

FILE NOTATIONS

Entered in NID File ✓

Entered in R Sheet 7

Location Map Pinned ✓

Card Indexed ✓

IWR for State or Fee Land \_\_\_\_\_

Checked by Chief PMB

Copy NID to Field Office ✓

Approval Letter ✓

Disapproval Letter \_\_\_\_\_

COMPLETION DATA:

Date Well Completed 1-19-63

Location Inspected \_\_\_\_\_

OW \_\_\_\_\_ WW \_\_\_\_\_ TA \_\_\_\_\_

Bond released \_\_\_\_\_

GW \_\_\_\_\_ OS \_\_\_\_\_ PA ✓

State of Fee Land \_\_\_\_\_

LOGS FILED

Driller's Log 2-6-63

Electric Logs (No. ) 2

E \_\_\_\_\_ I \_\_\_\_\_ E-I ✓ GR \_\_\_\_\_ GR-N \_\_\_\_\_ Micro \_\_\_\_\_

Log \_\_\_\_\_ Sonic ✓ Others \_\_\_\_\_

*Subsequent Report of abandonment*

**C. F. RAYMOND**

OIL OPERATOR

1700 BROADWAY

DENVER 2, COLORADO

PHONE TABOR 5-9115

November 26, 1962

State of Utah  
Oil & Gas Conservation Commission  
Salt Lake City, Utah

Gentlemen:

Enclosed herewith is Notice of Intention to Drill the #1 Government, NW $\frac{1}{4}$ NW $\frac{1}{4}$  of Section 17, Township 13 South, Range 25 East, Uintah County, Utah. We would appreciate your calling us collect as soon as this location has been approved as we would like to commence drilling operations immediately. Thank you.

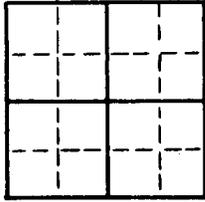
Yours very truly,

*C. F. Raymond*  
*CFR*  
C. F. Raymond

CFR:mh

Enc.

LAND:



STATE OF UTAH  
OIL & GAS CONSERVATION COMMISSION  
SALT LAKE CITY, UTAH

Fee and Patented.....  
State.....  
Lease No. ....  
Public Domain.....  
Lease No. Utah 03905-B  
Indian.....  
Lease No. ....

SUNDRY NOTICES AND REPORTS ON WELLS

Notice of Intention to Drill.....	<input checked="" type="checkbox"/>	Subsequent Report of Water Shut-off.....	
Notice of Intention to Change Plans.....		Subsequent Report of Altering Casing.....	
Notice of Intention to Redrill or Repair.....		Subsequent Report of Redrilling or Repair.....	
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)

November 26, 19 62

Well No. 1 Govt. is located 660 ft. from ~~W~~<sup>N</sup> line and 525 ft. from ~~N~~<sup>W</sup> line of Sec. 17

NW <sup>1</sup>/<sub>4</sub> NW <sup>1</sup>/<sub>4</sub> Sec. 17 13 S. 25 E. (Meridian)

(1/4 Sec. and Sec. No.)

(Twp.)

(Range)

(Meridian)

Wildcat  
(Field)

Uintah  
(County or Subdivision)

Utah  
(State or Territory)

The elevation of the ~~drill floor~~<sup>Ground</sup> above sea level is 7278.7 feet.

A drilling and plugging bond has been filed with The Travelers Indemnity Company - U.S.G.S.

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 work, surface formation, and date anticipate spudding-in.)

Will set 150' of 10-3/4" casing with approximately 150 sacks.

Wasatch	700'
Kmv	1600'
Morapos	3900'
Dakota	7600'
Morrison	7770'
Entrada	8400'
T. D.	8600'

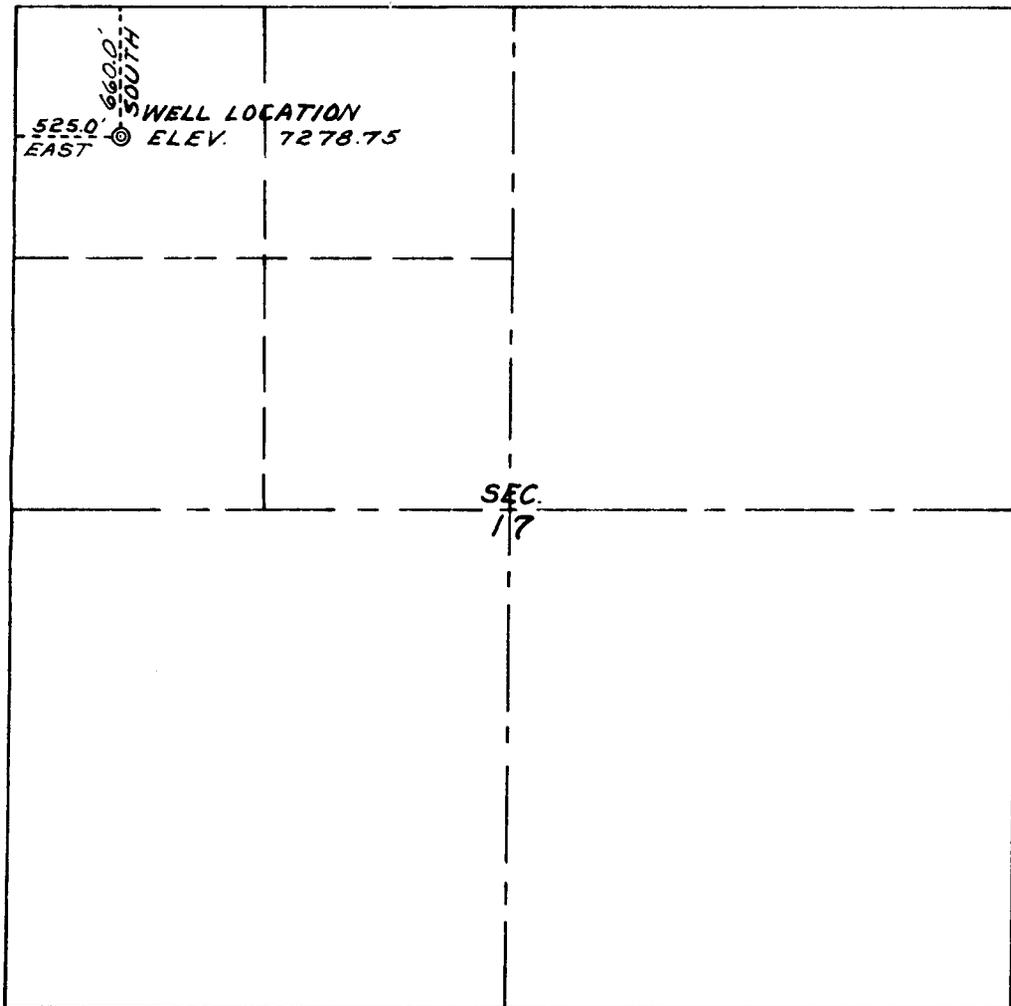
I understand that this plan of work must receive approval in writing by the Commission before operations may be commenced.

Company C. F. Raymond

Address 517 Mile High Center By C.F. Raymond

Denver 2, Colorado Title C. F. Raymond

INSTRUCTIONS: A plat or map must be attached to this form showing the location of all leases, property lines, drilling and producing wells, within an area of sufficient size so that the Commission may determine whether the location of the well conforms to applicable rules, regulations and orders.



WELL LOCATION  
 GOVERNMENT NO. 1

**RAYMOND OIL COMPANY**

DENVER, COLORADO

SITUATED IN NW $\frac{1}{4}$  NW $\frac{1}{4}$  SECTION 17,

T. 13 S., R. 25 E. OF THE S. L. B. M.

UINTAH COUNTY, UTAH

SCALE 1 INCH = 1000 FEET

REF. POINT 110.0' EAST ELEV. 7272.31

THIS IS TO CERTIFY THAT  
 THE WELL LOCATION SHOWN  
 ON THIS PLAT WAS PLOTTED  
 FROM FIELD NOTES OF  
 ACTUAL SURVEYS MADE BY  
 ME OR UNDER MY SUPER-  
 VISION AND THAT THE SAME  
 ARE TRUE AND CORRECT  
 TO THE BEST OF MY KNOW-  
 LEDGE AND BELIEF.

DATE SURVEYED:  
 NOV. 20 & 21, 1962.

TOM WALKER  
 REG. LAND SURVEYOR  
 GLENWOOD SPRINGS,  
 COLORADO  
 CERTIFICATE NO. 1548

November 28, 1962

C. F. Raymond  
517 Mile High Center  
Denver 2, Colorado

Attention: C. F. Raymond

Gentlemen:

This is to acknowledge receipt of your notice of intention to drill Well No. Gov't #1, which is to be located 660 feet from the north line and 525 feet from the west line of Section 17, Township 13 South, Range 25 East, SLBM, Uintah County, Utah.

Please be advised that insofar as this office is concerned approval to drill said well is hereby granted. However, this approval is conditional upon a Designation of Agent being filed with this Commission in accordance with Rule 4-4(b), General Rules and Regulations and Rules of Practice and Procedure, Utah State Oil and Gas Conservation Commission.

As soon as you have determined that it will be necessary to plug and abandon the above well, you are hereby requested to immediately notify the following:

PAUL W. BURCHELL, Chief Petroleum Engineer  
Office: DA 8-5771 or DA 8-5772  
Home: CR 7-2890  
Salt Lake City, Utah

This approval terminates within 90 days if the above mentioned well has not been spudded in within said period.

Very truly yours,

OIL & GAS CONSERVATION COMMISSION

CLEON B. FEIGHT  
EXECUTIVE DIRECTOR

CBF:cp

cc: D. F. Russell, Dist. Eng.  
USGS - Salt Lake City, Utah

H. L. Coonts, Pat. Eng.  
OGCC - Moab, Utah

dm  
4112  
Fur  
P  
J

+

January 21, 1963

MEMO FOR FILING

Re: C. F. Raymond  
Government #1  
Sec. 17, T. 13 S, R. 25 E., NW NW  
Uintah County, Utah

On January 19, 1963, Mr. Sciaky called to inquire the proper procedure to plug the above mentioned well. The necessary information was not available at the time of our conversation, such as geological tops, shows, etc. Therefore, only a general plugging program could be given.

1. 100' plug across shows
2. tops (significant ones)
3. surface casing
4. casing stubs
5. perforations
6. fresh water
7. marker with prescribed information
8. clean and level location

Mr. Sciaky was then informed to contact the USGS for more detailed plugging program, but not before hole was logged.

PAUL W. BURCHELL  
CHIEF PETROLEUM ENGINEER

PWB:cnp

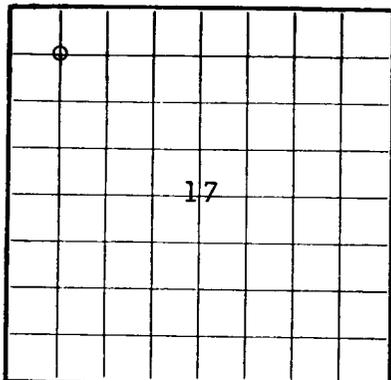
cc: Don Russell, Dist. Eng.,  
USGS, Salt Lake City, Utah

H.

N.D.  
C.M.  
F.M.  
S.F.

50/100  
7

Form OGCC-3



LOCATE WELL CORRECTLY

STATE OF UTAH  
OIL & GAS CONSERVATION COMMISSION

Salt Lake City, Utah

To be kept Confidential until \_\_\_\_\_  
(Not to exceed 4 months after filing date)

LOG OF OIL OR GAS WELL

Operating Company Raymond Oil Company, Inc. Address 517 Mile High Center, Denver, Colo.  
 Lease or Tract Government Field Wildcat State Utah  
 Well No. 1 Sec. 17 T. 13S R. 25E Meridian SLBM County Uintah  
 Location 660 ft. <sup>XN</sup> of N Line and 525 ft. <sup>E</sup> of W Line of Sec. 17 Elevation 7290  
(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 [Signature] Title Geologist

Date January 25, 1963

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

Commenced drilling \_\_\_\_\_, 19\_\_\_\_ Finished drilling \_\_\_\_\_, 19\_\_\_\_

OIL OR GAS SANDS OR ZONES

(Denote gas by G)

NONE

No. 1, from \_\_\_\_\_ to \_\_\_\_\_ No. 4, from \_\_\_\_\_ to \_\_\_\_\_  
 No. 2, from \_\_\_\_\_ to \_\_\_\_\_ No. 5, from \_\_\_\_\_ to \_\_\_\_\_  
 No. 3, from \_\_\_\_\_ to \_\_\_\_\_ No. 6, from \_\_\_\_\_ to \_\_\_\_\_

NONE

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		Purpose
							From--	To--	

MUDDING AND CEMENTING RECORD

Size casing	Where set	Number sacks of cement	Method used	Mud gravity	Amount of mud used
9-5/8"	530' from	KB 460 sx			

See Reverse Side

PLUGS AND ADAPTERS

LD MARK

**SHOOTING RECORD**

Size	Shell used	Explosive used	Quantity	Date	Depth shot	Depth cleaned out
None						

**TOOLS USED** 8840'

Rotary tools were used from Surface feet to T. D. feet, and from ..... feet to ..... feet  
 Cable tools were used from ..... feet to ..... feet, and from ..... feet to ..... feet

**DATES**

Date P & A January 19, 1963 Put to producing None, 19.....

The production for the first 24 hours was None 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 ..... Driller  
 ..... Driller ..... Driller

**FORMATION RECORD**

FROM—	TO—	TOTAL FEET	FORMATION
Electric Log	Tops:		At the end of complete Driller's Log add Geologic Tops. State whether from Electric Logs or samples.
Surface	1110'	1110'	Green River
1110'	2137	1027	Wasatch
2137	2286	149	Ohio Creek
2286	4004	1718	Mesaverde
4004	4203	199	Sego Sand
4203	4559	356	Mancos - Black Tongue
4559	4632	73	" Castlegate
4632	5372	740	" Shale
5372	6050	678	" Emery
6050	8512	2462	" Shale
8512	8573	61	Dakota
8573	8714	141	Cedar Mt.
8714	T. D. 8840		Brushy Basin (Morrison)

A.

**HISTORY OF OIL OR GAS WELL**

It is of the greatest importance to have a complete history of the well. Please state in detail the dates of re-drilling, together with the reasons for the work and its results. If there were any changes made in the casing, state fully, and if any casing was "sidetracked" or left in the well, give its size and location. If the well has been dynamited, give date, size, position, and number of shots. If plugs or bridges were put in to test for water, state kind of material used, position, and results of pumping or hauling.

State whether electric logs were run.

Spudded December 4, 1963

Surface Casing: Set 530' at KB of 9-5/8" set with 460 sacks

Well P&A January 19, 1963

Logs: Schlumberger Induction-Electrical and Sonic-Gamma Ray-Caliper

**Plugging Data:**

8487-8587	30 sacks
4534-4634	30 sacks
3979-4079	30 sacks
2261-2361	30 sacks
1085-1185	30 sacks
505-555	23 sacks
Surface	23 sacks

A 4' length of 4" pipe was set in the surface casing, capped and a well marker welded to this pipe.

\*\*\*\*\*

GEOLOGICAL REPORT  
RAYMOND OIL COMPANY, INC.  
NO. 1 GOVERNMENT  
NW $\frac{1}{4}$ NW $\frac{1}{4}$  Sec. 17-13S-25E  
UINTAH COUNTY, UTAH

\*\*\*\*\*

Peter Sciaky  
Geologist

## RESUME

**OPERATOR:** Raymond Oil Company, Inc.

**WELL:** No. 1 Government

**LOCATION:** 525' EWL, 660' SNL, Section 17,  
Township 13 South, Range 25 East

**COUNTY:** Uintah

**STATE:** Utah

**FIELD:** Wildcat

**ELEVATION:** 7290' KB; 7279' Ground

**CASING:** 530' @ KB of 9-5/8" set with 460 sacks

**HOLE SIZE:** 7-7/8"

**SPUD:** December 4, 1962

**COMPLETED:** January 19, 1963

**CORES:** None

**DRILL STEM TESTS:** 8510-8569

**LOGS:** Tooke Mud log; Schlumberger Induction-  
Electrical and Sonic-Gamma Ray-Caliper

**BOTTOMING FORMATION:** Brushy Basin (Morrison)

**TOTAL DEPTH:** 8840' Schlumberger

**CONTRACTOR:** Huron Drilling Company

**PRODUCTION:** None

**GEOLOGIST:** Peter Sciaky

CHRONOLOGICAL DRILLING HISTORY

<u>Date</u>	<u>Depth</u>	<u>Status</u>	<u>Made</u>
11/26/62	0	Moving in	
11/30/62	0	RURT	
12/3/62	0	Making rat hole	
12/4/62	0	Mouse & rat hole drilled, RU to spud	165
12/5/62	165	Drilling	635
12/6/62	800	Drilling, reaming	0
12/7/62		Reaming at 191 - 13-3/4" hole	0
12/8/62	800	WOC	125
12/9/62	925	Drilling (pipe stuck @ 925')	0
12/10/62	925	Fishing	0
12/11/62	925	WO washover pipe	0
12/12/62	925	Working with washover pipe	0
12/13/62	925	Commencing to drill	744
12/14/62	1669	Tripping the bit	523
12/15/62	2192	Drilling	523
12/16/62	2715	Drilling	599
12/17/62	3314	Drilling	358
12/18/62	3672	Drilling	272
12/19/62	3944	Drilling	372
12/20/62	4316	Trip for bit #16	276
12/21/62	4592	Trip for bit #18	168
12/22/62	4760	Trip for bit #20	240
12/23/62	5000	Trip, prepare to run log	190
12/24/62	5190	Drilling	245
12/25/62	5435	Drilling (fished for junk)	63
12/26/62	5496	Drilling	135
12/27/62	5631	Drilling	209
12/28/62	5840	Circulating before trip	209
12/29/62	6049	Commence to drill after trip	246
12/30/62	6395	Drilling	330
12/31/62	6725	Drilling	627
1/1/63	7098	Drilling	142
1/2/63	7250	Drilling	162
1/3/63	7470	Drilling	220
1/4/63	7715	Drilling	238
1/5/63	7953	Drilling	190
1/6/63	8143	Drilling	222
1/7/63	8365	Trip for bit #38	56
1/8/63	8421	Trip for bit #39	93
1/9/63	8514	Drilling	53
1/10/63	8569	Testing (corrected depth)	0
1/11/63	8509	De-freeze rig	6
1/12/63	8575	Drilling (shut down @ night to save fuel)	38
1/13/63	8613	Drilling	54
1/14/63	8667	Trip for bit #44	29
1/15/63	8696	Trip for bit #45	41
1/16/63	8736	Trip for bit #46	41
1/17/63	8777	Drilling	33
1/18/63	8810	Trip for bit #49	30
1/19/63	8840	Trip for logging	0

MUD CHARACTERISTICS

<u>Date</u>	<u>Weight</u>	<u>Vis.</u>	<u>W. L.</u>	<u>Cake**</u>
12/10/62	8.9	112	8.8	2/32"
12/12/62	8.4	90	5.2	2/32
12/13/62	8.7	45	10.4	*
12/14/62	9.2	45	4.2	1/32
12/15/62	9.5	45	5.0	*
12/17/62	9.6	43	5.4	2/32
12/18/62	9.5	40	5.0	*
12/19/62	9.3	43	5.0	1/32
12/20/62	9.5	40	6.8	*
12/21/62	9.5	44	5.4	1/32
12/22/62	9.5	55	5.0	*
12/23/62	9.5	67	3.2	
12/24/62	9.6	78	4.0	1/32
12/26/62	9.7	60		*
12/27/62	9.5	77		*
12/28/62	9.6	78	5.8	2/32
12/30/62	9.6	58	6.4	2/32
1/3/63	10.2	68	4.0	2/32
1/5/63	10.0	62	3.8	1/32
1/7/63	9.8	81	4.0	1/32
1/12/63	9.7	63	3.8	1/32
1/13/63	9.6	68	3.8	*
1/14/63	9.3	87	5.0	*
1/15/63	9.5	62	4.6	2/32
1/16/63	9.8	68	5.0	*
1/17/63	9.6	69	5.0	*
1/18/63	9.4	63	4.8	*

\* Taken by crew, no mud cake

\*\* When available

An average of 9 to 15% Rangely crude was added to the oil.

DEVIATION SURVEYS

<u>Depth</u>	<u>Dev.</u>	<u>Depth</u>	<u>Dev.</u>	<u>Depth</u>	<u>Dev.</u>	<u>Depth</u>	<u>Dev.</u>
60	0	1821	1/2	4240	1	6343	2
150	1-1/4	2100	3/4	4316	1-1/4	6650	2
193	1/2	2300	1	4430	1-1/4	6930	2-1/4
282	1/2	2592	3/4	4516	1-3/4	7200	2-1/4
400	1/2	3372	3/4	4760	2	7570	2
600	1/2	3650	1-1/2	5000	1-3/4	7835	2-1/2
1052	1/4	3735	1-3/4	5211	1-1/2	7999	2-1/4
1266	3/4	3845	1-1/2	5447	2-1/4	8181	1-3/4
1330	3/4	3944	1-1/4	5585	2-1/4	8480	2
1484	1/2	4030	3/4	5842	2-1/4	8730	1-1/4
1606	3/4	4130	1	6049	1-3/4		

BIT RECORD

<u>No.</u>	<u>Size</u>	<u>Type</u>	<u>In</u>	<u>Out</u>	<u>Footage</u>	<u>Hours</u>
1	9-7/8	CP-E526		0-574	574	30
2	9-5/8	CP-E526	574	800	226	4-1/2
3	13-3/4	CP-Reamer		0-530	530	20
4	7-7/8	CP E51G1	800	1382	582	9-1/2
5	7-7/8	CP E512A	1382	1669	287	6-3/4
6	7-7/8	Globe S-3	1669	2000	331	11-1/2
7	7-7/8	Globe S-3	2000	2313	313	7-3/4
8	7-7/8	Globe S-3	2313	2654	341	10
9	7-7/8	Globe S-3	2654	3022	368	11-1/2
10	7-7/8	Globe S-3	3022	3372	350	12
11	7-7/8	Globe S-3	3372	3628	256	10-3/4
12	7-7/8	Globe S-3	3628	3709	82	7-1/2
13	7-7/8	CP E52J	3709	3867	159	8
14	7-7/8	CP ES2G	3867	4030	163	10
15	7-7/8	Globe ST3	4030	4316	286	11
16	7-7/8	Globe ST3	4316	4516	200	11
17	7-7/8	Globe ST3	4516	4592	76	6
18	7-7/8	Globe M-3	4592	4669	77	5
19	7-7/8	Globe MHT-3	4669	4760	91	8
20	7-7/8	CP EM1V	4760	5000	240	17
21	7-7/8	CP ES2G	5000	5211	211	16-1/2
22	7-7/8	Globe ST3	5211	5447	236	17
23	7-7/8	Globe ST3	5447	5450	3	On junk ran magnet
24	7-7/8	Globe ST3	5450	5585	135	19-1/2
25	7-7/8	Globe ST3	5585	5730	145	12
26	7-7/8	Globe S-3	5730	5842	112	11
27	7-7/8	CP ES2G	5842	6049	219	12
28	7-7/8	CP ES2G	6049	6343	294	14
29	7-7/8	Globe S3	6343	6650	307	14
30	7-7/8	Globe S3	6650	6931	281	15
31	7-7/8	Globe S3	6931	7160	229	12-1/2
32	7-7/8	CP ES2G	7160	7440	280	15-1/2
33	7-7/8	CP ES2G	7440	7572	132	11-1/4
34	7-7/8	Globe ST3	7572	7835	263	14-1/2
35	7-7/8	Globe M-3	7835	7999	174	13-1/4
36	7-7/8	CP ES2G	7999	8181	182	14
37	7-7/8	CP ES2G	8181	8365	184	13
38	7-7/8	CP EH3	8365	8421	56	10-1/4
39	7-7/8	Globe MHV3	8421	8479	58	7-1/4
40	7-7/8	Globe MH3T	8479	8516	36	7
41	7-7/8	CP EH3	8516	8569	53	6-3/4
42	7-7/8	Globe MHT3	8569	8627	58	10-1/4
43	7-7/8	Globe HW 3	8627	8669	42	10
44	7-7/8	CP EH3	8669	8696	27	10
45	7-7/8	Globe HW 3	8696	8736	41	12
46	7-7/8	HTC W7-J	8736	8769	33	10-3/4
47	7-7/8	HTC W7-J	8769	8790	21	8-1/2
48	7-7/8	HTC W7R	8790	8810	20	7-1/2
49	7-7/8	HTC W7R2	8810	8834	30	8

Note: Bits #1 & 2 were 9-5/8"; #3 was a 13-3/4" reamer; #4 thru 49 were 7-7/8"

FORMATION TOPS

<u>Age</u>	<u>Formation</u>	<u>Depth</u>	<u>Datum</u>
Tertiary	Green River	Surface	+7290' KB
	Wasatch	1110'	+6180'
	Ohio Creek	2137'	+5153'
Cretaceous	Mesaverde	2286'	+5004'
	Sego Sand	4004'	+3286'
	Mancos Black Tongue	4203'	+3087'
	Castlegate	4559'	+2731'
	Mancos Shale	4632'	+2658'
	1st Emery	5372'	+1918'
	2nd Emery	5690'	+1600'
	Dakota*	8512'	-1220'
Jurassic	Cedar Mountain*	8573'	-1283'
	Brushy Basin (Morrison)*	8714'	-1424'

\*See Geologic discussion.

DRILL STEM TESTS

No. 1 8510-8569':

Tool opened 20 minutes first flow, strong blow. Closed for 30 minutes initial shutin. Re-opened for 60 minutes, second flow, with fair blow. Gas to surface in 35 minutes, to small to measure. Closed tool 60 minutes for final shutin. Recovered 255' of slightly gas cut mud. IHP 4410; FHP 4410; IFP 95; FFP 170' ISIP 1185; FSIP 740.

SAMPLE DESCRIPTION

0-30	Buff white to white, non crystalline limestone, with occasional hard brown striations, some samples high limonite staining
40-50	Graywacke gray to gray-green, some pyrite and carbonate inclusions, some pieces tend toward subgraywacke (almost quartzitic sandstone)
50-70	Subgraywacke, abundant pyrite and chalcoprite inclusions
70-100	Graywacke as above, finer quartz constituents
100-110	Gray siltstone with black carbonaceous inclusions
110-120	Missing
120-130	Coarse gray siltstone with black carbonaceous inclusions
130-140	Siltstone, steel gray, very fine with less carbonaceous inclusions than above
140-150	Very fine, stratified mudstone, blue to gray with streaks of tan
150-170	Cream white to buff limestone, no crystalline structures, some vugular, brown carbonaceous inclusions
170-260	Missing
260-280	Cream white to buff limestone non-crystalline with some brown inclusions. Also finely crystalline blue-green limestone with pyrite inclusions
280-290	Missing
290-300	Sandstone, quartz, very poor cementation, some weak fluorescence, no odor, taste
300-320	Missing
320-330	Limestone, very fine crystals, steel gray to gray green, very little carbonaceous inclusions
330-360	Missing

360-370	As 320-330
370-380	Missing
380-390	Cream to buff, vugular limestone, non-crystalline, some quartz sandstone in sample, sugary with glauconite inclusions
390-400	As above, no sand
400-20	Cream-buff limestone as described above, with some blue-green limestone
420-40	As above with some medium grain blue-green sandstone, quartz and some marl, brown and white dolomitic
440-460	As above less sand, some graywacke
460-480	As above
480-500	As above
500-520	White to buff limestone, non-crystalline, some oolites, some vugular, some pyrite
520-80	Missing
580-600	Siltstone, steel gray, with pyritic inclusions, very fine grain
600-20	As above with white limestone, similar to above description
620-40	Gray to white sand, medium to fine grain quartz, white limestone, white and brown marl
640-60	As above with gray siltstone, black carbonaceous inclusions
660-700	As above with buff to tan siltstone; white marly limestone, pyrite, marcasite
700-720	Sandstone, medium to very fine grain, dirty with carbonaceous and glauc. inclusions mostly clay filled. Some light gray to gray siltstone, a few gray shale
720-40	As above, slight increase in sand which cleaned up, less clay filled, no shale
740-60	As above sand back to clay filled sand, some tan to buff silt, very hard
760-80	Increased amount of silt; dark blue-green limestone, very finely crystalline
780-800	Increase quartz sandstone as described above, dirty, glauc. inclusions, medium grain, gray, decreased amount of green-blue limestone
800-30	Very fine light gray siltstone with minor amounts of black carbonaceous inclusions, slightly calcareous greenish-yellow sandstone, very fine grain, medium hard, minor darker inclusions, no show oil
830-50	Siltstone, medium gray, tending to gray shale, very minor specks of black inclusions
850-60	Gray shale as above
860-70	Light gray fine grain sandstone and shale as above
870-90	Very fine grain white to gray quartzitic sandstone, with inclusions, carbonaceous; minor amount of blue limestone
890-900	Gray shale (possible increase in green-yellow sand-silt described in 800-30)
900-920	Gray shale, gray-white sand
920-30	White and light gray quartzitic sandstone, very clay filled, friable, very fine grain
930-40	Gray shale, silty; gray (slightly bluish), very fine crystalline limestone, some of latter arenaceous
940-50	As above no shale
950-60	White, clay filled sandstone, medium to fine grain and blue-gray limestone (as in 930-40)
960-70	White to gray siltstone with laminations of carbonaceous inclusions
970-80	As above with minor amount of buff limestone with sand grain and darker fossils
980-90	Sand as above, blue-gray lime. buff limestone
990-1000	As above some brown marl
1000-10	Sand, light gray, very dirty, fine to medium grain black and brown inclusions, looks clay filled

1010-20	As above, becoming salt and pepper
1020-30	As above
1030-40	Buff to cream limestone, non-crystalline; also gray siltstone and shale
1040-50	Dark gray shale, some bordering on siltstone of same color
1050-60	As above
1060-70	Brown, non-crystalline limestone, some stratified with lighter brown; fossiliferous black inclusions
1070-80	As above, dark gray shale
1080-90	Dark gray siltstone; dirty gray-white medium grained quartzitic sandstone, sand has carbonaceous and glauconitic inclusions
1090-1100	As above, sand more predominant
1100-10	As above, sand and silt 50/50
1100-1200	Interval of thinly bedded limestones of various characters and colors
1110-20	Limestone, light brown to tan, very hard, strongly dolomitic
1120-30	Brown lime, not so dolomitic, some very arenaceous, dark gray limestone with nodules of light tan to brown limestone
1130-40	As above without the nodular limestone
1140-50	Light brown, buff to cream limestone, dark brown limestone; gray very oolitic limestone (cream colored oolites in dark gray matrix)
1150-60	As above with very marly brown to buff limestone
1160-70	As above, gray shale as well
1170-1200	As above less shale
1200-10	Sand, light gray to white, very dirty, medium to fine grained quartz, brown, highly calcareous inclusions
1210-20	As above, probably interbedded with gray coarse grained siltstone
1220-30	As above; also dark brown limestone
1230-40	Light cream, buff limestone highly oolitic and slightly dolomitic, some white quartz with lime nodules
1240-60	As above with some dark gray, nodular or oolitic limestone
1260-70	As above with some minor sand as described below
1270-80	Sand, light gray to white, medium grain quartz, clay-filled inclusions; brown carbonates, magnetite, glauconitic
1280-90	As above, more glauconitic
1290-1300	Tan and rusty brown siltstone, some with limonite staining, some hematite globs
1300-10	As above grading into light turquoise limestone
1310-40	Buff to cream, limestone, sometimes with mottled gray, highly fossiliferous, almost a fossil conglomerate, no fossil recognizable, too deformed
1240-50	As above, tending towards oolitic limestone, also limestone is more siliceous
1250-60	As above with some gray siltstone
1260-70	Sand, large to medium grain white to gray, dirty quartz, some clay-filled, large size inclusions of hematite, magnetite, some glauconite, pyrite
1270-80	As above, some rust color silt
1280-90	Rust colored siltstone (red bed type); some turquoise color non-calcite silt with some specks of brown
1390-1400	Turquoise silt grading to turquoise color quartz sand, heavily glauconitic, green color in better sand, medium to fine grain
1400-10	As above with some very red siltstone
1410-40	Red siltstone grading into a very fine grained red sandstone

1440-80	Steel gray siltstone and very fine gray, glauconitic quartz sandstone
1480-1500	Sand grading to silt as described in 1440-50; some highly calcareous blue-green silt
1500-1600	Fine to medium grain sandstone, quartzitic with black and glauc. inclusions, salt and pepper
1600-20	Sand as above with minor amounts of gray shale and red siltstone
1620-30	As above, a great deal of pyrite; some turquoise limestone, red silt; some gray silt
1630-40	As above, slight increase in red silt
1640-50	Strong increase in gray and red siltstone, decreasing amount of sand
1650-60	Very soft, rotten silt, grayish-green in color; some amount of red siltstone
1660-80	Missing
1680-90	Steel gray, slightly greenish quartz sand and siltsand with chert inclusions, glauconitic
1690-1700	Missing
1700-10	Missing
1710-30	Steel gray, slightly greenish siltstone, soft, calcareous
1730-40	As above, very slight increase in gray siltstone
1740-50	As above, grain size of sand smaller, more glauconitic
1750-70	Fine to medium grained quartzitic sandstone; gray, clay-filled with black chert and glauconitic inclusions
1770-80	As above, increased amount of steel gray siltstone
1780-1800	Missing, possible lime stringer (lime found in 1800-10)
1800-10	Quartz sand as above, large amount of steel gray siltstone, calcareous, limestone, some buff non crystalline
1810-20	Deep hematitic siltstone; sample had very little sand
1820-30	Steel gray silt and blue gray limestone
1830-50	Fine gray calcareous sand with quartz, glauconite inclusions, clay filled, some chert
1850-60	As above, sand slightly "cleaner"
1860-70	Steel gray calcareous silt
1870-90	As above mixed with fine quartz sand, glauconitic
1890-1900	Sand, silt and a few pieces of white lime
1900-20	Extremely fine grained glauconitic sand, very light green in color
1920-30	White, fine grained sand, with black inclusions
1930-40	White, fine to medium grain calcitic sand, slightly quartzitic, possibly a reworked limestone, pieces are lenticular rather than rounded; inclusions of quartz, chert, pyrite, glauconite, oily appearance
1940-50	As above possible increase in quartz
1950-60	As above increased amount of quartz and quartz sand, medium grained glauconitic with black inclusions
1960-70	Some sand as above; gray tan crystalline limestone
1970-80	Gray-tan crystalline limestone
1980-2000	As above
2000-10	Gray-green finely crystalline limestone, some quite arenaceous, mostly no quartz
2010-20	As above with some darker green limestone
2020-30	As above mixed with lighter green limestone and buff limestone
2030-40	As above with some dark green shale or mudstone
2040-80	Buff tan limestone, non-crystalline, green-grey lime; some sugary, glauconitic sandstone

2080-90 As above some highly fossiliferous, light tan with dark brown inclusions  
 2090-2100 As above with some gray shale  
 2100-10 Rust colored, slightly calcareous siltstone  
 2110-30 Deep green shale, light green limestone  
 2130-40 Slight increase in shale  
 2240-60 As in 2110-20  
 2260-80 Lime, shale, some white calcareous sand with black and some scattered red inclusions  
 2280-90 As above, also some few pieces buff limestone, non-crystalline  
 2290-2200 As above with some gray, very calcareous shale, some pure white lime  
 2200-10 Dark gray shale; very fine grained quartzitic sand, biotite inclusions along bedding planes, color of sand is dark gray with black streaks  
 2210-20 Dark gray shale, as above, less sand  
 2220-30 Dark shale, also medium to large green quartz sand, very dirty, white to gray color  
 2230-40 Dark gray siltstone (gray shale above gradient)  
 2240-50 Increase in dirty sand (as described in 2220-30), calcitic cementation  
 2250-60 Sand as above; buff non-crystalline limestone; some coal; sand has great deal of pyrite  
 2260-70 Dark gray shale or silt with coal inclusions, sand  
 2270-80 Some dark buff marly limestone  
 2280-90 Sand as described above, heavily pyritic  
 2290-2300 Gray silts and shales, black inclusions  
 2300-10 Very fine gray sand, quartzitic with black granular inclusions  
 2310-20 As above more sand  
 2320-50 Fine grain salt and pepper sand, dirty white, to gray; grain size increase from above  
 2350-60 Dark gray shale; tan non-crystalline limestone  
 2360-70 Gray silt and sand as described 2320-30  
 2370-80 As above  
 2380-90 Gray sands and silts  
 2390-2400 Gray sands and silts, some buff colored non-crystalline limestone  
 2400-10 Missing  
 2410-20 Very dark gray shale (almost black) with black stratified inclusions  
 2420-30 As above, grading to gray-white salt and pepper sandstone, quartz medium to fine grain with chert inclusions  
 2430-40 Sand as above  
 2440-60 Sand as above, grading back to very dark gray silt with coal laminations, some free coal  
 2460-70 Sandy coal and coal  
 2470-80 Gray shale with black incl., some quartz sand, very sli. glauc.  
 2480-90 Sand and sandy coal  
 2490-2510 Dirty gray salt and pepper sand  
 2510-20 Dark gray shale with some coal and coal on shale in laminations, fossiliferous wood, black  
 2520-50 Represents sequence of sandstone, shale, thin coal beds  
 2550-60 Fine to medium dirty gray quartzitic sandstone with black carbonaceous inclusions, salt and pepper  
 2560-70 As above with some dark gray silt, black inclusions  
 2570-80 Sand as described 2550-60  
 2580-2610 Sand as above with gray shale  
 2610-20 As above  
 2620-30 As above, slight increase in grain size  
 2630-40 As above with some shale with black coal along bedding, some free coal

2640-50	Gray silty shale
2650-60	As above with some tan lime; and some gray-blue shale
2660-70	Brown siltstone with coal inclusions along bedding
2670-80	Missing, probably sand
2680-90	Gray shale
2690-2700	Very fine sand and gray silt
2700-20	Medium grain to fine white quartzitic sand with black inclusions, very clayey, some feldspar, biotite
2720-50	Gray brown shale with very thin coal laminations, some steel gray shale with no coal
2750-60	Medium grain, very dirty quartz sandstone with black inclusions some coal inclusions
2760-70	Sand and gray shale
2770-80	Sand as above
2780-2800	Steel gray shale; brown-gray silt with coal inclusions; low rank coal
<u>2800-10</u>	Gray siltstone with black specks
2810-20	As above very small amount of gray non-crystalline lime
2820-30	Very fine grain brownish-white (egg shell) arenaceous lime some quartz sand with limestone pebbles
2830-40	Tan limestone, brown silt, coal
2840-50	Gray-white black speckled, very fine grain quartz sand, tending toward silt
2850-60	Medium grain white quartz sandstone, dirty matrix with black inclusions, some glauconite, much smaller grain sand is clayey
2860-80	As above decrease in grain size
2880-90	Steel gray to blue-gray calcareous silt, some with brown mottled staining
2890-2900	Gray brown silts with black inclusions, grading to whitish, brown, very fine grained quartz sandstone with black inclusions along bedding planes
<u>2900-10</u>	As above (sand), with gray shale
2910-20	Dark brown silt with coal; thin coal bed
2920-30	Dark brown silt and gray shale
2930-50	Large to medium grain white quartz sand, sand has coal inclusions, dirty matrix, slight to very clayey
2950-60	As above with thin bed of tan and turquoise shale, non-calcareous
2960-70	Shale as above, but slightly calcareous
2970-80	Dirty quartz sand as described in 2930-40
2980-3000	Dark brown silt with coal inclusions on beddings; free coal
3000-10	Dark gray shale
3010-20	As above with brown silt, coal
3020-30	Brown to white, very fine grained quartz sand, dirty matrix
3030-40	Gray shale, brown silt with coal
3040-50	As above, gray shale predominates
3050-60	Gray-brown silt with some gray shale
3060-70	As above with steel gray shale
3070-90	Brown silt and coal
3090-3100	Gray, coarse grain silt
<u>3100-10</u>	Medium to fine grain white gray quartz sandstone with black inclusions, some feldspar, glauc. clayey
3110-20	As above, coarser grain
3120-30	As above; thin dolomite string, buff; some brown silt with coal inclusions
3130-40	Brown silt with coal along bedding, some red silt
3140-50	Coal; turquoise shale

3150-60	Gray siltstone
3160-70	Gray siltstone to gray shale; some platy selenite crystals
3170-80	Brown silts and gray silts with coal on bedding of brown silts, more selenite
3180-90	Brown silts; coal
3190-3200	Brown silts; gray shales
3200-10	Brown silt; white to gray quartz sandstone as described 3100-10
3210-20	Brown silt, coal
3220-40	Coal, silt, sandstone
3240-50	Thin red and green shale, brown silt and coal
3250-70	Brown silt and coal
3270-80	Brown silt; coal; red, green, gray shales
3280-90	As above, more coal
3290-3300	Brown, coarse green silt and brownish white, fine grain sand, quartz
3300-20	Missing
3320-30	Brown silt and coal
3330-40	As above with red, green, gray shale
3340-50	Brown and brown-grey, coarse grain silts
3350-60	Red and green shales, coal
3360-70	Brown silt and coal
3370-80	Missing
3380-90	Coarse grain silt, brown to very fine quartz sand, brown, dirty matrix
3390-3400	Sand as described above to gray silt, to brown silt with coal inclusions; free coal
3400-10	Gray-brown, black speckled, very sandy silt
3410-20	As above with coal
3420-30	Dirty brown, medium to fine grain quartz sand and coarser grain salt and pepper sand
3430-40	As above, coarser limestone; red, green, gray shale
3440-50	Brown silt, higher % of free coal
3450-60	Buff, very fine crystalline limestone, red, green, gray shale, coal
3460-70	Blue-green shale, brown silts, coal
3470-80	Green, red, gray shale, brown silt, coal
3480-90	Brown silt, coal
3490-3500	White, medium grain, well sorted, very clean quartzitic sand, sand had blue-white fluorescence; mudlogger indicated high methane. No cut on carbontet
3500-10	As above with black inclusions on bedding, very carbonaceous, not biotite
3510-20	As above becoming dirtier matrix; some gray siltstone
3520-30	Missing
3530-40	Missing
3540-50	Brown silt, gray shale, some coal
3550-60	White quartz sand as described 3490-3500
3560-70	Sand as above; gray limey shale, red and green shale
3570-80	Brown silt and coal
3580-90	Fine grained, white quartz sand, well sorted, slight fluorescence (methane)
3590-3600	Brown silt and high % of coal (free)
3600-10	Brown silt, yellowish mud stone, red and green shale
3610-20	Brown silt, with very little coal
3620-30	Red, green, gray shales
3630-40	White sand, very fine grain, well sorted and coal
3640-50	Brown silt and high % coal
3650-60	Brown silt, red and green shale, coal
3660-70	Medium grain, white, well sorted quartz sandstone, clean
3670-80	Brown silt, red and green shale
3680-90	As above, predominantly brown silt
3690-3700	Grey to brown siltyshale

- 3700-20 Gray brown silty shale, some with bedding cleavage, black inclusions, micaceous
- 3720-40 As above with some particles being very silty, more gray in color
- 3740-50 As above, some gray-white very fine grained quartz sand
- 3750-60 Brown, very silty shale with some quartz sand
- 3760-70 Light brown silty shale and dark brown shale
- 3770-80 Coal, some dark brown silt
- 3780-90 Coal and more dark brown silt than above
- 3790-3810 Dark brown silt, some white quartz sand, brown shale
- 3810-20 White medium grain, clean quartz sandstone with black inclusions; weak fluorescence, gas log indicates methane, brown shale
- 3820-30 As above with coal
- 3830-40 As above with coal and gray and brown shale
- 3840-60 Gray-brown shale as described 3700-10
- 3860-70 Red, green, brown shales
- 3870-80 Light gray and light brown siltstone
- 3880-90 Medium grain salt and pepper quartz sand
- 3890-3900 Light gray and brown silts and shales
- 3900-20 Brown, silty shales and silts, micaceous
- 3920-30 Medium grain, white, with some black inclusions, quartz sandstone, no show, no fluorescence
- 3930-40 Sand as above, with brown silts and shales; some white fluorescence, no cut, no gas kick on logger
- 3940-50 Brown silt, very micaceous brown shale with black inclusions along bedding
- 3950-60 As above
- 3960-70 Brown silt, some shale as above, some quartz sand
- 3970-80 Fine to medium grain; white quartz sand; some slightly brownish, fairly clean matrix; some feldspar pebbles in sand, weak fluorescence, spotty, no cut, no kick on logger
- 3980-90 Coarser grain sand; increase in brown silty shale
- 3990-4000 Brown silty shale, red and green shale, some coal
- 4000-10 Brown shale and silt; brown-white, very silty quartz sandstone, no fluorescence
- 4010-20 Coal; brown silty, coal; very few pieces orange-buff limestone with oil staining; gave oil kick on mud logger, good cut in carbontet, scattered fluorescence, but too few pieces indicating thin limestone bed
- 4020-30 Brown silt, coal some sand, no sandstone fluorescence
- 4030-40 As above, red and green shales
- 4040-50 Very dirty brown, medium grain quartz sand with biotite, carbonaceous inclusions, silty in places, no shows, no fluorescence
- 4050-70 As above no clean-up of sandstone, weak, scattered fluorescence, no kick on logger
- 4070-80 As above, sand becoming cleaner, coarser grain with chert and glauconitic inclusions
- 4080-4130 Represents thin beds of sand, silty sand and silts
- 4080-90 As above with some brown silt, a little coal, some green shale
- 4090-4100 As above increase in silt, coal and shale
- 4100-30 Sand becoming very dirty, silt cut, some brown silt in sample, some orange buff lime, weak fluorescence, no kick on mud logger
- 4130-40 Predominantly sand with brown silty shale and silt
- 4140-50 Predominantly brown silt with some dirty sand
- 4150-70 As above, but predominantly silty shale
- 4170-80 Predominantly dirty sand with brown silty shale
- 4180-90 As above with gray shale

4190-4200	Red and gray-green shale, white medium to coarse grain quartz sand with chert inclusions and feldspar pebbles; some coal
4200-10	As above mostly sand, no fluorescence
4210-20	Sand as above
4220-30	Sand as above, slightly more brown shale
4230-50	Red, gray, brown shale
4250-60	Brown and gray shales; some very silty brown shale
4260-70	Gray-red shale and brown shale; brown siltstone, whitish sand, very fine grain
4270-80	Whitish sandstone, as above, brown silt, a little brown shale
4280-90	Brown and whitish brown silts
4290-4310	Red and green shales, brown micaceous shale, brown and white silts
4310-30	Predominantly brown, very silty shale
4330-40	Coarse grain, white salt and pepper quartz sand, no fluorescence
4340-50	As above, slightly less sand, increase in brown, silty, micaceous shale
4350-60	Very fine grain brown-white quartz sand, almost a silt
4360-70	As above, slightly coarser grain
4370-80	As above, but very fine grain (silty)
4380-90	Gray and brown silts
4390-4400	Brown, silty shales
4400-10	Brown, very silty shale, some very arenaceous pieces
4410-50	As above, some red and green shales, very thin
4450-4570	Very dark brown-gray shale
4570-4600	Tan and white, medium to coarse grain sand; slightly salt and pepper sand
4600-10	As above, finer grain
4610-20	As above, slightly silty
4620-30	Coarse silt and sand, both dirty gray
4630-40	As above, silt, little sand
4640-50	Brown silts and gray silts
4650-60	Mostly gray silts
4660-4700	Brown-gray micaceous shale, slightly silty
4700-20	Brown gray slightly micaceous shale, silty in parts, with some very silty, tite, very hard brown-gray sand quartz, no fluorescence
4720-30	Increase in sandstone, no fluorescence
4730-40	As above, no fluorescence
4740-50	Decrease in sand, graded to brown, silt
4750-60	Dark brown silts, some gray shale, dark brown silty shale
4760-90	Dark brown, very silty shale and silt
4790-4800	Decrease in silt, increase in shale
4800-20	Brown, silty shale; black carbonaceous inclusions
4820-30	Tan and buff dolomitic limestone, very few pieces, some calcareous tan shale; mostly brown silty shale
4830-40	Dark brown-black silty shale
4840-60	As above
4860-70	Dark brown shale, only slightly silty (some places almost black)
4870-4900	As above, some black inclusions
4900-60	As above
4960-70	Slight increase in silt
4970-90	As above, almost a siltstone
4990-5010	As above, some pieces almost a true sand
5010-20	Missing
5020-90	Dark gray to black, some brown tones, very silty shale to silt

5090-5160 As above, less silty  
 5160-90 As above, slightly more silty in portions, this a little lighter color gray  
 5190-5200 Missing  
 5200-10 Very silty, almost sandstone in some portions, light to dark gray, black speckled  
 5210-30 Slightly less silty  
 5230-40 As above with some light tan mudstone  
 5240-70 Silty brown gray shale  
 5270-80 As above with thin gray shale and some calcite crystals  
 5280-5300 Silty brown-gray shale  
 5300-30 As above with some very sandy pieces  
 5330-40 As above increase in silt  
 5340-50 As above with some very dirty gray medium to fine grained sand  
 5350-60 Sand diminish, some sand with glauc.; green and red shale  
 5360-70 As above, mostly silty brown-gray shale  
 5370-80 Strong increase in sandstone as described above  
 5380-90 Decrease in sand, brown shale, red silt, shale and mudstone  
 5390-5400 As above, very little sandstone, probably cavings  
 5400-10 Very silty, silt and sand  
 5410-20 Brown gray shale, silty; red and green shale, thin  
 5420-30 Fine grain, gray, tite and clayfill quartz sand  
 5430-40 As above  
 5440-50 Gray shale; brown silt; red and green shale  
 5450-60 As above, trace of coal, selenite  
 5460-70 Brown gray fine silt grading to dirty brown-gray, very fine grain quartz sand  
 5470-80 Sand as above, more gray and white, very fine black inclusions, very slight salt and pepper  
 5480-90 Sand diminishing; brown-gray shale  
 5490-5500 Brown-gray to white and gray, fine grained, silty quartzitic sand, black inclusions, slightly glauconitic; slightly salt and pper, no show, no mud log kick, no fluorescence  
 5500-10 Brown, coarse grain silt grading to fine to medium quartz sand, very hard, tight, clay filled, salt and pepper, trace glauc., no show, kick, fluorescence  
 5510-20 Sand, as above, possibly a thin silt band as well  
 5520-25 As above sand and silt  
 5525-30 Sand, as above  
 5530-35 Sand as above with brown, green shale, tan-buff dolomite very few pieces  
 5535-40 Buff dolomite, more than above, still only few pieces, green limestone; gray shale and sandstone, as above  
 5540-45 Medium grain, dirty, gray salt and pepper quartz sand, some silt, some pieces show sand-silt contact, very hard, tight  
 5545-50 As above, no silt  
 5550-55 As above, some amount of silt  
 5555-60 Silt grading to sand as above, no show  
 5560-65 Silt and sand, very tight, very fine grained, slightly salt and pepper, some selenite, no shows  
 5565-70 Gray, silty shale  
 5570-75 Gray silty shale; gray silt, medium grain white slightly salt and pepper quartz sand, no shows  
 5575-80 Tight, dirty gray sand, grading to gray silt  
 5580-85 Sand as above, grading to silt; to gray silty shale  
 5585-90 15 min. circ. - As above, less sand  
 5590-95 30 min. circ. - Gray silt and shale  
 5595-5600 45 min. circ. - Mostly gray shale  
 5605-10 60 min. circ. - Mostly gray shale; some silt, very little sand  
 5610 First sample after trip, mostly gray shale, some silt, very little sand  
 5610-15 Gray shale and very hard, tight, very silty gray quartz sandstone

5615-20 As above, increase in sand; grain size slightly coarser  
 5620-25 Decrease in sand; mostly gray shale  
 5625-30 Slight increase in sand; some silt, shale  
 5630-35 Decrease in sand, some silt, shale  
 5635-40 Sand, silt, shale  
 5640-45 Decrease in sand, mostly silt, shale  
 5645-50 Shale, silt, sand (in order of abundance)  
 5650-55 As above with increase in silt  
 5655-60 Very fine grain, dirty gray sand with black and glauc. in-  
 clusions, hard and tight and silt  
 5660-70 Sand as above, silt, shale  
 5670-80 Shale, 50%/50% white to gray medium grain quartzitic sand,  
 salt and pepper, some glauc., very hard, tight; no shows,  
 a few pieces of white, very calcitic material, appears to be  
 vein material  
 5680-90 Sand as above, hard, tight, salt and pepper, no show  
 5690-5700 Sand as above, coarser, more predominant, no show, some  
 bentonite  
 5700-20 As above but with less sand, finer, more silt in sample  
 5720-30 Gray silt, probably grading to gray shale; white lime; green  
 calcite shale; red shale  
 5730-40 Gray shale, red shale  
 5740-50 Red, green, gray shales  
 5750-60 As above, turquoise limestone stringer  
 5760-70 Brown siltstone; very dirty, fine grain quartz sand, gray,  
 hard and tight, no show  
 5770-80 Sand as above and dark gray-brown, slightly micaceous shale,  
 no show  
 5780-90 Sand as above and silt, no show  
 5790-5800 As above mostly very fine grained sand, no show  
 5800-10 Medium to fine grain, quartzitic sand, very tight, slightly  
 salt and pepper, slightly glauc., cut by laminations of silt,  
 slightly bentonitic in clay filling, no show  
 5810-30 As above, traces of red and green shale, coal, no show  
 5830-40 As above, occasional shale lamination, growing slightly  
 siltier, no show  
 5842 Circulating:  
 15 min. - Medium to fine grain, quartzitic sand, gray, salt  
 and pepper, very slightly glauc., no show, very  
 hard, well cemented tight; some clayey  
 30 min. - As above, trace coal, no show  
 45 min. - As above  
 1 hour - As above with gray shale, tan limestone, trace  
 red silty shale  
**After Trip**  
 5860 Sand as above, grading to silt, pale turquoise very limey  
 shale, gray brown shale, gray shale with black inclusions  
 5860-90 Very fine grain to fine grain, dirty quartzitic sand, salt and  
 pepper, trace glauc., well cemented, slightly stratification  
 apparent, hard and tight, no show  
 5890-5900 Sand as above, grading to coarse silt, brown-gray  
 5900-10 Silt as above and very fine grain, dirty sand with black and  
 glauc. inclusions, no show, some gray shale; some buff  
 limestone  
 5910-20 Gray silt and gray quartzitic sand, very fine grained, tight,  
 black inclusions, trace glauc.  
 5920-30 As above, trace buff limestone, calc. green shale  
 5930-50 Sand as above, siltier; with some gray-brown shale in sample  
 slight scattered fluorescence, no cut, no kick on logger  
 5950-60 Thin sand (as described above) laminations cut by thin silt  
 beds (apparent on individual grains) brown silt; gray shale,  
 selenite

5960-70	Gray-black shale and quartzitic sand; some buff limestone; gray silt
5970-80	Sand, silt and very silty shale, brown-gray in color
5980-90	Some sand and silt, predominately shale, brown-gray in color, pyrite, some selenite or bentonite
5990-6000	As above with addition of light gray calc. shale; increased amount of brown-gray shale
6000-10	Sand as above increased; some brown-gray shale; silt; buff limestone, gray calc. lime, sand is very dark gray, medium to fine grain, black inclusions; only trace of glauc. scattered, no show, no fluorescence
6010-20	Sand as above, decrease in sand; silt; dark gray, red and green shale
6020-30	Red shale, some of it tan; brown silty shale with mottled black streaks and patches
6030-40	Brown silty shale as above; gray limestone with brown and black inclusions, some silty sand
6040-50	Gray silty shale and very fine grain dirty, white and brown silty sand
6050-70	Sand as above, gray, clayey silt, red and green shale
6070-80	Gray shale with darker, mottled, carbonaceous intrusions, slightly micaceous
6080-90	As above with red and gray shale
6090-6100	Shale as above
<u>6100-10</u>	Gray shale with black mottled, carbonaceous inclusions, slightly brown shades, slightly micaceous, occasional silt piece
6110-20	Turquoise shale, red shale, gray silty shale, as above
6120-50	Shale gray-brown, micaceous, with black carbonaceous inclusions, some selenite, gray and red shale
6150-90	Gray shale, red and green shale, gray non-crystalline limestone, represents thin interbeds
6190-6300	As above, occasional piece of coal
6300-50	Gray shale with black mottled, carbonaceous inclusions
6350-6400	More homogenous in gray-black color, shale as above
6400-6530	Gray shale, slightly micaceous, some black carbonaceous material, slightly brown tint
6530-40	As above with slight amount of red and green shale
6540-50	As above 6500-30
6550-6600	As above
6600-20	Trace of gray silty sand, gray shale, trace selenite, shale is brown-black, with stratified black inclusions, very slightly micaceous
6620-30	Shale as above, with slight fossiliferous gray shale
6630-50	As above, trace silt
6650-90	Gray brown, slightly micaceous shale, some black carbonaceous inclusions
6690-6700	As above trace red silty shale
6700-10	As above, trace selenite
6710-6860	Gray-brown shale, black carbonaceous inclusions, very slightly micaceous, slightly stratified
6860-70	As above, trace of buff nodular limestone
6870-6930	Brown-gray shale as described above
6930-40	Very fine grain, light gray siltstone, almost a shale, trace gray lime, selenite crystals
6940-7000	Gray shale as described 6870-6900
7000-80	Gray-black, hard shale, slightly micaceous
7080-90	As above, trace of buff non-crystalline limestone; trace red and green shale
7090-7100	Missing
7100-30	Gray-black shale, as above
7130-40	As above, trace of siltstone, slightly arenaceous, trace of glauc., calcitic cement

7140-50 As above, silt almost a very fine grained sand, friable, glauc.  
 7150-7200 Gray-black shale as described above  
 7200-10 As above, trace of buff limestone  
 7210-20 Gray-black shale  
 7220-30 As above with trace of silt, gray limestone  
 7230-50 Gray-black shale  
 7250-70 Gray-black, brittle shale, micaceous, trace of white limestone  
 7270-7300 Gray-black shale, trace of limestone at 7300'  
 7300-50 As above, trace of limestone at 7340'  
 7350-60 As above, trace of white limestone, red and green shale  
 7360-7420 Gray-black micaceous shale  
 7420-30 As above, trace of hard sandstone, trace pyrite  
 7430-40 As above, trace of white limestone  
 7440-60 Gray-black shale, trace of red shale, pyrite  
 7460-70 As above, trace of glauc., medium grain quartzitic sand  
 7470-7500 Fine to medium grain, hard, tight, dirty, quartzitic sand, pyritic, no shows, with shale  
 7500-10 Sand, very dirty, stratified in layers with silt  
 7510-20 Black shale  
 7520-30 Very hard sand and sand silt, trace red and green shale  
 7530-40 Black shale, trace white limestone  
 7540-50 Black shale, trace sand  
 7550-60 Black shale  
 7560-70 Black shale, trace sand, hard and tight, well cemented. quartzite  
 7570-7600 Black shale  
 7600-40 Black shale, hard, silty sand very micaceous, glauc. sand, pebbles included  
 7640-50 Black shale with hard silt, micaceous  
 7650-60 Black shale  
 7660-70 Black shale with traces of hard, dense, very fine grained quartz  
 7670-90 Black shale  
 7690-7700 Black shale with traces of white, hard, medium grain sand, micaceous  
 7700-20 Black shale  
 7720-40 Black shale with trace of glauc., limey sand, trace of limestone at 7740'  
 7740-50 Missing  
 7750-60 Black shale  
 7760-7800 Black shale with trace of hard quartzitic sandstone, clay fill, with black inclusions, some micaceous  
 7800-10 Gray black shale with trace of medium grain clay-fill quartz sand, heavy micaceous, slightly glauc. and silt  
 7810-20 As above, less sand  
 7820-40 Shale  
 7840-50 Missing  
 7850-80 Shale and silt, silty shale, slightly brown tint  
 7880-90 Less silty, blacker, less brown tint  
 7890-7900 As above with trace of white limestone  
 7900-80 Gray-black shale, faintly stratified; some black specks, some pieces very slightly silty, very slightly micaceous  
 7980-8000 Slightly less stratified, finer grained shale, no black inclusions  
 8000-40 As above, some blue-green, slightly calc. shale  
 8040-50 Slightly more silty in parts  
 8050-90 As before, less siltiness in shale  
 8090-8100 As above with addition of turquoise shale  
 8100-20 Gray-black shale, faintly strat. some black specks, slightly silty in parts, micaceous, slightly brown tones

8120-50 As above with some brown shale  
 8150-90 Gray to black shale, homogenous, slightly micaceous  
 8190-8200 As above with trace of red and green shale  
 8200-10 As above, including trace of red and green shale  
 8210-20 No red and green shale, black shale with trace of gray silt  
 8220-50 As above with trace pyrite with silty shale parts  
 8250-60 As above, increase in silt, trace very silty sandstone  
 8260-70 As above, some free pyrite, some buff-orange limestone, abundant flakes muscovite, no sand  
 8270-80 Silty black shale, no sand, no limestone  
 8280-90 As above, slightly less silty, pyrite  
 8290-8300 As above, marked increase in silt  
 8300-10 As above, occasional brown, very fine grain, dirty silty sand, no show or fluorescence  
 8310-20 As above, slight increase in sand, sand is tight, brown or gray, with laminations of silt and shale  
 8320-50 Sand as above and shale  
 8350-60 Sample almost entirely silty sand and silt  
 8360-70 Sand, dirty, almost black or occasional light gray, hard, tite, no show, shale, silty, black, brown-black silt  
 8374 Circulating:  
 20 min. - Dark brown-gray, medium to coarse grain sand, silt cut, limey, occasional light brown piece, no show; abundant dark silt  
 40 min. - As above with free pyrite  
 60 min. - As above more sand, silt sand is heavily pyritic, brown to ochre in color, often masses of non-arenaceous quartz  
 80 min - As above  
 8360-80 Gray black, very tabular shaped black shale, very slightly micaceous, some gray shale, no show  
 8380-85 Extremely hard, dense, brown-black, sand very cherty, quartzitic, some pyrite, trace of green-blue shale, pebbles in sand  
 8385-90 Sand as above, scattered and few glauconite sand, black shale, brittle, jet black  
 8390-8400 Sand as above, black shale, green-gray shale  
 8400-20 Sand and silt, plattey, light buff, min. non-carbonaceous with abundant bronze mica within, sand gray-green, glauc. micaceous  
 8422 Circulating:  
 15 min. - Dark gray to light gray, very dirty, fine grained quartz sand, slightly glauc.  
 30 min. - As above, siltier  
 45 min. - Increase in silt, black, decreasing in sand  
 60 min. - Very fine grain, dark gray sand, clayey, slightly glauc.  
 8420 75 min. - As above  
 8420-30 Sand as above, grading to gray-black silt to very black shale, hard and brittle, tabular pieces  
 8430-40 Black shale as above, red silty shale, occasional green shale, trace coal  
 8440-50 Black silt, soft black shale  
 8450-60 Gray to black, medium grain quartzitic sand, trace pyrite, some chert  
 8460-70 Black brittle shale with occasional trace pyrite; trace coal  
 8470-80 As above, some large grain quartz, buff limestone stringer, some very silty sandstone  
 8480-90 Very fine grained white quartz sand, very fine grain with black inclusions; some medium grain clayfilled, very hard, silica cement, no show

8490-8500	Decrease in sand, some gray silt, gray-black shale
8500-10	Black shale, hard, tabular, trace coal
8516	Added 12' to geol. for corr. due to pipe strap
8510-20	White, medium to coarse quartz sand, very hard, high porosity and permeability, some with chert and glauc.; blue-green siltstone, slightly carbonaceous; brown and gray silt; red silty shale; buff limestone
8520-30	Blue-green siltstone and green-gray shale; red, silty shale; gray, very soft mudstone
8530-40	Medium grain white quartz sand, very clean, highly cemented with silica; gray mudstone, trace coal, sand with spotty stain, no fluorescence, good cut
8540-50	Sand as above, grading to very cherty black silt; buff limestone, green shale, trace coal
8550-60	Black sand to silt, cherty, hard; stratified; slight brown cast
8569	Added 5' to geograph due to pipe strap
8560-90	Missing due to fire
8590-8600	Medium grain white quartz sand, slightly glauc., with chert, no show, grading to gray-brown dirty sand to black very cherty sand hard and tight; red shale, gray, green shale, some white limestone
8600-10	Gray shale; black shale, slightly carbonaceous
8610-20	Red shale, trace green shale, trace sand, black highly carbonaceous shale
8620-35	Gray shale, green shale, some quartz sand (caving), black shale heavily carbonaceous, trace coal
8635-40	Dark gray shale, red and green shale, some lighter gray shale, silty
8640-50	As above (no green shale) trace white quartz sand, trace pyrite
8650-60	Gray-black shale, quartz sand, waxy quartz, clayfill, medium grain extreme well cemented, some gray shale
8660-70	Minor amounts of sand as above; white limestone; mostly light gray shale, some red shale with limonitic staining
8670-75	Gray shale, trace red shale, sand
8675-80	Gray shale and some gray-green shales
8680-85	As above; very fine grain; blue-green glauc. sand; some medium grain, tight clay fill quartz sand; some marly sand
8685-90	Very fine grain, blue-green glauc. sand; sand as above, gray shale
8690-95	Medium grain, very white quartz sand, highly cemented with pure quartz, highly bentonitic clay filling, pure quartzite, no show, no fluorescence, trace gypsum, chalky
8695-8700	As above with some silty, black, cherty sand
8700-05	Cherty sand; blue-green shale, brittle, but not hard
8705-10	Blue-green shale as above; very light gray, muddy shale, soft
8710-15	Darker gray silty shale; red and tan shale; blue-gray smokey quartz
8715-20	Gray silt (dark) with pyrite, brown-gray siltstone, almost a dirty sand
8720-25	Dark-gray brown silt as above, trace purple and red silty shale
8725-30	As above; trace sand
8730-35	Blue-gray shale, fine to medium gray quartz well rounded, highly cemented sand
8735-45	Missing
8745-50	Slightly green opaque quartz (chert); gray shale; red shale and silt, very slight trace quartz sand
8750-55	Red and gray shale; slight green opaque quartz, smokey white quartz
8755-60	Red and gray shale; minor amount of white, medium grain quartz sand, slightly clayey

8760-65 Red and gray shale; trace of sand as above and slightly green quartz

8765-70 Red and gray shale; trace of sand, as above and white, opaque non-crystalline quartz, trace gypsum

8770-75 White opaque quartz; gray siltstone; red and gray shale; trace sand

8775-80 White, slightly green opaque quartz; slightly purple-red shale; brown siltstone; vari-colored shale

8780-85 Slightly green shale; white quartzitic with very little arenaceous appearance

8785-90 Trace of quartzitic sand; gray silt, shaley, gray shale

8790-95 Blue-gray smokey quartz; white quartz sand, medium grain; brown silt; red silty shale (sample predominantly quartz)

8795-8800 As above in all components, slightly more sand

8800-05 White gypsum; fine to medium grain white quartz, blue-gray smokey quartz; vari-colored shales brown silts

8805-10 Very hard white and green-white quartz, not a sand

8810-15 White quartz as before, trace sand; vari-colored shale; hard, slightly lavender quartz

8815-20 White limestone; trace medium to coarse grain quartz sand, very hard, tight with pyrite; some quartz as above; vari-colored shale

8825-30 Vari-colored shale and silty shale; some opaque quartz with trace arenaceous

8834 Circulating:  
 30 min. - As above with brown tan limestone, trace medium to fine grained quartzitic sandstone; vari-colored shale  
 60 min. - As above, increase in sand  
 90 min. - As above, increase in sand, some silt

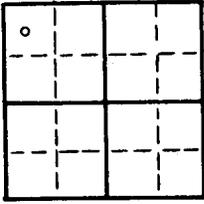
PLUGGING DATA

In compliance with the Federal Government and the State of Utah, the well was plugged in the following manner:

<u>Plug</u>	<u>Footage</u>	<u>Depths</u>	<u>Sacks Cement</u>
1.	100'	8487 8587	30 sacks
2.	100'	4534 4634	30 sacks
3.	100'	3979 4079	30 sacks
4.	100'	2261 2361	30 sacks
5.	100'	1085 1185	30 sacks
6.	50'	505 555	23 sacks
7.	50'	Surf. 50	23 sacks

A 4 foot length of 4" pipe was set in the surface casing, capped and a well marker welded to this pipe.

STATE OF UTAH OIL & GAS CONSERVATION COMMISSION SALT LAKE CITY, UTAH



Fee and Patented... State... Lease No. Public Domain... Lease No. Utah 03509-B Indian... Lease No.

SUNDRY NOTICES AND REPORTS ON WELLS

Table with 2 columns of report types and a checkmark column. Includes 'Notice of Intention to Drill', 'Subsequent Report of Water Shut-off', etc.

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

January 28, 1963, 19

Well No. 1 is located 660 ft. from N line and 525 ft. from W line of Sec. 17 NW 1/4 Sec. 17 T. 13S. R. 25 E. SLBM Wildcat Uintah Utah

The elevation of the derrick floor above sea level is 7290 feet. KB

A drilling and plugging bond has been filed with \$5,000 Oil & Gas Lease Bond Travelers Indemnity Co. 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 work, surface formation, and date anticipate spudding-in.)

Verbal permission to plug given by Mr. Harstad, January 19, 1963. 530' of 9-5/8" casing set KB with 460 sacks cement.

Table with 4 columns: Set Plugs, length, weight, and sacks. Lists 7 plugs with varying lengths and weights.

Intervals between plugs filled with heavy drilling mud.

A 4' length of 4" pipe was set in the surface casing, capped and a well marker welded to this pipe.

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

Company Raymond Oil Company, Inc. Address 1700 Broadway Denver 2, Colorado By [Signature] Geologist

INSTRUCTIONS: A plat or map must be attached to this form showing the location of all leases, property lines, drilling and producing wells, within an area of sufficient size so that the Commission may determine whether the location of the well conforms to applicable rules, regulations and orders.

**FILE IN DUPLICATE**

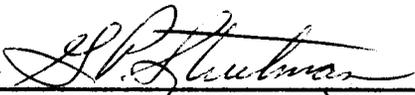
OIL & GAS CONSERVATION COMMISSION  
OF THE STATE OF UTAH

DESIGNATION OF AGENT

The undersigned producer, operator, transporter, refiner, gasoline or initial purchaser who is conducting oil and/or gas operations in the State of Utah, does, pursuant to the Rules and Regulations, and Rules of Practice and Procedure of the Oil and Gas Conservation Commission of the State of Utah, hereby appoint, Ken Parrent, whose address is 6071 Linden Way Salt Lake City 17, (his, ~~her or its~~) designated agent to accept and to be served with notices from said Commission, or from other persons authorized under the Oil and Gas Conservation Act of the State of Utah.

The undersigned further agrees to immediately report in writing, all changes of address of the agent, and any termination of the agent's authority, and in the latter case, the designation of a new agent or agents shall be immediately made. This designation of agent, however, shall remain in full force and effect until and unless a new designation agent is filed in accordance with said statute and said regulations.

Effective Date of Designation November 30, 1962

Company C. F. Raymond Address 517 Mile High Center  
Denver 2, Colorado  
By  Title Exploration Manager  
(Signature)

**NOTE: Agent must be a resident of Utah.**

Branch of Oil and Gas Operations  
416 Empire Building  
Salt Lake City 11, Utah

May 27, 1963

Subject: Utah 03509-B, Well #1  
NW~~1/4~~ sec. 17, T. 13 S.,  
R. 25 E., Uintah County,  
Utah

*C. F. Raymond*

Raymond Oil Company, Inc.  
1700 Broadway  
Denver 2, Colorado

Gentlemen:

The abandoned well site at the subject location was visited May 24, and we certainly will not recommend termination of the period of liability of the bond under which operations were conducted until this site has been prepared for abandonment purposes.

Part of the drilling rig has been removed to an area off the drill site while the remainder of the rig and miscellaneous junked material has been scattered all over the well site. The cellar and pits are open and could present a hazard to livestock.

We request you throw all junked material into the pits and then fill both the cellar and pits being careful that all the oil and drilling mud saturated earth is in the pits and buried. All junked material such as wire line, drums, cans, etc. which has been thrown over the small embankment at edge of the well site should be discarded to the pits or transported to some authorized dump. The drilling rig should either be moved entirely out of the area or should be neatly stacked to one side.

Please have this work done without delay and notify this office when the area is ready for another inspection.

Very truly yours,

(Orig. Sgd.) D. F. RUSSELL

D. F. Russell,  
District Engineer

DFR/id

cc: Land Office, Salt Lake City  
District Manager, BLM, Vernal  
State Oil & Gas Commission, Salt Lake City

July 28, 1964

On July 27, 1964, Mr. Rodney Smith, District Engineer for the U.S. Geological Survey, informed me that the following plugged wells have been satisfactorily abandoned and approved by his agency:

- Morris Rosenblatt, Well No. Federal #1,  
NE NE Sec. 20, T. 23 S., R. 17 E., Grand County, Utah
- Walter D. Broadhead, Well No. Keas Federal 5-75,  
NE SE Sec. 5, T. 20 S., R. 24 E., Grand County, Utah
- Honolulu Oil Corporation, Well No. Bitter Creek #1,  
SW SE Sec. 30, T. 11 S., R. 23 E., Uintah County, Utah
- H. P. McLish, Well No. Government Walton #1,  
SE SW Sec. 9, T. 8 S., R. 23 E., Uintah County, Utah
- Davis Oil Company, Well No. Pariette Bench Unit #5,  
SE SE Sec. 9, T. 9 S., R. 18 E., Uintah County, Utah
- Sinclair Oil & Gas Company, Well No. Uintah Federal #178-1,  
SW SW Sec. 24, T. 12 S., R. 22 E., Uintah County, Utah
- Shamrock Oil & Gas Corporation, Well No. Rock House Unit #10,  
SE NE Sec. 22, T. 11 S., R. 23 E., Uintah County, Utah
- California Oil Company, Well No. Red Wash #187 (32-31C),  
SW NE Sec. 31, T. 7 S., R. 24 E., Uintah County, Utah
- California Oil Company, Well No. White River Unit #14 (32-3D),  
SW NE Sec. 3, T. 8 S., R. 22 E., Uintah County, Utah
- C. F. Raymond, Well No. Government #1,  
NW NW Sec. 17, T. 13 S., R. 24 E., Uintah County, Utah
- Pan American Petroleum Corporation, Well No. USA Lyle O. Lingelbach #1,  
SE SE Sec. 29, T. 6 S., R. 21 E., Uintah County, Utah
- Pan American Petroleum Corporation, Well No. McLish Unit #1,  
SW SE Sec. 34, T. 6 S., R. 22 E., Uintah County, Utah