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STATE OF WEST VIRGINIA
GEOLOGICAL AND ECONOMIC SURVEY
P. O. BOX 879
MORGANTOWN

PAUL H. PRICE, DIRECTOR
AND STATE GEOLOGIST

November 21, 1962

A. E. MAC KINTOSH WELL #8

U. S. BUREAU OF MINES'
RESERVOIR APPRAISAL WELL #8

Skp 4 pages

Operating

Company: Weva Oil Corp., 608 Main Street, Hingham, Massachusetts

Farm Name: A.E. MacKintosh Permit No.: Wirt County - 433
Well #8

Well Location: Spring Creek District, Wirt County, W. Va.
N. E. Spencer Quadrangle - Scale 1/62,500
4.60 miles S. Lat. 39°00'
2.43 miles W. long. 81°15'

Oil Field: Ann's Run Oil Field
(near Creston in southeastern Wirt County)

Elevation (ground): 773.00' Reference Datum: Ground Elevation
Elevation (rig floor): 774.55' Total Depth: ~~948.00'~~
1633.00'

Intervals Cored: (size - 4") Coring Completed: June 19, 1962
686.02 - 724.00'
731.00 - 782.43'
870.93 - 928.93'

Detailed Lithologic Description of

Cores by: Wallace R. McCord

Sedimentary Petrographer
W. Va. Geological Survey
Morgantown, W. Va.

Use the Survey
letter Head
paper for this
sheet.

DETAILED LITHOLOGIC DESCRIPTION
OF THE
A. E. MAC KINTOSH WELL #8
Wirt County Permit No. 433
U. S. BUREAU OF MINES'
Reservoir Appraisal Well #8
Skip 4 spaces

<u>Depth in feet</u>		<u>Thickness</u>	<u>Rock Character</u>
<u>Top</u>	<u>Bottom</u>	<u>in feet</u>	
0.00	686.02	686.02	Drilled with cable tools; samples discarded at well site, not examined.
686.02	724.00	37.98	Cored with rotary tools.
686.02	686.84	0.82	Sandstone; very light- to light-gray, very fine-grained, highly angular, glassy to slightly frosted, tightly cemented, moderately calcareous, micaceous with abundant minute flakes of muscovite mica, slightly pyritic, few grains of glauconite.
686.84	692.74	5.90	Shale; medium-gray, slightly to moderately silty, non-calcareous, micaceous, slickensided, interbedded with very thin beds of light-gray, very fine-grained, calcareous sandstone.
692.74	694.46	1.72	Sandstone; light-gray, very fine-grained, highly angular, very silty, moderately calcareous, highly argillaceous, micaceous, shaly.
694.46	704.82	10.36	Shale; medium- to medium dark-gray, silty, micaceous, slickensided.
704.82	724.00	19.18	Shale; medium dark-gray, random streaks of medium-gray soft shale, cores discarded at well site.
724.00	729.00	5.00	Drilled with cable tools; samples discarded at well site, not examined.

PENNSYLVANIAN SYSTEM

ALLEGHENY SERIES - 199.93'±

Drillers' "First Cow Run"
Sandstone - 43.80'

729.00	731.82	2.82	Sandstone; cable tool samples discarded at well site, top of sandstone estimated from electric logs. <i>nuclear well</i>
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<u>Depth in feet</u>		<u>Thickness in feet</u>	<u>Rock Character</u>
<u>Top</u>	<u>Bottom</u>		
731.82	782.43	50.61	Cored with rotary tools.
731.82	738.20	6.38	Sandstone; very light- to light-gray, very fine- to medium-grained, highly angular, glassy to slightly frosted, argillaceous (mostly kaolinitic cementing material), slightly calcareous, micaceous, many specks of carbonaceous material, slightly pyritic, random partings of highly micaceous and carbonaceous shaly material.
738.20	743.90	5.70	Sandstone; light-gray, fine- to coarse-grained, highly angular, argillaceous (mostly kaolinitic cementing material), moderately calcareous, slightly micaceous and carbonaceous, few specks of pyrite, random partings of highly micaceous and argillaceous shaly material.
743.90	744.48	0.58	Sandstone; light-gray, very fine- to medium-grained, highly angular, glassy to moderately frosted, argillaceous (mostly kaolinitic cementing material), slightly calcareous and micaceous, numerous partings of highly micaceous and argillaceous shaly material.
744.48	745.05	0.57	Sandstone; medium light-gray, very fine- to fine-grained, highly angular, moderately frosted, very silty, highly argillaceous, many specks of carbonaceous material, very shaly.
745.05	757.50	12.45	Sandstone; very light- to light-gray, fine- to medium-grained, highly angular, glassy to slightly frosted, argillaceous (mostly kaolinitic cementing material), slightly to moderately calcareous, micaceous, many specks of carbonaceous material, few specks of pyrite, many streaks and random partings of highly micaceous and carbonaceous shaly material.
757.50	765.75	8.25	Sandstone; light-gray, very fine- to medium-grained, highly angular, argillaceous (mostly kaolinitic cementing material), moderately to highly calcareous, micaceous, many specks of carbonaceous material, many streaks and partings of highly micaceous and carbonaceous shaly material, some cross-bedding.

↑ skip 3 spaces

<u>Depth in feet</u>		<u>Thickness</u>	<u>Rock Character</u>
<u>Top</u>	<u>Bottom</u>	<u>in feet</u>	
765.75	767.55	1.80	Sandstone; light- to medium light-gray, very fine-grained, highly angular, glassy to moderately frosted, cemented with silt and argillaceous material, many specks of carbonaceous material, micaceous streaks and partings of micaceous, carbonaceous shale. ↑ skip 3 spaces
767.55	771.25	3.70	Sandstone; light-gray, fine- to medium-grained, highly angular, argillaceous (mostly kaolinitic cementing material), slightly calcareous, micaceous, slightly carbonaceous and pyritic.
771.25	772.80	1.55	Sandstone; very light- to light-gray, very fine- to fine-grained, highly angular, glassy to moderately frosted, tightly cemented with argillaceous material (mostly kaolinite), highly micaceous, slightly pyritic, many specks of carbonaceous material, many streaks and random partings of highly micaceous and argillaceous shaly material.
	772.80		Base of the <u>drillers'</u> "First Cow Run" sandstone.
772.80	772.82	0.02	Shale; grayish-black, carbonaceous, coaly.
772.82	775.53	2.71	Shale; greenish-gray, silty, micaceous, fairly hard.
775.53	777.70	2.17	Sandstone; very light- to light-gray, very fine- to fine-grained, highly angular, glassy to moderately frosted, tightly cemented with argillaceous material (mostly kaolinite), slightly calcareous, micaceous, many streaks and partings of medium light-gray micaceous shale.
777.70	779.27	1.57	Shale; medium-gray, silty, highly micaceous, fairly hard.
779.27	782.43	3.16	Sandstone; medium light-gray, very fine-grained, highly angular, silty, tightly cemented with argillaceous material, highly micaceous, slightly carbonaceous.
782.43	863.00	80.57	Drilled with cable tools; samples discarded at well site, not examined.

<u>Depth in feet</u>		<u>Thickness</u>	<u>Rock Character</u>
<u>Top</u>	<u>Bottom</u>	<u>in feet</u>	
			↑ 3 spaces Drillers' "Second Cow Run" Sandstone - 59.50' ↑ double space nuclear well
863.00	870.93	7.93	Sandstone; cable tool samples discarded at well site, top of sandstone estimated from electro logs.
870.93	928.93	58.00	Cored with rotary tools.
870.93	889.76	18.83	Sandstone; light-gray, fine- to coarse-grained (mostly medium-grained), highly angular, glassy to slightly frosted, argillaceous (mostly kaolinitic cementing material), slightly calcareous, micaceous, many specks of carbonaceous material, many streaks and random partings of highly micaceous and carbonaceous shaly material.
889.76	893.50	3.74	Sandstone; light-gray, medium- to coarse-grained, highly angular, glassy, argillaceous (mostly kaolinitic cementing material), slightly calcareous, micaceous, many specks of carbonaceous material, slightly shaly.
893.50	893.87	0.37	Shale; medium dark-gray, micaceous, slickensided, fairly hard.
893.87	894.25	0.38	Sandstone; very light-gray, very fine- to coarse-grained, angular, tightly cemented, highly argillaceous, micaceous, many specks of carbonaceous material, very shaly.
894.25	897.83	3.58	Sandstone; very light brownish-gray, fine- to coarse-grained, highly angular, glassy, argillaceous (mostly kaolinitic cementing material), slightly calcareous, micaceous, many specks of carbonaceous material.
897.83	901.34	3.51	Sandstone; light-gray, medium- to very coarse-grained, highly angular to sub-rounded, glassy to frosted, argillaceous (mostly kaolinitic cementing material), moderately calcareous, micaceous, many specks of carbonaceous material, many wavy partings of coal and medium-gray, highly micaceous shale.

<u>Depth in feet</u>		<u>Thickness</u>	<u>Rock Character</u>
<u>Top</u>	<u>Bottom</u>	<u>in feet</u>	
901.34	913.15	11.81	Sandstone; very light- to light-gray, very fine- to medium-grained (mostly fine-grained), highly angular, glassy to moderately frosted, tightly cemented with argillaceous material (mostly kaolinite), slightly to moderately calcareous, micaceous, many specks of carbonaceous material, few streaks and partings of coal, many streaks and wavy partings of highly micaceous and carbonaceous shaly material.
913.15	922.50	9.35	Sandstone; light-gray to light brownish-gray, fine- to medium-grained (slightly coarse-grained in lower most three feet), highly angular, glassy to slightly frosted, argillaceous (mostly kaolinitic cementing material), slightly calcareous, micaceous, many specks of carbonaceous material, few streaks of highly micaceous and dark-colored argillaceous material, lower most two feet contain fragments of medium light- to medium-gray shale.
	922.50		Base of the <u>drillers'</u> "Second Cow Run" sandstone.
922.50	923.65	1.15	Shale; medium-gray, very sandy, highly micaceous, slightly carbonaceous and pyritic, fairly hard.
923.65	924.40	0.75	Shale; medium-gray, micaceous, many streaks of coal, plant fossils (mostly calamites).
924.40	926.60	2.20	Coal; blocky, several partings of coaly shale.
926.60	927.35	0.75	Shale; dark-gray, grading to medium dark-gray, highly carbonaceous (coal and plant fossil material).
927.35	928.00	0.65	Shale; greenish-gray to medium-gray, few streaks of coal, slickensided, fairly soft.
928.00	928.93	0.93	Shale; medium-gray, fairly soft, cores discarded at well site.
	1633.00	704.07	
928.93	976.00	11.07	Drilled with cable tools; samples discarded at well site, not examined.
	1633.33		Total Depth of Well; taken from driller's log.
	976.00		

FIELD REPORT

Coring Operations, First and Second Cow Run Sands

Well: Reservoir Evaluation Well 8, Wave Oil Company, A. E. MacIntosh Farm, Ann's Run pool, Spring District, Wirt County, West Virginia

Submitted by: William M. Nabors and E. L. Rough **Date:** July 3, 1962

Summary: The following information is for the record:

Company - Wave Oil Company
 Well location and number:
 State - West Virginia
 County - Wirt
 District - Spring *Creek*
 Pool - Ann's Run
 Farm - A. E. MacIntosh *← on MacIntosh?*
 Well No. - 8

Elevation (ground) -
 Elevation (rig floor) -
 Bottom of 10-3/4-inch csg. from ground elevation - 48.00'
 Bottom of 8-5/8-inch csg. from ground elevation - 686.00'
 Depth to top of core hole, by driller (rig floor) - 690.00'
 Depth to top of core hole, B.M. (ground level) - 686.02'
 Top of circulating nipple to ground - 2.45'
 Top of rig floor to ground - 1.55'
 T.D. when logged, driller measurement - 979.00'

Interval cored - reference datum (ground level)

<u>Formation</u>	<u>Run</u>	<u>From</u>	<u>To</u>	<u>Total</u>	<u>Recovery</u>	<u>Percent</u>
Stray sand	1	686.02	703.52	19.50	18.82	
Shale	2	703.52	724.00	18.48	did not box	
Shale - Cable tool drilled		724.00	731.82	7.82	-	
First Cow Run	3	731.82	751.32	19.50	19.45	
First Cow Run	4	751.32	770.43	19.11	19.20	
First Cow Run	5	770.43	782.43	12.00	11.65	
				50.61	50.30	99.4
Second Cow Run	6	870.93	890.43	19.50	19.50	
Second Cow Run	7	890.43	909.93	19.50	19.45	
Second Cow Run	8	909.93	928.93	19.00	19.00	
				58.00	57.95	99.9

Description of core material - reference datum (ground level):

Run 1

- 686.02 - 686.85 -- Sandstone, fine to medium grain, hard, white in color.
 686.85 - 688.00 -- Shale, dense, blue, grading to sandy shale.
 688.00 - 693.00 -- Sandy shale, blue, dense grading to fine grained sandstone, white, laminated.
 693.00 - 694.50 -- Shaly sandstone, white to gray, fine grained, hard, laminated.
 694.50 - 695.50 -- Shale, blue-black, dense.
 695.50 - 701.00 -- Shale, blue-black, dense with random streaks and deposits of limestone.
 701.00 - 704.82 -- Shale, dense, blue grading to more dense black.

Run 2

- 705.52 - 724.00 -- Did not log or box this run. Dense black shale with soft gray shale streaks.

Run 3 - Estimated top of sandstone = 729.00

- 731.82 - 738.50 -- Sandstone, medium to coarse grain, hard, light grey, carbonaceous black random streaks.
 738.50 - 742.50 -- Sandstone, very coarse grain, hard, light grey, carbonaceous black streaks, slight oil bleed.
 742.50 - 744.00 -- Sandstone, medium to coarse grain, hard, light grey, carbonaceous black streaks, slight oil bleed.
 744.00 - 744.50 -- Sandstone, medium to coarse grain, hard, light grey, carbonaceous black streaks, heavy oil bleed.
 744.50 - 745.00 -- Shaly sandstone, dark grey, fine grained, hard.
 745.00 - 746.75 -- Sandstone, light grey, medium grained, hard, carbonaceous black streaks, excessive oil bleed.
 746.75 - 751.32 -- Sandstone, light grey, coarse grain, hard, carbonaceous black streaks, slight oil bleed.

Run 4

- 751.32 - 755.00 -- Sandstone, coarse to very coarse grain, hard, light grey, carbonaceous black bedding streaks, slight oil bleed.
 755.00 - 759.00 -- Sandstone, coarse to very coarse grain, hard, light grey, carbonaceous black streaks. Moderate oil bleed.

- 759.00 - 765.50 -- Sandstone, coarse grain, hard, light grey, carbonaceous streaks, excessive oil bleed.
- 765.50 - 767.50 -- Sandstone, medium to coarse grain, hard, light grey, moderate oil bleed.
- 767.50 - 770.43 -- Sandstone, coarse to very coarse grain, hard, light grey, excessive oil bleed.

Run 5

- 770.43 - 771.20 -- Sandstone, coarse grain, hard, light grey, heavy oil bleed.
- 771.20 -- Bottom of pay.
- 771.20 - 772.80 -- Sandstone, medium to coarse grain, light grey, carbonaceous black deposits, possible oil zone.
- 772.80 - 772.82 -- Coal.
- 772.82 - 775.50 -- Shale; black grading to dark grey, hard, dense.
- 775.50 - 777.70 -- Sandstone, medium to coarse, hard, light grey, black carbonaceous streaks, possible oil.
- 777.70 - 779.30 -- Shale, dark grey, dense.
- 779.30 - 780.20 -- Shaly sandstone, carbonaceous.
- 780.20 - 782.43 -- Shaly sandstone, dark grey, dense.

Run 6 - Estimated top of sandstone = 848.50'

- 870.93 - 890.43 -- Sandstone, hard, light grey, coarse grain, random carbonaceous black streaks, heavily deposited with mica.
- 872.75 - 873.75 -- Slight oil bleed.
- 883.50 - 885.50 -- Moderate oil bleed.
- 887.00 - 889.75 -- Moderate oil bleed.
- 889.75 - 890.43 -- Oil smell (odor) and slight bleed.

Run 7

- 890.43 - 891.85 -- Sandstone, light grey, coarse grained, hard, slight oil bleed.
- 891.85 - 892.15 -- Shaly sandstone, dark grey.
- 892.15 - 893.50 -- Sandstone, light grey, coarse grained, hard, irregular shale bedding planes, slight oil bleed.
- 893.50 - 893.85 -- Shale, dense, dark grey.
- 893.85 - 909.93 -- Sandstone, coarse grain, light grey, hard, carbonaceous shale streaks and bedding planes, oil show throughout.
- 899.25 -- Shale, pebbles 1-1/4" diameter.
- 901.25 -- Shale, pebbles 1/4" to 3/8" diameter.
- 904.00 - 905.50 -- Heavy bleeding.

Run 8

- 909.93 - 922.50 -- Sandstone, light grey, coarse to very coarse grain, hard with random streaks of carbonaceous shale. Oil bleeding as follows:
 - 909.93 - 912.50 - Slight bleed
 - 912.50 - 913.15 - Show of oil
 - 913.15 - 914.20 - Heavy bleed
 - 914.20 - 915.00 - Show of oil
 - 915.00 - 916.00 - Light bleed
 - 916.00 - 920.00 - Excessive bleed
 - 920.00 - 920.50 - Show of oil
 - 920.50 - 921.75 - Heavy bleed
 - 921.75 - 922.50 - Light bleed.
- 922.50 - 923.65 -- Sandy shale, dark grey, dense.
- 923.65 - 924.30 -- Shale, dark grey with irregular 1/8-inch white shale planes.
- 924.30 - 926.50 -- Coal, vary porous, gas bubbling.
- 926.50 - 927.50 -- Shale, dense, black grading to dark grey.
- 927.50 - 928.93 -- Shale, dark grey, dense.

Coring data:

- Coring medium - mud
 - Gypsum - 5 lbs./ bbl.
 - Qualox - .75 lbs./bbl.
 - Q-Broxin - 2 lbs./bbl.
 - Duacose - 1.25 lbs./bbl.
 - Aquagel - 25 lbs./bbl.

Date - June 9, 1962
 Run - 1
 Bit - 5
 Starting time - 8:25 a.m.
 Interval - 686.02 to 705.52

Foot	Time		Total	Remarks
	From	To		
1	8:25 a.m.	8:51 a.m.	26 min.	47 rpm
2	8:51	9:31	40	82 rpm
3	9:31	9:57	26	
4	9:57	10:23	26	124 rpm
5	10:23	10:57	34	
6	10:57	11:22	25	
7	11:22	12:03 p.m.	41	
8	12:03 p.m.	12:24	21	

Foot	Time		Total	Remarks
	From	To		
9	12:24p.m.	12:42p.m.	18 min.	
10	12:42	1:14	32	
11	1:27	1:52	25	Added 10 th sub.
12	1:52	2:18	26	
13	2:18	2:48	30	
14	2:48	3:28	40	Added .26 bbl. of mud in tank.
15	3:28	3:53	25	
16	3:53	4:22	29	
17	4:22	4:53	31	
18	4:53	5:23	30	
19	5:23	5:53	30	
19.5	5:53	6:15	22	

Circulated for 10 minutes

Mud sample No. 1: Temperature - 77° F.

ohm - M²/M - 1.862

Viscosity - 105 sec., Marsh funnel

Date - June 10 and 11, 1962

Run - 2

Bit - 4

Starting time - 10:18 p.m.

Interval - 705.52 to 724.00

Foot	Time		Total	Remarks
	From	To		
1	10:18p.m.	11:25p.m.	67 min.	108 rpm
2	11:25	12:18a.m.	53	Added .15 bbl. mud.
3	12:18a.m.	1:10	52	
4	1:10	2:32	82	
5	2:32	3:44	72	Added .20 bbl. mud.
6	3:44	5:17	93	
7	5:17	6:48	<u>1/75</u>	Lost 16 min. with stuck barrel.
8	6:48	7:38	50	
9	7:38	8:30	52	
10	8:30	9:56	86	
11	9:56	11:33	82	Added .17 bbl. mud; lost 15 min. with stuck barrel.
12	11:33	12:53p.m.	80	
13	12:53p.m.	2:00	62	
14	2:00	3:03	63	Rig down for 5 min.

1/ Coring at 94 rpm when core barrel stuck; increased pump pressure to lift core barrel.

Date - June 13 and 14, 1962
 Run - 4
 Bit - 4
 Starting time - 8:14 p.m.
 Interval - 751.32 to 770.43

Foot	Time		Total	Remarks
	From	To		
1	8:14 p.m.	8:25 p.m.	11 min.	Added .22 bbl. of mud. 92 rpm.
2	8:25	8:42	17	
3	8:42	8:57	15	
4	8:57	9:08	11	
5	9:08	9:23	15	
6	9:23	9:38	15	
7	9:38	9:54	16	
8	9:54	10:09	15	
9	10:09	10:25	16	
10	10:25	10:44	19	
11	10:44	11:03	19	
12	11:03	11:21	18	
13	11:21	11:36	15	
14	11:36	11:51	15	
15	11:51	12:08 a.m.	17	
16	12:08 a.m.	12:25	17	
17	12:25	12:41	16	
18	12:41	12:57	16	
19	12:57	1:09	12	
19.5	1:09	1:14	5	

Circulated for 10 minutes.

Date - June 14, 1962
 Run - 5
 Bit - 5
 Starting time - 5:00 a.m.
 Interval - 770.43 to 782.43

Foot	Time		Total	Remarks
	From	To		
1	5:00 a.m.	5:20 a.m.	20 min.	Added .20 bbl. of mud. 106 rpm. 106 rpm. 92 rpm.
2	5:20	5:42	22	
3	5:42	6:09	27	
4	6:09	6:41	32	
5	6:41	7:12	31	
6	7:12	7:35	23	
7	7:35	7:54	19	
8	7:54	8:15	21	
9	8:15	8:42	27	
10	8:42	9:05	23	
11	9:05	9:30	25	
12	9:30	9:55	25	

Foot	Time		Total	Remarks
	From	To		
15	3:03 p.m.	3:46 p.m.	39 min.	Down 4 min.; 135 rpm.
16	3:46	4:41	55	104 rpm.

Pulled out to ream and drill.

Date - June 12 and 13, 1962

Run - 3

Bit - 5

Starting time - 7:30 p.m.

Interval - 731.82 to 751.32

Foot	Time		Total	Remarks
	From	To		
1	7:30 p.m.	8:08 p.m.	38 min.	74 rpm - losing mud at bottom of 8-5/8 csg and out top of 10-3/4 csg. Shut down to reseat csg.
2	10:50a.m.	11:22a.m.	32	86 rpm; coring June 13.
3	11:22	11:45	23	108 rpm.
4	11:45	12:03p.m.	18	108 rpm.
5	12:03p.m.	12:18	15	120 rpm.
6	12:18	12:33	15	120 rpm.
7	12:33	12:47	14	120 rpm.
8	12:47	12:58	11	120 rpm.
9	12:58p.m.	1:13p.m.	15	120 rpm.
10	1:13	1:29	16	120 rpm.
11	1:29	1:45	16	120 rpm.
12	1:45	2:06	21	120 rpm.
13	2:06	2:30	24	120 rpm.
14	2:30	3:08	38	
15	3:08	3:31	23	
16	3:31	3:47	16	
17	3:47	4:05	18	
18	4:05	4:20	15	
19	4:20	4:32	12	
19-1/2	4:32	4:40	8	

Circulated for 10 minutes

Mud loss normal after seating of casing; lost only .03 bbls.
in 67 minutes.

Date - June 16, 1962
 Run - 6
 Bit - 4
 Starting time - 2:25 a.m.
 Interval - 870.93 to 890.43

Foot	Time		Total	Remarks
	From	To		
1	2:25 a.m.	2:58 a.m.	33 min.	
2	2:58	3:21	23	86 rpm.
3	3:21	3:41	20	86 rpm.
4	3:41	4:02	21	100 rpm.
5	4:02	4:19	17	
6	4:19	4:33	14	
7	4:33	4:46	13	
8	4:46	5:02	16	
9	5:02	5:18	16	
10	5:18	5:31	13	
11	5:31	5:43	12	
12	5:43	5:56	13	
13	5:56	6:08	12	
14	6:08	6:23	15	
15	6:23	6:36	13	
16	6:36	6:51	15	
17	6:51	7:04	13	
18	7:04	7:17	13	
19	7:17	7:28	11	
19-1/2	7:28	7:35	7	

Hole was caving during this run. Circulated with mud pumps until barrel was raised into the 8-inch hole.

Date - June 16, 1962
 Run - 7
 Bit - 5
 Starting time - 10:45 a.m.
 Interval - 890.43 to 909.93

Foot	Time		Total	Remarks
	From	To		
1	10:45a.m.	10:56a.m.	11 min.	Added .29 bbl. of mud.
2	10:56	11:13	17	114 rpm.
3	11:13	11:26	13	114 rpm.
4	11:26	11:55	29	114 rpm.
5	11:55	12:11p.m.	16	114 rpm.
6	12:11p.m.	12:33	12	114 rpm.

Foot	Time		Total	Remarks
	From	To		
7	12:33p.m.	12:37p.m.	14 min.	114 rpm.
8	12:37	12:53	16	114 rpm.
9	12:53	1:08	15	114 rpm.
10	1:08	1:26	18	114 rpm.
11	1:26	1:49	23	114 rpm.
12	1:49	2:16	27	114 rpm.
13	2:16	2:37	21	Added .26 bbl. of mud.
14	2:37	3:30	53	Barrel chattering and sticking.
15	3:30	3:53	23	90 rpm.
16	3:53	4:12	19	
17	4:12	4:35	23	Barrel chattering and sticking; added .23 bbl. of mud.
18	4:35	4:53	18	90 rpm.
19	4:53	5:08	15	
19-1/2	5:08	5:15	7	

Losing mud around bottom of 10-3/4 csg.

Date - June 18 and 19, 1962

Run - 8

Bit - 4

Starting time - 8:10 p.m.

Interval - 909.93 to 928.93

Foot	Time		Total	Remarks
	From	To		
1	8:10 p.m.	8:30 p.m.	20 min.	
2	8:30	8:39	9	84 rpm.
3	8:39	8:48	9	100 rpm at 4,000 lb.
4	8:48	8:56	8	100 rpm at 4,000 lb.
5	8:56	9:05	9	100 rpm at 4,000 lb.
6	9:05	9:10	5	100 rpm at 4,000 lb.
7	9:10	9:16	6	100 rpm at 4,000 lb.
8	9:16	9:22	6	100 rpm at 4,000 lb.
9	9:22	9:28	6	100 rpm at 4,000 lb.
10	9:28	9:34	6	100 rpm at 4,000 lb.
11	9:34	9:39	5	Added .16 bbl. of mud.
12	9:39	9:44	5	100 rpm at 5,000 lb.
13	9:44	9:53	9	100 rpm at 5,000 lb.
14	9:53	10:18	20	Down for 6 minutes.
15	10:18	10:30	12	110 rpm at 4,000 lb.

<u>Foot</u>	<u>Time</u>		<u>Total</u>	<u>Remarks</u>
	<u>From</u>	<u>To</u>		
16	10:30p.m.	10:35p.m.	5 min.	110 rpm at 4,000 lb.
17	10:35	10:48	13	110 rpm at 4,000 lb.
18	10:48	11:27	39	93 rpm at 5,000 lb.
19	11:27	12:05pm.	38	Added .15 bbl. of mud; 93 rpm at 6,000 lb.

Circulated for 13 minutes.

cc: W. T. Wertman
 C. I. Pierce
 R. L. Rough
 1) Eckard 2) Taylor 3) Files