STATE OF NEW MEXICO

ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION
AZTEC DISTRICT OFFICE

1000 RIO BRAZOS ROAD
AZTEC, NEW MEXICO 87410
(505) 334-6178

OIL CONSERVATION DIVISION
BOX 2088
SANTA FE, NEW MEXICO 87501

DATE 3-24-83

RE: Proposed MC_____
Proposed DHC_____
Proposed NSL_____
Proposed SWD_____
Proposed WFX ✓
Proposed PMX_____

Gentlemen:

I have examined the application dated 3-16-83

for the Hixon Development Co. (Operator) Carson Unit 31 #15 (Lease and Well No.) B-15-25N-12W (Unit, S-T-R)

and my recommendations are as follows:

Approve with maximum injection pressure of 945 psi

Yours truly,

Jeff A. Edmister

JAE

HIXON DEVELOPMENT COMPANY
P. O. BOX 2810
FARMINGTON, NEW MEXICO 87401

March 14, 1983

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

Subject: Carson Unit 31-15
790' FNL, 1980' FEL
Section 15, T25N, R12W
San Juan County, New Mexico

Dear Mr. Chavez:

Attached for your approval is our Application for Authorization to Inject for the subject well.

Very truly yours,

Hixon Development Company

by _____

Aldrich L. Kuchera
Executive Vice President

ALK:cb

Attachments

HIXON DEVELOPMENT COMPANY
P. O. BOX 2810
FARMINGTON, NEW MEXICO 87401

March 14, 1983

Bureau of Indian Affairs
Navajo Area Office
Minerals Department
Box 146
Window Rock, Arizona 86515

Subject: Carson Unit No. 31-15
790' FNL, 1980' FEL
Section 15, T25N, R12W
San Juan County, New Mexico

Gentlemen:

Attached is our Application for Authorization to Inject for the subject well. We are required by the Oil Conservation Division to furnish a copy of this application to the surface owner.

Very truly yours,

Hixon Development Company

by Aldrich L. Kuchera

Aldrich L. Kuchera
Executive Vice President

ALK:cb

Attachments

HIXON DEVELOPMENT COMPANY
APPLICATION FOR AUTHORIZATION TO INJECT
FORM C-108 SUPPLIMENTAL INFORMATION

CARSON UNIT WELL NO. 31-15
790' FNL, 1980' FEL
SECTION 15, T25N, R12W
SAN JUAN COUNTY, NEW MEXICO

I. Shown on application.

II. Shown on application.

III. Tabular and schematic Wellbore data are attached.

IV. This well is located in a Federal and State approved water flood project operational since February 1962.

V. Area of review is shown on attached map.

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

Carson Unit No. 24-10
Carson Unit No. 34-10
Carson Unit No. 44-10
Carson Unit No. 21-15
Carson Unit No. 41-15
Carson Unit No. 32-15
Carson Unit No. 42-15
Central Bisti Unit No. WI-7
Central Bisti Unit No. WI-6

VII. 1. Proposed average injection rate is 600 BWPD expected maximum injection rate 1200 BWPD.

2. The injection system will be closed.

3. Average injection pressures are expected to be in the 600-1000 psi range. Maximum injection pressure will be 1500 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 1962. All produced water is re-injected 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 upper bench of the Lower Gallup sandstone. This zone is shown to be 28' in thickness with a top of 4720' 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 as 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 Central Bisti Lower Gallup Sand Unit, it is not a disposal well.

XIII. Proof of Notification attached.

XIV. Certification shown on Application.

ENERGY AND MINERALS DEPARTMENT

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

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 87499

Contact party: Aldrich L. Kuchera Phone: (5050 325-6984

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 R-1414 B.

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 Executive Vice President

Signature: Aldrich L. Kuchera Date: March 14, 1983

* 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 district office

WELL NAME Carson Unit Well No. 31-15

LOCATION 790' FNL, 1980' FEL SECTION 15 T 25N R 12W

CURRENT STATUS:

GLE 6213.5'

RBM 6222.0'

DF 6220.8'

KB 8.5'

SURFACE CASING

Hole size: 12-1/4"

Casing: 8-5/8" 24# J-55

Casing set @ 94' with 94 sacks containing 2% CaCl

FORMATION TOPS

Fruitland	
Pictured Cliffs	1040'
Lewis	1263'
Cliffhouse	1447'
Menefee	1946'
Point Lookout	3545'
Mancos	3712'
Upper Gallup	4623'
Lower Gallup	4713'

CEMENT TOP

3848' (calculated)

PERFORATIONS

4726'-44'

4802'-14'

4819'-30'

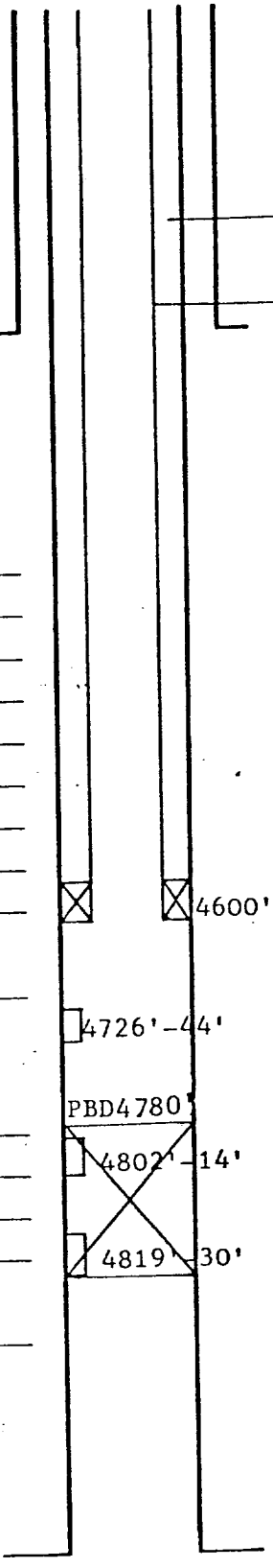
PBD

PRODUCTION CASING

Hole size: 7-7/8"

Casing: 4-1/2" 9.5#

Casing set @ 4848' w/ 150 sx containing 4% gel



WELL HISTORY

Spud date: 8/19/57

Original owner: Shell

IP BOPD 176 BWPD 0

GOR

Completion treatment:

CURRENT DATA

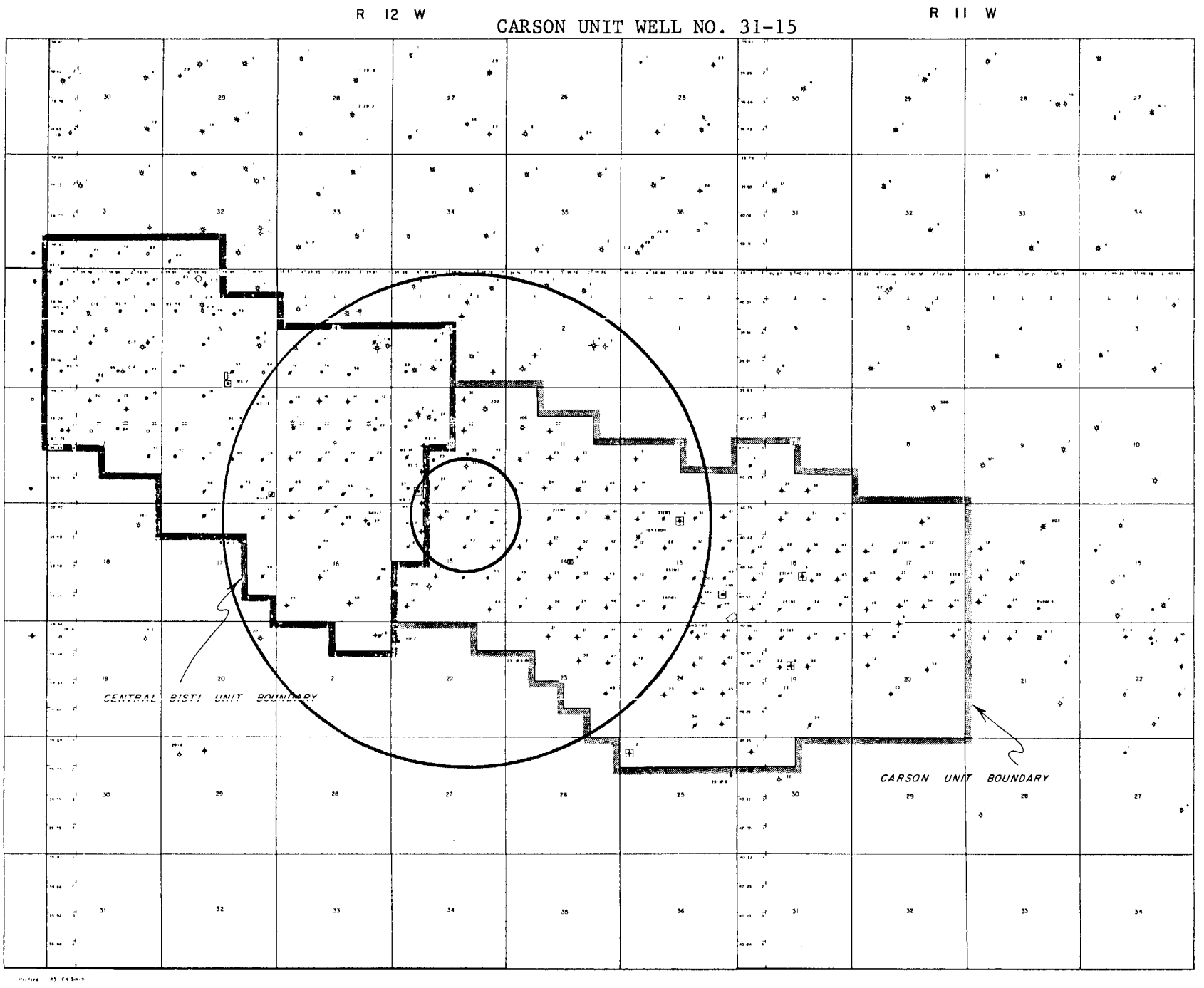
Pumping Unit

Tubing

Pump size

Rod string

Remarks



HIXON DEVELOPMENT COMPANY

CENTRAL BISTI - CARSON UNIT AREA

San Juan County, New Mexico

WELL NAME Carson Unit Well No. 24-10

LOCATION 530' FSL, 1979' FWL SECTION 10 T 25N R 12W

CURRENT STATUS:

GLE 6210.6'

RBM 6219.4'

DF 6218.2'

KB 8.8'

SURFACE CASING

Hole size: 12-1/4"

Casing: 119' 8-5/8" 24# J-55

Casing set @ 129' with 100 sx containing 2% CaCl

FORMATION TOPS

Fruitland	
Pictured Cliffs	1185'
Lewis	1270'
Cliffhouse	1447'
Menefee	1948'
Point Lookout	3559'
Mancos	3731'
Upper Gallup	4640'
Lower Gallup	4728'

CEMENT TOP 3877' (calculated)

PERFORATIONS 4742'-4763'

squeezed: 4775'-4788', 4817'-4828', 4833'-4848'

PBD 4852'

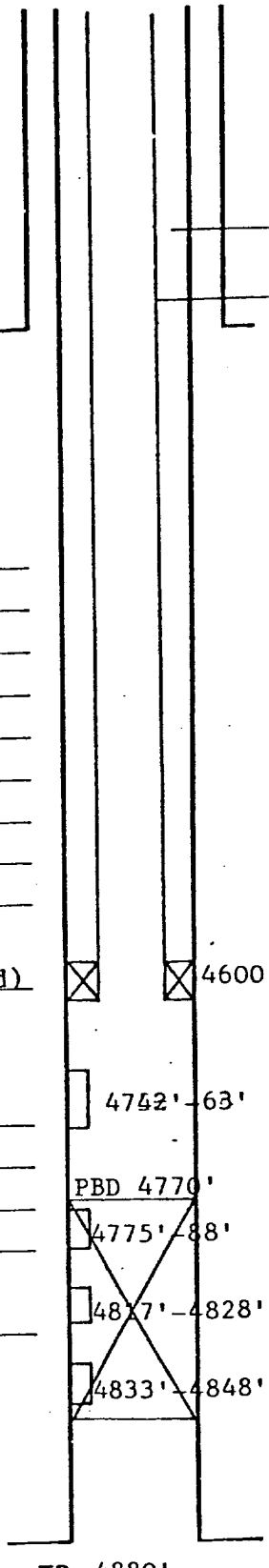
PRODUCTION CASING

Hole size: 7-7/8"

Casing: 4869' 4-1/2" 9.5# J-55

Casing set @ 4877' with 150 sx containing 4% gel

TD 4880'



WELL HISTORY

Spud date: 11/25/57

Original owner: Shell

IP BOPD 503 BWPD 1

GOR 334

Completion treatment: 50,000# 20-40 with 50,000 gallons oil

CURRENT DATA

Pumping Unit

Tubing

Pump size

Rod string

Remarks

WELL NAME CARSON UNIT 34-10

LOCATION 660' FSL, 1980' FEL SECTION 10 T 25N R 12W

CURRENT STATUS:

GLE 6276'

RBM 6287'

DF 6285'

KB 11'

SURFACE CASING

Hole size:

Casing: 8 5/8" 24# J-55

Casing set @ 134'
w/85 sacks cement containing
2% CaCl

FORMATION TOPS

Fruitland	
Pictured Cliffs	1122'
Lewis	1342'
Cliffhouse	1520'
Menefee	2014'
Point Lookout	3626'
Mancos	3794'
Upper Gallup	4703
Lower Gallup	4791'

CEMENT TOP

Calc. TOC 3990'

PERFORATIONS

4805'-4827'
4837'-4842'
4880'-4890'
4896'-4903'

PBD 4943'

PRODUCTION CASING

Hole size: 7-7/8"

Casing: 4½" 9.5#

Casing set @ 4943' TD 4950'
w/150 sx cement containing 4% gel (yield 1.52)

WELL HISTORY

Spud date:

Original owner:

IP 691 BOPD 690 BWPD 1

GOR

Completion treatment: 50,000# 20-40 w/tracer & 200 ball sealers

CURRENT DATA

Pumping Unit

Tubing

Pump size

Rod string

Remarks Records indicate well may be equipped with packer, no depth or type listed.

WELL NAME Carson Unit 44-10

LOCATION 790' FSL, 790' FEL SECTION 10 T 25N R 12W

CURRENT STATUS:

GLE

RBM

DF 6218.9 KB

SURFACE CASING

Hole size:

Casing: 8 5/8" 24#

Casing set @ 89' w/85 sx

FORMATION TOPS

Fruitland	
Pictured Cliffs	1067'
Lewis	1280'
Cliffhouse	1455'
Menefee	1930'
Point Lookout	3573'
Mancos	4470'
Upper Gallup	
Lower Gallup	4646'

CEMENT TOP

PERFORATIONS

4747'-68', 4779'-86', 4821'-31', 4837'-45'.

PBD

PRODUCTION CASING

Hole size:

Casing: 4½" 9/5 #

Casing set @ 4887' w/150 sx

TD 4890

WELL HISTORY

Spud date: 8/28/57

Original owner: Shell Oil

IP 1/31/58 BOPD 703 BWPD 1

GOR 120

Completion treatment: SOF w/500,000 gal oil & 1 #1 gal 20-20 sand

CURRENT DATA

Pumping Unit Lufkin 320

Tubing

Pump size

Rod string

Remarks

WELL NAME CARSON UNIT Well No. 41-15

LOCATION 860' FNL, 700' FEL SECTION 15 T 25N R 12W

CURRENT STATUS:

GLE 6249'

RBM 6261'

DF 6259'

KB 12'

SURFACE CASING

Hole size: 12¼"

Casing: 8 5/8" 24# J-55

Casing set @ 133' w/85 sx

Construction Cement and 2% CaCl. Circulated

FORMATION TOPS

Fruitland	
Pictured Cliffs	1111
Lewis	1302
Cliffhouse	1465
Menefee	2008
Point Lookout	3567
Mancos	3751
Upper Gallup	4658
Lower Gallup	4745

CEMENT TOP

Calc. TOC 4096'

PERFORATIONS

4759-4778
4834-4844
4850-4859
w/4 ½" JSPF

PBD 4900

PRODUCTION CASING

Hole size: 7 7/8"

Casing: 4½" 9.5# J-55

Casing set @ 4900 w/150 sx Construction Cement with 4% Gel

TD 4905'

WELL HISTORY

Spud date: 6-19-57

Original owner: Shell Oil Company

IP 212 BOPD 0 BWPD

GOR 460

Completion treatment: NONE

Frac all zones N/50,000# sand in 1

CURRENT DATA

Pumping Unit M-320D-213-120

Tubing

Pump size

Rod string

Remarks Well was TA by Shell in 1978 after finding 112' mud in casing.

WELL NAME Carson Unit 32-15

LOCATION 1980' FNL, 1980' FEL SECTION 15 T 25N R 12W

CURRENT STATUS:

GLE

RBM

DF

SURFACE CASING

Hole size: 12-1/4"

Casing: 8-5/8" 24# 8rd

Casing set @ 138' with 85 sacks

FORMATION TOPS

Fruitland	
Pictured Cliffs	1058'
Lewis	1252'
Cliffhouse	1415'
Menefee	1972'
Point Lookout	3523'
Mancos	3703'
Upper Gallup	
Lower Gallup	4611'

CEMENT TOP

PERFORATIONS

4712-30', 4754-60', 4771-77', 4789-98', 4805-10'.

PBD 4850'

PRODUCTION CASING

Hole size: 7-7/8"

Casing: 4-1/2" 9.5# 8rd

Casing set @ 4855' with 150 sx

TD 4870'

WELL HISTORY

Spud date: 6/6/57

Original owner: Shell Oil

IP 8/23/57 BOPD 181 BWPD 0

GOR 690 (125 MCFD)

Completion treatment: Frac w/ 30,000 gal crude, 1#/gal 20-40 sand

CURRENT DATA

Pumping Unit

Tubing 2-3/8" @ 4696'

Pump size

Rod string

Remarks

WELL NAME Carson Unit 42-15

LOCATION 1980' FNL, 660' FEL SECTION 15 T 25N R 12W

CURRENT STATUS:

GLE 6220'

RBM

DF 6229' KB

SURFACE CASING

Hole size: 12-1/4"

Casing: 8-5/8" 24# J-55

Casing set @ 109' w/ 100 sx

FORMATION TOPS

Fruitland	
Pictured Cliffs	1047'
Lewis	1251'
Cliffhouse	1421'
Menefee	1948'
Point Lookout	3500'
Mancos	3683'
Upper Gallup	
Lower Gallup	4612'

CEMENT TOP

PERFORATIONS

4711-31', 4744-54',
4772-81', 4788-98',
4804-13'.

PBD

PRODUCTION CASING

Hole size: 7-7/8"

Casing: 4-1/2" 9.5#

Casing set @ 4850' w/ 150 sx

TD 4855'

WELL HISTORY

Spud date: 7/20/59

Original owner: Shell Oil

IP 9/30/59 BOPD 37 BWPD 0

GOR 900 (33 MCFD)

Completion treatment: 200 gal mud acid & SOF w/ 10,000 gal crude, 1#/gal sand

CURRENT DATA

Pumping Unit

Tubing 2-3/8" @ 4790'

Pump size

Rod string

Remarks

WELL NAME CBU WI-7

LOCATION 1315' FNL, 1315' FWL SECTION 15 T 25N R 12W

CURRENT STATUS: P & A'd

GLE

RBM

DF 6268'

SURFACE CASING

Hole size: 12-1/4"

Casing: 8-5/8" 24# 8rd

Casing set @ 372' w/ 250 sx

FORMATION TOPS

Fruitland

Pictured Cliffs

Lewis

Cliffhouse

Menefee

Point Lookout

Mancos 3729'

Upper Gallup

Lower Gallup 4742'

CEMENT TOP

PERFORATIONS

4754'-72', 4784'-88'
4792'-4801', 4812'-24',
4834'-43', 4850'-61',
4871'-77', 4855'-59',
4836'-40'

PBD

PRODUCTION CASING

Hole size: 7-7/8"

Casing: 4-1/2" 9.5# 8rd

Casing set @ 4973' w/ 300 sx TD 4973'

WELL HISTORY

Spud date: 9/4/59

Original owner: Sun Ray-Mid-Continent

IP BOPD BWPD

GOR

Completion treatment:

CURRENT DATA

Pumping Unit

Tubing 2-3/8"

Pump size

Rod string

Remarks WI started 10/2/59

Squeeze perfs 4754'-4877' with 15 sx, spot 10 sx plug across Pt. Lookout inside 4-1/2" casing. Cut off 4-1/2" casing at 1855', pulled some. Spot 30 sx plug across stub, 1910'-1800'. Spot 40 sx over PC. 10 sx surface plug.

WELL NAME CBU WI-6

LOCATION 5' FNL, 1315' FWL SECTION 15 T 25N R 12W

CURRENT STATUS:

GLE

RBM

DF

SURFACE CASING

Hole size: 12-1/4"

Casing: 8-5/8" 24# J-55

Casing set @ 310' w/ 225 sx

FORMATION TOPS

Fruitland

Pictured Cliffs

Lewis

Cliffhouse

Menefee

Point Lookout

Mancos

Upper Gallup

Lower Gallup

CEMENT TOP 3200'

PERFORATIONS 4760'-80', 4792'-4804', 4823'-29', 4835'-44', 4850'-64', 4855'-59'.

PBD

PRODUCTION CASING

Hole size: 7-7/8"

Casing: 4-1/2" 9.5# J-55

Casing set @ 4927' w/ 350 sx TD 4925'

WELL HISTORY

Spud date: 8/25/59

Original owner:

IP BOPD BWPD

GOR

Completion treatment:

CURRENT DATA

Pumping Unit

Tubing 167 jts 2-3/8"

Pump size

Rod string

Remarks WI started 10/2/59

Squeezed perfs 4760-4864' with 15 sx, spot 10 sx plug across Pt. Lookout inside 4-1/2" casing. Cut 4-1/2" csg off at 1797', pulled some. Spot 30 sx plug across stub 1850'-1750'. Spot 40 sx plug over PC, 10 sx surface plug.

San Juan Testing Labs, 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
pH	7.25
Resistivity	2.94 ohms/meter @70°F
Conductivity	3,400 micromhos/cm @ 70°F

Comments

Essentially this is a 0.2% sodium sulfate solution.

Constituents	Meg/L	ppm
Cations		
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

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

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

Certified by:

TEST NO 22096

Form 360-7

NOTICE

HIXON DEVELOPMENT COMPANY, P. O. Box 2810, Farmington, New Mexico 87499, (505) 325-6984, whose agent is Aldrich L. Kuchera hereby notifies interested parties that the Carson Unit Well # 31-15 located at 790' FNL, 1980' FEL, Section 15, T25N, R12W is to be converted to a water injection well. Maximum rate will be 1200 BWIPD at less than 1500 psi.

Any request or objection should be filed with Oil Conservation Division, P.O. Box 2088, Santa Fe, New Mexico 87501 within 15 days.

Legal No. 12871 to be published on 3/17/83 in the Farmington Daily Times