

Hallwood Petroleum, Inc.

4582 South Ulster Street Parkway · Stanford Place III · Suite 1700 · Post Office Box 378111
Denver, Colorado 80237 · (303) 850-7373

CERTIFIED MAIL NO. 212 222 132

October 29, 1997

NOV - 6 1997

Mr. David Catanach,
Hearing Examiner
State of New Mexico
Oil Conservation Division
2040 South Pacheco
Santa Fe, New Mexico 87505

RE: Approval to Accept Additional Water
Cardon Com #1 (SWD)
Unit A – Section 27-T32N-R13W
San Juan County, New Mexico
Administrative Order SWD-632

Dear Mr. Catanach:

Hallwood Petroleum, Inc. is the Operator of the Cardon Com #1 (SWD) well in San Juan County, New Mexico. This well was approved for underground disposal of produced water by Administrative Order SWD-632 on July 9, 1996. The well currently disposes of produced Fruitland Basin Coal water from offset Hallwood Petroleum, Inc. wells into the Entrada formation in the Cardon Com #1 (SWD) at 7780'-7910' (130' interval of high quality 15% porosity sandstone).

As a result of increased drilling and production activity in the area surrounding Hallwood's wells and acreage, three (3) operators have contacted Hallwood with a request to take (and dispose of) produced Fruitland Basin Coal water from their wells.

Hallwood contacted Mr. Ernie Busch in the Aztec, New Mexico office and discussed the possibility of accepting and disposing of outside operated water into the Cardon Com #1 (SWD). We wanted to know whether or not this would classify as a "commercial disposal operation" or be in violation of our approved disposal permit. Mr. Busch said that it would not be a problem for the OCD or UIC if we disposed of outside operated similar waters. However, he suggested that we contact you and inform you of this situation; thus, this is the purpose of this letter.

Mr. David Catanach
State of New Mexico
Oil Conservation Division
October 29, 1997
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Attached is a Form C-103 Sundry Notice with a list of the five (5) outside operated wells for which we are currently taking water. Water analyses are also included for three (3) of the wells. Hallwood Petroleum, Inc. foresees no problem in accepting this similar type of water for disposal into the Cardon Com #1 (SWD). By disposing of this water, it will enable the other companies to adequately production test their wells without the much higher disposal cost involved with transporting the water 15-20 miles away. Also, the Cardon Com #1 (SWD) is currently disposing of 500-600 BWPd at 578 psig which is significantly below the approved maximum pressure of 1528 psig. Thus, additional water volumes should not present any problems as we are "under-utilizing" the well.

Please contact me at (303) 850-6303 should you have any questions or require additional information.

Sincerely,

HALLWOOD PETROLEUM, INC.



Kevin E. O'Connell
Drilling and Production Manager

KEO/jeY

Attachments

cc: Eva Kardas
Nonya Durham

OCD – District III
Ernie Busch
1000 Rio Brazos Road
Aztec, NM 87410

KEO97.076

OIL CONSERVATION DIVISION

CONDITIONS OF APPROVAL, IF ANY:

OIL CONSERVATION DIVISION

DISTRICT I

P. O. Box 1980, Hobbs, NM 88240

DISTRICT II

811 S. First St., Artesia, NM 88210-2834

DISTRICT III

1000 Rio Brazos Rd., Aztec, NM 87410

2040 S. Pacheco
Santa Fe, New Mexico 87505

WELL API NO.
30-045-24392

5. Indicate Type of Lease

STATE ☒

FEE ☐

6. State Oil & Gas Lease No.
N/A

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A
DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT"
(FORM C-101) FOR SUCH PROPOSALS.)

1. Type of Well:

OIL GAS
WELL ☐ WELL ☐ OTHER SWD Well

2. Name of Operator

Hallwood Petroleum, Inc.

3. Address of Operator

P. O. Box 378111, Denver, CO 80237

7. Lease Name or Unit Agreement Name

Cardon Com

8. Well No.

1

9. Pool name or Wildcat

SWD (Entrada)

4. Well Location

Unit Letter A : 1120 Feet From The North Line and 1050 Feet From The East Line

Section 27 Township 32N Range 13W NMPM San Juan County

10. Elevation (Show whether DF, RKB, RI, GR, etc.)

5909' KB 5899' GL

11. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐
TEMPORARILY ABANDON ☐ CHANGE PLANS ☐
PULL OR ALTER CASING ☐
OTHER: Approval to accept additional water ☒

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐ ALTERING CASING ☐
COMMENCE DRILLING OPNS. ☐ PLUG AND ABANDONMENT ☐
CASING TEST AND CEMENT JOB ☐
OTHER: ☐

12. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

Hallwood Petroleum, Inc. requests approval to accept produced Fruitland Coal water from the following wells into the Cardon Com #1 (SWD):

1. Merriion Oil & Gas Corp., Powell #1, SE NE Sec. 22-T32N-R13W, San Juan Co, NM
2. Merriion Oil & Gas Corp., Havasu #1, SE SE Sec. 22-T32N-R13W, San Juan Co., NM
3. Walsh Engineering, Steward Com #1, SE SE Sec. 28-T32N-R13W, San Juan Co., NM
4. Taurus Exploration, Inc., Culpepper Martin #9, Sec. 6-T31N-R12W, San Juan Co., NM
5. Taurus Exploration, Inc., Culpepper Martin #10, Sec. 7-T31N-R12W, San Juan Co., NM

Water analyses are attached for wells 1, 3 & 4 above. Combined total water volumes from the five wells are estimated to be 400-550 BWPD.-

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Kevin E. O'Connell TITLE Drilling & Production Mgr DATE 10/29/97

TYPE OR PRINT NAME Kevin E. O'Connell TELEPHONE NO. 303-850-6303

(This space for State Use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

**MERRION OIL & GAS CORPORATION**

610 REILLY AVENUE

FARMINGTON, NEW MEXICO 87401

F A X C O V E R S H E E T

DATE: September 9, 1997 **TIME:** 8:34 AM
TO: Hallwood Petroleum **PHONE:** 303.850.6303
Kevin O'Connel **FAX:** 303.850.6290
FROM: Steven Dunn **PHONE:** 505.327.9801
Merrion Oil & Gas **FAX:** 505.326.5900
RE: WATER DISPOSAL... POWELL 1, HAVASU 1
CC: Well Files

Number of pages including cover sheet: 2

Message

Merrion hereby requests that Hallwood dispose of produced water from the following Basin Fruitland Coal gas wells:

1. **Powell No. 1**
2050' fnl & 790' fel (se ne)
Sec 22, T32N, R13 W, NMPM
San Juan County, New Mexico
2. **Havasus No. 1**
790' fsl & 790' fel (se se)
Sec 22, T32N, R13W, NMPM
San Juan County, New Mexico

Both wells are producing water from the Main Fruitland Coal and an analysis is attached for the Powell No. 1 well. Merrion's Operator OGRID number is 14634; no well OGRID numbers have been assigned to the producing wells at this time.

Estimated water volumes are up to 300 bbl per day for the two wells combined.

Produced water would be trucked to Hallwood's facilities over existing roads.

If further is required, please give me a call.

A METHOD FOR PREDICTING THE TENDENCY OF OIL FIELD WATERS TO DEPOSIT CALCIUM CARBONATE

WELL NAME: **POWELL NO. 1** (Well No 1 on C-103)

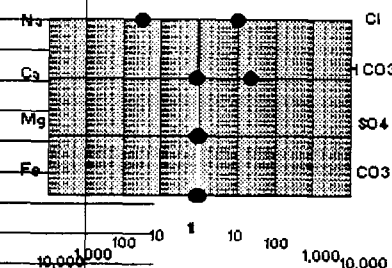
FORMATION: **FRUITLAND** Remarks:

Report Date: **8/27/97**

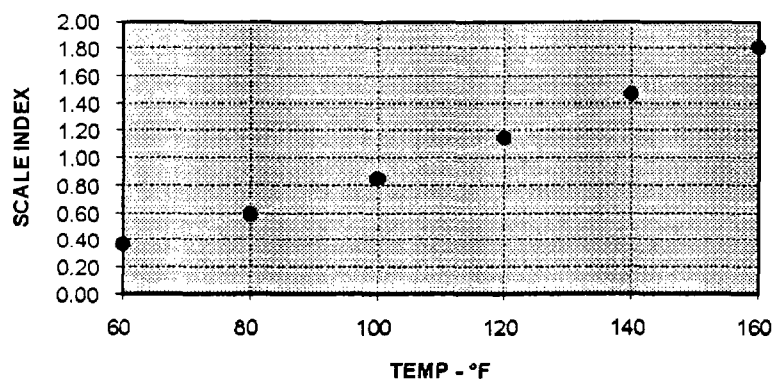
CONCENTRATION:

Na + K =	706	ppm/mg/l	30.71	meq/liter
Ca =	18	ppm/mg/l	0.90	meq/liter
Mg =	7	ppm/mg/l	0.58	meq/liter
Fe =	0	ppm/mg/l	0.00	meq/liter
Cl =	355	ppm/mg/l	10.01	meq/liter
HCO ₃ =	1,354	ppm/mg/l	22.21	meq/liter
SO ₄ =	0	ppm/mg/l	0.00	meq/liter
CO ₃ =	0	ppm/mg/l	0.00	meq/liter
TDS =	2,440	ppm/mg/l		
TOTAL IONIC	0.034			

LOGARITHMIC PROFILE



Spec. Grav.	1.0000	TEMP (°F)	TEMP (°C)	K	Scale Index
pH FACTOR =	8.27	60	15.6	2.941	0.368 *
pCa =	3.321	80	26.7	2.719	0.590 *
pAlk =	1.640	100	37.8	2.457	0.852 *
Total Hardness =	73.8 mg/l	120	48.9	2.164	1.145 *
	4.32 grains/gal	140	60.0	1.844	1.466 *
		160	71.1	1.499	1.810 *
Resistivity =	4.50 ohm-m @ 74°F				



* A POSITIVE INDEX INDICATES SCALE FORMATION. A NEGATIVE INDEX INDICATES CORROSION.

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Version 1.1

TO: DENVER 2

HALLWOOD DURANGO

OCT-14-'97 TUE 06:04 ID: HALLWOOD DURANGO

TEL NO: 303 259 1418

OCT 14 '97 05:50AM

10/10/97 12:18 FAX 503 327 4962

COLEMAN OIL GAS

002

From : WEPC (505) 327-4892

Sep. 23. 1997 09:45 AM

P01



HALLIBURTON

Water Analysis Report

To: Walsi Engineering
Submitted by: Halliburton Energy Services
Attention: Paul Thompson
Well Name: Steward Com #1

Date: 9/20/97
Date Rec: 9/18/97
Report #: _____
Formation: Fruitland Coal

(well #3 on C-103)

Specific Gravity	1.002
pH	7.17
Resistivity	@ 70° F
Iron (FE)	12.20 Mg / L
Potassium (K)	250.00 Mg / L
Sodium (Na)	885.8 Mg / L
Calcium (Ca)	41 Mg / L
Magnesium (Mg)	23 Mg / L
Chlorides (Cl)	1477 Mg / L
Sulfates (SO4)	300 Mg / L
Carbonates (CO3)	0 Mg / L
Bicarbonates (HCO3)	102 Mg / L
Total Dissolved Solids	3092 Mg / L

Respectfully: Colt Robinson

Title: Field QC

Location: Farmington, NM

SEP-30-'97 TUE 05:56 ID: HALLWOOD DURANGO

SEP-26-97 FRI 08:35 AM

HALLWOOD DURANGO
TEL NO: 303 259 1418 SEP 30 '97 05:44AM
FAX NO. 505 326 8112 #439 P02

TAURUS[®]
EXPLORATION, INC.
AN ENERGEN COMPANY

San Juan Office
2198 Bloomfield Highway
Farmington, New Mexico 87401
(505)325-6800, FAX (505)326-6112

Total number of pages (including cover page) 2

TO: *Hallwood Petroleum (970)259-1418

ATTN: *Jim Boneventura

FROM: *Gary Brink

DATE: *September 26, 1997

COVER MESSAGE:

If there are errors in transmission, please contact: Deb
at (505)325-6800.

SEP-26-97 FRI 08:35 AM

TEL NO: 303 259 1418 SEP 30 '97 05:44AM
FAX NO. 505 326 6112 #439 P23



Water Analysis Report

To: TAURUS EXPLORATION/VALSIR
Submitted by: Halliburton Energy Services
Attention: _____
Well Name: CULPEPPER MARTIN 9 06-03N-012W

Date: 9/24/97
Date Rec: 9/24/97
Report #: WT-97-0174
Formation: FRUITLAND COAL

Sec 6-T31N-R12W
(Well No. 4 - ON C-103)

Specific Gravity	1.000	
pH	7.83	
Resistivity	1.60	@ 70n F
Iron (FE)	1	Mg / L
Potassium (K)	0	Mg / L
Sodium (Na)	2065	Mg / L
Calcium (Ca)	49	Mg / L
Magnesium (Mg)	167	Mg / L
Chlorides (Cl)	499	Mg / L
Sulfates (SO4)	0	Mg / L
Carbonates (CO3)	0	Mg / L
Bicarbonates (HCO3)	5612	Mg / L
Total Dissolved Solids	8393	Mg / L

Respectfully: Teresa White

Title: Lsh Tech

Location: Farmington, NM

NOTICE:

This report is limited to the described sample tested. Any person using or relying on this report agrees that Halliburton shall not be liable for any loss or damage whether due to act or omission resulting from such report or its use.

MONTHLY INJECTION DATA
Cardon Com #1, San Juan County, New Mexico

Month Year	Injection Bbls	Days Injected	Average Bw/D	Cumulative Inj. Bbls	Average Pressure
9/96	22300	10	2230	22300	233
10/96	21464	27	795	43764	320
11/96	27391	30	913	71155	558
12/96	26133	31	843	97288	626
TOTAL 96	97288	98	1195	97288	434
=====					
1/97	20149	31	650	117437	556
2/97	17569	28	627	135006	556
3/97	18517	30	617	153523	583
4/97	14069	21	670	167592	471
5/97	13950	31	450	181542	481
6/97	12941	30	431	194483	450
7/97	12894	31	416	207377	484
8/97	18044	31	582	225421	543
9/97	20956	30	699	246377	578
10/97					
11/97					
12/97					
TOTAL 97	149089	263	571	246377	522
=====					