



SUNDRY NOTICES AND REPORTS ON WORKS - FORM 4

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 5749 (09-2006)

Well File No.
11920



PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.
PLEASE SUBMIT THE ORIGINAL AND ONE COPY.

| | | | |
|---|--|---|---|
| <input checked="" type="checkbox"/> Notice of Intent | Approximate Start Date December 10, 2018 | <input type="checkbox"/> Drilling Prognosis | <input type="checkbox"/> Spill Report |
| <input type="checkbox"/> Report of Work Done | Date Work Completed | <input type="checkbox"/> Redrilling or Repair | <input type="checkbox"/> Shooting |
| <input type="checkbox"/> Notice of Intent to Begin a Workover Project that may Qualify for a Tax Exemption Pursuant to NDCC Section 57-51.1-03. | Approximate Start Date | <input type="checkbox"/> Casing or Liner | <input type="checkbox"/> Acidizing |
| | | <input type="checkbox"/> Plug Well | <input type="checkbox"/> Fracture Treatment |
| | | <input type="checkbox"/> Supplemental History | <input type="checkbox"/> Change Production Method |
| | | <input type="checkbox"/> Temporarily Abandon | <input type="checkbox"/> Reclamation |
| | | <input checked="" type="checkbox"/> Other Return to Production | |

Well Name and Number
Corps of Engineers 31-10

| Footages | Qtr-Qtr | Section | Township | Range |
|-----------------------|------------------------|-------------|---------------------------|---------------------------|
| 660 F N L | 2305 F E L | NWNE | 10 | 153 N 101 W |
| Field Baker | Pool Duperow | | County McKenzie | |

24-HOUR PRODUCTION RATE

| | Before | | After |
|-------|--------|-------|-------|
| Oil | Bbls | Oil | Bbls |
| Water | Bbls | Water | Bbls |
| Gas | MCF | Gas | MCF |

Name of Contractor(s)

| | | | |
|---------|------|-------|----------|
| Address | City | State | Zip Code |
|---------|------|-------|----------|

DETAILS OF WORK

The Corps of Engineers 31-10 was shut in due to Missouri River flooding (well site is in flood plain). Facility repairs have been extensive, but expect repairs to be completed by next week and production resuming by 12/10/18.

| | | |
|--|---|--------------------------|
| Company RIM Operating, Inc | Telephone Number 303-799-9828 | |
| Address 5 Inverness Drive East | | |
| City Englewood | State CO | Zip Code 80112 |
| Signature | Printed Name Jason Rouse | |
| Title VP, Operations | Date November 29, 2018 | |
| Email Address jrouse@rimop.com | | |

FOR STATE USE ONLY

| | |
|--|-----------------------------------|
| <input checked="" type="checkbox"/> Received | <input type="checkbox"/> Approved |
| Date 12-12-18 | |
| By DAVE TABOR | |
| Title Field Supervisor | |



AUTHORIZATION TO PURCHASE AND TRANSPORT OIL FROM LEASE - FORM 8

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 5698 (03-2000)

Received

MAR 7 2016

| | |
|---------------|--------|
| Well File No. | 11920 |
| NDIC CTB No. | 111920 |

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.
PLEASE SUBMIT THE ORIGINAL AND FOUR COPIES.

ND Oil & Gas Division

| | | | | | |
|---|---|----------------------|--------------------------|--------------------------|---------------------------|
| Well Name and Number Corps of Engineers 31-10 | Qtr-Qtr NWNE | Section 10 | Township 153 N | Range 101 W | County McKenzie |
| Operator RIM Operating, Inc | Telephone Number 303-799-9828 | | Field Baker | | |
| Address 5 Inverness Drive East | City Englewood | | State CO | Zip Code 80112 | |

| | | | |
|--|---|-----------------------------|--|
| Name of First Purchaser Mercuria Energy Trading, Inc. | Telephone Number 832-209-2400 | % Purchased 100% | Date Effective March 1, 2016 |
| Principal Place of Business 20 Greenway Plaza, Suite 650 | City Houston | State TX | Zip Code 77046 |
| Field Address | City | State | Zip Code |
| Name of Transporter Rocky Mountain Crude Oil LLC | Telephone Number 877-651-9351 | % Transported 100 | Date Effective March 1, 2016 |
| Address 490 North 31st Street #2010 | City Billings | State MT | Zip Code 59101 |

The above named producer authorizes the above named purchaser to purchase the percentage of oil stated above which is produced from the lease designated above until further notice. The oil will be transported by the above named transporter.

| | | |
|---|---------------|----------------|
| Other First Purchasers Purchasing From This Lease | % Purchased | Date Effective |
| Other First Purchasers Purchasing From This Lease | % Purchased | Date Effective |
| Other Transporters Transporting From This Lease | % Transported | Date Effective |
| Other Transporters Transporting From This Lease | % Transported | Date Effective |
| Comments | | |

| | |
|--|--|
| I hereby swear or affirm that the information provided is true, complete and correct as determined from all available records. | Date March 3, 2016 |
| Signature | Printed Name Liz Ortiz |
| | Title Engineering Technician |

| | |
|------------------------------|--|
| Above Signature Witnessed By | |
| Witness Signature | Witness Printed Name Ken Kundrik |
| | Witness Title A&D Manager |

| | |
|-------------------------------------|--|
| FOR STATE USE ONLY | |
| Date Approved MAR 17 2016 | |
| By | |
| Title Erie Roberson | |

Oil & Gas Production Analyst

Industrial Commission of North Dakota
Oil and Gas Division
Spill / Incident Report

Date/Time Reported : Dec 8 2014 / 14:08

State Agency person :

Responsible Party : RIM OPERATING, INC.

Well Operator : RIM OPERATING, INC.

Date/Time of Incident : 12/7/2014 12:00:00 AM

NDIC File Number : 11920

Facility Number :

Well or Facility Name : CORPS OF ENGINEERS 31-10

Type of Incident : Valve/Piping Connection Leak

Field Name : BAKER

County : MCKENZIE

Section : 10

Township : 153

Range : 101

Quarter-Quarter :

Quarter :

Distance to nearest residence :

Distance to nearest water well :

Release Oil : 25 Barrels

Release Brine : 50 Barrels

Release Other :

Recovered Oil : 24 Barrels

Recovered Brine : 45 Barrels

Recovered Other :

Has/Will the incident be reported to the NRC? : No

Was release contained : Yes - Within Dike

Description of other released substance :

Immediate risk evaluation : Not Applicable

Followup Report Requested Y/N : Y



AUTHORIZATION TO PURCHASE AND TRANSPORT OIL FROM LEASE - FORM 8

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 5698 (03-2000)



| | |
|---------------|--------|
| Well File No. | 11920 |
| NDIC CTE No. | 111920 |

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM
PLEASE SUBMIT THE ORIGINAL AND FOUR COPIES.

| | | | | | |
|---|---|-----------------------|--------------------------|--------------------------|---------------------------|
| Well Name and Number Corps of Engineers 31-10 | Qtr-Qtr NWNE | Section 10 | Township 153 N | Range 101 W | County McKenzie |
| Operator RIM Operating, Inc | Telephone Number 303-799-9828 | Field Baker | | | |
| Address 5 Inverness Drive East | City Englewood | | State CO | Zip Code 80112 | |

| | | | |
|--|---|-----------------------------|--|
| Name of First Purchaser PetroChina International America, Inc. | Telephone Number 832-325-5317 | % Purchased 100 | Date Effective September 1, 2015 |
| Principal Place of Business 2000 W Sam Houston Parkway South | City Houston | State TX | Zip Code 77042 |
| Field Address | City | State | Zip Code |
| Name of Transporter Badlands Tank Lines, LLC | Telephone Number 402-281-0646 | % Transported 100 | Date Effective September 1, 2015 |
| Address 2211 South 156th Circle #2B | City Omaha | State NE | Zip Code 68116 |
| The above named producer authorizes the above named purchaser to purchase the percentage of oil stated above which is produced from the lease designated above until further notice. The oil will be transported by the above named transporter. | | | |

| | | |
|---|---------------|----------------|
| Other First Purchasers Purchasing From This Lease | % Purchased | Date Effective |
| Other First Purchasers Purchasing From This Lease | % Purchased | Date Effective |
| Other Transporters Transporting From This Lease | % Transported | Date Effective |
| Other Transporters Transporting From This Lease | % Transported | Date Effective |
| Comments | | |

| | |
|--|----------------------------------|
| I hereby swear or affirm that the information provided is true, complete and correct as determined from all available records. | Date August 18, 2015 |
| Signature | Printed Name Liz Ortiz |
| Title Engineering Technician | |

| | | | |
|------------------------------|-----------------------|--|---|
| Above Signature Witnessed By | Witness Signature | Witness Printed Name Ken Kundrik | Witness Title A&D Manager |
|------------------------------|-----------------------|--|---|

| | |
|-------------------------------------|--|
| FOR STATE USE ONLY | |
| Date Approved AUG 24 2015 | |
| By | |
| Title | |
| Oil & Gas Production Analyst | |



Oil and Gas Division

Lynn D. Helms - Director

Bruce E. Hicks - Assistant Director

Department of Mineral Resources

Lynn D. Helms - Director

North Dakota Industrial Commission

www.dmr.nd.gov/oilgas/

11920

May 13, 2014

Mr. Jason Rouse
General Representative
Rim Operating, Inc.
5 Inverness Drive East
Englewood, CO 80112

| | | |
|--|---|--|
| RE: Basic Game And Fish 34-3 SW SW 2-153N-101W State File No. 11745* | Corps Of Engineers 31-10 NW NE 10-153N-101W State File No. 11920* | Lewis And Clark 2-4H SE NE 4-153N-101W State File No. 15358* |
| Pederson 5-24 NW SW 24-153N-102W State File No. 11137* | Skurdal 2-24HR NE NW 24-153N-102W State File No. 10681 | Skurdal 6-24 SW SE 24-153N-102W State File No. 13428* |
| Coulter 1-19 SW NW 19-153N-101W State File No. 11238 | | |

*location impacted by 2014 ice jam flooding

Dear Jason,

Our conversation on May 2, 2014 discussed flood preparations for wells that your company operates near Williston, North Dakota. The Missouri River continues to rise and the possibility of additional flooding from the spring melt and recent rains in the near future exists. I urge you to closely monitor these sites and take the necessary preventative actions to eliminate or mitigate environmental damage if these sites become deluged with flood waters. The following e-mail from Allen Schlag of the National Weather Service also addresses the current situation of the Missouri River in the Williston area:

From: Allen Schlag [mailto:allen.schlag@noaa.gov]
Sent: Monday, May 12, 2014 1:47 PM
To: WILLIAMS; Samuelson, Jerry O.; MCKENZIE; Anton, Amy J.; Ackerman, Laura C.; Engelhardt, Bruce W.; Travnicek, Andrea J.; Johnson, Sean M.
Subject: Missouri River

Greetings everyone

Just a quick note on the Missouri River near Williston forecast site and the prospects for problems as we go forward into latter half of May and early June (by default this also includes the Yellowstone in ND as well). As you may have noticed already, the Missouri River near Williston crossed over into Forecast Issuance Stage this past weekend before falling back below 20 ft. This, is temporary. While the Corps released a statement last week tempering their runoff expectations for the Missouri River overall, the attached graphic of mountain snowpack suggests we still have a pretty strong runoff into the Yellowstone and Missouri Rivers ahead of us.

We will most likely cross over above flood stage as measured at the Lewis and Clark Bridge west of Williston at some point in the next couple of weeks.

What exactly lies in store for the area with respect to eventual river stages is still quite unclear as the overall environment for the melt of the mountain snowpack is too far out. However...there has been a fairly wet pattern in the plains of Montana already this spring, with a mixed bag in the upper elevations of central MT. The region remains well above normal with respect to mountain snowpack, but is also well below where 1997 and 2011 were at this point in time (see the second attached pdf).

If I had to take a wild guess this far in advance, something around the 22.5 to 24.5 ft range is reasonable, with any added big rains this could be expanded quite easily to the 25-26 ft range.

How exactly this will compare to this spring's ice jams and high water is a really good question, which I don't have any easy answers to either. Suffice to say, I think there's a pretty decent chance that we will see water roughly 4-6 ft higher than is currently in northwestern ND along both the Yellowstone and Missouri Rivers with the timing of near the last week of May to about the third week of June. Historically, I know there have been some access issues with oil well sites in the Trenton area with water levels in the 22 ft range at the Lewis and Clark Bridge. How much of this has been mitigated by ring dikes or road raises, again...very good question to which I have no answer.

Of course, if you have any questions or just want to chat about this in greater detail, always feel free to give me a call.

Allen

p.s. And as always, feel free to disseminate as you feel is appropriate.

Allen J. Schlag Service Hydrologist
WFO-Bismarck
National Weather Service
2301 Univ. Drive, Bldg 27
Bismarck, ND 58504 ph. 701-250-4495

If you have question in regards to flood preparation and prevention activities, please feel free to contact me at your convenience. You can reach me at (701) 770-3554 or e-mail at rsdunn@nd.gov. Thank you for your time and consideration.

Sincerely,

A handwritten signature in black ink that reads "Richard S. Dunn / FIP".

Richard S. Dunn
Field Inspector



AUTHORIZATION TO PURCHASE AND TRANSPORT OIL FROM LEASE - FORM 8

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFSN 5698 (03-2000)

| |
|---------------|
| Well File No. |
| 11920 |
| NDIC CTB No. |
| 111920 |



PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.
PLEASE SUBMIT THE ORIGINAL AND FOUR COPIES.

| | | | | | |
|---|---|-----------------------|--------------------------|--------------------------|---------------------------|
| Well Name and Number CORPS OF ENGINEERS 31-10 | Qtr-Qtr NWNE | Section 106 | Township 153 N | Range 101 W | County MCKENZIE |
| Operator RIM OPERATING, INC. | Telephone Number 303-799-9828 | | Field BAKER | | |
| Address 5 INVERNESS DRIVE EAST | City ENGLEWOOD | | State CO | Zip Code 80112 | |

| | | | |
|--|---|-----------------------------|---------------------------------------|
| Name of First Purchaser PLAINS MARKETING LP | Telephone Number 713-646-4100 | % Purchased 100 | Date Effective May 16, 2013 |
| Principal Place of Business PO BOX 4648 | City HOUSTON | State TX | Zip Code 77210 |
| Field Address 303 6TH AVE NE | City BELFIELD | State ND | Zip Code 58622 |
| Name of Transporter PLAINS MARKETING LP | Telephone Number 701-575-4349 | % Transported 100 | Date Effective May 16, 2013 |
| Address 303 6TH AVE NE | City BELFIELD | State ND | Zip Code 58622 |
| The above named producer authorizes the above named purchaser to purchase the percentage of oil stated above which is produced from the lease designated above until further notice. The oil will be transported by the above named transporter. | | | |

| | | |
|---|---------------|----------------|
| Other First Purchasers Purchasing From This Lease | % Purchased | Date Effective |
| Other First Purchasers Purchasing From This Lease | % Purchased | Date Effective |
| Other Transporters Transporting From This Lease | % Transported | Date Effective |
| Other Transporters Transporting From This Lease | % Transported | Date Effective |
| Comments | | |

| | | |
|--|------------------------------------|------------------------------------|
| I hereby swear or affirm that the information provided is true, complete and correct as determined from all available records. | Date May 23, 2013 | |
| Signature | Printed Name KEN KUNDRIK | Title OPERATIONS MANAGER |

| | | | |
|------------------------------|-----------------------|--|--|
| Above Signature Witnessed By | Witness Signature | Witness Printed Name KIM NEABUHR | Witness Title REVENUE ACCOUNTANT |
|------------------------------|-----------------------|--|--|

| | | |
|--------------------|---|--|
| FOR STATE USE ONLY | | |
| Date Approved | MAY 28 2013 | |
| By | | |
| Title | Oil & Gas Production Analyst | |



Oil and Gas Division

Lynn D. Helms - Director

Bruce E. Hicks - Assistant Director

Department of Mineral Resources

Lynn D. Helms - Director

North Dakota Industrial Commission

www.dmr.nd.gov/oilgas

11920

May 24, 2013

Rene Morin
Rim Operating, Inc.
5 Inverness Drive East
Englewood, CO 80112-5519

RE: CHANGE OF OPERATOR FROM SM ENERGY COMPANY
TO RIM OPERATING, INC.
15 WELLS

Dear Rene Morin:

Please find enclosed a copy of the approved Form 15, Notice of Transfer of Oil and Gas Wells, in regard to the above-referenced matter. This transfer has now been approved and subject wells are now covered by Bond No. RLB0013610, RLI Insurance Company as Surety.

If you should have any questions, please feel free to contact this office.

Sincerely,

A handwritten signature in black ink, appearing to read "Jeanette", is written over a large, irregular oval shape.

Jeanette Bean
Administrative Assistant

Enclosure

cc: Mark Mueller
SM Energy Company
PO Box 7168
Billings, MT 59103



NOTICE OF TRANSFER OF OIL AND GAS WELLS



FOR STATE USE ONLY

NDIC Bond Number

R 312

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 5762 (03-2000)

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM. PLEASE SUBMIT THE ORIGINAL AND 5 COPIES.
THIS NOTICE ALONG WITH A FEE OF \$25.00 PER WELL SHALL BE FILED AT LEAST THIRTY DAYS BEFORE THE CLOSING DATE OF TRANSFER.

TRANSFERRING OPERATOR

Name of Operator Representative

Mark Mueller

Operator Transferring Oil and/or Gas Wells

SM Energy CompanyAddress
P.O. Box 7168City
BillingsState
MTTelephone Number
406-245-6248

I, the above named representative, acknowledge the transfer of the oil and/or gas wells named below for the purpose of ownership and/or operation to the company named below.

Signature

Title (Must be an officer or power of attorney must be attached)

Sr VP/Regional Manager

Date

5/3/2013

| Well File Number | Requested Official Well Name and Number | Location (Qtr-Qtr, S-T-R) | Assignment Date |
|------------------|---|---------------------------|-----------------|
| | | | |

RECEIVING OPERATOR

Name of Operator Representative

Rene Morin

Operator Receiving Oil and/or Gas Wells

Rim Operating, Inc.Address
5 Inverness Drive EastCity
EnglewoodState
COTelephone Number
303-799-9828

I, the above named representative, have read the foregoing statement and accept such transfer, also the responsibility of ownership and/or operation of said well or wells, under the said company bond, said bond being tendered to or on file with the Industrial Commission of North Dakota.

Signature

Title (Must be an officer or power of attorney must be attached)

Vice President

Date

5-15-13

SURETY COMPANY

| | | | | |
|---|---|--|--------------------------|----------------------------------|
| Surety RLI Insurance Company | Telephone Number 713-961-1300 | Amount of Bond \$ 100,000.00 | | |
| Address 8 Greenway Plaza, Ste.400 | City Houston | State TX | Zip Code 77046 | Bond Number RLB0013610 |

The above named SURETY agrees that such bond shall extend to compliance with Chapter 38-08 of North Dakota Century Code and amendments and the rules and regulations of the Industrial Commission of North Dakota prescribed to govern the production of oil and gas on government and private lands within the State of North Dakota, in relation to the above stated transfer; it being further agreed and understood that the bond sum or amount is not to be considered increased because of such extension.

Signature

Title (Must be an officer or power of attorney must be attached)

Attorney-in-Fact

Date

05-22-13

Printed Name

Robbie Duxbury

FOR STATE USE ONLY

| | |
|---------------|---------------------------|
| Date Approved | May 24, 2013 |
| By | Bruce E. Luchs |
| Title | Assistant Director |

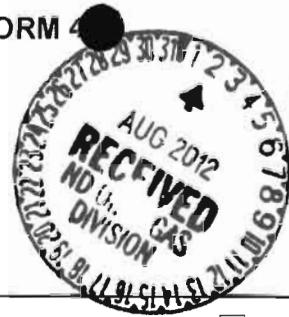
| Well File No. | Well Name | Gross Acres | Field | County | SI | Quarter | Section | Township | Range |
|---------------|--------------------------|-------------|-----------------|----------|----|---------|---------|----------|-------|
| 14792 | BOSS 12-17 | 160 | STOCKYARD CREEK | WILLIAMS | ND | SWNW | 17 | 154N | 99W |
| 14716 | BOSS 41-17 | 160 | STOCKYARD CREEK | WILLIAMS | ND | NENE | 17 | 154N | 99W |
| 13556 | CHURCH 1-2X ST | 320 | NAMELESS | MCKENZIE | ND | NENW | 2 | 150N | 102W |
| 15358 | LEWIS & CLARK 2-4H | 604.3 | BAKER | MCKENZIE | ND | SENE | 4 | 153N | 101W |
| 745 | BASIC GAME & FISH 34-3H | 320 | BAKER | MCKENZIE | ND | SWSW | 2 | 153N | 101W |
| .920 | CORPS OF ENGINEERS 31-10 | 320 | BAKER | MCKENZIE | ND | NWNE | 10 | 153N | 101W |
| 11137 | PEDERSON 5-24 (DUP) | 160 | HARDSCRABBLE | WILLIAMS | ND | NWSW | 24 | 153N | 102W |
| 11238 | COULTER 1-19 | 156 | INDIAN HILL | WILLIAMS | ND | SWNW | 19 | 153N | 101W |
| 11490 | CURRAN 1-1 | 160 | DUBLIN | WILLIAMS | ND | NENW | 1 | 157N | 100W |
| 9102 | CHURCH 1-2S | 160 | NAMELESS | MCKENZIE | ND | NWNW | 2 | 150N | 102W |
| 10681 | SKURDAL 2-24HR | 640 | HARDSCRABBLE | WILLIAMS | ND | NENW | 24 | 153N | 102W |
| 8322 | LINK 34-1S | 160 | NAMELESS | MCKENZIE | ND | NESW | 34 | 151N | 102W |
| 5856 | YELLOWSTONE STATE 1-36 | 320 | YELLOWSTONE | MCKENZIE | ND | NENW | 36 | 150N | 104W |
| 13428 | SKURDAL 6-24 RR | 320 | HARDSCRABBLE | WILLIAMS | ND | SWSE | 24 | 153N | 102W |
| 9481 | LINDECKER 1-35 SWD | | UNKNOWN | MCKENZIE | ND | NWSW | 35 | 151N | 102W |



SUNDRY NOTICES AND REPORTS ON WELLS - FORM 4

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 5749 (09-2006)

Well File No.
11920



PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.

PLEASE SUBMIT THE ORIGINAL AND ONE COPY.

| | |
|--|---|
| <input type="checkbox"/> Notice of Intent | Approximate Start Date |
| <input checked="" type="checkbox"/> Report of Work Done | Date Work Completed July 20, 2012 |
| <input type="checkbox"/> Notice of Intent to Begin a Workover Project that may Qualify for a Tax Exemption Pursuant to NDCC Section 57-51.1-03. | Approximate Start Date |
| <input type="checkbox"/> Drilling Prognosis <input type="checkbox"/> Spill Report <input type="checkbox"/> Redrilling or Repair <input type="checkbox"/> Shooting <input type="checkbox"/> Casing or Liner <input type="checkbox"/> Acidizing <input type="checkbox"/> Plug Well <input type="checkbox"/> Fracture Treatment <input type="checkbox"/> Supplemental History <input type="checkbox"/> Change Production Method <input type="checkbox"/> Temporarily Abandon <input type="checkbox"/> Reclamation <input checked="" type="checkbox"/> Other Return to Production | |

Well Name and Number

Corps of Engineers 31-10

| | | | | |
|-----------------------|------------------------|---------|---------------------------|-------------|
| Footages | Qtr-Qtr | Section | Township | Range |
| 660 F N L | 2305 F E L | NWNE | 10 | 153 N 101 W |
| Field Baker | Pool Duperow | | County McKenzie | |

24-HOUR PRODUCTION RATE

| Before | After |
|--------|-------|
| Oil | Bbls |
| Water | Bbls |
| Gas | MCF |

Name of Contractor(s)

| | | | |
|---------|------|-------|----------|
| Address | City | State | Zip Code |
|---------|------|-------|----------|

DETAILS OF WORK

The Corps of Engineers 31-10 was returned to production on 7/20/12 after being SI due to flooding in Baker Field.

| | | |
|---|---|--------------------------|
| Company SM Energy Company | Telephone Number (406) 245-6248 | |
| Address P.O. Box 7168 | | |
| City Billings | State MT | Zip Code 59103 |
| Signature <i>Cris Rogers</i> | Printed Name Cris Rogers | |
| Title Operations Engineer | Date July 27, 2012 | |
| Email Address crogers@sm-energy.com | | |

FOR STATE USE ONLY

| | |
|--|-----------------------------------|
| <input checked="" type="checkbox"/> Received | <input type="checkbox"/> Approved |
| Date <i>September 7, 2012</i> | |
| By <i>T. J. McMillin</i> | |
| Title PETROLEUM ENGINEER | |

Industrial Commission of North Dakota
Oil and Gas Division
Spill / Incident Report

Date/Time Reported : Dec 3 2010 / 14:20

State Agency person :

Responsible Party :

Well Operator : SM ENERGY COMPANY

Date/Time of Incident : 12/1/2010 12:00:00 AM

NDIC File Number : 11920

Facility Number :

Well or Facility Name : CORPS OF ENGINEERS 31-10

Field Name : BAKER

County : MCKENZIE

Section : 10

Township : 153

Range : 101

Quarter-Quarter : NW

Quarter : NE

Distance to nearest residence : 1 Miles

Distance to nearest water well : 25 Feet

Release Oil : 60 barrels

Release Brine : 0 barrels

Release Other : 0 barrels

Recovered Oil : 50 barrels

Recovered Brine : 0 barrels

Recovered Other : 0 barrels

Has/Will the incident be reported to the NRC? : Unknown

Was release contained : Yes - Within Dike

Description of other released substance :

Immediate risk evaluation : None.

Followup Report Requested Y/N : N

Industrial Commission of North Dakota
Oil and Gas Division
Spill / Incident Report

Date/Time Reported : Aug 12 2009 / 11:52

State Agency person :

Responsible Party :

Well Operator : ST MARY LAND & EXPLORATION COMPANY

Date/Time of Incident : 8/11/2009 12:00:00 AM

NDIC File Number : 11920

Facility Number :

Well or Facility Name : CORPS OF ENGINEERS 31-10

Field Name : BAKER

County : MCKENZIE

Section : 10

Township : 153

Range : 101

Quarter-Quarter : NW

Quarter : NE

Distance to nearest residence : 1 Miles

Distance to nearest water well : 0.25 Miles

Release Oil : 8 barrels

Release Brine : 0 barrels

Release Other : 0 barrels

Recovered Oil : 5 barrels

Recovered Brine : 0 barrels

Recovered Other : 0 barrels

Has/Will the incident be reported to the NRC? : No

Was release contained : Yes - Within Dike

Description of other released substance :

Immediate risk evaluation : None.

Followup Report Requested Y/N : N

Industrial Commission of North Dakota
Oil and Gas Division
Spill / Incident Report

Date/Time Reported : Oct 16 2006 / 10:29

State Agency person :

Responsible Party :

Well Operator : NANCE PETROLEUM CORPORATION

Date/Time of Incident : 10/15/2006 12:00:00 AM

NDIC File Number : 11920

Facility Number :

Well or Facility Name : Corp. of Engineers 31-10

Field Name : BAKER

County : McKenzie

Section : 10

Township : 153

Range : 101

Quarter-Quarter : NW

Quarter : NE

Distance to nearest residence : 5 Miles

Distance to nearest water well : 0.25 Miles

Release Oil : 1 barrels

Release Brine : 0 barrels

Release Other : 0 barrels

Recovered Oil : 0 barrels

Recovered Brine : 0 barrels

Recovered Other : 0 barrels

Has/Will the incident be reported to the NRC? : No

Was release contained : Yes - Within Dike

Description of other released substance :

Immediate risk evaluation :



SUNDRY NOTICES AND REPORTS ON WELLS - FORM

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 5749 (09-2006)



Well File No.
11920

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.
PLEASE SUBMIT THE ORIGINAL AND ONE COPY.

| | | | |
|---|------------------------|---|---|
| <input checked="" type="checkbox"/> Notice of Intent | Approximate Start Date | <input type="checkbox"/> Drilling Prognosis | <input type="checkbox"/> Spill Report |
| <input type="checkbox"/> Report of Work Done | Date Work Completed | <input type="checkbox"/> Redrilling or Repair | <input type="checkbox"/> Shooting |
| <input type="checkbox"/> Notice of Intent to Begin a Workover Project that may Qualify for a Tax Exemption Pursuant to NDCC Section 57-51.1-03. | | <input type="checkbox"/> Casing or Liner | <input type="checkbox"/> Acidizing |
| Approximate Start Date | | <input type="checkbox"/> Plug Well | <input type="checkbox"/> Fracture Treatment |
| | | <input type="checkbox"/> Supplemental History | <input type="checkbox"/> Change Production Method |
| | | <input type="checkbox"/> Temporarily Abandon | <input type="checkbox"/> Reclamation |
| | | <input checked="" type="checkbox"/> Other | Shut In Well |

Well Name and Number
Corp of Engineers 31-10

| | | | | | |
|------------------------------|------------------------|------------------------|----------------------|---------------------------|-----------------------|
| Footages 660 F N L | 2305 F E L | Qtr-Qtr NWNE | Section 10 | Township 153 N | Range 101 W |
| Field Baker | Pool Duperow | | | County McKenzie | |

24-HOUR PRODUCTION RATE

| Before | After |
|--------|-------|
| Oil | Bbls |
| Water | Bbls |
| Gas | MCF |

Name of Contractor(s)

| | | | |
|---------|------|-------|----------|
| Address | City | State | Zip Code |
|---------|------|-------|----------|

DETAILS OF WORK

Due to ice jams the above captioned well has been shut in.

Verbal approval to transport oil was given by John Axtman on February 3, 2012.

| | | |
|---|--------------------------------------|--------------------------|
| Company SM Energy | Telephone Number | |
| Address P O Box 7168 | | |
| City Billings | State MT | Zip Code 59103 |
| Signature <i>Lorena Griggs</i> | Printed Name Lorena Griggs | |
| Title Regulatory & Safety Assistant | Date February 3, 2012 | |
| Email Address rgriggs@sm-energy.com | | |

FOR STATE USE ONLY

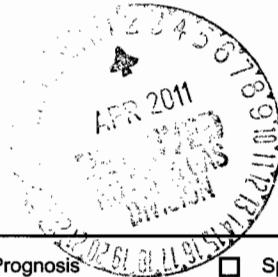
| | |
|--|-----------------------------------|
| <input checked="" type="checkbox"/> Received | <input type="checkbox"/> Approved |
| Date <i>February 22, 2012</i> | |
| By <i>John M. Lukas</i> | |
| Title PETROLEUM ENGINEER | |



SUNDRY NOTICES AND REPORTS ON WELLS - FORM 4

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 5749 (09-2006)

Well File No.
11920



PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.
PLEASE SUBMIT THE ORIGINAL AND ONE COPY.

| | | | |
|---|------------------------|---|---|
| <input checked="" type="checkbox"/> Notice of Intent | Approximate Start Date | <input type="checkbox"/> Drilling Prognosis | <input type="checkbox"/> Spill Report |
| <input type="checkbox"/> Report of Work Done | Date Work Completed | <input type="checkbox"/> Redrilling or Repair | <input type="checkbox"/> Shooting |
| <input type="checkbox"/> Notice of Intent to Begin a Workover Project that may Qualify for a Tax Exemption Pursuant to NDCC Section 57-51.1-03. | | <input type="checkbox"/> Casing or Liner | <input type="checkbox"/> Acidizing |
| Approximate Start Date | | <input type="checkbox"/> Plug Well | <input type="checkbox"/> Fracture Treatment |
| | | <input type="checkbox"/> Supplemental History | <input type="checkbox"/> Change Production Method |
| | | <input type="checkbox"/> Temporarily Abandon | <input type="checkbox"/> Reclamation |
| | | <input checked="" type="checkbox"/> Other | Shut In Well |

| | | | | | |
|--|------------------------|---------------------------|--------------------------|-----------------------|--|
| Well Name and Number Corp of Engineers 31-10 | | | | | |
| Footages 660 F N L 2305 F E L | Qtr-Qtr NWNE | Section 10 | Township 153 N | Range 101 W | |
| Field Baker | Pool Duperow | County McKenzie | | | |

| 24-HOUR PRODUCTION RATE | | | |
|-------------------------|------|-------|------|
| Before | | After | |
| Oil | Bbls | Oil | Bbls |
| Water | Bbls | Water | Bbls |
| Gas | MCF | Gas | MCF |

| | | | |
|-----------------------|--|------|----------|
| Name of Contractor(s) | | | |
| Address | | City | State |
| | | | Zip Code |

DETAILS OF WORK

3/29/2011 Temporarily Shut In due to Missouri River Flooding.

| | | | |
|---|------------------------------------|--------------------|--------------------------|
| Company SM Energy | | Telephone Number | |
| Address P O Box 7168 | | | |
| City Billings | | State MT | Zip Code 59103 |
| Signature | Printed Name Luke Studer | | |
| Title Regulatory and Safety Comp. Spec. | Date March 29, 2011 | | |
| Email Address | | | |

| | |
|--|-----------------------------------|
| FOR STATE USE ONLY | |
| <input checked="" type="checkbox"/> Received | <input type="checkbox"/> Approved |
| Date April 5, 2011 | |
| By | |
| Title Daniel J. McElhender | |

PETROLEUM ENGINEER



SUNDRY NOTICE AND REPORTS ON WELLS - FORM

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 5749 (09-2006)



Well File No.

11920

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.
PLEASE SUBMIT THE ORIGINAL AND ONE COPY.

| | | | |
|---|--|---|---|
| <input type="checkbox"/> Notice of Intent | Approximate Start Date | <input type="checkbox"/> Drilling Prognosis | <input type="checkbox"/> Spill Report |
| <input checked="" type="checkbox"/> Report of Work Done | Date Work Completed October 25, 2010 | <input type="checkbox"/> Redrilling or Repair | <input type="checkbox"/> Shooting |
| <input type="checkbox"/> Notice of Intent to Begin a Workover Project that may Qualify for a Tax Exemption Pursuant to NDCC Section 57-51.1-03. | Approximate Start Date | <input type="checkbox"/> Casing or Liner | <input type="checkbox"/> Acidizing |
| | | <input type="checkbox"/> Plug Well | <input type="checkbox"/> Fracture Treatment |
| | | <input type="checkbox"/> Supplemental History | <input type="checkbox"/> Change Production Method |
| | | <input type="checkbox"/> Temporarily Abandon | <input type="checkbox"/> Reclamation |
| | | <input checked="" type="checkbox"/> Other | Wells Flaring Gas |

Well Name and Number
See Attached List

| Footages | | F L | | Qtr-Qtr | Section | Township | Range | N W |
|----------|--|-----|--|---------|---------|----------|-------|-----|
| Field | | | | Pool | County | | | |

24-HOUR PRODUCTION RATE

| Before | | After | |
|--------|------|-------|------|
| Oil | Bbls | Oil | Bbls |
| Water | Bbls | Water | Bbls |
| Gas | MCF | Gas | MCF |

Name of Contractor(s)

Address

City

State

Zip Code

DETAILS OF WORK

Due to facility work on BearPaw Pipeline infrastructure the attached list of wells were flaring produced gas during October 16th, through October 25th.

| | | |
|---|---|--------------------------|
| Company SM Energy | Telephone Number (406) 245-6248 | |
| Address P O Box 7168 | | |
| City Billings | State MT | Zip Code 59103 |
| Signature | Printed Name Luke Studer | |
| Title Regulatory and Safety Comp. Spec. | Date October 27, 2010 | |
| Email Address lstuder@sm-energy.com | | |

FOR STATE USE ONLY

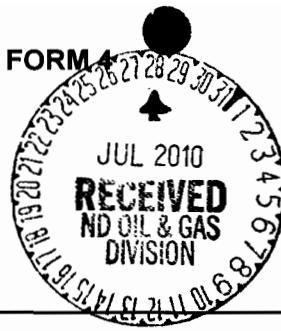
| | |
|--|--|
| <input checked="" type="checkbox"/> Received | <input type="checkbox"/> Approved |
| Date | 10-29-10 |
| By | Original Signed By GLENN L. WOLLAN |
| Title | Field Supervisor |

| <u>Pool</u> | <u>Well Name/NO</u> | <u>Field</u> | <u>NDIC No.</u> | <u>Fed Lease No.</u> | <u>Sec.</u> | <u>Township</u> | <u>Range</u> | <u>County</u> |
|-------------------|-------------------------|---------------|-----------------|----------------------|-------------|-----------------|--------------|---------------|
| Bakken | Klamm 13-10H | Dimmick Lake | 17952 | | 10 | 150 | 97 | Mckenzie |
| Bakken | Johnson 16-34 | Siverston | 18805 | | 34 | 150 | 98 | Mckenzie |
| Duperow | BA Green | Sioux Field | 11700 | | 5 | 151 | 101 | Mckenzie |
| Ratcliff | Willow 1-4 | Indian Hill | 8957 | | 4 | 152 | 101 | Mckenzie |
| Madison | Eckert 2-5HR | Indian Hill | 10089 | | 5 | 152 | 101 | Mckenzie |
| Ratcliff | Eckert 4-5-3A | Indian Hill | 10812 | | 5 | 152 | 101 | Mckenzie |
| Mission Canyon | Eckert 5-5-2A | Indian Hill | 11070 | | 5 | 152 | 101 | Mckenzie |
| Madison | Eckert 5-12-R | Indian Hill | 11009 | | 5 | 152 | 101 | Mckenzie |
| Madison | Eckert 2-6-2D | Indian Hill | 10088 | | 5 | 152 | 101 | Mckenzie |
| Madison | Lindvig #10 | Camp | 11316 | | 10 | 152 | 101 | Mckenzie |
| Mission Canyon | Anderson 32-10 | Camp | 11059 | | 10 | 152 | 101 | Mckenzie |
| Madison | M&G 14-2 | Baker | 11751 | NDM82193 | 2 | 153 | 101 | Mckenzie |
| Red River | French Pinney 24-3 | Baker | 12129 | NDM82195 | 3 | 153 | 101 | Mckenzie |
| Madison | Basic Game & Fish 34-3 | Baker | 11745 | NDM82193 | 3 | 153 | 101 | Mckenzie |
| Madison | Lewis & Clark 2-4H | Baker | 15358 | | 4 | 153 | 101 | Mckenzie |
| Duperow | Corp of Engineers 31-10 | Baker | 11920 | NDM82191 | 10 | 153 | 101 | Mckenzie |
| Red River | Rosebud 22-11 | Baker | 11549 | NDM82190 | 11 | 153 | 101 | Mckenzie |
| Madison | Lindvig 1-11HR | Baker | 9309 | | 11 | 153 | 101 | Mckenzie |
| Madison | Fredrickson 33-33 | Indian Hill | 11345 | | 33 | 153 | 101 | Mckenzie |
| Madison | Powers 33-23 | Indian Hill | 11523 | | 33 | 153 | 101 | Mckenzie |
| Madison | Canterra St of ND F-1 | Indian Hill | 11492 | | 33 | 153 | 101 | Mckenzie |
| Red River | Rehab 4-33 | Indian Hill | 15344 | | 33 | 153 | 101 | Mckenzie |
| Madison | Canterra St of ND F-2 | Indian Hill | 11575 | | 34 | 153 | 101 | Mckenzie |
| Red River | Barnes 1-2 | Indian Hill | 15170 | NDM88450 | 2 | 152 | 102 | Mckenzie |
| Madison | Boss 12-17 | Stockyard Crk | 14792 | | 17 | 154 | 99 | Williams |
| Madison | Boss 14-17 | Stockyard Crk | 14716 | | 17 | 154 | 99 | Williams |
| Madison | Coulter 1-19 | Indian Hill | 11238 | | 19 | 153 | 101 | Williams |
| Madison | Skurdal 2-24HR | Hardscrabble | 10681 | | 24 | 153 | 102 | Williams |
| Duperow | Skurdal 3-24-3B | Hardscrabble | 11136 | | 24 | 153 | 102 | Williams |
| Duperow/BirdBear | Pederson 5-24-4C | Hardscrabble | 11137 | | 24 | 153 | 102 | Williams |
| Red River/Stnwall | Skurdal 6-24 | Hardscrabble | 13428 | | 24 | 153 | 102 | Williams |
| Madison | Turmoil 10-4 | Ft Buford | 13457 | | 4 | 153 | 102 | Williams |
| Madison | Marley State 1-36 | Ft Buford | 7503 | | 36 | 153 | 104 | Williams |



SUNDRY NOTICES AND REPORTS ON WELLS - FORM A

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 5749 (09-2006)



Well File No.
11920

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.
PLEASE SUBMIT THE ORIGINAL AND ONE COPY.

| | | | |
|---|------------------------|---|---|
| <input checked="" type="checkbox"/> Notice of Intent | Approximate Start Date | <input type="checkbox"/> Drilling Prognosis | <input type="checkbox"/> Spill Report |
| <input type="checkbox"/> Report of Work Done | Date Work Completed | <input type="checkbox"/> Redrilling or Repair | <input type="checkbox"/> Shooting |
| <input type="checkbox"/> Notice of Intent to Begin a Workover Project that may Qualify for a Tax Exemption Pursuant to NDCC Section 57-51.1-03. | | <input type="checkbox"/> Casing or Liner | <input type="checkbox"/> Acidizing |
| Approximate Start Date | | <input type="checkbox"/> Plug Well | <input type="checkbox"/> Fracture Treatment |
| | | <input type="checkbox"/> Supplemental History | <input type="checkbox"/> Change Production Method |
| | | <input type="checkbox"/> Temporarily Abandon | <input type="checkbox"/> Reclamation |
| | | <input checked="" type="checkbox"/> Other | Shut In Well |

Well Name and Number
Corp of Engineers 31-10

| | | | | |
|---|------------------------|----------------------|---------------------------|-----------------------|
| Footages 660 F N L 2305 F E L | Qtr-Qtr NWNE | Section 10 | Township 153 N | Range 101 W |
| Field Baker | Pool Duperow | | County McKenzie | |

24-HOUR PRODUCTION RATE

| | Before | | After |
|-------|--------|-------|-------|
| Oil | Bbls | Oil | Bbls |
| Water | Bbls | Water | Bbls |
| Gas | MCF | Gas | MCF |

Name of Contractor(s)

Address

City

State

Zip Code

DETAILS OF WORK

6/30/2010 Temporarily Shut In due to Missouri River Flooding.

| | | |
|---|------------------------------------|--------------------------|
| Company SM Energy | Telephone Number | |
| Address P O Box 7168 | | |
| City Billings | State MT | Zip Code 59103 |
| Signature | Printed Name Luke Studer | |
| Title Regulatory and Safety Comp. Spec. | Date July 19, 2010 | |
| Email Address | | |

FOR STATE USE ONLY

| | |
|--|-----------------------------------|
| <input checked="" type="checkbox"/> Received | <input type="checkbox"/> Approved |
| Date 7-28-10 | |
| By | |
| Title GLENN L. WOLLAN | |

Field Supervisor

AUTHORIZATION TO PURCHASE AND TRANSPORT OIL FROM LEASE - FORM 8

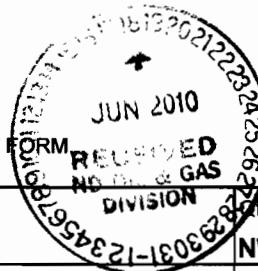
INDUSTRIAL COMMISSION OF NORTH DAKOTA

OIL AND GAS DIVISION

600 EAST BOULEVARD DEPT 405

BISMARCK, ND 58505-0840

SFN 5698 (03-2000)



Well File No.

111920

NDIC CTB No.

111920

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.
PLEASE SUBMIT THE ORIGINAL AND FOUR COPIES.

| | | | | | |
|---|------------------------------------|----------------------|--------------------------|-------------------------------|---------------------------|
| Well Name and Number CORPS OF ENGINEERS 31-10 | 1/4tr-Qtr NWNE | Section 10 | Township 153 N | Range 101 W | County MCKENZIE |
| Operator SM ENERGY COMPANY | Telephone # 406-245-6248 | | | | Field BAKER |
| Address P O BOX 7168 | City BILLINGS | | State MT | Zip Code 59103-7168 | |

| | | | |
|--|---|-----------------------------|---------------------------------------|
| Name of First Purchaser Nexen Marketing USA Inc | Telephone # 303-850-4284 | % Purchased 100 | Date Effective June 1, 2010 |
| Principal Place of Business 5660 Greenwood Plaza Blvd., #230 | City Greenwood Village | State CO | Zip Code 80111 |
| Field Address PO Box 567 | City Plentywood | State MT | Zip Code 59254 |
| Name of Transporter Diamond B Trucking Inc. (TR) | Telephone Number 701-245-6423 | % Transported 100 | Date Effective June 1, 2010 |
| Address PO Box 445 | City Westhope | State ND | Zip Code 58793 |
| The above named producer authorizes the above named purchaser to purchase the percentage of oil stated above which is produced from the lease designated above until further notice. The oil will be transported by the above named transporter. | | | |

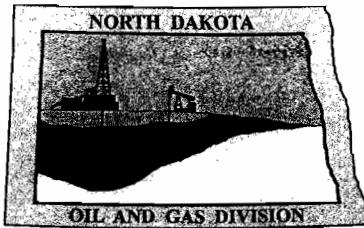
| | | |
|--|---------------|----------------|
| Other First Purchasers Purchasing From This Lease | % Purchased | Date Effective |
| Other First Purchasers Purchasing From This Lease | % Purchased | Date Effective |
| Other Transporters Transporting From This Lease | % Transported | Date Effective |
| Other Transporters Transporting From This Lease | % Transported | Date Effective |
| Comments St. Mary Land & Exploration Company name change to SM Energy Company effective 6/1/2010 | | |

| | |
|---|------------------------------|
| I hereby swear or affirm that the information herein provided is true, complete and correct as determined from all available records. | Date June 10, 2010 |
|---|------------------------------|

| | | |
|---------------|-------------------------------------|---------------------------------------|
| Signature | Printed Name Sherry Karst | Title Production Technician |
|---------------|-------------------------------------|---------------------------------------|

| | | | |
|------------------------------|-----------------------|---|---|
| Above Signature Witnessed By | Witness Signature | Witness Printed Name Brenda Young | Witness Title Production Technician |
|------------------------------|-----------------------|---|---|

| | | |
|--|--|--|
| FOR STATE USE ONLY | | |
| Date Approved JUL 01 2010 | | |
| By | | |
| Title Debra Tetzlaff, Production | | |



Oil and Gas Division

Lynn D. Helms - Director Bruce E. Hicks - Assistant Director

Department of Mineral Resources

Lynn D. Helms - Director

North Dakota Industrial Commission

www.dmr.nd.gov/oilgas

June 28, 2010

SM Energy Company
Ronald B. Santi
PO Box 7168
Billings, MT 59101

**RE: PRINCIPAL NAME CHANGE FROM
ST MARY LAND & EXPLORATION COMPANY TO
SM ENERGY COMPANY
BOND NOS. 6367113, 6456716, 6041871, 6160846, 6160847, 6160842, AND
6314472
SAFECO INSURANCE COMPANY OF AMERICA
267 WELLS**

Dear Mr. Ronald B. Santi:

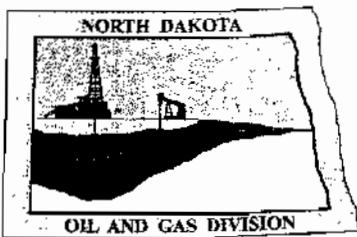
This office is in receipt of your request to change the principal name of St. Mary Land & Exploration Company to SM Energy Company.

This letter will verify the principal name change effective June 28, 2010.

Please feel free to contact this office if you should have any questions.

Sincerely,

Evie Roberson
Administrative Assistant



Oil and Gas Division

Lynn D. Helms - Director Bruce E. Hicks - Assistant Director

Department of Mineral Resources

Lynn D. Helms - Director

North Dakota Industrial Commission

www.dmr.nd.gov/oilgas

February 4, 2009

Ms. Maggie Vogl
St Mary Land & Exploration Company
550 North 31st Street
Billings, MT 59101

**RE: Corps of Engineers #31-10
NWNE Sec. 10, T.153N., R.101W.
McKenzie County, North Dakota
Baker Field
Well File No. 11920
STRIPPER WELL DETERMINATION**

Dear Ms. Vogl:

St Mary Land & Exploration Company (St Mary) filed with the North Dakota Industrial Commission – Oil and Gas Division (Commission) on February 2, 2009 an application for a Stripper Well Property Determination for the above captioned well.

Information contained in the application indicates that the above mentioned well is a property pursuant to statute and rule, and St Mary has elected to designate said well as a separate property for stripper well purposes. The well produced from a well depth greater than 10000 feet. During the qualifying period, October 1, 2007 through September 30, 2008 the well produced at a maximum efficient rate and the average daily production from the well was 28.4 barrels of oil per day during this period.

It is therefore determined that the above captioned well qualifies as a "Stripper Well Property" pursuant to Section 57-51.1-01 of the North Dakota Century Code. This determination is applicable only to the Duperow Pool in and under said property.

The Commission shall have continuing jurisdiction, and shall have the authority to review the matter, and to amend or rescind the determination if such action is supported by additional or newly discovered information. If you have any questions, do not hesitate to contact me.

Sincerely,

David J. McCusker
Petroleum Engineer

Cc: ND Tax Department

AUTHORIZATION TO PURCHASE AND TRANSPORT OIL FROM LEASE - FORM 8

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SIN 5698 (03-2000)

| | |
|---------------|---------------|
| Well File No. | 11920 |
| NDIC CTB No. | 111920 |

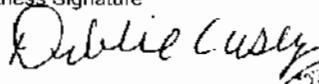
PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM
PLEASE SUBMIT THE ORIGINAL AND FOUR COPIES

| | | | | | |
|---|------------------------------------|----------------------|--------------------------|-------------------------------|---------------------------|
| Well Name and Number CORPS OF ENGINEERS 31-10 | Qtr-Otr NWNE | Section 10 | Township 153 N | Range 101 W | County MCKENZIE |
| Operator ST MARY LAND & EXPLORATION COMPANY | Telephone # 406-245-6248 | | | | Field BAKER |
| Address P O BOX 7168 | City BILLINGS | | State MT | Zip Code 59103-7168 | |

| | | | |
|--|---|-----------------------------|---|
| Name of First Purchaser Nexen Marketing USA Inc | Telephone # 303-850-4284 | % Purchased 100 | Date Effective December 1, 2007 |
| Principal Place of Business 5660 Greenwood Plaza Blvd., #230 | City Greenwood Village | State CO | Zip Code 80111 |
| Field Address PO Box 567 | City Plentywood | State MT | Zip Code 59254 |
| Name of Transporter Diamond B Trucking Inc. (TR) | Telephone Number 701-245-6423 | % Transported 100 | Date Effective December 1, 2007 |
| Address PO Box 445 | City Westhope | State ND | Zip Code 58793 |
| The above named producer authorizes the above named purchaser to purchase the percentage of oil stated above which is produced from the lease designated above until further notice. The oil will be transported by the above named transporter. | | | |

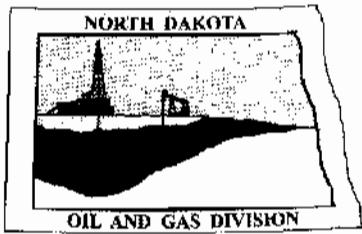
| | | |
|---|---------------|----------------|
| Other First Purchasers Purchasing From This Lease | % Purchased | Date Effective |
| Other First Purchasers Purchasing From This Lease | % Purchased | Date Effective |
| Other Transporters Transporting From This Lease | % Transported | Date Effective |
| Other Transporters Transporting From This Lease | % Transported | Date Effective |
| Comments | 0 | |

| | |
|--|----------------------------------|
| I hereby swear or affirm that the information herein provided is true, complete and correct as determined from all available records | Date December 17, 2007 |
|--|----------------------------------|

| | | |
|---|---|---|
| Signature  | Printed Name Kari Wheeler | Title Production Assistant |
| Above Signature Witnessed By | | |
| Witness Signature  | Witness Printed Name Debbie Casey | Witness Title Production Supervisor |



| | |
|------------------------------|---|
| FOR STATE USE ONLY | |
| Date Approved By Title | 12-26-07 Annette Totzke Oil & Gas Production Analyst |



Oil and Gas Division

Lynn D. Helms - Director Bruce E. Hicks - Assistant Director

Department of Mineral Resources

Lynn D. Helms - Director

North Dakota Industrial Commission

www.oilgas.nd.gov

December 26, 2007

Karin M. Writer
St Mary Land & Exploration Company
1776 Lincoln St Ste 700
Denver CO 80203

**RE: PRINCIPAL NAME CHANGE FROM
NANCE PETROLEUM CORPORATION TO
ST MARY LAND & EXPLORATION COMPANY
7 BONDS**

Dear Ms. Writer:

This office is in receipt of the riders changing the principal name from Nance Petroleum Corporation to St Mary Land & Exploration Company.

This letter will verify the principal name change from Nance Petroleum Corporation to St Mary Land & Exploration Company effective December 26, 2007.

Please feel free to contact this office if you should have any questions.

Sincerely,

Marge Rixen
Legal Assistant

/mr



**Nance Petroleum Corporation
Spill Prevention Measures for Pipelines**

File Number: 11920 Corps of Engineers 31-10

Schematic on a map showing the location and route of the pipelines:

See attached Site Diagram, indicating the location of the pipelines. At this facility, the "pipelines" are buried flowlines which connect the wellhead to the production facilities (heater treater and storage tanks). All flowlines are located within the boundaries of the well pad. The entire well pad is surrounded by a dike, and the treater and storage tanks are surrounded by their own dike (see "Dikes and their capacities").

Pipeline Information:

Flow line - (Buried) 2" steel threaded line pipe (Schedule 40)
WP - 2,650 psi

Oil Fill line - (Buried) 3" SDR 11 poly
WP - 160 psi

Salt water fill line - (Buried) 3" SDR 11 poly
WP - 160 psi

Recycle line - (Buried) 3" SDR 11 poly
WP - 160 psi

Fresh Water line - (Above ground) 1" steel threaded line pipe (Schedule 40)
WP 2,500 psi

Age: 20 years (completed 11/17/86)

Monitoring Systems installed: None

Surveillance Programs in place: None

Inspection and Maintenance Programs in place:

This is a single wellsite facility. Oil and produced water flow from the well, into and out of pressure vessels and to bulk storage by interconnecting piping. The piping may be either above or below ground, but does not extend past the outer boundaries of the wellsite. Production operations personnel perform routine operational (visual) examinations on above ground interconnecting piping for indication of leaks, abnormalities, or equipment malfunctions during their daily visit to the facility. Below ground flowlines are walked and a visual examination is performed for indications of a leak if a production shortage shows the need. Records of daily checks are recorded on gauge sheets. Periodic, comprehensive flowline inspections are performed by Nance

**Nance Petroleum Corporation
Spill Prevention Measures for Pipelines**

File Number: 11920 Corps of Engineers 31-10 - continued

Petroleum personnel and recorded on a well inspection report. These records are maintained at the Nance Petroleum Williston, ND and Billings, MT offices.

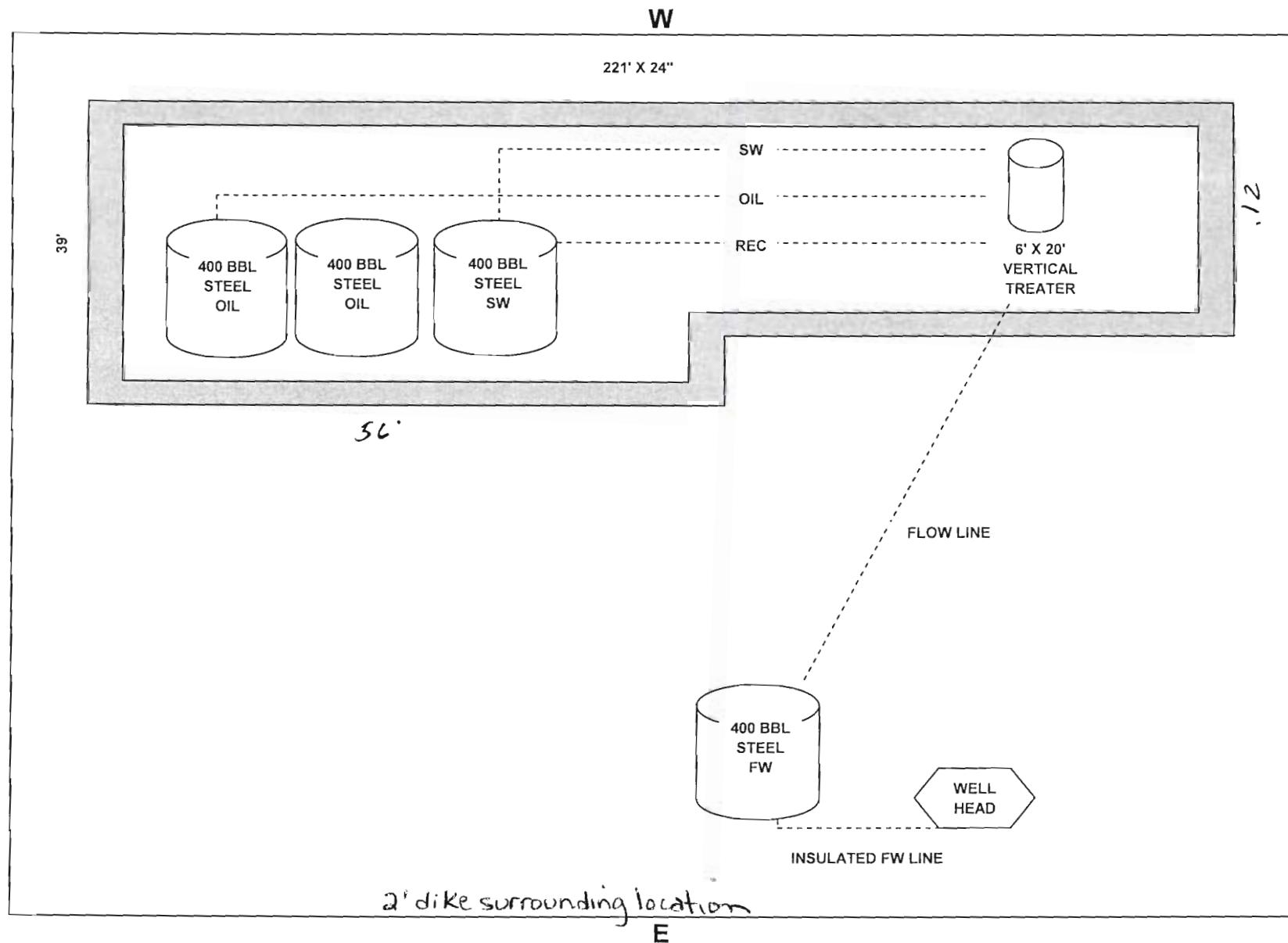
Integrity Test Results: None

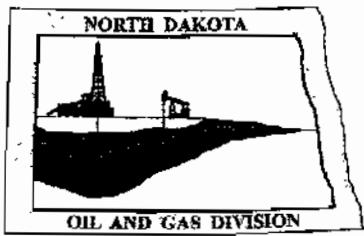
Dikes and their capacities:

Tank battery dike capacity: 2,012 barrels

Location dike capacity: 42,742 barrels (based on 400'x 300' x 2')

CORP. OF ENGINEERS 31-10





Oil and Gas Division

Lynn D. Helms - Director Bruce E. Hicks - Assistant Director

Department of Mineral Resources

Lynn D. Helms - Director

North Dakota Industrial Commission

www.oilgas.nd.gov

11920

July 25, 2006

Mr. Mike Mungas
Nance Petroleum Corp.
PO Box 7168
Billings, MT 59103-7168

RE: Spill Prevention Measures for Pipelines (See Attachment)

Dear Mr. Mungas:

The NDIC Oil and Gas Division is requesting information on spill prevention measures in place for the above referenced facilities. Please provide us with the following:

A schematic on a map showing the location and route of the pipelines.

Information available about the pipelines such as construction material, size, operating pressure rating and age of the pipelines.

A description of any monitoring systems installed, surveillance programs, and inspection and maintenance programs in place.

Results of any integrity tests done on the pipelines.

Dikes and their capacities.

Please contact Mark Bohrer or Glenn Wollan at (701) 328-8020 in our Bismarck office if you have questions.

Sincerely,

John Axtman
John Axtman
Williston District Supervisor

JSA/kl

ATTACHMENT
July 25, 2006

SPILL POTENTIAL WELLS OR FACILITIES

FILE NO.

| | | |
|-------|---------------------|----------|
| 9102 | CHURCH | 1-2 |
| 9362 | BURNING MINE BUTTE | 9-21 |
| 9481 | LINDECKER | 1-35-4A |
| 11130 | FLYNN | 1 |
| 11214 | NORTH BRANCH | 22-35 |
| 11549 | ROSEBUD | 22-11 |
| 11745 | BASIC GAME AND FISH | 34-3 |
| 11751 | M AND G | 14-2 |
| 11920 | CORPS OF ENGINEERS | 31-10 |
| 12129 | FRENCH-PINNEY | 24-3 |
| 12566 | ELLETSON | 33-1 |
| 13373 | PIERRE CREEK NELSON | 44-23HR |
| 13556 | CHURCH | 1-2X |
| 13681 | BRESE | 22-32HR |
| 13771 | DANIELSON | 32-32 |
| 14046 | PIERRE CREEK NELSON | 42-23 |
| 14794 | STENSRUD | 43-14 |
| 15344 | REHAB | 4-33 |
| 15358 | LEWIS AND CLARK | 2-4H |
| 90095 | MOORE FEDERAL | 3-28 SWD |

AUTHORIZATION TO PURCHASE AND TRANSPORT FROM LEASE - FORM 8

INDUSTRIAL COMMISSION OF NORTH DAKOTA
 OIL AND GAS DIVISION
 600 EAST BOULEVARD DEPT 405
 BISMARCK, ND 58505-0840
 SFN 5698 (03-2000)



| | |
|---------------|---------------|
| Well File No. | 11920 |
| NDIC CTB No. | 111920 |

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.
 PLEASE SUBMIT THE ORIGINAL AND FOUR COPIES.

| | | | | | |
|---|------------------------------------|----------------------|--------------------------|-------------------------------|---------------------------|
| Well Name and Number CORPS OF ENGINEERS 31-10 | Qtr-Qtr NWNE | Section 10 | Township 153 N | Range 101 W | County McKENZIE |
| Operator NANCE PETROLEUM CORPORATION | Telephone # 406-245-6248 | | | | Field BAKER |
| Address P O BOX 7168 | City BILLINGS | | State MT | Zip Code 59103-7168 | |

| | | | |
|--|---|-----------------------------|--|
| Name of First Purchaser Nexen Marketing USA Inc | Telephone # 303-850-4284 | % Purchased 100 | Date Effective October 1, 2005 |
| Principal Place of Business 5660 Greenwood Plaza Blvd., #230 | City Greenwood Village | State CO | Zip Code 80111 |
| Field Address PO Box 567 | City Plentywood | State MT | Zip Code 59254 |
| Name of Transporter Diamond B Trucking Inc. (TR) | Telephone Number 701-245-6423 | % Transported 100 | Date Effective October 1, 2005 |
| Address PO Box 445 | City Westhope | State ND | Zip Code 58793 |

The above named producer authorizes the above named purchaser to purchase the percentage of oil stated above which is produced from the lease designated above until further notice. The oil will be transported by the above named transporter.

| | | |
|--|---------------|----------------|
| Other First Purchasers Purchasing From This Lease | % Purchased | Date Effective |
| Other First Purchasers Purchasing From This Lease | % Purchased | Date Effective |
| Other Transporters Transporting From This Lease | % Transported | Date Effective |
| Other Transporters Transporting From This Lease | % Transported | Date Effective |
| Comments CHANGE OF PURCHASER EFFECTIVE 10/1/2005 | | |

| | |
|---|--------------------------------|
| I hereby swear or affirm that the information herein provided is true, complete and correct as determined from all available records. | Date October 5, 2005 |
|---|--------------------------------|

| | | |
|---------------|--------------------------------------|--|
| Signature | Printed Name Amanda Rambur | Title Marketing Representative |
|---------------|--------------------------------------|--|

| | | | |
|------------------------------|-----------------------|--|---|
| Above Signature Witnessed By | Witness Signature | Witness Printed Name Terry Holzwarth | Witness Title VP - Business Development |
|------------------------------|-----------------------|--|---|

| | |
|------------------------------|---|
| FOR STATE USE ONLY | |
| Date Approved By Title | <i>10-5-05</i> <i>Debra J. Fetter</i> <i>Oil & Gas Production Analyst</i> |

AUTHORIZATION TO PURCHASE AND TRANSPORT OIL FROM LEASE - FORM 8

INDUSTRIAL COMMISSION OF NORTH DAKOTA
 OIL AND GAS DIVISION
 600 EAST BOULEVARD DEPT 405
 BISMARCK, ND 58505-0840
 SFN 5698 (03-2000)

| | |
|---------------|--------|
| Well File No. | 11920 |
| NDIC CTB No. | 111920 |

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.
 PLEASE SUBMIT THE ORIGINAL AND FOUR COPIES.

| | | | | | |
|---|------------------------------------|----------------------|--------------------------|-------------------------------|---------------------------|
| Well Name and Number CORPS OF ENGINEERS 31-10 | Qtr-Qtr NWNE | Section 10 | Township 153 N | Range 101 W | County McKENZIE |
| Operator NANCE PETROLEUM CORPORATION | Telephone # 406-245-6248 | | | | Field BAKER |
| Address P O BOX 7168 | City BILLINGS | | State MT | Zip Code 59103-7168 | |

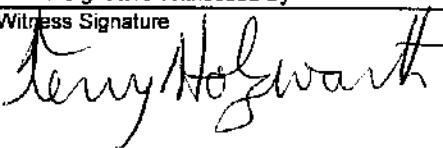
| | | | |
|--|---|-----------------------------|--|
| Name of First Purchaser Eighty-Eight Oil LLC | Telephone # 307-266-0264 | % Purchased 100 | Date Effective April 1, 2005 |
| Principal Place of Business P O Drawer 2360 | City Casper | State WY | Zip Code 82602 |
| Field Address P O Drawer 2360 | City Casper | State WY | Zip Code 82602 |
| Name of Transporter Black Hills Trucking | Telephone Number 307-266-0264 | % Transported 100 | Date Effective April 1, 2005 |
| Address P.O. Drawer 2360 | City Casper | State WY | Zip Code 82602 |

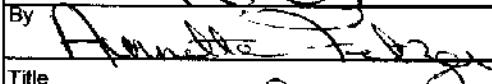
The above named producer authorizes the above named purchaser to purchase the percentage of oil stated above which is produced from the lease designated above until further notice. The oil will be transported by the above named transporter.

| | | |
|---|---------------|----------------|
| Other First Purchasers Purchasing From This Lease | % Purchased | Date Effective |
| Other First Purchasers Purchasing From This Lease | % Purchased | Date Effective |
| Other Transporters Transporting From This Lease | % Transported | Date Effective |
| Other Transporters Transporting From This Lease | % Transported | Date Effective |
| Comments | 0 | |

| | |
|---|-------------------------------|
| I hereby swear or affirm that the information herein provided is true, complete and correct as determined from all available records. | Date March 30, 2005 |
|---|-------------------------------|

| | | |
|---|--------------------------------------|--|
| Signature  | Printed Name Amanda Rambur | Title Marketing Representative |
|---|--------------------------------------|--|

| | | | |
|--|--|--|---|
| Above Signature Witnessed By  | Witness Signature  | Witness Printed Name Terry Holzwarth | Witness Title VP - Business Development |
|--|--|--|---|

| | |
|--------------------------------|--|
| FOR STATE USE ONLY | |
| Date Approved <i>4-6-05</i> | By  Title <i>Oil & Gas Production Analyst</i> |

AUTHORIZATION TO PURCHASE AND TRANSPORT OIL FROM LEASE - FORM 8

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 5698 (03-2000)



| | |
|---------------|-------|
| Well File No. | 11920 |
| NDIC CTB No. | 11920 |

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.
PLEASE SUBMIT THE ORIGINAL AND FOUR COPIES.

| | | | | | |
|---|------------------------------------|----------------------|--------------------------|-------------------------------|---------------------------|
| Well Name and Number CORPS OF ENGINEERS 31-10 | Qtr-Qtr NWNE | Section 10 | Township 153 N | Range 101 W | County McKENZIE |
| Operator NANCE PETROLEUM CORPORATION | Telephone # 406-245-6248 | | Field BAKER | | |
| Address P O BOX 7168 | City BILLINGS | | State MT | Zip Code 59103-7168 | |

| | | | |
|--|---|-----------------------------|--|
| Name of First Purchaser Tesoro Refining & Marketing Company | Telephone # 403-699-4059 | % Purchased 100 | Date Effective April 1, 2004 |
| Principal Place of Business 1225 17th St., Ste. 1800 | City Denver | State CO | Zip Code 80202 |
| Field Address HC 56 Box 605 1A | City Sidney | State MT | Zip Code 59270 |
| Name of Transporter Tesoro Refining & Marketing Company (TR) | Telephone Number 720-258-0611 | % Transported 100 | Date Effective April 1, 2004 |
| Address 1225 17th St., Ste 1800 | City Denver | State CO | Zip Code 80202 |
| The above named producer authorizes the above named purchaser to purchase the percentage of oil stated above which is produced from the lease designated above until further notice. The oil will be transported by the above named transporter. | | | |

| | | |
|---|---------------|----------------|
| Other First Purchasers Purchasing From This Lease | % Purchased | Date Effective |
| Other First Purchasers Purchasing From This Lease | % Purchased | Date Effective |
| Other Transporters Transporting From This Lease | % Transported | Date Effective |
| Other Transporters Transporting From This Lease | % Transported | Date Effective |
| Comments | 0 | |

| | |
|---|--------------------------------------|
| I hereby swear or affirm that the information herein provided is true, complete and correct as determined from all available records. | Date March 24, 2004 |
| Signature <i>Amanda Rambur</i> | Printed Name Amanda Rambur |
| Title Marketing Representative | |

| | | | |
|------------------------------|---|--|---|
| Above Signature Witnessed By | Witness Signature <i>Terry Holzwarth</i> | Witness Printed Name Terry Holzwarth | Witness Title VP - Acquisitions |
|------------------------------|---|--|---|

| | |
|--|----------------------------|
| FOR STATE USE ONLY | |
| Date Approved <i>3/31/04</i> | By <i>Annette Tabor</i> |
| Title <i>Oil & Gas Lead Analyst</i> | |

AUTHORIZATION TO PURCHASE AND TRANSPORT OIL FROM LEASE - FORM 8

INDUSTRIAL COMMISSION OF NORTH DAKOTA
 OIL AND GAS DIVISION
 600 EAST BOULEVARD DEPT 405
 BISMARCK, ND 58505-0840
 SFN 5698 (03-2000)

| | |
|---------------|--------|
| Well File No. | 11920 |
| NDIC CTB No. | 111920 |

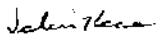
PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM
 PLEASE SUBMIT THE ORIGINAL AND FOUR COPIES.

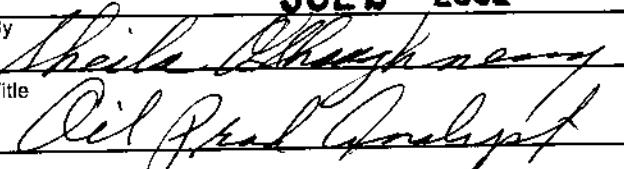
| | | | | | |
|---|------------------------------------|---------------|--------------------|-------------------------------|---------------------------|
| Well Name and Number CORPS OF ENGINEERS 31-10 | Op-Otr NWNE | Section 10 | Township 153 N | Range 101 W | County MCKENZIE |
| Operator NANCE PETROLEUM CORPORATION | Telephone # 406-245-6248 | | | | Field BAKER |
| Address P O BOX 7168 | City BILLINGS | | State MT | Zip Code 59103-7168 | |

| | | | |
|--|---|-----------------------------|---------------------------------------|
| Name of First Purchaser Nexen Marketing USA Inc. | Telephone # 403-699-4059 | % Purchased 100 | Date Effective July 1, 2002 |
| Principal Place of Business 1700 801 7th Ave SW 5660 Greenwood Plaza Blvd #200 | City Calgary AB V1V 1A9 | State Co. Canada | Zip Code T2P 3P7 S0111 |
| Field Address PO Box 567 | City Plentywood | State MT | Zip Code 59254 |
| Name of Transporter Diamond B Oilfield Trucking (TR) Inc. | Telephone Number 406-765-1376 | % Transported 100 | Date Effective July 1, 2002 |
| Address 445 PO Box 567 | City Westmore Plentywood | State MT ND | Zip Code 58793 59254 |
| The above named producer authorizes the above named purchaser to purchase the percentage of oil stated above which is produced from the lease designated above until further notice. The oil will be transported by the above named transporter. | | | |

| | | |
|---|---------------|----------------|
| Other First Purchasers Purchasing From This Lease | % Purchased | Date Effective |
| Other First Purchasers Purchasing From This Lease | % Purchased | Date Effective |
| Other Transporters Transporting From This Lease | % Transported | Date Effective |
| Other Transporters Transporting From This Lease | % Transported | Date Effective |
| Comments | 0 | |

| | |
|---|------------------------------|
| I hereby swear or affirm that the information herein provided is true, complete and correct as determined from all available records. | Date June 14, 2002 |
|---|------------------------------|

| | | |
|---|--|--|
| Signature  | Printed Name Gary L. Evertz | Title VP Operations |
| Above Signature Witnessed By  | Witness Printed Name Valeri Kaae | Witness Title Operations Assistant |

| | |
|------------------------------------|---|
| FOR STATE USE ONLY | |
| Date Approved JUL 2 2002 | By  Title Oil Field Analyst |

AUTHORIZATION TO PURCHASE AND TRANSPORT OIL FROM LEASE - FORM 8

INDUSTRIAL COMMISSION OF NORTH DAKOTA

OIL AND GAS DIVISION

600 EAST BOULEVARD DEPT 405

BISMARCK, ND 58505-0840

SFN 5698 (03-2000)

Well File No.

11920

NDIC CTB No.

11920

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.

PLEASE SUBMIT THE ORIGINAL AND FOUR COPIES.

| | | | | | |
|---|------------------------------------|----------------------|--------------------------|-------------------------------|---------------------------|
| Well Name and Number CORPS OF ENGINEERS 31-10 | Qtr Qtr NWNE | Section 10 | Township 153 N | Range 101 W | County MCKENZIE |
| Operator NANCE PETROLEUM CORPORATION | Telephone # 406-245-6248 | | Field BAKER | | |
| Address P O BOX 7168 | MT | | State MT | Zip Code 59103-7168 | |

| | | | |
|--|---|-----------------------------|---|
| Name of First Purchaser Tesoro Refining & Marketing Company | Telephone # 720-744-9315 | % Purchased 100 | Date Effective February 1, 2002 |
| Principal Place of Business 1225 17th St., Ste 1800 | City Denver | State CO | Zip Code 80202 |
| Field Address HC 56 Box 605 1A | City Sidney | State MT | Zip Code 59270 |
| Name of Transporter <i>High Plains Pipeline Co</i> Tesoro Refining & Marketing Company (TR) | Telephone Number 406-482-4841 | % Transported 100 | Date Effective February 1, 2002 |
| Address <i>HC 56 Box 605 1A 1225 17th St Ste 1800</i> | City <i>Sidney</i> | State <i>CO</i> | Zip Code <i>80202</i> |
| The above named producer authorizes the above named purchaser to purchase the percentage of oil stated above which is produced from the lease designated above until further notice. The oil will be transported by the above named transporter. | | | |

| | | |
|---|---------------|----------------|
| Other First Purchasers Purchasing From This Lease | % Purchased | Date Effective |
| Other First Purchasers Purchasing From This Lease | % Purchased | Date Effective |
| Other Transporters Transporting From This Lease | % Transported | Date Effective |
| Other Transporters Transporting From This Lease | % Transported | Date Effective |
| Comments BP AMOCO sold to Tesoro Refining & Marketing Company | | |

| | |
|---|---------------------------------|
| I hereby swear or affirm that the information herein provided is true, complete and correct as determined from all available records. | Date February 1, 2002 |
|---|---------------------------------|

| | | |
|------------------------------------|---------------------------------------|-------------------------------|
| Signature <i>Gary L. Evertz</i> | Printed Name Gary L. Evertz | Title VP Operations |
|------------------------------------|---------------------------------------|-------------------------------|

| | | | |
|--|---|--|--|
| Above Signature Witnessed By <i>Jeanette Magstadt</i> | Witness Signature <i>Jeanette Magstadt</i> | Witness Printed Name Jeanette Magstadt | Witness Title Operations Assistant |
|--|---|--|--|

| | |
|-------------------------------------|--|
| FOR STATE USE ONLY | |
| Date Approved FEB 8, 2002 | By <i>Christie O'Laughnessay</i> Title <i>Oil Prod. Analyst</i> |



**PRODUCERS CERTIFICATE OF COMPLIANCE AND
AUTHORIZATION TO TRANSPORT OIL FROM LEASE - FORM 8**
INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
SFN 5698 (2-92)

: Well File Number
11920
: _____
: NDIC CTB Number
11920

INSTRUCTIONS

The original and four copies of this form must be submitted to the OIL AND GAS DIVISION, 600 E.
Boulevard Avenue, Bismarck, ND 58505

| | | | | | | | | | | |
|-----------|-----------------------------|--------------------------|------|--------|-----------|------|--------|--------------------|--------|----------|
| WELL | 31-10 | CORPS OF ENGINEERS (Q/Q) | NWNE | (SEC.) | 10 (TWP.) | 153N | (RGE.) | 101W | COUNTY | MCKENZIE |
| PRODUCER: | Nance Petroleum Corporation | | | FIELD | BAKER | | POOL | RED RIVER DUFERROW | | |

ADDRESS CORRESPONDENCE TO: GARY L. EVERTZ, Nance Petroleum Corporation
550 N. 31ST STREET, SUITE 500, P. O. BOX 7168, BILLINGS, MT 59103

| | | | |
|-----------------------------|---|-----------------|----------------|
| Name of First Purchaser | AMOCO PRODUCTION COMPANY | % Purchased : | Date Effective |
| Principal Place of Business | 1670 Broadway, Ste 1104, Denver, CO 80201 | 100 | May 1, 2000 |
| Field Address | 1670 Broadway, Ste 1104, Denver, CO 80201 | | |
| Name of Transporter | BP AMOCO PRODUCTION COMPANY | % Transported : | Date Effective |
| Address | 1670 Broadway, Ste 1104, Denver, CO 80201 | 100 | May 1, 2000 |

The above named producer authorizes the above named purchaser to purchase the percentage of oil stated above which is produced from the lease designated above until further notice. The oil will be transported by the above named transporter.

| | | |
|---|-----------------|----------------|
| Other Transporters Transporting From This Lease | % Transported : | Date Effective |
| Other First Purchasers Purchasing From This Lease | % Purchased | Date Effective |

Remarks

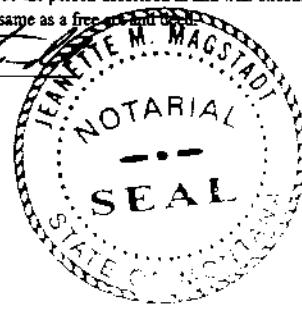
I certify that the above information is a true and correct report of the transporters and purchasers of oil produced from the above described property. This authorization will be valid until further notice to the transporters and purchasers named until cancelled by the OPERATOR.

Signature: Gary L. Evertz Title: Engineer Date: April 24, 2000

State of Montana
County of Yellowstone

On April 24, 2000, Gary L. Evertz, known to me to be the person described in and who executed the foregoing instrument, personally appeared before me and acknowledged that (s)he executed the same as a free and voluntary instrument.

Notary Public



My Commission Expires

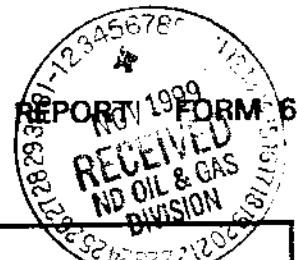
AUGUST 21, 2000



APPROVED BY: Sheri O'Goughnassy Date: JUN 19 2000
Oil Prod. Analyst



WELL COMPLETION OR RECOMPLETION
INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
SFN 2468 (2-92)



Industrial Commission of N.D.
Oil and Gas Division
600 East Boulevard
Bismarck, ND 58505

Designate Type of Completion

Oil Well Gas Well Other _____
 Work Over Deepened Plug Back

| | | |
|---|-------------------------------|-------------------|
| Operator Nance Petroleum Corporation | Phone Number (406)245-6248 | |
| Address P. O. Box 7163 | | |
| City Billings | State MT | Zip Code 59103 |

Well File No.

11920

Well Name and No.

Corp of Engineers 31-10

Spacing (Unit Description)

Docketed for 12-16-99

Field

Baker

Pool
Discovery
Duperow

Wildcat, Development, Extension

LOCATIONS (Show footages, quarter-quarter, section, township and range)

| | | | | | |
|--|-----------------|--------------------------------|-------------------------|---|---|
| At Surface NWNE Sec 10-T153N-R101W (660' FNL & 2304' FEL) | | | | | County McKenzie |
| At Top Prod. Interval, Reported Below NWNE Sec 10-T153N-R101W (844' FNL & 1909' FEL) | | | | | |
| At Total Depth NWNE Sec 10-T153N-R101W (841' FNL & 1926' FEL) | | | | | Welder's Verification No. |
| Date Spudded 6/20/86 | Date TD Reached | Drilling Contractor & Rig. No. | Elevation (KB) 1872' | Total Depth (MD & TVD) 13,480' | Plug Back TD (MD & TVD) (see back) 11,191' |
| Producing Interval(s), This Completion, Top, Bottom, Name (MD & TVD) Duperow 10,965-11,115' | | | | No. of DST's Run (see back) | Date Directional Survey Submitted |
| Type of Electric and Other Logs Run (See Instructions) | | | | Was Well Cored? <input type="checkbox"/> No <input type="checkbox"/> Yes - List intervals: | |

CASING RECORD (Report all strings set in well)

| Casing Size | Depth Set (MD) | Hole Size | Weight (Lbs./Ft.) | Sacks Cement | Top of Cement |
|---------------|----------------|-----------|-------------------|--------------|---------------|
| 9-5/8" | 2954 | | 36, 40# | 1220 | Surface |
| 5-1/2, 5-5/8" | 13480 | 8-3/4 | 17, 20, 23, 26 | 2932 | 5130' |

LINER RECORD

| Size | Top (MD) | Bottom (MD) | Sacks Cement | Size | Depth Set (MD) | Anchor Set (MD) | Packer Set (MD) |
|------|----------|-------------|--------------|--------|----------------|-----------------|-----------------|
| | | | | 2-7/8" | 11,174 | 6581 | |
| | | | | | | | |

PERFORATION RECORD

| Interval (MD) | Holes Per Ft. | Potential (O&W) | Purpose | Acid, Frac, Sqz, etc. | Amount & Kind of Material Used |
|---------------|---------------|-----------------|------------|-----------------------|--------------------------------|
| 10,965-969 | 4 | 0 | Production | Acid | 7000 gal. gelled 15% H |
| 11,100-11,115 | 4 | 0 | Production | Acid | |
| 13,255-330 | 4 | | Production | | Abandoned |

PRODUCTION

| Date of First Production Through Permanent Wellhead | | Producing Method (Flowing, gas lift, pumping - size & type of pump) | | | Well Status (Prod. or shut-in) | | |
|---|--------------|---|-------------------------|-------------|--------------------------------|---------------|---------------------------|
| 10/7/99 | | Pumping | | | Producing | | |
| Date of Test | Hours Tested | Choke Size | Production for Test | Oil (Bbls.) | Gas (Mcf.) | Water (Bbls.) | Oil Gravity - API (Corr.) |
| | 240 | -- | | 1040 | 873 | 2280 | 37.1 |
| Flowing Tubing Pressure | | Casing Pressure | Calculated 24 hour rate | Oil (Bbls.) | Gas (Mcf.) | Water (Bbls.) | Gas-Oil Ratio |
| -- | | -- | | 104 | 87.3 | 228 | 839 |
| Disposition of Oil & Gas (Purchaser & Transporter) | | | | | Test Witnessed By | | |
| Sold - Oil-FOTT, Gas-Bear Paw | | | | | Brian Boots | | |

List of Attachments/Comments

Wellbore schematic

GEOLOGICAL MARKERS

PLUG BACK INFORMATION

DRILL STEM TEST DATA

I hereby swear or affirm that the information herein provided is true, complete and correct as determined from all available records.

| | | | | | |
|-----------|--------------|-------|--------------------|------|---------|
| Signature | Randy Miller | Title | Operations Manager | Date | 11/3/99 |
|-----------|--------------|-------|--------------------|------|---------|

STATE OF Montana _____)

Notary
Seal

COUNTY OF Yellowstone

On November 3, 1999, Gary E. Evertz, known to me to be the person described in and who

executed the foregoing instrument, personally appeared before me and acknowledged that (S)he executed the same as a free act and deed.

My Commission Expires 6-28-2000

Notary Public Stephan D. Hart My Commission Expires 12/31/2024

INSTRUCTIONS

1. Within thirty (30) days after the completion of a well, or recompletion of a well in a different pool, the original and three copies of this report must be filed with the Industrial Commission of North Dakota, Oil and Gas Division.
 2. Immediately after the completion of a well in a pool or reservoir not then covered by an order of the commission, the original and three copies of this report must be filed with the Industrial Commission of North Dakota, Oil and Gas Division.
 3. The owner or operator shall file with the Oil and Gas Division two copies of all logs run and three copies of the following: drill stem test reports and charts, formation water analysis and noninterpretive lithologic logs or sample descriptions if compiled.

NANCE PETROLEUM CORPORATION

DIRECTIONAL WELL!!!!

| | | WELL: | CORPS OF ENGINEERS 31-10 | FIELD: | BAKER |
|-------------|----------------|------------------------|---|------------------|---|
| 2954' | | LOCATION: | NWNE SEC 10 153N 101W, MCKENZIE CO, ND SURF:660' FNL & 2304' FEL BHL:841' FNL & 1926' FEL | STATUS: | PUMPING OIL WELL |
| | | ACCTG NO.: | 60103 | ST FILE NO: | 11920 |
| | | ELEVATION: | GL - 1851' KB - 1872' | API #: | 33-053-02148 |
| | | SPUD DATE: | 6/20/86 | COMP DATE: | 11/24/86 |
| 4354' | | KOP | | | |
| 5130' | | CMT TOP | | | |
| 5145' | | MAX DEV 12.75 DEG | | | |
| 5777-783' H | H | CASING PATCH | | | |
| 6581' | <<< >>> | AC | | | |
| 6661' | \ / \ / | TIGHT CSG < 4 1/4" | | | |
| | | BLAST JTS 6643-6704' | | | |
| 7455' | | DEV BACK TO 1 DEG. | | | |
| | | TUBING & BHA | | | RODS & PUMP |
| 7980' |) o (| MSN | 216 JTS 2 7/8" L-80 TBG AC W/ 20M # - 6681' 2 JTS 2 7/8" L-80 TBG 3 - 3 11/16" BLAST JTS 6643' - 6704' | 118 7/8" (2950.) | 1" X 8', 6', 4' & 2' PONY RODS 96 - 1" NOR97 PLAIN (2400') 52 - 7/8" NOR97 RODS (1300') 55-7/8" NOR97 4 STEALTH/ROD (1375') |
| 8933-37' | | DV COLLAR | 42 JTS 2 7/8" L-80 TBG MSN @ 7980' 105 JTS 2 7/8" L-80 TBG PINNED COLLAR @ 11174' | 86 3/4" (2150") | 11-7/8" NOR97 3 PAD/ROD (275') 70-3/4" NOR97 4 STEALTH/ROD (1750') 16-3/4" NOR97 DBLPLUS (400') 18-1" CLASS D 4 PAD/ROD (450') 2 1/2" x 1 3/4" x 24.5' RHEM PAMPA |
| 10965-969' | = | DUPEROW | | | |
| 11100-115' | = | PERFS | | | |
| 11174' | | EOT | | | |
| 11191' | | TOP OF CMT PLUG | SALT | DEPTH | 5 1/2" SET @ |
| 11498' | >> >> | MODEL D PKR | DUNHAM | 6654-6710 | 20# L-80 21 |
| 11600-612' | \ / \ / | TIGHT CSG FISH-MILL | PINE | 7022-7070 | 5 5/8" 26# SS95 57 |
| 11840-642' | * | SQZ PERFS | CHARLES | 8252-8950 | 20# L-80 3855 |
| | | | PRAIRIE | 11594-11790 | 17# L-80 6439 |
| | | | | | 23# SS95 6944 |
| | | | | | 17# L-80 8046 |
| | | | | | 23# SS95 8877 |
| | | | | | 20# L-80 11389 |
| | | | | | 5 5/8" 26# SS95 11703 |
| | | | | | 20# L-80 13344 |
| 13100' | | | | | |
| 13120-122' | * | SQZ PERFS | | | SL - 144" SPM - 6 |
| | | MODEL R-3 PKR | | | WELLHEAD: TBGHD CIW,F,1" 3000 PSI X 7 1/18" |
| 13243' | <<< >>> | & 5 JTS TBG | | | PUMP UNIT: LUFKIN MII 640-365-144 W/ AJAX E-42 ENG,PU SH-33", ENG SH-14". |
| 13255-265' | = | RED RIVER B | | | GR=28.6:1. |
| 13296-303' | = | = \ | | | PERFS: DUPEROW 10965' - 969', 11100' - 115', 4 SPF |
| 13308-312' | = | = > RED RIVER C | | | ABANDONED BELOW CEMENT PLUG |
| 13322-330' | = | = / | | | RED RIVER "B" 13255-265', 4 SPF. |
| 13344' | <<< * * * >>> | CMT RET | | | RED RIVER "C" 13296-303', 13308-312', 13322-330' 4 SPF. |
| 13400-402' | =***** | SQZ | | | |
| 13440-442' | =***** | PERFS | | | |
| 13438' | ***** | FLOAT COLLAR | | | |
| 13480' | ***** | 5 1/2" | | | |
| | | | PREPARED BY: GARY L EVERETZ | | DATE: 10/06/99 |
| | | | | | CORP3110.XLS |

DIRECTIONAL WELL TMD - 13480', KOP @ 4354', MAX DEV. 12.75 DEG @ 5145'. BACK TO 1 DEG @ 7455'.



SUNDRY NOTICES AND REPORTS ON WELLS - FORM 4
INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
SFN 5749 (2-92)

Well File Number
11920

PLEASE READ INSTRUCTIONS ON BACK OF FORM

Notice of Intent

Approximate Start Date _____

Report of Work Done

Date Work Completed _____

- 1999
 Drilling Prognosis
 Redrilling or Repair
 Casing or Liner
 Plug Well
 Supplemental History
 Temporarily Abandon

- Spill Report
 Shooting
 Acidizing
 Fracture Treatment
 Change Producing Method
 Reclamation
 Other _____

Well Name and Number

Corps of Engineers 31-10

| | | | | |
|--------------------------------|-------------------|---------------|--------------------|---------------|
| Footages 660' FNL 2305' FEL | Qtr-Qtr NW NE | Section 10 | Township 153N | Range 10TN |
| Field Eaker | Pool Red River | | County McKenzie | |

| 24 HOUR PRODUCTION RATE | |
|-------------------------|-------|
| BEFORE | AFTER |
| Oil | Oil |
| Water | Water |
| Gas | Gas |

Name of Contractor

Address

City

State

Zip Code

DETAILS OF WORK

Nance Petroleum request permission to permanently abandon the Red River and production test the Duperow. A previous workover in May and June 1999 attempted to stimulate the Red River, but failed due to collapsed casing in the Prairie Salt and Dunham formations. Communication was lost with the producing zone during the workover due to salt plugs in the various fish left in the well. See the attached wellbore schematic. Approximately \$156,000 was spent trying to re-establish production from the Red River. The well has salted off again and is not productive. We propose to spot 30 sx Class 'G' cement on top of the Model 'D' packer to permanently abandon the Red River. Due to the tight casing in the Dunham, 6661', we can not get a retainer in the well, and with out communication with the perfs, we can not get a squeeze. We request a verbal approval as we intend to start this work this week due to lease expirations

| | | | |
|---|---|-------------------------------|--|
| Company NANCE PETROLEUM CORPORATION | | | |
| Address P. O. Box 7168 | | | |
| City Billings | State MT | Zip Code 59103-7168 | |
| By <i>Gary S. Nance</i> | Date 9/21/99 | | |
| Title Operations Manager | Telephone Number 406-245-6248 | | |

406-245-9106 Fax

| | |
|------------------------------------|--|
| FOR OFFICE USE ONLY | |
| <input type="checkbox"/> Received | <input checked="" type="checkbox"/> Approved |
| Date 9-24-99 | |
| By <i>Glenn L. Wollan</i> | |
| Title ORIGINAL SIGNED BY | |

GLENN L. WOLLAN
RECLAMATION SUPERVISOR

NANCE PETROLEUM CORPORATION

CORP OF ENGINEERS 31-10

NWNE Sec 10 T153N R101W

Baker Field – McKenzie County, ND

GL - 1851' KB - 1872' (21' KB)

ACCOUNTING CODE # 60103

WORKOVER PROCEDURE TO RECOMPLETE TO DUPEROW

WELL BORE DIAGRAM ATTACHED

AFE # 87

Current Condition

Red River shut-in unable to produce due to salt from casing split at Prairie Salt.

Proposed Procedure

1. MI RU rig. Unseat pump and hot oil rods to remove paraffin. POOH with rods and pump. ND wellhead and NU BOPE. POOH with tubing. Pressure casing w/ 1000 psi to confirm perfs salted off.
2. TIH w/ tubing open ended. Hydrotest tubing to 7000 psi. Tag Model D packer and spot end of tubing right above packer. Spot balanced plug of 30 sx Class 'G' cement w/ silica flour. POOH to 11200' and reverse out. POOH. SION.
3. PT casing and cement plug to 1000 psi.
4. RU WL truck and **perforate Duperow** using a 3 3/8" expendable carrier gun loaded w/ the largest shot possible, phased 90°:

| <u>FDC/CNL depth, 8/18/86</u> | <u>CBL depth</u> |
|-------------------------------|-------------------|
| 10,965' – 10969' 4' | 10965' – 10969' |
| 11,100' – 11,115' 15' | 11,100' – 11,115' |

5. TIH w/ SN, 143 jts of tubing, full bore packer and rest of tubing. Set EOT @ 10925'±, and packer @ 6610'±. Swab test perfs.
6. RU pump truck. **Acidize Duperow perfs with 2000 gal. 15% HCl using 1.1 Sp. Gr. balls for diversion.** Flow and swab back immediately until well is cleaned up. POOH with tubing.
8. TIH w/ pinned collar, 3 jts 2 7/8" tbg, Mech SN, 148 jts 2 7/8" tbg, AC and rest of tbg. Set EOT @ 11206'±, SN @ 11115' AC @ 6610'±. Run rods, laying down 225' or 9 – plain 7/8" rods. Pump size and rod string design to be determined from swab rates. Put well through production facility.
9. RD & release rig.

GLE

9/20/99

CORP3110WO87A.doc

NANCE PETROLEUM CORPORATION

DIRECTIONAL WELL!!!!

WELL: CORPS OF ENGINEERS 31-10 FIELD: BAKER

LOCATION: NWNE SEC 10 153N 101W, MCKENZIE CO, ND
SURF:660' FNL & 2304' FEL
BHL:841' FNL & 1926' FEL STATUS: PUMPING OIL WELL

ACCTG NO.: 60103 ST FILE NO: 11920

API#:33-053-02148

COMP DATE: 11/24/86

ELEVATION: GL - 1851' KB - 1872'

SPUD DATE: 6/20/86

2954' 9 5/8" KOP
4354' CMT TOP
5130' MAX DEV 12.75 DEG
5145' CASING PATCH

ROTARY TD: 13480' PBTD: 13344'

5777-783' H H SURF CSG: 9 5/8" 36,40# K-55 SET @ 2954'. CMT W/ 1220 SX.

6609' <<< >>> AC PROD CSG: 5 1/2" 17,20,26# L-80,SS95 SET @ 13344'.CMT W/ 1850 SX "G",

6661' / / < 4 1/4" ID 1082 SX LITE.

7455' DEV BACK TO 1 DEG.

TUBING & BHA

RODS & PUMP

217 JTS 2 7/8" L-80 TBG
AC W/ 20M # - 6609'

1" X 8", 6", 4" & 2" PONY RODS
96 - 1" NOR97 PLAIN (2400')

156 JTS 2 7/8" L-80 TBG

- 52 - 7/8" NOR97 RODS (1300')

MSN W/ 20' X 1 1/4"

150 7/8" (3750') - 55-7/8" NOR97 4 STELTH/ROD (1375')

DIP TUBE - 11358'

- 43-7/8" NOR97 3 PAD/ROD (1075')

4' PERFED SUB

- 70-3/4" NOR97 4 STEALTH/ROD (1750')

2 JTS 2 7/8" L-80 TBG

189 3/4" (4725') - 119-3/4" NOR97 DBLPLUS (2975')

BULL PLUG - 11419'

18-1" CLASS D 4 PAD/ROD (450')

2 1/2" x 1 1/4" x 24.5' RHBM PAMPA

8933-37 DV COLLAR MECH SN-DIPTUBE
4' PERFED SUB

11358') o o (BULL PLUG

11419' [MODEL D PKR

5 1/2" SET #

SALT DEPTH

20# L-80 21

DUNHAM 6654-6710

5 5/8" 26# SS95 57

PINE 7022-7070

20# L-80 3855

FISH-MILL 8252-8950

17# L-80 6439

CHARLES 11594-11790

23# SS95 6944

PRAIRIE

17# L-80 8046

NOTE: FISH OR PERFS ARE SALTED OFF, AND WELL WILL NOT PRODUCE.
THERE IS NO COMMUNICATION WITH RED RIVER PERFS.

13100' 13120-122' * SQZ PERFS SL - 144" SPM - 6

13243' 13255-265' <<< | >>> MODEL R-3 PKR & 5 JTS TBG

13296-303' = = RED RIVER B

13308-312' = = > RED RIVER C

13322-330' = = / WELLHEAD: TBGHD CIW,F,1" 3000 PSI X 7 1/16"
PUMP UNIT: LUFKIN MII 640-365-144 W/ AJAX E-42 ENG,PU SH-33", ENG SH-14".
GR=28.6:1.

13348' 13400-402' <<< | * * * | >>> CMT RET SQZ PERFS: RED RIVER "B" 13255-265', 4 SPF.

13440-442' = * * * * * * * = SQZ PERFS: RED RIVER "C" 13296-303', 13308-312', 13322-330' 4 SPF.

13480' 13488' | * * * * * * * | FLOAT COLLAR 5 1/2"

PREPARED BY: GARY L EVERETZ DATE: 06/25/89

CORP3110.XLS

DIRECTIONAL WELL TMD - 13480', KOP @ 4354', MAX DEV. 12.75 DEG @ 5145'. BACK TO 1 DEG @ 7455'.



SUNDRY NOTICES AND REPORTS ON WELLS - FORM 4
INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
SFN 5749 (2-92)

| |
|---------------------------|
| Well File Number 11920 |
|---------------------------|

PLEASE READ INSTRUCTIONS ON BACK OF FORM

 Notice of Intent

Approximate Start Date _____

 Report of Work Done

Date Work Completed _____

- Drilling Prognosis
- Redrilling or Repair
- Casing or Liner
- Plug Well
- Supplemental History
- Temporarily Abandon

 Spill Report Shooting Acidizing Fracture Treatment Change Producing Method Reclamation Other _____

Well Name and Number

Corps of Engineers 31-10

Footage

660' FNL 2305' FEL

Qtr-Qtr

NW NE

Section

10

Township

153N

Range

101W

Field

Baker

Pool

Red River

County

McKenzie

24 HOUR PRODUCTION RATE

| BEFORE | AFTER |
|--------|-------|
| Oil | Oil |
| Water | Water |
| Gas | Gas |

Name of Contractor

Address

City

State

Zip Code

DETAILS OF WORK

Nance Petroleum request permission to permanently abandon the Red River and production test the Duperow. A previous workover in May and June 1999 attempted to stimulate the Red River, but failed due to collapsed casing in the Prairie Salt and Dunham formations. Communication was lost with the producing zone during the workover due to salt plugs in the various fish left in the well. See the attached wellbore schematic. Approximately \$156,000 was spent trying to re-establish production from the Red River. The well has salted off again and is not productive. We propose to spot 30 sx Class 'G' cement on top of the Model 'D' packer to permanently abandon the Red River. Due to the tight casing in the Dunham, 6661', we can not get a retainer in the well, and with out communication with the perfs, we can not get a squeeze. We request a verbal approval as we intend to start this work this week due to lease expirations

Company

NANCE PETROLEUM CORPORATION

Address

P. O. Box 7168

City

Billings

State

MT

Zip Code

59103-7168

By

Date

9/21/99

Title

Operations Manager

Telephone Number

406-245-6248

FOR OFFICE USE ONLY

 Received Approved

Date

9-22-99

By

ORIGINAL SIGNED BY

GLENN L. WOLLAN

RECLAMATION SUPERVISOR

NANCE PETROLEUM CORPORATION**CORP OF ENGINEERS 31-10**

NWNE Sec 10 T153N R101W

Baker Field – McKenzie County, ND

GL - 1851' KB - 1872' (21' KB)

ACCOUNTING CODE # 60103

WORKOVER PROCEDURE TO RECOMPLETE TO DUPEROW**WELL BORE DIAGRAM ATTACHED****AFE # 87****Current Condition**

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3. PT casing and cement plug to 1000 psi.
4. RU WL truck and perforate Duperow using a 3 3/8" expendable carrier gun loaded w/ the largest shot possible, phased 90°:

FDC/CNL depth, 8/18/86

| | |
|-------------------|-----|
| 10,965' – 10969' | 4' |
| 11,100' – 11,115' | 15' |

CBL depth

| |
|-------------------|
| 10965' – 10969' |
| 11,100' – 11,115' |

5. TIH w/ SN, 143 jts of tubing, full bore packer and rest of tubing. Set EOT @ 10925'±, and packer @ 6610'±. Swab test perfs.
6. RU pump truck. Acidize Duperow perfs with 2000 gal. 15% HCl using 1.1 Sp. Gr. balls for diversion. Flow and swab back immediately until well is cleaned up. POOH with tubing.
7. TIH w/ pinned collar, 3 jts 2 7/8" tbg, Mech SN, 148 jts 2 7/8" tbg, AC and rest of tbg. Set EOT @ 11206±, SN @ 11115'AC @ 6610'±. Run rods, laying down 225' or 9 – plain 7/8" rods. Pump size and rod string design to be determined from swab rates. Put well through production facility.
9. RD & release rig.

NANCE PETROLEUM CORPORATION

| DIRECTIONAL WELL!!!! | | | | WELL: | CORPS OF ENGINEERS 31-10 | FIELD: BAKER |
|----------------------|-------|-----------|----------------------------------|---|---|--|
| 2954' | | | 9 5/8" | LOCATION: | NWNE SEC 10 153N 101W, MCKENZIE CO, ND SURF:660' FNL & 2304' FEL BHL:641' FNL & 1926' FEL | STATUS: PUMPING OIL WELL |
| | | | | ACCTG NO.: | 60103 | |
| | | | | ELEVATION: | GL - 1851' KB - 1872' | ST FILE NO: 11920 API #: 33-053-02148 |
| | | | | SPUD DATE: | 8/20/88 | COMP DATE: 11/24/88 |
| 4354' | | | KOP | | | |
| 5130' | | | CMT TOP | ROTARY TD: | 13480' | PBTG: 13344' |
| 5145' | | | MAX DEV 12.75 DEG | | | |
| 5777-783' H | <<< | >>> | CASING PATCH | SURF CSG: | 9 5/8" 36,40# K-55 SET @ 2954'. CMT W/ 1220 SX. | |
| 6609' | <<< | >>> | AC | PROD CSG: | 5 1/2" 17,20,26# L-80,SS95 SET @ 13344'. CMT W/ 1850 SX "G". | |
| 6681' | / | / | TIGHT CSG! < 4 1/4" ID | | 1082 SX LITE. | |
| 7455' | | | DEV BACK TO 1 DEG. | | | |
| | | | | TUBING & BHA | | RODS & PUMP |
| | | | | 217 JTS 2 7/8" L-80 TBG | | 1" X 8', 4' & 2' PONY RODS |
| | | | | AC W/ 20M # - 6609' | | 96 - 1" NOR97 PLAIN (2400') |
| | | | | 156 JTS 2 7/8" L-80 TBG | | 52 - 7/8" NOR97 RODS (1300') |
| | | | | MSN W/ 20" X 1 1/4" | 150 7/8" (3750") | 55-7/8" NOR97 4 STEALTH/ROD (1375') |
| | | | DV COLLAR | DIP TUBE - 11358" | | 43-7/8" NOR97 3 PAD/ROD (1075') |
| | | | | 4" PERFED SUB | | 70-3/4" NOR97 4 STEALTH/ROD (1750') |
| | | | | 2 JTS 2 7/8" L-80 TBG | 188 3/4" (4725) | 119-3/4" NOR97 DBLPLUS (2875') |
| | | | | BULL PLUG - 11419" | | 18-1" CLASS D 4 PAD/ROD (450') |
| | | | | | | 2 1/2" X 1 1/4" x 24.5' RHBM PAMPA |
| 11358' |) |) | MECH SN-DIPTUBE 4" PERFED SUB | | | |
| 11419' | | | BULL PLUG | | | |
| 11498' | >>> | >>> | MODEL D PKR | | | |
| | | | | SALT | DEPTH | 3 1/2" |
| | | | | DUNHAM | 6654-8710 | 20# L-80 |
| 11600-612' | | | TIGHT CSG | PINE | 7022-7070 | 55# 26# SS95 |
| | | | FISH-MILL | CHARLES | 8252-8950 | 20# L-80 |
| 11840-842' | | | SQZ PERFS | PRAIRIE | 11594-11790 | 17# L-80 |
| | | | | | | 23# SS95 |
| | | | | | | 20# L-80 |
| | | | | | | 55# 26# SS95 |
| | | | | | | 20# L-80 |
| 13100' | | | SQZ PERFS | SL - 144" SPM - 6 | | 17# L-80 |
| 13120-122' | | | MODEL R-3 PKR | | | 23# SS95 |
| 13243' | <<< | >>> | 8 & 5 JTS TBG | | | 20# L-80 |
| 13255-265' | = | = | RED RIVER B | | | 11389 |
| 13298-303' | = | = | | WELLHEAD: TBGHD CIW,F,1" 3000 PSI X 7 1/16" | | |
| 13308-312' | = | = > | RED RIVER C | | | |
| 13322-330' | = | = / | | PUMP UNIT: LUFKIN MII 840-365-144 W/ AJAX E-42 ENG.PU SH-33", ENG SH-14". | | |
| | | | | GR=28.6:1. | | |
| 13344' | <<< | * * * >>> | CMT RET | | | |
| 13400-402' | ***** | ***** | SQZ | PERFS: RED RIVER "B" 13255-265, 4 SPF. | | |
| 13440-442' | ***** | ***** | PERFS | RED RIVER "C" 13298-303, 13308-312, 13322-330 4 SPF. | | |
| 13438' | ***** | ***** | FLOAT COLLAR | | | |
| 13480' | ***** | ***** | 5 1/2" | PREPARED BY: GARY L EVERTZ | | DATE: 08/25/99 |
| | | | | | | CORP3110.XLS |

DIRECTIONAL WELL TMD - 13480', KOP @ 4364', MAX DEV. 12.75 DEG @ 5145'. BACK TO 1 DEG @ 7455'.

NORTH DAKOTA INDUSTRIAL CO. MISSION

OIL AND GAS DIVISION N 11920

Lynn D. Helms
DIRECTOR

<http://explorer.ndic.state.nd.us>

Bruce E. Hicks
ASSISTANT DIRECTOR

August 2, 1999

Jan Magstadt
Nance Petroleum Corp.
P.O. Box 7168
Billings, MT 59103-7168

RE: PRINCIPAL NAME CHANGE FROM PANTERRA PETROLEUM TO
NANCE PETROLEUM CORPORATION
\$100,000 Bond; Bond No. B01936
Underwriters Indemnity Co.

Dear Jan:

This office is in receipt of your request to change the principal name of Panterra Petroleum to Nance Petroleum Corporation.

This office is also in receipt of the rider for the above-captioned bond accepting liability of the five (5) wells covered by bond no. B01314.

This letter will verify the principal name change from Panterra Petroleum to Nance Petroleum Corporation, the transfer of the five (5) wells from bond no. B01314 to bond no. B01936 and termination of Nance Petroleum Corp. \$50,000 Bond; Bond No. B01314, Underwriters Indemnity Co. effective this date.

Please feel free to contact this office if you should have any questions.

Sincerely,

Marge

Marge Rixen
Legal Assistant

/mr

cc: Underwriters Indemnity Co.
8 Greenway Plaza, Ste. 400
Houston, TX 77046



PRODUCERS CERTIFICATE OF COMPLIANCE AND
AUTHORIZATION TO TRANSPORT OIL FROM LEASE **FORM 8**
INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
SFN 5698 (2-92)



Well File Number : 11920
NDIC CTB Number : 11920

INSTRUCTIONS

The original and four copies of this form must be submitted to the OIL AND GAS DIVISION, 600 E.
Boulevard Avenue, Bismarck, ND 58505

| | | | | | | |
|-----------|-----------------------------------|----------------|--------------------------|---------------------|----------------|-----------------------|
| WELL | 31-10 CORPS OF ENGINEERS (Q/Q) | NWNE (SEC.) | 10 (TWP.) 153N (RGE.) | 101W FIELD BAKER | COUNTY POOL | MCKENZIE RED RIVER |
| PRODUCER: | Nance Petroleum Corporation | | | | | |

ADDRESS CORRESPONDENCE TO: GARY L. EVERTZ, Nance Petroleum Corporation
550 N. 31ST STREET, SUITE 500, P. O. BOX 7168, BILLINGS, MT 59103

| | | | |
|--------------------------------|---|-----------------|----------------|
| Name of First Purchaser | EOTT ENERGY OPERATING LIMITED PARTNERSH | % Purchased : | Date Effective |
| Principal Place of Business | P O BOX 4666, HOUSTON, TX 77210-4666 | : | June 1, 1999 |
| Field Address | P O BOX 4666, HOUSTON, TX 77210-4666 | : | |
| Name of Transporter Address | EOTT ENERGY OPERATING LIMITED PARTNERSH P O BOX 4666, HOUSTON, TX 77210-4666 | % Transported : | Date Effective |

The above named producer authorizes the above named purchaser to purchase the percentage of oil stated above which is produced from the lease designated above until further notice. The oil will be transported by the above named transporter.

| | | |
|---|-----------------|----------------|
| Other Transporters Transporting From This Lease | % Transported : | Date Effective |
| Other First Purchasers Purchasing From This Lease | % Purchased | Date Effective |

Remarks
Name change Panterra Petroleum to NANCE PETROLEUM CORPORATION

I certify that the above information is a true and correct report of the transporters and purchasers of oil produced from the above described property. This authorization will be valid until further notice to the transporters and purchasers named until cancelled by the OPERATOR.

Signature

Title
Engineer

Date

June 30, 1999

State of Montana
County of Yellowstone

On June 30, 1999 Gary L. Evertz, known to me to be the person described in and who executed the foregoing instrument, personally appeared before me and acknowledged that he executed the same as a free act and deed.

Notary Public

My Commission Expires

AUGUST 21, 2000

APPROVED BY:

Date:

AUG 2 1999



SUNDRY NOTICES AND REPORTS ON WELLS - FORM 4
INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
SFN 5749 (2-92)

PLEASE READ INSTRUCTIONS ON BACK OF FORM

Notice of Intent
Approximate Start Date _____

Report of Work Done
Date Work Completed 5/28/99

- | | |
|---|--|
| <input type="checkbox"/> Drilling Prognosis | <input type="checkbox"/> Spill Report |
| <input type="checkbox"/> Redrilling or Repair | <input type="checkbox"/> Shooting |
| <input type="checkbox"/> Casing or Liner | <input type="checkbox"/> Acidizing |
| <input type="checkbox"/> Plug Well | <input type="checkbox"/> Fracture Treatment |
| <input type="checkbox"/> Supplemental History | <input type="checkbox"/> Change Producing Method |
| <input type="checkbox"/> Temporarily Abandon | <input type="checkbox"/> Reclamation |
| <input type="checkbox"/> Other _____ | |

Well File Number
11920
RECEIVED
NO OIL & GAS
DIVISION

5/6/18 1920 21 22 23 24 25 26 27 28 29 30
JUN 1999
23456789101112131415161718192021222324252627282920
23456789101112131415161718192021222324252627282920

| Well Name and Number | | | | |
|--------------------------|---------|---------|----------|-------|
| Corps of Engineers 31-10 | | | | |
| Footages | Qtr-Qtr | Section | Township | Range |
| 660' FNL 2305' FEL | NW NE | 10 | 153N | 10 TW |

| | | | |
|-------|-----------|----------|--|
| Field | Pool | County | |
| Eaker | Red River | McKenzie | |

| 24 HOUR PRODUCTION RATE | |
|-------------------------|-------|
| BEFORE | AFTER |
| Oil | Oil |
| 24 | |
| Water | Water |
| 6 | |
| Gas | Gas |
| 332 | |

Name of Contractor

| | | | |
|---------|------|-------|----------|
| Address | City | State | Zip Code |
|---------|------|-------|----------|

DETAILS OF WORK

5/4/99 PULL RODS & PUMP. SEAL ASSEMBLY WOULD NOT RELEASE. CHEM CUT TBG @ 10000'. SWEDGE CSG W/ 3.875", 4" & 4 1/4". RUN O/S & GOT HOLD OF FISH @ 10000' & POOH. THW W/ REDRESSED SEAL ASSY & COULD NOT LATCH PKR. POOH. MULE SHOE WAS SCARRED UP. RUN 161 JTS TP, PKR & TBG SET PKR @ 6570' ABOVE TIGHT CSG. ACDZ RED RIVER W/ 5000 GAL 15 % GELLED HCL 6 BPM & 3934 PSI. VAC IN 1 MIN. SWAB TO SN W/ NO ENTRY AFTER GETTING A LOT OF SCALE SOLIDS. FILL HOLE W/ FW BUT COULDN'T PUMP @ 7000 PSI. POOH & PU 5 JTS 2" TP & STING THRU PKR & SET ON MILL. SPOT 1000 GAL 15 % HCL & PUMP @ 4.4 BPM & 4500 PSI. ISIP 2400 W/ LITTLE BLEED OFF. SWAB MORE SOLIDS & SOME FREE SALT. SWAB DOWN. ACDZ W/ 2500 GAL 28% HCL W/ N2 FOAM 4 BPM & 6888 PSI. FLOW & SWAB BACK. PULL TBG & RUN PROD BHA W/ EOT @ 11419', SN @ 11358'. AC @ 6609'. RUN 1 1/2" PUMP. RD RIG 5/29/99.

| | | | |
|---------|--------------------|-------|---------------------------|
| Company | Panterra Petroleum | | |
| Address | P. O. Box 7168 | | |
| City | Billings | State | MT Zip Code 59103-7168 |
| By | Barry E. Nitz | | |
| Title | Operations Manager | | |

406-245-9106 Fax

| | |
|--|-----------------------------------|
| FOR OFFICE USE ONLY | |
| <input checked="" type="checkbox"/> Received | <input type="checkbox"/> Approved |
| Date <u>JUN 21 1999</u> | |
| By <u>Reed W. Deane</u> | |
| Title <u>Assistant Director</u> | |



SUNDY NOTICES AND REPORTS ON WELLS - FORM 4
INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
SFN 5749 (2-92)

Well File Number
11920

PLEASE READ INSTRUCTIONS ON BACK OF FORM

Notice of Intent

Approximate Start Date 5/4/99

Report of Work Done

Date Work Completed 5/4/99

- Drilling Prognosis
- Redrilling or Repair
- Casing or Liner
- Plug Well
- Supplemental History
- Temporarily Abandon

Spill Report

- Shooting
- Acidizing
- Fracture Treatment
- Change Producing Method
- Reclamation
- Other _____

Well Name and Number

Corps of Engineers 31-10

Footages

660' FNL 2305' FEL

Qtr-Qtr
NW NE

Section
10

Township
153N

Range
10TW

Field

Baker

Pool

Red River

County

McKenzie

24 HOUR PRODUCTION RATE

| BEFORE | AFTER |
|--------|-------|
| Oil | Oil |
| Water | Water |
| Gas | Gas |

Name of Contractor

Address

City

State

Zip Code

DETAILS OF WORK

Panterra Petroleum requests permission to acid stimulate the Red River perfs. See the attached procedure and wellbore schematic.

Company

Panterra Petroleum

Address

P. O. Box 7168

City

Billings

State

Zip Code

MT 59103-7168

By

Bonny Evertz

Date

Title

Operations Manager

Telephone Number

406-245-6248

406-245-9106 Fax

FOR OFFICE USE ONLY

Received

Approved

Date

MAY 6 1999

By

F. E. Willmon

Title

Assistant Director

PANTERRA PETROLEUM

CORP OF ENGINEERS 31-10

NWNE Sec 10 T153N R101W

Baker Field – McKenzie County, Nd

GL - 1851' KB - 1872' (21' KB)

ACCOUNTING CODE # 60103

WORKOVER PROCEDURE TO DO FOAM ACID JOB OF RED RIVER

WELL BORE DIAGRAM ATTACHED

AFE # 31

Current Condition

Pumping 24 BOPD, 332 MCFD and 6 BWPD.

Proposed Procedure

1. MI RU rig. Unseat pump and hot oil rods to remove paraffin. POOH with rods and pump. ND wellhead and NU BOPE. Unsting from Baker Model D packer. POOH with tubing. LD both perfed subs and bull plug.
2. Redress seal assembly and TIH w/ tubing. Hydrotest tubing to 7000 psi. Sting into Model D packer and PT csg to 500 psi.
3. RU pump truck. Run And stake down steel flowline to test tank. **Acidize Red River "B" and "C" perfs with 600 gal. foamed FW , 2500 gal. gelled 28% HCl foamed w/ Nitrogen then 600 gal. foamed FW overdisplacement.** Flow and swab back immediately until well is cleaned up. POOH with tubing.
4. Run same production BHA. Run rods and pump. Put well through production facility.
5. RD & release rig.

GLE

4/29/99

CORP3110WO31.doc

PANTERRA PETROLEUM

| | | | WELL: | CORPS OF ENGINEERS 31-10 | FIELD: | BAKER |
|------------|-------------------|---|--|---|------------------------------------|------------------|
| 2954' | | 9 5/8" | LOCATION: | NWNE SEC 10 153N 101W, MCKENZIE CO, ND SURF:660' FNL & 2304' FEL BHL:841' FNL & 1926' FEL | STATUS: | FLOWING OIL WELL |
| | | | ACCTG NO.: | 618 | ST FILE NO: | 11920 |
| | | | ELEVATION: | GL - 1851' KB - 1872' | API #: | 33-053-02148 |
| | | | SPUD DATE: | 6/20/86 | COMP DATE: | 11/24/86 |
| 5130' | | CMT TOP | ROTARY TD: | 13480' | PBTD: | 13344' |
| 5777-783' | H | CASING PATCH | SURF CSG: | 9 5/8" 36,40# K-55 SET @ 2954'. CMT W/ 1220 SX. | | |
| 6661' | / | TIGHT CSG! < 4 3/8" ID | PROD CSG: | 5 1/2" 17,20,26# L-80,SS95 SET @ 13344'.CMT W/ 1850 SX "G", 1082 SX LITE. | | |
| | | | | | | |
| | | | TUBING & BHA | | RODS & PUMP | |
| | | | 328 JTS 2 7/8" L-80 TBG | | 1" X 8", 6", & 4' PONY RODS | |
| | | | MECH SN W/ 12" X 1 1/4" DIP TUBE-10015 | | 96 - 1" NOR97 PLAIN (2400') | |
| | | | 4" PERFED SUB | | 56 - 7/8" NOR97 RODS (1400') | |
| | | | 48 JTS 2 7/8" L-80 TBG | | 28-7/8" NOR97 6 PAD/ROD (700') | |
| 8933-37' | | DV COLLAR | BULL PLUG | | 15-7/8" NOR97 3 PAD/ROD (375') | |
| | | | 4" PERFED SUB | | 63-3/4" NOR97 3 PAD/ROD (1575') | |
| | | | BAKER 40-26 MOD E-22 SEAL ASSY | | 68-3/4" NOR97 PLAIN (1700') | |
| 10015' |) o l (| MECH SN-DIPTUBE 4" PERFED SUB | BAKER MOD D PERM. PKR. - 11498' | | 56-3/4" NOR97 4 PAD/ROD (1400') | |
| | | | | | 16-1" CLASS D 4 PAD/ROD (400') | |
| | | | | | 2 1/2" x 1 1/4" x 24" RHBM 2 STAGE | |
| | | | | | | |
| | | | BULL PLUG | | | |
| | | | PERFED SUB | | | |
| 11498' | >>> >>> | MODEL D PKR | SALT | DEPTH | 5 1/2" | SET @ |
| | | | DUNHAM | 6654-6710 | 20# L-80 | 21 |
| 11600-612' | - / / \ - | TIGHT CSG | PINE | 7022-7070 | 26# SS95 | 57 |
| | | FISH-MILL | CHARLES | 8252-8950 | 20# L-80 | 3855 |
| 11840-842' | * | SQZ PERFS | PRAIRIE | 11594-11790 | 17# L-80 | 6439 |
| | | | | | 23# SS95 | 6944 |
| | | | | | 17# L-80 | 8046 |
| | | | | | 23# SS95 | 8877 |
| | | | | | 20# L-80 | 11389 |
| | | | | | 26# SS95 | 11703 |
| | | | | | 20# L-80 | 13344 |
| | | | | | | |
| 13100' | | | SL - 144" SPM - 5.5 | | | |
| 13120-122' | * | | | | | |
| 13243' | <<< >>> | SQZ PERFS MODEL R-3 PKR & 5 JTS TBG | | | | |
| 13255-265' | = | = | RED RIVER B | | | |
| 13296-303' | = | = \ | | | | |
| 13308-312' | = | = > | RED RIVER C | | | |
| 13322-330' | = | = / | | | | |
| 13344' | <<< * * * >>> | CMT RET | WELLHEAD: | TBGHD CIW,F,1" 3000 PSI X 7 1/16" | | |
| 13400-402' | * * * * * * * * = | SOZ | PUMP UNIT: | LUFKIN MII 640-365-144 W/ AJAX E-42 ENG,PU SH-33", ENG SH-14". GR=28.6:1. | | |
| 13440-442' | = * * * * * * * = | PERFS | PERFS: | RED RIVER "B" 13255-265', 4 SPF. | | |
| 13438' | * * * * * * * * | FLOAT COLLAR | | RED RIVER "C" 13296-303', 13308-312', 13322-330' 4 SPF. | | |
| 13480' | * * * * * * * * | 5 1/2" | PREPARED BY: | GARY L EVERETZ | DATE: | 04/13/99 |
| | | | | | | CORP3110.XLS |

DIRECTIONAL WELL TMD - 13480'



SUNDY NOTICES AND REPORTS ON WELLS - FORM 4
INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
SFN 5749 (2-92)

Well File Number
11920

PLEASE READ INSTRUCTIONS ON BACK OF FORM

Notice of Intent

Approximate Start Date 5/4/99

Report of Work Done

Date Work Completed [REDACTED]

- | | |
|---|--|
| <input type="checkbox"/> Drilling Prognosis | <input type="checkbox"/> Spill Report |
| <input type="checkbox"/> Redrilling or Repair | <input type="checkbox"/> Shooting |
| <input type="checkbox"/> Casing or Liner | <input checked="" type="checkbox"/> Acidizing |
| <input type="checkbox"/> Plug Well | <input type="checkbox"/> Fracture Treatment |
| <input type="checkbox"/> Supplemental History | <input type="checkbox"/> Change Producing Method |
| <input type="checkbox"/> Temporarily Abandon | <input type="checkbox"/> Reclamation |
| | <input type="checkbox"/> Other _____ |

Well Name and Number

Corps of Engineers 31-10

Footages
660' FNL 2305' FEL

Dir-Cor NW NE Section 10 Township 153N Range 10TW

Field Baker Pool Red River

County McKenzie

| 24 HOUR PRODUCTION RATE | |
|-------------------------|-------|
| BEFORE | AFTER |
| Oil | Oil |
| Water | Water |
| Gas | Gas |

Name of Contractor

Address

City

State

Zip Code

DETAILS OF WORK

Panterra Petroleum requests permission to acid stimulate the Red River perfs. See the attached procedure and wellbore schematic.

| | | | |
|---------|-----------------------|--------------|------------|
| Company | Pantrerra Petroleum | | |
| Address | P. O. Box 7168 | | |
| City | Billings | State | Zip Code |
| By | <i>Benny J. Evans</i> | Date | 59103-7168 |
| Title | Operations Manager | | |
| | Telephone Number | 406-245-6248 | |

406-245-9106 Fax

FOR OFFICE USE ONLY

| | |
|-----------------------------------|--|
| <input type="checkbox"/> Received | <input checked="" type="checkbox"/> Approved |
| Date | <u>4 May 99</u> |
| By | <i>PE Williams</i> |
| Title | Assistant Director |

PANTERRA PETROLEUM
CORP OF ENGINEERS 31-10
NWNE Sec 10 T153N R101W
Baker Field - McKenzie County, Nd
GL - 1851' KB - 1872' (21' KB)
ACCOUNTING CODE # 60103

WORKOVER PROCEDURE TO DO FOAM ACID JOB OF RED RIVER
WELL BORE DIAGRAM ATTACHED
AFE # 31

Current Condition

Pumping 24 BOPD, 332 MCFD and 6 BWPD.

Proposed Procedure

1. MI RU rig. Unseat pump and hot oil rods to remove paraffin. POOH with rods and pump. ND wellhead and NU BOPE. Unsting from Baker Model D packer. POOH with tubing. LD both perfed subs and bull plug.
2. Redress seal assembly and TIH w/ tubing. Hydrotest tubing to 7000 psi. Sting into Model D packer and PT csg to 500 psi.
3. RU pump truck. Run And stake down steel flowline to test tank. Acidize Red River "B" and "C" perfs with 600 gal. foamed FW , 2500 gal. gelled 28% HCl foamed w/ Nitrogen then 600 gal. foamed FW overdisplacement. Flow and swab back immediately until well is cleaned up. POOH with tubing.
4. Run same production BHA. Run rods and pump. Put well through production facility.
5. RD & release rig.

GLE
4/28/99
CORP3110WO31.doc

PANTERRA PETROLEUM

WELL: CORPS OF ENGINEERS 31-10 FIELD: BAKER
 LOCATION: NWNE SEC 10 153N 101W, MCKENZIE CO, ND
 SURF:660' FNL & 2304' FEL
 BHL:841' FNL & 1926' FEL STATUS: FLOWING OIL WELL
 ACCTG NO.: 618
 ELEVATION: GL - 1851' KB - 1872'
 SPUD DATE: 6/20/86 ST FILE NO: 11920
 API #:33-053-02148
 COMP DATE: 11/24/86

2954' | 9 5/8" CMT TOP ROTARY TD: 13480' PSTD: 13344'
 5130' | H H Casing Patch SURF CSG: 9 5/8" 36,40# K-55 SET @ 2954'. CMT W/ 1220 SX.
 5777-783' | H H TIGHT CSG! PROD CSG: 5 1/2" 17,20,26# L-80,SS95 SET @ 13344'.CMT W/ 1850 SX "G".
 8661' | / / < 4 3/8" ID 1082 SX LITE.

TUBING & BHA

328 JTS 2 7/8" L-80 TBG
 MECH SN W/ 12" X 1 1/4" DIP TUBE-10015'
 4" PERFORED SUB
 48 JTS 2 7/8" L-80 TBG
 BULL PLUG
 4" PERFORED SUB
 BAKER 40-26 MOD E-22 SEAL ASSY
 BAKER MOD D PERM. PKR. - 11488'

RODS & PUMP

1" X 8',8", & 4" PONY RODS
 96 - 1" NOR97 PLAIN (2400')
 56 - 7/8" NOR97 RODS (1400')
 28-7/8" NOR97 6 PAD/ROD (700')
 15-7/8" NOR97 3 PAD/ROD (375')
 63-3/4" NOR97 3 PAD/ROD (1575')
 68-3/4" NOR97 PLAIN (1700')
 58-3/4" NOR97 4 PAD/ROD (1400')
 16-1" CLASS D 4 PAD/ROD (400')
 2 1/2" x 1 1/4" x 24' RHBM 2 STAGE

MECH SN-DIPTUBE

4" PERFORED SUB

BULL PLUG
PERFORED SUB

MODEL D PKR

| SALT | DEPTH |
|---------|-------------|
| DUNHAM | 6654-6710 |
| PINE | 7022-7070 |
| CHARLES | 8252-8950 |
| PRAIRIE | 11594-11790 |

| 5 1/2" | SET @ |
|----------|-------|
| 20# L-80 | 21 |
| 26# SS95 | 57 |
| 20# L-80 | 3855 |
| 17# L-80 | 6439 |
| 23# SS95 | 6944 |
| 17# L-80 | 8046 |
| 23# SS95 | 8877 |
| 20# L-80 | 11388 |
| 26# SS95 | 11703 |
| 20# L-80 | 13344 |

13100' |
 13120-122' |
 13243' | <<< | >>> | SQZ PERFS
 13255-265' | = | = | MODEL R-3 PKR
 13296-303' | = | = | & 5 JTS TBG
 13308-312' | = | = | RED RIVER B
 13322-330' | = | = |
 13344' | <<< | * * * | >>> | SL - 144" SPM - 5.5
 13400-402' | = * * * * | = |
 13440-442' | = * * * * | = | WELLHEAD: TBGHD CIW,F,1" 3000 PSI X 7 1/16"
 13438' | = * * * * | = | PUMP UNIT: LUFKIN MII 640-385-144 W/ AJAX E-42 ENG,PU SH-33", ENG SH-14".
 13480' | = * * * * | = | GR=28.6:1.
 CMT RET
 SQZ
 PERFS
 FLOAT COLLAR
 5 1/2"

PERFS: RED RIVER "B" 13255-265', 4 SPF.
 RED RIVER "C" 13296-303', 13308-312', 13322-330' 4 SPF.
 PREPARED BY: GARY L EVERETZ DATE: 04/13/99
 CORP3110.XLS



**PRODUCERS CERTIFICATE OF COMPLIANCE AND
AUTHORIZATION TO TRANSPORT OIL FROM LEASE**

INDUSTRIAL COMMISSION OF NORTH DAKOTA

OIL AND GAS DIVISION

SFN 5698 (7-92)

INSTRUCTIONS

The original and four copies of this form must be submitted to the OIL AND GAS DIVISION, 600
Boulevard Avenue, Bismarck, ND 58505.



| | |
|------------------|-------|
| Well File Number | 11920 |
| NDIC CTB Number | 11920 |

| | | | | | |
|--|---------|---------|--------------------|--------------------------|----------------------------|
| Well Name and Number CORP OF ENGINEERS 31-10 | Qtr-Qtr | Section | Township | Range | County MC KENZIE |
| Company Name PANTERRA PETROLEUM | Field | | | | BAKER |
| Address P.O. BOX 7168 | City | | State MT | Zip Code 59103 | |

| | | |
|--|--------------------------------|--|
| Name of First Purchaser EOTT ENERGY OPERATING LIMITED PARTNERSHIP | % Purchased 100% | Date Effective 12/17/98 |
| Principal Place of Business P O Box 4666 | City Houston | State TX Zip Code 77210-4666 |
| Field Address | City | State Zip Code |
| Name of Transporter EOTT ENERGY OPERATING LIMITED PARTNERSHIP | % Transported 100.00 | Date Effective 12/01/98 |
| Address P O BOX 4666 | City HOUSTON | State TX Zip Code 77210-4666 |
| The above named producer authorizes the above named purchaser to purchase the percentage of oil stated above which is produced from the lease designated above until further notice. The oil will be transported by the above named transporter. | | |
| Other Transporters Transporting From This Lease | % Transported | Date Effective |
| Other Transporters Transporting From This Lease | % Transported | Date Effective |
| Other First Purchasers Purchasing From This Lease | % Purchased | Date Effective |
| Other First Purchasers Purchasing From This Lease | % Purchased | Date Effective |
| Remarks | | |
| Sale of certain oil marketing, transportation and pipeline gathering assets: Koch Oil Company to EOTT Energy Operating Limited Partnership. | | |

I certify that the above information is a true and correct report of the transporters and purchasers of oil produced from the above described property. This authorization will be valid until further notice to the transporters and purchasers named until cancelled by the _____

| | | |
|-------------------------------------|--------------------------|----------------------------|
| Signature <i>Terry Holzwarth</i> | Title Engineer | Date DEC 11 1998 |
|-------------------------------------|--------------------------|----------------------------|

STATE OF Montana)
COUNTY OF Yellowstone)

Notary
Seal

On 12/11, 1998, Terry S. Holzwarth, known to me to be the person described in and who executed the foregoing instrument, personally appeared before me and acknowledged that (s)he executed the same as a free act and deed.

Terry S. Holzwarth
Notary Public Billings, MT

My commission expires 8/21/00

FOR OFFICE USE ONLY

| | | |
|---------------------------------------|-----------------------|-------------------------|
| Approved By <i>Charles A. Koch</i> | Title Buyer | Date 12/21/98 |
|---------------------------------------|-----------------------|-------------------------|

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPPLICATE
(Other instructions on reverse side)

11920
Form approved.
Budget Bureau No. 1004-0135
Expires August 31, 1985

3. LEASE DESIGNATION AND SERIAL NO.

SUNDY 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" for such proposals.)

1. OIL GAS WELL OTHER

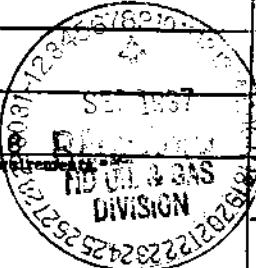
2. NAME OF OPERATOR

PANTERRA PETROLEUM

3. ADDRESS OF OPERATOR

4. P. O. Box 7168, Billings, MT 59103-7168
At surface
660 FNL, 2305 FEL
NWNE 10-153-101

5. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.
See also space 17 below.)



See also space 17 below.)

At surface

6. FIELD AND POOL, OR WILDCAT

Baker - Red River

7. SURVEY OR AREA

10-153N-101W

8. PERMIT NO.

11920

9. ELEVATIONS (Show whether DEP., ST., GE., etc.)

10. COUNTY OR PARISH: 11. STATE

McKenzie

ND

10.

Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

SEQUENTIAL REPORT OF:

- TEST WATER SHOT-OFF
FRACTURE TREAT
SHOOT OR ACIDIZE
REPAIR WELL
(Other)

- PULL OR ALTER CASING
MULTIPLE COMPLETE
ABANDON
CHANGE PLANE

- WATER SHOT-OFF
FRACTURE TREATMENT
SHOOTING OR ACIDIZING
(Other) Spill

- REPAIRING WELL
ALTERING CASING
ABANDONMENT



(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

11. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.) *

See Attached Spill History Report.

12. I hereby certify that the foregoing is true and correct

SIGNED Randy B. Bohm TITLE Operations Manager DATE 9/5/97

(This space for Federal or State office use)

Recd

APPROVED BY Mark Bohm TITLE PETROLEUM ENGINEER DATE September 8, 1997

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

SPCC PLAN, ATTACHMENT #1
SPILL HISTORY

Complete this form for any reportable spill (s).

Well Name: Corps of Engineers 31-10 Location: NWNE Sec 10, T153N, R101W
Operator: Panterra Petroleum McKenzie County, ND

1. Date of Occurrence: 09/05/97 Reported by: Kevin Grindeland
Surface Ownership: Corps of Engineers
Agencies & Dates Notified: NDIC 9/5/97, BLM 9/5/97,
Corps of Engineers 9/5/97

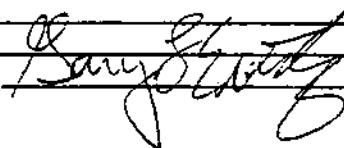
Volume & Type of Fluid Spilled: 30 BSW, all in dike

Volume Recovered: 28 bbls

Cause of Event: SW line leak.

Corrective Action Taken, Damage Description: Isolate line.

Plans for Preventing Recurrence: Replace line.

Signature: 

2. Date of Occurrence: _____ Reported by: _____
Surface Ownership: _____
Agencies & Dates Notified: _____

Volume & Type of Fluid Spilled: _____

Volume Recovered: _____

Cause of Event: _____

Corrective Action Taken, Damage Description: _____

Plans for Preventing Recurrence: _____

Signature: _____



**PRODUCERS CERTIFICATE OF COMPLIANCE AND
AUTHORIZATION TO TRANSPORT OIL FROM LEASE - FOR
INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION**

INSTRUCTIONS

The original and four copies of this form must be submitted to the OIL AND GAS DIVISION, 600 E. Boulevard Avenue, Bismarck, ND 58505.

: Well File Number :
: 11920 :
: -----:
: NDIC CTB Number :
: 111920 :
: -----:

31-10
WELL CORPS OF ENGINEERS (Q/Q) NWNE (SEC.) 10 (TWP.) 153N (RGE.) 101W COUNTY MCKENZIE

PRODUCER: PANTERRA PETROLEUM FIELD BAKER POOL RED RIVER

ADDRESS CORRESPONDENCE TO: GARY L. EVERTZ, PANTERRA PETROLEUM

Name of First Purchaser : AMOCO PRODUCTION COMPANY : % Purchased : 100 : Date Effective 06/01/97

Principal Place of Business 1670 Broadway, Ste 715, Denver CO 80201

Field Address 1670 Broadway, Ste 715, Denver CO 80201

AMOCO PRODUCTION COMPANY

The above named producer authorizes the above named purchaser to purchase the percentage of oil stated above which is produced from the lease designated above until further notice. The oil will be transported by the above named transporter.

Other Transporters Transporting From This Lease : % Transported : Date Effective

Other First Purchasers Purchasing From This Lease : % Purchased Date Effective

Remarks

I certify that the above information is a true and correct report of the transporters and purchasers of oil produced from the above described property. This authorization will be valid until further notice to the transporters and purchasers named until cancelled by the OPERATOR.

Signature

Title
Engineer

Date

05/28/97

State of Montana
County of Yellowstone

On 05/28/97, Gary L. Evertz, known to me to be the person described in and who executed the foregoing instrument personally appeared before me and acknowledged that (s)he executed the same as a free act and deed.

Notary Public

My Commission Expires

AUGUST 21, 2000

APPROVED BY:

Charles A. York

Date: 6/3/97



SUNDRY NOTICES AND REPORTS ON WELLS - FORM 4
INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
SFN 5749 (2-92)

APR 12 1996
APR 12 1996

Well File Number
11920

PLEASE READ INSTRUCTIONS ON BACK OF FORM

| | |
|---|---|
| <input type="checkbox"/> Notice of Intent | Drilling Prognosis |
| Approximate Start Date _____ | <input type="checkbox"/> Redrilling or Repair |
| <input checked="" type="checkbox"/> Report of Work Done | <input type="checkbox"/> Casing or Liner |
| Date Work Completed <u>03/15/96</u> | <input type="checkbox"/> Plug Well |
| | <input type="checkbox"/> Supplemental History |
| | <input type="checkbox"/> Temporarily Abandon |

| |
|---|
| <input type="checkbox"/> Spill Report |
| <input type="checkbox"/> Shooting |
| <input checked="" type="checkbox"/> Acidizing |
| <input type="checkbox"/> Fracture Treatment |
| <input type="checkbox"/> Change Producing Method |
| <input type="checkbox"/> Reclamation |
| <input checked="" type="checkbox"/> Other Put on Pump |

| | | | | | |
|---|----------------|---------|----------|-------|--|
| Well Name and Number Corps of Engineers 31-10 | | | | | |
| Footages | Ctr-Ctr | Section | Township | Range | |
| 660' FNL 2305' FEL | NW NE | 10 | 153N | 10 TW | |
| Reid Eaker | Pool Red River | County | McKenzie | | |

| 24 HOUR PRODUCTION RATE | |
|-------------------------|--------------|
| BEFORE | AFTER |
| Oil 34 | Oil 105 |
| Water 10 | Water 24 |
| Gas 190 | Gas 587 est. |

Name of Contractor

| | | | |
|---------|------|-------|----------|
| Address | City | State | Zip Code |
|---------|------|-------|----------|

DETAILS OF WORK

1/23/96 MI RIG FL-6300'. SWAB TO 9500' W/ NO ENTRY.PUMP 140 BFW.SD DUE,
TO COLD WEATHER.,
2/5/96 COULD NOT REL F/ PKR.CUT TBG ABOVE SEAL ASSY.POOR.FOUND TBG HOLE,
@ 9472'.RUN O/S SEVERAL TIMES & GOT SEAL ASSY RELEASED.RIH &
STING INTO PKR.SWB 2 DAYS FINAL ENTRY 4 BOPH,2.5 BWPH.RD MO RIG,
DUE TO FLOODING.,
3/4/96 MI RIG & SWB.ACDZ RED RIVER W/ 1500 GAL FOAMED 28 HCL SWIC.4.6,
BPM, 5579 PSI.FLOW BACK.GOT VERY!!! DIRTY FLUID FOR 3 DAYS SWBG,
AND FLOWING.LAST RATE 6.7 BPH.DROP SV & PERF TBG ABOVE SV &
PICKLE TBG & CSG IN TWO JOBS OF 2000 GAL 15% HCL.PULL TBG & RIH,
W/ PROD BHA.RUN NEW NOR97 RODS & 1 1/4 2 STAGE PUMP.START PUMPING 3/15/96.

| | | | |
|---------|--------------------|------------------|---------------|
| Company | Panterra Petroleum | | |
| Address | P. O. Box 7168 | | |
| City | Billings | State | Zip Code |
| By | | Date | April 9, 1996 |
| Title | Engineer | Telephone Number | 406-245-6248 |

406-245-9106 Fax

| | |
|--|-----------------------------------|
| FOR OFFICE USE ONLY | |
| <input checked="" type="checkbox"/> Received | <input type="checkbox"/> Approved |
| Date | |
| APR 12 1996 | |
| By | |
| F. E. Gullion | |
| Title | |
| Assistant Director | |

NORTH DAKOTA INDUSTRIAL COMMISSION

OIL AND GAS DIVISION

11920

Wesley D. Norton
DIRECTOR

F. E. Wilborn
ASSISTANT DIRECTOR

March 8, 1996

Ms. Jan Magstadt
Panterra Petroleum
P. O. Box 7168
Billings, MT 59103-7168

Dear Ms. Magstadt:

Panterra Petroleum filed with the Industrial Commission on March 7, 1996 an application for a Stripper Well Property Determination for its Corps of Engineers #31-10 well (Well File #11920, API #33-053-02148) located in the NW NE 10-153N-101W, McKenzie County, North Dakota.

Information contained in the application indicates that the above mentioned well is a property pursuant to statute and rule, and Panterra Petroleum has elected to designate said well as a separate property for stripper well purposes. Also, the well produces from a well depth of more than 10,000 feet. During the twelve consecutive months qualifying period January 1995 thru December 1995, the well produced at a maximum efficient rate, and the average daily production from the well was 27.9 barrels of oil per day.

It is therefore determined that the above mentioned well qualifies as a "Stripper Well Property" pursuant to Section 57-51.1-01 NDCC.

This determination is applicable only to the Red River Pool in and under said property.

The Commission shall have continuing jurisdiction, and shall have the authority to review the matter. The determination may be amended or rescinded by the Commission for good cause.

Sincerely,

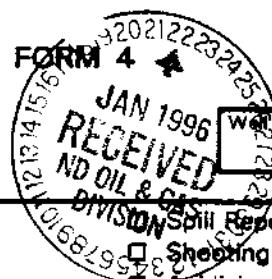

James R. Legerski
Senior Petroleum Engineer

cc: Tax Dept.



SUNDRY NOTICES AND REPORTS ON WELLS - FORM 4
 INDUSTRIAL COMMISSION OF NORTH DAKOTA
 OIL AND GAS DIVISION
 SFN 5749 (2-92)

PLEASE READ INSTRUCTIONS ON BACK OF FORM



Well File Number
11920

Notice of Intent

Approximate Start Date 1/22/96

Report of Work Done

Date Work Completed _____

Drilling Prognosis

Redrilling or Repair

Casing or Liner

Plug Well

Supplemental History

Temporarily Abandon

Place on Rod Pump

Spill Report

Shooting

Acidizing

Fracture Treatment

Change Producing Method

Reclamation

Other WO Exemption - Tax

Well Name and Number

Corps of Engineers 31-10

Footages

660' FNL 2305' FEL

Ctr-Qtr

NW NE

Section

10

Township

153N

Range

10T

Field

Baker

Pool

Red River

County

McKenzie

24 HOUR PRODUCTION RATE

| BEFORE | AFTER |
|-----------------|-------|
| Oil <u>34</u> | Oil |
| Water <u>10</u> | Water |
| Gas <u>204</u> | Gas |

Name of Contractor

Address

City

State

Zip Code

DETAILS OF WORK

PANTERRA PETROLEUM plans to place well on rod pump. Currently it will only flow intermittently.

PANTERRA PETROLEUM hereby applies for workover exemption - notice of intention to begin a workover project, which may be exempt from taxation pursuant to subsection (4) of North Dakota century Code section 57-51.1-03, for work outlined above. Approximate cost: \$99,500.00.

| | | |
|-------------------------|------------------|------------|
| Company | | |
| Panterra Petroleum | | |
| Address | | |
| P. O. Box 7168 | | |
| City | State | Zip Code |
| Billings | MT | 59103-7168 |
| By | Date | |
| <i>Bane J. E. Neely</i> | 1/18/96 | |
| Title | Telephone Number | |
| Manager Operations | 406-245-6248 | |

406-245-9106 Fax

FOR OFFICE USE ONLY

| | |
|-----------------------------------|--|
| <input type="checkbox"/> Received | <input checked="" type="checkbox"/> Approved |
| Date | <i>1-22-96</i> |
| By | <i>Karl Lutz</i> |
| Title | <i>REC</i> |

PANTERRA PETROLEUM

PROPOSED WELL BORE SCHEMATIC!!

| | | | | |
|--|------------------|-----------------|---|-----------------------------------|
| | I : I : I | | WELL: CORPS OF ENGINEERS 31-10 | FIELD: BAKER |
| | I : I : I | | LOCATION: NUNE SEC 10 153N 101W, MCKENZIE CO, ND | |
| | I : I : I | | SURF:660' FML & 2304' FEL | |
| 2954' | I : I : I | 9 5/8" | BHL:841' FML & 1926' FEL | STATUS: FLOWING OIL WELL |
| | I : I : I | | ELEVATION: GL - 1851' KB - 1872' | ST FILE NO: 11920 |
| 4643' | I : I : I | KICKOFF OFF PT | SPUD DATE: 6/20/86 | API #:33-053-02148 |
| 5130' | I : I : I | CMT TOP | COMP DATE: 11/24/86 | |
| | I : I : I | | ROTARY TD: 13480' | PBTB: 13344' |
| | I : I : I | | SURF CSG: 9 5/8" 36,40# K-55 SET @ 2954'. CMT W/ 1220 SX. | |
| 5777-783' | H I : I H | CASING PATCH | PROD CSG: 5 1/2" 17,20,26# L-80,SS95 SET @ 13344'.CMT W/ 1850 SX "G". | |
| | I : I : I | | 1082 SX LITE. | |
| | \ I : I / | TIGHT CSG! | | |
| 6661' | / I : I \ | < 4 3/8" ID | | |
| | I : I : I | | PROPOSED TUBING & BHA | PROPOSED RODS & PUMP |
| 8933-37' | D I o o I | DU COLLAR | | |
| | I : I I | | 2 7/8" L-80 TBG | 98 - 1" 2450' NOR97 PLAIN |
| 10000' | > o o < | SN W/ DIPTUBE | MECH SN W/ 20' DIPTUBE - 10000' | 56 - 7/8" 1400' NOR97 PLAIN |
| | I o o I | 4' PERFOR SUB | 4' PERFOR SUB | 28 - 7/8" 700' NOR97 6 CENT./ROD |
| | I : I : I | | 47 JTS 2 7/8" L-80 TBG | 15 - 7/8" 375' NOR97 3 CENT./ROD |
| | I : I : I | | PLUGGED OFF TBG COLLAR | 63 - 3/4" 1575' NOR97 3 CENT./ROD |
| | I : I : I | | 4' PERFOR SUB | 68 - 3/4" 1700' NOR97 PLAIN |
| | I : I : I | | BAKER 40-26 MOD G-22 SEAL ASSY | 56 - 3/4" 1400' NOR97 4 CENT./ROD |
| | I---I | TBG COLLAR PLUG | BAKER MOD D PERM. PKR. - 11498' | 16 - 1" 400' D INSP. 4 CENT./ROD |
| | I o o I | 4' PERFOR SUB | | 2 1/2" X 1 1/4" PUMP |
| | \ / \ / | SEAL DIVIDER | | |
| 11498' | >>>I I>>> | MODEL D PKR | SALT DEPTH | 5 1/2", 5 5/8" LTC SET & |
| | | | | |
| | / \ I \ / | | DUNHAM 6654-6710 | 20# L-80 21 |
| 11600-612' | \ I I I / | TIGHT CSG | PINE 7022-7070 | 26# SS95 57 |
| | / \ I I I \ / | FISH-MILL | CHARLES 8252-8950 | 20# L-80 3855 |
| | | | PRAIRIE 11594-11790 | 17# L-80 6439 |
| 11840-842' | = = = | SOZ PERFS | | 23# SS95 6944 |
| | | | | 17# L-80 8046 |
| 13100' | I I I I | TOP OF FISH | SL-144 SPM-5 | 23# SS95 8877 |
| 13120-122' | = I I = | SOZ PERFS | | 20# L-80 11389 |
| | = I I = | MODEL R-3 PKR | WELLHEAD: TBGHD CIW,F,1" 3000 PSI X 7 1/16" | 26# SS95 11703 |
| 13243' | I << I >>> | & 5 JTS TBG | | 20# L-80 13344 |
| 13255-265' | = = = | RED RIVER B | PUMP UNIT: LUFKIN MII 640-365-144 W/ AJAX E-42 ENG. | |
| 13296-303' | = = = | | AJAX SHEAVE-11", FU SHEAVE-33", GR-20.6:1 | |
| 13308-312' | = = = | RED RIVER C | | |
| 13322-330' | = = = | | PERFS: RED RIVER 'B' 13255-265', 4 SFF. | |
| | | | RED RIVER 'C' 13296-303', 13308-312', 13322-330' 4 SFF. | |
| 13344' | I << I *** I >>> | CHT RET | | |
| 13400-402' | =***** | SOZ | PRODUCTION: | |
| 13440-442' | =***** | PERFS | | |
| 13438' | ***** | FLOAT COLLAR | PREPARED BY: GARY L EVERETZ | DATE: 01/15/96 |
| 13480' | ***** | 5 1/2" | | CORPPHP.WK3 |
| DIRECTIONAL WELL TMD - 13490' MAX ANGLE 12 3/4 @ 5145' | | | | |

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0135
Expires August 31, 1985

11920

5. LEASE DESIGNATION AND SERIAL NO.

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME

NDM82191

8. FARM OR LEASE NAME

Corp of Engineers

9. WELL NO.

31-10

10. FIELD AND POOL, OR WILDCAT

Baker

11. SEC., T., R., M., OR BLK. AND
SURVEY OR AREA

10-153N-101W

12. COUNTY OR PARISH 13. STATE

McKenzie

ND

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.)

11920

16.

Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF

PULL OR ALTER CASING

FRACTURE TREAT

MULTIPLE COMPLETE

SUBSEQUENT REPORT OF:

SHOOT OR ACIDIZE

ABANDON*

WATER SHUT-OFF

REPAIRING WELL

REPAIR WELL

CHANGE PLANS

FRACTURE TREATMENT

ALTERING CASING

(Other)

SHOOTING OR ACIDIZING

ABANDONMENT*

(Other) _____

(Note: Report results of multiple completion on Well
Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.) *

Well was returned to production September 8, 1995, after flood waters receded from Lake Sakakawea

18. I hereby certify that the foregoing is true and correct

SIGNED

(This space for Federal or State office use)

TITLE

Operations Asst.

DATE

9-11-95

APPROVED BY

CONDITIONS OF APPROVAL, IF ANY:

FEW

TITLE

Assistant Director

DATE

9-14-95

*See Instructions on Reverse Side

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

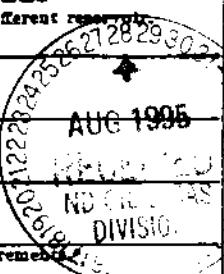
SUBMIT IN TRIP ALONE
(Other instructions on reverse side)

Form approved
Budget Bureau No. 1004-0135
Expires August 31, 1985
5. LEASE DESIGNATION AND SERIAL NO.

11920

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" for such proposals.)

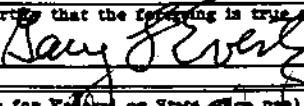
| | | | | | | | | |
|--|--|--|--|---|---|-----------------------------|---|--|
| 1. OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER  | 2. NAME OF OPERATOR PANTERRA PETROLEUM | 3. ADDRESS OF OPERATOR P. O. Box 7168, Billings, MT 59103-7168 | 4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements. See also space 17 below.) At surface | 5. UNIT AGREEMENT NAME NDM82191 | 6. FARM OR LEASE NAME Corp of Engineers | 7. WELL NO. 31-10 | 8. FIELD AND POOL, OR WILDCAT Baker | 9. EBC, T, R, M, OR EBL, AND SURVEY OR AREA 10-153N-101W |
| 10. PERMIT NO. 11920 | 11. ELEVATIONS (Show whether DEP, FT, GM etc.) | 12. COUNTY OR PARISH McKenzie | 13. STATE ND | | | | | |

| | | | | | | | |
|---|--------------------------|----------------------|--------------------------|------------------------|---|-----------------|--------------------------|
| 16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data | | | | | | | |
| NOTICE OF INTENTION TO : | | | | SUBSEQUENT REPORT OF : | | | |
| TEST WATER SHUT-OFF | <input type="checkbox"/> | PULL OR ALTER CASING | <input type="checkbox"/> | WATER SHUT-OFF | <input type="checkbox"/> | REPAIRING WELL | <input type="checkbox"/> |
| FRACURE TREAT | <input type="checkbox"/> | MULTIPLE COMPLETION | <input type="checkbox"/> | FRACURE TREATMENT | <input type="checkbox"/> | ALTERING CASING | <input type="checkbox"/> |
| SHOOT OR ACIDIZE | <input type="checkbox"/> | ABANDON* | <input type="checkbox"/> | SHOOTING OR ACIDIZING | <input type="checkbox"/> | ABANDONMENT* | <input type="checkbox"/> |
| REPAIR WELL | <input type="checkbox"/> | CHANGE PLANS | <input type="checkbox"/> | (Other) _____ | (Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.) | | |

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.) *

Well was temporarily shut-in July 15, 1995, due to flood waters in Lake Sakakawea.

18. I hereby certify that the following is true and correct

| | | |
|---|----------------------------|----------------|
| SIGNED  | TITLE - Operations Manager | DATE - 8/24/95 |
| (This space for Federal or State office use) | | |
| APPROVED BY  | TITLE - Oil Prod. Auditor | DATE - 8-28-95 |
| CONDITIONS OF APPROVAL IF ANY: | | |

*See Instructions on Reverse Side



PRODUCERS CERTIFICATE OF COMPLIANCE AND
AUTHORIZATION TO TRANSPORT OIL FROM LEASE - FORM JUL 1995
INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
SFN 5898 (2-92)



File Number : 11920 :
Div. : ND OIL & GAS :
Division : IOWA CTB Number : 111920 :
Date : 07/14/95 :
Stamp ID : 18086202 :
Stamp Date : 07/14/95

INSTRUCTIONS

The original and four copies of this form must be submitted to the OIL AND GAS DIVISION, 600 E.
Boulevard Avenue, Bismarck, ND 58505

31-10

WELL CORPS OF ENGINEERS (Q/Q) NWNE (SEC.) 10 (TWP.) 153N (RGE.) 101W COUNTY MCKENZIE

PRODUCER: PANTERRA PETROLEUM FIELD BAKER POOL RED RIVER

ADDRESS CORRESPONDENCE TO: GARY L. EVERTZ, PANTERRA PETROLEUM
550 N. 31ST STREET, SUITE 500, P. O. BOX 7168, BILLINGS, MT 59103

Name of First Purchaser AMOCO PRODUCTION COMPANY : % Purchased : Date Effective
: 100 : 08/01/95

Principal Place of Business 1670 Broadway, Ste 715, Denver CO 80201

Field Address 1670 Broadway, Ste 715, Denver CO 80201

Name of Transporter SCURLOCK PERMIAN CORP. - TRUCK : % Transported : Date Effective
Address P. O. BOX 2358, WILLISTON, ND 58801 : 100 : 08/01/95

The above named producer authorizes the above named purchaser to purchase the percentage of oil stated above which is produced from the lease designated above until further notice. The oil will be transported by the above named transporter.

Other Transporters Transporting From This Lease : % Transported : Date Effective
: : :

Other First Purchasers Purchasing From This Lease : % Purchased Date Effective
: : :

Remarks

I certify that the above information is a true and correct report of the transporters and purchasers of oil produced from the above described property. This authorization will be valid until further notice to the transporters and purchasers named until cancelled by the OPERATOR.

Signature

Title
Engineer

Date

07/14/95

State of Montana

County of Yellowstone

On 07/14/95

personally appeared before me and acknowledged that (s)he executed the same as a free act and deed.

Notary Public

My Commission Expires

AUGUST 21, 1996

APPROVED BY:

Date: 7/17/95



PRODUCERS CERTIFICATE OF COMPLIANCE AND
AUTHORIZATION TO TRANSPORT OIL FROM LEASE - FORM 8
INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
SFN 5698 (2-92)

: Well File Number :
: 11920 :
: ----- :
: MDIC CTB Number :
: 111920 :
: ----- :

INSTRUCTIONS

The original and four copies of this form must be submitted to the OIL AND GAS DIVISION, 600 E.
Boulevard Avenue, Bismarck, ND 58505

31-10

WELL CORPS OF ENGINEERS (Q/Q) NWNE (SEC.) 10 (TWP.) 153N (RGE.) 101W COUNTY MCKENZIE

PRODUCER: PANTERRA PETROLEUM FIELD BAKER POOL RED RIVER

ADDRESS CORRESPONDENCE TO: GARY L. EVERTZ, PANTERRA PETROLEUM
550 N. 31ST STREET, SUITE 500, P. O. BOX 7168, BILLINGS, MT 59103

Name of First Purchaser SCURLOCK PERMIAN CORP. : % Purchased : Date Effective
: 100 : 1/1/95

Principal Place of Business P. O. BOX 4648, HOUSTON, TX 77210-4648

Field Address P. O. BOX 2358, WILLISTON, ND 58801

Name of Transporter SCURLOCK PERMIAN CORP. - TRUCK : % Transported : Date Effective
Address P. O. BOX 2358, WILLISTON, ND 58801 : 100 : 1/1/95

The above named producer authorizes the above named purchaser to purchase the percentage of oil stated above which is produced from the lease designated above until further notice. The oil will be transported by the above named transporter.

Other Transporters Transporting From This Lease : % Transported : Date Effective
: : :

Other First Purchasers Purchasing From This Lease : % Purchased Date Effective
: : :

Remarks

I certify that the above information is a true and correct report of the transporters and purchasers of oil produced from the above described property. This authorization will be valid until further notice to the transporters and purchasers named until cancelled by the OPERATOR.

Signature

Title
Engineer

Date

12/9/94

State of Montana
County of Yellowstone

On 12/9/94, Gary L. Evertz, known to me to be the person described in and who executed the foregoing instrument personally appeared before me and acknowledged that (s)he executed the same as a free act and deed.

Notary Public

My Commission Expires

AUGUST 21, 1996

APPROVED BY:

Date:

12/13/94

NORTH DAKOTA INDUSTRIAL COMMISSION

OIL AND GAS DIVISION

11920

Wesley D. Norton
DIRECTOR

F. E. Wilborn
ASSISTANT DIRECTOR

Clarence G. Carlson
GEOLOGIST

Charles Koch
ENGINEERING DEPT

Doren Dannewitz
FIELD SUPERVISOR

Glenn Wollan
RECLAMATION SUP.

September 10, 1994

Mr. Gary Evertz
Operations Manager
Panterra Petroleum
P.O. Box 7168
Billings, MT 59103-7168

Workover Project Determination
Corps of Engineers #31-10
NWNE 10-153N-101W
McKenzie County, ND
Well File No. 11920

Dear Mr. Evertz:

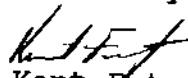
On June 13, 1994, Panterra Petroleum filed a notice of intent to begin a workover project on the above listed well with the North Dakota Industrial Commission. The workover project was completed on June 20, 1994 and meets the requirements set forth in North Dakota Century Code Section 57-51.1-03.

The workover project was performed from June 13, 1994 to June 20, 1994. The total cost of the project was \$39,239. The average daily production from the well prior to commencement of the workover project from December 1993 through May 1994 was 24.53 barrels of oil per day. The average daily production from the well during the first sixty days after completion of the project was 72.37 barrels of oil per day.

Therefore, it is determined the above listed well qualifies as a workover project for tax exemption purposes.

The Commission shall have continuing jurisdiction, and shall have the authority to review the matter. The determination may be amended or rescinded by the Commission for good cause.

Sincerely,


Kent Fetzer
Petroleum Engineer

cc: Tax Dept



SUNDRY NOTICES AND REPORTS ON WELLS - FORM 4
INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
SFN 5749 (2-92)

Well File Number
11920

PLEASE READ INSTRUCTIONS ON BACK OF FORM

Notice of Intent
Approximate Start Date _____

Report of Work Done
Date Work Completed _____

- Drilling Prognosis
- Redrilling or Repair
- Casing or Liner
- Plug Well
- Supplemental History
- Temporarily Abandon

- Spill Report
- Shooting
- Acidizing
- Fracture Treatment
- Change Producing Method
- Reclamation
- Other Workover Exemption

Well Name and Number

Corps of Engineers 31-10

| | | | | |
|--------------------|-------------------|--------------------|----------|-------|
| Footages | Qtr-Qtr | Section | Township | Range |
| 660' FNL 2305' FEL | NW NE | 10 | 153N | 10TW |
| Field Baker | Pool Red River | County McKenzie | | |

24 HOUR PRODUCTION RATE

| BEFORE | AFTER |
|--------------|--------------|
| Oil 22.92 | Oil 72.37 |
| Water | Water |
| Gas | Gas |

Name of Contractor

| | | | |
|---------|------|-------|----------|
| Address | City | State | Zip Code |
|---------|------|-------|----------|

DETAILS OF WORK

APPLICATION FOR WORKOVER PROJECT DETERMINATION (43-02-09-04)

1. Enclosed: \$100.00
2. PANTERRA PETROLEUM, P. O. Box 7168, Billings, MT 59103-7168
3. Well name and legal - as above.
4. Dates workover project performed: June 7, 1994 to June 20, 1994.
5. AFE cost detail attached. Final cost: \$70,015.63.
6. Detail of all work done: see attached Sundry Notice - Form 4.
7. Average daily oil production first 60 days: 72.37 BOPD Before 22.92 BOPD
See average before and after attached.
8. Gauge tickets of oil produced during the first two months after completion of the workover and volume of oil stored on the well premises prior to workover (attached).

| | | | |
|------------------------|----------------------|------------------|----------|
| Company | Pantrerra Petroleum | | |
| Address | P. O. Box 7168 | | |
| City | Billings | State | Zip Code |
| By | Date | Telephone Number | |
| <i>Jeanette Mayall</i> | Sept 1, 1994 | 406-245-6248 | |
| Title | Operations Assistant | | |

FOR OFFICE USE ONLY

| | |
|-----------------------------------|--|
| <input type="checkbox"/> Received | <input checked="" type="checkbox"/> Approved |
| Date | <i>9-6-94</i> |
| By | <i>Karl R.P.</i> |
| Title | Per Encl |

406-245-9106 Fax

5.)

DATE: 8/31/94 060263
 TIME: 14:51:36

AFE SPECIAL REPORT
 TERRA ENERGY CORPORATION
 PANTERRA PETROLEUM
 REPL. TRG, LOWER LARGER
 PUMP, ACID/STIM RED RIVER
 FROM 00/00 THRU 00/00

CORP # 2
 A/C # 1
 AFE # 46
 ENTITY # W 00618 CORP OF ENGINEERS 31-10
 8/8THS REPORT

PAGE 1

| MAJOR MINOR DESCRIPTION | ORIGINAL BUDGET | SUPPLEMENTAL BUDGET | TOTAL BUDGET | ACTUAL | VARIANCE (OVER)/UNDER | % VARIANCE (OVER)/UNDER |
|--|-------------------|---------------------|-------------------|-------------------|-----------------------|-------------------------|
| INTANG. DRILLING COSTS | | | | | | |
| TOTAL INT. DRILLING COSTS | \$ 0.00 | \$ 0.00 | \$ 0.00 | \$ 0.00 | \$ 0.00 | .00% |
| INTANG. REMEDIAL/CONST.-COMPL. | | | | | | |
| 1660 0100 LOCATION, ROADS, PERMITS | \$ 0.00 * | \$ 0.00 * | \$ 0.00 * | \$4807.30 * | \$4807.30 * | 100.00% |
| 1660 0200 COMPLETION UNIT | \$14500.00 * | \$ 0.00 * | \$14500.00 * | \$3729.95 * | \$10770.05 * | 74.27% |
| 1660 0300 WATER SOURCE, HAILING | \$3000.00 * | \$ 0.00 * | \$3000.00 * | \$2532.62 * | \$467.38 * | 15.57% |
| 1660 0440 PERF, LOG, WIRELINE SERVICE | \$2200.00 * | \$ 0.00 * | \$2200.00 * | \$1638.60 * | \$1438.60 * | 65.39% |
| 1660 0450 STIMULATION FRAC/ACID | \$15000.00 * | \$ 0.00 * | \$15000.00 * | \$18821.82 * | \$3821.82 * | 25.47% |
| 1660 0500 RENTAL EQUIPMENT | \$2000.00 * | \$ 0.00 * | \$2000.00 * | \$5849.03 * | \$3849.03 * | 100.00% |
| 1660 0510 TRUCKING | \$ 0.00 * | \$ 0.00 * | \$ 0.00 * | \$1517.00 * | \$1517.00 * | 100.00% |
| 1660 0610 LABOR - CONTRACT | \$500.00 * | \$ 0.00 * | \$500.00 * | \$4479.24 * | \$3979.24 * | 100.00% |
| 1660 0650 SUPERVISION - CONTRACT | \$3500.00 * | \$ 0.00 * | \$3500.00 * | \$6125.50 * | \$2625.50 * | 75.01% |
| 1660 0700 OTHER COSTS | \$4000.00 * | \$ 0.00 * | \$4000.00 * | \$7556.06 * | \$3556.06 * | 88.90% |
| 1660 0800 ADMINISTRATIVE OVERHEAD | \$2000.00 * | \$ 0.00 * | \$2000.00 * | \$2235.15 * | \$235.15 * | 11.75% |
| TOTAL INT. REM./CONSTR.-COMPL | \$46700.00 | \$ 0.00 | \$46700.00 | \$61292.27 | \$14592.27 OR | 31.24% |
| TANGIBLE WELL & LEASE EQUIPMENT | | | | | | |
| 1700 0905 TUBING | \$2000.00 * | \$ 0.00 * | \$2000.00 * | \$ 0.00 * | \$2000.00 * | 100.00% |
| 1700 0910 ROOS | \$3000.00 * | \$ 0.00 * | \$3000.00 * | \$1028.58 * | \$1971.42 * | 65.71% |
| 1700 0915 WELL HEAD EQUIPMENT | \$ 0.00 * | \$ 0.00 * | \$ 0.00 * | \$1212.38 * | \$1212.38 * | 100.00% |
| 1700 0920 PUMPING UNIT | \$35000.00 * | \$ 0.00 * | \$35000.00 * | \$4407.82 * | \$30592.18 * | 87.40% |
| 1700 0925 PRIME MOVER | \$7000.00 * | \$ 0.00 * | \$7000.00 * | \$2074.58 * | \$4925.42 * | 70.36% |
| TOTAL TANG. WELL/LEASE EQUIP. | \$47000.00 | \$ 0.00 | \$47000.00 | \$8723.36 | \$38276.64 | 81.43% |

DATE: 8/31/94 060263
TIME: 14:51:36

AFE SPECIAL REPORT
TERRA ENERGY CORPORATION
PANTERRA PETROLEUM
REPL. TBC, LOWER LARGER
PUMP, ACID/STIM RED RIVER
FROM 00/00 THRU 00/00

CORP # 2
A/C # 1
AFE # 46
ENTITY # M 00618 CORP OF ENGINEERS 31-10
8/8THS REPORT

PAGE 2

| MAJOR MINOR DESCRIPTION | ORIGINAL BUDGET | SUPPLEMENTAL BUDGET | TOTAL BUDGET | ACTUAL | VARIANCE (OVER)/UNDER | % VARIANCE (OVER)/UNDER |
|--------------------------|-------------------|---------------------|-------------------|-------------------|-----------------------|-------------------------|
| TOTAL WELL COST ESTIMATE | \$93700.00 | \$0.00 | \$93700.00 | \$70015.63 | \$23684.37 | 25.27% |
| ** AFE TOTALS ** | <u>\$93700.00</u> | <u>\$0.00</u> | <u>\$93700.00</u> | <u>\$70015.63</u> | <u>\$23684.37</u> | <u>25.27%</u> |



SUNDAY NOTICE AND REPORTS ON WELLS - FO. . 4
INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
SPN 5749 (2-92)

Well File Number
11920

PLEASE READ INSTRUCTIONS ON BACK OF FORM

| | |
|--|------------------------------------|
| <input type="checkbox"/> Notice of Intent | Approximate Start Date _____ |
| <input type="checkbox"/> Report of Work Done | Date Work Completed <u>6/20/94</u> |

- | | |
|---|--|
| <input type="checkbox"/> Drilling Prognosis | <input type="checkbox"/> Spill Report |
| <input type="checkbox"/> Redrilling or Repair | <input type="checkbox"/> Shooting |
| <input type="checkbox"/> Casing or Liner | <input type="checkbox"/> Acidizing |
| <input type="checkbox"/> Plug Well | <input type="checkbox"/> Fracture Treatment |
| <input type="checkbox"/> Supplemental History | <input type="checkbox"/> Change Producing Method |
| <input type="checkbox"/> Temporarily Abandon | <input type="checkbox"/> Reclamation |
| <input type="checkbox"/> Other _____ | |

| | | | | | |
|---|-------------------|--------------------|----------|---------|--|
| Well Name and Number Corps of Engineers 31-10 | | | | | |
| Footages | Ctr-Ctr | Section | Township | Range | |
| 660' FNL 2305' FEL | NW NE | 10 | 153N | 10 T.W. | |
| Field Baker | Pool Red River | County McKenzie | | | |

| 24 HOUR PRODUCTION RATE | |
|-------------------------|-------------|
| BEFORE | AFTER |
| Oil 20 | Oil 82 |
| Water 20 | Water 13 |
| Gas 70 | Gas 350 |

| | | | |
|--------------------|------|-------|----------|
| Name of Contractor | | | |
| Address | City | State | Zip Code |

DETAILS OF WORK

06-09-94 Pull rods and tbg. Run tbg in hole. Ran tbg caliper and LD 19 jts rod cut tbg. Pickle tbg w/1100 gal 15%. Attempt to acidize Red River and had down hole leak. Pull tbg and hydrotest in hole. LD 1 jt. Acidize w/ 2000 gal foamed 15% HCl. Flow back load and well continued flowing w/ 350 psi FTP on a 14/48" choke.

See attached daily reports and wellbore schematic.

| | | | |
|--------------------------------------|---|-------------------------------|--|
| Company Panterra Petroleum | | | |
| Address P. O. Box 7168 | | | |
| City Billings | State MT | Zip Code 59103-7168 | |
| By <i>Barry Wilborn</i> | Date 7/1/94 | | |
| Tide | Telephone Number 406-245-6248 | | |
| 406-245-9106 Fax | | | |

| | |
|--|-----------------------------------|
| FOR OFFICE USE ONLY | |
| <input checked="" type="checkbox"/> Received | <input type="checkbox"/> Approved |
| Date 7-14-94 | |
| By ORIGINAL SIGNED BY | |
| Title F.E. WILBORN | |
| Assistant Director | |

PANTERRA PETROLEUM

| | | | | | | | | |
|------------|--------|-------------|---|-------------|--|---|---|----------|
| | | | | WELL: | CORPS OF ENGINEERS 31-10 | FIELD: | BAKER | |
| | | | | LOCATION: | NWNE SEC 10 153N 101W, MCKENZIE CO, ND | | | |
| | | | | | SURF:660' FNL & 2304' FEL | | | |
| | | | | | BHL:841' FNL & 1926' FEL | STATUS: | FLOWING OIL WELL | |
| 2954' | I | I | I | 9 5/8" | | | | |
| | I | I | I | | ELEVATION: GL - 1851' KB - 1872' | ST FILE NO: | 11920 | |
| | I | I | I | | | API #: | 33-053-02148 | |
| 5130' | I | I | I | CMT TOP | SPUD DATE: 6/20/86 | COMP DATE: | 11/24/86 | |
| | I | I | I | | ROTARY TD: 13480' | | PBTID: 13344' | |
| | I | I | I | | | | | |
| 5777-783' | H | I | I | H | CASING PATCH | SURF CSG: | 9 5/8" 36,40# K-55 SET @ 2954'. CMT W/ 1220 SX. | |
| | I | I | I | | | PROD CSG: | 5 1/2" 17,20,26# L-80,SS95 SET @ 13344'.CMT W/ 1850 SX "G", | |
| 6661' | \ | I | I | / | TIGHT CSG! | | 1082 SX LITE. | |
| | I | I | I | < 4 3/8" ID | | | | |
| | I | I | I | | | | | |
| | I | I | I | | | | | |
| 8933-37' | I | I | I | D | DY COLLAR | | | |
| | I | I | I | | | 1 JT 2 7/8" L-80 TBG | | |
| 10200' | I | I | I | | CUP SN | 1 - 2 7/8" X 4' TBG SUB | | |
| | I | I | I | | PERF SUB | 377 JTS 2 7/8" L-80 TBG | | |
| | I | I | I | | | CUP SN - 11497' | | |
| 11497' | I | < | I | I | CUP SN | BAKER 40-26 MOD G-22 SEAL ASSY | | |
| | I | I | I | | | BAKER MOD D PERM. PKR. - 11498' | | |
| | \ | / | \ | | | | | |
| 11498' | >>>I | I | I | >>> | MODEL D PKR | | | |
| | | | | | | | | |
| | / | I | I | / | | | | |
| 11600-612' | \ | I | I | / | TIGHT CSG | SALT | 5 1/2" LTC | SET @ |
| | / | I | I | \ | FISH-MILL | DEPTH | | |
| | | | | | | | | |
| 11840-842' | = | = | = | | SQZ PERFS | DUNHAM | 20# L-80 | 21 |
| | | | | | | PINE | 26# SS95 | 57 |
| | | | | | | CHARLES | 20# L-80 | 3855 |
| 13100' | I | I | I | I | | PRAIRIE | 17# L-80 | 6439 |
| 13120-122' | = | I | I | = | SQZ PERFS | | 23# SS95 | 6944 |
| | I | I | I | I | MODEL R-3 PKR | | 17# L-80 | 8046 |
| 13243' | I | < | I | > | 8 5 JTS TBG | SL- | 23# SS95 | 8877 |
| 13255-265' | = | = | = | | RED RIVER B | SPH- | 20# L-80 | 11389 |
| | | | | | | | 26# SS95 | 11703 |
| 13296-303' | = | = | = | | | WELLHEAD: TBGHD CIW,F,1" 3000 PSI X 7 1/16" | 20# L-80 | 13344 |
| 13308-312' | = | = | = | | RED RIVER C | PUMP UNIT: LUFKIN MII 640-365-144 W/ AJAX E-42 ENG. | | |
| 13322-330' | = | = | = | | | PERFS: RED RIVER "B" 13255-265', 4 SPF. | | |
| | | | | | | | | |
| 13344' | I | <<(I***I)>> | I | | CMT RET | | | |
| 13400-402' | =***** | ***** | = | | | RED RIVER "C" 13296-303', 1330B-312', 13322-330' 4 SPF. | | |
| 13440-442' | =***** | ***** | = | | PERFS | | | |
| | | | | | | PRODUCTION: 82 BO, 350 MCF, 13 BWPD | | |
| 13438' | ***** | ***** | | | FLOAT COLLAR | | | |
| 13480' | ***** | ***** | | | 5 1/2" | PREPARED BY: GARY L EVERETZ | DATE: | 07/01/94 |

Corps Of Engineers 31-10
PANTERRA PETROLEUM
NWNE 10 - T153N, R101W
Baker Field
McKenzie County, ND

AFE #46

- 06-16-94 FL @ 8500' (3000' of fluid entry - 16 hrs). Swabbed well to SN @ 11,496' in 3 runs. Rec 100' of oil on 1st run. TF - 15 BLW rec. 180 BLWTR. RU HES to do foamed acid job. Fill csg w/ 38 BSW & test to 2000# - held OK. Had hot oil truck maintain csg psi during job. Installed 5000# master valve on tbq. Pumped 200 gal 28% HCl acid ahead of 50,000 SCF of N₂, 400 gal foamed FW & additives, 1800 gal 28% SGA-HT foamed acid. Flushed to perfs w/ N₂. Max press - 6590#, Avg press - 5950#, Avg inj rate - 2.7 BPM. ISIP - 5822#. LWTR - 60 bbls tbq, 38 bbls csg, 180 bbls before job = 278 BLWTR. RD HES. Install choke @ tbq & hook flowline to test tank. Flow back 72 BLW in 4 1/2 hrs & well died. RU swab. Made 2 swab runs f/ SN, very gassy from N₂ & acid gas. Rec 16 BLW. Had 5% oil on last run. Rec 88 BLW, 190 BLWTR. SDFN. DC \$12072 CC \$53033
- 06-17-94 SITP - 1475#, SICP - 100#. Bled gas off well thru 16/64" choke & treater. 2 hr FTP @ 135#. Well started flowing oil. Well flowed 8.4 bbls of 98% oil on 16/64" choke in 2 hrs & started gassing only. Opened on 1" choke. Well unloaded 3 BO, 7 BLW in 1 hr & died. Made 1 swab run f/ 3500'. Well started flowing. Made 1 swab run/hr, next 2 hrs, one f/ 3500' & one f/ 6000'. Well continued flowing. In 10 1/2 hrs swabbed & flowed 46.7 BO (53%), 41.1 BLW, TF 87.8 bbls. Volumes are calculated on avg wellhead cuts. Had choke settings f/ 16/64" - 1". TP varied f/ 40# - 300#. Had to repair SW dump valve & float on treater. Turned well thru treater @ 9:00 p.m., CDT & left flowing on 20/64" choke w/ 280# FTP. DC \$2657 CC \$55690
- 06-18-94 Flowed 33 BO, 17 BLW, TP - 50-280#, 20/64" choke in 10 hrs.
- 06-19-94 Flowed 92 BO, 52 BLW, TP - 50-350#, 24/64" choke in 24 hrs, 36% wtr.
- 06-20-94 Flowed 85 BO, 20 BLW, TP - 50-350#, 24/64" choke in 24 hrs, 24% wtr.

Well has made 257 bbls oil and 130 bbls LW = 387 BTF since acid job. 60 BLW TR (prob. in csg annulus) put well on 18/64 choke. Laid all rods from derrick on ground in triples. SK&S roustabouts moved out American 456-256-120 PU w/ cement port-a-base to yard. They moved in and set Lufkin Mark II - M640 D-365-144 ~~DII~~ Serial #21835. Mounted 8-1/2" x 10" Ajax engine to PU. Engine sheave = 14"; PU sheave = 33" gear box ratio = 28.6:1; new D grove 482 belts.

From 7 a.m. to 4:30 p.m. (9 hr - well SI 1/2 hr). Well flowed 40.6 bbls oil, 6.9 bbls SW, 475 BTF, 85% oil. 4.5 bbls oil / hr on 18/64" choke. Making \pm 400 mcf/day of gas to sales. Put Wellpro BOP and hand slips on 1/2 cost rental of \$70/day. ERC choke and master valve - \$20/day. RD and Release Rig. DC \$2414 CC 58104

Corps Of Engineers 31-10
PANTERRA PETROLEUM
NWNE 10 - T153N, R101W
Baker Field
McKenzie County, ND

AFE #46

- 06-11-94 Fished 2" SV w/ sandline. RU HES for foamed acid job. Install 2 7/8" EUE, 5000# master valve on tbg. Test csg to 1540# - OK. Test lines to 5460#. Pump 50,000 SCF N. down tbg, followed by 400 gal foamed FW w/ 10 GPM Pen-88HT, 20 GPM Sperse-All & 50,000 SCF N.. TP - 5500#, CP - 1006#. AIR @ .35 BPM. Pumped 500 gal 28% SGA w/ Inhibitor, Pen-88HT, SWIC & Sperse-All w/ 75,000 SCF N. down tbg @ 5900 psi. CP immed came up to 3008#. SD. Bled csg down to 2000#. RU choke & hardline to test tank. Bled well off to tank. Rec acid in tank. Flushed csg w/ 24 BFW. Drop 2" SV in tbg, wait 30 min. Pump 66 BSW down tbg. Had circulation out csg. Shut csg & PT to 1500#, pkr - OK, csg - OK. Possible leak in tbg or circ valve. RD HES. Rotate out of Model "D" w/ latch. POOH w/ 378 jts 2 7/8" tbg & top connection of circ valve was broken @ base of threads on top pin of valve. Left circ valve, SN & seal assy in hole. SDFN. DC \$13272 CC \$27410
- 06-12-94 TIH w/ Bowen 4 3/8" OD Overshot w/ cut lip guide, dressed w/ 3 1/2" basket grapple, Bowen oil jars, & 218 jts 2 7/8" tbg. Hit tight spot in csg @ 6661' K.B. Set down 30,000# SW. Had to set jars off 3 times to pull out. Set down 10,000# - would not go. Had to pull 10,000# over string weight to get free. POOH w/ tbg & BHA. Cut lip guide was egg shaped (4 1/4" x 4 1/2"). TIH w/ 4" OD x 2.25' long undressed shoe f/ guide to go over fish & 378 jts. Took 5000# SW to go past 6661' K.B. Set down @ 11,498' K.B. RIH w/ sandline & OS to fish SV. POOH - did not have it. Made 2nd attempt & successfully fished SV out of circ valve. SDFN. DC \$3366 CC \$30776
- 06-13-94 POOH w/ tbg & guide. TIH w/ max OD 3 3/4" taper tap, Bowen oil jars, & 378 jts 2 7/8" tbg. Tagged fish @ 11,494' K.B. Engaged fish. Torqued tbg 5 rounds. Pull 15,000# over string weight & set down 15,000#, worked string. Attempted to release latch-in seal assy. POOH. No recovery of fish. Could see marks on taper tap where it had been inside 2" mandrel on circ valve. SDFN. DC \$3078 CC \$33854
- 06-14-94 TIH w/ 3 3/4" max O.D. taper tap, bumper sub, Bowen oil jars & 378 jts 2 7/8" tbg. Engage fish @ 11,494' K.B. Release latch-in seal assy. POOH w/ 378 jts tbg & BHA. Rec all of fish (circ valve, SN & latch-in assy). RU Basin Tubing Testers. TIH w/ Baker 40-26 model G-22 latch-in type seal assy w/ 2 seal units, 2 7/8" cup type SN, 378 jts 2 7/8" tbg & 1 - 2 7/8" x 4' tbg sub. Hydrotested tbg to 7000#. Found thread leak @ 3 jts above SN @ 1000#. Replaced bad jt. Stung into model "D" pkr @ 11,498' w/ 22,000# compression. SDFN. DC \$5133 CC \$38987
- 06-15-94 RU to swab. FL @ 2800'. Swabbed 5 BO, 60 BSW. Total of 65 BF in 12 runs in 8 hrs. All oil was on 1st run. Then swabbed 60 BLW. 195 BLWTR. Swab f/ pkr after 7th run. Made 1 run/hr last 4 hrs. FL @ 10,900' (600' above pkr) last 4 runs. Rec 1.7 BLW/hr last 2 hrs. SDFN. DC \$1974 CC \$40961

Corps Of Engineers 31-10
PANTERRA PETROLEUM
NWNE 10 - T153N, R101W
Baker Field
McKenzie County, ND

03-06-94 Shut-in @ 4:00 p.m. due to flooding.

03-22-94 Well put back on production around 2:00 p.m.

AFE #46

06-07-94 MI H&L Well Service rig. Too windy to rig up.

06-08-94 RU H&L rig. Pump 70 BSW down tbg - on vacuum. Jar on pump, would not unseat. Backed off rods. POOH w/ 1 - 1"x 2' & 1 - 1"x 6' pony rods, 94 - 1" plain rods & 53 - 7/8" plain rods. RU f/ tbg. Install BOP. Tbg was set w/ 40,000# compression. Pull out of Model "D" pkr. Strap OOH w/ 122 jts 2 7/8" tbg to rods. Continue stripping rods & tbg OOH. Found rod cut split jt 219 f/ top (6650'+). RU swab. Swab fluid f/ tbg to tank battery. Pull tbg to fluid, well started flowing oil f/ tbg. Hooked tbg & csg to flowline & left open to T.B. overnight. Have 265 jts tbg (7880'+) & 330 rods (8250'+). DC \$3145

06-09-94 Well flowed 1/2" (.84 BO) into tank overnight, was dead in a.m. Finished stripping rods & tbg to pump. Had to swab tbg down after pulling rods. Pump was stuck in btm jt above SN. Cut tbg to recover pump & found pump was stuck in salt. Sent pump in for repairs. Recovered rods: 94 - 1" plain, 60 - 7/8" plain, 38 - 7/8" w/ scrapers, 189 - 3/4" w/ scrapers, & 16 - 1" w/ scrapers (these scrapers were very worn). 329 jts of tbg above SN. POOH w/ 49 jts 2 7/8" tailpipe, 2 cup type SN, 2 - 2 7/8" x 4' perf subs, & locator seal assy w/ 4 seal units f/ Baker Model "D" pkr. TIH open-ended w/ 377 jts 2 7/8" tbg to 11,453' K.B. RU Dialog. Ran Tubing Profile Caliper Log. Tool would not go down past 2200' due to paraffin. Hot oil tbg w/ 35 bbls prod oil. Ran Profile Log f/ EOT to surface. Found 19 its over 35% wear (to be replaced). Most bad jts were in the 1500' of tbg above SN. Left well open to T.B. overnight. DC \$4671 CC \$7816

06-10-94 POOH w/ 377 jts 2 7/8" L-80 tbg. LD 19 jts that were over 35% wall thickness worn off. TIH w/ Baker 40-26 mod. G-22 Latch-in type Seal Assy w/ 2 seal units & 40,000# shear ring, 2 3/8" cup type SN, Basin circ valve, 378 jts 2 7/8" L-80 tbg, & 1 - 2 7/8" x 6' tbg sub. Replaced worn tbg w/ 21 jts of inspected tbg. Latch into Model "D" pkr @ 11,498'. Open circ valve. Set tbg in compression. RU HES & pump 20 BSW cushion in tbg. Drop 2" SV, wait for it to drop. Pickle tbg w/ 1200 gal 15% HCl acid w/ inhibitor & Sperse-All @ 1 BPM. Displaced into csg annulus thru circ valve. Let set 15 min. Reverse acid out of tbg to test tank, cycle tbg & close circ valve. PT csg & valve to 500# - OK. SDFN. DC \$6322 CC \$14138

1.)

Corp of Engineers - Well File Number 11920
Average Oil Production - First Sixty (60) days after Workover.

OIL PRODUCTION

JUNE 1994

| | |
|----|-------|
| 20 | 88.53 |
| 21 | 21.72 |
| 22 | 86.83 |
| 23 | 80.99 |
| 24 | 83.52 |
| 25 | 76.00 |
| 26 | 75.16 |
| 27 | 76.84 |
| 28 | 86.44 |
| 29 | 81.82 |
| 30 | 70.58 |

JULY, 1994

| | |
|----|--------|
| 1 | 79.76 |
| 2 | 70.15 |
| 3 | 77.73 |
| 4 | 78.48 |
| 5 | 74.75 |
| 6 | -21.79 |
| 7 | 237.28 |
| 8 | 8.45 |
| 9 | 60.10 |
| 10 | 89.37 |
| 11 | 81.85 |
| 12 | 86.86 |
| 13 | 75.16 |
| 14 | 90.18 |
| 15 | 81.01 |
| 16 | 85.19 |
| 17 | 75.99 |
| 18 | 78.48 |
| 19 | 78.50 |
| 20 | 80.18 |
| 21 | -64.19 |
| 22 | 0.00 |
| 23 | 0.00 |
| 24 | 202.52 |
| 25 | 90.21 |
| 26 | 83.63 |
| 27 | 85.19 |
| 28 | 77.65 |
| 29 | 77.27 |
| 30 | 78.49 |
| 31 | 77.25 |

AUGUST, 1994

| | |
|----|------------------|
| 1 | 76.49 |
| 2 | 76.84 |
| 3 | 77.65 |
| 4 | 77.69 |
| 5 | 73.47 |
| 6 | 71.83 |
| 7 | 76.95 |
| 8 | 68.49 |
| 9 | 70.98 |
| 10 | 68.95 |
| 11 | 63.45 |
| 12 | 50.11 |
| 13 | 55.12 |
| 14 | 80.30 |
| 15 | 78.51 |
| 16 | 65.14 |
| 17 | 68.95 |
| 18 | 63.45 |
| 19 | 63.47 |
| 20 | 55.26 total days |

TOTAL 4487.23 62

average

72.37

7.)

CORP OF ENGINEERS - WELL FILE NUMBER 11920
OIL PRODUCTION HISTORY - LATEST SIX MONTHS

| 1993 BOPM | # DAYS |
|-----------------|--------|
| 12 | 856 |
| | 31 |
| 1994 | |
| 1 | 740 |
| 2 | 654 |
| 3 | 250 |
| 4 | 500 |
| 5 | 529 |
| TOTAL BBLS/DAYS | 3529 |
| AVERAGE | 154 |

~~22.52 BOPD~~

9-93 TO 2-94
4476 BBL / 182.4 DAYS

= 24.53 B/D

~~Storage and Protection~~
Patent Petroleum Inc.

The line connection: ~~SECURELOCK~~ PERMAN

~~Country: WICENZE~~

~~Reese: CORPS EN 31-10~~

From: 8/18

Stroke Length:

SPM : 9.08

~~The first~~ — Film

3/11/94 Spec. Gravity = 1.125 PWT = 180-846

8/13/04 Spec. Gravity = 1.125

1111111 Spec. Sheet No. 1-100 221 101-153

8/16/94 aspect. stability 1.150

6/22/94 CBT Patient# 0-300 - Date 300 1100

Digitized by srujanika@gmail.com

10. The following table shows the number of hours worked by each employee.

Ban's Production Services

www.gutenberg.org

~~COMPUTER VERSION BY: TRAVIS BEAVER~~
Bea's Production Service
Williston, ND

Stroke Length

SPK : 6.0

Time Clock : Flawin

7/26/94 Cut pyrifolia: 6-100' - hard, 300'-1100' - soft, run to 3000'

7/21/94 Flowed 10 bbls. Shot well 10 at 6:00 pm on 7-28 after putting 25.85 bbls hot FW and 98.55 bbls hot oil down tubing, reason for mud production shot

7/22/96 Room 24 hrs. Well shut in to build tubing pressure.

1/23/94 Down 24 hrs. Will shoot in. Will going to scrub this up

7/24/94 Elwood 20 hrs. BM1 grabbed well to go [T-2].

1/26/94 7:16:00 20 115. 400 11000 90 10 1.00

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Bar's Production Services
Williston, ND

Crude and Production Report
Panterra Petroleum Inc.

Pipeline Connection: SCURLOCK-PERMIA

County: MCKENZIE
State: NORTH DAKOTA

Lease: CORPS-ENG 31-10
Field: BAKER

From: 7/10/94
To: 7/17/94

| Producing Well Nos. & Status | Tank Number | Date: 7/10/94 | | | Date: 7/11/94 | | | Date: 7/12/94 | | | Date: 7/13/94 | | | Date: 7/14/94 | | | Date: 7/15/94 | | | Date: 7/16/94 | | | Date: 7/17/94 | | | | |
|------------------------------------|-----------------|---------------|--------|-------|---------------|--------|--------|---------------|---------|---------|---------------|--------|------|---------------|--------|----------|---------------|--------|------|---------------|--------|------|---------------|--------|------|---------|--------|
| | | Size | Ft | Inch | Barrels | Ft | Inch | Barrels | Ft | Inch | Barrels | Ft | Inch | Barrels | Ft | Inch | Barrels | Ft | Inch | Barrels | Ft | Inch | Barrels | Ft | Inch | Barrels | |
| | 50412 | 400 | 15 | 10.50 | 318.39 | 15 | 10.50 | 318.39 | 15 | 10.50 | 318.39 | 6 | 0.00 | 130.49 | 11 | 0.00 | 220.67 | 15 | 0.50 | 301.68 | 15 | 0.50 | 301.68 | 3 | 2.00 | 63.00 | |
| | 50413 | 400 | 7 | 3.00 | 145.44 | 11 | 4.00 | 227.40 | 15 | 8.00 | 314.26 | 17 | 0.25 | 341.40 | 4 | 11.00 | 98.78 | 1 | 2.00 | 183.97 | 1 | 3.50 | 25.99 | 0 | 0.00 | 0.00 | |
| | | 0 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| | | 0 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| | | 0 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | Cum | RTD |
| | Saltwater | | 13 | | | 13 | | | 15 | | | 10 | | | 5 | | | 10 | | | 17 | | | 0 | | 91 | 265 |
| | Freshwater | | 6 | | | 0 | | | 0 | | | 0 | | | 0 | | | 1 | | | 0 | | | 0 | | 0 | 0 |
| | Tubing | | 320 | | | 320 | | | 320 | | | 400 | | | 320 | | | 310 | | | 320 | | | | | | 290 |
| | Casing | | | | | | | | | | | | | | | | | | | | | | | | | 20/ 48 | 20/ 48 |
| | Choke Size | | 20/ 48 | | | 20/ 48 | | | 20/ 48 | | | 20/ 48 | | | 20/ 48 | | | 20/ 48 | | | 20/ 48 | | | | | | 20/ 48 |
| | Stock Today | | 443.84 | | | 545.79 | | | 432.55 | | | 471.89 | | | 319.45 | | | 400.44 | | | 483.55 | | | 49.66 | | | |
| | Runs Yesterday | | 0.00 | | | 0.00 | | | 0.00 | | | 215.32 | | | 242.32 | | | 150.00 | | | 4.00 | | | 471.96 | | | |
| | Total | | 443.84 | | | 545.79 | | | 432.55 | | | 471.89 | | | 552.07 | | | 488.44 | | | 485.63 | | | 663.64 | | | |
| | Stock Yesterday | | 374.57 | | | 463.84 | | | 545.79 | | | 632.65 | | | 471.89 | | | 319.45 | | | 400.46 | | | 485.65 | | | |
| | Prod. Yesterday | | 69.37 | | | 81.85 | | | 86.86 | | | 75.16 | | | 50.18 | | | 81.01 | | | 85.19 | | | 75.99 | | | |
| | Date | Ticket # | Time | s | Ft | Inch | Ft | Inch | Barrels | s | Gty. | Temp | s | Run Date | s | Run BSAW | s | Temp | | | | | | | | | |
| 7/12/94 | 0200425 | 50412 | 15 | 10.50 | 4 | 1.25 | 235.82 | 51.00 | 94 | 7/13/94 | 0.00000000 | 98 | | | | | | | | | | | | | | | |
| 7/13/94 | 0050443 | 50413 | 17 | 0.25 | 4 | 11.00 | 242.62 | 49.66 | 90 | 7/14/94 | 0.00000000 | 98 | | | | | | | | | | | | | | | |
| 7/16/94 | 0050437 | 50412 | 15 | 0.50 | 3 | 1.75 | 238.41 | 52.00 | 104 | 7/17/94 | 0.05000000 | 108 | | | | | | | | | | | | | | | |
| 7/17/94 | 0040456 | 50413 | 12 | 11.25 | 1 | 3.50 | 233.55 | 50.20 | 80 | 7/17/94 | 0.10000000 | 98 | | | | | | | | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0.00 | | | | 0 | | / | / | 0.00000000 | 0 | | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0.00 | | | | 0 | | / | / | 0.00000000 | 0 | | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0.00 | | | | 0 | | / | / | 0.00000000 | 0 | | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0.00 | | | | 0 | | / | / | 0.00000000 | 0 | | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0.00 | | | | 0 | | / | / | 0.00000000 | 0 | | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0.00 | | | | 0 | | / | / | 0.00000000 | 0 | | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0.00 | | | | 0 | | / | / | 0.00000000 | 0 | | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0.00 | | | | 0 | | / | / | 0.00000000 | 0 | | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0.00 | | | | 0 | | / | / | 0.00000000 | 0 | | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0.00 | | | | 0 | | / | / | 0.00000000 | 0 | | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0.00 | | | | 0 | | / | / | 0.00000000 | 0 | | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0.00 | | | | 0 | | / | / | 0.00000000 | 0 | | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0.00 | | | | 0 | | / | / | 0.00000000 | 0 | | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0.00 | | | | 0 | | / | / | 0.00000000 | 0 | | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0.00 | | | | 0 | | / | / | 0.00000000 | 0 | | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0.00 | | | | 0 | | / | / | 0.00000000 | 0 | | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0.00 | | | | 0 | | / | / | 0.00000000 | 0 | | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0.00 | | | | 0 | | / | / | 0.00000000 | 0 | | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0.00 | | | | 0 | | / | / | 0.00000000 | 0 | | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0.00 | | | | 0 | | / | / | 0.00000000 | 0 | | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0.00 | | | | 0 | | / | / | 0.00000000 | 0 | | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0.00 | | | | 0 | | / | / | 0.00000000 | 0 | | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0.00 | | | | 0 | | / | / | 0.00000000 | 0 | | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0.00 | | | | 0 | | / | / | 0.00000000 | 0 | | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0.00 | | | | 0 | | / | / | 0.00000000 | 0 | | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0.00 | | | | 0 | | / | / | 0.00000000 | 0 | | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0.00 | | | | 0 | | / | / | 0.00000000 | 0 | | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0.00 | | | | 0 | | / | / | 0.00000000 | 0 | | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0.00 | | | | 0 | | / | / | 0.00000000 | 0 | | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0.00 | | | | 0 | | / | / | 0.00000000 | 0 | | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0.00 | | | | 0 | | / | / | 0.00000000 | 0 | | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0.00 | | | | 0 | | / | / | 0.00000000 | 0 | | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0.00 | | | | 0 | | / | / | 0.00000000 | 0 | | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0.00 | | | | 0 | | / | / | 0.00000000 | 0 | | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0.00 | | | | 0 | | / | / | 0.00000000 | 0 | | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0.00 | | | | 0 | | / | / | 0.00000000 | 0 | | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0.00 | | | | 0 | | / | / | 0.00000000 | 0 | | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0.00 | | | | 0 | | / | / | 0.00000000 | 0 | | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0.00 | | | | 0 | | / | / | 0.00000000 | 0 | | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0.00 | | | | 0 | | / | / | 0.00000000 | 0 | | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0.00 | | | | 0 | | / | / | 0.00000000 | 0 | | | | | | | | | |
| | | | 0 | | | | | | | | | | | | | | | | | | | | | | | | |

Storage and Production Report **Pipeline Connection: SCURLOCK-PERNIAN**
Panterra Petroleum Inc. **County: MCKENZIE** **Lease: CORPS E&G 31-10**
 State: NORTH DAKOTA **Field: BAKER**
From: 7/02/94
To: 7/08/94

| Producing Well Nos. & Status | Tank | Date: 7/02/94 | | | Date: 7/03/94 | | | Date: 7/04/94 | | | Date: 7/05/94 | | | Date: 7/06/94 | | | Date: 7/07/94 | | | Date: 7/08/94 | | | Date: 7/09/94 | | | | | |
|------------------------------------|-----------------|---------------|------|--------|---------------|---------|---------|---------------|---------|------|---------------|----------|------|---------------|---------|------|---------------|---------|-------|---------------|---------|------|---------------|---------|------|--------|---------|---|
| | | Number | Size | Ft | Inch | Barrels | Ft | Inch | Barrels | Ft | Inch | Barrels | Ft | Inch | Barrels | Ft | Inch | Barrels | Ft | Inch | Barrels | Ft | Inch | Barrels | Ft | Inch | Barrels | |
| | 50412 | 400 | 13 | 8.25 | 274.54 | 4 | 10.00 | 187.09 | 8 | 9.00 | 175.57 | 12 | 5.75 | 250.32 | 12 | 5.75 | 250.32 | 4 | 10.00 | 36.88 | 5 | 2.00 | 103.77 | 13 | 5.00 | 229.02 | | |
| | 50413 | 400 | 12 | 5.00 | 249.11 | 13 | 5.25 | 281.56 | 13 | 5.25 | 269.56 | 2 | 8.00 | 53.65 | 1 | 7.00 | 31.86 | 13 | 5.00 | 261.14 | 10 | 8.00 | 210.70 | 7 | 3.00 | 145.55 | | |
| | | 0 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | | |
| | | 0 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | | |
| | | 0 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | | |
| | | 0 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Saltwater | | | 10 | | 12 | | | | 10 | | | 13 | | | 2 | | | 1 | | | 82 | | | 45 | | 174 | |
| | Freshwater | | | 0 | | 0 | | | 0 | | | 0 | | | 0 | | | 0 | | | 0 | | | 0 | | 0 | | 0 |
| | Tubing | | | 470 | | 440 | | | 350 | | | 340 | | | | | | | 200 | | | 350 | | | | | | |
| | Casing | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Choke Size | | | 18/ 64 | | 18/ 64 | | | 18/ 64 | | | 18/ 64 | | | / | | | / | | | 24/ 48 | | | 20/ 48 | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Stock Today | | | 523.65 | | 384.44 | | | 445.13 | | | 303.97 | | | 282.18 | | | 306.02 | | | 314.47 | | | 374.57 | | | | |
| | Runs Yesterday | | | 0.00 | | 234.72 | | | 0.00 | | | 215.31 | | | 0.00 | | | 213.44 | | | 0.00 | | | 0.00 | | | | |
| | Total | | | 523.65 | | 681.70 | | | 445.13 | | | 519.88 | | | 282.18 | | | 519.46 | | | 314.47 | | | 374.57 | | | | |
| | Stock Yesterday | | | 453.50 | | 523.65 | | | 366.65 | | | 445.13 | | | 303.97 | | | 282.18 | | | 306.02 | | | 314.47 | | | | |
| | Prod. Yesterday | | | 70.15 | | 77.73 | | | 78.48 | | | 74.75 | | | -21.79 | | | 237.26 | | | 8.45 | | | 60.10 | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Date | Ticker # | Tank | ft | Inch | ft | Inch | Barrels | Gvty | | Temp | | Ran Date | | BSBN | | Temp | | | | | | | | | | | | |
| 7/02/94 | 9080468 | 50412 | 13 | 8.50 | 2 | 0.00 | 234.73 | 50.40 | | 98 | | 7/03/94 | | 0.1000000 | | 98 | | | | | | | | | | | | |
| 7/05/94 | 9080390 | 50413 | 13 | 5.25 | 2 | 0.00 | 215.31 | 49.60 | | 04 | | 7/05/94 | | -0.3000000 | | 98 | | | | | | | | | | | | |
| 7/07/94 | 9080497 | 50412 | 12 | 5.75 | 1 | 10.00 | 213.44 | 51.00 | | 110 | | 7/07/94 | | 0.1000000 | | 110 | | | | | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | | 0 | | / / | | 0.0000000 | | 0 | | | | | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | | 0 | | / / | | 0.0000000 | | 0 | | | | | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | | 0 | | / / | | 0.0000000 | | 0 | | | | | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | | 0 | | / / | | 0.0000000 | | 0 | | | | | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | | 0 | | / / | | 0.0000000 | | 0 | | | | | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | | 0 | | / / | | 0.0000000 | | 0 | | | | | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | | 0 | | / / | | 0.0000000 | | 0 | | | | | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | | 0 | | / / | | 0.0000000 | | 0 | | | | | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | | 0 | | / / | | 0.0000000 | | 0 | | | | | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | | 0 | | / / | | 0.0000000 | | 0 | | | | | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | | 0 | | / / | | 0.0000000 | | 0 | | | | | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | | 0 | | / / | | 0.0000000 | | 0 | | | | | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | | 0 | | / / | | 0.0000000 | | 0 | | | | | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | | 0 | | / / | | 0.0000000 | | 0 | | | | | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | | 0 | | / / | | 0.0000000 | | 0 | | | | | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | | 0 | | / / | | 0.0000000 | | 0 | | | | | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | | 0 | | / / | | 0.0000000 | | 0 | | | | | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | | 0 | | / / | | 0.0000000 | | 0 | | | | | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | | 0 | | / / | | 0.0000000 | | 0 | | | | | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | | 0 | | / / | | 0.0000000 | | 0 | | | | | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | | 0 | | / / | | 0.0000000 | | 0 | | | | | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | | 0 | | / / | | 0.0000000 | | 0 | | | | | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | | 0 | | / / | | 0.0000000 | | 0 | | | | | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | | 0 | | / / | | 0.0000000 | | 0 | | | | | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | | 0 | | / / | | 0.0000000 | | 0 | | | | | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | | 0 | | / / | | 0.0000000 | | 0 | | | | | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | | 0 | | / / | | 0.0000000 | | 0 | | | | | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | | 0 | | / / | | 0.0000000 | | 0 | | | | | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | | 0 | | / / | | 0.0000000 | | 0 | | | | | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | | 0 | | / / | | 0.0000000 | | 0 | | | | | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | | 0 | | / / | | 0.0000000 | | 0 | | | | | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | | 0 | | / / | | 0.0000000 | | 0 | | | | | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | | 0 | | / / | | 0.0000000 | | 0 | | | | | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | | 0 | | / / | | 0.0000000 | | 0 | | | | | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | | 0 | | / / | | 0.0000000 | | 0 | | | | | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | | 0 | | / / | | 0.0000000 | | 0 | | | | | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | | 0 | | / / | | 0.0000000 | | 0 | | | | | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | | 0 | | / / | | 0.0000000 | | 0 | | | | | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | | 0 | | / / | | 0.0000000 | | 0 | | | | | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | | 0 | | / / | | 0.0000000 | | 0 | | | | | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | | 0 | | / / | | 0.0000000 | | 0 | | | | | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | | 0 | | / / | | 0.0000000 | | 0 | | | | | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | | 0 | | / / | | 0.0000000 | | 0 | | | | | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | | 0 | | / / | | 0.0000000 | | 0 | | | | | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | | 0 | | / / | | 0.0000000 | | 0 | | | | | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | | 0 | | / / | | 0.0000000 | | 0 | | | | | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | | 0 | | / / | | 0.0000000 | | 0 | | | | | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | </td | | | | | | | | | | | | | | | | | | | |

Stroke Length:

SPF

~~The Great Depression~~

7/8/94 Flowed 3 hrs. Shut well down at 11:00 am on i-5 to work on well. Kinos production shown was used to hot oil tubing.

1/17/54 (cont'd) 24 hrs. Production shown was made while working on well. Put on Tree
1/18/54 Elevated 62 hrs. Around well.

1000' followed by Mrs. Groom. We'll go at 2:00 pm on 1-7. Pulled approx 56 miles SW off tank 10.

11/14 Recycled on Tank 13 from 10'6" to 1'3" into Tank 12. Puffed approx 25 bbls SW off bottom.

10. The following table shows the number of hours worked by 1000 employees in a company.

[View my LinkedIn profile](#)

Leave Pendleton, Oregon

DAR'S PRODUCTION SERVICES

FORM 1484 1/2 GS

Stroke Length:

SPN : 9.0

Time Clock ... flowing

6/29/14 Cut paraffin: 0-600° = hard, 600°-1300° = soft, ran to 3000°

Dan's Production Service
Williston, ND

Stroke Length:

SPX : 4.00

1/13/14 - Flowed to 1/2 hrs. from 10:00 am to 11:00 am. Improved clarity to 1/24/14.

5/2/24 Printed from https://www.nysenate.gov

6/21/94 213300Z JUN 94 000000Z JUN 94 000000Z JUN 94

6/27/94 Revised approach to gate 30 diff bottom of tank 14 that got in there during solvotherm. Changes shown to 6/28/94.

7/23/94 through 8/20/94 to 11/14.

Tom's Production Service

卷之三

1960-61
1961-62

—
—
—

→ [View Details](#)

Digitized by srujanika@gmail.com

8.)

| | | | | | | | | | | | | | | | | | | | | |
|-----------------------------|----------|---------------------------------------|--------|---------------------|---------------|------------------------|---------|---------------|------|---------|---------------|------|---------|---------------|------|---------|---------------|------|---------|--------|
| Range and Production Report | | Pipeline Connection, SCARLOCK FERNIAN | | County: MCKENZIE | | Lease: CORPS ENG 31-1C | | From: 6/02/94 | | | | | | | | | | | | |
| Pasterra Petroleum Inc. | | | | State: NORTH DAKOTA | | Field: BAKER | | To: 6/09/94 | | | | | | | | | | | | |
| Producing Well Nos. | Tank | Date: 6/02/94 | | | Date: 6/03/94 | | | Date: 6/04/94 | | | Date: 6/05/94 | | | Date: 6/06/94 | | | Date: 6/07/94 | | | |
| | | 1 Status | Number | Size | Ft | Inch | Barrels | Ft | Inch | Barrels | Ft | Inch | Barrels | Ft | Inch | Barrels | Ft | Inch | Barrels | |
| | | | | | | | | | | | | | | | | | | | | |
| | 50412 | 400 | 0 | 11.00 | 178.91 | 0 | 11.00 | 178.91 | 0 | 11.00 | 178.91 | 0 | 11.00 | 178.91 | 0 | 11.00 | 178.91 | 12 | 5.00 | 241.87 |
| | 50413 | 400 | 0 | 11.00 | 30.18 | 1 | 6.00 | 30.18 | 1 | 6.00 | 30.18 | 1 | 6.00 | 30.18 | 1 | 6.00 | 30.18 | 0 | 0.00 | 0.00 |
| | | | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | | | | | | | | | | | | | | | | |
| Saltwater | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Freshwater | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Tubing | | | | | | | | | | | | | | | | | | | | |
| Casing | | | | | | | | | | | | | | | | | | | | |
| Choke Size | | | | | | | | | | | | | | | | | | | | |
| Stock Today | | | 209.09 | | 209.09 | | | 209.09 | | | 209.09 | | | 209.09 | | | 209.09 | | | |
| Runs Yesterday | | | 0.00 | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | | |
| Total | | | 209.09 | | 209.09 | | | 209.09 | | | 209.09 | | | 209.09 | | | 209.09 | | | |
| Stock Yesterday | | | 209.09 | | 209.09 | | | 209.09 | | | 209.09 | | | 209.09 | | | 209.09 | | | |
| Prod. Yesterday | | | 0.00 | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | | |
| Date | Ticket # | Tank # | Ft | Inch | Ft | Inch | Barrels | Qty | Temp | Am Date | RSIV | Time | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000000 | 0 | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000001 | 0 | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000002 | 0 | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000003 | 0 | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000004 | 0 | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000005 | 0 | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000006 | 0 | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000007 | 0 | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000008 | 0 | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000009 | 0 | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000010 | 0 | | | | | | | | |
| / / | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000011 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000012 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000013 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000014 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000015 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000016 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000017 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000018 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000019 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000020 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000021 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000022 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000023 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000024 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000025 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000026 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000027 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000028 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000029 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000030 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000031 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000032 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000033 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000034 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000035 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000036 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000037 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000038 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000039 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000040 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000041 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000042 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000043 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000044 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000045 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000046 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000047 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000048 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000049 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000050 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000051 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000052 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000053 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000054 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000055 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000056 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000057 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000058 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000059 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000060 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000061 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000062 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000063 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000064 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000065 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000066 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000067 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000068 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000069 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000070 | 0 | | | | | | | | |
| | | | 0 | 0.00 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 0.0000071 | 0 | | | | | | | | |



SUNDY NOTICES AND REPORTS ON WELLS - FORM 4
INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
SFN 5749 (2-92)

Well File Number
11920

PLEASE READ INSTRUCTIONS ON BACK OF FORM

| | |
|--|------------------------------|
| <input type="checkbox"/> Notice of Intent | Approximate Start Date _____ |
| <input type="checkbox"/> Report of Work Done | Date Work Completed 6/20/94 |

- | | |
|---|--|
| <input type="checkbox"/> Drilling Prognosis | <input type="checkbox"/> Spill Report |
| <input type="checkbox"/> Redrilling or Repair | <input type="checkbox"/> Shooting |
| <input type="checkbox"/> Casing or Liner | <input type="checkbox"/> Acidizing |
| <input type="checkbox"/> Plug Well | <input type="checkbox"/> Fracture Treatment |
| <input type="checkbox"/> Supplemental History | <input type="checkbox"/> Change Producing Method |
| <input type="checkbox"/> Temporarily Abandon | <input type="checkbox"/> Reclamation |
| | <input type="checkbox"/> Other _____ |

| | | | | |
|---|-------------------|--------------------|------------------|--------------|
| Well Name and Number Corps of Engineers 31-10 | | | | |
| Footages 660' FNL 2305' FEL | Qtr-Qtr NW NE | Section 10 | Township 153N | Range 10W |
| Field Baker | Pool Red River | County McKenzie | | |

| 24 HOUR PRODUCTION RATE | |
|-------------------------|-------------|
| BEFORE | AFTER |
| Oil 20 | Oil 82 |
| Water 20 | Water 13 |
| Gas 70 | Gas 350 |

Name of Contractor

| | | | |
|---------|------|-------|----------|
| Address | City | State | Zip Code |
|---------|------|-------|----------|

DETAILS OF WORK

06-09-94 Pull rods and tbg. Run tbg in hole. Ran tbg caliper and LD 19 jts rod cut tbg. Pickle tbg w/1100 gal 15%. Attempt to acidize Red River and had down hole leak. Pull tbg and hydrotest in hole. LD 1 jt. Acidize w/ 2000 gal foamed 15% HCl. Flow back load and well continued flowing w/ 350 psi FTP on a 14/48" choke.

See attached daily reports and wellbore schematic.

| | | | |
|--------------------------------------|---|-------------------------------|--|
| Company Panterra Petroleum | | | |
| Address P. O. Box 7168 | | | |
| City Billings | State MT | Zip Code 59103-7168 | |
| By <i>Barry Evertz</i> | Date 7/1/94 | | |
| Title | Telephone Number 406-245-6248 | | |

406-245-9106 Fax

| | |
|--|-----------------------------------|
| FOR OFFICE USE ONLY | |
| <input checked="" type="checkbox"/> Received | <input type="checkbox"/> Approved |
| Date <i>7-16-94</i> | |
| By <i>F. C. Williams</i> | |
| Title Assistant Director | |

PANTERRA PETROLEUM

| | | | | | | | | |
|------------|-----------|---|----|-------------|-------------------------|---|---|---|
| | | | | | WELL: | CORPS OF ENGINEERS 31-10 | FIELD: | BAKER |
| | | | | | LOCATION: | NWNE SEC 10 153N 101W, MCKENZIE CO, ND SURF:660' FNL & 2304' FEL BHL:841' FNL & 1926' FEL | | |
| 2954' | I | I | I | 9 5/8" | | | STATUS: | FLOWING OIL WELL |
| | I | I | I | | ELEVATION: | GL - 1851' KB - 1872' | ST FILE NO: | 11920 |
| | I | I | I | | | | API #: | 33-053-02148 |
| 5130' | I | I | I | CMT TOP | SPUD DATE: | 6/20/86 | COMP DATE: | 11/24/86 |
| | I | I | I | | ROTARY TD: | 13480' | PBTD: | 13344' |
| 5777-783' | H | I | I | H | CASING PATCH | SURF CSG: 9 5/8" 36,40# K-55 SET @ 2954', CMT W/ 1220 SX. | | |
| | I | I | I | | TIGHT CSG: | PROD CSG: 5 1/2" 17,20,26# L-80,5595 SET @ 13344', CMT W/ 1850 SX "G", | | |
| 6661' | / | I | I | \ | < 4 3/8" ID | 1082 SX LITE. | | |
| | I | I | I | | TUBING & BHA | | RODS & PUMP | |
| 8933-37' | J | I | I | C | IV COLLAR | | | |
| | I | I | I | | 1 JT 2 7/8" L-80 TBG | | | |
| 10200' | I | I | I | | 1 - 2 7/8" X 4" TBG SUB | | | |
| | I | I | I | | 377 JTS 2 7/8" L-80 TBG | | | |
| | I | I | I | | CUP SN - 11497' | | | |
| 11497' | I | > | I | I | CUP SN | BAKER 40-26 MOD G-22 SEAL ASSY | | |
| | I | I | I | | | BAKER MOD D PERM. PKR. - 11498' | | |
| 11498' | | | | MODEL D PKR | | | | |
| | I | I | I | | | | | |
| 11600-612' | \ | I | I | \ | TIGHT CSG | SALT | DEPTH | 5 1/2" LTC SET @ |
| | /\ | I | I | \ \ | FISH-MILL | | | |
| 11840-842' | = | | | = | SQZ PERFS | DUNHAM | 6654-6710 | 20# L-80 21 |
| | | | | | | PIKE | 7022-7070 | 26# SS95 57 |
| 13100' | I | I | I | I | | CHARLES | 8252-8950 | 20# L-80 3855 |
| 13120-122' | = | I | I | = | SQZ PERFS | PRAIRIE | 11594-11790 | 17# L-80 6439 |
| 13243' | <(I | I | >) | I | MODEL R-3 PKR | | | 23# SS95 6944 |
| 13255-265' | = | | | = | & 5 JTS TBG | SL- | SPM- | 17# L-80 8046 |
| | | | | | RED RIVER B | | | 23# SS95 8877 |
| | | | | | | | | 20# L-80 11389 |
| 13296-303' | = | | | = | | WELLHEAD: | TBGHD CIW,F,1" 3000 PSI X 7 1/16" | 26# SS95 11703 |
| 13308-312' | = | | | = | RED RIVER C | | | 20# L-80 13344 |
| 13322-330' | = | | | = | | PUMP UNIT: | LUFKIN MI 640-365-144 W/ AJAX E-42 ENG. | |
| | | | | | | PERFS: | RED RIVER "B" 13255-265', 4 SPF. | |
| 13344' | <(****I>) | | | | CMT RET | | | |
| 13400-402' | ***** | | | | SQZ | | | RED RIVER "C" 13296-303', 13308-312', 13322-330' 4 SPF. |
| 13440-442' | ***** | | | | PERFS | | | |
| | | | | | | PRODUCTION: | 82 BO, 350 MCF, 13 BWPD | |
| 13438' | ***** | | | | FLOAT COLLAR | | | |
| 13480' | ***** | | | | 5 1/2" | PREPARED BY: | GARY L EVERETZ | DATE: 07/01/94 |

Corps Of Engineers 31-16
PANTERRA PETROLEUM
NWNE 10 - T153N, R101W
Baker Field
McKenzie County, ND

AFE #46

- 06-16-94 FL @ 8500' (3000' of fluid entry - 16 hrs). Swabbed well to SN @ 11,496' in 3 runs. Rec 100' of oil on 1st run. TF - 15 BLW rec. 180 BLWTR. RU HES to do foamed acid job. Fill csg w/ 38 BSW & test to 2000# - held OK. Had hot oil truck maintain csg psi during job. Installed 5000# master valve on tbg. Pumped 200 gal 28% HCl acid ahead of 50,000 SCF of N₂, 400 gal foamed FW & additives, 1800 gal 28% SGA-HT foamed acid. Flushed to perfs w/ N₂. Max press - 6590#, Avg press - 5950#, Avg inj rate - 2.7 BPM. ISIP - 5822#. LWTR - 60 bbls tbg, 38 bbls csg, 180 bbls before job = 278 BLWTR. RD HES. Install choke @ tbg & hook flowline to test tank. Flow back 72 BLW in 4 1/2 hrs & well died. RU swab. Made 2 swab runs f/ SN, very gassy from N₂ & acid gas. Rec 16 BLW. Had 5% oil on last run. Rec 88 BLW, 190 BLWTR. SDFN. DC \$12072 CC \$53033
- 06-17-94 SITP - 1475#, SICP - 100#. Bleed gas off well thru 16/64" choke & treater. 2 hr FTP @ 135#. Well started flowing oil. Well flowed 8.4 bbls of 98% oil on 16/64" choke in 2 hrs & started gassing only. Opened on 1" choke. Well unloaded 3 BO, 7 BLW in 1 hr & died. Made 1 swab run f/ 3500'. Well started flowing. Made 1 swab run/hr, next 2 hrs, one f/ 3500' & one f/ 6000'. Well continued flowing. In 10 1/2 hrs swabbed & flowed 46.7 BO (53%), 41.1 BLW, TF 87.8 bbls. Volumes are calculated on avg wellhead cuts. Had choke settings f/ 16/64" - 1". TP varied f/ 40# - 300#. Had to repair SW dump valve & float on treater. Turned well thru treater @ 9:00 p.m., CDT & left flowing on 20/64" choke w/ 280# FTP. DC \$2657 CC \$55690
- 06-18-94 Flowed 33 BO, 17 BLW, TP - 50-280#, 20/64" choke in 10 hrs.
- 06-19-94 Flowed 92 BO, 52 BLW, TP - 50-350#, 24/64" choke in 24 hrs, 36% wtr.
- 06-20-94 Flowed 85 BO, 20 BLW, TP - 50-350#, 24/64" choke in 24 hrs, 24% wtr.
- Well has made 257 bbls oil and 130 bbls LW = 387 BTF since acid job. 60 BLW TR (prob. in csg annulus) put well on 18/64 choke. Laid all rods from derrick on ground in triples. SK&S roustabouts moved out American 456-256-120 PU w/ cement port-a-base to yard. They moved in and set Lufkin Mark II - M640 D-365-144 PU Serial #21835. Mounted 8-1/2" x 10" Ajax engine to PU. Engine sheave = 14"; PU sheave = 33" gear box ratio = 28.6:1; new D grove 482 belts.
- From 7 a.m. to 4:30 p.m. (9 hr - well SI 1/2 hr). Well flowed 40.6 bbls oil, 6.9 bbls SW, 475 BTF, 85% oil. 4.5 bbls oil / hr on 18/64" choke. Making ±400 mcf/day of gas to sales. Put Wellpro BOP and hand slips on 1/2 cost rental of \$70/day. ERC choke and master valve - \$20/day. RD and Release Rig. DC \$2414 CC 58104

Corps Of Engineers 31-10
PANTERRA PETROLEUM
NWNE 10 - T153N, R101W
Baker Field
McKenzie County, ND

AFE #46

- 06-11-94 Fished 2" SV w/ sandline. RU HES for foamed acid job. Install 2 7/8" EUE, 5000# master valve on tbg. Test csg to 1540# - OK. Test lines to 5460#. Pump 50,000 SCF N. down tbg, followed by 400 gal foamed FW w/ 10 GPM Pen-88HT, 20 GPM Sperse-All & 50,000 SCF N. TP - 5500#, CP - 1006#. AIR @ .35 BPM. Pumped 500 gal 28% SGA w/ Inhibitor, Pen-88HT, SWIC & Sperse-All w/ 75,000 SCF N. down tbg @ 5900 psi. CP immed came up to 3008#. SD. Bled csg down to 2000#. RU choke & hardline to test tank. Bled well off to tank. Rec acid in tank. Flushed csg w/ 24 BFW. Drop 2" SV in tbg, wait 30 min. Pump 66 BSW down tbg. Had circulation out csg. Shut csg & PT to 1500#, pkr - OK, csg - OK. Possible leak in tbg or circ valve. RD HES. Rotate out of Model "D" w/ latch. POOH w/ 378 jts 2 7/8" tbg & top connection of circ valve was broken @ base of threads on top pin of valve. Left circ valve, SN & seal assy in hole. SDFN. DC \$13272 CC \$27410
- 06-12-94 TIH w/ Bowen 4 3/8" OD Overshot w/ cut lip guide, dressed w/ 3 1/2" basket grapple, Bowen oil jars, & 218 jts 2 7/8" tbg. Hit tight spot in csg @ 6661' K.B. Set down 30,000# SW. Had to set jars off 3 times to pull out. Set down 10,000# - would not go. Had to pull 10,000# over string weight to get free. POOH w/ tbg & BHA. Cut long undressed shoe f/ guide to go over fish & 378 jts. Took 5000# SW to go past 6661' K.B. Set down @ 11,498' K.B. RIH w/ sandline & OS to fish SV. POOH - did not have it. Made 2nd attempt & successfully fished SV out of circ valve. SDFN. DC \$3366 CC \$30776
- 06-13-94 POOH w/ tbg & guide. TIH w/ max OD 3 3/4" taper tap, Bowen oil jars, & 378 jts 2 7/8" tbg. Tagged fish @ 11,494' K.B. Engaged fish. Torqued tbg 5 rounds. Pull 15,000# over string weight & set down 15,000#, worked string. Attempted to release latch-in seal assy. POOH. No recovery of fish. Could see marks on taper tap where it had been inside 2" mandrel on circ valve. SDFN. DC \$3078 CC \$33854
- 06-14-94 TIH w/ 3 3/4" max O.D. taper tap, bumper sub, Bowen oil jars & 378 jts 2 7/8" tbg. Engage fish @ 11,494' K.B. Release latch-in seal assy. POOH w/ 378 jts tbg & BHA. Rec all of fish (circ valve, SN & latch-in assy). RU Basin Tubing Testers. TIH w/ Baker 40-26 model G-22 latch-in type seal assy w/ 2 seal units, 2 7/8" cup type SN, 378 jts 2 7/8" tbg & 1 - 2 7/8" x 4' tbg sub. Hydrotested tbg to 7000#. Found thread leak @ 3 jts above SN @ 1000#. Replaced bad jt. Stung into model "D" pkr @ 11,498' w/ 22,000# compression. SDFN. DC \$5133 CC \$38987
- 06-15-94 RU to swab. FL @ 2800'. Swabbed 5 BO, 60 BSW. Total of 65 BF in 12 runs in 8 hrs. All oil was on 1st run. Then swabbed 60 BLW. 195 BLWTR. Swab f/ pkr after 7th run. Made 1 run/hr last 4 hrs. FL @ 10,900' (600' above pkr) last 4 runs. Rec 1.7 BLW/hr last 2 hrs. SDFN. DC \$1974 CC \$40961

Corps Of Engineers 31-10
PANTERRA PETROLEUM
NWNE 10 - T153N, R101W
Baker Field
McKenzie County, ND

03-06-94 Shut-in @ 4:00 p.m. due to flooding.

03-22-94 Well put back on production around 2:00 p.m.

AFE #46

06-07-94 MI H&L Well Service rig. Too windy to rig up.

06-08-94 RU H&L rig. Pump 70 BSW down tbg - on vacuum. Jar on pump, would not unseat. Backed off rods. POOH w/ 1 - 1"x 2' & 1 - 1"x 6' pony rods, 94 - 1" plain rods & 53 - 7/8" plain rods. RU f/ tbg. Install BOP. Tbg was set w/ 40,000# compression. Pull out of Model "D" pkr. Strap OOH w/ 122 jts 2 7/8" tbg to rods. Continue stripping rods & tbg OOH. Found rod cut split jt 219 f/ top (6650'+). RU swab. Swab fluid f/ tbg to tank battery. Pull tbg to fluid, well started flowing oil f/ tbg. Hooked tbg & csg to flowline & left open to T.B. overnight. Have 265 jts tbg (7880'+) & 330 rods (8250'+). DC \$3145

06-09-94 Well flowed 1/2" (.84 BO) into tank overnight, was dead in a.m. Finished stripping rods & tbg to pump. Had to swab tbg down after pulling rods. Pump was stuck in btm jt above SN. Cut tbg to recover pump & found pump was stuck in salt. Sent pump in for repairs. Recovered rods: 94 - 1" plain, 60 - 7/8" plain, 38 - 7/8" w/ scrapers, 189 - 3/4" w/ scrapers, & 16 - 1" w/ scrapers (these scrapers were very worn). 329 jts of tbg above SN. POOH w/ 49 jts 2 7/8" tailpipe, 2 cup type SN, 2 - 2 7/8" x 4' perf subs, & locator seal assy w/ 4 seal units f/ Baker Model "D" pkr. TIH open-ended w/ 377 jts 2 7/8" tbg to 11,453' K.B. RU Dialog. Ran Tubing Profile Caliper Log. Tool would not go down past 2200' due to paraffin. Hot oil tbg w/ 35 bbls prod oil. Ran Profile Log f/ to surface. Found 19 jts over 35% wear (to be replaced). Most bad jts were in the 1500' of tbg above SN. Left well open to T.B. overnight. DC \$4671 CC \$7816

06-10-94 POOH w/ 377 jts 2 7/8" L-80 tbg. LD 19 jts that were over 35% wall thickness worn off. TIH w/ Baker 40-26 mod. G-22 Latch-in type Seal Assy w/ 2 seal units & 40,000# shear ring, 2 3/8" cup type SN, Basin circ valve, 378 jts 2 7/8" L-80 tbg, & 1 - 2 7/8" x 6' tbg sub. Replaced worn tbg w/ 21 jts of inspected tbg. Latch into Model "D" pkr @ 11,498'. Open circ valve. Set tbg in compression. Drop 2" SV, wait for it to RU HES & pump 20 BSW cushion in tbg. Drop 2" SV, wait for it to drop. Pickle tbg w/ 1200 gal 15% HCl acid w/ inhibitor & Sperse. Drop. Displaced into csg annulus thru circ valve. Let set All @ 1 BPM. Reverse acid out of tbg to test tank, cycle tbg & close circ valve. PT csg & valve to 500# - OK. SDFN. DC \$6322 CC \$14138



SUNDRY NOTICES AND REPORTS ON WELLS
INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
SPN 5749 (2-92)

PLEASE READ INSTRUCTIONS ON BACK OF FORM

| | |
|--|--------------------------------------|
| <input checked="" type="checkbox"/> Notice of Intent | Approximate Start Date <u>6/8/94</u> |
| <input type="checkbox"/> Report of Work Done | Date Work Completed _____ |

- | | |
|--|--|
| <input type="checkbox"/> Drilling Prognosis | <input type="checkbox"/> Spill Report |
| <input type="checkbox"/> Redrilling or Repair | <input type="checkbox"/> Shooting |
| <input type="checkbox"/> Casing or Liner | <input checked="" type="checkbox"/> Acidizing |
| <input type="checkbox"/> Plug Well | <input type="checkbox"/> Fracture Treatment |
| <input type="checkbox"/> Supplemental History | <input type="checkbox"/> Change Producing Method |
| <input type="checkbox"/> Temporarily Abandon | <input type="checkbox"/> Reclamation |
| <input type="checkbox"/> Other <u>Workover Tax Exemption</u> | |

| | | | | | |
|---|--------------------------|---------------------------|-------------------------|-----------------------|--|
| Well Name and Number Corps of Engineers 31-10 | | | | | |
| Footages 660' FNL 2305' FEL | Qtr-Qtr NW NE | Section 10 | Township 153N | Range 10 TW | |
| Field Baker | Pool Red River | County McKenzie | | | |

| 24 HOUR PRODUCTION RATE | |
|-------------------------|-------|
| BEFORE | AFTER |
| Oil 20 | Oil |
| Water | Water |
| Gas | Gas |

| | | | |
|--------------------|------|-------|----------|
| Name of Contractor | | | |
| Address | City | State | Zip Code |

DETAILS OF WORK

On June 2, 1994, the well developed a tubing leak and a rig was moved on June 8, 1994. While pulling the rods and pump, scale was noted and it was decided that work in addition to repair of tubing leak should be done. Panterra proposes to replace rod cut tbg, lower pump, and acid stimulate the Red River. Replaceing the 456 pumping unit with a larger unit will be required when the pump is lowered.

PANTERRA PETROLEUM hereby applies for workover exemption - notice of intention to begin a workover project, which may be exempt from taxation pursuant to subsection (4) of North Dakota century Code section 57-51.1-03, for work outlined above. Approximate cost: \$93,700.00. Cost through June 10, 1994 is \$14,138.00.

| | | | |
|--------------------------------------|---|-------------------------------|--|
| Company Panterra Petroleum | | | |
| Address P. O. Box 7168 | | | |
| City Billings | State MT | Zip Code 59103-7168 | |
| By <i>Terry Holsworth</i> | Date 6/13/94 | | |
| Title Petroleum Engineer | Telephone Number 406-245-6248 | | |
| 406-245-9106 Fax | | | |

| | |
|-----------------------------------|--|
| FOR OFFICE USE ONLY | |
| <input type="checkbox"/> Received | <input checked="" type="checkbox"/> Approved |
| Date 6-15-94 | |
| By <i>Kurt Furt</i> | |
| Title Per EDS | |

CORPS OF ENGINEERS 31-10
NWNE Sec. 10, T153N-R101W
Baker Field
McKenzie County, North Dakota
WORKOVER PROCEDURE

Proposed Red River Acid Job AFE #46

Current Status:

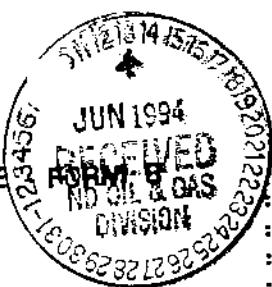
Production: 20 BOPD, 60 MCFPD, 20 BWPD. Well currently being worked on due to tubing leak. Pump @ 10,200'.

Proposed Procedure

1. Rig on location. Rods and tbg were stripped out due to pump stuck in bottom jt of tbg. Found rod cut split at 7450'.
2. 10 perfed subs. TIH w/ tbg. RU Dialog. Run tbg Caliper inspecting tbg for rod cut problems. LD all tbg with wall loss over 35%.
3. TIH w/ seal divider with latch down assembly added, SN, and circulating valve and rest of tbg. Sting into Model D pkr at 11,498'.
4. RU pump truck. Drop SV. Pickle tbg w/ 1200 gal 15% HCl. Acidize Red River perfs w/ 2000 gal 28% foamed acid. Pump nitrogen pad ahead of acid and displace acid w/ nitrogen. Flow back as soon as possible.
5. Flow and swab back well until cleaned up. POOH w/ tbg.
6. Run prod BHA: Seal divider w/ latch down assemble, 1 jt 2-38" tbg w/ 30' x 1-1/4" dip tube, Mech SN, rest of tbg. Latch into Model D pkr and land tbg in tension.
7. Run 2-1/2" x 1-1/4" pump.
Rod design:
111 - 1" (2775')
112 - 7/8" (2800')
220 - 3/4" (5500')
16 - 1" (400')
8. Move American 456 PU to SK&S yard. Move Lufkin M640-365-144 to well. Retro fit Ajax motor for 640 unit or tie in 3-phase power to well.



PRODUCERS CERTIFICATE OF COMPLIANCE AND
AUTHORIZATION TO TRANSPORT OIL FROM LEASE
INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
SFP 5698 (2-92)



Well File Number :
11920

NDIC CTB Number :
111920

INSTRUCTIONS

The original and four copies of this form must be submitted to the OIL AND GAS DIVISION, 600 E.
Boulevard Avenue, Bismarck, ND 58505

31-10
WELL CORPS OF ENGINEERS (Q/Q) NAME (SEC.) 10 (TWP.) 153N (RGE.) 101W COUNTY MCKENZIE

PRODUCER: PANTERRA PETROLEUM FIELD BAKER POOL RED RIVER

ADDRESS CORRESPONDENCE TO: GARY L. EVERTZ, PANTERRA PETROLEUM
550 N. 31ST STREET, SUITE 500, P. O. BOX 7168, BILLINGS, MT 59103

Name of First Purchaser AMOCO PRODUCTION COMPANY : % Purchased : Date Effective
: 100 : 6/1/94

Principal Place of Business 1670 BROADWAY, STE 715, DENVER, CO 80201

Field Address 1670 BROADWAY, STE 715, DENVER, CO 80201

Name of Transporter SCURLOCK PERMIAN CORP. - TRUCK : % Transported : Date Effective
Address 650 S. CHERRY ST., STE 210, DENVER, CO : 100 : 6/1/94

The above named producer authorizes the above named purchaser to purchase the percentage of oil stated above which is produced from the lease designated above until further notice. The oil will be transported by the above named transporter.

Other Transporters Transporting From This Lease : % Transported : Date Effective
: : :

Other First Purchasers Purchasing From This Lease : % Purchased Date Effective
: : :

Remarks

I certify that the above information is a true and correct report of the transporters and purchasers of oil produced from the above described property. This authorization will be valid until further notice to the transporters and purchasers named until cancelled by the OPERATOR.

Signature

Title
Engineer

Date

6/8/94

State of Montana
County of Yellowstone

On 6/8/94, Gary L. Evertz, known to me to be the person described in and who executed the foregoing instrument personally appeared before me and acknowledged that (s)he executed the same as a free act and deed.

My Commission Expires

AUGUST 21, 1996

APPROVED BY:

Date: 6/13/94



PRODUCERS CERTIFICATE OF COMPLIANCE AND
AUTHORIZATION TO TRANSPORT OIL FROM LEASE - FORM 8
INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
SFN 5898 (2-92)

: Well File Number :
: 11920 :
: ----- :
: NDIC CTB Number :
: 11920 :
: ----- :

INSTRUCTIONS

The original and four copies of this form must be submitted to the OIL AND GAS DIVISION, 600 E.
Boulevard Avenue, Bismarck, ND 58505

| | | | | | | | |
|------|--|--------|----------------|--------|------|--------|----------|
| WELL | 31-10 CORPS OF ENGINEERS (Q/Q) NAME | (SEC.) | 10 (TWP.) 153N | (RGE.) | 101W | COUNTY | MCKENZIE |
|------|--|--------|----------------|--------|------|--------|----------|

PRODUCER: PANTERRA PETROLEUM FIELD BAKER POOL RED RIVER

ADDRESS CORRESPONDENCE TO: GARY L. EVERTZ, PANTERRA PETROLEUM
550 W. 31ST STREET, SUITE 500, P. O. BOX 7168, BILLINGS, MT 59103

| | | |
|-----------------------------|---|----------------------------------|
| Name of First Purchaser | SCURLock Permian Corp. | : % Purchased : Date Effective |
| Principal Place of Business | 650 S. CHERRY ST., STE 210, DENVER, CO 80222-1804 | : 100 2/1/94 |
| Field Address | 650 S. CHERRY ST., STE 210, DENVER, CO 80222-1804 | : |
| Name of Transporter | SCURLock Permian Corp. - TRUCK | : % Transported : Date Effective |
| Address | 650 S. CHERRY ST., STE 210, DENVER, CO | : 100 2/1/94 |

The above named producer authorizes the above named purchaser to purchase the percentage of oil stated above which is produced from the lease designated above until further notice. The oil will be transported by the above named transporter.

| | |
|---|----------------------------------|
| Other Transporters Transporting From This Lease | : % Transported : Date Effective |
| Other First Purchasers Purchasing From This Lease | : % Purchased Date Effective |

Remarks
WELLS PURCHASED FROM JOHN L. COX. OPERATORSHIP EFFECTIVE 2-1-94

I certify that the above information is a true and correct report of the transporters and purchasers of oil produced from the above described property. This authorization will be valid until further notice to the transporters and purchasers named until cancelled by the OPERATOR.

Signature

Title
Engineer

Date

2/1/94

State of Montana
County of Yellowstone

on 2/1/94, Gary L. Evertz, known to me to be the person described in and who executed the foregoing instrument personally appeared before me and acknowledged that (s)he executed the same as a free act and deed.

My Commission Expires

AUGUST 21, 1996

APPROVED BY:

Date:

2/22/94

NORTH DAKOTA INDUSTRIAL COMMISSION

OIL AND GAS DIVISION

11920

Wesley D. Norton
DIRECTOR

F. E. Wilborn
ASSISTANT DIRECTOR

Clarence G. Carlson
GEOLOGIST

Charles Koch
ENGINEERING DEPT.

Doren Dannewitz
FIELD SUPERVISOR

Glenn Wollan
RECLAMATION SUP.

February 8, 1994

Jan Magstadt
Panterra Petroleum
P.O. Box 7168
Billings, MT 59103-7168

**RE: CHANGE OF OPERATOR FROM JOHN L. COX TO
PANTERRA PETROLEUM
7 WELLS**

Dear Ms. Magstadt:

Please find enclosed a copy of the approved Form 15, Notice of Transfer of Oil and Gas Wells, in regard to the above-referenced matter. These transfers have now been approved and subject wells are now covered by Panterra Petroleum Bond No. B01936, Underwriters Indemnity Co., as Surety.

If you should have any questions, please feel free to contact this office.

Sincerely,

F. E. Wilborn / mr

F. E. Wilborn
Assistant Director

FEW/mr

Enclosure

cc: John L. Cox
PO Box 2217
Midland, TX 79702



NOTICE OF TRANSFER OF OIL AND GAS WELLS - FORM 15
INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
SFN 5762 (3-92)

BOND NO. B01936

The original and one copy of this form must be submitted to the Industrial Commission of North Dakota, Oil and Gas Division, 600 E. Boulevard Avenue, Bismarck, North Dakota 58505-0840.

TRANSFERRING COMPANY

Name and Address of Representative

JOHN L. COX BOX 2217 MIDLAND, TX 79702

Name of Company Transferring Oil and/or Gas Wells

JOHN L. COX

I, the above named representative, acknowledge the transfer of the oil and/or gas wells named below for the purpose of ownership and/or operation to the company named below.

January 31, 1994

Operator

Date

Title

(Must be an officer or power of attorney must be attached)

| File Number | Requested Official Well Name and Number | Location (Qtr-Qtr, Sec, Twp, Rge) |
|-------------|---|-----------------------------------|
| | Please see attached. | |

RECEIVING COMPANY

Name and Address of Representative

Panterra Petroleum
Robert L. Nance P. O. Box 7168, Billings, MT 59103-7168

Name of Company Transferring Oil and/or Gas Wells

I, the above named representative, have read the foregoing statement and accept such transfer, also the responsibility of ownership and/or operation of said well or wells, under the said company bond, said bond being tendered to or on file with the Industrial Commission.

Panterra Petroleum, a Montana General Partnership, Nance Petroleum Corporation, Managing Partner

January 31, 1994

President

Partner

Date

Title

(Must be an officer or power of attorney must be attached)

Robert L. Nance

| Principal | Amount of Bond |
|-----------|----------------|
| | \$ 100,000.00 |

Name and Address of Surety

Underwriters Indemnity Company 8 Greenway Plaza, Suite 400, Houston, TX 77046

We, the above named PRINCIPAL and SURETY, agree that such bond shall extend to compliance with Chapter 38-08 of North Dakota Century Code and amendments and the rules and regulations of the Industrial Commission of the State of North Dakota prescribed to govern the Production of oil and gas on government and private lands within the State of North Dakota, in relation to the above stated transfer; it being further agreed and understood that the bond sum or amount is not to be considered increased because of such extension.

February 3, 1994 Roy C. Die, Attorney-in-Fact

Date

Title

(Must be an officer or power of attorney must be attached)

FOR OFFICE USE ONLY

| Approved By | Title | Date |
|-------------|-------|------------|
| | | FEB 3 1994 |

ATTACHED TO AND MADE A PART OF THAT CERTAIN FORM 15
RECEIVING COMPANY: PANTERRA PETROLEUM, A MONTANA GENERAL PARTNERSHIP
HANCE PETROLEUM CORPORATION, MANAGING PARTNER

| LEASE/WELL | DESCRIPTION | FIELD NAME | COUNTY | STATE | FILE # |
|--------------------------|-------------------|------------|----------|-------|--------|
| Basic Game & Fish 34-3 | SWSW 3-153-101W | BAKER | McKENZIE | ND | 11745 |
| CORPS OF ENGINEERS 31-10 | NWNE 10-153N-101W | BAKER | McKENZIE | ND | 11920 |
| FRENCH PINNEY 24-3 | SESW 3-153N-101W | BAKER | McKENZIE | ND | 12129 |
| ROSEBUD 22-11 | SENW 11-153N-101W | BAKER | McKENZIE | ND | 11549 |
| H & G 14-2 | SWSW 2-153N-101W | BAKER | McKENZIE | ND | 11751 |
| USA 2-12 | SWSE 12-141N-101W | TR | BILLINGS | ND | 9262 |
| USA 3-12 | NWNE 12-141N-101W | TR | BILLINGS | ND | 7014 |

FILE# 11920 CURRENT OPERATOR: JOHN L. COX

X

LEASE: BASIC CORPS OF ENGINEERS #31-10

SURFACE LOC: NW NE 10-153-101 FOOTAGE: 0660' FNL 2305' FEL BHL: BHL

POOL 1: NEAREST N-S LINE: 0.00 NEAREST E-W LINE: 0.00

| | | | | | | | | | | |
|-----------|-------|---------|-------|--------|-----|---|---|---|------|-------|
| MD: 12570 | N+ S- | -176.67 | E+ W- | 383.13 | | | | | | |
| 12980 | | -180.59 | | 378.28 | 843 | F | N | L | 1930 | F E L |
| 13225 | | -182.93 | | 375.38 | * | | | | | |

POOL 2:

| | | | | | | | | | | |
|-------|-------|------|-------|------|---|---|---|---|---|---|
| MD: 0 | N+ S- | 0.00 | E+ W- | 0.00 | | | | | | |
| 0 | | 0.00 | | 0.00 | 0 | F | L | 0 | F | L |
| 0 | | 0.00 | | 0.00 | | | | | | |

POOL 3:

| | | | | | | | | | | |
|-------|-------|------|-------|------|---|---|---|---|---|---|
| MD: 0 | N+ S- | 0.00 | E+ W- | 0.00 | | | | | | |
| 0 | | 0.00 | | 0.00 | 0 | F | L | 0 | F | L |
| 0 | | 0.00 | | 0.00 | | | | | | |

POOL 4:

| | | | | | | | | | | |
|-------|-------|------|-------|------|---|---|---|---|---|---|
| MD: 0 | N+ S- | 0.00 | E+ W- | 0.00 | | | | | | |
| 0 | | 0.00 | | 0.00 | 0 | F | L | 0 | F | L |
| 0 | | 0.00 | | 0.00 | | | | | | |

TOTAL DEPTH:

| | | | | | | | | | | |
|-----------|-------|---------|-------|--------|-----|---|---|---|------|-------|
| MD: 12570 | N+ S- | -176.67 | E+ W- | 383.13 | | | | | | |
| 12980 | | -180.59 | | 378.28 | 845 | F | N | L | 1933 | F E L |
| 13480 | | -185.37 | | 372.37 | * | | | | | |

FILE# 11920 CURRENT OPERATOR: JOHN L. COX
 LEASE: BASIC CORPS OF ENGINEERS #31-10
 SURFACE LOC: NW NE 10-153-101 FOOTAGE: 0660' FNL 2305' FEL BHL: BHL
 POOL 1:
 MD: 12570 N+ S- -176.675 E+ W- 383.13 E
13225 12980 -180.555 378.28 E
13225
 POOL 2:
 MD: _____ N+ S- _____ E+ W- _____

 POOL 3:
 MD: _____ N+ S- _____ E+ W- _____

 POOL 4:
 MD: _____ N+ S- _____ E+ W- _____

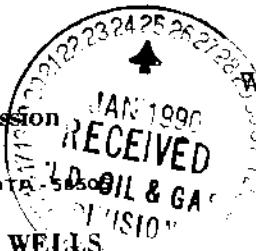
 TOTAL DEPTH:
 MD: 12570 N+ S- -176.615 E+ W- 383.03 E
12980 -180.555 378.28 E
13480 _____

FORM 4

North Dakota State Industrial Commission
Oil and Gas Division

900 EAST BOULEVARD - BISMARCK, NORTH DAKOTA 58501

Well File No. 11920



SUNDRY NOTICES AND REPORTS ON WELLS

1. Notice of Intention to Drill or Redrill _____
2. Notice of Intention to Change Plans _____
3. Notice of Intention to Pull Casing _____
4. Notice of Intention to Abandon Well _____
5. Report of Water Shut-Off _____
6. Report of Shooting or Acidizing _____

7. Report of Casing _____
8. Report of Redrilling or Repair _____
9. Supplementary History X
10. Well Potential Test _____
11. Drilling Prognosis _____
12. _____

NAME OF LEASE Corp. of Engineers Date January 22, 1990
 WELL NO. 31-10 is located 840.59 ft. from (N) (S) line and 1926.72 ft. from the (E) (W) line
 of Section 10 Township 153-N Range 101-W in McKenzie
 County, Baker Field Red River Pool. The elevation of the Ground
 is 1851 feet above sea level.

Name and Address of Contractor, or Company which will do work is:

Sun Well Service, Inc., P. O. Box 2356, Williston, North Dakota 58801

(DETAILS OF WORK)

(State names of, and expected depth of objective sand; show sizes, weight, and lengths of proposed casing,
indicate mud weights, cementing points, and all other details of work)

11/27/89- (RU to pull well. Pkr stuck. Look for freepoint. Work Tbg. WIH cut 2-7/8" tbg. @13,100',
11-28-89 (Left 5 jts. 2-7/8" tbg and Model R Pkr @13,243' & 2 jts tail pipe.

11/29/89- (Run in hole with flat mill to tight spot in csg, started milling. Tbg parted, lost
12/1/89 (4-1/2" flat bottom mill. Could not fish. WIH with Overshot, jar on tbg., rig up
(Wireline, free tbg. Lay down tbg.

12/2/89- (PU Mill/Overshot combination; mill on fish.

12/6/89- { Start jarring. Could not fish 4-1/2" flat bottom mill, washover. Washover jars.
(Total 12.22 feet. Top @11,600', Mill @11,612'.

12/9/89- (Ran Model "D" Pkr (Baker 42-26) - set @11,498' (Permanent Packer), 378 jts 2-7/8"
(L-80 tbg., 1-10' sub, 1-6' sub, 1-4' sub.

12/10/89- (Swab well.

12/12/89- { Swab well.
Continue to Shut In 2-3 days, then swab. Well is not on normal production as of
1-19-90.

Company JOHN L. COX

Do not write in this space

Address Box 2217, Midland, TX 79702Rec'd
Approved

JAN 25 1990

19

By Martha Wittenbach

By

F. EllsworthTitle Martha Wittenbach, Prod. Mgr.

Title

Deputy Enforcement Officer

NORTH DAKOTA INDUSTRIAL COMMISSION

OIL AND GAS DIVISION

11920

Wesley D. Norton
CHIEF ENFORCEMENT OFFICER

F. E. Wilborn
DEPUTY ENFORCEMENT OFFICER

Clarence G. Carlson
GEOLOGIST

Charles Koch
ENGINEERING DEPT.

Doren Dannewitz
FIELD SUPERVISOR

Glenn Wollan
RECLAMATION SUP.

January 9, 1990

Ms. Martha Wittenbach
John L. Cox
P.O. Box 2217
Midland, TX 79702

RE: Basic Corps #31-10
NW NE Sec. 10-153N-101W
Well File No. 11920

Dear Ms. Wittenbach:

Please submit a Sundry Notice (Form 4) detailing work done on the above captioned well in November/December 1989, during changeover to permanent packer.

If you have any questions, feel free to contact our office.

Sincerely,

Thomas K. Delling /
Thomas K. Delling
Field Inspector

TKD/kl

NORTH DAKOTA INDUSTRIAL COMMISSION

OIL AND GAS DIVISION

11920

WESLEY D. NORTON
Chief Enforcement Officer

F. E. WILBORN
Deputy Enforcement Officer

CLARENCE G. CARLSON
Geologist

CHARLES KOCH
Engineering Dept.

DOREN DANNEWITZ
Field Supervisor

KEN KALLESTAD
Reclamation Sup.

February 12, 1987

Ms. Martha Wittenbach
Production Accounting Manager
John L. Cox
P. O. Box 2217
Midland, TX 79702

RE: Change of Operators
#11549 - Rosebud 22-11
#11745 - Basic Game & Fish 34-3
#11920 - Basic Corps of Eng. 31-10

Dear Ms. Wittenbach:

Enclosed are approved copies of the Form 2, 8, and 15 for the Change of Operator, for the above captioned wells, located in McKenzie County, North Dakota.

The former operator of the wells was Basic Earth Science Systems, Inc. If you have any questions, please do not hesitate to contact this office.

Sincerely yours,



Donna R. Bauer
Permit/Bond Secretary

/drb

Enclosures

cc: Basic Earth Science Systems, Inc.
P. O. Box 3088
Englewood, CO 80155

**North Dakota State Industrial Commission
Oil and Gas Division**

900 EAST BOULEVARD • BISMARCK, NORTH DAKOTA • 58505

NOTICE OF TRANSFER OF OIL & GAS WELLS



I, Jeffery E. Jones, of Basic Earth Science Systems, Inc. (Company)
do hereby acknowledge the transfer for the purpose of ownership and/or operation of the following oil and/or gas wells to
John L. Cox (Company)

OFFICIAL WELL NAME

LOCATION

BASIC CORPS OF ENGINEERS #31-10
11920

Surface: 660'FNL & 2305' FEL
BHL: 840.59'FNL & 1926.72'FEL
Section 10, T153N, R101W
McKenzie County, North Dakota

By Jeffrey E. Jones
Its Vice President

I, Martha Wittenbach, of John L. Cox (Company)
have read the foregoing statement and accept such transfer, also, the responsibility of ownership and/or operation of said well
or wells.

By Martha Wittenbach
Martha Wittenbach,
Its Production Acctg. Mgr.

John L. Cox, as Principal, and National Surety Corporation as Surety, on a drilling bond in the penalty of \$50,000.00, (amount of bond) executed on November 4, 1985 in favor of the State of North Dakota, hereby agree that such bond shall extend to compliance with Chapter 38-08 of N.D. Century Code and amendments thereto and the rules and regulation of the Industrial Commission of the State of North Dakota prescribed to govern the Production of oil and gas on state and private lands within the State of North Dakota, in relation to the above stated transfer; it being further agreed and understood that the bond sum or amount is not to be considered increased because of such extension.

John L. Cox

Bond No. SAA8 6720886

By: Martha Wittenbach (Principal)
Martha Wittenbach, Prodn. Acctg. Mgr.
National Surety Corporation (Surety)

By: Linda F. Hughes

Do not write in this space. Linda F. Hughes, Attorney-in-Fact
7-10-87

FEB 12 1987

Approved 19

By _____

Title F.E. Wilson
Deputy Enforcement Officer

FORM 8

Well File No. 1183

North Dakota State Industrial Commission

Oil and Gas Division

900 EAST BOULEVARD - BISMARCK, NORTH DAKOTA 58505

PRODUCERS CERTIFICATE OF COMPLIANCE AND AUTHORIZATION TO
TRANSPORT OIL FROM LEASE

BASIC CORP. OF ENGINEERS

WELL 31-10 (SEC.) 10 (TWP.) 153N (RGE.) 101W COUNTY McKenziePRODUCER JOHN L. COX FIELD Baker POOL Red RiverADDRESS CORRESPONDENCE TO JOHN L. COX, Attn: Martha WittenbachSTREET 400 West Wall Box 2217 CITY Midland STATE Texas 79702THE ABOVE NAMED PRODUCER HEREBY AUTHORIZES THE PERMIAN CORPORATION

(Name of Purchaser)

WHOSE PRINCIPAL PLACE OF BUSINESS IS Box 1183, Houston, Texas 77251-1183

(Street) (City) (State)

Williston, North Dakota

AND WHOSE FIELD ADDRESS IS _____

TO TRANSPORT 100 % OF THE OIL PRODUCED FROM THE LEASE DESIGNATED ABOVE UNTIL
FURTHER NOTICETHE OIL WILL BE TRANSPORTED BY THE PERMIAN CORPORATION - Trucks

(Name of Transporter)

OTHER PURCHASERS TRANSPORTING OIL FROM THIS LEASE ARE:

N/A%N/A%

(Name of Purchasers)

(Name of Purchasers)

REMARKS: JOHN L. COX ASSUMED OPERATION OF THIS PROPERTY FEBRUARY 1, 1987.

The undersigned certifies that the rules and regulations of the State Industrial Commission have been complied with except as noted above and that the purchaser is authorized to transport the above percentage of oil produced from the above described property and that this authorization will be valid until further notice to the purchaser named herein until canceled by the Operator

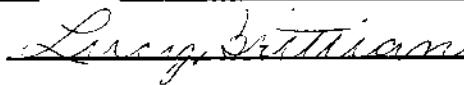
Executed this 5th day of February, 1987 JOHN L. COX

(Company or Operator)

STATE OF Texas)

Martha Wittenbach Prodn/Acctng/Mgr.
 (Signature) (Title)
COUNTY OF Midland) ss

Before me the undersigned authority, on this day personally appeared MARTHA WITTENBACH known to me to be the person whose name is subscribed to the above instrument, who being by me duly sworn on oath states that he is authorized to make this report and has knowledge of the facts stated herein and that said report is true and correct.

Subscribed and sworn to before me this the 5th day of February, 1987.

Lucy Williams
My Commission expires 7-16-88 Notary Public in and for Midland County, TexasFEB 12 1987Approved by: TEC Williams
(Deputy Enforcement Officer)

(Date)

(Instructions Over)

North Dakota State Industrial Commission
Oil and Gas Division

900 EAST BOULEVARD - BISMARCK, NORTH DAKOTA - 58505

SUNDRY NOTICES AND REPORTS ON WELLS

- | | |
|--|-----------------------------------|
| 1. Notice of Intention to Drill or Redrill | 7. Report of Casing |
| 2. Notice of Intention to Change Plans | 8. Report of Redrilling or Repair |
| 3. Notice of Intention to Pull Casing | 9. Supplementary History |
| 4. Notice of Intention to Abandon Well | 10. Well Potential Test |
| 5. Report of Water Shut-Off | 11. Drilling Prognosis |
| 6. Report of Shooting or Acidizing | 12. Report of API gravity. |

NAME OF LEASE Basic Corps of Engineers Date January 30, 1987

WELL NO. 31-10 Bottom-hole is located 840.59 ft. from (N) (S) line and 1926.72 ft. from the (E) (W) line

of Section 10 Township 153N Range 101W in McKenzie

County, Baker Field Red River Pool. The elevation of the ground

is 1851 feet above sea level.

Name and Address of Contractor, or Company which will do work is:

(DETAILS OF WORK)

(State names of, and expected depth of objective sand; show sizes, weight, and lengths of proposed casing,
indicate mud weights, cementing points, and all other details of work)

"TIGHT HOLE"

In response to your request for the Oil Gravity API which was inadvertently omitted from the Completion Report (Form 6).

Oil Gravity 51.0

Company Basic Earth Science Systems, Inc.

Do not write in this space

Address P.O. Box 3088, Englewood CO 80155

Approved FEB 06 1987 19

By Jeffrey E. Jones

By RELLIOTT

Title Vice President

Title Deputy Enforcement Officer



Earth Science Systems, Inc.

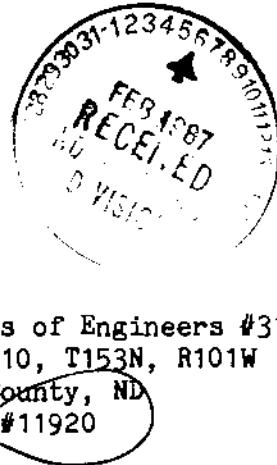
11920

P.O. Box 3088
Englewood, Colorado 80155
(303) 792-5230

February 4, 1987

North Dakota Industrial Commission
Oil and Gas Division
900 East Boulevard
Bismarck, ND 58505

Attn: Ms. Lyn S. Entzi



Re: Basic Corps of Engineers #31-10
NWNE Sec. 10, T153N, R101W
McKenzie County, ND
Well File #11920

Dear Ms. Entzi:

Enclosed please find the following, as requested in your letter of January 21st, for the above referenced well:

- ✓ Sundry Notice (Form 4) reporting the Oil Gravity
- ✓ Copy of previously submitted Form 8
- ✓ 3 copies each of DST numbers 1, 2 and 3
- ✓ 3 copies each of the Cyberlook, CNL and CBL logs

Please do not hesitate to contact me if you need anything further.

Sincerely,

Basic Earth Science Systems, Inc.

April Kreis
April Kreis
Production Technician

ak

Enclosures

11970
CEI ED
1087
1455789101121314

TECHNICAL SERVICES, Security Life Bldg. • Suite 1350 • 1616 Glenarm • Denver, Colorado 80202 • Phone. (303) 573-8027

Contractor Shelby Drilling
Rig No. 52
Spot NW/NE
Sec. 10
Twp. 153N
Rng. 101W
Field Skunk Hollow
County McKenzie
State North Dakota
Elevation 1872 ft.
Formation Lower Duperow

Top Choke 1/4"
Bottom Choke 3/4"
Size Hole 8 3/4"
Size Rat Hole 9 3/4"
Size & Wt. D. P. 4 1/2" XH 16.60#
Size Wt. Pipe --
I. D. of D. C. 2 3/4"
Length of D. C. 655 ft.
Total Depth 11132 ft.
Interval Tested 11087-11132 ft.
Type of Test Bottom Hole
Conventional

Flow No. 1 15 Min.
Shut-in No. 1 60 Min.
Flow No. 2 90 Min.
Shut-in No. 2 120 Min.
Flow No. 3 -- Min.
Shut-in No. 3 -- Min.

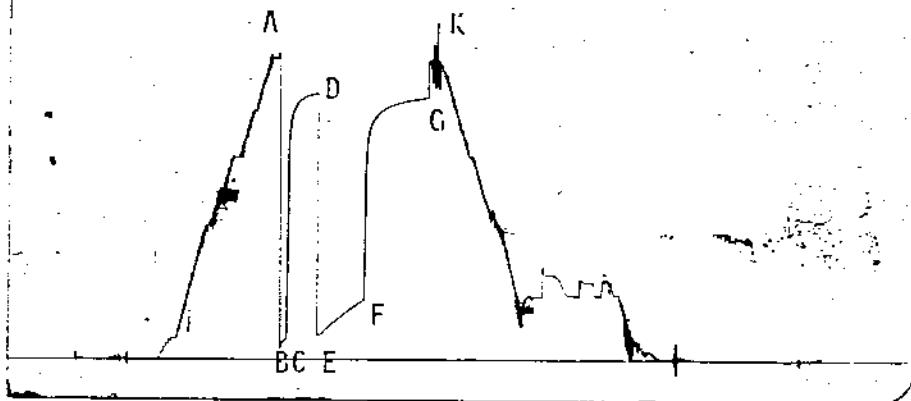
Bottom Hole Temp. 230°F
Mud Weight 10.5#
Gravity --
Viscosity 42

Tool opened @ 5:45 a.m.

Outside Recorder

| PRD Make | Kuster K-3 |
|---------------------|-------------------------|
| No | 22462 Cap. 9475 @ 11127 |
| Press | Corrected |
| Initial Hydrostatic | A 6143 |
| Final Hydrostatic | K 6107 |
| Initial Flow | B 232 |
| Final Initial Flow | C 409 |
| Initial Shut-in | D 5412 |
| Second Initial Flow | E 487 |
| Second Final Flow | F 1199 |
| Second Shut-in | G 5324 |
| Third Initial Flow | H -- |
| Third Final Flow | I -- |
| Third Shut-in | J -- |
| | |
| | |
| | |

Lynes Dist. Williston, ND
Our Tester Keith Hammer
Witnessed By Tom Hopkin



Did Well Flow - Gas Yes Oil No Water No
RECOVERY IN PIPE:

Test was reverse-circulated.

| | |
|---|--------------|
| 2415 ft. Total Recovery | = 29.77 Bbls |
| 1050 ft. Highly gas, slightly oil-cut mud | = 14.91 Bbls |
| 450 ft. Slightly oil & gas-cut muddy salt water | = 6.39 Bbls |
| 915 ft. Salt water with trace of oil | = 8.47 Bbls |

Blow Description:

1st Flow: Tool opened with a $\frac{1}{2}$ " blow, increasing to an $8\frac{1}{2}$ " blow at the end of the flow.

2nd Flow: Tool opened with a 1" blow and increased to a 3 psi blow in 80 minutes, decreasing slightly to a 2 psi reading at the end of the flow. Gas to surface during final shut-in.

Comments: The test results indicate a mechanically successful test. The flow and shut-in curves suggest relatively low permeability within the zone tested.

Operator Basic Earth Science Systems Inc.
P.O. Box 3088
Englewood, CO 80155
Well Name and No. Corrps #31-10
Ticket No. 04034
Date 7-30-86
DST No. 3
No. Final Copies 5

Location: SEC. 10 T153N R101W
 Test Type: BOTTOM HOLE CONVENTIONAL
 Formation: LOWER DUPEROW

Recorder Number: 22462
 Recorder Depth: 11127 ft.

TIME-PRESSURE LISTING

| CHART LABEL | COMMENTS | TIME MIN. | DELTA P psi | PRESSURE (T+dt)/dt psi | PRESSURE ABSCISSA | PRESSURE SQUARED psi^2/10^6 |
|-------------------|---------------------|--------------|----------------|---------------------------|----------------------|-----------------------------------|
| A | INITIAL HYDROSTATIC | 0.00 | | 6143.0 | | |
| B | START OF 1st FLOW | 0.00 | | 232.0 | | |
| C | END OF 1st FLOW | 15.00 | | 409.0 | | |
| 1st SHUTIN PERIOD | | 0.00 | 0.0 | 409.0 | 0.0000 | |
| | | 5.00 | 4051.0 | 4460.0 | 4.0000 | |
| | | 10.00 | 4519.0 | 4928.0 | 2.5000 | |
| | | 15.00 | 4679.0 | 5088.0 | 2.0000 | |
| | | 20.00 | 4779.0 | 5188.0 | 1.7500 | |
| | | 25.00 | 4851.0 | 5260.0 | 1.6000 | |
| | | 30.00 | 4887.0 | 5296.0 | 1.5000 | |
| | | 35.00 | 4919.0 | 5328.0 | 1.4286 | |
| | | 40.00 | 4943.0 | 5352.0 | 1.3750 | |
| | | 45.00 | 4963.0 | 5372.0 | 1.3333 | |
| | | 50.00 | 4979.0 | 5388.0 | 1.3000 | |
| | | 55.00 | 4995.0 | 5404.0 | 1.2727 | |
| D | END OF 1st SHUTIN | 60.00 | 5003.0 | 5412.0 | 1.2500 | |
| E | START OF 2nd FLOW | 0.00 | | 487.0 | | |
| F | END OF 2nd FLOW | 90.00 | | 1199.0 | | |
| 2nd SHUTIN PERIOD | | 0.00 | 0.0 | 1199.0 | 0.0000 | |
| | | 5.00 | 3039.0 | 4238.0 | 22.0000 | |
| | | 10.00 | 3433.0 | 4632.0 | 11.5000 | |
| | | 15.00 | 3589.0 | 4788.0 | 8.0000 | |
| | | 20.00 | 3689.0 | 4888.0 | 6.2500 | |
| | | 25.00 | 3765.0 | 4964.0 | 5.2000 | |
| | | 30.00 | 3821.0 | 5020.0 | 4.5000 | |
| | | 35.00 | 3861.0 | 5060.0 | 4.0000 | |
| | | 40.00 | 3897.0 | 5096.0 | 3.6250 | |
| | | 45.00 | 3925.0 | 5124.0 | 3.3333 | |
| | | 50.00 | 3953.0 | 5152.0 | 3.1000 | |
| | | 55.00 | 3973.0 | 5172.0 | 2.9091 | |
| | | 60.00 | 3993.0 | 5192.0 | 2.7500 | |
| | | 65.00 | 4013.0 | 5212.0 | 2.6154 | |
| | | 70.00 | 4029.0 | 5228.0 | 2.5000 | |
| | | 75.00 | 4045.0 | 5244.0 | 2.4000 | |
| | | 80.00 | 4057.0 | 5256.0 | 2.3125 | |
| | | 85.00 | 4065.0 | 5264.0 | 2.2353 | |
| | | 90.00 | 4073.0 | 5272.0 | 2.1667 | |

SIC EARTH SCIENCE SYSTEMS C.
LOT #: 3
CORPS #31-10
11087 - 11132ft.

Page 2

Location: SEC. 10 T153N R101W
Test Type: BOTTOM HOLE CONVENTIONAL
Formation: LOWER DUPEROW

Recorder Number: 22462
Recorder Depth: 11127 ft.

TIME-PRESSURE LISTING

| CHART LABEL | COMMENTS | TIME MIN. | DELTA P psi | PRESSURE psi | (T+dt)/dt ABSCISSA | PRESSURE SQUARED psi ² /10 ⁶ |
|---------------------|----------|--------------|----------------|-----------------|-----------------------|--|
| | | 95.00 | 4085.0 | 5284.0 | 2.1053 | |
| | | 100.00 | 4093.0 | 5292.0 | 2.0500 | |
| | | 105.00 | 4105.0 | 5304.0 | 2.0000* | |
| | | 110.00 | 4113.0 | 5312.0 | 1.9545* | |
| | | 115.00 | 4121.0 | 5320.0 | 1.9130* | |
| G END OF 2nd SHUTIN | | 120.00 | 4125.0 | 5324.0 | 1.8750* | |
| Q FINAL HYDROSTATIC | | 0.00 | | 6107.0 | | |

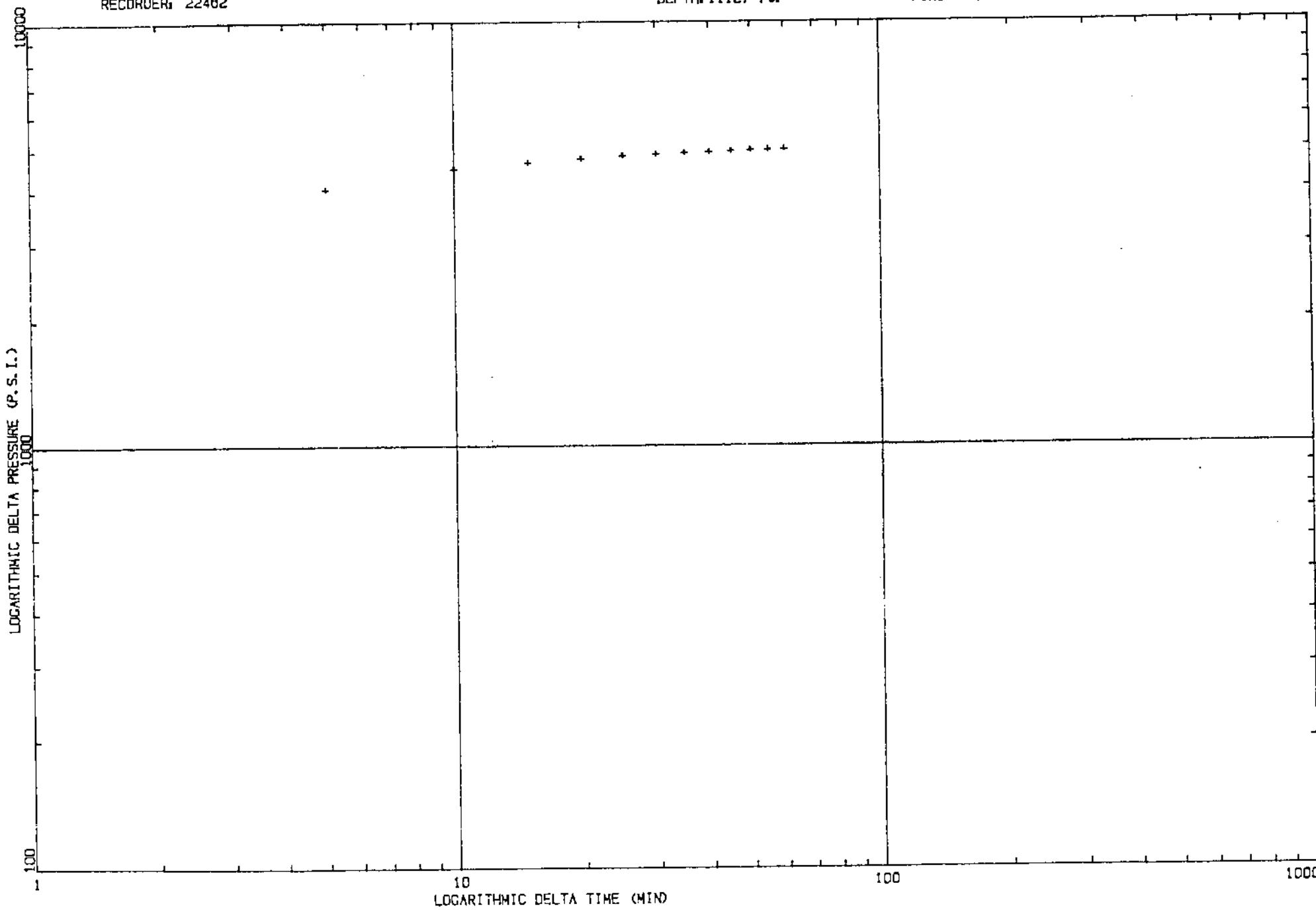
* VALUES USED FOR EXTRAPOLATIONS

2nd SHUT-IN
HORNER EXTRAPOLATION 5527.63 PSI
HORNER SLOPE 741.61 psi/cycle

OPERATOR: BASIC EARTH SCIENCE SYSTEMS INC.
LOCATION: SEC. 16 T153N R101W
RECORDER: 22462

WELL NAME: CORPS #31-10
DST #: 3
DEPTH: 11127 ft.

FIRST SHUT-IN



OPERATOR: BASIC EARTH SCIENCE SYSTEMS INC.

WELL NAME: CORPS #31-1D

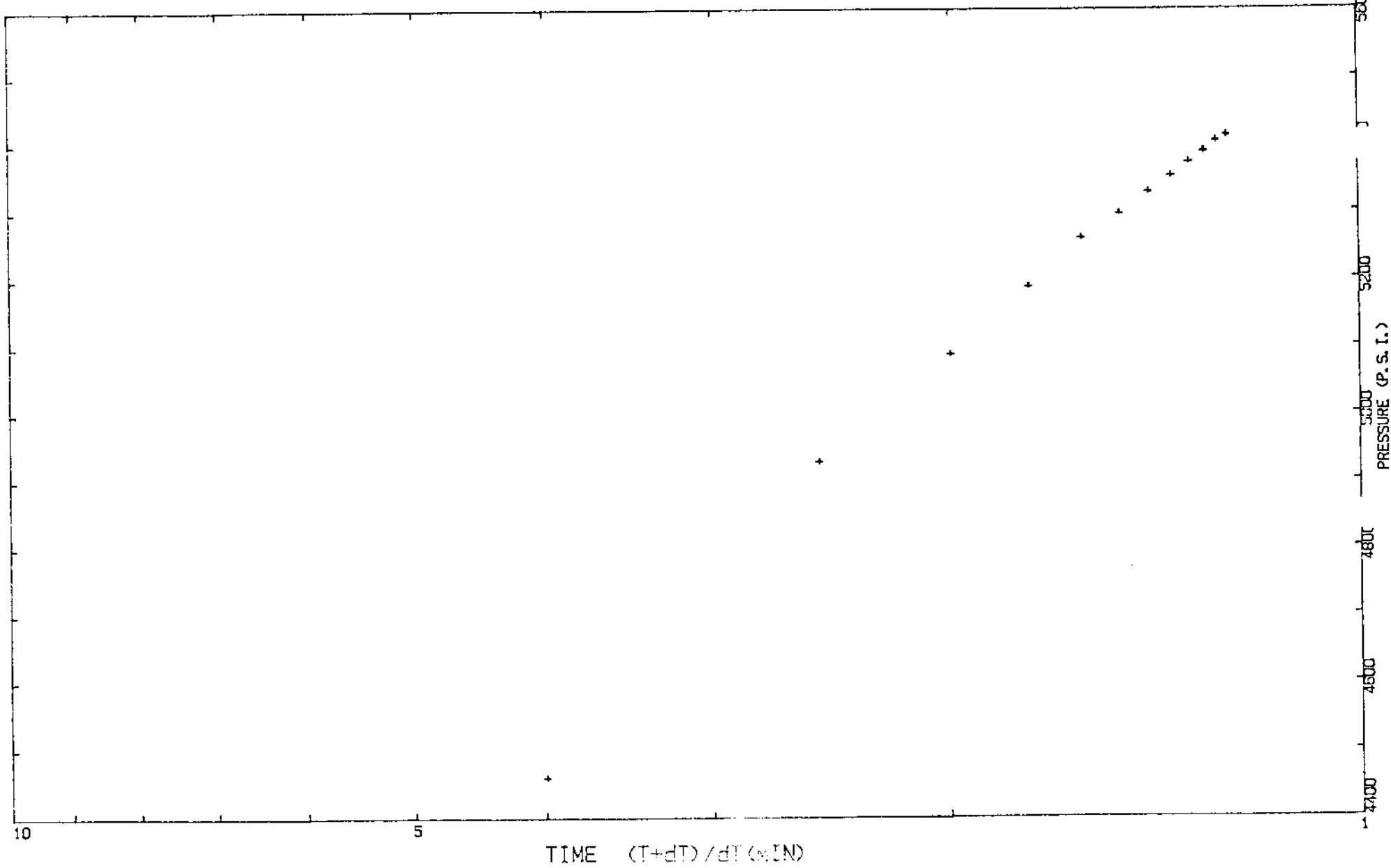
LOCATION: SEC. 10 T153N R1D1W

DST #: 3

FIRST SHUT-IN

RECORDER: 22462

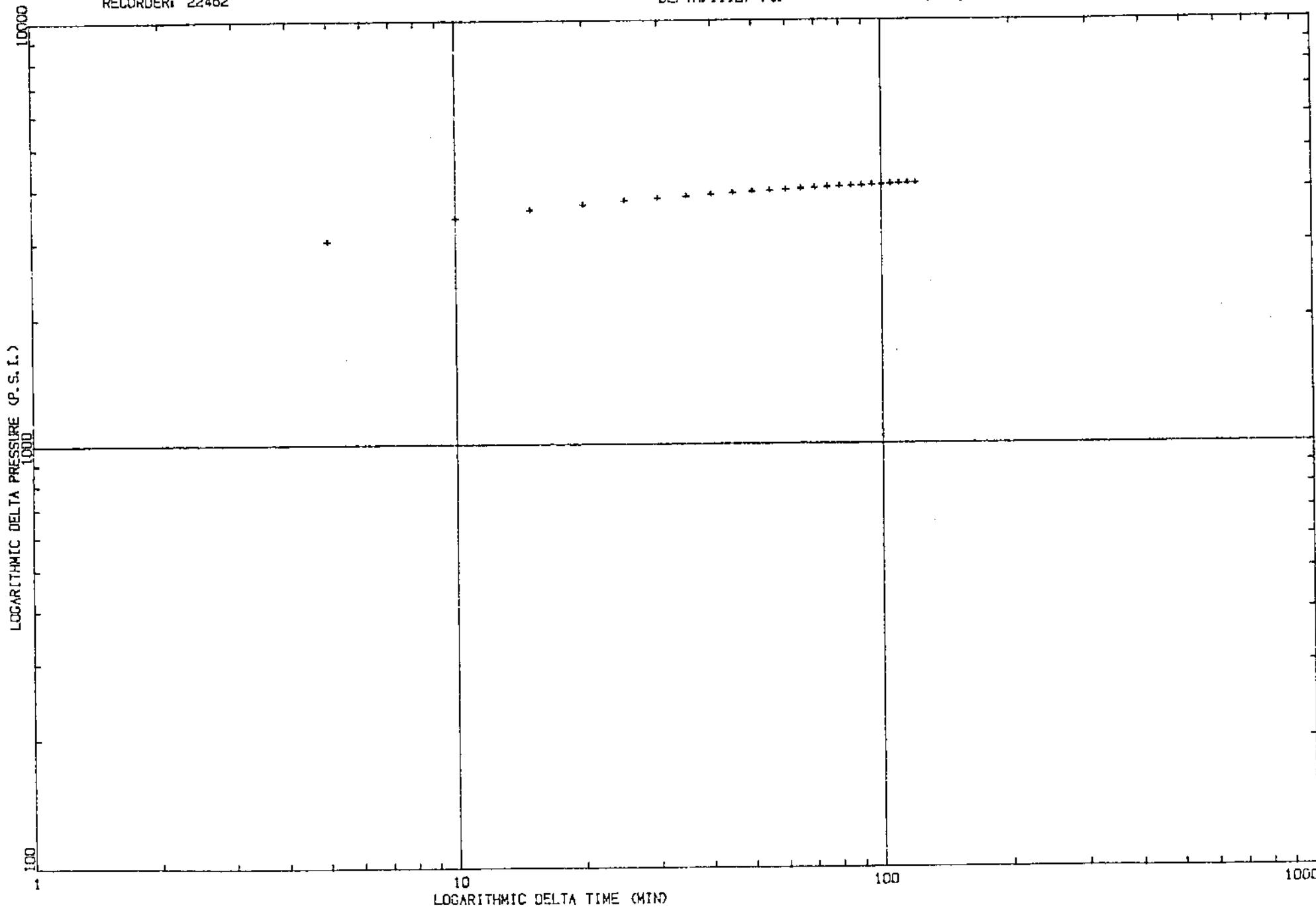
DEPTH: 11127 ft.



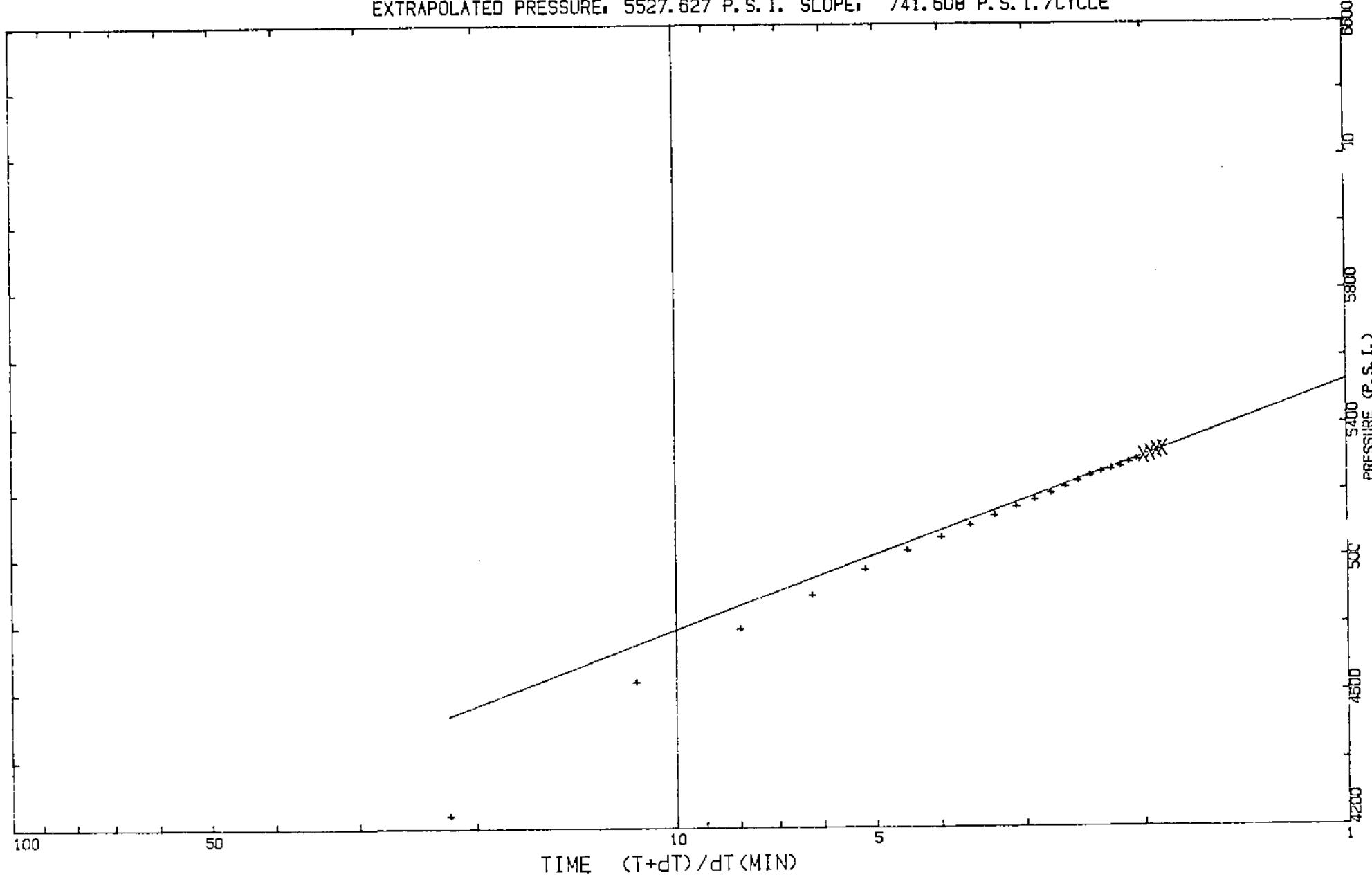
OPERATOR: BASIC EARTH SCIENCE SYSTEMS INC.
LOCATION: SEC. 10 T153N R101W
RECORDER: 22482

WELL NAME: CORPS #31-10
DST #: 3
DEPTH: 11127 ft.

SECOND SHUT-IN



OPERATOR: BASIC EARTH SCIENCE SYSTEMS INC.
WELL NAME: CORPS #31-10
LOCATION: SEC. 10 T153N R101W DST #: 3
SECOND SHUT-IN
RECORDER: 22462 DEPTH: 11127 ft.
EXTRAPOLATED PRESSURE: 5527.627 P.S.I. SLOPE: 741.608 P.S.I./CYCLE



SIC EARTH SCIENCE SYSTEMS C.
DST#: 3
CORPS #31-10
11087 - 11132ft.

Page 3

Location: SEC. 10 T153N R101W
Test Type: BOTTOM HOLE CONVENTIONAL
Formation: LOWER DUPEROW

Recorder Number: 22462
Recorder Depth: 11127 ft.

SAMPLE DATA

SAMPLE CHAMBER:

Capacity of sample chamber 3300 cc
Volume of sample..... 3300 cc
Pressure in sampler..... 1450 psig
Where sampler was drained... on location

Sampler contained:

Oil 1700 cc 38 @ 60 Degrees F
Water 1600 cc
Gas 9.7 cu-ft
GOR 913

RESISTIVITY DATA:

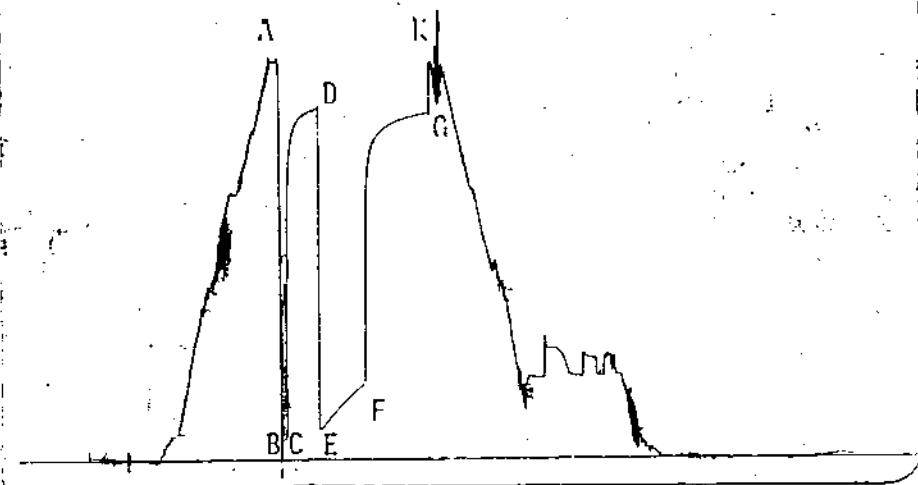
| | |
|-----------------|-------------------|
| Top..... | 195 000 PPM NACL |
| Middle..... | OIL-CUT MUD |
| Bottom..... | 175 000 PPM NACL |
| Sampler..... | 200 000+ PPM NACL |
| Mud pit..... | 195 000 PPM NACL |
| Make-up Water.. | |

SIC EARTH SCIENCE SYSTEMS INC.
DST# : 3
CORPS #31-10
11087 - 11132ft.

Page 4

PRESSURE RECORDER NUMBER : 13878

DEPTH : 11061.00ft. LOCATION : INSIDE
TYPE : K-3 CAPACITY : 7100.00psi



PRESSURE
psi

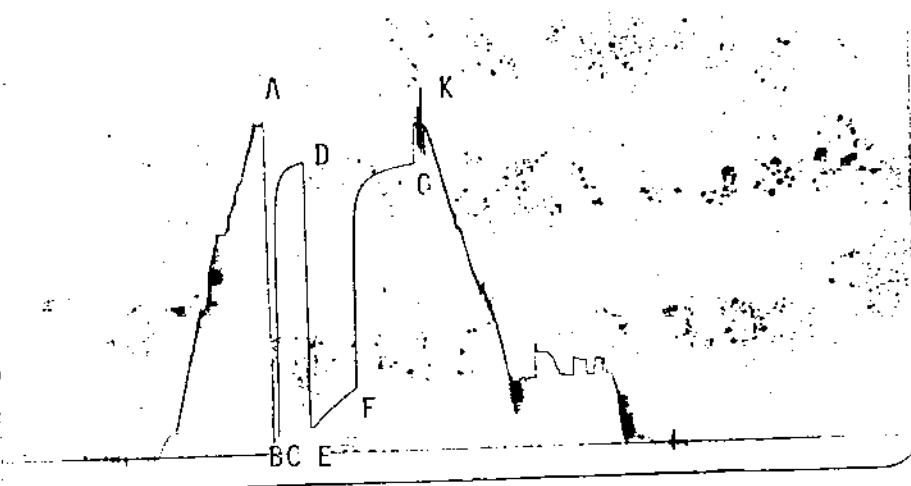
A)Initial Hydro : 6143.0
B)1st Flow Start: 269.0
C)1st Flow End : 383.0
D)END 1st Shutin: 5434.0
E)2nd Flow Start: 482.0
F)2nd Flow End : 1196.0
G)END 2nd Shutin: 5342.0
Q)Final Hydro. : 6116.0

PRESSURE RECORDER NUMBER : 3087

DEPTH : 11097.00ft. LOCATION : OUTSIDE
TYPE : K-3 CAPACITY : 8400.00psi

PRESSURE
psi

A)Initial Hydro : 6161.0
B)1st Flow Start: 240.0
C)1st Flow End : 355.0
D)END 1st Shutin: 5436.0
E)2nd Flow Start: 484.0
F)2nd Flow End : 1196.0
G)END 2nd Shutin: 5353.0
Q)Final Hydro. : 6114.0





TECHNICAL SERVICES, Security Life Bldg. • Suite 1350 • 1616 Glenarm • Denver, Colorado 80202 • Phone. (303) 573-8021

11920

Contractor Shelby Drilling
Rig No. 52
Spot NW/NE
Sec. 10
Twp. 153N
Rng. 101W
Field Skunk Hollow
County McKenzie
State North Dakota
Elevation 1872 ft.
Formation Duperow

Top Choke 1/4"
 Bottom Choke 3/4"
 Size Hole 8 3/4"
 Size Rat Hole --
 Size & Wt. D. P. 4 1/2" XH 16.60#
 Size Wt. Pipe --
 I. D. of D. C. 2 3/4"
 Length of D. C. 684 ft.
 Total Depth 10984 ft.
 Interval Tested 10920-10984 ft
 Type of Test Bottom Hole
Conventional

| | | |
|--------------------------|------------------|------|
| Flow No. 1 | 15 | Min. |
| Shut-in No. 1 | 60 | Min. |
| Flow No. 2 | 120 | Min. |
| Shut-in No. 2 | 180 | Min. |
| Flow No. 3 | -- | Min. |
| Shut-in No. 3 | -- | Min. |
| Bottom Hole Temp. | 236 ⁰ | F |
| Mud Weight | 10.5# | |
| Gravity | -- | |
| Viscosity | 40 | |

Tool opened @ 6:00 a.m.

Outside Recorder

PRD Make Kuster K-3
No. 3087 Cap. 8400 @ 10930'

| | Press | Corrected |
|---------------------|-------|-----------|
| Initial Hydrostatic | A | 6092 |
| Final Hydrostatic | K | 6055 |
| Initial Flow | B | 94 |
| Final Initial Flow | C | 129 |
| Initial Shut-in | D | 5036 |
| Second Initial Flow | E | 240 |
| Second Final Flow | F | 358 |
| Second Shut-in | G | 5047 |
| Third Initial Flow | H | -- |
| Third Final Flow | I | -- |
| Third Shut-in | J | -- |
| | | |
| | | |
| | | |

Lynes Dist. Williston, ND
Our Tester: Keith Hammer
Witnessed By: Tom Hopkin

Did Well Flow = Gas No. cit. No. Water No.

RECOVERY IN PIPE

622 ft. Total Recovery
250 ft. Drilling mud
372 ft. Mud-cut salt water

$$\begin{aligned} &= 4.53 \text{ Bbls} \\ &= 1.82 \text{ Bbls} \\ &= 2.71 \text{ Bbls} \end{aligned}$$

Blow Description:

1st Flow: Tool opened with a weak surface blow, increasing to a $\frac{1}{2}$ " blow in 5 minutes for the remainder of the flow.

2nd Flow: Tool opened with a weak surface blow, increasing to a $\frac{1}{4}$ " blow in 5 minutes, and continuing to increase to a 5" blow in 105 minutes, then decreasing to a 4" blow at the end of the flow.

Comments: The test results indicate a mechanically successful test. The flow and shut-in curves suggest low permeability within the zone tested. The initial and final shut-in curves were incremented and plotted, but no extrapolations could be performed due to insufficient curve development.

| | | | |
|----------|----------------------------------|-------------------|--------------|
| Operator | Basic Earth Science Systems Inc. | Well Name and No. | Corps #31-10 |
| P.O. | Box 3088 | | |
| Address | Englewood, CO 80150 | Ticket No. | 04033 |
| | | Dat | |

7-2B-86

No Final Copies 5

Location: SEC. 10 T153N R101W Recorder Number: 3087
 Test Type: BOTTOM HOLE CONVENTIONAL Recorder Depth: 10930 ft.
 Formation: DUPEROW

TIME-PRESSURE LISTING

| CHART LABEL | COMMENTS | TIME MIN. | DELTA P psi | PRESSURE (T+dt)/dt psi | PRESSURE ABSCISSA | PRESSURE SQUARED psi^2/10^6 |
|----------------|---------------------|--------------|----------------|---------------------------|----------------------|-----------------------------------|
| A | INITIAL HYDROSTATIC | 0.00 | | 6092.0 | | |
| B | START OF 1st FLOW | 0.00 | | 94.0 | | |
| C | END OF 1st FLOW | 15.00 | | 129.0 | | |
| | 1st SHUTIN PERIOD | 0.00 | 0.0 | 129.0 | 0.0000 | |
| | | 5.00 | 160.0 | 289.0 | 4.0000 | |
| | | 10.00 | 714.0 | 843.0 | 2.5000 | |
| | | 15.00 | 2835.0 | 2964.0 | 2.0000 | |
| | | 20.00 | 3821.0 | 3950.0 | 1.7500 | |
| | | 25.00 | 4192.0 | 4321.0 | 1.6000 | |
| | | 30.00 | 4415.0 | 4544.0 | 1.5000 | |
| | | 35.00 | 4570.0 | 4699.0 | 1.4286 | |
| | | 40.00 | 4671.0 | 4800.0 | 1.3750 | |
| | | 45.00 | 4755.0 | 4884.0 | 1.3333 | |
| | | 50.00 | 4816.0 | 4945.0 | 1.3000 | |
| | | 55.00 | 4871.0 | 5000.0 | 1.2727 | |
| D | END OF 1st SHUTIN | 60.00 | 4907.0 | 5036.0 | 1.2500 | |
| E | START OF 2nd FLOW | 0.00 | | 240.0 | | |
| F | END OF 2nd FLOW | 120.00 | | 358.0 | | |
| | 2nd SHUTIN PERIOD | 0.00 | 0.0 | 358.0 | 0.0000 | |
| | | 5.00 | 112.0 | 470.0 | 28.0000 | |
| | | 10.00 | 272.0 | 630.0 | 14.5000 | |
| | | 15.00 | 525.0 | 883.0 | 10.0000 | |
| | | 20.00 | 1094.0 | 1452.0 | 7.7500 | |
| | | 25.00 | 2128.0 | 2486.0 | 6.4000 | |
| | | 30.00 | 2960.0 | 3318.0 | 5.5000 | |
| | | 35.00 | 3371.0 | 3729.0 | 4.8571 | |
| | | 40.00 | 3624.0 | 3982.0 | 4.3750 | |
| | | 45.00 | 3790.0 | 4148.0 | 4.0000 | |
| | | 50.00 | 3909.0 | 4267.0 | 3.7000 | |
| | | 55.00 | 4010.0 | 4368.0 | 3.4545 | |
| | | 60.00 | 4089.0 | 4447.0 | 3.2500 | |
| | | 70.00 | 4211.0 | 4569.0 | 2.9286 | |
| | | 80.00 | 4301.0 | 4659.0 | 2.6075 | |
| | | 90.00 | 4374.0 | 4732.0 | 2.5000 | |
| | | 100.00 | 4431.0 | 4789.0 | 2.3500 | |
| | | 110.00 | 4482.0 | 4840.0 | 2.2273 | |
| | | 120.00 | 4526.0 | 4884.0 | 2.1250 | |

: SIC EARTH SCIENCE SYSTEMS . .
DST #: 2
CORPS #31-10
10920 - 10984ft.

Page 2

Location: SEC. 10 T153N R101W Recorder Number: 3087
Test Type: BOTTOM HOLE CONVENTIONAL Recorder Depth: 10930 ft.
Formation: DUPEROW

TIME-PRESSURE LISTING

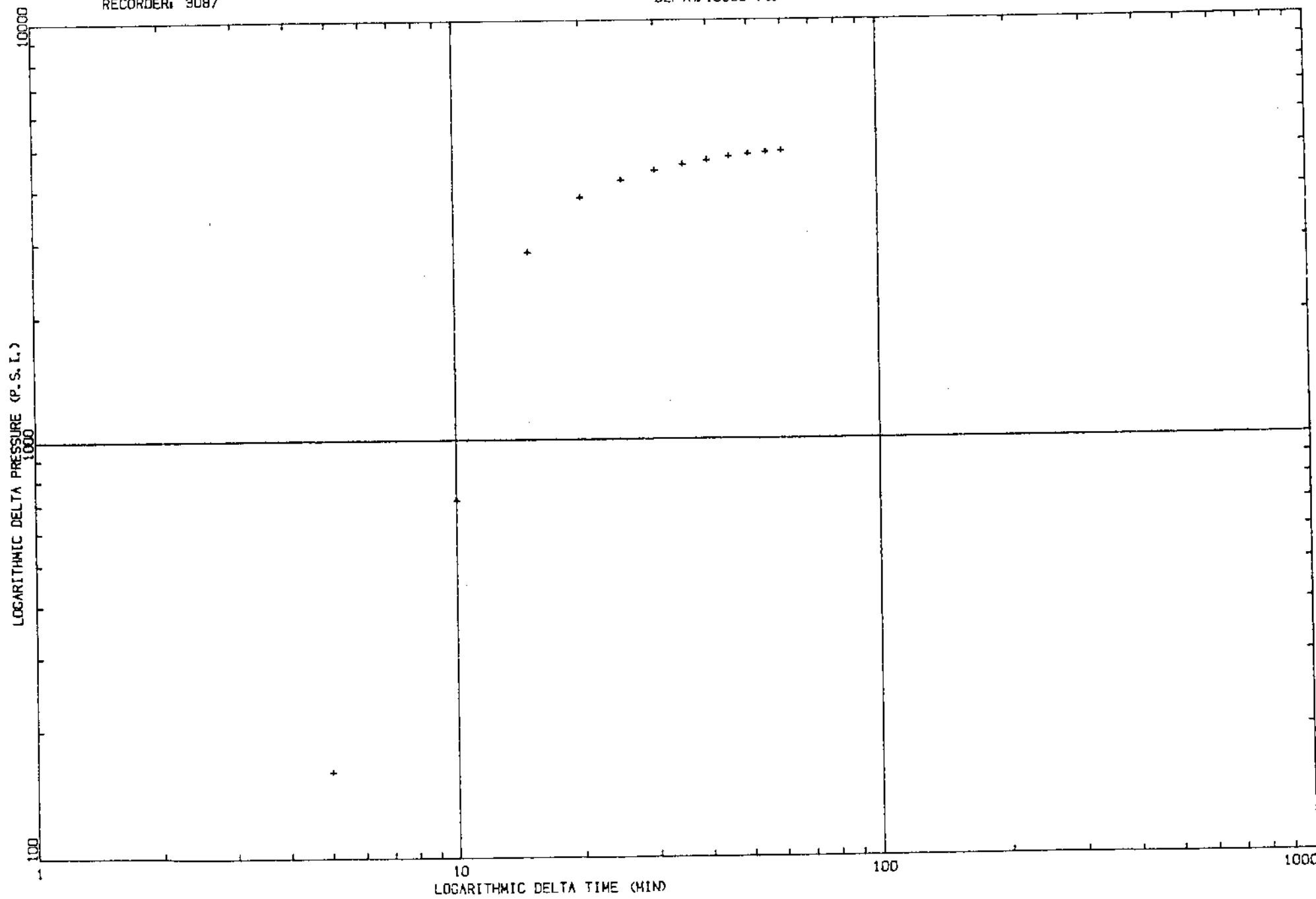
| CHART LABEL | COMMENTS | TIME MIN. | DELTA P psi | PRESSURE (T+dt)/dt psi | ABSCISSA | PRESSURE SQUARED psi^2/10^6 |
|---------------------|----------|--------------|----------------|---------------------------|----------|-----------------------------------|
| | | 130.00 | 4566.0 | 4924.0 | 2.0385 | |
| | | 140.00 | 4595.0 | 4953.0 | 1.9643 | |
| | | 150.00 | 4624.0 | 4982.0 | 1.9000 | |
| | | 160.00 | 4649.0 | 5007.0 | 1.8438 | |
| | | 170.00 | 4671.0 | 5029.0 | 1.7941 | |
| G END OF 2nd SHUTIN | | 180.00 | 4689.0 | 5047.0 | 1.7500 | |
| Q FINAL HYDROSTATIC | | | 0.00 | 6055.0 | | |

* VALUES USED FOR EXTRAPOLATIONS

OPERATOR: BASIC EARTH SCIENCE SYSTEMS INC.
LOCATION: SEC. 10 T15N R101W
RECORDER: 3087

WELL NAME: CORPS #31-10
DST #: 2
DEPTH: 10930 ft.

FIRST SHUT-IN



OPERATOR: BASIC EARTH SCIENCE SYSTEMS INC.

WELL NAME: CORPS #31-10

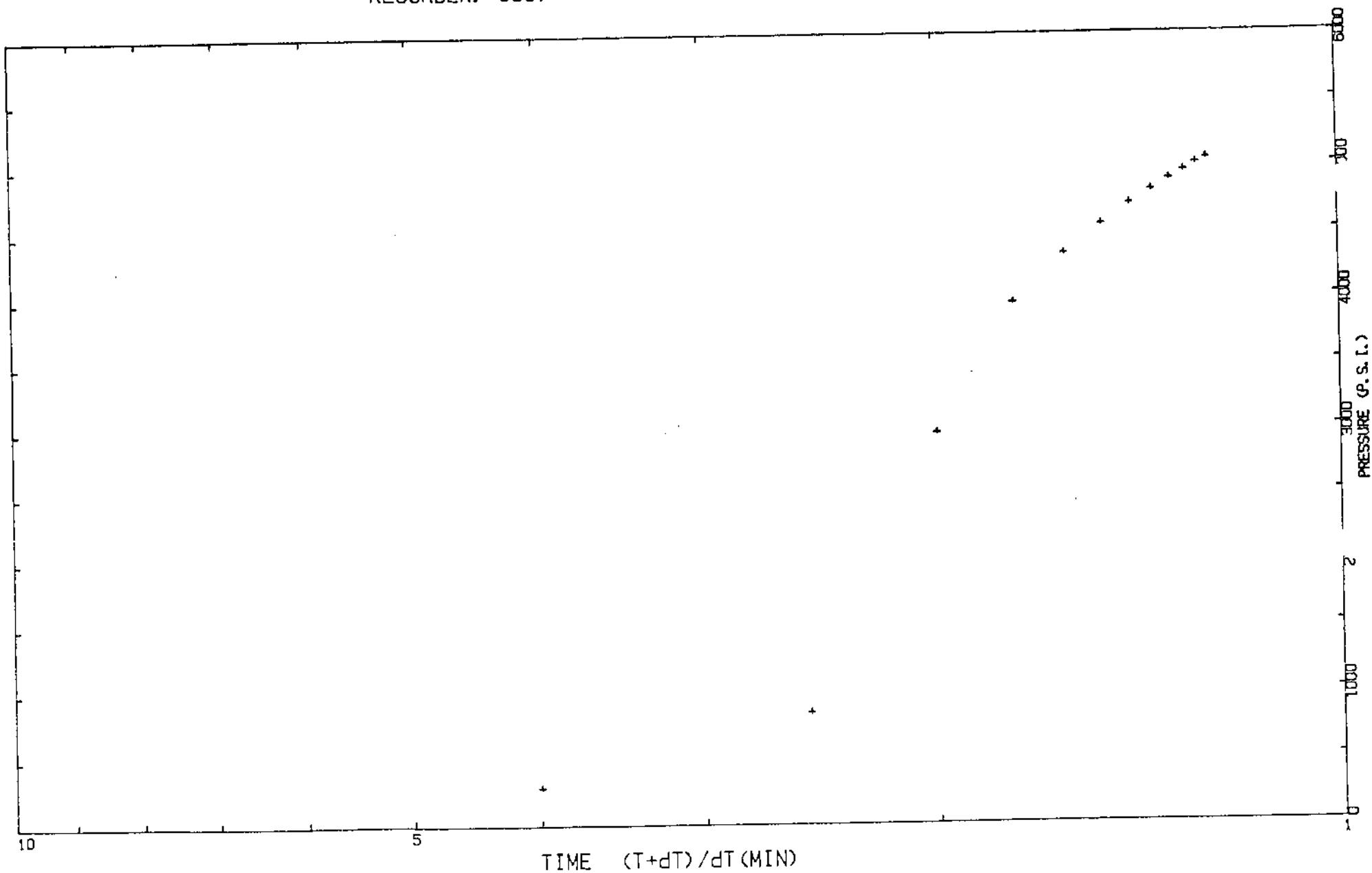
LOCATION: SEC. 10 T153N R101W

DST #: 2

FIRST SHUT-IN

RECORDER: 3087

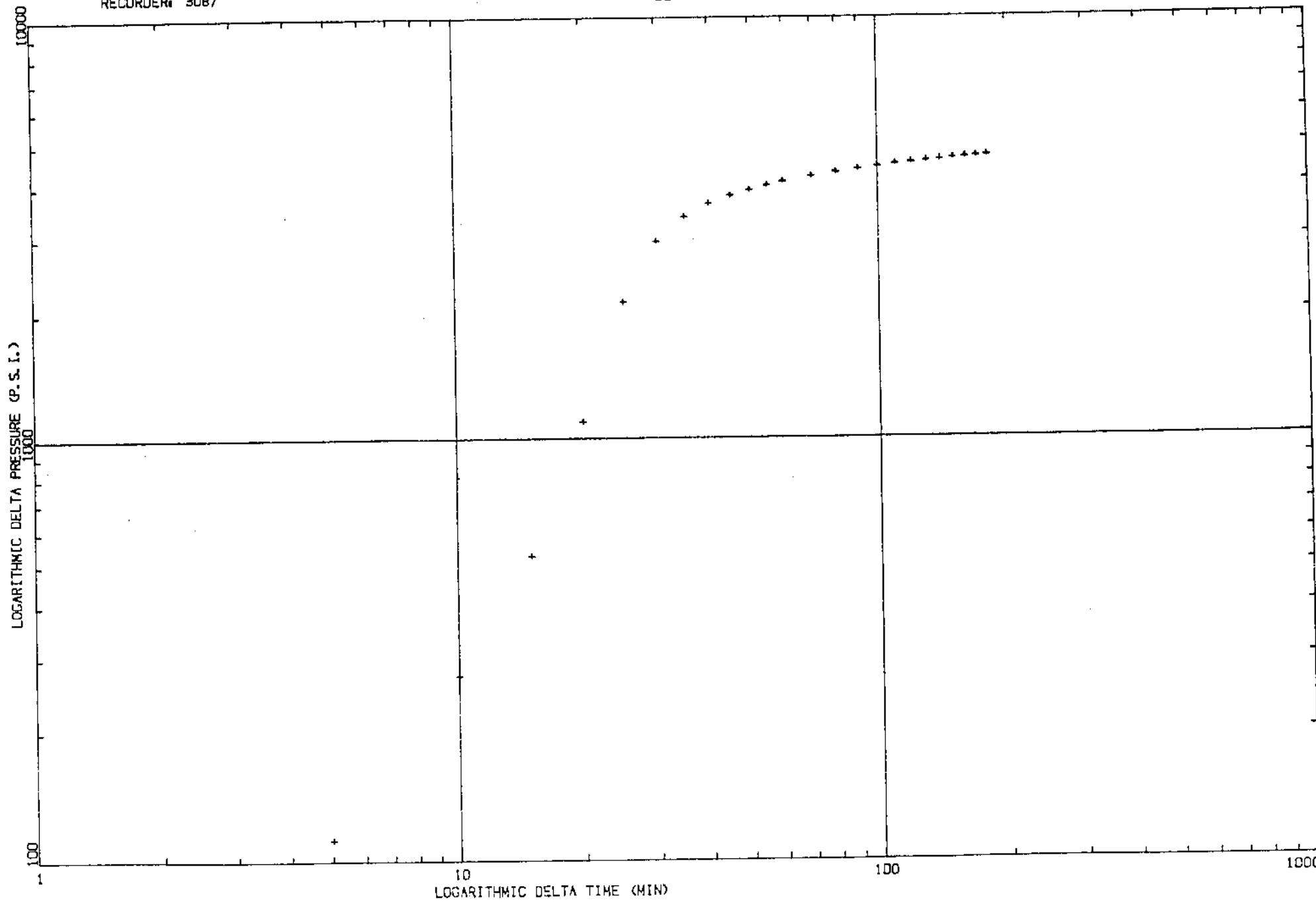
DEPTH: 10930 ft.



OPERATOR: BASIC EARTH SCIENCE SYSTEMS INC.
LOCATION: SEC. 10 T15N R101W
RECORDER: 3087

WELL NAME: CORPS #31-10
DST #: 2
DEPTH: 10930 ft.

SECOND SHUT-IN



OPERATOR: BASIC EARTH SCIENCE SYSTEMS INC.

WELL NAME: CORPS #31-10

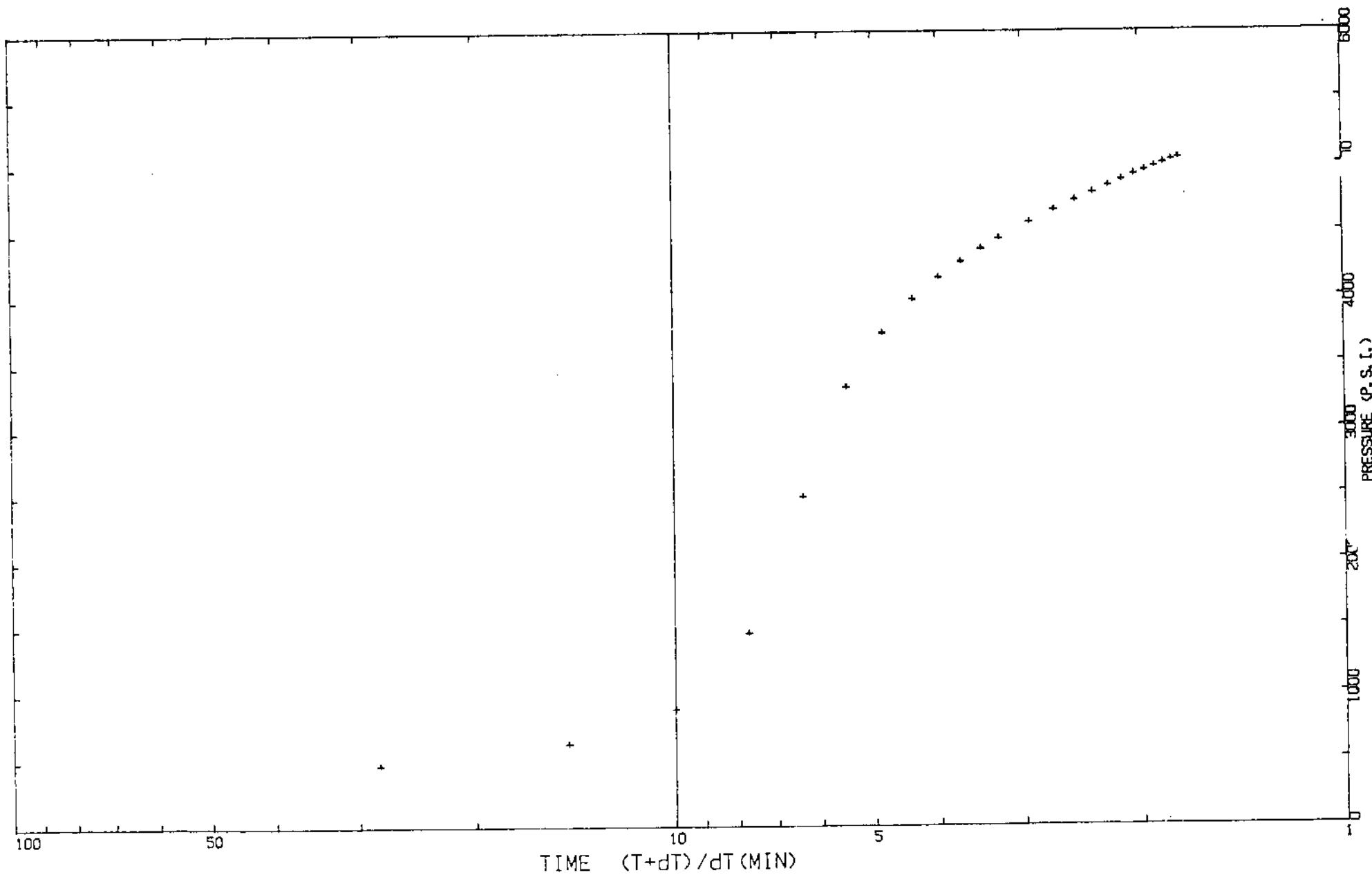
LOCATION: SEC. 10 T153N R101W

DST #: 2

SECOND SHUT-IN

RECORDER: 3087

DEPTH: 10930 ft.



I GIC EARTH SCIENCE SYSTEMS . C.
DST#: 2
CORPS #31-10
10920 - 10984ft.

Page 3

Location: SEC. 10 T153N R101W
Test Type: BOTTOM HOLE CONVENTIONAL
Formation: DUPEROW

Recorder Number: 3087
Recorder Depth: 10930 ft.

SAMPLE DATA

SAMPLE CHAMBER:

Capacity of sample chamber 2300 cc
Volume of sample..... 2150 cc
Pressure in sampler..... 900 psig
Where sampler was drained... on location

Sampler contained:

Oil 550 cc 39 @ 60 Degrees F
Water 1600 cc
Gas .5.5 cu-ft
GOR 1600

RESISTIVITY DATA:

| | |
|-----------------|------------------|
| Top..... | 185 000 PPM NACL |
| Middle..... | 185 000 PPM NACL |
| Bottom..... | 155 000 PPM NACL |
| Sampler..... | 155 000 PPM NACL |
| Mud pit..... | 200 000 PPM NACL |
| Make-up Water.. | |

T DIC EARTH SCIENCE SYSTEMS INC.
Lift: 2
CORPS #31-10
10920 - 10984ft.

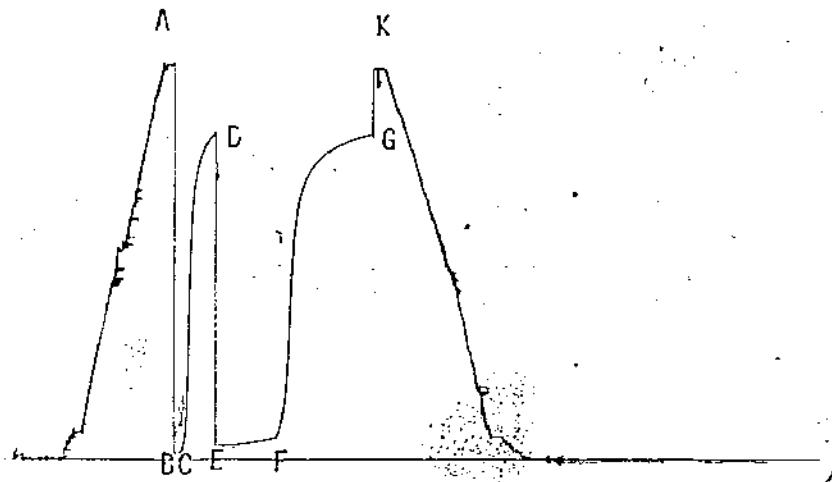
Page 4

PRESSURE RECORDER NUMBER : 13878

DEPTH : 10903.00ft. LOCATION : INSIDE
TYPE : K-3 CAPACITY : 7100.00psi

PRESSURE
psi

A)Initial Hydro : 6069.0
B)1st Flow Start: 93.0
C)1st Flow End : 132.0
D)END 1st Shutin: 5030.0
E)2nd Flow Start: 221.0
F)2nd Flow End : 332.0
G)END 2nd Shutin: 5019.0
Q)Final Hydro. : 6027.0



TEST TIMES(MIN)

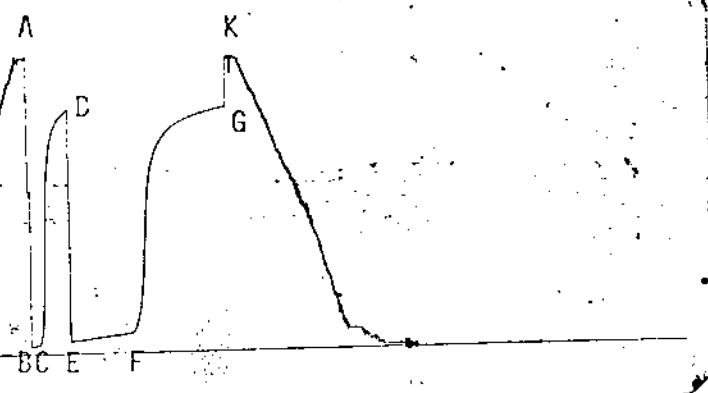
1st FLOW : 15
SHUTIN: 60
2nd FLOW : 120
SHUTIN: 180

PRESSURE RECORDER NUMBER : 22462

DEPTH : 10979.00ft. LOCATION : OUTSIDE
TYPE : K-3 CAPACITY : 9475.00psi

PRESSURE
psi

A)Initial Hydro : 6103.0
B)1st Flow Start: 138.0
C)1st Flow End : 181.0
D)END 1st Shutin: 5020.0
E)2nd Flow Start: 244.0
F)2nd Flow End : 397.0
G)END 2nd Shutin: 5016.0
Q)Final Hydro. : 6059.0



11020

TECHNICAL SERVICES, Security Life Bldg. • Suite 1350 • 1616 Glenarm • Denver, Colorado 80202 • Phone. (303) 573-8027

Contractor Shelby Drilling
Rig No. 52
Spot NW/NE
Sec. 10
Twp. 153N
Rng. 101W
Field Skunk Hollow
County McKenzie
State North Dakota
Elevation 1872 ft.
Formation Nesson

Top Choke 1/4"
Bottom Choke 3/4"
Size Hole 8 3/4"
Size Rat Hole --
Size & Wt. D. P. 4 1/2" XH 16.60#
Size Wt. Pipe --
I. D. of D. C. 2 3/4"
Length of D. C. 728 ft.
Total Depth 9200 ft.
Interval Tested 9156-9200 ft.
Type of Test Bottom Hole
Conventional

Flow No. 1 15 Min.
Shut-in No. 1 60 Min.
Flow No. 2 90 Min.
Shut-in No. 2 120 Min.
Flow No. 3 -- Min.
Shut-in No. 3 -- Min.

Bottom Hole Temp. 192°F
Mud Weight 10.6#
Gravity --
Viscosity 40

Tool opened @ 5:00 a.m.

Outside Recorder

PRD Make Kuster K-3
No 16797 Cap. 6600 @ 9166'

Press Corrected

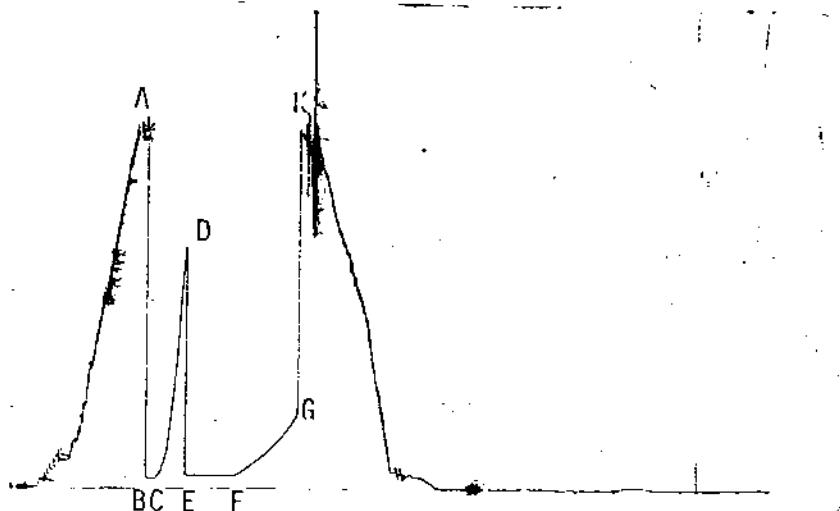
| | | |
|---------------------|---|------|
| Initial Hydrostatic | A | 5134 |
| Final Hydrostatic | K | 5099 |
| Initial Flow | B | 161 |
| Final Initial Flow | C | 150 |
| Initial Shut-in | D | 3468 |
| Second Initial Flow | E | 195 |
| Second Final Flow | F | 195 |
| Second Shut-in | G | 1084 |
| Third Initial Flow | H | -- |
| Third Final Flow | I | -- |
| Third Shut-in | J | -- |
| | | |
| | | |
| | | |
| | | |

Ticket No. 22960

Date 7-15-86

No. Final Copies 5

Basic Earth Science Systems, Inc. Well Name and No. Corps #31-10
P.O. Box 3088 Englewood, CO 80150



Lynes Dist. Williston, ND
Our Tester Rick Green
Witnessed By Tom Hopkin

Did Well Flow - Gas No Oil No Water No
RECOVERY IN PIPE:

| | |
|--------------------------------------|-------------|
| 270 ft. Total Recovery | = 1.96 Bbls |
| 1 ft. Oil & gas emulsion | = -- |
| 60 ft. Mud and oil-cut ammonia water | = .44 Bbls |
| 60 ft. Mud-cut ammonia water | = .44 Bbls |
| 149 ft. Gas and ammonia-cut mud | = 1.08 Bbls |

Blow Description:

- 1st Flow: Tool opened with a $\frac{1}{4}$ " blow, decreasing to a weak surface blow in 5 minutes, and dying to nil in 7 minutes.
- 2nd Flow: Tool opened with a $\frac{1}{2}$ " blow, increasing slightly to a $1\frac{1}{2}$ " blow in 5 minutes, decreasing to a $\frac{1}{2}$ " blow in 30 minutes, then steadily increasing to a $2\frac{1}{2}$ " blow at the end of the flow.

Comments: The test results indicate a mechanically successful test. The flow and shut-in curves suggest very low permeability within the zone tested.

FIC EARTH SCIENCE SYSTEMS I ,
Def: 1
CORPS #31-10
9156 - 9200ft.

Page 1

Location: SEC. 10 T153N R101W
Test Type: BOTTOM HOLE CONVENTIONAL
Formation: NESSON

Recorder Number: 16797
Recorder Depth: 9166 ft.

TIME-PRESSURE LISTING

| CHART LABEL | COMMENTS | TIME MIN. | DELTA P psi | PRESSURE (T+dt)/dt ABSCISSA | PRESSURE SQUARED psi^2/10^6 |
|----------------|---------------------|--------------|----------------|--------------------------------|-----------------------------------|
| A | INITIAL HYDROSTATIC | 0.00 | | 5134.0 | |
| B | START OF 1st FLOW | 0.00 | | 161.0 | |
| C | END OF 1st FLOW | 15.00 | | 150.0 | |
| | 1st SHUTIN PERIOD | 0.00 | 0.0 | 150.0 | 0.0000 |
| | | 5.00 | 45.0 | 195.0 | 4.0000 |
| | | 10.00 | 113.0 | 263.0 | 2.5000 |
| | | 15.00 | 232.0 | 382.0 | 2.0000 |
| | | 20.00 | 345.0 | 495.0 | 1.7500 |
| | | 25.00 | 566.0 | 716.0 | 1.6000 |
| | | 30.00 | 877.0 | 1027.0 | 1.5000 |
| | | 35.00 | 1218.0 | 1368.0 | 1.4286 |
| | | 40.00 | 1581.0 | 1731.0 | 1.3750 |
| | | 45.00 | 2077.0 | 2227.0 | 1.3333 |
| | | 50.00 | 2598.0 | 2748.0 | 1.3000 |
| | | 55.00 | 3021.0 | 3171.0 | 1.2727 |
| D | END OF 1st SHUTIN | 60.00 | 3318.0 | 3468.0 | 1.2500 |
| E | START OF 2nd FLOW | 0.00 | | 195.0 | |
| F | END OF 2nd FLOW | 90.00 | | 195.0 | |
| | 2nd SHUTIN PERIOD | 0.00 | 0.0 | 195.0 | 0.0000 |
| | | 5.00 | 3.0 | 198.0 | 22.0000 |
| | | 10.00 | 26.0 | 221.0 | 11.5000 |
| | | 15.00 | 51.0 | 246.0 | 8.0000 |
| | | 20.00 | 80.0 | 275.0 | 6.2500 |
| | | 25.00 | 111.0 | 306.0 | 5.2000 |
| | | 30.00 | 139.0 | 334.0 | 4.5000 |
| | | 35.00 | 170.0 | 365.0 | 4.0000 |
| | | 40.00 | 198.0 | 393.0 | 3.6250 |
| | | 45.00 | 230.0 | 425.0 | 3.3333 |
| | | 50.00 | 258.0 | 453.0 | 3.1000 |
| | | 55.00 | 286.0 | 481.0 | 2.9091 |
| | | 60.00 | 320.0 | 515.0 | 2.7500 |
| | | 65.00 | 357.0 | 552.0 | 2.6154 |
| | | 70.00 | 397.0 | 592.0 | 2.5000 |
| | | 75.00 | 435.0 | 630.0 | 2.4000 |
| | | 80.00 | 474.0 | 669.0 | 2.3125 |
| | | 85.00 | 515.0 | 710.0 | 2.2353 |
| | | 90.00 | 562.0 | 757.0 | 2.1667 |

SIC EARTH SCIENCE SYSTEMS C.
DST #: 1
CORPS #31-10
9156 - 9200ft.

Page 2

Location: SEC. 10 T153N R101W
Test Type: BOTTOM HOLE CONVENTIONAL
Formation: NESSON

Recorder Number: 16797
Recorder Depth: 9166 ft.

TIME-PRESSURE LISTING

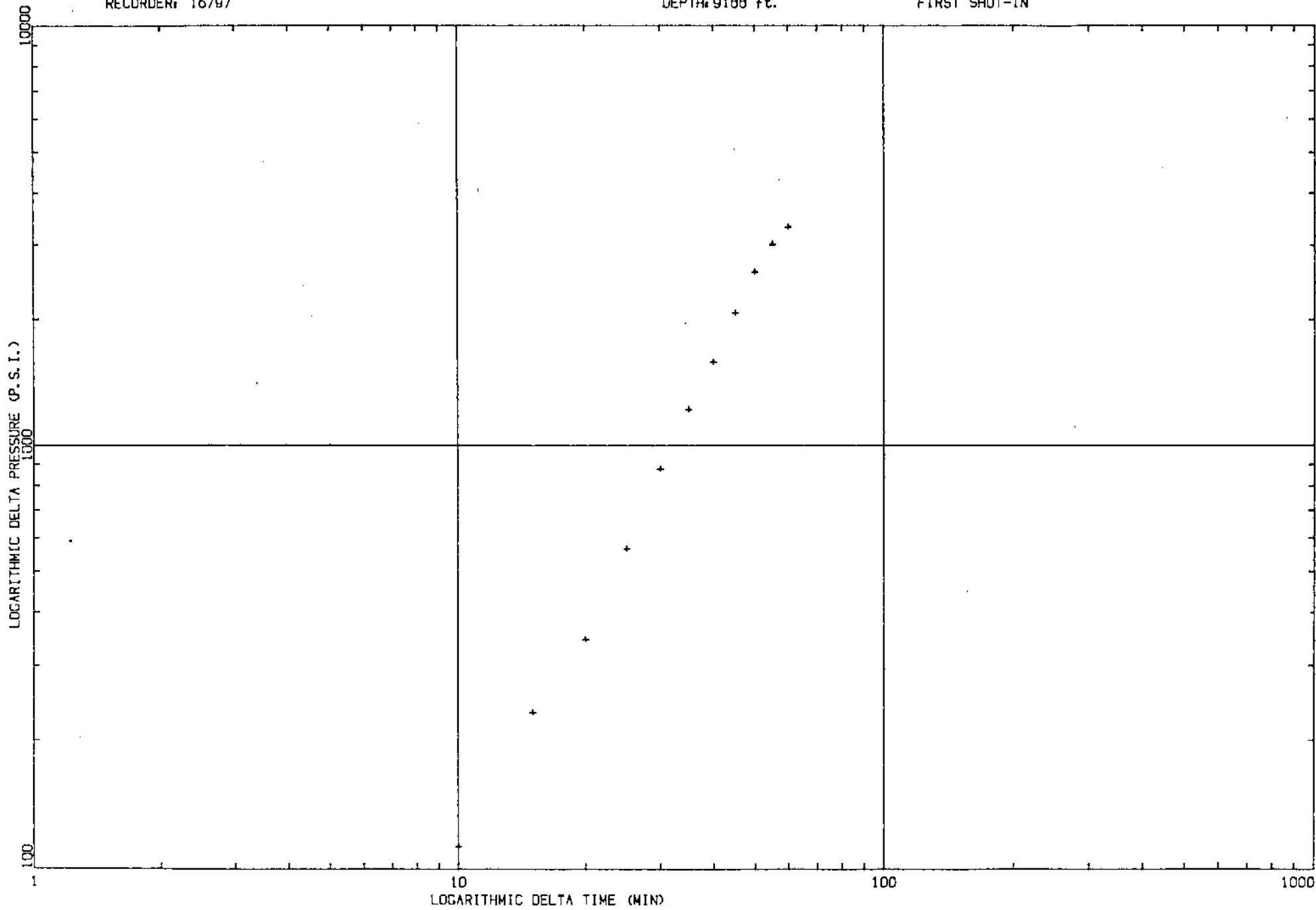
| CHART LABEL | COMMENTS | TIME MIN. | DELTA P psi | PRESSURE (T+dt)/dt psi | ABSCISSA | PRESSURE SQUARED psi ² /10 ⁶ |
|---------------------|----------|--------------|----------------|---------------------------|----------|--|
| | | 95.00 | 609.0 | 804.0 | 2.1053 | |
| | | 100.00 | 658.0 | 853.0 | 2.0500 | |
| | | 105.00 | 713.0 | 908.0 | 2.0000 | |
| | | 110.00 | 766.0 | 961.0 | 1.9545 | |
| | | 115.00 | 823.0 | 1018.0 | 1.9130 | |
| G END OF 2nd SHUTIN | | 120.00 | 889.0 | 1084.0 | 1.8750 | |
| Q FINAL HYDROSTATIC | | 0.00 | | 5099.0 | | |

* VALUES USED FOR EXTRAPOLATIONS

OPERATOR: BASIC EARTH SCIENCE SYSTEMS INC.
LOCATION: SEC. 10 T153N R101W
RECORDER: 16797

WELL NAME: CORPS #31-10
DST #: 1
DEPTH: 9100 ft.

FIRST SHUT-IN



OPERATOR: BASIC EARTH SCIENCE SYSTEMS INC.

WELL NAME: CORPS #31-10

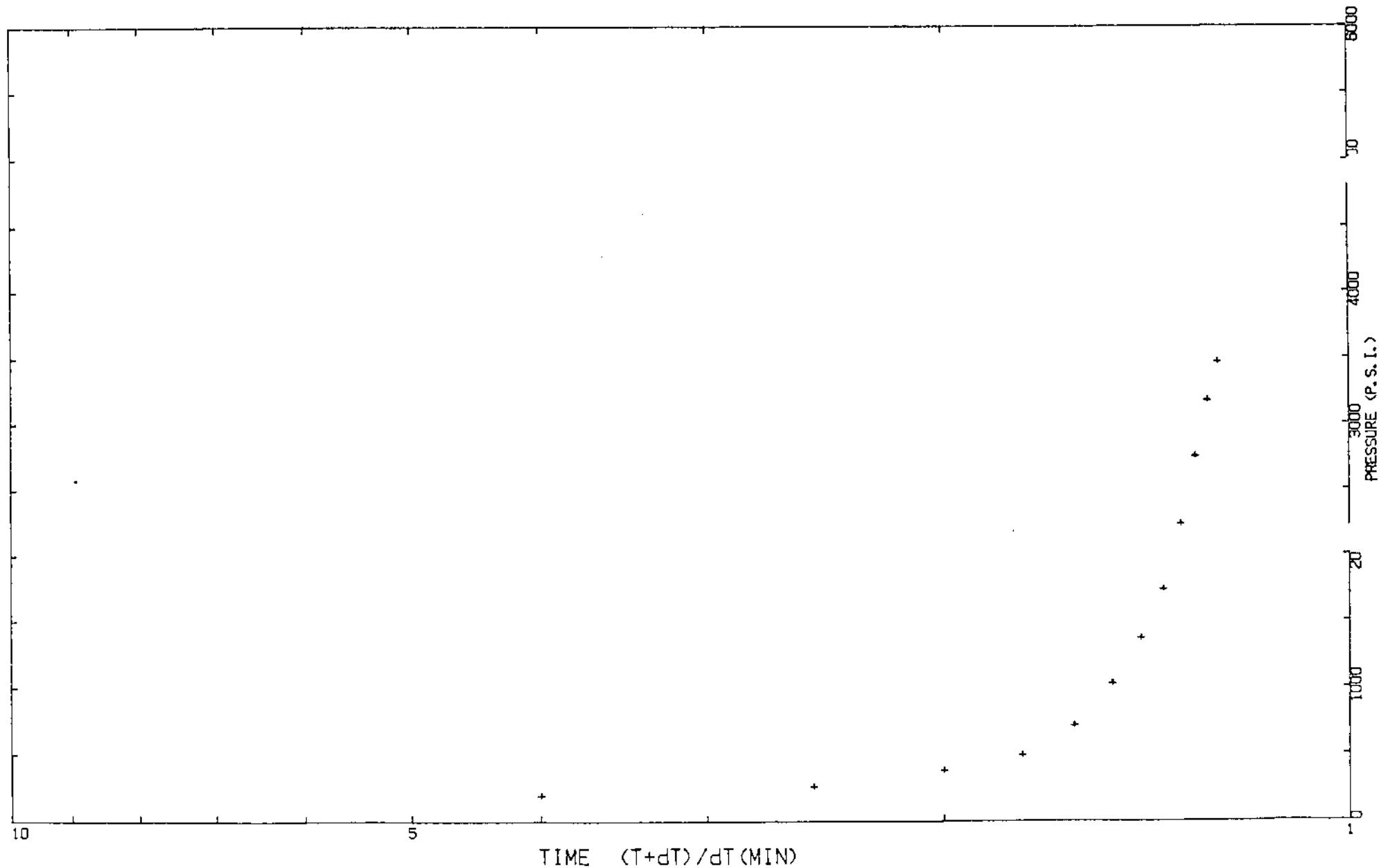
LOCATION: SEC. 10 T153N R101W

DST #: 1

FIRST SHUT-IN

RECORDER: 16797

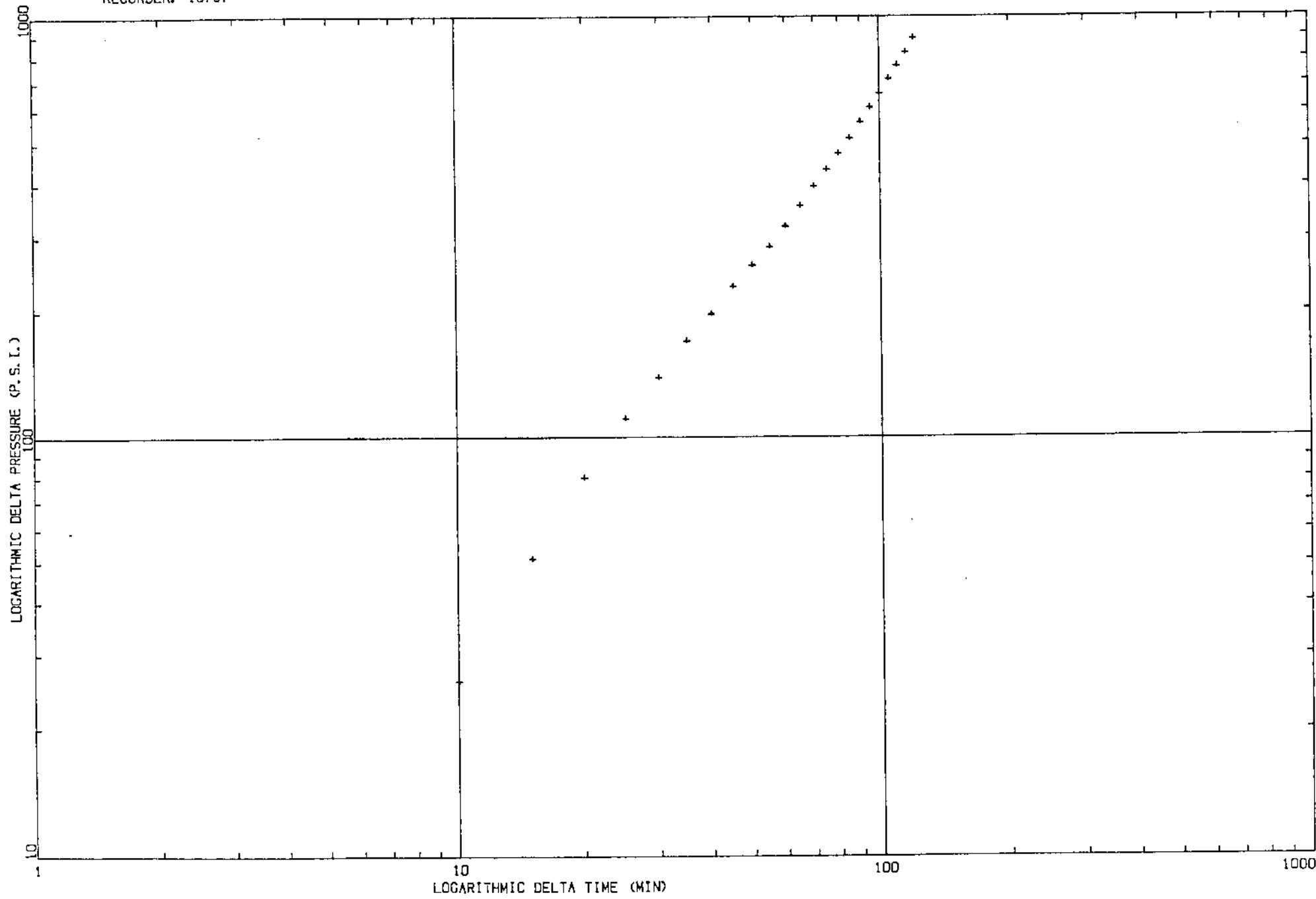
DEPTH: 9166 ft.



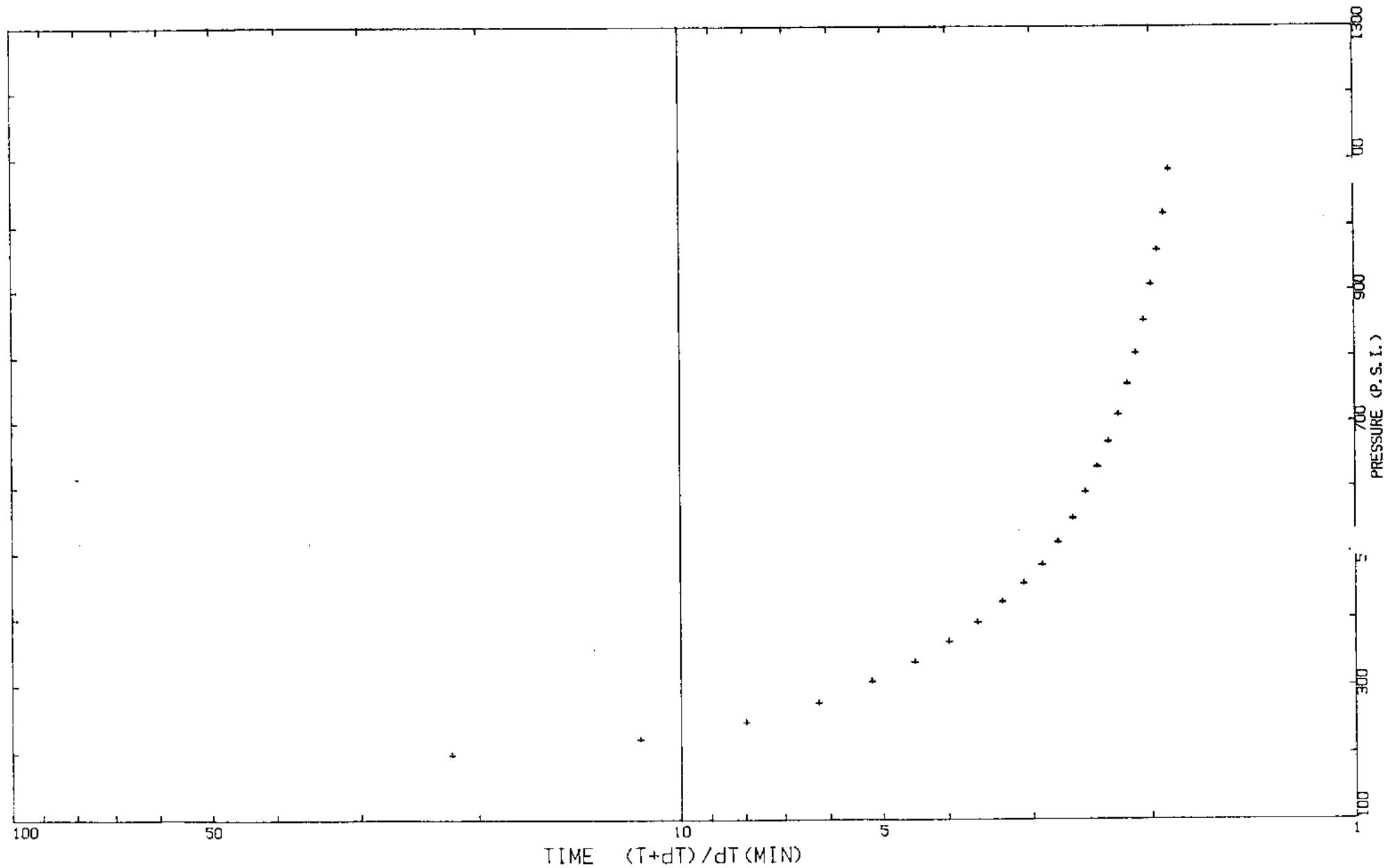
OPERATOR: BASIC EARTH SCIENCE SYSTEMS INC.
LOCATION: SEC. 10 T153N R101W
RECORDER: 18797

WELL NAME: CORPS #31-10
DST #: 1
DEPTH: 9168 ft.

SECOND SHUT-IN



OPERATOR: BASIC EARTH SCIENCE SYSTEMS INC.
WELL NAME: CORPS #31-10
LOCATION: SEC. 10 T153N R101W DST #: 1
SECOND SHUT-IN
RECORDER: 16797 DEPTH: 9166 ft.



SIC EARTH SCIENCE SYSTEMS CO.
B3T#1
CORPS #31-10
9156 - 9200ft.

Page 3

Location: SEC. 10 T153N R101W
Test Type: BOTTOM HOLE CONVENTIONAL
Formation: NESSON

Recorder Number: 16797
Recorder Depth: 9166 ft.

SAMPLE DATA

SAMPLE CHAMBER:

Capacity of sample chamber 2300 cc
Volume of sample..... 1000 cc
Pressure in sampler..... 60 psig
Where sampler was drained... on location

Sampler contained:

Oil 400 cc 38 @ 60 Degrees F
Water 600 cc
Mud .cc
Gas .78 cu-ft
GOR 312

RESISTIVITY DATA:

Top..... 115 000 PPM NACL
Middle..... 115 000 PPM NACL
Bottom..... 190 000 PPM NACL
Sampler..... 145 000 PPM NACL
Mud pit..... 200 000+ PPM NACL
Make-up Water...:

SIC EARTH SCIENCE SYSTEMS C.
TEST #: 1
CORPS #31-10
9156 - 9200ft.

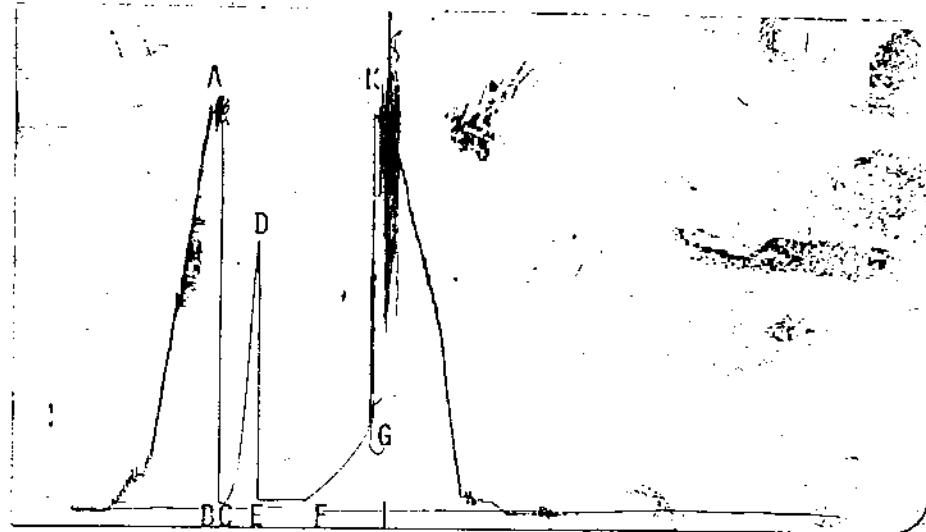
Page 4

PRESSURE RECORDER NUMBER : 20161

DEPTH : 9125.00ft. LOCATION : INSIDE
TYPE : K-3 CAPACITY : 5950.00psi

PRESSURE
psi

A)Initial Hydro : 5083.0
B)1st Flow Start: 105.0
C)1st Flow End : 105.0
D)END 1st Shutin: 3462.0
E)2nd Flow Start: 145.0
F)2nd Flow End : 153.0
G)END 2nd Shutin: 1055.0
Q)Final Hydro. : 5063.0



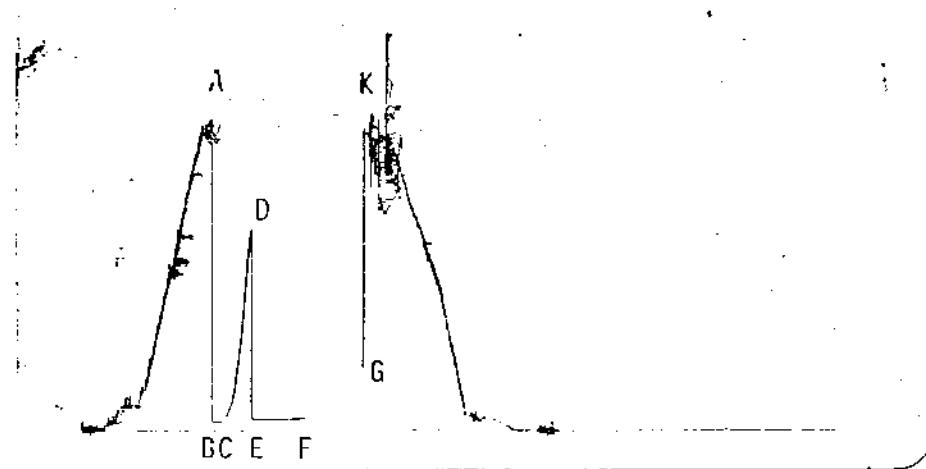
TEST TIMES(MIN)
1st FLOW : 15
SHUTIN: 60
2nd FLOW : 90
SHUTIN: 120

PRESSURE RECORDER NUMBER : 21804

DEPTH : 9199.00ft. LOCATION : OUTSIDE
TYPE : K-3 CAPACITY : 7900.00psi

PRESSURE
psi

A)Initial Hydro : 5089.0
B)1st Flow Start: 137.0
C)1st Flow End : 143.0
D)END 1st Shutin: 3457.0
E)2nd Flow Start: 178.0
F)2nd Flow End : 191.0
G)END 2nd Shutin: 1096.0
Q)Final Hydro. : 5089.0



11920

NORTH DAKOTA INDUSTRIAL COMMISSION
OIL AND GAS DIVISION

WESLEY D. NORTON
Chief Enforcement Officer

F. E. WILBORN
Deputy Enforcement Officer

CLARENCE G. CARLSON
Geologist

CHARLES KOCH
Engineering Dept.

DOREN DANNEWITZ
Field Supervisor

KEN KALLESTAD
Reclamation Sup.

January 21, 1987

Basic Earth Science Systems, Inc.
P.O. Box 3088
Englewood, CO 80155

ATTN: Mr. Jeff Jones

RE: Basic Corps of Eng's #31-10
NW NE Sec.10-153-101
Well File #11920
McKenzie County

Dear Mr. Jones:

Please submit to this office in triplicate a Producer's Certificate to Transport Oil (Form 8) for approval. Thank you.

Sincerely,

Lyn S. Entzi
Clerk II

/lse

Enclosures

basic

Earth Science Systems, Inc.

P.O. Box 3088
Englewood, Colorado 80155
(303) 792-5230

December 19, 1986

11920



North Dakota Industrial Commission
Oil and Gas Division
900 East Boulevard
Bismarck, ND 58505

Re: Basic Corps of Engineers #31-10
Sec. 10, T153N, R101W
McKenzie County, ND

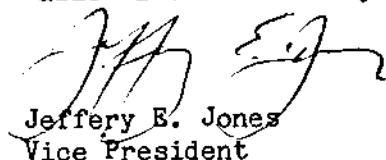
Gentlemen:

Enclosed please find the Completion Report, submitted in triplicate, for the above referenced well along with the Geologist Report and Directional Survey.

Please do not hesitate to contact me if you have any questions or need further information.

Sincerely,

Basic Earth Science Systems, Inc.


Jeffery E. Jones
Vice President

JEJ:ak

Enclosures

cc: Project Manager, Garrison Project Office
Chief, Operations Div., Corps of Engineers
Well Distribution w/o encl.

NORTH DAKOTA STATE INDUSTRIAL COMMISSION

Oil and Gas Division

900 East Boulevard, Bismarck, ND 58505

WELL COMPLETION OR RECOMPLETION REPORT

(Submit in Triplicate)

OIL WELL GAS WELL OTHER RECEIVED
ND DIVISION
OCT 10 1986
SAME RESVR
DIFF. RESVR

Designate type of completion

NEW WELL WORK OVER DEEPEN PLUG BACK OTHER

Well File No.

11920

Date Issued

1/6/86

Well Name & No.

Basic Corps of Engineers

#31-10

Spacing (Unit Description)

N¹₂, Section 10TICKET
HOL

OPERATOR

Basic Earth Sience Systems, Inc.

(303) 792-5230

ADDRESS

P. O. Box 3088, Englewood, CO 80155

LOCATIONS (Show quarter-quarter, footages, and section, township and range.)

At surface NW¹₄NE¹₄, 660' FNL & 2305' FEL, Sec. 10-T153N-R101W

At top prod. interval, reported below

At total depth

NW¹₄NE¹₄, 840.59' FNL & 1926.72' FEL, Sec. 10-T153N-R101W McKenzie

| Date Spudded | Date TD Reached | Date Comp.(ready to prod) | Elevation (KB,DF,GR) | Total Depth (MD & TVD) | Plug Back (TD,MD,TVD) |
|--------------|-----------------|---------------------------|----------------------|------------------------|-----------------------|
| 6/20/86 | 8/20/86 | 11/17/86 | 1872' KB 1851' GL | 13,480' MD | 13,344' |

| PRODUCING INTERVAL(S), THIS COMPLETION, TOP, BOTTOM, NAME (MD & TVD) | | | No. of DST's Run (see back) | Date Directional Survey Submitted |
|--|---------|---|--------------------------------|-----------------------------------|
| Red River B & C zones | 13,255' | - | 13,330' | Attached |

| TYPE ELECTRIC AND OTHER LOGS RUN (See instructions) | | | | | Was Well Cored |
|---|--|--|--|--|----------------|
| CNL, DLL-SFL, FDC, BHC, Cyberlook, PDC Perf, CCL | | | | | No. |

CASING RECORD (Report all strings set in well)

| Casing Size | Depth Set (MD) | Hole Size | Weight Lbs./Ft. | Sacks Cement | Amount Pulled |
|---------------------------------|----------------|----------------------------------|-----------------|----------------------|---------------|
| 9-5/8" | 2,954' | 12 ¹ / ₂ " | 36# & 40# | 1340 | None |
| 5 ¹ / ₄ " | 13,480' | 8-3/4" | 17#, 20# & 26# | (1) 1082 (2) 1856 | None |

LINER RECORD

TUBING RECORD

| Size | Top (MD) | Bottom (MD) | Sacks Cement | Screen (MD) | Size | Depth Set (MD) | Packer Set (MD) |
|------|----------|-------------|--------------|-------------|--------|----------------|-----------------|
| None | | | | | 2-7/8" | | 13,243.54 |

PERFORATION RECORD

ACID, SHOT, FRAC., CEMENT SQUEEZE, Etc.

| Depth Interval (MD) | Holes per ft. | Size and Type | Purpose | Amt. & Kind of Material Used | Depth Interval (MD) |
|---------------------|---------------|---------------|----------------|------------------------------|---------------------|
| 11,80' | 4 JSPE | .43 | Cmt. Szze. | 175Sx. Howco lite, 742 "G" | |
| 13,120-13,122 | 4JSPE | .43 | Cmt. Szze. | 5 bbl. G | |
| 13,225-13,265 | 4JSPE | .43 | Test Red River | 42 bbl. 15% HCl | 13,225-13,265 |
| 13,296-13,303 | 4JSPE | .43 | Test Red River | 7 bbl. 15% HCl | 13,296-13,303 |

PRODUCTION

| Date First Production | Producing Method (Flowing, gas, lift, pumping - size & type of pump) | | | | | Well Status (Prod. or shut-in) |
|-----------------------|--|--|--|--|--|--------------------------------|
| 11/17/86 | Flowing | | | | | Producing |

| Date of Test | Hours Tested | Choke Size | Production For Test | Oil, Bbls. | Gas, Mcf. | Water, Bbls. | Oil Gravity - API (Corr.) |
|---------------------|-----------------|-------------------------|---------------------|------------|-----------|--------------|---------------------------|
| 11/24/86 | 24 hrs | 16/64" | | 245 | 425 | 290 LM | |
| Flow, Tubing Press. | Casing Pressure | Calculated 24-Hour Rate | | Oil, Bbls. | Gas, Mcf. | Water, Bbls. | Gas-Oil Ratio |
| 750psi | -- | | | 245 | 425 | -0- | 1,735:1 |

| DISPOSITION OF OIL & GAS (Purchaser and Transporter) | | | | | Test Witnessed By |
|--|--|--|--|--|-------------------|
| Oil - The Permian Corporation, purchaser & transporter | | | | | |
| Gas - Ecological Engineering, pipeline | | | | | |

LIST OF ATTACHMENTS

Drill Stem Test details, Geologist Report, Directional Survey

Over to Complete Form

GEOLOGIC MARKERS

| Name | Measured Depth of Formation | True Vertical Depth |
|---------------|--------------------------------|------------------------|
| Greenhorn | 4,344' | 4,343' |
| Morrison | 5,622' | 4,497' |
| Minnekahata | 7,022' | 6,990' |
| Minnelusa | 7,343' | 7,311' |
| Kibbey L.S. | 8,098' | 8,065' |
| Three Forks | 10,507' | 10,474' |
| Interlake | 12,095' | 12,062' |
| Red River "C" | 13,286' | 13,252' |

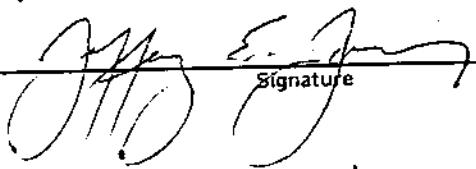
DRILL STEM TEST DATA

Please see attached.

Additional Perforations & Treatments

| | | | |
|---------------|--------|-----|---|
| 13,308-13,312 | 4 JSFP | .43 | Test Red River; 3 bbls. 15% HCl 13,308-13,312 |
| 13,322-13,330 | 4 JSFP | .43 | Test Red River; 2 bbls. 14% HCl 13,322-13,330 |
| | | | 1500 gal. 15% HCl 13,286-13,344 |
| 13,400-13,402 | | | Cmt. Squeeze; 41 bbls. cmt. slurry |
| 13,440-13442 | | | 1500 gal. 15% HCl |

I hereby swear or affirm that the information herein provided is true, complete and correct as determined from all available records.



Signature

Vice President

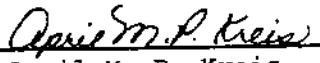
12/19/86

Title

Date

State of Colorado)County of Arapahoe)On this 19th day of December, 1986, before me personally appearedJeffery E. Jones to me known as the person described in and who executed the foregoing instrument

and acknowledged that (s)he executed the same as his/her free act and deed.


Notary Public April M. P. Kreis
State of Colorado County of Arapahoe
My Commission expires 3-21-90**INSTRUCTIONS**

1. Within thirty (30) days after the completion of a well, or recompletion of a well in a different pool, the original and three copies of this report must be filed with the North Dakota Industrial Commission, Oil and Gas Division.
2. Immediately after the completion or recompletion of a well in a pool or reservoir not then covered by an order of the commission, the original and three copies of this report must be filed with the North Dakota Industrial Commission, Oil and Gas Division.
3. The owner or operator shall file with the Oil and Gas Division three copies of the following: all logs run, drill stem test reports and charts, formation water analysis and noninterpretive lithologic logs or sample descriptions if compiled.

DST # 1- Nesson, tested 9156 to 9200

Times 15, 60, 90, 120

Tool opened with 1/4 inch blow, decreased to surface at 5 min. Dead after 7 min, and stayed dead for rest of initial open and all of first shut in. Reopened with 1/2" blow, 1 1/2 " in 5 min, 3/4 " in 15 min, 1/2" in 30 min, 1" in 45 min, 2" in 60 min, 1 1/2" in 60 min, and 2 " in 90 min. Final shut in 2 1/2 " died in 18 minutes.

| Pressures | Inside (9,125) | Outside (9166) |
|-----------|----------------|----------------|
| IH | 5070 psig | 5101 psig |
| FH | 5045 psig | 5087 psig |
| IF | 100-100 psig | 113-113 psig |
| ISIP | 3467 psig | 3343 psig |
| FFP | 125-137 psig | 156-156 psig |
| FSIP | 1107 psig | 1048 psig |
| | | BHT 192 deg |

Comments: Good mechanical test, charts show no breakover during the shutins.

Recovery: Total of 270 ft of fluid: 1ft of O&G emulsion, 60 ft of M&OC water (Rw .07 @ 70 deg 100,000 chlorides no nitrates or chromates), 60 ft MC water (Rw .07 @ 70 deg no nitrates or chromates), 149 ft of GC mud (Rw .05 @ 70 deg 20 ppm nitrates 90 ppm chromates) Note: all fluids had some ammonia inhibitor which was in the string prior to opening the tool.

DST #2 Duperow 10,920 to 10,984

Times 15-60-120-180

| Pressures | Inside (10,903) | Outside (10,930) |
|-----------|-----------------|------------------|
| IH | 6025 psig | 6055 psig |
| FH | 5985 psig | 6028 psig |
| IF | 105-135 psig | 104-139 psig |
| ISIP | 5007 psig | 5065 psig |
| FFP | 219-329 psig | 278-383 psig |
| FSIP | 5007 psig | 5065 psig |
| | | BHT 236" |

Recovery: Two hundred feet of gas in pipe 622 ft of total fluid, 250 ft of drilling mud, and 372 ft of mud cut salt water. Chlorides for the pipe recovery were 185,000 for top, 185,000 for middle, and 170,000 for bottom. Drilling mud had 195,000 chlorides.

Sampler: Total volume 2300 cc. AT 900 psig sampler contained 550 cc of 39 deg API oil, and 1600 cc of 170,000 chloride (.05 ohms at 80 deg) salt water, along with 5.5 cubic ft of gas.

DST #3 Duperow from 11,087 to 11,132

Times: 15-60-90-120

Had gas to surface in 60 minutes of the final shutin, there was still a six inch blow in the bucket when we started to pull pipe.

| Pressures | Inside (11,097) | Outside (11,061) |
|-----------|-----------------|------------------|
| IH | 6125 psig | 6104 psig |
| FH | 6088 psig | 6074 psig |
| IF | 244-348 psig | 239-329 psig |
| ISIP | 5429 psig | 5422 psig |
| FFP | 452-1160 psig | 449-1169 psig |
| FSIP | 5320 psig | 5303 psig |
| | | BHT 230 deg |

RECOVERY: Pipe 2415 ft of total fluid, 1050 ft of HGC&SOC mud, 450 ft of SO\$GC muddy saltwater, and 915 ft of Saltwater with a trace of oil.

SAMPLER: 3300 cc total volume at 1450 psig. 1500 cc of saltwater, 100 cc of free salt, and 1700 cc of 38 deg API oil at 60 deg. Note: water in the sampler was free of nitrates.

DST #4 Interlake from 12,088 to 12,138

Times: 15-60-210-240

No fluid to surface.

| Pressures | Inside (12,103) | Outside (12,110) |
|-----------|-----------------|------------------|
| IH | 7125 psig | 7135 psig |
| FH | 7125 psig | 7135 psig |
| IF | 500-518 psig | 502-521 psig |
| ISIP | 6020 psig | 6026 psig |
| FFP | 518-594 psig | 524-596 psig |
| FSIP | 5925 psig | 5932 psig |
| | | BHT 254 deg |

RECOVERY: Pipe 1403 ft of total fluid, 577 ft of SM&GCM, 826 ft HGC&SOCM estimated 15 % oil.

SAMPLER: Total volume 2200 CC, recovered 1.57 ft cubic of gas at 270 psi, 320 cc of oil and 1280 cc of mud. R_w .04 at 60 deg and 197,000 chlorides which is a match with the pit mud. None of the samples had any nitrates measured on site which is difficult to believe will send in for analysis.

DST #5 Interlake from 12,866 to 12,940
 Times: 15-60-90-120
 No fluid to surface.

Tool opened with a 1" blow, 2" in 1 min, 2" in 5 min, 2 1/4" in 10 min, and 4 1/2" at the end of the 15 min preflow. Blow built to 9" 20 minutes into shut in and died to 1" at end of 60 min shut. Reopened with 2" blow, 2 1/2" in 15 min, 5" in 20 min, 7" in 25 min, still 7" after 40 min, 6" in 45 min, 6" in 70 min, 6 1/2" in 75 min, 6" in 80 min, and 5 1/2" in 85 min.

| Pressures | Inside (12,891) | Outside (12,898) |
|-----------|-----------------|------------------|
| IH | 7250 psig | 7259 psig |
| FH | 7250 psig | 7259 psig |
| IF | 365-388 psig | 371-389 psig |
| ISIP | 4770 psig | 4772 psig |
| FFP | 385-474 psig | 389-479 psig |
| FSIP | 5340 psig | 5345 psig |
| | | BHT deg |

RECOVERY: Pipe 1114 ft of total fluid, 319 ft of gcwcush, and 695 ft of SG&WCM

SAMPLER: Total volume 2500 CC, recovered 5.56 ft cubic of gas at 2100 psi. 1700 cc of SMCSW. R_w .05 @ 60 deg.

DST #6 from 13,252-13,480
 Red River B and C

Tool opened with a 7" blow, 2 min bottom of bucket, 5 min 33", and 10 minutes 50" and packers failed.

Day 61, picking up to run DST # 7 from 13,232 to 13,480, Red River B and C. When DST # 6 was pulled after 6the packers failed we recovered 1598 ft HGCWCush and 3694 ft of HGCM. The charts indicated that the packers started leaking right away. Tripped back in hole to recondition for DST. Tripped out and picked up test tool, and tripped in. Opened tool with a 2" blow, 5 min 8", 10 min 20", and 15 min 28". S.T. \$7,108 Cum \$525,814

8/23/86
 Day 62, circulating and conditioning mud to run pipe at 13,480. Recovered 6412 ft of total fluid, 1781 of HGCWCush, and 4631 ft of HGCM with no sign of oil. Charts from DST #7 show that the initial shutin pressure built to 6275# before the packers started to leak. Sampler had .03 cubic ft of gas at 10 psi and 2400 cc of mud. S.T. \$6,880 Cum \$532,694

11920



**REPORT
of
SUB-SURFACE
DIRECTIONAL
SURVEY**



SHELBY DRILLING INC (BASIC EARTH SCIENCES)
COMPANY

CORPS OF ENGINEERS 31-10
WELL NAME

MCKENZIE COUNTY, NORTH DAKOTA
LOCATION

| <u>JOB NUMBER</u> | <u>TYPE OF SURVEY</u> | <u>DATE</u> |
|-------------------|-----------------------|-------------|
| 410-516 | SINGLE SHOT | 11-SEP-86 |

SURVEY BY
S. J. COCHRAN AND RIG CREWS

OFFICE
CASPER, WYOMING

EASTMAN WHIPSTOCK, INC.

RECORD OF SURVEY

FOR

NEW DISTRICT : ROCKY MOUNTAIN DIST.



EDDIE BOY DRILLING INC
BASIC GARTH SCIENCES
CORPS OF ENGINEERS 31-10

SLOT : DATE PRINTED : 11-SEP-86
WELL : C OF E 31-10 OUR REF. NO. : S02708.06Z
PBHL : S 70 0 E JOB NUMBER :

PAGE NO. 1

| MEASURED DEPTH | DRIFT ANGLE D M | DRIFT DIRECTION D M | COURSE LENGTH | TRUE VERTICAL DEPTH | VERTICAL SECTION | RECTANGULAR COORDINATES | DRAILED SEVERITY |
|----------------|-----------------|---------------------|---------------|---------------------|------------------|-------------------------|------------------|
| 510.00 | 0 30 | S 25 0 W | 0.00 | 510.00 | 0.00 | 0.00 N | 0.00 E |
| 1094.00 | 0 15 | S 43 0 W | 584.00 | 1093.99 | -0.92 | 3.16 S | 2.13 W |
| 1620.00 | 0 15 | N 68 0 E | 526.00 | 1619.98 | 0.43 | 4.53 S | 1.19 W |
| 2125.00 | 0 15 | N 26 0 E | 505.00 | 2124.78 | 1.40 | 3.05 S | 0.38 E |
| 2472.00 | 0 0 | N 26 0 E | 347.00 | 2471.98 | 1.48 | 2.38 S | 0.71 E |
| 2935.00 | 0 30 | S 79 0 E | 463.00 | 2934.97 | 3.48 | 2.77 S | 2.70 E |
| 3510.00 | 0 45 | S 77 0 E | 575.00 | 3509.94 | 9.70 | 4.07 S | 8.84 E |
| 3980.00 | 0 0 | S 77 0 E | 470.00 | 3979.92 | 12.76 | 4.76 S | 11.84 E |
| 4030.00 | 0 45 | S 79 0 E | 50.00 | 4029.92 | 13.08 | 4.83 S | 12.16 E |
| 4063.00 | 1 15 | N 88 0 E | 33.00 | 4062.92 | 13.64 | 4.87 S | 12.74 E |
| 4094.00 | 2 0 | N 88 0 E | 31.00 | 4093.90 | 14.45 | 4.84 S | 13.62 E |
| 4126.00 | 2 45 | S 88 0 E | 32.00 | 4125.88 | 15.70 | 4.84 S | 14.94 E |
| 4158.00 | 3 15 | S 84 0 E | 32.00 | 4157.83 | 17.31 | 4.96 S | 16.61 E |
| 4190.00 | 3 45 | S 74 0 E | 32.00 | 4189.77 | 19.23 | 5.33 S | 18.53 E |
| 4221.00 | 4 30 | S 74 0 E | 31.00 | 4220.69 | 21.46 | 5.95 S | 20.67 E |
| 4253.00 | 5 0 | S 67 0 E | 32.00 | 4252.58 | 24.11 | 6.83 S | 23.17 E |
| 4285.00 | 5 45 | S 71 0 E | 32.00 | 4284.44 | 27.10 | 7.90 S | 25.96 E |
| 4317.00 | 6 15 | S 67 0 E | 32.00 | 4316.27 | 30.45 | 9.10 S | 29.09 E |
| 4348.00 | 6 45 | S 67 0 E | 31.00 | 4347.07 | 33.95 | 10.47 S | 32.32 E |
| 4380.00 | 7 30 | S 63 0 E | 32.00 | 4378.82 | 37.90 | 12.15 S | 35.91 E |
| 4411.00 | 8 0 | S 62 0 E | 31.00 | 4409.54 | 42.05 | 14.03 S | 39.62 E |
| 4443.00 | 8 30 | S 62 0 E | 32.00 | 4441.20 | 46.59 | 16.24 S | 43.68 E |
| 4540.00 | 9 45 | S 64 0 E | 97.00 | 4536.97 | 61.84 | 23.22 S | 57.38 E |
| 4635.00 | 10 15 | S 64 0 E | 95.00 | 4630.53 | 78.27 | 30.45 S | 72.21 E |
| 4794.00 | 11 0 | S 65 0 E | 159.00 | 4786.80 | 107.45 | 43.07 S | 90.67 E |
| 4889.00 | 11 30 | S 63 0 E | 95.00 | 4879.98 | 125.08 | 51.20 S | 115.32 E |
| 4985.00 | 11 45 | S 66 0 E | 96.00 | 4974.01 | 145.13 | 59.52 S | 132.78 E |
| 5050.00 | 12 15 | S 65 0 E | 65.00 | 5037.59 | 158.61 | 65.13 S | 145.08 E |
| 5145.00 | 12 45 | S 65 0 E | 95.00 | 5130.34 | 179.09 | 73.82 S | 163.72 E |
| 5177.00 | 12 30 | S 66 0 E | 32.00 | 5161.56 | 186.06 | 76.72 S | 170.08 E |

CONTINUED ON NEXT PAGE ...



CHIEF, PRODUCTION INC
BASIC EARTH SCIENCES
CORPS OF ENGINEERS 31-10

DATE : 11-SEP-86
WELL : C-CF-E-31-10
FILE : S-70-O-E
JOB NUMBER :

PAGE NO. 3

| MEASURED DEPTH | DRIFT ANGLE D M | DRIFT DIRECTION D M | COURSE LENGTH | TRUE VERTICAL DEPTH | VERTICAL SECTION | RECTANGULAR COORDINATES | BOGLER SEVERITY |
|-------------------|-----------------------|---------------------------|------------------|---------------------------|---------------------|----------------------------|--------------------|
| 5225.00 | 12 30 | S 66 0 E | 48.00 | 5208.42 | 196.43 | 80.94 S 179.57 E | 0.00 |
| 5241.00 | 12 0 | S 65 0 E | 16.00 | 5224.06 | 199.81 | 82.35 S 182.66 E | 0.39 |
| 5336.00 | 11 30 | S 64 0 E | 95.00 | 5317.07 | 219.07 | 90.68 S 200.12 E | 0.57 |
| 5430.00 | 11 45 | S 64 0 E | 94.00 | 5409.14 | 237.91 | 98.98 S 217.15 E | 0.27 |
| 5559.00 | 10 45 | S 64 0 E | 129.00 | 5535.66 | 262.94 | 110.02 S 239.77 E | 0.78 |
| 5650.00 | 10 0 | S 65 0 E | 91.00 | 5625.17 | 279.25 | 117.07 S 254.56 E | 0.85 |
| 5712.00 | 10 0 | S 65 0 E | 62.00 | 5686.23 | 289.97 | 121.62 S 264.32 E | 0.00 |
| 5765.00 | 9 30 | S 64 0 E | 73.00 | 5758.18 | 302.28 | 126.94 S 275.47 E | 0.72 |
| 5848.00 | 9 0 | S 67 0 E | 63.00 | 5820.36 | 312.37 | 131.14 S 284.69 E | 1.10 |
| 5912.00 | 8 30 | S 68 0 E | 64.00 | 5883.61 | 322.10 | 134.87 S 293.68 E | 0.82 |
| 6004.00 | 7 0 | S 70 0 E | 92.00 | 5974.77 | 334.50 | 139.31 S 305.26 E | 1.66 |
| 6036.00 | 7 15 | S 69 0 E | 32.00 | 6006.52 | 338.47 | 140.70 S 308.98 E | 0.87 |
| 6099.00 | 7 0 | S 66 0 E | 63.00 | 6069.04 | 346.28 | 143.69 S 316.20 E | 0.71 |
| 6163.00 | 6 15 | S 66 0 E | 64.00 | 6132.61 | 353.64 | 146.70 S 322.94 E | 1.17 |
| 6226.00 | 5 30 | S 64 0 E | 63.00 | 6195.28 | 360.07 | 149.42 S 328.79 E | 1.23 |
| 6281.00 | 5 0 | S 67 0 E | 55.00 | 6250.05 | 365.06 | 151.51 S 333.37 E | 1.04 |
| 6383.00 | 4 15 | S 71 0 E | 102.00 | 6351.71 | 373.30 | 154.46 S 341.04 E | 0.80 |
| 6479.00 | 4 0 | S 66 0 E | 96.00 | 6447.46 | 380.21 | 156.99 S 347.47 E | 0.46 |
| 6542.00 | 3 45 | S 67 0 E | 63.00 | 6510.32 | 384.46 | 158.68 S 351.37 E | 0.41 |
| 6700.00 | 3 0 | S 57 0 E | 158.00 | 6668.04 | 393.65 | 163.05 S 359.58 E | 0.60 |
| 6828.00 | 2 30 | S 67 0 E | 128.00 | 6795.90 | 399.73 | 165.92 S 364.99 E | 0.54 |
| 6955.00 | 2 0 | S 57 0 E | 127.00 | 6922.80 | 404.66 | 168.26 S 369.39 E | 0.50 |
| 7455.00 | 1 0 | S 57 0 E | 500.00 | 7422.62 | 417.41 | 175.39 S 380.36 E | 0.20 |
| 7958.00 | 1 0 | S 42 0 E | 503.00 | 7925.54 | 425.61 | 181.08 S 387.02 E | 0.05 |
| 8242.00 | 0 30 | S 55 0 E | 284.00 | 8209.52 | 429.06 | 183.53 S 389.80 E | 0.18 |
| 9170.00 | 0 30 | S 57 0 E | 928.00 | 9137.48 | 436.92 | 188.06 S 396.51 E | 0.00 |
| 9477.00 | 0 15 | N 1 0 E | 307.00 | 9444.48 | 438.03 | 187.29 S 397.97 E | 0.22 |
| 10290.00 | 0 0 | N 1 0 E | 813.00 | 10257.47 | 437.45 | 185.52 S 398.00 E | 0.03 |
| 10968.00 | 0 15 | S 64 0 W | 678.00 | 10935.47 | 436.43 | 186.17 S 396.68 E | 0.04 |
| 11450.00 | 0 30 | N 18 0 E | 482.00 | 11417.46 | 434.11 | 184.53 S 394.80 E | 0.14 |

CONTINUED ON NEXT PAGE ...



PRINTED BY DRIFTECH INC
BAGG'S EARTH SURVEYING
CORPS OF ENGINEERS 31-10

DATE : 11-SEP-86
TIME : 00:00:00 OF 08-31-86
PERIOD : S 70° 0' E

PAGE NO. 4

| MEASURED DEPTH | DRIFT ANGLE D M | DRIFT DIRECTION D M | COURSE LENGTH | TRUE VERTICAL DEPTH | VERTICAL SECTION | RECTANGULAR COORDINATES | ROBLES SEVERITY |
|-------------------|-----------------------|---------------------------|------------------|---------------------------|---------------------|----------------------------|--------------------|
| 12003.00 | 1 15 | N 43° 0' W | 553.00 | 11970.39 | 429.78 | 176.67 S 383.06 E | 0.20 |
| 12570.00 | 1 0 | S 43° 0' W | 567.00 | 12537.28 | 420.45 | 176.67 S 383.13 E | 0.29 |
| 12980.00 | 0 45 | S 59° 0' W | 410.00 | 12947.24 | 417.24 | 180.59 S 375.28 E | 0.08 |

CLOSURE - DISTANCE : 419.18
DIRECTION : S 64 29 E

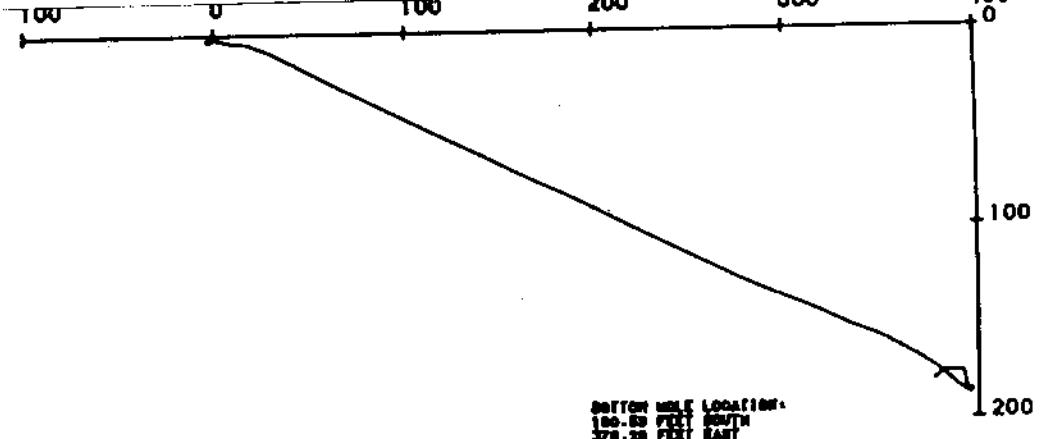
REPORT UNITS : Feet

SURVEY CALCULATION METHOD : Radius of curvature

SURVEY RUN INFORMATION

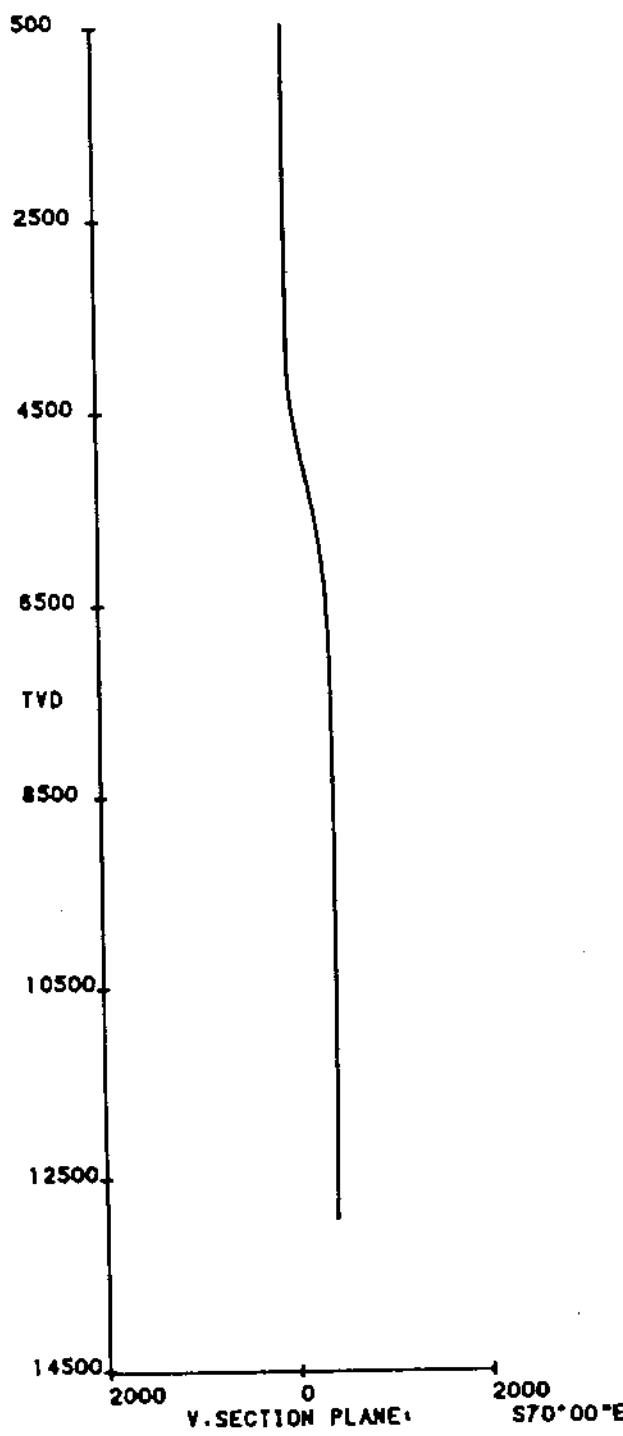
CDD JOB WITH S J COCHRAN
SINGLE SHOT - 8242 THRU 12980 ADDED ON 11-SEP-86





BOTTOM HOLE LOCATION:
100.00 FEET SOUTH
370.00 FEET EAST
OF SURFACE LOCATION

SCALE 1"=100FT.
NOTE: COORDINATES RELATIVE
TO SLOT



 EASTMAN
CHRISTENSEN

SHELBY DRILLING INC
BASIC EARTH SCIENCES
CORPS OF ENGINEERS 31-10

11920

NORTH DAKOTA INDUSTRIAL COMMISSION
OIL AND GAS DIVISION

WESLEY D. NORTON
Chief Enforcement Officer

F. E. WILBORN
Deputy Enforcement Officer

CLARENCE G. CARLSON
Geologist

CHARLES KOCH
Engineering Dept.

DOREN DANNEWITZ
Field Supervisor

KEN KALLESTAD
Reclamation Sup.

December 18, 1986

Mr. Jeffery E. Jones
Basic Earth Science Systems
P.O. Box 3088
Englewood, Colorado 80155

RE: Basic Corps of Eng. #31-10
NW NE Section 10-T153N-R101W
Well File No. 11920

Dear Mr. Jones:

According to our records, our office has not received a Completion Report (Form 6) for the above captioned well.

The Form 6 is due thirty days after the completion of a well. At this time, please submit this report, in triplicate, as soon as possible. Thank you.

Sincerely,

Tom Delling rls
Tom Delling
Field Inspector

TD/rls

~~CONFIDENTIAL~~

FORM 8

Well File No. 11920

**North Dakota State Industrial Commission
Oil and Gas Division**

900 EAST BOULEVARD - BISMARCK, NORTH DAKOTA - 58505

**PRODUCERS CERTIFICATE OF COMPLIANCE AND AUTHORIZATION TO
TRANSPORT OIL FROM LEASE**

Basic Corps of Engineers (SEC.) 10 (TWP.) 153N (RGE.) 101W COUNTY McKenzie

PRODUCER Basic Earth Science Systems. Inc. FIELD Baker POOL Red River

ADDRESS CORRESPONDENCE TO Jeffery E. Jones, Basic Earth Science Systems, Inc.

STREET P.O. Box 3088 CITY Englewood STATE Colorado 80155

THE ABOVE NAMED PRODUCER HEREBY AUTHORIZES The Permian Corporation
(Name of Purchaser)

WHOSE PRINCIPAL PLACE OF BUSINESS IS P.O. Box 3119, Midland, TX 79702
(Street) (City) (State)

AND WHOSE FIELD ADDRESS IS P.O. Box 2358, Williston, NE 58801

TO TRANSPORT 100 % OF THE OIL PRODUCED FROM THE LEASE DESIGNATED ABOVE UNTIL
FURTHER NOTICE

THE OIL WILL BE TRANSPORTED BY The Permian Corporation
(Name of Transporter)

OTHER PURCHASERS TRANSPORTING OIL FROM THIS LEASE ARE: None

(Name of Purchasers) % (Name of Purchasers)

REMARKS: Effective Date: November 22, 1986

The undersigned certifies that the rules and regulations of the State Industrial Commission have been complied with except as noted above and that the purchaser is authorized to transport the above percentage of oil produced from the above described property and that this authorization will be valid until further notice to the purchaser named herein until canceled by the producer.

Executed this 22th day of November, 1986. Basic Earth Science Systems, Inc.
(Company or Operator)

STATE OF COLORADO)
) ss
COUNTY OF ARAPAHOE)

(Signature) Jeffery E. Jones (Title) President

Before me the undersigned authority, on this day personally appeared Jeffery E. Jones, known to me to be the person whose name is subscribed to the above instrument, who being by me duly sworn on oath states that he is authorized to make this report and has knowledge of the facts stated herein and that said report is true and correct.

Subscribed and sworn to before me this the 22nd day of November, 1886.

My Commission expires 3-21-90 **Notary Public in and for** Arapahoe County, Colorado.

Approved by: F. Ellsworth
(Deputy Enforcement Officer)

DEC 2 1986

(Date)

(Instructions Over)

11920

**NORTH DAKOTA INDUSTRIAL COMMISSION
OIL AND GAS DIVISION**

WESLEY D. NORTON
Chief Enforcement Officer

F. E. WILBORN
Deputy Enforcement Officer

CLARENCE G. CARLSON
Geologist

CHARLES KOCH
Engineering Dept.

DOREN DANNEWITZ
Field Supervisor

KEN KALLESTAD
Reclamation Sup.

November 21, 1986

Mr. Jeffrey Jones
Vice President
Basic Earth Science Systems, Inc.
P.O. Box 3088
Englewood, CO 80155

RE: Basic Corps of Engineers #31-10
NW NE Section 10-T153N-R101W
McKenzie County, ND
Well File No. 11920

Dear Mr. Jones:

I have recently spoken with State Field Inspector Tom Delling about the reserve pit at the Basic Corps of Engineers #31-10. We feel all the material from the pit should be removed to a legal waste disposal system. I understand most has been removed already. This is a sensitive area as far as the high water table, and the possible flooding of the Missouri River. We felt this should have been a lined pit. A sample of the water in the pit showed 70,000 PPM. There is a possibility this could contaminate the area.

We will require the pit to be reclaimed this fall. If you have any question, please feel free to contact me.

Sincerely,

Kenneth Kallestad

Kenneth Kallestad
Reclamation Supervisor

KK/tp
cc: Tom Delling

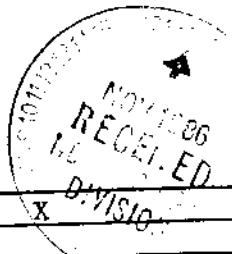
FORM 4

North Dakota State Industrial Commission

Oil and Gas Division

900 EAST BOULEVARD - BISMARCK, NORTH DAKOTA - 58505

SUNDRY NOTICES AND REPORTS ON WELLS



1. Notice of Intention to Drill or Redrill _____
2. Notice of Intention to Change Plans _____
3. Notice of Intention to Pull Casing _____
4. Notice of Intention to Abandon Well _____
5. Report of Water Shut-Off _____
6. Report of Shooting or Acidizing _____

7. Report of Casing _____
8. Report of ~~Water~~ Hanger Repair _____
9. Supplementary History _____
10. Well Potential Test _____
11. Drilling Prognosis _____
12. _____

NAME OF LEASE Basic Corps of Engineers Date November 17, 1986

WELL NO. 31-10 Bottom-hole is located 840.59 ft. from (N) (S) line and 1926.72 ft. from the (E) (W) line

of Section 10 Township 153N Range 101W in McKenzie

County. Baker Field Red River Pool. The elevation of the ground

is 1851 feet above sea level.

Name and Address of Contractor, or Company which will do work is: Shelby Drilling

(DETAILS OF WORK)

(State names of, and expected depth of objective sand; show sizes, weight, and lengths of proposed casing.
indicate mud weights, cementing points, and all other details of work)

On August 23, 1986, while running casing, pipe became stuck in hole, worked pipe and casing prematurely parted. Came out with 32 jts. TIH and found top of fish @ 5812', total pipe in hole 7682'. Unable to pull casing. Tied into casing with casing patch and cleaned out to TD. Unable to get casing to circulate from TD back up. Pressure tested casing to verify integrity of string. Perforated 11,840', set retainer at 11,791' and cemented from 11,840' back to DV @ 8940' with 175 sx of lite and 742 sx of class G. Then cemented second stage with 706 sx of lite followed by 1150 sx of class G. Drilled out to TD of 13,450', ran cement bond log. Cement top @ 5130'. Also bond log showed packed off section of the hole @ 12,450' - 12,680' that was packed off looking like cement. Perforated 13,120 - 13,122' and 13,400 - 13,402'. Set retainer @ 13,355' and performed circulating squeeze to cement off Red River. Drilled out cement, pressure tested and began production testing.

Company Basic Earth Science Systems, Inc.

Do not write in this space

Address P.O. Box 3088, Englewood CO 80155

Approved Nov. 29 1986

By Melvin E. Jones

By Alvin Hamwey

Title Vice President

Title Field supervisor

(Instructions Over)



P.O. Box 3088
Englewood, Colorado 80155
(303) 792-5230

November 17, 1986



Mr. F. E. Wilborn
Deputy Enforcement Officer
North Dakota Industrial Commission
Oil and Gas Division
900 East Boulevard
Bismarck, ND 58505

Re: Basic Corps of Engineers #31-10
Township 153 North-Range 101 West
Section 10: NW₄NE₄
McKenzie County, ND
Well File No. 11920

Dear Mr. Wilborn:

Enclosed you will find a Sundry Notice (Form 4) for the Basic Corps of Engineers #31-10 detailing a parted casing problem and the work involved in correcting it.

If you have any questions or need additional information, please do not hesitate to contact me.

Sincerely,

Basic Earth Science Systems, Inc.

Jeffery E. Jones
Vice President

JEJ:jb

encl.

North Dakota State Industrial Commission
Oil and Gas Division

900 EAST BOULEVARD - BISMARCK, NORTH DAKOTA 58505

SUNDRY NOTICES AND REPORTS ON WELLS

1. Notice of Intention to Drill or Redrill _____
2. Notice of Intention to Change Plans _____
3. Notice of Intention to Pull Casing _____
4. Notice of Intention to Abandon Well _____
5. Report of Water Shut-Off _____
6. Report of Shooting or Acidizing _____

7. Report of Casing _____
8. Report of Redrilling or Repair _____
9. Supplementary History _____
10. Well Potential Test _____
11. Drilling Prognosis _____
12. Rehabilitation Notice _____

NAME OF LEASE Basic Corps of Engineers Date October 30, 1986
 WELL NO. 31-10 Bottom-hole 840.59 ft. from (N) (S) line and 1926.72 ft. from the (E) (W) line
 of Section 10 Township 153N Range 101W in McKenzie
 County, Baker Field Red River Pool. The elevation of the ground
 is 1851 feet above sea level.

Name and Address of Contractor, or Company which will do work is:

(DETAILS OF WORK)

(State names of, and expected depth of objective sand; show sizes, weight, and lengths of proposed casing,
indicate mud weights, cementing points, and all other details of work)

"TIGHT HOLE"

- A. Dirt contractor is Hexom Earth Construction, Rt. 3, Box 238, Williston, ND 58801
- B. Surface Owner: Corps of Engineers, Real Estate Div., 6014 US Post Office & Courthouse,
Omaha, NE 68102-4978.
- C. Surface restoration will begin approx. 11/10/86 and be completed by 12/10/86.
- D. Water hauled to Great Plains Disposal well State #16-11.
- E. Drilling mud hauled to Great Plains Helling State disposal well, drill cuttings will
be hauled to Prairie Disposal Dishon well. Pit is empty except for solids and rainwater.
- F. Drill site will be leveled and contoured, redistribution of the topsoil will be delayed
one year to allow for settling of the location.
- G. Basic Earth Science Systems, Inc. will reseed the location with approved mixture.

Company Basic Earth Science Systems, Inc.

Do not write in this space

Address P.O. Box 3088, Englewood CO 80155

Approved 11-3

By Jeffrey E. Jones
Title Vice President

By Kenneth Kallstedt
Title Reclamation Supervisor

basic

Earth Science Systems, Inc.

11920
P.O. Box 3088
Englewood, Colorado 80155
(303) 792-5230

October 27, 1986



Mr. Tom Delling
Field Inspector
North Dakota Industrial Commission
Oil and Gas Division
900 East Boulevard
Bismarck, ND 58505

Re: Rosebud #22-11
Township 153 North-Range 101 West
Section 11: SE $\frac{1}{4}$ NW $\frac{1}{4}$
McKenzie County, ND
Well File No. 11549

Basic Corps of Engineers #31-10
Township 153 North-Range 101 West
Section 10: NW $\frac{1}{4}$ NE $\frac{1}{4}$
McKenzie County, ND
Well File No. 11920

Dear Mr. Delling:

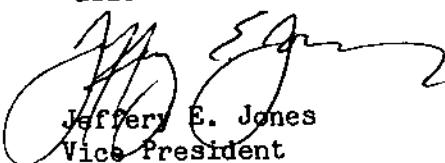
We are in receipt of your letter of October 20, 1986, regarding the above-referenced wells. We have reviewed our production operation both in-house and with our field personnel and are unaware of any recurring problem with gas venting off the top of the Rosebud #22-11 tanks. Since this well is hooked into a gas sales line, we would be anxious to correct this problem. Please contact me at your earliest convenience so we can discuss this perceived problem and seek a reasonable solution. Any solution to a problem must be matched with the scope of the problem it is intended to solve, for this reason I am in need of further input from you to solve this problem.

We are still in the process of repairing the casing problems in the Corps of Engineers #31-10 well and as soon as that work is completed, we will submit a form 4 detailing exactly what has been done to date. At this point in time, we have run a string of casing to the bottom of the hole and are attempting to verify how well cemented it is.

Please contact me at your convenience so we can resolve any problem we may have. ~

Sincerely,

Basic Earth Science Systems, Inc.



Jeffrey E. Jones
Vice President

JEJ:jb

NORTH DAKOTA INDUSTRIAL COMMISSION

11920

OIL AND GAS DIVISION

WESLEY D. NORTON
Chief Enforcement Officer

F. E. WILBORN
Deputy Enforcement Officer

CLARENCE G. CARLSON
Geologist

CHARLES KOCH
Engineering Dept.

DOREN DANNEWITZ
Field Supervisor

KEN KALLESTAD
Reclamation Sup.

October 20, 1986

Mr. Jeffery E. Jones
Basic Earth Science System
P.O. Box 3088
Englewood, Colorado 80155

RE: Rosebud #22-11
SE NW Section 11-T153N-R101W
Well File No. 11549

Basic Corps of Engineers #31-10
NW NE Section 10-T153N-R101W
Well File No. 11920

Dear Mr. Jones:

Please be advised that we are requiring that a closed system be installed on the Rosebud #22-11. You may either tie in the tank vent lines to the flare pit or install a vapor recovery system. This is due to the close proximity of the rifle range and previous problems with gas coming off the top of the tanks. Please take care of this immediately.

Also, it is our understanding that you encountered problems with your casing program on the Basic Corps of Eng #31-10 well. Please submit a Form 4 detailing the problems and what was done to rectify the problems. Thank you.

Sincerely,

Tom Delling /rb
Tom Delling
Field Inspector

TD/rls

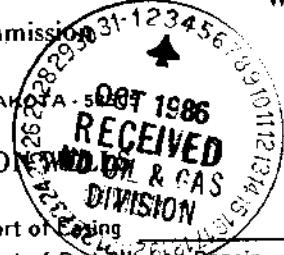
North Dakota State Industrial Commission
Oil and Gas Division

900 EAST BOULEVARD - BISMARCK, NORTH DAKOTA 58501

SUNDRY NOTICES AND REPORTS ON THE OIL & GAS

1. Notice of Intention to Drill or Redrill _____
2. Notice of Intention to Change Plans _____
3. Notice of Intention to Pull Casing _____
4. Notice of Intention to Abandon Well _____
5. Report of Water Shut-Off _____
6. Report of Shooting or Acidizing _____

7. Report of Casing _____ X
8. Report of Redrilling by Repair _____
9. Supplementary History _____
10. Well Potential Test _____
11. Drilling Prognosis _____
12. _____



NAME OF LEASE Basic Corps of Engineers Date September 30, 1986

WELL NO. 31-10 is located 660 ft. from (N) (S) line and 2305 ft. from the (E) (W) line

of Section 10 Township 153N Range 101W in McKenzie

County, Baker Field Red River Pool. The elevation of the ground

is 1851 feet above sea level.

Name and Address of Contractor, or Company which will do work is:

(DETAILS OF WORK)

(State names of, and expected depth of objective sand; show sizes, weight, and lengths of proposed casing,
indicate mud weights, cementing points, and all other details of work)

"TIGHT HOLE"

Production Casing: Ran 335 jts. 17 & 20# L-80 and 26# SS-95 casing. Landed at 13,434'.

Cementing: 1st stage: 340 sx. Halliburton lite followed by 742 sx. class "G".
2nd stage: Lead w/176 sx lite, followed by 530 sx lite tailed w/1150 sx class "G". Dropped plug and displaced w/186 bbls. salt water.

Company Basic Earth Science Systems, Inc.

Do not write in this space

Address P.O. Box 3088, Englewood CO 80155

Approved

OCT 03 1986

By Jeffrey E. Jones

By

F. W. Wilson

Title Vice President

Title

Deputy Enforcement Officer



Earth Science Systems, Inc.

P.O. Box 3088
Englewood, Colorado 80155
(303) 792-5230

September 30, 1986



North Dakota Industrial Commission
Oil and Gas Division
900 East Boulevard
Bismarck, ND 58505

Re: Corps of Engineers #31-10
Sec. 10, T153N, R101W
McKenzie County, ND

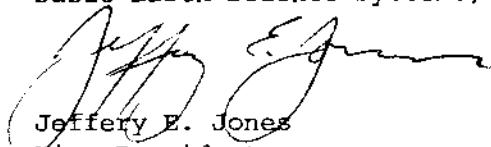
Gentlemen:

Enclosed please find four copies of a Sundry Notice detailing the setting and cementing of the production casing in the above referenced well.

Please do not hesitate to contact me if you have any questions.

Sincerely,

Basic Earth Science Systems, Inc.


Jeffery E. Jones
Vice President

JEJ:ak

Enclosures

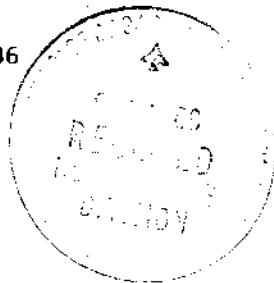
basic

Earth Science Systems, Inc.

P.O. Box 3088
Englewood, Colorado 80155
(303) 792-5230

11930

September 22, 1986



DISTRIBUTION

Re: Corps of Engineers #31-10
Sec. 10, T153N, R101W
McKenzie County, ND

Gentlemen:

Enclosed please find your required number of copies of the Geologist's Well Report for the above referenced well.

Please do not hesitate to contact me if you have any questions or need further information.

Sincerely,

Basic Earth Science Systems, Inc.

Charles L. Mitchell

Charles L. Mitchell
Geologist

CLM:ak

Enclosure/s

1980



WELL REPORT

BASIC EARTH SCIENCE SYSTEMS, INC.

BASIC CORPS OF ENGINEERS NO. 31-10
Sec. 10-T153N-R101W
McKenzie County, North Dakota

Charles L. Mitchell
Senior Geologist
Basic Earth Science Systems, Inc.

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DATA SHEET

OPERATOR: Basic Earth Science Systems, Inc.
44 Inverness Drive East, Building E
Englewood, CO 80112
(P.O. Box 3088, Englewood, CO 80155)

WELL: Basic Corps of Engineers #31-10

LOCATION: NWNE Sec. 10-T153N, R101W
McKenzie Co., North Dakota
Surface: 660 FNL' and 2305' FEL
Bottom Hole: 841' FNL and 1918' FEL

ELEVATION: 1851' Ground
1872' K.B.

SPUD: June 20, 1986, 11:00 PM

FINISH DRILLING: August 18, 1986

COMPLETED: Completion pending

TOTAL DEPTH: 13,480' Driller, 13,475' Schlumberger

CASING: 9 5/8" @ 2996' w/1100 sacks, 5-1/2" @ 13,480'.

TESTS: DST #1: 9156 - 9200 (Nesson); DST #2: 10,920 - 10,984 (Duperow); DST #3: 11,087 - 11,132 (Duperow); DST #4: 12,088 - 12,138 (Interlake); DST #5: 12,866 - 12,940 (Interlake); DST #6: 13,252 - 13,480 (Red River); DST #7: 13,239 - 13,480 (Red River).

CORES: None

RIG: Shelby Drilling Inc. Rig #52

TOOL PUSHER: Ray Gentry

MUD: Davis Mud Co., Greg Sjaastad

MUDLOG: Red River Exploration, Marvin Heupel, one man unit

WELLSITE GEOLOGIST: Charles L. Mitchell-Basic Earth Science Systems, Inc.

WELLSITE ENGINEER: Tom Hopkin, Dickinson, North Dakota

FORMATION TOPS AND MARKERS

| | <u>Log Depth</u> | <u>TVD Correction</u> | <u>Subsea K.B. 1872'</u> | <u>Structurally High to Rosebud #22-11</u> |
|----------------------|------------------|---------------------------|------------------------------|--|
| <u>Cretaceous</u> | | | | |
| Greenhorn | 4,344 ft. | 1 ft. | -2,471 ft. | |
| Muddy | 4,746 | 7 | -2,867 | |
| Dakota | 5,156 | 15.5 | -3,269 | |
| <u>Jurassic</u> | | | | |
| Morrison | 5,622 | 25 | -3,725 | |
| Piper | 6,267 | 31 | -4,364 | |
| Dunham Salt | 6,653 | 32 | -4,749 | |
| <u>Permian</u> | | | | |
| Minnekahta | 7,022 | 32 | -5,118 | |
| Opeche | 7,078 | 32 | -5,174 | |
| <u>Pennsylvanian</u> | | | | |
| Minnelusa | 7,343 | 32 | -5,439 | |
| Amsden | 7,636 | 32 | -5,732 | |
| <u>Mississippian</u> | | | | |
| Kibbey L.S. | 8,098 | 33 | -6,193 | |
| Charles | 8,252 | 33 | -6,347 | |
| Base Last Salt | 8,950 | 33 | -7,045 11 ft. | |
| Midale | 9,077 | 33 | -7,172 | |
| Nesson | 9,174 | 33 | -7,269 15 | |
| Lodgepole | 9,739 | 33 | -7,834 | |
| Bakken | 10,430 | 33 | -8,525 30 | |
| <u>Devonian</u> | | | | |
| Three Forks | 10,507 | 33 | -8,602 | |
| Nisku | 10,695 | 33 | -8,790 | |
| Duperow | 10,782 | 33 | -8,877 34 | |
| Souris River | 11,242 | 33 | -9,337 | |
| Dawson Bay | 11,478 | 33 | -9,573 | |
| Prairie | 11,596 | 33 | -9,691 35 | |
| Winnepegosis | 11,790 | 33 | -9,885 | |
| Ashern | 11,981 | 33 | -10,076 49 | |
| <u>Silurian</u> | | | | |
| Interlake | 12,095 | 33 | -10,190 51 | |
| Stonewall | 12,938 | 33 | -11,033 | |
| <u>Ordovician</u> | | | | |
| Gunton | 13,012 | 33 | -11,107 | |
| Stoney Mtn. Shale | 13,119 | 33 | -11,214 38 | |
| Red River | 13,176 | 33 | -11,271 35 | |
| "B" Anhydrite | 13,239 | 33 | -11,334 | |
| "C" Anhydrite | 13,286 | 33 | -11,381 | |
| Total Depth | 13,480 | 33 | -11,575 | |

DRILL STEM TEST DATA

DST No. 1: 9,156' - 9,200' (Nesson)
Test Type: Conventional, Open Hole.
DST Times: 15"-60"-90"-120".
BHT: 192 Degrees
Company: Lynes Inc., Rick Green-Tester

BLOW: IF: 1/4" Initial Blow, dead in 7 minutes.
ISI: No Blow-remained dead.
FF: 1/2" Initial Blow, 1 1/2" in 5 min., 3/4" in 15 min., 1/2" in 30 min., 1" in 45 min., 2" in 60 min., 1 1/4" in 75 min., 2 1/2" at end of test.
FSI: Shut in with 2 1/2" blow, dead in 18 min.

CUSHION: 15 gal. amonia

Recovery: 1' oil & gas emulsion
60' mud and oil cut amonia water
60' mud cut amonia water
149' gas and amonia cut mud
270' Total Fluid Recovery

RESISTIVITIES: Top Sample R.W.=.07 @ 70 degrees (100,000 PPM)-no nitrates
Middle Sample R.W.=.07 @ 70 degrees (100,000 PPM)-no nitrates
Bottom Sample R.W.=.05 @ 70 degrees (170,000 PPM)- 30 PPM nitrates

SAMPLE CHAMBER: 2300 cc total capacity

Pressure: 60 psi
Recovery: 400 cc oil, 600 cc water
RW: .06 @ 70 degrees (125,000 PPM)-no nitrates
Gravity: 30.7 API @ 60 degrees F
Mud Pit RW: .04 @ 70 degrees (200,000 PPM)

LABORATORY ANALYSIS OF SAMPLER

RW = .46 ohms @ 77 degrees F
Sodium Chloride = 310,100 PPM - no H2S
API Gravity = 30.7 @ 60 degrees F
Pour Point = 49 degrees F
Paraffin = 11.1%

DST #1 Continued

| <u>PRESSESSES:</u> | <u>9125'(INSIDE)</u> | <u>9166'(OUTSIDE)</u> |
|--------------------|----------------------|-----------------------|
| IHP: | 5070 | 5101 |
| IFP: | 100-100 | 113-113 |
| ISIP: | 3467 | 3443 |
| FFP: | 125-137 | 156-156 |
| FSIP: | 1107 | 1048 |
| FHP: | 5045 | 5087 |

REMARKS: The charts indicate that the test was successful. All pressures are uncorrected field pressures.

DST No. 2: 10,920 - 10,984 (Duperow)
Test Type: Conventional, open hole
DST Times: 15"-60"-120"-180"
BHT: 236 degrees F
Company: Lynes Inc., Keith Hammer, Tester

BLOW: IF: Open with a weak surface blow, 1/4" blow in 5 min., 1/4" in 15 min.
ISI: Shut in with 1/4" blow, dead in 17 min.
FF: Opened with a weak surface blow, 1/4" in 5 min., 1 1/2" in 15 min., 3" in 30 min., 5" in 45 min., 3 1/2" in 60 min..., 4" in 120 min.
PSI: Closed tool with a 4" blow, dead in 25 min.

CUSHION: None

Recovery: 250' Drilling mud
372' Mud cut salt water
622' Total Fluid Recovery

RESISTIVITIES:

Top Sample R_w . = .045 @ 82 degrees F (185,000 PPM)
Middle Sample R_w . = .045 @ 82 degrees F (185,000 PPM)
Bottom Sample R_w . = .05 @ 80 degrees F (170,000 PPM)

LABORATORY ANALYSIS:

| | Oil | Nitrates(PPM) | Clorides(PPM) |
|----------------|-----|---------------|---------------|
| Top Sample: | 16% | 355 | 193,448 |
| Middle Sample: | 4% | 52 | 209,219 |
| Bottom Sample: | 50% | None | 207,116 |

ANALYSIS OF SAMPLER:

R_w . = .044 ohms @ 77 degrees F
Sodium Chloride = 342,200 PPM
API Gravity = 36.4 at 60 degrees F
Pour Point = 73 degrees F
Paraffin = 13.72%

SAMPLE CHAMBER: 2300 cc Total Capacity

Pressure: 900 psi
Recovery: 550 cc oil, 1600 cc water
 R_w : 0.05 @ 80 degrees F, (170,000 PPM)
Gravity: 39 degrees API @ 60 degrees F
Mud Pit R_w : 0.04 @ 76 degrees (200,000 PPM)

DST #2 Continued

| <u>PRESSESSES:</u> | <u>10,903(INSIDE)</u> | <u>10,930(OUTSIDE)</u> |
|--------------------|-----------------------|------------------------|
| IHP: | 6015 | 6055 |
| IFP: | 105-135 | 104-139 |
| ISIP: | 5007 | 5065 |
| FFP: | 219-329 | 278-383 |
| FSIP: | 5007 | 5065 |
| FHP: | 5985 | 6028 |

REMARKS: The charts indicate that the test was successful. All pressures are uncorrected field pressures.

DST No. 3: 11,087 - 11,132 (Duperow)
Test Type: Conventional, Open hole
DST Times: 15"-60"-90"-120"
BHT: 230 degrees
Company: Lynes, Inc., Keith Hammer, Tester

BLOW: IF: Tool opened with a 1/2" blow, 3 1/2" in 5 min., 6" in 10 min., 8 1/2" in 15 min.
ISI: Shut-in with an 8 1/2" blow, dead in 22 min.
FF: Opened with a 1" blow, 16" in 30 min., 1 psi in 45 min., 3 psi in 80 min., 2 1/2 psi in 90 min.
FSI: Closed tool with 2 psi blow, opened blow to flare pit, GTS in 60 min., decreased to 6" blow in 120 min.

CUSHION: None

Recovery: 1050' Highly gas cut, slightly oil cut mud (20% oil)
450' Slightly oil and gas cut muddy saltwater
915' Salt water w/trace of oil
2415' Total Fluid Recovery

RESISTIVITIES:

Top Sample R_w = .04 @ 79 degrees F (195,000 PPM-CL)
Middle Sample R_w = Oil cut mud
Bottom Sample R_w = .045 @ 83 degrees F (175,000 PPM)

LABORATORY ANALYSIS:

| | <u>NaCl</u> | <u>Nitrates</u> | <u>Oil</u> | <u>R_w</u> |
|---------|-------------|-----------------|------------|-------------------------|
| Top: | 318,992 PPM | 355 PPM | 16% | .044 Ohm-Meters |
| Middle: | 344,998 PPM | 52 PPM | 4% | .046 Ohm-Meters |
| Bottom: | 351,530 PPM | None | 1% | .046 Ohm-Meters |

SAMPLER ANALYSIS:

R_w = 0.46 ohms @ 77 degrees F
Sodium Chloride = 351,530 PPM
API Gravity = 34.4 @ 60 degrees F
Pour Point = 84 degrees F
Paraffin = 21.75%

SAMPLE CHAMBER: 3300 cc Total Capacity

Pressure: 1450 psi
Recovery: 1700 cc Oil, 1600 cc Water, 9.7 cu. ft. gas
 R_w : .03 @ 84 degrees F (200,000 PPM)
Gravity: 38 degrees API @ 60 degrees F
Mud Pit R_w : 0.04 @ 79 degrees F (195,000 PPM) ~ no nitrates

DST #3 Continued

| <u>PRESSESSES:</u> | <u>11,061(INSIDE)</u> | <u>11,097(OUTSIDE)</u> |
|--------------------|-----------------------|------------------------|
| IHP: | 6104 | 6125 |
| IFP: | 239-329 | 244-348 |
| ISIP: | 5422 | 5429 |
| FFP: | 449-1169 | 452-1160 |
| FSIP: | 5303 | 5320 |
| FHP: | 6074 | 6088 |

REMARKS: The charts indicate that the test was successful. All pressures are uncorrected field pressures.

DST No. 4: 12,088 - 12,138 (Interlake)

Test Type: Conventional, Open hole

DST Times: 15"-60"-210"-270"

BHT: 254 Degrees F

Company: Johnson Testers, Bob Osborne, Tester

BLOW: IF: Opened with a 1/2" blow, 1" in 15 min.

ISI: Blow dead in 30 min.

FF: Opened with a surface blow, 1/8" in 20 min., 1 1/2" in 40 min., 4" in 50 min., 14" in 80 min., 26" in 100 min., 37" in 120 min., 63" in 180 min. and 72" in 210 min.

FSI: Opened to flow line, no GTS

CUSHION: 1000 ft. (8.2 Bbls.) fresh water

Recovery: 577' Slightly mud and gas cut water cushion

826' Highly gas and oil cut mud

1403' Total Fluid Recovery

LABORATORY ANALYSIS:

| | Oil | Nitrates(PPM) | Chlorides(PPM) |
|---------------|-----|---------------|----------------|
| Top Sample: | 0% | None | 16,700 |
| Middle Sample | 38% | 347 | 166,900 |
| Sampler: | 20% | 164 | 199,000 |

ANALYSIS OF SAMPLER:

Rw.= None calculated - foamy mud.

API Gravity: = 41.6 @ 60 degrees F

Pour Point = 43 degrees F

Paraffin = 15.17%

SAMPLE CHAMBER: 2500 cc Total Volume

Pressure: 279 psi

Recovery: 320 cc of oil, 1280 cc of mud, 1.57 C.F. gas

Rw: 0.04 @ 60 degrees F (197,000 PPM)

Mud Pit Rw: .04 @ 60 degrees F (197,000 PPM)

Gravity: 41.6 @ 60 degrees F

| <u>PRESSESURES</u> | <u>12,103(INSIDE)</u> | <u>12,110(OUTSIDE)</u> |
|--------------------|-----------------------|------------------------|
| IHP: | 7125 | 7135 |
| IFP: | 500-518 | 502-521 |
| LSIP: | 6020 | 6026 |
| FFP: | 518-594 | 521-596 |
| FSIP: | 5925 | 5932 |
| FHP: | 7125 | 7135 |

REMARKS: The charts indicates that the test was successful. All pressures are uncorrected field pressures.

DST No. 5: 12,866 - 12,940 (Interlake)

Test Type: Conventional, Open hole

DST Times: 15"-60"-90"-120"

BHT: 258 degrees F

Company: Flopetrol Johnson, Bob Osborn, Tester

BLOW: IF: Tool opened with a surface blow, 2" in 7 min., 4 1/2" in 15 min.

ISI: Shut in with a 6" blow, 9" in 20 min., 4" in 40 min. and 1" 60 min.

FF: Opened with a 2" blow, 2" in 10 min., 5" in 20 min., 7" in 30 min., 6" in 60 min. and 5 1/2" in 90 min.

CUSHION: 720' Fresh water (4.5 bbls)

Recovery: 319' (4.5 bbls) Fresh water

695' (4.17 bbls) Slightly gas and water cut mud

1014' Total Fluid Recovery

LABORATORY ANALYSIS OF SAMPLER:

Rw: .046 ohms at 77 degrees F

Sodium Chloride: 336,600 PPM

SAMPLE CHAMBER: 2500 cc Total Volume

Pressure: 2100 psi

Recovery: 1720 cc Slightly mud cut salt water

Rw: .05 ohms @ 60 degrees F (196,000 PPM)

Pit Mud Rw: .04 ohms @ 60 degrees F (187,000 PPM)

| <u>PRESSESURES:</u> | <u>12,891(INSIDE)</u> | <u>12,898(OUTSIDE)</u> |
|---------------------|-----------------------|------------------------|
| IHP: | 7250 | 7259 |
| IFP: | 365-385 | 371-389 |
| ISIP: | 4770 | 4772 |
| FFP: | 385-474 | 389-479 |
| FSIP: | 5340 | 5345 |
| FHP: | 7250 | 7259 |

REMARKS: The charts indicate that the test was successful. All pressures are uncorrected field pressures.

DST No. 6: 13,252 - 13,480 (Red River)

Test Type: Conventional, Open hole

DST Times: Open 9", Packers Failed

BHT: 255 degrees F

Company: Flopetrol Johnson, Bob Osborn, Tester

BLOW: IF: Tool opened with a 7" blow, 33" in 5 min., 50" in 10 min.,
lost packer seat - misrun

CUSHION: 1758' Fresh Water (22.7 bbls)

Recovery: 1598' Highly gas cut water cushion (22.7 bbls)
3694' Highly gas cut mud (foam)
5292' Total Recovery

SAMPLE CHAMBER: 2500 cc Total Volume

Pressure: 810 psi

Recovery: 1100 cc mud, 4.1 cf gas

PRESSURES: None

REMARKS: The packers failed 9" into the first flow. The test was a misrun.

DST No. 7: 13,239 - 13,480 (Red River)

Test Type: Conventional, Open hole

DST Times: 15"-90"

BHT: 255 Degrees F

Company: Flopetrol Johnson, Bob Osborne, Tester

BLOW: IF: Opened with a 2" blow, 8" in 5 min., 20" in 10 min., 28" in
15 min.

ISI: Shut in with a 28" blow, 31" blow in 60 min., 45" in 90 min.

FF: Lost packer seat.

CUSHION: 1944' Fresh water (25.3 bbls)

Recovery: 1781' Water cushion (25.3 bbls)

4631' Gas cut mud (63.3 bbls)

6412' Total Recovery

SAMPLE CHAMBER: 2500 cc Total Volume

Pressure: 10 psi

Recovery: 2400 cc mud, .03 CF Gas

| <u>PRESSURES:</u> | <u>13,294(INSIDE)</u> | <u>13,300(OUTSIDE)</u> |
|-------------------|-----------------------|------------------------|
| IHP: | 7430 | 7438 |
| IFP: | 1000-1170 | 1015-1176 |
| ISIP: | 6270 | 6275 |
| FFP: | Packers Failed | |
| FHP: | 7430 | 7438 |

REMARKS: The initial flow and initial shut-in pressures appear valid. The packers failed at the beginning of the second flow period resulting in a misrun. All pressures are uncorrected field pressures.

DEVIATION

| DEPTH | ANGLE | DIRECTION | DEPTH | ANGLE | DIRECTION |
|-------|--------|-----------|--|-------|-----------|
| 510 | 1/2 | S25W | 6163 | 6-1/4 | S66E |
| 1094 | 1/4 | S43W | 6226 | 5-1/2 | S64E |
| 1620 | 1/4 | N68E | 6281 | 5 | S67E |
| 2125 | 1/4 | N26E | 6383 | 4-1/4 | S71E |
| 2572 | 0 | N26E | 6479 | 4 | S66E |
| 2935 | 1/2 | S79E | 6542 | 3-3/4 | S67E |
| 3510 | 3/4 | S77E | 6700 | 3 | S57E |
| 3980 | 0 | S77E | 6828 | 2-1/2 | S67E |
| 4030 | 3/4 | S79E | 6955 | 2 | S57E |
| 4063 | 1-1/4 | N88E | 7455 | 1 | S57E |
| 4094 | 2 | N88E | 7958 | 1 | S42E- |
| 4126 | 2-3/4 | S88E | <u>TVD 7925.54</u> | | |
| 4158 | 3-1/4 | S84E | 8242 | 1/2 | S55E |
| 4190 | 3-3/4 | S74E | 9170 | 1/2 | S57E |
| 4221 | 4-1/2 | S74E | 9477 | 1/4 | N1E |
| 4253 | 5 | S67E | 10270 | 0 | |
| 4285 | 5-3/4 | S71E | 10968 | 1/4 | N64W |
| 4317 | 6-1/4 | S67E | 12003 | 1-1/4 | N43W |
| 4348 | 6-3/4 | S67E | 12570 | 1 | S43W |
| 4380 | 7-1/2 | S63E | 12980 | 3/4 | S59W |
| 4411 | 8 | S62E | 13450 | 3/4 | N76W |
| 4443 | 8-1/2 | S62E | | | |
| 4540 | 9-3/4 | S64E | | | |
| 4635 | 10-1/4 | S64E | The Corps. of Engineers #31-10 was drilled as a deviated hole. At 7958' the True Vertical Depth is 32.5' less than the drillers depth, the bottom hole location is 181 feet South and 387 feet East of the Surface Location or about 841 feet FNL and 1918 feet FEL. | | |
| 4794 | 11 | S65E | | | |
| 4839 | 11-1/2 | S63E | | | |
| 4985 | 11-3/4 | S66E | | | |
| 5050 | 12-1/4 | S65E | | | |
| 5145 | 12-3/4 | S65E | | | |
| 5177 | 12-1/2 | S66E | | | |
| 5225 | 12-1/2 | S66E | | | |
| 5241 | 12 | S65E | | | |
| 5336 | 11-1/2 | S64E | | | |
| 5430 | 11-3/4 | S64E | | | |
| 5559 | 10-3/4 | S64E | | | |
| 5650 | 10 | S65E | | | |
| 5712 | 10 | S65E | | | |
| 5785 | 9-1/2 | S64E | | | |
| 5848 | 9 | S67E | | | |
| 5912 | 8-1/2 | S68E | | | |
| 6004 | 7 | S70E | | | |
| 6036 | 7-1/4 | S69E | | | |
| 6099 | 7 | S66E | | | |



Earth Science Systems, Inc.

P.O. Box 3088
Englewood, Colorado 80155BIT RECORDWELL NAME: Basic Corps of Engineers #31-10LOCATION: Sec. 10-T153N-R101WCOUNTY McKenzieSTATE ND

| Bit No. | Make | Type | Jet Size | Interval | Feet | Hours | Wt. | 1000# | RPM | PP | Dullness Cond | |
|---------|------|--------|----------|-------------|-------|--------|-----|-------|------|----|---------------|---|
| | | | | | | | | | | | T | B |
| 1 | HTC | J-1 | 14-14-13 | 90-2518 | 2,428 | 21-1/2 | 35 | 200 | 1800 | 8 | 4 | |
| 1A | HTC | J-1 | 14-14-13 | 2518-3000 | 482 | 4 | 35 | 200 | 1800 | 1 | 1 | |
| 1 | HTC | J-1 | 10-10-10 | 3000-4000 | 1,000 | 17 | 45 | 120 | 1400 | 6 | 4 | |
| 2 | HTC | J-1 | 16-16-16 | 4000-4354 | 354 | 7 1/2 | 45 | 120 | 1000 | 1 | 1 | |
| 3 | HTC | J-2 | 16-16-16 | 4354-4521 | 167 | 7 3/4 | 45 | 80 | 1000 | 1 | 1 | |
| 4 | HTC | J-22 | 11-11-11 | 4521-5744 | 1,223 | 41 1/2 | 40 | 80 | 1800 | 4 | 4 | |
| 5 | HTC | J-22 | 11-11-11 | 5744-6880 | 1,136 | 72 1/4 | 40 | 90 | 2000 | 3 | 5 | |
| 6 | HTC | J-33 | 10-11-11 | 6880-7832 | 952 | 59 1/2 | 55 | 80 | 2000 | 5 | 8 | |
| 7 | HTC | J-33H | 10-11-11 | 7832-8690 | 858 | 53 | 55 | 80 | 1600 | 5 | 8 | |
| 8 | HTC | J-33H | 10-11-11 | 8690-9200 | 464 | 39 3/4 | 50 | 80 | 1700 | 2 | 2 | |
| 9 | HTC | J-33H | 10-11-11 | 9200-9517 | 317 | 30 1/4 | 50 | 80 | 1700 | 8 | 5 | |
| 10 | HTC | J-33C | 10-10-10 | 9517-9637 | 120 | 14 3/4 | 55 | 70 | 1800 | 8 | 2 | |
| 11 | HTC | J-33C | 10-10-10 | 9637-9780 | 144 | 16 | 52 | 70 | 2000 | 6 | 2 | |
| 12 | HTC | J-33C | 10-10-10 | 9780-10320 | 540 | 59 | 55 | 72 | 2000 | 8 | 8 | |
| 13 | HTC | J-33C | 10-10-10 | 10320-10922 | 602 | 63 | 55 | 55 | 1900 | 4 | 6 | |
| 14 | HTC | J-33C | 10-10-10 | 10922-11336 | 414 | 40 3/4 | 55 | 60 | 1800 | 4 | 2 | |
| 15 | HTC | J-33C | 10-10-10 | 11336-12024 | 688 | 70 1/4 | 50 | 60 | 2000 | 2 | 2 | |
| 16 | STC | F-37RR | 10-10-10 | 12024-12138 | 144 | 20 1/4 | 50 | 60 | 1950 | 3 | 8 | |
| 17 | HTC | J-55 | 10-10-10 | 12138-12692 | 554 | 46 | 50 | 60 | 2050 | 8 | 8 | |
| 18 | HTC | J-55 | 10-10-10 | 12692-12940 | 248 | 31 | 55 | 60 | 2050 | 8 | 8 | |
| 19 | HTC | J-33RR | 10-10-11 | 12940-13015 | 75 | 8 3/4 | 50 | 60 | 1950 | 6 | 8 | |
| 20 | STC | F-3 | 10-10-11 | 13015-13393 | 378 | 39 1/2 | 55 | 60 | 1950 | 8 | 2 | |
| 21 | HTC | J-33RR | 10-10-11 | 13393-13480 | 87 | 12 1/4 | 55 | 60 | 2075 | 2 | 8 | |

MUD

| DATE | DEPTH | WT | VIS | PV | YP | WL | CHLORIDES | SALT | NITRATES |
|------|--------|------|-----|----|----|------|-----------|---------|----------|
| 6/21 | 202 | 8.6 | 35 | 7 | 4 | 18 | 120 | - | - |
| 6/22 | 1,925 | 9.3 | 46 | 10 | 13 | 16 | 1320 | 800 | - |
| 6/23 | 3,000 | 9.3 | 34 | 10 | 8 | 22 | 1452 | 880 | - |
| 6/24 | 3,000 | 9.9 | 105 | 26 | 32 | 14 | 1815 | 1100 | - |
| 6/25 | - | - | - | - | - | - | - | - | - |
| 6/26 | 3,000 | 8.6 | 27 | 2 | 1 | - | 7425 | 4500 | - |
| 6/27 | 4,000 | 9.0 | 31 | 3 | 4 | 12 | 1200 | 1980 | - |
| 6/28 | 4,354 | 9.1 | 34 | 5 | 5 | 11.6 | 1350 | 2227 | - |
| 6/29 | 4,521 | 8.8 | 36 | 7 | 7 | 16 | 2300 | 3795 | - |
| 6/30 | 5,093 | 9.2 | 34 | 7 | 8 | 14 | 1800 | 2970 | - |
| 7/1 | 5,470 | 9.3 | 38 | 10 | 7 | 15 | 2100 | 3465 | - |
| 7/2 | 5,744 | 9.2 | 38 | 6 | 9 | 13 | 2000 | 3300 | - |
| 7/3 | 6,077 | 9.3 | 40 | 9 | 13 | 16 | 2600 | 4290 | - |
| 7/4 | 6,390 | 10.0 | 26 | - | - | 22 | 200,000 | 330,000 | - |
| 7/5 | 6,729 | 10.1 | 32 | 6 | 5 | 26 | 202,000 | 333,300 | - |
| 7/6 | 6,928 | 10.3 | 36 | 10 | 8 | 36 | 198,000 | 326,700 | - |
| 7/7 | 7,292 | 10.3 | 34 | 10 | 7 | 28 | 194,000 | 320,100 | - |
| 7/8 | 7,578 | 10.4 | 35 | 10 | 8 | 24.2 | 199,000 | 328,350 | - |
| 7/9 | 7,844 | 10.5 | 36 | 11 | 9 | 16 | 197,000 | 325,050 | - |
| 7/10 | 8,116 | 10.5 | 38 | 14 | 11 | 11 | 194,000 | 320,100 | - |
| 7/11 | 8,572 | 10.5 | 38 | 13 | 11 | 14 | 194,000 | 320,100 | - |
| 7/12 | 8,830 | 10.5 | 37 | 13 | 11 | 14 | 193,000 | 310,450 | - |
| 7/13 | 9,056 | 10.5 | 38 | 10 | 10 | 14 | 194,000 | 320,100 | 120 |
| 7/14 | 9,154 | 10.5 | 38 | 12 | 10 | 15.6 | 193,000 | 318,450 | 100 |
| 7/15 | 9,200 | 10.6 | 40 | 13 | 10 | 9.8 | 195,000 | 321,750 | 100 |
| 7/16 | 9,313 | 10.6 | 40 | 13 | 10 | 12.4 | 193,000 | 318,450 | 75 |
| 7/17 | 9,517 | 10.7 | 37 | 14 | 9 | 14.6 | 191,000 | 315,100 | 60 |
| 7/18 | 9,637 | 10.8 | 38 | 14 | 8 | 15.4 | 192,000 | 316,800 | 50 |
| 7/19 | 9,780 | 10.7 | 38 | 13 | 9 | 16.8 | 195,000 | 321,750 | 35 |
| 7/20 | 9,923 | 10.7 | 39 | 14 | 12 | 16.4 | 195,000 | 321,750 | 25 |
| 7/21 | 10,068 | 10.6 | 40 | 12 | 10 | 15.2 | 196,000 | 323,400 | 85 |
| 7/22 | 10,278 | 10.5 | 39 | 12 | 11 | 15.0 | 196,000 | 323,400 | 75 |
| 7/23 | 10,414 | 10.4 | 39 | 12 | 10 | 15.8 | 197,000 | 325,000 | 80 |
| 7/24 | 10,471 | 10.5 | 39 | 13 | 10 | 16.8 | 196,000 | 323,400 | 80 |
| 7/25 | 10,572 | 10.6 | 39 | 13 | 9 | 15.2 | 197,000 | 325,050 | 95 |
| 7/26 | 10,777 | 10.5 | 40 | 12 | 11 | 14.6 | 197,000 | 325,050 | 90 |
| 7/27 | 10,922 | 10.6 | 38 | 11 | 10 | 11.0 | 191,000 | 315,100 | 95 |
| 7/28 | 10,984 | 10.5 | 40 | 13 | 10 | 11.2 | 196,000 | 323,400 | 100 |
| 7/29 | 11,057 | 10.5 | 39 | 12 | 10 | 14.0 | 196,000 | 323,400 | 85 |
| 7/30 | 11,132 | 10.5 | 40 | 10 | 12 | 13.0 | 198,000 | 326,700 | 85 |
| 7/31 | 11,186 | 10.5 | 42 | 12 | 10 | 15.0 | 198,000 | 326,700 | 60 |
| 8/1 | 11,336 | 10.5 | 42 | 12 | 11 | 16.0 | 194,000 | 320,100 | 50 |
| 8/2 | 11,369 | 10.5 | 42 | 12 | 13 | 16.0 | 196,000 | 323,400 | 85 |
| 8/3 | 11,569 | 10.6 | 42 | 13 | 12 | 17.0 | 196,000 | 323,400 | 100 |
| 8/4 | 11,642 | 10.7 | 40 | 14 | 10 | 15.6 | 197,000 | 325,050 | 75 |
| 8/5 | 11,930 | 10.6 | 42 | 14 | 13 | 14.6 | 197,000 | 325,050 | 60 |
| 8/6 | 12,024 | 10.7 | 43 | 15 | 12 | 14.0 | 194,000 | 320,100 | 80 |

Mud cont.

| DATE | DEPTH | WT | VIS | PV | YP | WL | CHLORIDES | SALT | NITRATES |
|------|--------|------|-----|----|----|------|-----------|---------|----------|
| 8/7 | 12,138 | 10.7 | 41 | 13 | 12 | 11.8 | 191,000 | 315,150 | 85 |
| 8/8 | 12,138 | 10.6 | 41 | 13 | 12 | 10.0 | 191,000 | 315,150 | 85 |
| 8/9 | 12,230 | 10.6 | 44 | 14 | 12 | 12.0 | 192,000 | 316,800 | 80 |
| 8/10 | 12,504 | 10.7 | 45 | 17 | 13 | 16.0 | 195,000 | 321,750 | 80 |
| 8/11 | 12,692 | 10.6 | 43 | 14 | 11 | 11.6 | 194,000 | 320,100 | 80 |
| 8/12 | 12,825 | 10.7 | 44 | 17 | 13 | 9.0 | 194,000 | 320,100 | 75 |
| 8/13 | 12,940 | 10.7 | 44 | 16 | 12 | 8.0 | 187,000 | 308,550 | 70 |
| 8/14 | 12,956 | 10.7 | 45 | 19 | 14 | 14.0 | 193,000 | 318,450 | 70 |
| 8/15 | 13,110 | 10.6 | 45 | 17 | 14 | 8.0 | 189,000 | 311,850 | 80 |
| 8/16 | 13,278 | 10.8 | 44 | 16 | 11 | 9.2 | 194,000 | 320,100 | 85 |
| 8/17 | 13,393 | 10.7 | 44 | 15 | 12 | 14.0 | 194,000 | 320,100 | 95 |
| 8/18 | 13,480 | 10.8 | 48 | 18 | 13 | 8.2 | 195,000 | 321,750 | 85 |
| 8/19 | 13,480 | 10.8 | 48 | 18 | 13 | 8.0 | 195,000 | 321,750 | 85 |
| 8/20 | 13,480 | 10.8 | 48 | 17 | 14 | 9.0 | 192,000 | 316,800 | 85 |

ELECTRIC LOGS

After reaching total depth, the following Schlumberger logs were run:

Dual Laterolog - Micro SFL: 0 - 13,474

Compensated Neutron-Density: 8,750 - 13,442

Borehole Compensated Sonic-Gamma Ray: 2,968 - 13,460

SAMPLE DESCRIPTIONS

Descriptions begin at 8400 feet, in the Charles Formation. Unlagged 30 foot samples were caught by drilling crews from the base of surface casing to 8400 feet. Lagged 10 foot samples were caught by drilling crew personnel from 8400 feet to TD. Sample quality is poor to 8400 feet and fairly good below 9000 feet.

| | |
|-------------------------------------|--|
| 8,400 - 8,460 | Salt |
| 8,460 - 8,490 | Limestone, brown, finely crystalline, 70% shale cavings: black, orange and gray-green. |
| 8,490 - 8,505 | Limestone, brown, microcrystalline, 70% shale cavings. |
| 8,505 - 8,545 | Salt, cavings. |
| 8,545 - 8,575 | Predominateley cavings. |
| 8,575 - 8,640 | Salt. |
| 8,640 - 8,660 | Limestone, brown, microcrystalline, 50% shale cavings. |
| 8,660 - 8,680 | Limestone, as above, trace limestone, gray, pelletoidal, tight. |
| 8,680 - 8,690 | No sample, tripped for Bit #8. |
| 8,690 - 8,700 | Limestone, brown, microcrystalline. |
| 8,700 - 8,720 | Limestone, brown, crystalline, no visible porosity, trace limestone, gray, pelletoidal, tight. |
| 8,720 - 8,760 | Salt, about 80% cavings. |
| 8,760 - 8,800 | Limestone, brown, crystalline, mottled, trace anhydrite, gray, 40% cavings. |
| 8,800 - 8,840 | Limestone, brown, microcrystalline, 20% shale cavings. |
| 8,840 - 8,860 | Anhydrite, gray, 20% shale cavings. |
| 8,860 - 8,884 | Limestone, gray, microcrystalline. |
| 8,884 - 8,934 | Salt. |
| <u>8,934 Base Last Charles Salt</u> | |
| 8,934 - 9,042 | Anhydrite, gray, interbedded with dolomite, brown-gray, finely crystalline. |

Sample Descriptions cont.

Drilling break at 9,042 - 9,049 = 9 unit gas increase.

9,042 - 9,049 Limestone, light brown, finely crystalline, no visible porosity, some gold mineral fluorescence, no cut, no visible show.

9,049 - 9,062 Anhydrite, gray-white.

9,062 Midale

9,062 - 9,068 Limestone, brown, microsucrosic, no visible porosity, no cut or fluorescence, trace anhydrite, gray.

Drilling break at 9,068 - 9,096: 5 unit gas increase.

9,068 - 9,096 Limestone, brown, pelletoidal, tight, 40% limestone, brown, finely crystalline, tight, no shows.

9,096 - 9,150 Limestone, brown, microcrystalline, tight.

9,150 - 9,159 No sample - tripped for hole in drill pipe.

9,159 - 9,168 Limestone, brown, finely crystalline, trace limestone, gray, microsucrosic, tight, no shows.

9,168 Nesson

Drilling break at 9,168 - 9,176 - No gas increase.

9,168 - 9,170 Limestone, brown, finely crystalline, tight, trace limestone, gray, pelletoidal, tight, no shows, 15% cavings

9,170 - 9,175 Limestone, brown to gray, mottled, argillaceous, tight, no shows, limestone, gray, microsucrosic, tight, no shows (cluster of 200 grains equals 0.25mm diameter), asphaltic contamination - pipe dope?, gives poor yellow streaming cut to pinch cut samples.

9,175 - 9,180 Limestone, brown to gray, mottled, argillaceous, tight, trace limestone, sucrosic with brown oil stain, fair porosity, weak fluorescence when wet, good yellow-white streaming cut with a slight greenish tint, contamination?

9,180 - 9,185 Limestone, brown, finely crystalline tight.

9,185 - 9,200 Limestone, brown-gray, microcrystalline, no visible porosity.

9,200 - 9,230 Cavings after DST #1: 9,156 - 9,200.

9,230 - 9,260 Limestone, light brown, finely crystalline, firm, tight, no shows.

Sample Descriptions cont.

| | |
|--|--|
| 9,260 - 9,320 | Limestone, light gray, microcrystalline, occasionally subsucrosic, slightly argillaceous, tight. |
| 9,320 - 9,360 | Limestone, light brownish gray, microcrystalline, slightly argillaceous tight. |
| 9,360 - 9,410 | Limestone, light brown to tan, cryptocrystalline, slightly fossiliferous-fragmental, tight. |
| 9,410 - 9,430 | Limestone, light brownish gray, microcrystalline, tight. |
| 9,430 - 9,470 | Limestone, as above, predominately tan-brown. |
| 9,470 - 9,500 | Limestone, gray to dark gray, microcrystalline, slightly mottled, no visible porosity. |
| 9,500 - 9,517 | No samples - tripped for Bit #10. |
| 9,517 - 9,550 | Limestone, as above, becoming light-medium gray. |
| 9,550 - 9,590 | Limestone, as above, some dark gray. |
| 9,590 - 9,620 | Limestone, light gray, microcrystalline, micritic, subchalky, tight. |
| 9,620 - 9,637 | No samples - tripped for hole in drill collars. |
| 9,637 - 9,670 | Limestone, light brownish gray, microcrystalline, slightly argillaceous, tight. |
| 9,670 - 9,730 | Limestone, as above, brown-gray, some light gray. |
| 9,730 - 9,770 | Limestone, light gray, microcrystalline, no visible porosity. |
| 9,770 - 9,780 | No samples - tripped for Bit #12. |
| 9,780 - 9,870 | Limestone, light gray-gray, microcrystalline, subchalky, slightly argillaceous, tight. |
| 9,870 - 9,943 | Limestone, brownish gray to gray, cryptocrystalline, slightly fragmental, tight. |
| <u>Drilling break at 9,943 - 9,944 - 42 unit gas increase.</u> | |
| 9,943 - 9,944 | Limestone, medium gray, microcrystalline, trace pinpoint porosity with dead oil stain, no fluorescence or cut. |
| 9,944 - 9,980 | Limestone, brownish gray, microcrystalline, slightly argillaceous, no visible porosity, trace limestone, dark gray, pyritic. |

Sample Description cont.

9,980 - 10,000 Limestone, as above, light gray, tight.
10,000 - 10,017 No sample - tripped for hole in drill collars.
10,017 - 10,040 Limestone, dark gray, carbonaceous, abundant plant fragments, also limestone, grayish brown, microcrystalline tight.

Drilling break at 10,040 - 10,042: 54 unit gas increase.

10,040 - 10,042 Limestone, dark gray, microcrystalline, firm, slightly argillaceous, tight, no fluorescence or cut.
10,042 - 10,080 Limestone, light grayish brown, microcrystalline.
10,080 - 10,100 Limestone, as above, gray, carbonaceous, earthy texture.
10,100 - 10,120 Limestone, as above, trace vuggy porosity.
10,120 - 10,150 Limestone, light grayish brown, microcrystalline, no visible porosity.
10,150 - 10,200 Limestone, grayish brown, cryptocrystalline, tight.
10,200 - 10,210 Limestone, light brown, microcrystalline, slightly argillaceous.
10,210 - 10,240 No samples - shale shaker repairs.
10,240 - 10,290 Limestone, as above, light brown-gray, no visible porosity.
10,290 - 10,310 Limestone, light brownish gray, microcrystalline, no visible porosity.
10,310 - 10,320 No sample - tripped for Bit #13.
10,320 - 10,400 Limestone, light grayish brown, finely crystalline, no visible porosity.
10,400 - 10,418 Limestone, light gray to gray, finely crystalline, tight.
10,424 Bakken
10,418 - 10,441 Tripped for hole in drill collars at 10,441 feet. Samples not circulated out.
10,441 - 10,474 Shale, black, soft, slightly gritty, earthy.
10,474 - 10,480 Exshaw Shale: 240 unit gas increase.
10,474 - 10,480 Shale, black, moderately firm, carbonaceous.

Sample Descriptions cont.

10,480 - 10,500 Shale, black, carbonaceous.

10,500 Three Forks

10,500 - 10,510 Tripped for hole in drill collars at 10,510 feet, samples not circulated out.

10,510 - 10,550 Limestone, brownish gray, microcrystalline, tight, 80% black shale cavings.

10,550 - 10,570 Limestone, brown to tan with an orange cast., microcrystalline, no visible porosity.

10,570 - 10,600 Limestone, orange-white, microcrystalline to crystalline, no visible porosity, interbedded with shale, orange-brown, lavender.

10,600 - 10,630 Limestone, orange-white, microcrystalline, tight.

10,630 - 10,650 Limestone as above, some shale, purple and orange.

10,650 - 10,682 Limestone and shale, as above.

10,682 Nisku

10,682 - 10,706 Limestone, brownish gray, microcrystalline, no visible porosity, no shows.

Drilling break at 10,706 - 10,708: No gas increase.

10,706 - 10,708 Limestone, brownish gray, microcrystalline, tight.

10,708 - 10,734 Limestone, as above.

Drilling break at 10,734 - 10,738: 16 Unit gas increase.

10,734 - 10,740 Limestone, brownish gray, slightly mottled, microcrystalline, trace limestone, gray, microsucrosic, no visible porosity, no cut or fluorescence.

10,740 - 10,760 Limestone, light brownish gray, microcrystalline, no visible porosity, no shows.

10,760 - 10,776 Limestone, brownish gray, pelletoidal, tight, no shows.

10,776 Duperow

10,776 - 10,804 Limestone, light gray-brown, mottled, microcrystalline, no visible porosity, no cut or fluorescence. Ireton shale not discernible.

Sample description cont.

Drilling break at 10,804 - 10,834: No gas increase.

- 10,804 - 10,815 Limestone, light brown-gray, microcrystalline, no visible porosity, no shows.
10,815 - 10,830 Limestone, light brown, pelletoidal, cemented, no shows.
10,830 - 10,860 Limestone, light brown-gray, microcrystalline, no visible porosity, no shows.

Drilling break at 10,860 - 10,862: 20 unit gas increase.

- 10,860 - 10,862 Limestone, light brown-gray, microcrystalline, some mottled, no visible porosity, no shows.
10,862 - 10,875 Limestone, as above.
10,875 - 10,885 Limestone, light brown, microcrystalline, slightly mottled, no visible porosity, no shows.
10,885 - 10,890 Limestone, as above, trace limestone, gray, pelletoidal, tight.
10,890 - 10,910 Limestone, light brown-gray, mottled, microcrystalline, tight, no shows, 20% cavings.
10,910 - 10,922 No sample-tripped for hole in drill collars.

Drilling break at 10,926 - 10,932: No gas increase.

- 10,926 - 10,932 Limestone, brown-gray, mottled, microcrystalline, no visible porosity, no cut or fluorescence.
10,932 - 10,958 Limestone, brown-gray, microcrystalline, tight.

Drilling break at 10,958 - 10,960: 28 unit gas increase.

- 10,958 - 10,965 Limestone, light brown, microsucrosic, slight stain, poor to fair porosity, 1% had blue-white fluorescence and a weak streaming cut. Poor sample show.
10,965 - 10,970 Limestone, light brown, microcrystalline, tight.
10,970 - 10,975 Limestone, light brown-gray, microcrystalline, trace dolomite, gray-white, sucrosic, poor porosity, no cut or fluorescence, no gas increase.
10,975 - 10,984 Limestone, as above.
10,984 - 11,000 Cavings from DST #2.
11,000 - 11,025 Limestone, brown, microcrystalline, tight.

Sample description cont.

11,025 - 11,040 Limestone, light brown-gray, microcrystalline, no visible porosity.

Drilling break at 11,040 - 11,046: 12 unit gas increase.

11,040 - 11,046 Limestone, light brown-gray, mottled, microcrystalline, some Dolomite, white, sucrosic, no cut or fluorescence.

11,046 - 11,060 Limestone, brown, finely crystalline, tight, no shows.

11,060 - 11,080 Limestone, as above.

11,080 - 11,090 Limestone, as above, trace Dolomite, brown, sucrosic, trace light brown stain, slight dull yellow fluorescence, no cut.

Drilling break at 11,090 - 11,104: 80 unit gas increase.

11,090 - 11,104 Dolomite Limestone, light brown, 15% sucrosic, fair porosity, no cut or fluorescence, trace Dolomite, sucrosic, yellow-green fluorescence, slow blue-white streaming cut.

11,104 - 11,116 Limestone, light gray-brown, finely crystalline, tight.

Drilling break at 11,116 - 11,126: 18 unit gas increase:

11,116 - 11,126 Dolomitic Limestone, light gray-brown, sucrosic, fair porosity, no cut or fluorescence. Pinch cuts have a trace of weak streaming cut - wet.

11,126 - 11,132 Limestone, light gray, finely crystalline, tight.

11,132 - 11,140 Cavings from DST #3.

11,140 - 11,150 Limestone, light gray-brown, finely crystalline, mottled, tight, no shows.

11,150 ~ 11,178 Limestone, as above, trace limestone, sucrosic, poor porosity, no shows.

Drilling break at 11,178 - 11,184: No gas increase.

11,178 - 11,184 Dolomitic limestone, light brown, sucrosic, trace dark oil stain, few pieces with a slow blue white cut and yellow green fluorescence.

11,184 - 11,200 Dolomitic limestone, as above, no shows.

11,200 - 11,222 Limestone, light brown-gray, finely crystalline, tight, no shows.

Sample description cont.

11,222 - 11,235 13' downward strap correction.

11,235 - 11,246 Limestone, as above.

11,246 Souris River

11,246 - 11,270 Limestone, light brownish gray, microcrystalline, dense, argillaceous.

11,270 - 11,300 Limestone, as above.

11,300 - 11,314 Limestone, as above, medium gray.

11,314 - 11,336 No samples - trip for hole in drill collars.

11,336 - 11,350 Poor samples - 85% cavings, shale, dark gray, silty.

11,350 - 11,400 Poor samples - 65% cavings, shale, dark gray, silty, some limestone, light gray, microcrystalline, tight.

11,400 - 11,448 Limestone, brown, microcrystalline, tight, trace limestone light brown, pelletoidal.

11,448 - 11,454 Limestone, light brown, microcrystalline, tight, possible 14 unit gas increase, no sample shows.

11,454 - 11,470 Limestone, light gray-brown, finely crystalline, tight.

11,476 Dawson Bay

11,470 - 11,488 Limestone, as above.

Drilling break at 11,488 - 11,498: 48 unit gas increase.

11,488 - 11,498 Dolomitic limestone, white to buff, finely crystalline, subchalky, no visible porosity, no cut or fluorescence in pinch cuts - no sample shows.

11,498 - 11,505 Limestone, white to buff, very finely crystalline, subchalky, tight.

11,505 - 11,550 Limestone, brown-buff, microcrystalline, tight.

11,550 - 11,569 No samples - tripped for hole in drill collars.

11,569 - 11,585 Limestone, light brown, microcrystalline, poor samples - 80% black shale cavings.

11,592 Prairie Salt

11,585 - 11,644 No samples - tripped for hole in drill collars.

Sample description cont.

11,644 - 11,790 Salt, samples are 80% Bakken shale cavings.

11,790 Winnepegosis

11,790 - 11,800 Salt, 50%, and shale cavings 50%.

11,800 - 11,824 Limestone, brown, microcrystalline, tight, and 60% shale cavings.

11,824 - 11,832 Poor samples ~ 60% cavings - 23 unit gas increase - limestone brown, microcrystalline, tight, no drilling break.

11,832 - 11,862 Limestone, as above. Poor samples, 50% cavings.

11,862 - 11,880 Limestone, as above, 29 unit gas increase, poor samples - 50% shale cavings - no drilling break.

11,880 - 11,900 Limestone, light brown-gray, finely crystalline, tight. 30% shale cavings.

11,900 - 11,920 Limestone, light brown, finely crystalline, mottled, slightly pelletoidal.

11,920 - 11,950 Limestone, as above.

11,950 - 11,979 Limestone, light brown, microcrystalline, tight.

11,979 - 11,981 Limestone, as above, 28 unit gas increase, no sample show.

11,982 Ashern

11,982 - 12,000 Limestone, dark brown, microcrystalline, tight, 20% cavings.

12,000 - 12,010 Shale, orange, and limestone, brown, tight.

12,010 - 12,024 No samples - tripped for a new bit.

12,024 - 12,050 Limestone, light brown-gray, microcrystalline, tight, interbedded with orange shale.

12,050 - 12,094 Limestone, brown, microcrystalline.

12,094 Interlake

Drilling break at 12,094 - 12,112: 40 unit gas increase.

12,094 - 12,112 Dolomitic limestone, light gray, some vuggy porosity, trace dolomite, white, sucrosic, very friable, no apparent stain, trace with good blue-white cut.

Sample decription cont.

12,112 - 12,126 Dolomitic limestone, light gray-white finely crystalline, tight.

Drilling break at 12,126 - 12,128: 16 unit gas increase.

12,126 - 12,128 Dolomite, light gray, finely crystalline, no visible porosity, dolomite fluorescence, no cut, trace dolomite, white, sucrosic, good porosity, friable, no shows.

12,128 - 12,138 Dolomite, as above.

12,138 - 12,146 Strap correction - 8' downward.

12,146 - 12,170 80% cavings from DST #4.

12,170 - 12,190 Dolomite, white, finely crystalline, some forams, no visible porosity, subchalky, tight.

12,190 - 12,200 Dolomite, as above.

12,200 - 12,210 Dolomite, as above, 80% shale cavings.

12,210 - 12,230 Dolomite, white, microcrystalline, trace forams, subchalky no visible porosity. 10% cavings.

12,230 - 12,250 Dolomite, as above, 50% cavings.

12,250 - 12,290 Dolomite, as above, 10% cavings, good samples.

12,290 - 12,320 Dolomite, as above.

12,320 - 12,350 Dolomite, buff - light brown, finely crystalline, subchalky, tight.

12,350 - 12,360 Dolomite, light brown, as above, trace dolomite, brown, sucrosic, no shows.

12,360 - 12,400 Dolomite, light brown, microcrystalline, medium soft, subchalky, tight.

12,400 - 12,440 Dolomite, as above.

12,440 - 12,470 Dolomite, white-buff, microcrystalline, subchalky, tight.

12,470 - 12,480 Dolomite, as above.

12,480 - 12,500 Dolomite, white - light brown, microcrystalline, no visible porosity, some dolomite, brown, sucrosic, tight.

12,500 - 12,550 Dolomite, as above, 5% cavings.

12,550 - 12,600 Dolomite, light brown, microsucrosic, no visible porosity.

Sample description cont

12,600 ~ 12,630 Dolomite, light brown, finely sucrosic, no visible porosity.

12,630 - 12,650 Dolomite, as above, becoming tan, microcrystalline, tight.

12,650 - 12,670 Dolomite, light brown-tan, finely crystalline to sucrosic, no visible porosity.

12,670 - 12,692 No samples - tripped for bit.

12,692 - 12,740 Dolomite, light brown, finely crystalline, granular, cemented, no visible porosity.

12,740 - 12,760 Dolomite, buff, finely crystalline, tight.

12,760 - 12,800 Dolomite, buff-brown, finely crystalline, tight.

12,800 - 12,850 Dolomite, dark brown, finely crystalline, slightly mottled, tight.

12,850 - 12,870 Dolomite, dark brown, finely crystalline, tight, some dolomite, dark brown, pelletoidal, trace dolomite, brown, sucrosic, tight.

Drilling break at 12,870 - 12,908: 59 unit gas increase.

12,870 - 12,890 Dolomite, dark brown, finely crystalline, no visible porosity, 5% dolomite, dark brown, sucrosic, tight, no fluorescence or cut.

12,890 - 12,908 Dolomite, as above, trace dolomite, pelletoidal, tight, no shows.

12,908 - 12,940 Dolomite, brown, microcrystalline to granular, no visible porosity, no cut or fluorescence.

12,944 Stonewall

12,940 - 12,960 Dolomite, brown-dark brown, finely crystalline, tight, trace dolomite, brown, sucrosic, no shows.

12,960 - 12,970 Dolomite, as above, possible 26 unit gas increase-possible recycle gas.

12,970 - 13,000 Dolomite, brown, finely crystalline, tight, trace dolomite, dark brown-brown, mottled, tight.

13,000 - 13,015 No samples - tripped for a new bit.

13,015 - 13,050 Limestone, brown, microcrystalline, tight.

13,050 - 13,100 Limestone, as above.

Sample description cont.

13,100 - 13,128 Limestone, brown-gray, microcrystalline, argillaceous, tight.

13,128 Stoney Mountain

13,128 ~ 13,150 Shale, light gray, calcareous.

13,150 - 13,184 Shale, as above.

13,184 Red River

13,184 - 13,200 Dolomite, brown, microcrystalline, no visible porosity, tight.

13,200 - 13,220 Dolomite, as above.

13,220 - 13,230 Anhydrite, gray-white.

Drilling break at 13,230 - 13,244: 5 unit gas increase.

13,230 - 13,248 Dolomite, brown-gray, microcrystalline, tight; about 5% dolomite, brown, microsucrosic, no visible porosity, no cut or fluorescence.

13,248 "B" Anhydrite

13,248 - 13,258 Dolomite, brownish gray, microcrystalline, slightly mottled, tight, trace anhydrite, gray-white.

Drilling break at 13,258 - 13,260: 29 unit gas increase.

13,258 - 13,266 Dolomite, brown, microcrystalline, no visible porosity, no shows. Circulate samples at 13,264.

Drilling break at 13,266 - 13,274: 47 unit gas increase.

13,266 ~ 13,274 Dolomite, brown, microcrystalline, subchalky, no visible porosity, no cut or fluorescence.

13,274 - 13,283 Dolomite, as above, circulated samples 120 min @ 13,283'.

13,183 - 13,306 Dolomite, brown, finely crystalline, tight, trace anhydrite, gray-white.

13,296 "C" Anhydrite

Drilling break at 13,306 - 13,310: 24 unit gas increase.

13,306 - 13,310 Dolomite, brown, finely crystalline, tight, trace dolomitic limestone, brown; mottled, pelletoidal, no cut or fluorescence.

Sample description cont.

13,310 - 13,318 Dolomite, as above.

Drilling break at 13,318 - 13,324: 19 unit gas increase.

13,318 - 13,324 Dolomite, brown-gray, microcrystalline, slightly mottled, tight, trace dolomite, microsucrosic, no visible porosity, no cut or fluorescence.

13,324 - 13,332 Dolomite, brown, microcrystalline, tight, no shows, circulated samples @ 13,332.

13,332 - 13,340 Dolomite, brown, microcrystalline, tight.

13,340 - 13,360 Dolomite, brown-gray, finely crystalline, mottled, tight, no cut or fluorescence.

13,360 - 13,384 Dolomite, brown-light brown, finely crystalline, trace pelletoidal micrite, tight.

13,384 - 13,393 No samples - tripped for a new bit.

13,393 - 13,420 Dolomite, light brown-gray, microcrystalline, tight; trace dolomite, gray, granular.

13,420 - 13,450 Limestone, light gray, dolomitic, tight.

13,450 - 13,480 Dolomite, light brown-gray, microcrystalline, tight.

13,480 - Driller's Total Depth.

13,475 - Schlumberger Total Depth.

WELL HISTORY

| <u>DATE</u> | <u>6 AM DEPTH & OPERATION</u> | <u>DRILLING PROGRESS: PREVIOUS 24 HOURS ACTIVITIES</u> |
|-------------|---------------------------------------|---|
| 6/21 | 202' Drilling | Drilled 112' in 2 1/2 hours. Finished rigging up, spudded at 11:00 PM 6-20-86, drilled with Bit #1, HTC 12-1/4" J-1 from 90' to 202'. (*Previously set 16" csg @ 90') |
| 6/22 | 1925' Drilling | Drilled 1723' in 14-1/2 hrs., hit water flow at 1600'. Drilling with fresh water, built mud to 9.3 and vis. to 46. Flow stopped. |
| 6/23 | 3000' Rng Csg | Drilled 1075' in 10-3/4 hrs. Lost circulation at 2125 feet. |
| 6/24 | 3000' Rng Csg | Ran 14 jts. of Csg., could no go any further. TOH with CSG. TIH with drill pipe to condition hole. |
| 6/25 | 3000' W.O.C. | Ran 75 jts of 9-5/8" casing. Set @ 2954' with 850 sacks of Howco Lite and 250 sacks of Class A cement. |
| 6/26 | 3000' Drig Cement | Nippled up and tested BOP. Picked up 14 drill collars. |
| 6/27 | 4000' Rng Survey | Drilled 1000' in 11-1/2 hrs. Circulated hole for Dynadrill. |
| 6/28 | 4354' Tripping | Drilled 354' in 7-1/2 hrs. Picked up Dynadrill. |
| 6/29 | 4521' Tripping | Drilled 167' in 7-3/4 hrs. Layed down mud motor, bent sub, bit sub., 2 jts DP, picked up NBIBS, bit sub, tripped to 4400', W & R to 4500'. |
| 6/30 | 5093' Wash & Ream | Drilled 572' in 14-1/2 hrs. Tripped to change out BHA. |
| 7/1 | 5470' Drilling | Drilled 377' in 16-1/2 hrs. |
| 7/2 | 5744' Tripping | Drilled 274' in 12 hrs. Rig repair, pump drive chain. |
| 7/3 | 6077' Drilling | Drilled 333' in 16 hrs. |

Well History cont.

| | | |
|------|--------------------------------|--|
| 7/4 | 6390' Drilling | Drilled 313' in 20-3/4 hrs. Changed to salt water mud system. |
| 7/5 | 6729' Drilling | Drilled 339' in 21 hrs. |
| 7/6 | 6928' Drilling | Drilled 199' in 18-1/4 hrs. Worked BOP Rams. |
| 7/7 | 7292' Drilling | Drilled 364' in 22-3/4 hrs. |
| 7/8 | 7578' Drilling | Drilled 286' in 16 hrs. Tripped for leak in drill collar. |
| 7/9 | 7844' Drilling | Drilled 266' in 18-1/2 hrs. Tripped for bit #7, changed out key seat wipers. |
| 7/10 | 8116' Drilling | Drilled 272' in 23-1/4 hrs. |
| 7/11 | 8572' Drilling | Drilled 456' in 23 hrs. |
| 7/12 | 8830' Drilling | Drilled 254' in 16-3/4 hrs. Changed out 10 cracked collars. |
| 7/13 | 9056' Drilling | Drilled 226' in 20 hrs. |
| 7/14 | 9154' Inspecting Drill Collars | Drilled 98' in 8-3/4 hrs. Layed down 13 cracked collars. |
| 7/15 | 9200' Rng DST #1 | Drilled 46' in 3-1/2 hrs. Running DST #1 - interval 9156' to 9200'. |
| 7/16 | 9313' Drilling | Drilled 113' in 8-1/2 hrs. |
| 7/17 | 9517' Tripping | Drilled 204 feet in 21-3/4 hrs. Tripped for bit #10. |
| 7/18 | 9637' Tripping | Drilled 120 feet in 14-3/4 hrs. Tripped for bit #11. |
| 7/19 | 9780' Tripping | Drilled 143' in 15-3/4 hrs. Tripped for hole in drill collars. |
| 7/20 | 9923' Drilling | Drilled 144' in 15-1/2 hrs. Changed out and picked up 4 - 7" drill collars. |
| 7/21 | 10,068' Drilling | Drilled 145' in 15-3/4 hrs. Tripped for cracked collars. |
| 7/22 | 10,278' Drilling | Drilled 210' in 23-1/4 hrs. |

Well History cont.

| | | |
|------|-----------------------|---|
| 7/23 | 10,414' Drilling | Drilled 136' in 15 hrs. Tripped for hole in drill collars. |
| 7/24 | 10,471' Tripping | Drilled 57' in 5-1/2 hrs. Tripped for hole in drill collars. |
| 7/25 | 10,577' Drilling | Drilled 101' in 10-1/2 hrs. Tripped for hole in drill collar. |
| 7/26 | 10,777' Drilling | Drilled 205' in 22-1/2 hrs. |
| 7/27 | 10,922' Tripping | Drilled 145' in 17.5 hrs., tripped for hole in drill pipe. |
| 7/28 | 10,984' Rng. DST #2 | Drilled 62' in 6 hrs. Running DST #2: 10,920 - 10,984. |
| 7/29 | 11,057' Drilling | Drilled 73' in 6-1/2 hrs. Finished Running DST #2. |
| 7/30 | 11,132' Rng. DST #3 | Drilled 75' in 6-3/4 hrs. Running DST #3: 11,087 - 11,132. |
| 7/31 | 11,186' Drilling | Drilled 54' in 5-1/2 hrs. |
| 8/1 | 11,336' Tripping | Drilled 150' in 16 hrs. Tripped for hole in drill collars. Worked stuck drill pipe. |
| 8/2 | 11,369' Drilling | Drilled 33' in 5 hrs. Tripped out hole for 2 cracked drill collars. |
| 8/3 | 11,569' Tripping | Drilled 200' in 23-1/2 hrs. Tripping for cracked drill collar. |
| 8/4 | 11,642' Tripping | Drilled 73' in 5-1/2 hrs. Tripped out and layed down 6 drill collars. |
| 8/5 | 11,922' Drilling | Drilled 280' in 21 hrs. |
| 8/6 | 12,024' Tripping | Drilled 102' in 15-1/2 hrs. Tripped for bit #7 @ 12,024. |
| 8/7 | 12,138' Circ. Samples | Drilled 114' in 20-1/4 hrs. Prep to run DST #4. |
| 8/8 | 12,138' Rng. DST #4 | Running DST #4: 12,088' - 12,138'. 8' downward strap correction. |
| 8/9 | 12,202' Drilling | Drilled 56' in 4-1/2 hrs. Finished running DST #4. |

Well History cont.

| | | |
|------|---------------------------|---|
| 8/10 | 12,474' Drilling | Drilled 272' in 23-1/2 hrs. |
| 8/11 | 12,692' Tripping | Drilled 218' in 18 hrs. Bit locked up. |
| 8/12 | 12,820' Drilling | Drilled 128' in 15-1/4 hrs. |
| 8/13 | 12,940' Rng DST #5 | Drilled 120' in 15-3/4 hrs. Running DST #5. |
| 8/14 | 12,945' Drilling | Drilled 5' in 1/2 hour. Running DST #5. |
| 8/15 | 13,076' Drilling | Drilled 131' in 14-1/4 hrs. Rerun bit locked up. |
| 8/16 | 13,278' Circ. Samples | Drilled 182' in 21 hrs. Circulated samples @ 13,264'. |
| 8/17 | 13,393' Tripping | Drilled 115' in 12-1/2 hrs. Tripped for Bit #21. |
| 8/18 | 13,480' Tripping | Drilled 87' in 12 hrs. Prepared to run Schlumberger logs. |
| 8/19 | 13,480' Conditioning Hole | Preparing to run DST #6: 13,252 - 13,480. |
| 8/20 | 13,480' Conditioning Hole | Preparing to run DST #7: 13,239 - 13,480. |
| 8/21 | 13,480' Conditioning Hole | Preparing to run 5-1/2" casing. |

11920

NORTH DAKOTA INDUSTRIAL COMMISSION
OIL AND GAS DIVISION

WESLEY D. NORTON
Chief Enforcement Officer

F. E. WILBORN
Deputy Enforcement Officer

CLARENCE G. CARLSON
Geologist

CHARLES KOCH
Engineering Dept.

DOREN DANNEWITZ
Field Supervisor

KEN KALLESTAD
Reclamation Sup.

September 15, 1986

Mr. Jeffery E. Jones
Basic Earth Science Systems
P.O. Box 3088
Englewood, Colorado 80155

RE: Basic Game & Fish #34-3
SW SE Section 3-T153N-R101W
Well File No. 11745

Basic Corps of Engineers #31-10
NW NE Section 10-T153N-R101W
Well File No. 11920

Rosebud #22-11
SE NW Section 11-T153N-R101W
Well File No. 11549

Dear Mr. Jones:

Upon a recent inspection of the above captioned wells, I noted the following problems:

Basic Game & Fish #34-3 - reclamation of the drilling pit must be completed immediately. The ignitor is not working and must be repaired as soon as possible. Additionally, there is an area around the production equipment that is very weedy and is a potential fire hazard.

Rosebud #22-11 - ignitor was not working. Also weeds on the location that need to be removed.

Basic Corps of Engineers #31-10 - the drilling pit mud cuttings must be hauled out to an approved disposal pit and the drilling pit on location reclaimed immediately.

Please take care of these problems as soon as possible. If you have any questions, feel free to contact our office.

Sincerely,

Tom Delling kb
Tom Delling
Field Inspector

TD/rls

REPORT NO.
13712F
PAGE NO. 1

TEST DATE:
8-26-86

WELL PERFORMANCE

TESTING™ REPORT

SEP 1986
RECEIVED
ND OIL & GAS

FLOPETROL JOHNSTON

Schlumberger

A Production System Analysis (NODALISION)
Based On Model Verified™ Interpretation

Well: CORPS. 31-10

Company: BASIC EARTH SCIENCE

TEST IDENTIFICATION

Test Type MFE DH DST
Test No. 7
Formation RED RIVER
Test Interval (ft) 13239 - 13480
Reference Depth

HOLE CONDITIONS

Total Depth (MD/TUD) (ft) 13480/13480
Hole Size (in) 8 3/4
Casing/Liner I.D. (in)
Perf'd Interval/Net Pay (ft) .. --/7
Shot Density/Diameter (in) ...

INITIAL TEST CONDITIONS

Initial Hydrostatic (psi) 7463
Gas Cushion Type NONE
Surface Pressure (psi) --
Liquid Cushion Type FRESH WATER
Cushion Length (ft) 1944

NET PIPE RECOVERY

| Volume | Fluid Type | Properties |
|--------------|-------------|---------------------|
| **5.98 BBLs. | **OIL | ASSUMED 45 DEG. API |
| | | |
| ACTUAL RECVY | | |
| 4631 FT. | GAS CUT MUD | |
| 1781 FT. | GC WTR.CUSH | |

WELL LOCATION

Field MC KENZIE
County NORTH DAKOTA
State 10T153NR101
Sec/Twn/Rng
Elevation (ft)

MUD PROPERTIES

Mud Type SALT STARCH
Mud Weight (lb/gal) 10.8
Mud Resistivity (ohm.m) 0.04 @ 60 DEG.F
Filtrate Resistivity (ohm.m) .. 0.05 @ 60 DEG.F
Filtrate Chlorides (ppm) 192000

TEST STRING CONFIGURATION

Pipe Length (ft)/I.D. (in) ... 12931/3.83
Collar Length (ft)/I.D. (in) .. 270/2.50
Packer Depths (ft) 13239
Bottomhole Choke Size (in) ... 15/16
Gauge Depth (ft)/Type 13300/MECH.

NET SAMPLE CHAMBER RECOVERY

| Volume | Fluid Type | Properties |
|--------------|--------------|------------------|
| 0.229 SCF | GAS | CORRECTED TO PWF |
| 2400 CC | MUD | 0.04 @ 60 DEG. F |
| | | 190000 PPM CL. |
| Pressure: 10 | GOR: ***2601 | GLR: ***2601 |

Pressure: 10 GOR: ***2601 GLR: ***2601

INTERPRETATION RESULTS

Model of Behavior HOMOGENEOUS
Fluid Type Used for Analysis . **OIL
Reservoir Pressure (psi) 6469
Transmissibility (md.ft/cp) .. 244.92
Effective Permeability (md) .. 4.83
Skin Factor/Damage Ratio 1.46 / 1.33
Storativity Ratio
Interporosity Flow Coeff.
Distance to an Anomaly (ft) ..
Radius of Investigation (ft)..
Potentiometric Surface (ft) ..

ROCK/FLUID/WELBORE PROPERTIES
Oil Density (deg. API) ASSUMED 45
Basic Solids (%)
Gas Gravity 0.65 ASSUMED
Water Cut (%) ASSUMED 0.0
Viscosity (cp) 0.138
Total Compressibility (1/psi) .. 5.39E-05
Porosity (%) 16
Reservoir Temperature (F) 255
Form.Vol.Factor (bbl/STB) GIVEN 2.467

PRODUCTION RATE DURING TEST: 624 BOPD 0-AUG.

COMMENTS:

THE PACKER SEAT FAILED DURING THE FINAL FLOW PERIOD. THE INITIAL SHUT-IN PERIOD DATA WAS ANALYZED USING HORNER METHOD TO DETERMINE RESERVOIR PARAMETERS OF KHAU, PW, AND SKIN - ASSUMING PRODUCTION OF 45 DEG. API OIL, AND GAS-LIQUID RATIO OF 2601 SCF/BBL. THE RESERVOIR PARAMETERS CALCULATED AND GIVEN ABOVE SHOULD BE USED WITH EXTREME CAUTION, AS THERE WAS ACTUALLY NO HYDROCARBON RECOVERY DURING THIS TEST. FOR THIS REASON, NO COMPLETION DESIGN SENSITIVITY PLOTS HAVE BEEN GENERATED FOR THIS TEST DATA.

REPORT NO.
13712F
PAGE NO. 2

SEQUENCE OF EVENTS

FLOPETROL JOHNSTON
Schlumberger

| EVENT NO. | DATE | TIME (HR:MIN) | DESCRIPTION | ELAPSED TIME (MINS) | BHP (PSIA) | BLOW (IN.-H2O) |
|-----------|---------|---------------|--|---------------------|------------|----------------|
| 1 | 8-20-86 | 1013 | SET PACKER | -3.16 | 7463 | -- |
| 2 | | 1015 | OPENED TOOL-1/8"BUBBLHOSE | 0.00 | 1078 | 2" BLOW |
| | | 1020 | | | | 8" BLOW |
| | | 1025 | | | | 20" BLOW |
| 3 | | 1030 | CLOSED FOR INITIAL SHUTIN | 13.79 | 1224 | 28" BLOW |
| 4 | | 1054 | PACKERS APPARENTLY BEGINNING TO FAIL. (ONLY SHUT-IN DATA UP TO THIS POINT HAS BEEN ANALYZED.) | | 6266 | -- |
| | | 1200 | FINISHED SHUT-IN | | | |
| | | 1200 | RE-OPENED TOOL | | | |
| | | 1201 | PACKER SEAT FAILED - MADE AN ATTEMPT TO RE-SET, AND TRIPPED OUT OF HOLE. | | | |
| 5 | | 1218 | FINAL HYDROSTATIC PRESSR. | | 7482 | -- |
| | | 1430 | STARTED REVERSING REC'UY | | | |
| | | 1630 | FINISHED REVERSING REC'UY | | | |

BOTTOMHOLE PRESSURE LOG

FIELD REPORT NO. 13712F

COMPANY : BASIC EARTH SCIENCE

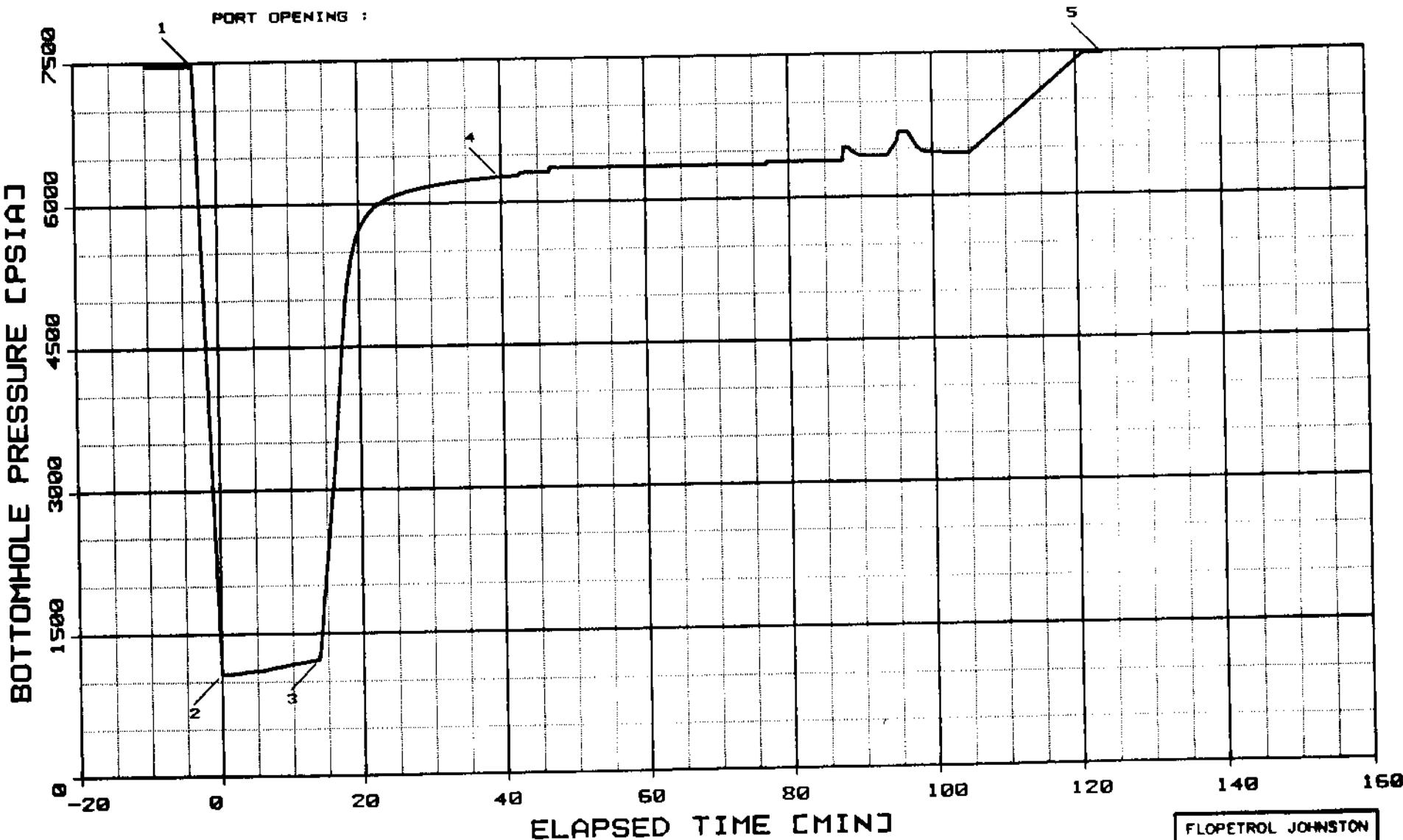
INSTRUMENT NO. J-2130

WELL : CORPS 31-10

DEPTH : 13300 FT

CAPACITY : 9000 PSI

PORT OPENING :



* WELL TEST DATA PRINTOUT *

FIELD REPORT # : 13712F

COMPANY : BASIC EARTH SCIENCE
WELL : CORPS 31-10

INSTRUMENT # : J-2130
CAPACITY [PSI] : 9000.
DEPTH [FT] : 13300.0
PORT OPENING :
TEMPERATURE [DEG F] : 255.0

LABEL POINT INFORMATION

| # | TIME OF DAY # HH:MM:SS | DATE DO-MM | EXPLANATION | BOT HOLE | PRESSURE PSIA |
|---|------------------------------|---------------|--------------------------|---------------------|------------------|
| | | | | ELAPSED TIME,MIN | |
| 1 | 10:11:50 | 20-AU | HYDROSTATIC MUO | -3.16 | 7463 |
| 2 | 10:15: 0 | 20-AU | START FLOW | 0.00 | 1078 |
| 3 | 10:28:47 | 20-AU | END FLOW & START SHUT-IN | 13.79 | 1224 |
| 4 | 10:54:46 | 20-AU | END SHUT-IN | 39.77 | 6266 |
| 5 | 12:18:40 | 20-AU | HYDROSTATIC MUD | 123.67 | 7482 |

SUMMARY OF FLOW PERIODS

| PERIOD | START ELAPSED TIME,MIN | END ELAPSED TIME,MIN | START DURATION MIN | PRESSURE PSIA | END PRESSURE PSIA | FINAL FLOW PRESSURE PSIA | PRODUCING TIME, MIN |
|--------|------------------------------|----------------------------|--------------------------|------------------|-------------------------|--------------------------------|------------------------|
| | TIME,MIN | MIN | MIN | PSIA | PSIA | PSIA | MIN |
| 1 | 0.00 | 13.79 | 13.79 | 1078 | 1078 | 1224 | 1224 |

SUMMARY OF SHUTIN PERIODS

| PERIOD | START ELAPSED TIME,MIN | END ELAPSED TIME,MIN | START DURATION MIN | PRESSURE PSIA | END PRESSURE PSIA | FINAL FLOW PRESSURE PSIA | PRODUCING TIME, MIN |
|--------|------------------------------|----------------------------|--------------------------|------------------|-------------------------|--------------------------------|------------------------|
| | TIME,MIN | MIN | MIN | PSIA | PSIA | PSIA | MIN |
| 1 | 13.79 | 39.77 | 25.98 | 1224 | 1224 | 1224 | 13.79 |

TEST PHASE : FLOW PERIOD # 1

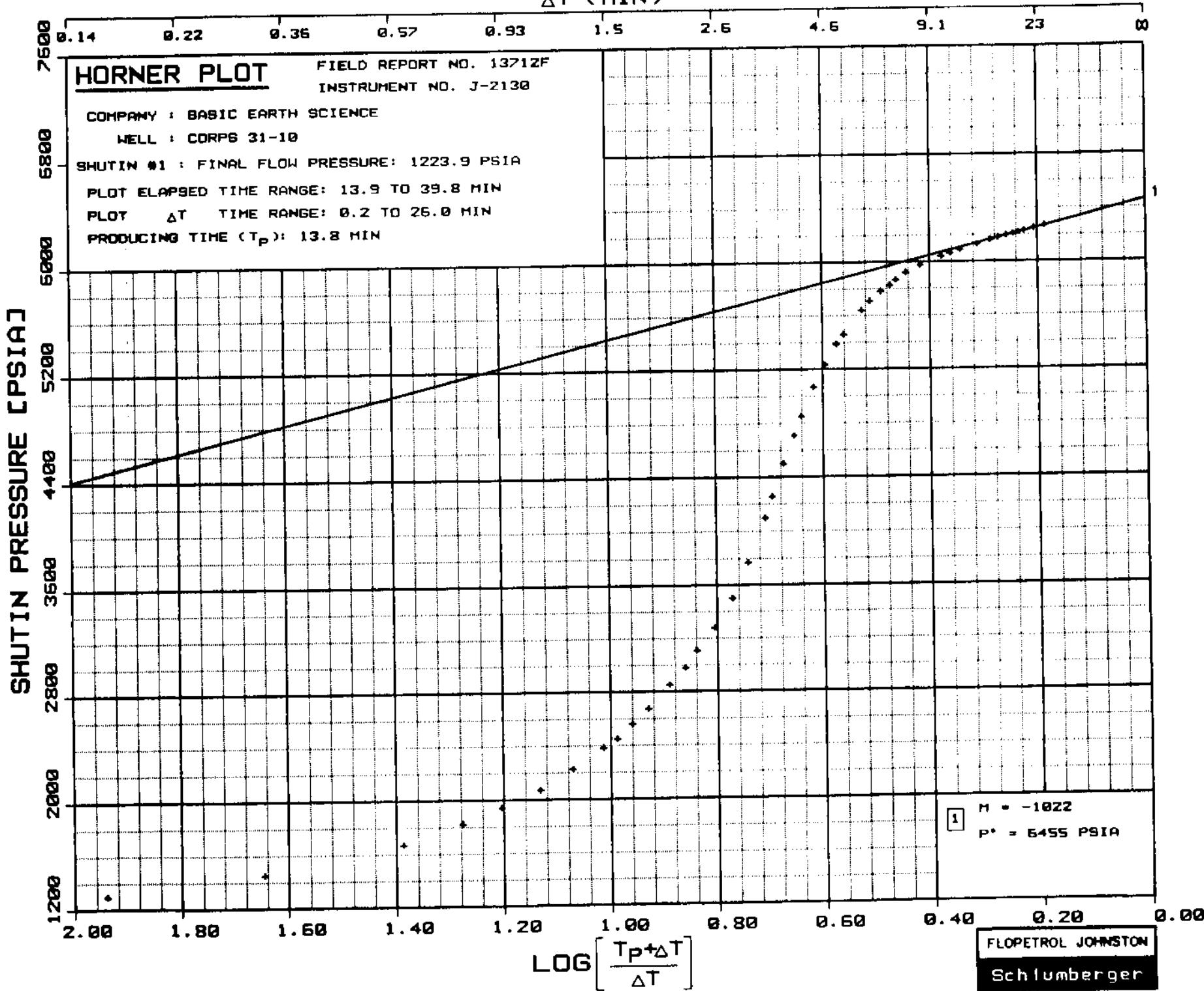
| TIME OF DAY | DATE | ELAPSED TIME,MIN | DELTA TIME,MIN | BOT HOLE PRESSURE PSIA |
|----------------|-------|---------------------|-------------------|------------------------------|
| HH:MM:SS | DD-MM | | | |
| ***** | ***** | ***** | ***** | ***** |
| 10:15: 0 | 20-AU | 0.00 | 0.00 | 1078 |
| 10:20: 0 | 20-AU | 5.00 | 5.00 | 1108 |
| 10:25: 0 | 20-AU | 10.00 | 10.00 | 1173 |
| 10:28:47 | 20-AU | 13.79 | 13.79 | 1224 |

TEST PHASE : SHUTIN PERIOD # 1

FINAL FLDW PRESSURE [PSIA] = 1224
 PRODUCING TIME [MIN] = 13.79

| TIME OF DAY | DATE | ELAPSED TIME,MIN | DELTA TIME,MIN | BOT HOLE PRESSURE PSIA | LOG DELTA P PSI | HORNER TIME |
|----------------|-------|---------------------|-------------------|------------------------------|-----------------------|----------------|
| HH:MM:SS | DD-MM | | | | | |
| ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| 10:28:47 | 20-AU | 13.79 | 0.00 | 1224 | 0 | |
| 10:29:47 | 20-AU | 14.79 | 1.00 | 1994 | 770 | 1.170 |
| 10:30:47 | 20-AU | 15.79 | 2.00 | 2811 | 1587 | 0.897 |
| 10:31:47 | 20-AU | 16.79 | 3.00 | 3709 | 2485 | 0.748 |
| 10:32:47 | 20-AU | 17.79 | 4.00 | 4764 | 3540 | 0.648 |
| 10:33:47 | 20-AU | 18.79 | 5.00 | 5380 | 4156 | 0.575 |
| 10:34:47 | 20-AU | 19.79 | 6.00 | 5674 | 4450 | 0.518 |
| 10:35:47 | 20-AU | 20.79 | 7.00 | 5828 | 4604 | 0.473 |
| 10:36:47 | 20-AU | 21.79 | 8.00 | 5936 | 4712 | 0.435 |
| 10:37:47 | 20-AU | 22.79 | 9.00 | 5995 | 4771 | 0.404 |
| 10:38:47 | 20-AU | 23.79 | 10.00 | 6042 | 4818 | 0.376 |
| 10:40:47 | 20-AU | 25.79 | 12.00 | 6101 | 4877 | 0.332 |
| 10:42:47 | 20-AU | 27.79 | 14.00 | 6144 | 4920 | 0.298 |
| 10:44:47 | 20-AU | 29.79 | 16.00 | 6177 | 4953 | 0.270 |
| 10:46:47 | 20-AU | 31.79 | 18.00 | 6203 | 4979 | 0.247 |
| 10:48:47 | 20-AU | 33.79 | 20.00 | 6222 | 4998 | 0.228 |
| 10:50:47 | 20-AU | 35.79 | 22.00 | 6240 | 5016 | 0.211 |
| 10:52:47 | 20-AU | 37.79 | 24.00 | 6255 | 5031 | 0.197 |
| 10:54:46 | 20-AU | 39.77 | 25.98 | 6266 | 5042 | 0.185 |

ΔT (MIN)



LOG LOG PLOT

COMPANY : BASIC EARTH SCIENCE
WELL : CORPS 31-10
FIELD REPORT NO. 13712F
INSTRUMENT NO. J-2130

SHUTIN #1 :
FINAL FLOW PRESSURE (PWF): 1223.9 PSIA
PLOT ELAPSED TIME RANGE: 13.9 TO 39.8 MIN
PLOT ΔT TIME RANGE: 0.2 TO 26.0 MIN

10000

ΔP (PSI)

1000

100

0.10

1.0

10.0

100.0

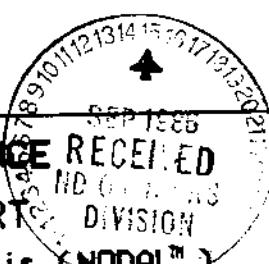
1000.0

ΔT (MIN)

FLOPETROL JOHNSTON

Schlumberger

11920



REPORT NO.
13711F
PAGE NO. 1

TEST DATE:
19-AUG-86

WELL PERFORMANCE RECEIVED
TESTING™ REPORT DIVISION

A Production System Analysis (NODAL™)
Based On Model Verified™ Interpretation

FLOPETROL JOHNSTON
Schlumberger

Company: BASIC EARTH SCIENCE

Well: CORPS. 31-10

TEST IDENTIFICATION

Test Type MFE OH DST
Test No. 6
Formation RED RIVER
Test Interval (ft) 13252 - 13480
Reference Depth

WELL LOCATION

Field MC KENZIE
County NORTH DAKOTA
State 10T153NR101
Sec/Twn/Rng
Elevation (ft)

HOLE CONDITIONS

Total Depth (MD/TUD) (ft)
Hole Size (in) 8 3/4
Casing/Liner I.D. (in)
Perf'd Interval/Net Pay (ft) .. --/--
Shot Density/Diameter (in) ...

MUD PROPERTIES

Mud Type SALT STARCH
Mud Weight (lb/gal) 18.8
Mud Resistivity (ohm.m) 0.04 @ 60 DEG.F
Filtrate Resistivity (ohm.m) .. 0.05 @ 60 DEG.F
Filtrate Chlorides (ppm) 200000

INITIAL TEST CONDITIONS

Initial Hydrostatic (psi) 7474
Gas Cushion Type NONE
Surface Pressure (psi) --
Liquid Cushion Type FRESH WATER
Cushion Length (ft) 1758

TEST STRING CONFIGURATION

Pipe Length (ft)/I.D. (in) ... 12942 / 3.83
Collar Length (ft)/I.D. (in) .. 270 / 2.50
Packer Depths (ft) 13252
Bottomhole Choke Size (in) ... 15/16
Gauge Depth (ft)/Type 13284/MECH.

NET PIPE RECOVERY

| Volume | Fluid Type | Properties |
|----------|-------------|------------|
| 1598 FT. | HGC WTRCUSH | |
| 3694 FT. | HGASCUT MUD | |
| | | |
| | | |
| | | |

NET SAMPLE CHAMBER RECOVERY

| Volume | Fluid Type | Properties |
|---------|------------|------------------|
| 4.1 SCF | GAS | |
| 1100 CC | MUD | 0.04 @ 60 DEG. F |
| | | 194000 PPM CL. |
| | | |
| | | |

Pressure: 810 GOR: -- GLR: --

INTERPRETATION RESULTS

Model of Behavior
Fluid Type Used for Analysis ..
Reservoir Pressure (psi)
Transmissibility (md.ft/cp) ..
Effective Permeability (md) ..
Skin Factor/Damage Ratio ..
Storativity Ratio,
Interporosity Flow Coeff.
Distance to an Anomaly (ft) ..
Radius of Investigation (ft) ..
Potentiometric Surface (ft) ..

ROCK/FLUID/WELBORE PROPERTIES

Oil Density (deg. API)
Basic Solids (%)
Gas Gravity
Water Cut (%)
Viscosity (cp)
Total Compressibility (1/psi).
Porosity (%)
Reservoir Temperature (F) 255
Form.Vol.Factor (bbl/STB)

PRODUCTION RATE DURING TEST: --

COMMENTS:

UNSUCCESSFUL TEST; PACKER SEAT FAILURE.

REPORT NO.

13711F

PAGE NO. 2

SEQUENCE OF EVENTS

FLOPETROL JOHNSTON

Schlumberger

| EVENT NO. | DATE | TIME (HR:MIN) | DESCRIPTION | ELAPSED TIME (MINS) | BHP (PSIA) | BLOW (IN.-H2O) |
|-----------|---------|---------------|---------------------------|---------------------|------------|----------------|
| 1 | 8-19-86 | 0628 | SET PACKER | -2.00 | 7474 | -- |
| 2 | | 0630 | OPENED TOOL-1/8"BUBBLHOSE | 0.00 | 1015 | 7" BLOW |
| 3 | | 0635 | LOST PACKER SEAT | 5.00 | 1641 | 30" BLOW |
| 4 | | 0645 | FINAL HYDROSTATIC MUD | | 7474 | -- |
| | | | UNSUCCESSFUL TEST; PACKER | | | |
| | | | SEAT FAILURE. | | | |

BOTTOM HOLE PRESSURE AND TIME DATA

J-1924

INSTRUMENT NUMBER

J-2130

CAPACITY (P.S.I.)

9000

DEPTH

13284 FT.

PORT OPENING

OUTSIDE

BOTTOM HOLE TEMPERATURE

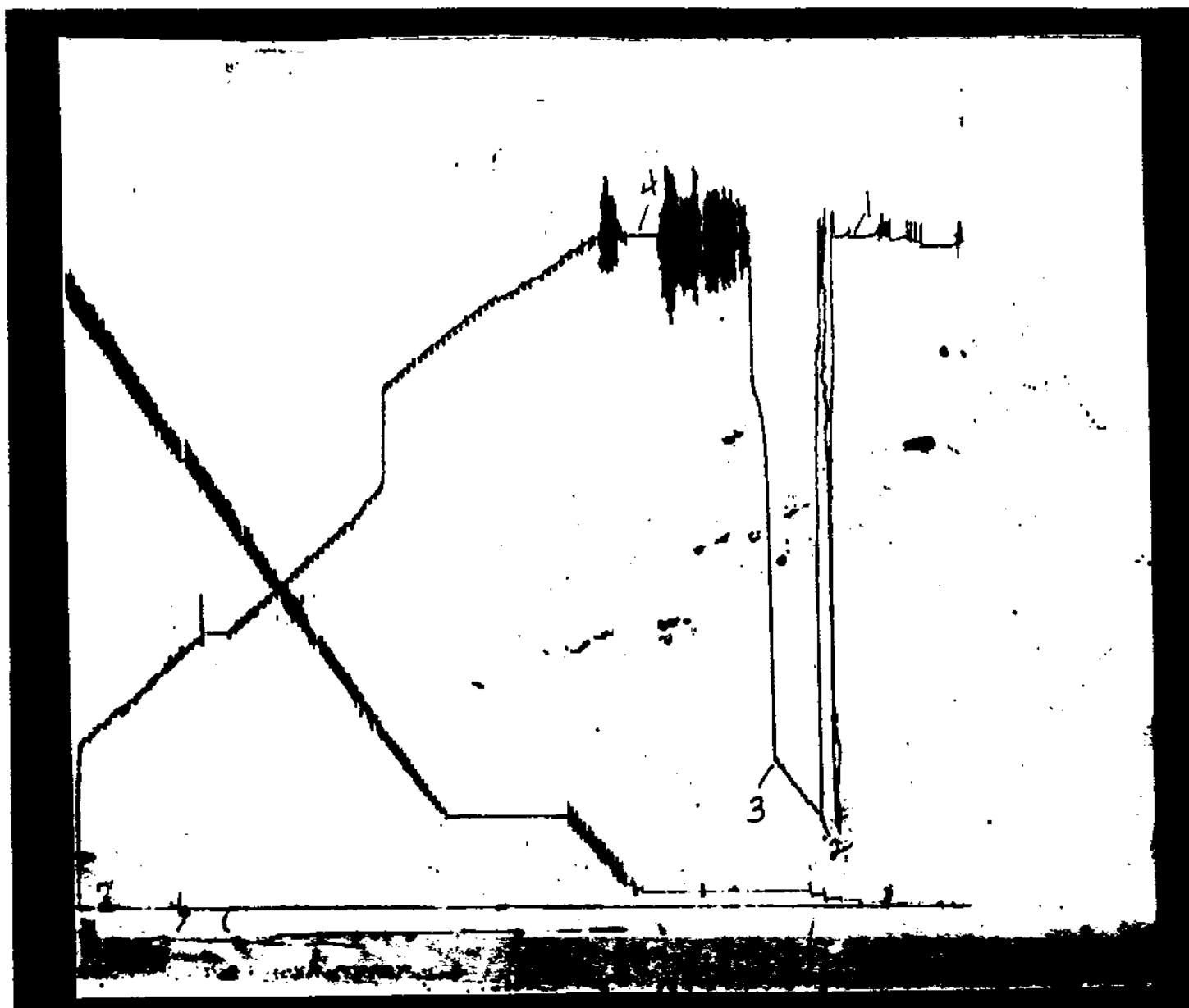
255°F

FIELD REPORT NUMBER

13711 F

| DESCRIPTION | LABELED POINTS | PRESSURE (P.S.I.) | GIVEN TIME | COMPUTED TIME |
|---------------------------|----------------|-------------------|------------|---------------|
| INITIAL HYDROSTATIC MUD | 1 | 7474 | | |
| INITIAL FLOW (1) | 2 | 1015 | | |
| INITIAL FLOW (2) | | | | |
| INITIAL SHUT-IN | | | | |
| SECOND FLOW (1) | | | | |
| SECOND FLOW (2) | | | | |
| SECOND SHUT-IN | | | | |
| FINAL FLOW (1) | | | | |
| FINAL FLOW (2) | | | | |
| FINAL SHUT-IN | | | | |
| FINAL HYDROSTATIC MUD | 4 | 7474 | | |
| REMARKS: LOST PACKER SEAT | 3 | 1641 | | |

UNSUCCESSFUL TEST; PACKER SEAT FAILURE



11920

NORTH DAKOTA INDUSTRIAL COMMISSION
OIL AND GAS DIVISION

WESLEY D. NORTON
Chief Enforcement Officer

F. E. WILBORN
Deputy Enforcement Officer

CLARENCE G. CARLSON
Geologist

CHARLES KOCH
Engineering Dept.

DOREN DANNEWITZ
Field Supervisor

KEN KALLESTAD
Reclamation Sup.

August 29, 1986

Ms. Judy Burke
Basic Earth Science Systems, Inc.
P.O. Box 3088
Englewood, CO 80155-3088

RE: Confidential Well Status
Basic Corps of Engineers #31-10
NW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec.10-153N-101W, McKenzie
Permit No. 11920

Dear Ms. Burke:

Your request for confidential status of all information furnished to the Enforcement Officer, or his representatives, is hereby granted. Such information shall remain confidential for six months commencing on the date such information, except production data, is required by statute and rule to be filed.

If information obtained during the drilling of the well is to be confidential, the six months period begins on the date the well is spudded.

Confidential status notwithstanding, the Enforcement Officer and his representatives shall have access to all well records wherever located. Your company personnel, or any person performing work for your company, shall permit the Enforcement Officer and his representatives to come upon any lease, property, well, or drilling rig operated or controlled by them, complying with all safety rules, and to inspect the records and operation of such wells, and to have access at all times to any and all records of wells.

The Commission's field personnel periodically inspect producing and drilling wells. Any information regarding such wells shall be made available to them at any time upon request. The information so obtained by the field personnel shall be maintained in strict confidence and shall be available only to the Commission and its staff.

Sincerely yours,

F.E. Wilborn

F. E. Wilborn
Deputy Enforcement Officer

FEW:cah



Earth Science Systems, Inc.

11920

P.O. Box 3088
Englewood, Colorado
80155-3088
(303) 792-5230

August 26, 1986



North Dakota State Industrial Commission
Oil and Gas Division
900 East Boulevard
Bismarck, ND 58505

Re: Basic Corps of Engineers #31-10
Township 153 North-Range 101 West
Section 10: NW¹NE⁴
McKenzie County, ND
Permit No. 11920

Gentlemen:

Basic Earth Science Systems, Inc. is in the process of drilling the above-referenced well. We are drilling this well as a tight hole and will appreciate your assistance in keeping any information you receive as confidential.

If you have any questions, please do not hesitate to contact me.

Sincerely,

Basic Earth Science Systems, Inc.

Judy Burke
Lease Analyst/Permit Coordinator

encl.

11920

REPORT NO.

13710F

PAGE NO. 1

TEST DATE:

13-AUG-86

WELL PERFORMANCE

TESTING™ REPORT

A Production System Analysis (NODAL™)
Based On Model Verified™ Interpretation

AUG 11 1986

RECEIVED

FLOPETROL JOHNSTON

Schlumberger

Company: BASIC EARTH SCIENCE

TEST IDENTIFICATION

Test Type MFE OH DST
 Test No. 5
 Formation INT'LK./STNWALL
 Test Interval (ft) 12866 - 12940
 Reference Depth KELLY BUSHING

HOLE CONDITIONS

Total Depth (MD/TVD) (ft) 12940 / 12940
 Hole Size (in) 8 3/4
 Casing/Liner I.D. (in)
 Perf'd Interval/Net Pay (ft) .. --/38
 Shot Density/Diameter (in) ...

INITIAL TEST CONDITIONS

Initial Hydrostatic (psi) 7255
 Gas Cushion Type NONE
 Surface Pressure (psi) --
 Liquid Cushion Type FRESH WATER
 Cushion Length (ft) 720

NET PIPE RECOVERY

| Volume | Fluid Type | Properties |
|---------|-------------|------------------|
| 319 FT. | GC WTR.CUSH | |
| 695 FT. | SGCWC MUD | 0.04 @ 60 DEG. F |
| | | 196000 PPM CL. |
| | | |
| | | |

INTERPRETATION RESULTS

Model of Behavior
 Fluid Type Used for Analysis
 Reservoir Pressure (psi)
 Transmissibility (md.ft/cp) ..
 Effective Permeability (md) ..
 Skin Factor/Damage Ratio
 Storativity Ratio
 Interporosity Flow Coeff.
 Distance to an Anomaly (ft) ..
 Radius of Investigation (ft)..
 Potentiometric Surface (ft) ..

Well: BASIC CORPS. OF ENGINEERS #31-10

WELL LOCATION

Field
 County MC KENZIE
 State NORTH DAKOTA
 Sec/Twn/Rng 10T1S3NR101
 Elevation (ft)

MUD PROPERTIES

Mud Type GEL STARCH
 Mud Weight (lb/gal) 10.7
 Mud Resistivity (ohm.m) 0.05 @ 60 DEG.F
 Filtrate Resistivity (ohm.m) .. 0.04 @ 60 DEG.F
 Filtrate Chlorides (ppm) 187000

TEST STRING CONFIGURATION

Pipe Length (ft)/I.D. (in) ... 12139 / 3.83
 Collar Length (ft)/I.D. (in) .. 687 / 2.50
 Packer Depths (ft) 12866
 Bottomhole Choke Size (in) ... 15/16
 Gauge Depth (ft)/Type 12898/MECH.

NET SAMPLE CHAMBER RECOVERY

| Volume | Fluid Type | Properties |
|----------|------------|-------------------|
| 5.56 SCF | GAS | |
| 1720 CC | WATER | 0.05 @ 60 DEG. F. |
| | | 196000 PPM CL. |
| | | |

Pressure: 2100 GOR: -- GLR: 514

ROCK/FLUID/WELLBORE PROPERTIES

Oil Density (deg. API)
 Basic Solids (%)
 Gas Gravity
 Water Cut (%)
 Viscosity (cp)
 Total Compressibility (1/psi).
 Porosity (%) 10
 Reservoir Temperature (F) 258
 Form.Vol.Factor (bbl/STB)

PRODUCTION RATE DURING TEST: --

COMMENTS:

REPORT NO.
13710F

PAGE NO. 2

SEQUENCE OF EVENTS

FLOPETROL JOHNSTON
Schlumberger

| EVENT NO. | DATE | TIME (HR:MIN) | DESCRIPTION | ELAPSED TIME (MINS) | BHP (PSIA) | BLOW (IN.-H2O) |
|-----------|---------|---------------|----------------------------|---------------------|------------|----------------|
| 1 | 8-13-86 | 1228 | SET PACKER | -2.00 | 7255 | -- |
| 2 | | 1230 | OPENED TOOL-1/8"BUBBLHOSE | 0.00 | 429 | 1" BLOW |
| | | 1235 | | | | 2" BLOW |
| | | 1240 | | | | 2.25" BLOW |
| 3 | | 1245 | CLOSED FOR INITIAL SHUT-IN | 14.27 | 429 | 4.5" BLOW |
| 4 | | 1345 | FINISHED SHUT-IN | 78.30 | 4789 | 1" BLOW |
| 5 | | 1345 | RE-OPENED TOOL | 78.30 | 465 | 2" BLOW |
| | | 1355 | | | | 5" BLOW |
| | | 1405 | | | | 6" BLOW |
| | | 1415 | | | | 6" BLOW |
| | | 1425 | | | | 7" BLOW |
| | | 1435 | | | | 6" BLOW |
| | | 1445 | | | | 6" BLOW |
| | | 1505 | | | | 6" BLOW |
| | | 1515 | | | | 5.5" BLOW |
| 6 | | 1515 | CLOSED FOR FINAL SHUT-IN | 169.74 | 492 | 5.5" BLOW |
| | | 1615 | | | | BLOW DIED |
| 7 | | 1715 | FINISHED SHUT-IN | 297.81 | 5347 | -- |
| 8 | | 1716 | PULLED PACKER LOOSE | 303.82 | 7301 | -- |

BOTTOMHOLE PRESSURE LOG

FIELD REPORT NO. 13710F

COMPANY : BASIC EARTH SCIENCE

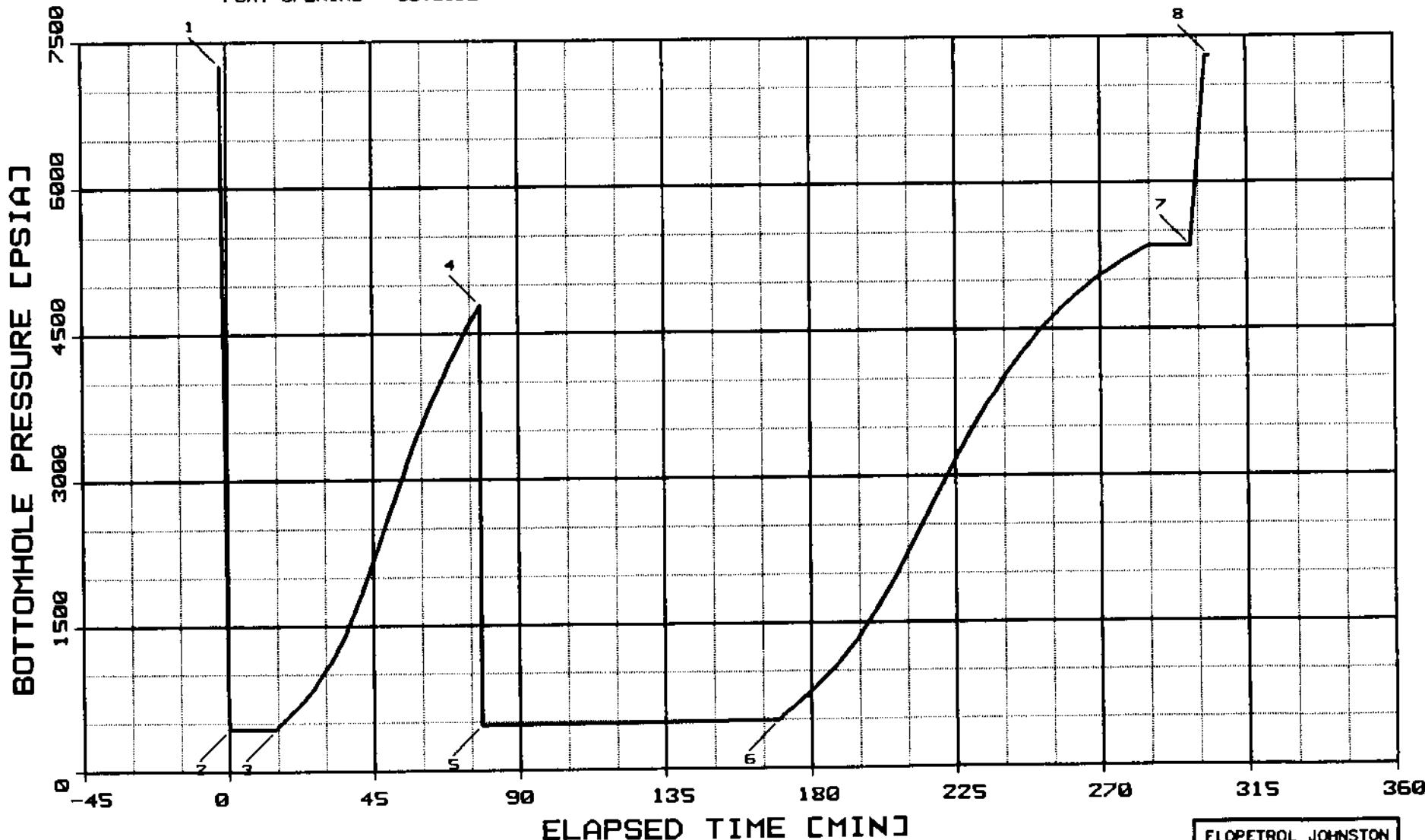
INSTRUMENT NO. J-2130

WELL : BASIC CORPS. OF ENGINEERS #31-10

DEPTH : 12898 FT

CAPACITY : 0 PSI

PORT OPENING : OUTSIDE



 * WELL TEST DATA PRINTOUT *

FIELD REPORT # : 13710F

COMPANY : BASIC EARTH SCIENCE

WELL : BASIC CORPS.DF ENGINEERS #31-10

INSTRUMENT # : J-2130

CAPACITY [PSI] : 0.

DEPTH [FT] : 12898.0

PORT OPENING : OUTSIDE

TEMPERATURE [DEG F] : 258.0

LABEL POINT INFORMATION

| # | TIME OF DAY HH:MM:SS | DATE DD-MM | EXPLANATION | ELAPSED | BOT HOLE PRESSURE |
|---|----------------------------|---------------|--------------------------|----------|----------------------|
| | | | | TIME,MIN | PSIA |
| 1 | 12:28: 0 | 13-AU | HYDROSTATIC MUD | -2.00 | 7255 |
| 2 | 12:30: 0 | 13-AU | START FLOW | 0.00 | 429 |
| 3 | 12:44:16 | 13-AU | END FLOW & START SHUT-IN | 14.27 | 429 |
| 4 | 13:48:18 | 13-AU | END SHUT-IN | 78.30 | 4789 |
| 5 | 13:48:18 | 13-AU | START FLOW | 78.30 | 465 |
| 6 | 15:19:44 | 13-AU | END FLOW & START SHUT-IN | 169.74 | 492 |
| 7 | 17:27:49 | 13-AU | END SHUT-IN | 297.81 | 5347 |
| 8 | 17:33:49 | 13-AU | HYDROSTATIC MUD | 303.82 | 7301 |

SUMMARY OF FLOW PERIODS

| PERIOD | START ELAPSED TIME,MIN | END ELAPSED TIME,MIN | START DURATION MIN | PRESSURE PSIA | END PRESSURE PSIA |
|--------|------------------------------|----------------------------|--------------------------|------------------|-------------------------|
| | | | | | |
| 1 | 0.00 | 14.27 | 14.27 | 429 | 429 |
| 2 | 78.30 | 169.74 | 91.44 | 465 | 492 |

SUMMARY OF SHUTIN PERIODS

| PERIOD | START ELAPSED TIME,MIN | END ELAPSED TIME,MIN | START DURATION MIN | PRESSURE PSIA | END PRESSURE PSIA | FINAL FLOW PRESSURE PSIA | PRODUCING TIME, MIN |
|--------|------------------------------|----------------------------|--------------------------|------------------|-------------------------|--------------------------------|------------------------|
| | | | | | | | |
| 1 | 14.27 | 78.30 | 64.03 | 429 | 4789 | 429 | 14.27 |
| 2 | 169.74 | 297.81 | 128.07 | 492 | 5347 | 492 | 105.71 |

TEST PHASE : FLOW PERIOD # 1

| TIME OF DAY | DATE DD-MM | ELAPSED TIME,MIN | DELTA TIME,MIN | BOT HOLE PRESSURE PSIA |
|----------------|---------------|---------------------|-------------------|------------------------------|
| 12:30: 0 | 13-AU | 0.00 | 0.00 | 429 |
| 12:35: 0 | 13-AU | 5.00 | 5.00 | 429 |
| 12:40: 0 | 13-AU | 10.00 | 10.00 | 429 |
| 12:44:16 | 13-AU | 14.27 | 14.27 | 429 |

TEST PHASE : SHUTIN PERIOD # 1

FINAL FLOW PRESSURE [PSIA] = 429
 PRODUCING TIME [MIN] = 14.27

| TIME OF DAY | DATE DD-MM | ELAPSED TIME,MIN | DELTA TIME,MIN | BOT HOLE PRESSURE PSIA | LOG DELTA P PSI | HORNER TIME |
|----------------|---------------|---------------------|-------------------|------------------------------|-----------------------|----------------|
| 12:44:16 | 13-AU | 14.27 | 0.00 | 429 | 0 | |
| 12:45:16 | 13-AU | 15.27 | 1.00 | 468 | 39 | 1.184 |
| 12:46:16 | 13-AU | 16.27 | 2.00 | 502 | 73 | 0.910 |
| 12:47:16 | 13-AU | 17.27 | 3.00 | 535 | 106 | 0.760 |
| 12:48:16 | 13-AU | 18.27 | 4.00 | 564 | 135 | 0.660 |
| 12:49:16 | 13-AU | 19.27 | 5.00 | 593 | 164 | 0.586 |
| 12:50:16 | 13-AU | 20.27 | 6.00 | 619 | 190 | 0.529 |
| 12:51:16 | 13-AU | 21.27 | 7.00 | 647 | 218 | 0.483 |
| 12:52:16 | 13-AU | 22.27 | 8.00 | 684 | 255 | 0.445 |
| 12:53:16 | 13-AU | 23.27 | 9.00 | 722 | 293 | 0.413 |
| 12:54:16 | 13-AU | 24.27 | 10.00 | 760 | 331 | 0.385 |
| 12:56:16 | 13-AU | 26.27 | 12.00 | 841 | 412 | 0.340 |
| 12:58:16 | 13-AU | 28.27 | 14.00 | 944 | 514 | 0.305 |
| 13: 0:16 | 13-AU | 30.27 | 16.00 | 1045 | 616 | 0.277 |
| 13: 2:16 | 13-AU | 32.27 | 18.00 | 1154 | 724 | 0.254 |
| 13: 4:16 | 13-AU | 34.27 | 20.00 | 1282 | 853 | 0.234 |
| 13: 6:16 | 13-AU | 36.27 | 22.00 | 1412 | 983 | 0.217 |
| 13: 8:16 | 13-AU | 38.27 | 24.00 | 1565 | 1136 | 0.203 |
| 13:10:16 | 13-AU | 40.27 | 26.00 | 1726 | 1297 | 0.190 |
| 13:12:16 | 13-AU | 42.27 | 28.00 | 1898 | 1468 | 0.179 |
| 13:14:16 | 13-AU | 44.27 | 30.00 | 2082 | 1653 | 0.169 |
| 13:19:16 | 13-AU | 49.27 | 35.00 | 2584 | 2155 | 0.149 |
| 13:24:16 | 13-AU | 54.27 | 40.00 | 3030 | 2600 | 0.132 |
| 13:29:16 | 13-AU | 59.27 | 45.00 | 3489 | 3060 | 0.120 |
| 13:34:16 | 13-AU | 64.27 | 50.00 | 3868 | 3439 | 0.109 |
| 13:39:16 | 13-AU | 69.27 | 55.00 | 4225 | 3795 | 0.100 |
| 13:44:16 | 13-AU | 74.27 | 60.00 | 4553 | 4124 | 0.093 |
| 13:48:18 | 13-AU | 78.30 | 64.03 | 4789 | 4359 | 0.087 |

TEST PHASE : FLOW PERIOD # 2

| TIME OF DAY | DATE DD-MM | ELAPSED TIME,MIN | DELTA TIME,MIN | BOT HOLE PRESSURE PSIA |
|----------------|---------------|---------------------|-------------------|------------------------------|
| 13:48:18 | 13-AU | 78.30 | 0.00 | 465 |
| 13:53:18 | 13-AU | 83.30 | 5.00 | 466 |
| 13:58:18 | 13-AU | 88.30 | 10.00 | 466 |
| 14: 3:18 | 13-AU | 93.30 | 15.00 | 466 |
| 14: 8:18 | 13-AU | 98.30 | 20.00 | 466 |
| 14:13:18 | 13-AU | 103.30 | 25.00 | 466 |
| 14:18:18 | 13-AU | 108.30 | 30.00 | 467 |
| 14:23:18 | 13-AU | 113.30 | 35.00 | 470 |
| 14:28:18 | 13-AU | 118.30 | 40.00 | 472 |
| 14:33:18 | 13-AU | 123.30 | 45.00 | 474 |
| 14:38:18 | 13-AU | 128.30 | 50.00 | 476 |
| 14:43:18 | 13-AU | 133.30 | 55.00 | 479 |
| 14:48:18 | 13-AU | 138.30 | 60.00 | 482 |
| 14:53:18 | 13-AU | 143.30 | 65.00 | 484 |
| 14:58:18 | 13-AU | 148.30 | 70.00 | 486 |
| 15: 3:18 | 13-AU | 153.30 | 75.00 | 489 |
| 15: 8:18 | 13-AU | 158.30 | 80.00 | 490 |
| 15:13:18 | 13-AU | 163.30 | 85.00 | 491 |
| 15:18:18 | 13-AU | 168.30 | 90.00 | 492 |
| 15:19:44 | 13-AU | 169.74 | 91.44 | 492 |

TEST PHASE : SHUTIN PERIOD # 2

FINAL FLOW PRESSURE [PSIA] = 492
 PRODUCING TIME [MIN] = 105.71

| TIME OF DAY | DATE DD-MM | ELAPSED TIME,MIN | DELTA TIME,MIN | BOT HOLE PRESSURE PSIA | LOG DELTA P PSI | HORNER TIME |
|----------------|---------------|---------------------|-------------------|------------------------------|-----------------------|----------------|
| 15:19:44 | 13-AU | 169.74 | 0.00 | 492 | 0 | |
| 15:20:44 | 13-AU | 170.74 | 1.00 | 521 | 30 | 2.028 |
| 15:21:44 | 13-AU | 171.74 | 2.00 | 550 | 58 | 1.731 |
| 15:22:44 | 13-AU | 172.74 | 3.00 | 577 | 86 | 1.559 |
| 15:23:44 | 13-AU | 173.74 | 4.00 | 604 | 112 | 1.438 |
| 15:24:44 | 13-AU | 174.74 | 5.00 | 631 | 139 | 1.345 |
| 15:25:44 | 13-AU | 175.74 | 6.00 | 659 | 167 | 1.270 |
| 15:26:44 | 13-AU | 176.74 | 7.00 | 688 | 196 | 1.207 |
| 15:27:44 | 13-AU | 177.74 | 8.00 | 724 | 232 | 1.153 |
| 15:28:44 | 13-AU | 178.74 | 9.00 | 734 | 242 | 1.105 |
| 15:29:44 | 13-AU | 179.74 | 10.00 | 778 | 286 | 1.063 |
| 15:31:44 | 13-AU | 181.74 | 12.00 | 841 | 349 | 0.992 |
| 15:33:44 | 13-AU | 183.74 | 14.00 | 906 | 414 | 0.932 |
| 15:35:44 | 13-AU | 185.74 | 16.00 | 973 | 481 | 0.881 |
| 15:37:44 | 13-AU | 187.74 | 18.00 | 1045 | 553 | 0.837 |
| 15:39:44 | 13-AU | 189.74 | 20.00 | 1126 | 634 | 0.798 |
| 15:41:44 | 13-AU | 191.74 | 22.00 | 1212 | 720 | 0.764 |
| 15:43:44 | 13-AU | 193.74 | 24.00 | 1300 | 808 | 0.733 |

TEST PHASE : SHUTIN PERIOD # 2
 FINAL FLOW PRESSURE [PSIA] = 492
 PRODUCING TIME [MIN] = 105.71

| TIME OF DAY | DATE DD-MM | ELAPSED TIME,MIN | DELTA TIME,MIN | BOT HOLE PRESSURE PSIA | DELTA P PSI | LOG HORNER TIME |
|----------------|---------------|---------------------|-------------------|------------------------------|----------------|-----------------------|
| 15:45:44 | 13-AU | 195.74 | 26.00 | 1392 | 900 | 0.705 |
| 15:47:44 | 13-AU | 197.74 | 28.00 | 1491 | 999 | 0.679 |
| 15:49:44 | 13-AU | 199.74 | 30.00 | 1596 | 1104 | 0.655 |
| 15:54:44 | 13-AU | 204.74 | 35.00 | 1876 | 1385 | 0.604 |
| 15:59:44 | 13-AU | 209.74 | 40.00 | 2189 | 1697 | 0.561 |
| 16: 4:44 | 13-AU | 214.74 | 45.00 | 2513 | 2021 | 0.525 |
| 16: 9:44 | 13-AU | 219.74 | 50.00 | 2839 | 2348 | 0.493 |
| 16:14:44 | 13-AU | 224.74 | 55.00 | 3156 | 2664 | 0.466 |
| 16:19:44 | 13-AU | 229.74 | 60.00 | 3461 | 2969 | 0.441 |
| 16:24:44 | 13-AU | 234.74 | 65.00 | 3738 | 3246 | 0.419 |
| 16:29:44 | 13-AU | 239.74 | 70.00 | 3991 | 3499 | 0.400 |
| 16:34:44 | 13-AU | 244.74 | 75.00 | 4221 | 3729 | 0.382 |
| 16:39:44 | 13-AU | 249.74 | 80.00 | 4427 | 3935 | 0.366 |
| 16:44:44 | 13-AU | 254.74 | 85.00 | 4607 | 4115 | 0.351 |
| 16:49:44 | 13-AU | 259.74 | 90.00 | 4769 | 4277 | 0.337 |
| 16:54:44 | 13-AU | 264.74 | 95.00 | 4909 | 4417 | 0.325 |
| 16:59:44 | 13-AU | 269.74 | 100.00 | 5038 | 4546 | 0.313 |
| 17: 4:44 | 13-AU | 274.74 | 105.00 | 5150 | 4659 | 0.302 |
| 17: 9:44 | 13-AU | 279.74 | 110.00 | 5249 | 4757 | 0.292 |
| 17:14:44 | 13-AU | 284.74 | 115.00 | 5343 | 4851 | 0.283 |
| 17:19:44 | 13-AU | 289.74 | 120.00 | 5347 | 4855 | 0.274 |
| 17:24:44 | 13-AU | 294.74 | 125.00 | 5347 | 4855 | 0.266 |
| 17:27:49 | 13-AU | 297.81 | 128.07 | 5347 | 4855 | 0.261 |

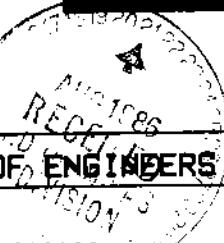
REPORT NO.
13708F
PAGE NO. 1

WELL PERFORMANCE
TESTING™ REPORT

11920
FLOPETROL JOHNSTON
Schlumberger

TEST DATE:
08-AUG-86

A Production System Analysis (NODAL™)
Based On Model Verified™ Interpretation



| | | | | | |
|---------------------------------|---------------|---------------------|---------------------------------------|-----------------|---------------------|
| Company: BASIC EARTH SCIENCE | | | Well: BASIC CORP. OF ENGINEERS #31-10 | | |
| TEST IDENTIFICATION | | | WELL LOCATION | | |
| Test Type | MFE DH DST | | Field | | |
| Test No. | 4 | | County | MC KENZIE | |
| Formation | INTERLAKE | | State | NORTH DAKOTA | |
| Test Interval (ft) | 12088 - 12138 | | Sec/Twn/Rng | 10T153NR101 | |
| Reference Depth | KELLY BUSHING | | Elevation (ft) | 2305 | |
| HOLE CONDITIONS | | | MUD PROPERTIES | | |
| Total Depth (MD/TUD) (ft) | 12138 / 12138 | | Mud Type | SALT GEL STARCH | |
| Hole Size (in) | 8 3/4 | | Mud Weight (lb/gal) | 10.7 | |
| Casing/Liner I.D. (in) | | | Mud Resistivity (ohm.m) | 0.04 @ 60 DEG.F | |
| Perf'd Interval/Net Pay (ft) .. | --/24 | | Filtrate Resistivity (ohm.m) .. | 0.05 @ 60 DEG.F | |
| Shot Density/Diameter (in) ... | | | Filtrate Chlorides (ppm) | 191000 | |
| INITIAL TEST CONDITIONS | | | TEST STRING CONFIGURATION | | |
| Initial Hydrostatic (psi) | 6820 | | Pipe Length (ft)/I.D. (in) ... | 11388 / 3.83 | |
| Gas Cushion Type | NONE | | Collar Length (ft)/I.D. (in) .. | 660 / 2.50 | |
| Surface Pressure (psi) | -- | | Packer Depths (ft) | 12088 | |
| Liquid Cushion Type | FRESH WATER | | Bottomhole Choke Size (in) ... | 15/16 | |
| Cushion Length (ft) | 1000 | | Gauge Depth (ft)/Type | 12110/MECH. | |
| NET PIPE RECOVERY | | | NET SAMPLE CHAMBER RECOVERY | | |
| Volume | Fluid Type | Properties | Volume | Fluid Type | Properties |
| 0.638 BBLS. | OIL | ASSUMED 40 DEG. API | 1.57 SCF | GAS | |
| 3.615 BBLS. | MUD | 0.04 @ 60 DEG. F | 320 CC | OIL | ASSUMED 40 DEG. API |
| | | 195000 PPM CL. | 1280 CC | MUD | 0.04 @ 60 DEG. F |
| | | | | | 197000 PPM CL. |
| | | | Pressure: 270 | GOR: 780 | GLR: 156 |
| INTERPRETATION RESULTS | | | ROCK/FLUID/WELLBORE PROPERTIES | | |
| Model of Behavior | HOMOGENEOUS | | Oil Density (deg. API) | ASSUMED 40 | |
| Fluid Type Used for Analysis . | OIL | | Basic Solids (%) | | |
| Reservoir Pressure (psi) | 6004 | | Gas Gravity | 0.650 | |
| Transmissibility (md.ft/cp) .. | 3.90 | | Water Cut (%) | 0 | |
| Effective Permeability (md) .. | 0.155 | | Viscosity (cp) | 0.954 | |
| Skin Factor/Damage Ratio | 0.99 / 1.25 | | Total Compressibility (1/psi) .. | 1.016E-5 | |
| Storativity Ratio | | | Porosity (%) | 10 | |
| Interporosity Flow Coeff. | | | Reservoir Temperature (F) | 254 | |
| Distance to an Anomaly (ft) .. | | | Form.Vol.Factor (bbl/STB) | 1.12 | |
| Radius of Investigation (ft) .. | 25 | | | | |
| Potentiometric Surface (ft) .. | | | | | |

PRODUCTION RATE DURING TEST: 27.2 BOPD AVG.

COMMENTS:

AS NOT ENOUGH OIL WAS RECOVERED TO OBTAIN A RELIABLE VALUE FOR API GRAVITY, IT WAS ASSUMED THAT THE API GRAVITY OF THE OIL IS 40 DEG. THE FINAL SHUT-IN PRESSURE BUILD-UP DATA WAS ANALYZED USING HORNER ANALYSIS FOR DETERMINATION OF P*, KH/U, AND SKIN. COMPLETION DESIGN SENSITIVITY PLOTS WERE GENERATED FOR VARIOUS FRACTURE HALF-LENGTHS, TO PREDICT FUTURE PRODUCTION POTENTIAL OF THE ZONE WITH A HYDRAULIC FRACTURE TREATMENT. SEE SENSITIVITY PLOTS FOLLOWING ON THE NEXT PAGE.

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SENSITIVITY ANALYSIS

Rate vs. Xf (vs. Time)

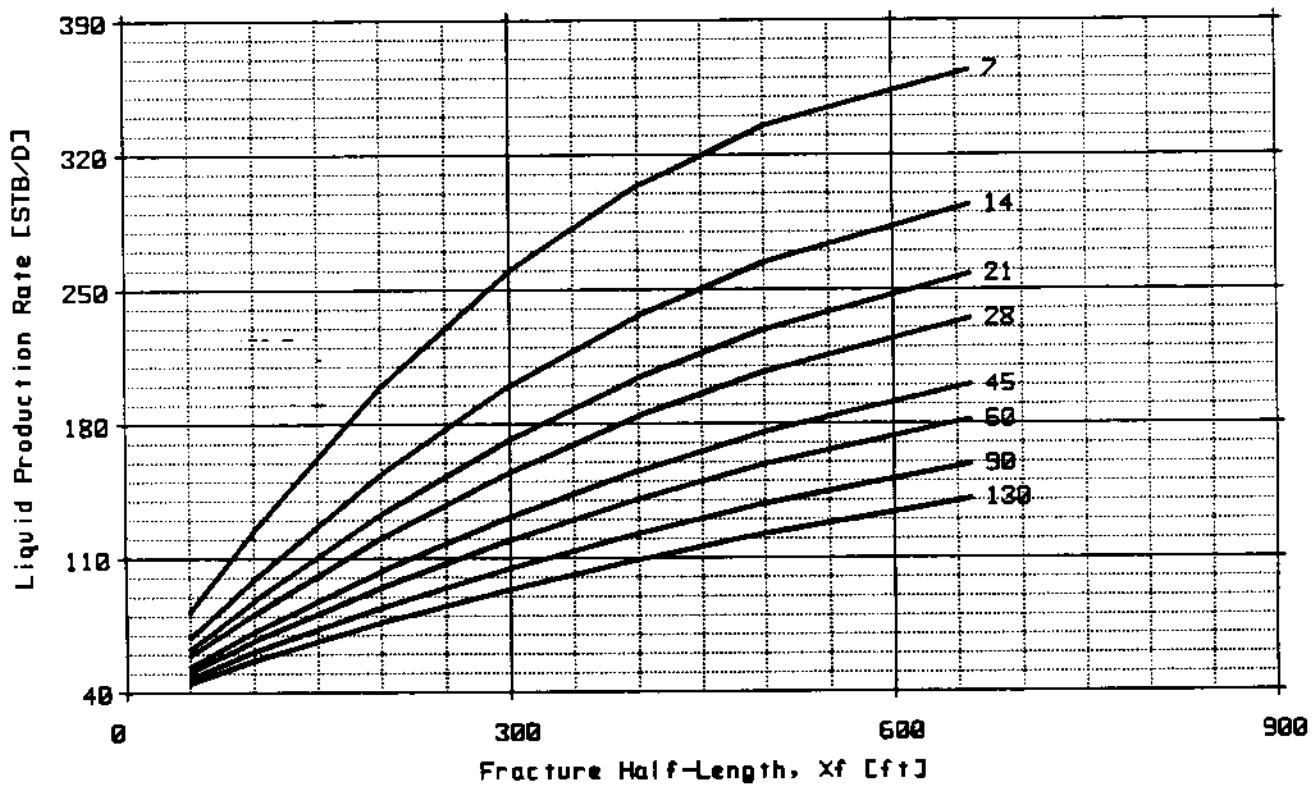
ACRE SPACING ASSUMED = 40 AC

FLOPETROL JOHNSTON

Schlumberger

Reservoir Pressure: 6004 psi Gas/Liquid Ratio: 156.0 SCF/STB
Permeability: 0.155 md Tubing Size: 2.441 in (id)
Net Thickness: 24.0 ft Wellhead Pressure: 50.0 psi

Fracture Conductivity, kf*w: 600.0 md.ft



Production Rate vs. Frac. Half-Length, Transient Conditions
7 to 130 days : ACRE SPACING ASSUMED = 40 AC

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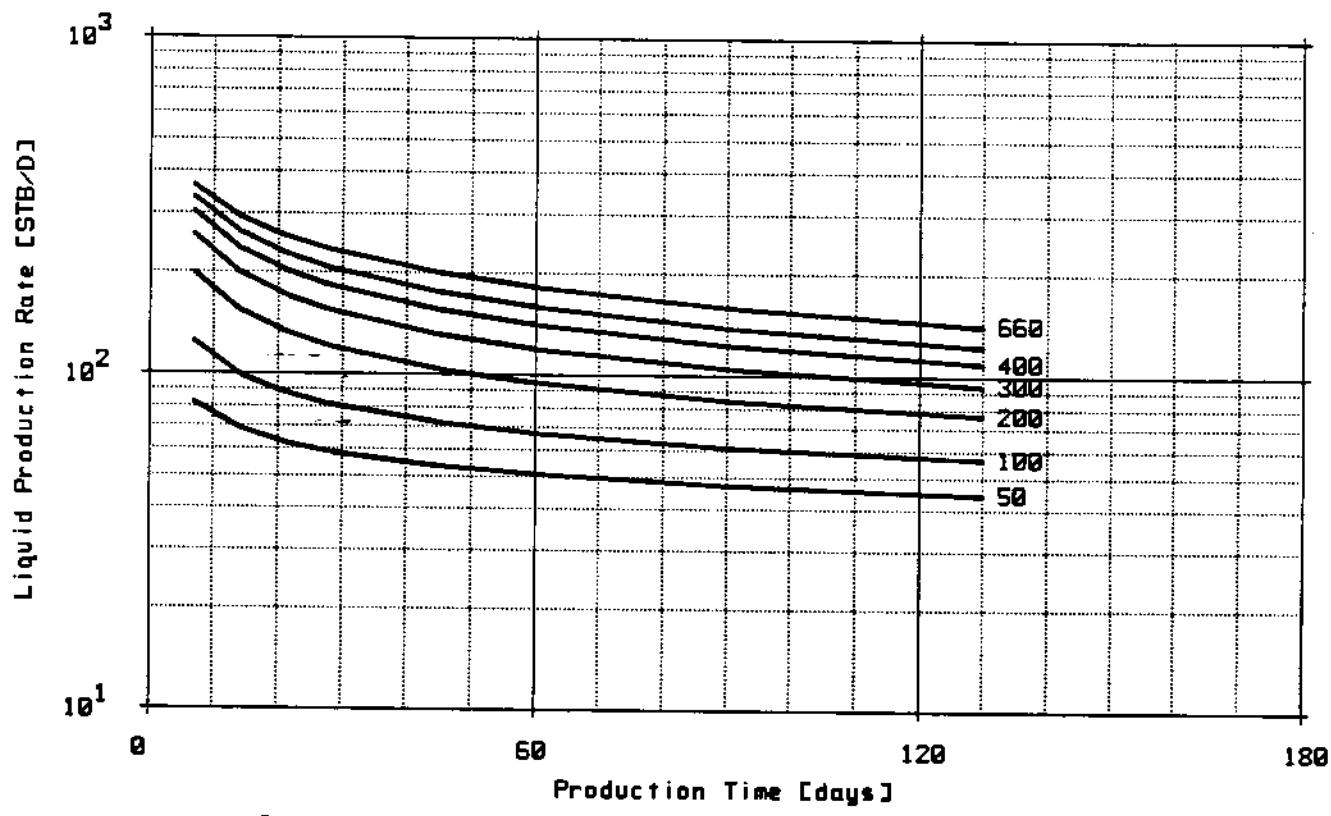
SENSITIVITY ANALYSIS
Rate vs. Time (vs. X_f)
ACRE SPACING ASSUMED = 40 AC

FLOPETROL JOHNSTON

Schlumberger

Reservoir Pressure: 6004 psi Gas/Liquid Ratio: 156.0 SCF/STB
Permeability: 0.155 md Tubing Size: 2.441 in (id)
Net Thickness: 24.0 ft Wellhead Pressure: 50.0 psi

Fracture Conductivity, $k_f w$: 600.0 md.ft



Effect of Time on Production Rate, for Fracture Half-Lengths
from 50 to 660 ft : ACRE SPACING ASSUMED = 40 AC

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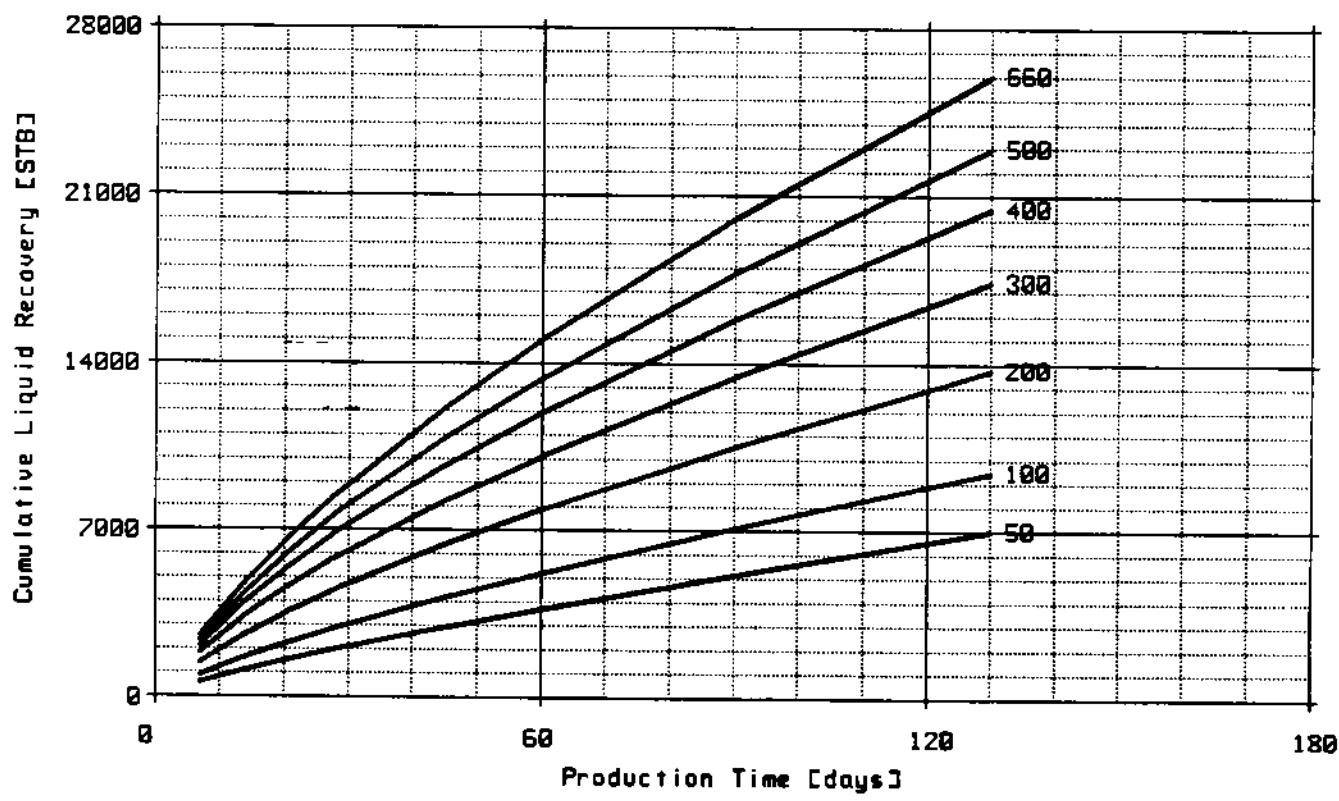
SENSITIVITY ANALYSIS
Recovery vs. Time (vs. x_f)
ACRE SPACING ASSUMED = 40 AC

FLOPETROL JOHNSTON

Schlumberger

Reservoir Pressure: 6004 psi Gas/Liquid Ratio: 156.0 SCF/STB
Permeability: 0.155 md Tubing Size: 2.441 in (id)
Net Thickness: 24.0 ft Wellhead Pressure: 50.0 psi

Fracture Conductivity, $k_f w$: 600.0 md.ft



Effect of Time on Cumulative Recovery, for Fracture Half-Lengths
from 50 to 660 ft : ACRE SPACING ASSUMED = 40 AC

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SENSITIVITY ANALYSIS
Input Data Summary
ACRE SPACING ASSUMED = 40 AC

FLOPETROL JOHNSTON
Schlumberger

Production Time [days]

| | | | | |
|------|------|-------|------|------|
| 7.0 | 14.0 | 21.0 | 28.0 | 45.0 |
| 60.0 | 90.0 | 130.0 | | |

Fracture Half-Length, xf [ft]

| | | | | |
|-------|-------|-------|-------|-------|
| 50.0 | 100.0 | 200.0 | 300.0 | 400.0 |
| 500.0 | 660.0 | | | |

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SEQUENCE OF EVENTS

FLOPETROL JOHNSTON

Schlumberger

| EVENT NO. | DATE | TIME (HR:MIN) | DESCRIPTION | ELAPSED TIME (MINS) | BHP (PSIA) | BLOW (IN.-H2O) |
|-----------|--------|---------------|----------------------------|---------------------|------------|----------------|
| 1 | 8-8-86 | 0443 | SET PACKER | -2.00 | 6820 | -- |
| 2 | | 0445 | OPENED TOOL-1/8"BUBBLHOSE | 0.00 | 507 | 1/2" BLOW |
| | | 0450 | | | | 1" BLOW |
| 3 | | 0500 | CLOSED FOR INITIAL SHUT-IN | 15.00 | 516 | 1" BLOW |
| | | 0530 | | | | BLOW DIED |
| 4 | | 0600 | FINISHED SHUT-IN | 74.00 | 5752 | -- |
| 5 | | 0600 | RE-OPENED TOOL | 75.00 | 541 | SURF. BLOW |
| | | 0630 | | | | SURF. BLOW |
| | | 0640 | | | | 1.5" BLOW |
| | | 0650 | | | | 4" BLOW |
| | | 0700 | | | | 6" BLOW |
| | | 0710 | | | | 10" BLOW |
| | | 0720 | | | | 14" BLOW |
| | | 0730 | | | | 20" BLOW |
| | | 0740 | | | | 26" BLOW |
| | | 0750 | | | | 32" BLOW |
| | | 0810 | | | | 41" BLOW |
| | | 0830 | | | | 51" BLOW |
| | | 0900 | | | | 63" BLOW |
| 6 | | 0930 | CLOSED FOR FINAL SHUT-IN | 285.00 | 591 | 72" BLOW |
| 7 | | 1400 | FINISHED SHUT-IN | 555.00 | 5666 | -- |
| 8 | | 1400 | PULLED PACKER LOOSE | 556.00 | 6820 | -- |

BOTTOMHOLE PRESSURE LOG

FIELD REPORT NO. 13708F

COMPANY : BASIC EARTH SCIENCE

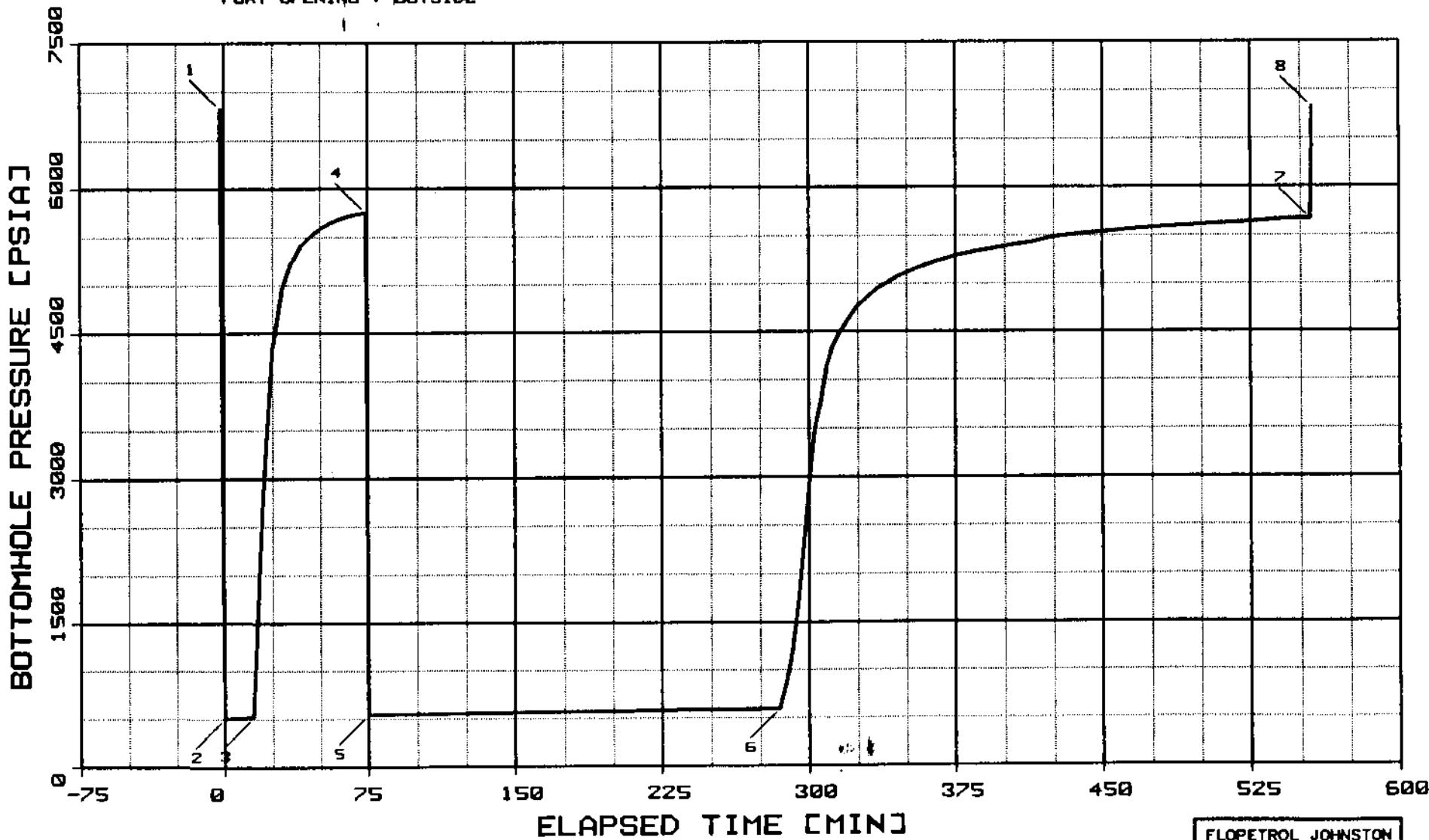
INSTRUMENT NO. J-2130

WELL : BASIC CORP. OF ENGINEERS 31-10

DEPTH : 12110 FT

CAPACITY : 0 PSI

PORT OPENING : OUTSIDE



 * WELL TEST DATA PRINTOUT *

FIELD REPORT # : 13708F

COMPANY : BASIC EARTH SCIENCE

WELL : BASIC CORP. OF ENGINEERS 31-10

INSTRUMENT # : J-2130
 CAPACITY [PSI] : 0.
 DEPTH [FT] : 12110.0
 PORT OPENING : OUTSIDE
 TEMPERATURE [DEG F] : 254.0

LABEL POINT INFORMATION

| # | TIME OF DAY HH:MM:SS | DATE DD-MM | EXPLANATION | ELAPSED TIME,MIN | BOT HOLE PRESSURE PSIA |
|---|----------------------------|---------------|--------------------------|---------------------|------------------------------|
| 1 | 4:43: 0 | 8-AU | HYDROSTATIC MUD | -2.00 | 6820 |
| 2 | 4:45: 0 | 8-AU | START FLOW | 0.00 | 507 |
| 3 | 5: 0: 0 | 8-AU | END FLOW & START SHUT-IN | 15.00 | 516 |
| 4 | 5:59: 0 | 8-AU | END SHUT-IN | 74.00 | 5752 |
| 5 | 6: 0: 0 | 8-AU | START FLOW | 75.00 | 541 |
| 6 | 9:30: 0 | 8-AU | END FLOW & START SHUT-IN | 285.00 | 591 |
| 7 | 14: 0: 0 | 8-AU | END SHUT-IN | 555.00 | 5666 |
| 8 | 14: 1: 0 | 8-AU | HYDROSTATIC MUD | 556.00 | 6820 |

SUMMARY OF FLOW PERIODS

| PERIOD | START ELAPSED TIME,MIN | END ELAPSED TIME,MIN | START DURATION MIN | PRESSURE PSIA | END PRESSURE PSIA |
|--------|------------------------------|----------------------------|--------------------------|------------------|-------------------------|
| 1 | 0.00 | 15.00 | 15.00 | 507 | 516 |
| 2 | 75.00 | 285.00 | 210.00 | 541 | 591 |

SUMMARY OF SHUTIN-PERIODS

| PERIOD | START ELAPSED TIME,MIN | END ELAPSED TIME,MIN | START DURATION MIN | PRESSURE PSIA | ENO PRESSURE PSIA | FINAL FLOW PRESSURE PSIA | PRODUCING TIME, MIN |
|--------|------------------------------|----------------------------|--------------------------|------------------|-------------------------|--------------------------------|------------------------|
| 1 | 15.00 | 74.00 | 59.00 | 516 | 5752 | 516 | 15.00 |
| 2 | 285.00 | 555.00 | 270.00 | 591 | 5666 | 591 | 225.00 |

TEST PHASE : FLOW PERIOD # 1

| TIME OF DAY | DATE DD-MM | ELAPSED TIME,MIN | DELTA TIME,MIN | BOT HOLE PRESSURE PSIA |
|----------------|---------------|---------------------|-------------------|------------------------------|
| 4:45: 0 | 8-AU | 0.00 | 0.00 | 507 |
| 4:50: 0 | 8-AU | 5.00 | 5.00 | 510 |
| 4:55: 0 | 8-AU | 10.00 | 10.00 | 513 |
| 5: 0: 0 | 8-AU | 15.00 | 15.00 | 516 |

TEST PHASE : SHUTIN PERIOD # 1

FINAL FLOW PRESSURE [PSIA] = 516
 PRODUCING TIME [MIN] = 15.00

| TIME OF DAY | DATE DD-MM | ELAPSED TIME,MIN | DELTA TIME,MIN | BOT HOLE PRESSURE PSIA | LOG DELTA P PSI | HORNER TIME |
|----------------|---------------|---------------------|-------------------|------------------------------|-----------------------|----------------|
| 5: 0: 0 | 8-AU | 15.00 | 0.00 | 516 | 0 | |
| 5: 1: 0 | 8-AU | 16.00 | 1.00 | 964 | 448 | 1.204 |
| 5: 2: 0 | 8-AU | 17.00 | 2.00 | 1413 | 897 | 0.929 |
| 5: 3: 0 | 8-AU | 18.00 | 3.00 | 1861 | 1345 | 0.778 |
| 5: 4: 0 | 8-AU | 19.00 | 4.00 | 2310 | 1794 | 0.677 |
| 5: 5: 0 | 8-AU | 20.00 | 5.00 | 2758 | 2242 | 0.602 |
| 5: 6: 0 | 8-AU | 21.00 | 6.00 | 3072 | 2556 | 0.544 |
| 5: 7: 0 | 8-AU | 22.00 | 7.00 | 3387 | 2871 | 0.497 |
| 5: 8: 0 | 8-AU | 23.00 | 8.00 | 3701 | 3185 | 0.459 |
| 5: 9: 0 | 8-AU | 24.00 | 9.00 | 4016 | 3500 | 0.426 |
| 5:10: 0 | 8-AU | 25.00 | 10.00 | 4330 | 3814 | 0.398 |
| 5:12: 0 | 8-AU | 27.00 | 12.00 | 4575 | 4059 | 0.352 |
| 5:14: 0 | 8-AU | 29.00 | 14.00 | 4820 | 4304 | 0.316 |
| 5:16: 0 | 8-AU | 31.00 | 16.00 | 4999 | 4483 | 0.287 |
| 5:18: 0 | 8-AU | 33.00 | 18.00 | 5114 | 4598 | 0.263 |
| 5:20: 0 | 8-AU | 35.00 | 20.00 | 5228 | 4712 | 0.243 |
| 5:22: 0 | 8-AU | 37.00 | 22.00 | 5300 | 4784 | 0.226 |
| 5:24: 0 | 8-AU | 39.00 | 24.00 | 5371 | 4855 | 0.211 |
| 5:26: 0 | 8-AU | 41.00 | 26.00 | 5427 | 4911 | 0.198 |
| 5:28: 0 | 8-AU | 43.00 | 28.00 | 5468 | 4952 | 0.186 |
| 5:30: 0 | 8-AU | 45.00 | 30.00 | 5509 | 4993 | 0.176 |
| 5:35: 0 | 8-AU | 50.00 | 35.00 | 5584 | 5068 | 0.155 |
| 5:40: 0 | 8-AU | 55.00 | 40.00 | 5643 | 5127 | 0.138 |
| 5:45: 0 | 8-AU | 60.00 | 45.00 | 5679 | 5163 | 0.125 |
| 5:50: 0 | 8-AU | 65.00 | 50.00 | 5711 | 5195 | 0.114 |
| 5:55: 0 | 8-AU | 70.00 | 55.00 | 5738 | 5222 | 0.105 |
| 5:59: 0 | 8-AU | 74.00 | 59.00 | 5752 | 5236 | 0.098 |

TEST PHASE : FLOW PERIOD # 2

| TIME OF DAY | DATE | ELAPSED TIME,MIN | DELTA TIME,MIN | BOT HOLE PRESSURE PSIA |
|----------------|-------|---------------------|-------------------|------------------------------|
| HH:MM:SS | DD-MM | ***** | ***** | ***** |
| 6: 0: 0 | 8-AU | 75.00 | 0.00 | 541 |
| 6: 5: 0 | 8-AU | 80.00 | 5.00 | 542 |
| 6:10: 0 | 8-AU | 85.00 | 10.00 | 543 |
| 6:15: 0 | 8-AU | 90.00 | 15.00 | 545 |
| 6:20: 0 | 8-AU | 95.00 | 20.00 | 546 |
| 6:25: 0 | 8-AU | 100.00 | 25.00 | 547 |
| 6:30: 0 | 8-AU | 105.00 | 30.00 | 548 |
| 6:35: 0 | 8-AU | 110.00 | 35.00 | 549 |
| 6:40: 0 | 8-AU | 115.00 | 40.00 | 551 |
| 6:45: 0 | 8-AU | 120.00 | 45.00 | 552 |
| 6:50: 0 | 8-AU | 125.00 | 50.00 | 553 |
| 6:55: 0 | 8-AU | 130.00 | 55.00 | 554 |
| 7: 0: 0 | 8-AU | 135.00 | 60.00 | 555 |
| 7: 5: 0 | 8-AU | 140.00 | 65.00 | 556 |
| 7:10: 0 | 8-AU | 145.00 | 70.00 | 558 |
| 7:15: 0 | 8-AU | 150.00 | 75.00 | 559 |
| 7:20: 0 | 8-AU | 155.00 | 80.00 | 560 |
| 7:25: 0 | 8-AU | 160.00 | 85.00 | 561 |
| 7:30: 0 | 8-AU | 165.00 | 90.00 | 562 |
| 7:35: 0 | 8-AU | 170.00 | 95.00 | 564 |
| 7:40: 0 | 8-AU | 175.00 | 100.00 | 565 |
| 7:45: 0 | 8-AU | 180.00 | 105.00 | 566 |
| 7:50: 0 | 8-AU | 185.00 | 110.00 | 567 |
| 7:55: 0 | 8-AU | 190.00 | 115.00 | 568 |
| 8: 0: 0 | 8-AU | 195.00 | 120.00 | 570 |
| 8: 5: 0 | 8-AU | 200.00 | 125.00 | 571 |
| 8:10: 0 | 8-AU | 205.00 | 130.00 | 572 |
| 8:15: 0 | 8-AU | 210.00 | 135.00 | 573 |
| 8:20: 0 | 8-AU | 215.00 | 140.00 | 574 |
| 8:25: 0 | 8-AU | 220.00 | 145.00 | 576 |
| 8:30: 0 | 8-AU | 225.00 | 150.00 | 577 |
| 8:35: 0 | 8-AU | 230.00 | 155.00 | 578 |
| 8:40: 0 | 8-AU | 235.00 | 160.00 | 579 |
| 8:45: 0 | 8-AU | 240.00 | 165.00 | 580 |
| 8:50: 0 | 8-AU | 245.00 | 170.00 | 581 |
| 8:55: 0 | 8-AU | 250.00 | 175.00 | 583 |
| 9: 0: 0 | 8-AU | 255.00 | 180.00 | 584 |
| 9: 5: 0 | 8-AU | 260.00 | 185.00 | 585 |
| 9:10: 0 | 8-AU | 265.00 | 190.00 | 586 |
| 9:15: 0 | 8-AU | 270.00 | 195.00 | 587 |
| 9:20: 0 | 8-AU | 275.00 | 200.00 | 589 |
| 9:25: 0 | 8-AU | 280.00 | 205.00 | 590 |
| 9:30: 0 | 8-AU | 285.00 | 210.00 | 591 |

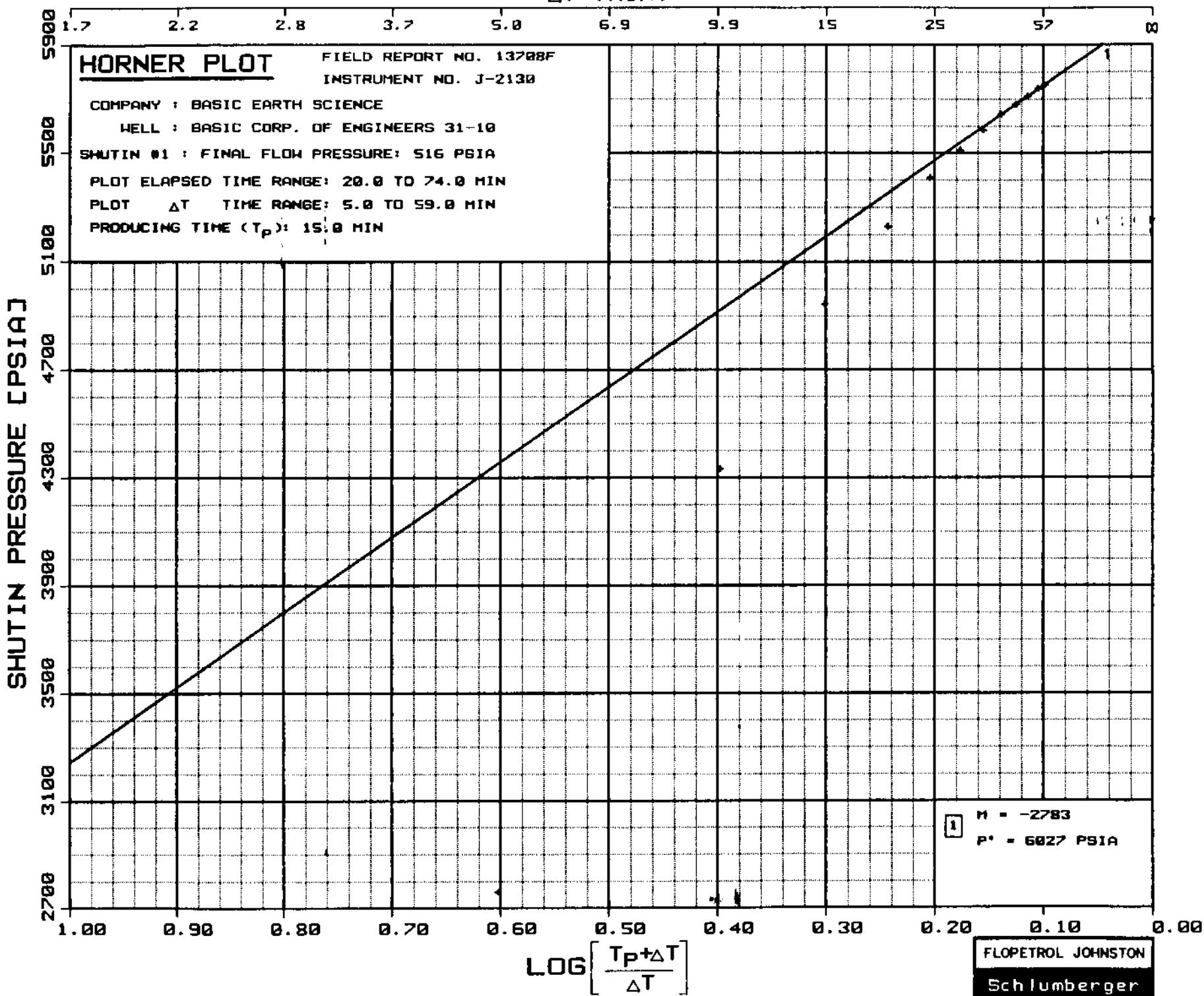
TEST PHASE : SHUTIN PERIOD # 2
 FINAL FLOW PRESSURE [PSIA] = 591
 PRODUCING TIME [MIN] = 225.00

| TIME OF DAY | DATE DD-MM | ELAPSED TIME, MIN | DELTA TIME, MIN | BOT HOLE PRESSURE PSIA | DELTA P PSI | LOG HORNER TIME |
|----------------|---------------|----------------------|--------------------|------------------------------|----------------|-----------------------|
| ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| 9:30: 0 | 8-AU | 285.00 | 0.00 | 591 | 0 | |
| 9:31: 0 | 8-AU | 286.00 | 1.00 | 682 | 91 | 2.354 |
| 9:32: 0 | 8-AU | 287.00 | 2.00 | 753 | 162 | 2.055 |
| 9:33: 0 | 8-AU | 288.00 | 3.00 | 837 | 246 | 1.881 |
| 9:34: 0 | 8-AU | 289.00 | 4.00 | 927 | 336 | 1.758 |
| 9:35: 0 | 8-AU | 290.00 | 5.00 | 1034 | 443 | 1.663 |
| 9:36: 0 | 8-AU | 291.00 | 6.00 | 1149 | 558 | 1.585 |
| 9:37: 0 | 8-AU | 292.00 | 7.00 | 1279 | 688 | 1.520 |
| 9:38: 0 | 8-AU | 293.00 | 8.00 | 1433 | 842 | 1.464 |
| 9:39: 0 | 8-AU | 294.00 | 9.00 | 1617 | 1026 | 1.415 |
| 9:40: 0 | 8-AU | 295.00 | 10.00 | 1794 | 1203 | 1.371 |
| 9:42: 0 | 8-AU | 297.00 | 12.00 | 2232 | 1641 | 1.296 |
| 9:44: 0 | 8-AU | 299.00 | 14.00 | 2690 | 2099 | 1.232 |
| 9:46: 0 | 8-AU | 301.00 | 16.00 | 3127 | 2536 | 1.178 |
| 9:48: 0 | 8-AU | 303.00 | 18.00 | 3500 | 2909 | 1.130 |
| 9:50: 0 | 8-AU | 305.00 | 20.00 | 3679 | 3088 | 1.088 |
| 9:52: 0 | 8-AU | 307.00 | 22.00 | 3896 | 3305 | 1.050 |
| 9:54: 0 | 8-AU | 309.00 | 24.00 | 4128 | 3537 | 1.016 |
| 9:56: 0 | 8-AU | 311.00 | 26.00 | 4268 | 3677 | 0.985 |
| 9:58: 0 | 8-AU | 313.00 | 28.00 | 4377 | 3786 | 0.956 |
| 10: 0: 0 | 8-AU | 315.00 | 30.00 | 4457 | 3866 | 0.929 |
| 10: 5: 0 | 8-AU | 320.00 | 35.00 | 4613 | 4022 | 0.871 |
| 10:10: 0 | 8-AU | 325.00 | 40.00 | 4768 | 4177 | 0.821 |
| 10:15: 0 | 8-AU | 330.00 | 45.00 | 4857 | 4266 | 0.778 |
| 10:20: 0 | 8-AU | 335.00 | 50.00 | 4945 | 4354 | 0.740 |
| 10:25: 0 | 8-AU | 340.00 | 55.00 | 5006 | 4415 | 0.707 |
| 10:30: 0 | 8-AU | 345.00 | 60.00 | 5067 | 4476 | 0.677 |
| 10:35: 0 | 8-AU | 350.00 | 65.00 | 5112 | 4521 | 0.649 |
| 10:40: 0 | 8-AU | 355.00 | 70.00 | 5156 | 4565 | 0.625 |
| 10:45: 0 | 8-AU | 360.00 | 75.00 | 5192 | 4601 | 0.602 |
| 10:50: 0 | 8-AU | 365.00 | 80.00 | 5228 | 4637 | 0.581 |
| 10:55: 0 | 8-AU | 370.00 | 85.00 | 5258 | 4667 | 0.562 |
| 11: 0: 0 | 8-AU | 375.00 | 90.00 | 5287 | 4696 | 0.544 |
| 11: 5: 0 | 8-AU | 380.00 | 95.00 | 5310 | 4719 | 0.527 |
| 11:10: 0 | 8-AU | 385.00 | 100.00 | 5332 | 4741 | 0.512 |
| 11:15: 0 | 8-AU | 390.00 | 105.00 | 5351 | 4760 | 0.497 |
| 11:20: 0 | 8-AU | 395.00 | 110.00 | 5369 | 4778 | 0.484 |
| 11:25: 0 | 8-AU | 400.00 | 115.00 | 5385 | 4794 | 0.471 |
| 11:30: 0 | 8-AU | 405.00 | 120.00 | 5401 | 4810 | 0.459 |
| 11:35: 0 | 8-AU | 410.00 | 125.00 | 5418 | 4827 | 0.447 |
| 11:40: 0 | 8-AU | 415.00 | 130.00 | 5434 | 4843 | 0.436 |
| 11:45: 0 | 8-AU | 420.00 | 135.00 | 5459 | 4868 | 0.426 |
| 11:50: 0 | 8-AU | 425.00 | 140.00 | 5484 | 4893 | 0.416 |
| 11:55: 0 | 8-AU | 430.00 | 145.00 | 5496 | 4905 | 0.407 |
| 12: 0: 0 | 8-AU | 435.00 | 150.00 | 5507 | 4916 | 0.398 |
| 12: 5: 0 | 8-AU | 440.00 | 155.00 | 5516 | 4925 | 0.389 |
| 12:10: 0 | 8-AU | 445.00 | 160.00 | 5525 | 4934 | 0.381 |
| 12:15: 0 | 8-AU | 450.00 | 165.00 | 5534 | 4943 | 0.374 |

TEST PHASE : SHUTIN PERIOD # 2
FINAL FLOW PRESSURE [PSIA] = 591
PRODUCING TIME [MIN] = 225.00

| TIME OF DAY | DATE DD-MM | ELAPSED TIME,MIN | DELTA TIME,MIN | BOT HOLE PRESSURE PSIA | DELTA P PSI | LOG HORNER TIME |
|----------------|---------------|---------------------|-------------------|------------------------------|----------------|-----------------------|
| ***** | ***** | ***** | ***** | ***** | ***** | ***** |
| 12:20: 0 | 8-AU | 455.00 | 170.00 | 5543 | 4952 | 0.366 |
| 12:25: 0 | 8-AU | 460.00 | 175.00 | 5552 | 4961 | 0.359 |
| 12:30: 0 | 8-AU | 465.00 | 180.00 | 5561 | 4970 | 0.352 |
| 12:35: 0 | 8-AU | 470.00 | 185.00 | 5569 | 4978 | 0.346 |
| 12:40: 0 | 8-AU | 475.00 | 190.00 | 5577 | 4986 | 0.339 |
| 12:45: 0 | 8-AU | 480.00 | 195.00 | 5584 | 4993 | 0.333 |
| 12:50: 0 | 8-AU | 485.00 | 200.00 | 5591 | 5000 | 0.327 |
| 12:55: 0 | 8-AU | 490.00 | 205.00 | 5597 | 5006 | 0.322 |
| 13: 0: 0 | 8-AU | 495.00 | 210.00 | 5602 | 5011 | 0.316 |
| 13: 5: 0 | 8-AU | 500.00 | 215.00 | 5609 | 5018 | 0.311 |
| 13:10: 0 | 8-AU | 505.00 | 220.00 | 5616 | 5025 | 0.306 |
| 13:15: 0 | 8-AU | 510.00 | 225.00 | 5622 | 5031 | 0.301 |
| 13:20: 0 | 8-AU | 515.00 | 230.00 | 5627 | 5036 | 0.296 |
| 13:25: 0 | 8-AU | 520.00 | 235.00 | 5633 | 5042 | 0.292 |
| 13:30: 0 | 8-AU | 525.00 | 240.00 | 5639 | 5048 | 0.287 |
| 13:35: 0 | 8-AU | 530.00 | 245.00 | 5647 | 5056 | 0.283 |
| 13:40: 0 | 8-AU | 535.00 | 250.00 | 5654 | 5063 | 0.279 |
| 13:45: 0 | 8-AU | 540.00 | 255.00 | 5660 | 5069 | 0.275 |
| 13:50: 0 | 8-AU | 545.00 | 260.00 | 5666 | 5075 | 0.271 |
| 13:55: 0 | 8-AU | 550.00 | 265.00 | 5666 | 5075 | 0.267 |
| 14: 0: 0 | 8-AU | 555.00 | 270.00 | 5666 | 5075 | 0.263 |

ΔT (MIN)



LOG LOG PLOT

COMPANY : BASIC EARTH SCIENCE

WELL : BASIC CORP. OF ENGINEERS 31-10

FIELD REPORT NO. 13708F

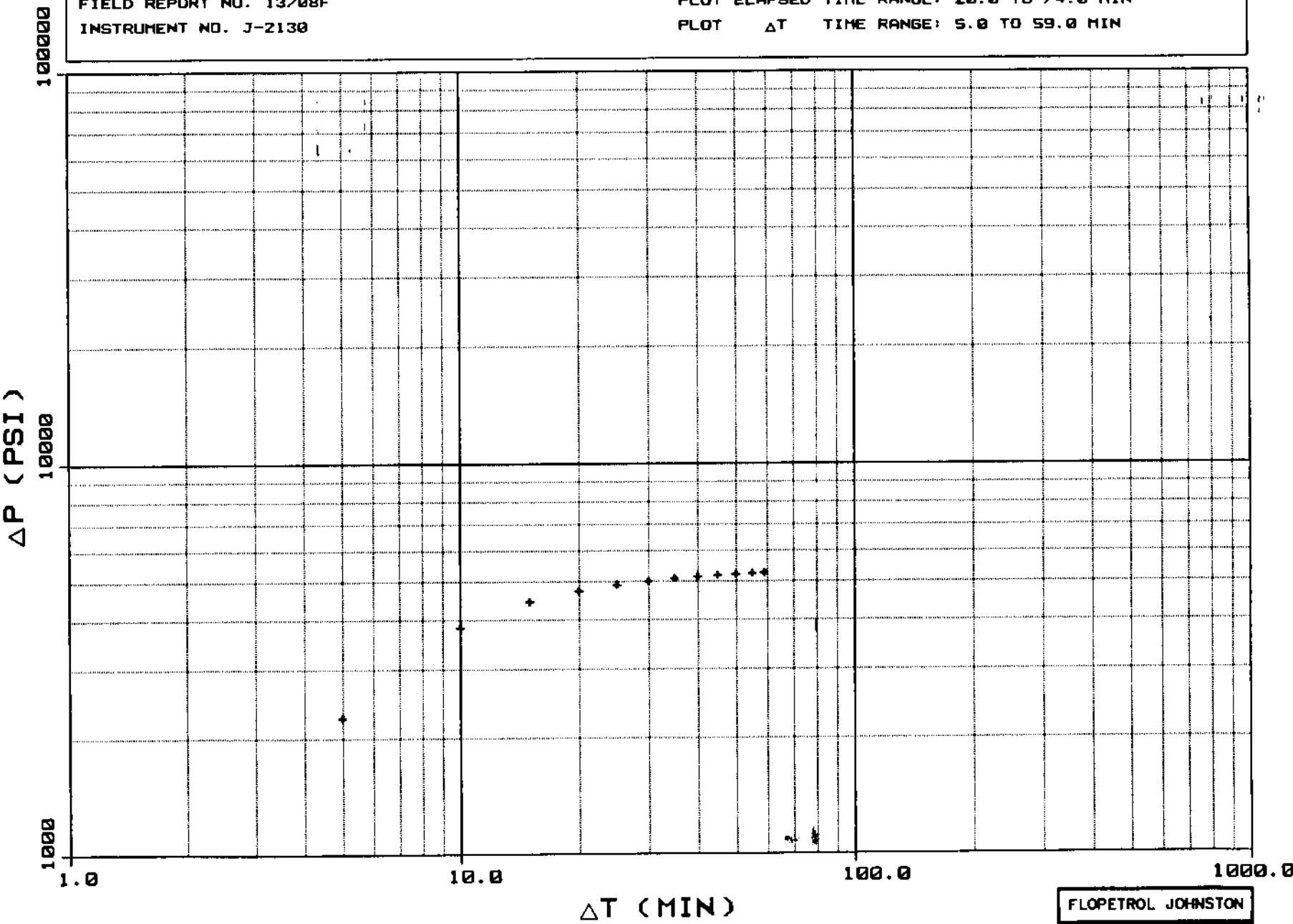
INSTRUMENT NO. J-2130

SHUT-IN #1 :

FINAL FLOW PRESSURE (PHF): 516 PSIA

PLOT ELAPSED TIME RANGE: 20.0 TO 74.0 MIN

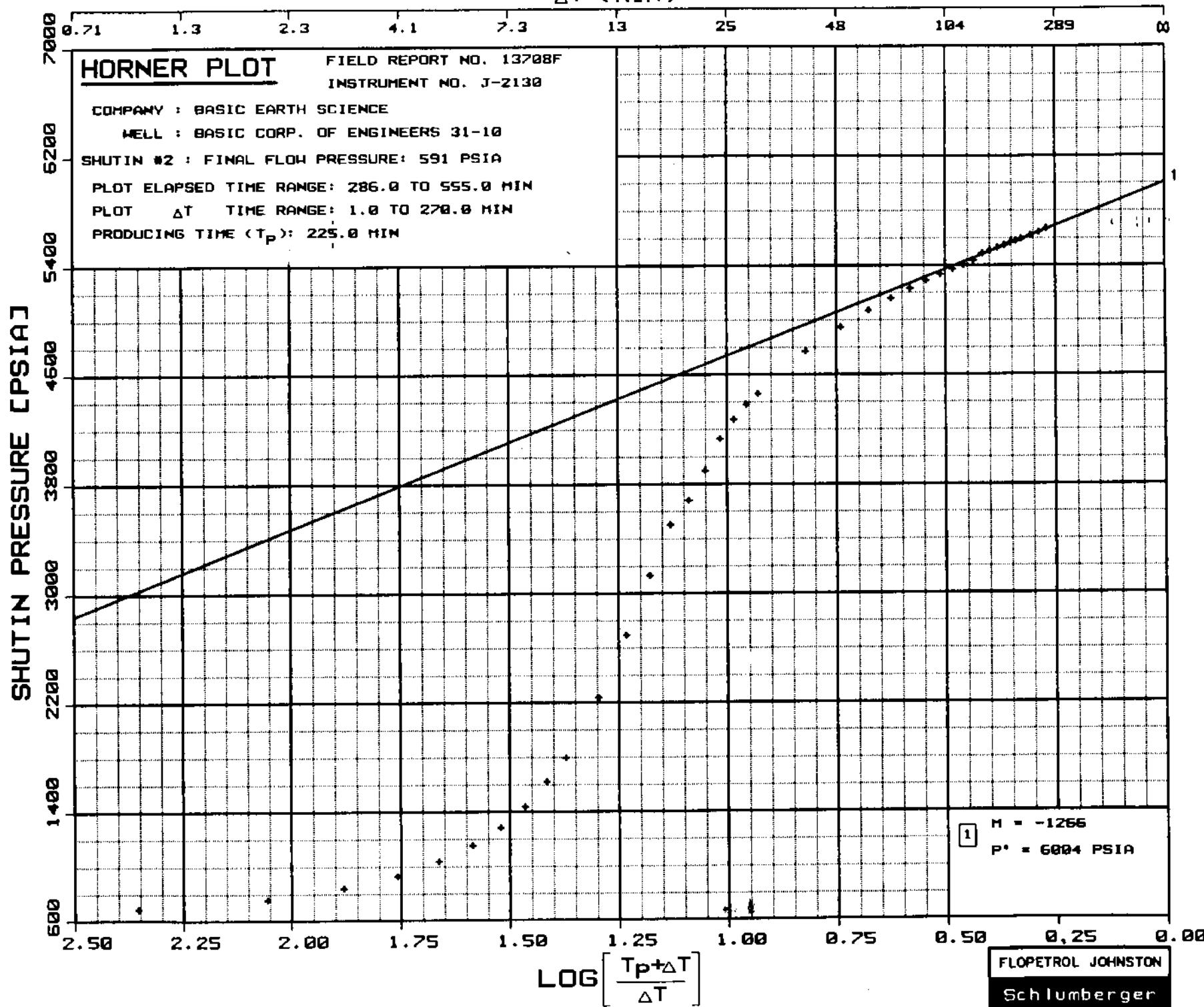
PLOT AT TIME RANGE: 5.0 TO 59.0 MIN



FLOPETROL JOHNSTON

© 1988 Lubrication

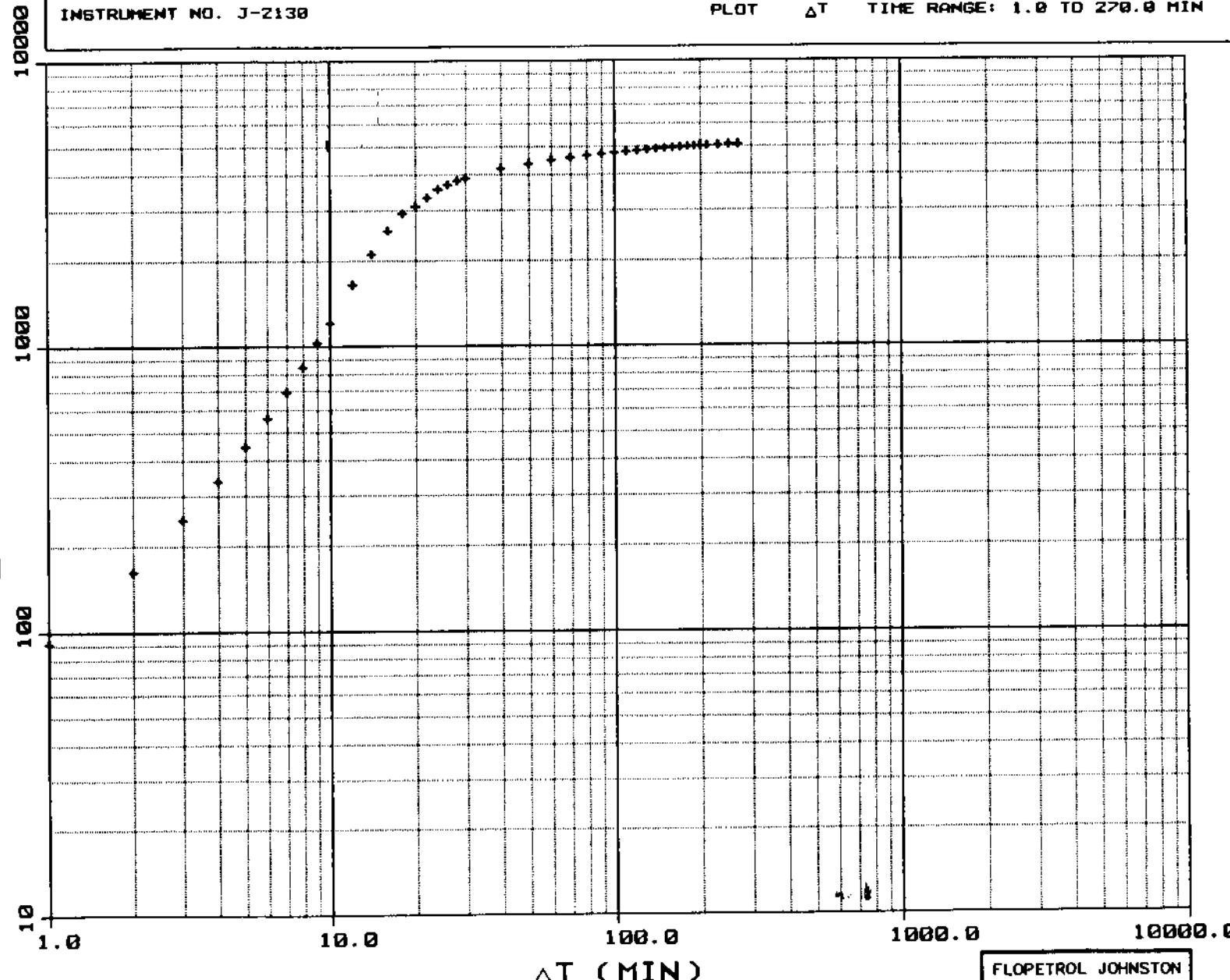
ΔT (MIN)



LOG LOG PLOT

COMPANY : BASIC EARTH SCIENCE
WELL : BASIC CORP. OF ENGINEERS 31-10
FIELD REPORT NO. 13708F
INSTRUMENT NO. J-2130

SHUT-IN #2 :
FINAL FLOW PRESSURE (PHF): 591 PSIA
PLOT ELAPSED TIME RANGE: 286.0 TO 555.0 MIN
PLOT ΔT TIME RANGE: 1.0 TO 270.0 MIN



FLOPETROL JOHNSTON

Bob Luebberman

WPT Sensitivity Analysis Summary
File : 13708F Case ID : ACRE SPACING ASSUMED = 40 AC

ISS Report Pages & Data Records

Production Rate vs. Xf (vs. Time) ... ISS Report Page 2 ; Data Record 12
Production Rate vs. Time (vs. Xf) ... ISS Report Page 3 ; Data Record 13
Cumulative Recovery vs. Xf (vs. Time) ... ISS Report Page -- ; Data Record 14
Cumulative Recovery vs. Time (vs. Xf) ... ISS Report Page 4 ; Data Record 15

Summary Printout ... ISS Report Page 5

Input Data for (Xf) Sensitivity

Produced Fluid & In-Place Fluid Information

Produced Fluid is primarily Liquid
Producing Gas/Liquid Ratio [SCF/STB] 156.00
Producing Water/Total Liquid Ratio [Water Cut] 0.00000E+00
Reservoir Oil Saturation [So, fraction] 0.7000
Reservoir Water Saturation [Sw, fraction] 0.3000
Reservoir Gas Saturation [Sg, fraction] 0.0000

Fluid Property Data

Water Specific Gravity 1.0700
Water Salinity [ppm] 1000.0
Oil (or Condensate) API Gravity 40.000
Oil Solution GOR & Bub.Pt.Pres. Correlation Standing
Oil Formation Volume Factor Correlation Standing
Gas Gravity at Standard Conditions [Air=1.0] 0.6500
Mole % CO2 0.000
Mole % H2S 0.000
Mole % N2 0.000

Flowline, Wellhead, Tubing, and Casing Data

Start at Wellhead (no Flowline)
Wellhead Temperature [deg F] 60.00
Wellhead Pressure [psig] 50.000
Tubing Inside Diameter [inch] 2.4410
Tubing Absolute Roughness [ft] 5.00000E-05
Tubing Length [ft] 12088.
Tubing Vertical Multiphase Flow Correlation Hagedorn-Brown
Casing Inside Diameter [inch] 6.3360
Casing-Tubing Packer Depth [measured depth, ft] 12088.
Total Depth [measured depth to mid-formation, ft] ... 12113.
True Vertical Depth [to mid-formation, ft] 12113.

Input Data for (Xf) Sensitivity

Reservoir and Near-Wellbore Data

| | |
|---|-----------|
| Initial Reservoir Pressure [Pi, psia] | 6004.0 |
| Reservoir Temperature [deg F] | 254.00 |
| (Total) Permeability [k, md] | 0.15500 |
| (Net Productive) Thickness [h, ft] | 24.000 |
| Rock Type | Sandstone |
| Porosity [fraction] | 0.10000 |
| Fracture Conductivity [kfew, md.ft] | 600.00 |

Reservoir Total (Equivalent Single-Phase) Properties

| | |
|---|-------------|
| Total Liquid Viscosity [cp] | 0.95444 |
| Total Liquid Form.Vol.Factor [bbl/STB] | 1.1157 |
| (Vogel) Bub.Pt.Pres. [psia, 0.0=single-phase IPR] ... | 915.51 |
| Total Compressibility [1/psi] | 1.01588E-05 |
| Wellbore Storage Factor [bbl/psi] | 0.00000E+00 |

Sensitivity Parameter Values

Production Time [days]

| | | | | | |
|-------|-------|-------|-------|-------|---|
| 7.000 | 14.00 | 21.00 | 28.00 | 45.00 | — |
| 60.00 | 90.00 | 130.0 | | | — |

Fracture Half-Length, Xf [ft]

| | | | | | |
|-------|-------|-------|-------|-------|---|
| 50.00 | 100.0 | 200.0 | 300.0 | 400.0 | — |
| 500.0 | 600.0 | | | | — |

INTAKE Flowrate Range 20 Uneven-Spaced Rates

INTAKE Minimum Liquid Rate [STB/D] 1.0000

INTAKE Maximum Liquid Rate [STB/D] 5000.0

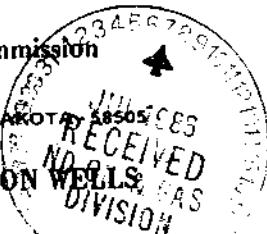
Time and Date

| | |
|--|-----------------------|
| Option Execution began | 10:02:58 on 12-AUG-86 |
| Data Input required | 1 min 25 sec |
| Data Generation required | 2 min 19 sec |
| Option Execution completed | 10:06:39 on 12-AUG-86 |
| Input & Output Page(s) completed | 10:10:27 on 12-AUG-86 |

North Dakota State Industrial Commission
Oil and Gas Division

900 EAST BOULEVARD - BISMARCK, NORTH DAKOTA 58505

SUNDRY NOTICES AND REPORTS ON WELLS



1. Notice of Intention to Drill or Redrill _____
2. Notice of Intention to Change Plans _____
3. Notice of Intention to Pull Casing _____
4. Notice of Intention to Abandon Well _____
5. Report of Water Shut-Off _____
6. Report of Shooting or Acidizing _____

7. Report of Casing Surface Casing & Cementing _____
8. Report of Redrilling or Repair _____
9. Supplementary History _____
10. Well Potential Test _____
11. Drilling Prognosis _____
12. Notice of Spud _____

NAME OF LEASE Basic Corps of Engineers

Date July 3, 1986

WELL NO. 31-10 is located 660 ft. from (N) (E) line and 2305 ft. from the (E) (W) line

of Section 10 Township 153N Range 101W in McKenzie

County, Baker Field Red River Pool. The elevation of the ground

is 1851 feet above sea level.

Name and Address of Contractor, or Company which will do work is: Shelby Drilling Inc.
5350 S. Roslyn, Suite 300
Englewood, CO 80111

(DETAILS OF WORK)

(State names of, and expected depth of objective sand; show sizes, weight, and lengths of proposed casing,
indicate mud weights, cementing points, and all other details of work)

Spud well 6/20/86 @ 11:00 pm, drilling contractor is Shelby Drilling Inc. Rig #52.

Surface Casing: 75 jts 36# and 40# 9-5/8" K55, set at 2954'. Cemented with 850 sx Howco Lite and 250 sx Class "A", both mixed with $\frac{1}{2}$ #/sx celloflakes and 2% CaCl. Good returns, no cement to surface. Bumped plug w/2200 psi, held ok. Pumped top job of 120 sx Class "A" w/3% CaCl & $\frac{1}{2}$ #/sx celloflakes, good returns w/cement to surface.

Company Basic Earth Science Systems, Inc.

Do not write in this space
JUL 7 1986

Address P.O. Box 3088, Englewood CO 80155

Approved 19

By Jeffery E. Jones

By F. Williamson

Title Vice President

Title



Earth Science Systems, Inc.

P.O. Box 3088
Englewood, Colorado 80155
(303) 792-5230

July 3, 1986



North Dakota Industrial Commission
Oil and Gas Division
900 East Boulevard
Bismarck, ND 58505

Project Manager, Garrison Project Office
Administration Building
Riverdale, ND 58565

Chief, Operations Division
Corps of Engineers
6014 U.S. Post Office and Courthouse
Omaha, NE 68102

Re: Basic Corps of Engineers #31-30
Sec. 10-T153N-R101W
McKenzie County, ND

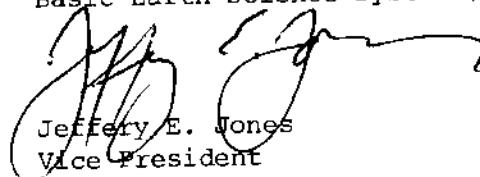
Gentlemen:

Enclosed please find your required number of copies of a Sundry Notice detailing the spudding and setting of surface casing for the above referenced well.

Please do not hesitate to contact me if you have any questions or need further information.

Sincerely,

Basic Earth Science Systems, Inc.



Jeffrey E. Jones
Vice President

JEJ:ak

Enclosures

cc: Distribution

#11020

DAILY DRILLING REPORTTIGHT HOLEBASIC CORP OF ENGINEERS 31-10, SECTION 10 T153N, R101W

6/19/86 Finish building location and moving in Shelby rig 52.

6/20/86 Rigging up Shelby rig 52.

6/21/86 Rigging up Shelby rig 52.

6/22/86 Rigging up Shelby rig 52.

6/23/86 Day 1, Drilling at 202 ft with fresh water, wt 8.6, visc 35, tight hole at 200 feet had to shut in to condition mud. Bit # 1 1/2-1 1/4 J-1. Spud 11pm CST 6/20/86 S.T. \$6,582 Cum. \$6,582.

6/24/86

Day 2, drilling at 1,723 ft, made 1,521 ft in 14 hr. Survey, 1 1/4 deg @ 300 ft, 1 1/4 deg 750 ft, 1/4 deg S43W; 1,094 ft, and 1/4 deg S68E 1620 ft. Had water flow at 1600 ft at a rate of 40-60 gal per minute, let mud wt build to 9.3 lb/gal and built visc to 46 flow stopped. S.T. \$33,025 Cum. \$39,607

6/25/86

Day 3, running casing at 3,000 ft. Made 1,075 ft in 10.75 hrs. Lost circulation at 2,125 ft. Surveys, at 2,121 ft 1/4 deg N26E; at 2477 ft 0 deg; at 2,935 ft 1/2 deg S66E; and resurvey at 3,500 ft, 1/2 deg S25 W. Bit 2A 12 1/4 J1 in at 2518 ft. S.T. \$20,965 Cum. \$60,572.

6/26/86

Day 4, running casing at 3000 ft. Ran 14 jts of casing could not go any further, TOH with casing, TIH with drill pipe and washed and reamed from 430 ft to 1200 ft. Bit plugged TOH to unplug bit, TIH to 430 washed and reamed from 430 to 1200 ft. Circulated and conditioned hole. Raised weight to 9.9 and visc to 105, chained out of hole and rigged up to run casing. S.T. \$34,124 Cum. \$94,696

6/27/86

Day 5, WOC at 2954 ft. Ran guide shoe and 75 jts of 36# and 40# 9 5/8 casing. Had to wash the casing from 400 ft to T.D. unable to get past 2954. Circulated bottoms up and pumped 20 bbls of water followed by 850 sks of Howco Lite, and 250 sks of Class A both mixed with 1/4#/sk celloflake, and 2% CaCl. Good returns throughout job, but no cement to surface. Bumped plug with 2200 psi held ok. Ran 120 ft of one inch and pumped top job of 10 bbls of water followed by 120 sks of Class A with 3% CaCl, and 1/4# per sk celloflake. Good returns with cement to surface held ok. Cut off casing and welded on wellhead. S.T. \$6,221, Cum. \$100,917

11920

NORTH DAKOTA INDUSTRIAL COMMISSION
OIL AND GAS DIVISION

WESLEY D. NORTON
Chief Enforcement Officer

F. E. WILBORN
Deputy Enforcement Officer

CLARENCE G. CARLSON
Geologist

CHARLES KOCH
Engineering Dept.

DOREN DANNEWITZ
Field Supervisor

KEN KALLESTAD
Reclamation Sup.

June 19, 1986

Mr. Jeffery E. Jones
Basic Earth Science Systems
P.O. Box 3088
Englewood, Colorado 80155

RE: Basic Corps of Engineers #31-10
NW NE Section 10-T153N-R101W
Well File No. 11920

Dear Mr. Jones:

As per our conversation on June 16, 1986, neither Ken Kallestad nor Ellis Haake with the Oil and Gas Division, could confirm the fact that they had a conversation with you and approved the use of the drilling pit without a liner on the above captioned location.

The fluids in the pit shall not exceed 3000 ppm TDS. I will be checking the fresh water pit regularly and if at any time it exceeds 3000 ppm TDS, we will require that the fluids be removed and a liner installed. Upon completion of drilling status, you will be required to remove the fluids and reclaim the pit. Also, any contaminates noted must be removed immediately.

If you have any questions, feel free to contact our office.

Sincerely,

Tom Delling reb
Tom Delling
Field Inspector

TD/rls

11930



Earth Science Systems, Inc.

P.O. Box 3088
Englewood, Colorado 80155
(303) 792-5230

April 17, 1986



North Dakota Industrial Commission
Oil and Gas Division
900 East Blvd.
Bismarck, ND 58505

Project Manager, Garrison Project Office
Administration Building
Riverdale, ND 58565

North Dakota Game & Fish Dept.
214 Rose Lane
Williston, ND 58801

Re: Basic Corps of Engineers #31-10
NWNE Sec. 10, T153N, R101W
McKenzie County, ND

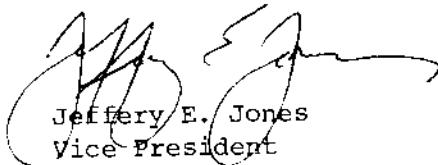
Gentlemen:

Enclosed please find a copy of the Archeological Report which is to be included in our Multi-Point Surface Use and Operations Plan as Exhibit 8. This report was not available at the time we submitted our Multi-Point plan.

Please do not hesitate to contact me if you have any questions or need anything further.

Sincerely,

Basic Earth Science Systems, Inc.



Jeffery E. Jones
Vice President

JEJ:ak

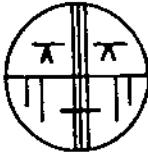
Enclosure



2599 So. Paradise Dr.

John & Mavis Greer

Archeological Consultants



Casper, Wyoming 82604

(307) 472-4016

AN INTENSIVE CULTURAL RESOURCE SURVEY
OF THE
BASIC EARTH SCIENCE SYSTEMS, INC.
BASIC CORP OF ENGINEERS 31-10
WELL PAD AND ACCESS ROAD,
MCKENZIE COUNTY, NORTH DAKOTA

by

John and Mavis Greer

Mavis Greer (P.I.)

Project No. ND-1946
March 1986

ABSTRACT: An intensive cultural resource survey was conducted on the area surrounding a proposed well pad and access road. No cultural resources were found, and cultural clearance is recommended with no special stipulations.

PROJECT LOCATION:

Agency: Corp of Engineers, Riverdale
USGS Quad: Williston SW (7.5')
Well Location: NW/NE (660 fsl, 2305 fel) Sec.10-T153N-R101W
Access Route: Public Surface (5 acres surveyed)
Access Route: NW/NE Section 10
(0.11 miles surveyed, public surface)

PROJECT DESCRIPTION: Construction is planned on a well pad (est. 300 x 350') and an access road (about 600 feet long). The access road leaves the bladed county road just to the north and runs south on the west side of an irrigation canal to the well location. The well pad and access road are staked in a plowed field which is currently in stubble. This flat area has been diked and is a controlled farming portion of the wide Missouri River floodplain.

PROJECT SETTING: The proposed well location is situated on the recent Missouri River floodplain, in a silty area currently in cultivation. A large major meander (now a large recreational lake) is just to the south-east, while the main Missouri River channel is to the north. Elevation of the well pad area is about 1850 feet.

FILES SEARCH: The files of the North Dakota State Historical Society indicate that no previous surveys or cultural resources are known for the project area. Previous surveys in adjacent and nearby areas include well pad and access road surveys by Greer, a pipeline survey by Powers Elevation, and seismograph line studies by the Corps of Engineers; all previous studies have provided negative results. No subsurface monitoring of construction to provide subsurface information has been reported in any surrounding or nearby areas.

FIELD WORK: During the intensive cultural resource survey on 3/30/86 by John and Mavis Greer, the 5 acres surrounding the well pad were surveyed with multiple transects with an average spacing of 70 feet. Ground visibility was fair to poor, due to mostly dense stubble and grass cover. The well location was staked.

CULTURAL RESOURCES: No cultural resources have been reported from the area, and none were found during the present inspection. There were no surface indications of buried cultural deposits within the project area. Two small shovel tests dug to 1.5 feet deep within the well pad planned construction area also yielded negative results.

RECOMMENDATIONS: It appears that no cultural resources will be affected by the proposed project, and no further work is recommended. If subsurface cultural materials are found during construction, the head of the federal permitting agency should be notified immediately. These recommendations are subject to the approval of the permitting agency.

ATTACHMENTS: Project map (USGS quad).

COLLECTIONS: None.

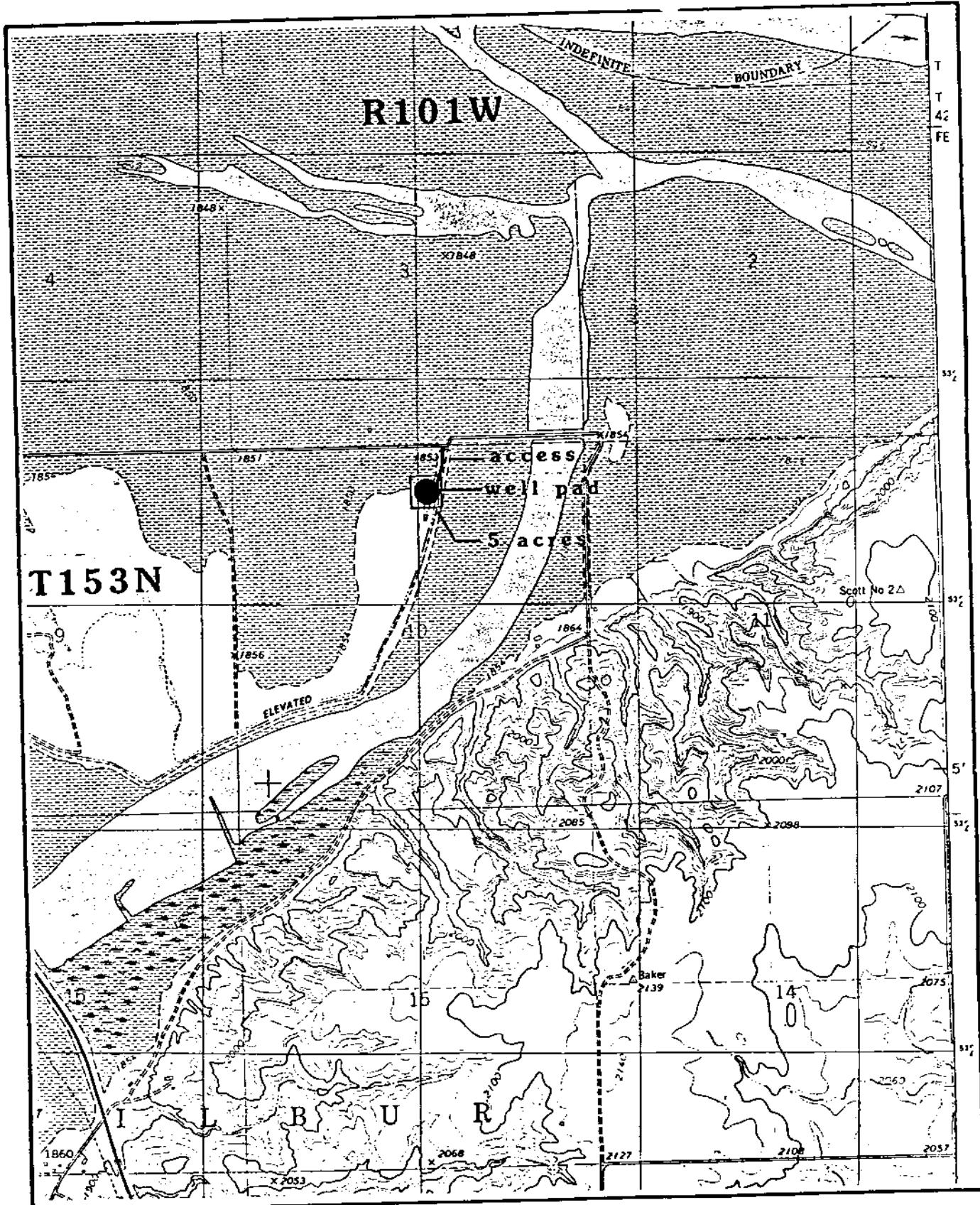


Figure 1. Portion of the Williston SW Quad (USGS 7.5'), McKenzie County, North Dakota, showing the proposed Basic Corp of Engineers 31-10 well pad, access road, and 5-acre survey area. No cultural resources were found.

basic

Earth Science Systems, Inc.

P.O. Box 3088
Englewood, Colorado 80155
(303) 792-5230

March 6, 1986



Department of the Army
Omaha District, Corps of Engineers
6014 U.S. Post Office and Courthouse
Omaha, Nebraska 68102-4978

Attention: Mr. Rick Noel, Real Estate Division

Re: Basic Corps of Engineers #31-10
Township 153 North-Range 202 West
Section 10: NW¹NE¹
McKenzie County, ND

Letter Grant No. DACW45-9-86-6112
ND Permit No. 11920

Gentlemen:

The permitted Basic Corps of Engineers #31-10 location is under two feet of water due to the Missouri River flooding. We estimate a minimum delay of one month before construction of the drill pad can begin. Since the frost should no longer be a factor by that time, we believe a conventional drill pad would be acceptable, therefore, permission is requested to deviate from the requirement to cover the pad with plastic and build the location up with dirt acquired from a private source.

The Multi-Point Surface Use and Operation Plan should be amended as follows:

4. Location of Existing and/or Proposed Facilities

- B. Exhibits 3 and 4 show the surveyed location and the anticipated cut and fill. These show that after removing six to eight inches of top soil, the entire cut will be above 1850 feet. There should be sufficient dirt available from the drill pit and fill to level the location. All top soil and dirt removed during construction of the reserve pits will be placed in separate piles. Both piles will be kept as free as possible from contamination.
- C. Construction will be to strip the top soil and level the drilling pad. The battery

6. Source of Construction Materials

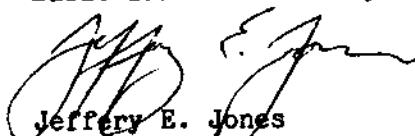
- A.the brush covering location will be scraped into a pile on the southeast corner of the location. The top soil will be scraped into a separate pile at the southwest corner of the location. The site will then be leveled

Corps of Engineers
March 6, 1986
Page 2

Thank you for your consideration of this request and please do not hesitate to contact me if you have any questions or require additional information.

Sincerely,

Basic Earth Science Systems, Inc.



Jeffery E. Jones
Vice President

JEJ:jb

cc: Project Manager, Garrison Project Office
Administration Building, Riverdale, North Dakota 58565
North Dakota Game & Fish Department
214 Rose Lane, Williston, North Dakota 58801
North Dakota Industrial Commission
Oil and Gas Division, 900 E. Blvd., Bismarck, North Dakota 58505

basic

Earth Science Systems, Inc.

Amend APD & Spud loc

Directional hole letter

Must comply w/ all spacing

requirements in Baker Field
Connie - add do already?

Project Manager
Garrison Project Office
Administration Building
Riverdale, North Dakota 58565

Chief, Operations Division
Corps of Engineers
6014 U.S. Post Office & Courthouse
Omaha, Nebraska 68102

Attn: MROOP-R

✓ North Dakota Industrial Commission
Oil and Gas Division
900 East Boulevard
Bismarck, North Dakota 58505

Re: Application to Drill
Basic Game & Fish #31-10
Section 10, T153N, R101W
McKenzie County, ND

Gentlemen:

Enclosed please find Basic Earth Science Systems, Inc.'s Multi-point Surface Use and Operations Plan submitted to obtain permission to drill a 13,500 foot Red River test. An on-site inspection was held on January 9, 1986, with Mr. Alan Steinle of the Corps of Engineers, Mr. Bruce Renhowe of the Game and Fish Department, Mr. Tom Hopkin representing Basic Earth Science Systems, Inc., and several dirt contractors. Recommendations from that meeting have been incorporated into the enclosed application.

A spud date of February 1, 1986 has been requested due to lease constraints and, therefore, we would appreciate your expeditious handling of this application. If you have any questions or need additional information, please do not hesitate to contact me.

Sincerely,

Basic Earth Science Systems, Inc.

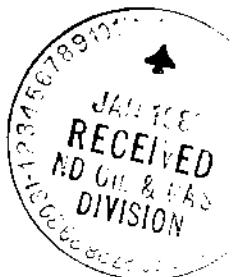
Judy Burke

Judy Burke
Lease Analyst/Permit Coordinator

JB
encl.

44E Inverness Drive East

MULTI-POINT SURFACE USE AND OPERATIONS PLAN



BASIC EARTH SCIENCE SYSTEMS, INC.
Basic Corps of Engineers #31-10
NW^{1/4}NE^{1/4} Section 10, Township 153 North, Range 101 West
660' FNL - 2305' FEL (Surface Location)
660' FNL - 2140' FEL (Bottom Hole Location)
McKenzie County, North Dakota

Prepared By:
Basic Earth Science Systems, Inc.
P. O. Box 3088
Englewood, Colorado 80155

Copies:

- 1 - Project Manager, Garrison Project Office
Administration Building, Riverdale, North Dakota 58565
- 1 - Chief, Operations Division, Corps of Engineers
6014 U.S. Post Office & Courthouse, Omaha, Nebraska 68102
Attn: MROOP-R
- 1 - North Dakota Game & Fish Department
214 Rose Lane, Williston, North Dakota 58801
- 1 - North Dakota Industrial Commission
Oil and Gas Division, 900 E. Blvd., Bismarck, North Dakota 58505

MULTI-POINT SURFACE USE AND OPERATIONS PLAN

BASIC EARTH SCIENCE SYSTEMS, INC.

Basic Corps of Engineers #31-10

NW¹NE⁴ Section 10, Township 153 North, Range 101 West
660' FNL - 2305' FEL (Surface Location)
660' FNL - 2140' FEL (Bottom Hole Location)
McKenzie County, North Dakota

SUMMARY OF PROJECT

Basic Earth Science Systems, Inc. is submitting the following application to obtain permission from the Corps of Engineers to drill a 13,600 foot Red River test with the above-referenced name and surface location. The location has been carefully chosen to balance the concerns of Basic Earth Science Systems, Inc., the Corps of Engineers, and surface lessee (North Dakota Game and Fish). From this surface location Basic Earth Science Systems, Inc. will directionally drill to a legal bottom hole location of 660' FNL and 2140' FEL of Section 10, T153N, R101W. All of the oil and gas minerals in this area are privately owned. Basic Earth Science Systems, Inc. understands that this location is within the 100-year flood plain. Any facilities and equipment which can be damaged by floodwater and which cannot be readily moved if a flood is imminent will be placed at a location above, or adequately protected by diking to 1858', the 100-year flood water surface elevation at this location plus a minimum of three feet of freeboard to protect against wind-wave runup. Due to lease constraints this well must be drilling by February 1, 1986, and, therefore, your expeditious processing of this application is requested.

LIST OF EXHIBITS

| Number | | Page |
|--------|---|------|
| 1.1 | Regional Map | 10 |
| 1.2 | Topographical Map - Access Roads | 11 |
| 2 | Existing Well Plat | 12 |
| 3 | Survey Plat | 13 |
| 4 | Cut & Fill Cross Section | 14 |
| 5 | Pit & Pad Layout | 15 |
| 6 | Production & Equipment Layout | 16 |
| 7 | Rig Layout | 17 |
| 8 | Archeological Report | 18 |
| 9 | BOP Diagram | 19 |
| 10 | Well Control Equipment | 20 |
| 11 | ND Application for Permit to Drill | 21 |
| 12 | ND Game & Fish Surface Damage Agreement | 22 |
| 13 | Drilling Prognosis | 23 |

1. Existing Roads

- A. Directions to the location from Williston, North Dakota are as follows: Go south on Highway 85 8-1/4 miles, turn east on first existing gravel road with stop sign controlling access, proceed east 2 miles, turn south on gravel road 460' to wellsite access.

MULTI-POINT SURFACE USE AND OPERATIONS PLAN

- B. For access roads in relation to county roads, see Exhibit 1.1 with the access of U.S. 85 highlighted in pink. This map shows all county roads within a three mile radius.
- C. Exhibit 1.2 shows a detailed map of the existing roads. The first two miles of access off U.S. 85, marked in green, is a high quality gravel road. The following 460', marked in pink, is an existing gravel road with access onto the location.
- D. Roads within a one-mile radius are shown on Exhibit 1.1.
- E. Existing roads will be maintained as necessary to allow access during drilling and completion operations.

2. Planned Access Roads

Referencing Exhibit 1.2 and the through segments of road:

- A. Prior to drilling, the existing roads will be upgraded as follows:
 - (1) Gravel Road (Exhibit 1.2, green) This segment of road is in good condition. Basic Earth Science Systems, Inc. has recently upgraded this road in conjunction with other activity in this area and will continue to keep this road maintained.
 - (2) Gravel Road (Exhibit 1.2, pink) This existing gravel road will require no improvement and will only require that the accesses to the location be built.

If the well is completed as a dry hole, the access will be reclaimed along with the rest of the location.

If the well is completed as a producer, the lease road will be upgraded as required and gravel added as needed.

- B. The maximum grade will be less than six percent, however, this may vary as topographical conditions vary.
- C. No turnouts are planned.
- D. No culverts are planned.
- E. Native surfacing material from construction of access road will be sufficient for drilling. No outside construction materials are anticipated, if additional material is needed, then it will be acquired from a private source and it will be free of noxious weeds.
- F. No gates, cattleguards or fence cuts will be necessary.
- G. No road will be built. The location will be accessed from the existing gravel road.

MULTI-POINT SURFACE USE AND OPERATIONS PLAN

3. Location of Existing Wells Within One Mile Radius (see Exhibit 2)

- A. Water wells - 0
- B. Abandoned wells - 2
- C. Temporarily abandoned wells - 0
- D. Disposal wells - 0
- E. Drilling wells - 0
- F. Producing wells - 2
- G. Shut-in wells - 0
- H. Injection wells - 0
- I. Monitoring observation wells - 0
- J. Other proposed locations - 1 (#14-2, SW $\frac{1}{4}$ SW $\frac{1}{4}$ 2-153N-101W)

4. Location of Existing and/or Proposed Facilities

- A. Basic Earth Science Systems, Inc. has production facilities on their Rosebud #22-11 location approximately 4050 ft. to the southwest. These consist of standard producing equipment for a Red River well. The Basic Game & Fish #34-3 is being completed in the SW $\frac{1}{4}$ SW $\frac{1}{4}$ Section 2, Township 153 North, Range 101 West, and equipment will be installed for Mission Canyon production. Basic Earth Science Systems, Inc. has no other facilities in the area.
- B. Exhibits 3 and 4 show the surveyed location and the anticipated cut and fill. Complying with the Corps of Engineers' requirement because of the frozen condition of the land, the wellsite will have the snow and vegetation bladed off down to the ground surface, a plastic liner laid on top and dirt added to level the location. The dirt will be taken from the construction of the pit.
- C. New facilities contemplated in the event of production are shown on Exhibit 6.
 - (1) Proposed tank battery and production equipment are as shown on Exhibit 6 and are to be located adjacent to the existing road as shown on Exhibit 6. Said equipment will be bermed as per the Army Corps of Engineers' requirement.
 - (2) Dimension of the facilities are shown on Exhibit 6.
 - (3) Construction will be to strip the topsoil, level drilling pad. The battery site and treater pits will be constructed with soil materials native to the site. The additional material needed on site will be acquired from a private source and will contain no noxious weeds. Construction methods will be employed to assume that no drainage flows are impounded to prevent the loss of any hydrocarbon from the site. This is to be done in a manner to facilitate rapid recovery and clean up. (See Exhibit 6).

MULTI-POINT SURFACE USE AND OPERATIONS PLAN

- (4) Protective measures to protect wildlife and livestock will be taken as follows: the weights on the pumping unit will be enclosed and the production pit will be fenced.
- D. Upon completion of well, areas required for continued use will be graded to provide drainage and minimize erosion. Those areas unnecessary for use will be graded to blend with the surrounding topography. Top-soil will be replaced on those areas and seeded with Brome grass or other mixture as required by the Corps of Engineers and the North Dakota Game and Fish Department.
5. Location and Type of Water Supply
- A. Fresh water for spudding and drilling the first 6500 feet will be trucked to location over the roads shown on Exhibit 1.2. Salt water for the salt-saturated mud system will be trucked from Williston.
- B. Salt and fresh water will be trucked to location over the roads marked on Exhibit 1.2.
- C. No water well is to be drilled on this lease.
6. Source of Construction Materials
- A. Exhibit 5 shows the layout of the planned pad for drilling purposes. This layout represents the maximum area to be disturbed. If a smaller drilling rig is available, the actual size of the location will be reduced to minimize the area disturbed. Prior to leveling off the drillsite pad, the brush covering location will be scraped into a pile on the southeast corner of the location. A sheet of plastic will be laid over the wells site. Dirt removed from the pit will be distributed on the plastic. The site will then be leveled and laid out as shown on Exhibit 5. If the well is productive, the drillsite will be reclaimed and an area sufficient for the wellhead and a completion rig will be left at the proposed drillsite. The production equipment will then be installed as shown in Exhibit 6. Said production equipment and wellhead will be diked as required by the Corps of Engineers. Gravel will then be placed on the production pad. Construction materials will consist of soil encountered within the boundaries of the proposed site. Gravel will be used, as needed. The entire producing facility will be fenced with a two strand barbless wire fence.
- B. The planned site and access roads are outleased to the North Dakota Game and Fish Department.

MULTI-POINT SURFACE USE AND OPERATIONS PLAN

- C. All gravel (containing no noxious weeds) will be obtained from private land in quantities necessary for the access surfacing and tank base material on the battery site.

7. Methods for Handling Waste Disposal

This well is being drilled to a depth of 6500 feet with fresh water. From that depth on salt water will be used. All cuttings and salt saturated material generated will be hauled off location during and after completion of the well. Upon the completion of drilling operations, all waste materials including, but not limited to drill cuttings, drilling fluids, and burned and unburned trash, shall be completely removed from Government land as directed by the Project Manager, Garrison Project. No waste material shall be buried on site.

- A. All drill cuttings will be stored on site in a 20 mil plastic lined pit during drilling and hauled off site prior to reclamation.
- B. All fresh water drilling fluids will be removed from site or allowed to evaporate from the reserve pit.
- C. At 6500 feet we will be switching over to a brine system. All liquid and solid waste that is produced will be hauled from the site, either during or immediately after drilling is completed. All waste stored on location during drilling activities will be stored in steel containers or in an earthen dike lined with 20 mil plastic liner.
- D. No substantial amount of produced water is expected while drilling. The amount of hydrocarbon that may be produced while testing will be stored in a tank. The small amount of loss will be retained in the reserve pit. Previous to clean-up operations the hydrocarbon materials will be skimmed or removed as the situation would dictate.
- E. Sanitary facilities will consist of chemical toilets. Waste will be contained and hauled from the site immediately following the drilling operations.
- F. Garbage and nonflammable waste are to be contained in the trash pit. Flammable waste is to be contained in the burn pit. The flammable trash is to be burned periodically. The trash and/or burn pit will be totally enclosed with small mesh wire to prevent wind scattering and wildlife entry. The pit will be fenced and flagged to prevent entry of livestock. All non-flammable trash will be hauled from site prior to reclamation.

MULTI-POINT SURFACE USE AND OPERATIONS PLAN

- G. All trash, garbage, etc. is to be gathered and burned or hauled from the site at the end of drilling operations. Reserve and mud pits will be trenched as needed and allowed to dry after drilling is completed and then adequately filled and leveled. All garbage and pits will be filled as soon as the rig leaves the location.

8. Ancillary Facilities

There are no airstrips, camps or other facilities planned during the drilling of the proposed well.

9. Well Site Layout

- A. See Exhibit 5 for a cross section of the drill pad with cut and fills. Exhibit 5 shows that the location is relatively flat and there will be approximately a three foot cut and one foot of fill on the drill pad.
- B. Rig layout is shown on Exhibit 7. No permanent living facilities are planned. However, during drilling operations, three trailers will be on location.
- C. Location of mud tanks; reserve, burn and trash pits; pipe racks; and soil material stockpiles are shown on Exhibits 6 and 7.

10. Plans for Restoration of Surface

- A. If well is completed as dry hole.
- (1) The reserve pit will be fenced until dry and all drill cuttings and salt saturated water material from the pits will be hauled, pits backfilled, leveled, and contoured. The brush pile will be burned and reincorporated with the top soil. The top soil will be redistributed and seeded.
 - (2) If access road is not needed, it will be leveled, top soiled, and reseeded.
 - (3) If there is oil in the pit, it will be removed immediately after drilling.
 - (4) Rehabilitation operations will begin immediately after the drilling rig is removed. The trash and/or burn pits will be covered. Produced fluids will be removed or flagged overhead and fenced immediately. Reseeding and revegetation operations shall be accomplished in accordance with the instructions, and to the satisfaction, of the Project Manager, Garrison Project. The entire reclamation process will be completed after the spring thaw of 1986.

MULTI-POINT SURFACE USE AND OPERATIONS PLAN

- B. If the well is completed as a producer.
- (1) The pit will be trenched and backfilled as soon as possible and all excess liquids will be hauled off site.
 - (2) The road will be upgraded as discussed in Section 2 and the production pad will be reduced in areal extent as discussed in Section 6.A. The area to be returned to the Game and Fish will be reclaimed as soon as feasible after the well is completed. The reclamation will consist of returning the ground to original contours and redistributing the top soil and seeding with Brome grass or other seed mixtures as required by the Game and Fish. The excess top soil pile will be seeded to prevent erosion.

11. Other Information

- A. Topography: The location borders the Missouri River floodplain.
- B. The surface at the drillsite and on the access road is outleased to the North Dakota Game and Fish Department. The surface settlement with the Game and Fish is attached as Exhibit 12.
- C. The nearest occupied dwelling is greater than a mile south of the site.
- D. The nearest source for water is approximately 1/4 mile east of the location.
- E. An archeological survey is being conducted and will be submitted under separate cover for inclusion in this application as Exhibit 8.
- F. Drilling is planned for February 1, 1986. It is anticipated that casing point will be reached within 55 days after commencement of drilling.

12. Lessee's or Operator's Representative

Basic Earth Science Systems, Inc.
Jeffery E. Jones, Vice President
P. O. Box 3088
Englewood, Colorado 80155
(303)771-5230 (office)
(303)790-0317 (home)

Tom Hopkin, Field Consultant
RR 4, P. O. Box 41A
Dickinson, North Dakota 58601
(701)677-5621

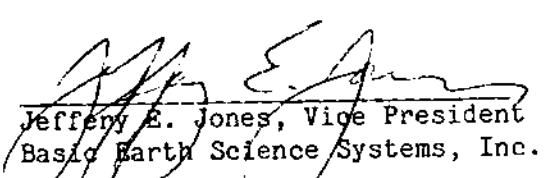
MULTI-POINT SURFACE USE AND OPERATIONS PLAN

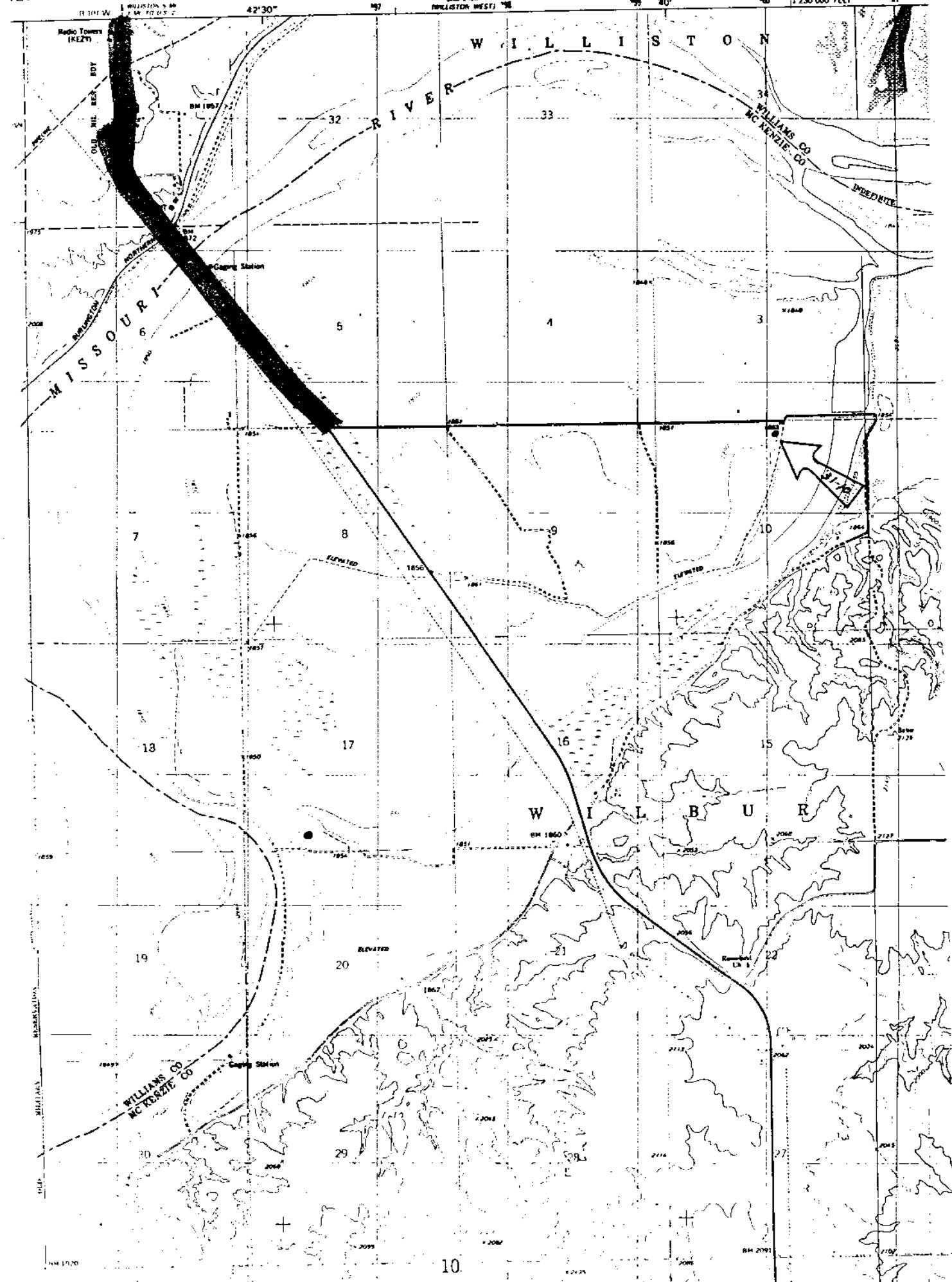
13. Certification

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drillsite and access route; that I am familiar with the conditions which presently exist; that the statements made in this plan are, to the best of my knowledge, true and correct; and, that the work associated with the operations proposed herein will be performed by Basic Earth Science Systems, Inc. and its contractors and subcontractors in conformity with the plan and the terms and conditions under which it is approved.

1-10-86

Date


Jeffrey E. Jones, Vice President
Basic Earth Science Systems, Inc.



NORTH

Basic Earth Science Systems Inc.
Basic Corp. of Engineers Alternate
660' fn & 2305' fe
Sec. 10 T-153N R-101W
McKenzie Co. North Dakota

5

Existing gravel road

Proposed Location

Existing Hi-Way

8

ELEVATED

17

W

I

B

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BM 1860

20

ELEVATED

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2034

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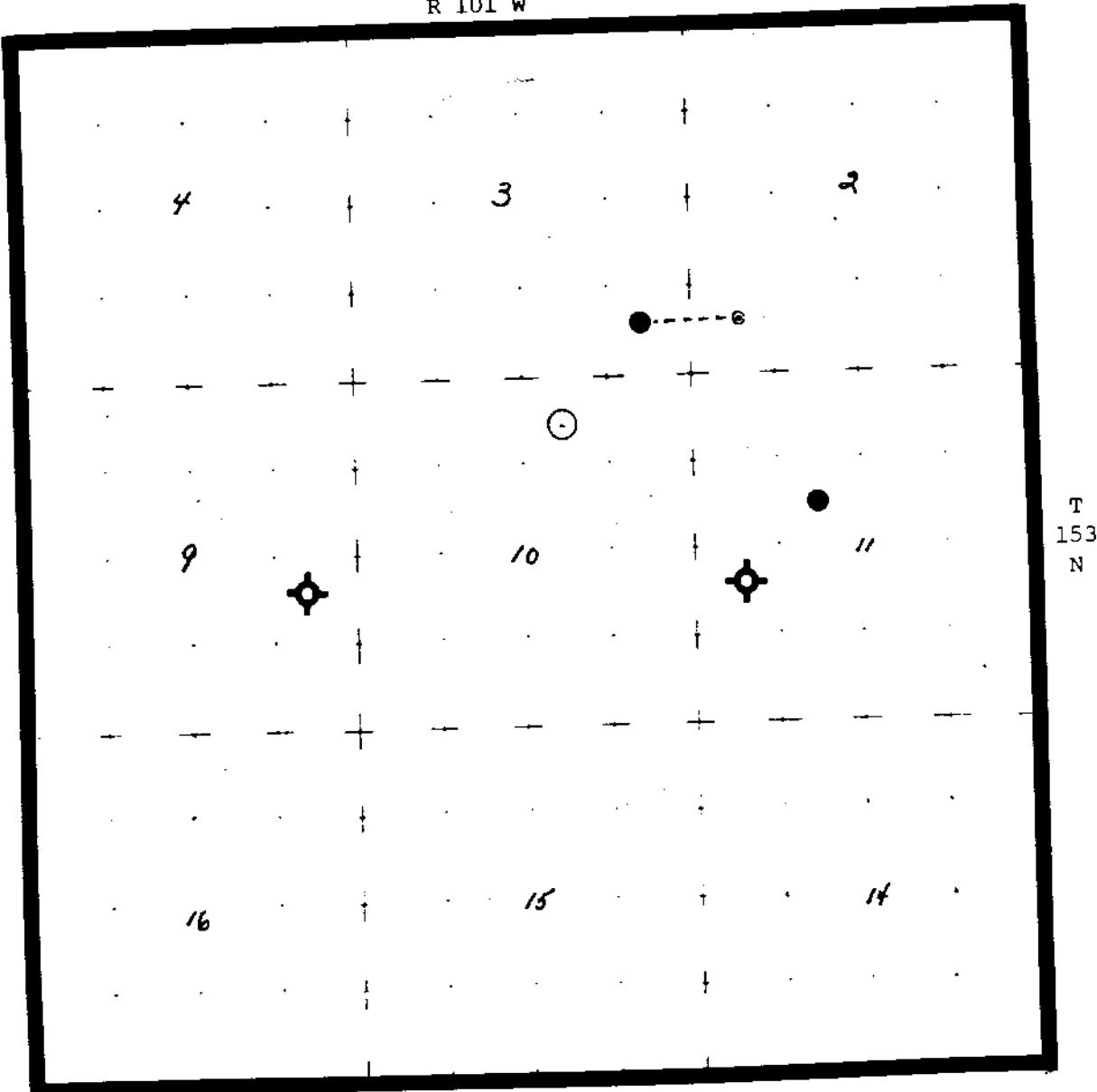
EXISTING WELL PLAT

EXHIBIT 2

Basic Earth Science Systems, Inc.

CORPS OF ENGINEERS #31-10
660' FNL & 2305' FWL
NW $\frac{1}{4}$ NE $\frac{1}{4}$ Section 10-T153N-R101W
McKenzie County, North Dakota

R 101 W



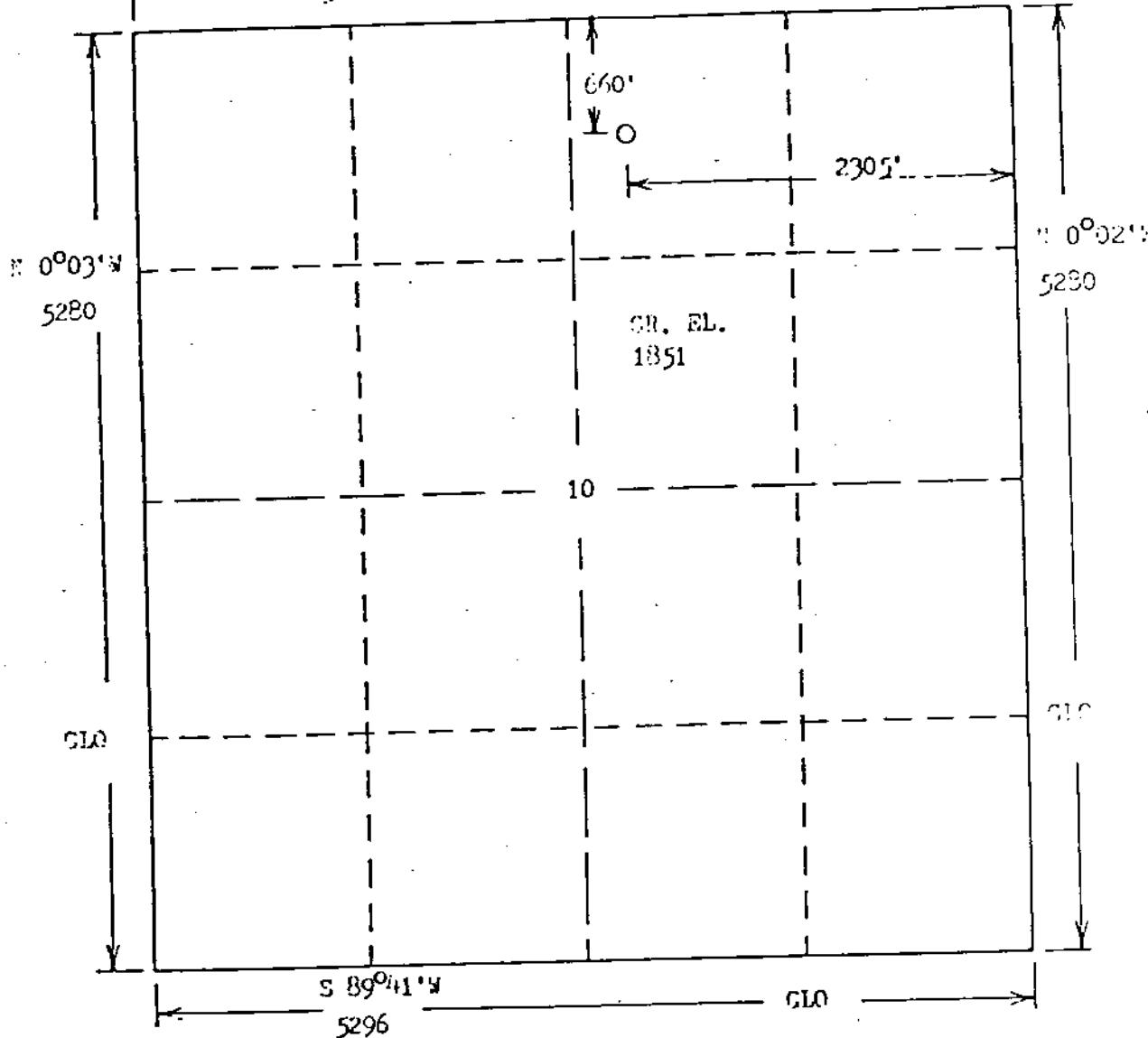
- Proposed Location
- ✖ Abandoned Well
- Producing Well
- ◎ Surface Location
Directional well



Form PS-102

R. 101^WS 89° 55' W
5284

CLO

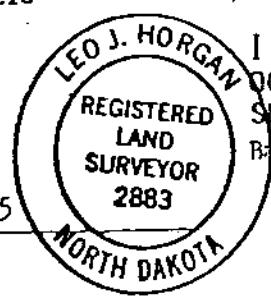


Scale: 1"=1000'

Powers Elevation of Denver, Colorado has in accordance with a request
from Judy Burke for Basic Earth Science Systems Inc.
determined the location of Basic Corp. of Engineers Alternate
to be 660'fn & 2305'fe Section 10 , Township 153 North
Range 101 West of the fifth principal Meridian,
McKenzie County, North Dakota

I hereby certify that this plot is an accurate representation of a correct survey showing the location of Basic Corp. of Engineers

Date: 12-21-85



Licensed Land Surveyor No. 2883
State of North Dakota

150'

100'

50'

70'

150'

Scale: Horizontal 1"=50' Dirt Quantities (not including pit)
Vertical 1"=10' Cut: 1,200 CU.YDS.
 Fill: 1,100 CU.YDS.

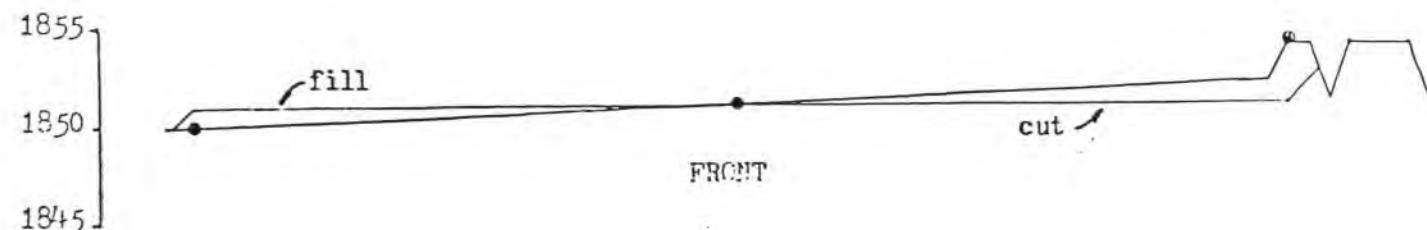
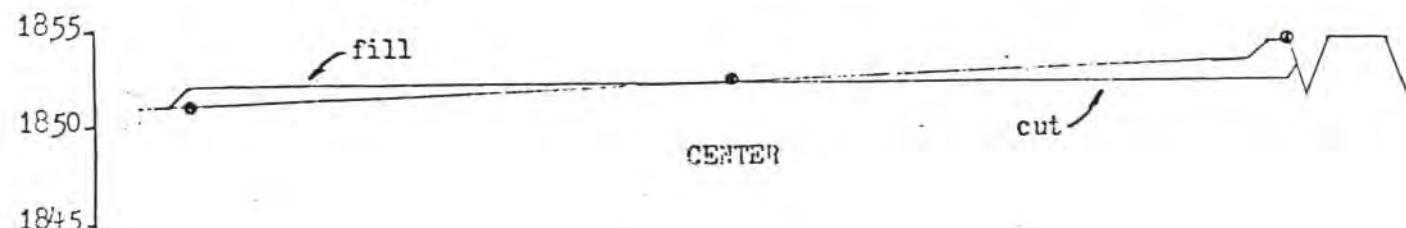
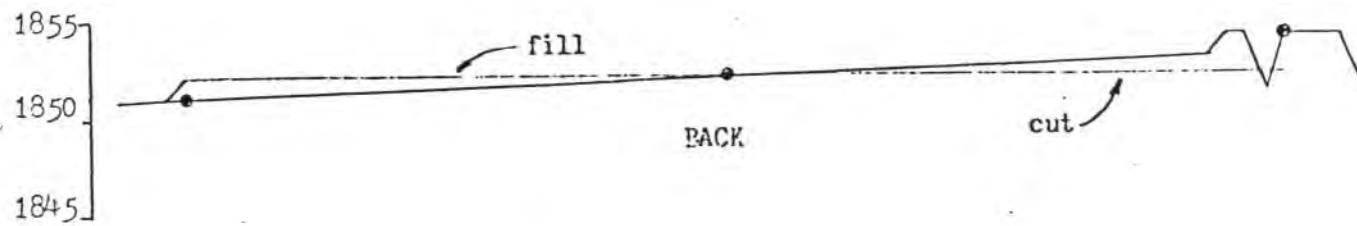


EXHIBIT 5

Pacific Earth Science Systems Inc.
 Pacific Corp. of Engineers #31-10
 2305' fe & 660' fn
 Sec. 10 T-153N N-101W
 McKenzie Co., North Dakota

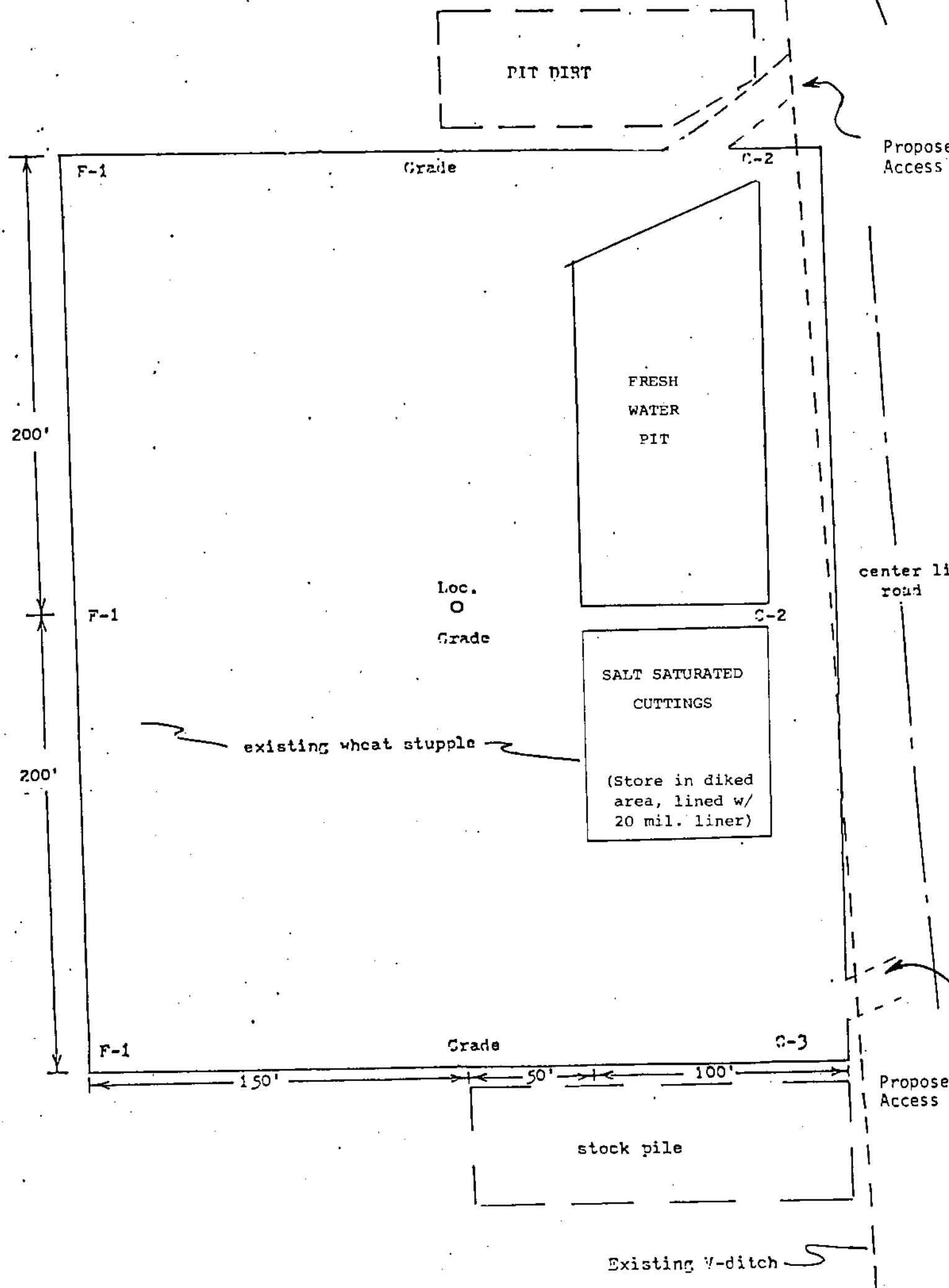
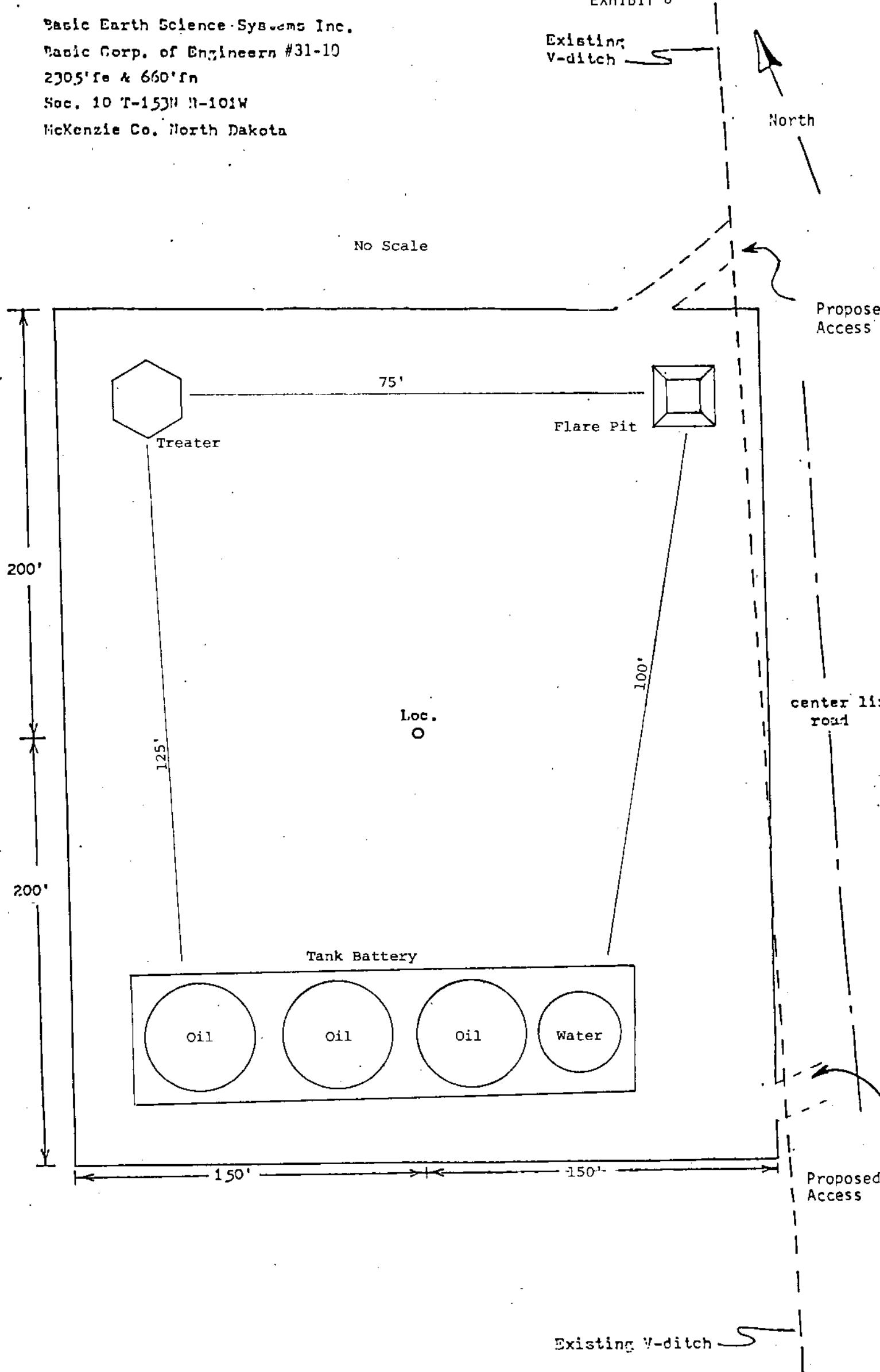
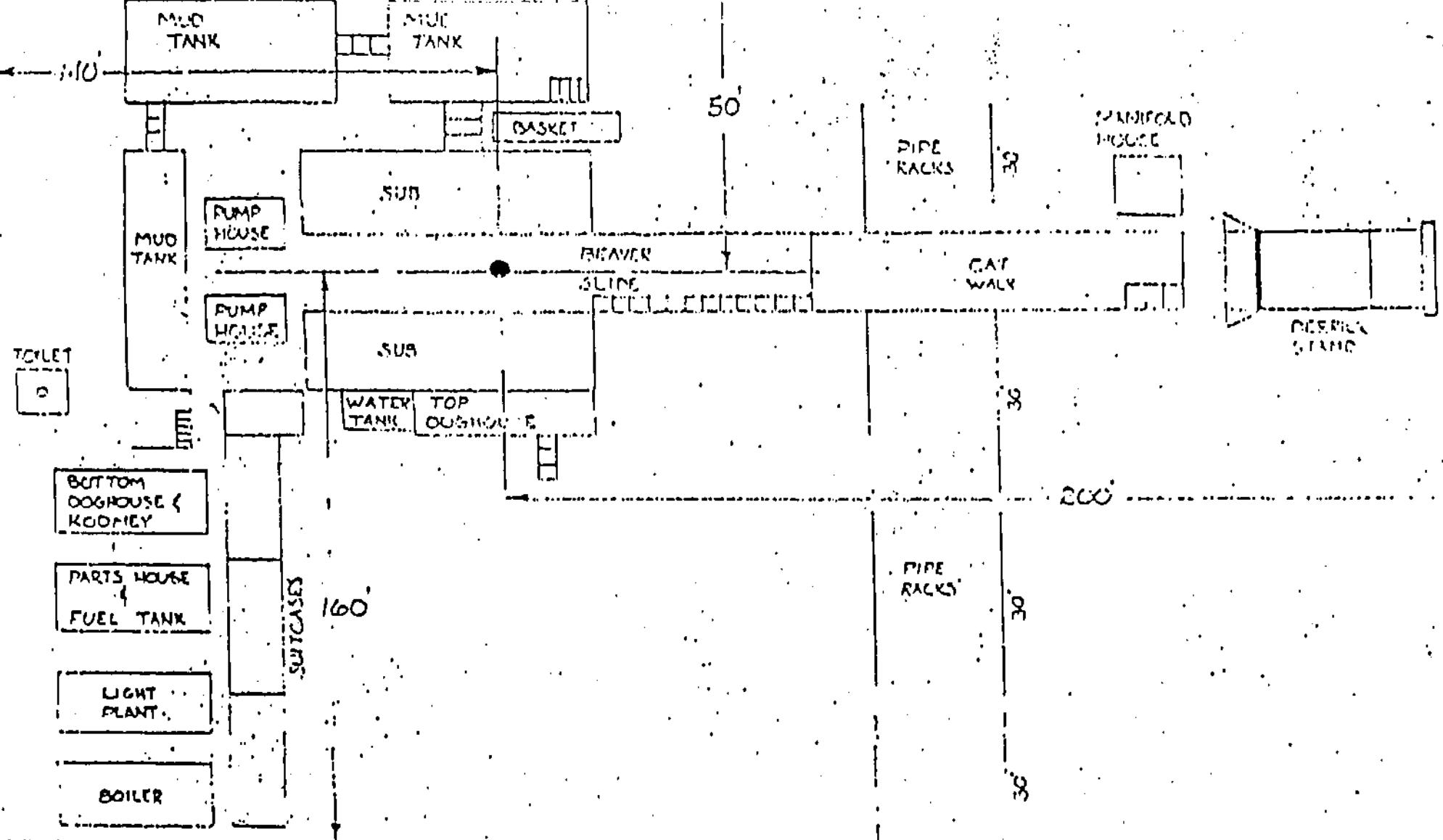


EXHIBIT 6

Basic Earth Science Systems Inc.
Basic Corp. of Engineers #31-10
2305' fe & 660' fm
Sec. 10 T-153N R-101W
McKenzie Co., North Dakota





RATLIFF RIG #15 LAYOUT.

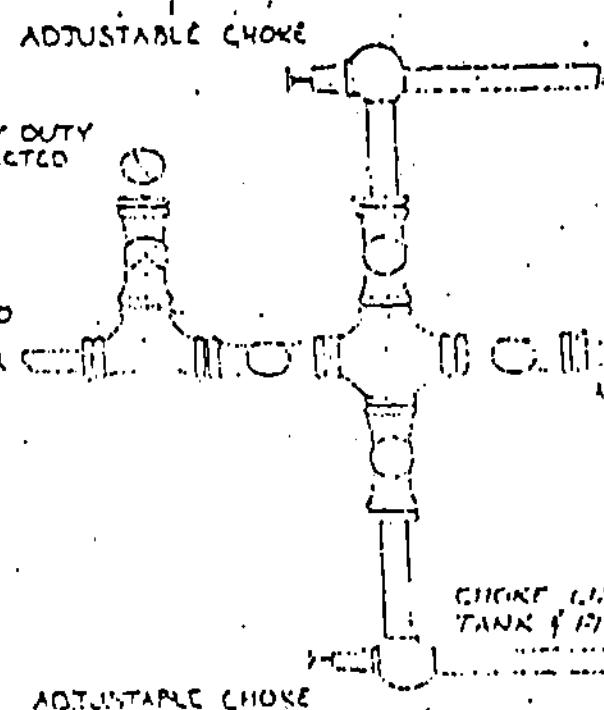
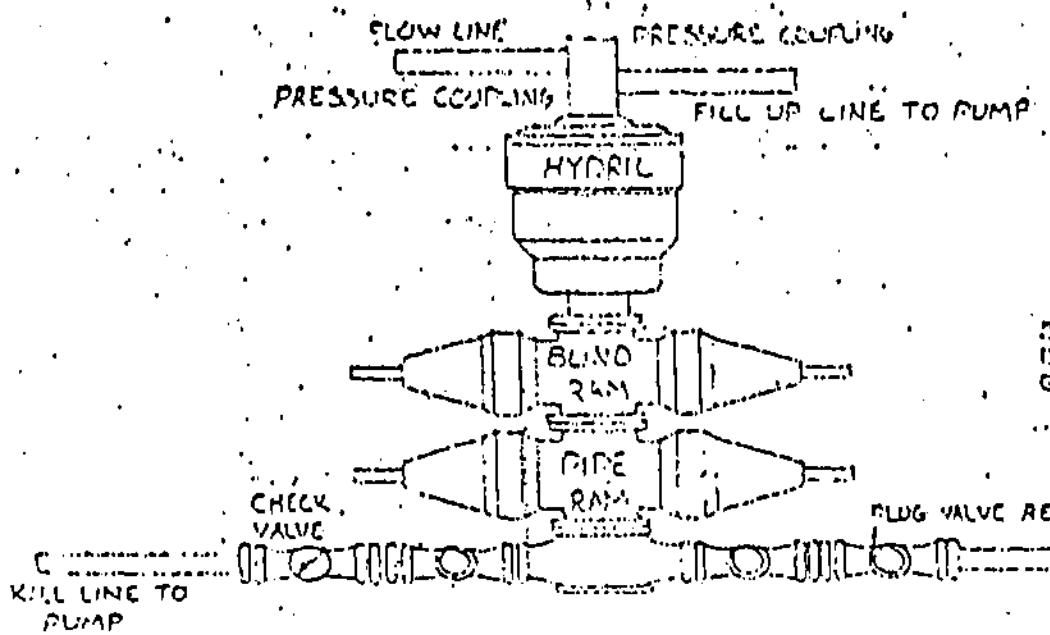
DATE: 11-1-83

DRAWN BY: M. POLLARD

Archeological Report

The Archeological Report will be submitted under separate cover.

5000 p.s.i. W.R.



WELL CONTROL EQUIPMENT
TEST PROCEDURE FOR BOP'S

1. Flush BOP's and all lines to be tested with water.
2. Run test plug on test joint and seat in casinghead (leave valve below test plug open to check for leak).
3. Test the following to rated pressure:
 - A. Inside blow out preventer.
 - B. Lower kelly cock.
 - C. Upper kelly cock.
 - D. Stand pipe valve.
 - E. Lines to mud pump.
 - F. Kill line to BOP's.
4. Close and test lower pipe rams to rated pressure.
5. Close and test hydral to rated pressure.
6. Close and test upper pipe rams to rated pressure.
7. Back off and leave test plug in place. Close and test blind rams to rated pressure.
8. Test all choke manifold valves to rated pressure.
9. Test kill line valves to rated pressure.

FORM 1

North Dakota State Industrial Commission

Oil and Gas Division

900 EAST BOULEVARD • BISMARCK, NORTH DAKOTA • 58505

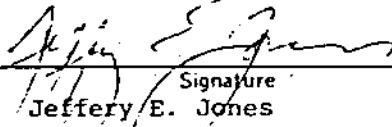
APPLICATION FOR PERMIT TO DRILL.

(File original and 3 copies with the Oil & Gas Division, 900 East Boulevard, Bismarck, North Dakota 58505)

Type of work: Drill new well _____, Reenter old well _____, Drill directional well _____.Type of well: Oil , gas _____, disposal _____, injection _____, others _____.NAME OF OPERATOR: Basic Earth Science Systems, Inc.ADDRESS: P.O. Box 3088, Englewood, CO 80155NAME AND ADDRESS OF SURFACE OWNER OR TENANT: North Dakota Game & FishWELL NAME AND NO.: Basic Corps of Engineers #31-10LOCATION OF WELL: Qtr.-Qtr., NW 1/4 NE 1/4 Sec., 10 Twp., 153N Rge., 101W COUNTY: McKenzieSurface location is 660 feet from (N) (S) section line and 2305 feet and from (E) (W) section line. 10, 153N, 101WIf directional, top of pay is 660 feet from (N) (S) section line and 2140 feet and from (E) (W) section line.Distance from proposed location to nearest spacing (drilling) unit line 500 ft.Distance from proposed location to nearest permitted or completed well in the same pool is 1920 ft.Acres in spacing (drilling) unit 320 Description of spacing unit is North 1/4 Section 10ELEVATION: 1851 (GROUND) 1850.6 (GRADED) ESTIMATED TOTAL DEPTH: 13,600'PROJECTED HORIZON (Pool Name): Red River APPROXIMATE DATE WORK WILL START: 2/1/85

REMARKS: _____

I hereby swear or affirm that the information herein provided is true, complete and correct as determined from all available records.


Signature
Jeffery E. Jones

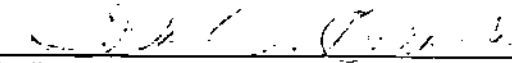
Vice President

January 2, 1986

STATE OF Colorado
COUNTY OF Arapahoe)
} SS

Title

Date

On this 2 day of January, 19 86, before me personally appeared _____Jeffery E. Jones to me known as the person described in and who executed the foregoing instrument
and acknowledged that (s)he executed the same as his/her free act and deed.
Notary PublicMy Commission expires 10-21-88

FOR STATE USE ONLY

API NO. 55-07-100191PERMIT NO. & WELL FILE NO. 11030APPROVAL DATE: JAN 6 1985BY: C. J. JonesNotary
Seal

DEPT:

(SEE INSTRUCTIONS ON REVERSE SIDE)



EXHIBIT 12

P.O. Box 3088
Englewood, Colorado 80155
(303) 792-5230

January 10, 1986

Mr. Bruce Renhowe
Wildlife Resource Management Biologist
North Dakota Game and Fish Department
214 Rose Lane
Williston, North Dakota 58801

Re: Surface Damage Agreement
Basic Corps of Engineers #31-10
SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 10, T153N, R101W
McKenzie County, ND

Dear Mr. Renhowe:

Referencing our telephone conversation of this date, Basic Earth Science Systems, Inc. hereby agrees to a surface damage amount equivalent to \$1,250.00 per acre to be contributed in the form of work for North Dakota Game and Fish projects. Once the actual location is built, our representative will meet with you at your convenience to measure the actual size of the damaged area.

It is also understood that the access roads will be upgraded and maintained in accordance with the multi-point and surface use and operations plan which we are forwarding to you at this time. It is further understood that should we obtain a productive well, that we will be responsible for maintaining the access roads with whatever assistance we can obtain from the township.

If you have any questions regarding the above settlement, please contact me immediately.

Sincerely,

Basic Earth Science Systems, Inc.

Jeffery E. Jones
Vice President

JEJ:jb
encl.

DRILLING PLAN FOR ONSHORE OIL & GAS ORDER NO. 1
DRILLING PROGNOSIS

BASIC EARTH SCIENCE SYSTEMS, INC.

Basic Corps of Engineers #31-10

NW $\frac{1}{4}$ NE $\frac{1}{4}$ Section 10, Township 153 North, Range 101 West
 660' FNL - 2305' FEL (Surface Location)
 660' FNL - 2140' FEL (Bottom Hole Location)
 McKenzie County, North Dakota

1. Estimated Tops of Geological Markers

| <u>Formation</u> | <u>True Vertical Depth</u> | <u>Subsea Depth</u> |
|------------------|----------------------------|---------------------|
| Pierre Shale | 1,580 | + 291 |
| Niobrara | 4,107 | -2,236 |
| Greenhorn | 4,563 | -2,692 |
| Belle Fourche | 4,607 | -2,736 |
| Mowry | 4,777 | -2,906 |
| Muddy | 4,954 | -3,083 |
| Dakota | 5,357 | -3,486 |
| Morrison | 5,832 | -3,961 |
| Swift | 6,100 | -4,229 |
| Reardon | 6,305 | -4,434 |
| Piper | 6,487 | -4,616 |
| Spearfish | 6,787 | -4,916 |
| Pine Salt | 6,822 | -4,951 |
| Minnekahta | 7,202 | -5,331 |
| Opeche | 7,257 | -5,386 |
| Minnelusa | 7,542 | -5,671 |
| Amsden | 7,834 | -5,963 |
| Tyler | 8,020 | -6,149 |
| T/Miss. Otter | 8,142 | -6,271 |
| Kibbey | 8,303 | -6,432 |
| Charles | 8,452 | -6,581 |
| BLS | 8,933 | -7,061 |
| Lodgepole | 9,649 | -7,777 |
| Bakken | 10,423 | -8,551 |
| Three Forks | 10,496 | -8,624 |
| Nisku | 10,685 | -8,813 |
| Duperow | 10,784 | -8,912 |
| Souris River | 11,243 | -9,371 |
| Dawson Bay | 11,480 | -9,608 |
| Prairie Evap. | 11,593 | -9,721 |
| Winnepegosis | 11,788 | -9,916 |
| Ashern | 11,987 | -10,115 |
| Interlake | 12,102 | -10,230 |
| Stonewall | 12,950 | -11,078 |
| Gunton | 13,029 | -11,157 |
| Stoney Mt. | 13,134 | -11,262 |
| Red River | 13,190 | -11,318 |
| TD | 13,502 | -11,630 |

DRILLING PLAN FOR ONSHORE OIL & GAS ORDER NO. 1
DRILLING PROGNOSIS

2. Estimated Depths of Anticipated Water, Oil, Gas or Minerals

| <u>Substances</u> | <u>Formation</u> | <u>Anticipated Depths</u> |
|-------------------|------------------|---------------------------|
| Brine Water | Dakota | 5,357' |
| Brine Water | Piper | 6,487' |
| Brine Water | Minnelusa | 7,542' |
| Brine Water | Kibbey | 8,303' |
| Oil and Gas | Nesson | 9,367' |
| Oil and Gas | Nisku | 10,685' |
| Oil and Gas | Duperow | 10,784' |
| Oil and Gas | Stonewall | 12,950' |
| Oil and Gas | Red River | 13,190' |

The 3000' of surface casing will protect any near-surface water zones. Any water zones encountered will be adequately protected.

3. Operator's Minimum Specifications for Pressure Control Equipment

Exhibit 9, is a schematic diagram of the blow out preventer equipment. The BOP's will be hydraulically tested to full working pressure after nipping up and after any use under pressure. Blind rams and annular preventer will be operationally checked at least every two weeks, as per stated specifications in Exhibit 10.

4. Drilling Equipment

- A. A kelly cock will be kept in the string at all times.
- B. A stabbing valve will be kept on the derrick floor to be stabbed into the drill pipe whenever the kelly is not in the string.
- C. A float will be used above the bit.
- D. H₂S monitoring devices and safety equipment will be installed on the rig by 9000'.

Proposed Casing Program (All new)

| <u>Size</u> | <u>Grade</u> | <u>Weight/Ft</u> | <u>Thread</u> | <u>Setting Depth</u> |
|-------------|--------------|------------------|---------------|----------------------|
| 9-5/8" | K-55 | 36# | ST&C | 0-3000' |
| 5-1/2" | L-80 | 23# | LT&C | 0-2550' |
| 5-1/2" | L-80 | 20# | LT&C | 2550-6550' |
| 5-1/2" | RS-90 | 23# | LT&C | 6550-6750' |
| 5-1/2" | L-80 | 20# | LT&C | 6750-8200' |
| 5-1/2" | RS-90 | 23# | LT&C | 8200-8985' |
| 5-1/2" | L-80 | 20# | LT&C | 8985-11550' |
| 5-1/2" | RS-90 | 26.4# | LT&C | 11550-11850' |
| 5-1/2" | L-80 | 23# | LT&C | 11850-13600' |

DRILLING PLAN FOR ONSHORE OIL & GAS ORDER NO. 1
DRILLING PROGNOSIS

5. Proposed Circulating Medium

The type and characteristics of the proposed circulating mud system will be gel chemical/inverted with adequate stocks of sorptive agents and other materials on-site to handle any anticipated down hole problem, as well as possible spills of fuel and oil on surface.

| <u>Depth</u> | <u>Weight</u> | <u>Viscosity</u> | <u>Fluid Loss</u> | <u>Salinity</u> |
|--------------|---------------|------------------|-------------------|-----------------|
| 0-2000 | 8.5-9.0 | Sweeps | N/C | Fresh |
| 2000-4950 | 8.7-9.5 | Sweeps | N/C | Fresh |
| 4950-5600 | 9.0-10.0 | 25-32 | 1/4 15 | Fresh |
| 5600-6600 | 9.5-10.2 | 25-35 | 1/4 30 | Brine |
| 6600-8450 | 9.5-10.6 | 32-50 | 1/4 30 | Saturated |
| 8450-9100 | 9.5-10.6 | 28-35 | 1/4 30 | |
| 9100-TD | 9.5-10.6 | 28-50 | 1/4 12 for DST's | |

The surface hole and first 3000' will be drilled with fresh water, using gel pills as needed to keep hole clean. The saturation of the mud will then be allowed to increase to saturated before drilling the Pine Salt at 6822'. The system will be kept salt saturated to TD.

6. Testing, Logging and Coring Programs (Proposed, depending shows)

- A. Drill Stem Tests will be made in any formation indicating commercial production.
- B. Logs run will be an Integrated Sonic Log from 2000' to total depth; a Dual Induction Log from surface to total depth; and a FDC/CNL Log from approximately 6000' to total depth.
- C. A two man mud logging unit will be on location from 8500' to TD.
- D. No cores are anticipated.
- E. We do not anticipate using fracture treatment.
- F. Directional surveys will be taken every 500' from surface to TD and the connection above any anticipated salts and the connection below the Pine and Charles salts.

7. Anticipated Abnormal Pressures or Temperatures Expected

No abnormal pressures or temperatures have been noted or reported in wells drilled in the area at the depths anticipated in the well. Bottom hole temperature should be approximately 280°F at TD, but not extreme.

Traces of hydrogen sulfide may be encountered from 9000' to TD. Adequate precautions will be taken and equipment installed. An H₂S safety supervisor will be used to train the crews in proper use of the safety equipment and in H₂S awareness. He will also be on location during testing of potential H₂S bearing formations.

11920

January 6, 1986

Mr. Jeffery E. Jones
Basic Earth Science Systems, Inc.
P.O. Box 3088
Englewood, Colorado 80155

Dear Mr. Jones:

Check No. 4543 in the amount of \$100.00 was received.

Enclosed is Permit No. 11920 to drill the Basic Corps of Engineers #31-10 well, located in the NW NE of Section 10, T.153N., R.101W., McKenzie County, North Dakota.

It is requested that notification be given, immediately upon the spudding of the well. This information shall be relayed to the Oil and Gas Division, in Bismarck, via telephone. The following information should be included: well name, legal location, Permit Number, drilling contractor, company representative, and date and time of spudding. Office hours are 8:00 a.m. to 12:00 noon, and 1:00 p.m. to 5:00 p.m. Central Time. Our telephone number is Area Code 701, 224-2969.

Thank you for your cooperation.

Sincerely yours,

F. E. Wilborn
Deputy Enforcement Officer

lb
enc.

NORTH DAKOTA INDUSTRIAL COMMISSION

OIL AND GAS DIVISION

WESLEY D. NORTON
Chief Enforcement Officer

F. E. WILBORN
Deputy Enforcement Officer

CLARENCE G. CARLSON
Geologist

CHARLES KOCH
Engineering Dept.

DOREN DANNEWITZ
Field Supervisor

KEN KALLESTAD
Reclamation Sup.

January 6, 1986

Mr. Jeffery E. Jones
Basic Earth Science Systems, Inc.
P.O. Box 3088
Englewood, Colorado 80155

Re: Deviate Wellbore
Basic Corps of Engineers #31-10
NW NE Sec.10-153N-101W, McKenzie
Permit No. 11920

Dear Mr. Jones:

Pursuant to Section 43-02-03-25 NDAC (as amended May 1, 1980), permission to deviate the wellbore of the Basic Corps of Engineers #31-10 well, Permit No. 11920, is hereby given.

The permission is granted on the condition that the wellbore of the well, having a surface location 660' from north line and 2305' from east line of Section 10, T.153N., R.101W., McKenzie County, North Dakota, intersect all pay zones at a point that complies with the spacing requirements in the Baker Field. Also, a directional survey of the well showing the location of the wellbore shall be filed with the Industrial Commission within 30 days after completion of the well.

Sincerely yours,

F. E. Wilborn

F. E. Wilborn
Deputy Enforcement Officer

FEW:lb
enc.



Earth Science Systems, Inc.

P.O. Box 3088
Englewood, Colorado 80155
(303) 792-5230

January 2, 1986

Mr. F. E. Wilborn
Deputy Enforcement Officer
North Dakota Industrial Commission
Oil and Gas Division
900 East Boulevard
Bismarck, ND 58505

Re: Basic Corps of Engineers #31-10
NW&NE $\frac{1}{4}$ Section 10, T153N, R101W
McKenzie County, ND

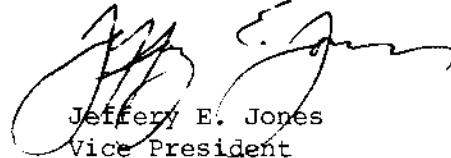
Dear Mr. Wilborn:

Enclosed please find an original and three copies of an Application to Drill for the above referenced well. A check in the amount of \$100.00 is enclosed for the permitting fee, as well as three copies of the Drilling Prognosis and the Surveyor's Plat.

Please do not hesitate to contact me if you have any questions or need additional information.

Sincerely,

BASIC EARTH SCIENCE SYSTEMS, INC.



Jeffery E. Jones
Vice President

JEJ/ib

enc. Application to Drill (4)
check
Drilling Prog. & Survr. Plat (3)

FORM 1

North Dakota State Industrial Commission
Oil and Gas Division

900 EAST BOULEVARD - BISMARCK, NORTH DAKOTA - 58505

APPLICATION FOR PERMIT TO DRILL

(File original and 3 copies with the Oil & Gas Division, 900 East Boulevard, Bismarck, North Dakota 58505)

Type of work: Drill new well _____, Reenter old well _____, Drill directional well X _____.Type of well: Oil X _____, gas _____, disposal _____, injection _____, others _____.

NAME OF OPERATOR: Basic Earth Science Systems, Inc.

ADDRESS: P.O. Box 3088, Englewood, CO 80155

NAME AND ADDRESS OF SURFACE OWNER OR TENANT: North Dakota Game & Fish

WELL NAME AND NO.: Basic Corps of Engineers #31-10

LOCATION OF WELL: Qtr.-Qtr. NW 1/4 NE 1/4 Sec., 10 Twp. 153N Rge. 101W COUNTY: McKenzieSurface location is 660 feet from (N) ~~(S)~~-section line and 2305 feet and from (E) ~~(W)~~ section line. 10, 153N, 101WIf directional, top of pay is 660 feet from (N) ~~(S)~~section line and 2140 feet and from (E) ~~(W)~~ section line.Distance from proposed location to nearest spacing (drilling) unit line 500 ft.Distance from proposed location to nearest permitted or completed well in the same pool is 1920 ft.Acres in spacing (drilling) unit 320 Description of spacing unit is North 1/4 Section 10ELEVATION: 1851 (GROUND) 1850.6 (GRADED) ESTIMATED TOTAL DEPTH: 13,600'PROJECTED HORIZON (Pool Name): Red River APPROXIMATE DATE WORK WILL START: 2/1/85

REMARKS: _____

I hereby swear or affirm that the information herein provided is true, complete and correct as determined from all available records.

 Vice President

January 2, 1986

Title

Date

Signature

Jeffery E. Jones

STATE OF Colorado)COUNTY OF Arapahoe) SSOn this 2 day of January, 19 86, before me personally appeared _____

Jeffery E. Jones to me known as the person described in and who executed the foregoing instrument and acknowledged that (s)he executed the same as his/her free act and deed.

 Notary PublicMy Commission expires 10-21-88

FOR STATE USE ONLY

API NO. 33-053-02148PERMIT NO. & WELL FILE NO. 11920

APPROVAL DATE: JAN 6 1986

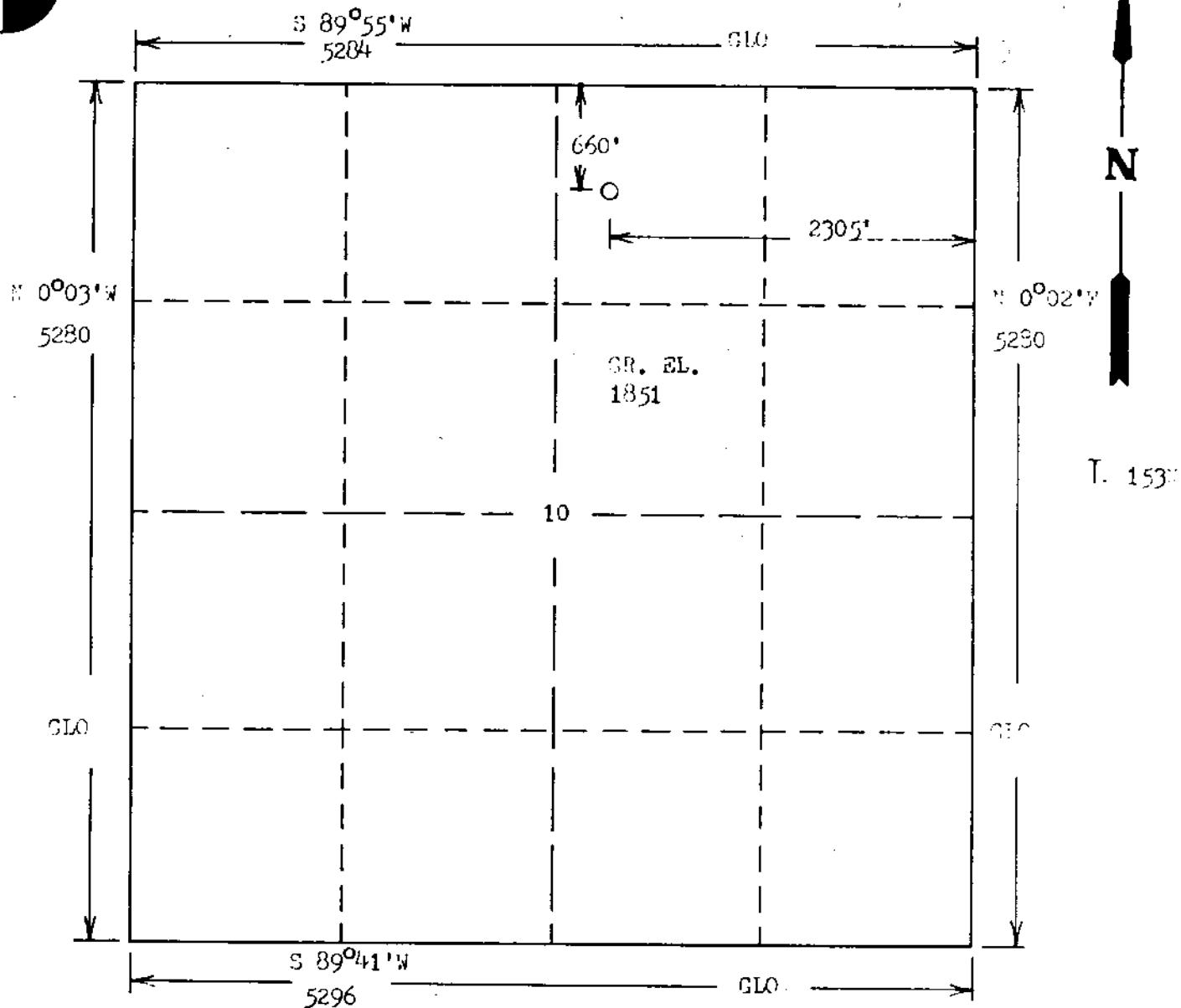
BY: Jeffery E. JonesNotary
Seal

(SEE INSTRUCTIONS ON REVERSE SIDE)



Form PS-102

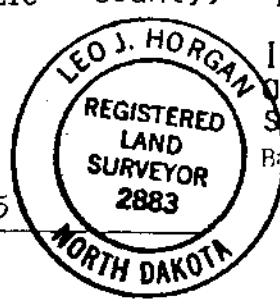
R. 101W

9001534
13-01-1984
11745

Scale: 1"=1000'

Powers Elevation of Denver, Colorado has in accordance with a request from Judy Burke determined the location of to be 660'fn & 2305'fe Range 101 West of the fifth principal Meridian, for Basic Earth Science Systems inc., basic Corp. of Engineers Alternate Section 10 , Township 153 North McKenzie County, North Dakota

Date: 12-21-85



I hereby certify that this plot is an accurate representation of a correct survey showing the location of Basic Corp. of Engineers

Licensed Land Surveyor No. 2883
State of North Dakota

DRILLING PROGNOSIS
Basic Corps of Engineers #31-10
 Directional Well
 NW $\frac{1}{4}$ NE $\frac{1}{4}$ Section 10, T153N, R101W
 McKenzie County, ND

1. Estimated Tops of Geological Markers

| <u>Formation</u> | <u>True Vertical Depth</u> | <u>Subsea Depth</u> |
|------------------|----------------------------|---------------------|
| Pierre Shale | 1,580 | + 291 |
| Niobrara | 4,107 | -2,236 |
| Greenhorn | 4,563 | -2,692 |
| Belle Fourche | 4,607 | -2,736 |
| Mowry | 4,777 | -2,906 |
| Muddy | 4,954 | -3,083 |
| Dakota | 5,357 | -3,486 |
| Morrison | 5,832 | -3,961 |
| Swift | 6,100 | -4,229 |
| Reardon | 6,305 | -4,434 |
| Piper | 6,487 | -4,616 |
| Spearfish | 6,787 | -4,916 |
| Pine Salt | 6,822 | -4,951 |
| Minnekahta | 7,202 | -5,331 |
| Opeche | 7,257 | -5,386 |
| Minnelusa | 7,542 | -5,671 |
| Amsden | 7,834 | -5,963 |
| Tyler | 8,020 | -6,149 |
| T/Miss. Otter | 8,142 | -6,271 |
| Kibbey | 8,303 | -6,432 |
| Charles | 8,452 | -6,581 |
| BLS | 8,933 | -7,061 |
| Lodgepole | 9,649 | -7,777 |
| Bakken | 10,423 | -8,551 |
| Three Forks | 10,496 | -8,624 |
| Nisku | 10,685 | -8,813 |
| Duperow | 10,784 | -8,912 |
| Souris River | 11,243 | -9,371 |
| Dawson Bay | 11,480 | -9,608 |
| Prairie Evap. | 11,593 | -9,721 |
| Winnepegosis | 11,788 | -9,916 |
| Ashern | 11,987 | -10,115 |
| Interlake | 12,102 | -10,230 |
| Stonewall | 12,950 | -11,078 |
| Gunton | 13,029 | -11,157 |
| Stoney Mt. | 13,134 | -11,262 |
| Red River | 13,190 | -11,318 |
| TD | 13,502 | -11,630 |

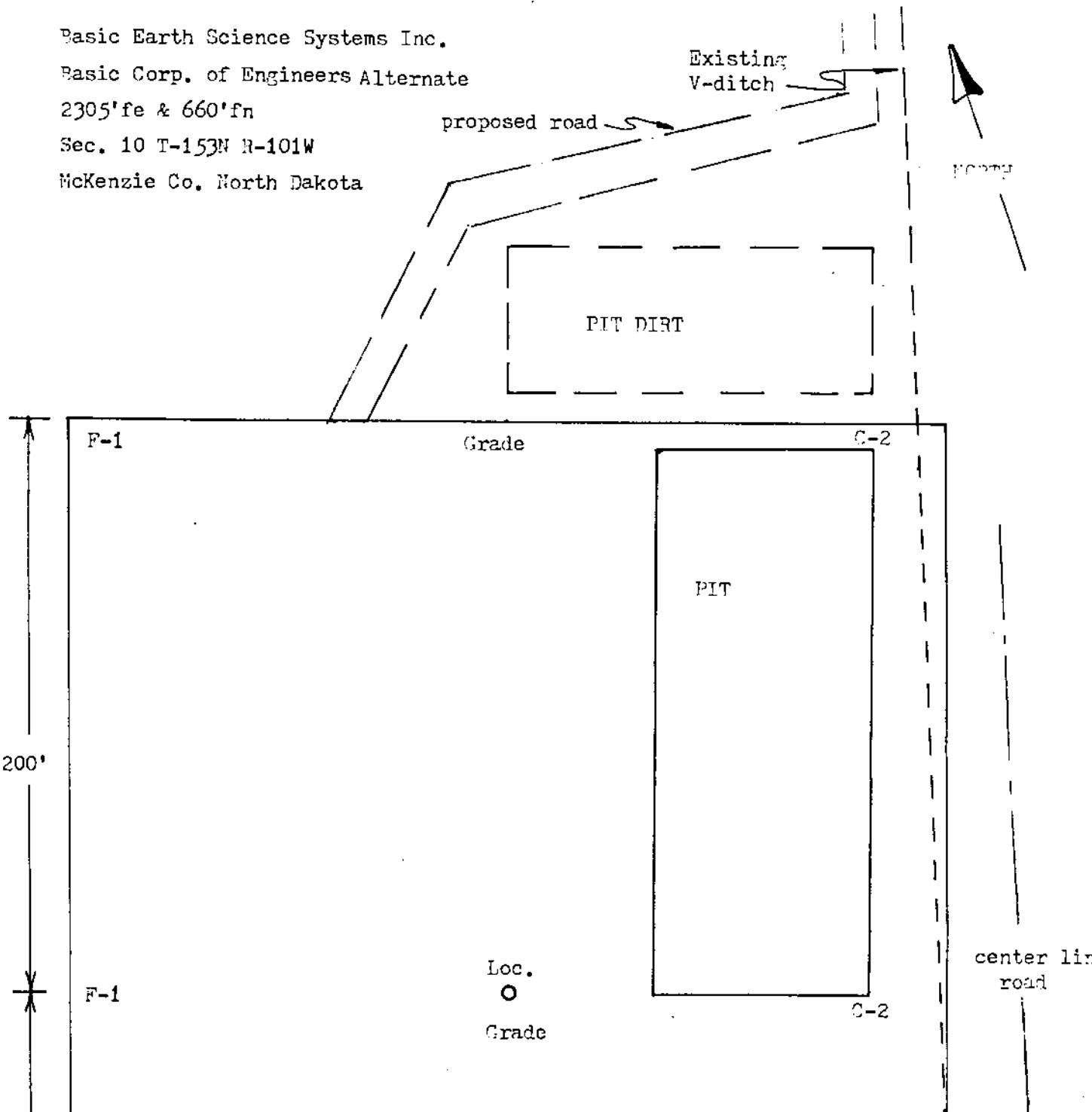
DRILLING PROGNOSIS
Basic Corps of Engineers #31-10

Proposed Casing Program (All new)

| <u>Size</u> | <u>Grade</u> | <u>Weight/Ft</u> | <u>Thread</u> | <u>Setting Depth</u> | <u>Hole Size</u> |
|-------------|--------------|------------------|---------------|----------------------|------------------|
| 9-5/8" | K-55 | 36# | ST&C | 0-3000' | 12-1/2" |
| 5-1/2" | L-80 | 23# | LT&C | 0-2550' | 8-3/4" |
| 5-1/2" | L-80 | 20# | LT&C | 2550-6550' | 8-3/4" |
| 5-1/2" | RS-90 | 23# | LT&C | 6550-6750' | 8-3/4" |
| 5-1/2" | L-80 | 20# | LT&C | 6750-8200' | 8-3/4" |
| 5-1/2" | RS-90 | 23# | LT&C | 8200-8985 | 8-3/4" |
| 5-1/2" | L-80 | 20# | LT&C | 8985-11550' | 8-3/4" |
| 5-1/2" | RS-90 | 26.4# | LT&C | 11550-11850' | 8-3/4" |
| 5-1/2" | L-80 | 23# | LT&C | 11850-13600' | 8-3/4" |

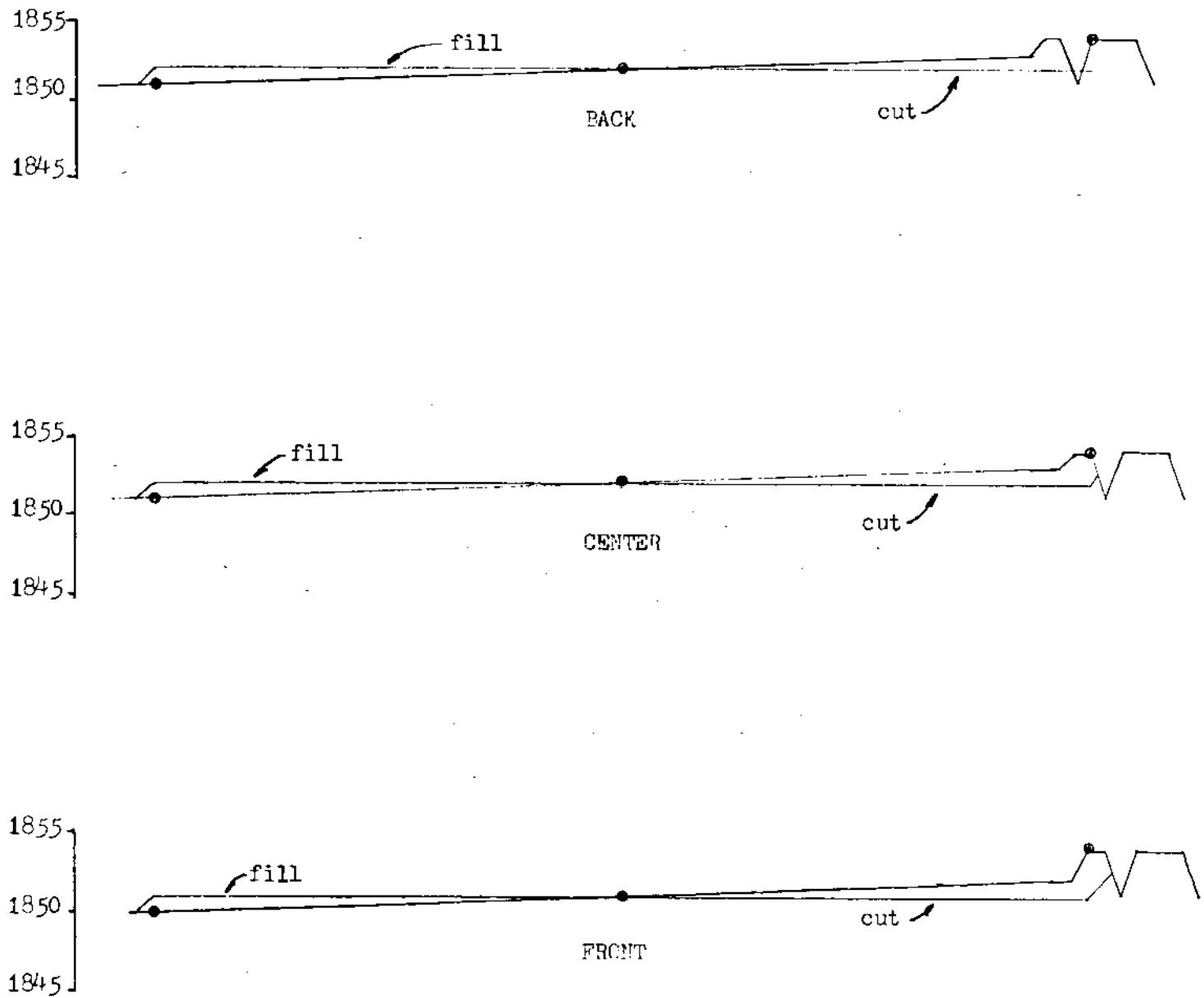
Basic Earth Science Systems, Inc. plans to drill a 13,600' (13,610' measured depth) Red River test directionally from a surface location 660' FNL and 2305' FEL of Section 10, T153N, R101W to a point 660' FNL and 2140' FEL of Section 10, T153N, R101W. Surface casing will consist of 3000' and will protect any near-surface water zones. We will drill approximately 6000' and then begin directional drilling.

Basic Earth Science Systems Inc.
Basic Corp. of Engineers Alternate
2305'fe & 660'fn
Sec. 10 T-153N R-101W
McKenzie Co., North Dakota



150' 100' 50' Center
line 50' 100' 150'

Scale: Horizontal 1"=50'
Vertical 1"=10'
Dirt Quantities (not including pit)
CUT: 1,200 CU.YDS.
Fill: 1,100 CU.YDS.



Basic Earth Science Systems Inc.
Basic Corp. of Engineers Alternate
660'fn & 2305'fe
Sec. 10 T-153N R-101W
McKenzie Co. North Dakota

NORTH

Existing gravel road

1851

Existing Hi-Way

8

Proposed road

Proposed Location

1

1855

ELEVATED

10

17

15

Baker
2129

W I L B U R

BM 1860

ELEVATED

20

5

1857

2000-21

2055

Rosefield Ch

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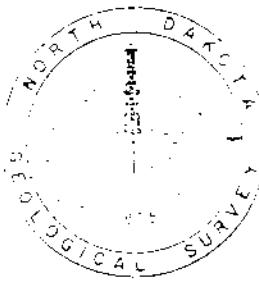
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NORTH DAKOTA GEOLOGICAL SURVEY

UNIVERSITY STATION·GRAND FORKS, N. DAK. 58208-7131
(701) 777-2231



DON L. HALVORSON
State Geologist

NOTICE

RE: Cores and samples from the Basic Earth Science Systems, Inc.,
NAME OF OPERATOR

Basic Corps of Engineers #31-10, 11920.
WELL NAME AND NUMBER PERMIT NUMBER

Section 38-08-04 of the North Dakota Century Code and Section 43-02-03-38 of the North Dakota Administrative Code provide for the preservation of cores and samples and the shipment of same to the State Geologist free of charge when requested.

Samples from the subject well (are) (~~are not~~) to be washed, dried, and properly labeled and forwarded to the State Geologist prepaid. Include all samples from B 25 ft East Charles S. H. to total depth.

Cores from the subject well (are) (~~are not~~) to be forwarded to the State Geologist prepaid. PLEASE INCLUDE ALL CORES.

Target Formation Cr. Res/Rise

Designation: Wildcat Replacement

Development

Extension

Outpost

Copies of all logs must be submitted to the State Geologist as provided for by Section 38-08-04 of the North Dakota Century Code and Section 43-02-03-31 of the North Dakota Administrative Code.

Signed

SFN 5737

CHECK SHEET

DATE:

January 6, 1986

FILE NO. 11920

COMPANY:

Basic Earth Science Systems, Inc.

WELL NAME:

Basic Corps of Engineers #31-10

LOCATION:

NW NE Sec. 10-153N-101W, McKenzie Co.

Permit Fee

Application to Drill

Organization Report

\$100,000 Bond

\$50,000 Bond

\$15,000 Bond

Certified Plat

Notice of Intention to Drill

Sundry Notice

XXXX

Completion Report

Plugging Report

Authorization to Transport Oil

4, 5, 6, 7

enc. 1, 2, 3 enc.

DST Reports

Geological Reports

Rept. of Sub-Surface direction Survey

Core Analysis Reports

CYB, CBL, FDL 2-6-87

Logs

Mud 9-2-86 DR, BHC, FDL 9-15-86

PERMIT NO.

11920

ISSUED:

Jan. 6, 1986

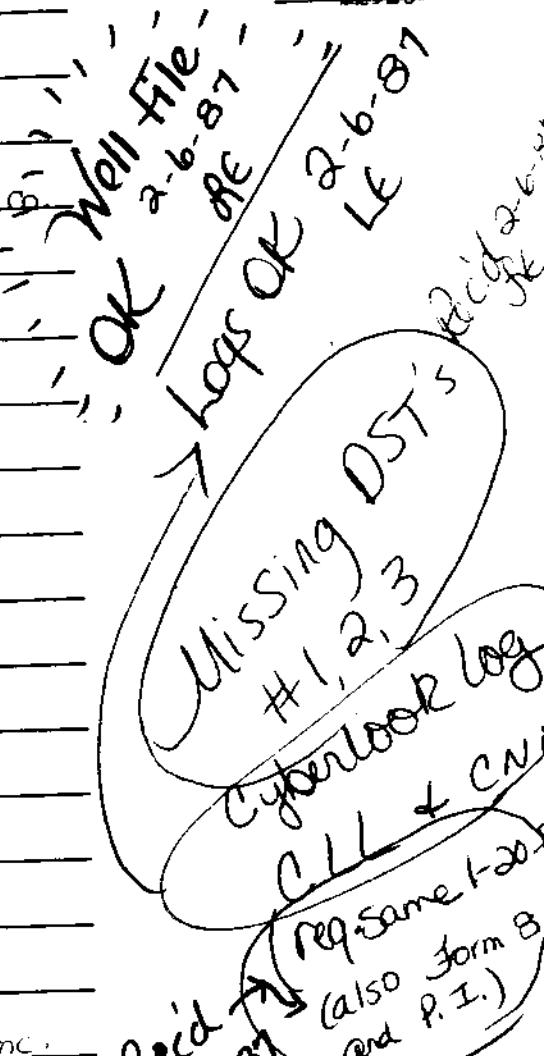
Status of Well:

Inspection Date:

Inspector:

Terrain: Tillable, Prairie, Badlands Type, other (circle one)

If Producer: Return check sheet promptly when reclamation is first noticed

If Plugged and Abandoned: Is drill site acceptable for bond release? Yes No
If no, please explain below.

CHECK SHEET

DATE: January 6, 1986 FILE NO. 11920

COMPANY: Basic Earth Science Systems, Inc.

WELL NAME: Basic Corps of Engineers #31-10

LOCATION: NW NE Sec.10-153N-101W, McKenzie Co.

Permit Fee X

Application to Drill X

Organization Report X

\$100,000 Bond _____

\$50,000 Bond X

\$15,000 Bond _____

Certified Plat X

Notice of Intention to Drill X

Sundry Notice _____

Completion Report _____

Plugging Report _____

Authorization to Transport Oil _____

DST Reports _____

Geological Reports _____

Core Analysis Reports _____

Logs _____

PERMIT NO. 11920ISSUED: Jan. 6, 1986

Status of Well: _____ Inspection Date: _____ Inspector: _____

Terrain: Tillable, Prairie, Badlands Type, other (circle one)

If Producer: Return check sheet promptly when reclamation is first noticed

If Plugged and Abandoned: Is drill site acceptable for bond release? Yes No
If no, please explain below.

