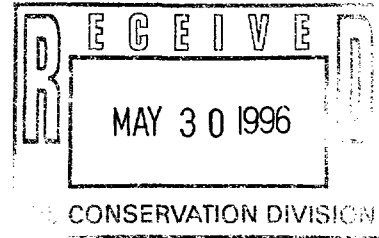


Nadine Mead
P.O. Box 248
La Plata, NM 87418



May 24, 1996

Mr. William J. LeMay
2040 S. Pacheco
Santa Fe, NM 87505

Reference: USA # 1

Dear Mr. LeMay,

It has come to my attention that the application filed by Hallwood Energy for the above referenced well in Section 27, Township 32 No, Range 13 W. in San Juan County, N.M., for a disposal well, has been objected to by Meridian Oil Company. I am writing you, as advised by the Oil & Gas Commission, Mr. Ben Stone, to object to the objection by Meridian Oil. My reasons are the following.

This above referenced well borders the north boundary of my property by a few feet and 3 years ago, a representative for Hallwood Energy encouraged my children to live on the property because of this well and the benefits it would bring to us. His name is Jim Bonaventura. He said that Hallwood was seeking a permit to this well and in a few months time they would be putting in the powerline and improving our roads, including gravel and would even gravel their driveways.

To make a long story short, this has drug on this past 3 years with just one excuse after the other until I finally went to Mr. Johnny Robinson of the Aztec, NM office of the Oil and Gas Commission to find if they had even filed for the permit. They hadn't. They didn't until I believe Jan of this year.

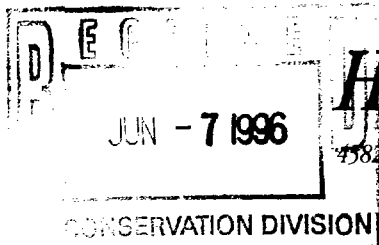
In spite of all the agrivations and delays, I have a family with four small babies still living there, going thru their fourth generator, waiting for this powerline to come to their home with road improvments. One child has respirtory problems and has been hospitalized twice. They need electricity to have the proper oxygen and vaporizers that are needed for sick children. My son-in-law now has a herniated disk and if medication can't fix it he will need surgery. This is due to 3 years of pull starting generators.

You would only have to visit this family to see that they are too poor to move somewhere else.

If Meridian hadn't interfered, we would probably be getting that powerline in now. We have outside family witness' to this commitment from Hallwood Energy. Please don't allow Meridian Oil to interfere as we believe our need is greater than theirs. Ours is human survival. Also, the powerline brings an opportunity to put in the local waterline, and right now, we all have to haul water, store it in a cistern and then pump it into the home.

Thank you for your help in this matter.

*Sincerely,
Nadine Mead*



Hallwood Energy Companies

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

June 4, 1996

CERTIFIED MAIL NO. P 324 481 540

Mr. William LeMay, Director
State of New Mexico
Oil Conservation Division
2040 S. Pacheco
Santa Fe, New Mexico 87505

RE: Form C-108, Application for Authorization to Inject
Hallwood Petroleum, Inc.
Proposed Cardon Com #1 SWD Well
Unit A, NE NE, 1120' FNL x 1050' FEL
Section 27-T32N-R13W
San Juan County, New Mexico

Dear Mr. LeMay:

This letter is a follow-up to our May 14, 1996 Application for Authorization to Inject on the captioned well. Attachment 1 is an original of the Affidavit of Publication from The Daily Times newspaper, Farmington, New Mexico. Also enclosed are copies and originals of the mailing notices to offset parties; of the twelve (12) notices mailed out eleven (11) were delivered (Attachment 2) and one (1) to W.A. Moncrief, Jr. was un-deliverable (Attachment 3).

We are also enclosing, as Attachment 4, a copy of Meridian Oil's "No Objection" letter. To date we have not heard of any objections or concerns to our proposal. Based on the delivery dates of the mailing notices and the newspaper publication date (5/18/96), the 15-day objection period has now elapsed.

Please contact me at (303) 850-6303 with any questions or comments you have on this application for injection, or if you need additional information, prior to approval.

Sincerely,

HALLWOOD PETROLEUM, INC.

A handwritten signature in cursive script, reading "Kevin E. O'Connell".

Kevin E. O'Connell
Drilling & Production Manager
Rocky Mountain & Mid-Continent District

KEO/jey

Mr. William LeMay, Director
June 4, 1996
Page 2

Attachments

cc: Oil Conservation Division
Aztec District III Office
1000 Rio Brazos Road
Aztec, NM 87410

Well File

AFFIDAVIT OF PUBLICATION

No. 36340

STATE OF NEW MEXICO

County of San Juan:

ROBERT LOVETT being duly sworn says: That he is the Classified Manager of THE DAILY TIMES, a daily newspaper of general circulation published in English at Farmington, said county and state, and that the hereto attached Legal Notice was published in a regular and entire issue of the said DAILY TIMES, a daily newspaper duly qualified for the purpose within the meaning of Chapter 167 of the 1937 Session Laws of the State of New Mexico for publication on the following day(s):

Saturday, May 18, 1996

and the cost of publication is: \$31.34.



On 5/18/96 ROBERT LOVETT appeared before me, whom I know personally to be the person who signed the above document.



My Commission Expires April 2, 2000

COPY OF PUBLICATION



Hallwood Petroleum, Inc. is filing an application for authorization to inject (dispose) of produced water.

1) Applicant:

Hallwood Petroleum, Inc.
P. O. Box 378111
Denver, CO 80237
Kevin E. O'Connell
(303) 850-7373

2) The intended purpose of the injection well is to dispose of produced water with the name and exact location of the well as follows:

Well Name:

Cardon Com #1 SWD
1120' FNL x 1050' FEL
NE NE, Unit A
Section 27-T32N-R13W
San Juan County,
New Mexico
API #30-045-24392

3) The formation names and depths:

Morrison, Bluff, Summerville & Entrada from 6,750' to 7,900'. Expected maximum injection rate of 1200 BWPD and pressure of 2,000 psig.

4) Interested parties must file objections or requests for hearing with the Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87504-2088 within 15 days.

Legal No. 33640 published in The Daily Times, Farmington, New Mexico, on Saturday, May 18, 1996.

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

- ☐ Addressee's Address
- ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

San Juan Coal Co.
P. O. Box 155
Fruitland, NM 87416

4a. Article Number

P 324 481 507

4b. Service Type

☐ Registered ☒ Certified
☐ Express Mail ☐ Insured
☐ Return Receipt for Merchandise ☐ COD

7. Date of Delivery

5/17/96

5. Received By: (Print Name)

Roberto Bustos

6. Signature (Addressee or Agent)

X *[Signature]*

8. Addressee's Address (Only if requested and fee is paid)

PS Form 3811, December 1994

Domestic Return Receipt

Thank you for using Return Receipt Service.

P 324 481 507

US Postal Service
Receipt for Certified Mail
 No Insurance Coverage Provided.
 Do not use for International Mail (See reverse)

Sent to

San Juan Coal Co.

Street & Number

P. O. Box 155

Post Office, State, & ZIP Code

Fruitland, NM 87416

Postage

\$ 3.00

Certified Fee

1.10

Special Delivery Fee

Restricted Delivery Fee

Return Receipt Showing to Whom & Date Delivered

1.10

Return Receipt Showing to Whom, Date, & Addressee's Address

TOTAL Postage & Fees

\$ 5.20

Postmark or Date

MAY 17 1996

PS Form 3800, April 1995

O'Connell Cardon Com #1 SMD

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
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- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

Cardon Com #1 SMD

I also wish to receive the following services (for an extra fee):

- ☐ Addressee's Address
- ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Delhi-Trading Inc.
P. O. Box 64
Farmington, NM 87499

4a. Article Number

P 324 481 509

4b. Service Type

- | | |
|---|---|
| <input type="checkbox"/> Registered | <input checked="" type="checkbox"/> Certified |
| <input type="checkbox"/> Express Mail | <input type="checkbox"/> Insured |
| <input type="checkbox"/> Return Receipt for Merchandise | <input type="checkbox"/> COD |

7. Date of Delivery

5-17-96

5. Received By: (Print Name)

Kelly Hegarty

6. Signature: (Addressee or Agent)

X Kelly Hegarty

8. Addressee's Address (Only if requested and fee is paid)

PS Form 3811, December 1994

Domestic Return Receipt

Thank you for using Return Receipt Service.

P 324 481 509

US Postal Service

Receipt for Certified Mail

No Insurance Coverage Provided.

Do not use for International Mail (See reverse)

Sent to Delhi-Trading Inc.	
Street & Number P. O. Box 64	
Post Office, State, & ZIP Code Farmington, NM 87499	
Postage	\$ 3.00
Certified Fee	1.00
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	1.00
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	\$ 5.00
Postmark or Date	15 1996

PS Form 3800, April 1995

O'Connell

Cardon Com #1 SMD

Cardon Com #1 SWD

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
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- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

<p>3. Article Addressed to:</p> <p style="text-align: center;">Hugoton Energy Corp. 1900 Epic Center 301 N. Main St. Wichita, KS 67202</p>	<p>4a. Article Number P 324 481 514</p> <p>4b. Service Type <input type="checkbox"/> Registered <input checked="" type="checkbox"/> Certified <input type="checkbox"/> Express Mail <input type="checkbox"/> Insured <input type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> COD </p> <p>7. Date of Delivery 5-17-96</p>
<p>5. Received By: (Print Name) Tammy Fleming</p> <p>6. Signature: (Addressee or Agent) X <i>Tammy Fleming</i></p>	<p>8. Addressee's Address (Only if requested and fee is paid)</p>

PS Form 3811, December 1994

Domestic Return Receipt

Thank you for using Return Receipt Service.

P 324 481 514

US Postal Service
Receipt for Certified Mail
 No Insurance Coverage Provided.
 Do not use for International Mail (See reverse)

Sent to Hugoton Energy Corp. 1900 Epic Center	
Street & Number 301 N. Main St.	
Post Office, State, & ZIP Code Wichita, KS 67202	
Postage	\$ 300
Certified Fee	110
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	110
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	\$ 520
Postmark or Date	

PS Form 3800, April 1995

O'Connell

Cardon Com #1 SWD

Cardon Com #1 SWD

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
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- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

San Juan Resources
1801 Broadway, #400
Denver, CO 80202

4a. Article Number

P 324 481 516

4b. Service Type

- | | |
|---|---|
| <input type="checkbox"/> Registered | <input checked="" type="checkbox"/> Certified |
| <input type="checkbox"/> Express Mail | <input type="checkbox"/> Insured |
| <input type="checkbox"/> Return Receipt for Merchandise | <input type="checkbox"/> COD |

7. Date of Delivery

5/16/96

5. Received By: (Print Name)

8. Addressee's Address (Only if requested and fee is paid)

6. Signature: (Addressee or Agent)

☒ 

PS Form 3811, December 1994

Domestic Return Receipt

Thank you for using Return Receipt Service.

P 324 481 516

US Postal Service

Receipt for Certified Mail

No Insurance Coverage Provided.

Do not use for International Mail (See reverse)

Sent to	
San Juan Resources	
Street & Number	
1801 Broadway, #400	
Post Office, State, & ZIP Code	
Denver, CO 80202	
Postage	\$ 3.00
Certified Fee	1.10
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	1.10
Return Receipt Showing to Whom, Date, & Addressee's Address	0.15
TOTAL Postage & Fees	\$ 5.20
Postmark or Date	

PS Form 3800, April 1995

O'Connell

Cardon Com #1 SWD

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

Cardon Com #1 SWD

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Meridian Oil Inc.
P. O. Box 4289
Farmington, NM 87499

4a. Article Number

P 324 481 510

4b. Service Type

- ☐ Registered ☒ Certified
☐ Express Mail ☐ Insured
☐ Return Receipt for Merchandise ☐ COD

7. Date of Delivery

5-17-96

5. Received By: (Print Name)

Judith Dee

6. Signature: (Addressee or Agent)

X Judith Dee

8. Addressee's Address (Only if requested and fee is paid)

PS Form 3811, December 1994

Domestic Return Receipt

Thank you for using Return Receipt Service.

P 324 481 510

US Postal Service

Receipt for Certified Mail

No Insurance Coverage Provided.

Do not use for International Mail (See reverse)

Sent to Meridian Oil Inc.	
Street & Number P. O. Box 4289	
Post Office, State, & ZIP Code Farmington, NM 87499	
Postage	\$ 3.00
Certified Fee	1.10
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	1.10
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	\$ 5.20
Postmark or Date	

PS Form 3800, April 1995

O'Connell

Cardon Com #1 SWD

Cardon Com #1 SWD

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

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- Complete items 3, 4a, and 4b.
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- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Martin N. Leeds
2920 Neilson Way, #404
Santa Monica, CA 90405

4a. Article Number

P 324 481 515

4b. Service Type

- | | |
|---|---|
| <input type="checkbox"/> Registered | <input checked="" type="checkbox"/> Certified |
| <input type="checkbox"/> Express Mail | <input type="checkbox"/> Insured |
| <input type="checkbox"/> Return Receipt for Merchandise | <input type="checkbox"/> COD |

7. Date of Delivery

5-17-96

5. Received By: (Print Name)

M. Leeds

6. Signature: (Addressee or Agent)

X

8. Addressee's Address (Only if requested and fee is paid)

Thank you for using Return Receipt Service.

PS Form 3811, December 1994

Domestic Return Receipt

P 324 481 515

US Postal Service

Receipt for Certified Mail

No Insurance Coverage Provided.

Do not use for International Mail (See reverse)

Sent to
Martin N. Leeds

Street & Number
2920 Neilson Way, #404

Post Office, State, & ZIP Code
Santa Monica, CA 90405

Postage \$ 3.00

Certified Fee 1.10

Special Delivery Fee

Restricted Delivery Fee

Return Receipt Showing to Whom & Date Delivered 1.60

Return Receipt Showing to Whom, Date, & Addressee's Address 15

TOTAL Postage & Fees \$ 15.20

Postmark or Date

PS Form 3800, April 1995

O'Connell

Cardon Com #1 SWD

Cardon Com #1 SWD

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
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- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Merrion Oil & Gas Corp.
610 Reilly Avenue
Farmington, NM 87401

4a. Article Number

P 324 481 517

4b. Service Type

- ☐ Registered ☒ Certified
☐ Express Mail ☐ Insured
☐ Return Receipt for Merchandise ☐ COD

7. Date of Delivery

5-17-96

5. Received By: (Print Name)

Betty Ward

8. Addressee's Address (Only if requested and fee is paid)

6. Signature: (Addressee or Agent)

X

Thank you for using Return Receipt Service.

PS Form 3811, December 1994

Domestic Return Receipt

P 324 481 517

US Postal Service

Receipt for Certified Mail

No Insurance Coverage Provided.

Do not use for International Mail (See reverse)

Sent to
Merrion Oil & Gas Corp.

Street & Number
610 Reilly Avenue

Post Office, State, & ZIP Code
Farmington, NM 87401

Postage \$ 3.00

Certified Fee 1.00

Special Delivery Fee

Restricted Delivery Fee

Return Receipt Showing to Whom & Date Delivered 1.00

Return Receipt Showing to Whom, Date, & Addressee's Address

TOTAL Postage & Fees \$ 5.20

Postmark or Date
15
1996

PS Form 3800, April 1995

O'Connell

Cardon Com #1 SWD

Cardon Com #1 SWD

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Palmer Oil & Gas Co.
P. O. Box 2564
Billings, MT 59103

4a. Article Number

P 324 481 513

4b. Service Type

- | | |
|---|---|
| <input type="checkbox"/> Registered | <input checked="" type="checkbox"/> Certified |
| <input type="checkbox"/> Express Mail | <input type="checkbox"/> Insured |
| <input type="checkbox"/> Return Receipt for Merchandise | <input type="checkbox"/> COD |

7. Date of Delivery

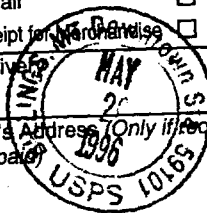
8. Addressee's Address (Only if requested and fee is paid)

5. Received By: (Print Name)

GRACE BROWN

6. Signature: (Addressee or Agent)

X *Grace Brown*



Thank you for using Return Receipt Service.

PS Form 3811, December 1994

Domestic Return Receipt

P 324 481 513

US Postal Service

Receipt for Certified Mail

No Insurance Coverage Provided.

Do not use for International Mail (See reverse)

Sent to	
Palmer Oil & Gas Co.	
Street & Number	
P. O. Box 2564	
Post Office, State, & ZIP Code	
Billings, MT 59103	
Postage	\$ 300
Certified Fee	110
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	110
Return Receipt Showing to Whom, Date, & Addressee's Address	MAY
TOTAL Postage & Fees	\$ 520
Postmark or Date	

PS Form 3800, April 1995

O'Connell

Cardon Com #1 SWD

Is your RETURN ADDRESS completed on the reverse side?

SENDER: Cardon Com #1 SWD ■ Complete items 1 and/or 2 for additional services. ■ Complete items 3, 4a, and 4b. ■ Print your name and address on the reverse of this form so that we can return this card to you. ■ Attach this form to the front of the mailpiece, or on the back if space does not permit. ■ Write "Return Receipt Requested" on the mailpiece below the article number. ■ The Return Receipt will show to whom the article was delivered and the date delivered.		I also wish to receive the following services (for an extra fee): 1. <input type="checkbox"/> Addressee's Address 2. <input type="checkbox"/> Restricted Delivery Consult postmaster for fee.
3. Article Addressed to: Union Oil Company of CA P. O. Box 3100 Midland, TX 79702	4a. Article Number P 324 481 511	4b. Service Type <input type="checkbox"/> Registered <input checked="" type="checkbox"/> Certified <input type="checkbox"/> Express Mail <input type="checkbox"/> Insured <input type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> COD
5. Received By: (Print Name)	7. Date of Delivery MAY 17 1996	
6. Signature: (Addressee or Agent) X <i>Chad L. White</i>	8. Addressee's Address (Only if requested and fee is paid)	

Thank you for using Return Receipt Service.

PS Form 3811, December 1994

Domestic Return Receipt

P 324 481 511

US Postal Service Receipt for Certified Mail No Insurance Coverage Provided. Do not use for International Mail (See reverse)	
Sent to Union Oil Company of CA	
Street & Number P. O. Box 3100	
Post Office, State, & ZIP Code Midland, TX 79702	
Postage	\$ 300
Certified Fee	110
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	110
Return Receipt Showing to Whom, Date, & Addressee's Address	MAY 17 1996
TOTAL Postage & Fees	15\$ 520
Postmark or Date	1996

PS Form 3800 April 1995

O'Connell
Cardon Com #1 SWD

Cardon Com #1 SWD

Is your RETURN ADDRESS completed on the reverse side?

SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Edward M. Thomas
1703 N. Knudsen
Farmington, NM 87401

4a. Article Number

P 324 481 508

4b. Service Type

- | | |
|---|---|
| <input type="checkbox"/> Registered | <input checked="" type="checkbox"/> Certified |
| <input type="checkbox"/> Express Mail | <input type="checkbox"/> Insured |
| <input type="checkbox"/> Return Receipt for Merchandise | <input type="checkbox"/> COD |

7. Date of Delivery

5-17

5. Received By: (Print Name)

6. Signature: (Addressee or Agent)

X *Edward Thomas Mackay*

8. Addressee's Address (Only if requested and fee is paid)

PS Form 3811, December 1994

Domestic Return Receipt

Thank you for using Return Receipt Service.

P 324 481 508

US Postal Service

Receipt for Certified Mail

No Insurance Coverage Provided.

Do not use for International Mail (See reverse)

PS Form 3800, April 1995

Sent to	
Edward M. Thomas	
Street & Number	
1703 N. Knudsen	
Post Office, State, & ZIP Code	
Farmington, NM 87401	
Postage	\$ 3.00
Certified Fee	1.10
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	1.10
Return Receipt Showing to Whom, Date, & Addressee's Address	1.10
TOTAL Postage & Fees	\$ 5.20
Postmark or Date	

0'Connell

Cardon Com #1 SWD

Mrs. Nadine Mead
P.O. Box 248
La Plata, NM 87418

RECEIVED
DIVISION
1996 JUL 8 10 52

July 5, 1996

Mr. Benjamin E. Stone
Petroleum Engineering Specialist
NM EM & Natural Resources Depart.
2040 So. Pacheco St.
Santa Fe, NM 87505

Dear Mr. Stone,

Thank you for responding with your letter of June 28, 1996. I wish to apologize for our communication problems with my letter concerning the Cardon Com Well No.1. Over the phone you gave me the identity of USA Well No.1 probably because I miscommunicated the property location incorrectly. I knew the disposal well was named Cardon Com from the local office in Aztec but after your telephone advice, thought that the name had been changed.

That clarified I feel also a need to clarify why I wrote in the first place. My objection was against the objection made by Meridian Oil Company...not Hallwood. It was my understanding that I should write and explain our objection because it was an interference to our needs. However, according to your letter we were misinformed and Meridian Oil was objecting to USA and not Cardon Com.

I don't know Mr. Kevin O'Connell of Hallwood and have never heard of him before but in reference to the position he presented to you concerning the Cardon Com Well No.1, he is obviously misinformed concerning the obligations from that Well in reference to us. Hallwood's commitment to us is to put in the power WHEN they got the permit and not any later. I won't continue to explain all this further or defend our rights to you as I am aware that in your position it isn't a concern. BUT, I did feel a need to explain, because I am aware all your records are public records, to set this particular issue straight. Hallwood "owes us NOW" and not at some future need for Hallwood.

I understand and always did that there is nothing in permitting that "requires electricity" and that wasn't my reason for writing either.

At the risk of repeating myself, I only wrote you as I was led to believe Meridian Oil Company was interfering in our issue with Hallwood. That obviously wasn't the case after all but your response is greatly appreciated and very informing.

Thank you sincerely,

Nadine Mead

Nadine Mead

P.S. Could you please send me the dates application was filed for both the Cardon Com Well No.1 and the Mead 27-1 wells. Thank you.



NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

June 28, 1996

Ms. Nadine Mead
P.O. Box 248
La Plata, New Mexico 87418

Re: Proposed Hallwood Energy Companies Salt Water Disposal Well.

Dear Ms. Mead:

Thank you for your letter indicating your concerns with the subject well. Hallwood Energy Companies has actually submitted applications for two (2) separate salt water disposal wells. Your letter references the USA Well No.1, located in Section 27, Township 32 North, Range 13 West. This location is actually for their other proposed SWD which is named Cardon Com Well No.1.

The application for the USA Well No.1 (24-32N-13W) has been returned to Hallwood subsequent to the objection by Meridian Oil Company. Their objection was based on valid geologic concerns and the effect a disposal operation at the proposed depths may have on Meridian's offsetting producing wells.

As the Cardon Com Well No.1 appears to be the well you may actually be interested in (according to the location you indicated), I am happy to tell you that this well has had no objections and the permit for salt water disposal operations will be issued the week of July 1, 1996. Depending on specifics of the operation however, Mr. Kevin O'Connell of Hallwood, said they may or may not run electricity to the well site. It may occur in the future, depending on the needs of the operation, but that won't be known until Hallwood sees how the operations is going and what specific needs they may have for pumps or other equipment in the future. While the road will be maintained for Hallwood representatives to inspect the well and gauge disposal, they are under no obligation to maintain the road in any specific condition. That is, it may only get bladed, etc., when Hallwood feels there is a need to do so.

Again, there will be nothing in the permit requiring electricity or a certain level of road maintenance. The permit covers specific information as to the geologic formations, well construction, injection pressures and monitoring of the well.

I hope you and your family are able to benefit from any improvements which Hallwood sees fit to conduct their operation in a prudent manner.

Very truly yours,

Benjamin E. Stone
Petroleum Engineering Specialist



NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

July 9, 1996

Mrs. Nadine Mead
P.O. Box 248
La Plata, New Mexico 87418

Re: Hallwood Energy Companies' Cardon Com Well No.1

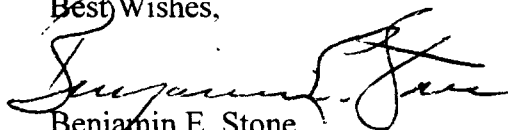
Dear Mrs. Mead:

I'm writing in response to your recent letter dated July 5, 1996. The application for authorization to inject on the Cardon Com Well No.1 was filed with the Division on June 4, 1996. The USA Well No.1 was filed sometime in March but has since been returned to Hallwood pending Meridian Oil Company's objection.

Your letter mentions an obligation Hallwood has made to you in some of your dealings with them. Please understand Mrs. Mead, the Division has no authority or jurisdiction in any agreements, understandings or obligations other than those which specifically concern the prudent operation of the subject well in regards to geologic factors, well construction and other downhole criteria pursuant to the Rules and Regulations of the Oil Conservation Division. Any other considerations which may be civil in nature, would come under the auspices of the legal system. In these instances, the Division would not make any ruling or inference one way or the other. While we value your comments and concerns, as I understand them, they are simply outside the realm of the Division's authority.

I hope this clarifies the Division's position. If you are adamant in your concerns, I believe legal counsel would best serve your interests.

Best Wishes,


Benjamin E. Stone
Petroleum Engineering Specialist

/BES

Hallwood Energy Companies

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

December 12, 1996

State of New Mexico
Oil Conservation Division
P.O. Box 2088
Santa Fe, New Mexico 87504-2088
Attn: Ben Stone

RE: Cardon Com #1 (SWD)
Section 27-T32N-R13W
San Juan Co., New Mexico

Dear Mr. Stone;

This letter is to provide you and your files with recent water analysis from the 22 - Fruitland Basin Coal gas wells in our "LaPlata Area" of San Juan County, New Mexico. The produced water from these wells is now being sub-surface disposed into the Entrada formation in our recently completed Cardon Com #1 (SWD) well (Administrative Order SWD-632). Included in these 22 water analysis are two (2) new wells the Mead 27-1 and the Wright 10-1, which were both drilled and completed in the third quarter of 1996.

Please contact me at (303)850-6303 should you require any additional information. Also, if you would ever like to visit the Cardon Com #1 (SWD) to view our water disposal well set-up and facility, please contact either myself at (303) 850-6303 or Jim Bonaventura our Area Superintendent in Durango, CO at (970)259-1374.

Sincerely,
Hallwood Petroleum Inc.



Kevin E. O'Connell
Drilling & Production Manager

attachments

KEO/keo

cc: Jim Bonaventura (w/o attachments)
Well File (w/attachments)

Mr. Ernie Busch (w/attachments)
OCD- District III
1000 Rio Brazos Road
Aztec, New Mexico 87410

OFF: (505) 325-5667



LAB: (505) 325-1556

API WATER ANALYSIS

Attn: *Kevin O'Connell*
 Company: *Hallwood Petroleum*
 Address: *463 Turner Drive, Ste.101*
 City, State: *Durango, CO 81301*

Date: *3-Dec-96*
 COC No.: *6190*
 Sample ID: *12878*
 Job No.: *2-1000*

Project Name: *Hallwood Petroleum*
 Project Location: *Alberding 3-2*
 Sampled by: *DE*
 Analyzed by: *HR*

Date: *14-Nov-96* Time: *NR*
 Date: *3-Dec-96*

API RP-45 Laboratory Analysis

Parameter	Result	Unit of Measure		Result	Unit of Measure	
Cations						
Sodium <i>Na</i>	2910	mg/L		126.58	me/L	
Calcium <i>Ca</i>	8.2	mg/L		0.41	me/L	
Magnesium <i>Mg</i>	2.3	mg/L		0.19	me/L	
Potassium <i>K</i>	18.6	mg/L		0.48	me/L	
Anions						
Chloride <i>Cl</i>	875	mg/L		24.68	me/L	
Sulfate <i>SO4</i>	3	mg/L		0.07	me/L	
Carbonate <i>CO3</i>	<1	mg/L		<0.01	me/L	
Bicarbonate <i>HCO3</i>	4780	mg/L		78.34	me/L	
Hydroxide <i>OH</i>	<1	mg/L		<0.01	me/L	
Sulfide <i>S2</i>	NA	mg/L		NA	me/L	
Iron <i>Fe</i>	0.2	mg/L		<0.01	me/L	
Total Dissolved Solids Calculated, Sum of Cation/Anion	8597	mg/L		Cation-Anion Balance 24.58 Difference Cation-Anion, me/L 230.75 Total Cation-Anion, me/L 10.7 % Difference Cation-Anion		
pH	7.91			Comments NA: Not Analyzed		
Resistivity	1.0010	ohm-m				
Specific Gravity	1.0064					
Total Hardness as CaCO3	30	mg/L				

Approved by: *[Signature]*
 Date: *12/3/96*

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

API WATER ANALYSIS

Attn: **Kevin O'Connell**
 Company: **Hallwood Petroleum**
 Address: **463 Turner Drive, Ste. 101**
 City, State: **Durango, CO 81301**

Date: **3-Dec-96**
 COC No.: **6189**
 Sample ID: **12869**
 Job No.: **2-1000**

Project Name: **Hallwood Petroleum**
 Project Location: **Baird 4-2**
 Sampled by: **DE**
 Analyzed by: **HR**

Date: **14-Nov-96** Time: **NR**
 Date: **3-Dec-96**

API RP-45 Laboratory Analysis

Parameter	Result	Unit of Measure	Result	Unit of Measure
Cations				
Sodium Na	4110	mg/L	178.78	me/L
Calcium Ca	14.5	mg/L	0.72	me/L
Magnesium Mg	5.4	mg/L	0.44	me/L
Potassium K	18.6	mg/L	0.48	me/L
Anions				
Chloride Cl	2947	mg/L	83.12	me/L
Sulfate SO4	4	mg/L	0.09	me/L
Carbonate CO3	<1	mg/L	<0.01	me/L
Bicarbonate HCO3	5266	mg/L	86.30	me/L
Hydroxide OH	<1	mg/L	<0.01	me/L
Sulfide S2	NA	mg/L	NA	me/L
Iron Fe	0.7	mg/L	0.02	me/L
Total Dissolved Solids			Cation-Anion Balance	
Calculated, Sum of Cation/Anion	12366	mg/L	10.92	Difference Cation-Anion, me/L
pH	7.81		349.95	Total Cation-Anion, me/L
Resistivity	0.6139	ohm-m	3.1	% Difference Cation-Anion
Specific Gravity	1.0101		Comments	
Total Hardness as CaCO3	58	mg/L	NA: Not Analyzed	

Approved by: 
 Date: **12/3/96**

OFF: (505) 325-5667



LAB: (505) 325-1556

API WATER ANALYSIS

Attn: *Kevin O'Connell*
 Company: *Hallwood Petroleum*
 Address: *463 Turner Drive, Ste.101*
 City, State: *Durango, CO 81301*

Date: *3-Dec-96*
 COC No.: *6190*
 Sample ID: *12872*
 Job No.: *2-1000*

Project Name: *Hallwood Petroleum*
 Project Location: *Chavez H2-C*
 Sampled by: *DE*
 Analyzed by: *HR*

Date: *14-Nov-96* Time: *NR*
 Date: *3-Dec-96*

API RP-45 Laboratory Analysis

Parameter	Result	Unit of Measure	Result	Unit of Measure
Cations				
Sodium <i>Na</i>	307	mg/L	13.35	me/L
Calcium <i>Ca</i>	1.5	mg/L	0.08	me/L
Magnesium <i>Mg</i>	0.6	mg/L	0.05	me/L
Potassium <i>K</i>	65.0	mg/L	1.66	me/L
Anions				
Chloride <i>Cl</i>	92.2	mg/L	2.60	me/L
Sulfate <i>SO4</i>	3	mg/L	0.05	me/L
Carbonate <i>CO3</i>	<1	mg/L	<0.01	me/L
Bicarbonate <i>HCO3</i>	620	mg/L	10.16	me/L
Hydroxide <i>OH</i>	<1	mg/L	<0.01	me/L
Sulfide <i>S2</i>	NA	mg/L	NA	me/L
Iron <i>Fe</i>	0.4	mg/L	0.01	me/L
Total Dissolved Solids Calculated, Sum of Cation/Anion	1089	mg/L	Cation-Anion Balance 2.34 Difference Cation-Anion, me/L 27.97 Total Cation-Anion, me/L 8.4 % Difference Cation-Anion	
pH	6.80		Comments NA: Not Analyzed	
Resistivity	6.8918	ohm-m		
Specific Gravity	1.0008			
Total Hardness as CaCO3	6	mg/L		

Approved by: *[Signature]*
 Date: *12/3/96*

OFF: (505) 325-5667



LAB: (505) 325-1556

API WATER ANALYSIS

Attn: *Kevin O'Connell*
 Company: *Hallwood Petroleum*
 Address: *463 Turner Drive, Ste.101*
 City, State: *Durango, CO 81301*

Date: *3-Dec-96*
 COC No.: *6190*
 Sample ID: *12873*
 Job No.: *2-1000*

Project Name: *Hallwood Petroleum*
 Project Location: *Federal B-2-12*
 Sampled by: *DE*
 Analyzed by: *HR*

Date: *14-Nov-96* Time: *NR*
 Date: *3-Dec-96*

API RP-45 Laboratory Analysis

Parameter	Result	Unit of Measure		Result	Unit of Measure	
Cations						
Sodium <i>Na</i>	4020	mg/L		174.86	me/L	
Calcium <i>Ca</i>	10.4	mg/L		0.52	me/L	
Magnesium <i>Mg</i>	3.4	mg/L		0.28	me/L	
Potassium <i>K</i>	26.0	mg/L		0.66	me/L	
Anions						
Chloride <i>Cl</i>	897	mg/L		25.30	me/L	
Sulfate <i>SO4</i>	3	mg/L		0.07	me/L	
Carbonate <i>CO3</i>	<1	mg/L		<0.01	me/L	
Bicarbonate <i>HCO3</i>	7941	mg/L		130.14	me/L	
Hydroxide <i>OH</i>	<1	mg/L		<0.01	me/L	
Sulfide <i>S2</i>	NA	mg/L		NA	me/L	
Iron <i>Fe</i>	0.7	mg/L		0.03	me/L	
Total Dissolved Solids Calculated, Sum of Cation/Anion	12901	mg/L		Cation-Anion Balance 20.84 Difference Cation-Anion, me/L 331.87 Total Cation-Anion, me/L 6.3 % Difference Cation-Anion		
pH	7.86			Comments NA: Not Analyzed		
Resistivity	0.6949	ohm-m				
Specific Gravity	1.0106					
Total Hardness as CaCO3	40	mg/L				

Approved by: Date: *12/3/96*

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- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

API WATER ANALYSIS

Attn: **Kevin O'Connell**
 Company: **Hallwood Petroleum**
 Address: **463 Turner Drive, Ste.101**
 City, State: **Durango, CO 81301**

Date: **3-Dec-96**
 COC No.: **6190**
 Sample ID: **12881**
 Job No.: **2-1000**

Project Name: **Hallwood Petroleum**
 Project Location: **Federal M-2-1**
 Sampled by: **DE**
 Analyzed by: **HR**

Date: **14-Nov-96** Time: **NR**
 Date: **3-Dec-96**

API RP-45 Laboratory Analysis

Parameter	Result	Unit of Measure		Result	Unit of Measure	
Cations						
Sodium Na	2430	mg/L		105.70	me/L	
Calcium Ca	8.0	mg/L		0.40	me/L	
Magnesium Mg	3.6	mg/L		0.29	me/L	
Potassium K	17.0	mg/L		0.43	me/L	
Anions						
Chloride Cl	2327	mg/L		65.64	me/L	
Sulfate SO ₄	3	mg/L		0.05	me/L	
Carbonate CO ₃	<1	mg/L		<0.01	me/L	
Bicarbonate HCO ₃	2415	mg/L		39.58	me/L	
Hydroxide OH	<1	mg/L		<0.01	me/L	
Sulfide S ₂	NA	mg/L		NA	me/L	
Iron Fe	0.1	mg/L		<0.01	me/L	
Total Dissolved Solids			Cation-Anion Balance 1.56 Difference Cation-Anion, me/L 212.10 Total Cation-Anion, me/L 0.7 % Difference Cation-Anion Comments NA: Not Analyzed			
Calculated, Sum of Cation/Anion	7203	mg/L				
pH	7.33					
Resistivity	0.9166	ohm-m				
Specific Gravity	1.0055					
Total Hardness as CaCO ₃	35	mg/L				

Approved by: 

Date: 12/3/96

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- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

API WATER ANALYSIS

Attn: **Kevin O'Connell**
 Company: **Hallwood Petroleum**
 Address: **463 Turner Drive, Ste.101**
 City, State: **Durango, CO 81301**

Date: **3-Dec-96**
 COC No.: **6190**
 Sample ID: **12877**
 Job No.: **2-1000**

Project Name: **Hallwood Petroleum**
 Project Location: **Freeman 11-3**
 Sampled by: **DE**
 Analyzed by: **HR**

Date: **14-Nov-96** Time: **NR**
 Date: **3-Dec-96**

API RP-45 Laboratory Analysis

Parameter	Result	Unit of Measure		Result	Unit of Measure																																																									
Cations																																																														
Sodium <i>Na</i>	2590	mg/L		112.66	me/L																																																									
Calcium <i>Ca</i>	3.9	mg/L		0.20	me/L																																																									
Magnesium <i>Mg</i>	1.7	mg/L		0.14	me/L																																																									
Potassium <i>K</i>	15.6	mg/L		0.40	me/L																																																									
Anions																																																														
Chloride <i>Cl</i>	1007	mg/L		28.40	me/L																																																									
Sulfate <i>SO4</i>	6	mg/L		0.12	me/L																																																									
Carbonate <i>CO3</i>	<1	mg/L		<0.01	me/L																																																									
Bicarbonate <i>HCO3</i>	4609	mg/L		75.54	me/L																																																									
Hydroxide <i>OH</i>	<1	mg/L		<0.01	me/L																																																									
Sulfide <i>S2</i>	NA	mg/L		NA	me/L																																																									
Iron <i>Fe</i>	0.7	mg/L		0.03	me/L																																																									
<table border="0"> <tr> <td colspan="3">Total Dissolved Solids</td><td colspan="4">Cation-Anion Balance</td></tr> <tr> <td>Calculated, Sum of Cation/Anion</td><td>8233</td><td>mg/L</td><td colspan="4">9.36 Difference Cation-Anion, me/L</td></tr> <tr> <td></td><td></td><td></td><td colspan="4">217.48 Total Cation-Anion, me/L</td></tr> <tr> <td></td><td></td><td></td><td colspan="4">4.3 % Difference Cation-Anion</td></tr> <tr> <td colspan="3">pH</td><td colspan="4">Comments</td></tr> <tr> <td>Resistivity</td><td>0.9990</td><td>ohm-m</td><td colspan="4">NA: Not Analyzed</td></tr> <tr> <td>Specific Gravity</td><td>1.0064</td><td></td><td colspan="4"></td></tr> <tr> <td>Total Hardness as CaCO3</td><td>17</td><td>mg/L</td><td colspan="4"></td></tr> </table>							Total Dissolved Solids			Cation-Anion Balance				Calculated, Sum of Cation/Anion	8233	mg/L	9.36 Difference Cation-Anion, me/L							217.48 Total Cation-Anion, me/L							4.3 % Difference Cation-Anion				pH			Comments				Resistivity	0.9990	ohm-m	NA: Not Analyzed				Specific Gravity	1.0064						Total Hardness as CaCO3	17	mg/L				
Total Dissolved Solids			Cation-Anion Balance																																																											
Calculated, Sum of Cation/Anion	8233	mg/L	9.36 Difference Cation-Anion, me/L																																																											
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Resistivity	0.9990	ohm-m	NA: Not Analyzed																																																											
Specific Gravity	1.0064																																																													
Total Hardness as CaCO3	17	mg/L																																																												

Approved by: 

Date: 12/3/96

OFF: (505) 325-5667



LAB: (505) 325-1556

API WATER ANALYSIS

Attn: **Kevin O'Connell**
 Company: **Hallwood Petroleum**
 Address: **463 Turner Drive, Ste.101**
 City, State: **Durango, CO 81301**


Date: **3-Dec-96**
 COC No.: **6190**
 Sample ID: **12879**
 Job No.: **2-1000**

Project Name: **Hallwood Petroleum**
 Project Location: **Jacquez K2-2**
 Sampled by: **DE**
 Analyzed by: **HR**

Date: **14-Nov-96** Time: **NR**
 Date: **3-Dec-96**

API RP-45 Laboratory Analysis

Parameter	Result	Unit of Measure	Result	Unit of Measure
Cations				
Sodium Na	2980	mg/L	129.62	me/L
Calcium Ca	7.1	mg/L	0.35	me/L
Magnesium Mg	2.6	mg/L	0.22	me/L
Potassium K	19.2	mg/L	0.49	me/L
Anions				
Chloride Cl	1102	mg/L	31.08	me/L
Sulfate SO ₄	4	mg/L	0.09	me/L
Carbonate CO ₃	<1	mg/L	<0.01	me/L
Bicarbonate HCO ₃	5190	mg/L	85.06	me/L
Hydroxide OH	<1	mg/L	<0.01	me/L
Sulfide S ₂	NA	mg/L	NA	me/L
Iron Fe	0.3	mg/L	<0.01	me/L
Total Dissolved Solids			Cation-Anion Balance	
Calculated, Sum of Cation/Anion	9305	mg/L	14.47 Difference Cation-Anion, me/L	
			246.92 Total Cation-Anion, me/L	
			5.9 % Difference Cation-Anion	
pH	7.45		Comments	
Resistivity	0.8981	ohm-m	NA: Not Analyzed	
Specific Gravity	1.0077			
Total Hardness as CaCO ₃	29	mg/L		

Approved by: 
 Date: **12/3/96**

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

API WATER ANALYSIS

Attn: **Kevin O'Connell**
 Company: **Hallwood Petroleum**
 Address: **463 Turner Drive, Ste. 101**
 City, State: **Durango, CO 81301**

Date: **3-Dec-96**
 COC No.: **6189**
 Sample ID: **12868**
 Job No.: **2-1000**

Project Name: **Hallwood Petroleum**
 Project Location: **Kline G-3-10**
 Sampled by: **DE**
 Analyzed by: **HR**

Date: **14-Nov-96** Time: **NR**
 Date: **3-Dec-96**

API RP-45 Laboratory Analysis

Parameter	Result	Unit of Measure		Result	Unit of Measure	
Cations						
Sodium <i>Na</i>	5640	mg/L		245.33	me/L	
Calcium <i>Ca</i>	10.0	mg/L		0.50	me/L	
Magnesium <i>Mg</i>	9.9	mg/L		0.81	me/L	
Potassium <i>K</i>	33.2	mg/L		0.85	me/L	
Anions						
Chloride <i>Cl</i>	4396	mg/L		124.00	me/L	
Sulfate <i>SO4</i>	3	mg/L		0.05	me/L	
Carbonate <i>CO3</i>	<1	mg/L		<0.01	me/L	
Bicarbonate <i>HCO3</i>	6578	mg/L		107.81	me/L	
Hydroxide <i>OH</i>	<1	mg/L		<0.01	me/L	
Sulfide <i>S2</i>	NA	mg/L		NA	me/L	
Iron <i>Fe</i>	0.4	mg/L		0.01	me/L	
Total Dissolved Solids			Cation-Anion Balance <hr/> 15.65 Difference Cation-Anion, me/L 479.36 Total Cation-Anion, me/L 3.3 % Difference Cation-Anion <hr/> Comments NA: Not Analyzed			
Calculated, Sum of Cation/Anion	16670	mg/L				
pH	7.53					
Resistivity	0.4525	ohm-m				
Specific Gravity	1.0135					
Total Hardness as CaCO3	66	mg/L				

Approved by: 

Date: 12/3/96

COFF: (505) 325-5667



LAB: (505) 325-1556

API WATER ANALYSIS

Attn: Kevin O'Connell
Company: Hallwood Petroleum
Address: 463 Turner Drive, Ste. 101
City, State: Durango, CO 81301

Date: 3-Dec-96
COC No.: 6189
Sample ID: 12870
Job No.: 2-1000

Project Name: Hallwood Petroleum
Project Location: Oshea K-2-3
Sampled by: DE
Analyzed by: HR

Date: 14-Nov-96 Time: NR
Date: 3-Dec-96

API RP-45 Laboratory Analysis

Parameter	Result	Unit of Measure		Result	Unit of Measure	
Cations						
Sodium Na	4200	mg/L		182.69	me/L	
Calcium Ca	18	mg/L		0.89	me/L	
Magnesium Mg	5	mg/L		0.43	me/L	
Potassium K	132	mg/L		3.37	me/L	
Anions						
Chloride Cl	2058	mg/L		58.05	me/L	
Sulfate SO4	3	mg/L		0.06	me/L	
Carbonate CO3	<1	mg/L		<0.01	me/L	
Bicarbonate HCO3	7204	mg/L		118.07	me/L	
Hydroxide OH	<1	mg/L		<0.01	me/L	
Sulfide S2	NA	mg/L		NA	me/L	
Iron Fe	0.5	mg/L		0.02	me/L	
Total Dissolved Solids			Cation-Anion Balance <hr/> 11.21 Difference Cation-Anion, me/L <hr/> 363.56 Total Cation-Anion, me/L <hr/> 3.1 % Difference Cation-Anion <hr/> Comments <hr/> NA: Not Analyzed			
Calculated, Sum of Cation/Anion	13619	mg/L				
pH	7.59					
Resistivity	0.6139	ohm-m				
Specific Gravity	1.0108					
Total Hardness as CaCO3	66	mg/L				

Approved by: *[Signature]*
Date: 12/3/96

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- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

API WATER ANALYSIS

Attn: Kevin O'Connell
 Company: Hallwood Petroleum
 Address: 463 Turner Drive, Ste.101
 City, State: Durango, CO 81301

Date: 3-Dec-96
 COC No.: 6190
 Sample ID: 12874
 Job No.: 2-1000

Project Name: Hallwood Petroleum
 Project Location: Mead 27-1
 Sampled by: DE
 Analyzed by: HR

Date: 14-Nov-96 Time: NR
 Date: 3-Dec-96

API RP-45 Laboratory Analysis

Parameter	Result	Unit of Measure	Result	Unit of Measure
Cations				
Sodium Na	1670	mg/L	72.64	me/L
Calcium Ca	23.2	mg/L	1.16	me/L
Magnesium Mg	2.9	mg/L	0.24	me/L
Potassium K	100.0	mg/L	2.56	me/L
Anions				
Chloride Cl	972	mg/L	27.42	me/L
Sulfate SO4	<1	mg/L	<0.01	me/L
Carbonate CO3	<1	mg/L	<0.01	me/L
Bicarbonate HCO3	2675	mg/L	43.84	me/L
Hydroxide OH	<1	mg/L	<0.01	me/L
Sulfide S2	NA	mg/L	NA	me/L
Iron Fe	0.5	mg/L	0.02	me/L
Total Dissolved Solids			Cation-Anion Balance <hr/> 5.35 Difference Cation-Anion, me/L <hr/> 147.87 Total Cation-Anion, me/L <hr/> 3.6 % Difference Cation-Anion <hr/> Comments <hr/> NA: Not Analyzed	
Calculated, Sum of Cation/Anion	5443	mg/L		
pH	7.59			
Resistivity	1.3793	ohm-m		
Specific Gravity	1.0044			
Total Hardness as CaCO3	70	mg/L		

Approved by: *Daq*
 Date: 12/3/96

COFF: (505) 325-5667



LAB: (505) 325-1556

API WATER ANALYSIS

Attn: Kevin O'Connell
 Company: Hallwood Petroleum
 Address: 463 Turner Drive, Ste. 101
 City, State: Durango, CO 81301

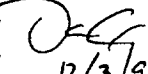
Date: 3-Dec-96
 COC No.: 6189
 Sample ID: 12862
 Job No.: 2-1000

Project Name: Hallwood Petroleum
 Project Location: Montoya 25-1
 Sampled by: DE
 Analyzed by: HR

Date: 14-Nov-96 Time: NR
 Date: 3-Dec-96

API RP-45 Laboratory Analysis

Parameter	Result	Unit of Measure	Result	Unit of Measure
Cations				
Sodium Na	4050	mg/L	176.17	me/L
Calcium Ca	4.4	mg/L	0.22	me/L
Magnesium Mg	3.7	mg/L	0.31	me/L
Potassium K	26.7	mg/L	0.68	me/L
Anions				
Chloride Cl	945	mg/L	26.66	me/L
Sulfate SO4	2	mg/L	0.03	me/L
Carbonate CO3	< 1	mg/L	< 0.01	me/L
Bicarbonate HCO3	7740	mg/L	126.85	me/L
Hydroxide OH	< 1	mg/L	< 0.01	me/L
Sulfide S2	NA	mg/L	NA	me/L
Iron Fe	0.5	mg/L	0.02	me/L
Total Dissolved Solids			Cation-Anion Balance	
Calculated, Sum of Cation/Anion	12771	mg/L	23.86	Difference Cation-Anion, me/L
			330.94	Total Cation-Anion, me/L
			7.2	% Difference Cation-Anion
pH	7.63		Comments	
Resistivity	0.7720	ohm-m	NA: Not Analyzed	
Specific Gravity	1.0109			
Total Hardness as CaCO3	26	mg/L		

Approved by: 
 Date: 12/3/96

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CFF: (505) 325-5667



LAB: (505) 325-1556

API WATER ANALYSIS

Attn: Kevin O'Connell
 Company: Hallwood Petroleum
 Address: 463 Turner Drive, Ste.101
 City, State: Durango, CO 81301


Date: 3-Dec-96
 COC No.: 6189
 Sample ID: 12863
 Job No.: 2-1000

Project Name: Hallwood Petroleum
 Project Location: Montoya 25-2
 Sampled by: DE
 Analyzed by: HR

Date: 14-Nov-96 Time: NR
 Date: 3-Dec-96

API RP-45 Laboratory Analysis

Parameter	Result	Unit of Measure	Result	Unit of Measure
Cations				
Sodium Na	5080	mg/L	220.97	me/L
Calcium Ca	9.3	mg/L	0.47	me/L
Magnesium Mg	5.2	mg/L	0.42	me/L
Potassium K	19.9	mg/L	0.51	me/L
Anions				
Chloride Cl	2527	mg/L	71.28	me/L
Sulfate SO4	6	mg/L	0.12	me/L
Carbonate CO3	<1	mg/L	<0.01	me/L
Bicarbonate HCO3	8036	mg/L	131.70	me/L
Hydroxide OH	<1	mg/L	<0.01	me/L
Sulfide S2	NA	mg/L	NA	me/L
Iron Fe	0.5	mg/L	0.02	me/L
Total Dissolved Solids			Cation-Anion Balance 19.29 Difference Cation-Anion, me/L 425.49 Total Cation-Anion, me/L 4.5 % Difference Cation-Anion Comments NA: Not Analyzed	
Calculated, Sum of Cation/Anion	15683	mg/L		
pH	7.62			
Resistivity	0.5274	ohm-m		
Specific Gravity	1.0128			
Total Hardness as CaCO3	45	mg/L		

Approved by: 
 Date: 12/3/96

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- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

CFF: (505) 325-5667



LAB: (505) 325-1556

API WATER ANALYSIS

Attn: **Kevin O'Connell**
 Company: **Hallwood Petroleum**
 Address: **463 Turner Drive, Ste.101**
 City, State: **Durango, CO 81301**


Date: **3-Dec-96**
 COC No.: **6189**
 Sample ID: **12864**
 Job No.: **2-1000**

Project Name: **Hallwood Petroleum**
 Project Location: **Montoya 27-1**
 Sampled by: **DE**
 Analyzed by: **HR**

Date: **14-Nov-96** Time: **NR**
 Date: **3-Dec-96**

API RP-45 Laboratory Analysis

Parameter	Result	Unit of Measure		Result	Unit of Measure	
Cations						
Sodium Na	3130	mg/L		136.15	me/L	
Calcium Ca	38.3	mg/L		1.91	me/L	
Magnesium Mg	8.2	mg/L		0.67	me/L	
Potassium K	25.3	mg/L		0.65	me/L	
Anions						
Chloride Cl	2764	mg/L		77.96	me/L	
Sulfate SO4	2	mg/L		0.03	me/L	
Carbonate CO3	<1	mg/L		<0.01	me/L	
Bicarbonate HCO3	3166	mg/L		51.89	me/L	
Hydroxide OH	<1	mg/L		<0.01	me/L	
Sulfide S2	NA	mg/L		NA	me/L	
Iron Fe	0.2	mg/L		<0.01	me/L	
Total Dissolved Solids			Cation-Anion Balance <hr/> 9.50 Difference Cation-Anion, me/L <hr/> 269.27 Total Cation-Anion, me/L <hr/> 3.5 % Difference Cation-Anion <hr/> Comments <hr/> NA: Not Analyzed			
Calculated, Sum of Cation/Anion	9133	mg/L				
pH	7.20					
Resistivity	0.7639	ohm-m				
Specific Gravity	1.0084					
Total Hardness as CaCO3	129	mg/L				

Approved by: 
 Date: **12/3/96**

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LAB: (505) 325-1556

API WATER ANALYSIS

Attn: **Kevin O'Connell**
 Company: **Hallwood Petroleum**
 Address: **463 Turner Drive, Ste.101**
 City, State: **Durango, CO 81301**

Date: **3-Dec-96**
 COC No.: **6189**
 Sample ID: **12865**
 Job No.: **2-1000**

Project Name: **Hallwood Petroleum**
 Project Location: **Montoya B2-35**
 Sampled by: **DE**
 Analyzed by: **HR**

Date: **14-Nov-96** Time: **NR**
 Date: **3-Dec-96**

API RP-45 Laboratory Analysis

Parameter	Result	Unit of Measure		Result	Unit of Measure	
Cations						
Sodium Na	4240	mg/L		184.43	me/L	
Calcium Ca	22.1	mg/L		1.10	me/L	
Magnesium Mg	6.9	mg/L		0.56	me/L	
Potassium K	15.6	mg/L		0.40	me/L	
Anions						
Chloride Cl	5746	mg/L		162.08	me/L	
Sulfate SO4	3	mg/L		0.05	me/L	
Carbonate CO3	< 1	mg/L		< 0.01	me/L	
Bicarbonate HCO3	627	mg/L		10.28	me/L	
Hydroxide OH	< 1	mg/L		< 0.01	me/L	
Sulfide S2	NA	mg/L		NA	me/L	
Iron Fe	2.2	mg/L		0.08	me/L	
Total Dissolved Solids			Cation-Anion Balance <hr/> 14.17 Difference Cation-Anion, me/L 358.98 Total Cation-Anion, me/L 3.9 % Difference Cation-Anion <hr/> Comments NA: Not Analyzed			
Calculated, Sum of Cation/Anion	10660	mg/L				
pH	6.76					
Resistivity	0.5336	ohm-m				
Specific Gravity	1.0083					
Total Hardness as CaCO3	83	mg/L				

Approved by: 

Date: 12/3/96

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API WATER ANALYSIS

Attn: Kevin O'Connell
 Company: Hallwood Petroleum
 Address: 463 Turner Drive, Ste.101
 City, State: Durango, CO 81301


Date: 3-Dec-96
 COC No.: 6190
 Sample ID: 12875
 Job No.: 2-1000

Project Name: Hallwood Petroleum
 Project Location: Moseley 1-1
 Sampled by: DE
 Analyzed by: HR

Date: 14-Nov-96 Time: NR
 Date: 3-Dec-96

API RP-45 Laboratory Analysis

Parameter	Result	Unit of Measure	Result	Unit of Measure
Cations				
Sodium Na	10440	mg/L	454.12	me/L
Calcium Ca	69.0	mg/L	3.44	me/L
Magnesium Mg	63.6	mg/L	5.23	me/L
Potassium K	124.4	mg/L	3.18	me/L
Anions				
Chloride Cl	13623	mg/L	384.26	me/L
Sulfate SO4	3	mg/L	0.07	me/L
Carbonate CO3	< 1	mg/L	< 0.01	me/L
Bicarbonate HCO3	4153	mg/L	68.06	me/L
Hydroxide OH	< 1	mg/L	< 0.01	me/L
Sulfide S2	NA	mg/L	NA	me/L
Iron Fe	3.2	mg/L	0.11	me/L
Total Dissolved Solids			Cation-Anion Balance	
Calculated, Sum of Cation/Anion	28476	mg/L	13.70	Difference Cation-Anion, me/L
			918.48	Total Cation-Anion, me/L
			1.5	% Difference Cation-Anion
pH	7.29		Comments	
Resistivity	0.2283	ohm-m	NA: Not Analyzed	
Specific Gravity	1.0214			
Total Hardness as CaCO3	434	mg/L		

Approved by: 
 Date: 12/3/96

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API WATER ANALYSIS

Attn: **Kevin O'Connell**
 Company: **Hallwood Petroleum**
 Address: **463 Turner Drive, Ste. 101**
 City, State: **Durango, CO 81301**

Date: **3-Dec-96**
 COC No.: **6190**
 Sample ID: **12876**
 Job No.: **2-1000**

Project Name: **Hallwood Petroleum**
 Project Location: **Pan Am State 2-36**
 Sampled by: **DE**
 Analyzed by: **HR**

Date: **14-Nov-96** Time: **NR**
 Date: **3-Dec-96**

API RP-45 Laboratory Analysis

Parameter	Result	Unit of Measure		Result	Unit of Measure	
Cations						
Sodium <i>Na</i>	1630	mg/L		70.90	me/L	
Calcium <i>Ca</i>	8.2	mg/L		0.41	me/L	
Magnesium <i>Mg</i>	1.7	mg/L		0.14	me/L	
Potassium <i>K</i>	9.0	mg/L		0.23	me/L	
Anions						
Chloride <i>Cl</i>	467	mg/L		13.17	me/L	
Sulfate <i>SO4</i>	3	mg/L		0.05	me/L	
Carbonate <i>CO3</i>	<1	mg/L		<0.01	me/L	
Bicarbonate <i>HCO3</i>	2600	mg/L		42.61	me/L	
Hydroxide <i>OH</i>	<1	mg/L		<0.01	me/L	
Sulfide <i>S2</i>	NA	mg/L		NA	me/L	
Iron <i>Fe</i>	0.2	mg/L		<0.01	me/L	
Total Dissolved Solids			Cation-Anion Balance			
Calculated, Sum of Cation/Anion	4718	mg/L	15.85 Difference Cation-Anion, me/L			
			127.52 Total Cation-Anion, me/L			
			2.4 % Difference Cation-Anion			
pH	7.30		Comments			
Resistivity	1.7668	ohm-m	NA: Not Analyzed			
Specific Gravity	1.0035					
Total Hardness as CaCO3	27	mg/L				

Approved by: 

Date: 12/3/96

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LAB: (505) 325-1556

API WATER ANALYSIS

Attn: Kevin O'Connell
 Company: Hallwood Petroleum
 Address: 463 Turner Drive, Ste. 101
 City, State: Durango, CO 81301


Date: 3-Dec-96
 COC No.: 6189
 Sample ID: 12861
 Job No.: 2-1000

Project Name: Hallwood Petroleum
 Project Location: Ripley 3-26
 Sampled by: DE
 Analyzed by: HR

Date: 14-Nov-96 Time: NR
 Date: 3-Dec-96

API RP-45 Laboratory Analysis

Parameter	Result	Unit of Measure	Result	Unit of Measure
Cations				
Sodium Na	2860	mg/L	124.40	me/L
Calcium Ca	10.1	mg/L	0.50	me/L
Magnesium Mg	3.7	mg/L	0.31	me/L
Potassium K	21.2	mg/L	0.54	me/L
Anions				
Chloride Cl	1644	mg/L	46.37	me/L
Sulfate SO ₄	2	mg/L	0.03	me/L
Carbonate CO ₃	<1	mg/L	<0.01	me/L
Bicarbonate HCO ₃	4080	mg/L	66.87	me/L
Hydroxide OH	<1	mg/L	<0.01	me/L
Sulfide S ₂	NA	mg/L	NA	me/L
Iron Fe	0.4	mg/L	0.01	me/L
Total Dissolved Solids			Cation-Anion Balance	
Calculated, Sum of Cation/Anion	8621	mg/L	12.50	Difference Cation-Anion, me/L
			239.04	Total Cation-Anion, me/L
			5.2	% Difference Cation-Anion
pH	7.67		Comments	
Resistivity	0.9058	ohm-m	NA: Not Analyzed	
Specific Gravity	1.0077			
Total Hardness as CaCO ₃	41	mg/L		

Approved by: 
 Date: 12/3/96

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LAB: (505) 325-1556

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API WATER ANALYSIS

Attn: Kevin O'Connell
 Company: Hallwood Petroleum
 Address: 463 Turner Drive, Ste. 101
 City, State: Durango, CO 81301


Date: 3-Dec-96
 COC No.: 6189
 Sample ID: 12860
 Job No.: 2-1000

Project Name: Hallwood Petroleum
 Project Location: Ripley N2-26
 Sampled by: DE
 Analyzed by: HR

Date: 14-Nov-96 Time: NR
 Date: 3-Dec-96

API RP-45 Laboratory Analysis

Parameter	Result	Unit of Measure	Result	Unit of Measure
Cations				
Sodium Na	7040	mg/L	306.22	me/L
Calcium Ca	45.0	mg/L	2.25	me/L
Magnesium Mg	21.2	mg/L	1.74	me/L
Potassium K	40.6	mg/L	1.04	me/L
Anions				
Chloride Cl	9257	mg/L	261.11	me/L
Sulfate SO4	3	mg/L	0.05	me/L
Carbonate CO3	<1	mg/L	<0.01	me/L
Bicarbonate HCO3	2916	mg/L	47.79	me/L
Hydroxide OH	<1	mg/L	<0.01	me/L
Sulfide S2	NA	mg/L	NA	me/L
Iron Fe	0.4	mg/L	0.01	me/L
Total Dissolved Solids			Cation-Anion Balance	
Calculated, Sum of Cation/Anion	19322	mg/L	2.32	Difference Cation-Anion, me/L
			620.22	Total Cation-Anion, me/L
			0.4	% Difference Cation-Anion
pH	7.25		Comments	
Resistivity	0.3289	ohm-m	NA: Not Analyzed	
Specific Gravity	1.0155			
Total Hardness as CaCO3	200	mg/L		

Approved by: 
 Date: 12/3/96

OFF: (505) 325-5667



LAB: (505) 325-1556

API WATER ANALYSIS

Attn: *Kevin O'Connell*
 Company: *Hallwood Petroleum*
 Address: *463 Turner Drive, Ste.101*
 City, State: *Durango, CO 81301*

Date: *3-Dec-96*
 COC No.: *6189*
 Sample ID: *12866*
 Job No.: *2-1000*

Project Name: *Hallwood Petroleum*
 Project Location: *Robinson Brothers 1-M*
 Sampled by: *DE*
 Analyzed by: *HR*

Date: *14-Nov-96* Time: *NR*
 Date: *3-Dec-96*

API RP-45 Laboratory Analysis

Parameter	Result	Unit of Measure	Result	Unit of Measure
Cations				
Sodium <i>Na</i>	3340	mg/L	145.28	me/L
Calcium <i>Ca</i>	16.2	mg/L	0.81	me/L
Magnesium <i>Mg</i>	5.3	mg/L	0.43	me/L
Potassium <i>K</i>	26.4	mg/L	0.68	me/L
Anions				
Chloride <i>Cl</i>	1547	mg/L	43.64	me/L
Sulfate <i>SO4</i>	2	mg/L	0.03	me/L
Carbonate <i>CO3</i>	<1	mg/L	<0.01	me/L
Bicarbonate <i>HCO3</i>	5301	mg/L	86.88	me/L
Hydroxide <i>OH</i>	<1	mg/L	<0.01	me/L
Sulfide <i>S2</i>	NA	mg/L	NA	me/L
Iron <i>Fe</i>	0.3	mg/L	0.01	me/L
Total Dissolved Solids Calculated, Sum of Cation/Anion	10237	mg/L	Cation-Anion Balance <hr/> 16.66 Difference Cation-Anion, me/L <hr/> 277.76 Total Cation-Anion, me/L <hr/> 6.0 % Difference Cation-Anion <hr/> Comments <hr/> NA: Not Analyzed	
pH	7.63			
Resistivity	0.8117	ohm-m		
Specific Gravity	1.0080			
Total Hardness as CaCO3	62	mg/L		

Approved by: *Dee*
 Date: *12/3/96*

OFF: (505) 325-5667



LAB: (505) 325-1556

API WATER ANALYSIS

Attn: **Kevin O'Connell**
 Company: **Hallwood Petroleum**
 Address: **463 Turner Drive, Ste. 101**
 City, State: **Durango, CO 81301**

Date: **3-Dec-96**
 COC No.: **6190**
 Sample ID: **12880**
 Job No.: **2-1000**

Project Name: **Hallwood Petroleum**
 Project Location: **Tafoya L2-35**
 Sampled by: **DE**
 Analyzed by: **HR**

Date: **14-Nov-96** Time: **NR**
 Date: **3-Dec-96**

API RP-45 Laboratory Analysis

Parameter	Result	Unit of Measure	Result	Unit of Measure
Cations				
Sodium Na	915	mg/L	39.80	me/L
Calcium Ca	4.3	mg/L	0.22	me/L
Magnesium Mg	0.6	mg/L	0.05	me/L
Potassium K	7.4	mg/L	0.19	me/L
Anions				
Chloride Cl	125	mg/L	3.53	me/L
Sulfate SO4	4	mg/L	0.09	me/L
Carbonate CO3	<1	mg/L	<0.01	me/L
Bicarbonate HCO3	1974	mg/L	32.35	me/L
Hydroxide OH	<1	mg/L	<0.01	me/L
Sulfide S2	NA	mg/L	NA	me/L
Iron Fe	0.1	mg/L	<0.01	me/L
Total Dissolved Solids			Cation-Anion Balance	
Calculated, Sum of Cation/Anion	3030	mg/L	4.30 Difference Cation-Anion, me/L	
			76.22 Total Cation-Anion, me/L	
			5.6 % Difference Cation-Anion	
pH	7.23		Comments	
Resistivity	2.7400	ohm-m	NA: Not Analyzed	
Specific Gravity	1.0020			
Total Hardness as CaCO3	13	mg/L		

Approved by: 

Date: 12/3/96

OFF: (505) 325-5667



LAB: (505) 325-1556

API WATER ANALYSIS

Attn: Kevin O'Connell
 Company: Hallwood Petroleum
 Address: 463 Turner Drive, Ste. 101
 City, State: Durango, CO 81301

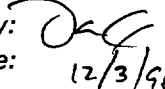
Date: 3-Dec-96
 COC No.: 6190
 Sample ID: 12871
 Job No.: 2-1000

Project Name: Hallwood Petroleum
 Project Location: Wilmerding 9-2
 Sampled by: DE
 Analyzed by: HR

Date: 14-Nov-96 Time: NR
 Date: 3-Dec-96

API RP-45 Laboratory Analysis

Parameter	Result	Unit of Measure	Result	Unit of Measure
Cations				
Sodium Na	5500	mg/L	239.24	me/L
Calcium Ca	39.0	mg/L	1.95	me/L
Magnesium Mg	16.9	mg/L	1.39	me/L
Potassium K	65.0	mg/L	1.66	me/L
Anions				
Chloride Cl	7008	mg/L	197.67	me/L
Sulfate SO ₄	3	mg/L	0.05	me/L
Carbonate CO ₃	<1	mg/L	<0.01	me/L
Bicarbonate HCO ₃	3256	mg/L	53.36	me/L
Hydroxide OH	<1	mg/L	<0.01	me/L
Sulfide S ₂	NA	mg/L	NA	me/L
Iron Fe	0.5	mg/L	0.02	me/L
Total Dissolved Solids			Cation-Anion Balance	
Calculated, Sum of Cation/Anion	15887	mg/L	6.83	Difference Cation-Anion, me/L
			495.34	Total Cation-Anion, me/L
			1.4	% Difference Cation-Anion
pH	7.34		Comments	
Resistivity	0.4049	ohm-m	NA: Not Analyzed	
Specific Gravity	1.0121			
Total Hardness as CaCO ₃	167	mg/L		

Approved by: 
 Date: 12/3/96

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API WATER ANALYSIS

Attn: *Kevin O'Connell*
 Company: *Hallwood Petroleum*
 Address: *463 Turner Drive, Ste. 101*
 City, State: *Durango, CO 81301*

Date: *3-Dec-96*
 COC No.: *6189*
 Sample ID: *12867*
 Job No.: *2-1000*

Project Name: *Hallwood Petroleum*
 Project Location: *Wright 10-1*
 Sampled by: *DE*
 Analyzed by: *HR*

Date: *14-Nov-96* Time: *NR*
 Date: *3-Dec-96*

API RP-45 Laboratory Analysis

Parameter	Result	Unit of Measure		Result	Unit of Measure	
Cations						
Sodium <i>Na</i>	6360	mg/L		276.64	me/L	
Calcium <i>Ca</i>	35.1	mg/L		1.75	me/L	
Magnesium <i>Mg</i>	32.4	mg/L		2.67	me/L	
Potassium <i>K</i>	79.8	mg/L		2.04	me/L	
Anions						
Chloride <i>Cl</i>	8692	mg/L		245.17	me/L	
Sulfate <i>SO4</i>	3	mg/L		0.05	me/L	
Carbonate <i>CO3</i>	<1	mg/L		<0.01	me/L	
Bicarbonate <i>HCO3</i>	3066	mg/L		50.25	me/L	
Hydroxide <i>OH</i>	<1	mg/L		<0.01	me/L	
Sulfide <i>S2</i>	NA	mg/L		NA	me/L	
Iron <i>Fe</i>	1.2	mg/L		0.04	me/L	
Total Dissolved Solids			Cation-Anion Balance <hr/> 12.33 Difference Cation-Anion, me/L <hr/> 578.62 Total Cation-Anion, me/L <hr/> 2.1 % Difference Cation-Anion <hr/> Comments <hr/> NA: Not Analyzed			
Calculated, Sum of Cation/Anion	18268	mg/L				
pH	7.51					
Resistivity	0.3460	ohm-m				
Specific Gravity	1.0140					
Total Hardness as CaCO3	221	mg/L				

Approved by: *[Signature]*
 Date: *12/3/96*

OFF: (505) 325-5667



LAB: (505) 325-1556

QUALITY ASSURANCE REPORT

API RP-45 Water Analysis

Date: 22-Dec-96

*3-Dec-96

Quality Control Sample

Parameter	Laboratory Identification	True Value	Analyzed Value	Unit of Measure	% Diff	Limit % Diff
*Sodium, Na	0509-QC	3.60	3.66	mg/L	2	10
Calcium, Ca	0462-QC	2.73	2.63	mg/L	-4	10
Magnesium, Mg	0462-QC	1.43	1.54	mg/L	8	10
Potassium, K	0509-QC	2.24	2.06	mg/L	-8	10
Chloride, Cl	0509-QC	155	156	mg/L	1	10
Sulfate, SO ₄	0509-QC	116	115	mg/L	-1	10
Alkalinity	0509-QC	174	184	mg/L	6	10
Iron, Fe	0495-QC	2.00	1.91	mg/L	-5	10
pH	0509-QC	9.05	9.25		2	10
Conductivity	0509-QC	1210	1173	uS/cm	-3	15

Matrix Spike

Parameter	Laboratory Identification	Analyzed Value	Matrix Spike	Spike Value	Unit of Measure	Spike Recovery
*Sodium, Na	12871-6190	1.38	0.50	1.83	mg/L	97%
Calcium, Ca	12871-6190	0.98	0.50	1.59	mg/L	107%
Magnesium, Mg	12881-6190	1.78	0.50	2.26	mg/L	99%
Potassium, K	12870-6189	1.64	0.50	2.11	mg/L	99%
Iron, Fe	12870-6189	0.24	0.50	0.73	mg/L	99%

Method Blank

Parameter	Laboratory Identification	Analyzed Value	Unit of Measure
*Sodium, Na	LF-Blank	<0.2	mg/L
Calcium, Ca	LF-Blank	<0.05	mg/L
Magnesium, Mg	LF-Blank	<0.05	mg/L
Potassium, K	LF-Blank	<0.05	mg/L
Iron, Fe	LF-Blank	<0.05	mg/L
Chloride, Cl	LF-Blank	<3 X DL	mg/L
Sulfate, SO ₄	LF-Blank	<1	mg/L
Sulfide, SO ₂	LF-Blank	NA	mg/L
Conductivity	LF-Blank	<2	uS/cm