

RECEIVED

JUL 24 1974

COLO. OIL & GAS CONS. COMM.

RECEIVED

JUL 24 1974

STATE LAND BOARD



GEOLOGICAL REPORT AND WELL HISTORY

Equity Oil Company
&
C & K Petroleum
Federal #7-20
Section 20-9N-91W, 6th PM
Moffat County, Colorado

Prepared by
Craig C. Ramsey
Patterson Building
Denver, Colorado
80202

file

WELL DATA SUMMARY

OPERATOR: Equity Oil Company, 2220 Western Federal Savings Building, Denver, Colorado 80202

WELL: Equity Oil Company and C&K Petroleum Federal #7-20

LOCATION: 1460' FNL, 1830' FEL - SW NE Section 20-9N-91W, 6th P.M., Moffat County, Colorado

ELEVATION: 6991' Gr., 7005' K.B.

FIELD: Wildcat - Blue Gravel Area

SPUD: 6/25/74

SURFACE CSG: 9-5/8" @ 316' K.B. w/150 sx

CONTRACTOR: R. L. Manning Drlg Company, Rig #7, Junior Gideon, Toolpusher

CORES: None

TESTS: DST #1 4885-4917 Drlr., 4891-4923 Schl., Lewis

MUD LOGGING: Tooke Engineering, DeWayne McCave, Logger

LOGS: Schlumberger Dual Induction-Laterolog 6742-313, Compensated Neutron-Formation Density 6742-3000, Borehole Compensated Sonic Log-Gamma Ray 5200-3000, Gamma Ray only 3000-surf

TOTAL DEPTH: 6742 Drlr., 6743 Schl in Mesaverde

COMPLETED: P&A 7/13/74

MARKER HORIZONS:

<u>Marker</u>	<u>Sample</u>	<u>Log</u>	<u>Log Subsea</u>
Wasatch	Surf		
Fort Union	2400	2410	+4595
Fox Hills ?	4250	4252	+2753
Lewis Shale	4385	4398	+2607
Upper Lewis Sand	4471	4471	+2534
Lower Lewis Sand	4883	4889	+2116
Lower Lewis Shale	5252	5290	+1715
Mesaverde	6685	6685	+ 320
Total Depth	6742	6743	+ 262

DRILL STEM TESTS

DST #1 4885-4917 TD, Drlr, 4891-4923 Schl, Lewis Sand, Open 10, shut in 60, open 70, shut in 120. Initial open w/v wk blo, incr to 1" wtr.

Second open w/v wk blo, dead in 10 mins. By passed packer & reopened w/wk blo, incr to 1", then diminished to dead @ end. Rec 45' drlg mud. No show oil or gas.

Initial Flow Pressures	92#- 83#
Second Flow Pressures	139#- 148#
Shut in Pressures	195#- 232#
Hydrostatic Pressures	2560#-2532#
BHT	108°F

Sample Chamber: Pressure 10#

Rec 1300 cc drlg mud (heavy mud drained poorly)

Rw rec mud 1.2 @ 68°F, 4200 ppm as chloride

Rw mud pit sample 1.2 @ 68°F, 4200 ppm as chloride

SAMPLE DESCRIPTION
(Lagged to Log Depths)

30' Samples, clear water drilling, samples fair.

320- 400	Clystn, varicol, pred gy-grn, ptly slty-sdy, sft.
400- 500	Clystn, a/a, pred tan-brn.
500- 556	Clystn, a/a, pred mar, ptly mottled, sft-firm.
556- 562	Sd, unconsol, varicol gr, f-v crs, sr-sa.
562- 590	Clystn, varicol, pred mar & mottled, ptly slty-sdy a/a.
590- 598	Sd, lt-m gy, S&P, vf-f, scat varicol gr, cly fil, sft, T.
598- 775	Clystn, a/a.
775- 930	Siltstn, grdg to vfg sd, lt-m gy-gnh, v arg, grdg to slty-sdy, clystn, varicol & mottled, & clystn, non-aren a/a.
930- 960	Sd, unconsol, f-v crs, ang-sr, varicol.
960-1030	Clystn, varicol, ptly sli slty-sdy.
1030-1060	Sd, pred clear qtz, m-v crs, frstd, sr, some unweathered pnk feldspar. Note: "Hot"Gamma ray
1060-1220	Clystn, a/a, inbed w/sd, m-v crs a/a.
1220-1245	Clystn.
1245-1265	Sd, a/a.
1265-1315	Clystn, varicol, ptly slty, a/a.
1315-1375	Sd, pred clear qtz, crs-f, sr-sa, frsted pred unconsol, inbed w/clystn, pred blu-gy, slty-sdy & varicol.
1375-1415	Clystn, blu-gy & varicol a/a.
1415-1432	Sd, m gy-lt gy, varicol, v crs-m, sr-a, unconsol.
1432-1445	Clystn, varicol a/a.
1445-1505	Sd, a/a, w/sm intbd clystn a/a.
1505-1582	Clystn, varicol, pred blu-gy, slty-sdy.
1582-1610	Sd, lt-m gy & varicol, v crs-crs, sr-a, unconsol.
1610-1670	Clystn, varicol, pred gy-grn, ptly slty-sdy.
1670-1715	Sd, v crs-crs a/a, w/sm clystn a/a.
1715-1740	A/a, w/tr coal.
1740-1825	Clystn, gy-grn, ptly slty-sdy, mottled.
1825-1860	Sd a/a?
1860-1885	Clystn a/a.
1885-1900	Sd a/a?

1900-1935 Clystn, varicol, ptly mottled, ptly slty-sdy.
 1935-2140 Sd, lt-m gy, vf-f, sa-sr, sli S&P, cly fil, T, w/inbd clystn a/a.

20' Samples @ 2000'

2140-2275 Clystn, varicol, rarely slty-sdy, mass.
 2275-2410 A/a, w/r tr lignitic coal.

Fort Union 2410

2410-2420 Sd, lt gy, f-m, a-sr, sil cem, sm cly fil, T-lo P&P.
 2420-2550 Clystn-sh, gn-gy, tan-brn, dk brn, (much less red), subwaxy, trc sh, dk brn-blk carb, tr coal.
 2550-2690 Clystn-sh, a/a, sli more dk brn carb sh, tr coal.
 2690-2740 Sd ? (no samples).

Samples 2500-3420 very poor

2740-2865 Clystn-sh a/a, trc sd, lt gy-whi, tan, mottled, sli S&P, cly fil, firm-fri, T.
 (shaker sample) coal.
 2865-2885 Clystn-sh a/a, sm sd a/a ?, 1-3% coal.
 2885-3040 Sd ?, clear-milky, crs-m, sr-sa, frstd, unconsol.
 3040-3325 Sd, a/a, w/sm sd, lt gy-tan, sli S&P, vf-m, sr, cly fil, T.
 3325-3385 Clystn-sh, gy-grn, tan-brn, mass, ptly slty.
 3385-3405 Sd, wh-lt gy, vf-m, sr-sa, cly fil, T.
 3405-3430 Clystn-sh a/a, ptly slty-sdy a/a.
 3430-3545 Sd, lt-m gy, S&P, vf-f, sa-sr, cly fil, fri, T-v lo P&P.
 3545-3562 Samples "boiler housed".
 3562-3760 Clystn-sh, varicol, ptly slty-sdy, w/sm intbd silts-vf sd, lt-m gy, S&P, cly fil, carb ptcls, T.
 3760-3800 Sd, f-m, lt gy-gnh gy, S&P, sr-sa, cly fil, T-lo P&P, grdg downward to sd, vf-siltstn, T.
 3800-3840 Clystn, a/a, w/sm intbd siltstn-sd a/a.
 3840-3860 A/a, "boiler Housed?"
 3860-3960 Sd, lt gy-wh, sli S&P, vf-f, sr, fairly clean, gd P&P, no stn or fluor. Possible gas show 6 units over background
 3960-4000 12 units (Total 18 units)

10' Samples @ 4000'

4000-4040 Sh, dk gy-dk brn, fis, & clystn a/a, w/sm thin beds coal.
 4040-4060 Sd, lt gy-whi, sli S&P, vf-f-siltstn, cly fil, T-lo P&P.
 4060-4179 Clystn-sh, pred gy-grn w/varicol & sm sh, dk brn, carb, w/sm intbd sd, lt gnh gy, sli S&P, vf-f-silt, sr-sa, v arg, firm, T-lo P&P.
 4179-4182 Coal.
 4182-4216 Clystn-sh & sd a/a.
 4216-4220 Coal.
 4220-4236 Clystn-sh & sd a/a.
 4236-4240 Coal.
 4240-4252 Clystn-sh & sd a/a.

Fox Hills? 4252

4252-4255 Coal.
 4255-4338 Sd, lt gy-gnh gy, S&P, f-vf-silt, sr-sa, cly fil, T-lo P&P, no stn or fluor, possible gas show 12 units over back ground of 12 units (total 24 units).
 4338-4358 Clystn-sh a/a?
 4358-4398 Sd, a/a, w/possible gas show a/a.

Lewis shale 4398

- 4398-4418 Sh, dk brn & dk gy-blk, fis-mass, ptly carb w/clystn-sh, grn, gy, brn a/a.
 4418-4436 Siltstn-sd, vfg, lt gy-gnh gy, cly fil, T-v lo P&P, NS.
 4436-4471 Sh, dk gy-blk & clystn-sh a/a.

Upper Lewis Sand 4471

- 4471-4476 Sd, m-lt gy, S&P, vfg-siltstn, sr-sa, cly fil, H, T, NS.
 4476-4500 Sd, lt gy, S&P & varicol grains, f-m, sr cly fil, lo P&P-T.
 4500-4610 Sd, a/a, exc vf-f, T-v lo P&P, inbed w/sh & clystn a/a.
 4610-4660 No sample.
 4660-4750 Sh, m-dk gy, mass-fis.
 4750-4889 Sh, a/a, bcmg sli-v slty, ptly grd to silts-vfg sd, m gy, v arg, sli S&P, H&T.

Lower Lewis Sand 4889

- 4889-4899 Sd, lt gy, S&P, vf-fg, sr-sa, cly fil, T-vv lo P&P, no stn, fluor, or cut. Gas show 37 units over background of 5 units (total 42 units).

See DST #1

- 4399-4937 Sh, dk gy, mass-fis, slty-v slty w/thin lams sd a/a.
 4937-4950 Sd, lt gy, S&P, f-vf, w/scat mg, poor sort, wh cly matrix, fri-firm, T-vv lo P&P, no stn, fluor or cut. Gas show 200 Units over background of 8 units (total 208 units)
 4950-4959 Sh, dk gy, a/a?
 4959-4962 Sd, a/a, except no gas show.
 4962-4965 Sh, a/a?
 4965-4972 Sd, a/a, no stn, fluor or cut. Gas show 65 units over background of 8 units (total 73 units).
 4972-4979 Sh, a/a?
 4979-4984 Sd, a/a, v T, NS.
 4984-5003 Sh, dk gy, fis-mass, ptly slty-v slty.
 5003-5018 Sd, lt gy, S&P w/varicol grains, f-m w/sm vf, v p sort, sr-sa, fri-firm, cly fil, T-v lo P&P, no stn, fluor or cut. Very questionable gas show, possibly 6 units over background of 6 units (total 12 units).
 5018-5058 Sh, a/a, ptly slty grd to siltst-vfg sd, m gy-gnh gy, S&P, sa, v calc, cly fil, firm-H, T, NS.
 5058-5071 Sd, m-lt gy-gnh gy, S&P, vf-m, poor sort, sa-sr, cly fil, v calc, firm-fri, T, NS.
 5071-5076 Sh, slty, grd to siltstn a/a.
 5076-5098 Sd, lt gy-wh, S&P, f-vf, sa-sr, wh cly matrix, v calc, firm-fri, T, NS.
 5098-5119 Siltstn, m-dk gy, sli S&P, v arg grd to slty sh.
 5119-5150 Sd, m-lt gy-lt tan, sli S&P, f-vf w/scat m, sa-r, cly fil, v calc, T, NS.
 5150-5172 Sd, a/a, exc more mg, T, NS.
 5172-5290 Sd, lt gy-buff, sli S&P, f-vf w/sm m, a-sr, wh cly fil, v calc, T, NS, w/sm intbd sh, v dk brn-brn, v carb, mass-fis, carb ptcls, trc coal, & sm sh, dk gy, fis-mass, non-aren to v slty-silt.

Lower Lewis Shale 5290

- 5290-5950 Sh, v dk gy-blk (v dk brn when wet), fis-mass, non-aren to v sli slty, sli calc, firm.

5950-6230	Sh, v dk gy-nearly blk, sli more mass, sli slty-slty in pt.
6230-6575	Sh, v dk gy-nearly blk a/a, pred non aren, fis-mass, trc slty sh.
6565-6685	Sh, a/a, w/more slty sh grdg to v arg siltstn, dk-m gy, mic, H.
<u>Mesaverde 6685</u>	
6685-6700	Siltstn, m-dk gy, sli S&P, scat carb ptcls, arg, calc, H&T.
6700-6720	Siltstn, a/a, grdg to vfg sd, m-dk gy, sa-sr, carb ptcls, arg, calc, H&T, trc pyr.
6720-6742	Sd, vfg a/a, grdg to siltstn a/a.

DEVIATION

Depth	Dev °	Depth	Dev °
120	1/4	4067	1
1333	1/4	4795	1-1/2
2273	1	5112	2-3/4
3424	3/4	5785	2-1/4

DRILLING FLUID PROPERTIES

United Engineering, Frenchie Bedard, Service Engineer

Depth Feet	Wt. #/Gal	Vis. Sec/Qt	Gel 0-10	pH	W.L. ML/30	Sand %	Solids %	LCM %
3646	9.2	36.5	0-2	9.0	7.6	1/4	5	0
4090	9.4	39.0	0-3	9.0	5.2	1/4	5	0
4765	9.6	40.0	0-3	9.0	5.6	1/4	6	0
4917	9.5	52.0	2-5	9.0	4.2	1/4	5	0
4997	9.4	45.0	0-2	9.0	4/4	1/4	5	0
5290	9.8	48.0	0-2	9.0	4.6	1/4	7	0
5580	9.6	44.0	0-2	9.0	5.2	1/4	6	0
5808	9.6	90.0	2-4	9.0	5.2	1/4	5	10
5820	9.6	55.0	1-4	9.0	5.2	1/4	5	10
5942	9.6	50.0	0-3	9.0	4.6	1/4	6	8
6322	9.6	51.0	0-3	9.0	4.2	1/4	5	6
6660	9.6	58.0	2-4	9.0	4.4	1/4	6	6
6742	9.6	105.0	2-5	9.0	4.2	1/4	6	6

BIT RECORD

Run	Size	Make	Type	Out	Feet	Hours	Remarks
A	12 $\frac{3}{4}$	HTC	OSC-3	320	275		
1	7-7/8	HTC	OSC-3A	1333	1013	18-1/4	
2	7-7/8	STC	DS	1960	627	9-1/2	
3	7-7/8	STC	DSJ	2273	313	8-3/4	
4	7-7/8	Reed	FP52	3424	1151	36-3/4	Lost 3 cones
5	7-7/8	STC	DTJ	3426	2		Drlg junk
6	7-7/8	HTC	OW4	3657	231	11-1/2	
7	7-7/8	STC	DTJ	4047	410	11-1/4	
8	7-7/8	STC	DTJ	4452	415	10-1/2	

9	7-7/8	STC	DTJ	4795	543	12-3/4	
10	7-7/8	STC	DTJ	4917	122	5-3/4	DST #1
11	7-7/8	STC	DTJ	5112	195	12	
12	7-7/8	HTC	OSC-3	5325	213	12-1/4	
13	7-7/8	STC	DTT	5785	460	14	
14	7-7/8	STC	DTT	6276	491	21-1/4	
15	7-7/8	STC	DTT	6606	330	15-1/2	
16	7-7/8	STC	DTJ	6742	136	9-3/4	

LOG OF OPERATIONS
(As of 8:00 AM Daily)


6/22/74 RURT.
 6/23/74 RURT.
 6/24/74 RURT.
 6/25/74 197' Drlg. 12 $\frac{1}{4}$ " surf hole. Spud 2:45 AM 6/25/74.
 6/26/74 320' WOC. Ran 10 jnts 9-5/8" 38# new surf csg, set @ 316' KB
 w/150 sx, 2% CaCl. Plug down @ 6:30 PM 6/25/74.
 6/27/74 1159' Drlg w/clear water. Tested blind rams @ 1000#, tested
 pipe rams & hydril. Drld plug @ 7:30 PM 6/26/74. Geolo-
 gist on location @ 4:00 PM 6/26/74.
 6/28/74 1963' Drlg w/water.
 6/29/74 2850' Drlg w/water.
 6/30/74 3424' on bank prep to mud up. Left 3 cones in hole from
 sealed bearing insert bit. On bank @ 6:00 AM.
 7/1/74 3424' Going in w/magnet. Made trip in w/junk basket - hit
 bridge @ 2800', mixed mud. Cleaned out 600' to bottom.
 Milled on junk, rec 1 cone in junk basket. Hit crown -
 6 hrs repair.
 7/2/74 3548' Drlg. Made trip w/magnet - no recovery. Trip w/bit,
 milled past junk @ 1:30 AM & began drlg.
 7/3/74 4067' trip for bit.
 7/4/74 4713' Drlg.
 7/5/74 4917' Trip out for DST #1. Reached 4917' @ 12:45, circ
 samples & condition hole 'til 7:00 AM.
 7/6/74 4979' Circ samples. Broke chain @ 8:00 AM 7/5/74. Repairs
 2 $\frac{1}{2}$ hrs - back to bottom to cond hole. Circ 2 hrs &
 on bank to pick up Virg's tools @ 3:30 PM. DST #1
 run & back on bottom @ 4:30 AM. Circ 1 hr to clear trip
 gas. Reached 4979 @ 7:30 AM, SLM 4922, board 4917,
 no correction.
 7/7/74 5099' Drlg. Circ & WOO til 10:45 AM @ 4979. Circ samples
 1 hr @ 5015.
 7/8/74 5548' Drlg. 1 $\frac{1}{2}$ hrs repair positive low.
 7/9/74 5808' Drlg. 2 $\frac{1}{2}$ hrs repair positive low. Going in hole on
 trip @ 5785', lost circ 8 stands off bot @ 12:00 AM.
 Pulled to 18 stands off bottom & mixed mud. Back on
 bottom drlg @ 7:00 PM
 7/10/74 6276' Trip for bit.
 7/11/74 6606' Trip for bit.
 7/12/74 6742' Drlr TD Logging w/Sch. Reached contract depth (6700')
 @ 3:05 PM, TD @ 8:15 PM (Bit locked) Circ samples 1 hr

(Vis 90+), short trip 10 stands. Circ till 1:00 AM
& strap out for logs. SLM 6749, board 6742', no corr.
On bank & pickup Schl @ 5:00 AM.

7/13/74

6742' Plugging. Finished logging @ 5:30 PM. WOO till approx
midnight & plugging orders issued as per telephone per-
mission Mr. Daniels of the U.S.G.S. as follows:

<u>Plug</u>	<u>From</u>		<u>Feet</u>	<u>Sacks</u>
	4900	-	4800	100
	2500	-	2400	100
	320	-	220	100
	Top surf	csg		30


 Craig C. Ramsey
 Certified Petroleum Geologist
 #1315