



S. Smith

THE STATE OF UTAH
OFFICE OF STATE ENGINEER
SALT LAKE CITY

RECEIVED
WAYNE D. CRIDDLE
STATE ENGINEER
PRODUCTION
DEPARTMENT

September 11, 1961

Phillips Petroleum Company
Bartlesville,
Oklahoma

Gentlemen:

RE: APPROVED APPLICATION NO. 32773

Enclosed find Approved Application No. 32773 . This is your authority to proceed with actual construction work which, under Sections 73-3-10 and 73-3-12, Utah Code Annotated, 1953, as amended, must be diligently prosecuted to completion. The water shall be put to beneficial use and proof of appropriation made to the State Engineer on or before ~~February 28, 1961~~ otherwise the application will lapse.

Failure on your part to comply with the requirements of the statutes may result in forfeiture of this application.

*Note error in date
Oct 9/1961*

Yours truly,

Wayne D. Criddle

ADDRESS ALL COMMUNICATIONS TO:

Wayne D. Criddle
STATE ENGINEER
STATE CAPITOL BUILDING
SALT LAKE CITY, UTAH

js
Encl: Copy of approved application

APPLICATION APPROVED

NOTICE TO APPLICANT

The approval of this Application is not a certificate of change. It is merely your authority to begin construction work, which must be diligently prosecuted to completion. To secure a certificate of change under this Application proof of change must be submitted within the time limit allowed by the State Engineer. The amount of water for which certificate will be issued will depend upon the amount of water actually put to a beneficial use, not to exceed, however, the amount of water covered by the original right. For further information write the State Engineer.

RULES AND REGULATIONS

Applicants will save time and expense by familiarizing themselves with the law before making Applications.

If the reservoir is to be located on the channel of the source from which the water is to be appropriated, it should be so stated under explanatory, and—

1. The location of the impounding dam should be described in Paragraph 16.
2. The point where the released storage will be rediverted from the natural stream should be described under explanatory in accordance with the note under Paragraph 16.

When the water is to be stored in other than the natural channel of the source from which it is to be appropriated, it should be so stated under explanatory, and—

1. The point of diversion from the supplying source should be described in Paragraph 16.
2. The intersection of the longitudinal axis of impounding dam and centerline of stream channel or drainage and a similar point where the released storage will be rediverted from a natural channel should be described under explanatory in accordance with the note under Paragraph 16.

In all cases Paragraphs 17 to 27, incl., should describe the proposed diverting and carrying works, exclusive of natural channels, even if already constructed in whole or in part.

If it is proposed to collect the water of a number of springs or other sources at a common point, said point should be described as the point of collection in Paragraph 16, and the point of diversion from each source should also be described under explanatory in accordance with the note in Paragraph 16. The quantity of water sought from each source should be indicated under explanatory, the total equaling the quantity specified in Paragraphs 12 or 13. Where the source of supply is in reality a spring area, the point of diversion is the point where the water is collected; in such case the exterior boundary of the spring area must be described under explanatory by metes and bounds and located with reference to the same point as used in describing the point of collection and as outlined by the note under Paragraph 16.

No enlargement of an original water right may be made by a change Application, either as to quantity of water covered, period of use or otherwise.

When there are two or more coapplicants the Application must be accompanied by a power of attorney.

The applicant's permanent address should be given in Paragraph 2, and the State Engineer notified promptly of any change in address; otherwise applicant may lose rights initiated by Application by failing to receive notices sent from the State Engineer's office.

No Application or other paper pertaining to an Application will be marked received unless accompanied with the required filing fee.

Applications accepted and numbered by the State Engineer, when returned to applicant for correction or additions, must be amended with red ink. Erasures must not be made, but any matter may be eliminated by running a red line through it. Corrected Applications must be resubmitted to the State Engineer's office, within sixty days from the date of State Engineer's letter returning Application for correction; otherwise the priority of the right to change will be brought down to date corrected Application is resubmitted.

Applicants will be informed by the State Engineer's office when cost of publishing notice of Application is due, and must advance cost within sixty days after date of notice, otherwise Application will lapse.

Fees Required by Law Payable to State Engineer

For examining and filing Applications for change of point of diversion, place and nature of use.....	\$2.50
For approving and recording Applications for change of point of diversion, place and nature of use.....	\$2.50
For filing written proof of change.....	\$1.00
For examining maps, profiles and drawings that are part of the proof of change.....	\$5.00
For issuing certificate of change.....	\$1.00

NOTE—In addition to the above fees applicants must pay the cost of publication of "Notice to Water Users" concerning the proposed change.

EXPLANATORY - contd. from printed form.

The additional alternative points of diversion from the source are in Section 3, T. 41S., R. 24E., San Juan County, Utah, situate at points as follows:

<u>Diversion Point</u>	<u>From West Line</u>	<u>From North Line</u>	<u>Subdivision</u>
1	100'	1780'	SW $\frac{1}{2}$ NW $\frac{1}{4}$
2	365'	1780'	"
3	630'	1770'	"
4	900'	1620'	"
5	1170'	1620'	"
6	1400'	1600'	SE $\frac{1}{2}$ NW $\frac{1}{4}$
7	1530'	1600'	"
8	1900'	1600'	"
9	2150'	1620'	"
10	2400'	1700'	"
11	2640'	1750'	"
12	2900'	1810'	SW $\frac{1}{2}$ NE $\frac{1}{4}$
13	3180'	1900'	"
14	3400'	1950'	"
15	3650'	2050'	"
16	3870'	2225'	"
17	4100'	2450'	SE $\frac{1}{2}$ NE $\frac{1}{4}$
18	4250'	2700'	NE $\frac{1}{2}$ SE $\frac{1}{4}$
19	4380'	2975'	"
20	4420'	3250'	"

*Review
file/S*

October 13, 1961

AIRMAIL

Mr. Clair M. Senior
Senior & Senior
Attorneys at Law
10 Exchange Place
Salt Lake City, Utah

Re: Alternate or Additional Source of Water
for the Rutherford Unit, San Juan County, Utah

Dear Clair:

Herewith in triplicate is completed and signed application to the Utah State Engineer for additional and alternate points of diversion for water for water-flood purposes in the Rutherford Unit. I would appreciate it if you would handle this matter with the Water Engineer and, as diplomatically as possible, urge upon him the importance of expediting the matter as much as possible.

Having gotten these papers back from the Production Department too late to get a check for the filing fee, I would ask that you advance the fee and, upon being billed, I will send you the check.

If you need any additional information, please advise.

Very truly yours,

RMW:jd
Enclosures

R. M. Williams

cc - Mr. Shofner Smith ✓

21 OCT 1961

3 copies transmitted
Chairman
10-13-67
P.S. Will

STURMISE
Legal

Application for Permanent Change of Point of Diversion, Place and Nature of Use of Water STATE OF UTAH

Do not fill out this blank until you have read carefully and thoroughly understand the "Rules and Regulations" on the back hereof and all the notes in the body of it.

For the purpose of obtaining permission to permanently change the point of diversion, ~~place or nature of use of~~ water right acquired by original Application No. 32773 (Give No. of Application, certificate of appropriation, title and date of Decree or other identification of right) to that hereinafter described, application is hereby made to the State Engineer, based upon the following showing of facts, submitted in accordance with the requirements of the Laws of Utah.

- The name of the applicant is Phillips Petroleum Company
- The post-office address of the applicant is Bartlesville, Oklahoma
- †The flow of water which ~~has been or was to have been~~ used in second-feet is 8
- †The quantity of water which has been or was to have been used in acre-feet is XX
- †The water ~~has been or was to have been~~ used each year from January 1 to December 31 incl.
(Month) (Day) (Month) (Day)
- †The water has been or was to have been stored each year from XX to XX incl.
(Month) (Day) (Month) (Day)
- The drainage area to which source of supply belongs is..... (Leave blank)
- The direct source of supply is Underground water and subsurface flow of San Juan River in San Juan County.
- †The point^s of diversion as described in the original Application ~~or the point at which the water has been diverted~~ ^{are} situated at a point s. in Section 5, T. 41S., R. 24E as more particularly set out in the original Application No. 32773.

- †The water involved ~~has been or was to have been~~ used for the following purposes:
Pressure maintenance and secondary recovery purposes
- Total XX Acres.

NOTE—If for irrigation, give legal subdivision of land and total acreage which has been or was to have been irrigated. If for other purposes, give nature, place and extent of use or proposed use.

- †The point at which water ~~has been or was to have been~~ returned to the stream channel is situated as follows: XX

NOTE—The above space is to be filled in only when all or part of the water is returned to the natural stream or channel.

The Following Changes Are Proposed

- The flow of water to be changed in cubic feet per second is No change
- The quantity of water to be changed in acre-feet is XX
- The water will be used each year from January 1 to December 31 incl.
(Month) (Day) (Month) (Day)
- The water will be stored each year from XX to XX incl.
(Month) (Day) (Month) (Day)
- The point at which it is now proposed to divert the water is situated (See note) See explanatory

NOTE—The "point of diversion," or "point of return," must be located by course and distance or by rectangular distances with reference to some regularly established United States land corner or United States mineral monument if within a distance of six miles of either, or if a greater distance, to some prominent and permanent natural object.

- The proposed diverting and conveying works will consist of wells and conveyance pipe as explained in original Application No. 32773
- The cross-section of the diverting channel will be. XXXXXXX ○
(Strike out ones not needed)
- The nature of the diverting channel will be: earth, wood, iron, concrete.
(Strike out the ones not needed)

†Strike out written matter not needed.

Copied for
C. M. Boles
11-3-61 SS:mll

THE STATE OF UTAH
OFFICE OF STATE ENGINEER

WAYNE D. CRIDDLE
STATE ENGINEER

SALT LAKE CITY
October 30, 1961

Issue Date: October 30, 1961
Expiration Date: April 30, 1962



Phillips Petroleum Company
c/o Senior and Senior, Attorneys
#10 Exchange Place
Salt Lake City 11, Utah

Gentlemen:

RE: APPROVED APPLICATION NO. 32773 AND
CHANGE APPLICATION NO. a-4025

This is to acknowledge receipt of your Permanent Change Application No. a-4025, which proposes to change the point of diversion of 8.0 sec.-ft. of water initiated by Application No. 32773. The water was to have been diverted from ten 12.75-inch O.D. wells located within $S\frac{1}{2}N\frac{1}{2}NE\frac{1}{4}$ and $SE\frac{1}{4}NE\frac{1}{4}NW\frac{1}{4}$ of Sec. 5, T41S, R24E, SLB&M. It is now proposed to divert the 8.0 sec.-ft. of water from a total of 31 wells 12.75 inches O.D., between 35 and 50 ft. deep, ten of these being the same as heretofore described and thirty-one wells to be located within $NW\frac{1}{4}$ Sec. 3, $N\frac{1}{2}$ Sec. 4, $NW\frac{1}{4}$ Sec. 5, T41S, R24E, SLB&M. The water is to be used for pressure maintenance and secondary recovery purposes as heretofore.

You have requested permission to proceed immediately with the drilling of these additional 31 wells. This letter grants you that privilege with the understanding that all risks as regards water rights are being assumed by you.

If other than new standard casing is to be used in these wells, such casing must be inspected and approved by a representative from this office. All wells must be so constructed and finished that they may be readily controlled at all times, in order to prevent waste of underground water. Wells must be drilled and cased in such a manner that will prevent the infiltration of contaminated water into them.

The driller must be bonded and have a current permit from the State Engineer. Before commencing, he must give this office notice as to the day he will begin drilling. Also, within 30 days after the well has been completed or abandoned, he must file a well driller's report for each well. These reports are to contain accurate and complete information regarding the work done and become part of the files in this office pertaining to the above-numbered wells.

This is permission for a licensed driller to begin drilling your wells.

Please note that the expiration date of this letter is April 30, 1962.

Yours truly,

Wayne D. Criddle
Wayne D. Criddle
STATE ENGINEER

RECEIVED

ds

1961
SENIOR

EXPLANATORY

The following additional facts are set forth in order to define more clearly the full purpose of the proposed application:

ITEM 2

The water will be pumped from the diversion area to the oil field where the water will be injected under pressure through deep wells into the petroleum-bearing formations for pressure maintenance and secondary recovery purposes.

ITEM 8

The point or points of diversion from the source will be in Section 5, T41S, R24E SLM, San Juan County, situated as follows: From that point at which the south bank of the river channel intersects the east line of Section 5, T41S, R24E, to that point at which the South bank of river channel intersects the North line of Section 5, T41S, R24E.

Diversion will be from one or more wells or infiltration galleries to be drilled in the alluvial fill and to be located as close to the South bank of the river channel as is practical within the east-west limits as above defined. Specific location and number of diversion points will be determined by a hydrographic survey and/or producing characteristics of wells to be drilled. The aggregate withdrawal, the rate of which is not to exceed that specified in this application, will be commingled in a conveyance works described in greater detail herein.

ITEM 9

The diverting and carrying works will consist of 12-1/4" diameter wells, cased with 35 to 50 feet of 8-5/8 inch outside diameter pipe to be drilled to depths of from 35 feet to 50 feet and about 11,500 feet of 10-3/4 inch conveyance pipe to places of use.

ITEM 20

Township 41 South, Range 23 East, SLM

S/2 Sec. 1; SE/4 Sec. 2; E/2 Sec. 11; All Sec. 12; All Sec. 13, E/2 Sec. 14, NE/4 Sec. 24.

Township 41 South, Range 24 East, SLM

All Sections 3, 4, 5, 6, 7, 8, 9, 10; W/2 Sec. 11, W/2 Sec. 14; All Sections 15, 16, 17, 18, 19, 20, 21; NW/4, W/2 SW/4 Sec. 22; W/2 NE/4, NE/4, W/2 SW/4 Sec. 28; All Sections 29, 30; N/2 Sec. 31; N/2 Sec. 32.

Said described lands, which are in San Juan County, Utah, constitute the Ratherford portion of the Greater Aneth Area oil field.

Continued on page 4

(Use page 4 if additional explanatory is needed.)

The quantity of water sought to be appropriated is limited to that which can be beneficially used for the purpose herein described.

PHILLIPS PETROLEUM COMPANY

By:

Signature of Applicant

VICE PRESIDENT OF PRODUCTION

*If applicant is a corporation or other organization, signature must be the name of such corporation or organization by its proper officer, or in the name of the partnership by one of the partners, and the names of the other partners shall be listed. If a corporation or partnership, the affidavit below need not be filled in. If there is more than one applicant, a power of attorney, authorizing one to act for all, should accompany the Application.

DECLARATION OF CITIZENSHIP

STATE OF UTAH, } ss
County of.....

On the day of 19..... personally appeared before me, a notary public for the State of Utah, the above applicant who, on oath, declared that he is a citizen of the United States, or has declared his intention to become such a citizen.

My commission expires:

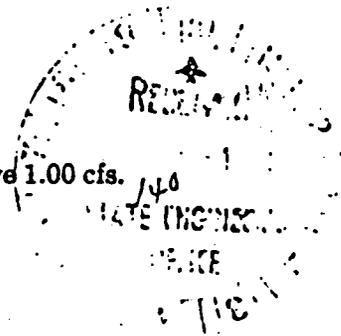
(SEAL)

Notary Public

FEEES FOR APPLICATIONS TO APPROPRIATE WATER IN UTAH

Flow rate — c.f.s.	Cost
0.0 to 0.1.....	\$ 10.00
over 0.1 to 0.5.....	20.00
over 0.5 to 1.0.....	30.00
over 1.0 to 15.0.....	30.00 plus \$5/cfs above 1.00 cfs.
over 15.0.....	100.00

Storage — acre-feet	Cost
0 to 20.....	15.00
over 20 to 500.....	30.00
over 500 to 7500.....	30.00 plus \$5/500 a. f. above first 500
over 7500.....	100.00



(This section is not to be filled in by applicant)

STATE ENGINEER'S ENDORSEMENTS

1. *10:00 a.m.* *Jan. 27, 1961* Application received *by mail* in State Engineer's office by *...*
2. Priority of Application brought down to, on account of.....
3. *Jan. 27, 1961* Application fee, \$*5.50*, received by..... Rec. No. *02265*
4. *Mar 10, 1961* Application ^{PHOTOSTATED} ~~copied~~ in book *711.32* page *357*, and indexed by *E. T. ...*
5. *...* Application platted by *...*
6. *April 7, 1961* Application examined by *...*
7. Application returned, or corrected by office.....
8. Corrected Application resubmitted *over counter* *by mail* to State Engineer's office.
9. *April 7, 1961* Application approved for advertisement by *...*
10. *June 16, 1961* Notice to water users prepared by *R. K. H.*
11. *June 27, 1961* Publication began; was completed *July 13, 1961*
Notice published in *San Juan Record, Monticello, Utah*
12. *June 27, 1961* Proof slips checked by *...*
13. Application protested by.....
14. *July 25, 1961* *Subscribers paid 725.22-1016.22*
Hearing held by.....
15. Field examination by.....
16. *Sept 5, 1961* Application designated for *approval* *rejection* *...*
17. *Sept. 11, 1961* Application copied or photostated by *T.E.* proofread by.....
18. *Sept. 11, 1961* Application *approved* *rejected*
19. Conditions:
This Application is approved, subject to prior rights, as follows:
a. Actual construction work shall be diligently prosecuted to completion.
b. Proof of Appropriation shall be submitted to the State Engineer's office by *Feb. 28, 1963*
c.
20. Time for making Proof of Appropriation extended to.....
21. Proof of Appropriation submitted.
22. Certificate of Appropriation, No....., issued

Wayne D. Criddle
Wayne D. Criddle State Engineer.

EXPLANATORY CONTINUED

The use of the applied for water for the planned pressure maintenance and secondary recovery operations will permit the recovery of substantial quantities of oil and gas which would otherwise not be recovered.

NOTICE TO APPLICANT

All waters in this state, whether above or under the ground, are the property of the public, subject to all existing rights to the use thereof. No appropriation of the unappropriated public water may be made and no rights to the use thereof shall be recognized except Application for such appropriation first be made to the State Engineer.

The approval of this Application is not a Certificate of Appropriation. It is merely your authority to begin construction work, which must be prosecuted diligently to completion. To secure a Certificate of Appropriation under this Application, Proof of Appropriation must be submitted within the time limit allowed by the State Engineer. The amount of water for which Certificate will be issued will depend upon the amount of water actually put to a beneficial use, not to exceed, however, the amount of water specified in this Application. Proof of Appropriation must be made in accordance with the requirements of the law. For further information write the State Engineer.

Copied for
C. M. Boles
4-18-62 EFL:mll

THE STATE OF UTAH
OFFICE OF THE STATE ENGINEER
SALT LAKE CITY

March 26, 1962

RECEIVED
APR 2 - 1962
PRODUCTION
DEPARTMENT

Phillips Petroleum Company
Bartlesville,
Oklahoma

Gentlemen:

RE: APPROVED APPLICATION NO. a-4025

Enclosed find Application No. a-4025 which has been approved by me. This approved Application is your authority to proceed with actual construction work which, under Sections 73-3-10 and 73-3-12, Utah Code Annotated 1953, as amended, must be diligently prosecuted to completion. The water shall be put to beneficial use and proof of appropriation filed with the State Engineer, as provided in the original application as amended by this approved change Application.

Failure on your part to comply with the requirements of the statutes may result in forfeiture of your Application.

Yours truly,

Wayne D. Criddle

Wayne D. Criddle

STATE ENGINEER
403 STATE CAPITOL
SALT LAKE CITY, UTAH

ADDRESS ALL COMMUNICATIONS TO:

js

Encl: Copy of approved application

CHANGE APPLICATION APPROVED

(Form for pending original Application)

Copy

December 2, 1965

Rutherford Unit, San Juan County, Utah -
Application No. 32773 - Request for Extension
of Time to Make Proof of Appropriation

Mr. R. M. Williams (2)
Legal Department

Phillips' Application No. 32773 to the State of Utah for appropriation of water to be used in the Rutherford Unit project was approved on September 5, 1961. One condition of the approval was that a proof of appropriation be submitted by February 28, 1963. Subsequently an extension was granted and the proof of appropriation is now due on February 28, 1966. It is not possible to determine at this time the quantity of water that will ultimately be required and this is to request your assistance in obtaining an additional extension of time before it is necessary to file the proof.

Attached is a copy of Mr. C. M. Boles' letter dated November 23, 1965, which transmits a copy of an unexecuted application for an extension of time for filing the proof from February 28, 1966, to February 28, 1971. Please examine the application as to form and, if it is acceptable, forward it to Mr. J. E. Chrisman, who will arrange for its execution. If it is your opinion that the legal firm of Senior and Senior should file the application, as was done previously, please so advise and the executed application will be returned to you.

Stofner Smith

JEC:gm
Attach.

cc: Messrs. C. W. Corbett
Attn. T. L. Osborne
C. M. Boles ✓

12/8/65
HSE

HW
JFB

P

Ratherford Unit
San Juan County, Utah
Application No. 32773
Proof of Appropriation

1300 Security Life Building
Denver, Colorado 80202

November 20, 1970

Mr. T. M. Blume
Division Chief Attorney
Denver Legal Department

Attached is a file pertaining to Phillips Petroleum Company's application for permanent use of water from underground and subsurface flow of the San Juan River in Utah for the beneficial use of pressure maintenance and secondary recovery in the Ratherford Unit.

I would like to direct your attention to Mr. C. H. Boles' letter of November 23, 1965, for background information.

On June 16, 1966, the Utah State Engineer granted a five-year extension to our Application No. 32773 for submittal of Proof of Appropriation. This extension will have elapsed on February 26, 1971.

We are preparing to file the Proof of Appropriation, however, the Casper office has information from the Area Engineer, Division of Water Rights, Department of Natural Resources, State of Utah that the filing of Proof of Appropriation is not necessary, but that filing of an Election to File Water Users Claim is necessary for permanent use of water from subsurface flow of the San Juan River.

We will appreciate your opinion on this filing.

H. W. Patterson

CML:rc
Attachment

cc: Mr. T. A. Matthews

A T T E N T I O N

THIS FORM IS TO BE USED ONLY WHEN WATER HAS BEEN PLACED TO FULL BENEFICIAL USE

Form 152

BEFORE THE STATE ENGINEER OF THE STATE OF UTAH

ELECTION TO FILE WATER USER'S CLAIM

APPLICATION NO. 32773(09-281)

STATE OF ~~DEAK~~ Utah
COURTY OF San Juan)

ss.

Phillips Petroleum Company, being first duly sworn, says that he is the owner of the above application; that the development contemplated under this application has been completed and the water placed to beneficial use.

In lieu of submitting "Proof of Appropriation" or "Proof of Change" and receiving "Certificate of Appropriation" or "Certificate of Change", the applicant hereby elects to file a "Statement of Water User's Claim" or an "Amended Statement of Water User's Claim" in the pending GENERAL DETERMINATION OF WATER RIGHTS; and that the applicant requests that said statement be prepared by the State Engineer and submitted for execution at an early date.

Phillips Petroleum Company
By: H. A. Kuehnert
Attorney-in-Fact

[Signature]
APPLICANT

ROC

Subscribed and sworn to before me this 28 day of Jan

.19 71

[Signature]
NOTARY PUBLIC

My commission expires 9-16-71



INTER-OFFICE CORRESPONDENCE / SUBJECT:
Denver Legal Department

Ratherford Unit
San Juan County, Utah
Application No. 32773
Proof of Appropriation

December 2, 1970

Mr. H. W. Patterson
Denver District Office

This is in answer to your inquiry of November 20, 1970, regarding the filing of an Election to File Water Users Claim in lieu of a Proof of Appropriation in the above matter. It is my opinion that we should elect to file the Election to File Water Users Claim.

An investigation of the pertinent Utah Statutes discloses that there is no difference between the legal effect of the two procedures. The election procedure is judicial in nature and results in a court order stating precisely our rights regarding use of the water. The decision is based upon the recommendation of the State Engineer, who has the responsibility for surveying, etc. if it is necessary. In short, we will get the same benefit at little or no expense.

Thomas M. Blume
Thomas M. Blume

TMB/cjk

J. P. Denny

December 23, 1970

Mr. Kenward H. McKinney, Area Engineer
State of Utah
Department of Natural Resources
6 East Main
Price, Utah 84501

H. W. Patterson
JS

Dear Mr. McKinney:

Enclosed is a completed and notarized State of Utah Form No. 152, "Election to File Water User's Claim" for water placed in beneficial use by Phillips Petroleum Company in the Rutherford Unit, San Juan County, Utah.

Very truly yours,

H. W. Patterson

H. W. Patterson
Production Director
Western District

CML:rc
Attachment

bcc: Mr. J. P. Denny (2)

RU 1-B



FORM 31-B

STATE OF UTAH

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF WATER RIGHTS

DEE C. HANSEN
STATE ENGINEER

JOHN BENE
DEPUTY

442 STATE CAPITOL
SALT LAKE CITY, UTAH 84114

(801) 328-6071

May 28, 1974

DIRECTING ENGINEERS

HAROLD D. DONALDSON

DONALD C. NORSETH

~~XXXXXXXXXXXX~~

Stanley Green

Rather than want w. s. well.

Phillips Petroleum Company
Box 2920
Casper, Wyoming 82601

Gentlemen:

RE: Change Appl. No. a-7804 (09-281)

Enclosed is Change Application No. a-7804 (09-281) which has been approved. The approved change application is amendatory and serves only to affect a correction to Application No. 32773 a-4025 on which an election to file a water user's claim has been submitted.

As soon as possible, engineers of this office will make the necessary field investigations and will prepare a water user's claim which will be entered in the adjudication of water rights in your area.

Yours truly,

Dee C. Hansen
State Engineer

jb

Enc.: Copy of Approved Application

CHANGE APPLICATION APPROVED

(Form for Pending Original Application)

PHILLIPS PETROLEUM CO. CASPER AREA E & P DEPT.		
Recd: JUN 3 1974		
Send to	File	Mail
Supv.	<input checked="" type="checkbox"/>	
Super. Sept.	<input checked="" type="checkbox"/>	
Dist. Engr.	<input checked="" type="checkbox"/>	
Ctr. Engr.	<input checked="" type="checkbox"/>	
Legal	<input checked="" type="checkbox"/>	
Surveyor	<input checked="" type="checkbox"/>	
Send		
Date		
By		



Application for Permanent Change of Point of Diversion Place and Nature of Use of Water STATE OF UTAH

Please clearly and correctly complete the information requested below which defines the right or rights being changed. (Type or clearly print.)

For the purpose of obtaining permission to permanently change: the point of diversion , place , or nature of use , of water rights acquired by Application No. 32773 (09-281)
(Give Number of Application, certificate of appropriation, title and date of Decree or other identification of right.)

If the right described has been amended by a previous approved change application, give the number of such change application. No. a-4025

- The name of the applicant is Phillips Petroleum Company
- The post-office address of the applicant is Box 2920, Casper, Wyoming 82601
- The flow of water which has been or was to have been used in second-feet is 8.0
- The quantity of water which has been or was to have been used in acre-feet is _____
- The water has been or was to have been used for and during periods as follows:

<u>Oil Field Pressure Maintenance and</u>	from _____	to _____	incl.
(purpose)	(month) (day)	(month) (day)	
<u>Secondary Recovery Uses</u>	from <u>January 1</u>	to <u>December 31</u>	incl.
(purpose)	(month) (day)	(month) (day)	

 and stored each year (if stored) _____ from _____ to _____ incl.
 (month) (day) (month) (day)
- The direct source of supply is 41 Wells in San Juan County.
(well, spring, stream, drain, river; if other explain)
- The point or points of diversion See Separate Sheet

(Must be the same as that of right being changed unless a previous change has been filed and approved. Then use the point or points approved in the previous change.)

- Diversion works:
 If a well give diameter and depth 12 3/4" diameter wells, 35-50 ft. deep
 If a dam and reservoir give height, capacity, and area inundated _____
 If other give type of diversion facility _____

- The water involved has been or was to have been used for the following purposes in the following described legal subdivisions: (If used for irrigation, state sole or supplemental supply, and describe other supplemental rights.)

Irrigation _____

Total acres to be irrigated _____

Stockwatering (number and kind) _____

Domestic (number of families and/or persons, etc.) _____

Other See Separate Sheet

- The point at which water has been or was to have been returned to the stream channel is situated as follows: (Please describe method of return.) _____

Note: Paragraph 10 is to be completed only when all or part of the water is returned to the natural stream or channel.

The Following Changes Are Proposed

- The flow of water to be changed in cubic feet per second is Same as heretofore
- The quantity of water to be changed in acre-feet is _____

13. The water will be used each year for:
 Same as heretofore from to incl.
 (purpose) (month) (day) (month) (day)
 from to incl.
 (purpose) (month) (day) (month) (day)
 and stored each year (if stored) from to incl.
 (month) (day) (month) (day)

14. It is now proposed to divert the water from 23 Wells
 (i.e., spring, spring area, stream, river, drain, well, etc.)
 at a point(s) as follows: See Separate Sheet

NOTE: The "point of diversion," or "point of return," must be located by course and distance or by rectangular distances with reference to some regularly established United States land corner or United States mineral monument if within a distance of six miles of either, or if a greater distance to some prominent and permanent natural object. A spring area must also be described by metes and bounds.

15. The proposed diverting and conveying works will consist of: (if a well, state diameter and depth thereof)
20 - 16-inch diameter wells, 35-50 ft. deep

16. If water is to be stored, give capacity of reservoir in acre-feet height of dam
 area inundated in acres legal subdivisions of area inundated

17. The water is to be used for the following purposes in the following described legal subdivisions: (if used for irrigation, state sole or supplemental supply, and describe other supplemental rights.)

Irrigation

Total acres to be irrigated

but limited to the sole irrigation supply of acres.

Stockwatering (number and kind)

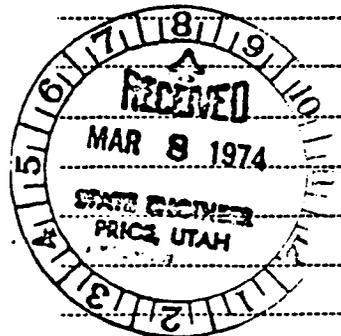
Domestic (number of families and/or persons, etc.)

Other Same as heretofore

18. If paragraphs 11 and 12 designate that only part of the right described in paragraphs 1 to 10 inclusive is to be changed, designate the status of the water so affected by this change as to its being abandoned or used as heretofore.

EXPLANATORY

The following additional facts are set forth in order to define more clearly and completely the full purpose of the proposed change: This is an Amendatory Change Application filed to correct the location of the points of diversion.



The undersigned hereby acknowledges that even though he may have been assisted in the preparation of the above-numbered application through the courtesy of the employees of the State Engineer's Office, all responsibility for the accuracy of the information contained therein, at the time of filing, rests with the applicant.

Forest E. Morgan
 Signature of Applicant

Item 7 - Points of Diversion

Well No.	Well Location	Well No.	Well Location
1	S. 1000 ft. & W. 150 ft.	22	S. 1550 ft. & E. 1850 ft.
2	S. 1000 ft. & W. 450 ft.	all from NW Cor. Sec. 3, T41S, R24E.	
3	S. 1000 ft. & W. 750 ft.	23	S. 950 ft. & E. 150 ft.
4	S. 1000 ft. & W. 1050 ft.	24	S. 950 ft. & E. 450 ft.
5	S. 1000 ft. & W. 1350 ft.	25	S. 925 ft. & E. 750 ft.
6	S. 1000 ft. & W. 1650 ft.	26	S. 910 ft. & E. 1050 ft.
7	S. 1000 ft. & W. 1950 ft.	27	S. 890 ft. & E. 1350 ft.
8	S. 1000 ft. & W. 2250 ft.	28	S. 890 ft. & E. 1650 ft.
9	S. 1000 ft. & W. 2550 ft.	29	S. 850 ft. & E. 1950 ft.
10	S. 1000 ft. & W. 2850 ft.	30	S. 825 ft. & E. 2250 ft.
11	S. 900 ft. & W. 3125 ft.	31	S. 895 ft. & E. 2540 ft.
12	S. 800 ft. & W. 3400 ft.	32	S. 1000 ft. & E. 2795 ft. DELETE FC
13	S. 700 ft. & W. 3700 ft.	33	S. 1210 ft. & E. 3000 ft.
14	S. 610 ft. & W. 3995 ft.	34	S. 1420 ft. & E. 3200 ft.
15	S. 500 ft. & W. 4280 ft.	35	S. 1620 ft. & E. 3410 ft.
all from NE Cor. Sec. 5, T41S, R24E		36	S. 1710 ft. & E. 3710 ft.
16	S. 1700 ft. & E. 50 ft.	37	S. 1760 ft. & E. 4000 ft.
17	S. 1675 ft. & E. 350 ft.	38	S. 1800 ft. & E. 4300 ft.
18	S. 1650 ft. & E. 650 ft.	39	S. 1780 ft. & E. 4600 ft.
19	S. 1610 ft. & E. 950 ft.	40	S. 1740 ft. & E. 4900 ft.
20	S. 1590 ft. & E. 1250 ft.	41	S. 1720 ft. & E. 5200 ft.
21	S. 1575 ft. & E. 1550 ft.	all from NW Cor. Sec. 4, T41S, R24E.	

Item 9 - Place of Use: Ratherford Unit Greater Aneth Oil Field; S $\frac{1}{2}$ Sec. 1; SE $\frac{1}{4}$ Sec. 2; E $\frac{1}{2}$ Sec. 11; Sec. 12; Sec. 13; E $\frac{1}{2}$ Sec. 14; NE $\frac{1}{4}$ Sec. 24, T41S, R23E, SLB&M. Secs. 3-10; W $\frac{1}{2}$ Sec. 11; W $\frac{1}{2}$ Sec. 14; Secs. 15-21; NW $\frac{1}{2}$ & W $\frac{1}{2}$ SW $\frac{1}{4}$ Sec. 22; W $\frac{1}{2}$ NE $\frac{1}{4}$, NW $\frac{1}{4}$, W $\frac{1}{2}$ SW $\frac{1}{4}$ Sec. 28; Secs. 29-30; N $\frac{1}{2}$ Sec. 31; N $\frac{1}{2}$ Sec. 32, T41S, R24E, SLB&M.

Item 14 - New Points of Diversion

Well No.	Well Location
1	S. 950 ft. & W. 148 ft. from NE Cor. Sec. 5, T41S, R24E, SLB&M. (D-41-24) 5 aad
2	S. 1014 ft. & W. 442 ft. from NE Cor. Sec. 5, T41S, R24E, SLB&M. (D-41-24) 5 aad
3	S. 1007 ft. & W. 741 ft. from NE Cor. Sec. 5, T41S, R24E, SLB&M. (D-41-24) 5 aad
4	S. 1010 ft. & W. 592 ft. from NE Cor. Sec. 5, T41S, R24E, SLB&M. (D-41-24) 5 aad
5	S. 982 ft. & W. 294 ft. from NE Cor. Sec. 5, T41S, R24E, SLB&M. (D-41-24) 5 aad
6	S. 887 ft. & W. 2 ft. from NE Cor. Sec. 5, T41S, R24E, SLB&M. (D-41-24) 85 aad
7	S. 863 ft. & E. 145 ft. from NW Cor. Sec. 4, T41S, R24E, SLB&M. (D-41-24) 5 aad
8	S. 843 ft. & E. 293 ft. from NW Cor. Sec. 4, T41S, R24E, SLB&M. (D-41-24) 5 aad
9	S. 818 ft. & E. 440 ft. from NW Cor. Sec. 4, T41S, R24E, SLB&M. (D-41-24) 5 aad
10	S. 803 ft. & E. 590 ft. from NW Cor. Sec. 4, T41S, R24E, SLB&M. (D-41-24) 5 aad
11	S. 789 ft. & E. 739 ft. from NW Cor. Sec. 4, T41S, R24E, SLB&M. (D-41-24) 5 aad
12	S. 777 ft. & E. 939 ft. from NW Cor. Sec. 4, T41S, R24E, SLB&M. DELETE FC
13	S. 803 ft. & E. 1137 ft. from NW Cor. Sec. 4, T41S, R24E, SLB&M. (D-41-24) 5 aad
14	S. 802 ft. & E. 1334 ft. from NW Cor. Sec. 4, T41S, R24E, SLB&M.
15	S. 759 ft. & E. 1529 ft. from NW Cor. Sec. 4, T41S, R24E, SLB&M.
16	S. 715 ft. & E. 1725 ft. from NW Cor. Sec. 4, T41S, R24E, SLB&M.
17	S. 672 ft. & E. 1920 ft. from NW Cor. Sec. 4, T41S, R24E, SLB&M.
18	NO WELL
19	S. 1792 ft. & W. 352 ft. from NE Cor. Sec. 4, T41S, R24E, SLB&M.
20	S. 1792 ft. & W. 952 ft. from NE Cor. Sec. 4, T41S, R24E, SLB&M.
21	NO WELL
22	S. 1792 ft. & W. 652 ft. from NE Cor. Sec. 4, T41S, R24E, SLB&M.
23	S. 1714 ft. & W. 1545 ft. from NE Cor. Sec. 4, T41S, R24E, SLB&M.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK
 DRILL DEEPEN PLUG BACK

b. TYPE OF WELL
 OIL WELL GAS WELL OTHER SINGLE ZONE MULTIPLE ZONE

2. NAME OF OPERATOR
 Phillips Petroleum Company

3. ADDRESS OF OPERATOR
 P. O. Box 2920, Casper, Wyoming 82602

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)*
 At surface 700' FNL 2140' FEL (NW NE) ✓
 At proposed prod. zone Same

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*
 Approximately 5 miles south of Montezuma Creek, Utah

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any)
 700' from Ratherford Unit lease line

16. NO. OF ACRES IN LEASE
 1904 Acres

17. NO. OF ACRES ASSIGNED TO THIS WELL
 40 Acres

18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.
 1,020' from #29W21

19. PROPOSED DEPTH
 5700' *Desert Creek*

20. ROTARY OR CABLE TOOLS
 Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.)
 5094' ungraded ground

22. APPROX. DATE WORK WILL START*
 August 1983

5. LEASE DESIGNATION AND SERIAL NO.
 14-20-603-407

6. IF INDIAN, ALLOTTEE OR TRIBE NAME
 Navajo

7. UNIT AGREEMENT NAME
 SW-I-4192

8. FARM OR LEASE NAME
 Ratherford Unit ✓

9. WELL NO.
 #29-31

10. FIELD AND POOL, OR WILDCAT
 Greater Aneth ✓

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
 Sec. 29-T41S-R24E

12. COUNTY OR PARISH
 San Juan

13. STATE
 Utah

PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
17 1/2"	13 3/8"	48#	100'	150 sx Class B (to surface)
12 1/4"	9 5/8"	36#	1600'	400 sx HLC & 400 sx Class B (Surface)
8 1/2"	7"	20#, 23#, & 26#	5700'	1,000 sx est ✓ T.O.C. approx. 2000 ft.)

Approval is requested to drill Ratherford Unit #29-31, a Desert Creek Development oil well, to increase the ultimate recovery from the Ratherford Unit.

BOP equipment will be operated daily and tested weekly.

APPROVED BY THE STATE
 OF UTAH DIVISION OF
 OIL, GAS, AND MINING
 DATE: 7/15/83
 BY: [Signature]

RECEIVED
 JUL 14 1983
 DIVISION OF
 GAS & MINING

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24. SIGNED [Signature] TITLE Area Manager DATE July 8, 1983
 A. E. Stuart

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

- 5 Minerals Management Service, Farmington, NM
 - ✓ - Utah O&G CC - S.L.C., Utah
 - 1 - J. L. Whirmire (r) T.C. Doughty
 - 1 - G. W. Berk
 - 1 - T. M. Isaacs
 - 1 - File
- See Instructions On Reverse Side
- Form 9-331C & Location Plat only - Barbara Conner
 Form 9-331C & Location Plat only - R. M. Coffelt

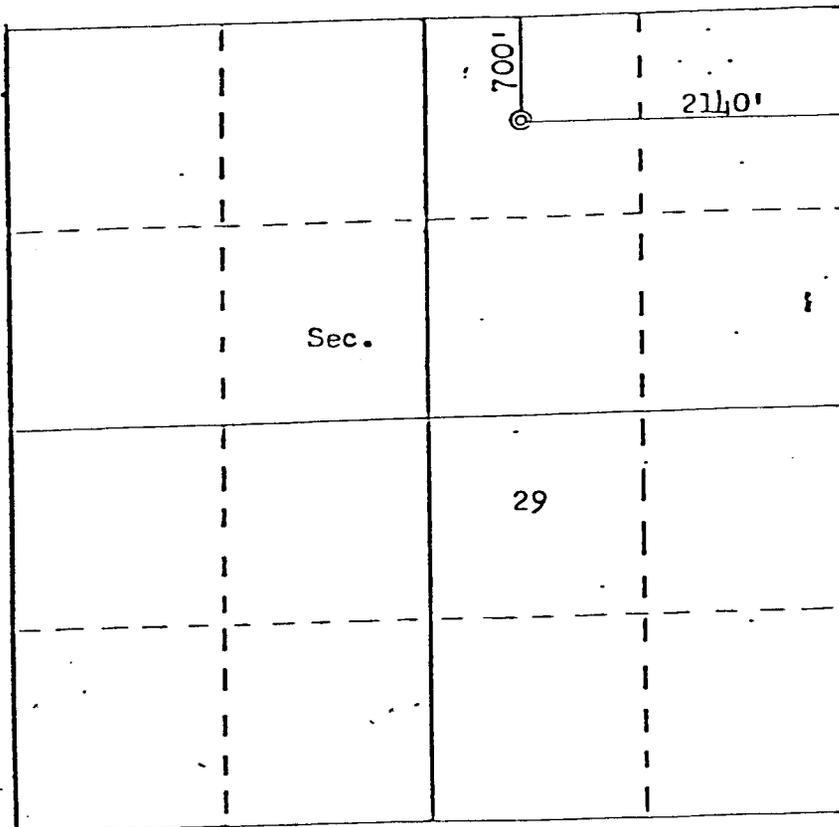
COMPANY PHILLIPS PETROLEUM COMPANY

LEASE RATHERFORD WELL NO. 29-31

SEC. 29, T. 41S, R. 24E
- San Juan County, Utah

LOCATION 700'FNL 2140'FEL

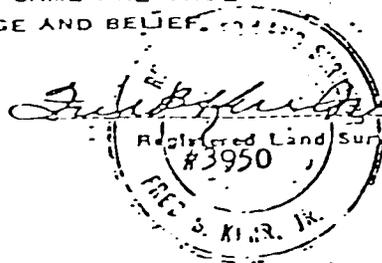
ELEVATION 5094 ungraded ground



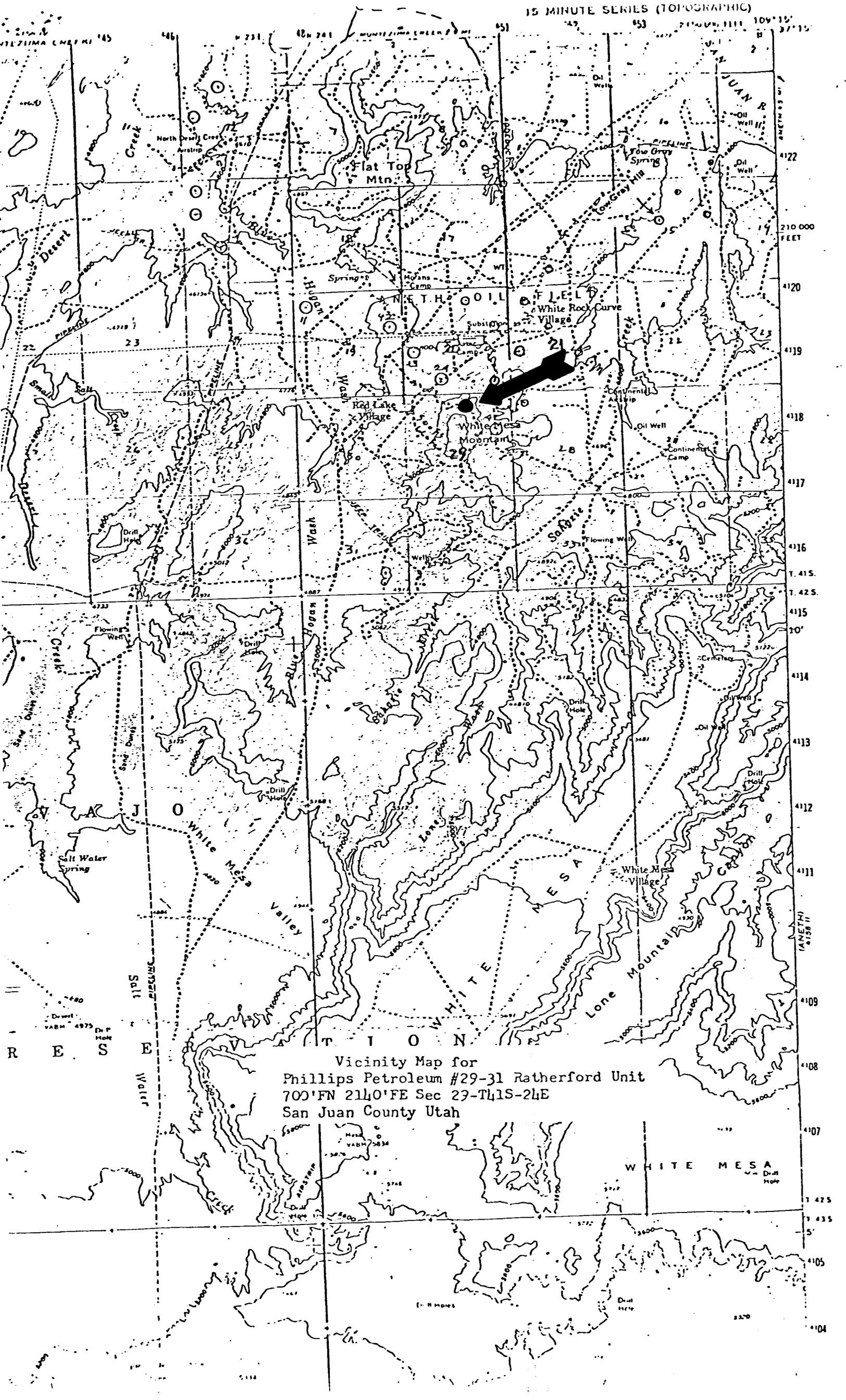
SCALE—4 INCHES EQUALS 1 MILE

THIS IS TO CERTIFY THAT THE ABOVE PLAT WAS PREPARED FROM FIELD NOTE OF ACTUAL SURVEYS MADE BY ME UNDER MY SUPERVISION AND THAT THE SAME ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

SEALS



SURVEYED February 1 1982



Vicinity Map for
Phillips Petroleum #29-31 Ratherford Unit
700'FN 2140'FE Sec 29-T41S-24E
San Juan County Utah

WHITE MESA

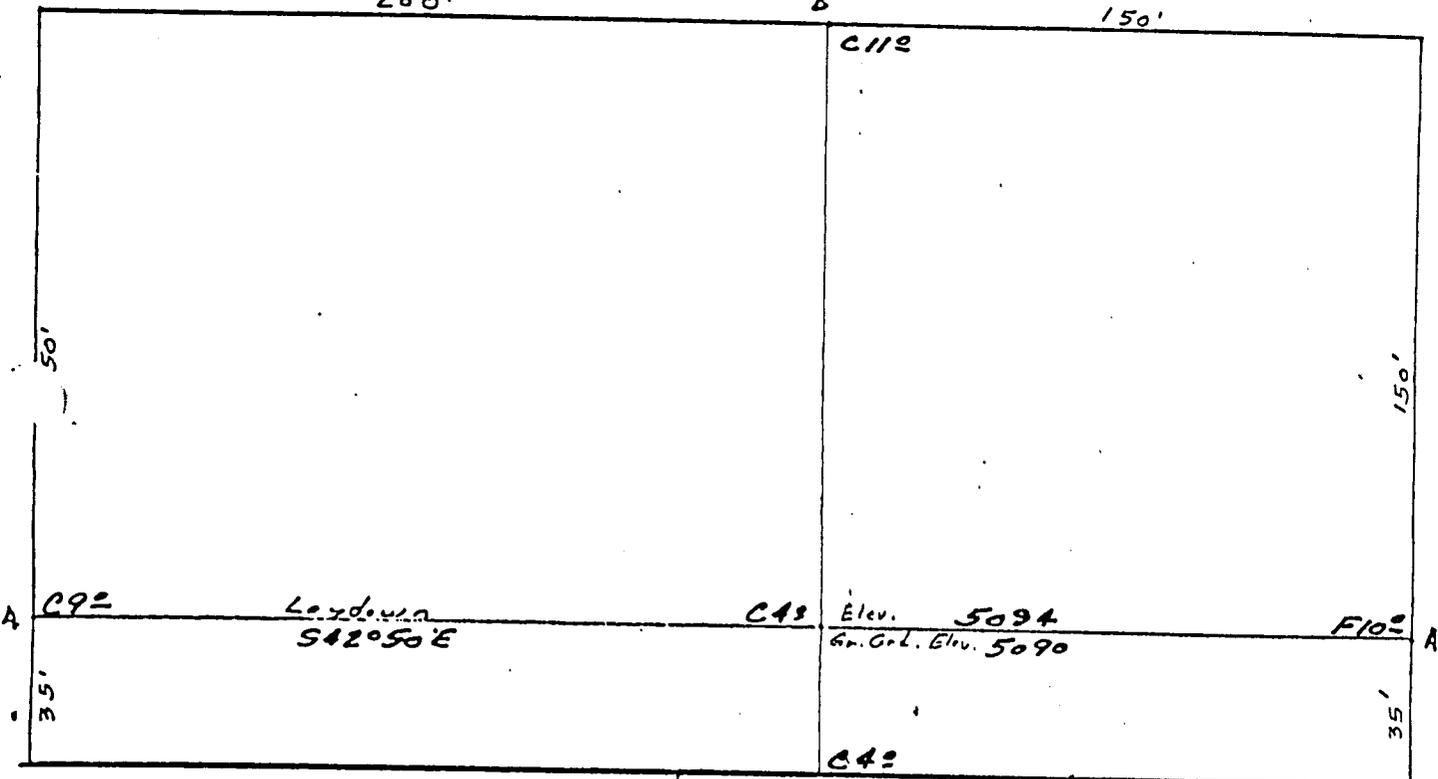
(1:25,000)

Profile for
 Phillips Petroleum Co #29-31 Ratherford Unit
 700' FNL 2140' FEL Sec. 29-41S-R24E
 San Juan County, Utah

200'

B

150'



C112

150'

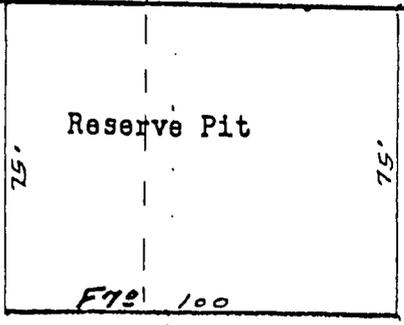
50'

A

35'

A'

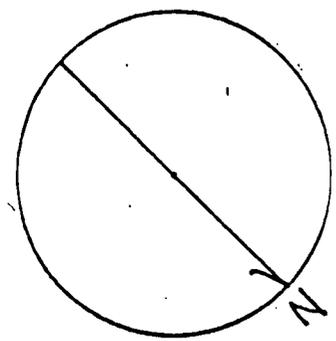
35'



Reserve Pit

F70 100

B'

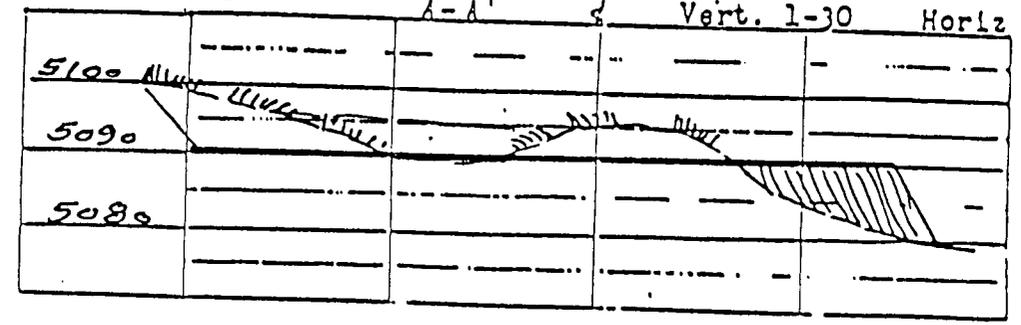


Date: Kerr Land Surveying

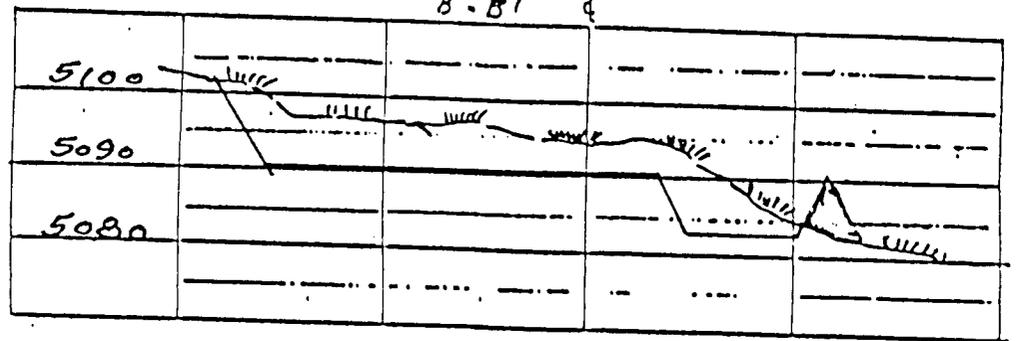
A-A'

Vert. 1-30

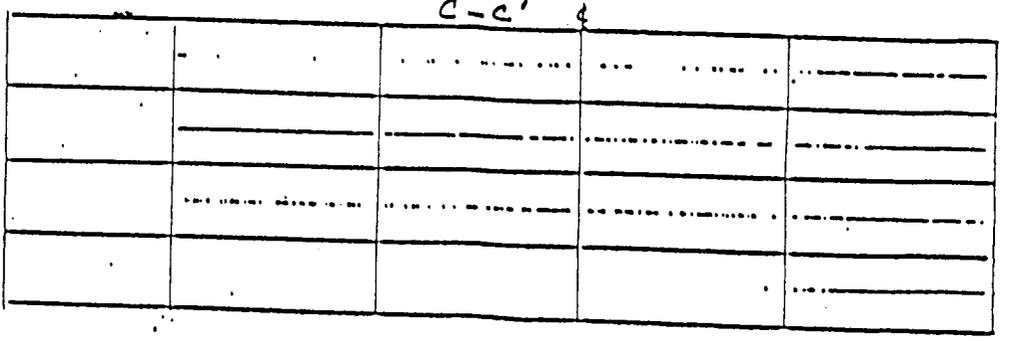
Horiz 1-



B-B'



C-C'



Kerr Land Surveying Inc.

Date: Feb 1, 1982

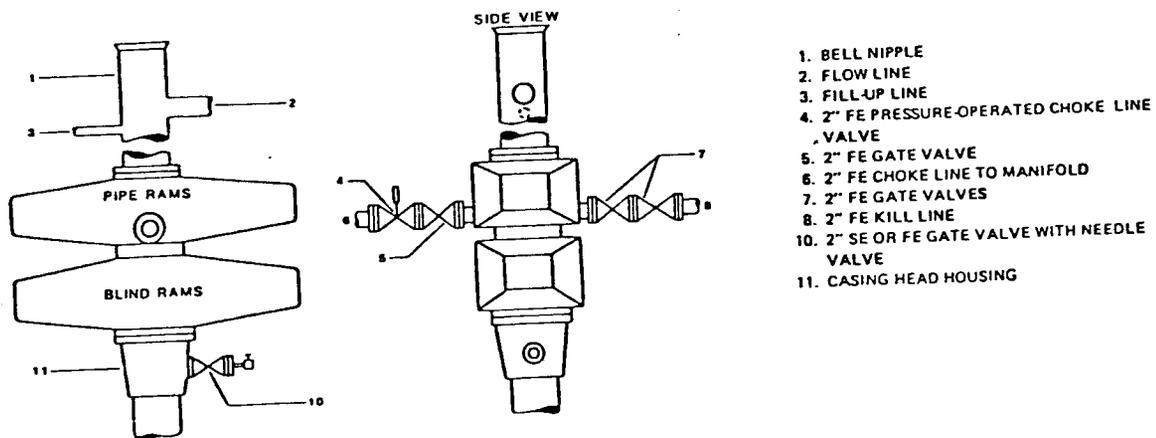


Figure 7-10. Standard Hydraulic Blowout Preventer Assembly
 (2 M or 3 M Working Pressure) Alternative 3 (without Drilling Spool)

Well Control 4
 January/83

PHILLIPS PETROLEUM COMPANY



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 Section II

BLOWOUT PREVENTER TESTING PROCEDURE

A. INITIAL INSTALLATION TEST FOR INSTALLATIONS AS SHOWN ON FIGURE NO. 7 -
TWO RAM UNITS

After all blowout preventers, regular choke lines, valves, bell nipples, and flow lines are rigged up, the following steps are to be carried out with no exceptions: (Emergency choke and kill lines are not to be connected below the bottom preventer at this time.)

Preparations
for Test
Steps 1-9

1. Inspect all flanges to see if all bolts are in place and tight.
2. Check all opening and closing lines to preventers to see if they are correctly placed, hooked up, and tight.
3. Check to see that all control valves are properly marked.
4. Open bradenhead valves and wash inside of preventers with water from the top. No lines are to be connected to the bradenhead at this time.
5. Connect water into suction of mud pump and pump water through kill line and out bradenhead valves until water clears up.
6. Connect test line in place of kill line.

A. INITIAL INSTALLATION TEST FOR INSTALLATIONS AS SHOWN ON FIGURE NO. 7
TWO RAM UNITS (Contd.)

7. Connect kill line to one bradenhead valve and open valve.
8. Close other bradenhead valve.
9. Fill preventers with water.
10. Close blind rams with 1,500 psi.
11. Check closing line and preventer for leaks.
12. Pressure up casing with mud pump to pressure required to test casing using water. Hold for 10 minutes.
13. Check bradenhead, bradenhead valve flanges, and blind rams for leaks.
14. Install a pressure gauge on the bradenhead valve opposite where the kill line is tied on.
15. Open bradenhead valve to read casing pressure.
16. Close bradenhead valve on side where kill line is tied on.
17. Release pressure on kill line.
18. Disconnect kill line from bradenhead valve.
19. Check bradenhead valve for leaks on the side where the kill line was disconnected. See that casing pressure has not dropped below the required test pressure.
20. Remove pressure gauge and bleed down casing.
21. Close bradenhead valve(s).
22. Open blind rams with 1,500 psi.
23. Check opening line and preventer for leaks.
24. Disconnect kill line from bradenhead valve and open both bradenhead valves.
25. Run test plug in on a joint of drill pipe, set in seat.

NOTE: Test plug to be fabricated so that there will be enough clearance between plug and pipe rams to clear tool joint when closed on joint of drill pipe made up in plug. The plug must be drilled so there is communication between inside of drill pipe and top of plug above seal surface.

Casing
Blind Ram
and Braden-
head Test
Steps 10-24

BOP Stack
and Choke
Line Test
Steps 25-38

A. INITIAL INSTALLATION TEST FOR INSTALLATIONS AS SHOWN ON FIGURE NO. 7
TWO RAM UNITS (Contd.)

26. Install safety valve and kelly on top of drill pipe.
27. Fill preventers with water.
28. Open all valves on choke lines and check to see that water is flowing through each outlet. Let run until clear. Open valves on kill line side of spool.
29. Close outside valves on choke lines making sure they are full of water and have no trapped air.
30. Refill preventers if necessary.
31. If Hydril is used in place of upper ram type preventer, close 1" plug valve on closing line. Test to 1,500 psi. Inspect valve for leaks. Release pressure. Open valve.
32. Close pipe rams or Hydril with 1,500 psi.
33. Check closing line and preventer for leaks.
34. Open stand pipe valve, kelly cock, and safety valve, and fill kelly with water.
35. Close kelly cock.
36. If Hydril is used, reduce closing pressure to that recommended on page 56. Closing pressure may be increased as required to effect a seal up to a maximum of 1,500 psi.
37. Pressure up to working pressure of preventers through test line. For maximum Hydril packing unit life, as the test pressure builds up, reduce the closing pressure and later apply opening pressure per applicable schedule starting on page 57, provided a schedule is listed for the Hydril in use. Hold test pressure for 10 minutes.
38. Check all valves, flanges, and seals that are under pressure for leaks and tighten if necessary. Check test plug for leak.
39. Close second valve from hole on choke line. Open outside valve on full opening line. Hold pressure for one minute.
40. Check to see if valve leaks.
41. Close inside valve on choke line. Open second valve out on choke line. Hold pressure for one minute.
42. Check to see if valve leaks.

Choke and
Kill Valve
Tests
Steps 39-55

A. INITIAL INSTALLATION TEST FOR INSTALLATIONS AS SHOWN ON FIGURE NO. 7
TWO RAM UNITS (Contd.)

43. Close safety valve and open kelly cock.
44. Check safety valve for leaks.
45. Close inside valve on kill line side. Open inside valve on choke line side. Hold pressure for one minute.
46. Check to see if valve leaks.
47. Close second valve out on kill line. Open inside valve on kill line. Hold pressure for one minute.
48. Check to see if valve leaks.
49. Open second valve out on kill line. Close inside valves on kill line and choke line.
50. Disconnect test line; connect kill line.
51. Open pipe rams (or Hydril) with 1,500 psi.
52. Check opening line and preventer for leaks.
53. Pull plug out of hole.
54. Close bradenhead valves.
55. Record test on drilling report.

B. RAM CHANGE TEST FOR INSTALLATIONS AS SHOWN ON FIGURE NO. 7 OR 8 -
TWO RAM UNITS

If Hydril is used in place of upper ram type preventer, ram change test is not required since no change will be made in preventer assembly to run casing.

Preparations
Steps 1-2

1. After getting out of hole, open choke line valves and drain mud out of preventers. No lines are to be connected to Figure 7 bradenhead valves at this time.

2. Wash inside of preventers from top with water.

3. Close blind rams.

4. Open bonnets or doors on upper ram type preventer.

5. Remove drill pipe rams.

6. Install rams to fit casing.

Ram Change
Steps 3-9

B. RAM CHANGE TEST FOR INSTALLATIONS AS SHOWN ON FIGURE NO. 7 OR 8 - TWO RAM UNITS (contd.)

7. Close bonnets or doors, checking all seals and "O" rings.
8. Tighten up all bolts and inspect preventer to see that bonnets or doors are closed, steel to steel.
9. Open blind rams.
10. Install test plug and test line on extra joint of casing the same size that is to be run. Casing joint used must be of sufficient strength to withstand test pressures. The crossover connections used to get from casing joint to test plug must be short enough to permit the casing rams to close against casing.
11. Set test plug in casing spool.
12. Fill preventers with water.
13. Close casing rams.
14. Purge air from casing joint.
15. Pressure up through casing joint to working pressure of preventers. Hold for 10 minutes.
16. Check for leaks in all flanges and seals that hold pressure, especially bonnet or door seals on preventer changed.
17. Release pressure.
18. Open casing rams.
19. Pull test plug out of hole.
20. Close choke line valve.
21. Change sign on valve on blowout preventer closing manifold that controls casing rams to indicate casing rams instead of drill pipe rams.
22. Record test and ram changes in drilling report.

C. WEEKLY TEST PROCEDURE FOR INSTALLATIONS AS SHOWN ON FIGURE 7 - TWO RAM UNITS

Preparations
for Test
Steps 1-10

1. Inspect all flanges to see if all bolts are in place and tight.
2. Check all opening and closing lines to preventers to see if they are correctly placed, hooked up, and tight.

C. WEEKLY TEST PROCEDURE FOR INSTALLATIONS AS SHOWN ON FIGURE 7 - TWO
RAM UNITS (contd.)

3. Remove kill line and install test line in flange outside of second valve on the kill line side of the drilling spool.
4. Open valves on bradenhead and wash inside of preventers with water from the top. No lines are to be connected to the bradenhead at this time.
5. Run test plug in on a joint of drill pipe and set in seat.
6. Install safety valve and kelly on top of drill pipe.
7. Fill preventers with water.
8. Open all valves on choke lines and check to see that water is flowing through each choke line and full opening line. Let run until it clears up.
9. Close all outside valves on choke line, making sure they are full of water and do not have air trapped in them.
10. Refill preventers if necessary.
11. Close pipe rams (or Hydril, if used in place of upper ram type preventer).
12. Check closing line and preventer for leaks.
13. Open stand pipe valve, kelly cock, and safety valve, and fill kelly with water.
14. Close kelly cock.
15. If Hydril is used, reduce closing pressure to that listed on page 56. This may be increased as required up to a maximum of 1,500 psi.
16. Pressure up to 1/2 working pressure of preventers. For maximum Hydril packing unit life, as the test pressure builds up, reduce the closing pressure and later apply opening pressure per applicable schedule starting on page 57, provided a schedule is listed for the Hydril in use. Hold test pressure for 10 minutes.
17. Check for leaks.
18. Close safety valve and open kelly cock.
19. Check safety valve for leaks.

BOP Stack and
Kelly Cock Test
Steps 11-17

Safety Valve
Test
Steps 18-24

C. WEEKLY TEST PROCEDURE FOR INSTALLATIONS AS SHOWN ON FIGURE 7 -
RAM UNITS (Contd.)

20. Release pressure.
21. Open pipe rams (or Hydril)
22. Pull plug out of hole.
23. Close bradenhead valves.
24. Record test on drilling report.

BLOWOUT PREVENTER TESTING PROCEDURE

A. INITIAL INSTALLATION TEST FOR INSTALLATIONS AS SHOWN ON FIGURE NO. 8
TWO RAM UNITS - LOW SUBSTRUCTURE

After all blowout preventers, choke lines, valves, bell nipples, and flow lines are rigged up, the following steps are to be carried out with no exceptions:

1. Inspect all flanges to see if all bolts are in place and tight.
2. Check all opening and closing lines to preventers to see if they are correctly placed, hooked up, and tight.
3. Check to see that all control valves are properly marked.
4. Remove kill line and open all valves on bradenhead.
5. Open all valves on choke manifold and wash inside of preventers with water from the top. Check to see that water is flowing through each choke line and kill line.
6. Close outside valves on kill line side and on choke lines.
7. Install test line in flange on outside of second valve on kill line side of bradenhead.
8. Fill preventers.
9. Open outside valve on kill line side and pump through test line until all air is purged.
10. Close inside valve on kill line side.
11. Pressure up to working pressure of preventers. Hold for one minute.
12. Check for leaks.

Preparations
Steps 1-10

Kill Line
Outlet
Valves
Test
Steps 10-16

OPERATOR Phillips Petroleum Co. DATE 7-14-83
WELL NAME Rutherford Unit 29-31
SEC NWNE 29 T 41S R 24E COUNTY San Juan

43-037-30914
API NUMBER

Indian
TYPE OF LEASE

POSTING CHECK OFF:

INDEX

MAP

HL

NID

PI

PROCESSING COMMENTS:

^v CHIEF PETROLEUM ENGINEER REVIEW:
7/15/83

APPROVAL LETTER:

SPACING:

A-3

UNIT

c-3-a

CAUSE NO. & DATE

c-3-b

c-3-c

SPECIAL LANGUAGE:

(Water)

RECONCILE WELL NAME AND LOCATION ON APD AGAINST SAME DATA ON PLAT MAP.

AUTHENTICATE LEASE AND OPERATOR INFORMATION

VERIFY ADEQUATE AND PROPER BONDING

AUTHENTICATE IF SITE IS IN A NAMED FIELD, ETC.

APPLY SPACING CONSIDERATION

ORDER _____

UNIT *Rutherford Unit*

c-3-b

c-3-c

CHECK DISTANCE TO NEAREST WELL.

CHECK OUTSTANDING OR OVERDUE REPORTS FOR OPERATOR'S OTHER WELLS.

IF POTASH DESIGNATED AREA, SPECIAL LANGUAGE ON APPROVAL LETTER

IF IN OIL SHALE DESIGNATED AREA, SPECIAL APPROVAL LANGUAGE.

July 15, 1983

Phillips Petroleum Company
P. O. Box 2920
Casper, Wyoming 82602

RE: Well No. Ratherford Unit 29-31
NWNE Sec. 29, T.41S, R.24E
700' FNL, 2140' FEL
San Juan County, Utah

Gentlemen:

Insofar as this office is concerned, approval to drill the above referred to oil well is hereby granted in accordance with Section 40-6-11, Utah Code Annotated 1953; and predicated on Rule A-3, General Rules and Regulations and Rules of Practice and Procedure. Prior to spudding, a copy of the Utah Division of Water Rights (801-533-6071) approval for use or purchase of drilling water must be submitted to this office, otherwise this approval is void.

Should you determine that it will be necessary to plug and abandon this well, you are hereby requested to immediately notify the following:

RONALD J. FIRTH - Chief Petroleum Engineer
Office: 533-5771
Home: 571-6068

Enclosed please find Form OGC-8-X, which is to be completed whether or not water sands (aquifers) are encountered during drilling. Your cooperation in completing this form will be appreciated.

Further, it is requested that this Division be notified within 24 hours after drilling operations commence, and that the drilling contractor and rig number be identified.

The API number assigned to this well is 43-037-30914.

Sincerely,


R. J. Firth
Chief Petroleum Engineer

RJF/as
cc: Oil & Gas Operations
Minerals Management Service
Bureau of Indian Affairs

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

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 Form 9-331-C for such proposals.)

1. oil well gas well other Lease Road

2. NAME OF OPERATOR
Phillips Petroleum Company

3. ADDRESS OF OPERATOR
P. O. Box 2920 Casper, WY 82602

4. LOCATION OF WELL (REPORT LOCATION CLEARLY. See space 17 below.)
AT SURFACE:
AT TOP PROD. INTERVAL:
AT TOTAL DEPTH:

16. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

5. CASE 14-20-603-353
14-20-603-407

6. IF INDIAN, ALLOTTEE OR TRIBE NAME
Navajo

7. UNIT AGREEMENT NAME
SW-I-4192

8. FARM OR LEASE NAME
Ratherford Unit

9. WELL NO.

10. FIELD OR WILDCAT NAME
Greater Aneth

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Sec 20 and 29, T41S-R24E

12. COUNTY OR PARISH San Juan | 13. STATE Utah

14. API NO.

15. ELEVATIONS (SHOW DF, KDB, AND WD)

REQUEST FOR APPROVAL TO: SUBSEQUENT REPORT OF:

TEST WATER SHUT-OFF

FRACTURE TREAT

SHOOT OR ACIDIZE

REPAIR WELL

PULL OR ALTER CASING

MULTIPLE COMPLETE

CHANGE ZONES

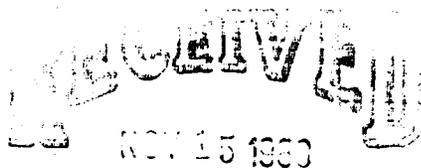
ABANDON*

(other) road construction

(NOTE: Report results of multiple completion or zone change on Form 9-330.)

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.)*

Approval is requested, contingent on securing Archaeological clearance and residents approval, to construct an access road as shown on the attached Plat A-1A. Approximately 660' of new lease road will be built. The road construction will be of native soil, approximately 20' wide.



DIVISION OF
OIL, GAS & MINING

Subsurface Safety Valve: Manu. and Type _____ Set @ _____ Ft.

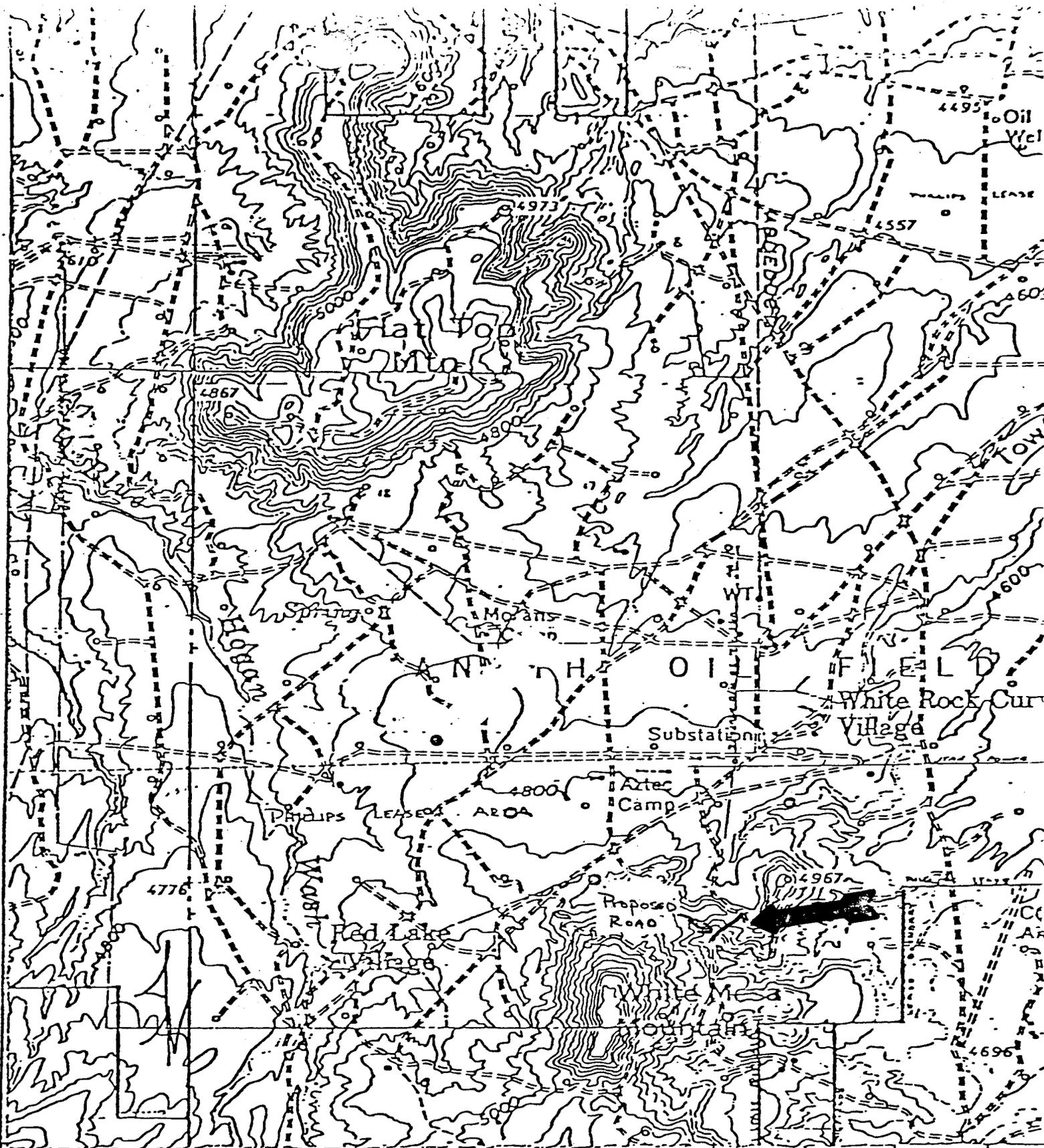
18. I hereby certify that the foregoing is true and correct

SIGNED A. E. Stearns TITLE Area Manager DATE November 10, 1983

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

- 5- BLM Farmington
- 1- Utah O&G CC SLC, Utah
- 1- J. L. Whitmire (r) T.C. Doughty *See Instructions on Reverse Side
- 1- G. W. Berk
- 1- T. M. Isaacs
- 1- File



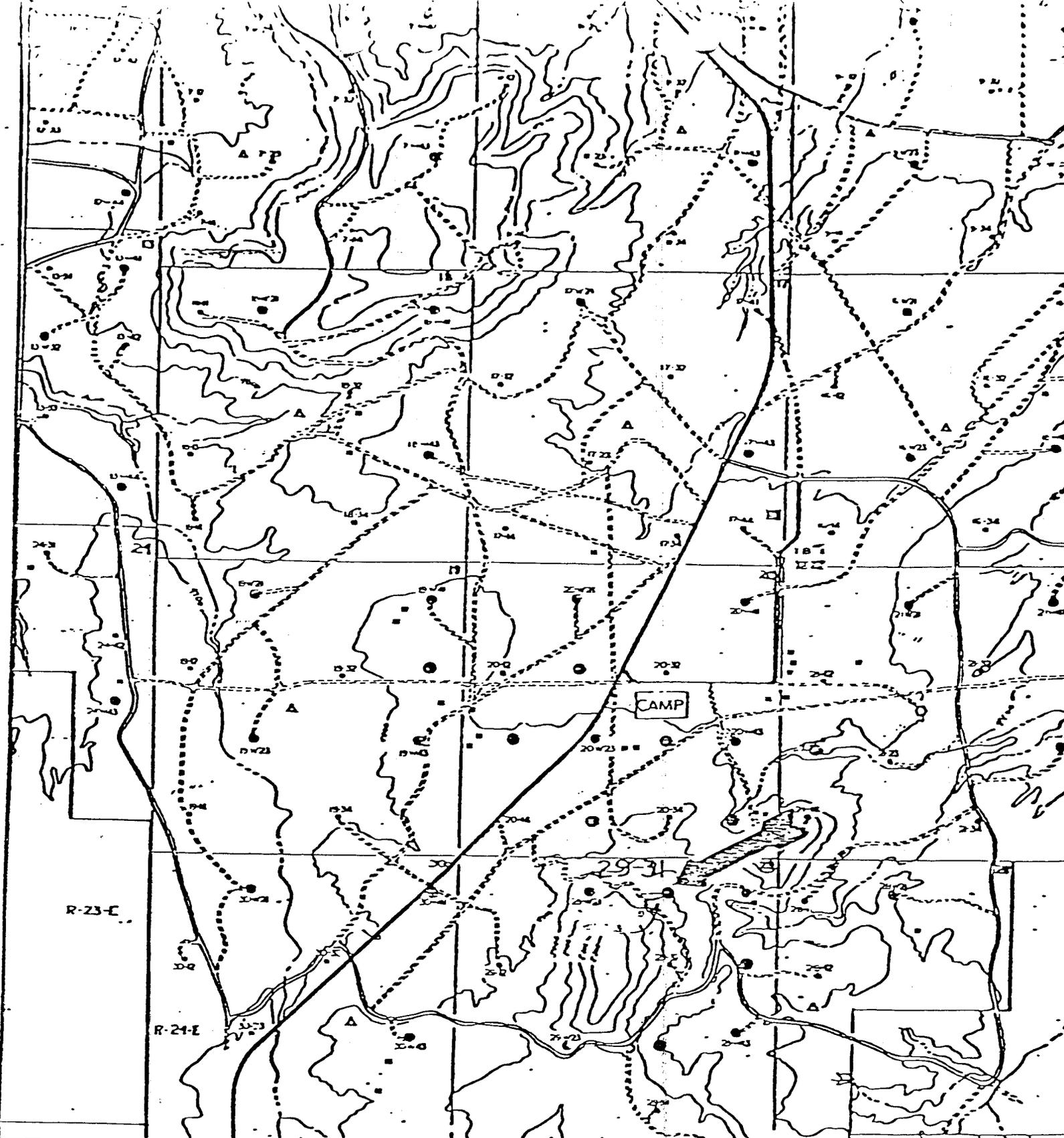
NO.	REVISION	BY	DATE	CHKD	APP
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FOR BIDS	
FOR APPR	
FOR CONST	
DRAWN	CEH
CHECKED	
APP'D	


PHILLIPS PETROLEUM COMPANY


RATHERFORD UNIT
PROPOSED ROAD
 T4IS-R24E
 SAN JUAN CO. UTAH

JA NO.	FILE CC
AFE NO.	SCALE 1/4" = 1 MI
DWG NO.	
SH NO.	



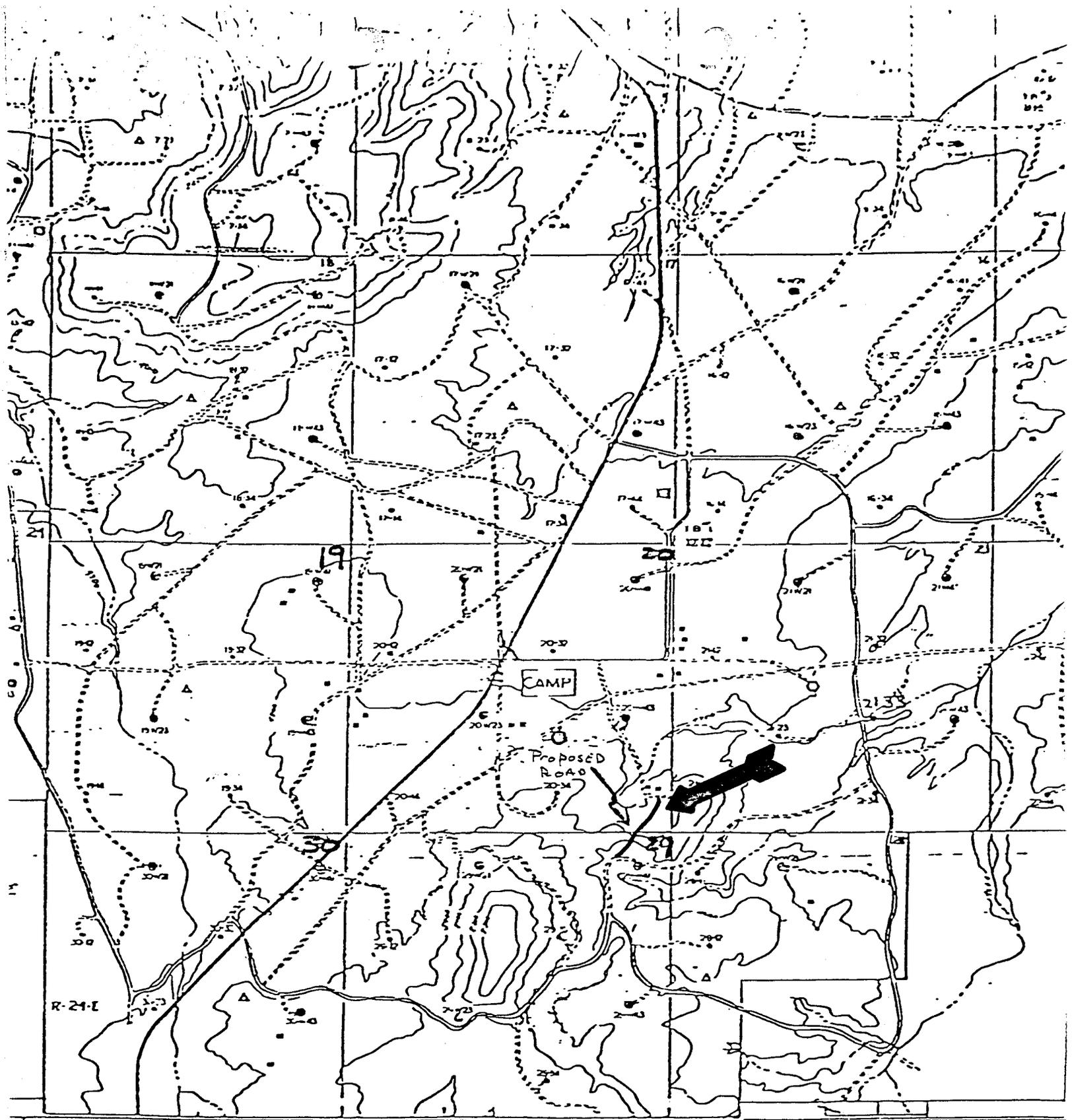
NO.	REVISION	BY	DATE	CHKD	APP'D
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FOR BIDS	
FOR APPR	
FOR CONST	
DR-WN	CJW
CHECKED	
APP'D	


PHILLIPS PETROLEUM COMPANY


RATBERFORD UNIT WELL 29-31
 ROAD PLAT
 NWNE SEC. 29-T4IS-R24E
 SAN JUAN CO., UTAH

JA NO.	FILE CODE
AFE NO.	SCALE 1/4" = 1M'
DWG NO.	
SH	



REVISION		BY	DATE	CHKD	APP'D
DESIGN					
APP'R					
CONST					
OWN					
CREATED					
D					

 PHILLIPS PETROLEUM COMPANY BARTLESVILLE, OKLAHOMA		JA NO.	FILE CODE
		AFE NO.	SCALE 2 1/4" = 1 mi
RATHERFORD UNIT PROPOSED ROAD T41S-R24E		DWG. NO.	
SAN JUAN CO., UTAH		SH. NO.	A-1A

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

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 Form 9-331-C for such proposals.)

1. oil well gas well other leadline

2. NAME OF OPERATOR
Phillips Petroleum Company

3. ADDRESS OF OPERATOR
P.O. Box 2920, Casper, WY 82602

4. LOCATION OF WELL (REPORT LOCATION CLEARLY. See space 17 below.)
AT SURFACE: 700' FNL 2140' FEL (NW NE)
AT TOP PROD. INTERVAL:
AT TOTAL DEPTH:

16. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

REQUEST FOR APPROVAL TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF	<input type="checkbox"/>		<input type="checkbox"/>
FRACTURE TREAT	<input type="checkbox"/>		<input type="checkbox"/>
SHOOT OR ACIDIZE	<input type="checkbox"/>		<input type="checkbox"/>
REPAIR WELL	<input type="checkbox"/>		<input type="checkbox"/>
PULL OR ALTER CASING	<input type="checkbox"/>		<input type="checkbox"/>
MULTIPLE COMPLETE	<input type="checkbox"/>		<input type="checkbox"/>
CHANGE ZONES	<input type="checkbox"/>		<input type="checkbox"/>
ABANDON*	<input type="checkbox"/>		<input type="checkbox"/>
(other) <u>Install leadline</u>			

5. LEASE
14-20-603-407

6. IF INDIAN, ALLOTTEE OR TRIBE NAME
Navajo

7. UNIT AGREEMENT NAME
SW-I-4192

8. FARM OR LEASE NAME
Ratherford Unit

9. WELL NO.
#29-31

10. FIELD OR WILDCAT NAME
Greater Aneth

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Sec. 29-41S-R24E

12. COUNTY OR PARISH | 13. STATE
San Juan | Utah

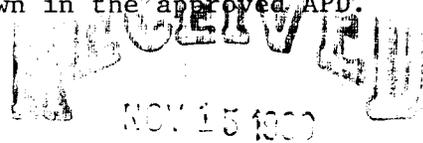
14. API NO.
43-037-30914

15. ELEVATIONS (SHOW DF, KDB, AND WD)

(NOTE: Report results of multiple completion or zone change on Form 9-330.)

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.)*

Approval is requested, contingent on securing Archaeological clearance, to install a leadline as shown on the attached Plat A-1A. The leadline will connect Ratherford Unit #29-31 well to Satellite 20. This proposed leadline routing is a revision from that shown in the approved APD.



DIVISION OF
OIL, GAS & MINING

Subsurface Safety Valve: Manu. and Type _____ Set @ _____ Ft.

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

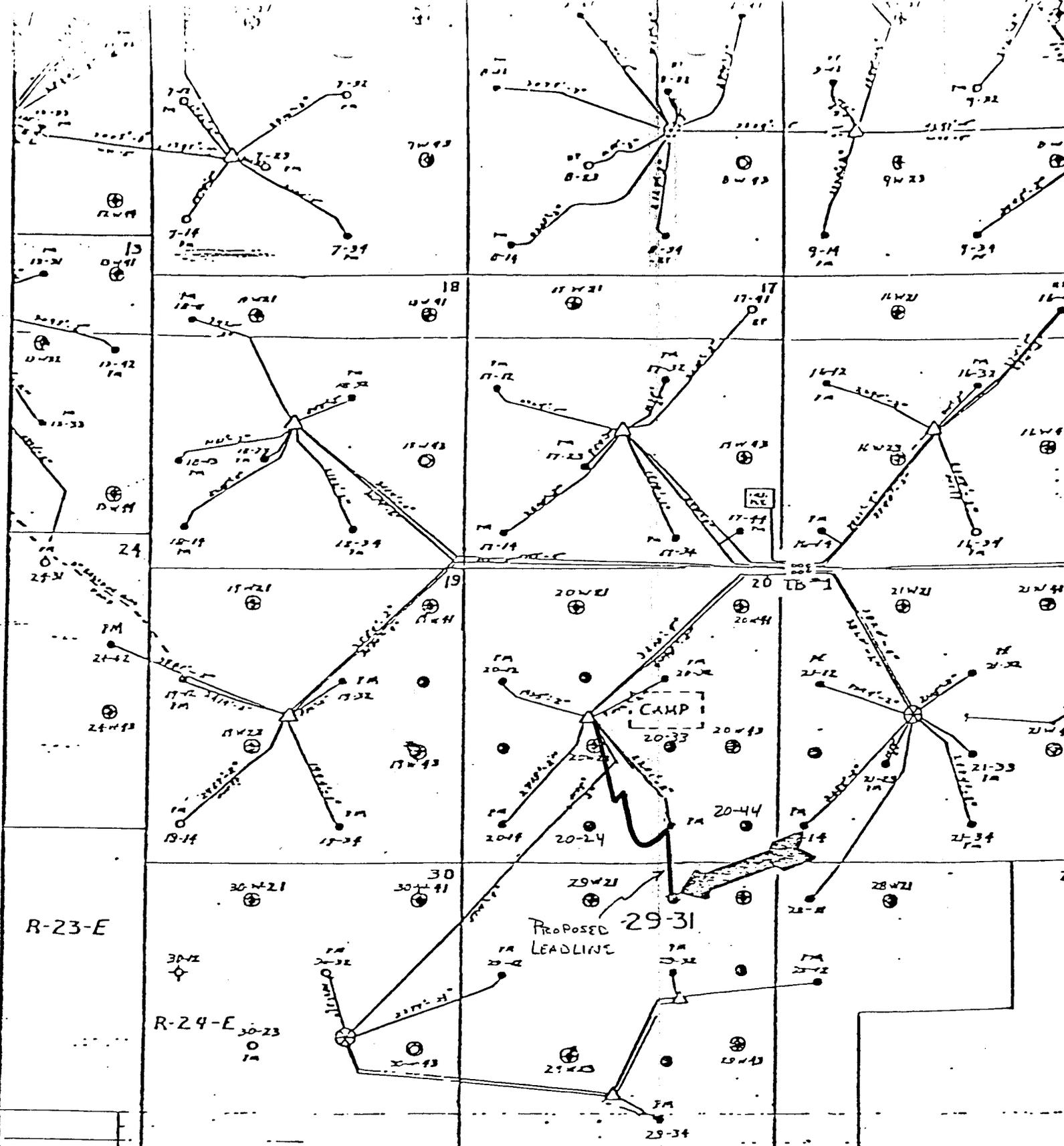
SIGNED A. E. Stuart TITLE Area Manager DATE November 10, 1983

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

- 5-BLM-Farmington
- ✓ 1-Utah O&G CC SLC Utah
- 1-J.L. Whitmire (r) T.C. Doughty
- 1-G.W. Berk
- 1-T.M. Isaacs
- 1-File

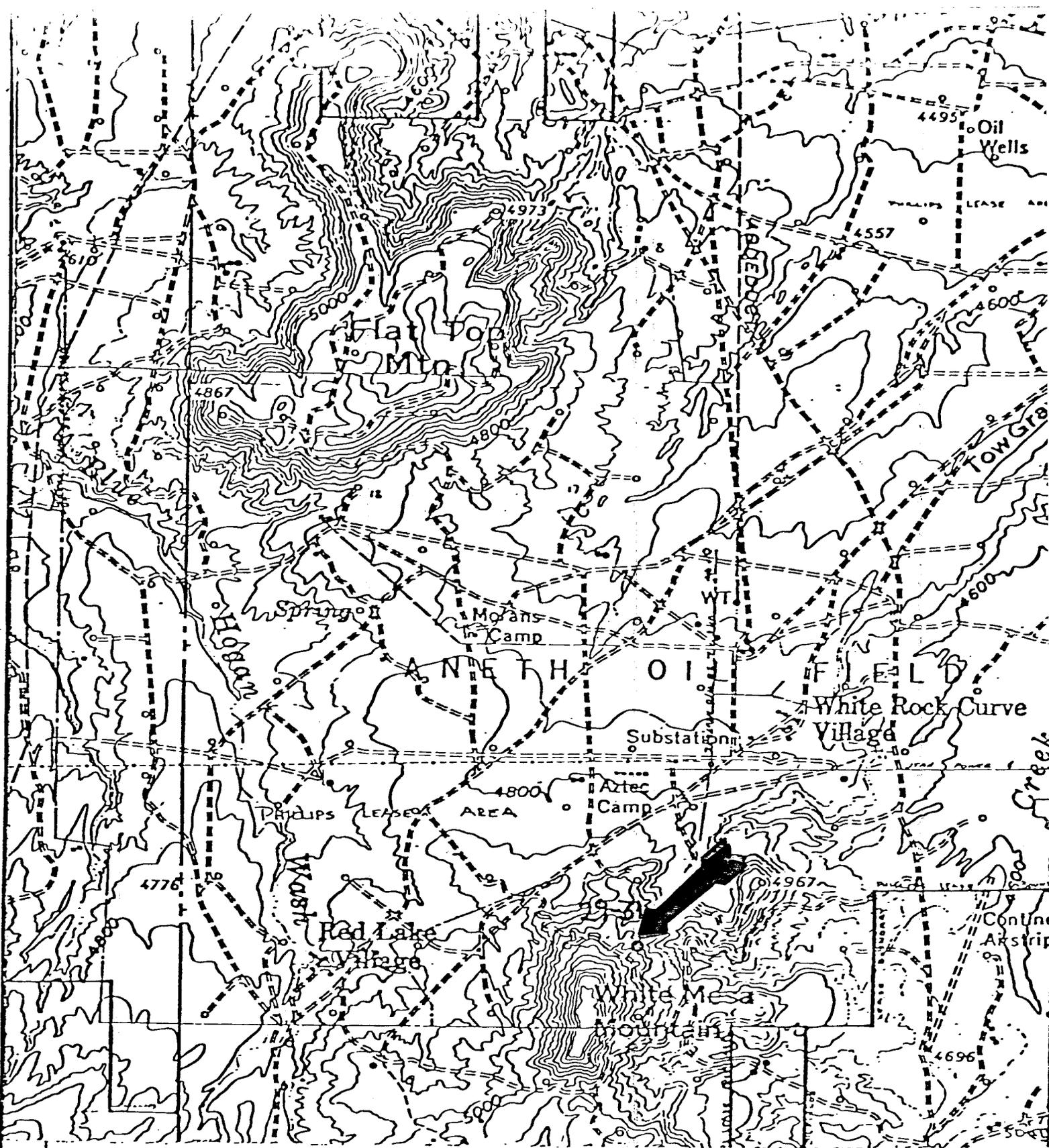
*See Instructions on Reverse Side



1 ROUTING OF LEADLINE CHANGED		TRIM	11/7/33
NO.	REVISION	BY	DATE

FOR BIDS	 PHILLIPS PETROLEUM COMPANY		JA NO.	FILE CODE
FOR APPR		SCALE		
FOR CONST		2 1/4" = 1 M.		
RATHEREFORD UNIT WELL 29-31 PROPOSED LEADLINE NW NE SEC. 29 T. 4 S. R. 24 E SAN JUAN CO., UTAH		DWG NO.	SH NO	A-1A

DRAWN	CJW
CHECKED	
APP'D	



NO.	REVISION	BY	DATE	CHKD	APP'D
FOR BIDS	 PHILLIPS PETROLEUM COMPANY		JA NO.	FILE CODE	
FOR APPR			AFE NO.	SCALE	
FOR CONST			Ratherford Unit Well # 29-31		2 1/4" = 1 Mi
DRAWN	CTW	Topographic Map			DWG NO.
CHECKED		NW NE Sec. 29 - T41S - R24E			SH NO.
APP'D		San Juan Co., Utah			

Walter

DIVISION OF OIL, GAS AND MINING

SPUDDING INFORMATION

NAME OF COMPANY: PHILLIPS PETROLEUM

WELL NAME: RATHERFORD UNIT 29-31

SECTION NWNE 29 TOWNSHIP 41S RANGE 24E COUNTY SAN JUAN

DRILLING CONTRACTOR FOUR CORNERS

RIG # 5

SPUDDED: DATE 12-7-83

TIME 6:00 PM

How Rotary

DRILLING WILL COMMENCE _____

REPORTED BY Henry Hankins

TELEPHONE # 651-3434

DATE 12-8-83 SIGNED AS

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Form 9-329 Rev. Feb 76
OMB 42-RO356

MONTHLY REPORT
OF
OPERATIONS

Lease No. 14 13-407

Communitization Agreement No. NA
Field Name Greater Aneth
Unit Name Rutherford Unit (SW-I-4192)
Participating Area Paradox
County San Juan State Utah
Operator Phillips Petroleum Company

Amended Report

The following is a correct report of operations and production (including status of all unplugged wells) for the month of
December, 19 83

(See Reverse of Form for Instructions)

This report is required by law (30 U.S.C. 189, 30 U.S.C. 359, 25 U.S.C. 396 d), regulation (30 CFR 221.60), and the terms of the lease. Failure to report can result in the assessment of liquidated damages (30 CFR 221.54 (j)), shutting down operations, or basis for recommendation to cancel the lease and forfeit the bond (30 CFR 221.53).

Well No.	Sec. & 1/4 of 1/4	TWP	RNG	Well Status	Days Prod.	*Barrels of Oil	*MCF of Gas	*Barrels of Water	Remarks
29-31	Sec. 29 NW NE	41S	24E	DRG			INITIAL REPORT		
Present Operation as of January 1, 1984 - PBD 5914'. WO Completion Unit.									
RU Dry Hole Digger, 11/25/83. Drld 18" cond hole to 124' Ran 13-3/8" BR R-3 48# K-55 csg set at 124' GL. Cmtd w/150 sx Class B. Circ cmt Cmt dropped to 36' in annulus. WOC before top out. Pmpd 100 sx Class B. MI & RU Four Corners Rig #5, 12/7/83. Drld mouse & rat holes. Spudded 12-1/4" hole at 6:00 pm, 12/7/83. Drld to 1600'. Ran 9-5/8" csg, 41 jts 36# 8 round K-55 Range 3, set at 1599'. Dowell cmtd w/300 sx Class B cmt w/20% Diacel-3, 2% CaCl2, 1/4#/sx D-29, 12/39#/gal slurry, followed w/300 sx Class B cmt w/2% CaCl2, 1/4#/sx D-29 15.6#/gal slurry. Circ 8 bbls cmt, cmt fell. Pmpd 100 sx Class B cmt w/3% CaCl2 in 5 intervals in top of annulus. Installed head & tested BOP's. Ran leakoff test to 477 psi w/8.3 fluid at 1610', 14#/gal equivalent mud wt. Drld 8-3/4" hole to TD 5962', 12/21/83. RU Gearhart & logged to 5970'. Run #1, DILL-GR-SP. Run #2, CDL-GNL-GR-Caliper. RD Gearhart. Ran 138 jts 26# and 106 jts 28# 7" csg set at 5962'. Pmpd 20 gal chemical wash. Cmtd w/400 sx Class B cmt w/20% Diacel-D, 10% salt, 1/4#/sx Celloflakes & 10#/sx Kolite, 12.2# wt, followed w/300 sx Class B cmt w/3/4% D-59, 18% salt & 1/4#/sx Celloflakes. Total slurry 220 bbls. Displd w/231 BW. Bumped plug w/2000 psi, held for 10 min. Released OK Set slips Rig Released at 7:00 am, 12/23/83 Now WO Completion Unit									

*If none, so state.

Disposition of production (Lease, Participating Area, or Communitized Area basis)

	Oil & Condensate (BBLs)	Gas (MCF)	Water (BBLs)
*On hand, Start of Month	_____	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
*Produced	_____	_____	_____
*Sold	_____	_____	XXXXXXXXXXXXXXXXXXXX
*Spilled or Lost	_____	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
*Flared or Vented	XXXXXXXXXXXXXXXXXXXX	_____	XXXXXXXXXXXXXXXXXXXX
*Used on Lease	_____	_____	XXXXXXXXXXXXXXXXXXXX
*Injected	_____	_____	_____
*Surface Pits	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	_____
*Other (Identify)	_____	_____	_____
*On hand, End of Month	_____	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
*API Gravity/BTU Content	_____	_____	XXXXXXXXXXXXXXXXXXXX

Authorized Signature: A. E. Stuart

Address: P.O. Box 2920, Casper, WY 82602

Title: Area Manager

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

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 <input type="checkbox"/>		5. LEASE DESIGNATION AND SERIAL NO.
2. NAME OF OPERATOR PHILLIPS PETROLEUM COMPANY		6. IF INDIAN, ALLOTTEE OR TRIBE NAME
3. ADDRESS OF OPERATOR ATTN: RMR DRLG. GROUP 8055 E. TUFTS AVE. PKWY. DENVER, CO 80237		7. UNIT AGREEMENT NAME Rotherford Unit
4. LOCATION OF WELL (Report location of well and its location with any State requirements. See also space 17 below.) At surface 700 FNL + 2140 FEL SEC 29-T415-R24E		8. FARM OR LEASE NAME Rotherford Unit
14. PERMIT NO.		9. WELL NO. 29-31
15. ELEVATIONS (Show whether OF, RT, OR, etc.) 5049' upgraded		10. FIELD AND POOL, OR WILDCAT Greater Aneth
		11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA Sec. 29-T415-R24E
		12. COUNTY OR PARISH San Juan
		13. STATE Utah

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

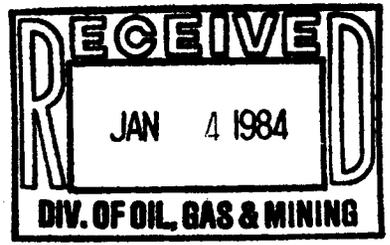
NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF <input type="checkbox"/>	PULL OR ALTER CASING <input type="checkbox"/>	WATER SHUT-OFF <input type="checkbox"/>	REPAIRING WELL <input type="checkbox"/>
FRACTURE TREAT <input type="checkbox"/>	MULTIPLE COMPLETE <input type="checkbox"/>	FRACTURE 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) _____	

(Other) Set 7" CS

(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.)*

Set 7" CS at 5959.62
Drilled by 4 Corners Rig # 5



18. I hereby certify that the foregoing is true and correct
SIGNED Denny J. Hankins TITLE Development Supervisor DATE Dec. 24, 1983

(This space for Federal or State office use)
APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Form 9-329 Rev. Feb 76
OMB 42-RO356

MONTHLY REPORT
OF
OPERATIONS

Lease No. 4-20-603-407

Communitization Agreement No. NA
Field Name Greater Aneth
Unit Name Ratherford Unit (SW-I-4192)
Participating Area Paradox
County San Juan State Utah
Operator Phillips Oil Company

Amended Report

The following is a correct report of operations and production (including status of all unplugged wells) for the month of January, 19 84

(See Reverse of Form for Instructions)

This report is required by law (30 U.S.C. 189, 30 U.S.C. 359, 25 U.S.C. 396 d), regulation (30 CFR 221.60), and the terms of the lease. Failure to report can result in the assessment of liquidated damages (30 CFR 221.54 (j)), shutting down operations, or basis for recommendation to cancel the lease and forfeit the bond (30 CFR 221.53).

WLS No.	Sec & 1/4 of 1/4	TWP	RNG	Well Status	Days Prod.	Barrels of Oil	MCF of Gas	Barrels of Water	Remarks
29-31	Sec. 29 NW NE	2941S	24E	DRG					<p style="text-align: center;"><u>FINAL REPORT</u></p> <p>TD 5962', PBDT 5916' MI & RU Compl Unit 1/2/84. Tag cmt at 5914' PBDT, cleaned out to final PBDT 5916'. Perforated 5822-47', 5847-72', 5872-86', 5894-5904', 2 SPF, 150 shots total, w/4" hollow steel carrier gun. Acidized perms as follows: Spot 500 gal 28% FE acid w/2 gal/1000 HAI-50, 2 gal/1000 HC-2 & 5 gal/1000 Lo-Surf 259. Pump 10,500 gal acid w/230, 1.3 sp grav., ball sealers. Displd w/60 bbls lse wtr. Set 2-7/8" tbg w/pkr at 5519'. Completed as a flowing oil well 1/5/84 from Desert Creek Zone I perms 5822-5904' with a final test of 5 BOPD, 5 MCFGPD, 1 BWPD, GOR 1000.</p>

*If none, so state.

Disposition of production (Lease, Participating Area, or Communitized Area basis)

	Oil & Condensate (BBLs)	Gas (MCF)	Water (BBLs)
*On hand, Start of Month	_____	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
*Produced	_____	_____	_____
*Sold	_____	_____	XXXXXXXXXXXXXXXXXXXX
*Spilled or Lost	_____	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
*Flared or Vented	XXXXXXXXXXXXXXXXXXXX	_____	XXXXXXXXXXXXXXXXXXXX
*Used on Lease	_____	_____	XXXXXXXXXXXXXXXXXXXX
*Injected	_____	_____	_____
*Surface Pits	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	_____
*Other (Identify)	_____	_____	_____
*On hand, End of Month	_____	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
*API Gravity/STU Content	_____	_____	XXXXXXXXXXXXXXXXXXXX

Authorized Signature: A. E. Stuart Address: P.O. Box 2920, Casper, WY 82602

Title: Area Manager

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

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 Form 9-331-C for such proposals.)

1. oil well gas well other

2. NAME OF OPERATOR
Phillips Petroleum Company

3. ADDRESS OF OPERATOR
8055 E. Tufts Ave. Pkwy./Denver, CO.

4. LOCATION OF WELL (REPORT LOCATION CLEARLY. See space 17 below.)
AT SURFACE: 700 FNL + 2140 FEL (NW NE)
AT TOP PROD. INTERVAL:
AT TOTAL DEPTH:

16. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

REQUEST FOR APPROVAL TO:
TEST WATER SHUT-OFF
FRACTURE TREAT
SHOOT OR ACIDIZE
REPAIR WELL
PULL OR ALTER CASING
MULTIPLE COMPLETE
CHANGE ZONES
ABANDON*
(other)

SUBSEQUENT REPORT OF:

5. LEASE
14-20-503-353
6. IF INDIAN, ALLOTTEE OR TRIBE NAME
Navajo
7. UNIT AGREEMENT NAME
SW-I-4192
8. FARM OR LEASE NAME
Ratherford Unit
9. WELL NO.
29-31
10. FIELD OR WILDCAT NAME
Greater Aneth
11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Sec 29-T4IS-R24E
12. COUNTY OR PARISH 13. STATE
San Juan Utah
14. API NO.
43-03-30914
15. ELEVATIONS (SHOW DF, KDB, AND WD)
5094 GR

(NOTE: Report results of multiple completion or zone change on Form 9-330.)

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.)*

✓ Spudded well 12-4-83 with Four Corners Rig #5. Drilled 12 1/4" hole to 1600. Ran 1599 ft., 9-5/8" 36# K-55 surface casing. Cemented with 720 ft.³ (300 sx) class B w/20% Diacel D, tailed w/360 ft.³ (300 sx) class B. Cement did not circulate. Cemented annulus with 90 ft.³ (75 sx) class B thru 1" pipe. Job completed 12-9-83. Drilled 8-3/4" hole to 5962. Ran 5962 ft., 7" 23# & 26# K-55 casing, cemented w/960 ft.³ (400 sx) class B w/20% Diacel D, tailed with 360 ft.³ (300 sx) class B w/18% salt. Pressure tested casing to 2000 psi. Job complete 12-22-83. TOC at 3035.

Subsurface Safety Valve: Manu. and Type _____ Set @ _____ Ft.

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

SIGNED Justin Beck TITLE Drilling Manager DATE 12-Jan-84

(This space for Federal or State office use)

APPROVED BY _____
CONDITIONS OF APPROVAL, IF ANY _____

TITLE _____

DATE _____

- 3 - BLM Farmington, NM
- 1 - Utah O&G CC, Salt Lake City, UT.
- 1 - Casper
- 1 - File
- 1 - T. M. Issacs

*See Instructions on Reverse Side

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

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 Form 9-331-C for such proposals.)

1. oil well gas well other

2. NAME OF OPERATOR
Phillips Oil Company

3. ADDRESS OF OPERATOR
P.O. Box 2920, Casper, WY 82602

4. LOCATION OF WELL (REPORT LOCATION CLEARLY. See space 17 below.)
AT SURFACE:
AT TOP PROD. INTERVAL:
AT TOTAL DEPTH:

16. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

REQUEST FOR APPROVAL TO: SUBSEQUENT REPORT OF:

TEST WATER SHUT-OFF

FRACTURE TREAT

SHOOT OR ACIDIZE

REPAIR WELL

PULL OR ALTER CASING

MULTIPLE COMPLETE

CHANGE ZONES

ABANDON*

(other) Change of Operator

5. LEASE

6. IF INDIAN, ALLOTTEE OR TRIBE NAME
Navajo

7. UNIT AGREEMENT NAME
SW-I-4192

8. FARM OR LEASE NAME
Ratherford Unit

9. WELL NO.

10. FIELD OR WILDCAT NAME
Greater Aneth

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

12. COUNTY OR PARISH 13. STATE
San Juan Utah

14. API NO.

15. ELEVATIONS (SHOW DEPTHS, KDB, AND WD)

(NOTE: Report results of multiple completion or zone change on Form 9-330.)

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.)*

Effective December 1, 1983, Phillips Oil Company assumed operations from Phillips Petroleum Company. The following wells had Applications for Permits to Drill submitted under Phillips Petroleum Company.

Ratherford Unit #19-42, 20-13, 20-44, 20-22, 20-24, 20-33, 21-13, 29-42, 29-32, & 29-33. + 29-31

JAN 13 1984
DIVISION OF
OIL, GAS & MINING

Subsurface Safety Valve: Manu. and Type _____ Set @ _____ Ft.

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

SIGNED A. E. Stuart TITLE Area Manager DATE 1/13/84

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

**UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY**

SUBMIT IN DUPLICATE
(See other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R3555.

5. LEASE DESIGNATION AND SERIAL NO.

14-20-603-407

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

Navajo

7. UNIT AGREEMENT NAME

SW-I-4192

8. FARM OR LEASE NAME

Ratherford Unit

9. WELL NO.

29-31

10. FIELD AND POOL, OR WILDCAT

Greater Aneth

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

Sec. 29-T41S-R24E

12. COUNTY OR PARISH

San Juan

13. STATE

Utah

WELL COMPLETION OR RECOMPLETION REPORT AND LOG *

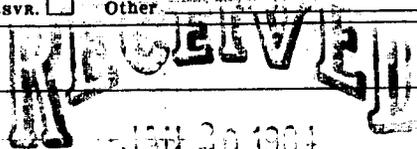
1a. TYPE OF WELL: OIL WELL GAS WELL DRY Other _____

b. TYPE OF COMPLETION: NEW WELL WORK OVER DEEP-EN PLUG BACK DIFF. RESVR. Other _____

2. NAME OF OPERATOR
Phillips Oil Company

3. ADDRESS OF OPERATOR
P.O. Box 2920, Casper, WY 82602

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)*
At surface 700' FNL & 2140' FEL, NW NE
At top prod. interval reported below
At total depth _____



**DIVISION OF
OIL, GAS & MINING**

14. PERMIT NO. 43-037-30914 | DATE ISSUED 7/15/83

15. DATE SPUDED 12/7/83 | 16. DATE T.D. REACHED 12/21/83 | 17. DATE COMPL. (Ready to prod.) 1/5/84 | 18. ELEVATIONS (DF, REB, RT, GR, ETC.)* GR 5093' RKB 5105' | 19. ELEV. CASINGHEAD --

20. TOTAL DEPTH, MD & TVD 5962' | 21. PLUG, BACK T.D., MD & TVD 5916' | 22. IF MULTIPLE COMPL., HOW MANY* -- | 23. INTERVALS DRILLED BY -- | ROTARY TOOLS 0 - 5962' | CABLE TOOLS --

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*
5822' - 5904' Desert Creek Zone I | 25. WAS DIRECTIONAL SURVEY MADE No

26. TYPE ELECTRIC AND OTHER LOGS RUN
DILL, GR-SP | CDL-GNL-GR-Caliper | 27. WAS WELL CORED No

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
13-3/8"	48#	124'	18"	250 sx Class B	--
9-5/8"	36#	1599'	12-1/4"	600 sx Class B, 75 sx Class B in 5 intervals in top of annulus	--
7"	23# & 26#	5962'	8-3/4"	700 sx Class B	--

29. LINER RECORD | 30. TUBING RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)
--	--	--	--	--	2-7/8"	5519'	5519'

31. PERFORATION RECORD (Interval, size and number) | 32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

INTERVAL	SHOTS	DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
5822-47'	2 SPF, 51 shots	5822-5904'	Spot 500 gal 28% FE Acid w/2 gal/1000 HAI-50, 2 gal/1000 HC-2&5 gal/1000 Lo-Surf 259. Pump 10,500 gal acid w/230, 1.3 sp
5847-72'	2 SPF, 50 shots		
5872-86'	2 SPF, 28 shots		
5894-5904'	2 SPF, 21 shots		
Total 150 shots - 4" hollow steel carrier gun. grav, ball sealers. Displd w/60 bbls lse wtr.			

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump)	WELL STATUS (Producing or shut-in)					
1/5/84	Flowing	Producing					
DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
1/11/84	24	8/64"	→	5	5	1	1000
FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)	
--	--	→	5	5	1	40.0	

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.)
Sold | TEST WITNESSED BY --

35. LIST OF ATTACHMENTS
None

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records.
SIGNED A. E. Stuart | TITLE Area Manager | DATE 1/17/84

- 3 - BLM, Farmington* (See Instructions and Spaces for Additional Data on Reverse Side)
2 - Utah O&GCC, SLC | 1 - B. Conner, B'Ville | 1 - Fraser | 1 - File
1 - BIA, Shiprock | 1 - Whitmire | 1 - Poling
1 - Navajo Nation | 1 - Coffelt | 1 - W.I. Owners

INSTRUCTIONS

General: This form is designed for submitting a complete and correct well completion report and log on all types of lands and leases to either a Federal agency or a State agency, or both, pursuant to applicable Federal and/or State laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from, the local Federal and/or State office. See instructions on items 22 and 24, and 38, below regarding separate reports for separate completions.

If not filed prior to the time this summary record is submitted, copies of all currently available logs (drillers, geologists, sample and core analysis, all types electric, etc.), formation and pressure tests, and directional surveys, should be attached hereto, to the extent required by applicable Federal and/or State laws and regulations. All attachments should be listed on this form, see item 35.

Item 4: If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local State or Federal office for specific instructions.

Item 18: Indicate which elevation is used as reference (where not otherwise shown) for depth measurements given in other spaces on this form and in any attachments. **Items 22 and 24:** If this well is completed for separate production from more than one interval zone (multiple completion), so state in item 22, and in item 24 show the producing interval, or intervals, top(s), bottom(s) and name(s) (if any) for only the interval reported in item 33. Submit a separate report (page) on this form, adequately identified, for each additional interval to be separately produced, showing the additional data pertinent to such interval.

Item 29: "Sacks Cement": Attached supplemental records for this well should show the details of any multiple stage cementing and the location of the cementing tool. **Item 33:** Submit a separate completion report on this form for each interval to be separately produced. (See instruction for items 22 and 24 above.)

FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.
No Cores or DST'S Run.			
38. GEOLOGIC MARKERS			
	MEAS. DEPTH	TOP	
Shinarump DeChelly Hermosa Paradox	LOG TOPS		2610' 2930' 4852' 5680'

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

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 Form 9-331-C for such proposals.)

1. oil well gas well other

2. NAME OF OPERATOR
Phillips Petroleum Company

3. ADDRESS OF OPERATOR
8055 E. Tufts Ave. Pkwy./Denver, CO. 80237

4. LOCATION OF WELL (REPORT LOCATION CLEARLY. See space 17 below.)
AT SURFACE: 700 FNL & 2140 FEL (NW NE)
AT TOP PROD. INTERVAL:
AT TOTAL DEPTH:

16. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

5. LEASE
14-20-603-407

6. IF INDIAN, ALLOTTEE OR TRIBE NAME
Navajo

7. UNIT AGREEMENT NAME
Sii-I-4192

8. FARM OR LEASE NAME
Ratherford Unit

9. WELL NO.
29-31

10. FIELD OR WILDCAT NAME
Greater Aneth

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Sec 29-T41S-R24E

12. COUNTY OR PARISH: 13. STATE
San Juan Utah

14. API NO.
43-037-30914

15. ELEVATIONS (SHOW DF, KDB, AND WD)
5105 RKB

REQUEST FOR APPROVAL TO: SUBSEQUENT REPORT OF

TEST WATER SHUT-OFF

FRACTURE TREAT

SHOOT OR ACIDIZE

REPAIR WELL

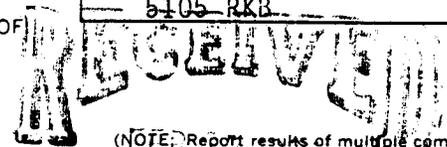
PULL OR ALTER CASING

MULTIPLE COMPLETE

CHANGE ZONES

ABANDON*

(other) _____

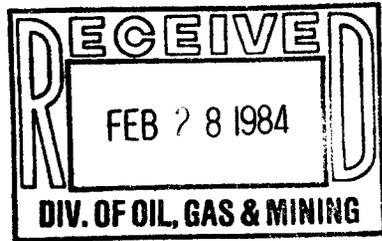


(NOTE) Report results of multiple completion or zone change on Form 9-330.

**DIVISION OF
OIL, GAS & MINING**

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.)*

Drilled 18" conductor hole to 124 ft. Ran 124 ft., 13-3/8" 48# H-40 conductor casing. Set casing at 124' cemented with 300 ft³ (250 sx) class 'B' cemented to surface. Finished job and moved out rat hole driller 11-26-83. Moved in drilling rig to spud well. See Sundry Notice dated 1-12-84. Reached TD of 5962 ft on 12-21-83.
Plug back total depth is 5916 ft.



Subsurface Safety Valve: Manu. and Type _____ Set @ _____ Ft.

18. I hereby certify that the foregoing is true and correct
SIGNED James W. Bair TITLE Drilling Manager DATE 2-2-84

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

- 6 - BLM Farmington, NM.
- 2 - Utah Oil & Gas CC Salt Lake City
- 1 - File - RC
- 1 - Casper
- 1 - T. M. Issacs

*See Instructions on Reverse Side



STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

Scott M. Matheson, Governor
Temple A. Reynolds, Executive Director
Dianne R. Nielson, Ph.D., Division Director

4241 State Office Building • Salt Lake City, UT 84114 • 801-533-5771

March 2, 1984

Phillips Oil Company
P. O. Box 2920
Casper, Wyoming 82602

RE: Well No. Ratherford Unit 29-31
API #43-037-30914
700' FNL, 2140' FEL NW/NE
Sec. 29, T. 41S, R. 24E.
San Juan County, Utah

Gentlemen:

According to our records, a "Well Completion Report" filed with this office January 17, 1984 on the above referred to well, indicates the following electric logs were run: DIL, GR-SP. As of today's date, this office has not received these logs.

Rule C-5, General Rules and Regulations and Rules of Practice and Procedure, requires that a well log shall be filed with the Commission together with a copy of the electric and radioactivity logs.

We will be happy to acknowledge receipt of your response to this notice if you will include an extra copy of the transmittal letter with a place for our signature, and a self addressed envelope for the return. Such acknowledgment should avoid unnecessary mailing of a second notice from our agency.

Your prompt attention to the above will be greatly appreciated.

Respectfully,

A handwritten signature in cursive script that reads "Claudia Jones".

Claudia Jones
Well Records Specialist

CJ/cj
cc: Dianne R. Nielson, Director
Harold Balthrop, Associate Director
Ronald J. Firth, Chief Engineer

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN DUPLICATE

(See instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0137
Expires August 31, 1985

~~THIS REPORT~~
by correction

5. LEASE DESIGNATION AND SERIAL NO.

14-20-603-407

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

Navajo

7. UNIT AGREEMENT NAME

SW-I-4192

8. FARM OR LEASE NAME

Ratherford Unit

9. WELL NO.

29-31

10. FIELD AND POOL, OR WILDCAT

Greater Aneth

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

Sec. 29-T41S-R24E

12. COUNTY OR PARISH

San Juan

13. STATE

Utah

WELL COMPLETION OR RECOMPLETION REPORT AND LOG *

1a. TYPE OF WELL: OIL WELL GAS WELL DRY Other _____

b. TYPE OF COMPLETION: NEW WELL WORK OVER DEEPEN PLUG BACK DIFF. RENOV. Other _____

2. NAME OF OPERATOR
Phillips Petroleum Company

3. ADDRESS OF OPERATOR
P.O. Box 2920, Casper, Wyoming 82602

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)

At surface 700' FNL & 2140' FEL, NW NE

At top prod. interval reported below

At total depth

API #43-037-30914

14. PERMIT NO. ISSUED
GAS & MINING

OCT 23 1985

15. DATE SPUNDED 12/7/83 16. DATE T.D. REACHED 12/21/83 17. DATE COMPL. (Ready to prod.) 1/5/84 18. ELEVATIONS (DF, RKB, RT, GR, ETC.) * GR 5093', RKB 5105' 19. ELEV. CASINGHEAD --

20. TOTAL DEPTH, MD & TVD 5962' 21. PLUG, BACK T.D., MD & TVD 5916' 22. IF MULTIPLE COMPL., HOW MANY? -- 23. INTERVALS DRILLED BY -- ROTARY TOOLS 0 - 5962' CABLE TOOLS --

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD) * 5822' - 5904' Desert Creek Zone I 25. WAS DIRECTIONAL SURVEY MADE No

26. TYPE ELECTRIC AND OTHER LOGS RUN DILL, GR-SP, CDL-GNL-GR-Caliper 27. WAS WELL CORED No

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
13-3/8"	48#	124'	18"	250 sx Class B	--
9-5/8"	36#	1599'	12-1/4"	600 sx Class B, 75 sx Class B in 5 intervals in top of annulus	--
7"	23# & 26#	5962'	8-3/4"	700 sx Class B	--

29. LINER RECORD 30. TUBING RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)
--	--	--	--	--	2-7/8"	5667'	5667'

31. PERFORATION RECORD (Interval, size and number)

5822-47', 2 SPF, 51 shots
5847-72', 2 SPF, 50 shots
5872-86', 2 SPF, 28 shots
5894-5904', 2 SPF, 21 shots
150 Shots Total, 4" HSC Gun

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
5822-5904'	Spot 500 gal 28% FF Acid w/2 gal/1000 HAI-50, 2 gal/1000 HC-275 gal/1000 Lo-Surf 259, Pump 10,500 gal acid w/230 l.3 sp. gray, ball sealers. Displd w/60 bbls lse

33. PRODUCTION wtr.

DATE FIRST PRODUCTION 1/5/84 PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump) Flowing WELL STATUS (Producing or shut-in) Producing

DATE OF TEST	HOURS TESTED	CHOKED SIZE	PROD'N. FOR TEST PERIOD	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
1/11/84	24	8/64"	→	5	5	1	1000
FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)	
--	--	→	5	5	1	40	

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.) Sold TEST WITNESSED BY --

35. LIST OF ATTACHMENTS None

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED D. V. Gill TITLE Area Manager DATE 10/18/85

*(See Instructions and Spaces for Additional Data on Reverse Side)

Mobil Oil Corporation

P.O. BOX 5444
DENVER, COLORADO 80217-5444

May 14, 1986

Utah Board of Oil, Gas and Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

RECEIVED
MAY 16 1986

DIVISION OF
OIL, GAS & MINING

Attn: R. J. Firth
Associate Director

SUPERIOR OIL COMPANY MERGER

Dear Mr. Firth:

On September 20, 1984, The Superior Oil Company (Superior) became a wholly owned subsidiary of Mobil Corporation. Since January 1, 1985, Mobil Oil Corporation (MOC), another wholly owned subsidiary of Mobil Corporation, has acted as agent for Superior and has operated the Superior-owned properties.

On April 24, 1986, Superior was merged with Mobil Exploration and Producing North America Inc. (MEPNA), which is also a wholly owned subsidiary of Mobil Corporation. MEPNA is the surviving company of the merger.

This letter is to advise you that all properties held in the name of Superior will now be held in the name of MEPNA; and that these properties will continue to be operated by MOC as agent for MEPNA.

Attached is a listing of all wells and a separate listing of injection-disposal wells, Designation of Agent and an organization chart illustrating the relationships of the various companies. If you have any questions or require additional documentation of this merger, please feel free to contact me at the above address or (303) 298-2577.

Very truly yours,



R. D. Baker
Environmental Regulatory Manager

CNE/rd
CNE8661

MONTHLY OIL AND GAS PRODUCTION REPORT

OPERATOR NAME AND ADDRESS:

ACCOUNT NUMBER: N0772

P J KONKEL
PHILLIPS PETROLEUM COMPANY
5525 HWY 64 NBU 3004
FARMINGTON NM 87401

RECEIVED

AUG 16 1993

REPORT PERIOD (MONTH/YEAR):

6 / 93

DIVISION OF
OIL, GAS & MINING

AMENDED REPORT (Highlight Changes)

Well Name API Number	Entity	Location	Producing Zone	Well Status	Days Oper	Production Volumes		
						OIL(BBL)	GAS(MCF)	WATER(BBL)
#21-23 4303713754	06280	41S 24E 21	DSCR	POW	29	1374	883	58
#3-44 4303715031	06280	41S 24E 3	DSCR	POW	30	111	94	2905
#3-14 4303715124	06280	41S 24E 3	DSCR	POW	30	67	23	302
#9-12 4303715126	06280	41S 24E 9	DSCR	POW	30	112	654	17363
#9-14 4303715127	06280	41S 24E 9	DSCR	POW	30	201	315	423
#28-12 4303715336	06280	41S 24E 28	PRDX	POW	29	112	47	2428
#29-12 4303715337	06280	41S 24E 29	PRDX	POW	29	56	0	672
#29-32 4303715339	06280	41S 24E 29	DSCR	POW	29	1402	287	2224
#29-34 4303715340	06280	41S 24E 29	DSCR	POW	29	757	48	0
#30-32 4303715342	06280	41S 24E 30	DSCR	POW	29	588	1049	3744
#3-12 4303715620	06280	41S 24E 3	DSCR	POW	30	268	11	363
#9-34 4303715711	06280	41S 24E 9	DSCR	POW	30	45	46	9800
#10-12 4303715712	06280	41S 24E 10	DSCR	POW	30	45	23	1088
TOTALS						5138	3480	41370

COMMENTS: Effective July 1, 1993, Phillips Petroleum Company has sold its interest in the Ratherford Unit to Mobil Exploration and Producing U.S., Incorporated, P. O. Box 633, Midland, Texas 79702. Mobil assumed operations on July 1, 1993.

I hereby certify that this report is true and complete to the best of my knowledge. Date: 8/11/93

Name and Signature: PAT KONKEL *Pat Konkell*

Telephone Number: 505 599-3452

STATE OF UTAH
DIVISION OF OIL, GAS AND MINING

<p>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.)</p>		<p>3. LEASE DESIGNATION & SERIAL NO.</p>
<p>1. OIL WELL <input type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <input type="checkbox"/></p>		<p>6. IF INDIAN, ALLOTTEE OR TRIBE NAME NAVAJO TRIBAL</p>
<p>2. NAME OF OPERATOR MOBIL OIL CORPORATION</p>		<p>7. UNIT AGREEMENT NAME RATHERFORD UNIT</p>
<p>3. ADDRESS OF OPERATOR P. O. BOX 633 MIDLAND, TX 79702</p>		<p>8. FARM OR LEASE NAME</p>
<p>4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements. See also space 17 below.) At surface At proposed prod. zone</p>		<p>9. WELL NO.</p>
<p>14. API NO.</p>		<p>10. FIELD AND POOL, OR WILDCAT GREATER ANETH</p>
<p>15. ELEVATIONS (Show whether DF, RT, GR, etc.)</p>		<p>11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA</p>
<p>12. COUNTY SAN JUAN</p>		<p>13. STATE UTAH</p>

RECEIVED

SEP 13 1993

DIVISION OF
OIL, GAS & MINING

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

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
<p>TEST WATER SHUT-OFF <input type="checkbox"/></p> <p>FRACTURE TREAT <input type="checkbox"/></p> <p>SHOOT OR ACIDIZE <input type="checkbox"/></p> <p>REPAIR WELL <input type="checkbox"/></p> <p>(Other) <input type="checkbox"/></p>	<p>PULL OR ALTER CASING <input type="checkbox"/></p> <p>MULTIPLE COMPLETE <input type="checkbox"/></p> <p>ABANDON <input type="checkbox"/></p> <p>CHANGE PLANS <input type="checkbox"/></p>	<p>WATER SHUT-OFF <input type="checkbox"/></p> <p>FRACTURE TREATMENT <input type="checkbox"/></p> <p>SHOOTING OR ACIDIZING <input type="checkbox"/></p> <p>(Other) <u>CHANGE OF OPERATOR</u> <input type="checkbox"/></p> <p>(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)</p>	<p>REPAIRING WELL <input type="checkbox"/></p> <p>ALTERING CASING <input type="checkbox"/></p> <p>ABANDONMENT* <input type="checkbox"/></p>
APPROX. DATE WORK WILL START _____		DATE OF COMPLETION _____	

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.)

* Must be accompanied by a cement verification report.

AS OF JULY1, 1993, MOBIL OIL CORPORATION IS THE OPERATOR OF THE RATHERFORD UNIT. ATTACHED ARE THE INDIVIDUAL WELLS.

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

SIGNED Shirley Todd TITLE ENV. & REG TECHNICIAN DATE 9-8-93

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

MONTHLY OIL AND GAS DISPOSITION REPORT

OPERATOR NAME AND ADDRESS:

L. B. Sheffield
~~BRIAN BERRY~~
~~M. E. P. N. A. MOBIL~~
~~POB 219031 1807A RENTWYR~~ *P.O. DRAWER G*
 DALLAS TX 75221-9031 *CORTEZ, Co. 81321*

UTAH ACCOUNT NUMBER: N7370

REPORT PERIOD (MONTH/YEAR): 7 / 93

AMENDED REPORT (Highlight Changes)

**931006 updated.
 Jc*

ENTITY NUMBER	PRODUCT	GRAVITY	BEGINNING INVENTORY	VOLUME PRODUCED	DISPOSITIONS				ENDING INVENTORY
		BTU			TRANSPORTED	USED ON SITE	FLARED/VENTED	OTHER	
05980	OIL			177609	177609	0			
	GAS			72101	66216	5885			
11174	OIL								
	GAS								
	OIL								
	GAS								
	OIL								
	GAS								
	OIL								
	GAS								
	OIL								
	GAS								
	OIL								
	GAS								
TOTALS				249710	243825	5885			

RECEIVED

SEP 13 1993

DIVISION OF OIL, GAS & MINING

COMMENTS: *PLEASE NOTE ADDRESS change. Mobil ~~ASU~~ PRODUCTION REPORTS will be compiled and sent from the Cortez, Co. office IN THE FUTURE.*

I hereby certify that this report is true and complete to the best of my knowledge.

Date: 9/5/93

Name and Signature: L. B. Sheffield

Telephone Number: 303-565-2212
244-688-2528

Sept 29, 1993

TO: Lisha Cordova - Utah Mining
Oil & Gas

FROM: Janice Easley
BLM Farmington, NM
505 599-6355

Here is copy of Rutherford Unit
Successor Operator,

4 pages including this one.

2.6. Ratherford Unit (GC)

RECEIVED
BLM

SEP 27 11:44

Navajo Area Office
P. O. Box 1060
Gallup, New Mexico 87305-1060

070 FARMINGTON, NM

ARES/543

JUL 23 1993

Mr. G. D. Cox
Mobil Exploration and
Producing North America, Inc.
P. O. Box 633
Midland, Texas 79702

MINERAL RIGHTS	
NO. 1	
DATE	
BY	
3	
2	
FILED	
GPS	
ALL SUPV.	
FILED	

Dear Mr. Cox:

Enclosed for your information and use is the approved Designation of Operator between the Phillips Petroleum Company and Mobil Exploration and Producing North America, Inc. for the Ratherford Unit.

Please note that all other concerned parties will be furnished their copy of the approved document.

Sincerely,

ACTING Area Director

Enclosure

cc: Bureau of Land Management, Farmington District Office w/enc.
TNN, Director, Minerals Department w/enc.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS

RECEIVED
BLM

DESIGNATION OF OPERATOR

Phillips Petroleum Company is, on the records of the Bureau of Indian Affairs, operator of the Rutherford Unit,

JUN 27 11:44

AREA OFFICE: Window Rock, Arizona
LEASE NO: Attached hereto as Exhibit "A"

070 FARMINGTON, NM

and, pursuant to the terms of the Rutherford Unit Agreement, is resigning as Unit Operator effective July 1, 1993, and hereby designates

NAME: Mobil Exploration and Producing North America Inc., duly elected pursuant to the terms of the Rutherford Unit Agreement,

ADDRESS: P. O. Box 633, Midland, Texas 79702
Attn: G. D. Cox

as Operator and local agent, with full authority to act on behalf of the Rutherford Unit lessees in complying with the terms of all leases and regulations applicable thereto and on whom the authorized officer may serve written or oral instructions in securing compliance with the Operating Regulations (43 CFR 3160 and 25 CFR 211 and 212) with respect to (described acreage to which this designation is applicable):

Attached hereto as Exhibit "A"

Bond coverage under 25 CFR 211, 212 or 225 for lease activities conducted by the above named designated operator is under Bond Number 05202782 (attach copy). Evidence of bonding is required prior to the commencement of operations.

It is understood that this designation of operator does not relieve any lessee of responsibility for compliance with the terms of the leases and the Operating Regulations. It is also understood that this designation of operator does not constitute an assignment of any interest in the leases.

In case of default on the part of the designated operator, the lessees will make full and prompt compliance with all regulations, lease terms, stipulations, or orders of the Secretary of the Interior or his representative.

Attached is the appropriate documentation relevant to this document.

The designated operator agrees to promptly notify the authorized officer of any change in the operatorship of said Rutherford Unit.

Phillips Petroleum Company

June 17, 1993

By: M. B. [Signature]
Attorney-in-Fact

Mobil Exploration and Producing
North America Inc.

June 11, 1993

By: B. D. [Signature]
Attorney-in-Fact B.D. MARTINY

[Signature] ACTING AREA DIRECTOR
APPROVED BY TITLE DATE
7/9/93

APPROVED PURSUANT, TO SECRETARIAL REDELEGATION ORDER 209 DM 8 AND 230 DM 3.

This form does not constitute an information collection as defined by 44 U.S.C. 3502 and therefore does not require OMB approval.

EXHIBIT "A"

ATTACHED TO AND MADE A PART OF DESIGNATION OF SUCCESSOR OPERATOR, RATHERFORD UNIT

EXHIBIT "C"

Revised as of September 29, 1992
SCHEDULE OF TRACT PERCENTAGE PARTICIPATION

<u>Tract Number</u>	<u>Description of Land</u>	<u>Serial Number and Effective Date of Lease</u>	<u>Tract Percentage Participation</u>
1	S/2 Sec. 1, E/2 SE/4 Sec. 2, E/4 Sec. 11, and all of Sec. 12, T-41-S, R-23-E, S.L.M. San Juan County, Utah	14-20-603-246-A Oct. 5, 1953	11.0652565
2	SE/4 and W/2 SW/4 Sec. 5, the irregular SW/4 Sec. 6, and all of Sec. 7 and 8, T-41-S, R-24-E, San Juan County, Utah	14-20-603-368 Oct. 26, 1953	14.4159942
3	SW/4 of Sec. 4, T-41-S, R-24-E, San Juan County, Utah	14-20-603-5446 Sept. 1, 1959	.5763826
4	SE/4 Sec. 4, and NE/4 Sec. 9, T-41-S, R-24-E, San Juan County, Utah	14-20-603-4035 March 3, 1958	1.2587779
5	SW/4 of Sec. 3, T-41-S, R-24-E, S.L.M., San Juan County, Utah	14-20-603-5445 Sept. 3, 1959	.4667669
6	NW/4 of Sec. 9, T-41-S, R-24-E, S.L.M., San Juan County, Utah	14-20-603-5045 Feb. 4, 1959	1.0187043
7	NW/4, W/2 NE/4, and SW/4 Sec. 10, SE/4 Sec. 9, T-41-S, R-24-E, San Juan County, Utah	14-20-603-4043 Feb. 18, 1958	3.5097575
8	SW/4 Sec. 9, T-41-S, R-24-E, S.L.M. San Juan County, Utah	14-20-603-5046 Feb. 4, 1959	1.1141679
9	SE/4 Sec. 10 and S/2 SW/4 Sec. 11 T-41-S, R-24-E, San Juan County, Utah	14-20-603-4037 Feb. 14, 1958	2.6186804
10	All of Sec. 13, E/2 Sec. 14, and E/2 SE/4 and N/2 Sec. 24, T-41-S, R-23-E, S.L.M., San Juan County, Utah	14-20-603-247-A Oct. 5, 1953	10.3108861
11	Sections 17, 18, 19 and 20, T-41-S, R-24-E, San Juan County Utah	14-20-603-353 Oct. 27, 1953	27.3389265
12	Sections 15, 16, 21, and NW/4, and W/2 SW/4 Sec. 22, T-41-S, R-24-E, San Juan County, Utah	14-20-603-355 Oct. 27, 1953	14.2819339
13	W/2 Section 14, T-41-S, R-24-E, San Juan County, Utah	14-20-603-370 Oct. 26, 1953	1.8500847
14	N/2 and SE/4, and E/2 SW/4 Sec. 29, NE/4 and E/2 SE/4 and E/2 W/2 irregular Sec. 30, and E/2 NE/4 Sec. 32, T-41-S, R-24-E, San Juan County, Utah	14-20-603-407 Dec. 10, 1953	6.9924969
15	NW/4 Sec. 28, T-41-S, R24-E San Juan County, Utah	14-20-603-409 Dec. 10, 1953	.9416393
16	SE/4 Sec. 3, T-41-S, R-24-E San Juan County, Utah	14-20-0603-6504 July 11, 1961	.5750254
17	NE/4 Sec. 3, T-41-S, R-24-E San Juan County, Utah	14-20-0603-6505 July 11, 1961	.5449292
18	NW/4 Sec. 3, T-41-S, R-24-E San Juan County, Utah	14-20-0603-6506 July 11, 1961	.5482788
19	NE/4 Sec. 4, T-41-S, R24-E San Juan County, Utah	14-20-0603-7171 June 11, 1962	.4720628
20	E/2 NW/4 Sec. 4, T-41-S, R-24-E San Juan County, Utah	14-20-0603-7172 June 11, 1962	.0992482
100%	Indian Lands	TOTAL 12,909.74	100.0000000

Division of Oil, Gas and Mining
PHONE CONVERSATION DOCUMENTATION FORM

Route original/copy to:

Well File _____

(Location) Sec ___ Twp ___ Rng ___
(API No.) _____

Suspense
(Return Date) _____
(To - Initials) _____

Other
OPERATOR CHANGE

1. Date of Phone Call: 10-6-93 : Time: 9:30

2. DOGM Employee (name) L. CORDOVA (Initiated Call
Talked to:

Name GLEN COX (Initiated Call - Phone No. (915) 688-2114
of (Company/Organization) MOBIL

3. Topic of Conversation: OPERATOR CHANGE FROM PHILLIPS TO MOBIL "RATHERFORD UNIT".
(NEED TO CONFIRM HOW OPERATOR WANTS THE WELLS SET UP - MEPNA AS PER BIA APPROVAL
OR MOBIL OIL CORPORATION AS PER SUNDRY DATED 9-8-93?)

4. Highlights of Conversation: _____

MR. COX CONFIRMED THAT THE WELLS SHOULD BE SET UNDER ACCOUNT N7370/MEPNA AS
PER BIA APPROVAL, ALSO CONFIRMED THAT PRODUCTION & DISPOSITION REPORTS WILL NOW
BE HANDLED OUT OF THEIR CORTEZ OFFICE RATHER THAN DALLAS.

MEPNA-

PO DRAWER G

CORTEZ, CO 81321

(303)565-2212

*ADDRESS CHANGE AFFECTS ALL WELLS CURRENTLY OPERATED BY MEPNA, CURRENTLY
REPORTED OUT OF DALLAS (MCELMO CREEK).

Division of Oil, Gas and Mining
OPERATOR CHANGE WORKSHEET

Routing:

1-VLC/87-93
2-DEPT 58-87
3-VLC
4-RJH
5-DEPT
6-PL

Attach all documentation received by the division regarding this change.
 Initial each listed item when completed. Write N/A if item is not applicable.

- Change of Operator (well sold) Designation of Agent
 Designation of Operator Operator Name Change Only

The operator of the well(s) listed below has changed (EFFECTIVE DATE: 7-1-93)

TO (new operator)	<u>M E P N A</u>	FROM (former operator)	<u>PHILLIPS PETROLEUM COMPANY</u>
(address)	<u>PO DRAWER G</u>	(address)	<u>5525 HWY 64 NBU 3004</u>
	<u>CORTEZ, CO 81321</u>		<u>FARMINGTON, NM 87401</u>
	<u>GLEN COX (915)688-2114</u>		<u>PAT KONKEL</u>
phone	<u>(303) 565-2212</u>	phone	<u>(505) 599-3452</u>
account no.	<u>N7370</u>	account no.	<u>N0772(A)</u>

Well(s) (attach additional page if needed): ***RATHERFORD UNIT (NAVAJO)**

Name: **SEE ATTACHED**	API: <u>43-037-30914</u>	Entity: _____	Sec. _____	Twp. _____	Rng. _____	Lease Type: _____
Name: _____	API: _____	Entity: _____	Sec. _____	Twp. _____	Rng. _____	Lease Type: _____
Name: _____	API: _____	Entity: _____	Sec. _____	Twp. _____	Rng. _____	Lease Type: _____
Name: _____	API: _____	Entity: _____	Sec. _____	Twp. _____	Rng. _____	Lease Type: _____
Name: _____	API: _____	Entity: _____	Sec. _____	Twp. _____	Rng. _____	Lease Type: _____
Name: _____	API: _____	Entity: _____	Sec. _____	Twp. _____	Rng. _____	Lease Type: _____
Name: _____	API: _____	Entity: _____	Sec. _____	Twp. _____	Rng. _____	Lease Type: _____

OPERATOR CHANGE DOCUMENTATION

- Sec 1. (Rule R615-8-10) Sundry or other legal documentation has been received from former operator (Attach to this form). (Reg. 8-20-93) (6/93 Prod. Rpt. 8-16-93)
- Sec 2. (Rule R615-8-10) Sundry or other legal documentation has been received from new operator (Attach to this form). (Reg. 8-31-93) (Rec'd 9-14-93)
- N/A 3. The Department of Commerce has been contacted if the new operator above is not currently operating any wells in Utah. Is company registered with the state? (yes/no) ____ If yes, show company file number: _____.
- Sec 4. (For Indian and Federal Wells ONLY) The BLM has been contacted regarding this change (attach Telephone Documentation Form to this report). Make note of BLM status in comments section of this form. Management review of Federal and Indian well operator changes should take place prior to completion of steps 5 through 9 below.
- Sec 5. Changes have been entered in the Oil and Gas Information System (Wang/IBM) for each well listed above. (O&G wells 10-6-93) (Wiw's 10-26-93)
- Sec 6. Cardex file has been updated for each well listed above. (O&G wells 10-6-93) (Wiw's 10-26-93)
- Sec 7. Well file labels have been updated for each well listed above. (O&G wells 10-6-93) (Wiw's 10-26-93)
- Sec 8. Changes have been included on the monthly "Operator, Address, and Account Changes" memo for distribution to State Lands and the Tax Commission. (10-6-93)
- Sec 9. A folder has been set up for the Operator Change file, and a copy of this page has been placed there for reference during routing and processing of the original documents.

ENTITY REVIEW

- 1. (Rule R615-8-7) Entity assignments have been reviewed for all wells listed above. Were entity changes made? (yes/no) no (If entity assignments were changed, attach copies of Form 6, Entity Action Form).
- 2. State Lands and the Tax Commission have been notified through normal procedures of entity changes.

BOND VERIFICATION (Fee wells only)

- 1. (Rule R615-3-1) The new operator of any fee lease well listed above has furnished a proper bond.
- 2. A copy of this form has been placed in the new and former operators' bond files.
- 3. The former operator has requested a release of liability from their bond (yes/no) no. Today's date _____ 1993. If yes, division response was made by letter dated _____ 1993.

LEASE INTEREST OWNER NOTIFICATION RESPONSIBILITY

- 1. (Rule R615-2-10) The former operator/lessee of any fee lease well listed above has been notified by letter dated _____ 1993, of their responsibility to notify any person with an interest in such lease of the change of operator. Documentation of such notification has been requested.
- 2. Copies of documents have been sent to State Lands for changes involving State leases.

FILMING

- 1. All attachments to this form have been microfilmed. Date: 11.17 1993.

FILING

- 1. Copies of all attachments to this form have been filed in each well file.
- 2. The original of this form and the original attachments have been filed in the Operator Change file.

COMMENTS

931006 BIA/Btm Approved 7-9-93.

✓ 19W-21	43-037-15741	14-20-603-353	SEC. 19, T41S, R24E	NE/NW 660' FNL 1860' FWL
✓ 19-22	43-037-31046	14-20-603-353	SEC. 19, T41S, R24E	SE/NW 1840' FNL; 1980' FWL
✓ 19W-23	43-037-15742	14-20-603-353	SEC. 19, T41S, R24E	NE/SW 2080' FSL; 1860' FWL
✓ 19-31	43-037-31047	14-20-603-353	SEC. 19, T41S, R24E	NW/NE 510' FNL; 1980' FEL
✓ 19-32	43-037-15743	14-20-603-353	SEC. 19, T41S, R24E	SW/NE 1980' FNL; 1980' FEL
✓ 19-33	43-037-31048	14-20-603-353	SEC. 19, T41S, R24E	NW/SE 1980' FSL; 1980' FEL
✓ 19-34	43-037-15744	14-20-603-353	SEC. 19, T41S, R24E	SW/SE 660' FSL; 1980' FEL
✓ 19W-41	43-037-15745	14-20-603-353	SEC. 19, T41S, R24E	NE/NE 660' FNL; 660' FEL
✓ 19-42	43-037-30916	14-20-603-353	SEC. 19, T41S, R24E	SE/NE 1880' FNL, 660' FEL
✓ 19W-43	43-037-16420	14-20-603-353	SEC. 19, T41S, R24E	NE/SE 1980' FSL; 760' FEL
✓ 19-44	43-037-31081	14-20-603-353	SEC. 19, T41S, R24E	SE/SE 660' FSL; 660' FEL
✓ 19-97	43-037-31596	14-20-603-353	SEC. 19, T41S, R24E	2562' FNL, 30' FEL
✓ 20-11	43-037-31049	14-20-603-353	SEC. 20, T41S, R24E	NW/NW 500' FNL; 660' FWL
✓ 20-12	43-037-15746	14-20-603-353	SEC. 20, T41S, R24E	1980' FNL, 660' FWL
✓ 20-13	43-037-30917	14-20-603-353	SEC. 20, T41S, R24E	NW/SW 2140' FSL, 500' FWL
✓ 20-14	43-037-15747	14-20-603-353	SEC. 20, T41S, R24E	660' FSL; 660' FWL
✓ 20W-21	43-037-16423	14-20-603-353	SEC. 20, T41S, R24E	660' FNL; 1880' FWL
✓ 20-22	43-037-30930	14-20-603-353	SEC. 20, T41S, R24E	SE/NW 2020' FNL; 2090' FWL
✓ 20W-23	43-037-15748	14-20-603-353	SEC. 20, T41S, R24E	NW/SW 2080; 2120' FWL
✓ 20-24	43-037-30918	14-20-603-353	SEC. 20, T41S, R24E	SE/SW 820' FSL; 1820' FWL
✓ 20-31	43-037-31050	14-20-603-353	SEC. 20, T41S, R24E	NW/NE 660' FNL; 1880' FEL
✓ 20-32	43-037-15749	14-20-603-353	SEC. 20, T41S, R24E	SW/NE 1980' FNL, 1980' FEL
✓ 20-33	43-037-30931	14-20-603-353	SEC. 20, T41S, R24E	NW/SE 1910' FSL; 2140' FEL
✓ 20-34	43-037-15750	14-20-603-353	SEC. 20, T41S, R24E	660' FSL; 1850' FEL
✓ 20W-41	43-037-15751	14-20-603-353	SEC. 20, T41S, R24E	NE/NE 660' FNL; 660' FEL
✓ 20-42	43-037-31051	14-20-603-353	SEC. 20, T41S, R24E	SE/NE 1980' FNL; 660' FEL
✓ 20W-43	43-037-16424	14-20-603-353	SEC. 20, T41S, R24E	2070' FSL; 810' FEL
✓ 20-44	43-037-30915	14-20-603-353	SEC. 20, T41S, R24E	SE/SE 620' FSL; 760' FEL
✓ 20-66	43-037-31592	14-20-603-353	SEC. 20, T41S, R24E	SW/NW 1221' FWL; 1369' FNL
✓ 21-11	43-037-31052	14-20-603-355	SEC. 21, T41S, R24E	NW/NW 660' FNL; 660' FWL
✓ 21-12	43-037-15752	14-20-603-355	SEC. 21, T41S, R24E	2080' FNL; 660' FWL
✓ 21-13	43-037-30921	14-20-603-355	SEC. 21, T41S, R24E	NW/SW 2030' FSL; 515' FWL
✓ 21-14	43-037-15753	14-20-603-355	SEC. 21, T41S, R24E	SW/SW 660' FSL; 460' FWL
✓ 21W-21	43-037-16425	14-20-603-355	SEC. 21, T41S, R24E	NE/NW 660' FNL; 2030' FWL
✓ 21-32	43-037-15755	14-20-603-355	SEC. 21, T41S, R24E	SW/NE 1880' FNL; 1980' FEL
✓ 21-33	NA	14-20-603-355	SEC. 21, T41S, R24E	2000' FSL, 1860' FEL
✓ 21-34	43-037-15756	14-20-603-355	SEC. 21, T41S, R24E	SW/SE 660' FSL; 1980' FEL
✓ 21W-41	43-037-16426	14-20-603-355	SEC. 21, T41S, R24E	660' FNL; 810' FEL
✓ 21W-43	43-037-16427	14-20-603-355	SEC. 21, T41S, R24E	NE/NE 1980' FSL; 660' FEL
✓ 24-11	43-037-15861	14-20-603-247A	SEC. 24, T41S, R24E	510' FNL; 810' FWL
✓ 24W-21	43-037-16429	14-20-603-247	SEC. 24, T41S, R24E	4695' FSL; 3300' FEL
✓ 24W-43	43-037-16430	14-20-603-247	SEC. 24, T41S, R24E	2080' FSL; 660' FEL
✓ 24-31W	43-037-15862	14-20-603-247A	SEC. 24, T41S, R24E	NW/NE 560' FNL; 1830' FEL
✓ 24-32	43-037-31593	14-20-603-247A	SEC. 24, T41S, R24E	SW/NE 2121' FNL; 1846' FEL
✓ 24-41	43-037-31132	14-20-603-247A	SEC. 24, T41S, R24E	NE/NE 660' FNL; 710' FEL
✓ 24W-42	43-037-15863	14-20-603-247A	SEC. 24, T41S, R24E	660' FSL; 1980' FNL
✓ 28-11	43-037-30446	14-20-603-409	SEC. 28, T41S, R24E	NW/NW 520' FNL; 620' FWL
✓ 28-12	43-037-15336	14-20-603-409B	SEC. 28, T41S, R24E	SW/SE/NW 2121' FNL; 623' FWL
✓ 29-11	43-037-31053	14-20-603-407	SEC. 29, T41S, R24E	NW/NW 770' FNL; 585' FWL
✓ 29W-21	43-037-16432	14-20-603-407	SEC. 29, T41S, R24E	NE/NW 667' FNL; 2122' FWL
✓ 29-22	43-037-31082	14-20-603-407	SEC. 29, T41S, R24E	SE/NW 2130' FNL; 1370' FWL
✓ 29W-23	43-037-15338	14-20-603-407	SEC. 29, T41S, R24E	NE/SW 1846' FSL; 1832' FWL
✓ 29-31	43-037-30914	14-20-603-407	SEC. 29, T41S, R24E	NW/NE 700' FNL; 2140' FEL
✓ 29-32	43-037-15339	14-20-603-407	SEC. 29, T41S, R24E	1951' FNL; 1755' FEL
✓ 29-33	43-037-30932	14-20-603-407	SEC. 29, T41S, R24E	NW/SE 1860' FSL; 1820' FEL
✓ 29-34	43-037-15340	14-20-603-407	SEC. 29, T41S, R24E	817' FSL; 2096' FEL
✓ 29W-41	43-037-16433	14-20-603-407	SEC. 29, T41S, R24E	557' FNL; 591' FEL
✓ 29W-42	43-037-30937	14-20-603-407	SEC. 29, T41S, R24E	SE/NE 1850' FNL; 660' FEL
✓ 29W-43	43-037-16434	14-20-603-407	SEC. 29, T41S, R24E	NE/SE 1980' FSL; 660' FEL
✓ 30-21W	43-037-16435	14-20-603-407	SEC. 30, T41S, R24E	660' FNL; 1920' FWL
✓ 30-32	43-037-15342	14-20-603-407	SEC. 30, T41S, R24E	SW/NE 1975' FNL; 2010' FEL
✓ 30W-41	43-037-15343	14-20-603-407	SEC. 30, T41S, R24E	NE/NE 660' FNL; 660' FEL
✓ 3-34	NA 4303715711	NA 14206034043	NA sec. 9, T. 41S, R. 24E	NA SW/SE 660' FSL 1980' FEL
✓ 12-43	43-307-31202	14-20-603-246	SEC. 12, T41S, R23E	2100' FSL; 660' FEL
✓ 12W31	43-037-15847	14-20-603-246	SEC. 12, T41S, R23E	661' FNL; 1981' FEL
✓ 13W24	43-037-15853	14-20-603-247	SEC. 13, T41S, R23E	SE/SW 660' FSL; 3300' FEL
✓ 15W23	43-037-16412	14-20-603-355	SEC. 15, T41S, R24E	2140' FSL; 1820' FWL
✓ 17-24	43-037-31044	14-20-603-353	SEC. 17, T41S, R24E	SE/SW 720' FSL; 1980' FWL
✓ 18-13	43-037-15734	14-20-603-353	SEC. 18, T41S, R24E	NW/NW 1980' FSL; 500' FWL
✓ 18W32	43-037-15736	14-20-603-353	SEC. 18, T41S, R24E	SW/NE 2140' FNL; 1830' FEL
✓ 20-68	43-037-31591	14-20-603-353	SEC. 20, T41S, R24E	NW/SW 1276' FWL; 1615' FSL
✓ 21-23	43-037-13754	14-20-603-355	SEC. 21, T41S, R24E	NE/SW 1740' FSL 1740' FWL
✓ 28W21	43-037-16431	14-20-603-409	SEC. 29, T41S, R24E	660' FNL; 2022' FWL

PAID

PAID

PAID

PAID

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT - " for such proposals

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

5. Lease Designation and Serial No.
14-20-603-407

6. If Indian, Allottee or Tribe Name
NAVAJO TRIBAL

7. If Unit or CA, Agreement Designation
RATHERFORD UNIT

8. Well Name and No.
RATHERFORD UNIT 29-31

9. API Well No.
43-037-30914

10. Field and Pool, or exploratory Area
GREATER ANETH

11. County or Parish, State
SAN JUAN, UT

SUBMIT IN TRIPLICATE

1. Type of Well
 Oil Well Gas Well Other

2. Name of Operator
MOBIL EXPLORATION & PRODUCING US, AS AGENT FOR MEPNA

3. Address and Telephone No.
P. O. BOX 633, MIDLAND, TX 79702 (915) 688-2585

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
700' FNL, 2140' FEL; SEC 29, T41S, R24E

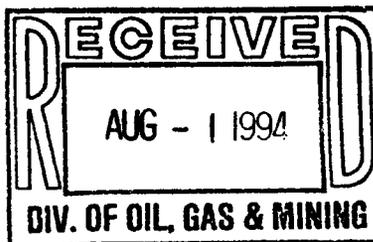
12. CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Abandonment
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Recompletion
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Plugging Back
	<input type="checkbox"/> Casing Repair
	<input type="checkbox"/> Altering Casing
	<input type="checkbox"/> Other <u>SIDETRACK</u>
	<input type="checkbox"/> Change of Plans
	<input type="checkbox"/> New Construction
	<input type="checkbox"/> Non-Routine Fracturing
	<input type="checkbox"/> Water Shut-Off
	<input type="checkbox"/> Conversion to Injection
	<input type="checkbox"/> Dispose Water

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

13. 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 PROCEDURE ***



APPROVED BY THE STATE
OF UTAH DIVISION OF
OIL, GAS, AND MINING

DATE: 8/5/94
BY: [Signature]
WELL SPACING 2649-2-3

14. I hereby certify that the foregoing is true and correct
Signed [Signature] Title ENV. & REG. TECHNICIAN Date 07/27/94

(This space for Federal or State office use)
Approved by 43-037-30914 Title _____ Date _____
Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.

Use "APPLICATION FOR PERMIT - " for such proposals

5. Lease Designation and Serial No.
14-20-603-407

6. If Indian, Allottee or Tribe Name
NAVAJO TRIBAL

7. If Unit or CA, Agreement Designation
RATHERFORD UNIT

8. Well Name and No.
RATHERFORD UNIT 29-31

9. API Well No.
43-037-30914

10. Field and Pool, or exploratory Area
GREATER ANETH

11. County or Parish, State
SAN JUAN, UT

SUBMIT IN TRIPLICATE

1. Type of Well
 Oil Well Gas Well Other

2. Name of Operator
MOBIL EXPLORATION & PRODUCING US, AS AGENT FOR MEPNA

3. Address and Telephone No.
P. O. BOX 633, MIDLAND, TX 79702 (915) 688-2585

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
700' FNL, 2140' FEL; SEC 29, T41S, R24E

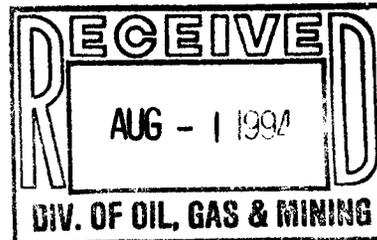
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*** SEE ATTACHED PROCEDURE ***



APPROVED BY THE STATE
OF UTAH DIVISION OF
OIL, GAS, AND MINING
DATE: 8/5/94
BY: [Signature]
WELL SPACING 2649-2-3

14. I hereby certify that the foregoing is true and correct
Signed [Signature] Title ENV. & REG. TECHNICIAN Date 07/27/94

(This space for Federal or State office use)
Approved by 43-037-30914 Title _____ Date _____
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Generic Ratherford Unit Horizontal Drilling Procedure

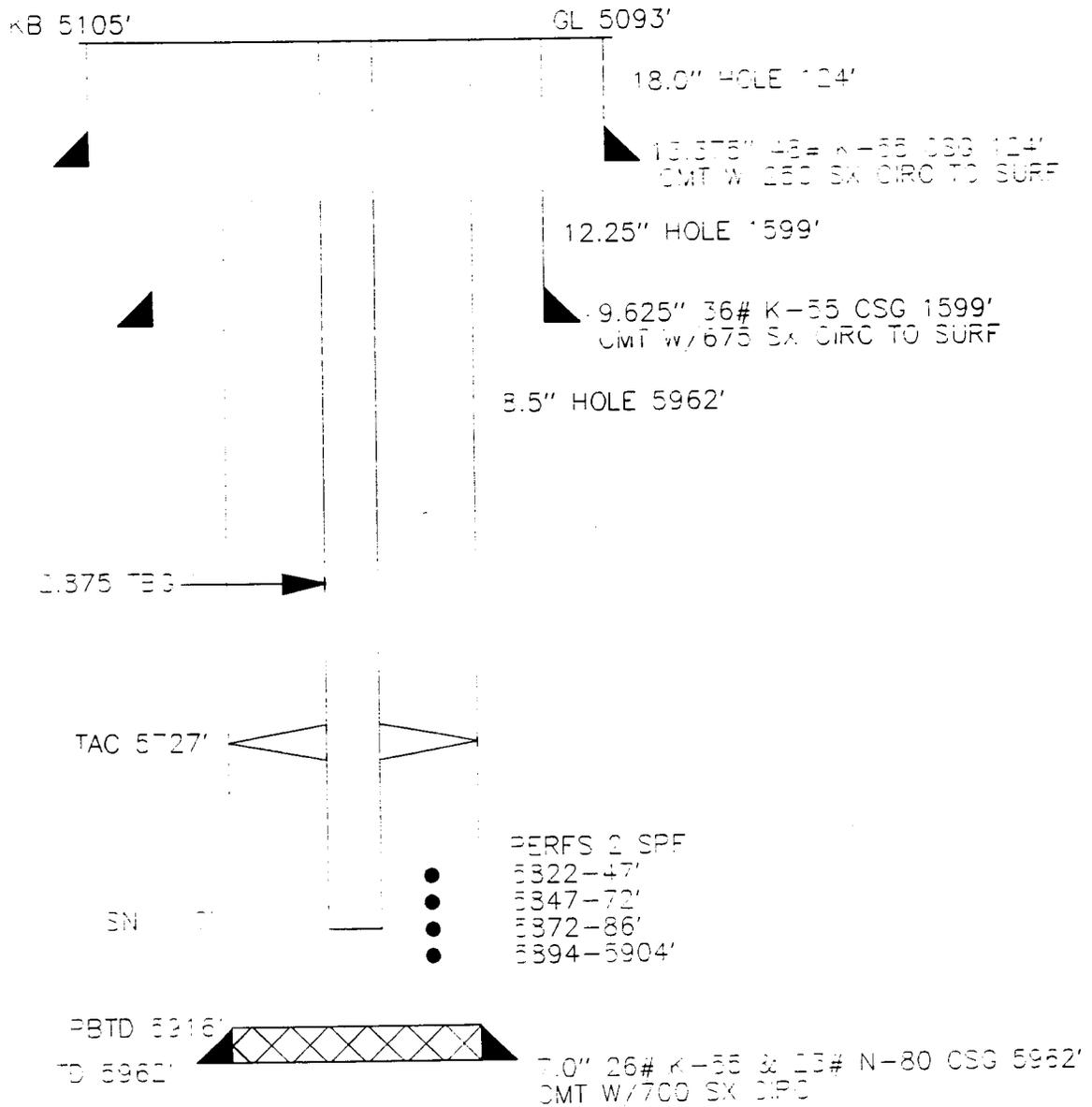
The objective of this procedure is to prepare this wellbore for sidetracking, sidetrack the subject well and drill a short radius horizontal well with a 1000' lateral.

1. Prepare location and dig working pit.
2. MIRU DDPU (daylight workover rig), reverse unit and H2S equipment.
3. TOH and LD rods.
4. ND wellhead, release TAC, and NU BOPs.
5. TIH with bit and casing scraper to PBTD. TOH with bit and scraper.
6. Attempt to load hole and establish an injection rate (if the injection pressure is > 500 psi, a packer should be run to establish an injection rate).
7. MIRU wireline truck. Run gauge ring and junk basket to PBTD. Run a gyro survey from PBTD to surface. Run and set a cement retainer $\pm 100'$ above the top perforation. RD wireline truck.
8. TIH with star guide and stop $\pm 30'$ above the cement retainer. Circulate until well is static and free of oil and gas. Sting into cement retainer and establish injection rate. Pressure annulus to 500 psi. Squeeze cement the existing Desert Creek perforations. Pull out of retainer leaving 1 bbl of cement on top of the retainer and reverse out. TOH with star guide laying down tubing.
9. TIH with bit and drill collars picking up 2 7/8" 10.40 ppf E-75 AOH workstring. Drill cement retainer and cement to the original PBTD. Circulate hole clean and them mud-up system until a yield point of 40-50 is obtained. TOH with bit.
10. TIH with section mill dressed with cutter arms for 5 1/2" or 7" casing. Mill a 30' section in the casing just below the Gothic shale. Circulate the hole clean and TOH with section mill.
11. TIH with bit and clean out to TD. Circulate hole clean and TOH with bit.
12. TIH with 10 jts 2 3/8" tubing on 2 7/8" DP to TD. Circulate the well until static and free of oil and gas. Spot a balanced cement kick-off plug. TOH with workstring. WOC a minimum of 12 hours.
13. TIH and tag cement plug and re-spot plug if the top is to low. TOH and LD workstring. ND BOPs and NU wellhead. RDMO daylight workover rig.
14. MIRU 24 hour DDPU with drilling package. TIH with MT bit, DCs, and 2 7/8", 10.4 ppf, AOH drillpipe.
15. Dress off cement plug to the kick off point. Treat water and mud up. POOH.

16. PU curve drilling assembly and TIH on 2 7/8" DP to PBTD.
17. RU power swivel and wireline. Latch into gyro tool and orient BHA.
18. Sidetrack wellbore using gyro orientation. Switch to Magnetic steering tool when free of magnetic interference from casing.
19. Drill curve section using steering tool for orientation. POOH and LD curve drilling motor.
20. PU lateral drilling motor and new bit.
21. TIH with lateral drilling assembly. Steer assembly as necessary with steering tool to reach target. Make bit trips as necessary. Circulate wellbore clean and POOH.
22. Complete well as per operations Engineering.

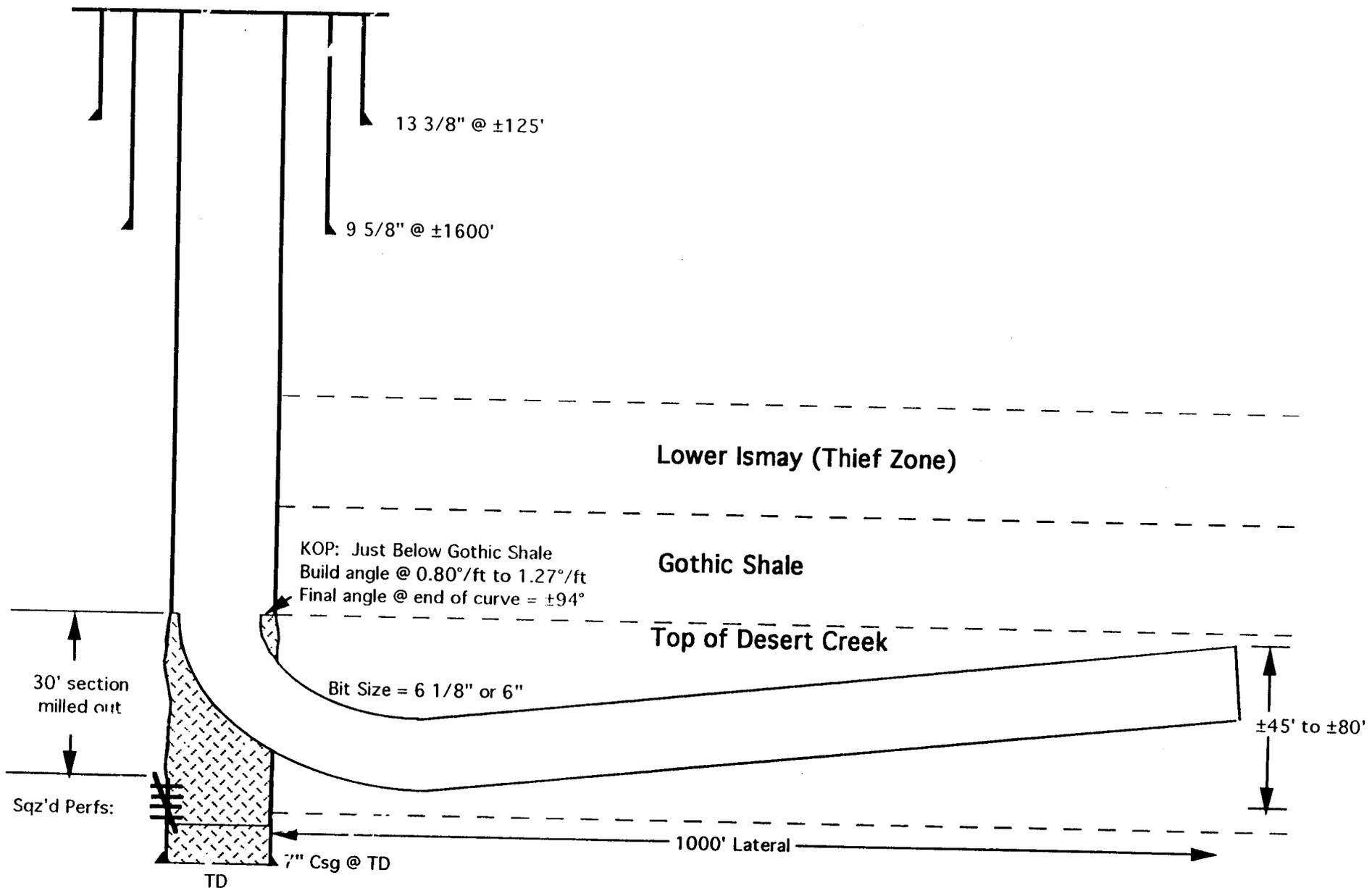
RATHERFORD UNIT 29-31
GREATER ANETH FIELD UTAH
700' FNL & 2140' FEL
SEC 29-T41S-R24E
SAN JUAN COUNTY UTAH
LPI 45-037-50914
PRISM 0043138

PRODUCER



L. BERNHARDT 2/15/94

GENERIC HORIZONTAL RATHERFORD UNIT PRODUCER WITH 7" CASING



Generic Ratherford Unit Horizontal Drilling Procedure

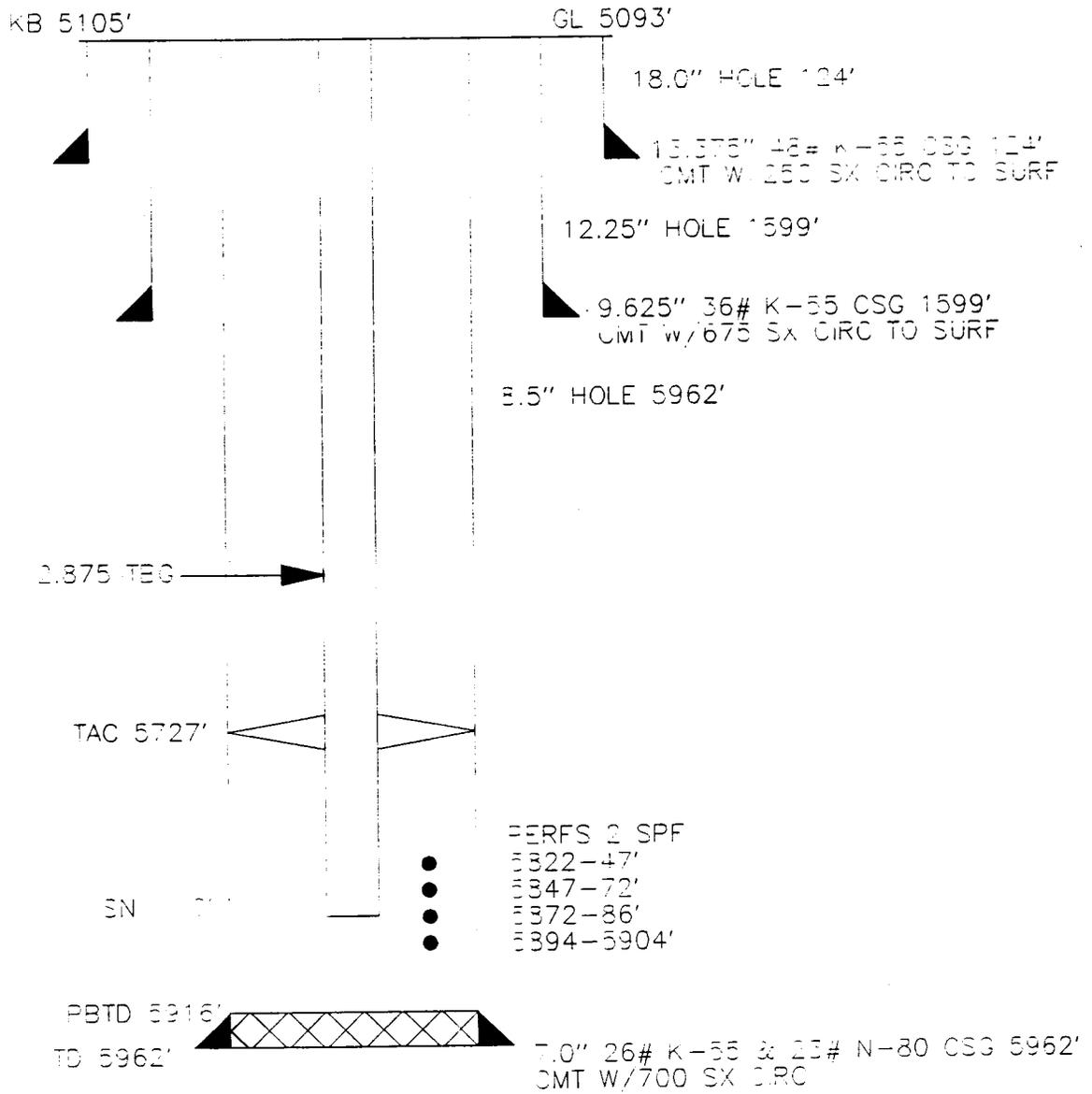
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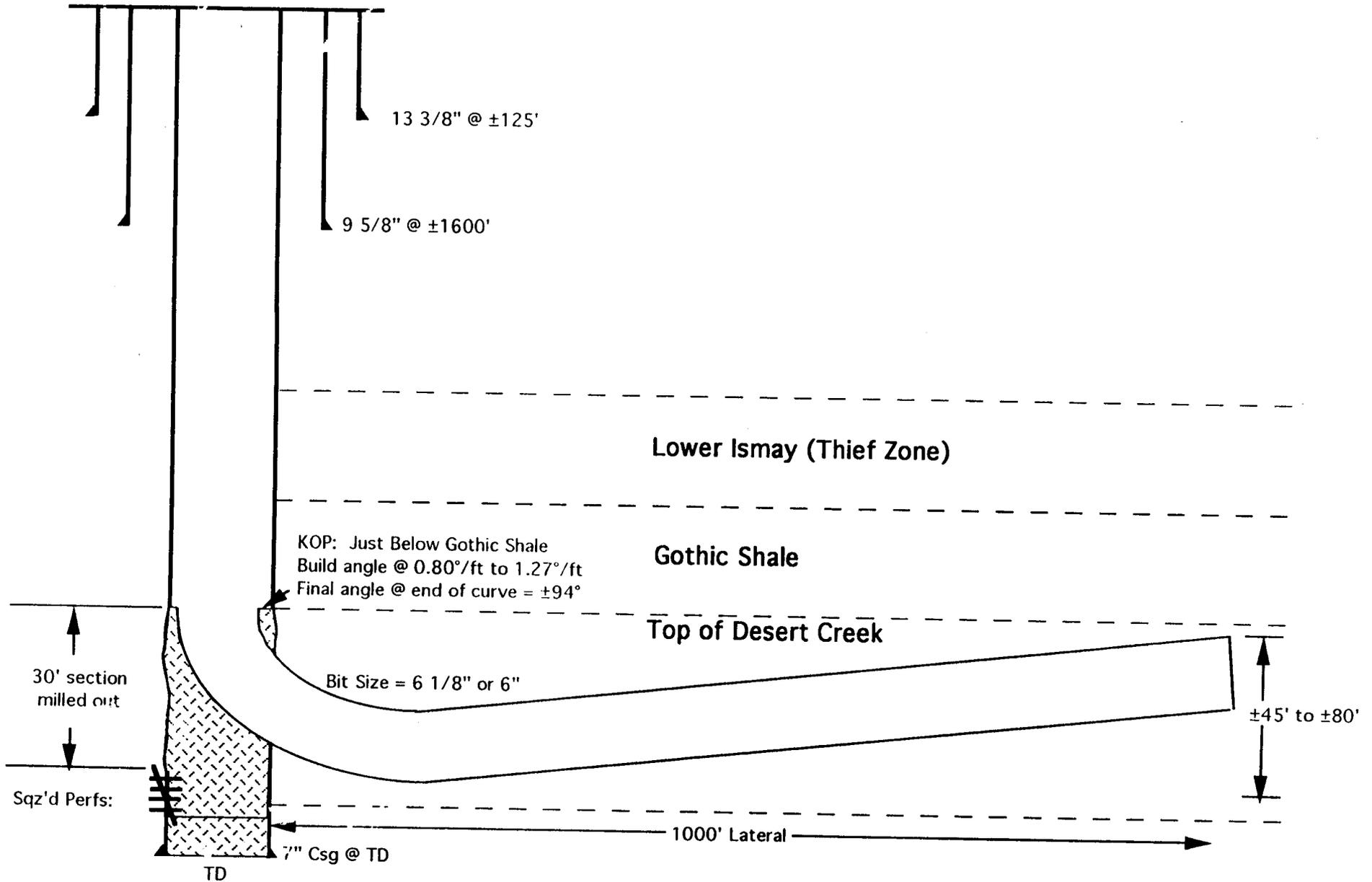
RATHERFORD UNIT 29-3
GREATER ANETH FIELD UTAH
700' ENL & 2140' FEL
SEC 29-T41S-R24E
SAN JUAN COUNTY UTAH
API 43-037-30914
PRISM 0043138

PRODUCER



L. BERNHARDT 2/15/94

GENERIC HORIZONTAL RATHERFORD UNIT PRODUCER WITH 7" CASING



**WORKSHEET
APPLICATION FOR PERMIT TO DRILL**

APD RECEIVED: 08/01/94

API NO. ASSIGNED: 43-037-30914

WELL NAME: RU 29-31 (RE-ENTRY)
 OPERATOR: MOBIL EXPL & PROD CO. (N7370)

PROPOSED LOCATION:
 NWE 29 - T41S - R24E
 SURFACE: 0700-FNL-2140-FEL
 BOTTOM:
 SAN JUAN COUNTY
 GREATER ANETH FIELD (365)

INSPECT LOCATION BY: / /		
TECH REVIEW	Initials	Date
Engineering		
Geology		
Surface		

LEASE TYPE: IND
 LEASE NUMBER: 14-20-603-407

PROPOSED PRODUCING FORMATION: DSCR

RECEIVED AND/OR REVIEWED:

Plat
 Bond: Federal State Fee
 (Number _____)
 Potash (Y/N)
 Oil shale (Y/N)
 Water permit
 (Number _____)
 RDCC Review (Y/N)
 (Date: _____)

LOCATION AND SITING:

R649-2-3. Unit: _____
 R649-3-2. General.
 R649-3-3. Exception.
 Drilling Unit.
 Board Cause no: _____
 Date: _____

COMMENTS: _____

STIPULATIONS: *1. Need BHL on well when drilling finished.*



State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

Michael O. Leavitt
Governor

Ted Stewart
Executive Director

James W. Carter
Division Director

355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
801-538-5340
801-359-3940 (Fax)
801-538-5319 (TDD)

August 5, 1994

Mobil Exploration & Producing U.S., As Agent for MEPNA
P.O. Box 633
Midland, Texas 79702

Re: Ratherford Unit 29-31 Well, 700' FNL, 2140' FEL, NW NE, Sec. 29, T. 41 S., R. 24 E., San Juan County, Utah

Gentlemen:

Pursuant to Utah Code Ann. § 40-6-18, (1953, as amended), Utah Admin. R. 649-2-3, Application of Rules to Unit Agreements and R. 649-3-4, Permitting of Wells to be Drilled, Deepened or Plugged-Back, approval to reenter and drill the referenced well is hereby granted.

In addition, the following specific actions are necessary to fully comply with this approval:

1. In accordance with Utah Admin. R. 649-3-11, Directional Drilling, submittal of a complete angular deviation and directional survey report is required.
2. Compliance with the requirements of Utah Admin. R. 649-1 et seq., the Oil and Gas Conservation General Rules.
3. Notification to the Division within 24 hours after drilling operations commence.
4. Submittal of Entity Action Form, Form 6, within five working days following commencement of drilling operations and whenever a change in operations or interests necessitates an entity status change.
5. Submittal of the Report of Water Encountered During Drilling, Form 7.
6. Prompt notification prior to commencing operations, if necessary, to plug and abandon the well. Notify Frank R. Matthews, Petroleum Engineer, (Office) (801)538-5340, (Home) (801)476-8613, or K. Michael Hebertson, Reclamation Specialist, (Home) (801)269-9212.

Page 2

Mobil Exploration & Producing U.S. As Agent for MEPNA
Ratherford Unit 29-31 Well
August 5, 1994

7. Compliance with the requirements of Utah Admin. R. 649-3-20, Gas Flaring or Venting, if the well is completed for production.

This approval shall expire one year after date of issuance unless substantial and continuous operation is underway or a request for an extension is made prior to the approval expiration date. The API number assigned to this well is 43-037-30914.

Sincerely,



R.J. Firth
Associate Director

ldc

Enclosures

cc: San Juan County Assessor

Bureau of Land Management, Moab District Office

WO11

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED
SEP 28 1995

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.

Use "APPLICATION FOR PERMIT -" for such proposals

5. Lease Designation and Serial No.

14-20-603-407

6. If Indian, Allottee or Tribe Name

NAVAJO TRIBAL

7. If Unit or CA, Agreement Designation

RATHERFORD UNIT

8. Well Name and No.

RATHERFORD 29-31

9. API Well No.

43-037-30914

10. Field and Pool, or exploratory Area

GREATER ANETH

11. County or Parish, State

SAN JUAN UT

SUBMIT IN TRIPLICATE

1. Type of Well

Oil Well Gas Well Other

2. Name of Operator Mobil Exploration & Producing U.S. Inc.
as Agent for Mobil Producing TX & NM Inc.

3. Address and Telephone No.
P.O. Box 633, Midland, TX 79702 915-688-2585

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
700' FNL, 2140' FEL
SEC.29, T41S, R24E

12. CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION

- Notice of Intent
- Subsequent Report
- Final Abandonment Notice

TYPE OF ACTION

- Abandonment
- Recompletion
- Plugging Back
- Casing Repair
- Altering Casing
- Other CANCEL WO/APPROVAL
- Change of Plans
- New Construction
- Non-Routine Fracturing
- Water Shut-Off
- Conversion to Injection
- Dispose Water

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

13. 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.)*

CANCEL WORKOVER NOTICE OF INTENT SUNDRY NOTICE APPROVED AUGUST 2, 1994.

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

Signed Shuley Robinson

Title ENV. & REG. TECHNICIAN

Date 9-22-95

(This space for Federal or State office use)

Approved by _____ Title _____ Date _____
Conditions of approval, if any:

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Division of Oil, Gas and Mining
PHONE CONVERSATION DOCUMENTATION FORM

Route original/copy to:

Well File _____
(Location) Sec ___ Twp ___ Rng ___
(API No.) _____

Suspense
(Return Date) _____
(To - Initials) _____

Other
OPER NM CHG _____

1. Date of Phone Call: 8-3-95 Time: _____

2. DOGM Employee (name) L. CORDOVA (Initiated Call)
Talked to:

Name R. J. FIRTH (Initiated Call) - Phone No. () _____
of (Company/Organization) _____

3. Topic of Conversation: M E P N A / N7370

4. Highlights of Conversation: _____

OPERATOR NAME IS BEING CHANGED FROM M E P N A (MOBIL EXPLORATION AND PRODUCING
NORTH AMERICA INC) TO MOBIL EXPLOR & PROD. THE NAME CHANGE IS BEING DONE AT
THIS TIME TO ALLEVIATE CONFUSION, BOTH IN HOUSE AND AMONGST THE GENERAL PUBLIC.
*SUPERIOR OIL COMPANY MERGED INTO M E P N A 4-24-86 (SEE ATTACHED).

Division of Oil, Gas and Mining
OPERATOR CHANGE WORKSHEET

Routing: *del*

1- L/C	7-PL
2-LWP	8-SJ
3- DES	9-FILE
4-VLC	
5-RJF	✓
6-LWP	✓

Attach all documentation received by the division regarding this change.
 Initial each listed item when completed. Write N/A if item is not applicable.

- Change of Operator (well sold) Designation of Agent
 Designation of Operator **Operator Name Change Only**

The operator of the well(s) listed below has changed (EFFECTIVE DATE: 8-2-95)

TO (new operator) MOBIL EXPLOR & PROD
 (address) C/O MOBIL OIL CORP
PO DRAWER G
CORTEZ CO 81321
 phone (303) 564-5212
 account no. N7370

FROM (former operator) M E P N A
 (address) C/O MOBIL OIL CORP
PO DRAWER G
CORTEZ CO 81321
 phone (303) 564-5212
 account no. N7370

Well(s) (attach additional page if needed):

Name: ** SEE ATTACHED **	API: <u>43-037-30914</u>	Entity: _____	Sec _____	Twp _____	Rng _____	Lease Type: _____
Name: _____	API: _____	Entity: _____	Sec _____	Twp _____	Rng _____	Lease Type: _____
Name: _____	API: _____	Entity: _____	Sec _____	Twp _____	Rng _____	Lease Type: _____
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Name: _____	API: _____	Entity: _____	Sec _____	Twp _____	Rng _____	Lease Type: _____
Name: _____	API: _____	Entity: _____	Sec _____	Twp _____	Rng _____	Lease Type: _____

OPERATOR CHANGE DOCUMENTATION

- N/A* 1. (Rule R615-8-10) Sundry or other legal documentation has been received from former operator (Attach to this form).
- N/A* 2. (Rule R615-8-10) Sundry or other legal documentation has been received from new operator (Attach to this form).
- N/A* 3. The Department of Commerce has been contacted if the new operator above is not currently operating any wells in Utah. Is company registered with the state? (yes/no) _____ If yes, show company file number: _____.
- N/A* 4. (For Indian and Federal Wells ONLY) The BLM has been contacted regarding this change (attach Telephone Documentation Form to this report). Make note of BLM status in comments section of this form. Management review of **Federal and Indian** well operator changes should take place prior to completion of steps 5 through 9 below.
- Yes* 5. Changes have been entered in the Oil and Gas Information System (Wang/IBM) for each well listed above. *(8-3-95)*
- LWP* 6. Cardex file has been updated for each well listed above. *8-21-95*
- W/P* 7. Well file labels have been updated for each well listed above. *9-28-95*
- Yes* 8. Changes have been included on the monthly "Operator, Address, and Account Changes" memo for distribution to State Lands and the Tax Commission. *(8-3-95)*
- Yes* 9. A folder has been set up for the Operator Change file, and a copy of this page has been placed there for reference during routing and processing of the original documents.

ENTITY REVIEW

- Lee* 1. (Rule R615-8-7) Entity assignments have been reviewed for all wells listed above. Were entity changes made? (yes/no) ____ (If entity assignments were changed, attach copies of Form 6, Entity Action Form).
- N/A* 2. State Lands and the Tax Commission have been notified through normal procedures of entity changes.

BOND VERIFICATION (Fee wells only) ** No Fee Lease Wells at this time!*

- N/A/ Lee* 1. (Rule R615-3-1) The new operator of any fee lease well listed above has furnished a proper bond.
- ____ 2. A copy of this form has been placed in the new and former operators' bond files.
- ____ 3. The former operator has requested a release of liability from their bond (yes/no) ____ . Today's date _____ 19____ . If yes, division response was made by letter dated _____ 19____ .

LEASE INTEREST OWNER NOTIFICATION RESPONSIBILITY

- N/A* 1. (Rule R615-2-10) The former operator/lessee of any fee lease well listed above has been notified by letter dated _____ 19____ , of their responsibility to notify any person with an interest in such lease of the change of operator. Documentation of such notification has been requested. *UTS 8/5/95*
- N/A* 2. Copies of documents have been sent to State Lands for changes involving State leases.

FILMING

- h* 1. All attachments to this form have been microfilmed. Date: 8.29-97 19____ .

FILING

- ____ 1. Copies of all attachments to this form have been filed in each well file.
- ____ 2. The original of this form and the original attachments have been filed in the Operator Change file.

COMMENTS

950803 LIC F5/Not necessary!

Record#	WELL_NAME	API_NUMBER	DATEAPPRVD	SPUD_DATE	COMPLTDATE	
✓ 2508	MCELMO CREEK O-10 (RE-ENTRY)	43-037-15967	06/28/95	1 1	1 1	Dr. E. WTW
✓ 2509	MCELMO CREEK P-11 (RE-ENTRY)	43-037-15971	06/28/95	1 1	1 1	Dr. E. WTW
✓ 2510	MCELMO CREEK Q-10 (RE-ENTRY)	43-037-15973	06/28/95	1 1	1 1	Dr. E. WTW
✓ 2507	MCELMO CREEK P-09 (RE-ENTRY)	43-037-16367	06/28/95	1 1	1 1	Dr. E. WTW
✓ 2143	RU 28-11 (RE-ENTRY)	43-037-30446	08/05/94	1 1	1 1	Dr. E. POW
✓ 2144	RU 29-31 (RE-ENTRY)	43-037-30914	08/05/94	1 1	1 1	Dr. E. POW
✓ 2146	RU 20-33 (RE-ENTRY)	43-037-30931	08/05/94	1 1	1 1	Dr. E. POW
✓ 2147	RU 29-42 (RE-ENTRY)	43-037-30937	08/05/94	1 1	1 1	Dr. E. POW
✓ 2148	RU 20-42 (RE-ENTRY)	43-037-31051	08/05/94	1 1	1 1	Dr. E. POW

APD: APPROVED
 - Not yet
 Spudded

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

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8. Well Name and No.

RATHERFORD 29-31

9. API Well No.

43-037-~~10339~~ 30914

10. Field and Pool, or exploratory Area

GREATER ANETH

11. County or Parish, State

SAN JUAN UT

SUBMIT IN TRIPLICATE

1. Type of Well

Oil Well Gas Well Other

2. Name of Operator

MOBIL PRODUCING TX & NM INC.*
*MOBIL EXPLORATION & PRODUCING US INC. AS AGENT FOR MPTM

3. Address and Telephone No.

P.O. Box 633, Midland TX 79702 (915) 688-2585

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

SEC. 29, T41S, R24E
NW/NE 700' FNL & 2140' FEL

12. CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION

Notice of Intent
 Subsequent Report
 Final Abandonment Notice

TYPE OF ACTION

Abandonment
 Recompletion
 Plugging Back
 Casing Repair
 Altering Casing
 Other SIDETRACK
 Change of Plans
 New Construction
 Non-Routine Fracturing
 Water Shut-Off
 Conversion to Injection
 Dispose Water

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

13. 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.)*

BHL:

LATERAL #1: 1093' NORTH & 1302' WEST FROM SURFACE SPOT (ZONE 1a/1b). 650211.92 x 4115548.94
LATERAL #2: 940' SOUTH & 1294' EAST FROM SURFACE SPOT (ZONE 1a). 661005.26 x 4117771.93
333 397 439134 1992.21
257 395 650608.86 4118057.30 s/c 20

SEE ATTACHED PROCEDURE.

Approved by the
Utah Division of
Oil, Gas and Mining

Date: 9/29/98

By: *[Signature]*

COPY SENT TO OPERATOR
Date: 9-29-98
Initials: KAK

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

Signed *[Signature]* for Title SHIRLEY HOUCHINS/ENV & REG TECH Date 9-17-98

(This space for Federal or State office use)

Approved by _____ Title _____ Date _____
Conditions of approval, if any: _____

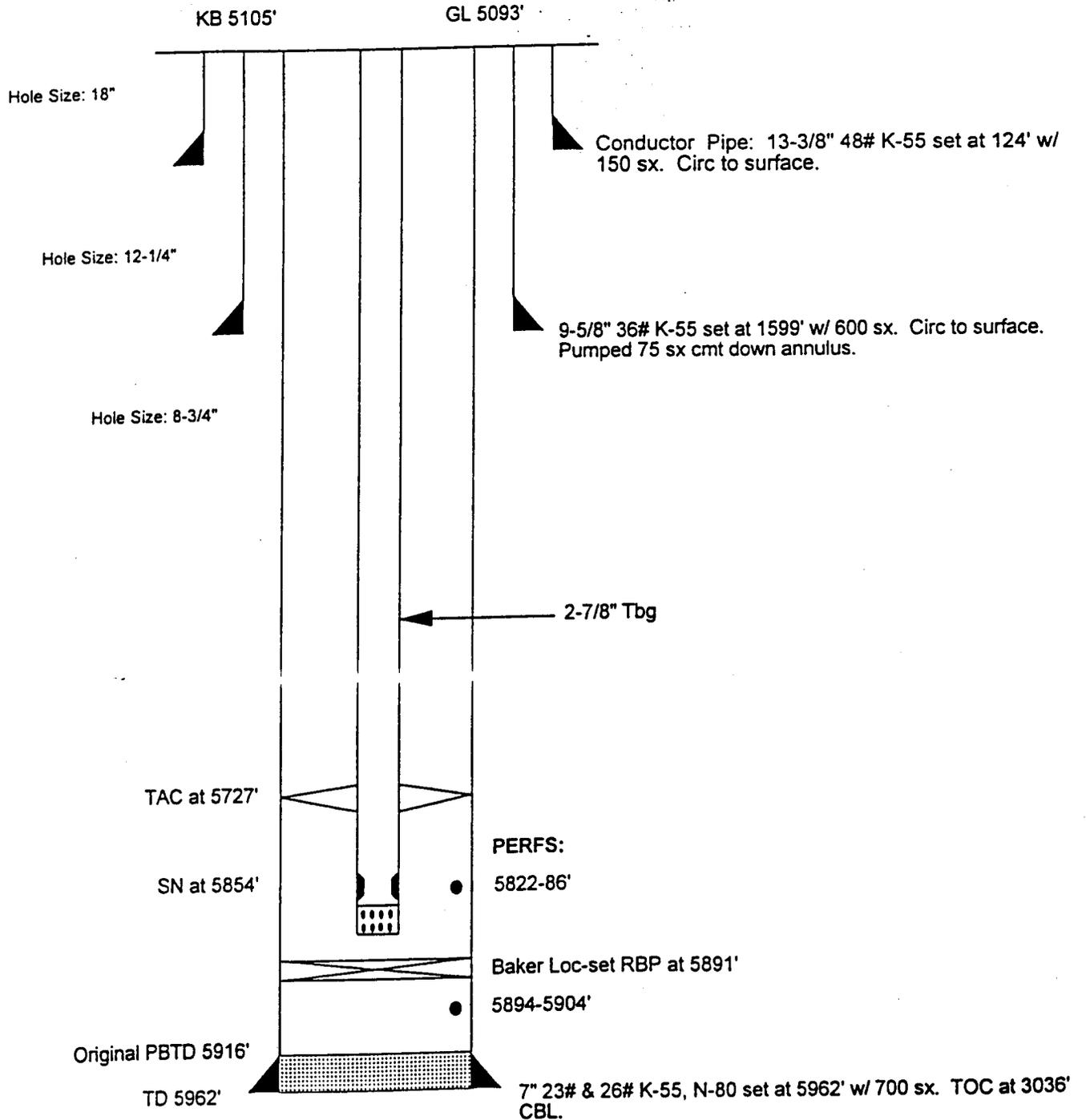
Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

* See Instruction on Reverse Side

RATHERFORD UNIT # 29-31
GREATER ANETH FIELD
 700' FNL & 2140' FEL
 SEC 29-T41S-R24E
 SAN JUAN COUNTY, UTAH
 API 43-037-30914
 PRISM 0043138

PRODUCER

Capacities:	bb/ft	gal/ft	cuf/ft
2-7/8" 6.5#	.00579	.2431	.0325
7" 23#	.0393	1.6535	.2210
7" 26#	.0382	1.6070	.2148
2-7/8"x7"23#	.0313	1.3162	.1760
2-7/8"x7"26#	.0302	1.2698	.1697

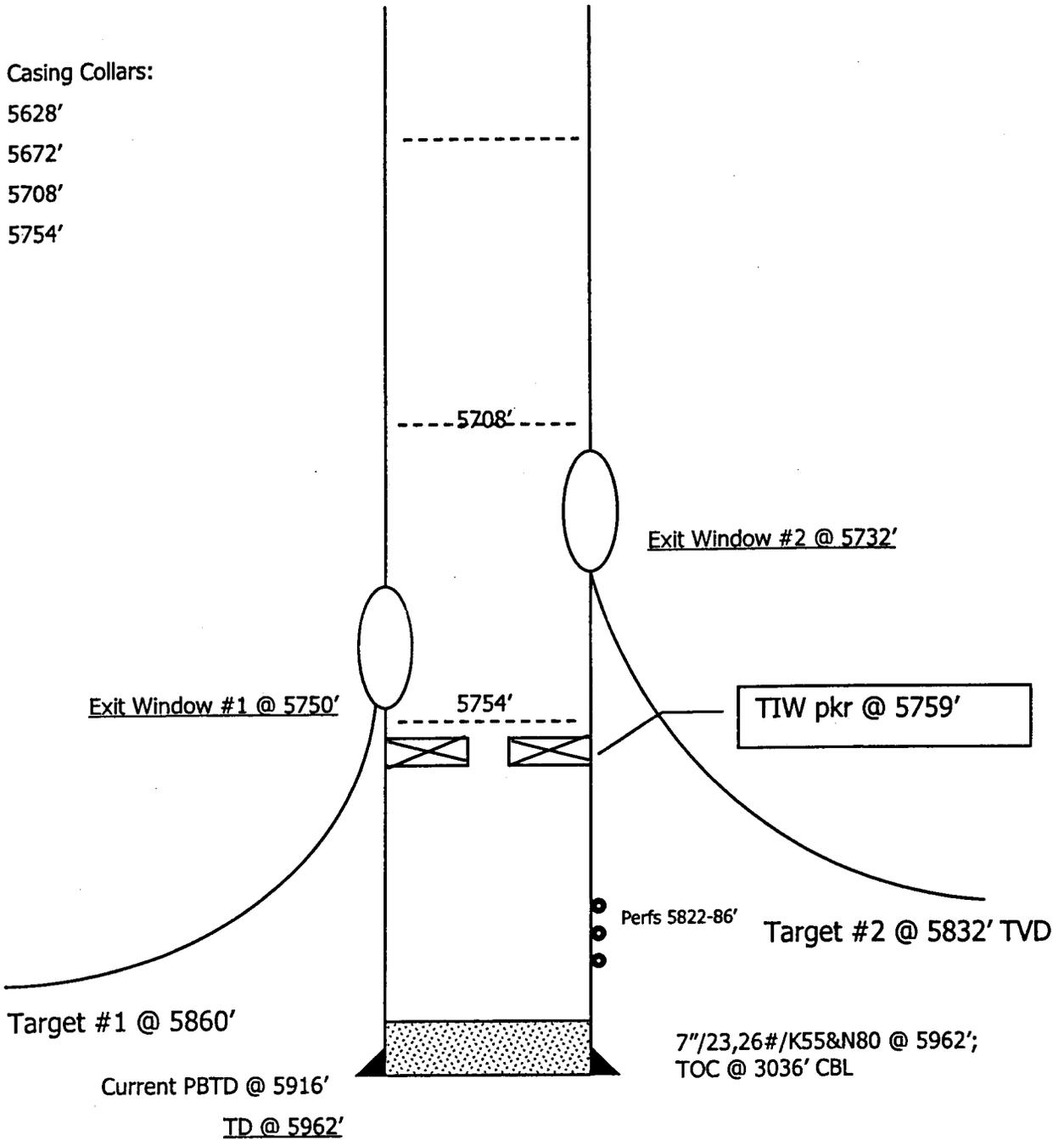


Ratherford Unit Well #29-31 Horizontal Drilling Procedure

The objective of this procedure is to prepare this wellbore for sidetracking, sidetrack the subject well and drill multilateral short radius horizontal laterals (1600-1700 feet).

1. Prepare location and dig working pit.
2. MIRU WSU, reverse unit, and H2S equipment. Bullhead kill weight fluid down tubing.
3. ND wellhead and NU BOP's. Pressure test BOP's to working pressure.
4. Continue to POH with related equipment (tubing and rods for producers or tubing and packer for injectors).
5. RU wireline to run any logs desired and run gage ring for casing size and weight.
6. Set retrievable bridge plug and pressure test casing to 1000 psi.
7. RDMO WSU.
8. MIRU 24 hr. WSU. NU BOP's and pressure test with chart.
9. PU tubing, drilling collars, and drill pipe in derrick and run in hole. Then POH and stand back.
10. Run packer on wireline and set using GR/CCL log to correlate with. RD wireline.
11. PU drillpipe with UBHO sub in string and latch into packer to survey the hole and obtain orientation of keyway. POH w/gyro and drill string.
12. Orient whipstock on surface to desired bearing and RIH on drill pipe. Latch into packer. Shear starter mill bolt and make starter cut.
13. POH w/ starter mill and pick up window mill and watermelon mill and continue to mill window. Drill 1-2 ft of formation
14. POH w/ mills and PU curve building assembly and drill string with UBHO sub in string and RIH.
15. RU gyro to assist in time drilling and starting out of the casing window. POH w/ gyro when inclination dictates it must be pulled.
16. Finish drilling the curve using the MWD.
17. POH once curve is finished and PU lateral motor to drill the lateral using MWD.
18. Once lateral TD is reached, POH w/ directional equipment.
19. PU retrieving hook and RIH on drill pipe. Retrieve whipstock and PU new whipstock oriented for desired bearing to start in hole.
20. Repeat steps 12 through 19 for each subsequent lateral.

Ratherford Unit #29-31



Window	Btm-Top of Window	Ext length	Curve Radius	Bearing	Horiz Displ
1	5750-42	-----	110	320	1700
2	5732-24	18	100	126	1600

The double spline is 2.42 ft long and the bottom of the whipstock, the latch, the debris and the shear sub are 8.68 ft long. These lengths must be added to the extension lengths to determine the entire whipstock assembly length.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED
SEP 28 1995

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.

Use "APPLICATION FOR PERMIT -" for such proposals

5. Lease Designation and Serial No.
14-20-603-407

6. If Indian, Allottee or Tribe Name
NAVAJO TRIBAL

7. If Unit or CA, Agreement Designation
RATHERFORD UNIT

8. Well Name and No.
RATHERFORD 29-31

9. API Well No.
43-037-30914

10. Field and Pool, or exploratory Area
GREATER ANETH

11. County or Parish, State
SAN JUAN UT

SUBMIT IN TRIPLICATE

1. Type of Well
 Oil Well Gas Well Other

2. Name of Operator Mobil Exploration & Producing U.S. Inc.
as Agent for Mobil Producing TX & NM Inc.

3. Address and Telephone No.
P.O. Box 633, Midland, TX 79702 915-688-2585

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
700' FNL, 2140' FEL
SEC.29, T41S, R24E

12. CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Abandonment
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Recompletion
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Plugging Back
	<input type="checkbox"/> Casing Repair
	<input type="checkbox"/> Altering Casing
	<input type="checkbox"/> Other <u>CANCEL WO/APPROVAL</u>
	<input type="checkbox"/> Change of Plans
	<input type="checkbox"/> New Construction
	<input type="checkbox"/> Non-Routine Fracturing
	<input type="checkbox"/> Water Shut-Off
	<input type="checkbox"/> Conversion to Injection
	<input type="checkbox"/> Dispose Water

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

13. 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.)*

CANCEL WORKOVER NOTICE OF INTENT SUNDRY NOTICE APPROVED AUGUST 2, 1994.
(8/5/94 by BOG/m)

KDR - I found this in the well file. This "permit" needs to be rescinded (1st of 2 screens). The well is producing in DSCR, so file needs to go back to active well files.

LA - Today's date 8/11/97

Thanks,
Don

14. I hereby certify that the foregoing is true and correct
 Signed Shuley Robertson Title ENV. & REG. TECHNICIAN Date 9-22-95

(This space for Federal or State office use)
 Approved by _____ Title _____ Date _____
 Conditions of approval, if any:

WORKSHEET
APPLICATION FOR PERMIT TO DRILL

APD RECEIVED: 09/28/98

API NO. ASSIGNED: 43-037-30914

WELL NAME: RATHERFORD 29-31 MULTI-LEG
 OPERATOR: MOBIL EXPL & PROD INC (N7370)
 CONTACT: _____

PROPOSED LOCATION:
 SENE 29 - T41S - R24E
 SURFACE: 0700-FNL-2140-FEL
 BOTTOM: 0439-FSL-1992-FWL
 SAN JUAN COUNTY
 GREATER ANETH FIELD (365)

INSPECT LOCATION BY: / /		
TECH REVIEW	Initials	Date
Engineering		
Geology		
Surface		

LEASE TYPE: IND
 LEASE NUMBER: 14-20-603-407
 SURFACE OWNER: _____

PROPOSED FORMATION: DSCR

RECEIVED AND/OR REVIEWED:

Plat

Bond: Federal State Fee
 (No. ALREADY BONDED)

Potash (Y/N)

Oil Shale (Y/N) *190-5(B)

Water Permit
 (No. NAVAJO ALLOCATION)

RDCC Review (Y/N)
 (Date: _____)

St/Fee Surf Agreement (Y/N)

LOCATION AND SITING:

R649-2-3. Unit RATHERFORD UNIT

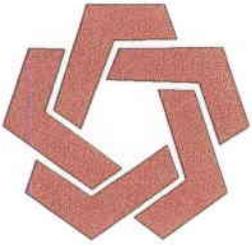
R649-3-2. General

R649-3-3. Exception

Drilling Unit
 Board Cause No: _____
 Date: _____

COMMENTS: _____

STIPULATIONS: _____



DIVISION OF OIL, GAS & MINING

OPERATOR: MOBIL EXPL & PROD INC (N7370)

FIELD: GREATER ANETH (365)

SEC. 29, TWP 41S, RNG 24E

COUNTY: SAN JUAN UNIT: RATHERFORD UNIT



DATE PREPARED:
28-SEP-1998

DIVISION OF OIL, GAS AND MINING

SPUDDING INFORMATION

Name of Company: MOBIL E & P

Well Name: RATHERFORD UNIT 29-31

API No. 43-037-30914 Lease Type: INDIAN

Section 29 Township 41S Range 24E County SAN JUAN

Drilling Contractor BIG "A" RIG# 25

SPUDDED:

Date 10/28/98

Time _____

How ROTARY

Drilling will commence _____

Reported by SIMON

Telephone # _____

Date: 10/28/98 Signed: JLT

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.

Use "APPLICATION FOR PERMIT -" for such proposals

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14-20-603-407

6. If Indian, Allottee or Tribe Name

NAVAJO TRIBAL

7. If Unit or CA, Agreement Designation

RATHERFORD UNIT

8. Well Name and No.

RATHERFORD 29-31

9. API Well No.

43-037-30914

10. Field and Pool, or exploratory Area

GREATER ANETH

11. County or Parish, State

SAN JUAN UT

SUBMIT IN TRIPLICATE

1. Type of Well

Oil Well Gas Well Other

2. Name of Operator

MOBIL PRODUCING TX & NM INC.*
*MOBIL EXPLORATION & PRODUCING US INC. AS AGENT FOR MPTM

3. Address and Telephone No.

P.O. Box 633, Midland TX 79702 (915) 688-2585

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

SEC. 29, T41S, R24E
NW/NE 700' FNL & 2140' FEL

12. CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION

- Notice of Intent
 Subsequent Report
 Final Abandonment Notice

TYPE OF ACTION

- Abandonment
 Recompletion
 Plugging Back
 Casing Repair
 Altering Casing
 Other SIDETRACK
- Change of Plans
 New Construction
 Non-Routine Fracturing
 Water Shut-Off
 Conversion to Injection
 Dispose Water

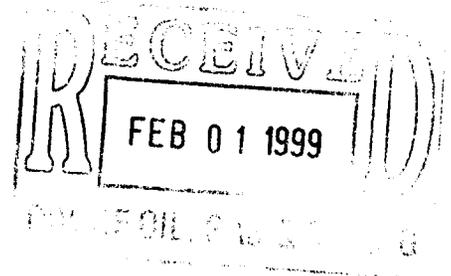
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BHL:

LATERAL #1: 1213' NORTH & 1192' WEST FROM SURFACE SPOT (ZONE 1a/1b).
LATERAL #2: 923' SOUTH & 1308' EAST FROM SURFACE SPOT (ZONE 1a).
LATERAL #3: 1398' NORTH & 967' WEST FROM SURFACE SPOT (ZONE 1a).

SEE ATTACHED PROCEDURE 10-23-98 -- 12-17-98



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

Signed Shirley Houchins Title SHIRLEY HOUCHINS/ENV & REG TECH Date 1-27-99

(This space for Federal or State office use)

Approved by _____ Title _____ Date _____
Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

* See instruction on Reverse Side

Ratherford Unit Well #29-31 Horizontal Drilling Procedure

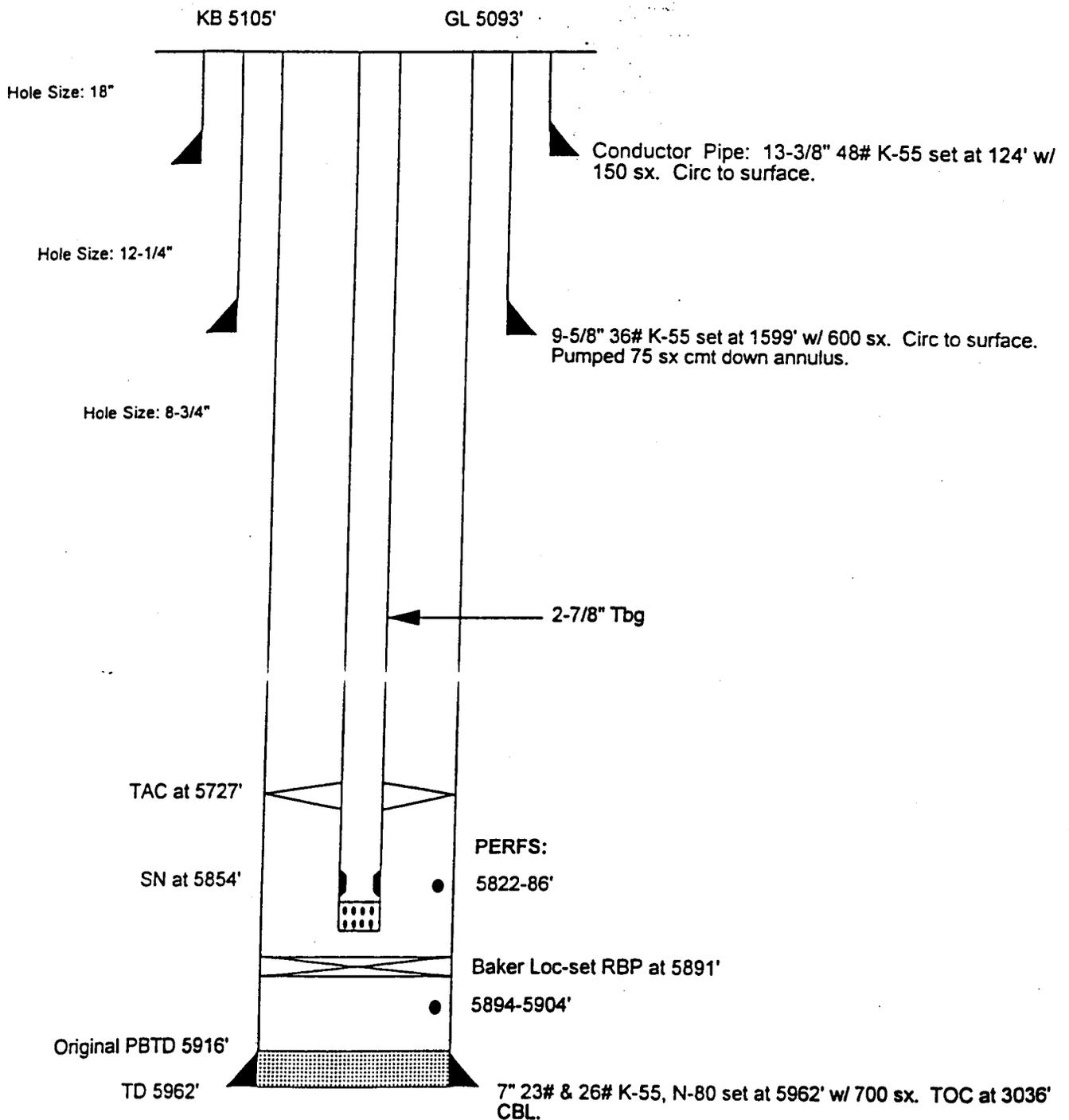
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1. Prepare location and dig working pit.
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3. ND wellhead and NU BOP's. Pressure test BOP's to working pressure.
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5. RU wireline to run any logs desired and run gage ring for casing size and weight.
6. Set retrievable bridge plug and pressure test casing to 1000 psi.
7. RDMO WSU.
8. MIRU 24 hr. WSU. NU BOP's and pressure test with chart.
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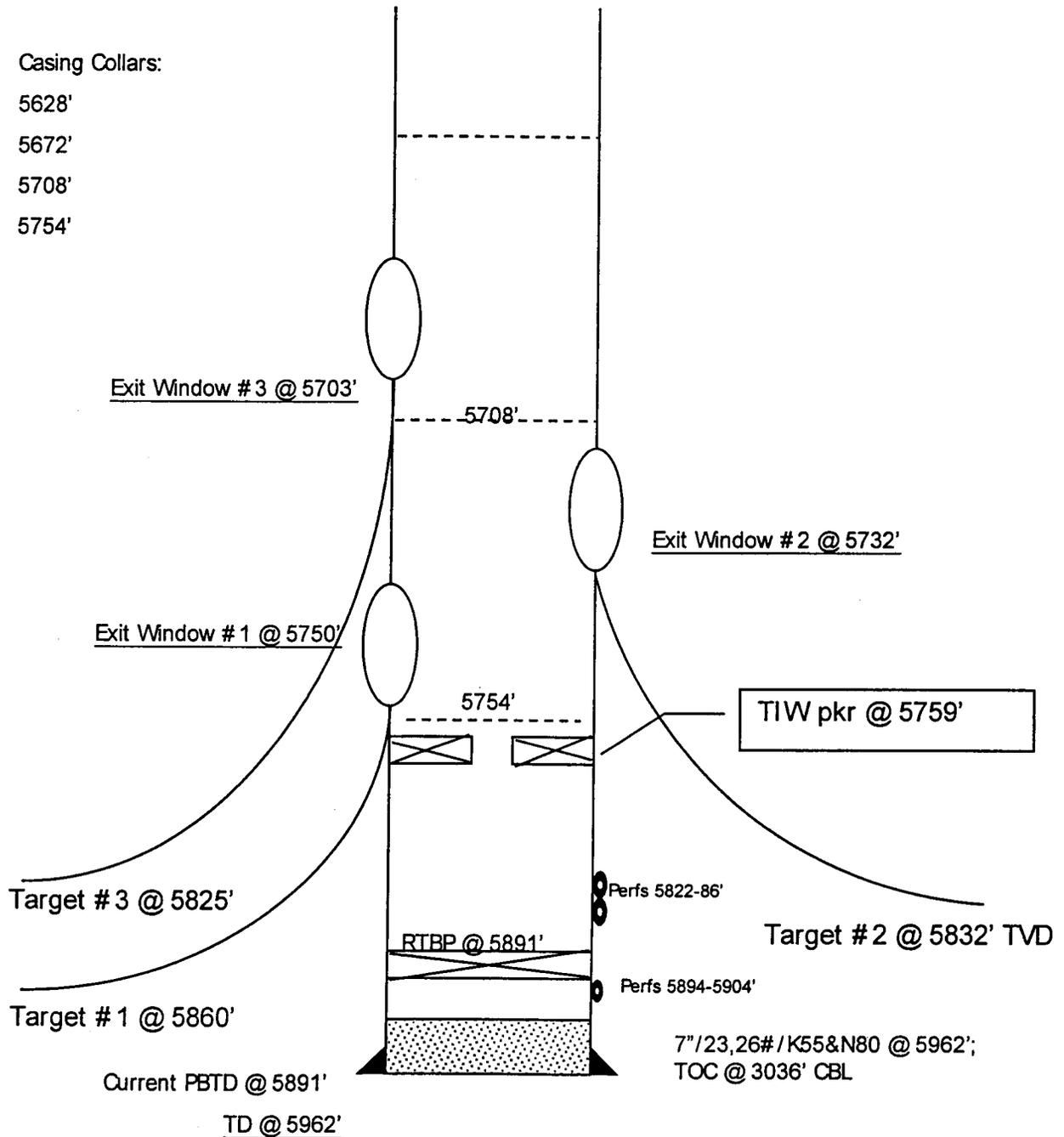
RATHERFORD UNIT # 29-31
GREATER ANETH FIELD
 700' FNL & 2140' FEL
 SEC 29-T41S-R24E
 SAN JUAN COUNTY, UTAH
 API 43-037-30914
 PRISM 0043138

PRODUCER

Capacities:	bbbl/ft	gal/ft	cuft/ft
2-7/8" 6.5#	.00579	.2431	.0325
7" 23#	.0393	1.6535	.2210
7" 26#	.0382	1.6070	.2148
2-7/8"x7"23#	.0313	1.3162	.1760
2-7/8"x7"26#	.0302	1.2698	.1697



Ratherford Unit #29-31



Window	Btm-Top of Window	Ext length	Curve Radius	Bearing	Horiz Displ
1	5750-42	-----	110	315	1700
2	5732-24	18	100	126	1600
3	5703-5695	45	122	325	1700

The double spline is 2.42 ft long and the bottom of the whipstock, the latch, the debris and the shear sub are 8.68 ft long. These lengths must be added to the extension lengths to determine the entire whipstock assembly length.



SYSTEMS USA CORP.

Electronic Rig Monitoring Systems • Well Logging • Consulting Geology • Coal Bed Methane Services
2450 INDUSTRIAL BLVD. • GRAND JUNCTION, CO 81505
(970) 243-3044 • (FAX) 241-1085

Monday, December 28, 1998

Division of Oil & Gas Mining
State of Utah
1594 West North Temple
3 Triad Center, Ste. 1210
Salt Lake City, UT 84116

Re: Ratherford Unit #29-31 Legs 1,2,&3
Sec. 29, T41S, R24E
San Juan County, Utah

Dear Sirs:

LS 137359-1

Enclosed is the final computer colored log and geology report for the above referenced well.

Mod Log in log file

We appreciate the opportunity to be of service to you and look forward to working with you again in the near future.

If you have any questions regarding the enclosed data, please contact us.

Sincerely,

Bill Nagel

Bill Nagel *a*
Senior Geologist

BN/dn

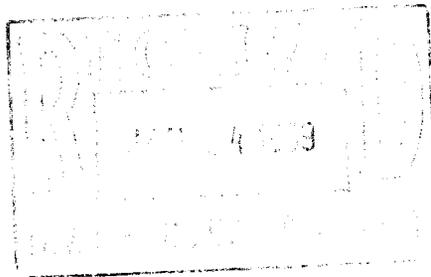
Enc. 1 Final Computer Colored Log and Geology Report

cc Letter Only; Dana Larson; Mobil E & P U.S., Inc.; Midland, TX



MOBIL

**RATHERFORD UNIT #29-31
NW HORIZONTAL LATERAL LEG #1
UPPER 1-B POROSITY BENCH
DESERT CREEK MEMBER
PARADOX FORMATION
SECTION 29, T41S, R24E
SAN JUAN, UTAH**



GEOLOGY REPORT
prepared by
DAVE MEADE
PASON/ROCKY MOUNTAIN GEO-ENGINEERING CORP.
GRAND JUNCTION, COLORADO
(970) 243-3044



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WELL SUMMARY

OPERATOR: MOBIL EXPLORATION & PRODUCTION U.S. INC.

NAME: RATHERFORD UNIT #29-31 NW HORIZONTAL LATERAL
LEG #1 IN 1-B POROSITY BENCH, DESERT CREEK

LOCATION: SECTION 29, T41S, R24E

COUNTY/STATE: SAN JUAN, UTAH

ELEVATION: KB:5105' GL:5093'

SPUD DATE: 10/29/98

COMPLETION DATE: 11/03/98

DRILLING ENGINEER: SIMMON BERRERA

WELLSITE GEOLOGY: DAVE MEADE / MARVIN ROANHORSE

**MUDLOGGING
ENGINEERS:** DAVE MEADE / MARVIN ROANHORSE

CONTRACTOR: BIG "A" RIG 25
TOOLPUSHER: J. DEES

HOLE SIZE: 4 ¾"

CASING RECORD: SIDETRACK IN WINDOW AT 5750' MEASURED DEPTH

DRILLING MUD: M-I
ENGINEER: MIKE PITTSINGER / RON WESTENBURG
MUD TYPE: FRESH WATER & BRINE WATER W/ POLYMER SWEEPS

**DIRECTIONAL
DRILLING CO:** SPERRY-SUN

ELECTICAL LOGGING: NA

TOTAL DEPTH: 7476' MEASURED DEPTH; TRUE VERTICAL DEPTH- 5878.5'

STATUS: PREPARING WELL FOR SE LATERAL #2

DRILLING CHRONOLOGY
RATHERFORD UNIT #29-31
1-B NW HORIZONTAL LATERAL LEG #1

DATE	DEPTH	DAILY	ACTIVITY
10/28/98	0'	0'	RIG DOWN-MOVE RIG TO R.U. #29-31 LOCATION- RIG UP-NIPPLE UP BOP-PRESURE TEST-TIH & STRAP DC & DP
10/29/98	0'	0'	STRAP PIPE-TIH-LATCH ON TO RBP-RELEASE-TOH-LD PLUG-R.U. WIRELINE-RIH W/PACKER-SET WIRE LINE PACKER @ 5759'-R.D. WIRE LINE-P.U. ANCHOR LATCH-TIH-LATCH INTO ANCHOR-R. U. GYRO DATA-RUN GYRO & ORIENT ANCHOR-RIG DOWN GYRO-MIX & PUMP LCM-TRY TO REGAIN CIRCULATION
10/30/98	5759'	0'	MIX & PUMP LCM-REGAIN CIR-TOH-P.U. WHIPSTOCK #1 & STARTER MILL-TIH-TAG FILL 5' ABOVE PACKER-TOH-L.D. WHIPSTOCK & STARTER MILL-P.U. ANCHOR LATCH-TIH-CIR & WASH OVER PACKER-LATCH INTO ANCHOR
10/31/98	5749'	10'	P.U. WHIPSTOCK #1 & STARTER MILL-SET WHIPSTOCK @ 5749'-MILL W/STARTER MILL 5740' TO 5743'-TOH-L.D. STARTER MILL-P.U. WINDOW MILL & WATER MELON MILLS-TIH-SPOT LCM-MILL W/WINDOW MILLS 5743' TO 5750'-PUMP & CIR SWEEP-TOH-L.D. MILLS-P.U. CURVE ASSEM.-ORIENT & TEST
11/01/98	5750'	231'	TIH W/CURVE ASSEMBLY-CIR & CLEAN PIPE-R.U. GYRO DATA & RIH W/ GYRO-TIME DRLG 5750' TO 5753'- DIR DRLG & WIRELINE SURVEYS 5781'-PULL GYRO & RIG DOWN GYRO DATA-DIR DRLG & SURVEYS TO 5932' (T.D. CURVE)-PUMP SWEEP & CIR OUT SPLS-PUMP 10 BBLs BRINE-L.D. 49 JTS AOH-TOH-L.D. CURVE ASSEM.-P.U. LATERAL ASSEMBLY-ORIENT & TEST-P.U. 50 JTS PIPE-TIH-DIR DRLG & SURVEYS
11/02/98	5981'	1355'	DIR DRLG & SURVEYS
11/03/98	7336'	140'	DIR DRLG & SURVEYS TO 7476' (TD LATERAL #1)-PUMP SWEEP & CIR SPLS-PUMP 10 BBLs BRINE-DISPLACE HOLE W/ BRINE-TOH-L.D. LATERAL ASSEMBLY-P.U. RETRIEVING HOOK-TIH-LATCH INTO WHIPSTOCK & WORK FREE-TOH-L. D. WHIPSTOCK #1-P. U. WHIPSTOCK #2 & ORIENT-TIH-W/WHIPSTOCK & STARTER MILL-SET WHIPSTOCK @ 5729'-MILL 5722' TO 5725'

DAILY ACTIVITY

Operator: MOBIL

Well Name: RATHERFORD UNIT #29-31 NW1-B HORIZONTAL LATERAL LEG #1

DATE	DEPTH	DAILY	DATE	DEPTH	DAILY
10/28/98	0'	0'			
10/29/98	0'	0'			
10/30/98	5759'	0'			
10/31/98	5749'	10'			
11/01/98	5750'	231'			
11/02/98	5981'	1355'			
11/03/98	7336'	140'			

BIT RECORD

OPERATOR: MOBIL

WELL NAME: RATHERFORD UNIT #29-31 NW1-B HORIZONTAL LATERAL LEG #1

RUN	SIZE	MAKE	TYPE	IN/OUT	FTG	HRS	FT/HR
#1 (RR)	4 3/4"	STC	MF-37P	5750'/ 5932'	182'	9.5	19.2
#2	4 3/4"	STC	MF-3P	5932'/ 7476'	1544'	32	48.25

MUD REPORT

OPERATOR: MOBIL

WELL NAME: RATHERFORD UNIT #29-31 NW1-B HORIZONTAL LATERAL LEG #1

DATE	DEPT H	WT	VIS	PLS	YLD	GEL	PH	WL	CK	CHL	CA	SD	OIL	WTR
10/29/98	0'	NO	CHECK	-	-	-	-	-	-	-	-	-	-	-
10/30/98	5759'	8.3	26	1	1	0/0	8.0	NC	NC	1000	120	0%	0%	100%
10/31/98	5741'	8.3	26	1	1	0/0	8.0	NC	NC	1000	120	0%	0%	100%
11/01/98	5813'	8.4	26	1	1	0/0	12.0	NC	NC	6000	80	0%	0%	100%
11/02/98	6432'	8.5	26	1	1	0/0	12.5	NC	NC	10000	80	0%	0%	100%
11/03/98	7476'	8.5	26	1	1	0/0	11.0	NC	NC	16000	1080	TR	TR	100%

SPERRY-SUN DRILLING SERVICES
SURVEY DATA

Customer ... : Mobil (Utah)
Platform ... : RATHERFORD UNIT
Slot/Well .. : BA25/29-31 1A1

MEASURED DEPTH	ANGLE DEG	DIRECTION DEG	TVD	NORTHINGS FEET	EASTINGS FEET	VERTICAL SECTION	DOG LEG
5600.00	0.09	17.77	5599.67	42.29 N	16.02 W	41.23	0.00
5741.00	0.36	51.05	5740.67	42.68 N	15.64 W	41.24	0.20
5750.00	4.60	315.00	5749.66	42.95 N	15.88 W	41.59	51.69
5760.00	8.20	320.31	5759.60	43.78 N	16.61 W	42.71	36.45
5770.00	12.30	322.21	5769.43	45.17 N	17.72 W	44.47	41.13
5780.00	16.70	323.19	5779.11	47.17 N	19.24 W	46.95	44.07
5790.00	21.30	323.80	5788.57	49.78 N	21.17 W	50.17	46.04
5800.00	25.80	323.60	5797.73	53.00 N	23.54 W	54.12	45.01
5810.00	30.40	325.10	5806.55	56.83 N	26.28 W	58.77	46.54
5820.00	35.10	326.10	5814.96	61.29 N	29.33 W	64.08	47.31
5830.00	40.00	326.90	5822.88	66.38 N	32.69 W	70.05	49.24
5840.00	44.40	327.40	5830.29	72.02 N	36.33 W	76.62	44.13
5850.00	49.30	327.70	5837.13	78.17 N	40.25 W	83.74	49.05
5860.00	54.30	327.10	5843.31	84.79 N	44.48 W	91.41	50.22
5870.00	59.10	326.20	5848.80	91.77 N	49.07 W	99.59	48.59
5880.00	64.20	325.00	5853.54	99.03 N	54.05 W	108.24	52.08
5890.00	69.30	323.80	5857.49	106.49 N	59.39 W	117.30	52.18
5900.00	74.80	322.50	5860.57	114.10 N	65.10 W	126.72	56.37
5932.00	88.60	317.40	5865.18	138.26 N	85.44 W	158.18	45.90
5968.00	89.20	313.70	5865.87	163.95 N	110.64 W	194.16	10.41
6000.00	90.90	311.00	5865.85	185.50 N	134.28 W	226.12	9.97
6032.00	91.40	311.10	5865.20	206.51 N	158.41 W	258.04	1.59
6063.00	90.80	311.10	5864.61	226.89 N	181.77 W	288.96	1.94
6095.00	91.00	311.70	5864.11	248.05 N	205.77 W	320.90	1.98
6127.00	92.80	311.50	5863.04	269.28 N	229.68 W	352.82	5.66
6158.00	91.30	311.80	5861.94	289.87 N	252.83 W	383.75	4.93
6190.00	90.90	311.70	5861.32	311.17 N	276.70 W	415.69	1.29
6222.00	89.70	312.00	5861.15	332.52 N	300.54 W	447.64	3.87
6254.00	90.00	312.00	5861.24	353.93 N	324.32 W	479.60	0.94
6285.00	90.80	312.50	5861.02	374.78 N	347.26 W	510.56	3.04
6317.00	89.60	313.60	5860.91	396.62 N	370.65 W	542.54	5.09
6349.00	88.60	313.90	5861.41	418.75 N	393.76 W	574.53	3.26
6381.00	87.40	313.20	5862.53	440.78 N	416.94 W	606.50	4.34
6413.00	86.60	312.70	5864.20	462.55 N	440.33 W	638.43	2.95
6445.00	87.90	311.80	5865.74	484.04 N	463.99 W	670.36	4.94
6476.00	90.30	312.90	5866.23	504.92 N	486.89 W	701.32	8.52
6508.00	90.10	312.90	5866.11	526.71 N	510.33 W	733.30	0.63
6540.00	89.30	313.10	5866.28	548.53 N	533.74 W	765.28	2.58

SPERRY-SUN DRILLING SERVICES
SURVEY DATA

Customer ... : Mobil (Utah)
Platform ... : RATHERFORD UNIT
Slot/Well .. : BA25/29-31 1A1

MEASURED DEPTH	ANGLE DEG	DIRECTION DEG	TVD	NORTHINGS FEET	EASTINGS FEET	VERTICAL SECTION	DOG LEG
6572.00	90.30	313.90	5866.39	570.56 N	556.95 W	797.26	4.00
6603.00	90.10	314.30	5866.29	592.13 N	579.21 W	828.26	1.44
6635.00	92.00	314.10	5865.70	614.43 N	602.15 W	860.25	5.97
6666.00	91.00	314.10	5864.89	636.00 N	624.40 W	891.24	3.23
6697.00	90.00	314.30	5864.62	657.61 N	646.62 W	922.23	3.29
6729.00	90.10	314.10	5864.59	679.92 N	669.56 W	954.23	0.70
6761.00	91.90	314.50	5864.03	702.26 N	692.46 W	986.22	5.76
6793.00	91.40	314.80	5863.11	724.74 N	715.22 W	1018.21	1.82
6825.00	88.50	315.20	5863.14	747.37 N	737.84 W	1050.20	9.15
6856.00	89.40	314.70	5863.71	769.27 N	759.78 W	1081.20	3.32
6888.00	89.40	314.80	5864.04	791.79 N	782.50 W	1113.19	0.31
6919.00	87.60	315.00	5864.85	813.67 N	804.45 W	1144.18	5.84
6951.00	85.30	315.00	5866.83	836.25 N	827.03 W	1176.12	7.19
6983.00	85.90	314.50	5869.29	858.71 N	849.69 W	1208.02	2.44
7014.00	87.20	314.80	5871.15	880.46 N	871.71 W	1238.97	4.30
7046.00	87.50	314.70	5872.63	902.96 N	894.41 W	1270.93	0.99
7078.00	88.50	314.80	5873.75	925.48 N	917.12 W	1302.91	3.14
7110.00	88.30	315.40	5874.64	948.13 N	939.70 W	1334.90	1.98
7141.00	87.60	316.20	5875.75	970.34 N	961.30 W	1365.88	3.43
7173.00	88.70	316.40	5876.79	993.47 N	983.39 W	1397.85	3.49
7205.00	90.20	317.80	5877.09	1016.90 N	1005.17 W	1429.83	6.41
7236.00	87.70	317.30	5877.66	1039.77 N	1026.09 W	1460.79	8.22
7268.00	86.50	315.70	5879.28	1062.95 N	1048.09 W	1492.73	6.24
7300.00	87.00	315.40	5881.09	1085.76 N	1070.46 W	1524.68	1.82
7331.00	91.40	315.50	5881.53	1107.85 N	1092.20 W	1555.67	14.20
7363.00	94.20	315.90	5879.96	1130.72 N	1114.52 W	1587.63	8.84
7394.00	92.30	316.10	5878.21	1152.98 N	1136.02 W	1618.57	6.16
7426.00	89.40	316.90	5877.73	1176.19 N	1158.04 W	1650.55	9.40
7442.00	88.90	316.90	5877.97	1187.87 N	1168.98 W	1666.54	3.13
* 7476.00	88.90	316.90	5878.62	1212.69 N	1192.20 W	1700.52	0.00

THE DOGLEG SEVERITY IS IN DEGREES PER 100.00 FEET.
N/E COORDINATE VALUES GIVEN RELATIVE TO WELL HEAD.
TVD COORDINATE VALUES GIVEN RELATIVE TO WELL HEAD.
THE VERTICAL SECTION ORIGIN IS WELL HEAD.
THE VERTICAL SECTION WAS COMPUTED ALONG 315.00 (TRUE).
CALCULATION METHOD: MINIMUM CURVATURE.

* 7476 EXTRAPOLATED TO BIT

SAMPLE DESCRIPTIONS

OPERATOR: MOBIL

WELL NAME: RATHERFORD UNIT #29-31 NW 1-A HORIZONTAL LATERAL LEG #1

DEPTH	LITHOLOGY
5749.00 5760.00	"LS crm-ltgy, occ wh-tan, crpxl-micxl, v chk-pty, arg, dol, grdg to v lmy DOL ip, tt, NFSOC, w/intbd DOL tan-brn crpxl-micxl arg lmy dns occ shy-grdg to v dol MRLST & SH blk-dkgy pty mica arg dol-sl calc carb ip SCAT CMT FRAG & LCM MAT"
5760.00 5770.00	"LS AA, bcmg pred tan-brn crpxl dns tt, NFSOC w/intbd DOL brn-gybrn AA v arg scat Crin fos tt NFSOC, rr blk SH lams-ptgs & blk-dkbrn CHT frag"
5770.00 5780.00	"LS tan-crm-ltbrn, micxl, arg, v mrly, grdg to v lmy sl dol MRLST, sl anhy, rr mic fos, tt, NFSOC, intbd DOL brn-gybrn micxl arg lmy sl slty rr mic fos mrly-grdg to v dol MRLST, thn SH blk-dkgy, sbblky-sbpty, mica carb-sooty, scat bf CHT frag "
5780.00 5790.00	"LS wh-crm-ltgy, tan, micxl, v sl arg, slty ip, occ anhy-scat ANHY incl, rr DOL-SH AA & rr CHT AA"
5790.00 5800.00	"LS AA, w/v rr intxl-frac POR, spty dull-bri yel FLOR, n-v rr brn STN, p slow dif-stmg CUT, intbd DOL brn v arg AA sl slty v rr intxl POR, spty FLOR-STN-CUT, rr thn blk SH & trnsl CHT"
5800.00 5810.00	"LS & DOL AA, bcmg v mrly-grdg to MRLST-grdg to blk-dkgy carb sooty mica sl slty SH"
5810.00 5820.00	"SH pred blk-dkgy, carb-sooty, w/v rr thn dns LS & DOL lams, bcmg pred dns tan-crm-rr brn anhy LS crpxl-rr vfxl-v sl alg, tt-sl tr intxl-alg POR, sl tr FLOR-STN-v p CUT & rr thn intbd ltbrn sl arg-lmy DOL tt-NFSOC "
5820.00 5850.00	"LS crm-tan-ltbrn, occ brn, rr mot brn-wh, crpxl-vfxl, gran-micsuc ip, pred alg-sl ool GRNST, w/scat dns anhy PKST, rr ANHY cmt-POR fl, tr-fr intxl-ool POR, mfr bri-dull yel FLOR, tr ltbrn-rr blk STN, mfr slow-mod fast stmg CUT, tr dns DOL-carb SH CVGS "
5850.00 5880.00	"LS pred tan-ltbrn, micxl-vfxl, gran-micsuc ip, ooc-oom sl alg-alg GRNST, w/rr crm-wh crpxl dns v sl ool PKST, occ ANHY xl-cmt-v rr DOL cmt, tr alg-tr-fr ool-intxl POR, mfr-fr bri-dull yel FLOR, mfr-fr brn stn-mfr blk dd o STN, mfr-fr slow dif-mod fast stmg CUT"
5880.00 5900.00	"LS AA, incr & bcmg pred ooc-oom GRNST, decr alg mat, scat dns PKST frag AA, pred mfr-mg ool-intxl-tr alg POR, mfr-fr bri-dull yel FLOR, fr ltbrn STN, tr-mfr blk dd o STN, fr slow dif-mfr fast stmg mlky CUT"

DEPTH	LITHOLOGY
5900.00 5932.00	"LS pred tan-ltbrn,micxl-vfxl,gran-micsuc ip,ool-oom sl alg GRNST,w/sl tr crm-wh crpxl dns v sl ool PKST,occ ANHY xl-cmt-v rr DOL cmt,tr alg-tr-mg ool-intxl POR,fr bri-dull yel FLOR,mfr-fr brn stn-mfr blk dd o STN,mfr-fr occ mg slow dif-mod fast stmg CUT"
5932.00 5940.00	"LS tan-ltbrn,crm,occ brn,tr off wh,ltgybrn-ltgy,crpxl-micxl,tr vfxl-gran,rr xln incl,pred dns sl chky-sl shy-arg PKST cvgs,tr scat sl ool-oom GRNST,sl anhy-mrly ip/rr xln ANHY,fr intxl-rr ool POR,tr scat mod bri-spty bri yel FLOR,fr-tr ltbrn-brn STN,rr blk dd o STN,fr-mg slow stmg mlky CUT,w/SH blk-dkbrn,frm-fis,sl calc,carb cvgs"
5940.00 5970.00	"LS ltbrn-tan-brn,tr wh-crm-ltgybrn,vfxl-gran-micsuc,tr micxl-crpxl,pred ool-sl oom GRNST,tr PKST cvgs AA,sl chky-anhy/tr POR fl-thn plty prtgs,rr xln ANHY,dol/tr DOL cmt,mg-fr ool-sl oom/tr intxl POR,g even mod bri-spty bri yel FLOR,mg tbrn-brn/tr blk dd o STN,g mod fast-slow stmg mlky CUT w/tr SH cvgs AA"
5970.00 6000.00	"LS brn,occ ltbrn,tr tan,rr ltgybrn,vfxl-gran-micsuc,tr micxl-crpxl,ool-sl oom-ool GRNST,tr scat dns chky sl ooc-ool PKST frag,sl anhy/v rr xln ANHY,dol/fr DOL cmt,mg-fr ool-oom/tr intxl POR,mg-g even mod bri-spty bri yel FLOR,g brn-ltbrn /tr dkbrn-blk dd o STN,g fast-mod fast stmg mlky CUT"
6000.00 6020.00	"LS brn-ltbrn/tr crm-off wh incl,tr tan,rr off wh,vfxl-gran-micsuc,tr micxl-crpxl,ool-sl oom-ool GRNST,rr scat PKST AA,tr chk POR fl & plty prtgs,sl anhy,dol/fr DOL cmt,POR AA,g even mod bri-spty bri yel FLOR,STN AA,g mod fast-slow stmg mlky CUT"
6020.00 6050.00	"LS ltbrn-tan-brn,occ ltgy-off wh,vfxl-gran-micsuc,tr micxl-crpxl,pred GRNST AA,sl incr scat dns sl ool-ool PKST & plty chky-sl anhy prtgs,v rr xln ANHY,occ-sl dol/tr DOL cmt,mg-g ool-sl oom/tr intxl POR,FLOR-STN-CUT AA"
6050.00 6080.00	"LS ltbrn-brn,occ ltgybrn-ltgy-crm-off wh,AA,pred ool-sl oom-ool GRNST,incr scat dns sl ool-ool PKST & plty prtgs,chky-sl anhy/tr-fr POR fl & rr xln ANHY,dol/fr DOL cmt,mg-g ool-sl oom/tr intxl POR,mg-g even mod bri-spty bri yel FLOR,g-mg ltbrn-brn/tr dkbrn & sl incr scat blk dd o STN,g fast-mod fast stmg mlky CUT"
6080.00 6120.00	"LS ltbrn-brn-tan,tr ltgybrn-ltgy-crm-off wh,AA,pred GRNST AA,scat PKST & plty prtgs AA,chky-sl anhy/tr-fr POR fl & xln ANHY,sl dol/tr DOL cmt,mg ool-sl oom/tr intxl POR,FLOR AA,g-mg ltbrn-brn/tr dkbrn-rr blk dd o STN,g slow-mod fast stmg mlky CUT"
6120.00 6150.00	"LS ltbrn-brn,occ ltgybrn-ltgy-crm-off wh,vfxl-gran-micsuc,micxl-crpxl,pred ool-sl oom-ool GRNST,scat dns sl ool-ool PKST & incr plty prtgs,incr chky-sl anhy/tr-fr POR fl-xln ANHY,sl dol/tr DOL cmt,mg-g ool-sl oom/tr intxl POR,fr mod bri/tr spty bri yel FLOR,fr-mg ltbrn-brn/tr dkbrn-rr blk dd o STN,fr-mg slow stmg mlky CUT"

DEPTH	LITHOLOGY
6150.00 6170.00	"LS AA,w/sl incr dns ool-fos PKST frag,incr ANHY xl-cmt-POR fl,mfr-fr intxl-tr ool POR,mfr-fr dull-bri yel FLOR,fr brn STN-rr blk dd o STN,fr slow-mod fast stmg mlky-fr dif CUT"
6170.00 6190.00	"LS tan-brn,rr ltgybrn-crm-wh,micxl-vfxl,gran-micsuc ip,pred sl oom-oom GRNST w/v rr alg mat,sl tr dns sl ool occ plty-chk PKST intcls,rr ANHY xl-POR fl,sl tr DOL cmt,mg intxl-mfr ool-rr alg POR,fr mod bri yel FLOR,mg brn-rr spty blk STN,mfr mod fast CUT"
6190.00 6230.00	"LS AA,decr PKST intcl & ANHY cmt-POR fl,v rr alg mat,fr-mg intxl-ool POR,fr-mg bri-dull yel FLOR,fr brn-dkbrn STN,sl tr blk dd o STN,fr-mg mod fast-slow stmg mlky CUT"
6230.00 6280.00	"LS tan-brn,rr gybrn,micxl-vfxl,gran-micsuc ip,pred ooc-oom GRNST-no vis alg mat,rr scat dns v sl ool occ chk arg sl anhy PKST intcl,tr DOL cmt-rr-tr ANHY cmt-POR fl,fr-mg ool-fr intxl POR,fr dull-tr bri yel FLOR,fr brn-rr blk STN,fr mod fast stmg CUT"
6280.00 6300.00	"LS AA,w/incr dns occ chy sl ool anhy PKST intcl,mfr-fr intxl-ool POR,mfr dull-tr bri yel FLOR,mfr-fr ltbrn STN-rr blk dd o STN,mfr-fr slow stmg-mg slow dif-tr mod fast stmg mlky CUT"
6300.00 6320.00	"LS AA,decr PKST AA,n-v rr scat trnsl CHT frag,fr-mg intxl-mfr ool POR,fr dull-bri yel FLOR,mfr-fr brn STN,sl tr blk dd o STN,CUT AA"
6320.00 6340.00	"LS ltbrn-brn,rr crm-tan,micxl-vfxl,gran-micsuc ip,pred sl ooc-oom GRNST,rr dns-crpxl v sl ool occ chk sl anhy PKST intcl,tr DOL-ANHY cmt,occ ANHY xl-POR fl,fr-mg intxl-tr ool POR,mfr-fr dull-mfr bri yel FLOR,fr brn-tr blk STN,fr mod fast-tr fast stmg CUT"
6340.00 6380.00	"LS AA,pred sl ooc-oom GRNST,w/scat dns crpxl-micxl occ chk sl ool anhy PKST intcl,fr-mg intxl-mfr ool POR,mfr-fr bri-dull yel FLOR,mfr-fr ltbrn-rr brn STN,scat blk dd o STN,mfr-fr mod fast-mg slow stmg mlky CUT"
6380.00 6430.00	"LS tan-ltbrn,rr brn-ltgybrn,micxl-vfxl,occ micsuc-gran,v sl suc,pred sl ooc-oom GRNST,w/scat dns crpxl sl ool occ chk v anhy ip PKST intcl,occ DOL cmt,v rr-tr ANHY xl-POR fl,fr-mg intxl-mfr ool POR,fr-mg bri-dull yel FLOR,mfr ltbrn-rr brn-sl tr blk STN,mfr-fr slow-mfr mod fast stmg-fr slow dif CUT"
6430.00 6450.00	"LS AA,v sl incr dns ool PKST intcl,pred GRNST AA,v rr scat ANHY xl-v rr trnsl CHT frag,POR-FLOR-STN AA,mfr-mg slow-mod fast stmg mlky CUT"
6450.00 6480.00	"LS tan-ltbrn,rr brn-crm,micxl-vfxl,occ micsuc-gran,v sl suc,pred sl ooc-oom GRNST,w/scat dns crpxl sl ool occ chk-anhy PKST intcl,occ DOL cmt,v rr ANHY xl-POR fl,fr-mg intxl-fr ool POR,fr-mg bri-dull yel FLOR,mfr ltbrn-brn-sl tr blk STN,mg mod fast CUT"
6480.00 6510.00	"LS AA,incr intxl POR,mg FLOR-STN-CUT"

DEPTH	LITHOLOGY
6510.00 6560.00	"LS tan-ltbrn-brn,rr gybrn-crm,crpxl-vfxl,occ gran-micsuc,v rr suc,pred sl ooc-oom GRNST,sl DOL cmt,incr amnts dns crpxl ool anhy PKST intcls,v rr trnsi CHT frag & ANHY xl,tt-mg intxl-mfr ool POR,fr-mg bri-dull yel FLOR,mfr brn-tr blk STN,fr mod fast CUT"
6560.00 6590.00	"LS AA,w/tr scat dns crpxl ool occ anhy tt PKST intcl-lams,mfr-mg intxl-tr ool POR,fr dull-bri yel FLOR,mfr-fr ltbrn-brn STN-sl tr blk dd o STN,fr-mg mod fast-rr fast stmg mlky CUT"
6590.00 6620.00	"LS tan-ltbrn-brn,rr crm,micxl-vfxl,occ gran-micsuc,pred mfr ooc-oom GRNST w/sl DOL cmt,mfr amnts dns crpxl ool anhy PKST intcls,tr ANHY xl-POR FL,occ DOL cmt,tr-mg intxl-fr ool POR,fr-mg bri-dull yel FLOR,mfr brn-tr blk STN,mg mod fast-tr fast stmg CUT"
6620.00 6650.00	"LS AA,pred intxl-mfr ool POR,w/scat dns v sl ool occ anhy-cthy PKST frag-intcl,w/tr DOL cmt,mfr-mg intxl-mfr ool POR,fr-mg dull-bri yel FLOR,mfr-fr ltbrn-tr brn STN-tr blk dd o STN,mfr-fr mod fast-mfr fast stmg mlky CUT"
6650.00 6670.00	"LS AA,w/sl incr dns PKST frag-intcl,v sl decr ool-intxl POR,FLOR-STN-CUT AA"
6670.00 6700.00	"LS tan-ltbrn,v rr crm,crpxl-vfxl,occ gran-micsuc,pred sl ooc-oom GRNST w/tr DOL cmt,scat dns crpxl ool anhy PKST intcls,tr ANHY xl-POR FL,tr DOL cmt,mfr-mg intxl-mfr ool POR,fr-mg dull-tr bri yel FLOR,fr brn-mfr blk STN,fr mod fast-tr fast stmg CUT"
6700.00 6730.00	"LS AA,pred sl ooc-oom GRNST,w/occ DOL cmt,scat dns sl ool occ chky crpxl anhy PKST intcl,mfr-mg intxl-mfr ool POR,FLOR-STN-CUT AA"
6730.00 6790.00	"LS tan-ltbrn-brn,rr crm,micxl-vfxl,occ gran-micsuc,pred mfr ooc-oom GRNST w/sl DOL cmt,mfr amnts dns crpxl ool anhy PKST intcls,rr ANHY incl-POR fl,sl DOL cmt,fr-mg intxl-mfr ool POR,fr-mg bri-dull yel FLOR,fr brn-tr blk STN,mg mod fast-tr fast stmg CUT"
6790.00 6810.00	"LS AA,vfxl-gran-micsuc,micxl-crpxl,pred ooc-sl oom-occ GRNST,tr dns crpxl ool-occ anhy PKST,chky-sl anhy/tr scat plty prtgs-ANHY xl-sl incr POR fl,bcmg dol/fr DOL cmt,fr-mg ool-intxl POR,fr scat bri-dull yel FLOR,mg ltbrn-brn/tr dkbrn-blk STN,CUT AA"
6810.00 6830.00	"LS AA,pred ooc-sl oom-occ GRNST,tr dns crpxl ool-occ PKST,chky-sl anhy/mg POR fl-tr xln ANHY-plty prtgs,mg-fr DOL cmt,mg-fr ool-intxl-rr sl oom POR,mg-g scat bri-mod bri yel FLOR,STN AA,mg-g mod fast-fast stmg mlky CUT"
6830.00 6860.00	"LS ltbrn-brn-tan,tr crm-off wh-ltgy,AA,pred ooc-sl oom-occ GRNST,tr PKST AA,chky-sl anhy/fr plty prtgs-tr POR fl-rr xln ANHY,sl dol/tr DOL cmt,mg-fr ool-sl oom/fr intxl POR,mg even mod bri-scat bri yel FLOR,mg-g ltbrn-brn/tr dkbrn-blk dd o STN, g mod fast-fast stmg mlky CUT"

DEPTH	LITHOLOGY
6860.00 6890.00	"LS tan-ltbrn,occ crm,tr off wh-ltgy,brn,vfxl-gran-micsuc,micxl-crpxl,ool-sl oom-oc GRNST,tr scat dns sl ool-oc PKST/tr gran tex,chky-sl anhy/fr POR fl-incr sact plty prtgs,tr xln ANHY,dol/fr DOL cmt,mg-fr ool-sl oom/tr intxl POR,mg-g even mod bri-scat bri yel FLOR,fr-mg ltbrn-tr brn & blk dd o STN,g-mg mod fast-tr fast stmg mlky CUT"
6890.00 6920.00	"LS AA,vfxl-gran-micsuc ip,micxl-crpxl,pred ool-sl oom-oc GRNST,tr dns sl ool-oc PKST,chky-sl anhy/fr POR fl-tr xln ANHY-fr scat plty prtgs,sl dol/tr DOL cmt,mg-fr ool-intxl POR,FLOR AA,mg-g ltbrn/tr brn & blk dd o STN,g fast-mod fast stmg mlky CUT"
6920.00 6970.00	"LS ltbrn-tan-crm,tr brn,off wh,vfxl-gran-micsuc,micxl-crpxl ip,pred ool-sl oom-oc GRNST,tr scat dns sl ool-oc PKST/tr gran tex,chky-sl anhy/fr POR fl-tr plty prtgs-xln ANHY,dol/tr DOL cmt,mg-fr ool-sl oom/tr intxl POR,mg-g even mod bri-scat spty bri yel FLOR,mg-fr ltbrn-tr brn & blk pp dd o STN,g fast stmg-sl blooming mlky CUT"
6970.00 7010.00	"LS ltbrn-tan,occ crm,tr brn,off wh-ltgybrn-ltgy,vfxl-gran-micsuc,micxl-crpxl ip,pred ool-sl oom-oc GRNST,tr scat dns sl ool-oc PKST,chky-sl anhy/fr POR fl-tr plty prtgs-xln ANHY,dol/fr DOL cmt,mg-fr ool-sl oom/fr intxl POR,g even mod bri- scat spty bri yel FLOR,mg ltbrn-fr brn/tr scat blk dd o STN,g fast-mod fast stmg mlky CUT"
7010.00 7020.00	"LS AA,pred ool-sl oom-oc GRNST/tr scat PKST AA,slchky-anhy/sl incr scat plty prtgs-tr POR fl-rr xln ANHY,dol/tr DOL cmt,POR-FLOR-STN-CUT AA"
7020.00 7050.00	"LS ltbrn-brn-tan,tr crm,rr off wh,AA,ool-sl oom-oc GRNST,tr-rr dns sl ool-oc PKST/tr gran tex,chky-sl anhy/tr POR fl-plty prtgs-rr xln ANHY,dol/fr DOL cmt,g-mg ool-sl oom/tr intxl POR,g even bri-mod bri yel FLOR,g ltbrn-brn/incr blk dd o STN,CUT AA"
7050.00 7110.00	"LS brn-ltbrn,occ tan,tr dkbrn,crm,rr off wh-ltgy,vfxl-gran-micsuc,occ micxl-suc ip,tr crpxl,ool-sl oom-v sl ooc GRNST,tr scat dns sl ool-oc PKST/tr gran tex,chky-sl anhy/tr POR fl-rr plty prtgs-xln ANHY,dol/fr DOL cmt,POR AA,g even mod bri-bri yel FLOR,mg-g ltbrn-brn-tr dkbrn/rr blk dd o STN,g fast stmg-sl blooming mlky CUT"
7110.00 7140.00	"LS ltbrn-brn-tan,occ crm,tr dkbrn,off wh-ltgy,vfxl-gran-micsuc,micxl-xln-crpxl,sl suc ip,ool-sl oom-oc GRNST,tr scat dns sl ool-oc PKST/tr gran tex,sl-occ v chky/tr POR fl-rr plty prtgs,sl anhy/rr xln ANHY,dol/fr DOL cmt,POR-FLOR AA,g-mg ltbrn-brn/sl incr dkbrn-tr blk dd o STN,g fast-mod fast stmg mlky CUT"
7140.00 7150.00	"LS AA,ool-sl oom-rr ooc GRNST,tr PKST AA,sl chky-anhy/tr POR fl-plty prtgs-rr xln ANHY,dol/tr DOL cmt,POR-FLOR AA,g-mg ltbrn-brn/tr dkbrn-blk dd o STN,g fast-mod fast stmg mlky CUT"

DEPTH	LITHOLOGY
7150.00 7170.00	"LS ltbrn-tan-crm,occ brn,off wh,tr dkbrn,AA,ool-sl oom-rr ooc GRNST,tr scat PKST AA,chky-sl anhy/fr POR fl-tr plty prtgs-rr xln ANHY,dol/fr DOL cmt,mg-fr ool-sl oom/tr intxl POR,g-mg even mod bri-spty bri yel FLOR,mg ltbrn-fr brn/tr dkbrn & blk dd o STN,CUT AA"
7170.00 7210.00	"mg-g even dull-mod bri/tr spty bri yel FLOR,mg-fr ltbrn-brn/tr dkbrn-blk dd o STN,g-mg fast-mod fast stmg mlky CUT"
7170.00 7210.00	7176.55 0 "LS ltbrn-tan-brn,occ crm,tr dkbrn,off wh,vfxl-gran-sl micsuc,micxl-crpxl,ool-sl oom-rr ooc GRNST,tr scat dns sl ool-ool PKST/tr gran tex,sl-occ v chky-sl anhy/tr POR fl-plty prtgs-rr xln ANHY,dol/fr DOL cmt,mg-fr ool-intxl-rr oom POR,"
7210.00 7240.00	"LS AA,vfxl-micsuc-gran,micxl-crpxl,ool-sl oom-rr ooc GRNST,tr scat PKST AA,sl chky-anhy/tr POR fl-plty prtgs-rr xln ANHY,sl dol/tr DOL cmt,mg-fr ool-sl oom-intxl POR,g even mod bri-spty bri yel FLOR,STN AA,g fast stmg-sl blooming mlky CUT"
7240.00 7280.00	"LS ltbrn-tan-crm,occ brn,tr dkbrn,off wh,vfxl-gran-sl micsuc,occ micxl-crpxl,rr xln incl,pred sl ool-ool-tr oom GRNST,tr scat dns sl ool-ool PKST/tr gran tex,chky-sl anhy/fr POR fl-tr plty prtgs-xln ANHY,dol/fr DOL cmt,mg-fr ool-intxl/tr sl oom POR,fr-mg even dull-mod bri yel FLOR,mg-fr ltbrn-tr brn-blk dd o STN,g-mg mod fast-slow stmg mlky CUT"
7280.00 7330.00	"LS tan-crm-ltbrn,occ off wh,tr brn,vfxl-gran-sl micsuc,occ micxl-crpxl,sl ool-ool-tr oom GRNST,scat dns sl ool-ool PKST/tr gran tex,chky-sl anhy/fr POR fl-incr plty prtgs-rr xln ANHY,dol/fr DOL cmt,mg-fr ool-intxl/tr sl oom POR,FLOR-STN AA,mg-g mod fast/tr fast stmg mlky CUT"
7330.00 7380.00	"LS tan-crm-off wh,occ ltbrn,tr brn,vfxl-gran-micxl,occ micsuc,crpxl,sl ool-ool-tr oom GRNST,incr dns sl ool-ool PKST/tr gran tex,chky-sl anhy/fr POR fl-incr plty prtgs-rr xln ANHY,sl dol/tr DOL cmt,fr-mg ool-intxl/tr oom POR,mg-fr even dull-mod bri/tr scat spty bri yel FLOR,fr-mg ltbrn-brn/tr blk pp dd o STN,g mod fast-fast stmg mlky CUT"
7380.00 7400.00	"LS tan-brn,occ crm-wh,crpxl-vfxl,sl gran-micsuc,pred sl ooc-oom GRNST w/dns plty-chk anhy sl ool crpxl PKST intcl-ptgs,rr DOL cmt,scat ANHY xl-POR fl,tt-mfr intxl-tr ool POR,tr-fr bri-dull yel FLOR,mfr spty brn-rr blk STN,n-fr slow-tr mod fast stmg CUT"
7400.00 7420.00	"LS AA,sl incr micsuc-suc tex,decr amnt dns plty PKST intcl-ptgs,mfr-fr intxl-tr ool POR,mfr-fr bri-tr dull yel FLOR,mfr ltbrn-brn STN,sl tr-tr blk dd o STN,tr-mfr mod fast stmg-mfr slow dif-stmg CUT"
7420.00 7430.00	"LS ltbrn-brn,tan ip,occ crm-wh,crpxl-vfxl,occ gran-micsuc,rr suc tex,pred sl ooc-oom GRNST,w/scat dns tt chk ip occ plty anhy sl ool PKST intcl-lams,occ DOL cmt,scat ANHY xl-POR fl,tt-mg intxl-tr ool POR,mfr-fr bri-rr dull yel FLOR,mfr brn-rr blk STN,sl tr mod fast-mfr slow stmg CUT,pred g slow dif CUT"

DEPTH	LITHOLOGY
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7430.00 7450.00 "LS AA,decr-tr dns PKST intcl,POR-FLOR-CUT AA,incr brn-blk STN"

7450.00 7476.00 "LS ltbrn-tan,occ crm-wh,micxl-vfxl,gran,occ micsuc-suc tex,pred sl ooc-oom GRNST w/occ dns tt chk ip occ plty anhy sl ool PKST intcl,rr DOL cmt,tr ANHY xl-POR fl,mfr-mg intxl-mfr ool POR,fr-mg bri-tr dull yel FLOR,tr-mfr ltbrn STN-tr blk dd o STN,mfr-fr mod fast stmg-mg slow dif CUT"

FORMATION TOPS

OPERATOR: MOBIL

WELL NAME: RATHERFORD UNIT #29-31 NW1-B HORIZONTAL LATERAL LEG #1

FORMATION NAME		SAMPLES	SAMPLES	DATUM
		MEASURED DEPTH	TRUE VERTICAL DEPTH	KB:5105'
LOWER ISMAY		5775'	5774'	-669'
GOTHIC SHALE		5806'	5803'	-698'
DESERT CREEK		5815'	5811'	-706'
UPPER DC 1-A ZONE		5819'	5814'	-709'
UPPER DC 1-B ZONE		5985'	5855'	-750'

GEOLOGICAL SUMMARY

AND

ZONES OF INTEREST

The Mobil Exploration and Production U.S., Inc., Ratherford UNIT #29-31 Northwest Horizontal Lateral Leg #1 was a re-entry of the Mobil Ratherford UNIT #29-31 located in Section 19, T41S, R24E, and was sidetracked in a northwesterly direction from 5750' measured depth, 5749.7' true vertical depth, on November 1, 1998. The lateral reached a measured depth of 7476', true vertical depth of 5878.5' at total depth, with a horizontal displacement of 1700' and true vertical plane of 316.9 degrees on November 3, 1998. The lateral was terminated in the 1-B porosity zone in the Upper Desert Creek Member of the Paradox Formation. The curve and lateral were drilled using fresh water with polymer sweeps as the drilling fluid. The proposed target line was used as a reference point throughout the lateral. The curve and lateral sections were drilled with no significant mechanical problems. There was no measurable flow or loss of fluid throughout the curve and most of the lateral section. Circulation was lost while preparing the well for the initial curve section of the lateral, but was regained prior to drilling the curve and lateral sections with no to very minor fluid loss in the curve and lateral sections.

The objective of the Ratherford UNIT #29-31 southeast lateral Leg #1 was to penetrate and drill 1600' horizontally in the Desert Creek 1-B porosity zone to identify and define its lithology, and to evaluate the effective porosity of the zone. In this northwesterly direction, the 1-B porosity zone appeared to have a very consistent and well developed porosity, thus was the target for drilling in this lateral. Of note was the thinning of the 1-B zone in the northwesterly direction, with a thickening of the 1-A to 1-B transition zone on the electric logs but not actually seen in the drilling of this lateral. The lithology of the best porosity penetrated in the 1-B zone in this northwesterly lateral was predominately an oolitic to oomoldic, very slightly algal limestone grainstone facies, and had a fair to good hydrocarbon and gas show, with fair to good visible porosity and apparent permeability. After penetrating the top of the 1-A zone in the curve section and continuing through the 1-B zone the lithology was very consistent with no visible separation between the two zones, and the lithology being in the limestone grainstone described above. Only very minor very thin streaks of dense limestone packstones were noted in the curve section, with very scattered dense limestone packstone interclasts noted in the curve section. The limestone grainstone of the 1-A and 1-B zones have a moderately fair to fair sample show. As the lateral bumped the top of the 1-B zone toward the end of the lateral, a very minor increase in dense, very slightly oolitic, occasionally platy and chalky limestone packstone was noted. These packstones have no to extremely poor porosities, sample and gas shows.

The curve was begun near the base of the Upper Ismay on November 1, 1998 before encountering the typical sections of the Lower Ismay, Gothic Shale, Desert Creek and the 1-A porosity bench carbonate cycle of the Upper Paradox Formation.

The curve section was began at measured depth of 5750', 5750' true vertical depth, near the base of the Upper Ismay carbonate cycle of the Upper Paradox Formation. The lower Upper Ismay was penetrated from a measured depth of 5750', to a measured depth of 5775', true vertical depth 5774'. This lower 25' of the Upper Ismay member was a predominately clean to dense, occasionally argillaceous, tight limestone, with interbedded earthy to argillaceous dolomites, very thin black carbonaceous shale partings and scattered chert fragments. The limestones were light gray to cream to white and tan to brown, cryptocrystalline to microcrystalline, clean and dense, with streaks of an

earthy to argillaceous to chalky texture, and rare Crinoid fossils. These limestones had no visible porosity nor sample show. The thin interbedded dolomites were tan to brown to gray brown, cryptocrystalline to microcrystalline, earthy to argillaceous, limey, becoming marly with depth, and had scattered Crinoid fossils. The dolomites also had no visible porosity or sample shows. The shale partings were black to dark gray, some light gray, subblocky to subplaty, occasionally fissile, very slightly silty, micaceous, and calcareous to slightly dolomitic, and had very minor Crinoid fossils. Scattered throughout the Upper Ismay carbonates were buff to dark brown, some black chert fragments. The basal carbonates became increasingly marly and graded into the thin, very fossiliferous, carbonaceous Hovenweep Shale. The Hovenweep Shale, which defines the Upper and Lower Ismay contact, was represented by a slight increase in the black carbonaceous, dolomitic to calcareous, occasionally silty shale. This contact is poorly represented in the samples from measured depths of 5773' to 5775', and true vertical depths from 5772' to 5774'.

The top of the Lower Ismay member of the Upper Paradox Formation was picked at a measured depth of 5775', true vertical depth 5774', based primarily on sample identification and a significant decrease in the rate of penetration at the very top of the Lower Ismay. The upper 7' of the Lower Ismay was predominately a very dense, anhydritic, tan to cream to brown, some gray brown, cherty limestone; with very thinly interbedded argillaceous, brown to medium brown, limey dolomite, and very thin black carbonaceous shale partings and rare brown to dark brown chert fragments. This upper 7' had very thin streaks of dense, translucent, anhydrite. The Lower Ismay, from measured depths of 5782' to 5794', became a white to cream to light gray, cryptocrystalline to microcrystalline limestone, with granular streaks, a trace of chalky texture, slightly to very silty, occasionally anhydritic and occasionally dolomitic in part, with scattered Crinoid and microfossils. This limestone had streaks of well cemented very silty limestone grainstones, some scattered translucent to light to dark brown chert fragments, and very rare thin brown, earthy to slightly argillaceous dolomites. It was also noted that these limestones occasionally graded to very limey siltstones. There was no visible porosity or sample show associated with the limestones and dolomites. The basal 10 feet of the Lower Ismay, from a measured depth of 5796' to a measured depth of 5806', was a very dense, slightly dolomitic limestone packstone and earthy limey dolomites. These limestones and dolomites became slightly to very marly with depth, and had scattered anhydrite interclasts and very rare chert fragments. The basal limestones and thin dolomites had very rare visible intercrystalline to fractured porosity and a very poor sample show. The basal limestones and dolomites of the Lower Ismay carbonates graded into limey to dolomitic carbonaceous shales of the Gothic Shale.

The Gothic Shale was penetrated at a measured depth of 5806', true vertical depth 5803', and gradationally underlies the Lower Ismay. The top of the Gothic was picked at a slight increase in the penetration rate below the dense limestone and dolomite marlstones of the basal Lower Ismay and a slight increase in the amount of black carbonaceous shale in the cuttings. This shale member of the Upper Paradox Formation was seen have a true vertical thickness of 8 feet in this northwesterly direction. This shale is black to dark gray shale, carbonaceous, occasionally grainy to silty, soft to slightly firm, sooty, slightly fissile, subblocky to subplaty, calcareous to slightly dolomitic and slightly micaceous. Very thin partings of dense, very slightly argillaceous, occasionally dolomitic, cream to tan limestones and clean to very argillaceous, limey, brown to medium gray brown dolomites were noted in this shale member. The Gothic overlays the top of the Desert Creek Member with a sharp contact.

The top of the Desert Creek Member of the Upper Paradox Formation was picked at a measured depth of 5815', 5811' true vertical depth, with a slight decrease in penetration rate and a slight increase in the amount of dense limestone packstone in the samples. The Upper Desert Creek transition zone between the Gothic Shale and the 1-A porosity zone had a true vertical thickness of approximately three feet. This transition zone was predominately a dense limestone packstone, which was very argillaceous on occasion and was very slightly fossiliferous. There were very thinly interbeds of argillaceous limey dolomites and very thin black carbonaceous shale partings. The limestones of the transition zone are light brown to cream to tan, cryptocrystalline to microcrystalline, dense to slightly silty, some chalky to anhydritic and very slightly dolomitic. Scattered in the limestones are very thin,

brown, microcrystalline, argillaceous, limey dolomites; some very rare black, dolomitic, slightly micaceous, calcareous, very slightly carbonaceous shales; with rare translucent chert fragments and translucent anhydrite inclusions. The transition zone had a very poor intercrystalline porosity and a very poor sample show. Near the base of the transition zone the dense limestones became increasingly oolitic and graded in to the oolitic to oomoldic limestones of the upper 1-A porosity bench.

The top of the Desert Creek Upper 1-A porosity zone was encountered at a measured depth of 5819', true vertical depth of 5814', with a horizontal displacement of approximately 63'. The top was picked on the lithology becoming predominately a good oolitic to oomoldic limestone grainstone with a significant increase in the penetration rate and background gases. This oolitic to oomoldic limestone grainstones marked the top of the 1-A porosity zone. The oolitic to oomoldic porosity had a true vertical thickness of 41' in this northwesterly direction. These limestone grainstones are tan to light brown to cream, some brown, microcrystalline to very fine crystalline, with traces of granular to microsugrosic texture, a slightly dolomitic cement, and some very rare chert fragments and anhydrite inclusions. The limestones have moderately good oomoldic to oolitic fabric to very poor algal material, with a moderately fair oolitic to fair intercrystalline and very poor algal porosity development. A very minor amount of anhydrite and calcite crystal growth was noted in the oolitic and molds as well as in the intercrystalline matrix. The sample show was moderately fair to fair, with a trace to fair of brown to light brown oil stain and had traces of black bichimum* staining on the crystal faces and molds as well as in oolitic and algal material. The grainstones had a trace to moderately good bright to occasionally dull yellow fluorescence and a moderately fair slow streaming to trace fast streaming cut. At a measured depth of 5984', 5854.5' true vertical depth a very slight decrease in the penetration rate was noted as the base of the 1-A zone was encountered. The transition zone from the 1-A to 1-B zone was seen as a very minor decrease in the penetration rate and a very slight increase in the amount of dense packstone in the samples. The transition zone from the 1-A to 1-B zone was less than one foot thick in this northwesterly direction. Also noted was the decrease in background gas as the base of the 1-A zone was approached.

At a true vertical depth of 5855', 5985' measured depth the top of the 1-B zone was picked at the slight change in penetration rate. The 1-B zone, like the 1-A zone above, was an oolitic to oomoldic slightly algal limestone grainstone. This limestone grainstone show minor amounts of anhydrite cement and porosity filling, with traces of dolomite cement. A slight decrease in the penetration rate and an increase in the amount of packstone in the samples was noted from 5914' to 5919' measured depth, 5860.8' to 5861' true vertical depth prior to the landing of the curve section of this lateral. Although the 1-B zone had a slightly slower penetration than the overlying 1-A zone, the 1-B zone showed no visible decrease in porosity or sample show in the oolitic to oomoldic slightly algal limestone grainstone lithology.

The curve portion of the lateral was completed at a measured depth of 5932', true vertical depth 5865', with a horizontal displacement of 46', bearing 317.4 degrees, and an inclination of 88.6 degrees, also on November 1, 1998. Drilling of the curve section was halted 10' into the oolitic to oomoldic, very slightly algal limestone grainstone of the 1-B zone, five feet below the proposed target line. At this point a trip was made to lay down the curve assembly and pickup the lateral assembly.

Drilling of the northwest lateral in the 1-B zone was begun on the 1st of November 1998, in the Upper Desert Creek 1-B porosity zone of the Upper Paradox Formation. The lateral was slid for the first 70' in order to control horizontal plane direction and to turn the well path upward to approached the proposed target line in the 1-B porosity zone. The lateral was begun in the very good oolitic to oomoldic, occasionally algal limestone grainstone facies. This limestone grainstone was a tan to light brown, occasionally brown, microcrystalline to very finely crystalline, granular to microsugrosic, slightly dolomitic, with rare anhydrite to calcite porosity filling, slight trace of dolomite cement. These limestone grainstones had a fair to good intercrystalline to oolitic porosity, with a slight trace of algal porosity. The sample show in this limestone grainstone of the 1-B zone was predominately a fair to good bright to occasionally dull yellow fluorescence, with a fair to good brown

oil stain, scattered black bitchimum* stain, and a moderately good to good streaming milky cut. Scattered through out this oolitic to slightly algal limestone grainstone, were scattered dense, slightly oolitic to very rarely fossiliferous, occasionally chalky to platy, light gray, cryptocrystalline, limestone packstones.

As the well path was slowly turned upward the lithology remained the oolitic to oomoldic, slightly algal limestone grainstone. Upon reaching a measured depth of 6222', 5861' true vertical depth, and a horizontal displacement of 450', the lateral approached the proposed target line. From 6222' measured depth, 450' of horizontal displacement to a measured depth of 6615', with a horizontal displacement of 850' the lateral tracked the proposed target line. Through out this interval, the lithology remained in the slightly oolitic to oomoldic, occasionally algal limestone grainstone. Also noted from approximately 300' to 600' of horizontal section, were varying amounts of dense, cream to white to light gray, occasionally brown, tight, slightly oolitic limestone packstone partings to laminations, with occasionally decreases in the associated sample shows. The well bore was allowed to slowly drift upward, beginning at the measured depth of 6615'. The lithology remained in the oolitic and oomoldic, occasionally algal, limestone grainstone, as the well path rose above the proposed target line to a maximum distance of 7', at a measured depth of 6800'. Upon reaching the measured depth of 6800, 5863' true vertical depth, and a horizontal displacement of 1025', the well path was slowly turned downward toward the proposed target line. Although the well path was allowed to rise 7' above the proposed target line, the lithology remained consistent, in the limestone grainstones.

The well path was turned downward to remain with in the projected parameters of the 1-B zone and to keep the well path below the 1-A to 1-B transition zone which was approximately seven foot thick in the offsetting Ratherford Unit #20-42 well. As the well path was continued downward toward the proposed target line, the 1-A to 1-B transition zone was not encountered. The proposed target line was intersected at a horizontal displacement of 1400', 7176' measured depth and a true vertical depth of 5877'. As the well path was continued along the target line, a tight streak was encountered at a measured depth of 7194', which turned the well path upward, away from the true vertical depth of 5877'. The well path was again nudged downward in the attempt to keep the well path below the slow developing 1-A to 1-B transition zone. Upon reaching a measured depth of 7303', a true vertical depth of 5881', and a horizontal displacement of 1526', a hard streak was again encountered which turned the well path rather sharply upward. At a measured depth of 7360', 5880' true vertical depth, a hard streak was very shallowly penetrated as the well path was turned downward. From the measured depth of 7250', 5878' true vertical depth, the lithology showed increasing amounts of dense, slightly oolitic, chalky to very slightly platy limestone packstone, with decreasing amounts of visible porosity and associated sample show. The oolitic to oomoldic limestone grainstone remained the dominant lithology throughout this interval.

As the well path was slowly turned downward and continued to termination at a measured depth of 7476', 5878.6' true vertical depth and a horizontal displacement of 1700', the lithology showed some minor variations. The variation in the lithology was the increase in the amount of dense, slightly oolitic, chalky to slightly platy, anhydritic limestone packstone interclasts and very thin partings. Even though the lithology remained predominately the slightly oolitic and oomoldic, very rarely algal limestone grainstone. Also noted from a measured depth of 7350' to the laterals termination, was that the sample show began decreasing, even though the background gases and gas flare did not show a marked decrease. When the lateral was terminated, at the measured depth of 7476', the well path was four (4) feet above the proposed target line. The lithology of the 1-B zone at the end of the northwest lateral remained in the very good, oolitic to oomoldic, slightly algal limestone grainstone porosity. This limestone was tan to light brown, rare brown to cream, microcrystalline to very fine crystalline, granular to microsucrosic, occasionally traces of sucrosic texture, slightly dolomitic cement, rare calcite and anhydrite cement and porosity filling. These grainstones had a fair to good oolitic to intercrystalline porosity, with a very minor amount of algal fabric. The sample show through the lateral was very consistent, ranging from moderately fair to

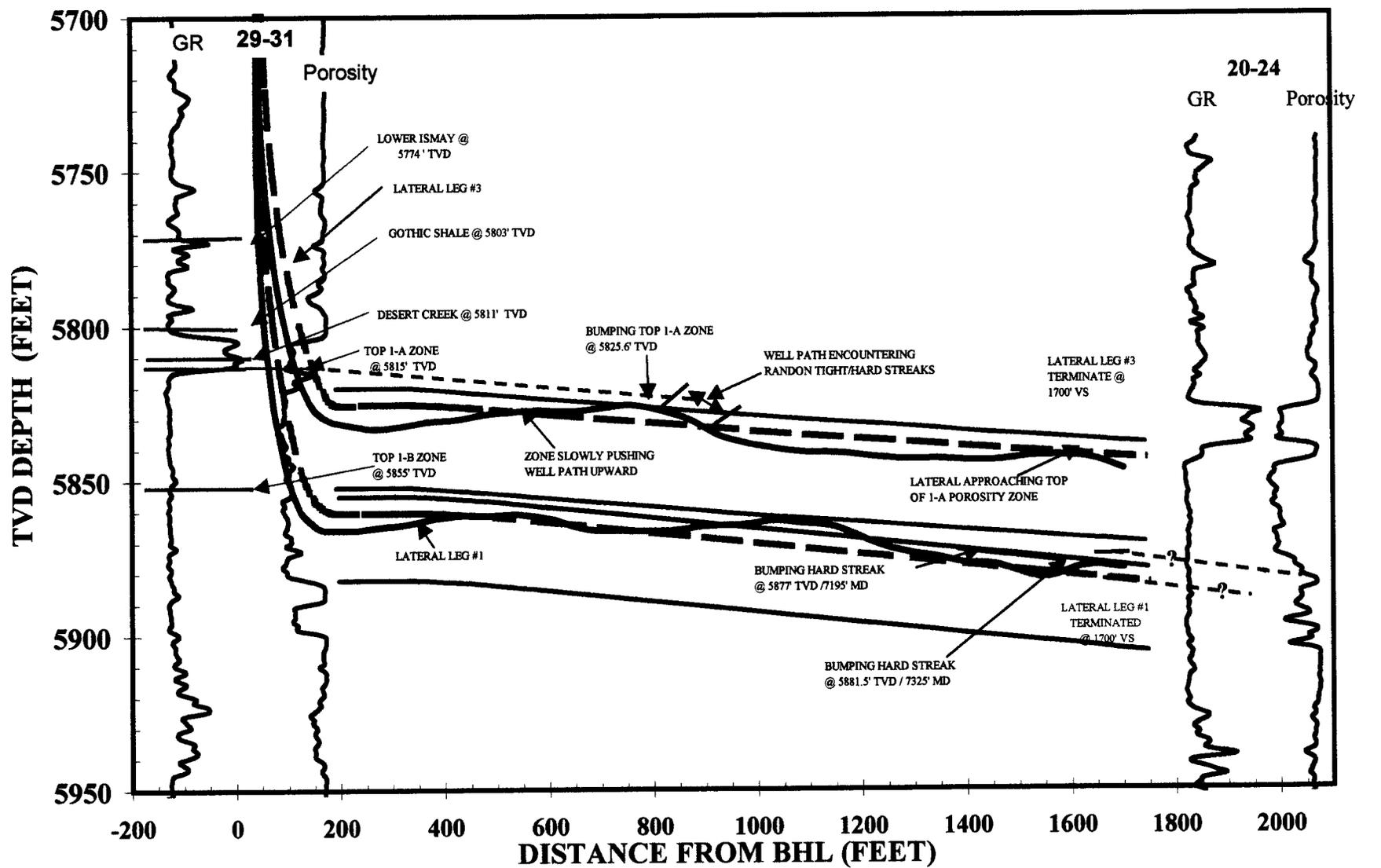
good, with the majority of the lateral having a moderately good sample show. These limestone grainstone had a predominately moderately good to moderately fair bright yellow fluorescence, a trace to fair light brown to brown oil stain, with rare to occasionally trace amounts of black bitchimum* stain, and a moderately fair to good fast to moderately fast, occasionally slow streaming milky cut. Scattered through out the length of the lateral were very rare to traces of dense, very slightly oolitic limestone packstone, with minor microfossils. These dense limestone packstones increased slightly when very thin random hard streaks were encountered and the top of the 1-A zone was bumped or very shallowly penetrated. The top was possibly encountered only once at a measured depth of 7354', with a true vertical depth of 5580', and a horizontal displacement of 1578'. The top 1-B zone had an approximate dip of 89° over the length of the lateral. The lateral reached it's termination point on November 3, 1998', near the top of the best porosity in the 1-B zone, at a measured depth of 7476', 5878.6' true vertical depth, and a horizontal displacement of 1700'. From the beginning of the lateral section to its termination, a flare from 3' in height increasing up to approximately 7' was seen. The lateral began making minor amounts of oil and gas as soon as the good porosity in the 1-A and 1-B zones were encountered.

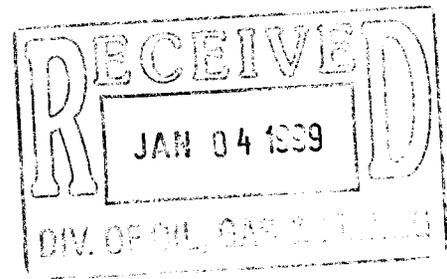
In tracking the lateral in this northwesterly direction, the oolitic to oomoldic limestone grainstone porosity had good sample shows, which remained relatively consistent throughout the lateral's length. The lateral was drilled throughout its length in upper 10' to 15' of the 1-B zone. From the measured depth of 7250, true vertical depth of 5578' to the laterals termination, the zone showed an increase in the amount of platy, chalky limestone packstone, as a thin hard streak and possibly the top of the 1-B zone was encountered. From the beginning of the lateral to it's termination the top of the 1-B zone was possibly encountered only once and that was near the end of the lateral. The oolitic to oomoldic, very slightly algal limestone grainstones of the 1-B porosity bench, showed good oolitic to intergranular porosity and very rare algal porosity, with a good sample show, as well as the lateral making minor amounts of oil and gas throughout. The scattered dense limestone packstones were of no significance in this lateral. The well path began varying from the proposed well path while drilling the curve section of the lateral, which was completed 5' low to the target line. The lateral tracked the target line from horizontal displacements of about 400' to 800', and again from horizontal displacements of 1375' to 1425'. The lateral varied from the target line a maximum of 8' in the middle of the lateral, with the lateral being terminated 4' above the proposed target line.

From the beginning of the 29-31 northwest lateral leg #1 to its termination on November 3, 1998, at a measured depth of 7476', 5878.5' true vertical depth and a horizontal displacement of 1700', the porosities in the upper 10' to 15' of the 1-B zone appeared to remain relatively consistent. The oolitic to intercrystalline to very rare algal porosities are well enough developed to enhance the production performance of the R. U. 29-31 well. The limestone grainstone lithology which appeared to thin in the lateral section from horizontal displacements of 1375' to 1500', will also add to the performance of the lateral after acidization.

*The black residual staining has been called by Dr. Dave Eby & others as "bitchimum" and is also known as "dead oil" ("dd o stn" on mud logs). This staining is associated with the movement of oil over long periods of time and is a good indicator of producible hydrocarbons when associated with productive porosities, but can also be found in porosities that have been filled by anhydrites and other material at later dates.

MOBIL, Ratherford Unit #29-31, Northwest Lateral





MOBIL

**RATHERFORD UNIT #29-31
SE HORIZONTAL LATERAL LEG #2
UPPER 1-A POROSITY BENCH
DESERT CREEK MEMBER
PARADOX FORMATION
SECTION 29, T41S, R24E
SAN JUAN, UTAH**

**GEOLOGY REPORT
prepared by
DAVE MEADE
PASON/ROCKY MOUNTAIN GEO-ENGINEERING CORP.
GRAND JUNCTION, COLORADO
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WELL SUMMARY

OPERATOR: MOBIL EXPLORATION & PRODUCTION U.S. INC.

NAME: RATHERFORD UNIT #29-31 SE HORIZONTAL LATERAL
LEG #2 IN 1-A POROSITY BENCH, DESERT CREEK

LOCATION: SECTION 29, T41S, R24E

COUNTY/STATE: SAN JUAN, UTAH

ELEVATION: KB:5105' GL:5093'

SPUD DATE: 10/29/98

COMPLETION DATE: 11/07/98

DRILLING ENGINEER: SIMMON BERRERA

WELLSITE GEOLOGY: DAVE MEADE / MARVIN ROANHORSE

**MUDLOGGING
ENGINEERS:** DAVE MEADE / MARVIN ROANHORSE

CONTRACTOR: BIG "A" RIG 25
TOOLPUSHER: J. DEES

HOLE SIZE: 4 3/4"

CASING RECORD: SIDETRACK IN WINDOW AT 5750' MEASURED DEPTH

**DRILLING MUD:
ENGINEER:** M-I
MIKE PITTSINGER / RON WESTENBURG
MUD TYPE: FRESH WATER & BRINE WATER W/ POLYMER SWEEPS

**DIRECTIONAL
DRILLING CO:** SPERRY-SUN

ELECTICAL LOGGING: NA

TOTAL DEPTH: 7424' MEASURED DEPTH; TRUE VERTICAL DEPTH- 5843.7'

STATUS: PREPARING WELL FOR NW LATERAL #3

DRILLING CHRONOLOGY
RATHERFORD UNIT #29-31
1-A SE HORIZONTAL LATERAL LEG #2

DATE	DEPTH	DAILY	ACTIVITY
11/04/98	5725'	6'	CIR OUT-TOH-L.D. STARTER MILL-P.U. WINDOW MILL & WATER MELON MILLS-TIH-MILL W/WINDOW MILLS 5725' TO 5730'-TOH-CHANGE OUT MILLS-RIG REPAIR-TIH-CUT 60' DRLG LINE-MILL 5730' TO 5731'
11/05/98	5731'	127'	MILL 5731' TO 5732'-PUMP SWEEP & CIR OUT-PUMP 10 BBLs BRINE-TOH-L.D. MILLS-P.U. CURVE ASSEM.-ORIENT & TEST-TIH-CIR & CLEAN PIPE- R.U. GYRO DATA & RIH W/ GYRO-TIME DRLG 5732' TO 5736'- DIR DRLG & WIRELINE SURVEYS TO 5762'-PULL GYRO & RIG DOWN GYRO DATA-DIR DRLG & SURVEYS TO 5858'
11/06/98	5858'	1098'	DIR DRLG & SURVEYS TO 5892'-(T.D. CURVE)-PUMP SWEEP & CIR OUT SPLS-PUMP 10 BBLs BRINE-L.D. 48 JTS AOH-TOH-L.D. CURVE ASSEM.-P.U. LATERAL ASSEMBLY- ORIENT & TEST-P.U. 48 JTS PIPE-TIH-DIR DRLG & SURVEYS
11/07/98	6956'	10'	DIR DRLG & SURVEYS TO 7424' (TD LATERAL #2)PUMP SWEEP & CIR SPLS-PUMP 15 BBLs BRINE-TOH TO WINDOW-PUMP 160 BBLs BRINE-TOH-L.D. LATERAL ASSEM.-P.U. SUPER HOOK-TOH-LATCH INTO WHIPSTOCK-CIR BTMS UP-TOH-L.D. WHIPSTOCK #2-WELL FLOWING-SHUT IN WELL & W.O. WATER TRUCK-BULL HEAD 150 BBLs BRINE-P.U. & ORIENT WHIPSTOCK #3-TIH-SET WHIPSTOCK @ 5696'

DAILY ACTIVITY

Operator: MOBIL

Well Name: RATHERFORD UNIT #29-31 SE 1-A HORIZONTAL LATERAL LEG #2

DATE	DEPTH	DAILY	DATE	DEPTH	DAILY
11/04/98	5725'	6'			
11/05/98	5731'	127'			
11/06/98	5858'	1098'			
11/07/98	6956'	468'			
	7424'	TD LEG #2			

BIT RECORD

OPERATOR: MOBIL

WELL NAME: RATHERFORD UNIT #29-31 SE 1-A HORIZONTAL LATERAL LEG #2

RUN	SIZE	MAKE	TYPE	IN/OUT	FTG	HRS	FT/HR
#1 (RR)	4 3/4"	STC	MF-37P	5732'/ 5892'	160'	12.5	12.8
#2	4 3/4"	STC	MF-37P	5892'/ 7424'	1532'	22	69.64

MUD REPORT

OPERATOR: MOBIL

WELL NAME: RATHERFORD UNIT #29-31 SE 1-A HORIZONTAL LATERAL LEG #2

DATE	DEPT H	WT	VIS	PLS	YLD	GEL	PH	WL	CK	CHL	CA	SD	OIL	WTR
11/04/98	5725'	8.8	26	1	1	0/0	11.0	NC	NC	43000	1120	TR	TR	100%
11/05/98	5733'	8.8	26	1	1	0/0	11.0	NC	NC	45000	1200	1%	TR	99%
11/06/98	5937'	8.8	26	1	1	0/0	11.0	NC	NC	49000	1080	TR	TR	100%
11/07/98	7424'	8.9	26	1	1	0/0	11.0	NC	NC	48000	3800	1%	TR	99%

SPERRY-SUN DRILLING SERVICES
SURVEY DATA

Customer ... : Mobil (Utah)
Platform ... : RATHERFORD UNIT
Slot/Well .. : BA25/29-31 2A1

MEASURED DEPTH	ANGLE DEG	DIRECTION DEG	TVD	NORTHINGS FEET	EASTINGS FEET	VERTICAL SECTION	DOG LEG
5600.00	0.09	17.77	5599.67	42.29 N	16.02 W	-37.82	0.00
5723.00	0.32	49.94	5722.67	42.61 N	15.73 W	-37.77	0.20
5732.00	4.70	126.00	5731.66	42.40 N	15.41 W	-37.39	51.48
5742.00	10.30	128.67	5741.57	41.60 N	14.38 W	-36.09	56.09
5752.00	16.60	129.52	5751.29	40.14 N	12.58 W	-33.77	63.03
5762.00	23.20	129.64	5760.69	37.97 N	9.96 W	-30.37	66.00
5772.00	29.00	130.19	5769.66	35.14 N	6.58 W	-25.98	58.05
5782.00	33.80	130.37	5778.20	31.78 N	2.61 W	-20.79	48.01
5792.00	35.50	130.50	5786.42	28.09 N	1.72 E	-15.12	17.02
5802.00	39.30	128.50	5794.37	24.23 N	6.40 E	-9.06	39.89
5812.00	44.80	124.10	5801.79	20.28 N	11.81 E	-2.37	62.37
5822.00	50.10	123.10	5808.55	16.21 N	17.94 E	4.99	53.51
5832.00	55.90	123.50	5814.57	11.82 N	24.61 E	12.96	58.09
5842.00	62.10	123.70	5819.71	7.08 N	31.75 E	21.52	62.02
5852.00	68.00	124.80	5823.93	1.98 N	39.24 E	30.58	59.84
5862.00	73.60	126.40	5827.22	3.52 S	46.91 E	40.02	58.00
5892.00	87.30	132.50	5832.19	22.29 S	69.67 E	69.46	49.85
5935.00	88.20	131.90	5833.88	51.15 S	101.50 E	112.18	2.51
5967.00	90.10	130.30	5834.35	72.18 S	125.61 E	144.05	7.76
5998.00	90.30	129.70	5834.24	92.11 S	149.36 E	174.97	2.04
6030.00	89.90	127.10	5834.19	111.98 S	174.43 E	206.94	8.22
6061.00	89.30	125.50	5834.40	130.33 S	199.41 E	237.94	5.51
6093.00	89.40	125.70	5834.77	148.96 S	225.43 E	269.93	0.70
6125.00	89.60	126.20	5835.05	167.74 S	251.34 E	301.93	1.68
6157.00	89.40	126.60	5835.32	186.73 S	277.09 E	333.93	1.40
6189.00	89.10	126.20	5835.74	205.72 S	302.85 E	365.93	1.56
6220.00	89.80	124.50	5836.04	223.65 S	328.13 E	396.92	5.93
6252.00	89.80	124.50	5836.15	241.78 S	354.50 E	428.91	0.00
6284.00	89.70	123.60	5836.29	259.70 S	381.01 E	460.89	2.83
6316.00	89.70	123.80	5836.46	277.45 S	407.64 E	492.87	0.63
6347.00	89.30	124.30	5836.73	294.81 S	433.32 E	523.85	2.07
6379.00	89.50	123.90	5837.07	312.75 S	459.82 E	555.83	1.40
6411.00	88.00	124.30	5837.76	330.68 S	486.31 E	587.80	4.85
6443.00	87.60	124.60	5838.99	348.77 S	512.67 E	619.77	1.56
6475.00	88.10	124.60	5840.19	366.93 S	539.00 E	651.73	1.56
6506.00	89.20	124.80	5840.92	384.57 S	564.48 E	682.72	3.61
6538.00	90.30	125.30	5841.06	402.95 S	590.67 E	714.71	3.78
6569.00	91.30	125.30	5840.63	420.86 S	615.97 E	745.71	3.23

SPERRY-SUN DRILLING SERVICES
SURVEY DATA

Customer ... : Mobil (Utah)
Platform ... : RATHERFORD UNIT
Slot/Well .. : BA25/29-31 2A1

MEASURED DEPTH	ANGLE DEG	DIRECTION DEG	TVD	NORTHINGS FEET	EASTINGS FEET	VERTICAL SECTION	DOG LEG
6601.00	91.70	125.70	5839.79	439.44 S	642.01 E	777.69	1.77
6632.00	91.10	126.00	5839.03	457.59 S	667.13 E	808.68	2.16
6664.00	89.80	125.00	5838.78	476.17 S	693.18 E	840.68	5.13
6696.00	90.00	125.50	5838.84	494.64 S	719.31 E	872.68	1.68
6728.00	89.60	125.50	5838.95	513.22 S	745.37 E	904.68	1.25
6759.00	89.10	125.30	5839.30	531.18 S	770.63 E	935.67	1.74
6791.00	90.10	125.70	5839.53	549.76 S	796.68 E	967.67	3.37
6823.00	89.60	125.90	5839.61	568.48 S	822.64 E	999.67	1.68
6855.00	89.40	126.60	5839.89	587.40 S	848.44 E	1031.67	2.27
6886.00	88.20	126.70	5840.54	605.90 S	873.31 E	1062.66	3.88
6918.00	88.90	126.70	5841.35	625.02 S	898.96 E	1094.64	2.19
6949.00	89.20	127.40	5841.86	643.69 S	923.69 E	1125.64	2.46
6981.00	89.60	127.10	5842.20	663.06 S	949.16 E	1157.63	1.56
7013.00	91.00	126.00	5842.03	682.11 S	974.87 E	1189.62	5.56
7045.00	90.00	126.20	5841.75	700.97 S	1000.72 E	1221.62	3.19
7076.00	91.40	126.20	5841.37	719.27 S	1025.74 E	1252.62	4.52
7108.00	92.50	126.00	5840.28	738.12 S	1051.58 E	1284.60	3.49
7140.00	94.10	127.10	5838.44	757.14 S	1077.24 E	1316.54	6.06
7171.00	93.30	127.30	5836.44	775.85 S	1101.88 E	1347.47	2.66
7203.00	85.80	125.30	5836.69	794.77 S	1127.65 E	1379.44	24.26
7235.00	84.60	126.00	5839.37	813.36 S	1153.56 E	1411.33	4.34
7267.00	86.80	126.00	5841.77	832.11 S	1179.38 E	1443.24	6.88
7297.00	88.20	126.00	5843.08	849.73 S	1203.62 E	1473.21	4.67
7329.00	89.30	125.90	5843.77	868.51 S	1229.52 E	1505.20	3.45
7361.00	90.50	125.20	5843.83	887.12 S	1255.56 E	1537.20	4.34
7390.00	90.00	123.90	5843.70	903.56 S	1279.44 E	1566.19	4.80
7424.00	90.00	123.90	5843.70	922.53 S	1307.66 E	1600.17	0.00

THE DOGLEG SEVERITY IS IN DEGREES PER 100.00 FEET.
N/E COORDINATE VALUES GIVEN RELATIVE TO WELL HEAD.
TVD COORDINATE VALUES GIVEN RELATIVE TO WELL HEAD.
THE VERTICAL SECTION ORIGIN IS WELL HEAD.
THE VERTICAL SECTION WAS COMPUTED ALONG 126.00 (TRUE).
CALCULATION METHOD: MINIMUM CURVATURE.

LAST SURVEY ENTERED IS PROJECTED TO BIT AT TD.

SAMPLE DESCRIPTIONS

OPERATOR: MOBIL

WELL NAME: RATHERFORD UNIT #29-31 SE 1-A HORIZONTAL LATERAL LEG #2

DEPTH	LITHOLOGY
5731.00 5740.00	"LS tan-ltbrn, occ crm, crpxl-micxl, arg, rthy, dol, v sl fos, occ anhy, mrlly ip, tt, NFSOC & intbd DOL tan-brn-dkbrn, micxl-crpxl, lmy, rthy, arg, mrlly, tt, NFSOC w/rr thn blk carb SH lams & trnsl-bf CHT FRAG scat CMT CVGS"
5740.00 5750.00	"LS AA, incr chk-plty, v sl dol, rr dkbrn CHT frag, tt, NFSOC, intbd DOL AA, occ plty-ghty, sl anhy, lmy, tt, NFSOC, v rr SH lams AA, v rr CMT CVGS AA"
5750.00 5762.00	"LS tan-ltbrn, ltgy-crm, crpxl-micxl, rthy-sl shy, dol, occ chky-anhy, mrlly ip, tt, NFSOC w/intbd DOL tan-brn-dkbrn, micxl-crpxl, lmy, rthy, arg, mrlly, tt, NFSOC w/rr thn blk carb SH lams & bf CHT"
5762.00 5770.00	"LS AA, crpxl-micxl, rthy, sl shy, sl dol, chky-anhy-mrlly ip, tr mic fos, tt, NFSOC w/DOL AA, tt, NFSOC & sl incr SH blk, blk-plty, frm-mhd, carb, calc, sl slty, tr CHT trnsl-bf"
5770.00 5780.00	"LS m-ltgybrn-tan, lt-mbrn, occ ltgy, crpxl-micxl, rthy, sl slty, sl dol, chky-sl anhy/tr mrlly strk-xln ANHY, rr mic fos, scat dkbrn CHT/v rr disp PYR, tt-tr intxl POR, NFSOC"
5780.00 5800.00	"LS ltgy, lt-mgybrn, occ tan-crm-off wh, crpxl-micxl, rthy, bcmg incr slty-sl sdy & occ grdg to vf gr SS/lmy mtrx & LS incl, chky-sl anhy-mrlly/tr xln ANHY, rr blk SH lam, sl dol, tt-tr inxl-frac POR, fr scat spty bri-dull yel FLOR, no-tr ltbrn STN, fr mod bri res ring/tr slow stmg mlky CUT, w/DOL brn-ltbrn, micxl, sl slty-rthy, sl arg, tr intxl POR, mg dull-mod bri yel FLOR, fr ltbrn STN, mg slow stmg mlky CUT"
5800.00 5820.00	"LS tan-lt-mgybrn, crm-off wh, crpxl-micxl, rthy, sl slty, chky-sl anhy-mrlly ip, tr xln ANHY, tr blk SH lam, sl dol, tt-tr inxl-v rr frac POR, fr scat dull-spty mod bri yel FLOR, STN-CUT AA, w/decr DOL AA, POR-FLOR-STN-CUT AA & scat SH"
5820.00 5840.00	"SH blk-dkbrnblk, plty-sbblky, mfrm-sft-fis, carb, calc-sl dol, tr pp mica, sooty w/scat LS & DOL AA"
5840.00 5850.00	"LS tan-ltbrn-crm, occ off wh, ltbrn, micxl-vfxl-gran ip, crpxl, pred mod dns ooc-agl-sl ool GRNST intbd/dns sl agl-ooc PKST occ grdg to BOUNDST, chky-sl anhy/fr POR fl-rr xln ANHY, sl dol/tr DOL cmt, tt-mg intxl-fr ool-agl POR, mg-g scat spty dull-mod bri/tr bri yel FLOR, fr ltbrn-tr brn-rr blk dd o STN, mg slow stmg mlky CUT"
5850.00 5870.00	"LS tan-ltbrn-crm, tr ltbrn, off wh, vfxl-micxl-gran, sl micsuc, crpxl, bcmg ool-sl oom-ooc GRNST, scat dns sl ooc PKST, chky-sl anhy/tr POR fl-xln ANHY, sl dol/tr DOL cmt, POR-FLOR-STN AA, g slow-mod fast stmg mlky CUT"

DEPTH	LITHOLOGY
5870.00	5892.00 "LS AA,vfxl-micxl-gran,sl micsuc,crpxl,pred ool-sl oom-oom GRNST,decr dns sl ooc PKST,chky-sl anhy/tr POR fl-xln ANHY,dol/fr DOL cmt,mg-g ool-sl oom POR,g even mod bri/spty bri yel FLOR,STN AA/sl incr blk dd o STN,g slow-mod fast stmg mlky CUT"
5892.00	5910.00 "LS ltbrn-brn,occ tan,micxl-vfvl,gran-micsuc,pred ooc-oom GRNST,v rr dns tt sl ool anhy PKST intcl,tr DOL cmt,rr ANHY fl POR,fr-g ool-mfr intxl POR,mg bri yel FLOR,mfr m-dkbrn STN-sl tr blk dd o STN,fr-mg mod fast stmg mlky CUT"
5910.00	5930.00 "LS AA,incr ooc-oom mat,v rr alg mat,pred GRNST,n-v rr scat dns PKST intcl,POR-FLOR-CUT AA,incr dkbrn STN-incr blk dd o STN"
5930.00	5950.00 "LS ltbrn-brn,occ tan,micxl-vfvl,gran-micsuc,occ sl suc tex,pred ooc-oom v sl alg GRNST,rr scat dns PKST intcl,occ sl DOL-ANHY cmt,rr ANHY POR fl,fr-mg intxl-mfr ool-rr alg POR,mg bri yel FLOR,g brn-tr blk STN,fr-mg mod fast-fast stmg mlky CUT"
5950.00	5960.00 "LS AA,pred ooc-oom GRNST,v rr alg mat,rr PKST intcl,g intxl-fr ool POR,v rr alg POR,mg bri yel FLOR,mg ltbrn STN-tr blk dd o STN,mg mod fast-fast stmg CUT"
5960.00	5980.00 "LS AA,g POR-FLOR-STN-CUT"
5982.00	6010.00 "LS ltbrn-brn,occ tan,micxl-vfvl,gran-micsuc,occ sl suc-sl alg tex,pred ooc-sl oom GRNST,rr scat dns sl ool PKST intcl,occ sl DOL-ANHY cmt,rr ANHY POR fl,fr-mg intxl-mfr ool-rr alg POR,mg bri yel FLOR,g brn-tr blk STN,fr-mg mod fast-fast stmg mlky CUT"
6010.00	6020.00 "LS AA,v g ooc-intxl-v rr alg POR,FLOR-STN-CUT AA"
6020.00	6030.00 "LS AA,pred brn ooc-sl oom vl sl agl GRNST,w/rr dns sl ool occ anhy PKST intcl,v g ool-fr intxl-v rr alg POR,g bri yel FLOR,fr brn-tr blk STN,g mod fast-fast stmg mlky CUT"
6030.00	6050.00 "LS ltbrn-brn,occ tan,micxl-vfvl,gran-micsuc,occ sl suc tex,pred ooc-oom v sl alg GRNST,rr scat dns PKST intcl,tr DOL-v sl ANHY cmt,v rr ANHY POR fl,fr-mg ool-mfr intxl-rr alg POR,mg-g bri yel FLOR,g brn-tr blk STN,fr-mg mod fast-fast stmg mlky CUT"
6050.00	6070.00 "LS AA,pred ooc-sl oom occ alg GRNST,w/scat PKST intcl AA,POR-FLOR-STN-CUT AA"
6070.00	6090.00 "LS tan-ltbrn,occ brn,micxl-vfvl,gran-micsuc,occ suc-alg tex,pred ooc-sl oom GRNST w/rr scat dns sl ool PKST intcl,tr DOL cmt,occ ANHY xl-POR fl,mg-g intxl-fr ool-rr alg POR,mg bri yel FLOR,mfr-fr ltbrn-brn STN-rr blk dd o STN,mg-g mod fast stmg mlky CUT"
6090.00	6110.00 "LS AA,pred g ooc-fr intxl-v rr alg POR,mg bri yel FLOR,fr-mg brn-ltbrn STN-tr blk dd o STN,mg mod fast-fast stmg mlky CUT"

DEPTH

LITHOLOGY

6110.00 6140.00 "LS AA,sl incr dns occ chk sl ool PKST intcl,incr brn-mbrn STN,POR-FLOR-CUT AA"

6140.00 6170.00 "LS tan-ltbrn,occ brn-gybrn,micxl-vfxl,gran-micsuc,sl suc tex,pred ooc-sl oom GRNST w/rr dns sl ool PKST intcl-frag,sl DOL cmt,rr ANHY xl-POR fl,mg ool-fr intxl-v rr alg POR,mg bri yel FLOR,fr ltbrn-brn STN-mfr blk dd o STN,mg mod fast-fast stmg mlky CUT"

6170.00 6200.00 "LS AA,sl incr PKST frag-intcl,scat dns trnsi ANHY incl-rr POR fl,mg intxl-ool-v rr alg POR,FLOR-CUT AA,mg brn-ltbrn STN-tr blk dd o STN"

6200.00 6230.00 "LS brn-ltbrn,tr tan,rr crm,vfxl-gran-micsuc,micxl-crpxl ip,ool-sl oom-rr ooc GRNST,tr scat-occ intbd dns sl ool-ool PKST/tr gran tex,sl chky-anhy/rr xln ANHY-POR fl,dol/fr DOL cmt,POR AA,g even mod bri-spty bri yel FLOR,g brn-ltbrn/mf blk dd o STN,g fast-sl blooming mlky CUT"

6230.00 6260.00 "LS AA,vfxl-gran-micsuc ip,occ micxl-crpxl,ool-sl oom-ool GRNST/scat-occ intbd dns sl ool-ool PKST/tr gran tex,sl chky-anhy/rr POR fl-xln ANHY incl,sl dol/tr DOL cmt,g ool-sl oom-rr agl POR,FLOR-STN AA,g fast-mod fast stmg mlky CUT"

6260.00 6280.00 "LS brn-ltbrn,occ tan,rr crm,AA,ool-sl oom-rr ooc GRNST,tr scat-occ intbd PKST AA,sl chky-anhy/v rr xln ANHY-POR fl,dol/fr DOL cmt,POR AA,g even mod bri-spty bri yel FLOR,STN AA,g mod fast-fast stmg mlky CUT"

6280.00 6300.00 "LS AA,vfxl-gran-micsuc,micxl-crpxl ip,ool-sl oom-rr ooc GRNST,tr scat-occ intbd dns sl ool-ool PKST/tr gran tex,sl chky-anhy/rr xln ANHY-POR fl,dol/fr DOL cmt,POR-FLOR AA,g brn-ltbrn/mf blk dd o STN,g mod fast-fast stmg mlky CUT"

6300.00 6330.00 "LS ltbrn-brn-tan,tr crm,vfxl-gran-micsuc,occ micxl-crpxl,ool-sl oom-ool GRNST,scat-intbd dns sl ool-ool PKST/tr gran tex,sl chky-anhy/rr POR fl-prtgs,v rr xln ANHY,g ool-sl oom-rr agl POR,g even bri-mod bri yel FLOR,g brn-ltbrn/scat blk dd o STN,CUT AA"

6330.00 6360.00 "LS ltbrn-tan,occ brn,crm,rr wh,vfxl-gran-micsuc,micxl-crpxl,ool-sl oom GRNST/scat-occ intbd PKST AA,sl chky-anhy/rr-tr POR fl-rr prtgs,v rr xln ANHY,fr DOL cmt,g ool-sl oom-rr agl POR,g even mod bri-spty bri yel FLOR,mg ltbrn-fr brn-blk dd o STN,CUT AA"

6360.00 6390.00 "LS AA,ool-sl oom-ool GRNST,tr scat-intbd dns sl ool PKST/tr gran tex,sl chky-anhy/tr POR fl-rr xln ANHY,dol/mg DOL cmt,mg-g ool-sl oom-v rr agl POR,g even mod bri-spty bri yel FLOR,g-mg ltbrn-fr brn-blk dd o STN,g mod fast stmg mlky CUT"

6390.00 6430.00 "LS ltbrn-brn,occ tan,tr crm,vfxl-gran-micsuc,tr micxl-crpxl,ool-sl oom-ool GRNST,tr dns sl ool-ool PKST intcl/tr gran tex,sl chky-anhy/tr POR fl-rr xln ANHY,dol/fr DOL cmt,g-mg ool-sl oom-v rr agl POR,g even mod bri-bri yel FLOR,mg-g ltbrn-brn/scat dkbrn-blk dd o STN,g mod fast-tr fast stmg mlky CUT"

DEPTH

LITHOLOGY

6430.00 6470.00 "LS ltbrn-tan-brn,occ crm,vfxl-gran-micsuc,tr micxl-crpxl,ool-sl oom-oc GRNST/tr dns sl ool-oc PKST intcl,sl chky-anhy/tr POR fl-xln ANHY,dol/fr DOL cmt,g ool-sl oom-rr pp agl POR,g even mod bri-bri yel FLOR,g-mg ltbrn-brn/scat dkbrn-blk dd o STN,g fast-sl blooming mlky CUT "

6470.00 6480.00 "LS AA,ool-sl oom-v sl ooc GRNST,tr PKST AA,sl chky-anhy/rr POR fl-xln ANHY,dol/fr DOL cmt,POR-FLOR-STN-CUT AA"

6480.00 6510.00 "LS AA,vfxl-gran-micsuc,micxl-crpxl ip,ool-sl oom-rr ooc GRNST,tr PKST AA/tr gran tex,sl chky-anhy/rr xln ANHY-POR fl,dol/fr DOL cmt,POR-FLOR AA,g brn-ltbrn/mf blk dd o STN,g fast stmg-sl blooming mlky CUT"

6510.00 6540.00 "LS ltbrn-tan,occ brn,crm,vfxl-gran-micsuc,micxl-crpxl,ool-sl oom-oc GRNST/intcl-rr frag PKST AA,sl chky-anhy/rr-tr POR fl-rr prtgs,v rr xln ANHY,fr DOL cmt,g ool-sl oom-rr agl POR,g even mod bri-spty bri yel FLOR,mg ltbrn-fr brn-blk dd o STN,CUT AA"

6540.00 6570.00 "LS AA,ool-sl oom-oc GRNST,tr dns sl ool-oc PKST intcl-frag,sl-occ v chky-sl anhy/tr POR fl-rr prtgs,v rr xln ANHY,fr DOL cmt,g ool-sl oom-rr agl POR,g even mod bri-spty bri yel FLOR,mg-g ltbrn-fr brn-blk dd o STN,g fast-mod fast stmg mlky CUT"

6570.00 6600.00 "LS ltbrn-tan,occ brn,crm,vfxl-gran-micsuc,tr micxl-crpxl,ool-sl oom-oc GRNST/tr PKST AA,chky-sl anhy/tr POR fl-rr xln ANHY,dol/tr DOL cmt,g ool-sl oom-rr agl POR,g even mod bri-spty bri yel FLOR,mg ltbrn-fr brn-blk dd o STN,CUT AA"

6600.00 6630.00 "LS AA,vfxl-gran-micsuc,micxl-crpxl,rr xln,ool-sl oom-oc GRNST,tr dns sl ool-oc PKST intcl-frag,sl chky-anhy/tr POR fl-v rr prtgs,rr xln ANHY,fr DOL cmt,g ool-sl oom-rr agl POR,FLOR AA,mg ltbrn-fr brn-blk dd o STN,g mod fast-fast stmg mlky CUT"

6630.00 6650.00 "LS ltbrn-tan-crm,occ brn,vfxl-gran-micsuc,micxl-crpxl,sl suc,ool-sl oom-oc GRNST,tr dns sl ool-oc PKST intcl,sl chky-anhy/tr POR fl-xln ANHY-v rr prtgs,fr DOL cmt,POR AA,g even mod bri-spty bri yel FLOR,mg ltbrn-fr brn-blk dd o STN,CUT AA"

6650.00 6670.00 "LS AA,vfxl-gran-micsuc,micxl-crpxl,GRNST AA/tr PKST AA,sl-occ v chky-sl anhy/tr POR fl-rr xln ANHY,dol/fr DOL cmt,g ool-sl oom-rr agl POR,FLOR AA,mg ltbrn-fr brn/sl decr blk dd o STN,g mod fast-fast stmg mlky CUT"

6670.00 6700.00 "LS tan-ltbrn-crm,occ brn,vfxl-gran-micsuc,micxl-crpxl,tr xln incl,ool-sl oom-oc GRNST,tr dns sl ool-oc PKST intcl-frag,bcmg sl dol/tr DOL cmt,sl chky-anhy/sl incr POR fl-tr xln ANHY,mg-g ool-sl oom POR,FLOR AA,mg-fr ltbrn-fr brn-blk dd o STN,CUT AA"

6700.00 6730.00 "LS AA,vfxl-gran-micsuc,micxl-crpxl,ool-sl oom-oc GRNST,tr dns sl ool-oc PKST intcl-frag,dol/fr DOL cmt,sl chky-anhy/tr POR fl-rr xln ANHY,POR-FLOR AA,mg-fr ltbrn-fr brn-blk dd o STN,g fast-mod fast stmg mlky CUT"

DEPTH

LITHOLOGY

6730.00 6760.00 "LS tan-crm-ltbrn,occ brn,tr dkbrn,vfxl-gran-micsuc ip,micxl-crpxl,sl xln,ool-sl oom-rrooc GRNST,tr dns sl ool-oc PKST intcl-frag/tr gran tex,mg-fr DOL cmt,chky-sl anhy/fr POR fl-tr xln ANHY,mg ool-sl oom-fr intxl POR,g even mod bri-spty bri yel FLOR,mg-fr ltbrn-fr brn-tr dkbrn STN,fr scat blk dd o STN,g fast-mod fast stmg mlky CUT"

6760.00 6790.00 "LS AA,vfxl-gran-micsuc,micxl-crpxl,sl incr xln incl,ool-sl oom-oc GRNST,tr dns sl ool-oc PKST intcl-frag,dol/fr DOL cmt,sl chky-anhy/tr POR fl-xln ANHY,mg-g ool-sl oom POR,FLOR AA,mg-fr ltbrn-fr brn-blk dd o STN,g fast-mod fast stmg mlky CUT"

6790.00 6830.00 "LS AA,ool-sl oom-oc GRNST,decr dns sl ool-oc PKST intcl-frag,dol/fr DOL cmt,sl chky-anhy/tr POR fl-xln ANHY,mg-g ool-sl oom POR,g even mod bri-spty bri yel FLOR,mg-fr ltbrn-fr brn-blk dd o STN,g mod fast-fast stmg mlky CUT"

6830.00 6860.00 "LS tan-crm-ltbrn,occ brn,vfxl-gran-micsuc,micxl-crpxl-xln ip,ool-sl oom-oc GRNST,tr-sl incr dns sl ool-oc PKST intcl-frag,chky-sl anhy/sl incr POR fl-tr xln ANHY,dol/fr DOL cmt,mg-g ool-sl oom POR,FLOR AA,mg-fr ltbrn-tr brn/fr scat blk dd o STN,g mod fast-fast stmg/tr sl blooming mlky CUT"

6860.00 6890.00 "LS tan-ltbrn-crm,occ brn,AA,ool-sl oom-oc GRNST,tr dns PKST AA,sl chky-anhy/tr POR fl-rr xln ANHY,dol/fr DOL cmt,mg-fr ool-sl oom POR,g even mod bri-spty bri yel FLOR,fr ltbrn-brn-tr blk dd o STN,g mod fast-slow stmg mlky CUT"

6890.00 6930.00 "LS tan-crm-ltbrn,tr brn,vfxl-gran-micsuc,micxl-crpxl-sl xln,ool-sl oom-oc GRNST,tr PKST AA,sl chky-anhy/tr POR fl-rr xln ANHY,fr DOL cmt,mg-g ool-sl oom POR,g even mod bri-spty bri yel FLOR,mg ltbrn-fr brn/tr dkbrn-blk dd o STN,g fast-mod fast-fast stmg mlky CUT "

6930.00 6970.00 "LS tan-ltbrn-crm,occ brn,AA,ool-sl oom-oc GRNST,tr dns sl ool-oc PKST intcl-frag/tr gran tex,sl chky-anhy/tr POR fl-rr xln ANHY,fr DOL cmt,mg-fr ool-sl oom POR,g even mod bri-bri yel FLOR,fr-mg ltbrn-brn/tr dkbrn-blk dd o STN,CUT AA"

6970.00 6990.00 "LS tan-crm,ltbrn,tr brn,vfxl-gran-micsuc,micxl-crpxl-sl xln ip,GRNST AA,tr dns PKST AA,sl chky-anhy/decr POR fl-rr xln ANHY,fr DOL cmt,mg-g ool-sl oom POR,g even-spty bri yel FLOR,fr ltbrn-brn/tr dkbrn-blk dd o STN,g fast stmg-sl blooming mlky CUT"

6990.00 7010.00 "LS tan-ltbrn-crm,occ brn,AA,ool-sl oom-oc GRNST/dns sl ool-oc PKST intcl-frag,sl chky-anhy/tr POR fl-rr xln ANHY,fr DOL cmt,POR-FLOR AA,fr ltbrn-brn/tr dkbrn-blk dd o STN,mg mod fast-slow stmg mlky CUT"

7010.00 7020.00 "LS AA,ool-sl oom-v sl ooc GRNST/PKST AA,sl chky-anhy/tr POR fl-rr xln ANHY,dol/fr DOL cmt,POR-FLOR-STN-CUT AA"

DEPTH

LITHOLOGY

7020.00 7060.00 "LS tan-ltbrn-crm,occ brn,vfxl-gran-micsuc,micxl-crpxl-xln ip,ool-sl oom-oc GRNST/dns sl ool-oc PKST intcl-frag,sl chky-anhy/tr xln ANHY-rr POR fl,dol/fr DOL cmt,mg-g ool-tr sl oom-intxl POR,g even mod bri-spty bri bri yel FLOR,mg-fr ltbrn-brn/fr dkbrn-scat blk dd o STN,g mod fast-tr fast stmg mlky CUT"

7060.00 7090.00 "LS AA,ool-sl ooc-tr oom GRNST,tr dns sl ool-oc PKST intcl-frag/tr gran tex,dol/fr DOL cmt,sl chky/tr POR fl,v sl anhy/rr xln ANHY,mg-fr ool-fr intxl-tr oom POR,FLOR AA,mg-fr ltbrn-fr brn/tr scat dkbrn-blk dd o STN,mg slow-tr mod fast stmg mlky CUT"

7090.00 7140.00 "LS tan-crm-ltbrn,occ brn,tr dkbrn,AA,ool-sl oom-rr ooc GRNST/tr PKST AA,sl chky/tr POR fl,v sl anhy/tr xln ANHY,fr DOL cmt,mg-fr ool-intxl/tr sl oom POR,g even mod bri-spty bri yel FLOR,mg-fr ltbrn-tr brn & blk dd o STN,g fast-mod fast stmg mlky CUT"

7140.00 7170.00 "LS tan-ltbrn,occ brn-mbrn,micxl-vfxl,gran,micsuc ip,pred sl oom-oc GRNST w/v rr alg mat,occ dns tt ool sl anhy PKST intcl-frag,mfr-mg ool-intxl POR,fr bri-rr dull yel FLOR,mfr ltbrn-brn STN,tr blk dd o STN,mfr-mg mod fast-fast stmg mlky CUT"

7170.00 7200.00 "LS AA,incr gran-micsuc tex,sl incr dns sl ool v anhy PKST frag,scat trnsd ANHY incl,g intxl-mfr ool POR,mg bri-tr dull yel FLOR,g ltbrn-tr brn STN,sl tr-tr blk dd o STN,mg mod fast-fast stmg mlky CUT"

7200.00 7230.00 "LS AA,pred sl ooc-oom GRNST,scat dns occ plty-chk PKST frag-intcl,rr trnsd-clr CHT frag & scat ANHY incl,mg intxl-fr ool POR,mg bri-rr dull yel FLOR,fr ltbrn-tr brn STN,tr blk dd o STN,mg-g mod fast-fast stmg mlky CUT"

7230.00 7260.00 "LS tan-ltbrn,occ brn-mbrn,micxl-vfxl,gran,micsuc ip,pred ooc-sl oom GRNST-v rr alg mat,occ dns tt ool occ anhy PKST intcl-frag,v rr ANHY xl,fr ool-intxl POR,fr bri-tr dull yel FLOR,mfr ltbrn-brn STN,sl tr blk dd o STN,fr-mg mod fast-fr fast stmg mlky CUT"

7260.00 7290.00 "LS tan-brn,micxl-vfxl,gran-micsuc occ suc,pred sl oom-oc GRNST,scat PKST AA,rr scat ANHY xl-POR fl,pred mg-g intxl-tr ool POR,mfr-fr bri-mfr dull yel FLOR,mfr brn-dkbrn STN,rr-sl tr blk dd o STN,fr-mg mod fast-tr fast stmg mlky CUT"

7290.00 7340.00 "LS tan-ltbrn,occ brn-mbrn,micxl-vfxl,gran-micsuc,sl suc,pred sl oom-oc GRNST,sl tr dns tt sl ool PKST intcl-frag,v rr alg mat,sl dol-rr anhy,mg intxl-tr ool POR,fr bri-tr dull yel FLOR,fr ltbrn-brn STN,rr blk dd o STN,fr-mg mod fast-fast stmg mlky CUT"

7340.00 7370.00 "LS AA,incr vfxl & suc tex,pred fr-mg intxl-mfr ool POR,mfr bri-fr dull yel FLOR,fr ltbrn-tr brn STN,rr-sl tr blk dd o STN,fr-fr mod fast-tr-mfr fast stmg mlky CUT"

DEPTH	LITHOLOGY
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7370.00 7400.00 "LS AA, pred brn, vfxl, suc ip, rr-tr ANHY & CALC xl in ooc
fab, mg-g intxl-mfr ool POR, mg bri-tr dull yel FLOR, mfr-fr ltbrn-brn STN, mg mod
fast-mfr fast stmg mlky CUT"

7400.00 7424.00 "LS tan-ltbrn, occ brn, crm ip, micxl-vfxl, gran, micsuc-sl
suc, pred sl oom-ool GRNST, tr dns crpxl chk sl ool PKST frag, v rr alg mat, sl
dol-rr anhy, mg intxl-fr ool POR, fr bri-mfr dull yel FLOR, fr ltbrn-brn STN, rr
blk dd o STN, mg mod fast-mfr fast stmg mlky CUT"

FORMATION TOPS

OPERATOR: MOBIL

WELL NAME: RATHERFORD UNIT #29-31 SE 1-A HORIZONTAL LATERAL LEG #2

FORMATION NAME		SAMPLES	SAMPLES	DATUM
		MEASURED DEPTH	TRUE VERTICAL DEPTH	KB:5105'
LOWER ISMAY		5778'	5774'	-669'
GOTHIC SHALE		5812'	5802'	-697'
DESERT CREEK		5828'	5811'	-706'
UPPER DC 1-A ZONE		5835'	5815'	-711'

GEOLOGICAL SUMMARY

AND

ZONES OF INTEREST

The Mobil Exploration and Production U.S., Inc., Ratherford Unit #29-31 Southeast Horizontal Lateral Leg #2 was a re-entry of the Mobil Ratherford Unit #29-31 located in Section 29, T41S, R24E, and was sidetracked in a southeasterly direction from 5732' measured depth, 5731.7' true vertical depth, on November 4, 1998. The lateral reached a measured depth of 7424', true vertical depth of 5843.7' at total depth, with a horizontal displacement of 1600' and true vertical plane of 123.9 degrees on November 7, 1998. The lateral was terminated in the 1-A porosity zone in the Upper Desert Creek Member of the Paradox Formation. The curve and lateral were drilled using fresh water with polymer sweeps as the drilling fluid. The proposed target line was used as a reference point throughout the lateral. The curve and lateral sections were drilled with no significant mechanical problems. There was a very minor flow of fluid noted when terminating the lateral section. Circulation was lost while preparing the well for the initial northwesterly curve and lateral sections, but was regained and no further fluid loss was noted.

The objective of the Ratherford Unit #29-31 southeast lateral Leg #2 was to penetrate and drill 1600' horizontally in the Desert Creek 1-A porosity zone, to identify and define its lithology, and to evaluate the effective porosity of the zone. In this southeasterly direction, the 1-A porosity zone appeared to be very consistent, have very well developed porosity, and be approximately 35' thick on the electric log for the Ratherford Unit #29-31 vertical well, thus was the target for drilling in this lateral. The lithology of the best porosity penetrated in the 1-A zone in this southeasterly lateral was very homogenous in predominately an oolitic to oomoldic, very slightly algal limestone grainstone facies, and had a fair to good hydrocarbon and gas show, with fair to good visible porosity and apparent permeability. Only very rare, minor, very thin streaks and interclasts of dense limestone packstones were noted in the curve and lateral section. The top of the 1-A zone was possibly bumped only once near the end of the lateral, with only a very minor increase in dense, very slightly oolitic, occasionally platy and chalky limestone packstone noted. These packstones have no to extremely poor porosities, and no visible sample or gas shows.

The curve was begun near the base of the Upper Ismay on November 4, 1998 before encountering the typical sections of the Lower Ismay, Gothic Shale, Desert Creek and the 1-A porosity bench carbonate cycle of the Upper Paradox Formation.

The curve section was begun at measured depth of 5732'; 5732' true vertical depth, near the base of the Upper Ismay carbonate cycle of the Upper Paradox Formation. The lower Upper Ismay was penetrated from a measured depth of 5732', to a measured depth of 5778', true vertical depth 5774'. The lower 46' of the Upper Ismay member was a predominately a clean to dense, occasionally argillaceous, tight limestone, with interbedded earthy to argillaceous dolomites, very thin black carbonaceous shale partings and scattered chert fragments. The limestones were tan to cream, light gray, light to medium brown, cryptocrystalline to microcrystalline, clean and dense, with streaks of an earthy to chalky texture, some argillaceous texture and very rare microfossils to Crinoid fossils. These limestones had no visible porosity nor sample show. The thin interbedded dolomites were tan to brown to dark brown, crypto to microcrystalline, earthy to argillaceous, limey, becoming marly with depth, and had very rare scattered micro to Crinoid fossils. The dolomites also had no visible porosity or sample shows. The shale parting were black to dark gray, some light gray, subblocky to subplaty,

traces of fissile, very slightly silty, micaceous, and calcareous to slightly dolomitic, and had very minor Crinoid fossils. Scattered through out the Upper Ismay carbonates were buff to dark brown, some black chert fragments. The basal carbonates became increasingly marly and graded into the thin, very fossiliferous, carbonaceous Hovenweep Shale. The Hovenweep Shale, which defines the Upper and Lower Ismay contact, was represented by a very slight increase in the black carbonaceous, dolomitic to calcareous, occasionally silty shale and very minor change in the penetration rate. This contact was poorly represented in the samples from measured depths of 5775' to 5778', and true vertical depths from 5772' to 5774'.

The top of the Lower Ismay member of the Upper Paradox Formation was picked at a measured depth of 5778', true vertical depth 5774', based primarily on sample identification and a significant decrease in the rate of penetration at the very top. The upper 8' of the Lower Ismay was predominately a very dense, anhydritic, tan to cream to brown, some gray brown, cherty limestone and thinly interbedded argillaceous, brown to medium brown, limey dolomite, with very thin streaks of black carbonaceous shale partings and rare brown to dark brown chert fragments. This upper 8' had rars scattered very thin streaks of dense, translucent, anhydrite. The Lower Ismay, from measured depths of 5785' to 5798', became a white to cream to light gray, light to medium graybrown to tan, cryptocrystalline to microcrystalline limestone. This limestone had scattered granular streaks with a trace of chalky texture, and was slightly to very silty, occasionally anhydritic and occasionally dolomitic in part, with scattered Crinoid and microfossils. This limestone had streaks of well cemented very silty limestone grainstones, some scattered translucent to light to dark brown chert fragments, and very rare thin brown, earthy to slightly argillaceous dolomites. It was also noted that these limestones occasionally graded to very limey siltstones, and very rare very fine-grained sandstones with limestone rich cement. There was only a very poor visible intercrystalline porosity, with a very poor sample show associated with the limestones and dolomites. The basal 14 feet of the Lower Ismay, from a measured depth of 5798' to a measured depth of 5812', was a very dense, slightly dolomitic limestone packstone and earthy limey dolomites. These limestones and dolomites became slightly to very marly with depth, and had scattered anhydrite interclasts and very rare chert fragments. The basal limestones and thin dolomites had very rare visible intercrystalline to fractured porosity and a very poor sample show. The basal limestones and dolomites of the Lower Ismay carbonates graded into limey to dolomitic carbonaceous shales of the Gothic Shale.

The Gothic Shale was penetrated at a measured depth of 5812', true vertical depth 5802', and gradationally underlies the Lower Ismay. The top of the Gothic was picked at a slight increase in the penetration rate below the dense limestone and dolomite marlstones of the basal Lower Ismay and a slight increase in the amount of black carbonaceous shale in the cuttings. This shale member of the Upper Paradox Formation was seen have a true vertical thickness of 8 feet in this southeasterly direction. This shale is black to dark gray shale, carbonaceous, occasionally grainy to silty, soft to slightly firm, sooty, slightly fissile, subblocky to subplaty, calcareous to slightly dolomitic and slightly micaceous. Very thin partings of dense, very slightly argillaceous, occasionally dolomitic, cream to tan limestones and clean to very argillaceous, limey, brown to medium gray brown dolomites were noted in this shale member. The Gothic overlays the top of the Desert Creek Member with a sharp contact.

The top of the Desert Creek Member of the Upper Paradox Formation was picked at a measured depth of 5828', 5811' true vertical depth, with a slight decrease in penetration rate and a slight increase in the amount of dense limestone packstone in the samples. The Upper Desert Creek transition zone between the Gothic Shale and the 1-A porosity zone had a true vertical thickness of approximately five feet. This transition zone was predominately a dense limestone packstone, which was very argillaceous on occasion and was very slightly fossiliferous. There were very thinly interbeds of argillaceous limey dolomites and very thin black carbonaceous shale partings. The limestones of the transition zone are light brown to cream to tan, cryptocrystalline to microcrystalline, dense to slightly silty, some chalky to anhydritic and very slightly dolomitic. Scattered in the limestones are very thin, brown, microcrystalline, argillaceous, limey dolomites; some very rare black, dolomitic, slightly micaceous, calcareous, very slightly carbonaceous shales; with rare translucent chert fragments and

translucent anhydrite inclusions. The transition zone showed a very poor intercrystalline porosity and a very poor sample show. Near the base of the transition zone the dense limestones became increasingly oolitic and graded in to the oolitic to oomoldic limestones of the upper 1-A porosity bench.

The top of the Desert Creek Upper 1-A porosity zone was encountered at a measured depth of 5835', true vertical depth of 5815', with a horizontal displacement of approximately 16'. The top was picked on the lithology becoming predominately a good oolitic to oomoldic limestone grainstone with a significant increase in the penetration rate and background gases. This oolitic to oomoldic limestone grainstones marked the top of the 1-A porosity zone. The 1-A zone had an apparent true vertical thickness of 35' in this southeasterly direction. These limestone grainstones are tan to light brown to cream, some brown, microcrystalline to very fine crystalline, with traces of granular to microsucrosic texture, a slightly dolomitic cement, and very rare translucent to buff chert fragments and rare translucent anhydrite inclusions. The limestones have moderately good to good oomoldic to oolitic fabric, some very poor algal material, with a fair to good oolitic to fair intercrystalline porosity and a very poor algal porosity development. A very minor amount of anhydrite and calcite crystal growth was noted in the oolitic and molds as well as in the intercrystalline matrix. The sample show was fair to moderately good, with a fair amount of brown to light brown oil stain and had traces of black bitchimum* staining on the crystal faces and molds as well as in oolitic and very rare algal fabric. These grainstones had a fair to good bright to occasionally dull yellow fluorescence and a fair slow to moderately good moderately fast to some fast streaming cut.

The curve portion of the lateral was completed at a measured depth of 5892', true vertical depth 5832', with a horizontal displacement of 69', bearing 132.5 degrees, and an inclination of 87.3 degrees on November 5, 1998. Drilling of the curve section was halted 17 vertical feet into the oolitic to oomoldic, very slightly algal limestone grainstone of the 1-A zone, right at the proposed target line. At this point a trip was made to lay down the curve assembly and pickup the lateral assembly.

Drilling of the southeast lateral in the 1-A zone was begun also on November the 5TH, in the Upper Desert Creek 1-A porosity zone of the Upper Paradox Formation. The lateral was slid for the first 70' mainly in order to control horizontal plane direction and to level the well path along the proposed target line in the 1-A porosity zone. The lateral was begun at the true vertical depth of 5832' in the very good oolitic to oomoldic, occasionally algal limestone grainstone facies of the 1-A zone. This limestone grainstone through out the length of the lateral was a tan to light brown to brown, occasionally cream, microcrystalline to very finely crystalline, granular to microsucrosic, slightly dolomitic, with rare anhydrite to calcite porosity filling, slight trace of dolomite cement. These limestone grainstones had a fair to good intercrystalline to oolitic porosity, with only very rare algal porosity. The sample show in this limestone grainstone of the 1-A zone, through out the length of the lateral was predominately a fair to good. The sample show was a bright to occasionally dull yellow fluorescence, with a fair to good brown oil stain, some scattered black bitchimum* stain, and a moderately good to good streaming milky cut. Scattered through out this oolitic oomoldic to very slightly algal limestone grainstone, were scattered dense, slightly oolitic to very rarely fossiliferous, occasionally chalky to platy, cream to white to light gray, some tan, cryptocrystalline, limestone packstones.

The lateral was drilled with a very shallow downward angle, beginning on the target line and slowly dropping below the target line, and the lateral remained below the target line, until reaching a measured depth of 7040', 5841' true vertical depth, and a horizontal displacement of 1215'. Upon reaching the measured depth of 7040', the formation began to slowly push the well path upward. A series of slides were made to control the rate of climb of the lateral. As the lateral turned upward and approached a measured depth of 7170', 5836.4' true vertical depth and a horizontal displacement of 1345', a short slid was made to slowly bring the well path downward. Just as the slide was made the well bore bumped off a thin hard streak near the top or the top of the 1-A zone. As the well path bumped off the denser limestone, the well bore turned downward rather abruptly, nescicaiting a

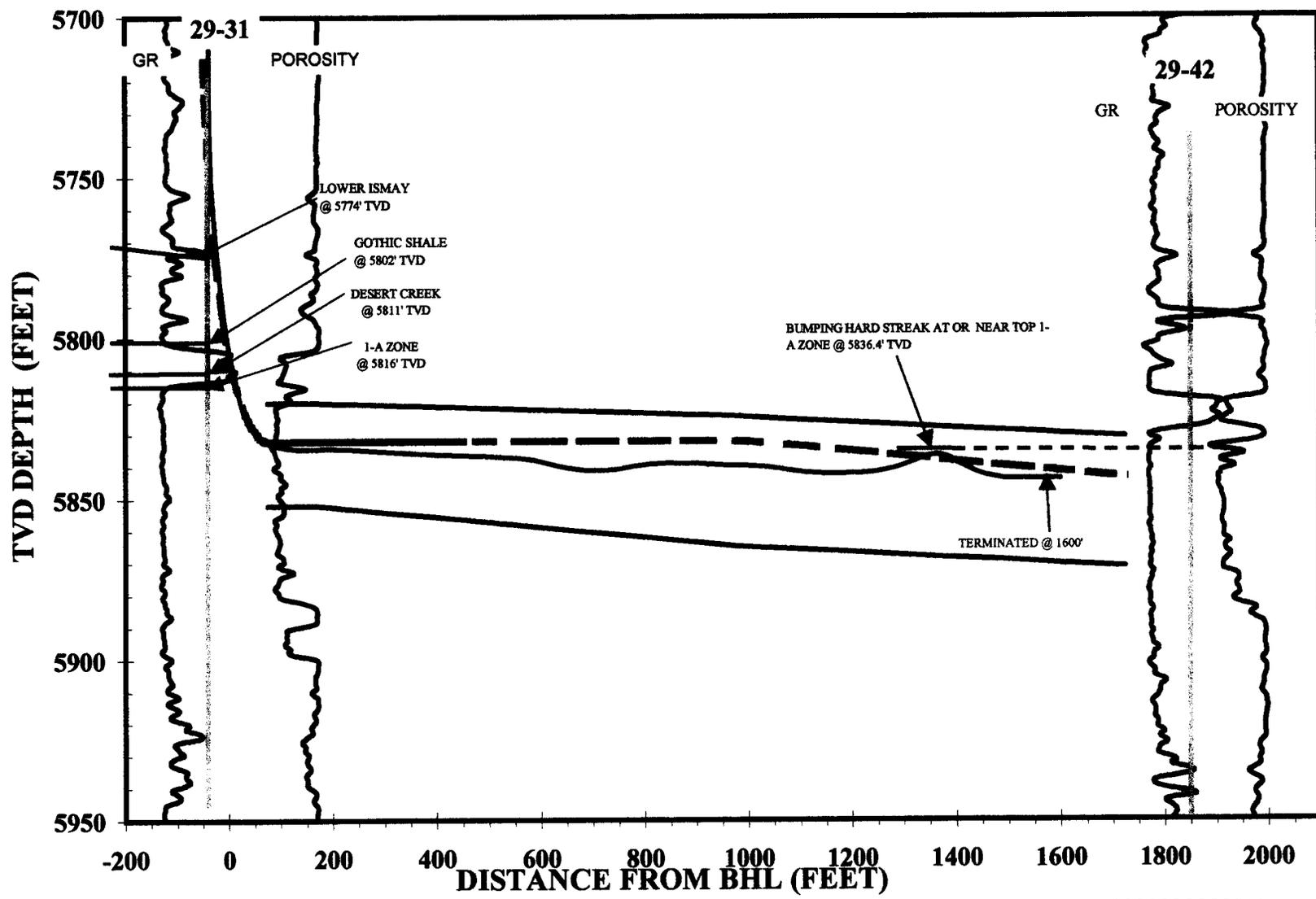
series of slides to now control the rate of drop of the well path. When the well bore bumped the hard streak or top of the 1-A zone, there was only a very minor decrease in the penetration rate, with no to a very slight visible decrease in the slightly oolitic to oomoldic limestone grainstones. Only a very minor increase in the dense packstone was noted. The lateral was finally leveled as the well path reached a true vertical depth of 5843.7', a measured depth of 7315', with a horizontal displacement of 1490'. From the measured depth of 7315' to the lateral's termination, the lateral remained level at a true vertical depth of 5843.7', and remained in the slightly oolitic to oomoldic, occasionally algal limestone grainstone. This portion of the lateral, as it neared its termination, showed a very slight decrease in the associated sample show and background gases. The lateral reached its termination point on November 7, 1998, in the upper 10' to 15', of the best porosity in the 1-A zone, at a measured depth of 7424', 5843.7' true vertical depth, and a horizontal displacement of 1600'. At the end of this southeasterly lateral the well path was only 1' to 1.5' below the proposed well path. From the beginning of the lateral section to its termination, a flare from 3' in height increasing up to approximately 10' to 12' in height was seen. The lateral began making minor amounts of oil and gas as soon as the good porosity in the 1-A zone was encountered and a minor flow of approximately 12 barrels per hour was seen.

In tracking the lateral in this southeasterly direction, the oolitic to oomoldic limestone grainstone porosity had good sample shows, which remained very consistent through out the lateral's length. Of note was the decrease in cutting size as the lateral progressed. The lateral was drilled through out its length in upper 10' to 15' of the 1-A zone. From the beginning of the lateral to its termination the top of the 1-A zone was possibly encountered only once and that was near the end of the lateral, at the measured depth of 7170. The oolitic to oomoldic, very slightly algal limestone grainstones of the 1-A porosity bench, showed good oolitic to intergranular porosity and very minor, rare algal fabric, with a good sample show, as well as the lateral making minor amounts of oil and gas through out. The scattered dense limestone packstones were of no significance in this lateral. The well path began varying from the proposed well path after landing the curve section of the lateral, and beginning the lateral section. The lateral varied from the target line a maximum of 9' at a horizontal displacement of 700' near the middle of the lateral.

From the beginning of the 29-31 northwest lateral leg #2 to its termination on November 7, 1998, at a measured depth of 7424', 5843.7' true vertical depth and a horizontal displacement of 1700', the porosities in the upper 10' to 15' of the 1-A zone remained very consistent. The oolitic to intercrystalline to very rare algal porosities are well enough developed to enhance the production performance of the R. U. 29-31 well. The limestone grainstone lithology through out the length of the lateral is very consistent and will add to the overall performance of the R.U. 29-31 well after acidization.

*The black residual staining has been called by Dr. Dave Eby & others as "bitchimum" and is also known as "dead oil" ("dd o stn" on mud logs). This staining is associated with the movement of oil over long periods of time and is a good indicator of producible hydrocarbons when associated with productive porosities, but can also be found in porosities that have been filled by anhydrites and other material at later dates.

MOBIL, Ratherford #29-31, Southeast Lateral



MOBIL

**RATHERFORD UNIT #29-31
NW HORIZONTAL LATERAL LEG #3
UPPER 1-A POROSITY BENCH
DESERT CREEK MEMBER
PARADOX FORMATION
SECTION 29, T41S, R24E
SAN JUAN, UTAH**

GEOLOGY REPORT

prepared by

DAVE MEADE

PASON/ROCKY MOUNTAIN GEO-ENGINEERING CORP.

GRAND JUNCTION, COLORADO

(970) 243-3044

MICROFILM

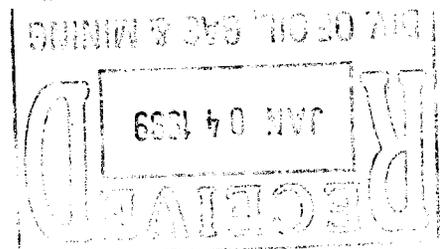


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WELL SUMMARY

OPERATOR: MOBIL EXPLORATION & PRODUCTION U.S. INC.

NAME: RATHERFORD UNIT #29-31 NW HORIZONTAL LATERAL
LEG #3 IN 1-A POROSITY BENCH, DESERT CREEK

LOCATION: SECTION 29, T41S, R24E

COUNTY/STATE: SAN JUAN, UTAH

ELEVATION: KB:5105' GL:5093'

SPUD DATE: 10/29/98

COMPLETION DATE: 11/10/98

DRILLING ENGINEER: SIMMON BERRERA

WELLSITE GEOLOGY: DAVE MEADE / LUKE TITUS

**MUDLOGGING
ENGINEERS:** DAVE MEADE / LUKE TITUS

CONTRACTOR: BIG "A" RIG 25
TOOLPUSHER: J. DEES

HOLE SIZE: 4 3/4"

CASING RECORD: SIDETRACK IN WINDOW AT 5705' MEASURED DEPTH

**DRILLING MUD:
ENGINEER:** M-I
RON WESTENBURG
MUD TYPE: FRESH WATER & BRINE WATER W/ POLYMER SWEEPS

**DIRECTIONAL
DRILLING CO:** SPERRY-SUN

ELECTICAL LOGGING: NA

TOTAL DEPTH: 7432' MEASURED DEPTH; TRUE VERTICAL DEPTH- 5846.7'

STATUS: PREPARING WELL FOR RIG MOVE TO R.U. 20-14 LOCATION

DRILLING CHRONOLOGY
RATHERFORD UNIT #29-31
1-A NW HORIZONTAL LATERAL LEG #3

DATE	DEPTH	DAILY	ACTIVITY
11/08/98	5696'	34'	MILL W/STARTER MILL 5695' TO 5698'-CIR BTMS UP-PUMP BRINE-TOH-L.D. STARTER MILL-P.U. WINDOW MILLS -TIH-MILL W/WINDOW MILLS 5695' TO 5705'-PUMP & CIR SWEEP-170 BBLs BRINE-TOH-L.D. MILLS-P.U. CURVE ASSEM.-ORIENT & TEST-TIH-RIG UP GYRO DATA & RUN GYRO-TIME DRLG 5705' TO 5707'-DIR DRLG & WIRE LINE SURVEYS
11/09/98	5730'	471'	DIR DRLG & WIRELINE SURVEYS TO 5731'-PULL GYRO & RIG DOWN GYRO DATA-DIR DRLG & SURVEYS TO 5912' (T.D. CURVE)-PUMP SWEEP & CIR OUT SPLS-PUMP 175 BBLs BRINE-L.D. 49 JTS AOH-TOH-L.D. CURVE ASSEM.-P.U. LATERAL ASSEMBLY- ORIENT & TEST-TIH-DIR DRLG & SURVEYS
11/10/98	6201'	1231'	DATA-DIR DRLG & SURVEYS TO 7432' (T.D. LATERAL)-PUMP SWEEP & CIR OUT SPLS-PUMP 10 BBLs BRINE-TOH TO WINDOW-DISPLACE HOLE W/BRINE-TOH-L.D. LATERAL ASSEM.-P.U. RETRIEVING HOOK-TIH-LATCH INTO WHIPSTOCK-TOH-P.U. RBP-TIH-SET @ 5587'-TOH & LAY DOWN PIPE
11/11/98	7432'	0'	TOH & LAY DOWN PIPE-PREPARE WELL FOR RIG MOVE TO 20-14 LOCATION

DAILY ACTIVITY

Operator: MOBIL
Well Name: RATHERFORD UNIT #29-31 NW1-A HORIZONTAL LATERAL LEG #3

DATE	DEPTH	DAILY	DATE	DEPTH	DAILY
11/08/98	5696'	34'			
11/09/98	5730'	471'			
11/10/98	6201'	1231'			
11/11/98	7432'	0'			

BIT RECORD

OPERATOR: MOBIL
WELL NAME: RATHERFORD UNIT #29-31 NW1-A HORIZONTAL LATERAL LEG #3

RUN	SIZE	MAKE	TYPE	IN/OUT	FTG	HRS	FT/HR
#1 (RR)	4 3/4"	STC	MF-37P	5705'/ 5912'	207'	13.0	15.92
#2	4 3/4"	STC	MF-3P	5912'/ 7432'	1520'	18.5	82.16

MUD REPORT

OPERATOR: MOBIL
WELL NAME: RATHERFORD UNIT #29-31 NW1-A HORIZONTAL LATERAL LEG #3

DATE	DEPT H	WT	VIS	PLS	YLD	GEL	PH	WL	CK	CHL	CA	SD	OIL	WTR
11/08/98	5699'	9.3	27	1	1	0/0	10.0	NC	NC	94000	3600	1%	TR	99%
11/09/98	5820'	9.0	27	1	1	0/0	11.0	NC	NC	61000	3800	1%	TR	99%
11/10/98	6838'	8.9	27	1	1	0/0	10.5	NC	NC	53000	5600	1%	TR	99%

SPERRY-SUN DRILLING SERVICES
SURVEY DATA

Customer ... : Mobil (Utah)
Platform ... : RATHERFORD UNIT
Slot/Well .. : BA25/29-31 3A1

MEASURED DEPTH	ANGLE DEG	DIRECTION DEG	TVD	NORTHINGS FEET	EASTINGS FEET	VERTICAL SECTION	DOG LEG
6474.00	91.00	326.80	5825.71	624.64 N	404.10 W	743.45	0.88
6506.00	88.30	325.40	5825.90	651.19 N	421.94 W	775.44	9.50
6538.00	87.20	325.00	5827.16	677.45 N	440.19 W	807.42	3.66
6569.00	87.50	324.70	5828.59	702.77 N	458.02 W	838.38	1.37
6601.00	85.50	323.10	5830.54	728.57 N	476.84 W	870.31	8.00
6633.00	83.90	322.70	5833.50	753.99 N	496.06 W	902.16	5.15
6664.00	86.90	321.20	5835.99	778.32 N	515.10 W	933.01	10.81
6696.00	87.50	321.20	5837.55	803.22 N	535.13 W	964.90	1.87
6727.00	88.30	320.80	5838.69	827.30 N	554.62 W	995.80	2.88
6759.00	88.50	320.10	5839.58	851.96 N	574.99 W	1027.69	2.27
6791.00	88.70	319.80	5840.36	876.45 N	595.57 W	1059.55	1.13
6823.00	89.50	322.00	5840.86	901.28 N	615.75 W	1091.47	7.31
6854.00	90.00	324.50	5841.00	926.12 N	634.30 W	1122.45	8.22
6886.00	89.00	324.50	5841.28	952.17 N	652.88 W	1154.45	3.13
6918.00	89.20	325.20	5841.78	978.33 N	671.30 W	1186.44	2.27
6950.00	88.90	326.30	5842.31	1004.78 N	689.31 W	1218.43	3.56
6982.00	89.10	326.10	5842.87	1031.36 N	707.11 W	1250.42	0.88
7013.00	89.20	325.20	5843.33	1056.95 N	724.60 W	1281.42	2.92
7045.00	90.70	325.90	5843.36	1083.34 N	742.70 W	1313.41	5.17
7077.00	89.80	324.70	5843.22	1109.65 N	760.91 W	1345.41	4.69
7109.00	89.10	324.30	5843.53	1135.70 N	779.49 W	1377.41	2.52
7140.00	89.80	322.70	5843.82	1160.62 N	797.93 W	1408.40	5.63
7171.00	90.40	323.10	5843.77	1185.34 N	816.63 W	1439.38	2.33
7202.00	90.80	325.00	5843.44	1210.43 N	834.83 W	1470.37	6.26
7234.00	91.30	324.70	5842.86	1236.59 N	853.25 W	1502.36	1.82
7265.00	90.80	323.80	5842.29	1261.75 N	871.36 W	1533.35	3.32
7297.00	89.80	324.10	5842.12	1287.62 N	890.19 W	1565.35	3.26
7329.00	89.30	326.60	5842.37	1313.94 N	908.38 W	1597.34	7.97
7361.00	88.90	325.40	5842.88	1340.47 N	926.27 W	1629.33	3.95
7398.00	86.20	324.70	5844.46	1370.76 N	947.45 W	1666.30	7.54
* 7432.00	86.20	324.70	5846.71	1398.45 N	967.05 W	1700.22	0.00 *

THE DOGLEG SEVERITY IS IN DEGREES PER 100.00 FEET.
N/E COORDINATE VALUES GIVEN RELATIVE TO WELL HEAD.
TVD COORDINATE VALUES GIVEN RELATIVE TO WELL HEAD.
THE VERTICAL SECTION ORIGIN IS WELL HEAD.
THE VERTICAL SECTION WAS COMPUTED ALONG 325.00 (TRUE).
CALCULATION METHOD: MINIMUM CURVATURE.

* LAST SURVEY ENTERED IS PROJECTED TO BIT AT TD *

SPERRY-SUN DRILLING SERVICES
SURVEY DATA

Customer ... : Mobil (Utah)
Platform ... : RATHERFORD UNIT
Slot/Well .. : BA25/29-31 3A1

MEASURED DEPTH	ANGLE DEG	DIRECTION DEG	TVD	NORTHINGS FEET	EASTINGS FEET	VERTICAL SECTION	DOG LEG
5600.00	0.09	17.77	5599.67	42.29 N	16.02 W	43.83	0.00
5696.00	0.27	47.71	5695.67	42.52 N	15.83 W	43.91	0.21
5705.00	2.90	325.00	5704.67	42.72 N	15.95 W	44.14	31.98
5715.00	6.50	319.58	5714.63	43.35 N	16.46 W	44.95	36.23
5725.00	11.30	318.26	5724.51	44.52 N	17.48 W	46.49	48.04
5735.00	16.00	317.67	5734.22	46.27 N	19.06 W	48.83	47.02
5745.00	20.90	317.32	5743.71	48.60 N	21.20 W	51.97	49.01
5755.00	25.70	317.10	5752.89	51.50 N	23.88 W	55.89	48.01
5765.00	30.10	311.50	5761.72	54.75 N	27.24 W	60.48	51.17
5775.00	34.80	312.10	5770.16	58.33 N	31.24 W	65.70	47.11
5785.00	38.00	313.70	5778.21	62.37 N	35.58 W	71.50	33.38
5795.00	43.00	318.30	5785.81	67.05 N	40.08 W	77.91	58.22
5805.00	47.70	319.90	5792.84	72.43 N	44.73 W	84.99	48.36
5815.00	52.20	321.90	5799.27	78.37 N	49.56 W	92.62	47.53
5825.00	55.40	324.70	5805.18	84.84 N	54.37 W	100.68	39.17
5835.00	58.80	327.90	5810.61	91.82 N	59.03 W	109.07	43.33
5845.00	63.10	330.00	5815.46	99.31 N	63.53 W	117.79	46.75
5855.00	67.80	331.60	5819.62	107.25 N	67.97 W	126.84	49.20
5865.00	71.90	332.60	5823.06	115.54 N	72.36 W	136.15	42.06
5875.00	75.80	333.40	5825.84	124.10 N	76.72 W	145.66	39.75
5885.00	80.10	334.50	5827.93	132.89 N	81.01 W	155.32	44.32
5912.00	88.20	331.60	5830.68	156.80 N	93.17 W	181.89	31.84
5967.00	88.00	325.00	5832.51	203.55 N	122.04 W	236.74	12.00
5999.00	90.10	324.10	5833.04	229.61 N	140.60 W	268.73	7.14
6030.00	91.20	325.40	5832.69	254.92 N	158.49 W	299.73	5.49
6062.00	92.20	324.70	5831.74	281.14 N	176.81 W	331.71	3.81
6094.00	90.90	324.50	5830.87	307.21 N	195.34 W	363.70	4.11
6126.00	90.40	325.60	5830.51	333.44 N	213.67 W	395.70	3.78
6158.00	91.50	326.60	5829.98	360.00 N	231.52 W	427.68	4.65
6189.00	91.80	326.10	5829.08	385.79 N	248.69 W	458.66	1.88
6221.00	91.10	326.80	5828.27	412.45 N	266.37 W	490.64	3.09
6253.00	90.40	327.00	5827.86	439.26 N	283.84 W	522.62	2.28
6285.00	90.90	327.10	5827.49	466.11 N	301.24 W	554.60	1.59
6316.00	90.10	327.30	5827.22	492.16 N	318.04 W	585.57	2.66
6348.00	88.50	326.60	5827.61	518.98 N	335.49 W	617.55	5.46
6379.00	91.40	327.00	5827.64	544.92 N	352.46 W	648.53	9.44
6411.00	91.10	327.30	5826.94	571.80 N	369.81 W	680.50	1.33
6442.00	91.20	327.00	5826.32	597.83 N	386.63 W	711.48	1.02

SAMPLE DESCRIPTIONS

OPERATOR: MOBIL

WELL NAME: RATHERFORD UNIT #29-31 NW 1-A HORIZONTAL LATERAL LEG #3

DEPTH	LITHOLOGY
5705.00 5720.00	"LS ltbn-tn-crm, rr offwh, crpxl-micxl, dns-cln, chk-plty ip, v sl anhy-rr ANHY incl, occ dol, v rr mic fos, tt, NFSOC w/thn intbd DOL brn-mbrn, crpxl-micxl, cln-dns, occ chk, arg, sl lmy, tt, NFSOC & v thn SH blk-dkgy, sbplty, mica, calc-dol, v sl carb TR CMT CVGS"
5720.00 5730.00	"LS pred ltbrn-tan, AA, dns-cln NFSOC thn DOL AA, incr arg ip, tt NFSOC, sl incr blk carb SH AA, scat tan-smky gy CHT frag"
5730.00 5750.00	"LS tan-brn-dkbrn, micxl, occ crpxl, rthy-chk, occ cln-dns, v rr mic fos, scat CHT frag AA, occ sl dol, tt-v rr intxl POR, v rr spty bri yel FLOR, n vis STN, v p slow dif CUT w/thn brn-dkbrn micxl DOL incl arg-v lmy rr intxl POR, v p spty FLOR-slow dif"
5730.00 5750.00 5745.43 0	"CUT, n vis STN; rr thn dkgy-dkgybrn-blk SH lams-carb, dol-calc, sl mica, occ v sl slty"
5750.00 5760.00	"LS tan-brn-crm, rr wh, crpxl-micxl, rthy-dns, occ chk, sl anhy, tt, NFSOC w/intbd brn-mgybrn micxl DOL rthy occ cln arg ip v rr mic fos v rr intxl POR, rr bri yel FLOR, n-v p vis STN, v p slow dif CUT, occ blk SH AA, rr CHT frag"
5760.00 5770.00	"LS AA, dns sl chty dol ip tt NFSOC & thn inbd DOL arg mrly ip tt NFSOC, scat thn blk-dkgy SH ptgs, rr brn-tan CHT frag"
5770.00 5780.00	"LS & DOL AA bcmg v mrly tt NFSOC, incr dkgy-dkgybrn-blk SH sbblky-sbplty mica carb sl slty dol-calc w/v thn dkgy-dkbrn CHT frag"
5780.00 5790.00	"LS crm-wh-ltgy, occ tan, crpxl-micxl, rthy-slty, occ v sl sdy, mica ip, n vis POR, NFSOC, w/thn rthy brn DOL tt NFSOC & thn SH AA"
5790.00 5800.00	"LS crm-wh, bcmg tan-ltbrn, crpxl-micxl, rr vfxl-gran, pred dns-chk-slty AA, w/thn stks alg mat, tt-tr intxl-pp vug POR, mfr dull-bri yel FLOR, tr brn-rr blk STN, mfr-fr slow-mod fast stmng CUT w/v thn DOL-SH & v rr CHT AA"
5800.00 5820.00	"LS crm-tan, occ wh-ltgy, rr brn, crpxl-micxl, rthy-chk, occ dns, sl anhy, occ dol, bcmg mrly ip, tt, NFSOC, w/v thn stks m-dkbrn-gybrn micxl DOL incl-lmy v sl slty arg mrly-grdg to dol MRLST ip, rr thn blk carb SH prts-v rr CHT frag, occ ANHY incl"
5820.00 5830.00	"LS-DOL AA v rr mic fos, bcmg pred SH blk-dkgy sbblky-sbplty, fis ip, sl mica, v sl slty, calc-dol, carb-sooty, w/v rr LS & DOL incl"
5830.00 5840.00	"PRED BLK SH AA, bcmg LS crm-tan-brn, crpxl-micxl, rthy-dns, v sl arg, occ anhy, tt-v rr frac-intxl POR-ANHY fl, NFSOC & v thn brn-mbrn-gybrn micxl lmy arg DOL lams NFSOC"

DEPTH

LITHOLOGY

5840.00 5850.00 "LS tan-ltbrn,rr crm,crpxl,dns,tt AA,bcmg micxl-vfxl,gran-micsuc,oc-oom-v sl alg GRNST,rr v thn plty PKST intcl,tt-mg intxl-tr ool-v rr alg POR,fr dull-bri yel FLOR,n-fr ltbrn-v rr blk STN,n-mfr slow-mod fast stmg CUT,w/v rr DOL-SH CVGS "

5850.00 5860.00 "LS AA,pred ooc-oom v sl alg GRNST,mfr-fr POR-FLOR-STN-CUT AA"

5860.00 5880.00 "LS tan-ltbrn-brn,crpxl-vfxl,gran-misuc ip,pred ooc-oom v sl alg GRNST,rr thn scat dns crm-tan v sl ool PKST lams-intcl,rr DOL cmt-v rr ANHY xl-POR fl,mfr-mg ool-fr intxl-v rr alg POR,fr dull-bri yel FLOR,fr brn STN,rr blk dd o STN,fr-mg slow-mod fast CUT"

5880.00 5912.00 "LS tan-ltbrn,occ brn,rr crm-offwh,micxl-vfxl,gran-micsuc ip,pred ooc-oom GRNST w/v rr alg mat,scat thn dns occ chk-plty v sl ool PKST frag-intcl,sl DOL cmt,occ anhy-ANHY xl-POR fl,fr-g ool-tr intxl-v rr alg POR,fr-g bri-dull yel FLOR,mfr-fr brn-ltbrn STN,tr blk dd o STN,fr-mg slow-mod fast-tr fast stmg mlky CUT"

5912.00 5930.00 "LS tn-ltbn-occ bn,sl mott,mic-pred vf xln,grn-microsuc-suc mtx,pred oom/ool sl alg ool GRNST,rr calc frac flgs,sl dol,sl anhy-rr ANHY xls;pred oom/ool w/alg- microsuc fab POR,even dul-mbri yelgld FLOR,f-slo strmg dif CUT,pred mf-mg ltbn-mbn o STN"

5930.00 5950.00 "LS AA, pred mf-mg ool to scat oom/ool w/sl alg dev fab POR,even dul-mbri w/spty bri yel FLOR,f-slo strmg dif CUT,pred mf-mg ltbn-mbn w/rr blk dd o STN res"

5950.00 5980.00 "LS ltbn-mbn-tn-occ dkbn,sl mott-mott,pred vf xln-tr mic xln,grn-microsuc mtx,sl dol,occ sl anhy-v rr ANHY xls,sl alg dev,pred GRNST;pred mf-mg mbn-ltbn-occ dkbn o STN w/scat blk dd o STN flg casts,f-mbri yelgld FLOR,fr-slo strmg dif CUT"

5980.00 6000.00 "LS mbn-ltbn,mic-pred vf xln,grn-microsuc mtx,sl dol, pred oom/ool ool sl alg GRNST,v rr dns sl ool sl plty PKST,sme calc/anhy fld casts,v rr carb SH prtgs,rr chky mat;pred mbn-dkbn o STN,mf-f slo strmg dif CUT,even dul-bri yelgld FLOR"

6000.00 6030.00 "LS AA,incr in oom to ooc fab POR,mg bn-dkbn o STN,pred GRNST,rr dns ool to sl ool PKST,ool to pel,rr ANHY xls,v rr carb mat"

6030.00 6060.00 "LS AA,pred reduced to mg oom to ooc ool sl alg microsuc fab POR,even mbri-spty bri yelgld FLOR,fst to f slo strmg dif milky ring CUT,pred mf-mg mbn-bn-occ dkbn o STN, rr blk dd o STN flg casts"

6060.00 6090.00 "LS mbn-dkbn-ltbn,mott,mic-pred vf xln,grn-microsuc mtx,occ mdns mtx ip,pred ool rich oom/ool sl alg GRNST,rr dns dkbn o STN,rr foss frgstr calc frac flgs;pred mf-f oom to ooc ool sl alg fab POR,even dul-bri yelgld FLOR,tr fst to pred f-mg slo strmg CUT"

DEPTH	LITHOLOGY
6090.00 6120.00	"LS AA, FLOR AA, CUT AA, o STN AA"
6120.00 6150.00	"LS bn-dkbn, mott,mic-pred vf xln,mdns mtx ip,pred grn-microsuc mtx,pred ool rich oom ooc v sl alg GRNST w/rr dns ool to sl ool occ plty & sl chlky PCKST,sl dol, v rr ANHY xls,rr chlky mat"
6150.00 6180.00	"LS AA, pred pr- g oom to ooc w/ ool to sl alg-microsuc & intrxln fab POR, mf-mg bn-dkbn o STN, tr blk dd o STN flg casts, fst dif to f-slo strmg mlky ring CUT,mbri-bri yelgld FLOR"
6180.00 6210.00	"LS mbn-bn-occ dkbn & ltbn, mott,mic-vf xln, microsuc-grn mtx, GRNST AA,rr PCKST AA,rr ANHY xls-v sl anhy, rr. chlky mat,v rr carb SH prtgs, sl rthy,CUT AA,FLOR AA, o STN AA,POR AA"
6210.00 6240.00	"LS bn-dkbn,mic-pred vf xln,grn-microsuc mtx,sl dol, pred oom/ool ool sl alg GRNST,v rr dns sl ool sl plty PKST,sme calc/anhy fld casts,v rr carb SH prtgs,rr chlky mat;pred mbn-dkbn o STN,mf-f slo strmg dif CUT,even dul-bri yelgld FLOR"
6240.00 6270.00	"LS mbn-dkbn,mott,pred vf xln-mic xln,grn-microsuc mtx,sl dol,occ sl anhy-v rr ANHY xls,sl alg dev,pred ool oom/ool GRNSTw rr dns PKST, mf-mg bn-dkbn o STN w/scat blk dd o STN flg casts,f-mbri yelgld FLOR,fr-slo strmg dif CUT,pred ool to oom/ool fab POR"
6270.00 6300.00	"LS AA, pred mf-mg ltbn-bn to dkbn w/scat blk ss o STN flg casts & coating calc frac flgs-anhy, even mbri-bri yel FLOR,fst dif to mg-slo strmg mlky CUT"
6300.00 6330.00	"LS ltbn-bn, mott,mic-vf xln,mdns mtx ip,grn mtx,sl dol,pred oom/ool ool GRNST w/rr dns sl ool to ool PKST,pred reduced-mg omm to ooc fab POR,mf-mg ltbn-bn o STN w blk dd o STN res,fst dif CUT to fr slo strmg CUT,mbri yelgld FLOR"
6330.00 6360.00	"LS AA,even dul-bri yelgld FLOR,fst dif CUT to f-mg slo strmg mlky ring CUT,mf-mg ltbn-bn o STN w/abunt blk dd o STN flg casts"
6360.00 6390.00	"LS ltbn-bn-occ dkbn,mott,mic-vf xln,mdns mtx ip to grn mtx,rr dns mtx-PCKST,pred ool rich oom/ool GRNST, pred reduc-mg oom/ool fab POR w/intrxln fab POR v rr alg fab POR,FLOR AA,o STN AA,CUT AA"
6390.00 6430.00	"LS tan-ltbrn,occ crm-brn,micxl-vfxl,gran-misuc ip,pred ooc-oom GRNST,w/scat stks dns sl ool anhy ip PKST intcl,v sl dol-occ anhy-rr ANHY fl POR,fr-mg intxl-ool POR,mg bri yel FLOR,fr brn STN,tr blk dd o STN,fr-mg mod fast-mfr fast stmg mlky CUT"
6430.00 6450.00	"LS AA,sl decr intxl POR,scat ANHY xl-incl-tr POR fl,mg ool-mfr intxl POR,mfr-fr bri-tr dull yel FLOR,mfr-fr ltbrn-tr dk brn STN,rr-tr blk dd o STN,mfr-fr slow-mod fast-rr fast stmg CUT "
6450.00 6460.00	"LS AA,scat dns PKST intcl-frag,occ ANHY xl-incl,POR-FLOR-STN-CUT AA"

DEPTH	LITHOLOGY
6460.00 6480.00	"LS tan-ltbrn, occ brn, micxl-vfxl, gran-misuc ip, pred ooc-oom GRNST, w/rr scat stks dns sl ool anhy ip PKST intcl, v sl dol-anhy-rr ANHY xl-fl POR, fr-mg ool-fr intxl POR, mg bri yel FLOR, fr ltbrn-brn STN, tr blk dd o STN, fr-mg mod fast-mfr fast stmg mlky CUT"
6480.00 6500.00	"LS AA, w/incr amnts & bcmg dns sl ool occ chk crm tt PKST intcl-lams, fr intxl-ool POR, fr-mfr bri-dull yel FLOR, decr STN, mg slow-mod fast-mfr fast stmg mlky CUT"
6500.00 6530.00	"LS pred ooc-oom GRNST, w/incr amnts dns sl ool occ chk anhy sl dol tt crm-tan PKST intcl-lams, mfr-fr intxl-tr ool POR, incr tt, mfr-fr bri-rr dull yel FLOR, mfr ltbrn-rr brn STN, rr-sl tr blk dd o STN, incr slow-pred mfr mod fast stmg mlky CUT"
6530.00 6560.00	"LS tan-ltbrn, occ brn-rr crm, crpxl-vfxl, occ gran-micsuc, pred ooc-oom GRNST w/incr amnt dns sl ool occ anhy PKST intcl-lams, v sl dol, occ ANHY cmt-POR fl, tt-fr intxl-ool POR, fr bri-tr dull yel FLOR, mfr brn-rr blk STN, fr slow-tr-mfr mod fast-rr fast stmg CUT"
6560.00 6590.00	"LS pred tan-ltbrn GRNST AA, rr scat dns PKST frag-intcl, mg-g bri yel FLOR, fr-mg intxl-tr ool POR, tr-fr ltbrn-rr brn STN, mfr-fr mod fast-fast-mg slow stmg mlky CUT"
6590.00 6600.00	"LS tan-ltbrn, occ brn, crpxl-vfxl, occ gran-micsuc, pred dns ooc-sl oom GRNST, w/dns sl ool occ anhy v tt sl plty PKST mtx-intxl-v rr lams, v sl anhy-dol ip, rr ANHY fl POR-v rr trnsf CHT frag, mfr-fr bri-tr dull yel FLOR, mfr intxl-fr ool POR, tr brn STN, fr CUT"
6600.00 6620.00	"LS AA, incr dns v sl ool-ooc PKST, v dns mtx in POR, tt-fr intxl-ool POR, mfr-fr bri-tr dull yel FLOR, mfr brn STN-tr-mfr blk dd o STN, mfr-fr slow-tr mod fast-fast stmg mlky CUT"
6620.00 6630.00	"LS brn-occ ltbrn, pred ooc-oom GRNST, v rr scat dns PKST intcl, rr ANHY incl, mg ool-mfr intxl POR, fr bri yel FLOR, mfr ltbrn-tr brn STN-sl tr blk dd o STN, mg mod fast-tr fast stmg mlky CUT"
6630.00 6650.00	"LS tan-ltbrn, tr crm-ltgy, micxl-vfxl, gran, micsuc ip, pred ooc-sl oom GRNST w/scat dns sl ool anhy occ chk-plty PKST intcl-v rr lams, v sl anhy-dol ip, rr ANHY xl-POR fl, fr-mg bri-fr dull yel FLOR, mg intxl-fr ool POR, fr brn-tr blk STN, fr-mg mod fast-fast CUT"
6650.00 6670.00	"LS AA, pred g ooc-sl oom GRNST, w/scat dns sl ool sl chk-plty occ anhy PKST intcl-frag, pred g intxl-ool POR, fr dull-bri yel FLOR, fr ltbrn-brn STN-tr-mfr blk dd o STN, fr-mg mod fast-fr fast stmg mlky CUT"
6670.00 6700.00	"LS tan-ltbrn, rr brn-gybrn, crpxl-vfxl, gran-micsuc ip, pred ooc-sl ool GRNST, v rr alg mat, scat tt sl ool anhy PKST frag-intxl, occ ANHY xl-POR fl, sl dol, mg ool-tr intxl POR, mfr-fr bri-mfr dull yel FLOR, fr brn STN, mfr blk dd o STN, mg mod fast-tr fast stmg CUT"

DEPTH	LITHOLOGY
6700.00 6720.00	"LS AA,scat trnsl ANHY xl-incl,fr-mg ool-intxl POR,mfr-fr bri-dull yel FLOR,fr ltbrn-brn STN-rr-tr blk dd o STN,mfr-fr mod fast-fast-mg slow stmg CUT"
6720.00 6760.00	"LS tan-brn,rr gybrn,micxl-vfxl,gran-micsuc ip,pred ooc-sl ool GRNST,rr tan-ltbrn crpxl sl ool anhy PKST frag-intcl,occ ANHY xl-POR fl,sl dol,mg ool-fr intxl POR,fr-mg bri-fr dull yel FLOR,fr brn STN-,mfr blk dd o STN,mg mod fast-fr fast-mg slow stmg CUT"
6760.00 6790.00	"LS AA,incr gran-micsuc tex,fr-mg intxl-ool POR,FLOR-STN-CUT AA"
6790.00 6820.00	"LS tan-brn,v rr crm,crpxl-vfxl,gran-micsuc ip,pred ooc-sl ool GRNST w/scat crpxl sl ool anhy dns PKST frag-intcl,occ ANHY xl-POR fl,sl dol,mg ool-fr intxl POR,fr bri-dull yel FLOR,fr-mg ltbrn-brn STN,tr blk dd o STN,mg mod fast-tr fast stmg CUT"
6820.00 6840.00	"LS AA,scat dns sl ool PKST intcl,mg ool-fr intxl POR,fr-mg dull-bri yel FLOR,fr ltbrn-tr brn STN,tr-mfr blk dd o STN,fr-mg slow-mod fast-tr fast stmg mlky CUT"
6840.00 6860.00	"LS AA,POR-FLOR-STN-CUT AA"
6860.00 6880.00	"LS tan-ltbrn,rr brn-gybrn,crpxl-vfxl,occ gran-micsuc,pred ooc-v sl ool GRNST w/scat dns sl ool-v rr mic fos anhy PKST intcl-frag,mfr-fr ool-fr intxl POR,mg bri-tr dull yel FLOR,mfr-fr brn-tr blk dd o STN,fr-mg slow-mod fast-mfr fast stmg mlky CUT"
6880.00 6920.00	"LS AA,pred tan sl ooc-oom GRNST,w/incr dns sl ool-ool anhy PKST frag-intcl,mfr ool-mg intxl POR,mg bri-tr dull yel FLOR,tr-mfr ltbrn-rr brn STN,sl tr blk dd o STN,fr-mg slow-mod fast-sl tr fast stmg mlky CUT"
6920.00 6950.00	"LS ltbrn-tan,rr brn,crpxl-vfxl,gran-micsuc ip,pred ooc-oom GRNST,w/tr dns tt ool-v sl ool anhy PKST frag-intcl,v sl dol-anhy,rr ANHY xl-intxl,fr-mg intxl-fr ool POR,fr bri-mfr dull yel FLOR,tr-mfr brn-tr blk STN,mfr-fr mod fast-mg slow-tr fast stmg CUT"
6950.00 6980.00	"LS tan-ltbrn,crpxl-vfxl,gran-micsuc ip,pred sl ooc-ool GRNST,tr dns crpxl sl ool occ anhy PKST frag-intcl,scat ANHY xl-POR fl,v sl dol,mg intxl-mfr ool POR,fr bri-mfr dull yel FLOR,tr-mfr brn STN,rr blk dd o STN,mg slow-mod fast- sl tr fast stmg mlky CUT"
6980.00 7000.00	"LS AA,incr ooc-oom mat,incr ool POR,FLOR-STN-CUT AA"
7000.00 7030.00	"LS AA,sl decr ooc-oom mat,mg intxl-mfr ool POR,mg bri-tr dull yel FLOR,tr-mfr ltbrn-rr brn STN-tr blk dd o STN,fr-mg slow-mod fast-tr fast stmg mlky CUT"
7030.00 7080.00	"LS tan,occ ltbrn,micxl-vfxl,gran-micsuc ip,pred ooc-sl ool GRNST,scat dns sl ool occ anhy PKST frag-intcl,scat ANHY xl-POR fl,sl dol,mg intxl-fr ool POR,fr bri-mfr dull yel FLOR,fr ltbrn STN-tr blk dd o STN,fr-mg slow-mod fast-tr fast stmg mlky CUT"

DEPTH

LITHOLOGY

7080.00 7130.00 "LS AA,incr gran-micsuc,bcmg suc ip,pred sl ooc-occ oom GRNST,w/v rr dns PKST frag-intcl,g intxl-mfr ool POR,fr-mg bri-sl tr dull yel FLOR,mfr ltbrn-rr brn STN-sl tr blk dd o STN,mfr-fr mod fast-sl tr fast stmg mlky CUT,g slow stmg CUT"

7130.00 7180.00 "LS tan-ltbrn,rr brn-crm,micxl-vfxl,gran-micsuc tex,sl suc ip,pred ooc-ool GRNST w/rr tt sl ool anhy PKST intcl,rr ANHY xl-occ POR fl,dol ip,mg intxl-fr ool POR,fr bri-dull yel FLOR,mfr-fr brn STN,tr blk dd o STN,mg mod fast-tr fast stmg mlky CUT"

7180.00 7190.00 "LS AA,pred g ooc-oom GRNST,incr trnsl ANHY incl-rr POR fl,g intxl-mfr-fr ool POR,fr dull-bri yel FLOR,fr ltbrn-brn STN,tr-mfr blk dd o STN,g mod fast-tr fast stmg mlky CUT"

7190.00 7210.00 "LS AA,pred tan,incr intbd crpxl dns anhy v sl ool PKST & PKST frag,sl decr POR-FLOR-STN-CUT"

7210.00 7230.00 "LS tan-ltbrn,crpxl-vfxl,occ gran-micsuc,pred sl ooc-ool GRNST,scat tr dns sl ool occ anhy PKST frag-intcl,rr ANHY xl-POR fl,sl dol,mfr-mg intxl-mfr ool POR,fr bri-mfr dull yel FLOR,tr-mfr brn STN,tr blk dd o STN,fr-mg slow-mod fast-tr fast stmg mlky CUT"

7230.00 7240.00 "LS AA,sl incr ooc-oom fab,incr intxl POR,FLOR-STN-CUT AA"

7240.00 7260.00 "LS tan-ltbrn,occ brn-ltgybrn,micxl-vfxl,occ gran tex,micsuc-suc ip,pred ooc-sl oom GRNST w/scat dns tt sl ool occ anhy PKST intcl,v rr scat trnsl CHT frag-ANHY xl,v rr ANHY fl POR,fr-mg intxl-fr ool POR,fr dull-bri yel FLOR,mfr-fr ltbrn-tr blk STN, fr mod fast-tr fast stmg mlky CUT"

7260.00 7300.00 "LS pred tan-ltbrn AA,occ suc,pred ooc-sl oom GRNST,rr scat dns sl ool PKST intcl w/v rr scat trnsl CHT frag,fr-mg intxl-mfr-fr ool POR,fr dull-bri yel FLOR,mfr-fr ltbrn-brn STN,tr-mfr blk dd o STN,fr-mg mod fast-fast stmg mlky CUT"

7300.00 7320.00 "LS AA,incr & bcmg pred v g ooc-sl oom GRNST w/scat dns crpxl chk ip v sl ool occ anhy PKST intcl-frag fr-mg intxl-mfr ool POR,mfr-fr dull-bri yel FLOR,tr blk dd o STN,fr-mg slow-mod fast-tr fast stmg mlky CUT"

7320.00 7350.00 "LS tan-ltbrn,micxl-vfxl,occ gran-micsuc,pred ooc-sl ool GRNST w/tr crpxl sl ool occ anhy PKST frag-intcl,rr ANHY xl-occ POR fl,dol ip,mg intxl-fr ool POR,fr bri-mfr dull yel FLOR,mfr brn STN-rr blk dd o STN,fr slow-mod fast-tr fast stmg mlky CUT"

7350.00 7390.00 "LS AA,w/tr scat ool dns crpxl occ chk PKST w/rr mic fos,fr intxl-mfr-fr ool POR,fr-mg bri-dull yel FLOR,fr ltbrn-rr brn STN-rr-tr blk dd o STN,fr-mg slow-mod fast-tr fast stmg mlky CUT"

7390.00 7432.00 "LS tan-ltbrn,crpxl-vfxl,gran,occ micsuc-rr suc,pred ooc-sl ool GRNST w/tr dns sl ool occ anhy PKST frag-intcl,tr ANHY xl-POR fl,sl dol,mg intxl-fr ool POR,fr-mg bri-dull yel FLOR,mfr-fr ltbrn STN,rr spty blk dd o STN,mg slow-mod fast stmg mlky CUT,w/v rr trnsl CHT frag"

FORMATION TOPS

OPERATOR: MOBIL

WELL NAME: RATHERFORD UNIT #29-31 NW1-A HORIZONTAL LATERAL LEG #3

FORMATION NAME		SAMPLES MEASURED DEPTH	SAMPLES TRUE VERTICAL DEPTH	DATUM KB:5105'
LOWER ISMAY		5779'	5774'	-669'
GOTHIC SHALE		5821'	5802'	-697'
DESERT CREEK		5836'	5811'	-706'
UPPER DC 1-A ZONE		5844'	5815'	-710'

GEOLOGICAL SUMMARY

AND

ZONES OF INTEREST

The Mobil Exploration and Production U.S., Inc., Rutherford Unit #29-31 Northwest Horizontal Lateral Leg #3 was a re-entry of the Mobil Rutherford Unit #29-31 located in Section 19, T41S, R24E, and was sidetracked in a northwesterly direction from 5705' measured depth, 5704.7' true vertical depth, on November 8, 1998. The lateral reached a measured depth of 7432', true vertical depth of 5846.7' at total depth, with a horizontal displacement of 1700' and true vertical plane of 324.7 degrees on November 10, 1998. The lateral was terminated in the 1-A porosity zone in the Upper Desert Creek Member of the Paradox Formation. The curve and lateral were drilled using fresh water with polymer sweeps as the drilling fluid. The proposed target line was used as a reference point throughout the lateral. The curve and lateral sections were drilled with no significant mechanical problems. There was a flow of 10 to 12 barrels per hour noted while drilling the curve section and a flow of up to 20 to 30 barrels per hour noted while drilling the lateral section. When initially rigging up on the R.U. #29-31 location circulation was lost while preparing the well for the initial curve section of the lateral, but was regained prior to drilling the curve and lateral sections with no further to very minor fluid loss in the curve and lateral sections.

The objective of the Rutherford Unit #29-31 southeast lateral Leg #3 was to penetrate and drill 1700' horizontally in the Desert Creek 1-A porosity zone to identify and define its lithology, and to evaluate the effective porosity of the zone. The 1-A porosity zone, based on the electric logs from the R.U. 29-31 vertical well, appeared to have a very consistent and well developed porosity, thus was the target for drilling in this lateral. The lithology of the best porosity penetrated in the 1-A zone in this northwesterly lateral was predominately an oolitic to oomoldic, very slightly algal limestone grainstone facies, and had a fair to good hydrocarbon and gas show, with fair to good visible porosity and apparent permeability. Only very minor, dense limestone packstones interclasts and very thin streaks were noted in the curve section and lateral section. The limestone grainstone of the 1-A zone have a moderately fair to fair sample show. As the lateral bumped the top of the 1-A zone near the midpoint of the lateral, a very minor increase in dense, very slightly oolitic, occasionally platy and chalky limestone packstone was noted. The dense packstones noted have no to extremely poor porosities, sample and gas shows.

The curve was begun in the upper half of the Upper Ismay on November 8, 1998 before encountering the typical sections of the Lower Ismay, Gothic Shale, Desert Creek and the 1-A porosity bench carbonate cycle of the Upper Paradox Formation.

The curve section was began at measured depth of 5705', 5705' true vertical depth, in the upper half of the Upper Ismay carbonate cycle of the Upper Paradox Formation. The lower Upper Ismay was penetrated from a measured depth of 5705', to a measured depth of 5779', true vertical depth 5774'. This 74' of the Upper Ismay member was a predominately a clean to dense, occasionally argillaceous, tight limestone, with thinly interbedded clean to argillaceous dolomites, very thin black carbonaceous shale partings and scattered chert fragments. The limestones were light gray to cream to white and tan to brown, cryptocrystalline to microcrystalline, clean and dense, with streaks of an earthy to argillaceous to chalky texture, and rare Crinoid fossils. The thin dolomites were tan to brown to gray brown, cryptocrystalline to microcrystalline, earthy to argillaceous, limey, becoming marly with depth, and had scattered Crinoid fossils. The limestones and dolomites had very thin streaks of

intercrystalline porosity, but had no to a very poor sample shows. The porosity in the Upper Ismay has no economic value. The thin scattered shale parting were black to dark gray, some light gray, subblocky to subplaty, occasionally fissile, very slightly silty, micaceous, and calcareous to slightly dolomitic, and had very minor Crinoid fossils. Scattered through out the Upper Ismay carbonates were buff to dark brown, some black chert fragments. The basal carbonates of the Upper Ismay became increasingly marly and graded into the thin, very fossiliferous, carbonaceous Hovenweep Shale. The Hovenweep Shale, which defines the Upper and Lower Ismay contact, was represented by a slight increase in the black carbonaceous, dolomitic to calcareous, occasionally silty shale. This contact is poorly represented in the samples from measured depths of 5775' to 5779', and true vertical depths from 5770' to 5774'.

The top of the Lower Ismay member of the Upper Paradox Formation was picked at a measured depth of 5779', true vertical depth 5774', based primarily on sample identification and a slight decrease in the rate of penetration at the very top of the Lower Ismay. The upper 23' of the Lower Ismay was predominately a very dense, anhydritic, tan to cream to brown, some gray brown, cherty limestone; with very thinly interbedded argillaceous, brown to medium brown, limey dolomite, and very thin black carbonaceous shale partings and rare brown to dark brown chert fragments. This limestone had streaks of well-cemented very silty limestone grainstones, with granular streaks, a trace of chalky texture, slightly to very silty texture. In the upper 5' of this interval, very thin streaks of dense, translucent, anhydrite were noted. The Lower Ismay, from measured depths of 5793' to 5799', was a cream to tan, cryptocrystalline to microcrystalline, occasionally very finely crystalline, dense to algal limestone. This limestone had traces of intercrystalline to good algal porosity, with a moderate sample show. From 5799' to 5810' the limestones of the Lower Ismay became a white to cream to light gray, cryptocrystalline to microcrystalline limestone, with granular streaks, a trace of chalky texture, slightly to very silty, occasionally anhydritic and occasionally dolomitic in part, with scattered Crinoid and microfossils. Some scattered translucent to light to dark brown chert fragments, and very rare thin brown, earthy to slightly argillaceous dolomites. It was also noted that these limestones occasionally graded to very limey siltstones. There was no visible porosity or sample show associated with the limestones and dolomites. The basal 11 feet of the Lower Ismay, from a measured depth of 5810' to a measured depth of 5821', was a very dense, slightly dolomitic limestone packstone and earthy limey dolomites. These limestones and dolomites became slightly to very marly with depth, and had scattered anhydrite interclasts and very rare chert fragments. The basal limestones and thin dolomites had very rare visible intercrystalline to fractured porosity and a very poor sample show. The basal limestones and dolomites of the Lower Ismay carbonates graded into limey to dolomitic carbonaceous shales of the Gothic Shale.

The Gothic Shale was penetrated at a measured depth of 5821', true vertical depth 5802', and gradationally underlies the Lower Ismay. The top of the Gothic was picked at a slight increase in the penetration rate below the dense limestone and dolomite marlstones of the basal Lower Ismay and a slight increase in the amount of black carbonaceous shale in the cuttings. This shale member of the Upper Paradox Formation was seen have a true vertical thickness of 9 feet in this northwesterly direction. This shale is black to dark gray shale, carbonaceous, occasionally grainy to silty, soft to slightly firm, sooty, slightly fissile, subblocky to subplaty, calcareous to slightly dolomitic and slightly micaceous. Very thin partings of dense, very slightly argillaceous, occasionally dolomitic, cream to tan limestones and clean to very argillaceous, limey, brown to medium gray brown dolomites were noted in this shale member. The Gothic overlays the top of the Desert Creek Member with a sharp contact.

The top of the Desert Creek Member of the Upper Paradox Formation was picked at a measured depth of 5836', 5811' true vertical depth, with a slight decrease in penetration rate and a slight increase in the amount of dense limestone packstone in the samples. The Upper Desert Creek transition zone between the Gothic Shale and the 1-A porosity zone had a true vertical thickness of approximately four feet. This transition zone was predominately a dense limestone packstone, which was very argillaceous on occasion and was very slightly fossiliferous. There were very thinly interbeds of argillaceous limey dolomites and very thin black carbonaceous shale partings. The limestones of the

transition zone are light brown to cream to tan, cryptocrystalline to microcrystalline, dense to slightly silty, some chalky to anhydritic and very slightly dolomitic. Scattered in the limestones are very thin, brown, microcrystalline, argillaceous, limey dolomites; some very rare black, dolomitic, slightly micaceous, calcareous, very slightly carbonaceous shales; with rare translucent chert fragments and translucent anhydrite inclusions. The transition zone had a very poor visible intercrystalline to fracture porosity and a very poor sample show. Near the base of the transition zone the dense limestones became increasingly oolitic and graded in to the oolitic to oomoldic limestones of the upper 1-A porosity bench.

The top of the Desert Creek Upper 1-A porosity zone was encountered at a measured depth of 5844', true vertical depth of 5815', with a horizontal displacement of approximately 117'. The top was picked on the lithology becoming predominately a good oolitic to oomoldic limestone grainstone with a significant increase in the penetration rate and background gases. This oolitic to oomoldic limestone grainstones marked the top of the 1-A porosity zone. The oolitic to oomoldic porosity had a true vertical thickness of approximately 41' in this northwesterly direction. These limestone grainstones are tan to light brown to cream, some brown, microcrystalline to very fine crystalline, with traces of granular to microsucrosic texture, a slightly dolomitic cement, and some very rare chert fragments and anhydrite inclusions. The limestones have moderately good oomoldic to oolitic fabric to very poor algal material, with a moderately fair oolitic to fair intercrystalline and very poor algal porosity development. A very minor amount of anhydrite and very rare calcite crystal growth was noted in the oolitic molds as well as in the intercrystalline matrix. The sample show was moderately fair to fair, with a trace to fair of brown to light brown oil stain and had traces of black bitchimum* staining on the crystal faces and molds as well as in oolitic and algal material. The grainstones had a trace to moderately good bright to occasionally dull yellow fluorescence and a moderately fair slow streaming to trace fast streaming cut.

The curve portion of the lateral was completed at a measured depth of 5912', true vertical depth 5830.7', with a horizontal displacement of 182', bearing 331.6 degrees, and an inclination of 88.2 degrees, also on November 9, 1998. Drilling of the curve section was halted 15 vertical feet into the oolitic to oomoldic, very slightly algal limestone grainstone of the 1-A zone, about five and one half (5 ½) feet below the proposed target line. At this point a trip was made to lay down the curve assembly and pickup the lateral assembly.

Drilling of the northwest lateral in the 1-A zone was begun also on the 9th of November, in the Upper Desert Creek 1-A porosity zone of the Upper Paradox Formation. The lateral was slid for the first 73' in order to control horizontal plane direction and to turn the well path upward to approach the proposed target line in the 1-A porosity zone. The lateral was begun in the very good oolitic to oomoldic, occasionally algal limestone grainstone facies. This limestone grainstone was a tan to light brown, occasionally brown, microcrystalline to very finely crystalline, granular to microsucrosic, slightly dolomitic, with rare anhydrite to calcite porosity filling, slight trace of dolomite cement. These limestone grainstones had a fair to good intercrystalline to oolitic porosity, with a slight trace of algal porosity. The sample show in this limestone grainstone of the 1-A zone was predominately a fair to good bright to occasionally dull yellow fluorescence, with a fair to good brown oil stain, scattered black bitchimum* stain, and a moderately good to good streaming milky cut. Scattered through out this oolitic to slightly algal limestone grainstone, were scattered dense, slightly oolitic to very rarely fossiliferous, occasionally chalky to platy, light gray, cryptocrystalline, limestone packstones.

As the well path was slowly turned toward 90° and then continued to be turned slowly upward toward the proposed target line, the lithology remained the oolitic to oomoldic, slightly algal limestone grainstone. Upon reaching a measured depth of 6222', 5861' true vertical depth, and a horizontal displacement of 450', the lateral approached the proposed target line. From 6222' measured depth, 450' of horizontal displacement to a true vertical depth of 5825.6', a measured depth of 6500', with a horizontal displacement of 769' the lateral was pushed slowly upward by the zone. Through out

this interval short slides were made to control the rate of climb and in an attempt to turn the lateral toward 90°. Upon reaching the true vertical depth of 5825.6' the top of the 1-A zone was bumped tuning the well path downward. As the well path was being slowly pushed upward through this interval, the lithology remained in the slightly oolitic to oomoldic, occasionally algal limestone grainstone. Only very minor amounts of dense, cream to white to light gray, occasionally brown, tight, slightly oolitic limestone packstone partings to laminations were noted.

When the top of the 1-A zone was bumped and turned the well path downward. The lateral was approximately 5' above the proposed target line. As the well path was continued downward toward the proposed target line, very thin random streaks of dense limestone packstone were encountered from a horizontal displacement of 818' to 890', and true vertical depths of 5827.5' to 5831'. The proposed target line was intersected again at a horizontal displacement of 900', 6630' measured depth and a true vertical depth of 5833'. As the well path continued slowly downward, the lateral turned approximately level at a true vertical depth of 5841', a measured depth of 6854', and a horizontal displacement of 1122'. With the exception of the interval 818' 890' when the random packstone streaks were encountered, the lithology remained in the very good oolitic to oomoldic limestone grainstones. This limestone grainstone also had very good visible porosity and sample show.

From the measured depth of 6854', to a measured depth of 7160', a true vertical depth of 5843.8', and a horizontal displacement of 1429', the lateral was drilled in the very good oolitic to oomoldic limestone grainstones at a very shallow downward angle of 89.5 degrees. At the measured depth of 7160', the well path turned upward at a shallow angle of 90.8°, until reaching a measured depth of 7293', 5842' true vertical depth, with a horizontal displacement of 1561', when the top of the 1-A zone was approached. The oolitic to oomoldic limestone grainstone remained the dominant lithology throughout this interval.

As the top of the 1-A zone was approached the well path turned downward and continued to the lateral's termination at a measured depth of 7432', 5846.7' true vertical depth and a horizontal displacement of 1700', the lithology no visible to only very minor variations in the lithology. The variation in the lithology was the very minor increase in the amount of dense, slightly oolitic, chalky to slightly platy, anhydritic limestone packstone interclasts and very thin partings as the lateral approached and may have brushed the top of the zone. There was only a very minor visible decrease in the penetration rate as the top was approached, but the lithology remained predominately the slightly oolitic and oomoldic, very rarely algal limestone grainstone, with only a very minor decrease in the visible porosity and sample show. When the lateral was terminated, at the measured depth of 7432', the well path was two and one half (2 ½) feet below the proposed target line. The lithology of the 1-A zone at the end of the northwest lateral remained in the very good, oolitic to oomoldic, slightly algal limestone grainstone porosity. This limestone was still tan to light brown, rare brown to cream, microcrystalline to very fine crystalline, granular to microsugrosic, occasionally traces of sugrosic texture, slightly dolomitic cement, rare calcite and anhydrite cement and porosity filling. These grainstones had a fair to good oolitic to intercrystalline porosity, with a very minor amount of algal fabric. The sample show through the lateral was very consistent, ranging from moderately fair to good, with the majority of the lateral having a moderately good sample show. These limestone grainstone had a predominately moderately good to moderately fair bright yellow fluorescence, a trace to fair light brown to brown oil stain, with rare to occasionally trace amounts of black bitchimum* stain, and a moderately fair to good fast to moderately fast, occasionally slow streaming milky cut. Scattered through out the length of the lateral were very rare to traces of dense, very slightly oolitic limestone packstone, with minor microfossils. These dense limestone packstones increased slightly when very thin random hard streaks were encountered near the top and when the top of the 1-A zone was approached and bumped.

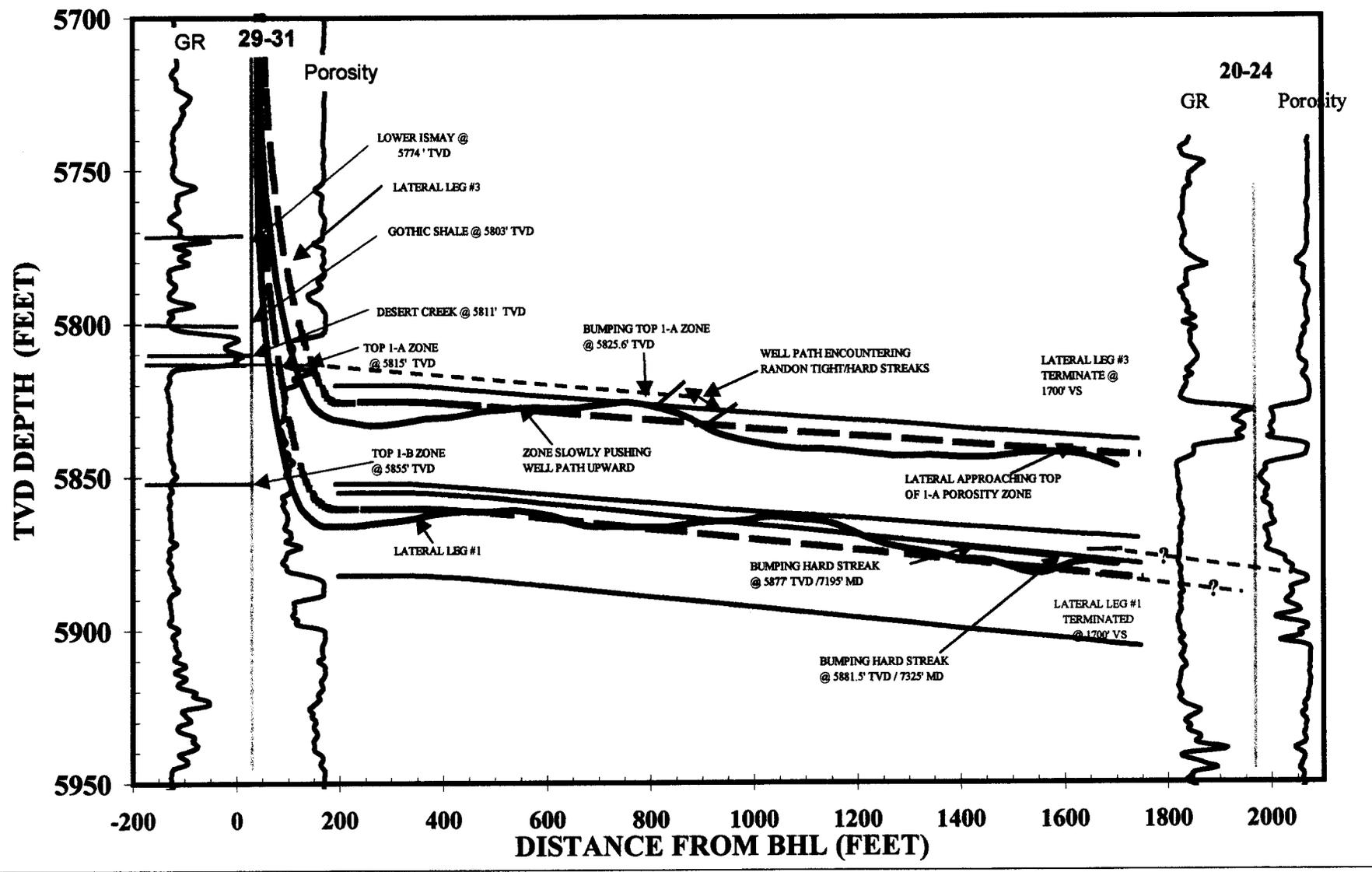
The top was possibly encountered twice; once at a measured depth of 6500', with a true vertical depth of 5525.6', and a horizontal displacement of 769', then possibly at the measured depth of 7293', true vertical depth of 5842', and a horizontal displacement of 1561'. The top 1-A zone had an apparent dip of 89° over the length of the lateral. The lateral reached its termination point on November 10, 1998', near the top and in the best porosity in the 1-A zone, at a measured depth of 7432', 5846.7' true vertical depth, and a horizontal displacement of 1700'. From the beginning of the lateral section to its termination, a flare from 3' in height increasing up to approximately 12' was seen. The lateral began making minor amounts of oil and gas, also an increasing flow of water, as soon as the good porosity in the 1-A and 1-A zones were encountered.

In tracking the lateral in this northwesterly direction, the oolitic to oomoldic limestone grainstone porosity had good sample shows, which remained relatively consistent through out the lateral's length. The lateral was drilled though out its length in upper 10' to 15' of the 1-A zone. From the horizontal displacement of 818' to 890', the zone showed an increase in the amount of platy, chalky limestone packstone, as scattered thin streaks of dense packstone were encountered after the top of the 1-A zone had been bumped. The 1-A zone showed a very consistent oolitic to oomoldic, very slightly algal limestone grainstones, with good oolitic to intergranular porosity and very rare algal porosity, and a good sample show. The scattered dense limestone packstones were of no significance in this lateral. The well path began varying from the proposed well path while drilling the curve section of the lateral, which was completed 5 ½' low to the target line. The lateral crossed the target line several times and predominately paralleled the target line through out its length. The lateral varied from the target line a maximum of 6' after beginning the lateral, with the lateral being terminated 5 ½' below the proposed target line.

From the beginning of the 29-31 northwest lateral leg #3 to its termination on November 10, 1998, at a measured depth of 7432', 5846.7' true vertical depth and a horizontal displacement of 1700', the porosities in the upper 10' to 15' of the 1-A zone remained relatively consistent. The oolitic to intercrystalline to very rare algal porosities are well enough developed to enhance the production performance of the R. U. #29-31 well. The limestone grainstone lithology did not appear to thin at any point within the lateral section, and all though thin streaks of packstone were encountered, they will not interfere with the lateral's production.

*The black residual staining has been called by Dr. Dave Eby & others as "bitchimum" and is also known as "dead oil" ("dd o stn" on mud logs). This staining is associated with the movement of oil over long periods of time and is a good indicator of producible hydrocarbons when associated with productive porosities, but can also be found in porosities that have been filled by anhydrites and other material at later dates.

MOBIL, Ratherford Unit #29-31, Northwest Lateral



Form 3160-4
(July 1992)

FEB 01 1999

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN DUPLICATE*

(See other instructions on reverse side)

FORM APPROVED
OMB NO. 1004-0137
Expires: February 28, 1995

DIV. WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

5. LEASE DESIGNATION AND SERIAL NO. 14-20-603-407

6. IF INDIAN, ALLOTTEE OR TRIBE NAME NAVAJO TRIBAL

7. UNIT AGREEMENT NAME RATHERFORD UNIT

8. FARM OR LEASE NAME, WELL NO. RATHERFORD 29-31

9. API WELL NO. 43-037-30914

10. FIELD AND POOL, OR WILDCAT GREATER ANETH

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA SEC. 29, T41S, R24E

12. COUNTY OR PARISH SAN JUAN

13. STATE UT

14. PERMIT NO. 43-037-30914

DATE ISSUED 7-15-83 ORIG

15. DATE SPUNDED 10-23-98

16. DATE T.D. REACHED 11-12-98

17. DATE COMPL. (Ready to prod.) 12-17-98

18. ELEVATIONS (OF, RKB, RT, GR, ETC.)* 5093' GR; 5105' RKB

19. ELEV. CASINGHEAD

20. TOTAL DEPTH, MD & TVD **#24 & 31

21. PLUG, BACK T.D., MD & TVD **#24 & 31

22. IF MULTIPLE COMPL., HOW MANY*

23. INTERVALS DRILLED BY →

ROTARY TOOLS X

CABLE TOOLS

24. PRODUCING INTERVAL(S), OF THIS COMPLETION - TOP, BOTTOM, NAME (MD AND TVD)* ** LAT 1, (5741-7476' TMD)(5741-5879'TVD) LAT 2, (5723-7424'TMD)(5723-5844'TVD)

25. WAS DIRECTIONAL SURVEY MADE YES

26. TYPE ELECTRIC AND OTHER LOGS RUN NO

27. WAS WELL CORED NO

CASING RECORD (Report all strings set in well)

CASING SIZE/GRADE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	TOP OF CEMENT, CEMENTING RECORD	AMOUNT PULLED
13 3/8"	48#	124'	18"	250 SXS SURFACE	
9 5/8"	36#	1599'	12 1/4"	300 SXS CMT TOP ANNULUS	
7"	23 & 26#	5962'	8 3/4"	700 SXS TOC @3036'	
ORIGINAL	CASING	UNDISTURBED			

LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)
					2 3/8"	5530'	5530'

31. PERFORATION RECORD (Interval, size and number)
*LAT 3, 1398' FNL & 967' FWL, ALL F/SURF SPOT
** LAT #3 (5696-7432'TMD)(5696-5847'TVD)

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
5915-7432'	LAT 3 - 21000 GALS 15% NEFF
5892-7424'	LAT 2 - 21250 GALS 15% HCL
5932-7476'	LAT 1 - 15810 GALS 15% HCL

33. PRODUCTION

DATE FIRST PRODUCTION 12-23-98

PRODUCTION METHOD (Flowing, gas lift, pumping - size and type of pump) PUMPING

WELL STATUS (Producing or shut-in) PRODUCING

DATE OF TEST 12-23-98

HOURS TESTED

CHOKE SIZE

PROD'N. FOR TEST PERIOD →

OIL - BBL. 200

GAS - MCF. 102

WATER - BBL. 1442

GAS - OIL RATIO 510

FLOW. TUBING PRESS.

CASING PRESSURE

CALCULATED 24-HOUR RATE →

OIL - BBL.

GAS - MCF.

WATER - BBL.

OIL GRAVITY - API (CORR.)

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.)

35. LIST OF ATTACHMENTS
DIRECTIONAL SURVEY

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records
SIGNED Shirley Houchins TITLE SHIRLEY HOUCHINS/ENV & REG TECH DATE 1-27-99

*(See Instructions and Spaces for Additional Data on Reverse Side)

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

WTC
3-30-99
RJK

ATTACHMENT - FORM 3160-5
RATHERFORD UNIT 29-31
14-20-603-353
NAVAJO TRIBAL
SAN JUAN, UTAH

- 10-23-98 CALLED B.L.M. AT 11:01 ON 10-22-98 TALKED TO WAYNE TOWNSEND, INFORMED OF INTENT TO MOVE ON WELL AND PREP. FOR DRLG. TOOLS. OK. CALLED NAVAJO E.P.A. AT 11:06 ON 10-22-98. TALKED TO CHARMAINE HESTEEN, INFORMED OF INTENT TO DIG AND LINE EARTH PIT. OK. MIRU NAVAJO WEST RIG #36. RU PUMP, PIT AND LINES.
- 10-24-98 SI TBG. AND CSG. PRESSURE AT 07:30 WAS 100 PSI. RU AND KILL WELL. POH AND LAY DOWN RODS AND PUMP. ND WELL HEAD. NU BOPE RELEASE TBG. ANCHOR. POH WITH TBG. SHUT WELL IN.
- 10-25-98 SHUT IN CSG. PRESSURE AT 07:30 WAS 0 PSI. MAKE-UP GUIBERSON RETV. BRIDGE PLUG. RIH TO 5604.89'. SET BRIDGE PLUG. RELEASE FROM BRIDGE PLUG. RU AND TEST CSG. TO 1000 PSI., 30 MIN. OK. SIFN.
- 10-26-98 SI PRESSURE AT 07:30HRS WAS 0 PSI. RU AND POOH LAYING DOWN PROD. TBG, ND BOP, CAP WELL, ND PROD. FLW LINE FROM WELL HEAD, RD PUMP, PIT AND FLOW LINE FROM WELL HEAD, RDMO PUMP, PIT , AND FLW LNS. REPL 2" VLVS ON TBG HANGER, ADJUST TBG HD, RDMO. MONTEZUMA RIG #36.
- 10-28-98 MI NAVAJO RIG #25. (NOTIFIED JIM THOMPSON W/STATE OF UTAH ABOUT MOVING IN AT 0730 HRS. 10-28-98).
- 10-29-98 FINISH MOVING IN AND RU ROTARY RIG. NU BOP STACK, CHOKE MANIFOLD, GAS SEPARATOR FLARE LINES, ETC. TEST BOP STACK. TIH AND RETRIEVE RBP. WL SET TIW PKR. @ 5759', TRIPPING IN HOLE W/ANCHOR LATCH ASSY. AND UBHO.
- 10-30-98 FINISH IN HOLE W/ANCHOR LATCH ASSY. AND UBHO AND LATCH INTO TIW PKR. AT 5759'. PUMP DOWN DP TO CLEAN. RU GYRO SURVEY TO SURFACE. TOOH W/ANCHOR LATCH ASSY.
- 10-31-98 FINISH IN HOLE W/ANCHOR LATCH ASSY. AND WHIPSTOCK. LATCHED INTO PKR. AT 5759'. MILL WINDOW FROM 5741-5743' W/STARTER MILL. PU CSG. AND WATERMELON MILL. TIH W/SAME ASSY. MILL WINDOW FROM 5742-5747'.
- 11-1-98 FINISH MILLING WINDOW IN 7" CSG. (TOP WINDOW AT 5740', BTM. WINDOW AT 5749' FORMATION TO 5750'. TOP OF WS AT 5741'). POOH LAY DOWN MILLS. FINAL REPORT LAT. #1. MAKE UP CURVE BUILDING. TIME DRILL FROM 5750-52'. SLIDE DRILL W/WT. FROM 5752-81' RD GYRO DATA. SLIDE DRILL AND SURVEYS W/MWD FROM 5781' TO TD OF CURVE AT 5932' (PROJECTED SURVEY AT TD OF 5932', 90 ANGLE, 322 AZ., 5864.79 TVD, 158.09 VS. PREPARE TO POOH.
- 11-2-98 POOH LAYING DOWN TBG. AND CURVE BUILDING ASSY. MAKE UP LATERAL ASSY. SLIDE/ROTATE DRILL AND SURVEYS FROM 5932-6840' LAST SURVEY AT 6793' MD, 91.40 ANGLE, 314.80 AZ., 5863.11 TVD, 1018.21 VERTICAL SECTION. (908' IN 16.5 HRS.)
- 11-3-98 SLIDE/ROTATE DRILL AND SURVEYS FROM 6840' TO TD OF 7476' MD, TVD 5878.62, ANGLE 88.90, AZ. 316.90, VERTICAL SECTION 1700.52. PUMP SWEEP AND CIRC. TO SURFACE. POOH LAYING DOWN LATERAL ASSY. ENGAGE WHIPSTOCK W/SUPERHOOK AND RELEASED.

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- 11-4-98 FINISH OUT OF HOLE W/WHIPSTOCK #1 AND LAY DOWN. MAKE UP WHIPSTOCK #2, STARTER MILL, AND ORIENT WHIPSTOCK TO 126 GTF W/KEYWAY AT 281' GTF. RIH W/DC'S AND INTO TIW PKR. AT 5759'. CUT WINDOW IN 7" CSG. FROM 5723-25'. CIRC. SWEEP TO SURFACE. TOO H LAY DOWN STARTER MILL. TIH W/CSG. AND WATERMELON MILL. CUT WINDOW IN 7" CSG. FROM 5722-30' MILL QUIT CUTTING. START OUT OF HOLE W/MILLS.
- 11-5-98 FINISH OUT OF HOLE W/MILLS. FINISH CUTTING WINDOW IN 7" CSG. TO 5732', (1' FORMATION), (TOP OF WHIPSTOCK AT 5723'), (TOP OF WINDOW 5722'), (BTM. WINDOW 5731'). FINAL REPORT LATERAL 2. PU CURVE BUILDING ASSY. TIH W/CURVE BUILDING ASSY. RU GYRODATA. TIME DRILL AND DRILL W/WT. FROM 5732-5762'.
- 11-6-98 SLIDE/ROTATE DRILL AND SURVEYS FROM 5792'. PROJECTED SURVEY AT TD. OF 5892' MD, 5831 TVD, 90 ANGLE, 126.40 AZ., 69.963 VS. PUMP AND CIRC. SWEEP TO SURFACE. POOH LAYING DOWN CURVE ASSY. PU LATERAL ASSY TIH. SLIDE/ROTATE DRILL AND SURVEYS FROM 5892-6222'. LAST SURVEY AT 6157' MD, 89.40 ANGLE, 126.60 AZ., 5835.32 TVD, 333.93 VERTICAL SECTION.
- 11-7-98 SLIDE/ROTATE DRILL AND SURVEYS FROM 6222' TO TD OF 7424', PUMP SWEEP AND CIRC. FINAL REPORT LAT. 2A1.
- 11-8-98 POOH LAYING DOWN WHIPSTOCK #2. WHIPSTOCK #3, STARTER MILL, LATCH INTO TIW PKR. AT 5759' CUT WINDOW FROM 5696-98' TOO H LAYING DOWN STARTER MILL. PU CSG. WATERMELON MILL. MILL WINDOW FROM 5695-5704' PLUS 1 FT. FORMATION TO 5705'. POOH LAYING DOWN MILLS. FINAL REPORT LAT 3.
- 11-9-98 PU CURVE BUILDING ASSY. RU GYRO DATA AND ORIENT TOOLFACE. TIME DRILL FROM 5705-5730'. PULL GYRO AND RD WL. SLIDE/DRILL AND SURVEYS FROM 5730' TO T.D. OF 5912'. (PROJECTED SURVEY AT T.D. OF 5912' MD, 5830.26 TVD, 90 ANGLE, 334.50 AZ., 181.82 VERTICAL SECTION. STOOD REMAINING DP BACK.
- 11-10-98 FINISH OUT OF HOLE LAYING DOWN CURVE BUILDING ASSY. PU LATERAL ASSY. SLIDE/ROTATE DRILL AND SURVEYS FROM 5912' TI T.D. IF 7432' PROJECTED SURVEY AT TD OF 7432' MD, 5846.71 TVD, 86.20 ANGLE, 324.70 AZ., 1700.22 VERTICAL SECTION.
- 11-11-98 FINISH CIRC. SWEEP TO SURFACE. POOH LAYING DOWN LATERAL ASSY. PU TIH, GUIBERSON PKR. AT 5587' (WINDOW AT 5694') W/EOT AT 5915' (END OF CURVE AT 5912'). RDMO.
- 11-12-98 FINAL REPORT PENDING COMPLETION REPORT.
- 12-2-98 MIRU MONTEZUMA RIG 36.
- 12-3-98 FIN RIH W/PH6 TBG, LATCHED ON/OFF TOOL @ 5587', TESTED CSG TO 500#, HELD OK, FISHED 1.87 BAKER TBG PLUG, SWI & SDFN.
- 12-4-98 WAITING ON DOWELL, WILL ACIDIZE LATERAL 3A1 SATURDAY MORNING.
- 12-5-98 SITP-1400#, CP-500# RU DOWELL COIL TBG UNIT & ACID PUMP, THRU DESERT CREEK OHZ FROM 5915-7432' W/21000 GAL 15% NEFE & RD COIL TBG UNIT SWI FOR PRESS BUILD UP.

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12-6-98 LET ANNULUS PRESS TO 300#, ANNULAR BOP HOLDING OK, SENT CREW HOME, 12HR SITP-1650#, CP-300#, SDFN.

12-7-98 5 HRS UNTHAWING RIG PUMP, KILLED WELL, REPAIRED BOP RAMS, PULL 20 JTS, SWI & SDFN.

12-8-98 SERV. UNIT SIT/CP 0#. POOH W/PKR/TP. RIH W/ SUPER HOOK, @ 5696'. POOH W/WHIPSTOCK LAY DN. MAKE UP ANCHOR LATCH ASSM. ENTRY TOOL. RIH W/ENTRY TOOLS LATCHED INTO TIW PKR @ 5759', SWISDFN.

12-9-98 SITP/CSG 0#. POOH W/ REENTRY SETTING TOOL. RIH W/ TBG PKR @ 5594.45 TP @ 5897', RU DOWELL COIL TBG UNIT. ACIDIZED 2A1 LATERAL W/ 21250 GALS 15% HCL ACID FM 7424-5892'. RDMO DOWELL EQUIP. SWISDFN.

12-10-98 SITP 1250# CSG 0#. REL PKR @ 5759'. SWISDFN.

12-11-98 ORIENT REENTRY GUIDE FOR 1A1 LATERAL. RIH W/ TOOLS LATCHED INTO TIW PKR @ 5759' SHEAR OFF. RIH W/ MULE SHOE TBG GUIB. 7" UNI-VI PKR. SET @ 5592' EOT @ 5927'. LOAD STILL WOULDN'T TEST SWISDFN.

12-12-98 SICP AND SITP ZERO. RELEASE PKR. RESET PKR. AT 5530' W/EOT AT 5864' RETEST ANNULUS. OK. WAITING ON DOWELL. RU DOWELL COIL TBG. ACIDIZE LATERAL 1A1 FROM 7476-5932' W/510 BBLs. 15% HCL ACID. POOH W/COIL TBG. RD.

12-13-98 OPEN WELL TO TEST TANK OF FULL OPEN CHOKE. FLOWED BACK. WELL SI. SITP 1550 PSI. SDFN.

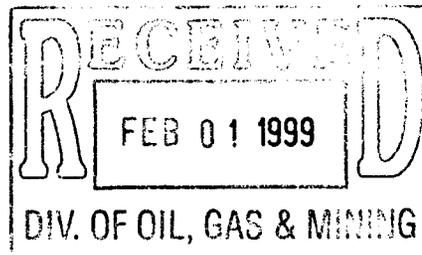
12-14-98 SITP 1600'. FLOW WELL BACK FOR 1 HR. KILL TBG. RELEASE PKR. POOH W/PKR. TIH W/ RETRIEVING TOOL AND POOH W/RE-ENTRY GUIDE. TIH W/GUIBERSON PKR. W/BLANKING PLUG IN PLACE. SET PKR @ 5530' PRESSURE TEST. RELEASE ON/OFF TOOL. PULL 1 JNT. SDFN.

12-15-98 PULL TBG. DISPLACE KILL MUD INTO TEST TANK. TRIP BACK IN HOLE TO TOP OF PKR. AT 5530'. POOH LAY DOWN WORKSTRING. SECURE WELL. SDFN.

12-16-98 RU TBG. TESTER. PU RIG W/ ON/OFF TOOL TESTING TO 3500# ABOVE SLIPS TO TOP OF PKR. AT 5330'. LATCH INTO. RD TBG. TESTER. SPACE OUT. RELEASE ON/OFF TOOL. DISPLACE HOLE W/PKR. FLUID. LATCH BACK INTO PKR. ND BOP. PRESSURE TEST ANNULUS TO 500# OK. PRESSURE TEST MASTER VALVE TO 1000# OK. SDFN.

12-17-98 RU SLICK LINE AND RETRIEVE BLANKING PLUG. FLOW WELL TO CLEAN UP. RD PU AND SUPPORT EQUIP. RELEASED WELL TO PROD. DEPT. MOVE OFF LOCATION.

Mobil



**San Juan County
Utah
Ratherford Unit
RU 29-31 - MWD Survey Leg #1**

SURVEY REPORT

6 January, 1999

sperry-sun
DRILLING SERVICES
A DIVISION OF SPECTRA ENERGY, INC.

Survey Ref: svy3468

Sperry-Sun Drilling Services

Survey Report for RU 29-31



Mobil
San Juan County

Utah
Ratherford Unit

	Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate ("/100ft)
Gyro	0.00	0.000	0.000	0.00	0.00 N	0.00 E	0.00	
	200.00	1.250	25.390	199.98	1.97 N	0.94 E	0.73	0.625
	400.00	0.700	39.310	399.95	4.89 N	2.64 E	1.59	0.297
	600.00	0.540	22.890	599.94	6.70 N	3.79 E	2.06	0.119
	800.00	0.480	333.010	799.94	8.32 N	3.77 E	3.21	0.217
	1000.00	0.580	337.350	999.93	10.00 N	3.00 E	4.95	0.054
	1200.00	0.560	332.140	1199.92	11.79 N	2.16 E	6.82	0.028
	1400.00	0.510	340.100	1399.91	13.50 N	1.40 E	8.56	0.045
	1600.00	0.610	325.490	1599.90	15.21 N	0.49 E	10.41	0.087
	1800.00	0.930	310.990	1799.88	17.15 N	1.34 W	13.07	0.186
	2000.00	1.000	309.440	1999.85	19.32 N	3.91 W	16.43	0.037
	2200.00	1.020	303.770	2199.82	21.42 N	6.74 W	19.91	0.051
	2400.00	1.030	309.710	2399.79	23.56 N	9.60 W	23.45	0.053
	2600.00	0.830	330.280	2599.76	25.97 N	11.70 W	26.64	0.193
	2800.00	0.670	320.620	2799.75	28.13 N	13.16 W	29.20	0.102
	3000.00	0.620	349.010	2999.73	30.10 N	14.11 W	31.26	0.160
	3200.00	0.880	6.200	3199.72	32.68 N	14.15 W	33.12	0.171
	3400.00	0.760	7.190	3399.70	35.53 N	13.82 W	34.89	0.060
	3600.00	0.470	347.090	3599.69	37.64 N	13.84 W	36.40	0.179
	3800.00	0.210	318.910	3799.68	38.72 N	14.26 W	37.46	0.151
	4000.00	0.110	288.550	3999.68	39.06 N	14.68 W	38.00	0.064
	4200.00	0.060	154.920	4199.68	39.02 N	14.82 W	38.07	0.079
	4400.00	0.100	247.040	4399.68	38.86 N	14.94 W	38.04	0.059
	4600.00	0.190	261.870	4599.68	38.74 N	15.43 W	38.31	0.048
	4800.00	0.170	15.770	4799.68	38.98 N	15.68 W	38.65	0.151
	5000.00	0.350	353.540	4999.68	39.88 N	15.66 W	39.27	0.102
	5200.00	0.240	3.440	5199.68	40.90 N	15.71 W	40.03	0.060
	5400.00	0.260	334.500	5399.67	41.73 N	15.88 W	40.73	0.063
	5600.00	0.090	17.770	5599.67	42.29 N	16.02 W	41.23	0.102
MWD Survey Leg #1								
	5741.00	0.360	51.050	5740.67	42.67 N	15.65 W	41.24	0.205
	5750.00	4.600	315.000	5749.66	42.94 N	15.88 W	41.59	51.686
	5760.00	8.200	320.310	5759.60	43.78 N	16.62 W	42.71	36.445
	5770.00	12.300	322.210	5769.44	45.17 N	17.73 W	44.47	41.134
	5780.00	16.700	323.190	5779.12	47.16 N	19.24 W	46.95	44.067

Continued...

Sperry-Sun Drilling Services

Survey Report for RU 29-31



Mobil
San Juan County

Utah
Ratherford Unit

Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
5790.00	21.300	323.800	5788.57	49.78 N	21.18 W	50.17	46.042
5800.00	25.800	323.600	5797.73	53.00 N	23.54 W	54.12	45.007
5810.00	30.400	325.100	5806.55	56.83 N	26.28 W	58.77	46.536
5820.00	35.100	326.100	5814.96	61.29 N	29.33 W	64.08	47.309
5830.00	40.000	326.900	5822.89	66.37 N	32.70 W	70.05	49.241
5840.00	44.400	327.400	5830.29	72.01 N	36.34 W	76.62	44.128
5850.00	49.300	327.700	5837.13	78.17 N	40.25 W	83.74	49.049
5860.00	54.300	327.100	5843.31	84.79 N	44.48 W	91.41	50.221
5870.00	59.100	326.200	5848.80	91.77 N	49.08 W	99.59	48.585
5880.00	64.200	325.000	5853.55	99.02 N	54.05 W	108.24	52.081
5890.00	69.300	323.800	5857.49	106.49 N	59.40 W	117.30	52.177
5900.00	74.800	322.500	5860.57	114.10 N	65.10 W	126.72	56.372
5932.00	88.600	317.400	5865.19	138.25 N	85.44 W	158.18	45.904
5968.00	89.200	313.700	5865.88	163.94 N	110.64 W	194.16	10.410
6000.00	90.900	311.000	5865.85	185.50 N	134.29 W	226.12	9.970
6032.00	91.400	311.100	5865.21	206.51 N	158.42 W	258.04	1.593
6063.00	90.800	311.100	5864.61	226.88 N	181.77 W	288.96	1.935
6095.00	91.000	311.700	5864.11	248.04 N	205.77 W	320.90	1.976
6127.00	92.800	311.500	5863.05	269.28 N	229.69 W	352.82	5.660
6158.00	91.300	311.800	5861.94	289.86 N	252.84 W	383.75	4.934
6190.00	90.900	311.700	5861.32	311.17 N	276.71 W	415.69	1.288
6222.00	89.700	312.000	5861.16	332.52 N	300.54 W	447.64	3.865
6254.00	90.000	312.000	5861.24	353.93 N	324.32 W	479.60	0.938
6285.00	90.800	312.500	5861.02	374.77 N	347.27 W	510.56	3.043
6317.00	89.600	313.600	5860.91	396.62 N	370.65 W	542.54	5.087
6349.00	88.600	313.900	5861.42	418.74 N	393.76 W	574.53	3.263
6381.00	87.400	313.200	5862.53	440.78 N	416.94 W	606.50	4.341
6413.00	86.600	312.700	5864.21	462.55 N	440.33 W	638.43	2.947
6445.00	87.800	311.800	5865.74	484.04 N	463.99 W	670.36	4.839
6476.00	90.300	312.900	5866.23	504.92 N	486.90 W	701.32	8.516
6508.00	90.100	312.900	5866.12	526.70 N	510.34 W	733.30	0.625
6540.00	89.300	313.100	5866.28	548.52 N	533.74 W	765.28	2.577
6572.00	90.300	313.900	5866.40	570.55 N	556.95 W	797.26	4.002
6603.00	90.100	314.300	5866.29	592.12 N	579.21 W	828.26	1.443
6635.00	92.000	314.100	5865.70	614.43 N	602.15 W	860.25	5.970
6666.00	91.000	314.100	5864.89	636.99 N	624.40 W	891.24	3.226
6697.00	90.000	314.300	5864.62	657.61 N	646.63 W	922.23	3.290
6729.00	90.100	314.100	5864.59	679.91 N	669.57 W	954.23	0.699
6761.00	91.900	314.500	5864.03	702.26 N	692.47 W	986.22	5.762
6793.00	91.400	314.800	5863.11	724.74 N	715.22 W	1018.21	1.822

Continued...

Sperry-Sun Drilling Services

Survey Report for RU 29-31



Mobil
San Juan County

Utah
Ratherford Unit

Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
6825.00	88.500	315.200	5863.14	747.36 N	737.85 W	1050.20	9.148
6856.00	89.400	314.700	5863.71	769.26 N	759.78 W	1081.20	3.321
6888.00	89.400	314.800	5864.04	791.79 N	782.51 W	1113.19	0.312
6919.00	87.600	315.000	5864.85	813.66 N	804.46 W	1144.18	5.842
6951.00	85.300	315.000	5866.84	836.24 N	827.04 W	1176.12	7.187
6983.00	85.900	314.500	5869.29	858.71 N	849.70 W	1208.02	2.438
7014.00	87.200	314.800	5871.16	880.45 N	871.71 W	1238.97	4.303
7046.00	87.500	314.700	5872.64	902.96 N	894.41 W	1270.93	0.988
7078.00	88.500	314.800	5873.75	925.47 N	917.12 W	1302.91	3.141
7110.00	88.300	315.400	5874.65	948.13 N	939.70 W	1334.90	1.976
7141.00	87.600	316.200	5875.76	970.34 N	961.30 W	1365.88	3.428
7173.00	88.700	316.400	5876.79	993.46 N	983.40 W	1397.85	3.494
7205.00	90.200	317.800	5877.10	1016.90 N	1005.18 W	1429.83	6.412
7236.00	87.700	317.300	5877.66	1039.77 N	1026.10 W	1460.79	8.224
7268.00	86.500	315.700	5879.28	1062.95 N	1048.09 W	1492.73	6.245
7300.00	87.000	315.400	5881.10	1085.76 N	1070.47 W	1524.68	1.821
7331.00	91.400	315.500	5881.53	1107.84 N	1092.21 W	1555.67	14.197
7363.00	94.200	315.900	5879.97	1130.71 N	1114.53 W	1587.63	8.839
7394.00	92.300	316.100	5878.21	1152.98 N	1136.03 W	1618.57	6.163
7426.00	89.400	316.900	5877.73	1176.18 N	1158.05 W	1650.55	9.401
7442.00	88.900	316.900	5877.97	1187.86 N	1168.98 W	1666.54	3.125
7476.00	88.900	316.900	5878.62	1212.68 N	1192.21 W	1700.52	0.000

All data is in feet unless otherwise stated. Directions and coordinates are relative to True North. Vertical depths are relative to Well. Northings and Eastings are relative to Well.

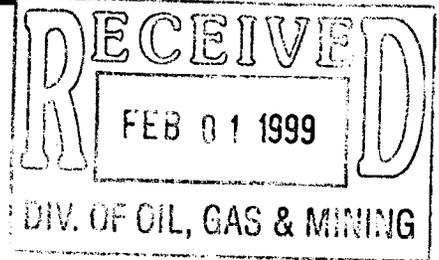
The Dogleg Severity is in Degrees per 100ft.

Vertical Section is from Well and calculated along an Azimuth of 315.000° (True).

Based upon Minimum Curvature type calculations, at a Measured Depth of 7476.00ft., The Bottom Hole Displacement is 1700.58ft., in the Direction of 315.488° (True).

Mobil

**San Juan County
Utah
Ratherford Unit
RU 29-31 - MWD Survey Leg #2**



SURVEY REPORT

6 January, 1999

sperry-sun
DRILLING SERVICES
A DIVISION OF BRITISH OIL FIELD SERVICES, INC.

Survey Ref: svy3470

Sperry-Sun Drilling Services

Survey Report for RU 29-31



Mobil
San Juan County

Utah
Ratherford Unit

Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (*'/100ft)
Gyro							
0.00	0.000	0.000	0.00	0.00 N	0.00 E	0.00	
200.00	1.250	25.390	199.98	1.97 N	0.94 E	-0.40	0.625
400.00	0.700	39.310	399.95	4.89 N	2.64 E	-0.73	0.297
600.00	0.540	22.890	599.94	6.70 N	3.79 E	-0.88	0.119
800.00	0.480	333.010	799.94	8.32 N	3.77 E	-1.84	0.217
1000.00	0.590	337.350	999.93	10.00 N	3.00 E	-3.45	0.054
1200.00	0.560	332.140	1199.92	11.79 N	2.16 E	-5.19	0.028
1400.00	0.510	340.100	1399.91	13.50 N	1.40 E	-6.80	0.045
1600.00	0.610	325.490	1599.90	15.21 N	0.49 E	-8.54	0.087
1800.00	0.930	310.990	1799.88	17.15 N	1.34 W	-11.16	0.186
2000.00	1.000	309.440	1999.85	19.32 N	3.91 W	-14.52	0.037
2200.00	1.020	303.770	2199.82	21.42 N	6.74 W	-18.04	0.051
2400.00	1.030	309.710	2399.79	23.56 N	9.60 W	-21.62	0.053
2600.00	0.830	330.280	2599.76	25.97 N	11.70 W	-24.73	0.193
2800.00	0.670	320.620	2799.75	28.13 N	13.16 W	-27.18	0.102
3000.00	0.620	349.010	2999.73	30.10 N	14.11 W	-29.11	0.160
3200.00	0.880	6.200	3199.72	32.68 N	14.15 W	-30.66	0.171
3400.00	0.760	7.190	3399.70	35.53 N	13.82 W	-32.06	0.060
3600.00	0.470	347.090	3599.69	37.64 N	13.84 W	-33.32	0.179
3800.00	0.210	318.910	3799.68	38.72 N	14.26 W	-34.30	0.151
4000.00	0.110	288.550	3999.68	39.06 N	14.68 W	-34.84	0.064
4200.00	0.060	154.920	4199.68	39.02 N	14.82 W	-34.93	0.079
4400.00	0.100	247.040	4399.68	38.86 N	14.94 W	-34.93	0.059
4600.00	0.190	261.870	4599.68	38.74 N	15.43 W	-35.25	0.048
4800.00	0.170	15.770	4799.68	38.98 N	15.68 W	-35.59	0.151
5000.00	0.350	353.540	4999.68	39.88 N	15.66 W	-36.11	0.102
5200.00	0.240	3.440	5199.68	40.90 N	15.71 W	-36.75	0.060
5400.00	0.260	334.500	5399.67	41.73 N	15.88 W	-37.37	0.063
5600.00	0.090	17.770	5599.67	42.29 N	16.02 W	-37.82	0.102
MWD Survey Leg #2							
5723.00	0.320	49.940	5722.67	42.60 N	15.73 W	-37.77	0.202
5732.00	4.700	126.000	5731.66	42.40 N	15.41 W	-37.39	51.481
5742.00	10.300	128.670	5741.57	41.60 N	14.38 W	-36.09	56.093
5752.00	16.600	129.520	5751.29	40.13 N	12.58 W	-33.77	63.029
5762.00	23.200	129.640	5760.69	37.96 N	9.96 W	-30.37	66.001

Continued...

Sperry-Sun Drilling Services

Survey Report for RU 29-31



Mobil
San Juan County

Utah
Ratherford Unit

Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (*100ft)
5772.00	29.000	130.190	5769.67	35.14 N	6.59 W	-25.99	58.050
5782.00	33.800	130.370	5778.20	31.77 N	2.62 W	-20.79	48.009
5792.00	35.500	130.500	5786.43	28.08 N	1.71 E	-15.12	17.016
5802.00	39.300	128.500	5794.37	24.23 N	6.40 E	-9.06	39.890
5812.00	44.800	124.100	5801.79	20.27 N	11.80 E	-2.37	62.371
5822.00	50.100	123.100	5808.55	16.20 N	17.94 E	4.99	53.508
5832.00	55.900	123.500	5814.57	11.82 N	24.61 E	12.96	58.088
5842.00	62.100	123.700	5819.72	7.08 N	31.74 E	21.52	62.024
5852.00	68.000	124.800	5823.93	1.97 N	39.23 E	30.58	59.836
5862.00	73.600	126.400	5827.22	3.52 S	46.91 E	40.02	58.001
5892.00	87.300	132.500	5832.19	22.29 S	69.67 E	69.46	49.854
5935.00	88.200	131.900	5833.88	51.15 S	101.50 E	112.18	2.515
5967.00	90.100	130.300	5834.35	72.18 S	125.60 E	144.05	7.762
5998.00	90.300	129.700	5834.25	92.11 S	149.35 E	174.97	2.040
6030.00	89.900	127.100	5834.19	111.99 S	174.43 E	206.94	8.221
6061.00	89.300	125.500	5834.41	130.34 S	199.41 E	237.94	5.512
6093.00	89.400	125.700	5834.77	148.96 S	225.43 E	269.93	0.699
6125.00	89.600	126.200	5835.05	167.75 S	251.33 E	301.93	1.683
6157.00	89.400	126.600	5835.33	186.74 S	277.09 E	333.93	1.397
6189.00	89.100	126.200	5835.75	205.73 S	302.84 E	365.93	1.562
6220.00	89.800	124.500	5836.04	223.66 S	328.12 E	396.92	5.990
6252.00	89.800	124.500	5836.16	241.78 S	354.50 E	428.91	0.000
6284.00	89.700	123.600	5836.30	259.70 S	381.01 E	460.89	2.830
6316.00	89.700	123.800	5836.46	277.46 S	407.63 E	492.86	0.625
6347.00	89.300	124.300	5836.73	294.81 S	433.31 E	523.85	2.065
6379.00	89.500	123.900	5837.07	312.75 S	459.81 E	555.83	1.397
6411.00	88.000	124.300	5837.77	330.69 S	486.30 E	587.80	4.851
6443.00	87.600	124.600	5838.99	348.78 S	512.67 E	619.76	1.562
6475.00	88.100	124.600	5840.20	366.93 S	538.99 E	651.73	1.562
6506.00	89.200	124.800	5840.93	384.58 S	564.47 E	682.72	3.607
6538.00	90.300	125.300	5841.07	402.95 S	590.67 E	714.71	3.776
6569.00	91.300	125.300	5840.63	420.87 S	615.96 E	745.70	3.226
6601.00	91.700	125.700	5839.79	439.44 S	642.01 E	777.69	1.767
6632.00	91.100	126.000	5839.04	457.59 S	667.13 E	808.68	2.164
6664.00	89.800	125.000	5838.79	476.17 S	693.18 E	840.68	5.125
6696.00	90.000	125.500	5838.84	494.64 S	719.31 E	872.68	1.683
6728.00	89.600	125.500	5838.95	513.22 S	745.36 E	904.67	1.250
6759.00	89.100	125.300	5839.31	531.18 S	770.63 E	935.67	1.737
6791.00	90.100	125.700	5839.53	549.76 S	796.68 E	967.67	3.366
6823.00	89.600	125.900	5839.61	568.48 S	822.63 E	999.67	1.683

Continued...

Sperry-Sun Drilling Services

Survey Report for RU 29-31



Mobil
San Juan County

Utah
Ratherford Unit

Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (*100ft)
6855.00	89.400	126.600	5839.89	587.40 S	848.44 E	1031.67	2.275
6886.00	88.200	126.700	5840.54	605.90 S	873.30 E	1062.66	3.884
6918.00	88.900	126.700	5841.35	625.02 S	898.95 E	1094.64	2.187
6949.00	89.200	127.400	5841.86	643.69 S	923.69 E	1125.63	2.456
6981.00	89.600	127.100	5842.20	663.06 S	949.16 E	1157.62	1.562
7013.00	91.000	126.000	5842.03	682.12 S	974.87 E	1189.62	5.564
7045.00	90.000	126.200	5841.75	700.97 S	1000.72 E	1221.62	3.187
7076.00	91.400	126.200	5841.37	719.28 S	1025.73 E	1252.62	4.516
7108.00	92.500	126.000	5840.29	738.12 S	1051.57 E	1284.60	3.494
7140.00	94.100	127.100	5838.44	757.15 S	1077.24 E	1316.54	6.064
7171.00	93.300	127.300	5836.44	775.85 S	1101.88 E	1347.47	2.660
7203.00	85.800	125.300	5836.69	794.78 S	1127.65 E	1379.44	24.255
7235.00	84.600	126.000	5839.37	813.36 S	1153.56 E	1411.33	4.338
7267.00	86.800	126.000	5841.77	832.12 S	1179.37 E	1443.24	6.875
7297.00	88.200	126.000	5843.08	849.74 S	1203.62 E	1473.21	4.667
7329.00	89.300	125.900	5843.78	868.52 S	1229.52 E	1505.20	3.452
7361.00	90.500	125.200	5843.83	887.12 S	1255.55 E	1537.20	4.341
7390.00	90.000	123.900	5843.71	903.57 S	1279.44 E	1566.19	4.803
7424.00	90.000	123.900	5843.71	922.53 S	1307.66 E	1600.17	0.000

All data is in feet unless otherwise stated. Directions and coordinates are relative to True North.
Vertical depths are relative to Well. Northings and Eastings are relative to Well.

The Dogleg Severity is in Degrees per 100ft.
Vertical Section is from Well and calculated along an Azimuth of 126.000° (True).

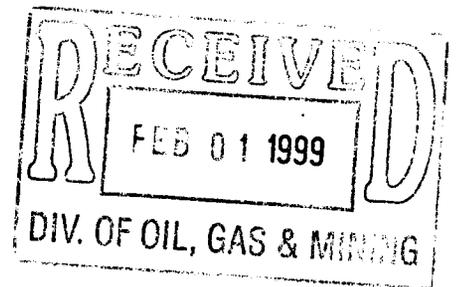
Based upon Minimum Curvature type calculations, at a Measured Depth of 7424.00ft.,
The Bottom Hole Displacement is 1600.32ft., in the Direction of 125.202° (True).

Mobil

**San Juan County
Utah
Ratherford Unit
RU 29-31 - MWD Survey Leg #3**

SURVEY REPORT

6 January, 1999



sperry-sun
DRILLING SERVICES
A DIVISION OF SUGAR INTERNATIONAL, INC.

Survey Ref: svy3472

Sperry-Sun Drilling Services

Survey Report for RU 29-31



Mobil
San Juan County

Utah
Ratherford Unit

Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
Gyro							
0.00	0.000	0.000	0.00	0.00 N	0.00 E	0.00	
200.00	1.250	25.390	199.98	1.97 N	0.94 E	1.08	0.625
400.00	0.700	39.310	399.95	4.89 N	2.64 E	2.49	0.297
600.00	0.540	22.890	599.94	6.70 N	3.79 E	3.32	0.119
800.00	0.480	333.010	799.94	8.32 N	3.77 E	4.65	0.217
1000.00	0.580	337.350	999.93	10.00 N	3.00 E	6.47	0.054
1200.00	0.560	332.140	1199.92	11.79 N	2.16 E	8.43	0.028
1400.00	0.510	340.100	1399.91	13.50 N	1.40 E	10.25	0.045
1600.00	0.610	325.490	1599.90	15.21 N	0.49 E	12.18	0.087
1800.00	0.930	310.990	1799.88	17.15 N	1.34 W	14.82	0.186
2000.00	1.000	309.440	1999.85	19.32 N	3.91 W	18.07	0.037
2200.00	1.020	303.770	2199.82	21.42 N	6.74 W	21.41	0.051
2400.00	1.030	309.710	2399.79	23.56 N	9.60 W	24.81	0.053
2600.00	0.830	330.280	2599.76	25.97 N	11.70 W	27.98	0.193
2800.00	0.670	320.620	2799.75	28.13 N	13.16 W	30.59	0.102
3000.00	0.620	349.010	2999.73	30.10 N	14.11 W	32.75	0.160
3200.00	0.880	6.200	3199.72	32.68 N	14.15 W	34.89	0.171
3400.00	0.760	7.190	3399.70	35.53 N	13.82 W	37.03	0.060
3600.00	0.470	347.090	3599.69	37.64 N	13.84 W	38.77	0.179
3800.00	0.210	318.910	3799.68	38.72 N	14.26 W	39.90	0.151
4000.00	0.110	288.550	3999.68	39.06 N	14.68 W	40.42	0.064
4200.00	0.060	154.920	4199.68	39.02 N	14.82 W	40.47	0.079
4400.00	0.100	247.040	4399.68	38.86 N	14.94 W	40.40	0.059
4600.00	0.190	261.870	4599.68	38.74 N	15.43 W	40.59	0.048
4800.00	0.170	15.770	4799.68	38.98 N	15.68 W	40.92	0.151
5000.00	0.350	353.540	4999.68	39.88 N	15.66 W	41.65	0.102
5200.00	0.240	3.440	5199.68	40.90 N	15.71 W	42.51	0.060
5400.00	0.260	334.500	5399.67	41.73 N	15.88 W	43.29	0.063
5600.00	0.090	17.770	5599.67	42.29 N	16.02 W	43.83	0.102
MWD Survey Leg #3							
5696.00	0.270	47.710	5695.67	42.51 N	15.83 W	43.91	0.205
5705.00	2.900	325.000	5704.67	42.71 N	15.95 W	44.14	31.980
5715.00	6.500	319.590	5714.63	43.35 N	16.46 W	44.95	36.233
5725.00	11.300	318.260	5724.51	44.51 N	17.48 W	46.49	48.040
5735.00	16.000	317.670	5734.22	46.26 N	19.06 W	48.83	47.020

Continued...

Sperry-Sun Drilling Services

Survey Report for RU 29-31



Mobil
San Juan County

Utah
Ratherford Unit

Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (*100ft)
5745.00	20.900	317.320	5743.71	48.60 N	21.20 W	51.97	49.012
5755.00	25.700	317.100	5752.89	51.50 N	23.89 W	55.89	48.008
5765.00	30.100	311.500	5761.73	54.75 N	27.24 W	60.47	51.169
5775.00	34.800	312.100	5770.16	58.33 N	31.24 W	65.70	47.110
5785.00	38.000	313.700	5778.21	62.37 N	35.59 W	71.50	33.377
5795.00	43.000	318.300	5785.81	67.04 N	40.08 W	77.91	58.218
5805.00	47.700	319.900	5792.84	72.42 N	44.74 W	84.98	48.356
5815.00	52.200	321.900	5799.27	78.36 N	49.56 W	92.62	47.529
5825.00	55.400	324.700	5805.18	84.83 N	54.38 W	100.68	39.168
5835.00	58.800	327.900	5810.61	91.82 N	59.03 W	109.07	43.328
5845.00	63.100	330.000	5815.47	99.31 N	63.53 W	117.79	46.752
5855.00	67.800	331.600	5819.62	107.25 N	67.97 W	126.84	49.200
5865.00	71.900	332.600	5823.06	115.54 N	72.36 W	136.15	42.060
5875.00	75.800	333.400	5825.85	124.10 N	76.72 W	145.66	39.749
5885.00	80.100	334.500	5827.93	132.88 N	81.01 W	155.32	44.325
5912.00	88.200	331.600	5830.68	156.80 N	93.18 W	181.89	31.843
5967.00	88.000	325.000	5832.51	203.54 N	122.05 W	236.74	11.999
5999.00	90.100	324.100	5833.04	229.61 N	140.60 W	268.73	7.140
6030.00	91.200	325.400	5832.69	254.92 N	158.49 W	299.73	5.493
6062.00	92.200	324.700	5831.74	281.14 N	176.82 W	331.71	3.814
6094.00	90.900	324.500	5830.87	307.21 N	195.35 W	363.70	4.110
6126.00	90.400	325.600	5830.51	333.44 N	213.68 W	395.69	3.776
6158.00	91.500	326.600	5829.98	359.99 N	231.52 W	427.68	4.645
6189.00	91.800	326.100	5829.09	385.79 N	248.69 W	458.66	1.880
6221.00	91.100	326.800	5828.28	412.45 N	266.37 W	490.64	3.093
6253.00	90.400	327.000	5827.86	439.25 N	283.84 W	522.62	2.275
6285.00	90.900	327.100	5827.49	466.10 N	301.25 W	554.60	1.593
6316.00	90.100	327.300	5827.22	492.16 N	318.04 W	585.57	2.660
6348.00	88.500	326.600	5827.61	518.98 N	335.49 W	617.55	5.457
6379.00	91.400	327.000	5827.64	544.92 N	352.46 W	648.53	9.443
6411.00	91.100	327.300	5826.94	571.79 N	369.82 W	680.50	1.326
6442.00	91.200	327.000	5826.32	597.83 N	386.63 W	711.47	1.020
6474.00	91.000	326.800	5825.71	624.63 N	404.10 W	743.45	0.884
6506.00	88.300	325.400	5825.90	651.19 N	421.95 W	775.44	9.504
6538.00	87.200	325.000	5827.16	677.44 N	440.19 W	807.42	3.657
6569.00	87.500	324.700	5828.59	702.76 N	458.02 W	838.38	1.368
6601.00	85.500	323.100	5830.55	728.57 N	476.84 W	870.31	7.998
6633.00	83.900	322.700	5833.50	753.98 N	496.06 W	902.15	5.153
6664.00	86.900	321.200	5835.99	778.31 N	515.10 W	933.01	10.812
6696.00	87.500	321.200	5837.55	803.22 N	535.13 W	964.90	1.875

Continued...

Sperry-Sun Drilling Services

Survey Report for RU 29-31



Mobil
San Juan County

Utah
Ratherford Unit

Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
6727.00	88.300	320.800	5838.69	827.30 N	554.63 W	995.80	2.885
6759.00	88.500	320.100	5839.58	851.96 N	574.99 W	1027.69	2.274
6791.00	88.700	319.800	5840.36	876.45 N	595.58 W	1059.55	1.127
6823.00	89.500	322.000	5840.86	901.28 N	615.76 W	1091.47	7.315
6854.00	90.000	324.500	5841.00	926.11 N	634.30 W	1122.45	8.224
6886.00	89.000	324.500	5841.28	952.16 N	652.88 W	1154.45	3.125
6918.00	89.200	325.200	5841.78	978.33 N	671.30 W	1186.44	2.275
6950.00	88.900	326.300	5842.31	1004.77 N	689.31 W	1218.43	3.563
6982.00	89.100	326.100	5842.87	1031.36 N	707.11 W	1250.42	0.884
7013.00	89.200	325.200	5843.33	1056.95 N	724.60 W	1281.42	2.921
7045.00	90.700	325.900	5843.36	1083.34 N	742.70 W	1313.41	5.173
7077.00	89.800	324.700	5843.22	1109.64 N	760.92 W	1345.41	4.687
7109.00	89.100	324.300	5843.53	1135.70 N	779.50 W	1377.41	2.519
7140.00	89.800	322.700	5843.82	1160.61 N	797.94 W	1408.40	5.633
7171.00	90.400	323.100	5843.77	1185.34 N	816.64 W	1439.37	2.326
7202.00	90.800	325.000	5843.45	1210.43 N	834.83 W	1470.37	6.263
7234.00	91.300	324.700	5842.86	1236.59 N	853.25 W	1502.36	1.822
7265.00	90.800	323.800	5842.29	1261.74 N	871.36 W	1533.35	3.321
7297.00	89.800	324.100	5842.12	1287.62 N	890.19 W	1565.35	3.263
7329.00	89.300	326.600	5842.37	1313.94 N	908.38 W	1597.34	7.967
7361.00	88.900	325.400	5842.88	1340.46 N	926.28 W	1629.33	3.952
7398.00	86.200	324.700	5844.46	1370.76 N	947.45 W	1666.30	7.538
7432.00	86.200	324.700	5846.71	1398.45 N	967.05 W	1700.22	0.000

All data is in feet unless otherwise stated. Directions and coordinates are relative to True North.
Vertical depths are relative to Well. Northings and Eastings are relative to Well.

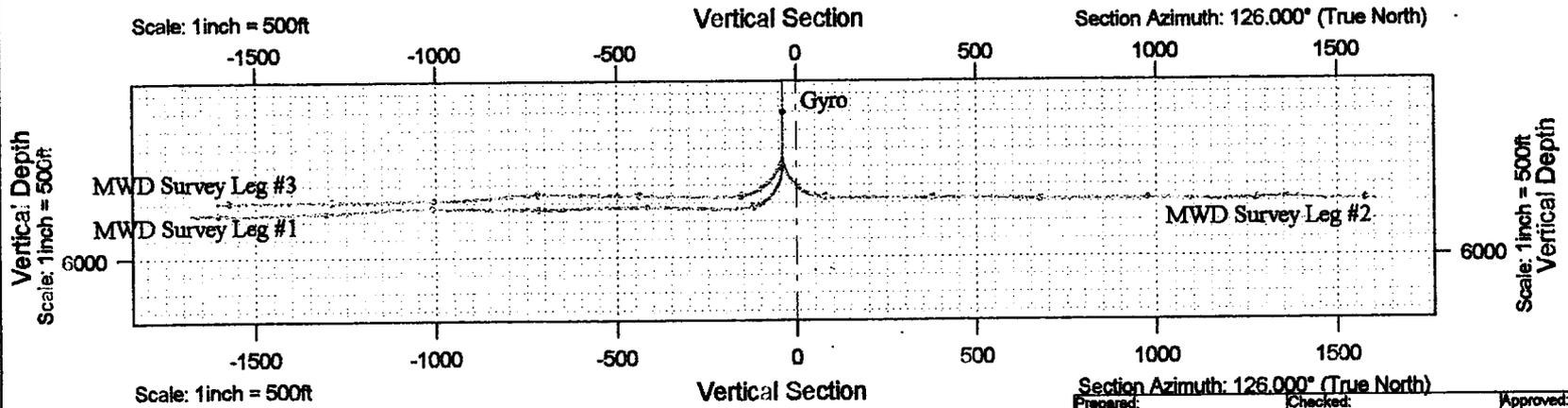
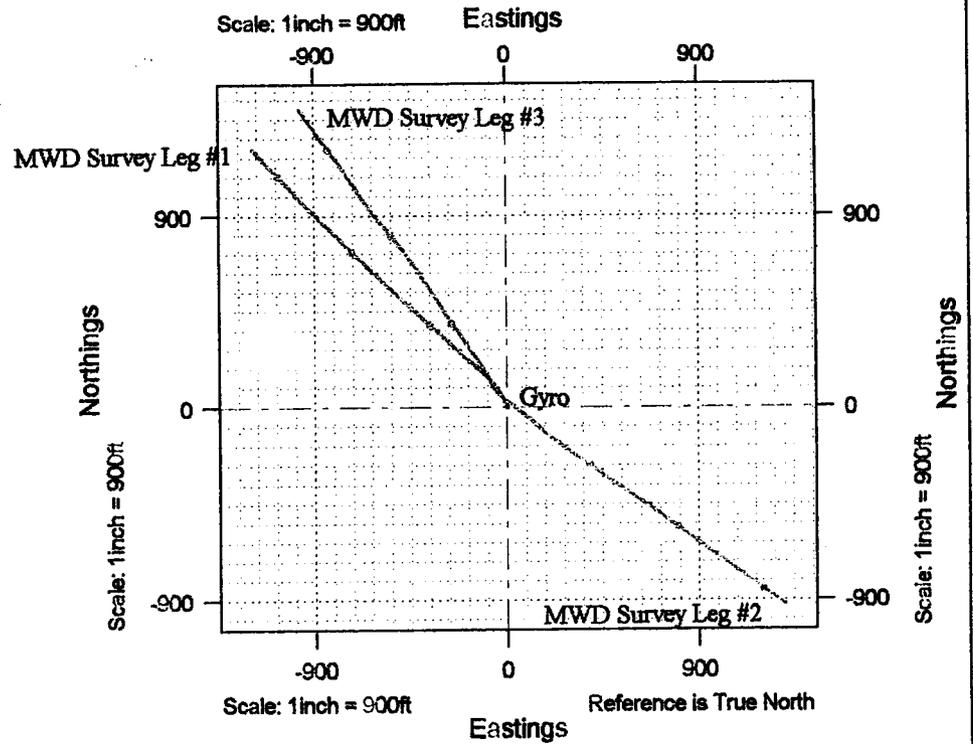
The Dogleg Severity is in Degrees per 100ft.

Vertical Section is from Well and calculated along an Azimuth of 325.000° (True).

Based upon Minimum Curvature type calculations, at a Measured Depth of 7432.00ft.,

The Bottom Hole Displacement is 1700.25ft., in the Direction of 325.335° (True).

**San Juan County
 Utah
 Rutherford Unit
 RU 29-31**



Prepared: _____ Checked: _____ Approved: _____

DRILLED FOOTAGE CALCULATION FOR DIRECTIONAL AND HORIZONTAL WELLS

Unit, Well Name: Ratherford Unit, Well 29-31
API Well #: 43-037-30914
Well Completion: Horizontal, Producer, 3 Laterals

First leg description:	Lateral #1
KOP MD:	5741.00
EOL MD:	7476.00
Footage drilled:	1735.00
Max. TVD Recorded	5879.97

Second leg description:	Lateral #2
KOP MD:	5723.00
EOL MD:	7424.00
Footage drilled:	1701.00
Max. TVD Recorded	5843.83

Third leg description:	Lateral #3
KOP MD:	5696.00
EOL MD:	7432.00
Footage drilled:	1736.00
Max. TVD Recorded	5846.71

Total Footage Drilled (MD):	5172.00
Deepest point (TVD):	5879.97

ATTACHMENT - FORM 3160-5
RATHERFORD UNIT 29-31
14-20-603-353
NAVAJO TRIBAL
SAN JUAN, UTAH

- 10-23-98 CALLED B.L.M. AT 11:01 ON 10-22-98 TALKED TO WAYNE TOWNSEND, INFORMED OF INTENT TO MOVE ON WELL AND PREP. FOR DRLG. TOOLS. OK. CALLED NAVAJO E.P.A. AT 11:06 ON 10-22-98. TALKED TO CHARMAINE HESTEEN, INFORMED OF INTENT TO DIG AND LINE EARTH PIT. OK. MIRU NAVAJO WEST RIG #36. RU PUMP, PIT AND LINES.
- 10-24-98 SI TBG. AND CSG. PRESSURE AT 07:30 WAS 100 PSI. RU AND KILL WELL. POH AND LAY DOWN RODS AND PUMP. ND WELL HEAD. NU BOPE RELEASE TBG. ANCHOR. POH WITH TBG. SHUT WELL IN.
- 10-25-98 SHUT IN CSG. PRESSURE AT 07:30 WAS 0 PSI. MAKE-UP GUIBERSON RETV. BRIDGE PLUG. RIH TO 5604.89'. SET BRIDGE PLUG. RELEASE FROM BRIDGE PLUG. RU AND TEST CSG. TO 1000 PSI., 30 MIN. OK. SIFN.
- 10-26-98 SI PRESSURE AT 07:30HRS WAS 0 PSI. RU AND POOH LAYING DOWN PROD. TBG, ND BOP, CAP WELL, ND PROD. FLW LINE FROM WELL HEAD, RD PUMP, PIT AND FLOW LINE FROM WELL HEAD, RDMO PUMP, PIT , AND FLW LNS. REPL 2" VLVS ON TBG HANGER, ADJUST TBG HD, RDMO. MONTEZUMA RIG #36.
- 10-28-98 MI NAVAJO RIG #25. (NOTIFIED JIM THOMPSON W/STATE OF UTAH ABOUT MOVING IN AT 0730 HRS. 10-28-98).
- 10-29-98 FINISH MOVING IN AND RU ROTARY RIG. NU BOP STACK, CHOKE MANIFOLD, GAS SEPARATOR FLARE LINES, ETC. TEST BOP STACK. TIH AND RETRIEVE RBP. WL SET TIW PKR. @ 5759', TRIPPING IN HOLE W/ANCHOR LATCH ASSY. AND UBHO.
- 10-30-98 FINISH IN HOLE W/ANCHOR LATCH ASSY. AND UBHO AND LATCH INTO TIW PKR. AT 5759'. PUMP DOWN DP TO CLEAN. RU GYRO SURVEY TO SURFACE. TOOH W/ANCHOR LATCH ASSY.
- 10-31-98 FINISH IN HOLE W/ANCHOR LATCH ASSY. AND WHIPSTOCK. LATCHED INTO PKR. AT 5759'. MILL WINDOW FROM 5741-5743' W/STARTER MILL. PU CSG. AND WATERMELON MILL. TIH W/SAME ASSY. MILL WINDOW FROM 5742-5747'.
- 11-1-98 FINISH MILLING WINDOW IN 7" CSG. (TOP WINDOW AT 5740', BTM. WINDOW AT 5749' FORMATION TO 5750'. TOP OF WS AT 5741'). POOH LAY DOWN MILLS. FINAL REPORT LAT. #1. MAKE UP CURVE BUILDING. TIME DRILL FROM 5750-52'. SLIDE DRILL W/WT. FROM 5752-81' RD GYRO DATA. SLIDE DRILL AND SURVEYS W/MWD FROM 5781' TO TD OF CURVE AT 5932' (PROJECTED SURVEY AT TD OF 5932', 90 ANGLE, 322 AZ., 5864.79 TVD, 158.09 VS. PREPARE TO POOH.
- 11-2-98 POOH LAYING DOWN TBG. AND CURVE BUILDING ASSY. MAKE UP LATERAL ASSY. SLIDE/ROTATE DRILL AND SURVEYS FROM 5932-6840' LAST SURVEY AT 6793' MD, 91.40 ANGLE, 314.80 AZ., 5863.11 TVD, 1018.21 VERTICAL SECTION. (908' IN 16.5 HRS.)
- 11-3-98 SLIDE/ROTATE DRILL AND SURVEYS FROM 6840' TO TD OF 7476' MD, TVD 5878.62, ANGLE 88.90, AZ. 316.90, VERTICAL SECTION 1700.52. PUMP SWEEP AND CIRC. TO SURFACE. POOH LAYING DOWN LATERAL ASSY. ENGAGE WHIPSTOCK W/SUPERHOOK AND RELEASED.

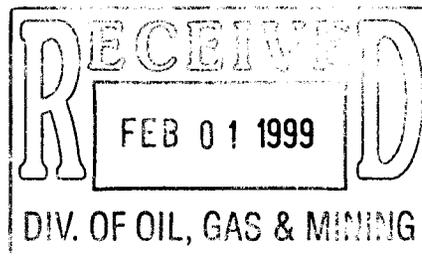
ATTACHMENT - FORM 3160-5
RATHERFORD UNIT 29-31
14-20-603-353
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SAN JUAN, UTAH
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- 11-4-98 FINISH OUT OF HOLE W/WHIPSTOCK #1 AND LAY DOWN. MAKE UP WHIPSTOCK #2, STARTER MILL, AND ORIENT WHIPSTOCK TO 126 GTF W/KEYWAY AT 281' GTF. RIH W/DC'S AND INTO TIW PKR. AT 5759'. CUT WINDOW IN 7" CSG. FROM 5723-25'. CIRC. SWEEP TO SURFACE. TOO H LAY DOWN STARTER MILL. TIH W/CSG. AND WATERMELON MILL. CUT WINDOW IN 7" CSG. FROM 5722-30' MILL QUIT CUTTING. START OUT OF HOLE W/MILLS.
- 11-5-98 FINISH OUT OF HOLE W/MILLS. FINISH CUTTING WINDOW IN 7" CSG. TO 5732', (1' FORMATION), (TOP OF WHIPSTOCK AT 5723'), (TOP OF WINDOW 5722'), (BTM. WINDOW 5731'). FINAL REPORT LATERAL 2. PU CURVE BUILDING ASSY. TIH W/CURVE BUILDING ASSY. RU GYRODATA. TIME DRILL AND DRILL W/WT. FROM 5732-5762'.
- 11-6-98 SLIDE/ROTATE DRILL AND SURVEYS FROM 5792'. PROJECTED SURVEY AT TD. OF 5892' MD, 5831 TVD, 90 ANGLE, 126.40 AZ., 69.963 VS. PUMP AND CIRC. SWEEP TO SURFACE. POOH LAYING DOWN CURVE ASSY. PU LATERAL ASSY TIH. SLIDE/ROTATE DRILL AND SURVEYS FROM 5892-6222'. LAST SURVEY AT 6157' MD, 89.40 ANGLE, 126.60 AZ., 5835.32 TVD, 333.93 VERTICAL SECTION.
- 11-7-98 SLIDE/ROTATE DRILL AND SURVEYS FROM 6222' TO TD OF 7424', PUMP SWEEP AND CIRC. FINAL REPORT LAT. 2A1.
- 11-8-98 POOH LAYING DOWN WHIPSTOCK #2. WHIPSTOCK #3, STARTER MILL, LATCH INTO TIW PKR. AT 5759' CUT WINDOW FROM 5696-98' TOO H LAYING DOWN STARTER MILL. PU CSG. WATERMELON MILL. MILL WINDOW FROM 5695-5704' PLUS 1 FT. FORMATION TO 5705'. POOH LAYING DOWN MILLS. FINAL REPORT LAT 3.
- 11-9-98 PU CURVE BUILDING ASSY. RU GYRO DATA AND ORIENT TOOLFACE. TIME DRILL FROM 5705-5730'. PULL GYRO AND RD WL. SLIDE/DRILL AND SURVEYS FROM 5730' TO T.D. OF 5912'. (PROJECTED SURVEY AT T.D. OF 5912' MD, 5830.26 TVD, 90 ANGLE, 334.50 AZ., 181.82 VERTICAL SECTION. STOOD REMAINING DP BACK.
- 11-10-98 FINISH OUT OF HOLE LAYING DOWN CURVE BUILDING ASSY. PU LATERAL ASSY. SLIDE/ROTATE DRILL AND SURVEYS FROM 5912' TI T.D. IF 7432' PROJECTED SURVEY AT TD OF 7432' MD, 5846.71 TVD, 86.20 ANGLE, 324.70 AZ., 1700.22 VERTICAL SECTION.
- 11-11-98 FINISH CIRC. SWEEP TO SURFACE. POOH LAYING DOWN LATERAL ASSY. PU TIH, GUIBERSON PKR. AT 5587' (WINDOW AT 5694') W/EOT AT 5915' (END OF CURVE AT 5912'). RDMO.
- 11-12-98 FINAL REPORT PENDING COMPLETION REPORT.
- 12-2-98 MIRU MONTEZUMA RIG 36.
- 12-3-98 FIN RIH W/PH6 TBG, LATCHED ON/OFF TOOL @ 5587', TESTED CSG TO 500#, HELD OK, FISHED 1.87 BAKER TBG PLUG, SWI & SDFN.
- 12-4-98 WAITING ON DOWELL, WILL ACIDIZE LATERAL 3A1 SATURDAY MORNING.
- 12-5-98 SITP-1400#, CP-500# RU DOWELL COIL TBG UNIT & ACID PUMP, THRU DESERT CREEK OHZ FROM 5915-7432' W/21000 GAL 15% NEFE & RD COIL TBG UNIT SWI FOR PRESS BUILD UP.

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- 12-6-98 LET ANNULUS PRESS TO 300#, ANNULAR BOP HOLDING OK, SENT CREW HOME, 12HR SITP-1650#, CP-300#, SDFN.
- 12-7-98 5 HRS UNTHAWING RIG PUMP, KILLED WELL, REPAIRED BOP RAMS, PULL 20 JTS, SWI & SDFN.
- 12-8-98 SERV. UNIT SIT/CP 0#. POOH W/PKR/TP. RIH W/ SUPER HOOK, @ 5696'. POOH W/WHIPSTOCK LAY DN. MAKE UP ANCHOR LATCH ASSM. ENTRY TOOL. RIH W/ENTRY TOOLS LATCHED INTO TIW PKR @ 5759', SWISDFN.
- 12-9-98 SITP/CSG 0#. POOH W/ REENTRY SETTING TOOL. RIH W/ TBG PKR @ 5594.45 TP @ 5897', RU DOWELL COIL TBG UNIT. ACIDIZED 2A1 LATERAL W/ 21250 GALS 15% HCL ACID FM 7424-5892'. RDMO DOWELL EQUIP. SWISDFN.
- 12-10-98 SITP 1250# CSG 0#. REL PKR @ 5759'. SWISDFN.
- 12-11-98 ORIENT REENTRY GUIDE FOR 1A1 LATERAL. RIH W/ TOOLS LATCHED INTO TIW PKR @ 5759' SHEAR OFF. RIH W/ MULE SHOE TBG GUIB. 7" UNI-VI PKR. SET @ 5592' EOT @ 5927'. LOAD STILL WOULDN'T TEST SWISDFN.
- 12-12-98 SICP AND SITP ZERO. RELEASE PKR. RESET PKR. AT 5530' W/EOT AT 5864' RETEST ANNULUS. OK. WAITING ON DOWELL. RU DOWELL COIL TBG. ACIDIZE LATERAL 1A1 FROM 7476-5932' W/510 BBLs. 15% HCL ACID. POOH W/COIL TBG. RD.
- 12-13-98 OPEN WELL TO TEST TANK OF FULL OPEN CHOKE. FLOWED BACK. WELL SI. SITP 1550 PSI. SDFN.
- 12-14-98 SITP 1600'. FLOW WELL BACK FOR 1 HR. KILL TBG. RELEASE PKR. POOH W/PKR. TIH W/ RETRIEVING TOOL AND POOH W/RE-ENTRY GUIDE. TIH W/GUIBERSON PKR. W/BLANKING PLUG IN PLACE. SET PKR @ 5530' PRESSURE TEST. RELEASE ON/OFF TOOL. PULL 1 JNT. SDFN.
- 12-15-98 PULL TBG. DISPLACE KILL MUD INTO TEST TANK. TRIP BACK IN HOLE TO TOP OF PKR. AT 5530'. POOH LAY DOWN WORKSTRING. SECURE WELL. SDFN.
- 12-16-98 RU TBG. TESTER. PU RIG W/ ON/OFF TOOL TESTING TO 3500# ABOVE SLIPS TO TOP OF PKR. AT 5330'. LATCH INTO. RD TBG. TESTER. SPACE OUT. RELEASE ON/OFF TOOL. DISPLACE HOLE W/PKR. FLUID. LATCH BACK INTO PKR. ND BOP. PRESSURE TEST ANNULUS TO 500# OK. PRESSURE TEST MASTER VALVE TO 1000# OK. SDFN.
- 12-17-98 RU SLICK LINE AND RETRIEVE BLANKING PLUG. FLOW WELL TO CLEAN UP. RD PU AND SUPPORT EQUIP. RELEASED WELL TO PROD. DEPT. MOVE OFF LOCATION.

Mobil



**San Juan County
Utah
Ratherford Unit
RU 29-31 - MWD Survey Leg #1**

SURVEY REPORT

6 January, 1999

sperry-sun
DRILLING SERVICES
A DIVISION OF AMERSON INTERNATIONAL, INC.

Survey Ref: svy3468

Sperry-Sun Drilling Services

Survey Report for RU 29-31



**Mobil
San Juan County**

**Utah
Ratherford Unit**

	Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
Gyro	0.00	0.000	0.000	0.00	0.00 N	0.00 E	0.00	
	200.00	1.250	25.390	199.98	1.97 N	0.94 E	0.73	0.625
	400.00	0.700	39.310	399.95	4.89 N	2.64 E	1.59	0.297
	600.00	0.540	22.890	599.94	6.70 N	3.79 E	2.06	0.119
	800.00	0.480	333.010	799.94	8.32 N	3.77 E	3.21	0.217
	1000.00	0.580	337.350	999.93	10.00 N	3.00 E	4.95	0.054
	1200.00	0.560	332.140	1199.92	11.79 N	2.16 E	6.82	0.028
	1400.00	0.510	340.100	1399.91	13.50 N	1.40 E	8.56	0.045
	1600.00	0.610	325.490	1599.90	15.21 N	0.49 E	10.41	0.087
	1800.00	0.930	310.990	1799.88	17.15 N	1.34 W	13.07	0.186
	2000.00	1.000	309.440	1999.85	19.32 N	3.91 W	16.43	0.037
	2200.00	1.020	303.770	2199.82	21.42 N	6.74 W	19.91	0.051
	2400.00	1.030	309.710	2399.79	23.56 N	9.60 W	23.45	0.053
	2600.00	0.830	330.280	2599.76	25.97 N	11.70 W	26.64	0.193
	2800.00	0.670	320.620	2799.75	28.13 N	13.16 W	29.20	0.102
	3000.00	0.620	349.010	2999.73	30.10 N	14.11 W	31.26	0.160
	3200.00	0.880	6.200	3199.72	32.68 N	14.15 W	33.12	0.171
	3400.00	0.760	7.190	3399.70	35.53 N	13.82 W	34.89	0.060
	3600.00	0.470	347.090	3599.69	37.64 N	13.84 W	36.40	0.179
	3800.00	0.210	318.910	3799.68	38.72 N	14.26 W	37.46	0.151
	4000.00	0.110	288.550	3999.68	39.06 N	14.68 W	38.00	0.064
	4200.00	0.060	154.920	4199.68	39.02 N	14.82 W	38.07	0.079
	4400.00	0.100	247.040	4399.68	38.86 N	14.94 W	38.04	0.059
	4600.00	0.190	261.870	4599.68	38.74 N	15.43 W	38.31	0.048
	4800.00	0.170	15.770	4799.68	38.98 N	15.68 W	38.65	0.151
	5000.00	0.350	353.540	4999.68	39.88 N	15.66 W	39.27	0.102
	5200.00	0.240	3.440	5199.68	40.90 N	15.71 W	40.03	0.060
	5400.00	0.260	334.500	5399.67	41.73 N	15.88 W	40.73	0.063
	5600.00	0.090	17.770	5599.67	42.29 N	16.02 W	41.23	0.102
MWD Survey Leg #1								
	5741.00	0.360	51.050	5740.67	42.67 N	15.65 W	41.24	0.205
	5750.00	4.600	315.000	5749.66	42.94 N	15.88 W	41.59	51.686
	5760.00	8.200	320.310	5759.60	43.78 N	16.62 W	42.71	36.445
	5770.00	12.300	322.210	5769.44	45.17 N	17.73 W	44.47	41.134
	5780.00	16.700	323.190	5779.12	47.16 N	19.24 W	46.95	44.067

Continued...

Sperry-Sun Drilling Services

Survey Report for RU 29-31



Mobil
San Juan County

Utah
Ratherford Unit

Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
5790.00	21.300	323.800	5788.57	49.78 N	21.18 W	50.17	46.042
5800.00	25.800	323.600	5797.73	53.00 N	23.54 W	54.12	45.007
5810.00	30.400	325.100	5806.55	56.83 N	26.28 W	58.77	46.536
5820.00	35.100	326.100	5814.96	61.29 N	29.33 W	64.08	47.309
5830.00	40.000	326.900	5822.89	66.37 N	32.70 W	70.05	49.241
5840.00	44.400	327.400	5830.29	72.01 N	36.34 W	76.62	44.128
5850.00	49.300	327.700	5837.13	78.17 N	40.25 W	83.74	49.049
5860.00	54.300	327.100	5843.31	84.79 N	44.48 W	91.41	50.221
5870.00	59.100	326.200	5848.80	91.77 N	49.08 W	99.59	48.585
5880.00	64.200	325.000	5853.55	99.02 N	54.05 W	108.24	52.081
5890.00	69.300	323.800	5857.49	106.49 N	59.40 W	117.30	52.177
5900.00	74.800	322.500	5860.57	114.10 N	65.10 W	126.72	56.372
5932.00	88.600	317.400	5865.19	138.25 N	85.44 W	158.18	45.904
5968.00	89.200	313.700	5865.88	163.94 N	110.64 W	194.16	10.410
6000.00	90.900	311.000	5865.85	185.50 N	134.29 W	226.12	9.970
6032.00	91.400	311.100	5865.21	206.51 N	158.42 W	258.04	1.593
6063.00	90.800	311.100	5864.61	226.88 N	181.77 W	288.96	1.935
6095.00	91.000	311.700	5864.11	248.04 N	205.77 W	320.90	1.976
6127.00	92.800	311.500	5863.05	269.28 N	229.69 W	352.82	5.660
6158.00	91.300	311.800	5861.94	289.86 N	252.84 W	383.75	4.934
6190.00	90.900	311.700	5861.32	311.17 N	276.71 W	415.69	1.288
6222.00	89.700	312.000	5861.16	332.52 N	300.54 W	447.64	3.865
6254.00	90.000	312.000	5861.24	353.93 N	324.32 W	479.60	0.938
6285.00	90.800	312.500	5861.02	374.77 N	347.27 W	510.56	3.043
6317.00	89.600	313.600	5860.91	396.62 N	370.65 W	542.54	5.087
6349.00	88.600	313.900	5861.42	418.74 N	393.76 W	574.53	3.263
6381.00	87.400	313.200	5862.53	440.78 N	416.94 W	606.50	4.341
6413.00	86.600	312.700	5864.21	462.55 N	440.33 W	638.43	2.947
6445.00	87.900	311.800	5865.74	484.04 N	463.99 W	670.36	4.939
6476.00	90.300	312.900	5866.23	504.92 N	486.90 W	701.32	8.516
6508.00	90.100	312.900	5866.12	526.70 N	510.34 W	733.30	0.625
6540.00	89.300	313.100	5866.28	548.52 N	533.74 W	765.28	2.577
6572.00	90.300	313.900	5866.40	570.55 N	556.95 W	797.26	4.002
6603.00	90.100	314.300	5866.29	592.12 N	579.21 W	828.26	1.443
6635.00	92.000	314.100	5865.70	614.43 N	602.15 W	860.25	5.970
6666.00	91.000	314.100	5864.89	635.99 N	624.40 W	891.24	3.226
6697.00	90.000	314.300	5864.62	657.61 N	646.63 W	922.23	3.290
6729.00	90.100	314.100	5864.59	679.91 N	669.57 W	954.23	0.699
6761.00	91.900	314.500	5864.03	702.26 N	692.47 W	986.22	5.762
6793.00	91.400	314.800	5863.11	724.74 N	715.22 W	1018.21	1.822

Continued...

Sperry-Sun Drilling Services

Survey Report for RU 29-31



Mobil
San Juan County

Utah
Rutherford Unit

Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
6825.00	88.500	315.200	5863.14	747.36 N	737.85 W	1050.20	9.148
6856.00	89.400	314.700	5863.71	769.26 N	759.78 W	1081.20	3.321
6888.00	89.400	314.800	5864.04	791.79 N	782.51 W	1113.19	0.312
6919.00	87.600	315.000	5864.85	813.66 N	804.46 W	1144.18	5.842
6951.00	85.300	315.000	5866.84	836.24 N	827.04 W	1176.12	7.187
6983.00	85.900	314.500	5869.29	858.71 N	849.70 W	1208.02	2.438
7014.00	87.200	314.800	5871.16	880.45 N	871.71 W	1238.97	4.303
7046.00	87.500	314.700	5872.64	902.96 N	894.41 W	1270.93	0.988
7078.00	88.500	314.800	5873.75	925.47 N	917.12 W	1302.91	3.141
7110.00	88.300	315.400	5874.65	948.13 N	939.70 W	1334.90	1.976
7141.00	87.600	316.200	5875.76	970.34 N	961.30 W	1365.88	3.428
7173.00	88.700	316.400	5876.79	993.46 N	983.40 W	1397.85	3.494
7205.00	90.200	317.800	5877.10	1016.90 N	1005.18 W	1429.83	6.412
7236.00	87.700	317.300	5877.66	1039.77 N	1026.10 W	1460.79	8.224
7268.00	86.500	315.700	5879.28	1062.95 N	1048.09 W	1492.73	6.245
7300.00	87.000	315.400	5881.10	1085.76 N	1070.47 W	1524.68	1.821
7331.00	91.400	315.500	5881.53	1107.84 N	1092.21 W	1555.67	14.197
7363.00	94.200	315.900	5879.97	1130.71 N	1114.53 W	1587.63	8.839
7394.00	92.300	316.100	5878.21	1152.98 N	1136.03 W	1618.57	6.163
7426.00	89.400	316.900	5877.73	1176.18 N	1158.05 W	1650.55	9.401
7442.00	88.900	316.900	5877.97	1187.86 N	1168.98 W	1666.54	3.125
7476.00	88.900	316.900	5878.62	1212.68 N	1192.21 W	1700.52	0.000

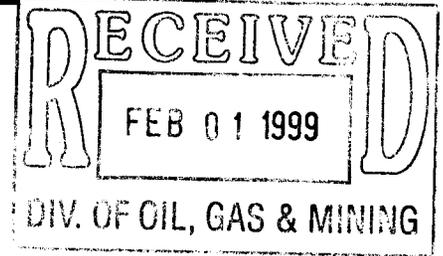
All data is in feet unless otherwise stated. Directions and coordinates are relative to True North. Vertical depths are relative to Well. Northings and Eastings are relative to Well.

The Dogleg Severity is in Degrees per 100ft.
Vertical Section is from Well and calculated along an Azimuth of 315.000° (True).

Based upon Minimum Curvature type calculations, at a Measured Depth of 7476.00ft.,
The Bottom Hole Displacement is 1700.58ft., in the Direction of 315.488° (True).

Mobil

**San Juan County
Utah
Ratherford Unit
RU 29-31 - MWD Survey Leg #2**



SURVEY REPORT

6 January, 1999

sperry-sun
DRILLING SERVICES
A DIVISION OF AMEREN ENERGY SERVICES, INC.

Survey Ref: svy3470

Sperry-Sun Drilling Services

Survey Report for RU 29-31



Mobil
San Juan County

Utah
Ratherford Unit

Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
Gyro							
0.00	0.000	0.000	0.00	0.00 N	0.00 E	0.00	
200.00	1.250	25.390	199.98	1.97 N	0.94 E	-0.40	0.625
400.00	0.700	39.310	399.95	4.89 N	2.64 E	-0.73	0.297
600.00	0.540	22.890	599.94	6.70 N	3.79 E	-0.88	0.119
800.00	0.480	333.010	799.94	8.32 N	3.77 E	-1.84	0.217
1000.00	0.580	337.350	999.93	10.00 N	3.00 E	-3.45	0.054
1200.00	0.560	332.140	1199.92	11.79 N	2.16 E	-5.19	0.028
1400.00	0.510	340.100	1399.91	13.50 N	1.40 E	-6.80	0.045
1600.00	0.610	325.490	1599.90	15.21 N	0.49 E	-8.54	0.087
1800.00	0.930	310.990	1799.88	17.15 N	1.34 W	-11.16	0.186
2000.00	1.000	309.440	1999.85	19.32 N	3.91 W	-14.52	0.037
2200.00	1.020	303.770	2199.82	21.42 N	6.74 W	-18.04	0.051
2400.00	1.030	309.710	2399.79	23.56 N	9.60 W	-21.62	0.053
2600.00	0.830	330.280	2599.76	25.97 N	11.70 W	-24.73	0.193
2800.00	0.670	320.620	2799.75	28.13 N	13.16 W	-27.18	0.102
3000.00	0.620	349.010	2999.73	30.10 N	14.11 W	-29.11	0.160
3200.00	0.880	6.200	3199.72	32.68 N	14.15 W	-30.66	0.171
3400.00	0.760	7.190	3399.70	35.53 N	13.82 W	-32.06	0.060
3600.00	0.470	347.090	3599.69	37.64 N	13.84 W	-33.32	0.179
3800.00	0.210	318.910	3799.68	38.72 N	14.26 W	-34.30	0.151
4000.00	0.110	288.550	3999.68	39.06 N	14.68 W	-34.84	0.064
4200.00	0.060	154.920	4199.68	39.02 N	14.82 W	-34.93	0.079
4400.00	0.100	247.040	4399.68	38.86 N	14.94 W	-34.93	0.059
4600.00	0.190	261.870	4599.68	38.74 N	15.43 W	-35.25	0.048
4800.00	0.170	15.770	4799.68	38.98 N	15.68 W	-35.59	0.151
5000.00	0.350	353.540	4999.68	39.88 N	15.66 W	-36.11	0.102
5200.00	0.240	3.440	5199.68	40.90 N	15.71 W	-36.75	0.060
5400.00	0.260	334.500	5399.67	41.73 N	15.88 W	-37.37	0.063
5600.00	0.090	17.770	5599.67	42.29 N	16.02 W	-37.82	0.102
MWD Survey Leg #2							
5723.00	0.320	49.940	5722.67	42.60 N	15.73 W	-37.77	0.202
5732.00	4.700	126.000	5731.66	42.40 N	15.41 W	-37.39	51.481
5742.00	10.300	128.670	5741.57	41.60 N	14.38 W	-36.09	56.093
5752.00	16.600	129.520	5751.29	40.13 N	12.58 W	-33.77	63.029
5762.00	23.200	129.640	5760.69	37.96 N	9.96 W	-30.37	66.001

Continued...

Sperry-Sun Drilling Services

Survey Report for RU 29-31



Mobil
San Juan County

Utah
Ratherford Unit

Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
5772.00	29.000	130.190	5769.67	35.14 N	6.59 W	-25.99	58.050
5782.00	33.800	130.370	5778.20	31.77 N	2.62 W	-20.79	48.009
5792.00	35.500	130.500	5786.43	28.08 N	1.71 E	-15.12	17.016
5802.00	39.300	128.500	5794.37	24.23 N	6.40 E	-9.06	39.890
5812.00	44.800	124.100	5801.79	20.27 N	11.80 E	-2.37	62.371
5822.00	50.100	123.100	5808.55	16.20 N	17.94 E	4.99	53.508
5832.00	55.900	123.500	5814.57	11.82 N	24.61 E	12.96	58.088
5842.00	62.100	123.700	5819.72	7.08 N	31.74 E	21.52	62.024
5852.00	68.000	124.800	5823.93	1.97 N	39.23 E	30.58	59.836
5862.00	73.600	126.400	5827.22	3.52 S	46.91 E	40.02	58.001
5892.00	87.300	132.500	5832.19	22.29 S	69.67 E	69.46	49.854
5935.00	88.200	131.900	5833.88	51.15 S	101.50 E	112.18	2.515
5967.00	90.100	130.300	5834.35	72.18 S	125.60 E	144.05	7.762
5998.00	90.300	129.700	5834.25	92.11 S	149.35 E	174.97	2.040
6030.00	89.900	127.100	5834.19	111.99 S	174.43 E	206.94	8.221
6061.00	89.300	125.500	5834.41	130.34 S	199.41 E	237.94	5.512
6093.00	89.400	125.700	5834.77	148.96 S	225.43 E	269.93	0.699
6125.00	89.600	126.200	5835.05	167.75 S	251.33 E	301.93	1.683
6157.00	89.400	126.600	5835.33	186.74 S	277.09 E	333.93	1.397
6189.00	89.100	126.200	5835.75	205.73 S	302.84 E	365.93	1.562
6220.00	89.800	124.500	5836.04	223.66 S	328.12 E	396.92	5.930
6252.00	89.800	124.500	5836.16	241.78 S	354.50 E	428.91	0.000
6284.00	89.700	123.600	5836.30	259.70 S	381.01 E	460.89	2.830
6316.00	89.700	123.800	5836.46	277.46 S	407.63 E	492.86	0.625
6347.00	89.300	124.300	5836.73	294.81 S	433.31 E	523.85	2.065
6379.00	89.500	123.900	5837.07	312.75 S	459.81 E	555.83	1.397
6411.00	88.000	124.300	5837.77	330.69 S	486.30 E	587.80	4.851
6443.00	87.600	124.600	5838.99	348.78 S	512.67 E	619.76	1.562
6475.00	88.100	124.600	5840.20	366.93 S	538.99 E	651.73	1.562
6506.00	89.200	124.800	5840.93	384.58 S	564.47 E	682.72	3.607
6538.00	90.300	125.300	5841.07	402.95 S	590.67 E	714.71	-3.776
6569.00	91.300	125.300	5840.63	420.87 S	615.96 E	745.70	3.226
6601.00	91.700	125.700	5839.79	439.44 S	642.01 E	777.69	1.767
6632.00	91.100	126.000	5839.04	457.59 S	667.13 E	808.68	2.164
6664.00	89.800	125.000	5838.79	476.17 S	693.18 E	840.68	5.125
6696.00	90.000	125.500	5838.84	494.64 S	719.31 E	872.68	1.683
6728.00	89.600	125.500	5838.95	513.22 S	745.36 E	904.67	1.250
6759.00	89.100	125.300	5839.31	531.18 S	770.63 E	935.67	1.737
6791.00	90.100	125.700	5839.53	549.76 S	796.68 E	967.67	3.366
6823.00	89.600	125.900	5839.61	568.48 S	822.63 E	999.67	1.683

Continued...

Sperry-Sun Drilling Services

Survey Report for RU 29-31



Mobil
San Juan County

Utah
Ratherford Unit

Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
6855.00	89.400	126.600	5839.89	587.40 S	848.44 E	1031.67	2.275
6886.00	88.200	126.700	5840.54	605.90 S	873.30 E	1062.66	3.884
6918.00	88.900	126.700	5841.35	625.02 S	898.95 E	1094.64	2.187
6949.00	89.200	127.400	5841.86	643.69 S	923.69 E	1125.63	2.456
6981.00	89.600	127.100	5842.20	663.06 S	949.16 E	1157.62	1.562
7013.00	91.000	126.000	5842.03	682.12 S	974.87 E	1189.62	5.564
7045.00	90.000	126.200	5841.75	700.97 S	1000.72 E	1221.62	3.187
7076.00	91.400	126.200	5841.37	719.28 S	1025.73 E	1252.62	4.516
7108.00	92.500	126.000	5840.29	738.12 S	1051.57 E	1284.60	3.494
7140.00	94.100	127.100	5838.44	757.15 S	1077.24 E	1316.54	6.064
7171.00	93.300	127.300	5836.44	775.85 S	1101.88 E	1347.47	2.660
7203.00	85.800	125.300	5836.69	794.78 S	1127.65 E	1379.44	24.255
7235.00	84.600	126.000	5839.37	813.36 S	1153.56 E	1411.33	4.338
7267.00	86.800	126.000	5841.77	832.12 S	1179.37 E	1443.24	6.875
7297.00	88.200	126.000	5843.08	849.74 S	1203.62 E	1473.21	4.667
7329.00	89.300	125.900	5843.78	868.52 S	1229.52 E	1505.20	3.452
7361.00	90.500	125.200	5843.83	887.12 S	1255.55 E	1537.20	4.341
7390.00	90.000	123.900	5843.71	903.57 S	1279.44 E	1566.19	4.803
7424.00	90.000	123.900	5843.71	922.53 S	1307.66 E	1600.17	0.000

All data is in feet unless otherwise stated. Directions and coordinates are relative to True North. Vertical depths are relative to Well. Northings and Eastings are relative to Well.

The Dogleg Severity is in Degrees per 100ft.

Vertical Section is from Well and calculated along an Azimuth of 126.000° (True).

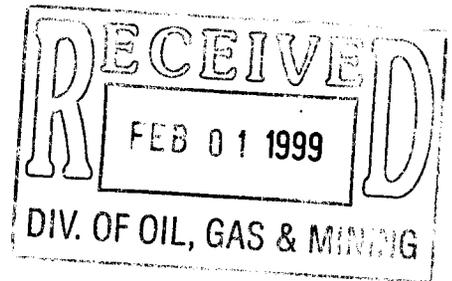
Based upon Minimum Curvature type calculations, at a Measured Depth of 7424.00ft., The Bottom Hole Displacement is 1600.32ft., in the Direction of 125.202° (True).

Mobil

**San Juan County
Utah
Ratherford Unit
RU 29-31 - MWD Survey Leg #3**

SURVEY REPORT

6 January, 1999



sperry-sun
DRILLING SERVICES
A DIVISION OF HUBBARD OILFIELD, INC.

Survey Ref: svy3472

Sperry-Sun Drilling Services

Survey Report for RU 29-31



Mobil
San Juan County

Utah
Ratherford Unit

Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
Gyro							
0.00	0.000	0.000	0.00	0.00 N	0.00 E	0.00	
200.00	1.250	25.390	199.98	1.97 N	0.94 E	1.08	0.625
400.00	0.700	39.310	399.95	4.89 N	2.64 E	2.49	0.297
600.00	0.540	22.890	599.94	6.70 N	3.79 E	3.32	0.119
800.00	0.480	333.010	799.94	8.32 N	3.77 E	4.65	0.217
1000.00	0.580	337.350	999.93	10.00 N	3.00 E	6.47	0.054
1200.00	0.560	332.140	1199.92	11.79 N	2.16 E	8.43	0.028
1400.00	0.510	340.100	1399.91	13.50 N	1.40 E	10.25	0.045
1600.00	0.610	325.490	1599.90	15.21 N	0.49 E	12.18	0.087
1800.00	0.930	310.990	1799.88	17.15 N	1.34 W	14.82	0.186
2000.00	1.000	309.440	1999.85	19.32 N	3.91 W	18.07	0.037
2200.00	1.020	303.770	2199.82	21.42 N	6.74 W	21.41	0.051
2400.00	1.030	309.710	2399.79	23.56 N	9.60 W	24.81	0.053
2600.00	0.830	330.280	2599.76	25.97 N	11.70 W	27.98	0.193
2800.00	0.670	320.620	2799.75	28.13 N	13.16 W	30.59	0.102
3000.00	0.620	349.010	2999.73	30.10 N	14.11 W	32.75	0.160
3200.00	0.880	6.200	3199.72	32.68 N	14.15 W	34.89	0.171
3400.00	0.760	7.190	3399.70	35.53 N	13.82 W	37.03	0.060
3600.00	0.470	347.090	3599.69	37.64 N	13.84 W	38.77	0.179
3800.00	0.210	318.910	3799.68	38.72 N	14.26 W	39.90	0.151
4000.00	0.110	288.550	3999.68	39.06 N	14.68 W	40.42	0.064
4200.00	0.060	154.920	4199.68	39.02 N	14.82 W	40.47	0.079
4400.00	0.100	247.040	4399.68	38.86 N	14.94 W	40.40	0.059
4600.00	0.190	261.870	4599.68	38.74 N	15.43 W	40.59	0.048
4800.00	0.170	15.770	4799.68	38.98 N	15.68 W	40.92	0.151
5000.00	0.350	353.540	4999.68	39.88 N	15.66 W	41.65	0.102
5200.00	0.240	3.440	5199.68	40.90 N	15.71 W	42.51	0.060
5400.00	0.260	334.500	5399.67	41.73 N	15.88 W	43.29	0.063
5600.00	0.090	17.770	5599.67	42.29 N	16.02 W	43.83	0.102
MWD Survey Leg #3							
5696.00	0.270	47.710	5695.67	42.51 N	15.83 W	43.91	0.205
5705.00	2.900	325.000	5704.67	42.71 N	15.95 W	44.14	31.980
5715.00	6.500	319.580	5714.63	43.35 N	16.46 W	44.95	36.233
5725.00	11.300	318.260	5724.51	44.51 N	17.48 W	46.49	48.040
5735.00	16.000	317.670	5734.22	46.26 N	19.06 W	48.83	47.020

Continued...

Sperry-Sun Drilling Services

Survey Report for RU 29-31



Mobil
San Juan County

Utah
Ratherford Unit

Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
5745.00	20.900	317.320	5743.71	48.60 N	21.20 W	51.97	49.012
5755.00	25.700	317.100	5752.89	51.50 N	23.89 W	55.89	48.008
5765.00	30.100	311.500	5761.73	54.75 N	27.24 W	60.47	51.169
5775.00	34.800	312.100	5770.16	58.33 N	31.24 W	65.70	47.110
5785.00	38.000	313.700	5778.21	62.37 N	35.59 W	71.50	33.377
5795.00	43.000	318.300	5785.81	67.04 N	40.08 W	77.91	58.218
5805.00	47.700	319.900	5792.84	72.42 N	44.74 W	84.98	48.356
5815.00	52.200	321.900	5799.27	78.36 N	49.56 W	92.62	47.529
5825.00	55.400	324.700	5805.18	84.83 N	54.38 W	100.68	39.168
5835.00	58.800	327.900	5810.61	91.82 N	59.03 W	109.07	43.328
5845.00	63.100	330.000	5815.47	99.31 N	63.53 W	117.79	46.752
5855.00	67.800	331.600	5819.62	107.25 N	67.97 W	126.84	49.200
5865.00	71.900	332.600	5823.06	115.54 N	72.36 W	136.15	42.060
5875.00	75.800	333.400	5825.85	124.10 N	76.72 W	145.66	39.749
5885.00	80.100	334.500	5827.93	132.88 N	81.01 W	155.32	44.325
5912.00	88.200	331.600	5830.68	156.80 N	93.18 W	181.89	31.843
5967.00	88.000	325.000	5832.51	203.54 N	122.05 W	236.74	11.999
5999.00	90.100	324.100	5833.04	229.61 N	140.60 W	268.73	7.140
6030.00	91.200	325.400	5832.69	254.92 N	158.49 W	299.73	5.493
6062.00	92.200	324.700	5831.74	281.14 N	176.82 W	331.71	3.814
6094.00	90.900	324.500	5830.87	307.21 N	195.35 W	363.70	4.110
6126.00	90.400	325.600	5830.51	333.44 N	213.68 W	395.69	3.776
6158.00	91.500	326.600	5829.98	359.99 N	231.52 W	427.68	4.645
6189.00	91.800	326.100	5829.09	385.79 N	248.69 W	458.66	1.880
6221.00	91.100	326.800	5828.28	412.45 N	266.37 W	490.64	3.093
6253.00	90.400	327.000	5827.86	439.25 N	283.84 W	522.62	2.275
6285.00	90.900	327.100	5827.49	466.10 N	301.25 W	554.60	1.593
6316.00	90.100	327.300	5827.22	492.16 N	318.04 W	585.57	2.660
6348.00	88.500	326.600	5827.61	518.98 N	335.49 W	617.55	5.457
6379.00	91.400	327.000	5827.64	544.92 N	352.46 W	648.53	9.443
6411.00	91.100	327.300	5826.94	571.79 N	369.82 W	680.50	-1.326
6442.00	91.200	327.000	5826.32	597.83 N	386.63 W	711.47	1.020
6474.00	91.000	326.800	5825.71	624.63 N	404.10 W	743.45	0.884
6506.00	88.300	325.400	5825.90	651.19 N	421.95 W	775.44	9.504
6538.00	87.200	325.000	5827.16	677.44 N	440.19 W	807.42	3.657
6569.00	87.500	324.700	5828.59	702.76 N	458.02 W	838.38	1.368
6601.00	85.500	323.100	5830.55	728.57 N	476.84 W	870.31	7.998
6633.00	83.900	322.700	5833.50	753.98 N	496.06 W	902.15	5.153
6664.00	86.900	321.200	5835.99	778.31 N	515.10 W	933.01	10.812
6696.00	87.500	321.200	5837.55	803.22 N	535.13 W	964.90	1.875

Continued...

Sperry-Sun Drilling Services

Survey Report for RU 29-31



Mobil
San Juan County

Utah
Ratherford Unit

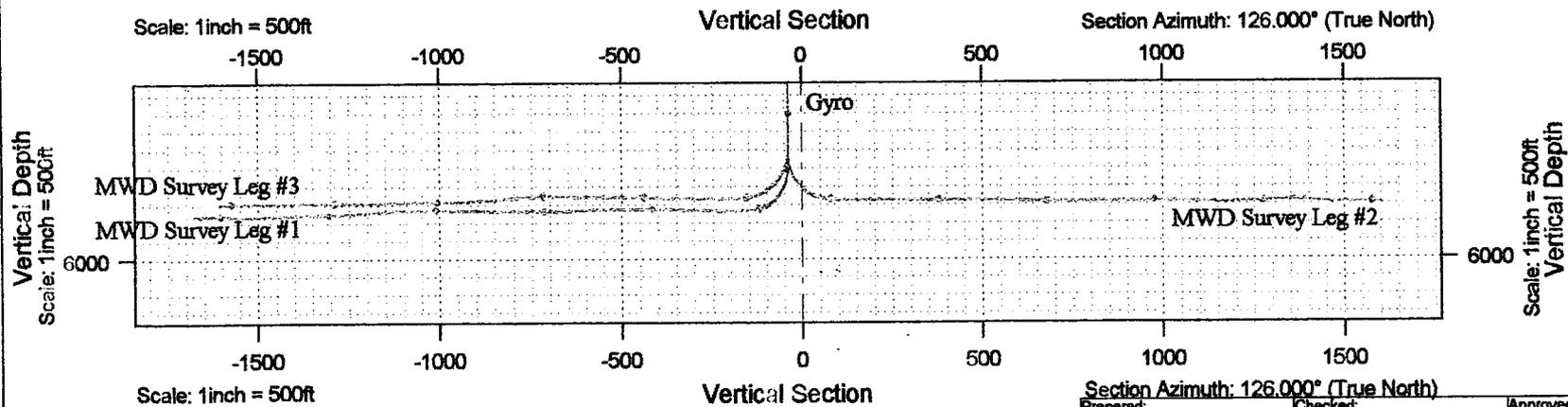
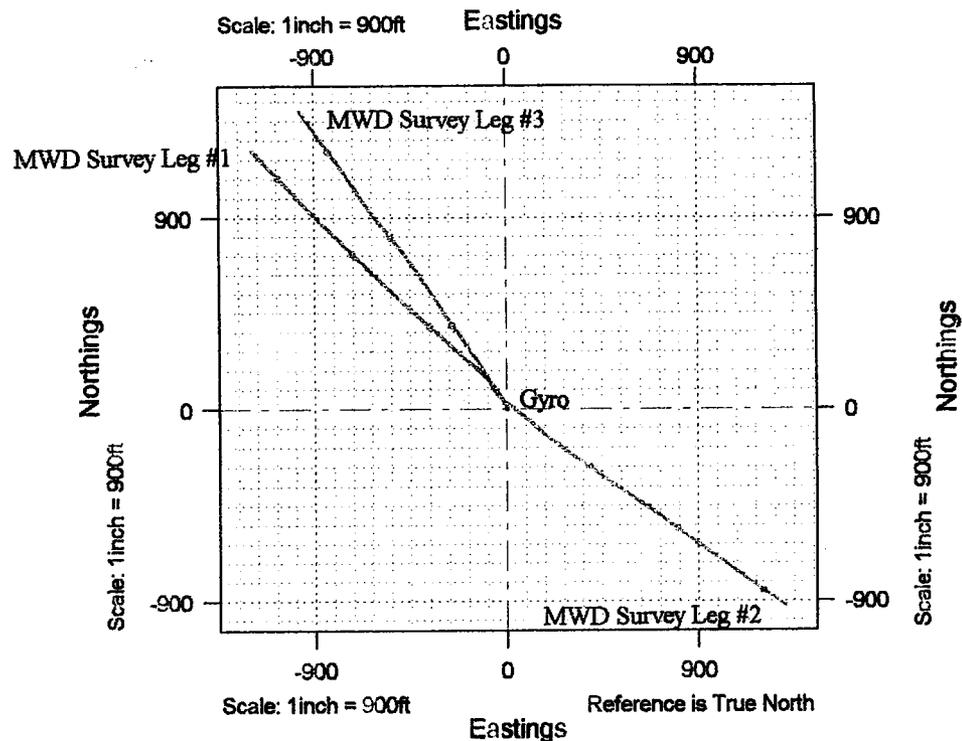
Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
6727.00	88.300	320.800	5838.69	827.30 N	554.63 W	995.80	2.885
6759.00	88.500	320.100	5839.58	851.96 N	574.99 W	1027.69	2.274
6791.00	88.700	319.800	5840.36	876.45 N	595.58 W	1059.55	1.127
6823.00	89.500	322.000	5840.86	901.28 N	615.76 W	1091.47	7.315
6854.00	90.000	324.500	5841.00	926.11 N	634.30 W	1122.45	8.224
6886.00	89.000	324.500	5841.28	952.16 N	652.88 W	1154.45	3.125
6918.00	89.200	325.200	5841.78	978.33 N	671.30 W	1186.44	2.275
6950.00	88.900	326.300	5842.31	1004.77 N	689.31 W	1218.43	3.563
6982.00	89.100	326.100	5842.87	1031.36 N	707.11 W	1250.42	0.884
7013.00	89.200	325.200	5843.33	1056.95 N	724.60 W	1281.42	2.921
7045.00	90.700	325.900	5843.36	1083.34 N	742.70 W	1313.41	5.173
7077.00	89.800	324.700	5843.22	1109.64 N	760.92 W	1345.41	4.687
7109.00	89.100	324.300	5843.53	1135.70 N	779.50 W	1377.41	2.519
7140.00	89.800	322.700	5843.82	1160.61 N	797.94 W	1408.40	5.633
7171.00	90.400	323.100	5843.77	1185.34 N	816.64 W	1439.37	2.326
7202.00	90.800	325.000	5843.45	1210.43 N	834.83 W	1470.37	6.263
7234.00	91.300	324.700	5842.86	1236.59 N	853.25 W	1502.36	1.822
7265.00	90.800	323.800	5842.29	1261.74 N	871.36 W	1533.35	3.321
7297.00	89.800	324.100	5842.12	1287.62 N	890.19 W	1565.35	3.263
7329.00	89.300	326.600	5842.37	1313.94 N	908.38 W	1597.34	7.967
7361.00	88.900	325.400	5842.88	1340.46 N	926.28 W	1629.33	3.952
7398.00	86.200	324.700	5844.46	1370.76 N	947.45 W	1666.30	7.538
7432.00	86.200	324.700	5846.71	1398.45 N	967.05 W	1700.22	0.000

All data is in feet unless otherwise stated. Directions and coordinates are relative to True North.
Vertical depths are relative to Well. Northings and Eastings are relative to Well.

The Dogleg Severity is in Degrees per 100ft.
Vertical Section is from Well and calculated along an Azimuth of 325.000° (True).

Based upon Minimum Curvature type calculations, at a Measured Depth of 7432.00ft.,
The Bottom Hole Displacement is 1700.25ft., in the Direction of 325.335° (True).

**San Juan County
 Utah
 Rutherford Unit
 RU 29-31**



Prepared: _____ Checked: _____ Approved: _____

DRILLED FOOTAGE CALCULATION FOR DIRECTIONAL AND HORIZONTAL WELLS

Unit, Well Name: Ratherford Unit, Well 29-31
API Well #: 43-037-30914
Well Completion: Horizontal, Producer, 3 Laterals

First leg description:	Lateral #1
KOP MD:	5741.00
EOL MD:	7476.00
Footage drilled:	1735.00
Max. TVD Recorded	5879.97

Second leg description:	Lateral #2
KOP MD:	5723.00
EOL MD:	7424.00
Footage drilled:	1701.00
Max. TVD Recorded	5843.83

Third leg description:	Lateral #3
KOP MD:	5696.00
EOL MD:	7432.00
Footage drilled:	1736.00
Max. TVD Recorded	5846.71

Total Footage Drilled (MD):	5172.00
Deepest point (TVD):	5879.97

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT -" for such proposals

5. Lease Designation and Serial No.

14-20-603-407

6. If Indian, Allottee or Tribe Name

NAVAJO TRIBAL

7. If Unit or CA, Agreement Designation

RATHERFORD UNIT

8. Well Name and No.

RATHERFORD 29-31

9. API Well No.

43-037-30914

10. Field and Pool, or exploratory Area

GREATER ANETH

11. County or Parish, State

SAN JUAN UT

SUBMIT IN TRIPLICATE

1. Type of Well

Oil Well Gas Well Other

2. Name of Operator MOBIL PRODUCING TX & NM INC.*

*MOBIL EXPLORATION & PRODUCING US INC. AS AGENT FOR MPTM

3. Address and Telephone No.

P.O. Box 633, Midland TX 79702 (915) 688-2585

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

SEC. 29, T41S, R24E
NW/NE 700' FNL & 2140' FEL

12. CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION
<input type="checkbox"/> Notice of Intent	<input type="checkbox"/> Abandonment
<input checked="" type="checkbox"/> Subsequent Report	<input checked="" type="checkbox"/> Recompletion
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Plugging Back
	<input type="checkbox"/> Casing Repair
	<input type="checkbox"/> Altering Casing
	<input checked="" type="checkbox"/> Other <u>SIDETRACK</u>
	<input type="checkbox"/> Change of Plans
	<input type="checkbox"/> New Construction
	<input type="checkbox"/> Non-Routine Fracturing
	<input type="checkbox"/> Water Shut-Off
	<input type="checkbox"/> Conversion to Injection
	<input type="checkbox"/> Dispose Water

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

13. 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.)*

BHL:

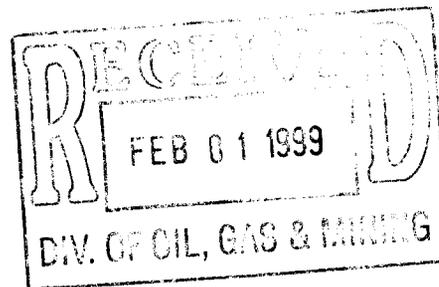
LATERAL #1: 1213' NORTH & 1192' WEST FROM SURFACE SPOT (ZONE 1a/1b).

LATERAL #2: 923' SOUTH & 1308' EAST FROM SURFACE SPOT (ZONE 1a).

LATERAL #3: 1398' NORTH & 967' WEST FROM SURFACE SPOT (ZONE 1a).

10-23-98 -- 12-17-98 HORIZONTAL RECOMPLETION.

ATTACHED FORM 15



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

Signed

Shirley Houchins

for Title

SHIRLEY HOUCHINS/ENV & REG TECH

Date

1-28-99

(This space for Federal or State office use)

Approved by

Title

Date

Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

* See Instruction on Reverse Side

w TC
3-1-99
RJK

RECEIVED
 Form 3160-4
 (July 1992)
 FEB 01 1999

UNITED STATES
 DEPARTMENT OF THE INTERIOR
 BUREAU OF LAND MANAGEMENT

SUBMIT IN DUPLICATE
 (See other instructions on reverse side)

FORM APPROVED
 OMB NO. 1004-0137
 Expires: February 28, 1995

DIV. WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

5. LEASE DESIGNATION AND SERIAL NO. **14-20-603-407**

6. IF INDIAN, ALLOTTEE OR TRIBE NAME **NAVAJO TRIBAL**

7. UNIT AGREEMENT NAME **RATHERFORD UNIT**

8. FARM OR LEASE NAME, WELL NO. **RATHERFORD 29-31**

9. API WELL NO. **43-037-30914**

10. FIELD AND POOL, OR WILDCAT **GREATER ANETH**

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA **SEC. 29, T41S, R24E**

12. COUNTY OR PARISH **SAN JUAN** 13. STATE **UT**

14. PERMIT NO. **43-037-30914** DATE ISSUED **7-15-83 ORIG**

15. DATE SPUDDED **10-23-98** 16. DATE T.D. REACHED **11-12-98** 17. DATE COMPL. (Ready to prod.) **12-17-98** 18. ELEVATIONS (DF, RKB, RT, GR, ETC.)* **5093' GR; 5105' RKB** 19. ELEV. CASINGHEAD

20. TOTAL DEPTH, MD & TVD ****#24 & 31** 21. PLUG, BACK T.D., MD & TVD ****#24 & 31** 22. IF MULTIPLE COMPL., HOW MANY* 23. INTERVALS DRILLED BY **ROTARY TOOLS X** CABLE TOOLS

24. PRODUCING INTERVAL(S), OF THIS COMPLETION - TOP, BOTTOM, NAME (MD AND TVD)* **** LAT 1, (5741-7476' TMD)(5741-5879'TVD) LAT 2, (5723-7424'TMD)(5723-5844'TVD)** 25. WAS DIRECTIONAL SURVEY MADE **YES**

26. TYPE ELECTRIC AND OTHER LOGS RUN **NO** 27. WAS WELL CORED **NO**

28. CASING RECORD (Report all strings set in well)

CASING SIZE/GRADE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	TOP OF CEMENT, CEMENTING RECORD	AMOUNT PULLED
13 3/8"	48#	124'	18"	250 SXS SURFACE	
9 5/8"	36#	1599'	12 1/4"	300 SXS CMT TOP ANNULUS	
7"	23 & 26#	5962'	8 3/4"	700 SXS TOC @3036'	
ORIGINAL	CASING	UNDISTURBED			

29. LINEAR RECORD 30. TUBING RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)
					2 3/8"	5530'	5530'

31. PERFORATION RECORD (Interval, size and number) ***LAT 3, 1398' FNL & 967' FWL, ALL F/SURF SPOT**
**** LAT #3 (5696-7432'TMD)(5696-5847'TVD)**

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
5915-7432'	LAT 3 - 21000 GALS 15% NEFE
5892-7424'	LAT 2 - 21250 GALS 15% HCL
5932-7476'	LAT 1 - 15810 GALS 15% HCL

33. PRODUCTION

DATE FIRST PRODUCTION **12-23-98** PRODUCTION METHOD (Flowing, gas lift, pumping - size and type of pump) **PUMPING** WELL STATUS (Producing or shut-in) **PRODUCING**

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD	OIL - BBL.	GAS - MCF.	WATER - BBL.	GAS - OIL RATIO
12-23-98				200	102	1442	510

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE	OIL - BBL.	GAS - MCF.	WATER - BBL.	OIL GRAVITY - API (CORR.)

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.) TEST WITNESSED BY

35. LIST OF ATTACHMENTS **DIRECTIONAL SURVEY**

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED *Shirley Houchins* TITLE **SHIRLEY HOUCHINS/ENV & REG TECH** DATE **1-27-99**

*(See Instructions and Spaces for Additional Data on Reverse Side)

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT - " for such proposals

5. Lease Designation and Serial No.

14-20-603-407

6. If Indian, Allottee or Tribe Name

NAVAJO TRIBAL

7. If Unit or CA, Agreement Designation

RATHERFORD UNIT

8. Well Name and No.

RATHERFORD 29-31

9. API Well No.

43-037-30914

10. Field and Pool, or exploratory Area

GREATER ANETH

11. County or Parish, State

SAN JUAN UT

SUBMIT IN TRIPLICATE

1. Type of Well

Oil Well Gas Well Other

2. Name of Operator

MOBIL PRODUCING TX & NM INC.*
*MOBIL EXPLORATION & PRODUCING US INC. AS AGENT FOR MPTM

3. Address and Telephone No.

P.O. Box 633, Midland TX 79702 (915) 688-2585

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

SEC. 29, T41S, R24E
NW/NE 700' FNL & 2140' FEL

12. CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION

Notice of Intent
 Subsequent Report
 Final Abandonment Notice

TYPE OF ACTION

Abandonment
 Recompletion
 Plugging Back
 Casing Repair
 Altering Casing
 Other SIDETRACK

Change of Plans
 New Construction
 Non-Routine Fracturing
 Water Shut-Off
 Conversion to Injection
 Dispose Water

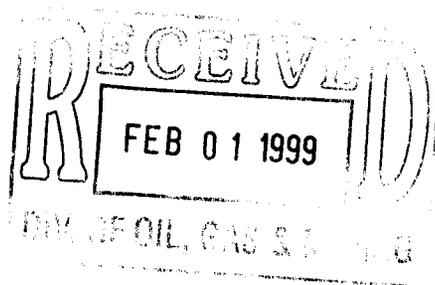
(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. 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.)*

BHL:

LATERAL #1: 1213' NORTH & 1192' WEST FROM SURFACE SPOT (ZONE 1a/1b).
LATERAL #2: 923' SOUTH & 1308' EAST FROM SURFACE SPOT (ZONE 1a).
LATERAL #3: 1398' NORTH & 967' WEST FROM SURFACE SPOT (ZONE 1a).

SEE ATTACHED PROCEDURE 10-23-98 -- 12-17-98



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

Signed

Shirley Houchins

Title SHIRLEY HOUCHINS/ENV & REG TECH

Date 1-27-99

(This space for Federal or State office use)

Approved by _____

Title _____

Date _____

Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

* See Instruction on Reverse Side

ExxonMobil Production Comp
U.S. West
P.O. Box 4358
Houston, Texas 77210-4358

June 27, 2001

ExxonMobil
Production

Mr. Jim Thompson
State of Utah, Division of Oil, Gas and Mining
1549 West North Temple
Suite 1210
Salt Lake City, UT 84114-5801

Change of Name – Mobil Oil Corporation to
ExxonMobil Oil Corporation

Dear Mr. Thompson

Effective June 1, 2001, Mobil Oil Corporation (MOC) changed its name to ExxonMobil Oil Corporation (EMOC). This was a name change only; EMOC is the same corporation as Mobil Oil Corporation, but with a new name. No facility or other asset was transferred from one corporation to another by virtue of the name change. Specifically, EMOC will remain the owner and operator of its existing exploration and production oil and gas properties and facilities, as well as relevant permits.

There is no change to the name of Exxon Mobil Corporation, the ultimate shareholder of EMOC.

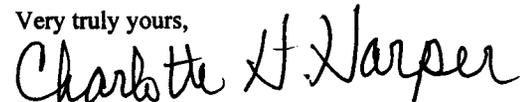
Please note the change of name of MOC to ExxonMobil Oil Corporation in your records pertaining to any MOC permits.

The Federal Identification Number for MOC (13-5401570) will remain the same for EMOC.

A copy of the Certification, Bond Rider and a list of wells are attached.

If you have any questions please feel free to call Joel Talavera at 713-431-1010

Very truly yours,



Charlotte H. Harper
Permitting Supervisor

ExxonMobil Production Company
a division of Exxon Mobil Corporation,
acting for ExxonMobil Oil Corporation

RECEIVED

JUN 29 2001

DIVISION OF
OIL, GAS AND MINING



United States Department of the Interior

BUREAU OF INDIAN AFFAIRS

Navajo Area Office
NAVAJO REGION

P.O. Box 1060
Gallup, New Mexico 87305-1060

AUG 30 2001

IN REPLY REFER TO:

RRES/543

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Charlotte H. Harper, Permitting Supervisor
Exxon Mobil Production Company
U. S. West
P. O. Box 4358
Houston, TX 77210-4358

Dear Ms. Harper:

This is to acknowledge receipt of your company's name change from Mobil Oil Corporation to ExxonMobil Oil Corporation effective June 1, 2001. The receipt of documents includes the Name Change Certification, current listing of Officers and Directors, Listing of Leases, Financial Statement, filing fees of \$75.00 and a copy of the Rider for Bond Number 8027 31 97. There are no other changes.

Please note that we will provide copies of these documents to other concerned parties. If you need further assistance, you may contact Ms. Bertha Spencer, Realty Specialist, at (928) 871-5938.

Sincerely,

DEMI DENETSONE

Regional Realty Officer

cc: BLM, Farmington Field Office w/enclosures ✓
Navajo Nation Minerals Office, Attn: Mr. Akhtar Zaman, Director/w enclosures

MINERAL RESOURCES	
ADM 1	<i>ES/MC</i>
NATV ADMIN COORD	
SOLID MIN TEAM	
PETRO MENT TEAM	<i>2</i>
O & G INSPECT TEAM	
ALL TEAM LEADERS	
LAND RESOURCES	
ENVIRONMENT	
FILES	

ExxonMobil Production Company
U.S. West
P.O. Box 4358
Houston, Texas 77210-4358

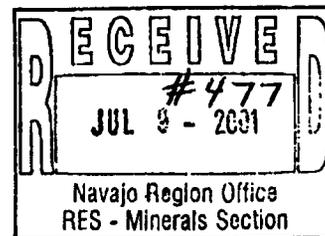
MS 7/12/2001
JK
543
File

June 27, 2001

ExxonMobil
Production

Certified Mail
Return Receipt Requested

Ms. Genni Denetsone
United States Department of the Interior
Bureau of Indian Affairs, Navajo Region
Real Estate Services
P. O. Box 1060
Gallup, New Mexico 87305-1060
Mail Code 543



Change of Name -
Mobil Oil Corporation to
ExxonMobil Oil Corporation

Dear Ms. Denetsone:

Effective June 1, 2001, Mobil Oil Corporation (MOC) changed its name to ExxonMobil Oil Corporation (EMOC). This was a name change only; EMOC is the same corporation as Mobil Oil Corporation, but with a new name. No facility or other asset was transferred from one corporation to another by virtue of the name change. Specifically, EMOC will remain the owner and operator of its existing exploration and production oil and gas properties and facilities, as well as relevant permits.

There is no change to the name of Exxon Mobil Corporation, the ultimate shareholder of EMOC.

Please note the change of name of MOC to ExxonMobil Oil Corporation in your records pertaining to any MOC permits.

The Federal Identification Number for MOC (13-5401570) will remain the same for EMOC.

Attached is the Name Change Certification, Current listing of Officers and Directors, Filing Fee of \$75/-, Listing of Leases, Financial Statement and a copy of the Rider for Bond number 8027 31 97. The original Bond Rider has been sent to Ms. Barbar Davis at your Washington Office.

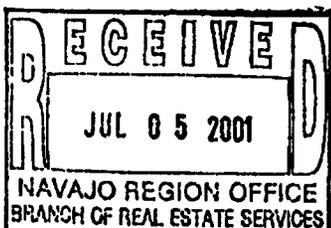
If you have any questions , please contact Alex Correa at (713) 431-1012.

Very truly yours,

Charlotte H. Harper

Charlotte H. Harper
Permitting Supervisor

Attachments



ExxonMobil Production Company
a division of Exxon Mobil Corporation,
acting for ExxonMobil Oil Corporation

NOTE: Check forwarded to Ella Isaac

Bureau of Indian Affairs
Navajo Region Office
Attn: RRES - Mineral and Mining Section
P.O. Box 1060
Gallup, New Mexico 87305-1060

Gentlemen:

The current listing of officers and director of ExxonMobil Oil Corporation (Name of Corporation), of New York (State) is as follows:

OFFICERS

President	<u>F.A. Risch</u>	Address <u>5959 Las Colinas Blvd. Irving, TX 75039</u>
Vice President	<u>K.T. Koonce</u>	Address <u>800 Bell Street Houston, TX 77002</u>
Secretary	<u>F.L. Reid</u>	Address <u>5959 Las Colinas Blvd. Irving, TX 75039</u>
Treasure	<u>B.A. Maher</u>	Address <u>5959 Las Colinas Blvd. Irving, TX 75039</u>

DIRECTORS

Name	<u>D.D. Humphreys</u>	Address <u>5959 Las Colinas Blvd. Irving, TX 75039</u>
Name	<u>P.A. Hanson</u>	Address <u>5959 Las Colinas Blvd. Irving, TX 75039</u>
Name	<u>T.P. Townsend</u>	Address <u>5959 Las Colinas Blvd. Irving, TX 75039</u>
Name	<u>B.A. Maher</u>	Address <u>5959 Las Colinas Blvd. Irving, TX 75039</u>
Name	<u>F.A. Risch</u>	Address <u>5959 Las Colinas Blvd. Irving, TX 75039</u>

Sincerely,



Alex Correa

This is to certify that the above information pertaining to ExxonMobil Oil Corporation (Corporation) is true and correct as evidenced by the records and accounts covering business for the State of Utah and in the custody of Corporation Service Company (Agent), Phone: 1 (800) 927-9800 whose business address is One Utah Center, 201 South Main Street, Salt Lake City, Utah 84111-2218





 Signature
AGENT AND ATTORNEY IN FACT

 Title

CERTIFICATION

I, the undersigned Assistant Secretary of ExxonMobil Oil Corporation. (formerly Mobil Oil Corporation), a corporation organized and existing under the laws of the State of New York, United States of America, DO HEREBY CERTIFY, That, the following is a true and exact copy of the resolutions adopted by the Board of Directors on May 22, 2001:

CHANGE OF COMPANY NAME

WHEREAS, the undersigned Directors of the Corporation deem it to be in the best interest of the Corporation to amend the Certificate of Incorporation of the Corporation to change the name and principal office of the Corporation:

NOW THEREFORE BE IT RESOLVED, That Article 1st relating to the corporate name is hereby amended to read as follows:

"1st The corporate name of said Company shall be,

ExxonMobil Oil Corporation",

FURTHER RESOLVED, That the amendment of the Corporation's Certificate of Incorporation referred to in the preceding resolutions be submitted to the sole shareholder of the Corporation entitled to vote thereon for its approval and, if such shareholder gives its written consent, pursuant to Section 803 of the Business Corporation Law of the State of New York, approving such amendment, the proper officers of the Corporation be, and they hereby are, authorized to execute in the name of the Corporation the Certificate of Amendment of Certificate of Incorporation, in the form attached hereto;

FURTHER RESOLVED, That the proper officers of the Corporation be and they hereby are authorized and directed to deliver, file and record in its behalf, the Certificate of Amendment of Certificate of Incorporation, and to take such action as may be deemed necessary or advisable to confirm and make effective in all respects the change of this Company's name to EXXONMOBIL OIL CORPORATION.

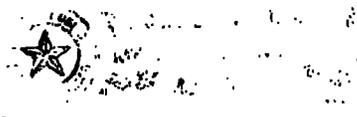
WITNESS, my hand and the seal of the Corporation at Irving, Texas, this 8th day of June, 2001.

S. A. Milligan
Assistant Secretary

COUNTY OF DALLAS)
STATE OF TEXAS)
UNITED STATES OF AMERICA)

Sworn to and subscribed before me at Irving, Texas, U. S. A. on this the 8th day of June, 2001.

Janice M. Phillips
Notary Public



LISTING OF LEASES OF MOBIL OIL CORPORATION**Lease Number**

- 1) 14-20-0603-6504
- 2) 14-20-0603-6505
- 3) 14-20-0603-6506
- 4) 14-20-0603-6508
- 5) 14-20-0603-6509
- 6) 14-20-0603-6510
- 7) 14-20-0603-7171
- 8) 14-20-0603-7172A
- 9) 14-20-600-3530
- 10) 14-20-603-359
- 11) 14-20-603-368
- 12) 14-20-603-370
- 13) 14-20-603-370A
- 14) 14-20-603-372
- 15) 14-20-603-372A
- 16) 14-20-603-4495
- 17) 14-20-603-5447
- 18) 14-20-603-5448
- 19) 14-20-603-5449
- 20) 14-20-603-5450
- 21) 14-20-603-5451

6/1/01

CHUBB GROUP OF INSURANCE COMPANIES

One Chubb Plaza, Suite 1900, Houston, Texas 77027-3301
Telephone: (713) 237-4600 • Facsimile: (713) 237-4750

NA Bond

FEDERAL INSURANCE COMPANY RIDER
to be attached to and form a part of

BOND NO 8027 31 97

wherein

Mobil Oil Corporation and Mobil Exploration and Producing U.S., Inc. is
named as Principal and

FEDERAL INSURANCE COMPANY AS SURETY,

in favor of **United States of America, Department of the Interior**
Bureau of Indian Affairs

in the amount of **\$150,000.00**

bond date: **11/01/65**

IT IS HEREBY UNDERSTOOD AND AGREED THAT effective June 1, 2001
the name of the Principal is changed

FROM: Mobil Oil Corporation and Mobil Exploration and Producing U.S., Inc.

TO : ExxonMobil Oil Corporation

All other terms and conditions of this Bond are unchanged.

Signed, sealed and dated this 12th of June, 2001.

ExxonMobil Oil Corporation

By:



FEDERAL INSURANCE COMPANY

By:



Mary Pierson, Attorney-in-fact



POWER OF ATTORNEY

Federal Insurance Company
Vigilant Insurance Company
Pacific Indemnity Company

Attn.: Surety Department
15 Mountain View Road
Warren, NJ 07059

Know All by These Presents, That FEDERAL INSURANCE COMPANY, an Indiana corporation, VIGILANT INSURANCE COMPANY, a New York corporation, and PACIFIC INDEMNITY COMPANY, a Wisconsin corporation, do each hereby constitute and appoint R.F. Bobo, Mary Pierson, Philana Berros, and Jody E. Specht of Houston, Texas-----

each as their true and lawful Attorney-in-Fact to execute under such designation in their names and to affix their corporate seals to and deliver for and on their behalf as surety thereon or otherwise, bonds and undertakings and other writings obligatory in the nature thereof (other than bail bonds) given or executed in the course of business, and any instruments amending or altering the same, and consents to the modification or alteration of any instrument referred to in said bonds or obligations.

In Witness Whereof, said FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY have each executed and attested these presents and affixed their corporate seals on this 10th day of May, 2001.

Kenneth C. Wendel
Kenneth C. Wendel, Assistant Secretary

Frank E. Robertson
Frank E. Robertson, Vice President

STATE OF NEW JERSEY } ss.
County of Somerset

On this 10th day of May, 2001

before me, a Notary Public of New Jersey, personally came Kenneth C. Wendel, the Assistant Secretary of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY, the companies which executed the foregoing Power of Attorney, and the said Kenneth C. Wendel being by me duly sworn, did depose and say that he is Assistant Secretary of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY, and knows the corporate seals thereof, that the seals affixed to the foregoing Power of Attorney are such corporate seals and were thereto affixed by authority of the By-Laws of said Companies; and that he signed said Power of Attorney as Assistant Secretary of said Companies by his authority; and that he is acquainted with Frank E. Robertson, and knows him to be Vice President of said Companies; and that the signature of Frank E. Robertson, subscribed to said Power of Attorney is in the genuine handwriting of Frank E. Robertson, and was thereto subscribed by authority of said Companies in the deponent's presence.



Notary Public State of New Jersey
No. 2231647
Commission Expires Oct. 28, 2004

Karen A. Price
Notary Public

Extract from the By-Laws of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY:

"All powers of attorney for and on behalf of the Company may and shall be executed in the name and on behalf of the Company, either by the Chairman or the President or a Vice President or an Assistant Vice President, jointly with the Secretary or an Assistant Secretary, under their respective designations. The signature of such officers may be engraved, printed or lithographed. The signature of each of the following officers: Chairman, President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary and the seal of the Company may be affixed by facsimile to any power of attorney or to any certificate relating thereto appointing Assistant Secretaries or Attorneys-in-Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such power of attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding upon the Company with respect to any bond or undertaking to which it is attached."

I, Kenneth C. Wendel, Assistant Secretary of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY (the "Companies") do hereby certify that

- (i) the foregoing extract of the By-Laws of the Companies is true and correct,
- (ii) the Companies are duly licensed and authorized to transact surety business in all 50 of the United States of America and the District of Columbia and are authorized by the U. S. Treasury Department; further, Federal and Vigilant are licensed in Puerto Rico and the U. S. Virgin Islands, and Federal is licensed in American Samoa, Guam, and each of the Provinces of Canada except Prince Edward Island; and
- (iii) the foregoing Power of Attorney is true, correct and in full force and effect.

Given under my hand and seals of said Companies at Warren, NJ this 12th day of June, 2001



Kenneth C. Wendel
Kenneth C. Wendel, Assistant Secretary

IN THE EVENT YOU WISH TO NOTIFY US OF A CLAIM, VERIFY THE AUTHENTICITY OF THIS BOND OR NOTIFY US OF ANY OTHER MATTER, PLEASE CONTACT US AT ADDRESS LISTED ABOVE, OR BY Telephone (908) 903-3485 Fax (908) 903-3656 e-mail: surety@chubb.com

CSC.

5184334741

06/01 '01 08:46 NO.410 03/05

CSC.

06/01 '01 09:06 NO.135 02/04

F010601000187

CERTIFICATE OF AMENDMENT
OF
CERTIFICATE OF INCORPORATION
OF
MOBIL OIL CORPORATION

CSC 45

(Under Section 805 of the Business Corporation Law)

Pursuant to the provisions of Section 805 of the Business Corporation Law, the undersigned President and Secretary, respectively, of Mobil Oil Corporation hereby certify:

FIRST: That the name of the corporation is **MOBIL OIL CORPORATION** and that said corporation was incorporated under the name of Standard Oil Company of New York.

SECOND: That the Certificate of Incorporation of the corporation was filed by the Department of State, Albany, New York, on the 10th day of August, 1882.

THIRD: That the amendments to the Certificate of Incorporation effected by this Certificate are as follows:

(a) Article 1st of the Certificate of Incorporation, relating to the corporate name, is hereby amended to read as follows:

"1st: The corporate name of said Company shall be,
ExxonMobil Oil Corporation,"

(b) Article 7th of the Certificate of Incorporation, relating to the office of the corporation is hereby amended to read as follows:

The office of the corporation within the State of New York is to be located in the County of Albany. The Company shall have offices at such other places as the Board of Directors may from time to time determine.

CSC
CSC

5184334741

06/01 '01 08:47 NO. 410 04/05
06/01 '01 07:00 NO. 137 03/04

FOURTH: That the amendments to the Certificate of Incorporation were authorized by the Board of Directors followed by the holder of all outstanding shares entitled to vote on amendments to the Certificate of Incorporation by written consent of the sole shareholder dated May 22, 2001.

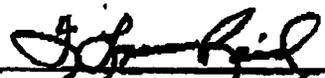
IN WITNESS WHEREOF, this Certificate has been signed this 22nd Day of May, 2001.



F. A. Risch, President 

STATE OF TEXAS)
)
COUNTY OF DALLAS)

F. L. REID, being duly sworn, deposes and says that he is the Secretary of MOBIL OIL CORPORATION, the corporation mentioned and described in the foregoing instrument; that he has read and signed the same and that the statements contained therein are true.



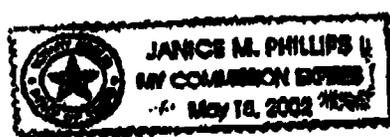
F. L. REID, Secretary

SUBSCRIBED AND SWORN TO before me, the undersigned authority, on this the 22nd day of May, 2001.

[SEAL]



NOTARY PUBLIC, STATE OF TEXAS



CSC
CSC

5184334741

06/01 '01 09:01 NO. 411 02/02
06/01 '01 09:06 NO. 155 04/04
F010601000187

CSC 45

CERTIFICATE OF AMENDMENT

OF

MOBIL OIL CORPORATION

Under Section 805 of the Business Corporation Law

SAC

**STATE OF NEW YORK
DEPARTMENT OF STATE**

100 cc

Filed by: EXXONMOBIL CORPORATION
(Name)

FILED JUN 01 2001

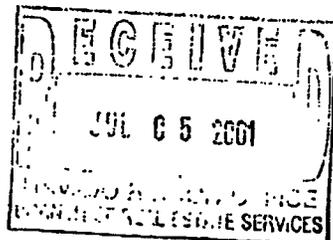
6949 Las Colinas Blvd.
(Mailing address)

TAX \$ _____
BY: *SAC*

Irving, TX 75039-2298
(City, State and Zip code)

ny Albany

Customer Ref # 1655781MPJ



010601000195

*State of New York } ss:
Department of State }*

I hereby certify that the annexed copy has been compared with the original document in the custody of the Secretary of State and that the same is a true copy of said original.

*Witness my hand and seal of the Department of State on **JUN 01 2001***



A handwritten signature in black ink, appearing to read "J. Leuch", with a long horizontal line extending to the right.

Special Deputy Secretary of State

6. **Federal and Indian Lease Wells:** The BLM and or the BIA has approved the merger, name change, or operator change for all wells listed on Federal or Indian leases on: BIA-06/01/01

7. **Federal and Indian Units:**

The BLM or BIA has approved the successor of unit operator for wells listed on: 06/01/2001

8. **Federal and Indian Communization Agreements ("CA"):**

The BLM or BIA has approved the operator for all wells listed within a CA on: N/A

9. **Underground Injection Control ("UIC")** The Division has approved UIC Form 5, **Transfer of Authority to Inject**, for the enhanced/secondary recovery unit/project for the water disposal well(s) listed on: N/A

DATA ENTRY:

1. Changes entered in the Oil and Gas Database on: 04/15/2002
2. Changes have been entered on the Monthly Operator Change Spread Sheet on: 04/15/2002
3. Bond information entered in RBDMS on: N/A
4. Fee wells attached to bond in RBDMS on: N/A

STATE WELL(S) BOND VERIFICATION:

1. State well(s) covered by Bond Number: N/A

FEDERAL WELL(S) BOND VERIFICATION:

1. Federal well(s) covered by Bond Number: N/A

INDIAN WELL(S) BOND VERIFICATION:

1. Indian well(s) covered by Bond Number: 80273197

FEE WELL(S) BOND VERIFICATION:

1. (R649-3-1) The **NEW** operator of any fee well(s) listed covered by Bond Number N/A
2. The **FORMER** operator has requested a release of liability from their bond on: N/A
The Division sent response by letter on: N/A

LEASE INTEREST OWNER NOTIFICATION:

3. (R649-2-10) The **FORMER** operator of the fee wells has been contacted and informed by a letter from the Division of their responsibility to notify all interest owners of this change on: N/A

COMMENTS:

Division of Oil, Gas and Mining
OPERATOR CHANGE WORKSHEET

ROUTING	
1. DJJ	
2. CDW	

X Change of Operator (Well Sold)

Operator Name Change/Merger

The operator of the well(s) listed below has changed, effective: 6/1/2006	
FROM: (Old Operator): N1855-ExxonMobil Oil Corporation PO Box 4358 Houston, TX 77210-4358 Phone: 1 (281) 654-1936	TO: (New Operator): N2700-Resolute Natural Resources Company 1675 Broadway, Suite 1950 Denver, CO 80202 Phone: 1 (303) 534-4600
CA No.	Unit: RATHERFORD

OPERATOR CHANGES DOCUMENTATION

Enter date after each listed item is completed

- (R649-8-10) Sundry or legal documentation was received from the **FORMER** operator on: 4/21/2006
- (R649-8-10) Sundry or legal documentation was received from the **NEW** operator on: 4/24/2006
- The new company was checked on the **Department of Commerce, Division of Corporations Database** on: 6/7/2006
- Is the new operator registered in the State of Utah: YES Business Number: 5733505-0143
- If **NO**, the operator was contacted on:
- (R649-9-2) Waste Management Plan has been received on: requested
- Inspections of LA PA state/fee well sites complete on: n/a
- Reports current for Production/Disposition & Sundries on: ok
- Federal and Indian Lease Wells:** The BLM and or the BIA has approved the merger, name change, or operator change for all wells listed on Federal or Indian leases on: BLM n/a BIA not yet
- Federal and Indian Units:**
The BLM or BIA has approved the successor of unit operator for wells listed on: not yet
- Federal and Indian Communization Agreements ("CA"):**
The BLM or BIA has approved the operator for all wells listed within a CA on: n/a
- Underground Injection Control ("UIC")** The Division has approved UIC Form 5, **Transfer of Authority to Inject**, for the enhanced/secondary recovery unit/project for the water disposal well(s) listed on: 6/12/2006

DATA ENTRY:

- Changes entered in the **Oil and Gas Database** on: 6/22/2006
- Changes have been entered on the **Monthly Operator Change Spread Sheet** on: 6/22/2006
- Bond information entered in RBDMS on: n/a
- Fee/State wells attached to bond in RBDMS on: n/a
- Injection Projects to new operator in RBDMS on: 6/22/2006
- Receipt of Acceptance of Drilling Procedures for APD/New on: n/a

BOND VERIFICATION:

- Federal well(s) covered by Bond Number: n/a
- Indian well(s) covered by Bond Number: PA002769
- (R649-3-1) The **NEW** operator of any fee well(s) listed covered by Bond Number n/a
- The **FORMER** operator has requested a release of liability from their bond on: n/a
The Division sent response by letter on: n/a

LEASE INTEREST OWNER NOTIFICATION:

- (R649-2-10) The **FORMER** operator of the fee wells has been contacted and informed by a letter from the Division of their responsibility to notify all interest owners of this change on: n/a

COMMENTS:

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

FORM 9

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

1. TYPE OF WELL OIL WELL <input type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <u>Unit Agreement</u>		5. LEASE DESIGNATION AND SERIAL NUMBER: <u>See attached list</u>
2. NAME OF OPERATOR: <u>Resolute Natural Resources Company</u> <u>N2700</u>		6. IF INDIAN, ALLOTTEE OR TRIBE NAME: <u>Navajo Tribe</u>
3. ADDRESS OF OPERATOR: <u>1675 Broadway, Suite 1950</u> CITY <u>Denver</u> STATE <u>CO</u> ZIP <u>80202</u>		7. UNIT or CA AGREEMENT NAME: <u>Ratherford Unit</u>
4. LOCATION OF WELL FOOTAGES AT SURFACE: <u>See attached list</u>		8. WELL NAME and NUMBER: <u>See attached list</u>
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: _____		9. API NUMBER: <u>Attached</u>
COUNTY: <u>San Juan</u>		10. FIELD AND POOL, OR WILDCAT: <u>Greater Aneth</u>
STATE: <u>UTAH</u>		

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

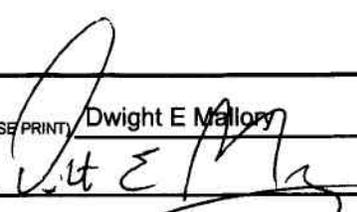
TYPE OF SUBMISSION	TYPE OF ACTION		
<input type="checkbox"/> NOTICE OF INTENT (Submit in Duplicate) Approximate date work will start: _____	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> REPERFORATE CURRENT FORMATION
	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> SIDETRACK TO REPAIR WELL
	<input type="checkbox"/> CASING REPAIR	<input type="checkbox"/> NEW CONSTRUCTION	<input type="checkbox"/> TEMPORARILY ABANDON
	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input checked="" type="checkbox"/> OPERATOR CHANGE	<input type="checkbox"/> TUBING REPAIR
	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> PLUG AND ABANDON	<input type="checkbox"/> VENT OR FLARE
<input checked="" type="checkbox"/> SUBSEQUENT REPORT (Submit Original Form Only) Date of work completion: _____	<input type="checkbox"/> CHANGE WELL NAME	<input type="checkbox"/> PLUG BACK	<input type="checkbox"/> WATER DISPOSAL
	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> PRODUCTION (START/RESUME)	<input type="checkbox"/> WATER SHUT-OFF
	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> RECLAMATION OF WELL SITE	<input type="checkbox"/> OTHER: _____
	<input type="checkbox"/> CONVERT WELL TYPE	<input type="checkbox"/> RECOMPLETE - DIFFERENT FORMATION	

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

Effective June 1, 2006 Exxon Mobil Oil Corporation resigns as operator of the Ratherford Unit. Also effective June 1, 2006 Resolute Natural Resources Company is designated as successor operator of the Ratherford Unit.

A list of affected producing and water source wells is attached. A separate of affected injection wells is being submitted with UIC Form 5, Transfer of Authority to Inject.

As of the effective date, bond coverage for the affected wells will transfer to BIA Bond # PA002769.

NAME (PLEASE PRINT) <u>Dwight E Mallory</u>	TITLE <u>Regulatory Coordinator</u>
SIGNATURE 	DATE <u>4/20/2006</u>

(This space for State use only)

APPROVED 6127106
Earlene Russell
Division of Oil, Gas and Mining (see instructions on Reverse Side)
Earlene Russell, Engineering Technician

RECEIVED
APR 24 2006
DIV. OF OIL, GAS & MINING

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

FORM 9

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

1. TYPE OF WELL OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER _____		5. LEASE DESIGNATION AND SERIAL NUMBER:
2. NAME OF OPERATOR: ExxonMobil Oil Corporation <i>N1855</i>		6. IF INDIAN, ALLOTTEE OR TRIBE NAME: Ship Rock
3. ADDRESS OF OPERATOR: P.O. Box 4358 CITY Houston STATE TX ZIP 77210-4358		7. UNIT or CA AGREEMENT NAME: UTU68931A
PHONE NUMBER: (281) 654-1936		8. WELL NAME and NUMBER: Ratherford
4. LOCATION OF WELL FOOTAGES AT SURFACE: QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:		9. API NUMBER: attached
		10. FIELD AND POOL, OR WILDCAT: Aneth
		COUNTY: San Juan
		STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
<input checked="" type="checkbox"/> NOTICE OF INTENT (Submit in Duplicate) Approximate date work will start: <u>6/1/2006</u>	<input type="checkbox"/> ACIDIZE	<input type="checkbox"/> DEEPEN	<input type="checkbox"/> REPERFORATE CURRENT FORMATION
	<input type="checkbox"/> ALTER CASING	<input type="checkbox"/> FRACTURE TREAT	<input type="checkbox"/> SIDETRACK TO REPAIR WELL
<input type="checkbox"/> SUBSEQUENT REPORT (Submit Original Form Only) Date of work completion:	<input type="checkbox"/> CASING REPAIR	<input type="checkbox"/> NEW CONSTRUCTION	<input type="checkbox"/> TEMPORARILY ABANDON
	<input type="checkbox"/> CHANGE TO PREVIOUS PLANS	<input checked="" type="checkbox"/> OPERATOR CHANGE	<input type="checkbox"/> TUBING REPAIR
	<input type="checkbox"/> CHANGE TUBING	<input type="checkbox"/> PLUG AND ABANDON	<input type="checkbox"/> VENT OR FLARE
	<input type="checkbox"/> CHANGE WELL NAME	<input type="checkbox"/> PLUG BACK	<input type="checkbox"/> WATER DISPOSAL
	<input type="checkbox"/> CHANGE WELL STATUS	<input type="checkbox"/> PRODUCTION (START/RESUME)	<input type="checkbox"/> WATER SHUT-OFF
	<input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS	<input type="checkbox"/> RECLAMATION OF WELL SITE	<input type="checkbox"/> OTHER: _____
	<input type="checkbox"/> CONVERT WELL TYPE	<input type="checkbox"/> RECOMPLETE - DIFFERENT FORMATION	

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

ExxonMobil Oil Corporation is transferring operatorship of Greater Aneth field, Ratherford lease to Resolute Natural Resources Company. All change of operator notices should be made effective as of 7:00 AM MST on June 1, 2006.

Attached please find a listing of producers and water source wells included in the transfer.

NAME (PLEASE PRINT) <u>Laurie Kilbride</u>	TITLE <u>Permitting Supervisor</u>
SIGNATURE <i>Laurie B. Kilbride</i>	DATE <u>4/19/2006</u>

(This space for State use only) **APPROVED** 6/13/06
Earlene Russell
Division of Oil, Gas and Mining
Earlene Russell, Engineering Technician

RECEIVED
APR 21 2006
DIV. OF OIL, GAS & MINING

Ratherford Unit - Producer Well List

minus P&A's

Lease	Number	API #	Status	Lease #	Location					
					Sec	T	R	QTR/QTR	NSFoot	EWFoot
Ratherford	01-14	430373116200S1	Producing	1420603246A	1	41S	23E	SWSW	0660FSL	0660FWL
Ratherford	01-34	430371638501S1	SI	1420603246A	1	41S	23E	SWSE	1133FSL	1980FEL
Ratherford	11-41	430373154400S1	Producing	1420603246A	11	41S	23E	NENE	0860FNL	0350FEL
Ratherford	11-43	430373162201S1	Producing	1420603246A	11	41S	23E	NESE	1980FSL	0660FEL
Ratherford	12-12	430373119000S1	Producing	1420603246A	12	41S	23E	SWNW	1850FNL	0660FWL
Ratherford	12-14	430371584400S1	SI	1420603246A	12	41S	23E	SWSW	0660FSL	4622FEL
Ratherford	12-21	430373120100S1	Producing	1420603246A	12	41S	23E	NENW	0660FNL	1980FWL
Ratherford	12-23	430371584601S1	Producing	1420603246A	12	41S	23E	NESW	1958FSL	3300FEL
Ratherford	12-32	430373120300S1	Producing	1420603246A	12	41S	23E	SWNE	1820FNL	1820FEL
Ratherford	12-34	430373112600S1	Producing	1420603246A	12	41S	23E	SWSE	0675FSL	1905FEL
Ratherford	12-43	430373120200S1	SI	1420603246A	12	41S	23E	NESE	2100FSL	0660FEL
Ratherford	13-12	430373112701S1	Producing	1420603247A	13	41S	23E	SWNW	1705FNL	0640FWL
Ratherford	13-14	430373158900S1	Producing	1420603247A	13	41S	23E	SWSW	0660FSL	0660FWL
Ratherford	13-21	430373112801S1	SI	1420603247A	13	41S	23E	NENW	0660FNL	1920FWL
Ratherford	13-23	430373112900S1	Producing	1420603247A	13	41S	23E	NESW	1980FSL	1930FWL
Ratherford	13-34	430373113001S1	Producing	1420603247A	13	41S	23E	SWSE	0660FSL	1980FEL
Ratherford	13-41	430371585601S1	Producing	1420603247A	13	41S	23E	NENE	660FNL	660FEL
Ratherford	13-43	430373113100S1	Producing	1420603247A	13	41S	23E	NESE	1700FSL	0960FEL
Ratherford	14-32	430371585801S1	Producing	1420603247A	14	41S	23E	SWNE	2130FNL	1830FEL
Ratherford	14-41	430373162300S1	Producing	1420603247A	14	41S	23E	NENE	0521FNL	0810FEL
Ratherford	24-32	430373159300S1	Producing	1420603247A	24	41S	23E	SWNE	2121FNL	1846FEL
Ratherford	24-41	430373113200S1	Producing	1420603247A	24	41S	23E	NENE	0660FNL	0710FEL
Ratherford	17-11	430373116900S1	Producing	1420603353	17	41S	24E	NWNW	1075FNL	0800FWL
Ratherford	17-13	430373113301S1	Producing	1420603353	17	41S	24E	NWSW	2100FSL	0660FWL
Ratherford	17-22	430373117001S1	Producing	1420603353	17	41S	24E	SENW	1882FNL	1910FWL
Ratherford	17-24	430373104400S1	Producing	1420603353	17	41S	24E	SESW	0720FSL	1980FWL
Ratherford	17-31	430373117800S1	Producing	1420603353	17	41S	24E	NWNE	0500FNL	1980FEL
Ratherford	17-33	430373113400S1	Producing	1420603353	17	41S	24E	NWSE	1980FSL	1845FEL
Ratherford	17-42	430373117700S1	Producing	1420603353	17	41S	24E	SENE	1980FNL	0660FEL
Ratherford	17-44	430371573201S1	Producing	1420603353	17	41S	24E	SESE	0660FSL	0660FEL
Ratherford	18-11	430371573300S1	SI	1420603353	18	41S	24E	NWNW	0720FNL	0730FWL
Ratherford	18-13	430371573401S1	Producing	1420603353	18	41S	24E	NWSW	1980FSL	0500FWL
Ratherford	18-22	430373123600S1	Producing	1420603353	18	41S	24E	SENW	2200FNL	2210FWL
Ratherford	18-24	430373107900S1	Producing	1420603353	18	41S	24E	SESW	0760FSL	1980FWL
Ratherford	18-31	430373118101S1	Producing	1420603353	18	41S	24E	NWNE	0795FNL	2090FEL
Ratherford	18-33	430373113501S1	Producing	1420603353	18	41S	24E	NWSE	1870FSL	1980FEL
Ratherford	18-42	430373118200S1	Producing	1420603353	18	41S	24E	SENE	2120FNL	0745FEL
Ratherford	18-44	430373104500S1	SI	1420603353	18	41S	24E	SESE	0660FSL	0660FEL
Ratherford	19-11	430373108000S1	Producing	1420603353	19	41S	24E	NWNW	0660FNL	0660FWL
Ratherford	19-13	430373171900S1	Producing	1420603353	19	41S	24E	NWSW	1980FSL	0660FWL
Ratherford	19-22	430373104601S1	Producing	1420603353	19	41S	24E	SENW	1840FNL	1980FWL
Ratherford	19-24	430373175401S1	Producing	1420603353	19	41S	24E	SESW	0600FSL	1980FWL
Ratherford	19-31	430373104701S1	Producing	1420603353	19	41S	24E	NWNE	510FNL	1980FEL
Ratherford	19-33	430373104800S1	Producing	1420603353	19	41S	24E	NWSE	1980FSL	1980FEL
Ratherford	19-42	430373091600S1	Producing	1420603353	19	41S	24E	SENE	1880FNL	0660FEL
Ratherford	19-44	430373108100S1	Producing	1420603353	19	41S	24E	SESE	0660FSL	0660FEL
Ratherford	19-97	430373159600S1	Producing	1420603353	19	41S	24E	SENE	2562FNL	0030FEL
Ratherford	20-11	430373104900S1	Producing	1420603353	20	41S	24E	NWNW	0500FNL	0660FWL
Ratherford	20-13	430373091700S1	Producing	1420603353	20	41S	24E	NWSW	2140FSL	0500FWL
Ratherford	20-22	430373093000S1	Producing	1420603353	20	41S	24E	SENW	2020FNL	2090FWL
Ratherford	20-24	430373091800S1	Producing	1420603353	20	41S	24E	SESW	0820FSL	1820FWL

Ratherford Unit - Producer Well List

minus P&A's

Lease	Number	API #	Status	Lease #	Location					
					Sec	T	R	QTR/QTR	NSFoot	EWFoot
Ratherford	20-31	430373105001S1	Producing	1420603353	20	41S	24E	NWNE	0660FNL	1880FEL
Ratherford	20-33	430373093100S1	Producing	1420603353	20	41S	24E	NWSE	1910FSL	2140FEL
Ratherford	20-42	430373105100S1	Producing	1420603353	20	41S	24E	SENE	1980FNL	0660FEL
Ratherford	20-44	430373091501S1	Producing	1420603353	20	41S	24E	SESE	0620FSL	0760FEL
Ratherford	20-66	430373159201S1	Producing	1420603353	20	41S	24E	SWNW	1369FNL	1221FWL
Ratherford	20-68	430373159100S1	Producing	1420603353	20	41S	24E	NWSW	1615FSL	1276FWL
Ratherford	15-12	430371571501S1	Producing	1420603355	15	41S	24E	SWNW	1820FNL	0500FWL
Ratherford	15-22	430373044900S1	SI	1420603355	15	41S	24E	SENE	1980FNL	2050FWL
Ratherford	15-32	430371571700S1	Producing	1420603355	15	41S	24E	SWNE	1980FNL	1980FEL
Ratherford	15-33	430371571800S1	Producing	1420603355	15	41S	24E	NWSE	1650FSL	1980FEL
Ratherford	15-41	430371571900S1	TA	1420603355	15	41S	24E	NENE	0660FNL	0660FEL
Ratherford	15-42	430373044800S1	Producing	1420603355	15	41S	24E	SENE	2020FNL	0820FEL
Ratherford	16-13	430373116801S1	Producing	1420603355	16	41S	24E	NWSW	1980FSL	660FWL
Ratherford	16-32	430371572300S1	Producing	1420603355	16	41S	24E	SWNE	1980FNL	1980FEL
Ratherford	16-41	430371572500S1	Producing	1420603355	16	41S	24E	NENE	0660FNL	0660FEL
Ratherford	16-77	430373176800S1	Producing	1420603355	16	41S	24E	NESW	2587FSL	2410FWL
Ratherford	21-23	430371375400S1	Producing	1420603355	21	41S	24E	NESW	1740FSL	1740FWL
Ratherford	21-24	430373172001S1	SI	1420603355	21	41S	24E	SESW	487FSL	2064FWL
Ratherford	21-32	430371575500S1	SI	1420603355	21	41S	24E	SWNE	1880FNL	1980FEL
Ratherford	21-77	430373175801S1	SI	1420603355	21	41S	24E	NWSE	2511FSL	2446FEL
Ratherford	07-11	430373116300S1	Producing	1420603368	7	41S	24E	NWNW	0660FNL	0710FWL
Ratherford	07-13	430373116400S1	Producing	1420603368	7	41S	24E	NWSW	2110FSL	0740FWL
Ratherford	07-22	430373116500S1	Producing	1420603368	7	41S	24E	SENE	1980FNL	1980FWL
Ratherford	07-24	430373116600S1	Producing	1420603368	7	41S	24E	SESW	0880FSL	2414FWL
Ratherford	07-44	430373118900S1	SI	1420603368	7	41S	24E	SESE	0737FSL	0555FEL
Ratherford	08-12	430371599100S1	Producing	1420603368	8	41S	24E	SWNW	1909FNL	0520FWL
Ratherford	08-21	430371599300S1	Producing	1420603368	8	41S	24E	NENW	0616FNL	1911FWL
Ratherford	08-23	430371599400S1	Producing	1420603368	8	41S	24E	NESW	1920FSL	2055FWL
Ratherford	08-32	430371599500S1	Producing	1420603368	8	41S	24E	SWNE	1980FNL	1980FEL
Ratherford	08-34	430371599600S1	Producing	1420603368	8	41S	24E	SWSE	0660FSL	1980FEL
Ratherford	04-34	430371616400S1	Producing	14206034035	4	41S	24E	SWSE	0660FSL	1980FEL
Ratherford	11-14	430371616700S1	Producing	14206034037	11	41S	24E	SWSW	0660FSL	0660FWL
Ratherford	09-34	430371571100S1	SI	14206034043	9	41S	24E	SWSE	0660FSL	1980FEL
Ratherford	10-12	430371571200S1	Producing	14206034043	10	41S	24E	SWNW	1980FNL	0660FWL
Ratherford	10-14	430371571300S1	Producing	14206034043	10	41S	24E	SWSW	0510FSL	0710FWL
Ratherford	10-32	430371571400S1	TA	14206034043	10	41S	24E	SWNE	2080FNL	1910FEL
Ratherford	10-44	430373045100S1	TA	14206034043	10	41S	24E	SESE	0820FSL	0510FEL
Ratherford	29-11	430373105300S1	Producing	1420603407	29	41S	24E	NWNW	0770FNL	0585FWL
Ratherford	29-22	430373108200S1	Producing	1420603407	29	41S	24E	SENE	2130FNL	1370FWL
Ratherford	29-31	430373091401S1	Producing	1420603407	29	41S	24E	NWNE	0700FNL	2140FEL
Ratherford	29-33	430373093200S1	SI	1420603407	29	41S	24E	NWSE	1860FSL	1820FEL
Ratherford	29-34	430371534000S1	SI	1420603407	29	41S	24E	SWSE	0817FSL	2096FEL
Ratherford	29-42	430373093700S1	SI	1420603407	29	41S	24E	SENE	1850FNL	0660FEL
Ratherford	30-32	430371534200S1	Producing	1420603407	30	41S	24E	SWNE	1975FNL	2010FEL
Ratherford	28-11	430373044600S1	Producing	1420603409	28	41S	24E	NWNW	0520FNL	0620FWL

Ratherford Unit - Producer Well List

minus P&A's

Lease	Number	API #	Status	Lease #	Location					
					Sec	T	R	QTR/QTR	NSFoot	EWFoot
Ratherford	09-12	430371512600S1	Producing	14206035045	9	41S	24E	SWNW	1865FNL	0780FWL
Ratherford	09-14	430371512700S1	Producing	14206035046	9	41S	24E	SWSW	0695FSL	0695FWL
Ratherford	04-14	430371616300S1	Producing	14206035446	4	41S	24E	SWSW	0500FSL	0660FWL
Ratherford	03-12	430371562000S1	Producing	14206036506	3	41S	24E	SWNW	2140FNL	0660FWL

Water Source Wells (Feb 2006)

RU	S1	4303700001	Active
RU	S2	4303700002	Active
RU	S3	4303700003	Active
RU	S4	4303700004	Active
RU	S5	4303700005	Active
RU	S6	4303700006	Active
RU	S7	4303700007	Active
RU	S8	4303700008	Active
RU	S9	4303700009	Active
RU	S10	4303700010	Active
RU	S11	4303700011	Active
RU	S12	4303700012	Active
RU	S13	4303700013	Active
RU	S14	4303700014	Active
RU	S16	4303700016	Active
RU	S17	4303700017	Active

STATE OF UTAH DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING	FORM 9 5. LEASE DESIGNATION AND SERIAL NUMBER: 14-20-603-407
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SUNDRY NOTICES AND REPORTS ON WELLS Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.	6. IF INDIAN, ALLOTTEE OR TRIBE NAME: NAVAJO 7. UNIT or CA AGREEMENT NAME: RATHERFORD
--	--

1. TYPE OF WELL Oil Well	8. WELL NAME and NUMBER: RATHERFORD UNIT 29-31
------------------------------------	--

2. NAME OF OPERATOR: RESOLUTE NATURAL RESOURCES	9. API NUMBER: 43037309140000
---	---

3. ADDRESS OF OPERATOR: 1700 Lincoln Street, Suite 2800 , Denver, CO, 80203 4535	PHONE NUMBER: 303 534-4600 Ext	9. FIELD and POOL or WILDCAT: GREATER ANETH
--	--	---

4. LOCATION OF WELL FOOTAGES AT SURFACE: 0700 FNL 2140 FEL QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: NWNE Section: 29 Township: 41.0S Range: 24.0E Meridian: S	COUNTY: SAN JUAN STATE: UTAH
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11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
<input checked="" type="checkbox"/> NOTICE OF INTENT Approximate date work will start: 10/22/2015 <input type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion: <input type="checkbox"/> SPUD REPORT Date of Spud: <input type="checkbox"/> DRILLING REPORT Report Date:	<input type="checkbox"/> ACIDIZE <input type="checkbox"/> CHANGE TO PREVIOUS PLANS <input type="checkbox"/> CHANGE WELL STATUS <input type="checkbox"/> DEEPEN <input type="checkbox"/> OPERATOR CHANGE <input type="checkbox"/> PRODUCTION START OR RESUME <input type="checkbox"/> REPERFORATE CURRENT FORMATION <input type="checkbox"/> TUBING REPAIR <input type="checkbox"/> WATER SHUTOFF <input type="checkbox"/> WILDCAT WELL DETERMINATION	<input type="checkbox"/> ALTER CASING <input type="checkbox"/> CHANGE TUBING <input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS <input type="checkbox"/> FRACTURE TREAT <input type="checkbox"/> PLUG AND ABANDON <input type="checkbox"/> RECLAMATION OF WELL SITE <input type="checkbox"/> SIDETRACK TO REPAIR WELL <input type="checkbox"/> VENT OR FLARE <input type="checkbox"/> SI TA STATUS EXTENSION <input checked="" type="checkbox"/> OTHER	<input type="checkbox"/> CASING REPAIR <input type="checkbox"/> CHANGE WELL NAME <input type="checkbox"/> CONVERT WELL TYPE <input type="checkbox"/> NEW CONSTRUCTION <input type="checkbox"/> PLUG BACK <input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION <input type="checkbox"/> TEMPORARY ABANDON <input type="checkbox"/> WATER DISPOSAL <input type="checkbox"/> APD EXTENSION OTHER: <input type="text" value="ESP Replacement"/>

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

Resolute Natural Resources respectfully submits this sundry as notice of ESP replacement on the above well, attached are the procedures and schematic

Accepted by the Utah Division of Oil, Gas and Mining

Date: October 27, 2015

By: Derek Duff

NAME (PLEASE PRINT) Erin Joseph	PHONE NUMBER 303 573-4886	TITLE Sr. Regulatory Analyst
SIGNATURE N/A	DATE 10/22/2015	

Resolute

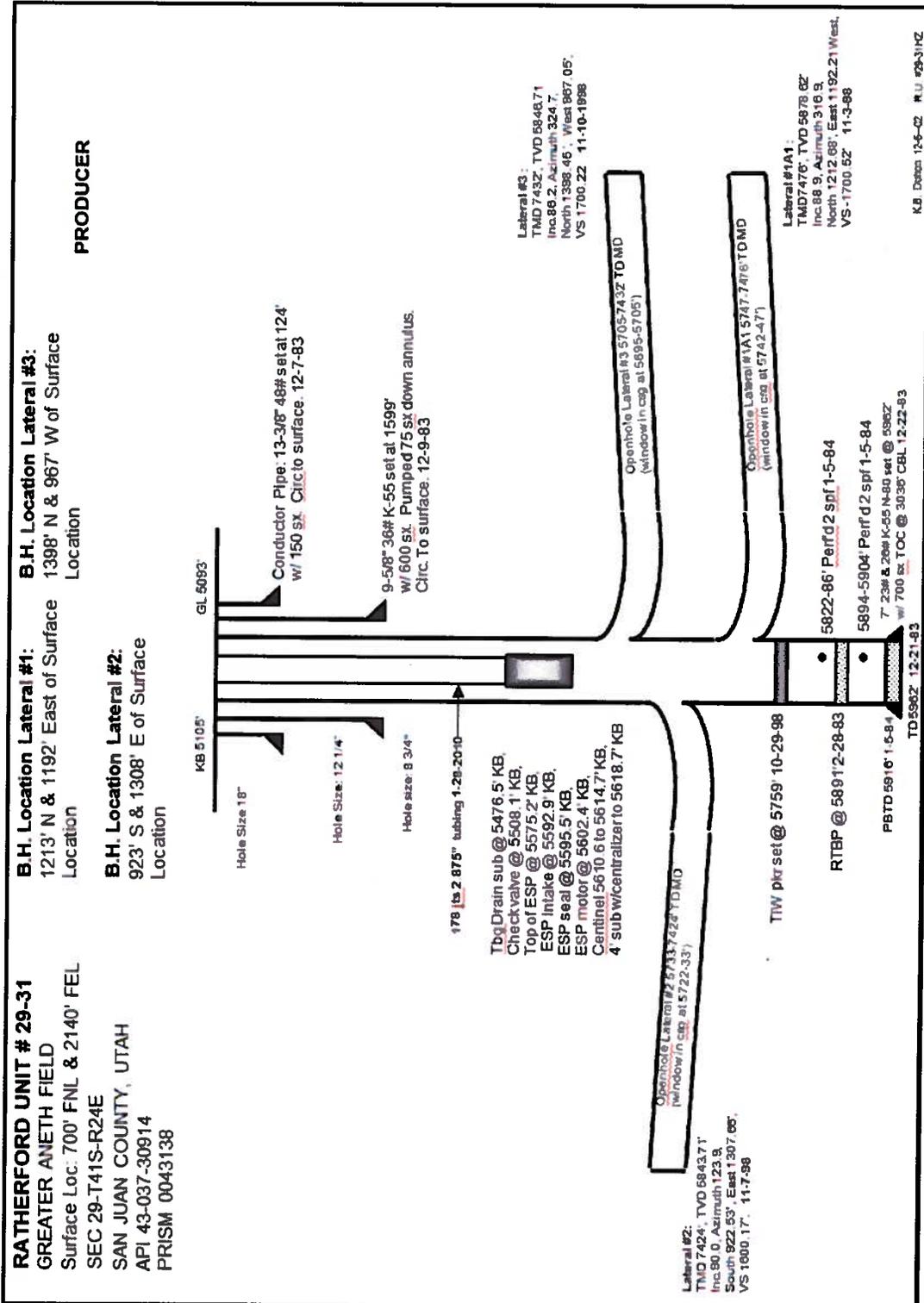
Natural Resources

Re: RU 29-31 ESP Replacement

Procedure

Horsley Witten: YES

- 1) MIRU WSU. LOTO equipment. Test rig anchors as required.
- 2) Drop bar to open the 2-7/8 tubing drain sub at 5476.5' KB. Kill well as required with circ down tbg, up casing.
- 3) NDWH. NU BOP. Test BOP.
- 4) MIRU ESP cable spooler & cap string spooler. Well has 60' cap string.
- 5) POOH with the 2-7/8" tubing, ESP assembly, ESP cable, and 60' capillary string.
- 6) Stand back tubing & inspect for condition. Call Bill Albert for tubing inspection (970) 371-9682 or Tech Support: Virgil Holly (435) 444-0020 or Nate Dee (435) 730-5442.
- 7) Lay down failed ESP assembly, documenting the condition & if possible, cause of failure.
- 8) Make bit & scraper trip to 5695' KB/top window.
- 9) RIH with replacement ESP assembly & Centinel, ESP cable, 2-7/8" tubing, including 2-7/8" check valve two joints above the ESP & 2-7/8 sliding sleeve w/2.313 'X' profile 1 joint above the check valve.
- 10) Run 1/4" cap string to 60' depth as before; inspect & pressure test the existing one & re-run it if condition is good.
- 11) Land tubing w/ ESP assembly bottom at ~5619' KB as before.
- 12) Perform WH penetrator tie-ins at tubing hanger for ESP cable & capillary string and land tubing.
- 13) ND BOPE. NUWH. Re-connect to VSD and transformer.
- 14) Perform necessary tests to ensure that the pump is ready to be returned to production.
- 15) Notify Operations Supervisor Alfred Redhouse (435) 619-7227 that the well is ready to return to production.
- 16) RDMOL.
- 17) Hook up appropriate chemical treatment.



STATE OF UTAH DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINING		FORM 9
SUNDRY NOTICES AND REPORTS ON WELLS		5. LEASE DESIGNATION AND SERIAL NUMBER: 14-20-603-407
Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.		6. IF INDIAN, ALLOTTEE OR TRIBE NAME: NAVAJO
		7. UNIT or CA AGREEMENT NAME: RATHERFORD
1. TYPE OF WELL Oil Well	8. WELL NAME and NUMBER: RATHERFORD UNIT 29-31	
2. NAME OF OPERATOR: RESOLUTE NATURAL RESOURCES	9. API NUMBER: 43037309140000	
3. ADDRESS OF OPERATOR: 1700 Lincoln Street, Suite 2800 , Denver, CO, 80203 4535	PHONE NUMBER: 303 534-4600 Ext	9. FIELD and POOL or WILDCAT: GREATER ANETH
4. LOCATION OF WELL FOOTAGES AT SURFACE: 0700 FNL 2140 FEL QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: NWNE Section: 29 Township: 41.0S Range: 24.0E Meridian: S		COUNTY: SAN JUAN
		STATE: UTAH
11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA		
TYPE OF SUBMISSION	TYPE OF ACTION	
<input type="checkbox"/> NOTICE OF INTENT Approximate date work will start: <input checked="" type="checkbox"/> SUBSEQUENT REPORT Date of Work Completion: 9/29/2015 <input type="checkbox"/> SPUD REPORT Date of Spud: <input type="checkbox"/> DRILLING REPORT Report Date:	<input type="checkbox"/> ACIDIZE <input type="checkbox"/> ALTER CASING <input type="checkbox"/> CASING REPAIR <input type="checkbox"/> CHANGE TO PREVIOUS PLANS <input type="checkbox"/> CHANGE TUBING <input type="checkbox"/> CHANGE WELL NAME <input type="checkbox"/> CHANGE WELL STATUS <input type="checkbox"/> COMMINGLE PRODUCING FORMATIONS <input type="checkbox"/> CONVERT WELL TYPE <input type="checkbox"/> DEEPEN <input type="checkbox"/> FRACTURE TREAT <input type="checkbox"/> NEW CONSTRUCTION <input type="checkbox"/> OPERATOR CHANGE <input type="checkbox"/> PLUG AND ABANDON <input type="checkbox"/> PLUG BACK <input type="checkbox"/> PRODUCTION START OR RESUME <input type="checkbox"/> RECLAMATION OF WELL SITE <input type="checkbox"/> RECOMPLETE DIFFERENT FORMATION <input type="checkbox"/> REPERFORATE CURRENT FORMATION <input type="checkbox"/> SIDETRACK TO REPAIR WELL <input type="checkbox"/> TEMPORARY ABANDON <input type="checkbox"/> TUBING REPAIR <input type="checkbox"/> VENT OR FLARE <input type="checkbox"/> WATER DISPOSAL <input type="checkbox"/> WATER SHUTOFF <input type="checkbox"/> SI TA STATUS EXTENSION <input type="checkbox"/> WILDCAT WELL DETERMINATION <input checked="" type="checkbox"/> OTHER	
OTHER: <input style="width: 100px;" type="text" value="ESP Replacement"/>		
12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc. Resolute Natural Resources respectfully submits this sundry as notice of the replacement of the ESP assembly on the above well was completed on 9/29/2015		
Accepted by the Utah Division of Oil, Gas and Mining FOR RECORD ONLY January 06, 2016		
NAME (PLEASE PRINT) Erin Joseph	PHONE NUMBER 303 573-4886	TITLE Sr. Regulatory Analyst
SIGNATURE N/A	DATE 1/6/2016	