

9/18/03

Suppna  
10/3/03

PWTJ 0329204987

STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL  
RESOURCES DEPARTMENT

Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, New Mexico 87505

FORM C-108  
Revised June 10, 2003

**APPLICATION FOR AUTHORIZATION TO INJECT**

I. PURPOSE: \_\_\_\_\_ Secondary Recovery \_\_\_\_\_ Pressure Maintenance X Disposal \_\_\_\_\_ Storage  
Application qualifies for administrative approval? X Yes \_\_\_\_\_ No

II. OPERATOR: MARBOB ENERGY CORPORATION

ADDRESS: P. O. BOX 227, ARTESIA, NM 88211-0227

CONTACT PARTY: BRIAN COLLINS PHONE: 505-748-3303

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 X 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 geologic data on the injection zone including appropriate lithologic detail, geologic 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 an 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 sources 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: BRIAN COLLINS TITLE: PETROLEUM ENGINEER

SIGNATURE: *Brian Collins* DATE: 16 Sept 03

E-MAIL ADDRESS: engineering@marbob.com

\* 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 circumstances of the earlier submittal: \_\_\_\_\_

*Handwritten notes:*  
WVS 10/17  
Approved  
Checked by  
of ARTESIA well  
ADP

C-108 Application for Authorization to Inject  
South Malaga H-4-25-28 SWD  
(Formerly Bran Oil Salt Draw "SFWG" State No.1)  
2310' FNL 330' FEL  
H-4-25S-28E, Eddy County

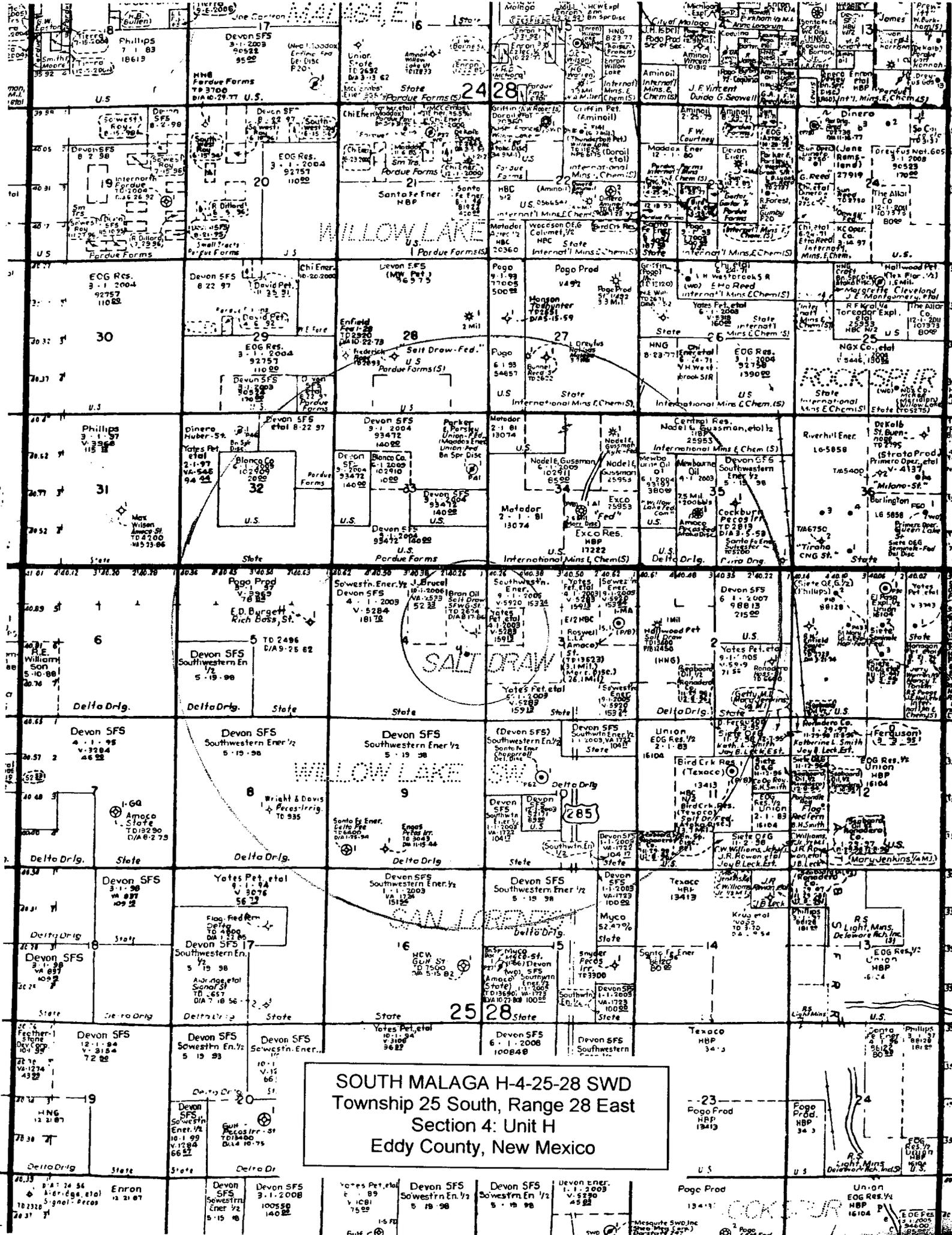
7 1980  
30-015-25641

Marbob Energy Corporation proposes to re-enter the captioned well and convert it to salt water disposal service into the Delaware Sand. Marbob proposes to deepen the well from 2674' to 4600' and run 5 1/2" casing to TD.

- V. Map is attached.
- VI. Wellbore schematics are attached for all the wells that penetrate the proposed injection zone within the 1/2 mile radius area of review.
- VII.
  1. Proposed average daily injection rate = 500 BWPD  
Proposed maximum daily injection rate = 2500 BWPD
  2. Closed system
  3. Proposed maximum injection pressure = 726 psi  
(0.2 psi/ft. x 3630 ft.)
  4. Source of injected water will be Delaware Sand produced water. The Delaware produced water is the same as the Delaware water in the receiving formation. No compatibility problems are expected. An analysis of Delaware water from an analogous field is attached.
  5. Disposal zone formation water is essentially the same as the injection water.
- VIII. The injection zone is the Delaware Sandstone, a fine-grained sandstone from 3630' to 4530'. Any underground water sources will be shallower than 382'.
- IX. The Delaware sand injection interval will be acidized with approximately 20 gals/ft. of 7 1/2% HCl acid. If necessary, the Delaware injection interval may be fraced with up to 300,000 lbs. of 16/30 mesh sand.
- X. Well logs have been filed with the Division.
- XI. There are two fresh water wells within one mile of the proposed SWD well. The closest is located NE/4SE/4, Sec. 4-T25S-R28E, about 0.3 mile to the south. The second is located NE/4NE/4, Sec. 3-T25S-R28E, about one mile to the east. Water analyses are attached.

1 only  
0 active well  
1 PEA  
1 TOTAL

- XII. After examining the available geologic and engineering data, no evidence was found of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.
- XIII. Proof of Notice is attached.



**SOUTH MALAGA H-4-25-28 SWD**  
**Township 25 South, Range 28 East**  
**Section 4: Unit H**  
**Eddy County, New Mexico**

INJECTION WELL DATA SHEET

OPERATOR: Marbob Energy Corporation

WELL NAME & NUMBER: South Malaga H-4-25-28 SWD (Formerly Brandil Salt Draw "SFWG" State No.1)

WELL LOCATION: 2310' FNL, 330' FEL      H      4      25s      28e  
 FOOTAGE LOCATION      UNIT LETTER      SECTION      TOWNSHIP      RANGE

WELLBORE SCHEMATIC

See attached BEFORE and AFTER  
wellbore schematics.

WELL CONSTRUCTION DATASurface Casing

Hole Size: 12 1/4"      Casing Size: 8 5/8" @ 382'  
 Cemented with: 250      sx.      or      -      ft<sup>3</sup>  
 Top of Cement: Surface      Method Determined: Circulated

Intermediate Casing

Hole Size: N/A      Casing Size: \_\_\_\_\_  
 Cemented with: \_\_\_\_\_      sx.      or      \_\_\_\_\_      ft<sup>3</sup>  
 Top of Cement: \_\_\_\_\_      Method Determined: \_\_\_\_\_

Production Casing  
(Proposed)

Hole Size: 7 7/8"      Casing Size: 5 1/2" @ 4600'  
 Cemented with: 550      sx.      or      900      ft<sup>3</sup>  
 Top of Cement: 2000'      Method Determined: By Design  
 Total Depth: 4600'

Injection Interval

3630      feet to      4530

(Perforated) or Open Hole; indicate which)

**INJECTION WELL DATA SHEET**

Tubing Size: 2 7/8" Lining Material: Internal Plastic Coating  
 Type of Packer: 10K nickel plated double grip retrievable packer  
 Packer Setting Depth: 3580'  
 Other Type of Tubing/Casing Seal (if applicable): N/A

Additional Data

1. Is this a new well drilled for injection?      Yes   X   No  
 If no, for what purpose was the well originally drilled? Oil & Gas
  
2. Name of the Injection Formation: Delaware Sand
3. Name of Field or Pool (if applicable): N/A
4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used. No
  
5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area: Overlying: None  
Underlying: Delaware 4500-6000'  
Bone Spring 6000-8000'  
Atoka 11700-12300'

Bran Oil Salt Draw "SFWG" St. 1

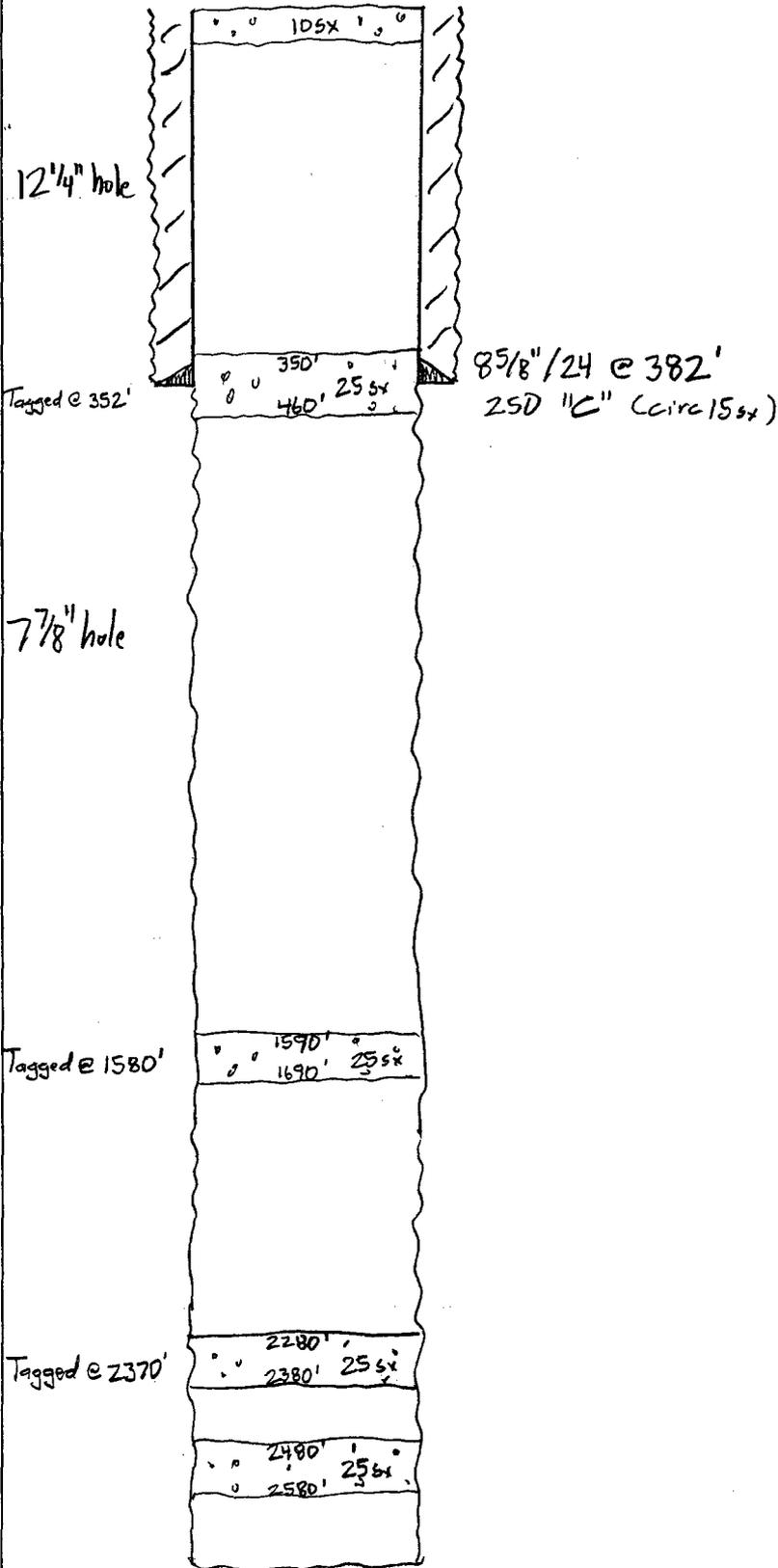
2310' FNL, 330' FEL

H-4-25s-28e

Eddy, NM

P&A: 8186

42-381 50 SHEETS EYE-EASE  
42-382 100 SHEETS EYE-EASE  
42-383 50 SHEETS EYE-EASE  
42-384 100 SHEETS EYE-EASE  
42-385 100 RECYCLED WHITE  
42-386 200 RECYCLED WHITE  
42-387 50 SHEETS EYE-EASE  
42-388 100 SHEETS EYE-EASE  
42-389 50 SHEETS EYE-EASE  
42-390 100 SHEETS EYE-EASE  
42-391 50 SHEETS EYE-EASE  
42-392 100 SHEETS EYE-EASE  
42-393 50 SHEETS EYE-EASE  
42-394 100 SHEETS EYE-EASE  
42-395 100 RECYCLED WHITE  
42-396 200 RECYCLED WHITE  
42-397 50 SHEETS EYE-EASE  
42-398 100 SHEETS EYE-EASE  
42-399 50 SHEETS EYE-EASE  
42-400 100 SHEETS EYE-EASE  
Made in U.S.A.



2674'

BEFORE

Elev: 2991.6' 6L

3002.6' KB

KBCollins / 9 Sept 03

South Malaga H-4-25-28 SWD  
 2310' FNL, 330' FEL  
 H-4-25s-28e  
 Eddy, NM

P&A: 8/86

13-782 500 SHEETS, FILTER, 5 SQUARE  
 42-381 50 SHEETS, EYE EASE, 5 SQUARE  
 42-382 100 SHEETS, EYE EASE, 5 SQUARE  
 42-383 100 SHEETS, EYE EASE, 5 SQUARE  
 42-384 100 RECYCLED, WHITE, 5 SQUARE  
 42-389 200 RECYCLED, WHITE, 5 SQUARE  
 Drawn in U.S.A.



12 1/4" hole

8 5/8" / 24 @ 382'  
 250 "C" (circ 15 ft)

7 7/8" hole

2 1/8" IRC  
 Inj. Tbg

TOC 2000' Design

AFTER

Nickel Plated Inj. Pkr  
 3580' ±

Delaware Sand

3630'

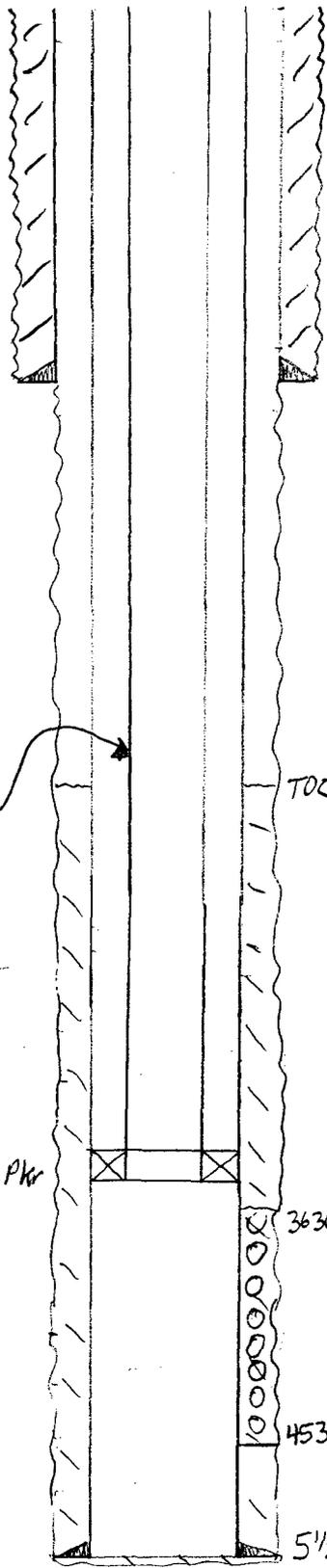
4530'

4600'

5 1/2" / 17 / J55 / LTC @ 4600'  
 550 sx. Super H (100% excess = 900 CF)

Elev: 2991.6' 6L  
 3002.6' KB

KBGillins / 9 Sept 03





HALLIBURTON DIVISION LABORATORY

HALLIBURTON SERVICES

ARTESIA DISTRICT

LABORATORY REPORT

No. W45-93

TO Hanagan Petroleum

Date February 7, 1993

P. O. Box 1737

Roswell, NM 88201

This report is the property of Halliburton Services and neither it nor any part thereof, nor a copy thereof, is to be published or disclosed without first securing the express written approval of laboratory management. It may, however, be used in the course of regular business operations by any person or concern and employees thereof receiving such report from Halliburton Services.

Submitted by \_\_\_\_\_ Date Rec. \_\_\_\_\_

Well No. Gehrig #2 Depth 5050' Formation Delaware

Field Brushy Draw 9-26s-29e County Eddy Source Produced Water

Resistivity ..... .052

Specific Gravity .. 1.1856

pH ..... 7.0

Calcium ..... 24,250

Magnesium ..... 9,000

Chlorides ..... 170,000

Sulfates ..... 250

Bicarbonates ..... 350

Soluble Iron ..... + 500

Water Analysis Representative of Produced Delaware Water to be Injected and of Delaware Water in the Proposed Injection Interval

Remarks:

Art Carrasco  
Respectfully submitted

Analyst: Art Carrasco - Technical Advisor

HALLIBURTON SERVICES

NOTICE:

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# HALLIBURTON

PERMAIN BASIN OPERATIONS LABORATORY  
 WATER ANALYSIS REPORT  
 HOBBS, NEW MEXICO

COMPANY Marbob  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

REPORT DATE DISTRICT W03-189  
September 10, 2003  
Hobbs

SUBMITTED BY Fresh Water Analyses 25s-28e

WELL COUNTY Eddy DEPTH FIELD \_\_\_\_\_ FORMATION SOURCE \_\_\_\_\_

SAMPLE Windmill NE/4 NE/4 Sec.3 Windmill NE/4 SE/4 Sec.4  
St. MA-1 SWD SE SWE Well

Sample Temp.	78 °F	78 °F	°F	°F
RESISTIVITY	3.34	2.99		
SPECIFIC GR.	1.001	1.001		
pH	7.71	7.42		
CALCIUM	900 mpl	1,250 mpl		
MAGNESIUM	540 mpl	135 mpl		
CHLORIDE	90 mpl	473 mpl		
SULFATES	light mpl	light mpl		
BICARBONATES	92 mpl	61 mpl		
SOLUBLE IRON	0 mpl	0 mpl		
KCL				
Sodium			0 mpl	0 mpl
TDS			0 mpl	0 mpl
OIL GRAVITY	@ °F	@ °F	@ °F	@ °F

REMARKS  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

MPL = Milligrams per liter  
 Resistivity measured in: Ohm/m2/m

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ANALYST: Mike Armstrong



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**marbob**  
energy corporation

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September 17, 2003

Artesia Daily Press  
P. O. Box 190  
Artesia, NM 88211-190

Re: Legal Notices  
Salt Water Disposal Wells

Gentlemen:

Enclosed are legal notices regarding New Mexico Oil Conservation Division C-108 Application for Authorization to Inject for four salt water disposal wells.

Please run these notices and return the proofs of notice to the undersigned at Marbob Energy Corporation, P. O. Box 227, Artesia, NM 88211-0227.

Sincerely,

Brian Collins  
Petroleum Engineer

BC/dlw

enclosure

**ARTESIA DAILY PRESS**  
**LEGAL NOTICES**

Marbob Energy Corporation, Post Office Box 227, Artesia, New Mexico, 88211-0227, has filed Form C-108 (Application for Authorization to Inject) with the New Mexico Oil Conservation Division seeking administrative approval for a salt water disposal well. The proposed well, the Salt Draw "SFWG" No. 1 is located 2310' FNL and 330' FEL, Section 4, Township 25 South, Range 28 East, Eddy County, New Mexico. Disposal water will be sourced from area wells producing from the Delaware formation. The disposal water will be injected into the Delaware formation at a depth of 3630' - 4530' at a maximum surface pressure of 726 psi and a maximum rate of 2500 BWPD. Any interested party who has an objection to this must give notice in writing to the Oil Conservation Division, 1220 South Saint Francis Street, Santa Fe, New Mexico, 87505, within fifteen (15) days of this notice. Any interested party with questions or comments may contact Brian Collins at Marbob Energy Corporation, Post Office Box 227, Artesia, New Mexico 88211-0227, or call 505-748-3303.

Published in the Artesia Daily Press, Artesia, New Mexico  
\_\_\_\_\_, 2003.

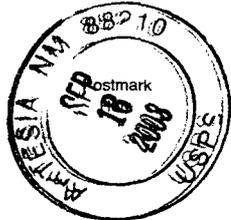
7002 2030 0001 8346 6350

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Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$



C-108 Salt Draw SFWG S+1

Sent To  
**SW Energy Production Co.**  
 Street, Apt. No.;  
 or PO Box No. **2350 N Sam Houston Pkway E., Ste. 300**  
 City, State, ZIP+4  
**Houston, TX 77032**  
 PS Form 3800, June 2002 See Reverse for Instructions

7002 2030 0000 8346 6350

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Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$



C-108 Salt Draw SFWG S+1

Sent To  
**James Bruce**  
 Street, Apt. No.;  
 or PO Box No. **PO Box 1056**  
 City, State, ZIP+4  
**Santa Fe, NM 87504**  
 PS Form 3800, April 2002 See Reverse for Instructions

7002 2030 0006 8346 6350

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Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$



C-108 Salt Draw SFWG S+1

Sent To  
**State Land Office**  
 Street, Apt. No.;  
 or PO Box No. **910 Old Santa Fe Trail**  
 City, State, ZIP+4  
**Santa Fe, NM 87504**  
 PS Form 3800, April 2002 See Reverse for Instructions

7002 2030 0001 8346 6350

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Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$



C-108 Salt Draw SFWG S+1

Sent To  
**Devon SFS Operating**  
 Street, Apt. No.;  
 or PO Box No. **20 N Broadway, Ste. 1500**  
 City, State, ZIP+4  
**Oklahoma City, OK 73102**  
 PS Form 3800, June 2002 See Reverse for Instructions



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**marbob**  
energy corporation

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September 16, 2003

James Bruce  
P. O. Box 1056  
Santa Fe, NM 87504

Re: Application to Inject  
Salt Draw "SFWG" State No. 1  
Township 25 South, Range 28 East, NMPM  
Section 4: 2310' FNL 330' FEL, Unit H  
Eddy County, New Mexico

Dear Mr. Bruce:

Enclosed for your review is a copy of Marbob Energy Corporation's application to convert the referenced well into a saltwater disposal well. As a requirement of the New Mexico Oil Conservation Division, we are notifying you because you have been identified as an operator or surface owner. Any objections must be submitted in writing to NMOCD, 1220 S. St. Francis Drive, Santa Fe, New Mexico 87505. Objections must be received within fifteen (15) days of receipt of this letter. If you have no objections to our application, please indicate below and return one copy of this letter to our office.

Please do not hesitate to contact us should you have any questions.

Sincerely,

Brian Collins  
Petroleum Engineer

BC/dlw  
enclosure

**James Bruce has no objection to the proposed disposal well:**

By: \_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_



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**marbob**  
energy corporation

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September 16, 2003

SW Energy Production Co.  
2350 N. Sam Houston Pkwy E, Ste. 300  
Houston, TX 77032

Re: Application to Inject  
Salt Draw "SFWG" State No. 1  
Township 25 South, Range 28 East, NMPM  
Section 4: 2310 FNL & 330 FEL, Unit H  
Eddy County, New Mexico

Gentlemen:

Enclosed for your review is a copy of Marbob Energy Corporation's application to convert the referenced well into a saltwater disposal well. As a requirement of the New Mexico Oil Conservation Division, we are notifying you because you have been identified as an operator or surface owner. Any objections must be submitted in writing to NMOCD, 1220 S. St. Francis Drive, Santa Fe, New Mexico 87505. Objections must be received within fifteen (15) days of receipt of this letter. If you have no objections to our application, please indicate below and return one copy of this letter to our office.

Please do not hesitate to contact us should you have any questions.

Sincerely,

Brian Collins  
Petroleum Engineer

BC/dlw  
enclosure

**SW Energy Production Co. has no objection to the proposed disposal well:**

By: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_



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**marbob**  
energy corporation

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September 16, 2003

Devon SFS Operating Co.  
20 N. Broadway, Ste. 1500  
Oklahoma City, OK 73102

Re: Application to Inject  
Salt Draw "SFWG" State No. 1  
Township 25 South, Range 28 East, NMPM  
Section 4: 2310' FNL 330' FEL, Unit H  
Eddy County, New Mexico

Dear Gentlemen:

Enclosed for your review is a copy of Marbob Energy Corporation's application to convert the referenced well into a saltwater disposal well. As a requirement of the New Mexico Oil Conservation Division, we are notifying you because you have been identified as an operator or surface owner. Any objections must be submitted in writing to NMOCD, 1220 S. St. Francis Drive, Santa Fe, New Mexico 87505. Objections must be received within fifteen (15) days of receipt of this letter. If you have no objections to our application, please indicate below and return one copy of this letter to our office.

Please do not hesitate to contact us should you have any questions.

Sincerely,

Brian Collins  
Petroleum Engineer

BC/dlw  
enclosure

**Devon SFS Operating Co. has no objection to the proposed disposal well:**

By: \_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_



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**marbob**  
energy corporation

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September 16, 2003

State Land Office  
310 Old Santa Fe Trail  
Santa Fe, NM 87504

Re: Application to Inject  
Salt Draw "SFWG" State No. 1  
Township 25 South, Range 28 East, NMPM  
Section 4: 2310 FNL & 330 FEL, Unit H  
Eddy County, New Mexico

Gentlemen:

Enclosed for your review is a copy of Marbob Energy Corporation's application to convert the referenced well into a saltwater disposal well. As a requirement of the New Mexico Oil Conservation Division, we are notifying you because you have been identified as an operator or surface owner. Any objections must be submitted in writing to NMOCD, 1220 S. St. Francis Drive, Santa Fe, New Mexico 87505. Objections must be received within fifteen (15) days of receipt of this letter. If you have no objections to our application, please indicate below and return one copy of this letter to our office.

Please do not hesitate to contact us should you have any questions.

Sincerely,

Brian Collins  
Petroleum Engineer

BC/dlw  
enclosure

**State Land Office has no objection to the proposed disposal well:**

By: \_\_\_\_\_  
Title: \_\_\_\_\_  
Date: \_\_\_\_\_