, N.M.
Well Type:	P & A
Spud Date:	03/11/60
Surface Casing Hole Size:	12-1/4"
Surface Casing Size:	8-5/8"
Surface Casing Depth:	108'
Cementing Record:	100 sx.
Production Casing Hole Size:	7-7/8"
Production Casing Size:	4-1/2"
Production Casing Depth:	5027'
Cementing Record:	150 sx.
Perforations:	4868'-4888' 4898'-4905' 4934'-4942' 4952'-4962' 4968'-4980' <u>January 1976</u> 1218'-1224' 1234'-1244'
Plug-Back Depth:	5027'
Total Depth:	5030'

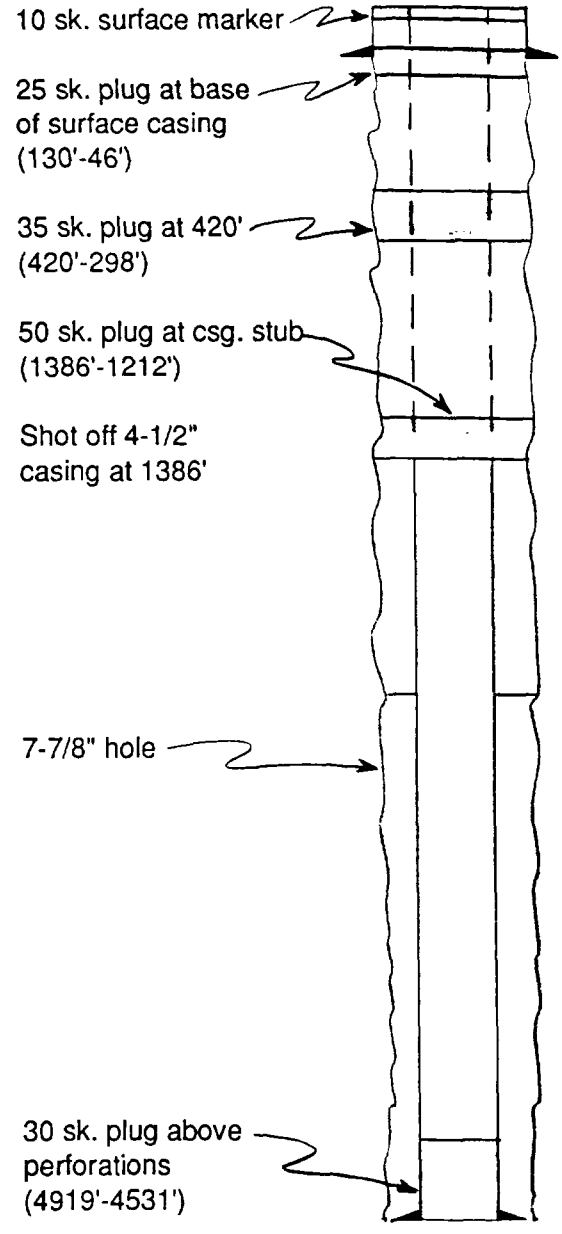


WELL DATA SHEET

Well Name:	Carson Unit #23-19
Legal Description:	1980' FSL, 1980' FWL Sec. 19, T25N-R11W San Juan County, N.M.
Well Type:	Oil Well
Spud Date:	12/12/58
Surface Casing Hole Size:	12-1/4"
Surface Casing Size:	8-5/8"
Surface Casing Depth:	101'
Cementing Record:	100 sx.
Production Casing Hole Size:	7-7/8"
Production Casing Size:	4-1/2"
Production Casing Depth:	4974'
Cementing Record:	150 sx.
Perforations:	4842'-4863' 4908'-4920' 4926'-4940' 4944'-4955'
Plug-Back Depth:	4974'
Total Depth:	4975'

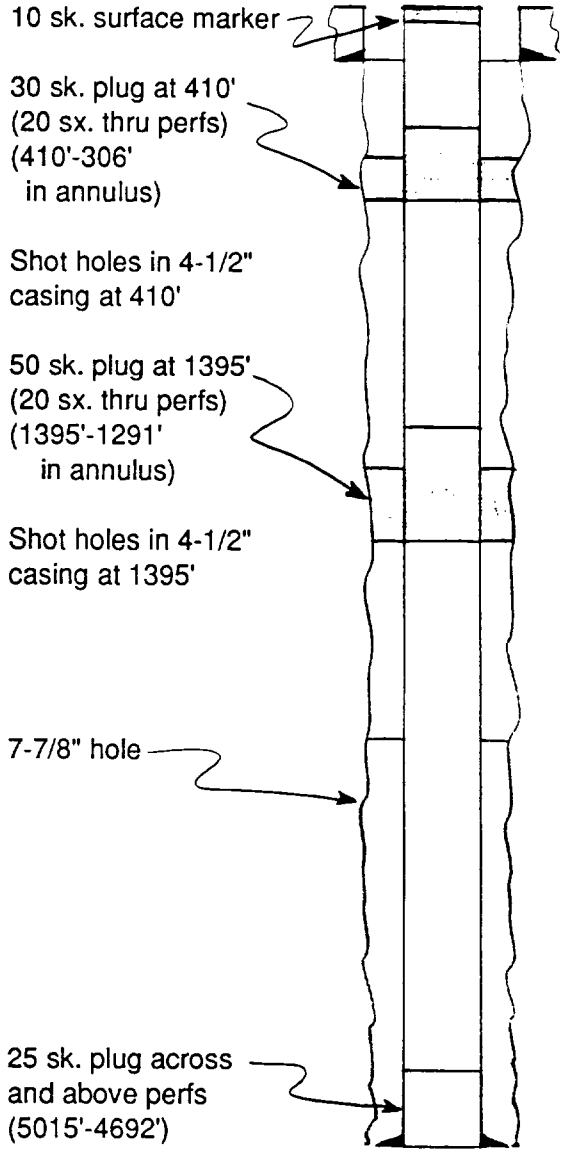
WELL DATA SHEET

Well Name:	Carson Unit #31-19
Legal Description:	660' FNL, 1973.5' FEL Sec. 19, T25N-R11W San Juan County, N.M.
Well Type:	P & A
Spud Date:	12/08/59
Surface Casing Hole Size:	12-1/4"
Surface Casing Size:	8-5/8"
Surface Casing Depth:	105'
Cementing Record:	100 sx.
Production Casing Hole Size:	7-7/8"
Production Casing Size:	4-1/2"
Production Casing Depth:	5029'
Cementing Record:	150 sx.
Perforations:	4867'-4895' 4900'-4910' 4922'-4926' 4940'-4944' 4952'-4958' 4964'-4970' 4976'-4982'
Plug-Back Depth:	5029'
Total Depth:	5030'



WELL DATA SHEET

Well Name:	Carson Unit #32-19
Legal Description:	1980' FNL, 1980' FEL Sec. 19, T25N-R11W San Juan County, N.M.
Well Type:	P & A
Spud Date:	03/03/58
Surface Casing Hole Size:	12-1/4"
Surface Casing Size:	8-5/8"
Surface Casing Depth:	108'
Cementing Record:	100 sx.
Production Casing Hole Size:	7-7/8"
Production Casing Size:	4-1/2"
Production Casing Depth:	5015'
Cementing Record:	150 sx.
Perforations:	4873'-4900' 4908'-4918' 4947'-4954' 4961'-4976' 4981'-4991'
Plug-Back Depth:	5015'
Total Depth:	5015'



WELL DATA SHEET

Well Name:	Carson Unit #41-19
Legal Description:	660' FNL, 660' FEL Sec. 19, T25N-R11W San Juan County, N.M.
Well Type:	Oil Well
Spud Date:	02/24/58
Surface Casing Hole Size:	12-1/4"
Surface Casing Size:	8-5/8"
Surface Casing Depth:	107'
Cementing Record:	100 sx.
Production Casing Hole Size:	7-7/8"
Production Casing Size:	4-1/2"
Production Casing Depth:	4986'
Cementing Record:	150 sx.
Perforations:	4865'-4880' 4885'-4892' 4900'-4910' 4941'-4946' 4951'-4968' 4972'-4982'
Plug-Back Depth:	4985'
Total Depth:	4990'

WELL DATA SHEET

Well Name:	Carson Unit #41-24
Legal Description:	660' FNL, 660' FEL Sec. 24, T25N-R12W San Juan County, N.M.
Well Type:	P & A
Spud Date:	07/19/56
Surface Casing Hole Size:	11"
Surface Casing Size:	8-5/8"
Surface Casing Depth:	228'
Cementing Record:	100 sx.
Production Casing Hole Size:	7-7/8"
Production Casing Size:	5-1/2"
Production Casing Depth:	5967'
Cementing Record:	300 sx.
Perforations:	5585'-5587' (Dakota) 4875'-4895' (Gallup) 3860'-3900' (Mancos)
Plug-Back Depth:	5924'
Total Depth:	5983'