~~Pumping~~ Started to inject 5-22-64
Converted to Water Injection Well November 21, 1963
~~Converted to Salt Water Disposal Well September 1963~~

FILE NOTATIONS

Entered in N I D File	✓	Checked by Chief	
Entered On S R Sheet		Copy N I D to Field Office	✓
Location Map Pinned	✓	Approval Letter	✓
Card Indexed	✓	Disapproval Letter	
I W R for State or Fee Land			

COMPLETION DATA:

Date Well Completed	8-20-59	Location Inspected	
OW	WW	TA	Bond released
GW	OS ✓	PA	State of Fee Land

LOGS FILED

Driller's Log 12-2-59

Electric Logs (No.) 3

E | I | E-I | GR | GR-N | Micro

Lat | Mi-L | Sonic | Others Formation Tester
Micro Caliper
{Induction-Electrical
Induction-Gamma Ray}

Form 9-331 b
(April 1952)

Budget Bureau No. 42-R359.4.
Approval expires 12-31-60.

		12	
x			

(SUBMIT IN TRIPLICATE)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Indian Agency Navajo

Allottee Tribal Land

Lease No. 14-20-603-246

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL	X	SUBSEQUENT REPORT OF WATER SHUT-OFF	
NOTICE OF INTENTION TO CHANGE PLANS		SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF		SUBSEQUENT REPORT OF ALTERING CASING	
NOTICE OF INTENTION TO REDRILL OR REPAIR WELL		SUBSEQUENT REPORT OF REDRILLING OR REPAIR	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE		SUBSEQUENT REPORT OF ABANDONMENT	
NOTICE OF INTENTION TO PULL OR ALTER CASING		SUPPLEMENTARY WELL HISTORY	
NOTICE OF INTENTION TO ABANDON WELL			

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

February 6, 19 59

North Desert Creek

Well No. 13-12 is located 1980 ft. from {N/S} line and 4620 ft. from {E/W} line of sec. 12

NW SW 12 (¼ Sec. and Sec. No.) 41S (Twp.) 23E (Range) SLBM (Meridian)

Ratherford (Field) San Juan (County or Subdivision) Utah (State or Territory)

The elevation of ~~the derrick floor above sea level is~~ 4550 ft. (Approx. ground)

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

1. Drill 17-1/2" hole to 1400'±.
2. Cement 13-3/8" casing at 1400'± (depending on water flow) with 350 sacks treated cement.
3. Drill 12-1/4" hole to 5320'±.
4. Cement 8-5/8" casing at 5320'± with 400 sacks cement.
5. Core 7-3/4" hole to 5520'± (Paradox.)
6. Test for spacing evidence as directed.

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company Shell Oil Company

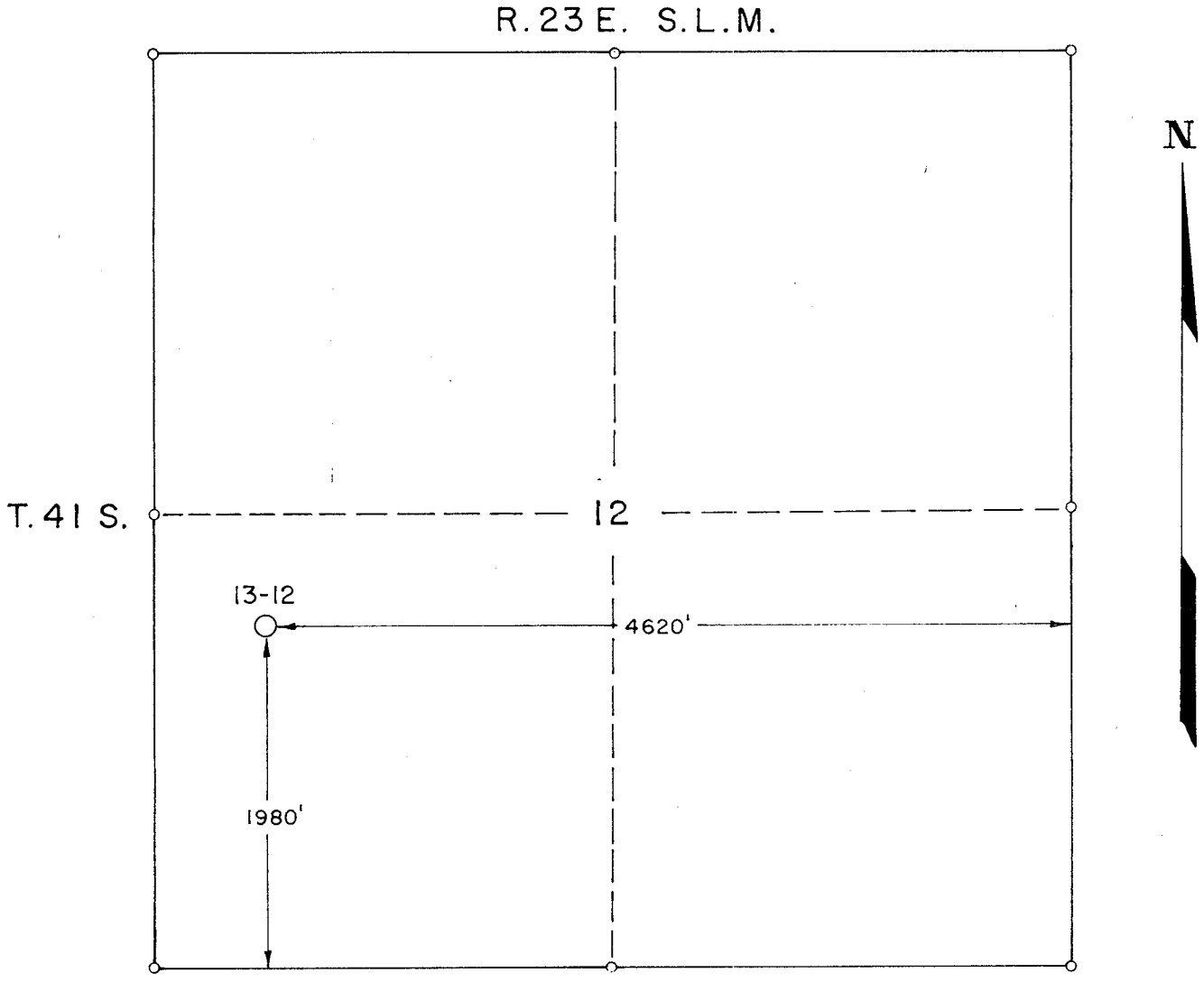
Address ~~705 West Municipal Drive~~
Farmington, New Mexico

Original signed by
R. S. MacALISTER, JR.

By R. S. Mac Alister, Jr.

Title Exploitation Engineer

U. S. GOVERNMENT PRINTING OFFICE 16—8437b-8



EST. ELEV._____

2158

DRAWN BY	SHELL OIL COMPANY	SCALE 1" = 1000'
CHECKED BY		Z-
DATE		

LOCATION OF RATHERFORD 13-12

SAN JUAN COUNTY, UTAH, SEC. 12, T. 41 S., R. 23 E., SLM

DIETERICH-POST CLEARPRINT NO. 1000

SHELL OIL COMPANY
705 West Municipal Drive
Farmington, New Mexico

FEB 6 1959

The State of Utah
Oil and Gas Conservation Commission
310 Newhouse Building
Salt Lake City, Utah

Gentlemen:

We are enclosing for your approval notices to drill two forty-acre spaced wells as follows:

Aneth Field	Burton 22-13
Ratherford Field	North Desert Creek 13-12

These wells are to be drilled for the purpose of obtaining spacing evidence within the terms of the Commission's forthcoming order for the consolidated Causes Nos. 8 and 11. These wells will be drilled and produced as prescribed by the Commission at the recent hearing in Salt Lake City. Your early approval will be appreciated so we may begin the drilling as soon as possible.

Very truly yours,

R. R. Robison

R. R. Robison
Division Production Manager

Enclosures (2)

February 9, 1959

Shell Oil Company
705 West Municipal Drive
Farmington, New Mexico

Attention: R. S. MacAlister, Jr.,
Exploitation Engineer

Gentlemen:

With reference to your notice of intention to drill Well No. North Desert Creek 13-12, which is to be located 1980 feet from the south line and 4620 feet from the east line of Section 12, Township 41 South, Range 23 East, SLBM, San Juan County, Utah, please be advised that approval to drill said well is hereby granted subject to the Order which will be issued in Cause No. 17 (Combined Causes No. 8 and 11), as a result of the hearing held on February 2, and 3, 1959.

Yours very truly,

OIL & GAS CONSERVATION COMMISSION

CLEON B. FEIGHT
EXECUTIVE SECRETARY

CBF:co

cc: J. A. Anderson,
Regional Oil & Gas Supervisor
U.S.G.S. Roswell,
New Mexico

P. T. McGrath, Dist. Eng.
U.S.G.S. Farmington,
New Mexico

SHELL OIL COMPANY

705 West Municipal Drive
Farmington, New Mexico

April 14, 1959

71-H
14/20

Core Laboratories, Inc.
817 West Main
Farmington, New Mexico

Gentlemen:

We hereby authorize you to release the core analysis made by you on cores from our North Desert Creek 13-12 well in the Ratherford field, San Juan County, Utah. Copies of the analysis may be given to any person or company requesting it, at their expense.

Very truly yours,

R. S. Mac Alister, Jr.
Division Exploitation Engineer

cc Attached mailing list

OIL'S FIRST CENTURY
BORN IN FREEDOM
WORKING FOR PROGRESS

MAILING LIST

State of Utah
Oil and Gas Conservation Commission
Room 310 Newhouse Building
Salt Lake City, Utah
Attention Mr. C. B. Feight

THIS COPY FOR

Aztec Oil & Gas Company
920 Mercentile Securities Building
Dallas 1, Texas
Attention Mr. Van Thompson

Ohio Oil Company
Post Office Box 120
Casper, Wyoming
Attention Mr. W. R. Kahla

The Pure Oil Company
Mile High Center
1700 Broadway
Denver 2, Colorado
Attention Mr. H. W. Van Zandt

The Texas Company
Post Office Box 817
Farmington, New Mexico
Attention Mr. U. E. Johnson

The Carter Oil Company
Post Office Box 3082
Durango, Colorado
Attention Mr. B. M. Bradley

The Carter Oil Company
Post Office Box 120
Denver, Colorado
Attention Mr. R. S. Frazier

The Carter Oil Company
Post Office Box 3082
Durango, Colorado
Attention Mr. R. C. Walther

Continental Oil Company
1755 Glenarm
Denver 2, Colorado
Attention Mr. J. W. Tynan

Continental Oil Company
816 Patterson Building
Denver, Colorado
Attention Mr. R. E. White

Continental Oil Company
Post Office Box 3312
Durango, Colorado
Attention Mr. J. B. Hall

The Superior Oil Company
Post Office Box 200
Casper, Wyoming
Attention Mr. W. H. Fraser

Gulf Oil Corporation
Post Office Box 2097
Denver, Colorado
Attention Mr. W. E. Bauman

Phillips Petroleum Company
Bartlesville, Oklahoma
Attention Mr. Shofner Smith

Phillips Petroleum Company
Post Office Drawer 1150
Cortez, Colorado
Attention Mr. C. M. Boles

Standard Oil Company of California
Post Office Box 445
Vernal, Utah
Attention Mr. C. V. Chatterton

United States Geological Survey
Post Office Box 965
Farmington, New Mexico
Attention Mr. P. T. McGrath

Three States Natural Gas Company
916 Fairgrounds Road
Farmington, New Mexico

Sinclair Oil & Gas Company
Room 601
Denver Club Building
Denver 2, Colorado
Attention Mr. C. D. Gaines

SHELL OIL COMPANY
Post Office Box 158
Farmington, New Mexico

Hold file

August 12, 1959

(ATTACHED MAILING LIST)

Gentlemen:

We are attaching for your information the pressure chart readings for the 40-acre spaced test wells, North Desert Creek 31-12, North Desert Creek 32-13 and North Desert Creek 41-12, all in the Ratherford Field. We will have the readings for the other two wells ready to distribute shortly. You are welcome to have a representative examine the charts and compare them with the readings in our Farmington office. Arrangements may be made through Mr. Karl Hauptfleisch.

Very truly yours,

R. R. Robison
Division Production Manager

Attachments

1859 1959
OIL'S FIRST CENTURY
BORN IN FREEDOM
WORKING FOR PROGRESS

CA-20

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

CORE ANALYSIS RESULTS

Company SHELL OIL COMPANY Formation DESERT CREEK ZONE File RP-3-943
Well NORTH DESERT CREEK NO.13-12 Core Type DIAMOND CONV. Date Report 3-20-59
Field RATHERFORD Drilling Fluid OIL BASE MUD Analysts CLIFFORD
County SAN JUAN State UTAH Elev 4571 DF Location NW SW Sec 12 41S 23E

Lithological Abbreviations

SAND-SD	DOLOMITE-DOL	ANHYDRITE-ANHY	SANDY-SDY	FINE-FN	CRYSTALLINE-XLN	BROWN-BRN	FRACTURED-FRAC	SLIGHTLY-SL/
SHALE-SH	CHERT-CH	CONGLOMERATE-CONG	SHALY-SHY	MEDIUM-MED	GRAIN-GRN	GRAY-GY	LAMINATION-LAM	VERY-V/
LIME-LM	GYPSUM-GYP	FOSSILIFEROUS-FOSS	LIMY-LMY	COARSE-CSE	GRANULAR-GRNL	VUGGY-VGY	STYLOLITIC-STY	WITH-W/

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCYS MAX	90°	POROSITY PER CENT	RESIDUAL SATURATION PER CENT PORE OIL	TOTAL WATER	SAMPLE DESCRIPTION AND REMARKS
1	5346.8-47.3	<0.1	<0.1	0.8	14.7	77.3	
2	5347.6-49.4	0.1	0.1	2.0	9.5	76.6	
		0.1	0.1				
3	5349.7-51.5	0.3	0.1	4.2	24.0	30.1	
		0.2	0.1				
4	5351.8-53.4	0.1	<0.1	12.7	38.0	19.8	
		0.1	0.1				
5	5353.6-55.6	1.6	1.0	13.1	40.0	19.6	
		2.0	1.5				
6	5355.9-57.2	1.0	0.8	8.9	24.9	18.2	
7	5357.6-59.4	3.1	1.2	10.6	22.5	13.2	
		3.7	2.6				
8	5359.6-61.2	<0.1	<0.1	3.0	8.8	62.4	
		0.1	0.1				
9	5361.5-63.5	<0.1	<0.1	3.8	7.1	62.9	
10	5363.8-65.4	0.1	<0.1	1.9	12.6	58.4	
11	5365.7-67.5	<0.1	<0.1	7.5	30.7	27.5	
		<0.1	<0.1				
12	5367.8-69.2	0.1	0.1	7.8	28.2	30.5	
		0.1	0.1				
13	5369.5-71.5	<0.1	<0.1	3.1	6.8	77.7	
		<0.1	<0.1				
14	5371.9-73.2	0.1	<0.1	8.3	21.3	37.6	
		<0.1	<0.1				
15	5373.5-75.6	<0.1	<0.1	9.1	30.3	33.2	
		<0.1	<0.1				
16	5375.9-77.5	0.3	0.2	10.2	37.7	24.2	
		0.4	0.3				
17	5377.7-79.5	0.1	0.1	2.9	7.3	72.4	
		0.1	<0.1				
18	5379.8-81.6	<0.1	<0.1	0.8	17.9	39.4	
		<0.1	<0.1				
19	5382.8-84.4	<0.1	<0.1	2.8	12.1	57.2	
		0.1	<0.1				
20	5384.6-86.4	0.3	0.2	8.1	23.2	27.3	
		0.1	0.1				
21	5386.7-88.4	3.3	0.8	4.6	10.5	30.7	
		0.3	0.1				
22	5388.7-90.5	1.3	0.9	1.2	16.8	52.9	

SERVICE NO.8-A NO INTERPRETATION OF RESULTS

These analyses, opinions or interpretations are based on observations and materials supplied by the client to whom, and for whose exclusive and confidential use, this report is made. The interpretations or opinions expressed represent the best judgment of Core Laboratories, Inc. (all errors and omissions excepted); but Core Laboratories, Inc. and its officers and employees, assume no responsibility and make no warranty or representations, as to the productivity, proper operations, or profitableness of any oil, gas or other mineral well or sand in connection with which such report is used or relied upon.

CA-20

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

CORE ANALYSIS RESULTS

Company SHELL OIL COMPANY Formation DESERT CREEK ZONE File RP-3-943
Well NORTH DESERT CREEK NO. 13-12 Core Type DIAMOND CONV. Date Report 3-20-59
Field RATHERFORD Drilling Fluid OIL BASE MUD Analysts CLIFFORD
County SAN JUAN State UTAH Elev. 4571 DF Location NW SW Sec 12 41S 23E

Lithological Abbreviations

SHALE-SH LIME-LM DOLOMITE-DOL GYPSUM-GYP ANHYDRITE-ANHY CONGLOMERATE-CONG FOSSILIFEROUS-FOSS SANDY-SDY SHALY-SHY LIMY-LMY FINE-FN MEDIUM-MED COARSE-CSE CRYSTALLINE-XLN GRAIN-GRN GRANULAR-GRNL BROWN-BRN GRAY-GY VUGGY-VGY FRACTURED-FRAC LAMINATION-LAM STYLOLITIC-STY SLIGHTLY-SL/ VERY-V/ WITH-W/

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCYS MAX	PERMEABILITY MILLIDARCYS 90°	POROSITY PER CENT	RESIDUAL SATURATION PER CENT PORE OIL	RESIDUAL SATURATION PER CENT PORE TOTAL WATER	SAMPLE DESCRIPTION AND REMARKS
23	5390.5-92.2	2.9	0.4	0.7	51.3	24.3	
		0.2	0.2				
24	5392.5-94.3	8.1	3.7	0.8	34.6	42.9	
		0.1	<0.1				
25	5394.5-96.4	0.6	0.1	0.9	32.5	48.7	
		0.3	<0.1				
26	5396.7-98.2	0.2	<0.1	0.7	0.0	85.0	
		<0.1	<0.1				
27	5398.5-00.1	0.2	<0.1	0.6	39.3	36.1	
		<0.1	<0.1				
28	5400.5-02.4	0.1	<0.1	0.8	17.5	51.3	
		<0.1	<0.1				
29	5402.7-04.2	<0.1	<0.1	0.8	25.0	51.4	
		<0.1	<0.1				
30	5404.5-06.4			0.6	21.0	43.6	
		0.2	0.2				
31	5406.7-08.2	0.2	0.1	0.6	31.2	45.9	
		4.4	0.4				
32	5408.5-10.2	0.1	<0.1	0.8	23.4	42.8	
		<0.1	<0.1				
33	5410.5-12.4	0.1	<0.1	0.6	22.4	51.7	
34	5412.7-14.2			1.0	10.1	48.0	
		<0.1	<0.1				

SERVICE NO.8-A NO INTERPRETATION OF RESULTS

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CA-20

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

CORE ANALYSIS RESULTS

Company SHELL OIL COMPANY | Formation PARADOX | File RP-3-943
Well NORTH DESERT CREEK NO. 13-12 | Core Type DIAMOND CONV. | Date Report 3-23-59
Field RATHERFORD | Drilling Fluid OIL BASE MUD | Analysts CLIFFORD
County SAN JUAN State UTAH Elev. 4571 DF Location NW SW Sec 12 41S 23E

Lithological Abbreviations

SAND-SD, SHALE-SH, LIME-LM, DOLOMITE-DOL, CHERT-CH, GYPSUM-GYP, ANHYDRITE-ANHY, CONGLOMERATE-CONG, FOSSILIFEROUS-FOSS, SANDY-SDY, SHALY-SHY, LIMY-LMY, FINE-FN, MEDIUM-MED, COARSE-CSE, CRYSTALLINE-XLN, GRAIN-GRN, GRANULAR-GRNL, BROWN-BRN, GRAY-GY, VUGGY-VGY, FRACTURED-FRAC, LAMINATION-LAM, STYLOLITIC-STY, SLIGHTLY-SL/, VERY-V/, WITH-W/

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCYS MAX	PERMEABILITY MILLIDARCYS 90°	POROSITY PER CENT	RESIDUAL SATURATION PER CENT PORE OIL	RESIDUAL SATURATION PER CENT PORE TOTAL WATER	SAMPLE DESCRIPTION AND REMARKS
35	5414.5-16.5	<0.1	<0.1	1.4	9.2	71.8	
		0.1	<0.1				
36	5416.8-18.3	<0.1	<0.1	3.8	5.2	76.8	
37	5418.6-20.3			1.8	4.4	66.7	
		0.4	0.1				
38	5420.7-22.8	0.1	<0.1	1.1	12.8	63.3	
		<0.1	<0.1				
39	5423.0-24.8	1.7	0.3	1.4	13.3	67.1	
		0.1	<0.1				
40	5424.8-26.5	0.7	0.2	1.0	23.6	56.0	
41	5426.8-28.5	<0.1	<0.1	1.8	9.1	70.9	
		<0.1	<0.1				
42	5428.8-30.4	2.2	<0.1	1.3	20.8	44.9	
		0.2	<0.1				
43	5430.7-32.3			0.8	23.1	38.5	
		1.7	0.6				
44	5432.6-34.1	<0.1	<0.1	0.7	39.5	25.8	
		0.1	<0.1				
45	5434.4-36.3	3.7	<0.1	6.1	4.2	79.3	
46	5436.7-38.6	<0.1	<0.1	4.0	3.2	72.0	
		6.0	3.0				
47	5438.9-40.9	<0.1	<0.1	5.5	15.4	35.4	
48	5441.5-43.6	<0.1	<0.1	2.9	10.1	60.6	VERTICAL FRACTURE
49	5443.6-46.6	0.02*		3.8	11.4	47.7	VERTICAL FRACTURE
50	5446.6-48.3			4.8	23.5	46.5	
		1.4	<0.1				
51	5448.6-50.4	1.2	0.2	7.8	19.8	60.8	
		2.4	2.1				
52	5450.6-52.5	1.1	0.6	6.9	24.8	21.8	
		1.2	0.2				
53	5452.8-55.3	0.6	0.1	5.4	12.4	14.2	
		1.0	0.6				
54	5455.7-57.3	1.1	0.7	3.0	13.8	22.6	
		21.4	11.7				
55	5457.6-59.3	1.0	0.7	6.4	12.8	16.7	
		10.9	8.9				
56	5459.7-61.2	1.6	0.6	6.2	12.6	23.2	
		2.4	1.4				
57	5461.6-63.4	0.4	0.3	1.2	12.2	32.2	
		0.2	0.1				
58	5463.7-65.4	0.6	0.5	0.8	21.1	27.6	
		0.2	0.1				

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CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

CORE ANALYSIS RESULTS

Company SHELL OIL COMPANY
Well NORTH DESERT CREEK NO. 13-12
Field RATHERFORD
County SAN JUAN State UTAH

Formation PARADOX
Core Type DIAMOND CONV.
Drilling Fluid OIL BASE MUD
Elev. 4571 DF Location NW SW Sec 12 41S 23E

File RP-3-943
Date Report 3-23-59
Analysts CLIFFORD

Lithological Abbreviations

SAND-SD	DOLOMITE-DOL	ANHYDRITE-ANHY	SANDY-SDY	FINE-FN	CRYSTALLINE-XLN	BROWN-BRN	FRACTURED-FRAC	SLIGHTLY-SL/
SHALE-SH	CHERT-CH	CONGLOMERATE-CONG	SHALY-SHY	MEDIUM-MED	GRAIN-GRN	GRAY-GY	LAMINATION-LAM	VERY-V/
LIME-LM	GYPSUM-GYP	FOSSILIFEROUS-FOSS	LIMY-LMY	COARSE-CSE	GRANULAR-GRNL	VUGGY-VGY	STYLOLITIC-STY	WITH-W/

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCYS MAX	90°	POROSITY PER CENT	RESIDUAL SATURATION PER CENT PORE OIL	TOTAL WATER	SAMPLE DESCRIPTION AND REMARKS
59	5465.7-67.2	0.1	0.1	0.9	19.8	36.3	
		0.3	<0.1				
60	5467.6-69.2	0.4	0.2	5.5	4.2	78.2	
		0.2	<0.1				
61	5469.7-71.2	<0.1	<0.1	7.9	3.0	73.0	
62	5471.5-73.2	<0.1	<0.1	4.9	3.3	75.8	
		<0.1	<0.1				
63	5473.5-74.0	<0.1	<0.1	11.0	4.1	77.1	

* MATRIX PERMEABILITY

SERVICE NO.8-A NO INTERPRETATION OF RESULTS

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CA-20

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

CORE ANALYSIS RESULTS

Company SHELL OIL COMPANY | Formation PARADOX | File RP-3-943
Well NORTH DESERT CREEK NO. 13-12 | Core Type DIAMOND CONV. | Date Report 3-24-59
Field RATHERFORD | Drilling Fluid OIL BASE MUD | Analysts CLIFFORD
County SAN JUAN State UTAH | Elev. 4571 DF | Location NW SW Sec 12 41S 23E

Lithological Abbreviations

SAND-SD	DOLOMITE-DOL	ANHYDRITE-ANHY	SANDY-SDY	FINE-FN	CRYSTALLINE-XLN	BROWN-BRN	FRACTURED-FRAC	SLIGHTLY-SL/
SHALE-SH	CHERT-CH	CONGLOMERATE-CONG	SHALY-SHY	MEDIUM-MED	GRAIN-GRN	GRAY-GY	LAMINATION-LAM	VERY-V/
LIME-LM	GYPSUM-GYP	FOSSILIFEROUS-FOSS	LIMY-LMY	COARSE-CSE	GRANULAR-GRNL	VUGGY-VGY	STYLOLITIC-STY	WITH-W/

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCYS MAX	90°	POROSITY PER CENT	RESIDUAL SATURATION PER CENT PORE OIL	TOTAL WATER	SAMPLE DESCRIPTION AND REMARKS
64	5474.3-76.3	0.4	0.4	9.3	38.7	19.9	•
		2.9	2.5				
65	5476.6-78.1	0.6	0.5	9.1	35.6	21.3	
		0.9	0.9				
66	5478.4-80.2	0.5	0.5	6.2	23.3	35.8	
		0.1	0.1				
67	5480.5-82.0	<0.1	<0.1	0.9	15.4	43.9	
		<0.1	<0.1				
68	5482.3-83.8	0.2	0.1	7.9	21.4	29.4	
		1.3	0.5				
69	5483.8-85.2	5.7	2.5	12.7	39.7	14.6	
		2.2	1.9				
70	5485.5-87.4	1.5	0.9	10.7	18.7	42.6	
		<0.1	<0.1				
71	5487.8-89.2	0.2	0.2	7.4	13.5	46.8	
		0.7	0.1				
72	5489.5-91.0	1.9	0.4	6.1	12.9	49.3	
		1.7	0.1				
73	5491.2-92.9	<0.1	<0.1	5.9	6.0	81.3	
		0.1	<0.1				
74	5492.9-94.4	<0.01*		8.3	7.8	78.8	
75	5494.7-96.6	<0.1	<0.1	4.2	22.2	68.0	
		<0.1	<0.1				

* MATRIX PERMEABILITY

SERVICE NO.8-A NO INTERPRETATION OF RESULTS

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MAILING LIST

8-5-59

State of Utah ← THIS COPY FOR
Oil and Gas Conservation Commission
Room 310 Newhouse Building
Salt Lake City, Utah
Attention Mr. C. B. Feight

Aztec Oil & Gas Company
920 Mercantile Securities Building
Dallas 1, Texas
Attention Mr. Van Thompson

The Carter Oil Company
Post Office Box 120
Denver, Colorado
Attention Mr. R. S. Frazier

The Carter Oil Company
Post Office Box 3082
Durango, Colorado
Attention Mr. B. M. Bradley

The Carter Oil Company
Post Office Box 3082
Durango, Colorado
Attention Mr. R. C. Walther

Cities Service Oil Company
3010 Monte Vista, N. E.
Albuquerque, New Mexico

Continental Oil Company
1755 Glenarm
Denver 2, Colorado
Attention Mr. J. W. Tynan

Continental Oil Company
816 Patterson Building
Denver, Colorado
Attention Mr. R. E. White

Continental Oil Company
Post Office Box 3312
Durango, Colorado
Attention Mr. J. B. Hall

Gulf Oil Corporation
Post Office Box 2097
Denver, Colorado
Attention Mr. W. E. Bauman

Ohio Oil Company
Post Office Box 120
Casper, Wyoming
Attention Mr. E. L. Spieles

Phillips Petroleum Company
Bartlesville, Oklahoma
Attention Mr. Shofner Smith

Phillips Petroleum Company
Post Office Drawer 1150
Cortez, Colorado
Attention Mr. C. M. Boles

The Pure Oil Company
Mile High Center
1700 Broadway
Denver 2, Colorado
Attention Mr. H. W. Van Zandt

Sinclair Oil & Gas Company
Denver Club Building, Room 601
Denver 2, Colorado
Attention Mr. C. D. Gaines

Standard Oil Company of California
Post Office Box 445
Vernal, Utah
Attention Mr. C. V. Chatterton

The Superior Oil Company
Post Office Box 200
Casper, Wyoming
Attention Mr. W. H. Fraser

The Superior Oil Company
Drawer G
Cortez, Colorado

Texaco Inc.
Post Office Box 817
Farmington, New Mexico
Attention Mr. U. E. Johnson

Three States Natural Gas Company
916 Fairgrounds Road
Farmington, New Mexico

United States Geological Survey
Post Office Box 965
Farmington, New Mexico
Attention Mr. P. T. McGrath

CA-20

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

CORE ANALYSIS RESULTS

Company SHELL OIL COMPANY Formation AS NOTED File RP-3-943
Well NORTH DESERT CREEK NO. 13-12 Core Type DIAMOND CONVENTIONAL Date Report 3-24-59
Field RATHERFORD Drilling Fluid OIL BASE MUD Analysts CLIFFORD
County SAN JUAN State UTAH Elev. 4571 DF Location NW SW SECTION 12 41S 23E

Lithological Abbreviations

SAND-SD	DOLOMITE-DOL	ANHYDRITE-ANHY	SANDY-SDY	FINE-FN	CRYSTALLINE-XLN	BROWN-BRN	FRACTURED-FRAC	SLIGHTLY-SL/
SHALE-SH	CHERT-CH	CONGLOMERATE-CONG	SHALY-SHY	MEDIUM-MED	GRAIN-GRN	GRAY-GY	LAMINATION-LAM	VERY-V/
LIME-LM	GYPSUM-GYP	FOSSILIFEROUS-FOSS	LIMY-LMY	COARSE-CSE	GRANULAR-GRNL	VUGGY-VGY	STYLOLITIC-STY	WITH-W/

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCYS MAX 90°		POROSITY PER CENT	RESIDUAL SATURATION PER CENT PORE OIL	TOTAL WATER		SAMPLE DESCRIPTION AND REMARKS
	Desert Creek Zone Formation							
1	5346.8-47.3	<0.1	<0.1	0.8	14.7	77.3	(2)	Limestone.
2	5347.6-49.4	0.1 0.1	0.1 0.1	2.0	9.5	76.6	(2)	Limestone.
3	5349.7-51.5	0.3 0.2	0.1 0.1	4.2	24.0	30.1	(2)	Limestone.
4	5351.8-53.4	0.1 0.1	<0.1 0.1	12.7	38.0	19.8	(2)	Limestone.
5	5353.6-55.6	1.6 2.0	1.0 1.5	13.1	40.0	19.6	(2)	Limestone.
6	5355.9-57.2	1.0	0.8	8.9	24.9	18.2	(2)	Limestone.
7	5357.6-59.4	3.1 3.7	1.2 2.6	10.6	22.5	13.2	(2)	Limestone.
8	5359.6-61.2	<0.1 0.1	<0.1 0.1	3.0	8.8	62.4	(2)	Limestone.
9	5361.5-63.5	<0.1	<0.1	3.8	7.1	62.9	(2)	Limestone.
10	5363.8-65.4	0.1	<0.1	1.9	12.6	58.4	(2)	Limestone.
11	5365.7-67.5	<0.1 <0.1	<0.1 <0.1	7.5	30.7	27.5	(2)	Limestone.
12	5367.8-69.2	0.1 0.1	0.1 0.1	7.8	28.2	30.5	(2)	Limestone.
13	5369.5-71.5	<0.1 <0.1	<0.1 <0.1	3.1	6.8	77.7	(2)	Limestone.
14	5371.9-73.2	0.1 <0.1	<0.1 <0.1	8.3	21.3	37.6	(2)	Limestone.
15	5373.5-75.6	<0.1 <0.1	<0.1 <0.1	9.1	30.3	33.2	(2)	Limestone.

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CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

CORE ANALYSIS RESULTS

Company SHELL OIL COMPANY | Formation AS NOTED | File RP-3-943
Well NORTH DESERT CREEK NO. 13-12 | Core Type DIAMOND CONVENTIONAL | Date Report 3-24-59
Field RATHERFORD | Drilling Fluid OIL BASE MUD | Analysts CLIFFORD
County SAN JUAN State UTAH Elev. 4571 DF Location NW SW SECTION 12 41S 23E

Lithological Abbreviations

SAND-SD	DOLOMITE-DOL	ANHYDRITE-ANHY	SANDY-SDY	FINE-FN	CRYSTALLINE-XLN	BROWN-BRN	FRACTURED-FRAC	SLIGHTLY-SL/
SHALE-SH	CHERT-CH	CONGLOMERATE-CONG	SHALY-SHY	MEDIUM-MED	GRAIN-GRN	GRAY-GY	LAMINATION-LAM	VERY-V/
LIME-LM	GYPSUM-GYP	FOSSILIFEROUS-FOSS	LIMY-LMY	COARSE-CSE	GRANULAR-GRNL	VUGGY-VGY	STYLOLITIC-STY	WITH-W/

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCYS MAX	90°	POROSITY PER CENT	RESIDUAL SATURATION PER CENT PORE OIL	TOTAL WATER	SAMPLE DESCRIPTION AND REMARKS
	Desert Creek Zone Formation						
16	5375.9-77.5	0.3	0.2	10.2	37.7	24.2	(2) Limestone.
		0.4	0.3				
17	5377.7-79.5	0.1	0.1	2.9	7.3	72.4	(2) Limestone.
		0.1	<0.1				
18	5379.8-81.6	<0.1	<0.1	0.8	17.9	39.4	(2) Limestone.
		<0.1	<0.1				
19	5382.8-84.4	<0.1	<0.1	2.8	12.1	57.2	(2) Limestone.
		0.1	<0.1				
20	5384.6-86.4	0.3	0.2	8.1	23.2	27.3	(2) Limestone.
		0.1	0.1				
21	5386.7-88.4	3.3	0.8	4.6	10.5	30.7	(2) Limestone.
		0.3	0.1				
22	5388.7-90.5	1.3	0.9	1.2	16.8	52.9	(2) Limestone.
	Paradox Formation						
23	5390.5-92.2	2.9	0.4	0.7	51.3	24.3	(2) Limestone.
		0.2	0.2				
24	5392.5-94.2	8.1	3.7	0.8	34.6	42.9	(2) Limestone.
		0.1	<0.1				
25	5394.5-96.4	0.6	0.1	0.9	32.5	48.7	(2) Limestone.
		0.3	<0.1				
26	5396.7-98.2	0.2	0.2	0.7	0.0	85.0	(2) Limestone.
		<0.1	0.1				
27	5398.5-00.1	0.2	0.1	0.6	39.3	36.1	(2) Limestone.
		<0.1	<0.1				
28	5400.5-02.4	0.1	<0.1	0.8	17.5	51.3	(2) Limestone.
		<0.1	<0.1				
29	5402.7-04.2	<0.1	<0.1	0.8	25.0	51.4	(2) Limestone.
		<0.1	<0.1				

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CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

CORE ANALYSIS RESULTS

Company SHELL OIL COMPANY | Formation AS NOTED | File RP-3-943
Well NORTH DESERT CREEK NO. 13-12 | Core Type DIAMOND CONVENTIONAL | Date Report 3-24-59
Field RATHERFORD | Drilling Fluid OIL BASE MUD | Analysts CLIFFORD
County SAN JUAN State UTAH Elev. 4571 DF Location NW SW SECTION 12 41S 23E

Lithological Abbreviations

SAND-SD SHALE-SH LIME-LM	DOLOMITE-DOL CHERT-CH GYPSUM-GYP	ANHYDRITE-ANHY CONGLOMERATE-CONG FOSSILIFEROUS-FOSS	SANDY-SDY SHALY-SHY LIMY-LMY	FINE-FN MEDIUM-MED COARSE-CSE	CRYSTALLINE-XLN GRAIN-GRN GRANULAR-GRNL	BROWN-BRN GRAY-GY VUGGY-VGY	FRACTURED-FRAC LAMINATION-LAM STYLOLITIC-STY	SLIGHTLY-SL/ VERY-V/ WITH-W/

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCYS MAX 90°		POROSITY PER CENT	RESIDUAL SATURATION PER CENT PORE OIL	TOTAL WATER		SAMPLE DESCRIPTION AND REMARKS
	Paradox Formation							
30	5404.5-06.4	---- 0.2	---- 0.2	0.6	21.0	43.6	(2)	Limestone.
31	5406.7-08.2	0.2 4.4	0.1 4.4	0.6	31.2	45.9	(2)	Limestone.
32	5408.5-10.2	0.1 <0.1	<0.1 <0.1	0.8	23.4	42.8	(2)	Limestone.
33	5410.5-12.4	0.1	<0.1	0.6	22.4	51.7	(2)	Limestone.
34	5412.7-14.2	---- <0.1	---- <0.1	1.0	10.0	48.0	(2)	Limestone.
35	5414.5-16.5	<0.1 0.1	<0.1 <0.1	1.4	9.2	71.8	(2)	Limestone.
36	5416.8.18.3	<0.1	<0.1	3.8	5.2	76.8	(2)	Limestone.
37	5418.6-20.3	---- 0.4	----- 0.1	1.8	4.4	66.7	(2)	Limestone.
38	5420.7-22.8	0.1 <0.1	<0.1 <0.1	1.1	12.8	63.3	(2)	Limestone.
39	5423.0-24.8	1.7 0.1	0.3 <0.1	1.4	13.3	67.1	(2)	Limestone.
40	5424.8-26.5	0.7	0.2	1.0	23.6	56.0	(2)	Limestone.
41	5426.8-28.5	<0.1 <0.1	<0.1 <0.1	1.8	9.1	70.9	(2)	Limestone.
42	5428.8-30.4	2.2 0.2	<0.1 <0.1	1.3	20.8	44.9	(2)	Limestone.
43	5430.7-32.3	--- 1.7	---- 0.6	0.8	23.1	38.5	(2)	Limestone.
44	5432.6-34.1	<0.1 0.1	<0.1 <0.1	0.7	39.5	25.8	(2)	Limestone.
45	5434.4-36.3	3.7	<0.1	6.1	4.2	79.3	(2)	Limestone.

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CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

CORE ANALYSIS RESULTS

Company SHELL OIL COMPANY | Formation AS NOTED | File RP-3-943
Well NORTH DESERT CREEK NO. 13-12 | Core Type DIAMOND CONVENTIONAL | Date Report 3-24-59
Field RATHERFORD | Drilling Fluid OIL BASE MUD | Analysts CLIFFORD
County SAN JUAN State UTAH Elev. 4571 DF Location NW SW SECTION 12 41S 23E

Lithological Abbreviations

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LIME-LM	GYPSUM-GYP	FOSSILIFEROUS-FOSS	LIMY-LMY	COARSE-CSE	GRANULAR-GRNL	VUGGY-VGY	STYLOLITIC-STY	WITH-W/

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCYS MAX. 90°		POROSITY PER CENT	RESIDUAL SATURATION PER CENT PORE OIL	TOTAL WATER		SAMPLE DESCRIPTION AND REMARKS
	Paradox Formation							
46	5436.7-38.6	<0.1	<0.1	4.0	3.2	72.0	(2)	Limestone.
		6.0	3.0					
47	5438.9-40.9	<0.1	<0.1	5.5	15.4	35.4	(2)	Limestone.
48	5441.5-43.6	<0.1	<0.1	2.9	10.1	60.6	(2)	Limestone, Vertical Fracture.
49	5443.6-46.6		0.02*	3.8	11.4	47.7	(2)	Limestone, Vertical Fracture.
50	5446.6-48.3	---	---	4.8	23.5	46.5	(2)	Limestone.
		1.4	<0.1					
51								
51	5448.6-50.4	1.2	0.2	7.8	19.8	60.8	(2)	Limestone.
		2.4	2.1					
52	5450.6-52.5	1.1	0.6	6.9	24.8	21.8	(2)	Limestone.
		1.2	0.2					
53	5452.8-55.3	0.6	0.1	5.4	12.4	14.2	(2)	Limestone.
		1.0	0.6					
54	5455.7-57.3	1.1	0.7	3.0	13.8	22.6	(2)	Limestone.
		21.4	11.7					
55	5457.6-59.3	1.0	0.7	6.4	12.8	16.7	(2)	Limestone.
		10.8	8.9					
56	5459.7-61.2	1.6	0.6	6.2	12.6	23.2	(2)	Limestone.
		2.4	1.4					
57	5461.6-63.4	0.4	0.3	1.2	12.2	32.2	(2)	Limestone.
		0.2	0.1					
58	5463.7-65.4	0.6	0.5	0.8	21.1	27.6	(2)	Limestone.
		0.2	0.1					
59	5465.7-67.2	0.1	0.1	0.9	19.8	36.3	(2)	Limestone.
		0.3	<0.1					
60	5467.6-69.2	0.4	0.2	5.5	4.2	78.2	(2)	Limestone.
		0.2	<0.1					

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CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

CORE ANALYSIS RESULTS

Company SHELL OIL COMPANY | Formation AS NOTED | File RP-3-943
Well NORTH DESERT CREEK NO. 13-12 | Core Type DIAMOND CONVENTIONAL | Date Report 3-24-59
Field RATHERFORD | Drilling Fluid OIL BASE MUD | Analysts CLIFFORD
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Lithological Abbreviations

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SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCYS MAX 90°		POROSITY PER CENT	RESIDUAL SATURATION PER CENT PORE OIL	TOTAL WATER		SAMPLE DESCRIPTION AND REMARKS
	Paradox Formation							
61	5469.7-71.2	<0.1	<0.1	7.9	3.0	73.0	(2)	Dolomite, Limestone.
62	5471.5-73.2	<0.1	<0.1	4.9	3.3	75.8	(2)	Limestone, Dolomite.
		<0.1	<0.1					
63	5473.5-74.0	<0.1	<0.1	11.0	4.1	77.1	(2)	Dolomite.
64	5474.4-76.3	0.4	0.4	9.3	38.7	19.9	(2)	Limestone.
		2.9	2.5					
65	5476.6-78.1	0.6	0.5	9.1	35.6	21.3	(2)	Limestone.
		0.9	0.9					
66	5478.4-80.2	0.5	0.5	6.2	23.3	35.8	(2)	Limestone.
		0.1	0.1					
67	5480.5-82.0	<0.1	<0.1	0.9	15.4	43.9	(2)	Limestone.
		<0.1	<0.1					
68	5482.3-83.8	0.2	0.1	7.9	21.4	29.4	(2)	Limestone.
		1.3	0.5					
69	5483.8-85.2	5.7	2.5	12.7	39.7	14.6	(2)	Limestone.
		2.2	1.9					
70	5485.5-87.4	1.5	0.9	10.7	18.7	42.6	(2)	Limestone.
		<0.1	<0.1					
71	5487.8-89.2	0.2	0.2	7.4	13.5	46.8	(2)	Limestone.
		0.7	0.1					
72	5489.5-91.0	1.9	0.4	6.1	12.9	49.3	(2)	Limestone.
		1.7	0.1					
73	5491.2-92.9	<0.1	<0.1	5.9	6.0	81.3	(2)	Limestone.
		0.1	<0.1					
74	5492.9-94.4	<0.01*		8.3	7.8	78.8	(2)	Limestone.
75	5494.7-96.6	<0.1	<0.1	4.2	22.2	68.0	(2)	Limestone.
		<0.1	<0.1					

(2) Service No. 8-A - No Interpretation of Results
* Matrix Permeability

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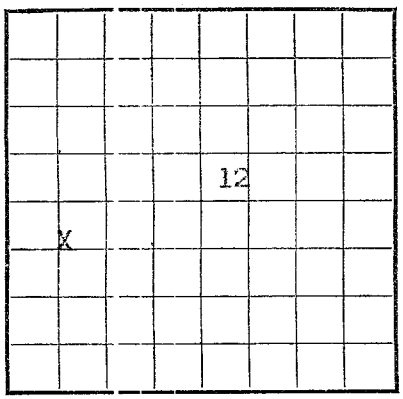
Form 9-330

Bureau No. 42-R355.4.
Approval expires 12-31-60.

PRELIMINARY REPORT

U. S. LAND OFFICE Navajo
SERIAL NUMBER 14-20-603-246
LEASE OR PERMIT TO PROSPECT -



LOCATE WELL CORRECTLY

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

LOG OF OIL OR GAS WELL

Company Shell Oil Company Address P.O. Box 158, Farmington, N.M.

Lessor or Tract Tribal - North Desert Creek Field Ratherford State Utah

Well No. 13-12 Sec. 12 T. 41S R. 23E Meridian SLBM County San Juan

Location 1980 ft. {N.} of S Line and 4620 ft. {W.} of E Line of Sec. 12 Elevation KB 4573
(Derrick floor relative to sea level)

The information given herewith is a complete and correct record of the well and all work done thereon so far as can be determined from all available records.

Signed Original signed by R. S. Mac ALISTER, JR.

Date November 27, 1959 Title DIV. Exploitation Engineer

The summary on this page is for the condition of the well at above date.

Commenced drilling February 16, 1959 Finished drilling March 21, 1959

OIL OR GAS SANDS OR ZONES

(*Denote gas by G*)

OPEN HOLE

No. 1, from 5345 to 5515 No. 4, from ---- to ----

No. 2, from ---- to ---- No. 5, from ---- to ----

No. 3, from ---- to ---- No. 6, from ---- to ----

IMPORTANT WATER SANDS

No. 1, from ---- to ---- No. 3, from ---- to ----

No. 2, from ---- to ---- No. 4, from ---- to ----

CASING RECORD

Size casing	Weight per foot	Threads per inch	Make	Amount	Kind of shoe	Cut and pulled from	Perforated From—	Perforated To—	Purpose
20"	94	-	-	94	Baker	-	-	-	Surface
13-3/8"	48	8	-	1349	Baker	-	-	-	Intermediate
8-5/8"	24 & 32	-	-	5331	Baker	-	5345	5515	Production (Open Hole)

MUDDING AND CEMENTING RECORD

Size casing	Where set	Number sacks of cement	Method used	Mud gravity	Amount of mud used
20"	94	125	Displacement	-	-
13-3/8"	1349	350	Displacement	-	-
8-5/8"	5345	200	Displacement	-	-

PLUGS AND ADAPTERS

Heaving plug—Material ---- Length ---- Depth set ----

Adapters—Material ---- Size ----

SHOOTING RECORD

FOLD | MARK

Adapters—Material _____ Size _____

SHOOTING RECORD

Size	Shell used	Explosive used	Quantity	Date	Depth shot	Depth cleaned out

TOOLS USED

Rotary tools were used from 0 feet to 5515 feet, and from - feet to - feet

Cable tools were used from - feet to - feet, and from - feet to - feet

DATES

Suspended 40-acre test well August 20, 19 59 Put to producing _____, 19____

The production for the first 24 hours was _____ barrels of fluid of which ____% was oil; ____% emulsion; ____% water; and ____% sediment. Gravity, °Bé. _____

If gas well, cu. ft. per 24 hours _____ Gallons gasoline per 1,000 cu. ft. of gas _____

Rock pressure, lbs. per sq. in. _____

EMPLOYEES

_____, Driller Rutledge Drilling Company, Driller

_____, Driller _____, Driller

FORMATION RECORD

FROM—	TO—	TOTAL FEET	FORMATION
		ELECTRIC LOG TOPS	
2149	2210	61	Shinarump
2210	2265	55	Moenkopi
2265	4335	2070	Cutler
4335	5324	989	Hermosa
5324	-	-	Paradox

FROM— TO— TOTAL FEET FORMATION

FORMATION RECORD—Continued

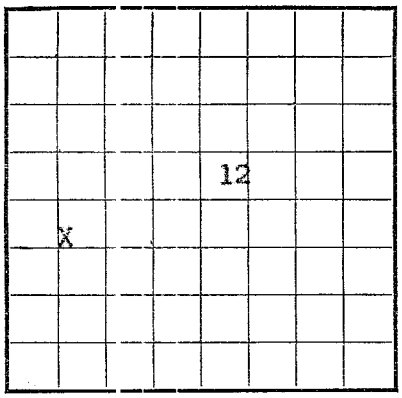
[OVER]

Form 9-330

Budget Bureau No. 42-R355.4.
Approval expires 12-31-60.

PRELIMINARY REPORT

U. S. LAND OFFICE Navajo
SERIAL NUMBER 14-20-603-246
LEASE OR PERMIT TO PROSPECT -



LOCATE WELL CORRECTLY

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

LOG OF OIL OR GAS WELL

Company Shell Oil Company Address P.O. Box 158, Farmington, N.M.

Lessor or Tract Tribal - North Desert Creek Field Ratherford State Utah

Well No. 13-12 Sec. 12 T. 41S R. 23E Meridian SLBM County San Juan

Location 1980 ft. {N./S.} of S Line and 4620 ft. {E./W.} of E Line of Sec. 12 Elevation KB 4573 (Derrick floor relative to sea level)

The information given herewith is a complete and correct record of the well and all work done thereon so far as can be determined from all available records.

Signed Original signed by R. S. Mac ALISTER, JR.

Date November 27, 1959 Title DIV. Exploitation Engineer

The summary on this page is for the condition of the well at above date.

Commenced drilling February 16, 19 59 Finished drilling March 21, 19 59

OIL OR GAS SANDS OR ZONES

OPEN HOLE (*Denote gas by G*)

No. 1, from 5345 to 5515 No. 4, from ____ to ____

No. 2, from ____ to ____ No. 5, from ____ to ____

No. 3, from ____ to ____ No. 6, from ____ to ____

IMPORTANT WATER SANDS

No. 1, from ____ to ____ No. 3, from ____ to ____

No. 2, from ____ to ____ No. 4, from ____ to ____

CASING RECORD

Size casing	Weight per foot	Threads per inch	Make	Amount	Kind of shoe	Cut and pulled from	Perforated From—	Perforated To—	Purpose
20"	94	-	-	58	-	-			Conductor
13-3/8"	48 & 54.5	8	-	1349	Baker	-			Surface
8-5/8"	23 & 32	-	-	5331	Baker	-	5345	5515	Production (Open Hole)

MUDDING AND CEMENTING RECORD

Size casing	Where set	Number sacks of cement	Method used	Mud gravity	Amount of mud used
20"	94	125	Displacement	-	-
13-3/8"	1349	250	Displacement	-	-
8-5/8"	5345	200	Displacement	-	-

PLUGS AND ADAPTERS

Heaving plug—Material ____ Length ____ Depth set ____

Adapters—Material ____ Size ____

FOLD | MARK

TOOLS USED

Rotary tools were used from 0 feet to 5515 feet, and from - feet to - feet

Cable tools were used from - feet to - feet, and from - feet to - feet

DATES

Suspended 40-acre test well

August 20, 1959 Put to producing ....., 19....

The production for the first 24 hours was ..... barrels of fluid of which ....% was oil; ....% emulsion; ....% water; and ....% sediment. Gravity, °Bé. .....

If gas well, cu. ft. per 24 hours ..... Gallons gasoline per 1,000 cu. ft. of gas .....

Rock pressure, lbs. per sq. in. .....

EMPLOYEES

..... Driller Rutledge Drilling Company ....., Driller

..... Driller ....., Driller

FORMATION RECORD

FROM—	TO—	TOTAL FEET	FORMATION
		ELECTRIC LOG TOPS	
2149	2210	61	Shinarump
2210	2265	55	Moenkopi
2265	4335	2070	Cutler
4335	5324	989	Hermosa
5324	-	-	Paradox

FROM— TO— TOTAL FEET FORMATION

FORMATION RECORD—Continued

[OVER]

DEC 5 1959

UNITED STATES
DEPARTMENT OF THE INTERIOR

LEASE OR PERMIT TO PROSPECT .....

Well file

SHELL OIL COMPANY
DAILY OPERATIONS REPORT

Well: North Desert Creek 13-12 **Date:** 3-31-59

Depth: 5519' **Drilled:** ø **Cored:** ø

Other Operations:

Ran Halliburton conventional test H-20. Running Halliburton conventional test H-21.

Preliminary Data Determinations:

H-20 conventional test 5463-5479, initial open 15 seconds. Initial shut-in 4 hours, open 1 hour. Final shut-in 3 hours. Immediate moderate blow continuing steadily throughout open period. Recovered 55' oil base mud and oil.

Field pressure readings:

	AK-1 589	AK-1 229,	HK H-1
IHP	2558	2542	2546
ISIP	2087	2062	2066
IFP	33	23	21
FFP	44	31	32
FSIP	*	1817 rising sharply	1819 rising sharply
FHP	**	**	**

* 12 hour clock stopped.
** chart not readable.

REMARKS:

JW

SHELL OIL COMPANY
DAILY OPERATIONS REPORT

Well: North Desert Creek 13-12 **Date:** 3-20-59 A.M.

Depth: 5471' **Drilled:** ø **Cored:** 45

Other Operations:

Preliminary Data Determinations:

REMARKS:

SHELL OIL COMPANY
DAILY OPERATIONS REPORT

Well: North Desert Creek 13-12 **Date:** 3-19-59 A.M.

Depth: 5426' **Drilled:** Ø **Cored:** 18

Other Operations:

Preliminary Data Determinations:

Core #2 5390.5 - 5414' Recovered 24'
Limestone IVFA, predominantly

REMARKS:

SHELL OIL COMPANY
DAILY OPERATIONS REPORT

Well: North Desert Creek 13-12

Date: 3-18-59 A.M.

Depth: 5408'

Drilled:

Cored: 19

Other Operations:

Preliminary Data Determinations:

REMARKS:

SHELL OIL COMPANY
DAILY OPERATIONS REPORT

Well: North Desert Creek 13-12 **Date:** 3-12-59 A.M.

Depth: 5254' **Drilled:** 94' **Cored:** -

Other Operations:

Location: 1980'N and 4620'W of SE Corner Section 12, T41S, R23E, SLBM, San Juan County, Utah.

Elevations: KB 4572.61
DF 4571.11
GR 4559.11

Preliminary Data Determinations:

REMARKS:

SHELL OIL COMPANY
DAILY OPERATIONS REPORT

Well: North Desert Creek 13-12 **Date:** 3-13-59 A.M.

Depth: 5304' **Drilled:** 50' **Cored:** -

Other Operations:

Preliminary Data Determinations:

REMARKS:

1828

SHELL OIL COMPANY
DAILY OPERATIONS REPORT

Well: North Desert Creek 13-12 **Date:** 3-14-59 A.M.

Depth: 5345' **Drilled:** 41' **Cored:** -

Other Operations:

Preliminary Data Determinations:

REMARKS:

SHELL OIL COMPANY
DAILY OPERATIONS REPORT

Well: North Desert Creek 13-12 Date: 3-15-59 A.M.

Depth: 5345' Drilled: Ø Cored: -

Other Operations: (Summary of operations prior to coring).

Drilled 11" hole to 5345'. Ran Induction-Electrical Survey 5338 to 1352'. Cemented 8-5/8" casing at 5345' with 200 sacks cement.

Preliminary Data Determinations:

REMARKS:

SHELL OIL COMPANY
DAILY OPERATIONS REPORT

Well: North Desert Creek 13-12 **Date:** 3-16-59 A.M.

Depth: 5346' **Drilled:** 1' **Cored:** -

Other Operations:

Drilled and cleaned out cement to 5346'. Changed over to oil base mud. Pressure tested casing and BOP with 1200 psi, OK.

Preliminary Data Determinations:

REMARKS:

SHELL OIL COMPANY
DAILY OPERATIONS REPORT

Well: North Desert Creek 13-12 **Date:** 3-17-58 A.M.

Depth: 5389' **Drilled:** Ø **Cored:** 43

Other Operations:

Preliminary Data Determinations:

Core #1 5346.8 - 5390.5 cut 43.7 (jammed). Recovered 43.7'.
Limestone, IVsA predominantly; bleeding oil from all porous intervals.

REMARKS:

Shell

SHELL OIL COMPANY
DAILY OPERATIONS REPORT

Well: North Desert Creek 13-12 Date: 3-21-59 A.M.

Depth: 5514' Drilled: Ø Cored: 43

Other Operations:

Ran Microcaliper T.D. to 5310, casing at 5343', ran 40' Induction log T.D. to casing shoe, ran GRN - 5 runs gamma ray logs qualitatively repeated but not quantitative. Neutron logs repeated well.

Run 1: T.D. to 5270' 5"/100' & 5"/100' scales. Time constant 2, logging speed 690 fph.
Run 2: T.D. to 5280' 5"/100' & 25"/100' scales. Time constant 3, logging speed 690 fph.
Run 3: T.D. to 5290', 5"/100' & 25"/100' scales. Time constant 2, logging speed 690 fph.
Run 4: T.D. to 5180', 5"/100' & 25"/100' scales. Time constant 2, logging speed 1500 fph.
Run 5: T.D. to 4200', 2"/100' & 5"/100' scales. Time constant 2, logging speed 1500 fph.

All runs with gamma ray sens. 2 and neutron sens. 400.

Preliminary Data Determinations: PRELIMINARY FIELD DATA

Core #3 5414.5 - 5474 Recovered 58.5'.
Limestone, predominantly IVFA in top 22' and bottom 13'; I BC and D porosity in middle 23.5'.

Plotted petrographic core description and porosity from core analysis ON 25"/100' scale. Core analysis available from 5346 to 5414'.

Comparing petro-core analysis plots with GRN (Run 1 25"/100') showed core depth - 4 feet = log depth. Selected 5 Schlumberger wire line test parts in gross interval 5346 to 5414 at following depths: 5350.5', 5355', 5364.5', 5372.5', 5381.5' (GRN run 1 depths).

REMARKS:

SHELL OIL COMPANY
DAILY OPERATIONS REPORT

Preliminary Data Determinations: PRELIMINARY FIELD DATA (Con't.) 3-22-59 A.M.

Field pressure readings:

	HK# H-5 @ 5384.5	HK# H-24 @ 5384.5
SIP	1061	1066
Still rising sharply		
HP (5371)	2511	[illegible]

Gradient Stops:

5071'	2378	2372
5171'	2424	2417
5271'	Clock	
5371'	ran	
	out	

Open Time: 1 hour 48 minutes.

Before running in hole the "T" gauge was flushed with Kerosene to remove the black magic that entered the ruptured diaphragm. The "T" pressures recorded during S-3 were 170± psi higher than the Ameradas. Since the T and Ameradas agreed well on tests S-1 & S-2, it is believed that the calibration altered. The "T" will not be run during the remaining tests.

SHELL OIL COMPANY
DAILY OPERATIONS REPORT

Well: North Desert Creek 13-12

Date: 3-23-59 to 3-24-59 A.M.

Depth: 5519'

Drilled: ø

Cored: ø

Other Operations:

Preliminary Data Determinations: DATA SUBJECT TO REVISION

WLT S-4 5456 open 35 minutes
Recorder H 24 SIP 1312 HP 2547
" H 5 " 1305 " 2525
WLT S-5 5482 open 2 hours 9 minutes
H 5 SIP 2092 HP ?
H 24 " 2125 2533
Period of measurement was shorter for H5 than for H24
WLT S-6 5473 open 63 minutes
H 24 SIP 341 HP 2551
5 337 2555
WLT S-7 5355 open 66 minutes
H 5 SIP 1860
WLT S-8 5448 open 1 hour 40 minutes
H 5 SIP 1315 HP 2542
H 24 1312 2536

Released Schlumberger
Conditioned Mud
Made up and ran Halliburton Multi Zone Tester to bottom. Ran Welex gamma ray collar locator through d.p. to 5460 for depth control. Pulled tester up and set packers to straddle 5348-5358+. Ran Welex gamma ray collar locator for depth check. Starting first run of Multi Zone Tester with retrievable pressure recorders. Plan test only 10' intervals: 5347-58, 5479-89, 5469-79, 5451-61, 5429-39, 5379-89, 5367-77 (7 tests).

REMARKS:

SHELL OIL COMPANY
DAILY OPERATIONS REPORT

Well: North Desert Creek 13-12 Date: 3-22-59 A.M.

Depth: 5519' Drilled: Ø Cored: 5

Other Operations:

Preliminary Data Determinations: PRELIMINARY FIELD DATA
Core #4 5474-5519. Recovered 45'
10' Limestone, IBC porosity.
11' Dolomite, I, II BC porosity.
24' Shale.

Schlumberger Wire Line Test No. 1 (WLT, S-1)
Ran WLT S-1 at 5350.5' with 2 Amerada (HK) pressure recorders in sample chamber and 1 Johnston T recorder above sample chamber. Air chamber 670 cc., tool open 62 minutes. Recovered 450 cc. oil + 220 cc. flow line fluid.

Field Pressure Readings:
Stab. SIP = 1730 psi @ 5362.5'
HP = 2493 psi @ 5362.5'

Gradient stops:

HP	Depth
2362 psi	5050'
2410	5150'
2456	5250'

Time to round trip tester, 2 hours 14 minutes.

Made trip to condition mud after approximately 20 hours with D.P. on bank, ran 7-7/8" bit free to 20' off bottom, rotated through last 20' easily.

WLT S-2 - 5381.5'
Air chamber 400 cc - no recovery.
SIP 95 psi - caused by expansion of shaped charge gases only.
tool open 31 minutes - fired seal valve to attempt buildup recorded by "T" gauge - lost pad seal when seal valve fired. Diaphragm was found to be ruptured on "T" gauge allowing oil base mud to enter gauge. Time to round trip - 3 hours 4 minutes.
Ran GR - collar log T.D. to 4200' 5" & 2" scales and T.D. to 5260' on 25" scale with new sonde and panel - GR log OK.

WLT S-3 5372.5'
Air chamber - 150 cc. Sample chamber filled with water (flow line provided air chamber hence no sample recoverable).

SHELL OIL COMPANY
DAILY OPERATIONS REPORT

Well: North Desert Creek 13-12 **Date:** 3-24-59 to 3-25-59

Depth: 5519' **Drilled:** 0 **Cored:** 0

Other Operations:

Ran Halliburton MZT H-9 5349/59, tool failed to open.
Round tripped drill pipe
Ran MZT tests H-9A, H-9B, H-9C

Preliminary Data Determinations:

MZT H-9 5349/59 Misrun
MZT H-9A 5345/55 Misrun
MZT H-9B 5345/55 Approximate SIP 1700 psi 5 gallon sample chamber, no fluid recovered.
MZT H-9C 5345/55 Approximate SIP 1700 psi 1 gallon sample chamber.

REMARKS:

MZT H-9B questionable test. Check valve in sample chamber fouled plugging chamber although pressures appeared reasonable. Used filed down shear pin and tool opened properly.

MZT H-9C Ran as check on MZT H-9B. Good test. Ran without shear pin.

SHELL OIL COMPANY
DAILY OPERATIONS REPORT

Well: North Desert Creek 13-12 **Date:** 3-26-59 A.M.

Depth: 5519' **Drilled:** ∅ **Cored:** ∅

Other Operations:

Ran H10C. Attempted to set at 5469-79 but packers would not hold. Ran H-11 and H-11A, running H-12.

Preliminary Data Determinations:

H-10	5477.5-87.5	SIP: H-5 gave reading of 2106 psi H-24 - off calibration open 1 hour, 1 gallon sample chamber
H-11	5452-62	Misrun - Tool failed to open.
H-11A	5452-62	Misrun - Tool failed to open.

Pulled packers out of hole - seal seat damaged - plan to modify with centralizers if feasible.

Running DST H-12* 5479-89 Initial open 1 minute, initial shut-in 1 hour, flow period 1 hour, final shut-in 3 hours.

REMARKS:

*Halliburton Conventional straddle test

SHELL OIL COMPANY
DAILY OPERATIONS REPORT

Well: North Desert Creek 13-12 **Date:** 3-27-59

Depth: 5529' **Drilled:** Ø **Cored:** Ø

Other Operations:

Finished running H-12 conventional test. Ran Halliburton MZ tool.
Tested H-13 5469-79'
H-14 5451-5461'
H-15 5469-79'
H-16 5429-39' running

Preliminary Data Determinations:

H-12 Conv.	5479-89'	Open 1 hr. Moderate steady blow throughout	Recovered 80' oil & oilbase mud. ISIP (1 hr.) 2014 rising FSIP (3 hr.) 2010 rising IFP 31 FFP 36 HP 2550		
H-13 MZT	5469-79'	H-5 2078	HH-1 1708*		
Gradient	5450'	2525			
	5350'	2483			
	5250	2436			
	5150'	2390			
H-14 MZT	5451'-61'	H-5 1297	H-24 1294	HP 2030	
H-15 MZT	5469-79'	Misrun tool didn't open			
H-15A MZT	5469-79'	2080	1999*	HP 2535	
			HH-1		
H-15B MZT	5469-79'	2070	2070	HP 2539	

Remarks: *Bound pressure element filter plugged with oilbase mud. Cleaned, checked with deadweight tester to insure calibration not affected.

SHELL OIL COMPANY
DAILY OPERATIONS REPORT

Well: North Desert Creek 13-12 **Date:** 3-28-59

Depth: 5519' **Drilled:** Ø **Cored:** Ø

Other Operations:

Finished MZT H-16 & H-16A 5429-39'.
Ran Halliburton conventional test H-17 5479-89'.

Preliminary Data Determinations:

H-16	MZT	5429-39'	HH-1 2521 Misrun-seal failed	H-24 2515
H-16A	MZT	5429-39'	H-5 2539 (5415') 2518 Misrun-seal failed	
Gradient		5300	2476	
		5200	2434	
		5100	2388	
H-17 Conv.		5479-89	Open 1 hr.	Recovered 60' oil & oilbase mud.

ISIP (1½ hr.)	2052 rising
FSIP (3 hr.)	2026 rising
IFP	17
FFP	34
HP	2535/2544

Remarks:

SHELL OIL COMPANY
DAILY OPERATIONS REPORT

Well: North Desert Creek 13-12 **Date:** 3-29-59 to 3-30-59

Depth: 5519' **Drilled:** ø **Cored:** ø

Other Operations:

Ran Halluburton conventional test H-17A, 5479-89', ran in Halliburton MZ tool, ran MZT #H-18, 5428.5-5438.5, MZT W18A, MZT 18B, MZT H-19 and H-19A. Running H-20 conventional test 5463-5479.

Preliminary Data Determinations:

H-17 conventional test (corrected)

	AKI-229	AK-1 589
IHP	2555	2546
ISIP	2056	2051
IFP	17	18
FFP	27	26
FSIP	1983	1979
FHP	2533	2528

H-17A conventional test, 5479-89', initial open 15 seconds. ISI 4 hours, open 1 hour, FSI 3 hours, recovered 70' oil and oil base mud.

	AK-1 229	AKI 589
IHP	2539	2551
ISIP	2038	2034
IFP	17	19
FFP	31	31
FSIP	1225*	1223*
FHP	2531	2530

* False, perforations plugged during FSI.

MZT H-18	5428.5 - 5438.5	- Tool did not open.
MZT H-18A	5428.5 - 5438.5	- Pressure bombs inoperative.
MZT H-18B	5428.5 - 5438.5	-

HK H-1

Gradient Stops:

5103'	2328
5203'	2373
5303'	2419
5403'	2465
IHP 5397'	2469
FHP 5413'	2510
SIP	1236

HK H-5 - SIP 1262

SHELL OIL COMPANY
DAILY OPERATIONS REPORT

Date: 3-29-59 to 3-30-59

Preliminary Data Determinations (con't.):

MZT H-19	5378.5 - 5388.5		Seal failed, bombs inoperative.
MZT H-19A	5378.5 - 5388.5		Tool did not seal properly.

HK H-1 SIP 2499
IHP 5347' 2477 psi.
FHP 5365' 2495 psi.

HK H-24 SIP 2473

CAUSE 17

Commission Exhibit Number_____ .

SHELL NORTH DESERT CREEK 13-12

CONTENTS:

Results of Pressure Tests Numbered:

WLT	S-1
"	S-3
"	S-4
"	S-5
"	S-7
"	S-8
Halliburton	H- 9B
	H- 9C
	H-10
	H-12
	H-13
	H-14
	H-15a
	H-15b
	H-17
	H-17a
	H-18a
	H-18b
	H-20
	H-21
	H-22
	H-26
	H-27a
	H-29
	H-30
	H-31
	H-32
	H-32a

Production Tests Dated:

7-21-59 to 8-19-59

Daily Operations Reports Dated:

3-12-59 to 4-11-59

Logs:

Schlumberger	Induction-Electrical Log
"	" -Gamma Ray Log
"	Micro-Caliper Log
"	Formation Tester Log

175

SHELL OIL COMPANY
BOTTOM HOLE PRESSURE DATA SHEET
RATHERFORD Field

NORTH DESERT CREEK 13-12 Well

Type Test SCHLUMBERGER WL Number of Test WLT S-1
Interval From To Date of Test 3-22-59
Point Tested 5350.5

Recorder No. T-564 Element No. Range 3000 PSI

Clock No. T-564 Range 6 HR.

Open Period:

Depth of Recorder (Inside/Outside)

Time	Deflect In.	Pressure PSIG				
0	0.1121	66				
10	0.2850	170				
20	0.9693	586				
30	2.1614	1309				
40	2.7274	1652				
50	2.8304	1715				
60	2.8478	1726				
62	2.8483	1726				

Hydrostatic Gradient Stops:

Recorder Depth Feet	Time	Defl. In.	Pressure PSIG	ΔP PSI	ΔD Feet	ΔP/ΔD PSI/Feet
5353.5		4.1422	2509			
5053.5		3.9273	2379			
5153.5		4.0194	2433			
5253.5		4.0982	2482			

Remarks:

PRODUCTION TEST
NORTH DESERT CREEK 13-12

7-21-59 Pumped 4 hrs. 8 bbls. oil, 0% cut. Fluid level survey:

4-1/2" - 8-5/8" annulus 4926', CP 445 psi
2" - 4-1/2" annulus 3500' TP 81 psi

Bled casing pressure to inject water in 4-1/2" - 8-5/8" annulus. TP went to 0. Measured fluid level in 4-1/2 - 8-5/8" 2841'. Fluid level in 2" - 4-1/2" 2926'. Pumped in 203 bbls. water in 8-5/8" casing and got fluid returns in 4-1/2" casing. Pumped 10 hrs., 20 bbls. oil, 32 bbls. water.

7-22-59 Pumped 12 hrs., 51 bbls. oil, 3 bbls. water.

7-23-59 To 7-27-59 Shut down.

7-28-59 To 7-29-59 Moved in completion rig.

7-30-59 To 8-2-59 Pulled rods and tubing. Pulled 4-1/2" casing and found Lynes packer deflated and Maihak pressure recorder inoperative. Reran 4-1/2" casing with new Maihak pressure recorder and Lynes Dual Seal Treating packers. Set packers at 5459' and 5470'. Maihak in 4-1/2" - 8-5/8" annulus at 5417'. Reran rods and tubing. Maihak in 2" - 4-1/2" annulus at 5389'.

8-3-59 Started pumping. Pumped 22 hrs., 13 bbls. oil and 53 bbls. load water.

Date	Status	Hrs. Prod.	Bbls. Gross	Bbls. Clean	% Cut	Gas MCF	GOR	TP	CP	Bean Size	Maihak in 4-1/2" 8-5/8"	Remarks
8-4-59	P	24*	22	6	72.7						1350	Pressure recorder in 2" - 4-1/2" not working.
8-5-59	P	24										No gauge.
8-6-59	P	24										No gauge.
8-7-59	P	24	16	11	31.3						1290	
8-8-59	P	24	11	10	9.1						1290	
8-9-59	P	24	17	14	17.6						1300	
8-10-59	P	24	11	10	9.1						1290	
8-11-59	P	24	7	7	0.1						1290	
8-12-59	P	24	9	9	0.1						1290	
8-13-59	P	24	9	9	0.1						1310	
8-14-59	P	24	8	8	0.1						1310	
8-15-59	P	24	6	4	33.3						1295	Tested through gas meter - no gas production
8-16-59	P	24	8	6	25.0							
8-17-59	P	24	7	7	0.1	128	1830				1330	
8-18-59	P	24	7	7	0.1						1330	
8-19-59	P	24	6	6	0.1						1290	

* Pumping unit on time clock, pumps 8 hours and shut down 4 hours.

SHELL OIL COMPANY
DAILY OPERATIONS REPORT

Well: North Desert Creek 13-12 **Date:** 3-12-59 A.M.

Depth: 5254' **Drilled:** 94' **Cored:** -

Other Operations:

Location: 1980'N and 4620'W of SE Corner Section 12, T41S, R23E, SLBM, San Juan County, Utah.

Elevations: KB 4572.61
DF 4571.11
GR 4559.11

Preliminary Data Determinations:

REMARKS:

W

SHELL OIL COMPANY
DAILY OPERATIONS REPORT

Well: North Desert Creek 13-12 **Date:** 3-13-59 A.M.

Depth: 5304' **Drilled:** 50' **Cored:** -

Other Operations:

Preliminary Data Determinations:

REMARKS:

SHELL OIL COMPANY
DAILY OPERATIONS REPORT

Well: North Desert Creek 13-12 **Date:** 3-14-59 A.M.

Depth: 5345' **Drilled:** 41' **Cored:** -

Other Operations:

Preliminary Data Determinations:

REMARKS:

SHELL OIL COMPANY
DAILY OPERATIONS REPORT

Well: North Desert Creek 13-12 **Date:** 3-15-59 A.M.

Depth: 5345' **Drilled:** Ø **Cored:** -

Other Operations: (Summary of operations prior to coring).

Drilled 11" hole to 5345'. Ran Induction-Electrical Survey 5338 to 1352'. Cemented 8-5/8" casing at 5345' with 200 sacks cement.

Preliminary Data Determinations:

REMARKS:

SHELL OIL COMPANY
DAILY OPERATIONS REPORT

Well: North Desert Creek 13-12 **Date:** 3-16-59 A.M.

Depth: 5346' **Drilled:** 1' **Cored:** -

Other Operations:

Drilled and cleaned out cement to 5346'. Changed over to oil base mud. Pressure tested casing and BOP with 1200 psi, OK.

Preliminary Data Determinations:

REMARKS:

SHELL OIL COMPANY
DAILY OPERATIONS REPORT

Well: North Desert Creek 13-12 Date: 3-17-58 A.M.

Depth: 5389' Drilled: Ø Cored: 43

Other Operations:

Preliminary Data Determinations:

Core #1 5346.8 - 5390.5 cut 43.7 (jammed). Recovered 43.7'.
Limestone, IVFA predominantly; bleeding oil from all porous intervals.

REMARKS:

SHELL OIL COMPANY
DAILY OPERATIONS REPORT

Well: North Desert Creek 13-12 **Date:** 3-18-59 A.M.

Depth: 5408' **Drilled:** **Cored:** 19

Other Operations:

Preliminary Data Determinations:

REMARKS:

SHELL OIL COMPANY
DAILY OPERATIONS REPORT

Well: North Desert Creek 13-12 **Date:** 3-19-59 A.M.

Depth: 5426' **Drilled:** Ø **Cored:** 18

Other Operations:

Preliminary Data Determinations:

Core #2 5390.5 - 5414' Recovered 24'
Limestone IVFA, predominantly

REMARKS:

SHELL OIL COMPANY
DAILY OPERATIONS REPORT

Well: North Desert Creek 13-12 **Date:** 3-20-59 A.M.

Depth: 5471' **Drilled:** ø **Cored:** 45

Other Operations:

Preliminary Data Determinations:

REMARKS:

SHELL OIL COMPANY
DAILY OPERATIONS REPORT

Well: North Desert Creek 13-12 Date: 3-21-59 A.M.

Depth: 5514' Drilled: Ø Cored: 43

Other Operations:

Ran Microcaliper T.D. to 5310, casing at 5343', ran 40' Induction log T.D. to casing shoe, ran GRN - 5 runs gamma ray logs qualitatively repeated but not quantitative. Neutron logs repeated well.

Run 1: T.D. to 5270' 5"/100' & 5"/100' scales. Time constant 2, logging speed 690 fph.
Run 2: T.D. to 5280' 5"/100' & 25"/100' scales. Time constant 3, logging speed 690 fph.
Run 3: T.D. to 5290', 5"/100' & 25"/100' scales. Time constant 2, logging speed 690 fph.
Run 4: T.D. to 5180', 5"/100' & 25"/100' scales. Time constant 2, logging speed 1500 fph.
Run 5: T.D. to 4200', 2"/100' & 5"/100' scales. Time constant 2, logging speed 1500 fph.

All runs with gamma ray sens. 2 and neutron sens. 400.

Preliminary Data Determinations: PRELIMINARY FIELD DATA

Core #3 5414.5 - 5474 Recovered 58.5'.
Limestone, predominantly IVFA in top 22' and bottom 13'; I BC and D porosity in middle 23.5'.

Plotted petrographic core description and porosity from core analysis on 25"/100' scale. Core analysis available from 5346 to 5414'.

Comparing petro-core analysis plots with GRN (Run 1 25"/100') showed core depth - 4 feet = log depth. Selected 5 Schlumberger wire line test parts in gross interval 5346 to 5414 at following depths: 5350.5', 5355', 5364.5', 5372.5', 5381.5' (GRN run 1 depths).

REMARKS:

Preliminary Data Determinations: PRELIMINARY FIELD DATA (Con't.) 3-22-59 A.M.

Field pressure readings:

	HK# H-5 @ 5384.5	HK# H-24 @ 5384.5
SIP Still rising sharply	1061	1066
HP (5371)	2511	2505

Gradient Stops:

5071'	2378	2372
5171'	2424	2417
5271'	Clock	
5371'	ran out	

Open Time: 1 hour 48 minutes.

Before running in hole the "T" gauge was flushed with Kerosene to remove the black magic that entered the ruptured diap rsgm. The "T" pressures recorded during S-3 were 170± psi higher than the Ameradas. Since the T and Ameradas agreed well on tests S-1 & S-2, it is believed that the calibration altered. The "T" will not be run during the remaining tests.

SHELL OIL COMPANY
DAILY OPERATIONS REPORT

Well: North Desert Creek 13-12 Date: 3-23-59 to 3-24-59 A.M.

Depth: 5519' Drilled: ø Cored: ø

Other Operations:

Preliminary Data Determinations: DATA SUBJECT TO REVISION

WLT S-4 5456 open 35 minutes
Recorder H 24 SIP 1312 HP 2547
" H 5 " 1305 " 2525
WLT S-5 5482 open 2 hours 9 minutes
H 5 SIP 2092 HP ?
H 24 " 2125 2533
Period of measurement was shorter for H5 than for H24
WLT S-6 5473 open 63 minutes
H 24 SIP 341 HP 2551
5 337 2555
WLT S-7 5355 open 66 minutes
H 5 SIP 1860
WLT S-8 5448 open 1 hour 40 minutes
H 5 SIP 1315 HP 2542
H 24 1312 2536

Released Schlumberger
Conditioned Mud
Made up and ran Halliburton Multi Zone Tester to bottom. Ran Welex gamma ray collar locator through d.p. to 5460 for depth control. Pulled tester up and set packers to straddle 5340-5358±. Ran Welex gamma ray collar locator for depth check. Starting first run of Multi Zone Tester with retrievable pressure recorders. Plan test only 10' intervals: 5347-58, 5479-89, 5469-79, 5451-61, 5429-39, 5379-89, 5367-77 (7 tests).

REMARKS:

SHELL OIL COMPANY
DAILY OPERATIONS REPORT

Well: North Desert Creek 13-12 Date: 3-22-59 A.M.

Depth: 5519' Drilled: Ø Cored: 5

Other Operations:

Preliminary Data Determinations: PRELIMINARY FIELD DATA

Core #4 5474-5519. Recovered 45'
10' Limestone, IBC porosity.
11' Dolomite, I, II BC porosity.
24' Shale.

Schlumberger Wire Line Test No. 1 (WLT, S-1)

Ran WLT S-1 at 5350.5' with 2 Amerada (HK) pressure recorders in sample chamber and 1 Johnston T recorder above sample chamber. Air chamber 670 cc., tool open 62 minutes. Recovered 450 cc. oil + 220 cc. flow line fluid.

Field Pressure Readings:
Stab. SIP = 1730 psi @ 5362.5'
HP = 2493 psi @ 5362.5'

Gradient stops:

HP	Depth
2362 psi	5050'
2410	5150'
2456	5250'

Time to round trip tester, 2 hours 14 minutes.

Made trip to condition mud after approximately 20 hours with D.P. on bank, ran 7-7/8" bit free to 20' off bottom, rotated through last 20' easily.

WLT S-2 - 5381.5'
Air chamber 400 cc - no recovery.
SIP 95 psi - caused by expansion of shaped charge gases only.
tool open 31 minutes - fired seal valve to attempt buildup recorded by "T" gauge - lost pad seal when seal valve fired. Diaphragm was found to be ruptured on "T" gauge allowing oil base mud to enter gauge. Time to round trip - 3 hours 4 minutes.

Ran GR - collar log T.D. to 4200' 5" & 2" scales and T.D. to 5260' on 25" scale with new sonde and panel - GR log OK.

WLT S-3 5372.5'
Air chamber - 150 cc. Sample chamber filled with water (flow line provided air chamber hence no sample recoverable).

SHELL OIL COMPANY
DAILY OPERATIONS REPORT

Well: North Desert Creek 13-12 **Date:** 3-24-59 to 3-25-59

Depth: 5519' **Drilled:** 0 **Cored:** 0

Other Operations:

Ran Halliburton MZT H-9 5349/59, tool failed to open.
Round tripped drill pipe
Ran MZT tests H-9A, H-9B, H-9C

Preliminary Data Determinations:

MZT H-9 5349/59 Misrun
MZT H-9A 5345/55 Misrun
MZT H-9B 5345/55 Approximate SIP 1700 psi 5 gallon sample chamber, no fluid recovered.
MZT H-9C 5345/55 Approximate SIP 1700 psi 1 gallon sample chamber.

REMARKS:

MZT H-9B questionable test. Check valve in sample chamber fouled plugging chamber although pressures appeared reasonable. Used filed down shear pin and tool opened properly.

MZT H-9C Ran as check on MZT H-9B. Good test. Ran without shear pin.

SHELL OIL COMPANY
DAILY OPERATIONS REPORT

Well: North Desert Creek 13-12 **Date:** 3-26-59 A.M.

Depth: 5519' **Drilled:** Ø **Cored:** Ø

Other Operations:

Ran H10C. Attempted to set at 5469-79 but packers would not hold. Ran H-11 and H-11A, running H-12.

Preliminary Data Determinations:

H-10	5477.5-87.5	SIP: H-5 gave reading of 2106 psi H-24 - off calibration open 1 hour, 1 gallon sample chamber
H-11	5452-62	Misrun - Tool failed to open.
H-11A	5452-62	Misrun - Tool failed to open.

Pulled packers out of hole - seal seat damaged - plan to modify with centralizers if feasible.

Running DST H-12*	5479-89	Initial open 1 minute, initial shut-in 1 hour, flow period 1 hour, final shut-in 3 hours.

REMARKS:

*Halliburton Conventional straddle test

SHELL OIL COMPANY
DAILY OPERATIONS REPORT

Well: North Desert Creek 13-12 Date: 3-27-59

Depth: 5519' Drilled: Ø Cored: Ø

Other Operations:

Finished running H-12 conventional test. Ran Halliburton MZ tool.
Tested H-13 5469-79'
H-14 5451-5461'
H-15 5469-79'
H-16 5429-39' running

Preliminary Data Determinations:

H-12 Conv.	5479-89'	Open 1 hr. Recovered 80' oil & oilbase mud. Moderate steady blow throughout	ISIP (1 hr.) 2014 rising FSIP (3 hr.) 2010 rising IFP 31 FFP 36 HP 2550	
H-13 MZT	5469-79'	H-5 2078	HH-1 1708*	
Gradient	5450'	2525		
	5350'	2483		
	5250'	2436		
	5150'	2390		
H-14 MZT	5451'-61'	H-5 1297	H-24 1294	HP 2030
H-15 MZT	5469-79'	Misrun tool didn't open		
H-15A MZT	5469-79'	2080	1999* HH-1	HP 2535
H-15B MZT	5469-79'	2070	2070	HP 2539

Remarks: *Found pressure element filter plugged with oilbase mud. Cleaned, checked with deadweight tester to insure calibration not affected.

SHELL OIL COMPANY
DAILY OPERATIONS REPORT

Well: North Desert Creek 13-12 **Date:** 3-28-59

Depth: 5519' **Drilled:** Ø **Cored:** Ø

Other Operations:

Finished MZT H-16 & H-16A 5429-39'.
Ran Halliburton conventional test H-17 5479-89'.

Preliminary Data Determinations:

H-16	MZT	5429-39'	HH-1 2521 Misrun-seal failed	H-24 2515
H-16A	MZT	5429-39'	H-5 2539 (5415') 2518 Misrun-seal failed	
Gradient		5300	2476	
		5200	2434	
		5100	2388	
H-17 Conv.		5479-89	Open 1 hr.	Recovered 60' oil & oilbase mud.

ISIP (1½ hr.)	2052 rising
FSIP (3 hr.)	2026 rising
IFP	17
FFP	34
HP	2535/2544

Remarks:

SHELL OIL COMPANY
DAILY OPERATIONS REPORT

Well: North Desert Creek 13-12 **Date:** 3-29-59 to 3-30-59

Depth: 5519' **Drilled:** ø **Cored:** ø

Other Operations:

Ran Halluburton conventional test H-17A, 5479-89', ran in Halliburton MZ tool, ran MZT #H-18, 5428.5-5438.5, MZT H18A, MZT 18B, MZT H-19 and H-19A. Running H-20 conventional test 5463-5479.

Preliminary Data Determinations:

H-17 conventional test (corrected)

	AKI-229	AK-1 589
IHP	2555	2546
ISIP	2056	2051
IFP	17	18
FFP	27	26
FSIP	1983	1979
FHP	2533	2528

H-17A conventional test, 5479-89', initial open 15 seconds. ISI 4 hours, open 1 hour, FSI 3 hours, recovered 70' oil and oil base mud.

	AK-1 229	AK1 589
IHP	2539	2551
ISIP	2038	2034
IFP	17	19
FFP	31	31
FSIP	1225*	1223*
FHP	2531	2530

* False, perforations plugged during FSI.

MZT H-18 5428.5 - 5438.5 - Tool did not open.
MZT H-18A 5428.5 - 5438.5 - Pressure bombs inoperative.
MZT H-18B 5428.5 - 5438.5 -

HK H-1

Gradient Stops:

5103'	2328
5203'	2373
5303'	2419
5403'	2465
IHP 5397'	2469
FHP 5413'	2510
SIP	1236

HK H-5 - SIP 1262

Date: 3-29-59 to 3-30-59

Preliminary Data Determinations (con't.):

MZT H-19	5378.5 - 5388.5		Seal failed, bombs inoperative.
MZT H-19A	5378.5 - 5388.5		Tool did not seal properly.

HK H-1 SIP 2499
IHP 5347' 2477 psi.
FHP 5365' 2495 psi.

HK H-24 SIP 2473

SHELL OIL COMPANY
DAILY OPERATIONS REPORT

Well: North Desert Creek 13-12 **Date:** 3-31-59

Depth: 5519' **Drilled:** ø **Cored:** ø

Other Operations:

Ran Halliburton conventional test H-20. Running Halliburton conventional test H-21.

Preliminary Data Determinations:

H-20 conventional test 5463-5479, initial open 15 seconds. Initial shut-in 4 hours, open 1 hour. Final shut-in 3 hours. Immediate moderate blow continuing steadily throughout open period. Recovered 55' oil base mud and oil.

Field pressure readings:

	AK-1 589	AK-1 229,	HK H-1
IHP	2558	2542	2546
ISIP	2087	2062	2066
IFP	33	23	21
FFP	44	31	32
FSIP	*	1817 rising sharply	1819 rising sharply
FHP	**	**	**

* 12 hour clock stopped.
** chart not readable.

REMARKS:

SHELL OIL COMPANY
DAILY OPERATIONS REPORT

Well: North Desert Creek 13-12 Date 4-1-59

Depth: 5519' Drilled Ø Cored Ø

Other Operations:

Ran Halliburton conventional test H-21. Ran bit conditioning mud.

Preliminary Data Determinations:

H-21 Conventional test 5446-5462 Initial open approximately 15 seconds. Initial shut in 2 hours, open 1 hour, final shut in 2 hours; immediate moderate blow continuing steadily throughout flow period. Recovered 140' (2 bbl) OCOCM and 970' (13.8 bbls) GCO.

Field pressure readings:

	AK-1	AK-1 229	HK H-1
IHP	2512		
ISIP	1280 (ess. stab)		
IFP	71		
FFP	208		
FSIP	1246 (rising)		
FHP	2538		

Remarks:

In pulling the Amerada bomb #12711 the wire line broke and the bomb fell about 1000' to top of tool.

SHELL OIL COMPANY
DAILY OPERATIONS REPORT

Well: North Desert Creek 13-12 Date: 4-2-59

Depth: 5519 Drilled: Ø Cored: Ø

Other Operations:

Conditioned mud. Ran conventional test H-22, and H-23. Attempted H-24, packers failed.

Preliminary Data Determinations:

Field pressure readings for DST H-21

	AK-1 229	HK H-1
IHP	2533	2546
ISIP	1283	1306
IFP	69	94
FFP	208	215
FSIP	1248	1261
FHP	2534	2549

H-22 Conventional test 5438-5446, initial open 45 seconds approx. Initial shut in 4 hours, flow period 1 hour, final shut in 4 hours. Immediate moderate blow continuing steadily throughout open period. Gas to surface in 20 min. Recovered 280' (4 bbls) slightly OBM and VGCO.

	AK-1 589	AK 1- 229	HK H-1
IHP	2542	2553	2552
ISIP	1268 (stab)	1283	1285
IFP	26	34	clock stopped
FFP	103	109	" "
FSIP	1254(rising)	1268	" "
FHP	Not readable	—	" "

H-23 Conventional test 5427.5-5437.5. Initial open 45 sec. approx. Initial shut in 4 hours, flow period 1 hr, 2 min, final shut in 4 hours. Immediate faint blow decreasing to very faint at end of flow period. Recovered 8' (0.1 bbl) OBM.

	AK-1 589	AK-1 229	HK H-1
IHP	2520	2540	2534
ISIP	70	86	85
IFP	9	21	18
FFP	10	25	26
FSIP	19	34	32
FHP	2532	2534	Clock ran down at 2.4 hrs.

Remarks:

SHELL OIL COMPANY
DAILY OPERATIONS REPORT

Well: North Desert Creek 13-12 Date: 4-3-59

Depth: 5519' Drilled: Ø Cored: Ø

Other Operations:

Ran conventional test H-24 - failed, H-25 and -26
Ran bit conditioned mud.

Preliminary Data Determinations:

H-24 conventional test 5390-5427', packer failed during open period for the initial shut-in.

	AK1 589	AK1 229	AK H-1
HP	2516	2533	2534

H-25 conventional test 5398-5427', initial open 15 seconds. Initial shut-in 2 hours. Flow period 1 hour, final shut-in 2 hours. Blow dead during flow period. Recovered 60' (.85 barrels) of oil base mud (initially, tool was set at 5395 and 5424'. Packers failed on the open period for initial shut-in pressure. Pulled tool up approximately 5').

	AK1 589	AK1 229	H-24
IHP	2510	2523	2521
ISIP	Failed	Failed	Failed
IFP	40	60	60
FFP	40	60	60
FSIP	88	110	109
FHP	2503	2522	2516

H-26 conventional test 5347-5359.5, initial open 40 seconds. Initial shut-in 4 hours, flow period 1 hour, final shut-in 4 hours, 17 minutes. Immediate moderate blow continuing steadily throughout flow period. Gas to surface in 15 minutes. Recovered 90' (1.3 barrels) oil and gas cut oil base mud.

	AK-1 589	AK1 229	H-24
IHP		2497	2494
ISIP	Clock	1718	1724
IFP	Stopped	28	29
FFP		52	Clocked stopped
FSIP		1688	after 35 minutes
FHP		2501	of open period.

REMARKS:

Recovery on H-25 probably all occurred when packer failed at initial setting.

SHELL OIL COMPANY
DAILY OPERATIONS REPORT

Well: North Desert Creek 13-12 Date: 4-4-59 to 4-5-59

Depth: 5519' Drilled: ∅ Cored: ∅

Other Operations:

Ran MZT H-27, H-27A, H-28, H-28A and H-28B.

Preliminary Data Determinations:

MZT H-27 5378-5383' 1 gallon chamber, - no recovery - misrun, tool did not open.

	HK H-24	Recorder Depth
IHP @ 5357	2466	5354
SIP (hydrostatic) @ 5364'	2510	5364
FHP @ 5363	2480	5360
HP @ 5003	2321	5000

MZT H-27A 5378-5383 recovered 1 gallon. Tool open 1 hour.

	HK H-24	Recorder Depth	HK H-1	Recorder Depth
IHP @ 5357	2474	5354		
SIP	1583	5364	1571	5354
FHP @ 5363	2477	5360		

	HP H-24	Recorder Depth
HP @ 5003	2317	5000
HP @ 5103	2363	5100
HP @ 5203	2408	5200
HP @ 5303	2454	5300

MZT H-28 5369.5-5374.5 1 gallon chamber - no recovery. Misrun, tool did not open.

	HK H-24	Recorder Depth
IHP @ 5349'	2468	5346
SIP (hydrostatic) @ 5355.5	2478	5355.5
FHP @ 5356	2475	5353

MZT H-28A 5369.5 - 5374.5, 1 gallon chamber - no recovery.
Misrun, tool did not open.

	HK H-24	Recorder Depth
IHP @ 5349'	2470	5346
SIP (Hydrostatic) @ 5355.5	2478	5355.5
FHP @ 5356	2474	5353

MZT H-28B 5369.5-5374.5, 1 gallon chamber - no recovery.
Misrun, tool did not open.

	HK H-24	Recorder Depth
SIP (Hydrostatic)	2479	5355.5
FHP @ 5356	2478	5353

SHELL OIL COMPANY
DAILY OPERATIONS REPORT

Well: North Desert Creek 13-12 Date 4-5-59 to 4-6-59

Depth: 5519' Drilled Ø Cored Ø

Other Operations:

Ran MZT H28C and conventional straddle test H-29.

Preliminary Data Determinations:

MZT H-28C 5369.5-5374.5 1 Gal Chamber - No Recovery
Misrun - Tool did not open.

	HK H-24	Recorder Depth
SIP (Hydrostatic)	2489	5355.5'
HP @ 5354' Line Depth	2486	5351'

H-29 Conventional Test 5380-5385. Initial Open 60 seconds, Initial shut-in 4 hours, flow period 1 hour, final shut-in 4 hours & 5 minutes.
Immediate weak blow continuing steadily throughout flow period. Recovered 30' (0.4 B) oil base mud.

	AK-1 #589	HK #H-1	AK1 #229
IHP	2540 @ 5469'	2551 @ 5489'	2552 @ 5496'
ISIP	1573 @ 5370'	1591 @ 5390'	1586 @ 5397'
IFP	12 @ 5370'	24 @ 5390'	18 @ 5397'
FFP	14 @ 5370'	Clock ran down	20 @ 5397'
FSIP	1568 @ 5370	After 17 Minutes	1581 @ 5397'
FHP	2502 @ 5370'	of flow period	2509 @ 5397'

Remarks:

SHELL OIL COMPANY
DAILY OPERATIONS REPORT

Well: North Desert Creek 13-12 Date 4-6-59 to 4-7-59

Depth: 5519 Drilled -0- Cored -0-

Other Operations:

Ran Conventional Straddle Test H-30

Preliminary Data Determinations:

H-30 Conventional Test 5359.5 - 5373.5. Initial open 30 seconds, initial shut-in 4 hours, flow period 1 hour, final shut-in 4 hours and 3 minutes. Dead throughout test. Recovered 2' oil base mud.

	AK-1 #589 @5345.5	HK #H-1 @5378.5'	AK-1 #229 @5385.5'
IHP	2491	2505	2502
ISIP (Rising)	1765	1788	1780
IFP	12	28	25
FFP	12	28	25
FSIP (Rising sharply)	844	862	861
FHP	2462	2496	2492

SHELL OIL COMPANY
DAILY OPERATIONS REPORT

Well: North Desert Creek 13-12 **Date** 4-7-59 to 4-8-59

Depth: 5519 **Drilled** -0- **Cored** -0-

Other Operations:

Ran Conventional Straddle Test H-31

Preliminary Data Determination:

H-31 Conventional Test 5414-5517. Initial open 15 seconds, initial shut-in 4 hours, flow period 1 hour, final shut-in 4 hours and 5 minutes. Immediate moderate blow continuing steadily throughout test. Gas to surface in 13 minutes. Recovery: 840' (11.9 bbls.). Reversed out 9 bbls. GCO and 1.5 bbls. GC oil base mud. (Lost 1.4 barrels due to escaped gas)

	HK #H-1 @5394.5'	AK-1 #589 @5507.5'	AK-1 #229 @5513.5'
IHP	2452	2545	2549
ISIP	2065	2105	2110
IFP	100	155	154
FFP	320	346	350
FSIP (Plugged)	1795	1822	1827
FHP	Clock Ran Down	2547	2547

Remarks: **Final shut-in pressure is not valid due to plugging. In addition, there is some evidence of sporadic plugging during the flow period.**

SHELL OIL COMPANY
DAILY OPERATIONS REPORT

Well: North Desert Creek 13-12 **Date:** 4-8-59 to 4-9-59

Depth: 5519' **Drilled:** Ø **Cored:** Ø

Other Operations:

Ran conventional test H-32, two packers in casing at 5319' & 5323.5'.

Ran Bit and circulated mud.

Preliminary Data Determinations:

H-32 Conventional test 5343-5517. Initial open 60 seconds, Initial shut-in 4 hours & 1 minute, flow period 1 hour, final shut-in 4 hours. Immediate faint blow increasing to moderate in 1 minute, moderate remainder of open period. Gas to surface in 6 minutes. Reversed out 12 barrels oil & 1 bbl. oil base mud.

	HK #H-1 @ 5304'	AK-1 #589 @ 5507.5'	AK-1 # 229 @ 5513.5'
IHP	2449	2545	2548
ISIP (Failed)	--	--	--
IFP	117	195	197
FFP	411	455	462
FSIP (Still Rising)	Clock Ran	1893	1897
FHP	down	2531	Not Readable

Remarks:

Running H-32A to take initial shut-in pressure only.

SHELL OIL COMPANY
DAILY OPERATIONS REPORT

Well: North Desert Creek 13-12 **Date** 4-9-59

Depth: 5519 **Drilled** -0- **Cored** -0-

Other Operations:

Ran Conventional Test H-32A, two packers in casing @ 5319' and 5323.5'

Preliminary Data Determinations:

H-32A Conventional Test 5343-5517. Initial open 60 seconds. Initial shut-in 4 hours.

	HK #H-24 @5304'	AK-1 #589 @5507.3'	AK-1 #229 @5513.3'
IHP	2,444	2,540	clock stopped
ISIP	2,004	2,084	
FHP	2,447	2,537	

REMARKS: Ran initial shut-in only.

SHELL OIL COMPANY
DAILY OPERATIONS REPORT

Well: North Desert Creek 13-12 **Date:** 4-10-59 and 4-11-59

Depth: 5519' **Drilled:** Ø **Cored:** Ø

Other Operations:

Ran tubing and packer, 182' of stinger to 5515'. Set packer at 5333', perforated nipple above packer 5323-5327. Tested packer with 850 psi. Displaced oil base mud with water. Released rig 2:00 P.M. 4-11-59. Suspended operations.

Preliminary Data Determinations:

Remarks:

SHELL OIL COMPANY
BOTTOM HOLE PRESSURE DATA SHEET
RATHERFORD Field

NORTH DESERT CREEK 13-12 Well

Type Test SCHLUMBERGER WIRE LINE Number of Test WLT 5-1
Interval Tested _____ To _____ Date of Test 3-22-59
Point Tested 5350.5

Recorder No. HK H-24 Element No. 2410 N Range 3400 PSI

Clock No. 5032 Range 3HR.

Open Period.

Depth of Recorder 53625 (Inside/~~Outside~~)

Time	Deflect In.	Pressure PSIG				
0	0.0347	60	40	0.9793	1662	
5	0.0490	85	45	1.0028	1702	
10	0.0987	170	50	1.0125	1719	
15	0.1953	334	55	1.0157	1724	
20	0.3548	603	60	1.0173	1727	
25	0.5767	977	62	1.0177	1728	
30	0.7878	1336				
35	0.9198	1561				

Hydrostatic Gradient Stops:

Recorder Depth Feet	Time	Defl. In.	Pressure PSIG	ΔP PSI	ΔD Feet	ΔP/ΔD PSI/Feet
5362.5		1.4659	2493			
5062.5		1.3882	2360			
5162.5		1.4148	2406			
5262.5		1.4442	2453			

Remarks:

SHELL OIL COMPANY
BOTTOM HOLE PRESSURE DATA SHEET
RATHERFORD Field

NORTH DESERT CREEK 13-12 Well

Type Tester SCHLUMBERGER WL Number of Test WLT S-3
Interval Test Date of Test 3-22-59
Point Tested 5372.5

Recorder No. H-24 Element No. 2410 N Range 3400 PSI

Clock No. Range

Open Period

Depth of Recorder 5384.5 (Inside/Outside)

Time	Deflection In.	Pressure PSIG				
0	.0098 .1571	17 270	80	.4424	751	
10	.1284	221	90	.5070	860	
20	.1609	277	100	.5757	975	
30	.1961	335	108	.6297	1068	
40	.2365	403				
50	.2819	480				
60	.3301	510				
70	.3836	651				

Hydrostatic Readings Stops

Recorder Depth Feet	Time	Defl. In.	Pressure PSIG	ΔP PSI	ΔD Feet	ΔP/ΔD PSI/Feet
5371		1.4737	2506			
5071		1.3958	2373			
5171		1.4222	2418			
5271		1.4496	2465			

Remarks:
5371 1.4773 2513

SHELL OIL COMPANY

BOTTOM HOLE PRESSURE DATA SHEET

RATHERFORD Field

NORTH DESERT CREEK 13-12 Well

Type Tester: SCHLUMBERGER WL Number of Test: WLT S-3

Interval Tested: Date of Test:

Point Tested: 5372.5

Recorder No. T 564 Element No. Range

Clock No. Range

Open Period:

Depth of Recorder: 5375.5 (Inside/Outside)

Time						
0	.023 1.084	11 656	80	1.222	740	
10	.356	214	90	1.399	846	
20	.446	268	100	1.586	960	
30	.548	331	108	1.743	1055	
40	.663	401				
50	.782	473				
60	.914	553				
70	1.063	644				

Hydrostatic Gradients:

Recorder Depth Feet	Time	Defl. In.	Pressure PSIG	ΔP PSI	ΔD Feet	ΔP/ΔD PSI/Feet
5371		4.123	2497			
5071		3.928	2380			
5171		4.014	2430			
5271		4.082	2472			

Remarks:

5371 4.153 2516

SHELL OIL COMPANY

BOTTOM HOLE PRESSURE DATA SHEET

RATHERFORD _____ Field

NORTH DESERT CREEK 13-12 Well

Type Test SCHLUMBERGER WL Number of Test WLT S-3

Interval _____ Date of Test 3-22-59

Point Tested 5372.5

Recorder No. H-5 Element No. 2413N Range 3450 PSI

Clock No. _____ Range _____

Open Period

Depth of Recorder 5384.5 (Inside/Outside)

Time	[illegible]	Pressure PSIG				
0	.0092 .1301	16 227	80	.4326	744	
10	.1250	219	90	.4963	854	
20	.1556	272	100	.5615	966	
30	.1920	333	108	.6163	1062	
40	.2319	401				
50	.2756	476				
60	.3233	557				
70	.3771	649				

Hydrostatic Gradient Survey

Recorder Depth Feet	Time	Gal. In.	Pressure PSIG	ΔP PSI	ΔD Feet	ΔP/ΔD PSI/Feet
5371		1.4501	2510			
5071		1.3739	2377			
5171		1.3998	2422			

Remarks:

SHELL OIL COMPANY
BOTTOM HOLE PRESSURE DATA SHEET
RATHERFORD Field

NORTH DESERT CREEK 13-12 Well

Type Tester SCHLUMBERGER WL Number of Test WLT S-4
Interval Tested _____ To _____ Date of Test 3-22-59
Point Tested 5456

Recorder No. H-5 Element No. 2413 Range 3450 PSI

Clock No. 5032 Range 3 HR

Open Period:

Depth of Recorder 5468 (~~Inside~~/Outside)

Time	Deflect In.	Pressure PSIG				
0	.0082	14				
1	.5397	929				
2	.7520	1298				
3	.7541	1302				
5	.7551	1304				
10	.7563	1306				
20	.7566	1306				
33	.7573	1308				

Hydrostatic Gradient Stops:

Recorder Depth Feet	Time	Defl. In.	Pressure PSIG	ΔP PSI	ΔD Feet	ΔP/ΔD PSI/Feet
5468		1.4750	2554			

Remarks:

SHELL OIL COMPANY
BOTTOM HOLE PRESSURE DATA SHEET
RATHERFORD Field

NORTH DESERT CREEK 13-12 Well

Type Tester SCHLUMBERGER WL Number of Test WLT S-4
Interval Tested _____ To _____ Date of Test 3-22-59
Point Tested 5456

Recorder No. JT 564 Element No. _____ Range _____

Clock No. _____ Range _____

Open Period:

Depth of Recorder 5459 (Inside/Outside)

Time	Deflect In.	Pressure PSIG				
0	.013	5				
1	.210	732				
2	2.115	1281				
3	2.134	1293				
5	2.139	1296				
10	2.144	1299				
20	2.148	1301				
33	2.149	1302				

Hydrostatic Gradient Stops:

Recorder Depth Feet	Time	Defl. In.	Pressure PSIG	ΔP PSI	ΔD Feet	ΔP/ΔD PSI/Feet
5459		4.200	2544			

Remarks:

SHELL OIL COMPANY
BOTTOM HOLE PRESSURE DATA SHEET
RATHERFORD Field

NORTH DESERT CREEK 13-12 Well

Type Tester: SCHLUMBERGER WL Number of Test: WLT S-4
Interval Tested _____ To _____ Date of Test: 3-22-59
Point Tested: 5456

Recorder No. H-24 Element No. 2410N Range 3400 PSI

Clock No. 5347 Range 3 HRS

Open Period:

Depth of Recorder 5468 (Inside/~~Outside~~)

Time	Deflect In.	Pressure PSIG				
0	.0097	17				
1	.6034	1023				
2	.7708	1308				
3	.7735	1312				
5	.7744	1314				
10	.7745	1314				
20	.7749	1315				
33	.7753	1315				

Hydrostatic Gradient Stops:

Recorder Depth Feet	Time	Defl. In.	Pressure PSIG	ΔP PSI	ΔD Feet	ΔP/ΔD PSI/Feet
5468		1.4989	2550			

Remarks:

SHELL OIL COMPANY
BOTTOM HOLE PRESSURE DATA SHEET
RATHERFORD Field

NORTH DESERT CREEK 13-12 Well

Type Test: SCHLUMBERGER WL Number of Test: WLT S-5
Interval: T Date of Test: 3-23-59
Point Test: 5482

Recorder No. H-5 Element No. 2413 Range 3450 PSI

Clock No. 5347 Range 3 HRS.

Open Drilled

Depth of Recorder 5489.5 (~~Inside~~/Outside)

Time	Pressure					
0	0.0079	14	80	1.0728	1851	
10	0.1498	262	90	1.1451	1977	
20	0.2520	435	100	1.1879	2052	
30	0.3818	657	110	1.2127	2094	
40	0.5180	892	111.7	1.2163	2101	
50	0.6679	1152	112	1.2318	2128	
60	0.8193	1415				
70	0.9620	1659				

Subsurface Gauge Data

Depth Gauge Set	Gauge No.	Pressure PSIG	ΔP PSI	ΔD Feet	ΔP/ΔD PSI/Feet
5489.5	1.479	2561	(APPROX.)		

Remarks

SHELL OIL COMPANY

BOTTOM HOLE PRESSURE DATA SHEET

RATHERFORD Field

NORTH DESERT CREEK 13-12 Well

Type Instrument: SCHLUMBERGER WL Number of Test: WLT S-5

Interval: Date of Test: 3-23-59

Point Tested: 5482

Recorder No.: H-24 Element No.: 2410N Range: 3400 PSI

Clock No.: 5032 Range: 3 HRS

Depth Pressure Taken: 5489.5 (Inside/~~Outside~~)

		Pressure PSIG				
0	.0093	16	70	.9679	1643	
	.1013	175	80	1.0812	1835	
10	.1563	269	90	1.1548	1961	
20	.2598	442	100	1.2012	2040	
30	.3896	661	110	1.2278	2085	
40	.5243	889	120	1.2429	2111	
50	.6751	1145	125	1.2478	2120	
60	.8271	1403	127	1.2486	2121	

Pressure Gradients

Depth Pressure Taken	Gal. In.	Pressure PSIG	ΔP PSI	ΔD Feet	ΔP/ΔD PSI/Feet
5489.5	1.4995	2551			

Remarks:

RATHER FORD

NORTH DESERT CREEK 13-12

Type Tester: SCHLUMBERGER WL Test: WLT S-7

Depth: 5355'

Hole Size: 11.5 Recovery: 2413 N Pressure: 3450 PSI

Total Depth: 5347 3 HR

Open Inches

Depth of Recorder: 5362.5

Time	Pressure	Temperature PSIG
0	0.0109 - 0.1444	19 - 252
10	0.6570	1133
20	0.9872	1720
30	1.0060	1735
40	1.0076	1737
50	1.0081	1738
55	1.0089	1740
60	1.0090	1740
64	1.0096	1741

Recorder Depth Feet	Time	Pressure PSIG	ΔP PSI	ΔD Feet	ΔP/ΔD PSI/Feet

Remarks

SHELL OIL COMPANY
BOTTOM HOLE PRESSURE DATA SHEET
RATHERFORD Field

NORTH DESERT CREEK 13-12 Well

Type: SCHLUMBERGER WL Number of Test WLT S-7
Interval From _____ To _____ Date of Test 3-23-59
Point Test: 5355

Recorder No. H-24 Element No. 2410N Range 3400 PSI

Clock No. 5032 Range 3 HR

Open Period:

Depth of Recorder 5362.5 (Inside/Outside)

Time	Deflect In.	Pressure PSIG				
*						

Hydrostatic Gradient Stops:

Recorder Depth Feet	Time	Defl. In.	Pressure PSIG	ΔP PSI	ΔD Feet	ΔP/ΔD PSI/Feet
5362.5		1.4702	2500			

Remarks:

* CLOCK ENGAGED WITH CHART CARRIER.

SHELL OIL COMPANY
BOTTOM HOLE PRESSURE DATA SHEET
RATHERFORD Field

NORTH DESERT CREEK 13-12 Well

Type Test: SCHLUMBERGER WL Number of Test: WLT S-8
Interval Tested: ____ To ____ Date of Test: 3-23-59
Point Tested: 5448

Recorder No. H-24 Element No. 2410N Range 3400 PSI

Clock No. 5032 Range 3 HR

Open Periods

Depth of Recorder 5455.5 (Inside/~~Outside~~)

Time	Deflect In.	Pressure PSIG				
0	.1388	239	76	.7770	1318	
10	.3078	523				
20	.5730	971				
30	.7182	1218				
40	.7640	1296				
50	.7787	1321				
60	.7782	1320				
70	.7789	1323				

Hydrostatic Gradient Stops:

Recorder Depth Feet	Time	Defl. In.	Pressure PSIG	ΔP PSI	ΔD Feet	ΔP/ΔD PSI/Feet
5149		1.4157	2407			
5249		1.4423	2453			
5349		1.4698	2500			
5449		1.4962	2545			

Remarks:

SHELL OIL COMPANY
BOTTOM HOLE PRESSURE DATA SHEET
RATHERFORD Field

NORTH DESERT CREEK 13-12 Well

Type Test: SCHLUMBERGER WL Number of Test WLT S-8
Interval Tested _____ To _____ Date of Test 3-23-9
Point Tested 5448

Recorder No. H-5 Element No. 2413 Range 3450 PSI

Clock No. 5347 Range 3 HR

Open Periods

Depth of Recorder 5455.5 (~~Inside~~/Outside)

Time	Deflect In.	Pressure PSIG				
0	.1384	242	76	.7650	1321	
10	.3007	518				
20	.5565	958				
30	.7005	1209				
40	.7461	1288				
50	.7607	1313				
60	.7646	1320				
70	.7649	1321				

Hydrostatic Gradient Stops:

Recorder Depth Feet	Time	Defl. In.	Pressure PSIG	ΔP PSI	ΔD Feet	ΔP/ΔD PSI/Feet
5149		1.3945	2413			
5249		1.4210	2460			
5349		1.4474	2506			
5449		1.4743	2553			

Remarks:

SHELL OIL COMPANY

BOTTOM HOLE PRESSURE DATA SHEET

RATHERFORD Field

NORTH DESERT CREEK 13-12 Well

Type Tester HALLIBURTON MZT Number of Test H-9B

Interval Test 5345 5355 Date of Test 3-24-59

Point Tested

Recorder No. H-5 Element No. 2413 Range 3450 PSI

Clock No. 5347 Range 3 HR

Open Period

Depth of Recorder 5331.5 (Inside/Outside)

Time		
0	.1163	203
10	.9918	1710
20	.9927	1712
30	.9936	1713
40	.9940	1714
50	.9941	1714
60	.9941	1714

Hydrostatic Gradient Survey

	Recorder Depth Feet	Time	Gradient Psi/Ft.	Pressure PSIG	ΔP PSI	ΔD Feet	ΔP/ΔD PSI/Feet
IHP	5331.5		1.4382	2490			
FHP	5331.5		1.4413	2495			

Remarks:

SHELL OIL COMPANY

BOTTOM HOLE PRESSURE DATA SHEET

RATHERFORD Field

NORTH DESERT CREEK 13-12 Well

Type Tester: HALLIBURTON MZT Number of Test H-9B

Interval Test: 5345 5355 Date of Test 3-24-59

Point Test:

Recorder No. H-24 Element No. 2410N Range 3400 PSI

Clock No. 5033 Range 3 HR

Open Period:

Depth of Recorder 5321.5 (Inside/~~Outside~~)

0	—	—				
10	.9949	1689				
20	1.0078	1711				
30	1.0088	1712				
40	1.0091	1713				
50	1.0095	1713				
60	1.0101	1714				
62	1.0108	1716				

Hydrostatic Gradient [illegible]

Pressure Depth Feet	[illegible]	Diff. [illegible]	Pressure PSIG	ΔP PSI	ΔD Feet	ΔP/ΔD PSI/Feet

Remarks:

SHELL OIL COMPANY
BOTTOM HOLE PRESSURE DATA SHEET
RATHERFORD Field

NORTH DESERT CREEK 13-12 Well

Type Test: HALLIBURTON MZT Number of Test H-9C
Interval Tested: 5345 To 5355 Date of Test 3-25-59
Point Tested

Recorder No. H-5 Element No. 2913N Range 3450 PSI

Clock No. 5347 Range 3 HR

Open Period:

Depth of Recorder 5331.5 (~~Inside~~/Outside)

Time	Deflect In.	Pressure PSIG				
0	0.0341	72				
10	0.9750	1682				
20	0.9888	1705				
30	0.9911	1709				
40	0.9921	1711				
50	0.9928	1712				
60	0.9929	1712				
61	0.9930	1712				

Hydrostatic Gradient Stops:

Recorder Depth Feet	Time	Defl. In.	Pressure PSIG	ΔP PSI	ΔD Feet	ΔP/ΔD PSI/Feet
IHP 5335		1.4411	2495			
FHP 5335		1.4449	2502			

Remarks:

SHELL OIL COMPANY
BOTTOM HOLE PRESSURE DATA SHEET
RATHERFORD Field

NORTH DESERT CREEK 13-12 Well

Type Test: HALLIBURTON MZT Number of Test H-9C
Interval Tested: 5345 To 5355 Date of Test 3-25-59
Point Tested

Recorder No. H-24 Element No. 2410N Range 3400 PSI

Clock No. 5053 Range 3 HR.

Open Periods:

Depth of Recorder 5321.5' (Inside/~~Outside~~)

Time	Deflect In.	Pressure PSIG				
0	.0000	—				
10	.9878	1677				
20	.9921	1684				
30	.9942	1687				
40	.9950	1689				
50	.9960 1.0006	1691 1698				

Hydrostatic Gradient Stops:

Recorder Depth Feet	Time	Defl. In.	Pressure PSIG	ΔP PSI	ΔD Feet	ΔP/ΔD PSI/Feet

Remarks:

SHELL OIL COMPANY

BOTTOM HOLE PRESSURE DATA SHEET

RATHERFORD Field

NORTH DESERT CREEK 13-12 Well

Type: HALLIBURTON MZT Number of Test: H-10

Depth: 5477.5 87.5 Date of Test: 3-25-59

Recorder No.: H-24 Clock No.: 2410 N Range: 3400 PSI

Serial No.: Rack:

PRESSURE RECORDER OFF CALIBRATION

Serial Number of Recorder: 5454

0	—	—			
5	1.0992	1866			
10	1.1778	2000			
20	1.1939	2027			
30	1.1983	2035			
40	1.2013	2040			
50	1.2023	2042			
60	1.2039	2044			

Pressure PSIG	ΔP PSI	ΔD Feet	ΔP/ΔD PSI/Feet

Remarks:

SHELL OIL COMPANY

[illegible] PRESSURE DATA SHEET

RATHERFORD _____ Field

NORTH DESERT CREEK 13-12 Well

HALLIBURTON MZT Number of Test H-10

5477.5 87.5 Date of Test 3-25-59

H-5 2413 Range 3450

5464

0	.0603	105
5	1.1473	1981
10	1.1914	2058
20	1.2083	2087
30	1.2129	2095
40	1.2154	2099
50	1.2168	2102
60	1.2174	2103

			Pressure PSIG	ΔP PSI	ΔD Feet	ΔP/ΔD PSI/Feet
IHP	5456	1.4793	2562			
FHP	5462	1.4696	2545			

SHELL OIL COMPANY

BOTTOM HOLE PRESSURE DATA SHEET

Field RATHERFORD

Well NORTH DESERT CREEK 13-12

Type Tester HALLIBURTON (CONV.) Number of Test H-12

Interval Tested 5479 To 5489 Date of Test 3-26-59

Recorder No. H-5 Element No. 2413 Clock Range

Depth of Recorder 5459 Inside/~~Outside~~

Initial Shut-in Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	.0225	39	60	1.1660	2014	
10	.4545	782				
20	.9352	1614				
30	1.1035	1905				
40	1.1423	1973				
50	1.1603	2004				

Flow Period Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	.0172	30	40	.0198	34	
10	.0188	33	50	.0198	34	
20	.0197	34	60	.0216	38	
30	.0198	34				

Final Shut-In Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	.0216	38				
10	.1286	225				
20	.2238	387				
30	.3488	601				
40	.5186	893				
50	.7028	1213				
52	.7397	1277				
	CLOCK RAN DOWN					

		Depth Ft.	Deflection In	Pressure PSIG	
Initial HP			1.4770	2558	
Final HP			CLOCK RAN DOWN		

SHELL OIL COMPANY
BOTTOM HOLE PRESSURE DATA SHEET

Field RATHERFORD
Well NORTH DESERT CREEK 13-12

Type Tester HALLIBURTON (CONV.) Number of Test 14-12
Interval Tested 5479 To 5489 Date of Test 3-26-59
Recorder No. AK-1589 Element No. 2456N Clock Range 24 HRS
Depth of Recorder 5466 Inside/~~Outside~~

Initial Shut-in Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	—	—	60	2.4529	2055	
10	1.4180	1171				
20	2.2122	1842				
30	2.3471	1957				
40	2.4034	2005				
50	2.4351	2032				

Flow Period Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	0.0303	25	40	0.0436	36	
10	0.0370	30	50	0.0469	38	
20	0.0377	31	60	0.0494	40	
30	0.0403	33				

Final Shut-In Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	0.0494	40	100	2.2951	1913	
10	0.2968	244	120	2.3451	1956	
20	0.5009	412	130	2.3602	1969	
30	0.7887	649	140	2.3733	1980	
40	1.1506	949	150	2.3838	1989	
50	1.5097	1247	160	2.3922	1996	
60	1.8204	1511	170	2.3986	2001	
70	2.0342	1691	180	2.4037	2006	
80	2.1743	1810				
90	2.2521	1876				

	Depth Ft.		Deflection In	Pressure PSIG	
Initial HP			3.0408	2555	
Final HP			3.0182	2535	

SHELL OIL COMPANY
BOTTOM HOLE PRESSURE DATA SHEET
RATHERFORD Field

NORTH DESERT CREEK 13-12 Well

Type Tester HALLIBURTON MZT Number of Test H-13
Interval Tested 5469 5479 Date of Test 3-27-59
Point Tested

Recorder No. H-5 Element No. 2413 Range 3450 PSI

Clock No. Range 3 HR.

Open Period:

Depth of Recorder 5455.5 (~~Inside~~/Outside)

Time	Defl. In.	Pressure PSIG				
0	0.0719	126				
10	1.1310	1953				
20	1.1684	2018				
30	1.1898	2055				
40	1.1967	2067				
50	1.1997	2072				
60	1.2028	2077				

Hydrostatic Gradient Grams

Recorder Depth Feet	Time	Defl. In.	Pressure PSIG	ΔP PSI	ΔD Feet	ΔP/ΔD PSI/Feet
5447		1.4575	2525			
5347		1.4344	2483			
5247		1.4084	2437			
5147		1.3813	2390			

Remarks:

SHELL OIL COMPANY
BOTTOM HOLE PRESSURE DATA SHEET
RATHERFORD Field

NORTH DESERT CREEK 13-12 Well

Type Test: HALLIBURTON MZT Number of Test H-14
Interval Tested 5451 To 5461 Date of Test 3-27-59
Point Tested

Recorder No. H-5 Element No. 2413 Range 3450 PSI

Clock No. 5031 Range 3 HR

Open Period:

Depth of Recorder 5437.5 (~~Inside~~/Outside)

Time	Deflect In.	Pressure PSIG				
0	0 - 0.1580	0 - 276				
20	0.7483	1292				
40	0.7497	1294				
58	0.7504	1296				

Hydrostatic Gradient Stops:

	Recorder Depth Feet	Time	Defl. In.	Pressure PSIG	ΔP PSI	ΔD Feet	ΔP/ΔD PSI/Feet
IHP	5435		1.4652	2537			
FHP	5435		1.4602	2528			

Remarks:

SHELL OIL COMPANY
BOTTOM HOLE PRESSURE DATA SHEET
RATHERFORD Field

NORTH DESERT CREEK 13-12 Well

Type Test HALLIBURTON MZT Number of Test H-14
Interval Tested 5451 To 5461 Date of Test 3-27-59
Point Tested

Recorder No. H-24 Element No. 2410 N Range 3400 PSI

Clock No. 5032 Range 3 HR

Open Period:

Depth of Recorder 5427.5 (Inside/~~Outside~~)

Time	Deflect In.	Pressure PSIG				
0	—	—				
5	0.7525	1276				
10	0.7601	1289				
20	0.7611	1291				
40	0.7621	1293				
58	0.7625	1293				

Hydrostatic Gradient Stops:

Recorder Depth Feet	Time	Defl. In.	Pressure PSIG	ΔP PSI	ΔD Feet	ΔP/ΔD PSI/Feet

Remarks:

SHELL OIL COMPANY

BOTTOM HOLE PRESSURE DATA SHEET

RATHERFORD _____ Field

NORTH DESERT CREEK 13-12 Well

Type Test HALLIBURTON MZT Number of Test H-15A

Interval 5469 5479 Date of Test 3-27-59

Point Test

Recorder No. H-5 Element No. 2413 Range 3450 PSI

Clock No. _____ Range 3 HRS

Open Period:

Depth of Recorder 5455.5 ~~Inside~~/(outside)

Time		
0	0.0838	146
10	1.1482	1983
20	1.1807	2039
30	1.1908	2057
40	1.1968	2067
50	1.2012	2075
60	1.2044	2080

Hydrostatic Pressure (Psig)

	Recorder Depth Feet			Pressure PSIG	ΔP PSI	ΔD Feet	ΔP/ΔD PSI/Feet
IHP			1.4732	2551			
FHP	5452		1.4690	2543			

Remarks:

SHELL OIL COMPANY
BOTTOM HOLE PRESSURE DATA SHEET
RATHERFORD Field

NORTH DESERT CREEK 13-12 Well

Type Tester HALLIBURTON MZT Number of Test H-15B
Interval 5469 To 5479 Date of Test 3-27-59
Point Test

Recorder No. H-1 Element No. 2536N Range 3700 PSI

Clock No. 5033 Range 3 HR

Chart Details

Depth of Recorder 5445.5 (Inside/~~Outside~~)

Time	[illegible]	Pressure PSIG				
0	.0071	13	60	1.1191	2067	
5	.9089	1676				
10	1.0488	1936				
15	1.0841	2002				
20	1.0979	2028				
30	1.1079	2046				
40	1.1141	2058				
50	1.1175	2065				

Pressure Gradient Stops

Recorder Depth Feet	[illegible]	Defl. In.	Pressure PSIG	ΔP PSI	ΔD Feet	ΔP/ΔD PSI/Feet

Remarks

SHELL OIL COMPANY
BOTTOM HOLE PRESSURE DATA SHEET
RATHERFORD Field

NORTH DESERT CREEK 13-12 Well

Type Tester HALLIBURTON MZT Number of Test H-15B
Interval Tested 5469 To 5479 Date of Test 3-27-59
Point Tested

Recorder No. H-5 Element No. 2413 Range 3450 PSI

Clock No. 5032 Range 3 HR.

Open Hole

Depth of Recorder 5455.5 (~~Inside~~/Outside)

Time	Defl. In.	Pressure PSIG				
0	.1824	317	60	1.2022	2076	
5	.9781	1687				
10	1.1307	1952				
15	1.1656	2013				
20	1.1795	2037				
30	1.1912	2057				
40	1.1968	2067				
50	1.1998	2072				

Pressure Gradient Data

Recorder Depth Point	Time	Defl. In.	Pressure PSIG	ΔP PSI	ΔD Feet	ΔP/ΔD PSI/Feet
IHP 5448		1.4698	2545			
FHP 5455		1.4657	2538			

Remarks:

SHELL OIL COMPANY
BOTTOM HOLE PRESSURE DATA SHEET
Field RATHERFORD
Well NORTH DESERT CREEK 13-12

Type Tester HALLIBURTON (CONV.) Number of Test H-17
Interval Tested 5479 To 5489 Date of Test 3-28-59
Recorder No. AK-1 229 Element No. 2454 N Clock Range 24 HR.
Depth of Recorder 5462 Inside/~~Outside~~

Initial Shut-in Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG
0	—	—	60	2.3997	2038
10	0.9833	828	70	2.4119	2049
20	2.0121	1701	80	2.4195	2055
30	2.2734	1930	90	2.4250	2060
40	2.3449	1990			
50	2.3802	2021			

Flow Period Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG
0	0.0210	18	40	0.0302	25
10	0.0257	21	50	0.0320	27
20	0.0274	23	60	0.0337	28
30	0.0290	24			

Final Shut-In Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG
0	0.0337	28	100	2.2318	1892
10	0.2654	222	120	2.2764	1931
20	0.5053	424	130	2.2909	1943
30	0.8331	700	140	2.3028	1954
40	1.3113	1103	150	2.3127	1962
50	1.6559	1396	160	2.3211	1970
60	1.8731	1582	170	2.3287	1976
70	2.0401	1725	180	2.3344	1981
80	2.1422	1814			
90	2.1973	1862			

	Depth Ft.	Deflection In	Pressure PSIG
Initial HP		2.9857	2550
Final HP		2.9668	2533

SHELL OIL COMPANY
BOTTOM HOLE PRESSURE DATA SHEET
Field RATHERFORD
Well NORTH DESERT CREEK 13-12

Type Tester HALLIBURTON (CONV.) Number of Test H-17
Interval Tested 5479 To 5489 Date of Test 3-28-59
Recorder No. AK-1 589 Element No. 2456N Clock Range 12 HR
Depth of Recorder 5458 Inside/~~Outside~~

Initial Shut-in Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	—	—	60	2.4313	2029	
10	1.2646	1044	70	2.4437	2040	
20	2.0512	1705	80	2.4520	2047	
30	2.3004	1917	90	2.4578	2052	
40	2.3778	1984				
50	2.4121	2012				

Flow Period Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	0.0225	18	40	0.0283	23	
10	0.0239	20	50	0.0297	24	
20	.0250	20	60	0.0312	26	
30	.0271	22				

Final Shut-In Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	.0312	26	100	2.2573	1881	
10	.2584	212	120	2.3046	1921	
20	.4867	384	130	2.3208	1935	
30	.7712	585	140	2.3342	1946	
40	1.1900	982	150	2.3451	1956	
50	1.5753	1303	160	2.3547	1964	
60	1.8334	1521	170	2.3613	1970	
70	2.0251	1683	180	2.3692	1976	
80	2.1469	1786				
90	2.2166	1846				

	Depth Ft.	Deflection In	Pressure PSIG	
Initial HP		3.0315	2547	
Final HP		3.0081	2526	

SHELL OIL COMPANY
BOTTOM HOLE PRESSURE DATA SHEET
Field RATHERFORD
Well NORTH DESERT CREEK 13-12

Type Tester HALLIBURTON (CONV.) Number of Test H-17A
Interval Tested 5479 To 5489 Date of Test 3-29-59
Recorder No. AK-1 589 Element No. 2456N Clock Range 12 HR
Depth of Recorder 5458 Inside/~~Outside~~

Initial Shut-in Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	—	—	160	2.4223	2022	
10	0.9090	748	200	2.4295	2028	
20	1.7293	1433	210	2.4310	2029	
40	2.2635	1886	220	2.4324	2030	
80	2.3857	1990	230	2.4339	2031	
120	2.4102	2011	241	2.4348	2032	

Flow Period Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	0.0229	19	40	0.0337	28	
10	0.0280	23	50	0.0358	29	
20	0.0300	25	62	0.0382	31	
30	0.0324	27				

Final Shut-In Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	.0382	31	178	1.4802	1223	
10	.1838	151				
20	2300	189				
30	3326	274				
40	6712	553				
60	1.0712	882				
100	1.3255	1094				
140	1.4134	1167				
160	1.4668	1212				
170	1.4768	1220				

		Depth Ft.	Deflection In	Pressure PSIG	
Initial HP			3.0300	2546	
Final HP			3.0114	2529	

SHELL OIL COMPANY
BOTTOM HOLE PRESSURE DATA SHEET
Field RATHERFORD
Well NORTH DESERT CREEK 13-12

Type Tester HALLIBURTON (CONV.) Number of Test H-17A
Interval Tested 5479 To 5489 Date of Test 3-29-59
Recorder No. AK-1 700 Element No. 2455N Clock Range 24HR
Depth of Recorder 5466 Inside/~~Outside~~

Initial Shut-in Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	—	—	160	2.3992	2027	
10	0.2008	169	200	2.4072	2034	
20	1.5478	1299	210	2.4084	2035	
40	2.2433	1893	220	2.4097	2036	
80	2.3621	1995	230	2.4113	2037	
120	2.3873	2017	241	2.4132	2039	

Flow Period Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	0.0207	17	40	0.0314	26	
10	0.0210	18	50	0.0328	28	
20	0.0271	23	62	0.0357	30	
30	0.0296	25				

Final Shut-In Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	0.0357	30	178	1.4588	1224	
10	0.1716	144				
20	0.2213	186				
30	0.2896	244				
40	0.6676	560				
60	1.0630	891				
100	1.3076	1097				
140	1.3937	1169				
160	1.4456	1213				
170	1.4564	1222				

		Depth Ft.	Deflection In	Pressure PSIG	
Initial HP			2.9842	2535	
Final HP			2.9827	2534	

SHELL OIL COMPANY
BOTTOM HOLE PRESSURE DATA SHEET
Field RATHERFORD
Well NORTH DESERT CREEK 13-12

Type Tester HALLIBURTON (CONV.) Number of Test H 17-A
Interval Tested 5479 To 5489 Date of Test 3-29-59
Recorder No. AK-1 229 Element No. 2454 N Clock Range 12 HR
Depth of Recorder 5462 Inside/~~Outside~~

Initial Shut-in Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	—	—	160	2.3858	2026	
10	0.7138	599	200	2.3935	2033	
20	1.7035	1437	210	2.3958	2035	
40	2.2335	1893	220	2.3968	2035	
80	2.3483	1993	230	2.3977	2036	
120	2.3741	2016	241	2.3993	2038	

Flow Period Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	0.0208	17	40	0.0348	29	
10	0.0270	22	50	0.0361	30	
20	0.0315	26	62	0.0381	32	
30	0.0337	28				

Final Shut-In Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	0381	32	178	1.4541	1225	
10	1811	151				
20	2277	191				
30	3232	271				
40	6739	566				
60	1.0634	894				
100	1.3080	1100				
140	1.3927	1172				
160	1.4418	1214				
170	1.4519	1222				

		Depth Ft.	Deflection In	Pressure PSIG	
Initial HP			2.9698	2536	
Final HP			2.9678	2534	

SHELL OIL COMPANY

[illegible] PRESSURE DATA SHEET

RATHERFORD Field

NORTH DESERT CREEK 13-12 Well

Type Test HALLIBURTON MZT Number of Test H-18A

Interval 5428.5 5438.5 Date of Test 3-30-59

Recorder No. H-5 Instrument No. 2409N Range 3750 PSI

Clock No. 5032 Time 3 HR

Depth of Recorder 5405

Time		
0	—	—
5	0.6661	1250
10	0.6664	1251
20	0.6672	1252
30	0.6679	1254
40	0.6686	1255
50	0.6695	1257
60	0.6703	1258

Pressure Depth Feet	Time	Pressure PSID	ΔP PSI	ΔD Feet	ΔP/ΔD PSI/Feet

Remarks

SHELL OIL COMPANY

BOTTOM HOLE PRESSURE DATA SHEET

RATHERFORD Field

NORTH DESERT CREEK 13-12 Well

HALLIBURTON MZT Number of Test H-18B
5428.5 5438.5 Date of Test 3-30-59

H-1 Serial No. 7769N Range 3800 PSI

5347 Hours 3 HR

5415 (Corrected)

0	—	—				
10	0.6407	1228				
20	0.6409	1229				
30	0.6412	1229				
40	0.6422	1231				
50	0.6428	1232				
60	0.6435	1234				

		Pressure PSIG	ΔP PSI	ΔD Feet	ΔP/ΔD PSI/Feet
5100	1.2116	2324			
5200	1.2348	2369			
5300	1.2580	2414			
5400	1.2822	2460			

SHELL OIL COMPANY
BOTTOM HOLE PRESSURE DATA SHEET
RATHERFORD Field

NORTH DESERT CREEK 13-12 Well

Type Test HALLIBURTON M2T Number of Test H-18 B
Interval 5428.5 To 5438.5 Date of Test 3-30-59
Point Tested

Recorder No. H-5 Element No. 2409 N Range 3750 PSI

Clock No. 5032 Range 3 HR

Open Period:

Depth of Recorder 5405 (Inside/~~Outside~~)

Time	Deflect In.	Pressure PSIG				
0	—	—				
10	.6685	1255				
20	.6688	1255				
30	.6693	1256				
40	.6709	1259				
50	.6710	1260				
60	.6723	1262				

Hydrostatic Gradient Stops:

Recorder Depth Feet	Time	Defl. In.	Pressure PSIG	ΔP PSI	ΔD Feet	ΔP/ΔD PSI/Feet

Remarks:

SHELL OIL COMPANY
BOTTOM HOLE PRESSURE DATA SHEET
Field RATHERFORD
Well NORTH DESERT CREEK 13-12

Type Tester HALLIBURTON (CONV.) Number of Test H-20
Interval Tested 5463 To 5479 Date of Test 3-31-59
Recorder No. AK-1 589 Element No. 2456N Clock Range 24 HR
Depth of Recorder 5445.5 Inside/~~Outside~~

Initial Shut-in Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	—	—	160	2.4461	2042	
10	0.3719	306	200	2.4586	2052	
20	0.7196	592	210	2.4611	2055	
40	1.6040	1327	220	2.4634	2056	
80	2.3457	1956	230	2.4650	2058	
120	2.4202	2020	240	2.4674	2060	

Flow Period Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	0.0268	22	40	0.0338	28	
10	0.0271	22	50	0.0361	30	
20	0.0274	22	60	0.0381	31	
30	0.0309	25				

Final Shut-In Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	0.0381	31	110	1.0513	866	
10	0.1229	101	120	1.2389	1022	
20	0.1997	164	130	1.4400	1189	
30	0.2752	226	140	1.6496	1365	
40	0.3480	286	150	1.8427	1529	
50	0.4187	345	160	1.9930	1656	
60	0.4910	404	170	2.1041	1749	
70	0.5659	466	180	2.1810	1815	
80	0.6502	535				
100	0.8937	735				

		Depth Ft.	Deflection In	Pressure PSIG	
Initial HP			3.0235	2540	
Final HP			NOT READABLE		

SHELL OIL COMPANY
BOTTOM HOLE PRESSURE DATA SHEET
Field RATHERFORD
Well NORTH DESERT CREEK 13-12

Type Tester HALLIBURTON (CONV.) Number of Test H-20
Interval Tested 5463 To 5479 Date of Test 3-31-59
Recorder No. H-1 Element No. 7769N Clock Range 12 HR
Depth of Recorder 5489 Inside/~~Outside~~

Initial Shut-in Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	—	—	160	1.0772	2067	
10	0.1993	383	200	1.0838	2080	
20	0.3357	644	210	1.0848	2082	
40	0.7033	1349	220	1.0861	2084	
80	1.0308	1978	230	1.0870	2086	
120	1.0654	2043	240	1.0880	2088	

Flow Period Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	0.0182	35	40	0.0229	44	
10	0.0182	35	50	0.0232	45	
20	0.0204	39	60	0.0238	46	
30	0.0218	42				

Final Shut-In Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	0.0238	46	100	0.4009	769	
10	0.0587	113	110	0.4782	916	
20	0.0921	178	113	0.4959	950	
30	0.1243	239				
40	0.1554	299				
50	0.1872	360				
60	0.2182	420				
70	0.2513	483				
80	0.2929	563				
90	0.3408	654				

		Depth Ft.	Deflection In	Pressure PSIG	
Initial HP			1.3341	2560	
Final HP			CLOCK RAN DOWN		

SHELL OIL COMPANY
BOTTOM HOLE PRESSURE DATA SHEET
Field RATHERFORD
Well NORTH DESERT CREEK 13-12

Type Tester HALLIBURTON (CONV.) Number of Test H-20
Interval Tested 5463 To 5479 Date of Test 3-31-59
Recorder No. AK-1 229 Element No. 2454 N Clock Range 24 HRS
Depth of Recorder 5449.5 Inside/~~Outside~~

Initial Shut-in Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	—	—	160	2.4113	2048	
10	0.1839	154	200	2.4244	2060	
20	0.5666	475	210	2.4268	2062	
40	1.6312	1375	220	2.4279	2063	
80	2.3109	1959	230	2.4300	2064	
120	2.3866	2027	240	2.4329	2067	

Flow Period Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	0.0276	23	40	0.0364	30	
10	0.0283	24	50	0.0389	32	
20	0.0282	23	60	0.0404	34	
30	0.0331	26				

Final Shut-In Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	0.0404	34	110	1.0398	874	
10	0.1191	99	120	1.2379	1041	
20	0.1949	163	130	1.4504	1221	
30	0.2665	223	140	1.6427	1385	
40	0.3334	279	150	1.8261	1542	
50	0.4041	339	160	1.9698	1665	
60	0.4770	400	170	2.0766	1757	
70	0.5499	461	180	2.1463	1818	
80	0.6368	534				
100	0.8824	741				

		Depth Ft.	Deflection In	Pressure PSIG	
Initial HP			2.9800	2545	
Final HP			NOT READABLE		

SHELL OIL COMPANY

TTOM HOLE PRESSURE DATA SHEET

Field RATHERFORD

Well NORTH DESERT CREEK 13-12

Type Tester HALLIBURTON (CONV.) Number of Test H-21

Interval Tested 5446 To 5462 Date of Test 3-31-59

Recorder No. AK-1 229 Element No. 2454N Clock Range 24 HR.

Depth of Recorder 5432.5 Inside/~~Outside~~

Initial Shut-in Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	—	—	100	1.5223	1283	
10	1.4994	1263	120	1.5231	1283	
20	1.5132	1275				
40	1.5184	1279				
60	1.5207	1281				
80	1.5214	1282				

Flow Period Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	0.0847	71	40	0.1763	147	
10	0.0901	75	50	0.2108	176	
20	0.1133	95	60	0.2501	209	
30	0.1413	118				

Final Shut-in Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	0.2501	209	100	1.4750	1242	
10	1.3320	1121	110	1.4784	1245	
20	1.3835	1165	120	1.4815	1248	
30	1.4115	1188				
40	1.4295	1204				
50	1.4418	1214				
60	1.4511	1222				
70	1.4597	1229				
80	1.4649	1234				
90	1.4701	1238				

	Depth Ft.		Deflection In	Pressure PSIG	
Initial HP			2.9670	2533	
Final HP			2.9709	2537	

SHELL OIL COMPANY
BOTTOM HOLE PRESSURE DATA SHEET
Field RATHERFORD
Well NORTH DESERT CREEK 13-12

Type Tester HALLIBURTON (CONV.) Number of Test H-21
Interval Tested 5446 To 5462 Date of Test 3-31-59
Recorder No. H-1 Element No. 7769N Clock Range 24 HR
Depth of Recorder 5472 ~~Inside~~/Outside

Initial Shut-in Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	—	—	100	0.6791	1302	
10	0.6718	1288	120	0.6797	1303	
20	0.6752	1295				
40	0.6772	1299				
60	0.6781	1300				
80	0.6786	1301				

Flow Period Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	0.0470	91	40	0.0857	165	
10	0.0516	100	50	0.0987	190	
20	0.0599	116	60	0.1134	218	
30	0.0726	140				

Final Shut-In Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	0.1134	218	100	0.6538	1253	
10	0.5676	1088	110	0.6558	1257	
20	0.6037	1157	120	0.6572	1260	
30	0.6198	1188				
40	0.6301	1208				
50	0.6373	1222				
60	0.6421	1231				
70	0.6456	1238				
80	0.6492	1245				
90	0.6515	1249				

		Depth Ft.	Deflection In	Pressure PSIG	
Initial HP			1.3245	2541	
Final HP			1.3279	2548	

SHELL OIL COMPANY
BOTTOM HOLE PRESSURE DATA SHEET
Field RATHERFORD
Well NORTH DESERT CREEK 13-12

Type Tester HALLIBURTON (CONV.) Number of Test H-21
Interval Tested 5446 To 5462 Date of Test 3-31-59
Recorder No. AK-1, 589 Element No. 2456 N Clock Range 24 HRS
Depth of Recorder 5428.5 Inside/~~Outside~~

Initial Shut-in Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	—	—	100	1.5467	1278	
10	1.5269	1262	120	1.5476	1279	
20	1.5378	1271				
40	1.5429	1275				
60	1.5447	1277				
80	1.5458	1278				

Flow Period Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	0.0873	72	40	0.1852	152	
10	0.1022	84	50	0.2172	178	
20	0.1247	102	60	0.2522	207	
30	0.1519	125				

Final Shut-In Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	0.2522	207	100	1.5013	1240	
10	1.3129	1084	110	1.5045	1243	
20	1.3888	1147	120	1.5065	1245	
30	1.4257	1178				
40	1.4481	1196				
50	1.4624	1208				
60	1.4736	1217				
70	1.4840	1226				
80	1.4897	1231				
90	1.4963	1236				

		Depth Ft.	Deflection In	Pressure PSIG	
Initial HP	FROM		2.9956	2515	
	TO		3.0140	2532	
Final HP	FROM		2.9896	2519	
	TO		3.0208	2537	

SHELL OIL COMPANY
BOTTOM HOLE PRESSURE DATA SHEET
Field RATHERFORD
Well NORTH DESERT CREEK 13-12

Type Tester HALLIBURTON (CONV.) Number of Test H-22
Interval Tested 5438 To 5446 Date of Test 4-1-59
Recorder No. AK-1 589 Element No. 2456 N Clock Range 24 HRS.
Depth of Recorder 5424.5 Inside/~~Outside~~

Initial Shut-in Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	—	—	200	1.5330	1267	
20	1.5308	1265	240	1.5331	1267	
40	1.5319	1266				
80	1.5325	1267				
120	1.5325	1267				
160	1.5326	1267				

Flow Period Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	0.0309	25	40	0.0918	75	
10	0.0566	46	50	0.1076	88	
20	0.0568	47	60	0.1249	102	
30	0.0742	61				

Final Shut-In Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	0.1249	102	240	1.5180	1254	
20	1.4890	1230				
40	1.4983	1238				
60	1.5026	1241				
80	1.5053	1244				
120	1.5099	1247				
160	1.5139	1251				
180	1.5143	1251				
200	1.5154	1252				
220	1.5162	1253				

		Depth Ft.	Deflection In	Pressure PSIG	
Initial HP			3.0241	2540	
Final HP			3.0132	2531	

SHELL OIL COMPANY
BOTTOM HOLE PRESSURE DATA SHEET
Field RATHERFORD
Well NORTH DESERT CREEK 13-12

Type Tester HALLIBURTON (CONV.) Number of Test H-22
Interval Tested 5438 To 5446 Date of Test 4-1-59
Recorder No. H-1 Element No. 7769N Clock Range
Depth of Recorder 5451 ~~Inside~~/Outside

Initial Shut-in Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	—	—	170	0.6704	1285	
20	0.6698	1284	175	0.6703	1285	
40	0.6704	1285				
80	0.6704	1285				
120	0.6703	1285				
160	0.6704	1285				

Flow Period Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
CLOCK RAN DOWN						

Final Shut-In Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
CLOCK RAN DOWN						

		Depth Ft.	Deflection In	Pressure PSIG	
Initial HP	AT LOGGING DEPTH		1.3300	2552	
Final HP			NOT READABLE		

SHELL OIL COMPANY

BOTTOM HOLE PRESSURE DATA SHEET

Field RATHERFORD

Well NORTH DESERT CREEK 13-12

Type Tester HALLIBURTON (CONV.) Number of Test H-22

Interval Tested 5938 To 5946 Date of Test 4-1-59

Recorder No. AK-1 229 Element No. 2454 N Clock Range 24

Depth of Recorder 5958 ~~Inside~~/Outside

Initial Shut-In Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	—	—	200	1.5220	1282	
20	1.5200	1281	240	1.5220	1282	
40	1.5207	1281				
80	1.5214	1282				
120	1.5220	1282				
160	1.5219	1282				

Flow Period Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	0.0928	36	40	0.0966	81	
10	0.0542	45	50	0.1142	95	
20	0.0622	52	60	0.1323	110	
30	0.0782	65				

Final Shut-In Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	0.1323	110	220	1.5036	1267	
10	1.4729	1241	240	1.5039	1267	
20	1.4782	1245				
40	1.4860	1252				
60	1.4912	1256				
80	1.4932	1258				
120	1.4963	1260				
160	1.4994	1263				
180	1.5009	1264				
200	1.5020	1265				

		Depth Ft.	Deflection In	Pressure PSIG	
Initial HP			2.9916	2555	
Final HP			NOT READABLE		

SHELL OIL COMPANY

BOTTOM HOLE PRESSURE DATA SHEET

Field RATHERFORD

Well NORTH DESERT CREEK 13-12

Type Tester HALLIBURTON (CONV.) Number of Test H-26

Interval Tested 5347 To 5359.5 Date of Test 4-3-59

Recorder No. HK H-24 Element No. 12017N Clock Range

Depth of Recorder 5365 Inside/~~Outside~~

Initial Shut-in Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	—	—	100	1.1831	1714	
10	1.1493	1665	140	1.1845	1716	
20	1.1713	1697	180	1.1852	1717	
40	1.1788	1708	220	1.1863	1718	
60	1.1811	1711	240	1.1873	1720	
80	1.1824	1713				

Flow Period Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	.0197	28	40	.0293	42	
10	.0228	33	50	.0310	45	
20	.0252	36	60	.0338	49	
30	.0276	40				

Final Shut-in Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
CHART RAN OUT						

	Depth Ft.	Deflection In	Pressure PSIG	
Initial HP		1.7154	2492	
Final HP		CHART RAN OUT		

SHELL OIL COMPANY

BOTTOM HOLE PRESSURE DATA SHEET

Field RATHERFORD

Well NORTH DESERT CREEK 13-12

Type Tester HALLIBURTON (CONV.) Number of Test H-26

Interval Tested 5347 To 5359.5 Date of Test 9-3-59

Recorder No. AB-1 229 Element No. 2454N Clock Range

Depth of Recorder 5371.5 ~~Inside~~/Outside

Initial Shut-in Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	1.6268	1372	200	2.0309	1717	
20	2.0129	1702	220	2.0316	1718	
40	2.0213	1709	240	2.0317	1718	
80	2.0265	1714				
120	2.0276	1715				
160	2.0295	1716				

Flow Period Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	0.0324	27	40	0.0582	49	
10	0.0412	34	50	0.0611	51	
20	0.0480	40	60	0.0651	54	
30	0.0535	45				

Final Shut-In Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	0.0651	54	180	1.9763	1671	
10	0.3869	324	200	1.9820	1676	
20	0.7339	616	220	1.9864	1679	
40	1.6657	1405	240	1.9892	1682	
60	1.8428	1557	260	1.9928	1685	
80	1.9005	1606	267	1.9930	1685	
100	1.9298	1631				
120	1.9465	1645				
140	1.9603	1657				
160	1.9691	1665				

		Depth Ft.	Deflection In	Pressure PSIG	
Initial HP			2.9271	2498	
Final HP			2.9278	2499	

SHELL OIL COMPANY
BOTTOM HOLE PRESSURE DATA SHEET
RATHERFORD Field

NORTH DESERT CREEK 13-12 Well

Type Tester HALLIBURTON MZT Number of Test H-27A
Interval Tested 5378 To 5383 Date of Test 4-5-59
Point Tested

Recorder No. H-1 Element No. 7769N Range 3800

Clock No. 5033 Range 3 HR

Open Period:

Depth of Recorder 5354 (Inside/~~Outside~~)

Time	Deflect In.	Pressure PSIG				
0	.0069	13	60	.8193	1572	
5	.1409	271	66	.8210	1577	
10	.6788	1302				
15	.8139	1552				
20	.8161	1566				
30	.8173	1568				
40	.8179	1569				
50	.8190	1572				

Hydrostatic Gradient Stops:

Recorder Depth Feet	Time	Defl. In.	Pressure PSIG	ΔP PSI	ΔD Feet	ΔP/ΔD PSI/Feet

Remarks:

SHELL OIL COMPANY
BOTTOM HOLE PRESSURE DATA SHEET
RATHERFORD Field

NORTH DESERT CREEK 13-12 Well

Type Test: HALLIBURTON MZT Number of Test H-27A
Interval: 5378 To 5383 Date of Test 4-5-59
Point Test:

Recorder No. H-24 Element No. 12017 N Range 2900 PSI

Clock No. 3437 Range 3 HR

Open Periods

Depth of Recorder 5364 (~~Inside~~/Outside)

Time	Deflect In.	Pressure PSIG				
0	.0135	19	60	1.0821	1568	
5	.1789	258	68	1.0823	1568	
10	.7950	1150				
15	1.0716	1553				
20	1.0778	1561				
30	1.0802	1565				
40	1.0810	1566				
50	1.0818	1567				

Hydrostatic Gradient Stops:

Recorder Depth Feet	Time	Defl. In.	Pressure PSIG	ΔP PSI	ΔD Feet	ΔP/ΔD PSI/Feet
5000		1.5965	2318			
5100		1.6273	2362			
5200		1.6582	2408			
5300		1.6889	2453			

Remarks:

SHELL OIL COMPANY
BOTTOM HOLE PRESSURE DATA SHEET
Field RATHERFORD
Well NORTH DESERT CREEK 13-12

Type Tester HALLIBURTON (CONV.) Number of Test H-29
Interval Tested 5380 To 5385 Date of Test 4-5-59
Recorder No. H-1 Element No. 7769N Clock Range 12 HRS
Depth of Recorder 5390 Inside/Outside

Initial Shut-in Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	—	—	180	0.8290	1591	
20	0.8100	1554	200	0.8291	1591	
40	0.8258	1584	220	0.8294	1591	
80	0.8270	1587	240	0.8300	1592	
120	0.8282	1589				
160	0.8290	1591				

Flow Period Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	0.0128	25				
10	0.0127	25				
16	0.0138	27				

Final Shut-In Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
CLOCK RAN DOWN						

		Depth Ft.	Deflection In	Pressure PSIG	
Initial HP	AT LOGGING DEPTH		1.3283	2549	
Final HP		NOT READABLE			

SHELL OIL COMPANY
BOTTOM HOLE PRESSURE DATA SHEET
Field RATHERFORD
Well NORTH DESERT CREEK 13-12

Type Tester HALLIBURTON (CONV.) Number of Test H-29
Interval Tested 5380 To 5385 Date of Test 4-5-59
Recorder No. AK-1 229 Element No. 2454N Clock Range 24 HR
Depth of Recorder 5397 Inside/~~Outside~~

Initial Shut-in Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	—	—	180	1.8770	1586	
20	1.7738	1497	200	1.8770	1586	
40	1.8662	1577	220	1.8772	1586	
80	1.8712	1581	240			
120	1.8776	1586				
160	1.8773	1586				

Flow Period Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	0.0263	22	40	0.0252	21	
10	0.0235	19	50	0.0251	21	
20	0.0244	20	60	0.0257	21	
30	0.0244	20				

Final Shut-In Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	0.0257	21	160	1.8674	1578	
10	0.1989	166	180	1.8682	1578	
20	0.4118	345	200	1.8687	1579	
30	0.7296	613	220	1.8695	1579	
40	1.5998	1348	240	1.8703	1580	
60	1.8532	1565	245	1.8704	1580	
80	1.8609	1572				
100	1.8641	1575				
120	1.8652	1576				
140	1.8666	1577				

		Depth Ft.	Deflection In	Pressure PSIG	
Initial HP			2.9892	2553	
Final HP			2.9401	2510	

SHELL OIL COMPANY
BOTTOM HOLE PRESSURE DATA SHEET
Field PATHERFORD
Well NORTH DESERT CREEK 13-12

Type Tester HALLIBURTON (CONV.) Number of Test H-29
Interval Tested 5380 To 5385 Date of Test 4-5-59
Recorder No. AK-1 589 Element No. 2456N Clock Range
Depth of Recorder 5370 Inside/~~Outside~~

Initial Shut-in Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG
			180	1.8940	1573
0	.0119	10	200	1.8941	1573
20	1.7266	1431	220	1.8940	1573
40	1.8832	1564	245	1.8933	1572
80	1.8876	1566			
120	1.8938	1573			
160	1.8940	1573			

Flow Period Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG
0	.0152	12	40	.0156	13
10	.0132	11	50	.0158	13
20	.0133	11	60	.0166	14
30	.0147	12			

Final Shut-In Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG
0	.0166	14	220	1.8887	1568
10	.1832	150	240	1.8888	1569
20	.3873	319			
40	1.2712	1049			
60	1.8655	1549			
80	1.8770	1558			
120	1.8823	1563			
160	1.8840	1564			
180	1.8848	1565			
200	1.8855	1565			

		Depth Ft.	Deflection In	Pressure PSIG
Initial HP			3.0243	2541
Final HP			3.0220	2539

SHELL OIL COMPANY
OM HOLE PRESSURE DATA SHEET
Field RATHERFORD
Well NORTH DESERT CREEK 13-12

Type Tester HALLIBURTON (CONV.) Number of Test H-30
Interval Tested 5359.5 To 5373.5 Date of Test 4-6-59
Recorder No. AK-1 589 Element No. 2456N Clock Range 24 HRS
Depth of Recorder 5345.5 Inside/~~Outside~~

Initial Shut-in Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	—	—	180	2.0845	1733	
20	0.6649	547	200	2.0964	1743	
40	1.4128	1167	220	2.1086	1753	
80	1.9129	1589	240	2.1184	1762	
120	2.0306	1689				
160	2.0737	1724				

Flow Period Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	0.0146	12	50	0.0137	11	
10	0.0144	12	60	0.0139	11	
20	0.0137	11				
40	0.0133	11				

Final Shut-In Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	0.0139	11	200	0.6245	514	
20	0.0333	27	210	0.7035	579	
40	0.0563	46	220	0.7959	655	
60	0.0855	70	230	0.8904	732	
80	0.1231	101	240	0.9928	817	
100	0.1698	139	243	1.0235	843	
120	0.2256	185				
140	0.2973	245				
160	0.3868	318				
180	0.4941	407				

		Depth Ft.	Deflection In	Pressure PSIG	
Initial HP			2.9642	2490	
Final HP			2.9737 2.0312	2496 2468	

SHELL OIL COMPANY
BOTTOM HOLE PRESSURE DATA SHEET
Field RATHERFORD
Well NORTH DESERT CREEK 13-12

Type Tester HALLIBURTON (CONV.) Number of Test H-30
Interval Tested 5359.5 To 5373.5 Date of Test 4-6-59
Recorder No. H-1 Element No. 7769N Clock Range
Depth of Recorder 5378.5 ~~Inside~~/Outside

Initial Shut-in Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	0.0086	17	160	0.9122	1750	
10	0.0542	105	200	0.9221	1769	
20	0.2398	461	210	0.9247	1774	
40	0.5955	1141	220	0.9275	1780	
80	0.8367	1605	240	0.9321	1789	
120	0.8936	1715				

Flow Period Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	0.0157	30	40	0.0125	24	
10	0.0137	26	50	0.0146	28	
20	0.0138	27	60	0.0136	26	
30	0.0144	28				

Final Shut-in Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	0.0136	26	230	0.3912	750	
10	0.0181	35	240	0.4353	834	
20	0.0218	42	243	0.4501	863	
30	0.0267	52				
40	0.0317	61				
60	0.0445	88				
100	0.0820	158				
140	0.1359	262				
180	0.2203	424				
220	0.3499	671				

		Depth Ft.	Deflection In	Pressure PSIG	
Initial HP			1.3041	2502	
Final HP			1.2998	2494	

SHELL OIL COMPANY
BOTTOM HOLE PRESSURE DATA SHEET
Field RATHERFORD
Well NORTH DESERT CREEK 13-12

Type Tester HALLIBURTON (CONV.) Number of Test H-30
Interval Tested 5359.5 To 5373.5 Date of Test 4-6-59
Recorder No. AK-1 229 Element No. 2454 N Clock Range 24 HR
Depth of Recorder 5385.5 ~~Inside~~/Outside

Initial Shut-in Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	—	—	180	2.0682	1749	
20	0.3210	269	200	2.0796	1759	
40	1.4128	1189	220	2.0922	1770	
80	1.8946	1601	240	2.1016	1778	
120	2.0137	1703				
160	2.0565	1739				

Flow Period Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	0.0337	28	50	0.0315	26	
10	0.0318	27	60	0.0311	26	
20	0.0318	27				
40	0.0308	26				

Final Shut-In Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	0.0311	26	200	0.6211	521	
20	0.0473	39	210	0.7029	590	
40	0.0695	58	220	0.7925	666	
60	0.0973	81	230	0.8918	749	
80	0.1312	110	240	0.9954	836	
100	0.1763	147	243	1.0258	862	
120	0.2333	195				
140	0.3020	253				
160	0.3857	323				
180	0.4931	414				

		Depth Ft.	Deflection In	Pressure PSIG	
Initial HP			2.9348	2507	
Final HP			2.9036	2478	

SHELL OIL COMPANY

TOM HOLE PRESSURE DATA SHEET

Field RATHERFORD

Well NORTH DESERT CREEK 13-2

Type Tester HALLIBURTON (CONV.) Number of Test H-31

Interval Tested 5414 To 5517(TD) Date of Test 4-7-59

Recorder No. AK-1 589 Element No. 2456N Clock Range 24 HR

Depth of Recorder 5507.5 ~~Inside~~/Outside

Initial Shut-in Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG
0	0.2760	227	180	2.5180	2103
20	2.4381	2035	200	2.5183	2103
40	2.4914	2080	220	2.5183	2103
80	2.5104	2096	240	2.5190	2104
120	2.5150	2100			
160	2.5172	2102			

Flow Period Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG
0	0.1897	156	40	0.3268	269
10	0.2192	180	50	0.3727	307
20	0.2353	193	60	0.4213	347
30	0.2785	229			

Final Shut-In Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG
0	0.4213	347	240	2.1794	1814
10	1.4896	1231	245	2.1892	1822
20	1.5660	1295			
40	1.7541	1454			
80	1.9831	1648			
120	2.0910	1738			
160	2.1581	1796			
180	2.1560	1794			
200	2.1634	1800			
220	2.1650	1802			

		Depth Ft.	Deflection In	Pressure PSIG
Initial HP			3.0271	2543
Final HP			3.0306	2546

SHELL OIL COMPANY
BOTTOM HOLE PRESSURE DATA SHEET

Field RATHERFORD
Well NORTH DESERT CREEK 13-12

Type Tester HALLIBURTON (CONV.) Number of Test 14-31
Interval Tested 5914 To 5517 (TD) Date of Test 4-7-59
Recorder No. AK-T 229 Element No. 2454 N Clock Range 24
Depth of Recorder 5513.5 ~~Inside~~/Outside

Initial Shut-in Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	0.2688	225	160	2.4802	2108	
10	2.2625	1919	180	2.4809	2109	
20	2.4037	2041	200	2.4808	2109	
40	2.4538	2085	220	2.4816	2110	
80	2.4729	2102	240	2.4820	2110	
120	2.4776	2106				

Flow Period Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	0.1847	154	40	0.3148	264	
10	0.1890	158	50	0.3641	305	
20	0.2248	188	60	0.4174	350	
30	0.2631	220				

Final Shut-In Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	0.4174	350	180	2.1215	1796	
10	1.5128	1274	200	2.1279	1802	
20	1.5888	1340	220	2.1328	1806	
40	1.7633	1488	240	2.1497	1820	
60	1.8868	1594	245	2.1567	1827	
80	1.9728	1668				
100	2.0501	1734				
120	2.0672	1748				
140	2.1126	1788				
160	2.1222	1796				

		Depth Ft.	Deflection In	Pressure PSIG	
Initial HP			2.9352 2.9827	2505 2597	
Final HP			2.9812	2546	

SHELL OIL COMPANY
P OM HOLE PRESSURE DATA SHEET
Field RATHER FORD
Well NORTH DESERT CREEK 13-12

Type Tester HALLIBURTON (CONV.) Number of Test H-31
Interval Tested 5414 To 5517 Date of Test 4-7-59
Recorder No. H-1 Element No. 7769N Clock Range 12 HR
Depth of Recorder 5394.5 Inside/~~Outside~~

Initial Shut-in Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	0.0195	38	160	1.0766	2066	
10	0.9311	1787	200	1.0766	2066	
20	1.0343	1985	220	1.0772	2067	
40	1.0638	2041	240	1.0774	2067	
80	1.0733	2060				
120	1.0750	2063				

Flow Period Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	0.0532	103	40	0.1266	244	
10	0.0798	154	50	0.1460	281	
20	0.0872	168	60	0.1676	323	
30	0.1073	207				

Final Shut-In Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	0.1676	323	180	0.9202	1766	
10	0.6374	1222	200	0.9246	1774	
20	0.6669	1279	220	0.9253	1776	
40	0.7469	1433	240	0.9326	1790	
60	0.8067	1548	245	0.9367	1798	
80	0.8476	1626				
100	0.8872	1702				
120	0.8934	1714				
140	0.9161	1758				
160	0.9206	1767				

		Depth Ft.	Deflection In	Pressure PSIG	
Initial HP			1.3018	2498	
Final HP			NOT READABLE		

SHELL OIL COMPANY
BOTTOM HOLE PRESSURE DATA SHEET
Field RATHERFORD
Well NORTH DESERT CREEK 13

Type Tester HALLIBURTON (CONV.) Number of Test H-32
Interval Tested 5343 To 5517 (TD) Date of Test 4-8-59
Recorder No. AK-1 229 Element No. 2454 N Clock Range 24 HR
Depth of Recorder 5513.5 ~~Inside~~/Outside

Initial Shut-in Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	2.9795	2544	200	2.7805	2371	
20	2.9543	2522	220	2.7593	2352	
40	2.9303	2501	240	2.7423	2338	
80	2.8955	2471	241	2.7430	2338	
120	2.8580	2438				
160	2.8125	2399				

Flow Period Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	0.2338	196	40	0.4638	389	
10	0.2912	244	50	0.5121	429	
20	0.3551	298	60	0.5500	461	
30	0.4088	343				

Final Shut-In Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	0.5500	461	180	2.2091	1872	
10	1.3721	1155	200	2.2221	1883	
20	1.6035	1352	220	2.2279	1889	
40	1.8498	1563	240	2.2351	1895	
60	1.9917	1684				
80	2.0623	1744				
100	2.1104	1786				
120	2.1467	1818				
140	2.1749	1842				
160	2.1937	1859				

		Depth Ft.	Deflection In	Pressure PSIG	
Initial HP			2.9824	2547	
Final HP			2.9672	2534	

SHELL OIL COMPANY
BOTTOM HOLE PRESSURE DATA SHEET
Field RATHERFORD
Well NORTH DESERT CREEK 1-2

Type Tester HALLIBURTON (CONV.) Number of Test H-32
Interval Tested 5343 To 5517 (TD) Date of Test 4-8-59
Recorder No. AK-1 589 Element No. 2456N Clock Range 24 HR
Depth of Recorder 5507.5 ~~Inside~~/Outside

Initial Shut-in Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	3.0246	2541	200	2.8310	2373	
20	3.0020	2521	220	2.8102	2355	
40	2.9828	2504	240	2.7922	2339	
80	2.9465	2474	241	2.7921	2339	
120	2.9078	2425				
160	2.8633	2401				

Flow Period Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	0.2387	196	40	0.4637	382	
10	0.2950	243	50	0.5123	422	
20	0.3625	298	60	0.5561	458	
30	0.4136	340				

Final Shut-In Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	0.5552	457	180	2.2442	1869	
10	1.1503	948	200	2.2579	1881	
20	1.5622	1292	220	2.2641	1886	
40	1.8097	1501	240	2.2724	1893	
60	2.0058	1667				
80	2.0845	1733				
100	2.1389	1779				
120	2.1781	1813				
140	2.2058	1837				
160	2.2270	1855				

		Depth Ft.	Deflection In	Pressure PSIG	
Initial HP			3.0307	2546	
Final HP			3.0151	2532	

SHELL OIL COMPANY

BOTTOM HOLE PRESSURE DATA SHEET

Field RATHERFORD

Well NORTH DESERT CREEK 13-

Type Tester HALLIBURTON (CONV.) Number of Test H-32

Interval Tested 5343 To 5517 (TD) Date of Test 4-8-59

Recorder No. H-1 Element No. 7769N Clock Range 12 HRS

Depth of Recorder 5304.5 Inside/~~Outside~~

Initial Shut-in Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG
0	1.2859	2467	200	1.1878	2278
20	1.2681	2432	220	1.1789	2261
40	1.2560	2410	240	1.1733	2251
80	1.2399	2379	241	1.1727	2249
120	1.2228	2346			
160	1.2029	2308			

Flow Period Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG
0	0.0648	125	40	0.1762	339
10	0.0921	178	50	0.1970	379
20	0.1274	245	60	0.2150	414
30	0.1547	298			

Final Shut-In Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG
0	0.2150	414	72	0.8602	1650
5	0.3421	657			
10	0.4636	888			
15	0.5926	1136			
20	0.6425	1232			
30	0.7073	1357			
40	0.7630	1464			
50	0.8045	1543			
60	0.8351	1602			
70	0.8576	1647			

		Depth Ft.	Deflection In	Pressure PSIG
Initial HP			1.2780	2452
Final HP			1.2803	2456

SHELL OIL COMPANY
BOTTOM HOLE PRESSURE DATA SHEET
Field RATHERFORD
Well NORTH DESERT CREEK 13-12

Type Tester HALLIBURTON (CONV.) Number of Test H-32A
Interval Tested 5343 To 5517 (TD) Date of Test 4-9-59
Recorder No. AK-1 589 Element No. 2456 N Clock Range 12 HR
Depth of Recorder 5507.5 ~~Inside~~/Outside

Initial Shut-in Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	
0	0.2434	200	180	2.4924	2081	
20	2.3785	1984	200	2.4936	2082	
40	2.4423	2039	220	2.4941	2083	
80	2.4754	2067	240	2.4949	2083	
120	2.4867	2076				
160	2.4912	2080				

Flow Period Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	

Final Shut-In Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG	

		Depth Ft.	Deflection In	Pressure PSIG	
Initial HP			3.0218	2538	
Final HP			3.0185	2535	

SHELL OIL COMPANY

TOM HOLE PRESSURE DATA SHEET

Field RATHERFORD

Well NORTH DESERT CREEK 13-12

Type Tester HALLIBURTON (CONV.) Number of Test H-32A

Interval Tested 5354 To 5517 (TD) Date of Test 4-9-59

Recorder No. H-24 Element No. 12017N Clock Range 12 HR

Depth of Recorder 5304.5 Inside/~~Outside~~

Initial Shut-in Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG
0	0.069	99	180	1.3776	1998
20	1.3019	1887	200	1.3781	1999
40	1.3454	1951	220	1.3790	2000
80	1.3670	1982	240	1.3796	2001
120	1.3740	1993			
160	1.3778	1998			

Flow Period Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG

Final Shut-in Pressure Readings:

Time	Deflect In.	Pressure PSIG	Time	Deflect In.	Pressure PSIG

		Depth Ft.	Deflection In	Pressure PSIG
Initial HP			1.6814	2442
Final HP			1.6842	2446

CORE DESCRIPTION NOTICE

SHELL OIL COMPANY, North Desert Creek #13-12 located in Section 2, T. 41 S., R. 23 E.

AND

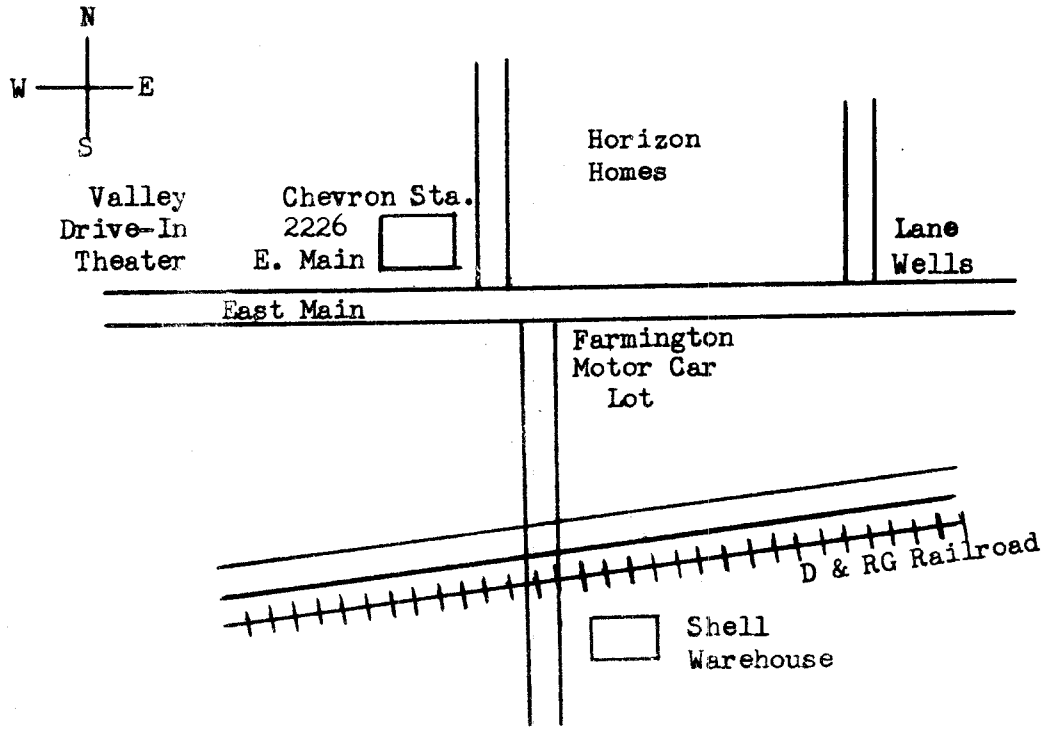
SHELL OIL COMPANY, Burton #22-13 located in Section 13, T. 40 S., R. 23 E.

San Juan County, Utah

Cores will be available for sampling at 8:30 A. M. on _____

Thursday, May 21, 1959

at the Shell warehouse in Farmington, New Mexico. The warehouse is located as follows:



CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

CORE ANALYSIS RESULTS

Company SHELL OIL COMPANY Formation DESERT CREEK ZONE File RP-3-943
Well NORTH DESERT CREEK NO.13-12 Core Type DIAMOND CONV. Date Report 3-20-59
Field RATHERFORD Drilling Fluid OIL BASE MUD Analysts CLIFFORD
County SAN JUAN State UTAH Elev 4571 DF Location NW SW Sec 12 41S 23E

Lithological Abbreviations

SAND-SD	DOLOMITE-DOL	ANHYDRITE-ANHY	SANDY-SDY	FINE-FN	CRYSTALLINE-XLN	BROWN-BRN	FRACTURED-FRAC	SLIGHTLY-SL/
SHALE-SH	CHERT-CH	CONGLOMERATE-CONG	SHALY-SHY	MEDIUM-MED	GRAIN-GRN	GRAY-GY	LAMINATION-LAM	VERY-V/
LIME-LM	GYPSUM-GYP	FOSSILIFEROUS-FOSS	LIMY-LMY	COARSE-CSE	GRANULAR-GRNL	VUGGY-VGY	STYLOLITIC-STY	WITH-W/

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCYS MAX	90°	POROSITY PER CENT	RESIDUAL SATURATION PER CENT PORE OIL	TOTAL WATER	SAMPLE DESCRIPTION AND REMARKS
1	5346.8-47.3	<0.1	<0.1	0.8	14.7	77.3	
2	5347.6-49.4	0.1	0.1	2.0	9.5	76.6	
		0.1	0.1				
3	5349.7-51.5	0.3	0.1	4.2	24.0	30.1	
		0.2	0.1				
4	5351.8-53.4	0.1	<0.1	12.7	38.0	19.8	
		0.1	0.1				
5	5353.6-55.6	1.6	1.0	13.1	40.0	19.6	
		2.0	1.5				
6	5355.9-57.2	1.0	0.8	8.9	24.9	18.2	
7	5357.6-59.4	3.1	1.2	10.6	22.5	13.2	
		3.7	2.6				
8	5359.6-61.2	<0.1	<0.1	3.0	8.8	62.4	
		0.1	0.1				
9	5361.5-63.5	<0.1	<0.1	3.8	7.1	62.9	
10	5363.8-65.4	0.1	<0.1	1.9	12.6	58.4	
11	5365.7-67.5	<0.1	<0.1	7.5	30.7	27.5	
		<0.1	<0.1				
12	5367.8-69.2	0.1	0.1	7.8	28.2	30.5	
		0.1	0.1				
13	5369.5-71.5	<0.1	<0.1	3.1	6.8	77.7	
		<0.1	<0.1				
14	5371.9-73.2	0.1	<0.1	8.3	21.3	37.6	
		<0.1	<0.1				
15	5373.5-75.6	<0.1	<0.1	9.1	30.3	33.2	
		<0.1	<0.1				
16	5375.9-77.5	0.3	0.2	10.2	37.7	24.2	
		0.4	0.3				
17	5377.7-79.5	0.1	0.1	2.9	7.3	72.4	
		0.1	<0.1				
18	5379.8-81.6	<0.1	<0.1	0.8	17.9	39.4	
		<0.1	<0.1				
19	5382.8-84.4	<0.1	<0.1	2.8	12.1	57.2	
		0.1	<0.1				
20	5384.6-86.4	0.3	0.2	8.1	23.2	27.3	
		0.1	0.1				
21	5386.7-88.4	3.3	0.8	4.6	10.5	30.7	
		0.3	0.1				
22	5388.7-90.5	1.3	0.9	1.2	16.8	52.9	

SERVICE NO.8-A NO INTERPRETATION OF RESULTS

These analyses, opinions or interpretations are based on observations and materials supplied by the client to whom, and for whose exclusive and confidential use, this report is made. The interpretations or opinions expressed represent the best judgment of Core Laboratories, Inc. (all errors and omissions excepted); but Core Laboratories, Inc. and its officers and employees, assume no responsibility and make no warranty or representations, as to the productivity, proper operations, or profitableness of any oil, gas or other mineral well or sand in connection with which such report is used or relied upon.

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

CORE ANALYSIS RESULTS

Company SHELL OIL COMPANY Formation DESERT CREEK ZONE File RP-3-943
Well NORTH DESERT CREEK NO. 13-12 Core Type DIAMOND CONV. Date Report 3-20-59
Field RATHERFORD Drilling Fluid OIL BASE MUD Analysts CLIFFORD
County SAN JUAN State UTAH Elev. 4571 DF Location NW SW Sec 12 41S 23E

Lithological Abbreviations

SAND-SD, SHALE-SH, LIME-LM, DOLOMITE-DOL, CHERT-CH, GYPSUM-GYP, ANHYDRITE-ANHY, CONGLOMERATE-CONG, FOSSILIFEROUS-FOSS, SANDY-SDY, SHALY-SHY, LIMY-LMY, FINE-FN, MEDIUM-MED, COARSE-CSE, CRYSTALLINE-XLN, GRAIN-GRN, GRANULAR-GRNL, BROWN-BRN, GRAY-GY, VUGGY-VGY, FRACTURED-FRAC, LAMINATION-LAM, STYLOLITIC-STY, SLIGHTLY-SL/, VERY-V/, WITH-W/

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCYS MAX	PERMEABILITY MILLIDARCYS 90°	POROSITY PER CENT	RESIDUAL SATURATION PER CENT PORE OIL	RESIDUAL SATURATION PER CENT PORE TOTAL WATER	SAMPLE DESCRIPTION AND REMARKS
23	5390.5-92.2	2.9	0.4	0.7	51.3	24.3	
		0.2	0.2				
24	5392.5-94.3	8.1	3.7	0.8	34.6	42.9	
		0.1	<0.1				
25	5394.5-96.4	0.6	0.1	0.9	32.5	48.7	
		0.3	<0.1				
26	5396.7-98.2	0.2	<0.1	0.7	0.0	85.0	
		<0.1	<0.1				
27	5398.5-00.1	0.2	<0.1	0.6	39.3	36.1	
		<0.1	<0.1				
28	5400.5-02.4	0.1	<0.1	0.8	17.5	51.3	
		<0.1	<0.1				
29	5402.7-04.2	<0.1	<0.1	0.8	25.0	51.4	
		<0.1	<0.1				
30	5404.5-06.4			0.6	21.0	43.6	
		0.2	0.2				
31	5406.7-08.2	0.2	0.1	0.6	31.2	45.9	
		4.4	0.4				
32	5408.5-10.2	0.1	<0.1	0.8	23.4	42.8	
		<0.1	<0.1				
33	5410.5-12.4	0.1	<0.1	0.6	22.4	51.7	
34	5412.7-14.2			1.0	10.1	48.0	
		<0.1	<0.1				

SERVICE NO.8-A NO INTERPRETATION OF RESULTS

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CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

CORE ANALYSIS RESULTS

Company SHELL OIL COMPANY
Well NORTH DESERT CREEK NO. 13-12
Field RATHERFORD
County SAN JUAN State UTAH

Formation PARADOX
Core Type DIAMOND CONV.
Drilling Fluid OIL BASE MUD
Elev. 4571 DF Location NW SW Sec 12 41S 23E

File RP-3-943
Date Report 3-23-59
Analysts CLIFFORD

Lithological Abbreviations

SANDSTONE-SD, SHALE-SH, LIME-LM, DOLOMITE-DOL, CHERT-CH, GYPSUM-GYP, ANHYDRITE-ANHY, CONGLOMERATE-CONG, FOSSILIFEROUS-FOSS, SANDY-SDY, SHALY-SHY, LIMY-LMY, FINE-FN, MEDIUM-MED, COARSE-CSE, CRYSTALLINE-XLN, GRAIN-GRN, GRANULAR-GRNL, BROWN-BRN, GRAY-GY, VUGGY-VGY, FRACTURED-FRAC, LAMINATION-LAM, STYLOLITIC-STY, SLIGHTLY-SL/, VERY-V/, WITH-W/

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCYS MAX	PERMEABILITY MILLIDARCYS 90°	POROSITY PER CENT	RESIDUAL SATURATION PER CENT PORE OIL	RESIDUAL SATURATION PER CENT PORE TOTAL WATER	SAMPLE DESCRIPTION AND REMARKS
35	5414.5-16.5	<0.1	<0.1	1.4	9.2	71.8	
		0.1	<0.1				
36	5416.8-18.3	<0.1	<0.1	3.8	5.2	76.8	
37	5418.6-20.3			1.8	4.4	66.7	
		0.4	0.1				
38	5420.7-22.8	0.1	<0.1	1.1	12.8	63.3	
		<0.1	<0.1				
39	5423.0-24.8	1.7	0.3	1.4	13.3	67.1	
		0.1	<0.1				
40	5424.8-26.5	0.7	0.2	1.0	23.6	56.0	
41	5426.8-28.5	<0.1	<0.1	1.8	9.1	70.9	
		<0.1	<0.1				
42	5428.8-30.4	2.2	<0.1	1.3	20.8	44.9	
		0.2	<0.1				
43	5430.7-32.3			0.8	23.1	38.5	
		1.7	0.6				
44	5432.6-34.1	<0.1	<0.1	0.7	39.5	25.8	
		0.1	<0.1				
45	5434.4-36.3	3.7	<0.1	6.1	4.2	79.3	
46	5436.7-38.6	<0.1	<0.1	4.0	3.2	72.0	
		6.0	3.0				
47	5438.9-40.9	<0.1	<0.1	5.5	15.4	35.4	
48	5441.5-43.6	<0.1	<0.1	2.9	10.1	60.6	VERTICAL FRACTURE
49	5443.6-46.6	0.02*		3.8	11.4	47.7	VERTICAL FRACTURE
50	5446.6-48.3			4.8	23.5	46.5	
		1.4	<0.1				
51	5448.6-50.4	1.2	0.2	7.8	19.8	60.8	
		2.4	2.1				
52	5450.6-52.5	1.1	0.6	6.9	24.8	21.8	
		1.2	0.2				
53	5452.8-55.3	0.6	0.1	5.4	12.4	14.2	
		1.0	0.6				
54	5455.7-57.3	1.1	0.7	3.0	13.8	22.6	
		21.4	11.7				
55	5457.6-59.3	1.0	0.7	6.4	12.8	16.7	
		10.9	8.9				
56	5459.7-61.2	1.6	0.6	6.2	12.6	23.2	
		2.4	1.4				
57	5461.6-63.4	0.4	0.3	1.2	12.2	32.2	
		0.2	0.1				
58	5463.7-65.4	0.6	0.5	0.8	21.1	27.6	
		0.2	0.1				

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CA-29

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

CORE ANALYSIS RESULTS

Company SHELL OIL COMPANY | Formation PARADOX | File RP-3-943
Well NORTH DESERT CREEK NO. 13-12 | Core Type DIAMOND CONV. | Date Report 3-23-59
Field RATHERFORD | Drilling Fluid OIL BASE MUD | Analysts CLIFFORD
County SAN JUAN State UTAH Elev. 4571 DF Location NW SW Sec 12 41S 23E

Lithological Abbreviations

SAND-SD, SHALE-SH, LIME-LM, DOLOMITE-DOL, CHERT-CH, GYPSUM-GYP, ANHYDRITE-ANHY, CONGLOMERATE-CONG, FOSSILIFEROUS-FOSS, SANDY-SDY, SHALY-SHY, LIMY-LMY, FINE-FN, MEDIUM-MED, COARSE-CRS, CRYSTALLINE-XLN, GRAIN-GRN, GRANULAR-GRNL, BROWN-BRN, GRAY-GY, VUGGY-VGY, FRACTURED-FRAC, LAMINATION-LAM, STYLOLITIC-STY, SLIGHTLY-SL/, VERY-V/, WITH-W/

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCYS MAX	90°	POROSITY PER CENT	RESIDUAL SATURATION PER CENT PORE OIL	TOTAL WATER	SAMPLE DESCRIPTION AND REMARKS
59	5465.7-67.2	0.1	0.1	0.9	19.8	36.3	
		0.3	<0.1				
60	5467.6-69.2	0.4	0.2	5.5	4.2	78.2	
		0.2	<0.1				
61	5469.7-71.2	<0.1	<0.1	7.9	3.0	73.0	
62	5471.5-73.2	<0.1	<0.1	4.9	3.3	75.8	
		<0.1	<0.1				
63	5473.5-74.0	<0.1	<0.1	11.0	4.1	77.1	

* MATRIX PERMEABILITY

SERVICE NO.8-A NO INTERPRETATION OF RESULTS

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CA-20

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

CORE ANALYSIS RESULTS

Company SHELL OIL COMPANY
Well NORTH DESERT CREEK NO. 13-12
Field RATHERFORD
County SAN JUAN State UTAH

Formation PARADOX
Core Type DIAMOND CONV.
Drilling Fluid OIL BASE MUD
Elev. 4571 DF Location NW SW Sec 12 41S 23E

File RP-3-943
Date Report 3-24-59
Analysts CLIFFORD

Lithological Abbreviations

SAND-SD, SHALE-SH, LIME-LM, DOLOMITE-DOL, CHERT-CH, GYPSUM-GYP, ANHYDRITE-ANHY, CONGLOMERATE-CONG, FOSSILIFEROUS-FOSS, SANDY-SDY, SHALY-SHY, LIMY-LMY, FINE-FN, MEDIUM-MED, COARSE-CSE, CRYSTALLINE-XLN, GRAIN-GRN, GRANULAR-GRNL, BROWN-BRN, GRAY-GY, VUGGY-VGY, FRACTURED-FRAC, LAMINATION-LAM, STYLOLITIC-STY, SLIGHTLY-SL/, VERY-V/, WITH-W/

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCYS MAX	90°	POROSITY PER CENT	RESIDUAL SATURATION PER CENT PORE OIL	TOTAL WATER	SAMPLE DESCRIPTION AND REMARKS
64	5474.3-76.3	0.4	0.4	9.3	38.7	19.9	
		2.9	2.5				
65	5476.6-78.1	0.6	0.5	9.1	35.6	21.3	
		0.9	0.9				
66	5478.4-80.2	0.5	0.5	6.2	23.3	35.8	
		0.1	0.1				
67	5480.5-82.0	<0.1	<0.1	0.9	15.4	43.9	
		<0.1	<0.1				
68	5482.3-83.8	0.2	0.1	7.9	21.4	29.4	
		1.3	0.5				
69	5483.8-85.2	5.7	2.5	12.7	39.7	14.6	
		2.2	1.9				
70	5485.5-87.4	1.5	0.9	10.7	18.7	42.6	
		<0.1	<0.1				
71	5487.8-89.2	0.2	0.2	7.4	13.5	46.8	
		0.7	0.1				
72	5489.5-91.0	1.9	0.4	6.1	12.9	49.3	
		1.7	0.1				
73	5491.2-92.9	<0.1	<0.1	5.9	6.0	81.3	
		0.1	<0.1				
74	5492.9-94.4	<0.01*		8.3	7.8	78.8	
75	5494.7-96.6	<0.1	<0.1	4.2	22.2	68.0	
		<0.1	<0.1				

* MATRIX PERMEABILITY

SERVICE NO.8-A NO INTERPRETATION OF RESULTS

These analyses, opinions or interpretations are based on observations and materials supplied by the client to whom, and for whose exclusive and confidential use, this report is made. The interpretations or opinions expressed represent the best judgment of Core Laboratories, Inc. (all errors and omissions excepted); but Core Laboratories, Inc. and its officers and employees, assume no responsibility and make no warranty or representations, as to the productivity, proper operations, or profitableness of any oil, gas or other mineral well or sand in connection with which such report is used or relied upon.

PRODUCTION TEST
NORTH DESERT CREEK 13-12

6-25-59	Moved in completion rig. Pulled tubing and packer. Reversed out oil base mud with water. Washed open hole with 1000 gallons kerosene. Reversed out.
6-26-59	Ran 2-7/8" tubing to T.D. (5515') with single Lynes packer. Spotted acid in interval 5464-5515'. Set packer at 5464', and injected 500 gallons intensified acid, 1500 gallons retarded acid, 1000 gallons intensified acid, overflushed with 2000 gallons water. Maximum pressure 4200, minimum pressure 3500 psi. Average injection rate 1.5 barrels/minute.
6-27-59	After 12 hours shut-in TP 900 psi, CP 0. Bled off 2 barrels water and swabbed 44.5 barrels water in 7 hours, FL 5300'. In next 4 hours swabbed 4 barrels oil, 4 barrels water, FL 5350'. Shut-in 12 hours, TP 125, CP 0. One swab run recovered 4-1/2 barrels oil and 3-1/2 barrels water, FL 3000'.
6-28-59	Unseated Lynes packer and laid down 2-7/8" tubing.
6-29-59 to 7-30-59	Ran 4-1/2" 9.5# casing with Lynes packer at 5463', 2-7/8" tail to 5510'. Maihak pressure recorder on outside at 5434'.
7-1-59	Ran 2-3/8" tubing to 5419' with Maihak pressure recorder at 5417'.
7-2-59 to 7-7-59	Installed pump.

WCM:HLG
Farmington Division
August 7, 1959

Date	Status	Hrs. Prod.	Bbls/ Gross	Bbls. Net	Out %	Gas MCF	GOR	TP	CP	Bean Size	Remarks
7-8-59	P	17									No Gauge
7-9-59	P	19	68								Load Water
7-10-59	P	24	96								Load and acid water
7-11-59	P	24	110	9							
7-12-59	P	18	56	56	0						Repairing shipping pump
7-13-59											Shut in
7-14-59	P	24	88	88	0						
7-15-59	P	24	44	44	0						Pressure recorder outside of 4-1/2" inoperative
7-16-59	P	24	89	89	0						
7-17-59	P	24	40	40	0	8					BHP inside 4-1/2" 30 psi
7-18-59	P	24	55	55	0						Shot sonolog fluid in 4-1/2"-8-5/8" annulus BHP 360.
7-19-59	P	24	52	52	0						Maihak recorder inside 4-1/2" BHP 250 psi.
7-20-59	P	24	48	48	0.1						

7-21-59 Pumped 4 hours, 8 barrels oil, 0% cut. Shut in for fluid level survey. After 24 hours measured fluid levels as follows:

4-1/2" - 8-5/8" Annulus 4926' with 445 psi CP
2-3/8" - 4-1/2" Annulus 3500' with 81 psi TP

Bled casing pressure to inject water in 4-1/2" - 8-5/8" annulus. TP went to 0. Measured fluid level in 4-1/2 - 8-5/8" at 2841'. Fluid level in 2-3/8" - 4-1/2" - 2926'. Pumped in 203 barrels water in 8-5/8" casing and got fluid returns in 4-1/2" casing. In 10 hours pumped 32 barrels water and 20 barrels oil.

7-22-59 Pumped 12 hours, 51 barrels oil, 3 barrels water.

7-23-59 to 7-27-59 Shut down.

7-28-59 to 7-29-59 Moved in rig.

7-30-59 to 8-2-59 Pulled tubing. Pulled 4-1/2" casing and found Lynes packer deflated and Maihak inoperative. Ran 4-1/2" casing with new Maihak and Lynes Dual Seal Treating packer. Set packers with center at 5465'. Ran 2-3/8" tubing with Maihak inside 4-1/2" casing.

8-3-59 Started pumping 10:00 A.M. Pumped 13 barrels oil, 53 barrels water in 22 hours. Packers set at 5459 - 5470'. Maihak in 8-5/8" - 4-1/2" annulus at 5417'. Maihak in 4-1/2" - 2-3/8" annulus at 5389'. Maihak pressure 1329 psi in 8-5/8" - 4-1/2" annulus.

PRODUCTION TEST

BURTON 22-13

7-14-59 Moved in completion rig. Pulled tubing and packer.

7-15-59 Ran tubing with casing scraper and hydrojet guns. Washed formation with 24 bbls. kerosene, circulated out with water.

7-16-59 Set bridge plug at 5792' with 3 gallons hydromite on top. Found top of plug at 5790'.

7-17-59 Ran 2-7/8" tubing with Lynes straddle packers and Maihak pressure recorder. Packers set at 5717' and 5779', pressure recorder at 5694'.

7-18-59 Injected 3000 gallons regular acid and 3000 gallons retarded acid in interval 5717-79'. Maximum pressure 1600 psi, average pressure 600 psi, average injection rate 2 bbls./min. Overflushed with 3000 gallons water. Pressure on annulus during treatment declined from 100 psi to 0.

7-19-59 Well began to flow after first swab run. In 24 hrs. (3 hr. on 1" choke, 21 hrs. on 3/4" choke) produced 1102 bbls. gross, 1068 bbls. oil, 7.8% cut, 895 MCF gas, 838 GOR, TP 230 psi.

Date	Status	Hrs. Prod.	Bbls. Gross	Bbls. Net	Cut %	Gas MCF	GOR	TP	CP	Bean Size	Remarks
7-20	F	24	447	441	1.3	528	1197	275	0	24/64"	
7-21	F	24	501	494	1.4	366	740			"	
7-22	F	"	442	433	2.1	419	968			"	Pressure above top packer 2450 psi.
7-23	F	"	444	435	2	471	1083			"	" " "
7-24	F	"	445	435	2	428	985	330	0	"	" " "
7-25	F	"	360	352	2	361	1002	"	0	"	
7-26	F	"	339	333	1.8	360	1080	"	0	"	" " "
7-27	F	"								"	Test no good.
7-28	F	8								24/64"	Not tested.

7-29) to 8-4) Shut in for bottom hole pressure survey.

WCM:GC
Farmington Division
August 7, 1959

Form 9-331 b
(April 1952)

Budget Bureau No. 42-R359.4.
Approval expires 12-31-60.

	12		
X			

(SUBMIT IN TRIPLICATE)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Indian Agency Navajo

Allottee Tribal Land

Lease No. 14-20-603-246

N-H
3-10

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL		SUBSEQUENT REPORT OF WATER SHUT-OFF	
NOTICE OF INTENTION TO CHANGE PLANS		SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF		SUBSEQUENT REPORT OF ALTERING CASING	
NOTICE OF INTENTION TO REDRILL OR REPAIR WELL		SUBSEQUENT REPORT OF REDRILLING OR REPAIR	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE		SUBSEQUENT REPORT OF ABANDONMENT	
NOTICE OF INTENTION TO PULL OR ALTER CASING		SUPPLEMENTARY WELL HISTORY	X
NOTICE OF INTENTION TO ABANDON WELL			

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

March 5, 1959

Well No. North Desert Creek 13-12 is located 1980 ft. from {N/S} line and 4620 ft. from {E/W} line of sec. 12

SW 12 (¼ Sec. and Sec. No.) 41S (Twp.) 23E (Range) SLBM (Meridian)

Ratherford (Field) San Juan (County or Subdivision) Utah (State or Territory)

The elevation of the Kelly Bushing above sea level is 4573 ft.

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

Spudded 2-16-59

2-20-59 to 2-22-59 Ran and cemented (1339') 13-3/8", 48#, H-40 casing at 1349' with 350 sacks cement treated with 2% calcium chloride. Good cement returns to surface; flanged up and waited on cement. Pressure tested casing and BOP with 700 psi, OK.

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company Shell Oil Company

Address 705 West Municipal Drive

Farmington, New Mexico

Original signed by
B. W. SHEPARD

By B. W. Shepard

Title Exploitation Engineer

Copy H. L. C.

Utah O&GCC

Form 9-331 b
(April 1952)

Budget Bureau No. 42-R359.4.
Approval expires 12-31-60.

(SUBMIT IN TRIPLICATE)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Indian Agency Navajo

Allottee Tribal Land

Lease No. 14-20-603-246

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL		SUBSEQUENT REPORT OF WATER SHUT-OFF	
NOTICE OF INTENTION TO CHANGE PLANS		SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF		SUBSEQUENT REPORT OF ALTERING CASING	
NOTICE OF INTENTION TO REDRILL OR REPAIR WELL		SUBSEQUENT REPORT OF REDRILLING OR REPAIR	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE		SUBSEQUENT REPORT OF ABANDONMENT	
NOTICE OF INTENTION TO PULL OR ALTER CASING		SUPPLEMENTARY WELL HISTORY Well shut in after completion 1-24-60 for hearing on spacing of wells in Aneth Field	
NOTICE OF INTENTION TO ABANDON WELL			
Application for SWD Well	X		

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

August 8, 1962

Ratherford Unit
Well No. 12-13 is located 1980 ft. from {N/S} line and 4620 ft. from {E/W} line of sec. 12
(Formerly Shell Navajo #1 Well 13-12)

SW/4 Sec. 12 (¼ Sec. and Sec. No.) 41S (Twp.) 23E (Range) S.L.M. (Meridian)

Aneth (Field) San Juan (County or Subdivision) Utah (State or Territory)

The elevation of the derrick floor above sea level is 4571.11 ft.

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

Request approval to pull the tubing from the Ratherford Unit Well No. 12-13, set a cast iron bridge plug at 2600', spot cement on bridge plug. Test casing and bridge plug by pressuring up the casing to 1000# with a pump truck, perforate the DeChelly formation from 2470-2510 with 2 holes per foot, and inject the produced water from Ratherford Unit Tank Battery No. 2 into the DeChelly (a saltwater bearing sandstone formation) through perforations at 2470-2510 in the 8-5/8" casing. Minimum injection rate will be 100 BWPD and maximum expected rate is 2000 BWPD.
A description of the casing in the subject well is as follows:
13-3/8" 48# casing set at 1349'.
8-5/8" 28# and 32# casing set at 5345', cemented with 200 sacks cement.
Total depth 5515 - open hole 5345-5515.

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company PHILLIPS PETROLEUM COMPANY

Address P. O. Drawer 1150
Cortez, Colorado

Attn: C. M. Boles

By C M Boles
C. M. Boles
Title District Superintendent

U. S. GOVERNMENT PRINTING OFFICE 16—8437b-8

August 13, 1962

Phillips Petroleum Company
P. O. Drawer 1150
Cortez, Colorado

Attn: C. M. Boles, Dist. Supt.

Dear Sir:

This is to acknowledge receipt of your notice of intention to convert Well No. Ratherford Unit #12-13, located 1980 feet from the south line and 4620 feet from the east line of Section 12, Township 41 South, Range 23 East, SLBM, San Juan County, Utah, into a salt water disposal well.

Please be advised that insofar as this office is concerned approval to convert said well is hereby granted. However, this approval is conditional upon your perforating the 8 5/8" casing in a zone near the top of the Chinle Formation (approximately 1500'), and squeezing cement in such a manner that salt water will not migrate up the annulus of the casing past the top of the Chinle. This should prevent any possible damage that could result to a fresh water source above the Chinle Formation.

Very truly yours,

OIL & GAS CONSERVATION COMMISSION

PAUL W. BURCHELL
CHIEF PETROLEUM ENGINEER

PWB:cnp

cc: P. T. McGrath, Dist. Eng.
USGS - Farmington, New Mexico

Francis Mayo, Resources Eng.
Salt Lake City, Utah

Harvey L. Coonts, Petroleum Eng.
OGCC - Moab, Utah

PHILLIPS PETROLEUM COMPANY
BARTLESVILLE, OKLAHOMA

EXPLORATION AND PRODUCTION DEPARTMENT

October 4, 1963

Ratherford Unit, San Juan County, Utah -
Pressure Maintenance - Revision of
Injection Program

Utah Oil and Gas Conservation Commission
310 Newhouse Building
Salt Lake City, Utah

Attention Mr. Cleon B. Feight

Gentlemen:

The Oil and Gas Conservation Commission of the State of Utah by its order entered in Cause 63 dated September 13, 1961, approved Phillips Petroleum Company's application for approval of a pressure maintenance program for the Ratherford Unit. Subsequent approval was granted for the conversion of twenty-five additional wells to water injection and to the installation of appropriate injection facilities.

Pursuant to Item 3 of the Commission order of September 13, 1961, Phillips, acting in its capacity as Unit Operator, respectfully requests that the Commission or its delegated representative approve the substitution of Unit Well No. 12-13 for Unit Well No. 11-44 in the injection pattern for the subject unit. The proposed change in injection well pattern is necessitated by the unsatisfactory performance of Unit Well No. 11-44 as an injection well. It is proposed to install temporary facilities to test the injectivity of Unit Well No. 12-13. If a satisfactory rate of injection is achieved, permanent facilities will be installed. If the well proves to be unsatisfactory, additional revisions will be submitted for your approval. This proposal has received approval of the majority of the working interest owners of the Ratherford Unit. Your approval is requested.

Respectfully submitted,

PHILLIPS PETROLEUM COMPANY

Earl Griffin, Manager
Production Department

EFL:hd

October 11, 1963

Phillips Petroleum Company
Bartlesville, Oklahoma

Attention: Mr. Earl Griffin, Manager Production Department

Gentlemen:

After reviewing the request made by your office to discontinue pressure maintanence on the Ratherford Unit Well No. 11-44 and subsequently convert the Unit Well No. 12-13 as an injection well, this Commission finds no objection to the proposal. Therefore, approval is hereby granted in accordance with Article 3 of Cause No. 63.

Very truly yours,

OIL & GAS CONSERVATION COMMISSION

PAUL W. BURCHELL
CHIEF PETROLEUM ENGINEER

PWB:kgw

Copy to Nh C

Form 9-331 b
(April 1952)

Budget Bureau No. 42-R359.4.
Approval expires 12-31-60.

(SUBMIT IN TRIPLICATE)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Indian Agency NAVAJO

Allotee TRIBAL

Lease No. 14-20-603-246

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL		SUBSEQUENT REPORT OF WATER SHUT-OFF	
NOTICE OF INTENTION TO CHANGE PLANS		SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF		SUBSEQUENT REPORT OF ALTERING CASING	
NOTICE OF INTENTION TO REDRILL OR REPAIR WELL		SUBSEQUENT REPORT OF REDRILLING OR REPAIR	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE		SUBSEQUENT REPORT OF ABANDONMENT	
NOTICE OF INTENTION TO PULL OR ALTER CASING		SUPPLEMENTARY WELL HISTORY	
NOTICE OF INTENTION TO ABANDON WELL			
NOTICE OF INTENTION TO ACIDIZE & TEST WATER INJECTIVITY RATES	X		

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

Cortez, Colorado November 4, 69

RATHERFORD UNIT

Well No. 12-13 is located 1980 ft. from ~~N~~ S line and 1620 ft. from ~~W~~ E line of sec. 12

SW/4 Sec. 12 (¼ Sec. and Sec. No.) 41S (Twp.) 23E (Range) S.L.M. (Meridian)

Aneth (Field) San Juan (County or Subdivision) Utah (State or Territory)

The elevation of the derrick floor above sea level 4571.11 ft.

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

Acidize open hole from 5345-5515' with 2,000 gallons regular acid, 300 gallons Sol Block, and 3,000 gallons regular acid, and test water injectivity rates.

Present Production: Shut down (Formerly Shell test well)

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company PHILLIPS PETROLEUM COMPANY

Address P. O. Drawer 1150
Cortez, Colorado

By C. M. Boles
C. M. Boles

Title District Superintendent

PHILLIPS PETROLEUM COMPANY
P. O. Drawer 1150
Cortez, Colorado

December 3, 1963

Utah Oil & Gas Conservation Commission
310 Newhouse Building
Salt Lake City 11, Utah

Attention: Mr. Cleon B. Feight

Dear Sirs:

In accordance with Rule E-4 of the Utah General Rules and Regulations, we wish to advise that water injection into our Ratherford Unit 12W13 located in SW/4 of Section 12-T41S-R23E, San Juan County, Utah, was discontinued December 2, 1963, after a successful test of injectivity of 1210 BWPD at 375#. This well will be shut down until such time as permanent injection lines are laid and permanently converted along with other wells under the expansion program.

Very truly yours,

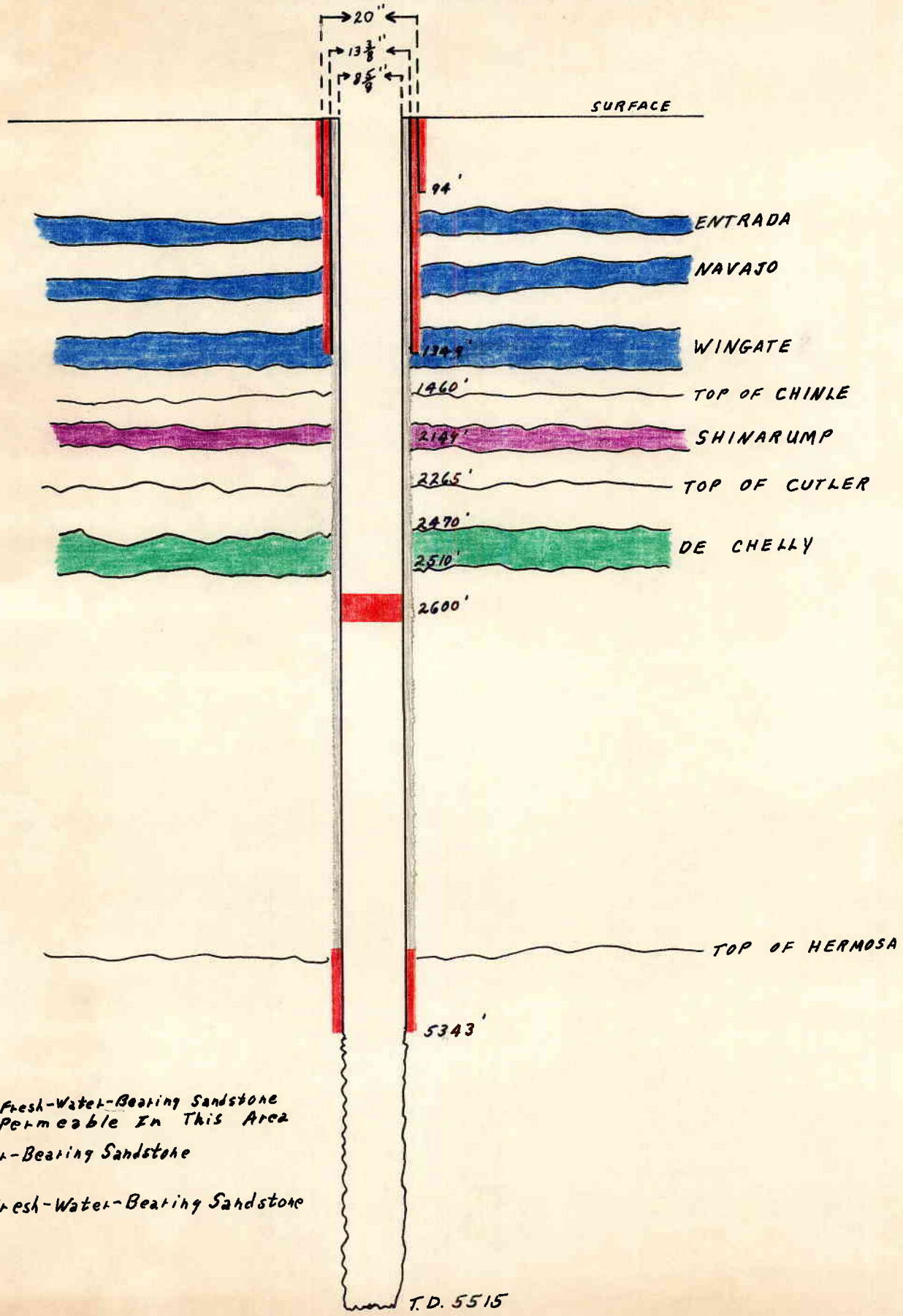
PHILLIPS PETROLEUM COMPANY

C. M. Boles

C. M. Boles
District Superintendent

HGC:bh
cc: Mr. Earl Griffin

"GENERALIZED" CROSS-SECTION OF SALT-
[illegible] DISPOSAL WELL PRO[illegible]SE[illegible]
[illegible]ILL[illegible]S PETROLEUM COMPA[illegible] I[illegible]
THEIR RATHERFORD UNIT NO. 12-13
SEC. 12, T41S-R23E
SAN JUAN CO., UTAH



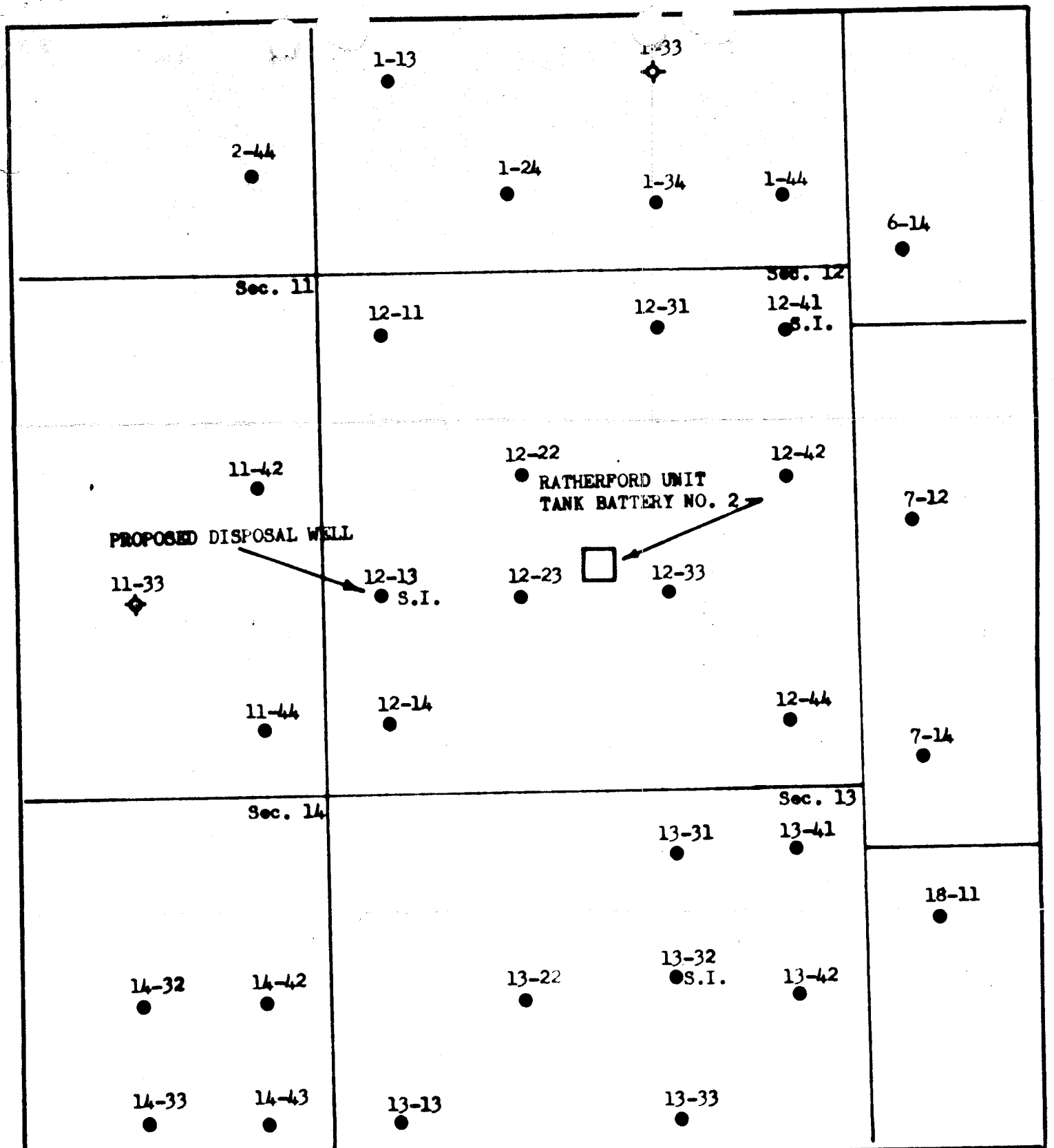
POSSIBLE Fresh-Water-Bearing Sandstone But Non-Permeable In This Area

Salt-Water-Bearing Sandstone

Possible Fresh-Water-Bearing Sandstone

CEMENT

PWB



BARTLESVILLE, OKLAHOMA

			LOCATION OF PROPOSED WATER DISPOSAL WELL PHILLIPS OPERATER RATHERFORD UNIT WELL NO. 12-13 SEC. 12 T41S R23E SAN JUAN CO. UTAH		
			DRAWN	AFE NO.	DWG. NO.
			CHECKED	SCALE 1" = 1 Mile	SHEET NO.
REVISION	BY	DATE	APPROVED		

Form 1770 9-66

Form 9-331 b
(April 1952)

Copy H.L.

(SUBMIT IN TRIPLICATE)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Budget Bureau No. 42-R359.4.
Approval expires 12-31-60.

Indian Agency NAVAJO

Allottee TRIBAL

Lease No. 14-20-603-246

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL		SUBSEQUENT REPORT OF WATER SHUT-OFF	
NOTICE OF INTENTION TO CHANGE PLANS		SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF		SUBSEQUENT REPORT OF ALTERING CASING	
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NOTICE OF INTENTION TO SHOOT OR ACIDIZE		SUBSEQUENT REPORT OF ABANDONMENT	
NOTICE OF INTENTION TO PULL OR ALTER CASING		SUPPLEMENTARY WELL HISTORY	
NOTICE OF INTENTION TO ABANDON WELL		Subsequent Report to acidize and convert to Water Injection Well	X

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

Cortez, Colorado December 9, 1963

Ratherford Unit (Formerly Ratherford Unit 12-13)

Well No. 12W13 is located 1980 ft. from {S} line and 4620 ft. from {E} line of sec. 12

SW/4 Sec. 12 (¼ Sec. and Sec. No.) 41S (Twp.) 23E (Range) S.L.M. (Meridian)

Aneth (Field) San Juan (County or Subdivision) Utah (State or Territory)

The elevation of the derrick floor above sea level is 4571.11 ft.

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

11-17-63 through 12-2-63:
Acidized Desert Creek open hole from 5345-5515' with 2000 gallons regular acid, 300 gallons Sol Block, and 3000 gallons regular acid. Hooked up for water injection. Started injecting 11-21-63. Well number changed from Ratherford Unit 12-13 to 12W13 and well classification changed from Shut Down Oil Well to Water Injection Well due to conversion to Water Injection. Pulled tubing and laid down, shut well in 12-2-63 to hold for water injection.

Before work: Shut down since Unitization. (Formerly Shell Oil Co. test well).
After work: Injected 1210 BWPD at 375# (Shut well in 12-2-63 to hold for Water Injection).

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company PHILLIPS PETROLEUM COMPANY

Address P. O. Drawer 1150
Cortez, Colorado

By C. M. Boles
Title District Superintendent

PHILLIPS PETROLEUM COMPANY
P. O. Drawer 1150
Cortez, Colorado

May 25, 1964

Utah Oil & Gas Conservation Commission
310 Newhouse Building
Salt Lake City 11, Utah

Attention: Mr. Cleon B. Feight

Dear Sirs:

In accordance with Rule E-4 of the Utah General Rules and Regulations, we wish to advise that the following wells located on the Ratherford Unit in San Juan County, Utah, were converted to water injection wells.

Old Well No.	New Well No.	Date Converted	Injection Rate	Injection Pressure
12-13	12W13	11-21-63 *	650 BWPD	400#
21-41	21W41	5-20-64	997 BWPD	2500#

*Well 12W13 was shut in after conversion to Water Injection well effective November 21, 1963 ; was shut in December 2, 1963 to hold for water injection. Water Injection resumed May 22, 1964.

Very truly yours,

PHILLIPS PETROLEUM COMPANY

C. M. Boles
Area Superintendent

bh

Form 9-331
(May 1963)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1424.

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.)

5. LEASE DESIGNATION AND SERIAL NO.: 14-20-603-246

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: Navajo

1. OIL WELL ☐ GAS WELL ☐ OTHER: Water Injection Well

7. UNIT AGREEMENT NAME: SW-I-4192

2. NAME OF OPERATOR: Phillips Petroleum Co.

8. FARM OR LEASE NAME: Rutherford Unit

3. ADDRESS OF OPERATOR: Box 1150, Cortez, Colorado 81321

9. WELL NO.: 12-13

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 1980' from South Line; 4620' from East Line -- Sec. 12

10. FIELD AND POOL, OR WILDCAT: Greater Aneth

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: 12-41S-23E S.L.M.

14. PERMIT NO.:

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 4571.11' DF

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	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	X	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other)			☐
(Other)			☐				

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

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

Acidize well with 6,000 gallons 15% acid and return to injection.

PRESENT INJECTION RATE: 501 BWPD at 650#.

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

SIGNED: C. H. Boles TITLE: Dist. Supt. DATE: 12-22-66

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

Form 9-331
(May 1963)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1424.

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 ☐ GAS WELL ☐ OTHER Water Injection

2. NAME OF OPERATOR: Phillips Petroleum Co.

3. ADDRESS OF OPERATOR: Drawer 1150, Cortez, Colorado 81321

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 1980' From South Line; 4620' from East Line - Sec. 12

5. LEASE DESIGNATION AND SERIAL NO.: 14-20-603-246

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: Navajo

7. UNIT AGREEMENT NAME: SW-I-4192

8. FARM OR LEASE NAME: Rutherford Unit

9. WELL NO.: 12-13

10. FIELD AND POOL, OR WILDCAT: Greater Aneth

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: 12-41S-23E SLM

12. COUNTY OR PARISH: San Juan

13. STATE: Utah

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 4571.11' DF

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

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	X	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other)			
(Other)							

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

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

On January 12, 1967 acidized Desert Creek open hole 5345-5515' with 6000 gallons 15% regular acid in two equal stages separated by 1500 gallons salt block mixed 3#/gallon.

PREVIOUS INJECTION RATE: 515 BWPD at 595#.

PRESENT INJECTION RATE: 732 BWPD at 585#.

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

SIGNED C. M. Boles TITLE Dist. Supt. DATE 1-24-67

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions on Reverse Side

STATE OF UTAH
DIVISION OF OIL, GAS, AND MINING
ROOM 4241 STATE OFFICE BUILDING
SALT LAKE CITY, UTAH 84114
(801) 533-5771
(RULE I-5 & RULE I-4)

FORM NO. DOGM-UIC-1
(Revised 1982)

IN THE MATTER OF THE APPLICATION OF
PHILLIPS PETROLEUM COMPANY
ADDRESS P.O. BOX 2920
CASPER, WYOMING ZIP 82602
INDIVIDUAL ___ PARTNERSHIP X CORPORATION ___
FOR ADMINISTRATIVE APPROVAL TO DISPOSE OR INJECT FLUID INTO THE 12W13 WELL
SEC. 12 TWP. 41S RANGE 23E
SAN JUAN COUNTY, UTAH

CAUSE NO. C-3(B)

ENHANCED RECOVERY INJ. WELL	☒
DISPOSAL WELL	☐
LP GAS STORAGE	☐
EXISTING WELL (RULE I-4)	☒

APPLICATION

Comes now the applicant and shows the Corporation Commission the following:
1. That Rule I-5 (g) (iv) authorizes administrative approval of enhanced rcovery injections, disposal or LP Gas storage operations.
2. That the applicant submits the following information.

Lease Name: Ratherford Unit	Well No.: 12W13	Field: Greater Aneth	County: San Juan
Location of Enhanced Recovery Injection or Disposal Well: 12W13	Sec. 12	Twp. 41S	Rge. 23E
New Well To Be Drilled Yes ☐ No ☒	Old Well To Be Converted Yes ☐ No ☒	Casing Test Yes ☒ No ☐ Date 5-83	
Depth-Base Lowest Known Fresh Water Within ½ Mile: Wingate 1550'	Does Injection Zone Contain Oil-Gas-Fresh Water Within ½ Mile YES ☒ NO ☐	State What: Oil & Gas	
Location of Injection Source(s): Desert Creek Paradox I & II, San Juan River	Geologic Name(s) and Depth of Source(s): Desert Creek (5567'), San Juan River (Surface)		
Geologic Name of Injection Zone: Desert Creek I & II	Depth of Injection Interval 5345 to 5515		
a. Top of the Perforated Interval: 5345	b. Base of Fresh Water: 1550'	c. Intervening Thickness (a minus b): 3795	
Is the intervening thickness sufficient to show fresh water will be protected without additional data? YES NO	See Attachment #4		
Lithology of Intervening Zones: See Attachment #1			
Injection Rates and Pressures: Maximum ___ B/D ___ PSI; SD 5.25.80			

The Names and Addresses of Those to Whom Notice of Application Should be Sent.

Navajo Tribe, Minerals Dept., P.O. Box 146, Window Rock, AZ 86515
Superior Oil, P.O. Box 4530, The Woodlands, TX 77380
Texaco Inc., P.O. Box 2100, Denver, CO 80201
Southland Royalty, 1000 Fort Worth Club Tower, Fort Worth, TX 76102

State of Wyoming)
County of Natrona)

PHILLIPS PETROLEUM COMPANY
Applicant

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

Suscribed and sworn to before me this 21st day of Sept, 19 83

SEAL

DONALD L. HUDSON - Notary Public
County of Natrona
State of Wyoming
My Commission Expires Nov. 3, 1986

Donald L. Hudson
Notary Public in and for Natrona Co., Wyoming

My commission expires Nov 3, 1986

(OVER)

INSTRUCTIONS

1. Attach qualitative and quantitative analysis of representative sample of water to be injected and a qualitative and quantitive analysis of the injection formation of water.

2. Attach plat showing subject well and all known oil and gas wells, abandoned, drilling and dry holes within one-half mile, together and with the name of the operator(s).

3. Attach Drillers Log (Form DOGM-UIC-2). (Appropriate Surety must be on file with Conservation Division or appropriate government agencies.)

4. Attach Electric or Radioactivity Log of Subject well (if released).

5. Attach schematic drawing of subsurface facilities including; Size, setting depth, amount of cement used measured or calculated tops of cement surface, intermediate (if any) and production casings; size and setting depth of tubing; type and setting depth of packer; geologic name of injection zone showing top and bottom of injection interval.

6. If the application is for a NEW well the original and six (6) copies of the application and three (3) complete sets of attachments shall be mailed to the Division. For EXISTING well applications (Rule I-4) only ONE copy of the application and ONE complete set of attachments are required to be mailed to the Division.

7. The Division is required to send notice of application to he surface owner of the land within one-half mile of the injection well and to each operator of a producing leasehole within one-half mile of the injection well. List all required names and addresses in the appropriate space provided on the front of this form.

8. Notice that an application has been filed shall be published by the Division in a newspaper of general circulation in the county of publication before the application is approved. The notice shall include the name and address of applicant, location of proposed injection or disposal well, injection zone, injection pressure and volume. If no written objection is received within 15 days from date of publication the application may be approved administratively.

9. A well shall not be used for injection or disposal unless completed machine accounting Form DOGM-UIC-3b is filed by January 31st each year.

10. Approval of this application, if granted, is valid only as long as there is no substantial change in the operations set forth in the application. A substantial operation change requires the approval of a new application.

11. If there is less intervening thickness required by Rule I-5 (b) 4, attach sworn evidence and data.

12. For enhanced recovery projects, information required by Rule I-4 which is common to more than one well, need be reported only once on the application.

CASING AND TUBING DATA

NAME OF STRING	SIZE	SETTING DEPTH	SACKS CEMENT	TOP OF CEMENT	TOP DETERMINED BY
Surface	20	94	125	Surface	Returns
Intermediate	13 3/8	1349	350	"	"
Production	8 5/8	5345			
Tubing	2 7/8	5303	Name - Type - Depth of Tubing Packer Baker Model AC Tension Pkr 5303'		

Total Depth	Geologic Name - Inj. Zone	Depth - Top of Inj. Interval	Depth - Base of Inj. Interval
5515	Desert Creek I	5345	5515

FORM DOGM-UIC-2
(Rule I-5 (b) 2
(Revised 1982)

PLEASE TYPE OR USE BLACK INK ONLY

(To be filed within 30 days after drilling is completed)

LEASE NO. 14-20-603-246

DEPARTMENT OF NATURAL RESOURCES AND ENERGY
DIVISION OF OIL, GAS, AND MINING
Room 4241 State Office Building
Salt Lake City, Utah 84114

API NO. 43-037-16 404

640 Acres
N
W E
S
Locate Well Correctly and Outline Lease

COUNTY San Juan SEC. 12 TWP. 41S RGE. 23E
COMPANY OPERATING Phillips Petroleum Company
OFFICE ADDRESS P.O. Box 2920
TOWN Casper STATE ZIP Wyoming 82602
FARM NAME --- WELL NO. 12W13
DRILLING STARTED 2-16 19 59 DRILLING FINISHED 4-11 19 59
DATE OF FIRST PRODUCTION 7-9-59 COMPLETED 7-3-59
WELL LOCATED NW ¼ SW ¼ ¼
1980 FT. FROM SL OF ¼ SEC. & 4620 FT. FROM EL OF ¼ SEC.
RKB ELEVATION ~~DERRICK FLOOR~~ 4572.61 GROUND 4561.11

TYPE COMPLETION
Single Zone Open Hole Completion
Multiple Zone X
Comingled

LOCATION EXCEPTION

OIL OR GAS ZONES

Name	From	To	Name	From	To
Desert Creek I	5345	----			
Desert Creek II	----	5465			
Desert Creek III	----	5515			

CASING & CEMENT

Casing Set				Csg. Test	Cement		
Size	Wgt.	Grade	Feet	Psi	Sax	Fillup	Top
20		H-40	80		125		Surface
13 3/8	48	J-55	1335	700	350		Surface
8 5/8	28	J-55	5331'	1500	200		
	32						

TOTAL DEPTH 5515

PACKERS SET DEPTH Baker Model AC Tension Pkr 5303'

NOTE: THIS FORM MUST ALSO BE ATTACHED WHEN FILING PLUGGING FORM DOGM-UIC-6

COMPLETION & TEST DATA BY PRODUCING FORMATION

	1	2	3
FORMATION	Desert Creek		
SPACING & SPACING ORDER NO.	40 acre Cause #C-3(B)		
CLASSIFICATION (DISPOSAL WELL, ENHANCED RECOVERY, LP GAS STORAGE)	Enhanced Recovery		
PERFORATED	Open Hole		
INTERVALS	5345-5515		
ACIDIZED?	10.20.75 1500 gal 15%		
	EE. Acid		
FRACTURE TREATED?	No		

INITIAL TEST DATA Converted to Injector 5-25-64

Date	5-25-64		
Oil, bbl./day	--		
Oil Gravity	--		
Gas, Cu. Ft./day	-- CF	CF	CF
Gas-Oil Ratio Cu. Ft./Bbl.	--		
Water-Bbl./day	650		
Pumping or Flowing	pumping		
CHOKE SIZE	---		
FLOW TUBING PRESSURE	400		

A record of the formations drilled through, and pertinent remarks are presented on the reverse. (use reverse side)

I, the undersigned, being first duly sworn upon oath, state that this well record is true, correct and complete according to the records of this office and to the best of my knowledge and belief.

Telephone 307-237-3791 A.E. Stuart, Area Manager
Name and title of representative of company

Subscribed and sworn before me this _____ day of SEP 22 1983

Casper

WELL: 12W13
LOCATION: NWSW Sec. 1 - T41S - R23E
FIELD: GREATER ANETH
RESERVOIR: Desert Creek I+II

W COMPLETION: 5.25.64
PRESENT STATUS: S.I.

RKB 4572.61
GL 4561.11

94'

1349'

SURFACE CASING: 20" H-40

INTERMEDIATE CASING: 13 3/8"
48# J-55

PRODUCTION CASING: 8 5/8"
28# J-55; 32# J-55

PERFORATIONS:
open hole 5345'-5515'

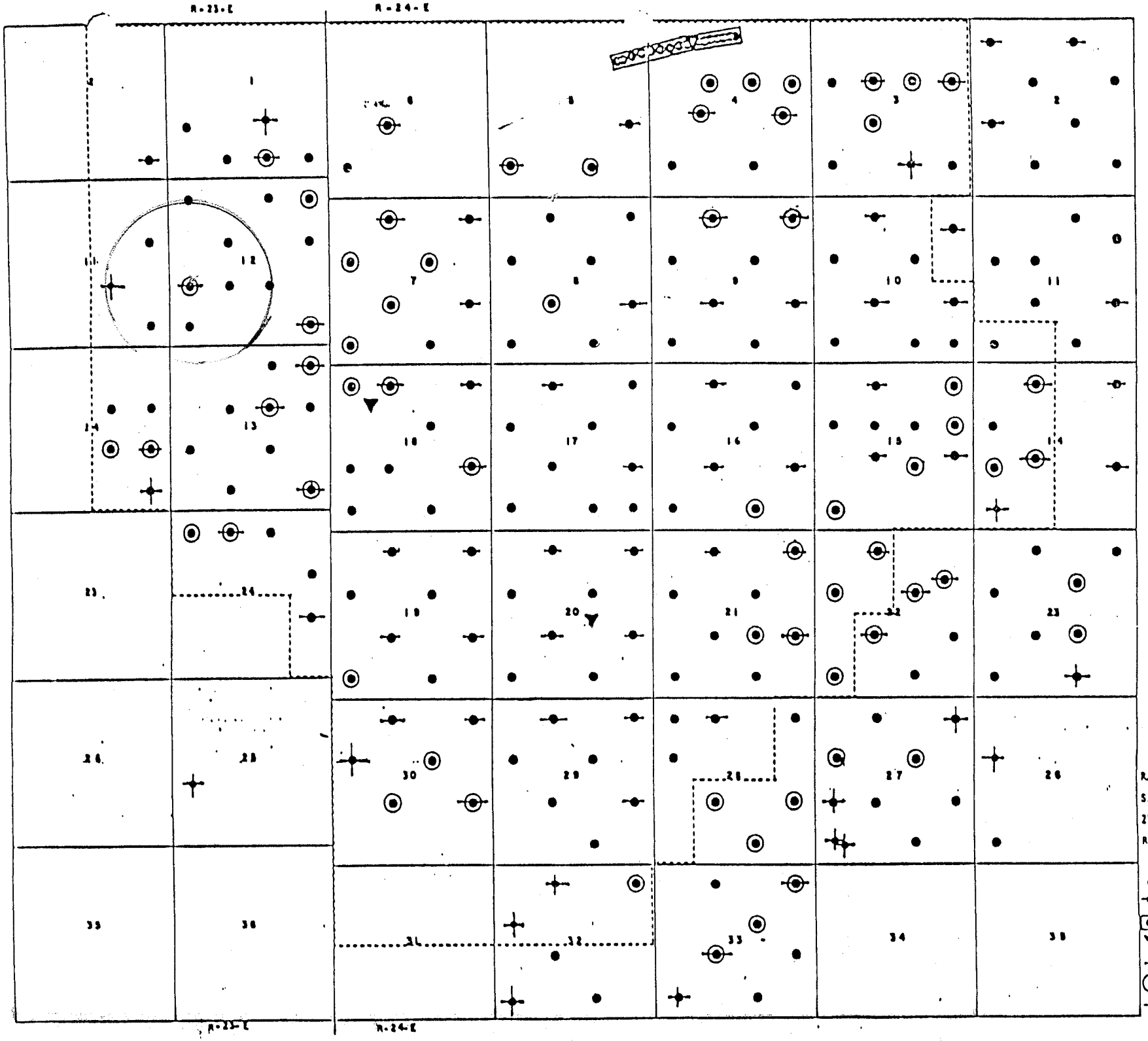
PACKER: Baker model "AC"
Tension Pkr @ 5303'
Tubing: 2 7/8" @ 5303'

5303'

5345'

PBTD: —
OTD: 5515'

Phillips Petroleum Company


R-23-E
R-24-E
T 41 S
RATHERFORD UNIT
SAN JUAN COUNTY, UTAH
2" = 1 mile
RCT 3-83
oil producer
water injector
water supply
domestic water
plugged & abandoned
shut in well
unit boundry

ATTACHMENT 3a:

Wte Injection Well

CL1-12A (REV. 1964)

CHEMICAL & GEOLOGICAL LABORATORIES

P. O. Box 2794
Casper, Wyoming

WATER ANALYSIS REPORT

OPERATOR Phillips Petroleum Co. DATE 5-27-83 LAB NO. W30480
WELL NO. Rutherford Unit LOCATION
FIELD FORMATION
COUNTY San Juan INTERVAL
STATE Utah SAMPLE FROM

REMARKS & CONCLUSIONS:

Specific gravity @68°F	1.0646
Oil and grease, mg/l	2.5
Aluminum (Al), mg/l	0.90
Iron (Fe), mg/l	0.3
Total Sulfides, mg/l	ND(0.1)

Cations	mg/l	meq/l	Anions	mg/l	meq/l
Sodium	24574	1068.99	Sulfate	1190	24.75
Potassium	396	10.14	Chloride	52000	1466.40
Lithium	-	-	Carbonate	0	0.00
Calcium	5982	298.50	Bicarbonate	190	3.12
Magnesium	1419	116.64	Hydroxide	-	-
Iron	-	-	Hydrogen sulfide	-	-
Total Cations		1494.27	Total Anions		1494.27

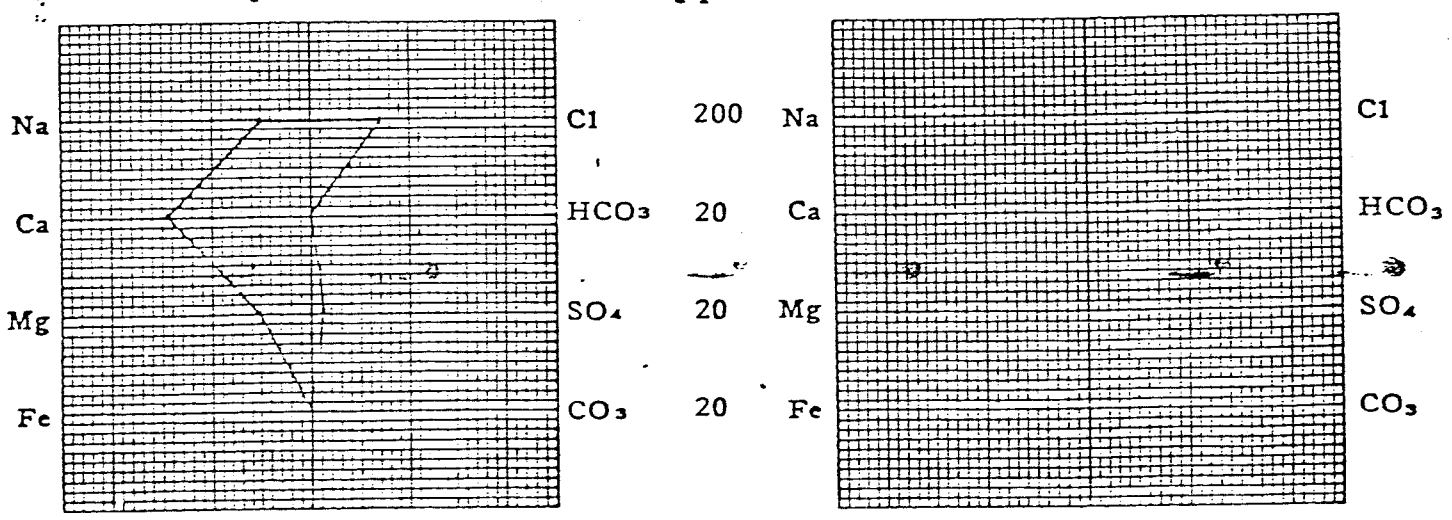
Total dissolved solids, mg/l 85655
NaCl equivalent, mg/l 86344
Observed pH 7.4

Specific resistance @ 68°F.:
Observed 0.095 ohm-meters
Calculated 0.086 ohm-meters

WATER ANALYSIS PATTERN

Sample above described

Scale
MEQ per Unit



(Na value in above graphs includes Na, K, and Li)
NOTE: Mg/l = Milligrams per liter Meq/l = Milligram equivalents per liter
Sodium chloride equivalent = by Dunlap & Hawthorne calculation from components

Formation Water

ATTACHMENT 3b:

CL1-12A (REV. 1964).

CHEMICAL & GEOLOGICAL LABORATORIES

P. O. Box 2794
Casper, Wyoming

WATER ANALYSIS REPORT

OPERATOR Phillips Petroleum Company
WELL NO. Ratherford Unit
FIELD
COUNTY San Juan
STATE Utah

DATE 7-22-83 LAB NO. W30636
LOCATION
FORMATION
INTERVAL
SAMPLE FROM Battery #1 Free water knockout (7-5-83) @ 10:35 S/N 28568

REMARKS & CONCLUSIONS:

Cations	mg/1	meq/1
Sodium	30147	1311.38
Potassium	429	10.98
Lithium	--	--
Calcium	6865	342.56
Magnesium	1738	124.86
Iron	--	--
Total Cations		1807.78

Anions	mg/1	meq/1
Sulfate	1380	28.70
Chloride	63000	1776.60
Carbonate	0	0.00
Bicarbonate	151	2.48
Hydroxide	--	--
Hydrogen sulfide	--	--
Total Anions		1807.78

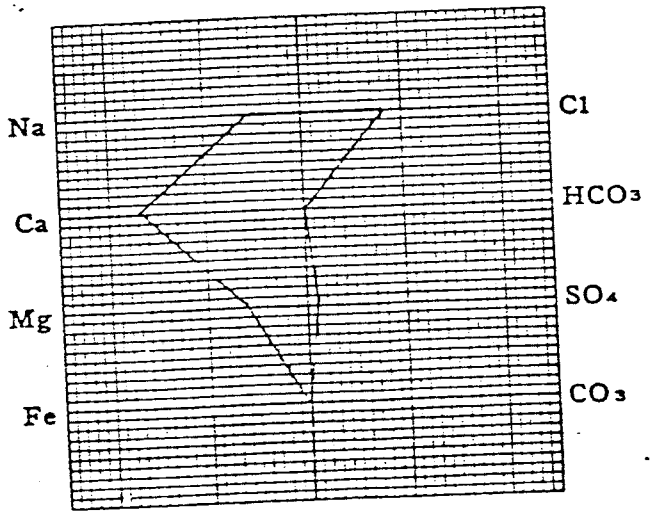
Total dissolved solids, mg/1	103633
NaCl equivalent, mg/1	104549
Observed pH	7.3

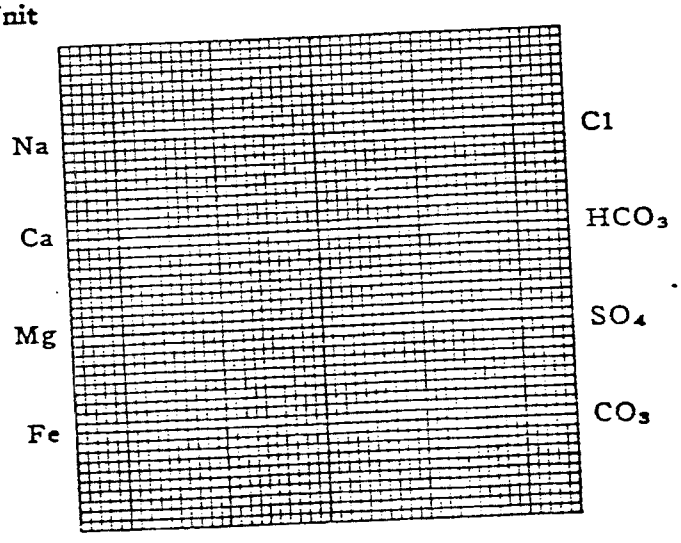
Specific resistance @ 68°F.:
Observed 0.087 ohm-meters
Calculated 0.078 ohm-meters

WATER ANALYSIS PATTERN

Scale
MEQ per Unit

Sample above described





(Na value in above graphs includes Na, K, and Li)
NOTE: Mg/1=Milligrams per liter Meq/1= Milligram equivalents per liter
Sodium chloride equivalent=by Dunlap & Hawthorne calculation from components

CHECKLIST FOR INJECTION WELL APPLICATION AND FILE REVIEW

Operator: Phillips Well No. Rattlesnake Unit 12W13

County: San Juan T 41S R 23E Sec. 12 API# 43-037-16404

New Well ___ Conversion ___ Disposal Well ___ Enhanced Recovery Well X

	YES	NO
UIC Forms Completed	✓	
Plat including Surface Owners, Leaseholders, and wells of available record	✓	
Schematic Diagram	✓	
Fracture Information	✓	
Pressure and Rate Control	✓	
Adequate Geologic Information	✓	
Fluid Source	Desert Creek	
Analysis of Injection Fluid	Yes ✓	No ___ TDS 85655
Analysis of Water in Formation to be injected into	Yes ✓	No ___ TDS 103633
Known USDW in area	Wingate	Depth 1550
Number of wells in area of review	7	Prod. 6 P&A 1
		Water 0 Inj. 0
Aquifer Exemption	Yes ___	NA ✓
Mechanical Integrity Test	Yes ___	No ✓
	Date ___	Type ___

Comments: _____

Reviewed by: _____

Form 3160-5
(November 1983)
(Formerly 9-331)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE* (Other instructions reverse side)

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

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.)

5. LEASE DESIGNATION AND SERIAL NO.: 14-20-603-246

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: Navajo

1. OIL WELL ☐ GAS WELL ☐ OTHER: Water Injection Well

7. UNIT AGREEMENT NAME: SW-I-4192

2. NAME OF OPERATOR: Phillips Oil Company

8. FARM OR LEASE NAME: Ratherford Unit

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

9. WELL NO.: 12W13

RECEIVED
APR 16 1985
DIVISION OF OIL GAS & MINING

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 1980' FSL, 4620' FEL

10. FIELD AND POOL, OR WILDCAT: Greater Aneth

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 12-T41S-R23E

14. PERMIT NO.: 43-037-16404

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 4572.6 RKB

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	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	X	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other)			
(Other) Plug Back to Zone I				(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.)*

It is proposed to convert Ratherford Unit #12W13, an open hole completion (5345'-5515'), from Zone I and II to Zone I water injection. After plugging back to Zone I @ 5400', the well will be acidized with 4000 gallons of 28% HCL, and returned to injection.

A 10'x8'x6' fenced pit will be constructed on location in a previously disturbed area. Upon completion of the workover, the pit will be dried and recovered.

5- BLM, Farmington, NM
12- Utah O&G CC, Salt Lake City, Utah
1- P. J. Adamson
1- B. Conner, 318B-TRW
1- J. R. Weichbrodt
1- C. M. Anderson
1- File RC

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

SIGNED: A. E. Stuart — TITLE: Area Manager — DATE: April 11, 1985

(This space for Federal or State office use)

APPROVED BY: Glen B. Feight — TITLE: Vic Manager — DATE: 4/18/85

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions 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.

Mobil Oil Corporation

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

May 14, 1986

RECEIVED
MAY 16 1986
DIVISION OF
OIL, GAS & MINING

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

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

GEARHART

X-Y CALIPER

RECEIVED
MAY 16 1986
DIVISION OF
OIL, GAS & MINING

FILING NO.

COMPANY PHILLIPS OIL COMPANY

WELL RATHERFORD UNIT #12-W13

FIELD GREATER ANETH

COUNTY SAN JUAN STATE UTAH

LOCATION

W.I.
43-037-16404

SEC 12 TWP 41S RGE 23E

OTHER SERVICES

PERMANENT DATUM ELEV

LOG MEASURED FROM K.B. 12 FT ABOVE PERM DATUM

DRILLING MEASURED FROM

ELEV K B
D F
G L

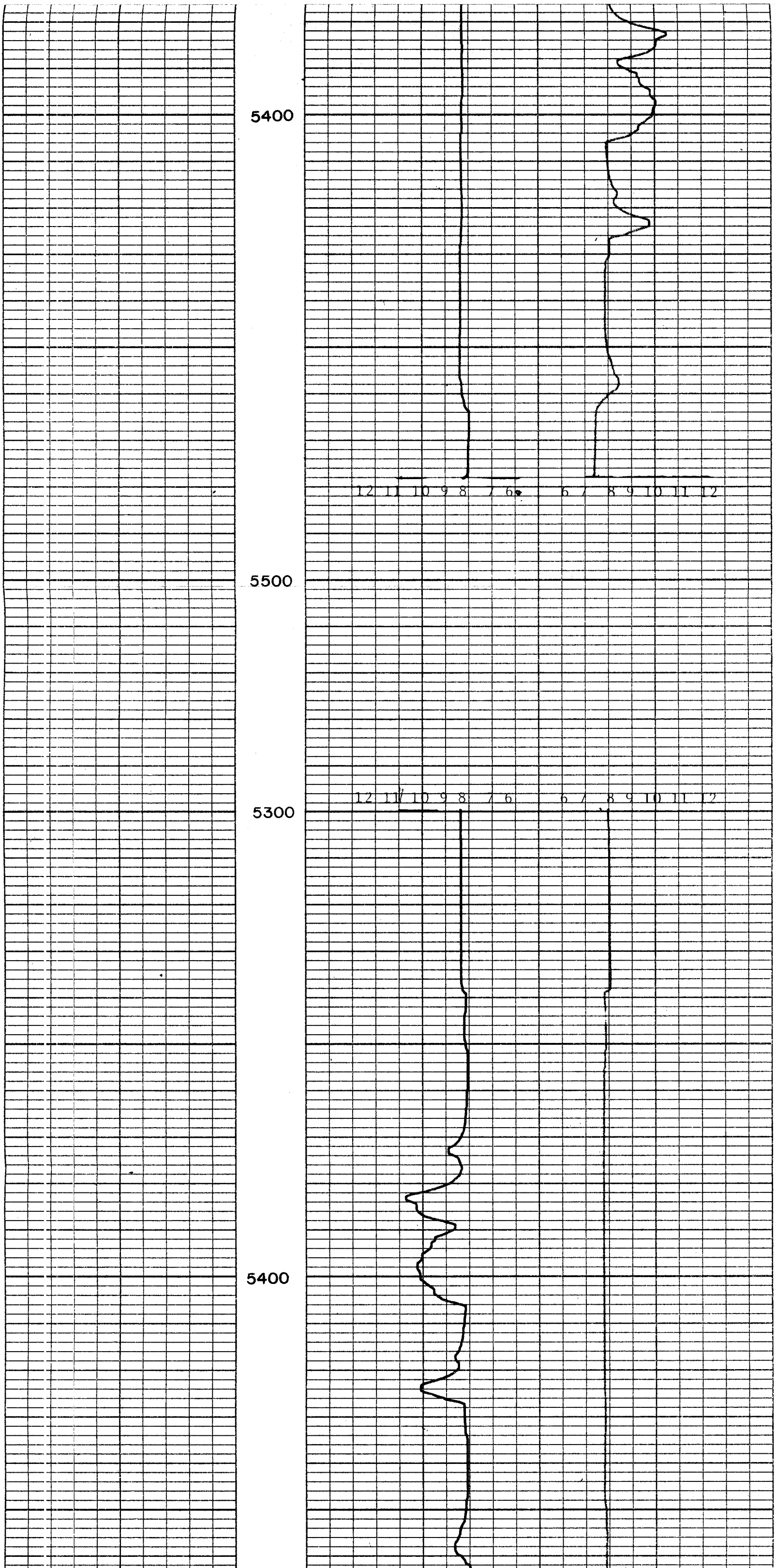
Date	04-29-86		
Run No.	ONE		
Type Log	X-Y CALIPER		
Depth-Driller			
Depth-Logger			
Bottom logged interval			
Top logged interval			
Type fluid in hole	H_2O		
Max rec. temp., deg. F.			
Operating rig time	45 MIN.		
Recorded by	NORTON		
Witnessed by	MR. DON PRESNELL		

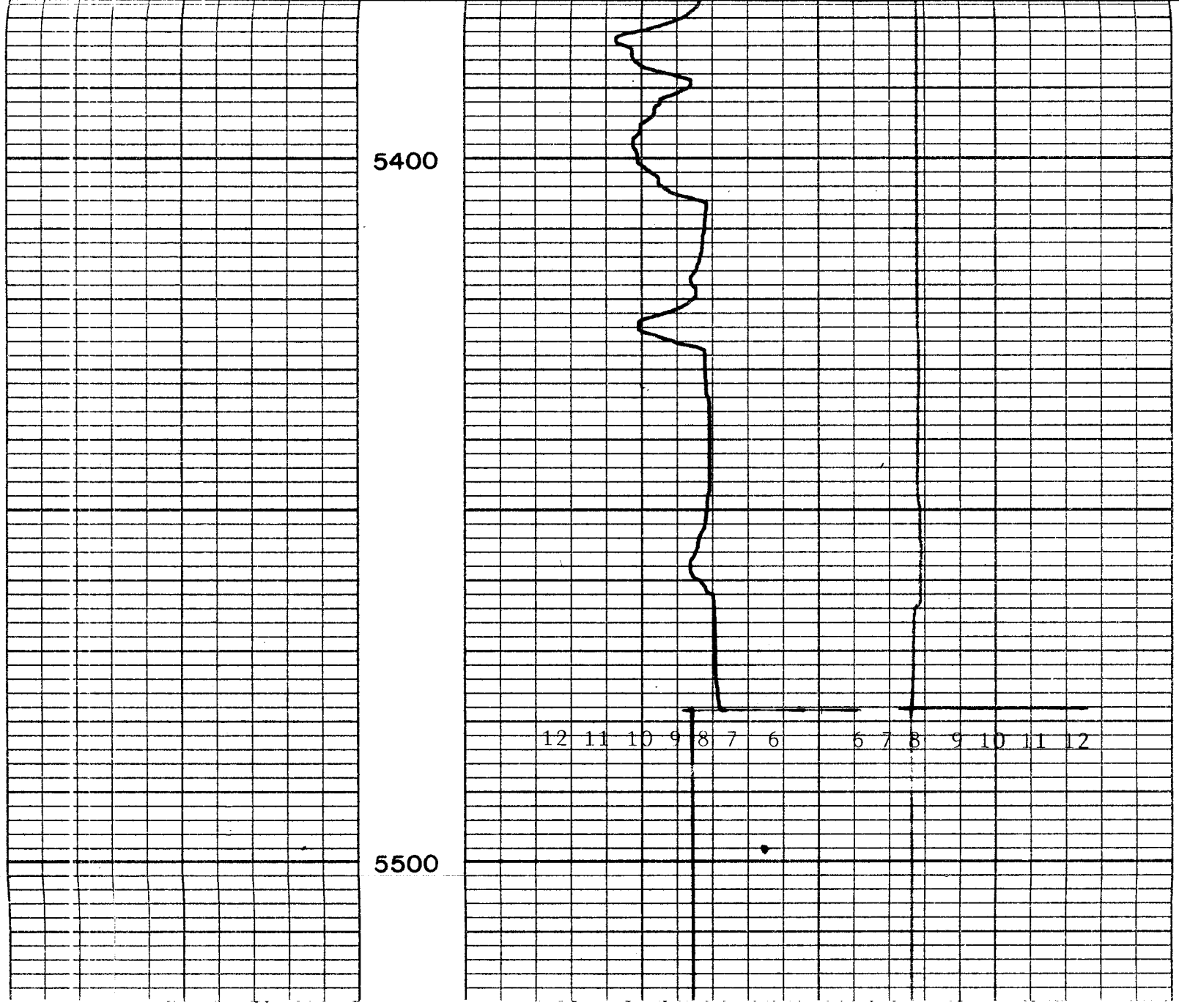
Bore-Hole Record				Tubing Record			
Run No.	Bit	From	To	Size	Wgt.	From	To

Casing Record				Liner			
Size	Wgt.	From	To	Size	Wgt.	From	To

FORM V-110-H R-9/82

NOTICE: Gearhart Industries, Inc. cannot and does not guarantee the accuracy or correctness of any log data or of any interpretation thereof and shall not be liable or responsible for any loss, cost, damage or expense incurred or sustained by Customer resulting from any log data or interpretation made by Gearhart Industries, Inc. or any of its agents, servants or employees. Neither log data nor interpretation thereof should be relied upon as the sole basis for any drilling, completion, well treatment or production decision or any other procedure. Unless there is presently in effect a master or other specific or general contract intended to extend and apply hereto, this Log is provided in accordance with Gearhart Industries, Inc.'s General Terms and Conditions as set out in its current price schedule.
GEARHART INDUSTRIES, INC.


5400
12 11 10 9 8 7 6
6 7 8 9 10 11 12
5500
12 11 10 9 8 7 6
6 7 8 9 10 11 12
5300
5400


5400
5500
12 11 10 9 8 7 6
6 7 8 9 10 11 12

UTAH DIVISION OF OIL, GAS AND MINING
CASING-BRADENHEAD TEST

OPERATOR: Phillips

FIELD: Greater Aneth LEASE: Ratherford Unit

WELL # 12W13 SEC. 12 TOWNSHIP 41S RANGE 23E

STATE (FED.) FEE DEPTH 5515 TYPE WELL Inj.-Wtr MAX. INJ. PRESS.

TEST DATE 6/17/86

CASING STRING	SIZE	SET AT	CMT	PRESSURE READINGS	REMARKS	FUTURE
SURFACE	20"	94'	125sx			
INTERMEDIATE	13 3/8	1349	350		81 recent workover	
PRODUCTION	8 5/8	5345				
TUBING	2 7/8	5303				

Tubing Packer-Baker model AC Tension Pkr at 5303'

CASING STRING	SIZE	SET AT	CMT	PRESSURE READINGS	REMARKS	FUTURE
SURFACE						
INTERMEDIATE						
PRODUCTION						
TUBING						

CASING STRING	SIZE	SET AT	CMT	PRESSURE READINGS	REMARKS	FUTURE
SURFACE						
INTERMEDIATE						
PRODUCTION						
TUBING						

Form 3160-5
(November 1983)
(Formerly 9-331)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

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

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.)

5. LEASE DESIGNATION AND SERIAL NO.: 14-20-603-246

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: Navajo

1. OIL WELL ☐ GAS WELL ☐ OTHER: Water Injector

7. UNIT AGREEMENT NAME: SW-I-4192

2. NAME OF OPERATOR: Phillips Petroleum Company

8. FARM OR LEASE NAME: Ratherford Unit

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

9. WELL NO.: 12W13

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.)
At surface: 1980' FSL & 4620' FEL, NW SW

API #43-037-16040

10. FIELD AND POOL, OR WILDCAT: Greater Aneth

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 12-T41S-R23E

14. PERMIT NO.:

15. ELEVATIONS (Show whether DF, RT, GR, etc.): RKB 4573'

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	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other) Plugback to Zone I			XX
(Other)				(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)* April 25, 1986 through June 19, 1986

OLD PBTD 5515, NEW PBTD 5413.
MI WS Unit 4/25/86 to Squeeze Zone II Open Hole 5430-5515', Acidize Zone I and Return to Injection. Tagged fill at 5311', cleaned out to 5490'. Set pkr at 5424'. Tested for communication between Zones I & II, no communication. Cmtd Lower Zone II w/200 sx Class "B" w/1% $CaCl_2$ & 0.6% D-127. Formation squeezed at 2350 psi after pumping 20 bbls cmt slurry below pkr. Ran bit and scraper, tag PBTD at 5413'. Staged 500 gal 28% HCL to clean out cmt and scale. Acidized Zone I w/5500 gal 28% HCL w/2 gal/1000 A-250 inhibitor, 4 gal/1000 F-78 fines suspender, 6 gal/1000 U-42 iron sequestering agent and 4 gal/1000 W52.1 non-emulsifier. Used 2 stages divert and rock salt. Ran 169 jts 2-3/8" tbg set at 5204'. Released Rig 5/8/86. Returned to Injection 5/19/86.

Injection Before (Zones I & II) - Shut-in 11/1/84
Injection After (Zone I) - Injecting 213 BWPD at 2350 psi.

RECEIVED
JUL 28 1986
DIVISION OF
OIL, GAS & MINING

4-BLM, Farmington, NM
2-Utah O&G CC, SLC, UT
1-M. Williams, B'Ville
1-J. Landrum, Denver
1-J. Reno, Cortez
1-Chieftain
1-Mobil Oil
1-Texaco, Inc.
1-Chevron USA
1-File RC

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

SIGNED D. C. Gill for D. C. Gill TITLE Area Manager DATE July 25, 1986

(This space for Federal or State office use)

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

*See Instructions 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.

Form 3160-5
(November 1983)
(Formerly 9-331)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

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

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.)

5. LEASE DESIGNATION AND SERIAL NO.

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: SW-I-4192

1. OIL WELL ☐ GAS WELL ☐ OTHER WATER INJECTION & WATER SUPPLY WELLS

7. UNIT AGREEMENT NAME: RATHERFORD UNIT #7960041920

2. NAME OF OPERATOR: PHILLIPS PETROLEUM COMPANY

8. FARM OR LEASE NAME:

3. ADDRESS OF OPERATOR: 152 N. DURBIN, 2ND FLOOR, CASPER, WYOMING 82601

9. WELL NO.: VARIOUS (see attached)

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: SEE ATTACHED

RECEIVED MAR 20 1989 DIVISION OF OIL, GAS & MINING

10. FIELD AND POOL, OR WILDCAT: GREATER ANETH

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sections 1 thru 30 T41S - R23E & 24E

14. PERMIT NO.

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

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	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other) CHANGE OF OWNERSHIP			XX
(Other)				(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

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

This is to advise all Water Injection and Water Supply Wells on the Ratherford Unit, listed on the attached sheet, were sold to Phillips Petroleum Company, effective August 1, 1985.

(former Operator - Phillips Oil Company)

3 - BLM, Farmington, NM
2 - ~~Utah~~ O&G CC, SLC, UT
1 - File

41-23-12 · 037-16904

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

SIGNED S. H. Oden (S. H. Oden) TITLE District Superintendent DATE March 17, 1989

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions 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.

Form 3160-5
December 1989

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires September 30, 1990

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.: 14-20-603-246
6. If Indian, Allottee or Tribe Name: Navajo Tribal

SUBMIT IN TRIPLICATE

OCT 09 1990

7. If Unit or CA, Agreement Designation: SW-I-4192 Ratherford Unit
1. Type of Well: ☐ Oil Well ☐ Gas Well ☒ Other Water Injection
8. Well Name and No.: Ratherford Unit #12W13
2. Name of Operator: Phillips Petroleum Company
9. API Well No.: 43-037-16404
3. Address and Telephone No.: P. O. Box 1150, Cortez, CO 81321 (303)565-3426
10. Field and Pool, or Exploratory Area: Greater Aneth
4. Location of Well (Footage, Sec., T., R., M., or Survey Description): 1980' FSL & 4620' FEL, NW SW, Sec. 12-T41S-R23E
11. County or Parish, State: San Juan County, Utah

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

TYPE OF SUBMISSION	TYPE OF ACTION	
☐ Notice of Intent	☐ Abandonment	☐ Change of Plans
☒ Subsequent Report	☐ Recompletion	☐ New Construction
☐ Final Abandonment Notice	☐ Plugging Back	☐ Non-Routine Fracturing
	☐ Casing Repair	☐ Water Shut-Off
	☐ Altering Casing	☐ Conversion to Injection
	☒ Other Clean Out Well, Perform UIC Test	

(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.)*

September 4, 1990 Through September 10, 1990

MI & RU well service unit 9/4/90. ND wellhead, NU BOP. Rel Baker 8-5/8" Lok-Set pkr. COOH w/162 jts 2-3/8" Rice Duolined tbg & pkr. GIH w/bit & scraper on workstring. Tagged fill at 5335'. Cleaned out well to PBTD 5413'. COOH w/workstring, bit, and scraper. GIH w/ 8-5/8" Baker Lok-Set pkr w/on-off tool & test plug and 162 jts 2-3/8" Rice Duolined tbg. Set pkr at 5219' and pressured annulus to 1000 psi, OK. Pmpd pkr fluid (309 bbls wtr w/1.5 drums Well Chem WA-840). Engaged on-off tool, ND BOP, NU wellhead. Pressured annulus to 1020 psi for 45 min for UIC test. Held OK. Hooked up inj line, RD & MO well service unit, and returned well to injection 9/10/90.

Injection Rate Prior to Work - 41 BWPD @ 2550 psi
Injection Rate After Work - 57 BWPD @ 2650 psi

Distribution

5 - BLM, Farmington	1 - N. Anstine	1 - Chieftain	1 - Chevron
2 - Utah O&GCC	1 - S. H. Oden	1 - Mobil Oil	1 - PPCO, Houston
1 - EPA, Denver	1 - P. J. Konkel	1 - Texaco, Inc.	1 - PPCO, Cortez, RC

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

Signed S. H. Oden S. H. Oden Title District Superintendent Date 9/28/90

(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

FORM 10

STATE OF UTAH
DIVISION OF OIL, GAS AND MINING

MONTHLY OIL AND GAS PRODUCTION REPORT

RECEIVED
AUG 16 1993
DIVISION OF
OIL, GAS & MINING

OPERATOR NAME AND ADDRESS:

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

OPERATOR ACCOUNT NUMBER: N0772

REPORT PERIOD (MONTH/YEAR): 6 / 93

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

USM 8-18-93

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 Konkel Telephone Number: 505 599-3452

(6/93)

FORM 11

STATE OF UTAH
/ISION OF OIL, GAS AND MINING

MONTHLY OIL AND GAS DISPOSITION REPORT

OPERATOR NAME AND ADDRESS:

LD Sheffield
~~BRIAN BERRY~~
~~M E P N A~~ MOBIL
~~POB 219031 1807A RENTWR~~ 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. fc

ENTITY NUMBER	PRODUCT	GRAVITY BTU	BEGINNING INVENTORY	VOLUME PRODUCED	DISPOSITIONS TRANSPORTED	USED ON SITE	FLARED/VENTED	OTHER	ENDING INVENTORY
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 ~~ASSO~~ 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: Lowell B Sheffield

Telephone Number: ~~214 658 2528~~ 303 565 2212

(6/93)

FORM=NR0003.FRM 07/2

WELL #	API#	LEASE #	SEC., T, R	LOCATION OF WELL	
01W-13	43-037-15838	14-20-603-246A	SEC. 1, T41S, R23E	NW/SW 1980 FSL; 660 FWL	
01-14	43-037-31162	14-20-603-246A	SEC. 1, T41S, R23E	SW/SW 660 FSL; 660 FWL	
01W-24	43-037-15839	14-20-603-246	SEC. 1, T41S, R23E	SE/SW 651 FSL; 3300 FEL	
01-34	43-037-16385	14-20-603-246A	SEC. 1, T41S, R23E	SW/SE 4147 FNL; 1980 FEL	
01W-44	43-037-15840	14-20-603-246A	SEC. 1, T41S, R23E	660 FSL; 661 FEL	PA'd
02W-44	43-037-16386	14-20-603-246A	SEC. 2, T41S, R23E	SE/SE 810 FNL; 5110' FWL	
03-14	43-037-15124	14-20-603-5445	SEC. 3, T41S, R24E	660 FSL; 660 FEL	
03-12	43-037-15620	14-20-603-6506	SEC. 3, T41S, R24E	SW/NW 2140 FNL; 660 FWL	
03W-42	43-037-16388	14-20-603-6505	SEC. 3, T41S, R24E	SW/NE 1980 FNL; 660 FEL	
03-44	43-037-15031	14-20-603-6504	SEC. 3, T41S, R24E	520 FSL; 820 FEL	
04-14	43-037-16163	14-20-603-5446	SEC. 4, T41S, R24E	500 FSL; 600 FEL	
04-34	43-037-16164	14-20-603-4035	SEC. 4, T41S, R24E	660 FSL; 1980 FEL	
05-34	43-037-15983	14-20-603-368	SEC. 5, T41S, R24E	SW/SE 612 FSL; 1990 FEL	
05W-43	43-037-16392	14-20-603-368	SEC. 5, T41S, R24E	1400 FSL; 990 FEL	PA'd
06W-14	43-037-15984	14-20-603-368	SEC. 6, T41S, R24E	SW/SW 660; FSL; 660 FWL	
06W-23	43-037-16393	14-20-603-368	SEC. 6, T41S, R24E	1830 FSL; 1895 FWL	PA'd
07-11	43-037-31163	14-20-603-368	SEC. 7, T41S, R24E	NW/NW 660 FNL; 710 FWL	
07W-12	43-037-15985	14-20-603-368	SEC. 7, T41S, R24E	SW/NW 2140 FNL; 585 FWL	
07-13	43-037-31164	14-20-603-368	SEC. 7, T41S, R24E	NW/SW 2110 FSL; 740 FWL	
07W-14	43-037-15986	14-20-603-368	SEC. 7, T41S, R24E	SW/SW 1065 FSL; 660 FWL	
07W-21	43-037-16394	14-20-603-368	SEC. 7, T41S, R24E	710 FNL; 1820 FWL	
07-22	43-037-31165	14-20-603-368	SEC. 7, T41S, R24E	SE/NW 1980 FNL; 1980 FWL	
07W-23	43-037-15987	14-20-603-368	SEC. 7, T41S, R24E	NE/SW 1980 FSL 1980 FWL	
07-24	43-037-31166	14-20-603-368	SEC. 7, T41S, R24E	SE/SW 880 FSL; 2414 FWL	
07W-32	43-037-15988	14-20-603-368	SEC. 7, T41S, R23E	SW/NE 1980 FNL; 1980 FEL	
07-33	43-037-31167	14-20-603-368	SEC. 7, T41S, R24E	NW/SE 2105 FSL; 1876 FEL	
07W-34	43-037-15989	14-20-603-368	SEC. 7, T41S, R24E	710 FSL; 2003 FEL	
07W-41	43-037-15990	14-20-603-368	SEC. 7, T41S, R24E	NE/NE 585 FNL; 770 FEL	
07W43	43-037-16395	14-20-603-368	SEC. 7, T41S, R24E	2110 FSL; 660 FEL	
07-44	43-037-31189	14-20-603-368	SEC. 7, T41S, R24E	SE/SE 737 FSL; 555 FEL	
08-12	43-037-15991	14-20-603-368	SEC. 8, T41S, R24E	SW/NW 1909 FNL; 520 FWL	
08W-14	43-037-15992	14-20-603-368	SEC. 8, T41S, R24E	745 FSL; 575 FWL	
08-21	43-037-15993	14-20-603-368	SEC. 8, T41S, R24E	616 FNL; 1911 FWL	
08-23	43-037-15994	14-20-603-368	SEC. 8, T41S, R24E	NE/NW 1920 FSL; 2055 FWL	
08-32	43-037-15995	14-20-603-368	SEC. 8, T41S, R24E	SW/NE 1980 FNL; 1980 FEL	
08-34	43-037-15996	14-20-603-368	SEC. 8, T41S, R24E	SW/SE 660 FSL; 1980 FEL	
08-41	43-037-15997	14-20-603-368	SEC. 8, T41S, R24E	NE/NE 660 FNL; 660 FEL	
08W-43	43-037-16396	14-20-603-368	SEC. 8, T41S, R24E	1980 FSL; 660 FEL	
09W-23	43-037-16398	14-20-603-5046	SEC. 9, T41S, R24E	NW/SE 1980 FSL; 1980 FWL	
09-12	43-037-15126	14-20-603-5045	SEC. 9, T41S, R24E	1865 FNL; 780 FWL	
09W-21	43-037-16397	14-20-603-5045	SEC. 9, T41S, R24E	660 FNL; 2080 FWL	
09-14A	43-037-15127	14-20-603-5046	SEC. 9, T41S, R24E	710 FSL; 660 FWL	
09-32	43-037-16165	14-20-603-4035	SEC. 9, T41S, R24E	1980 FNL; 1980 FEL	PA'd
09W-41	43-037-16399	14-20-603-4035	SEC. 9, T41S, R24E	660 FNL; 660 FEL	PA'd
09W-43	43-037-16400	14-20-603-4043	SEC. 9, T41S, R24E	1980 FSL; 660 FEL	
10W-23	43-037-16402	14-20-603-4043	SEC. 10, T41S, R24E	1980 FSL; 1980 FWL	
10-14	43-037-15713	14-20-603-4043	SEC. 10, T41S, R24E	510 FSL; 710 FWL	
10-12	43-037-15712	14-20-603-4043	SEC. 10, T41S, R24E	660 FWL; 1980 FNL	
10W-21	43-037-16401	14-20-603-4043	SEC. 10, T41S, R24E	810 FNL; 1980 FWL	
10-34	43-037-16166	14-20-603-4037	SEC. 10, T41S, R24E	620 FSL; 1860 FEL	
10W-43	43-037-16403	14-20-603-4037	SEC. 10, T41S, R24E	1980 FSL; 550 FEL	
11-41	43-037-31544	14-20-603-246A	SEC. 11, T41S, R23E	NE/NE 860 FNL; 350 FEL	
11-42W	43-037-15841	14-20-603-246	SEC. 11, T41S, R23E	3290 FNL; 4617 FEL	
11-43	43-037-31622	14-20-603-246A	SEC. 11, T41S, R23E	1980 FSL; 660 FEL	
11W-44	43-037-15842	14-20-603-246A	SEC. 11, T41S, R23E	SE/SE 660 FSL; 558 FEL	
12W-11	43-037-15843	14-20-603-246A	SEC. 12, T41S, R23E	NW/NW 678 FNL; 4620 FEL	
12-12	43-037-31190	14-20-603-246A	SEC. 12, T41S, R23E	SW/NW 1850 FNL; 660 FWL	
*12W-13	43-037-16404	14-20-603-246A	SEC. 12, T41S, R23E	1980 FSL; 4620 FEL	
12-14	43-037-15844	NA	SEC. 12, T41S, R23E	660 FNL; 4622 FWL	14-20-603-246
12-21	43-037-31201	14-20-603-246A	SEC. 12, T41S, R23E	NE/NW 660 FNL; 1980 FWL	
12W-22	43-037-15845	14-20-603-246	SEC. 12, T41S, R23E	NA	SENW 1920 FNL 2080 FWL
12-23	43-037-15846	14-20-603-246A	SEC. 12, T41S, R23E	1958 FNL; 3300 FWL	
12W-24	43-037-31151	14-20-603-246A	SEC. 12, T41S, R23E	775 FSL; 1980	
12-32	43-037-31203	14-20-603-246A	SEC. 12, T41S, R23E	SW/NE 1820 FNL; 1820 FEL	
12W-33	43-037-15848	14-20-603-246A	SEC. 12, T41S, R23E	NW/SE 1957 FSL; 1981 FEL	
12-34	43-037-31126	14-20-603-246A	SEC. 12, T41S, R23E	SW/SE 675 FSL; 1905 FEL	
12-41	43-037-15849	14-20-603-246A	SEC. 12, T41S, R23E	656 FNL; 660 FEL	
12W-42	43-037-15850	14-20-603-246A	SEC. 12, T41S, R23E	3275 FSL; 662 FEL	

RECEIVED
SEP 15 1993
DIVISION OF
OIL, GAS & MINING

FORM 9

STATE OF UTAH
DIVISION OF OIL, GAS AND MINING

5. LEASE DESIGNATION & SERIAL NO.

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.)

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: NAVAJO TRIBAL

1. OIL WELL ☐ GAS WELL ☐ OTHER

7. UNIT AGREEMENT NAME: RATHERFORD UNIT

2. NAME OF OPERATOR: MOBIL OIL CORPORATION

RECEIVED SEP 13 1993

8. FARM OR LEASE NAME

3. ADDRESS OF OPERATOR: P. O. BOX 633 MIDLAND, TX 79702

9. WELL NO.

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

DIVISION OF OIL, GAS & MINING

10. FIELD AND POOL, OR WILDCAT: GREATER ANETH

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

14. API NO.

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

12. COUNTY: 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	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other) CHANGE OF OPERATOR			☐
(Other)				(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			
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:

See Instructions On Reverse Side

(3/89)

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.

Re: Rathbird Unit (GC)

RECEIVED
BLM
27 AM 11:44
070 FARMINGTON, NM
MINERALS DIVISION
1 92
3
2
GPS
ALL SUPV.
FILES

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

ARES/543

JUL 2 0 1993

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

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

93 JUN 27 AM 11:44

070 FARMINGTON, NM

DESIGNATION OF OPERATOR

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

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

and, pursuant to the terms of the Ratherford 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 Ratherford 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 Ratherford 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 Ratherford Unit.

Phillips Petroleum Company

June 17, 1993 By: M. B. Frost, J.
Attorney-in-Fact

Mobil Exploration and Producing
North America Inc.

June 11, 1993 By: B. D. Martiny
Attorney-in-Fact B.D. MARTINY

ACTING AREA DIRECTOR 7/9/93
APPROVED BY TITLE DATE

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, 19921
SCHEDULE OF TRACT PERCENTAGE PARTICIPATION

Tract Number	Description of Land	Serial Number and Effective Date of Lease	Tract Percentage Participation
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) _____

XXX Other

OPERATOR CHANGE

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

2. DOGM Employee (name) L. CORDOVA (Initiated Call XXX)

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 OPERATORED BY MEPNA, CURRENTLY REPORTED OUT OF DALLAS (MCELMO CREEK).

STATE OF UTAH
DIVISION OF OIL, GAS AND MINING

OCT 25 1993

TRANSFER OF AUTHORITY TO INJECT - UIC FORM 5

Well name and number: _____

Field or Unit name: RATHERFORD UNIT API no. _____

Well location: QQ ____ section ___ township ___ range ___ county _____

Effective Date of Transfer: July 1, 1993

CURRENT OPERATOR

Transfer approved by:

Name Ed Hasely Company Phillips Petroleum Company

Signature Ed Hasely Address 5525 HWY. 64

Title Environmental Engineer Farmington, NM 87401

Date October 22, 1993 Phone (505) 599-3460

Comments:

NEW OPERATOR

Transfer approved by:

Name Shirley Todd Company Mobil Exploration & Producing North America

Signature Shirley Todd Address P O Box 633

Title Env. & Reg. Technician Midland, TX 79702

Date October 7, 1993 Phone (915) 688-2585

Comments:

(State use only)
Transfer approved by _____ Title UIC Manager

Approval Date 10-27-93

Lisha Cordova (801) 538-5340

(3/89)

BEFORE THE OIL AND GAS CONSERVATION COMMISSION OF THE STATE OF UTAH

APPLICATION OF PHILLIPS PETROLEUM COMPANY FOR THE APPROVAL OF THE UNIT OPERATIONS AND PRESSURE MAINTENANCE PROGRAM FOR THE RATHERFORD UNIT IN THE GREATER ANETH AREA, SAN JUAN COUNTY, UTAH	)	CAUSE NO. 63

O R D E R

This Cause came on for hearing before the Oil and Gas Conservation Commission of the State of Utah at 10 o'clock a. m. on Wednesday, September 13, 1961, in the Crystal Room, Hotel Newhouse, Fourth South at Main Street, Salt Lake City, Utah, pursuant to notice duly and regularly given. The entire Commission, except Walter G. Mann, was present, Edward W. Clyde presiding. Appearances were made as follows: Cecil C. Hamilton, attorney, on behalf of Phillips Petroleum Company; Clair M. Senior, attorney, on behalf of Texaco, Inc.; Gordon Mayberry, attorney, on behalf of Continental Oil Company; R. R. Robison on behalf of Shell Oil Company. Others present included Carl Trawick, on behalf of United States Geological Survey; and J. R. White, on behalf of Texaco, Inc.

Evidence in support of the application was introduced by Phillips Petroleum Company, the applicant and Unit Operator of the Ratherford Unit, which embraces as the unit area the following described land in San Juan County, State of Utah, to wit:

TOWNSHIP 41 SOUTH, RANGE 23 EAST, SLBM

Section 1:	All	Sections 12 and 13:	All
Section 2:	S/2	Section 14:	S/2
Section 11:	E/2	Section 24:	All

TOWNSHIP 41 SOUTH, RANGE 24 EAST, SLBM

Section 3:	SW/4	Sections 15 through 21:	All
Section 4:	S/2	Section 22:	NW/4 and W/2 of the SW/4
Sections 5 through 9:	All		
Section 10:	S/2 and NW/4 and W/2 of NE/4		
Section 11:	S/2 of SW/4	Section 23:	NW/4 and W/2 of NE/4 and W/2 of SW/
Section 14:	W/2		
		Section 29 and 30:	All
		Section 31:	W/2
		Section 32:	W/2

R. R. Robison on behalf of Shell Oil Company stated that (as contemplated by paragraph No. 5 of the Commission's order of February 24, 1959, in Cause No. 17 authorizing the drilling of certain test wells) Shell would submit to the Commission, as arbiter, the question as between Shell and Superior Oil Company

of the monetary value, if any, to be attributed to three test wells drilled within the Ratherford Unit area pursuant to said order of February 24, 1959.

No objection to the granting of the application was filed or expressed. The Shell Oil Company, Texaco, Inc. and Continental Oil Company expressed their support of the application of Phillips Petroleum Company.

FINDINGS OF FACT

The Commission finds that:

1. The unitized operation of the Ratherford Unit Area will enable pressure maintenance operations to be initiated and permit such Area to be operated in a manner which will prevent waste, protect correlative rights and result in greater ultimate recovery of oil and gas.

2. The Ratherford Unit Agreement has been approved by the various signatory parties as fair, reasonable and acceptable.

3. The water injection pressure maintenance program proposed by the applicant appears to be proper and designed to result in the greatest economic recovery of oil and gas to the end that all concerned, including the general public, may realize and enjoy the greatest good from the oil and gas resources of the unitized lands.

O R D E R

THEREFORE, IT IS ORDERED BY THE COMMISSION, and subject to its continuing jurisdiction, that:

1. Unit operation of the Ratherford Unit Area under the Ratherford Unit Agreement is approved.

2. The plan and program of water injection pressure maintenance operations proposed by applicant in its application filed herein should be and the same is hereby approved and the unit operator is authorized to proceed with and under such plan and program as soon as the Ratherford Unit Agreement becomes effective and operative.

3. If, at any time or from time to time, it appears necessary or desirable to the unit operator to alter or modify the hereby approved plan of pressure maintenance, any such alteration or modification shall be submitted for

and shall be subject to approval by the Commission or its delegated representative, which approval may be given without notice or hearing, unless otherwise ordered or directed by the Commission.

Dated this 13th day of September, 1961.

THE OIL AND GAS CONSERVATION
COMMISSION OF THE STATE OF UTAH

Edward W. Clyde, Commissioner presiding

C. R. Henderson, Chairman

M. V. Hatch, Commissioner

C. S. Thomson, Commissioner

Walter G. Mann, Commissioner

Division of Oil, Gas and Mining
OPERATOR CHANGE WORKSHEET

Routing:

1-	LEC/7-SJ
2-	DTS/8-FILE
3-	VLC
4-	RJF
5-	LEC
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.

XX 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) MEPNA
(address) PO DRAWER G
CORTEZ, CO 81321
GLEN COX (915)688-2114
phone (303) 565-2212
account no. N7370

FROM (former operator) PHILLIPS PETROLEUM COMPANY
(address) 5525 HWY 64 NBU 3004
FARMINGTON, NM 87401
PAT KONKEL
phone (505) 599-3452
account no. N0772(A)

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

Name	API	Entity	Sec	Twp	Rng	Lease Type
SEE ATTACHED	43-037-16404					

OPERATOR CHANGE DOCUMENTATION

Lec 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)

Lec 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: _____.

Lec 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.

Lec 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)

Lec 6. Cardex file has been updated for each well listed above. (O&G wells 10-6-93) (WIW's 10-26-93)

Lec 7. Well file labels have been updated for each well listed above. (O&G wells 10-6-93) (WIW's 10-26-93)

Lec 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)

Lec 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.

– OVER –

PERATOR CHANGE WORKSHEET (CONTINUED) Initial each item when completed. Write N/A if item is not applicable.

NTITY REVIEW

Lec 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.

OND VERIFICATION (Fee wells only)

Lec/N/A 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.

DTS 11-10-93

N/A 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 19 93.

FILING

Lec 1. Copies of all attachments to this form have been filed in each well file.

Lec 2. The original of this form and the original attachments have been filed in the Operator Change file.

COMMENTS

931006 BIA/Blm Approved 7-9-93.

Form 3160-5
(June 1990)

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

SUBMIT IN TRIPLICATE

5. Lease Designation and Serial No.
14-20-603-246A

6. If Indian, Allottee or Tribe Name
NAVAJO TRIBAL

7. If Unit or CA, Agreement Designation
RATHERFORD UNIT

1. Type of Well
[ ] Oil Well [ ] Gas Well [X] Other

8. Well Name and No.
RATHERFORD UNIT 12W-13

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

9. API Well No.
43-037-16404

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

10. Field and Pool, or exploratory Area
GREATER ANETH

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
1980' FSL, 4620' FEL; SEC. 12, T41S, R23E

11. County or Parish, State
SAN JUAN, UT

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

TYPE OF SUBMISSION	TYPE OF ACTION	
[ ] Notice of Intent	[ ] Abandonment	[ ] Change of Plans
[X] Subsequent Report	[ ] Recompletion	[ ] New Construction
[ ] Final Abandonment Notice	[ ] Plugging Back	[ ] Non-Routine Fracturing
	[ ] Casing Repair	[ ] Water Shut-Off
	[ ] Altering Casing	[ ] Conversion to Injection
	[ ] Other ACIDIZE	[ ] 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.)*

08/24/93 MIRU. PRESS TEST TO 2000 PSI/ HELD OK. WASH T/5410'. CIRC WELL CLEAN. PUMP 4000 GALS 15% HCL ACROSS PERF INT F/5348-80'. RDMO. RETURN TO INJECTION.

14. I hereby certify that the foregoing is true and correct
Signed D Irwin for Shirley Todd Title ENV. & REG. TECHNICIAN Date 5-20-94

(This space for Federal or State office use)
Approved by _____ Title _____ Date Tax Credit
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

STATE OF UTAH
INVENTORY OF INJECTION WELLS

OPERATOR	API NO.	WELL	TNS	RGE	SE	WELLTYPE	INDIAN COUNT
MEPNA (MOBIL	43-037-15506	L-21	41S	25E	18	INJW	Y
MEPNA (MOBIL	43-037-16358	K-24	41S	25E	18	INJW	Y
MEPNA (MOBIL	43-037-30400	K-22X	41S	25E	18	INJI	Y
MEPNA (MOBIL	43-037-15499	J-21	41S	25E	18	INJW	Y
MEPNA (MOBIL	43-037-15508	L-25	41S	25E	19	INJW	Y
MEPNA (MOBIL	43-037-15839	1W24	41S	23E	1	INJW	Y
MEPNA (MOBIL	43-037-15838	1W13	41S	23E	1	INJW	Y
MEPNA (MOBIL	43-037-16386	2W44	41S	23E	2	INJW	Y
MEPNA (MOBIL	43-037-15842	11W44	41S	23E	11	INJW	Y
MEPNA (MOBIL	43-037-15841	11W42	41S	23E	11	INJW	Y
MEPNA (MOBIL	43-037-15848	12W33	41S	23E	12	INJW	Y
MEPNA (MOBIL	43-037-15850	12W42	41S	23E	12	INJW	Y
MEPNA (MOBIL	43-037-15847	12W31	41S	23E	12	INJW	Y
MEPNA (MOBIL	43-037-16404	12W13	41S	23E	12	INJW	Y
MEPNA (MOBIL	43-037-15845	12W22	41S	23E	12	INJW	Y
MEPNA (MOBIL	43-037-15843	12W11	41S	23E	12	INJW	Y
MEPNA (MOBIL	43-037-31151	12W24	41S	23E	12	INJW	Y
MEPNA (MOBIL	43-037-31543	RATERFORD 12	41S	23E	12	INJW	Y
MEPNA (MOBIL	43-037-15854	13W31	41S	23E	13	INJW	Y
MEPNA (MOBIL	43-037-15851	13W13	41S	23E	13	INJW	Y
MEPNA (MOBIL	43-037-15857	13W42	41S	23E	13	INJW	Y
MEPNA (MOBIL	43-037-16407	13W44	41S	23E	13	INJW	Y
MEPNA (MOBIL	43-037-15855	13W33	41S	23E	13	INJW	Y
MEPNA (MOBIL	43-037-31152	13W11	41S	23E	13	INJW	Y
MEPNA (MOBIL	43-037-15852	13W22	41S	23E	13	INJW	Y
MEPNA (MOBIL	43-037-15853	13W24	41S	23E	13	INJW	Y
MEPNA (MOBIL	43-037-16410	14W43	41S	23E	14	INJI	Y
MEPNA (MOBIL	43-037-15860	14W43	41S	23E	14	INJW	Y
MEPNA (MOBIL	43-037-15863	24W42	41S	23E	24	INJW	Y
MEPNA (MOBIL	43-037-15862	24W31	41S	23E	24	INJW	Y
MEPNA (MOBIL	43-037-15984	6W14	41S	24E	6	INJW	Y
MEPNA (MOBIL	43-037-15988	7W32	41S	24E	7	INJW	Y
MEPNA (MOBIL	43-037-15990	7W41	41S	24E	7	INJW	Y
MEPNA (MOBIL	43-037-16394	7W21	41S	24E	7	INJW	Y
MEPNA (MOBIL	43-037-15985	7W12	41S	24E	7	INJW	Y
MEPNA (MOBIL	43-037-15989	7W34	41S	24E	7	INJW	Y
MEPNA (MOBIL	43-037-15986	7W14	41S	24E	7	INJW	Y
MEPNA (MOBIL	43-037-15987	7W23	41S	24E	7	INJW	Y
MEPNA (MOBIL	43-037-16395	7W43	41S	24E	7	INJW	Y
MEPNA (MOBIL	43-037-16396	8W43	41S	24E	8	INJI	Y
MEPNA (MOBIL	43-037-15992	8W14	41S	24E	8	INJW	Y
MEPNA (MOBIL	43-037-16398	9W23	41S	24E	9	INJW	Y
MEPNA (MOBIL	43-037-16400	9W43	41S	24E	9	INJI	Y
MEPNA (MOBIL	43-037-16397	9W21	41S	24E	9	INJW	Y
MEPNA (MOBIL	43-037-16402	10W23	41S	24E	10	INJW	Y
MEPNA (MOBIL	43-037-16401	10W21	41S	24E	10	INJI	Y
MEPNA (MOBIL	43-037-16403	10W43	41S	24E	10	INJW	Y
MEPNA (MOBIL	43-037-16413	15W43	41S	24E	15	INJI	Y
MEPNA (MOBIL	43-037-16411	15W21	41S	24E	15	INJW	Y
MEPNA (MOBIL	43-037-16412	15W23	41S	24E	15	INJI	Y
MEPNA (MOBIL	43-037-16415	16W43	41S	24E	16	INJW	Y
MEPNA (MOBIL	43-037-15720	16W12	41S	24E	16	INJW	Y
MEPNA (MOBIL	43-037-15721	16W14	41S	24E	16	INJW	Y

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) _____

XXX **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 XX) - 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:	
1-LEC	7-PL
2-LWP	8-SJ
3-~~DTS~~	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 XXX 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:	API:	Entity:	Sec	Twp	Rng	Lease Type:
** SEE ATTACHED **	037-16404					

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.

Lec 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. 8-31-95

LWP 7. Well file labels have been updated for each well listed above. 9-28-95

Lec 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)

Lec 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.

OPERATOR CHANGE WORKSHEET (CONTINUED) Initial each item when completed. Write N/A if item is not applicable.

ENTITY REVIEW

Lec 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/Lec 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.

DTS 8/5/95

N/A 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: October 4 19 95.

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 UIC F5/Not necessary!

WE71/34-35

Form 3160-5
(November 1994)

NITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires November 30, 2000

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE - Other instructions on reverse side

5. Lease Serial No.
14-20-603-246A

6. If Indian, Allottee or Tribe Name
NAVAJO TRIBAL

7. If Unit or CA/Agreement, Name and/or No.
RATHERFORD UNIT

1. Type of Well
[ ] Oil Well [ ] Gas Well [X] Other

8. Well Name and No.
RATHERFORD 12-W-13

2. Name of Operator
MOBIL PRODUCING TX & NM INC.*
*MOBIL EXPLORATION & PRODUCING US INC. AS AGENT FOR MPTM

9. API Well No.
43-037-16404

3a. Address
P.O. Box 633, Midland TX 79702

3b. Phone No. (*include area code*)
(915) 688-2585

10. Field and Pool, or Exploratory Area
GREATER ANETH

4. Location of Well (*Footage, Sec., T., R., M., or Survey Description*)
SEC. 12, T41S, R23E
1980' FSL & 4620' FEL

11. County or Parish, State
SAN JUAN UT

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

TYPE OF SUBMISSION	TYPE OF ACTION			
[X] Notice of Intent	[ ] Acidize	[ ] Deepen	[ ] Production (Start/Resume)	[ ] Water Shut-Off
[ ] Subsequent Report	[ ] Alter Casing	[ ] Fracture Treat	[ ] Reclamation	[X] Well Integrity
[ ] Final Abandonment Notice	[ ] Casing Repair	[ ] New Construction	[ ] Recomplete	[X] Other SCHEDULED MIT
	[ ] Change Plans	[ ] Plug and Abandon	[ ] Temporarily Abandon	
	[ ] Convert to Injection	[ ] Plug Back	[ ] Water Disposal	

13. Describe Proposed or Coommpleted Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the final site is ready for final inspection.)

SCHEDULED MIT & CHART ATTACHED.

RECEIVED
AUG 30 1999
DIV. OF OIL, GAS & MINING

14. I hereby certify that the foregoing is true and correct
Name (Printed/Typed) Sue Mosley for

Title SHIRLEY HOUCHINS/ENV & REG TECH

Date 8-25-99

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by | Title | Date

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office

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.

(Instructions on reverse)

ANNULAR PRESSURE TEST
(Mechanical Integrity Test)

Operator MOBIL E. & P., INC. Date of Test 8-12-99
Well Name RATHERFORD UNIT WELL# 12W-13 EPA Permit No.
Location SEC 12, T41S, R23E Tribal Lease No. 14206032246A
State and County SAN JUAN COUNTY, UTAH

Continuous Recorder? YES ☑ NO ☐ Pressure Gauge? YES ☑ NO ☐
Bradenhead Opened? YES ☑ NO ☐ Fluid Flow? YES ☑ NO ☐

TIME	ANNULUS PRESSURE, psi 0-1500psi gauge	ANNULUS PRESSURE, psi 0-1500psi recorder	TUBING PRESSURE, psi 0-3000psi gauge
1:44 PM	1095	1118	2750
1:49 PM	1095	1118	2750
1:54 PM	1095	1120	2750
1:59 PM	1095	1120	2750
2:04 PM	1095	1120	2750
2:09 PM	1095	1120	2750
2:14 PM	1095	1120	2750

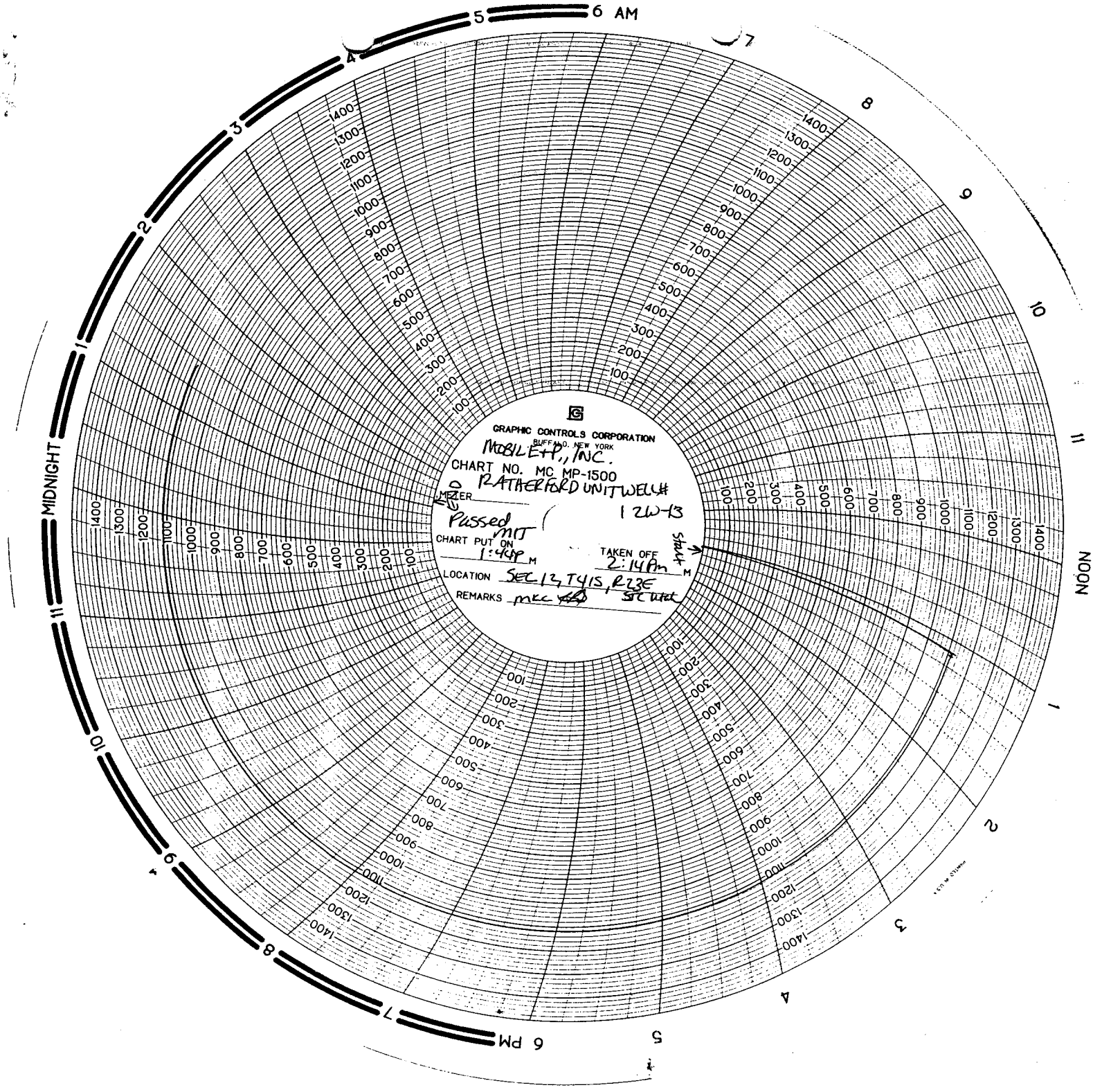
MAX. INJECTION PRESSURE: 3000 PSI
MAX. ALLOWABLE PRESSURE CHANGE: 54.75 PSI (TEST PRESSURE X 0.05)
REMARKS: Passed? Failed? If failed, cease injection until well passes MIT (40CFR§144.21(c)(6)).

Fluid from bradenhead was going to be bled off into truck by MobilE&P.
Injecting - active
Passed MIT

BENJAMIN B SILAS Benjamin B. Silas 8-12-99
COMPANY REPRESENTATIVE: (Print and Sign) DATE

MELVINA K. CLAH Melvina K. Clah 8-12-99
INSPECTOR: (Print and Sign) DATE

REGION-IX-FORM-935 (6/13/96) *USEPA - Region IX (White)* *NEPA-GPCP (Yellow)* *Operator (Pink)*


GRAPHIC CONTROLS CORPORATION
BUFFALO, NEW YORK
MOBIL E+P, INC.
CHART NO. MC MP-1500
RATHERFORD UNIT WELL#
METER
1 2W-13
Passed MIT
CHART PUT ON
1:44P M
TAKEN OFF
2:14Am M
LOCATION SEC 13, T41S, R23E
REMARKS
MIDNIGHT
NOON
6 AM
6 PM

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

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

IN REPLY REFER TO:

RRES/543

AUG 30 2001

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,

DENNI 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 DBM
NATV AM MIN COORD
SOLID MIN TEAM
PETRO MGMT TEAM 2
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

BB 7/12/2001

GN
543
File

June 27, 2001

ExxonMobil
Production

Certified Mail
Return Receipt Requested

RECEIVED
#477
JUL 9 - 2001
Navajo Region Office
RES - Minerals Section

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

RECEIVED
JUL 05 2001
NAVAJO REGION OFFICE
BRANCH OF REAL ESTATE SERVICES

ExxonMobil Production Company
a division of Exxon Mobil Corporation,
acting for ExxonMobil Oil Corporation

NOTE: Check forwarded to Ella Jessie

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	F.A. Risch	Address 5959 Las Colinas Blvd. Irving, TX 75039
Vice President	K.T. Koonce	Address 800 Bell Street Houston, TX 77002
Secretary	F.L. Reid	Address 5959 Las Colinas Blvd. Irving, TX 75039
Treasure	B.A. Maher	Address 5959 Las Colinas Blvd. Irving, TX 75039

DIRECTORS

Name	D.D. Humphreys	Address 5959 Las Colinas Blvd. Irving, TX 75039
Name	P.A. Hanson	Address 5959 Las Colinas Blvd. Irving, TX 75039
Name	T.P. Townsend	Address 5959 Las Colinas Blvd. Irving, TX 75039
Name	B.A. Maher	Address 5959 Las Colinas Blvd. Irving, TX 75039
Name	F.A. Risch	Address 5959 Las Colinas Blvd. Irving, TX 75039

Sincerely,

Alex Correa

This is to certify that the above information pertaining to ExxonMobil Oil Corporation (Corporation) is trust 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

(CORPORATE SEAL)

Signature

AGENT AND ATTORNEY IN FACT
Title

SAL

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. Millican
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

[illegible] South, Suite [illegible], Houston, Texas 77027-3[illegible]
[illegible] (713) 297-4600 • Facsimile: (713) 297-4759

NW 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
Mary Pierson, Attorney-in-fact

Chubb Surety

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, Assistant Secretary

Frank E. Robertson, Vice President

STATE OF NEW JERSEY
County of Somerset } ss.

On this 10th day of May, 2001, before me, a Notary Public of New Jersey, personally came Kenneth C. Wendel, to me known to be 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 like 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 deponent's presence.

Notarial Seal

KAREN A. PRICE NOTARY PUBLIC NEW JERSEY

Karen A. Price
Notary Public State of New Jersey
No. 2231647
Commission Expires Oct. 28, 2004

Karen A. Price
Notary Public

CERTIFICATION

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.

FEDERAL INSURANCE COMPANY INDIANA — PACIFIC INDEMNITY COMPANY INCORPORATED JAN. 14, 1929 WISCONSIN — VIGILANT INSURANCE COMPANY NEW YORK

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

15-10-0225 (Ed. 4-99) CONSENT

F010601000187

CSC 45

CERTIFICATE OF AMENDMENT

OF

CERTIFICATE OF INCORPORATION

OF

MOBIL OIL CORPORATION

(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.

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

JANICE M. PHILLIPS
MY COMMISSION EXPIRES
May 16, 2002

CSC 5184334741 06/01 '01 09:01 NO.411 02/02
CSC 06/01 '01 09:06 NO.139 04/04

F010601000187

CSC 45

CERTIFICATE OF AMENDMENT

OF

MOBIL OIL CORPORATION

Under Section 805 of the Business Corporation Law

SAC

100 cc

STATE OF NEW YORK
DEPARTMENT OF STATE
FILED JUN 01 2001
TAX $
BY: SAC
Albany

Filed by: EXXONMOBIL CORPORATION
(Name)

5959 Las Colinas Blvd.
(Mailing address)

Irving, TX 75039-2298
(City, State and Zip code)

Cust Ref # 165578MPJ

RECEIVED
JUL 05 2001
DIVISION OF REAL ESTATE SERVICES

010601000195

State of New York }
Department of State } *ss:*

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

Special Deputy Secretary of State

DOS-1266 (7/00)

Division of Oil, Gas and Mining

OPERATOR CHANGE WORKSHEET

ROUTING
1. GLH
2. CDW
3. FILE

Change of Operator (Well Sold) — Designation of Agent

X Operator Name Change — Merger

The operator of the well(s) listed below has changed, effective: **06-01-2001**

FROM: (Old Operator):	**TO:** (New Operator):
MOBIL EXPLORATION & PRODUCTION	EXXONMOBIL OIL CORPORATION
Address: P O BOX DRAWER "G"	Address: U S WEST P O BOX 4358
CORTEZ, CO 81321	HOUSTON, TX 77210-4358
Phone: 1-(970)-564-5212	Phone: 1-(713)-431-1010
Account No. N7370	Account No. N1855

CA No. **Unit:** **RATHERFORD**

WELL(S)

NAME	SEC TWN RNG	API NO	ENTITY NO	LEASE TYPE	WELL TYPE	WELL STATUS
1-24	01-41S-23E	43-037-15839	6280	INDIAN	WI	A
N DESERT CR 44-2 (2-44)	02-41S-23E	43-037-16386	99990	INDIAN	WI	A
11-42	11-41S-23E	43-037-15841	6280	INDIAN	WI	A
11-44	11-41S-23E	43-037-15842	6280	INDIAN	WI	A
12-11	12-41S-23E	43-037-15843	6280	INDIAN	WI	A
RATHERFORD 12-W-22	12-41S-23E	43-037-15845	6280	INDIAN	WI	A
12-31	12-41S-23E	43-037-15847	6280	INDIAN	WI	A
RATHERFORD 12-W-33	12-41S-23E	43-037-15848	6280	INDIAN	WI	A
12-42	12-41S-23E	43-037-15850	6280	INDIAN	WI	A
N DESERT CR 13-12 (12-13)	12-41S-23E	43-037-16404	99990	INDIAN	WI	A
RATHERFORD U 12-24	12-41S-23E	43-037-31151	6280	INDIAN	WI	A
RATHERFORD U 12-W-44A	12-41S-23E	43-037-31543	6280	INDIAN	WI	A
13-W-13	13-41S-23E	43-037-15851	6280	INDIAN	WI	A
13-22	13-41S-23E	43-037-15852	6280	INDIAN	WI	A
13-24	13-41S-23E	43-037-15853	6280	INDIAN	WI	A
13-31	13-41S-23E	43-037-15854	6280	INDIAN	WI	A
RATHERFORD 13-W-33	13-41S-23E	43-037-15855	6280	INDIAN	WI	A
13-42	13-41S-23E	43-037-15857	6280	INDIAN	WI	A
N DESERT CR 44-13 (13W44)	13-41S-23E	43-037-16407	99990	INDIAN	WI	A
RATHERFORD U 13-W-11	13-41S-23E	43-037-31152	6280	INDIAN	WI	A

OPERATOR CHANGES DOCUMENTATION

Enter date after each listed item is completed

1. (R649-8-10) Sundry or legal documentation was received from the **FORMER** operator on: 06/29/2001
2. (R649-8-10) Sundry or legal documentation was received from the **NEW** operator on: 06/29/2001
3. The new company has been checked through the **Department of Commerce, Division of Corporations Database on:** 04/09/2002
4. Is the new operator registered in the State of Utah: YES Business Number: 579865-0143
5. If **NO**, the operator was contacted contacted on: N/A

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
NOTE: EPA ISSUES UIC PERMIT

DATA ENTRY:

1. Changes entered in the **Oil and Gas Database on:** 04/09/2002
2. Changes have been entered on the **Monthly Operator Change Spread Sheet on:** 04/9/2002
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):	**TO:** (New Operator):
N1855-ExxonMobil Oil Corporation	N2700-Resolute Natural Resources Company
PO Box 4358	1675 Broadway, Suite 1950
Houston, TX 77210-4358	Denver, CO 80202
Phone: 1 (281) 654-1936	Phone: 1 (303) 534-4600

CA No. **Unit:** **RATHERFORD (UIC)**

OPERATOR CHANGES DOCUMENTATION

Enter date after each listed item is completed

1. (R649-8-10) Sundry or legal documentation was received from the **FORMER** operator on: 4/21/2006
2. (R649-8-10) Sundry or legal documentation was received from the **NEW** operator on: 4/24/2006
3. The new company was checked on the **Department of Commerce, Division of Corporations Database on:** 6/7/2006
4. Is the new operator registered in the State of Utah: YES Business Number: 5733505-0143
5. If **NO**, the operator was contacted contacted on:

6a. (R649-9-2)Waste Management Plan has been received on: requested

6b. Inspections of LA PA state/fee well sites complete on: n/a

6c. Reports current for Production/Disposition & Sundries on: ok

7. **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
8. **Federal and Indian Units:**
   The BLM or BIA has approved the successor of unit operator for wells listed on: not yet
9. **Federal and Indian Communization Agreements ("CA"):**
   The BLM or BIA has approved the operator for all wells listed within a CA on: n/a
10. **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:

1. Changes entered in the **Oil and Gas Database on:** 6/22/2006
2. Changes have been entered on the **Monthly Operator Change Spread Sheet on:** 6/22/2006
3. Bond information entered in RBDMS on: n/a
4. Fee/State wells attached to bond in RBDMS on: n/a
5. Injection Projects to new operator in RBDMS on: 6/22/2006
6. Receipt of Acceptance of Drilling Procedures for APD/New on: n/a

BOND VERIFICATION:

1. Federal well(s) covered by Bond Number: n/a
2. Indian well(s) covered by Bond Number: PA002769
3. (R649-3-1) The **NEW** operator of any fee well(s) listed covered by Bond Number n/a

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:

4. (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

UIC FORM 5

TRANSFER OF AUTHORITY TO INJECT

Well Name and Number See attached list	API Number Attached
Location of Well Footage : See attached list County : San Juan QQ, Section, Township, Range: State : UTAH	Field or Unit Name Ratherford Unit Lease Designation and Number See attached list

EFFECTIVE DATE OF TRANSFER: 6/1/2006

CURRENT OPERATOR

Company: Exxon Mobil Oil Corporation
Address: PO Box 4358
city Houston state TX zip 77210-4358
Phone: (281) 654-1936
Comments: Exxon Mobil has submitted a separate, signed copy of UIC Form 5

Name:
Signature:
Title:
Date:

NEW OPERATOR

Company: Resolute Natural Resources Company
Address: 1675 Broadway, Suite 1950
city Denver state CO zip 80202
Phone: (303) 534-4600
Comments: A list of affected UIC wells is attached.
New bond numbers for these wells are:
BIA Bond # PA002769 and US EPA Bond # B001252

Name: Dwight E Mallory
Signature:
Title: Regulatory Coordinator
Date: 4/20/2006

(This space for State use only)

Transfer approved by:
Title: Field Operations Manager
Approval Date: 6/12/06

Comments:

RECEIVED
APR 24 2006
DIV. OF OIL, GAS & MINING

(5/2000)

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.

5. LEASE DESIGNATION AND SERIAL NUMBER: See attached list
6. IF INDIAN, ALLOTTEE OR TRIBE NAME: Navajo Tribe
7. UNIT or CA AGREEMENT NAME: Ratherford Unit
8. WELL NAME and NUMBER: See attached list
9. API NUMBER: Attached
10. FIELD AND POOL, OR WILDCAT: Greater Aneth

1. TYPE OF WELL: OIL WELL ☐ GAS WELL ☐ OTHER Unit Agreement

2. NAME OF OPERATOR: Resolute Natural Resources Company N2700

3. ADDRESS OF OPERATOR: 1675 Broadway, Suite 1950 CITY Denver STATE CO ZIP 80202 PHONE NUMBER: (303) 534-4600

4. LOCATION OF WELL
FOOTAGES AT SURFACE: See attached list COUNTY: San Juan
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
☐ NOTICE OF INTENT (Submit in Duplicate)	☐ ACIDIZE	☐ DEEPEN	☐ REPERFORATE CURRENT FORMATION
Approximate date work will start:	☐ ALTER CASING	☐ FRACTURE TREAT	☐ SIDETRACK TO REPAIR WELL
	☐ CASING REPAIR	☐ NEW CONSTRUCTION	☐ TEMPORARILY ABANDON
	☐ CHANGE TO PREVIOUS PLANS	☑ OPERATOR CHANGE	☐ TUBING REPAIR
	☐ CHANGE TUBING	☐ PLUG AND ABANDON	☐ VENT OR FLARE
☑ SUBSEQUENT REPORT (Submit Original Form Only)	☐ CHANGE WELL NAME	☐ PLUG BACK	☐ WATER DISPOSAL
Date of work completion:	☐ CHANGE WELL STATUS	☐ PRODUCTION (START/RESUME)	☐ WATER SHUT-OFF
	☐ COMMINGLE PRODUCING FORMATIONS	☐ RECLAMATION OF WELL SITE	☐ OTHER:
	☐ CONVERT WELL TYPE	☐ 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) Dwight E Mallory TITLE Regulatory Coordinator
SIGNATURE DATE 4/20/2006

(This space for State use only)

APPROVED 6/27/06
Earlene Russell
Division of Oil, Gas and Mining
Earlene Russell, Engineering Technician

RECEIVED
APR 24 2006
DIV. OF OIL, GAS & MINING

(5/2000) (See Instructions on Reverse Side)

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.

5. LEASE DESIGNATION AND SERIAL NUMBER:

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: Ship Rock

7. UNIT or CA AGREEMENT NAME: UTU68931A

8. WELL NAME and NUMBER: Ratherford

9. API NUMBER: attached

10. FIELD AND POOL, OR WILDCAT: Aneth

1. TYPE OF WELL: OIL WELL ☐ GAS WELL ☐ OTHER Injection

2. NAME OF OPERATOR: ExxonMobil Oil Corporation N1855

3. ADDRESS OF OPERATOR: P.O. Box 4358 CITY Houston STATE TX ZIP 77210-4358 PHONE NUMBER: (281) 654-1936

4. LOCATION OF WELL

FOOTAGES AT SURFACE:

COUNTY: San Juan

QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:

STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
☑ NOTICE OF INTENT (Submit in Duplicate)	☐ ACIDIZE	☐ DEEPEN	☐ REPERFORATE CURRENT FORMATION
Approximate date work will start:	☐ ALTER CASING	☐ FRACTURE TREAT	☐ SIDETRACK TO REPAIR WELL
6/1/2006	☐ CASING REPAIR	☐ NEW CONSTRUCTION	☐ TEMPORARILY ABANDON
	☐ CHANGE TO PREVIOUS PLANS	☑ OPERATOR CHANGE	☐ TUBING REPAIR
	☐ CHANGE TUBING	☐ PLUG AND ABANDON	☐ VENT OR FLARE
☐ SUBSEQUENT REPORT (Submit Original Form Only)	☐ CHANGE WELL NAME	☐ PLUG BACK	☐ WATER DISPOSAL
Date of work completion:	☐ CHANGE WELL STATUS	☐ PRODUCTION (START/RESUME)	☐ WATER SHUT-OFF
	☐ COMMINGLE PRODUCING FORMATIONS	☐ RECLAMATION OF WELL SITE	☐ OTHER:
	☐ CONVERT WELL TYPE	☐ 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 injection wells included in the transfer.

NAME (PLEASE PRINT) Laurie Kilbride TITLE Permitting Supervisor

SIGNATURE Laurie O. Kilbride DATE 4/19/2006

(This space for State use only) APPROVED 6/27/06
Earlene Russell
Division of Oil, Gas and Mining
Earlene Russell, Engineering Technician

(See Instructions on Reverse Side)

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APR 21 2006
DIV. OF OIL, GAS & MINING

(5/2000)

GREATER ANETH FIELD UIC WELL LIST
Ratherford lease, San Juan County, Utah

Reg Lease Name	Well ID	API Num	Status	Reg Lease #	Surface Location						
					Qtr 1	Qtr 2	Sec	TN	RNG	NS Foot	EW Foot
RATHERFORD UNIT	1W24	430371583900S1	Shut-in	14-20-603-246A	NE	SE	1	41S	23E	0651FSL	3300FEL
RATHERFORD UNIT	2W44	430371638600S1	Active	14-20-603-246A	SE	SE	2	41S	23E	0810FSL	**0510FEL**
RATHERFORD UNIT	11W42	430371584100S1	Active	14-20-603-246A	SE	NE	11	41S	23E	3290FSL	4617FWL
RATHERFORD UNIT	11W44	430371584200S1	Shut-in	14-20-603-246A	SE	SE	11	41S	23E	0660FSL	0558FEL
RATHERFORD UNIT	12W11	430371584300S1	Active	14-20-603-246A	NW	NW	12	41S	23E	0678FNL	4620FEL
RATHERFORD UNIT	12W13	430371640400S1	Active	14-20-603-246A	NW	SW	12	41S	23E	1980FSL	4620FEL
RATHERFORD UNIT	12W22	430371584501S1	Active	14-20-603-246A	SE	NW	12	41S	23E	1920FNL	2080FWL
RATHERFORD UNIT	12W24	430373115101S1	Active	14-20-603-246A	SE	SW	12	41S	23E	0775FSL	1980FWL
RATHERFORD UNIT	12W31	430371584700S1	Active	14-20-603-246A	NW	NE	12	41S	23E	0661FNL	1981FEL
RATHERFORD UNIT	12W33	430371584800S1	Active	14-20-603-246A	NW	SE	12	41S	23E	1958FSL	3300FEL
RATHERFORD UNIT	12W42	430371585000S1	Active	14-20-603-246A	SE	NE	12	41S	23E	3275FSL	0662FEL
RATHERFORD UNIT	12W44A	430373154300S1	Shut-in	14-20-603-246A	SE	SE	12	41S	23E	0772FSL	0807FEL
RATHERFORD UNIT	13W11	430373115201S1	Active	14-20-603-247A	NW	NW	13	41S	23E	0500FNL	0660FWL
RATHERFORD UNIT	13W13	430371585100S1	Active	14-20-603-247A	NW	SW	13	41S	23E	1980FSL	4620FEL
RATHERFORD UNIT	13W22	430371585200S1	Active	14-20-603-247A	SE	NW	13	41S	23E	1988FNL	3300FEL
RATHERFORD UNIT	13W24	430371585300S1	Active	14-20-603-247A	SE	SW	13	41S	23E	0660FSL	3300FEL
RATHERFORD UNIT	13W33	430371585501S1	Active	14-20-603-247A	NW	SE	13	41S	23E	1970FSL	1979FEL
RATHERFORD UNIT	13W42	430371585700S1	Shut-in	14-20-603-247A	SE	NE	13	41S	23E	2139FNL	0585FEL
RATHERFORD UNIT	13W44	430371640700S1	Active	14-20-603-247A	SE	SE	13	41S	23E	0653FSL	0659FEL
RATHERFORD UNIT	14-31	430373171700S1	Active	14-20-603-247A	NW	NE	14	41S	23E	0754FNL	1604FEL
RATHERFORD UNIT	14W42	430371586001S1	Active	14-20-603-247A	SE	NE	14	41S	23E	1976FNL	653FEL
RATHERFORD UNIT	24W31	430371586200S1	Shut-in	14-20-603-247A	NW	NE	24	41S	24E	0560FNL	1830FEL
RATHERFORD UNIT	24W42	430371586300S1	Shut-in	14-20-603-247A	SE	NE	24	41S	24E	1980FNL	0660FEL
RATHERFORD UNIT	17W12	430371572601S1	Active	14-20-603-353	SW	NW	17	41S	24E	1980FNL	510FWL
RATHERFORD UNIT	17W14	430371572700S1	Active	14-20-603-353	SW	SW	17	41S	24E	0610FSL	0510FWL
RATHERFORD UNIT	17W21	430371641601S1	Active	14-20-603-353	NE	**NW**	17	41S	24E	0510FNL	1830FWL
RATHERFORD UNIT	17W23	430371572801S1	Active	14-20-603-353	NE	SW	17	41S	24E	1880FSL	1980FWL
RATHERFORD UNIT	17W32	430371572900S1	TA'd	14-20-603-353	SW	NE	17	41S	24E	1830FNL	2030FEL
RATHERFORD UNIT	17W34	430371573000S1	Active	14-20-603-353	SW	SE	17	41S	24E	0560FSL	1880FEL
RATHERFORD UNIT	17W41	430371573100S1	Shut-in	14-20-603-353	NE	NE	17	41S	24E	0610FNL	0510FEL
RATHERFORD UNIT	17W43	430371641701S1	Active	14-20-603-353	NE	SE	17	41S	24E	1980FSL	0660FEL
RATHERFORD UNIT	18-43B	430373171801S1	Active	14-20-603-353	NE	SE	18	41S	24E	2023FSL	0651FEL
RATHERFORD UNIT	18W12	430373115301S1	Active	14-20-603-353	SW	NW	18	41S	24E	1980FNL	560FWL
RATHERFORD UNIT	18W14	430371573501S1	Active	14-20-603-353	SW	SW	18	41S	24E	0810FSL	0600FWL
RATHERFORD UNIT	18W21	430371641801S1	Active	14-20-603-353	NE	NW	18	41S	24E	660FNL	1882FWL
RATHERFORD UNIT	18W23	430373024400S1	Shut-in	14-20-603-353	NE	SW	18	41S	24E	2385FSL	2040FWL
RATHERFORD UNIT	18W32	430371573601S1	Active	14-20-603-353	SW	NE	18	41S	24E	2140FNL	1830FEL
RATHERFORD UNIT	18W34	430371573701S1	Active	14-20-603-353	SW	SE	18	41S	24E	780FSL	1860FEL
RATHERFORD UNIT	18W41	430371573800S1	TA'd	14-20-603-353	NE	NE	18	41S	24E	0660FNL	0660FEL
RATHERFORD UNIT	19-12	430371573901S1	Active	14-20-603-353	SW	NW	19	41S	24E	1980FNL	0600FWL
RATHERFORD UNIT	19-32	430371574301S1	Active	14-20-603-353	SW	NE	19	41S	24E	2717FNL	2802FEL
RATHERFORD UNIT	19-34	430371574401S1	Active	14-20-603-353	SW	SE	19	41S	24E	0660FSL	1980FEL
RATHERFORD UNIT	19W21	430371574100S1	Shut-in	14-20-603-353	NE	NW	19	41S	24E	0660FNL	1860FWL
RATHERFORD UNIT	19W23	430371574200S1	Shut-in	14-20-603-353	NE	SW	19	41S	24E	2080FSL	1860FWL
RATHERFORD UNIT	19W43	430371642000S1	Shut-in	14-20-603-353	NE	SE	19	41S	24E	1980FSL	0760FEL
RATHERFORD UNIT	20-12	430371574601S1	Active	14-20-603-353	SW	NW	20	41S	24E	0709FNL	0748FEL
RATHERFORD UNIT	20-14	430371574701S1	Active	14-20-603-353	SW	SW	20	41S	24E	0660FSL	0660FWL
RATHERFORD UNIT	20-32	430371574901S1	Active	14-20-603-353	SW	NE	20	41S	24E	0037FNL	0035FWL
RATHERFORD UNIT	20-34	430371575001S1	Active	14-20-603-353	SW	SE	20	41S	24E	0774FNL	0617FWL
RATHERFORD UNIT	20-67	430373159000S1	Active	14-20-603-353	NE	SW	20	41S	24E	2629FSL	1412FWL
RATHERFORD UNIT	20W21	430371642300S1	Active	14-20-603-353	NE	NW	20	41S	24E	0660FNL	1880FWL
RATHERFORD UNIT	20W23	430371574800S1	Active	14-20-603-353	NW	SW	20	41S	24E	2080FSL	2120FWL
RATHERFORD UNIT	20W41	430371575100S1	Active	14-20-603-353	NE	NE	20	41S	24E	0660FNL	0660FEL
RATHERFORD UNIT	20W43	430371642400S1	TA'd	14-20-603-353	NE	SE	20	41S	24E	2070FSL	0810FEL
RATHERFORD UNIT	16W12	430371572000S1	Active	14-20-603-355	SW	NW	16	41S	24E	1880FNL	0660FWL

GREATER ANETH FIELD UIC WELL LIST
Ratherford lease, San Juan County, Utah

Reg Lease Name	Well ID	API Num	Status	Reg Lease #	Surface Location						
					Qtr 1	Qtr 2	Sec	TN	RNG	NS Foot	EW Foot
RATHERFORD UNIT	16W14	430371572100S1	Shut-in	14-20-603-355	SW	SW	16	41S	24E	0660FSL	0660FWL
RATHERFORD UNIT	16W21	430371641400S1	Active	14-20-603-355	NE	NW	16	41S	24E	0660FNL	1880FWL
RATHERFORD UNIT	16W23	430371572201S1	Active	14-20-603-355	NE	SW	16	41S	24E	1980FSL	1980FWL
RATHERFORD UNIT	16W43	430371641501S1	Active	14-20-603-355	NE	SE	16	41S	24E	2140FSL	0820FEL
RATHERFORD UNIT	21-14	430371575301S1	Active	14-20-603-355	SW	SW	21	41S	24E	0660FSL	0460FWL
RATHERFORD UNIT	21-67	430373175301S1	Active	14-20-603-355	NE	SW	21	41S	24E	2560FSL	1325FWL
RATHERFORD UNIT	21W21	430371642501S1	Active	14-20-603-355	NE	NW	21	41S	24E	0660FNL	2030FWL
RATHERFORD UNIT	**6W14**	430371598400S1	Active	14-20-603-368	NE	SE	6	41S	24E	0660FSL	0660FWL
RATHERFORD UNIT	7W12	430371598500S1	Active	14-20-603-368	NE	SE	7	41S	24E	2140FNL	0585FWL
RATHERFORD UNIT	7W14	430371598600S1	Active	14-20-603-368	NE	SE	7	41S	24E	1065FSL	0660FWL
RATHERFORD UNIT	7W21	430371639400S1	Active	14-20-603-368	**NE**	NW	7	41S	24E	0710FNL	1820FWL
RATHERFORD UNIT	7W34	430371598900S1	Active	14-20-603-368	SW	SE	7	41S	24E	0710FSL	2003FEL
RATHERFORD UNIT	7W43	430371639500S1	Active	14-20-603-368	NE	SE	7	41S	24E	2110FSL	0660FEL
RATHERFORD UNIT	**8W14**	430371599200S1	Active	14-20-603-368	SW	NE	8	41S	24E	0745FSL	0575FWL
RATHERFORD UNIT	10W43	430371640300S1	TA'd	14-20-603-4037	NE	SE	10	41S	24E	1980FSL	0550FEL
RATHERFORD UNIT	29-12	430371533701S1	Active	14-20-603-407	SW	**NW**	29	41S	24E	2870FNL	1422FWL
RATHERFORD UNIT	29-32	430371533901S1	Active	14-20-603-407	SW	NE	29	41S	24E	0694FNL	0685FWL
RATHERFORD UNIT	29W21	430371643200S1	Active	14-20-603-407	NE	NW	29	41S	24E	0667FNL	2122FWL
RATHERFORD UNIT	29W41	430371643300S1	Active	14-20-603-407	NE	NE	29	41S	24E	0557FNL	0591FEL
RATHERFORD UNIT	29W43	430371643400S1	Shut-in	14-20-603-407	NE	SE	29	41S	24E	1980FSL	0660FEL
RATHERFORD UNIT	30W41	430371534300S1	Shut-in	14-20-603-407	NE	NE	30	41S	24E	0660FNL	0660FEL
RATHERFORD UNIT	28-12	430371533601S1	Active	14-20-603-409	SW	SE	28	41S	24E	2121FNL	0623FWL
RATHERFORD UNIT	28W21	430371643100S1	Shut-in	14-20-603-409	NE	NW	28	41S	24E	0660FNL	2022FWL
RATHERFORD UNIT	9W23	430371639800S1	Active	14-20-603-5046	NW	SE	9	41S	24E	1980FSL	1980FWL