



00553981

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73069

INTERNATIONAL NUCLEAR CORPORATIONNO. 1 MILLER

Located in the center of the SE NE, Section 12-15S-45W, Cheyenne County, Colorado.

REMARKS:

Joint samples were caught from under surface pipe to 3000' and 10' samples were caught from 3000' to total depth. All samples were examined at the wellsite. After drilling was completed the samples were sent to American Stratigraphic, a commercial sample cut in Denver, Colorado. Drilling time was recorded by Geolograph and 1' drilling time from 3400' to total depth is tabulated in the last portion of this report.

Geological supervision was provided at the wellsite by the writer from 3600' to total depth. During the drilling of the well, five drillstem tests were run. The results of these tests are incorporated into the section dealing with the lithology of the hole.

At a rotary total depth of 5410' a suite of Welex electrical logs were run which recorded a total depth of 5412'. At this point Plains Exploration Company assumed operations and completed the test.

ELEVATIONS

4292 K.B.

4290 D.F.

4283 G.L.

STRUCTURAL COMPARISON

Structural comparison for the subject well was provided by a rank wildcat dry hole, International Nuclear Corporation #1 Bartholomew, NW NW, Section 18-15S-44W. The #1 Bartholomew is located approximately 3/4 miles to the south-southeast of the subject test. Some of the more important structural markers are tabulated below.

	<u>No. 1 Miller</u>	<u>No. 1 Bartholomew</u>
Anhydrite	2978 + 1314	+ 1308
Base	3017 + 1275	+ 1269
Neva	3624 + 668	+ 662
Foraker <i>Penn 3844</i>	3696 + 596	+ 590
Topeka	4030 + 262	+ 252
Heebner	4176 + 116	+ 108
Lansing	4245 + 47	+ 35
Marmaton	4597 - 305	- 302
Cherokee	4745 - 435	- 453
Atoka	4869 - 577	- 589
Morrow	4978 - 686	- 696
Mississippian	5132 - 840	- 855
Spergen	5240 - 948	- 972
Warsaw	5364 - 1072	- 1087
Harrison Shale	5391 - 1099	- 1118
Osage	5400 - 1108	- 1128

LITHOLOGIC ZONES OF INTEREST

The following descriptions are related to those reservoir zones which contained shows of hydrocarbons or were anomalous enough to warrant close scrutiny in future wildcat or development wells in this vicinity. The descriptions from the Anhydrite to the top of the Topeka are generalized as they are believed to offer minor prospects for commercial hydrocarbon accumulation.

Anhydrite

(2978 - 3017)

Anhydrite, red, pink to white.
Crystallization ranges from very fine to coarse.

(3017 - 3292)

Sandstones, very small grains, color range is gray, pink to orange. Alter-nating shale beds, red through brown.

(3292 - 3624)

Probable top of Chase group, 3292'. Dolomites, gray, pink to red. Dense, finely crystalline to granular. Sandstones, gray, green, red to orange. Fine grain and slightly micaceous. Shales ranging from gray through brown, red and green.

Neva

(3624 - 3653)

Limestone, white to buff, dense to finely crystalline in upper part. Lower section consists of dolomite, rose, tan and gray, very finely crystalline to granular.

Foraker

(3696 - 3745)

Limestone, white-gray, chalky to finely crystalline, has brown inclusions. Middle portion contains dolomite, gray with purple tinge, granular. Lower portion is limestone, finely crystalline to dense, slightly mottled and slightly oolitic.

(3745 - 4030)

This section consists of alternating relatively thin beds of shale, sandstones and limestones. The shales are gray to gray green, gritty. The sands are very fine grain, gray to green and shaley. The limestones which are more prevalent in the lower section are white, gray to buff. They may be chalky, to very finely crystalline and nodular to oolitic. They also contain fossil fragments.

Topeka

(4045 - 4056)
Circulated @ 4060'

Dolomite, buff, medium crystalline to sucrosic. Fair vugular porosity with good odor, live oil in porosity, good fluorescence and cut. (This zone tested water in the No. 1 Bartholomew.

(4078 - 86)
Circulated @ 4086'

Limestone, white, chalky with trace of dark gray fossil fragments with show live oil.

(4091 - 4105)
Circulated @ 4105'

Limestone, white-gray, finely crystalline to granular and nodular. Slightly

chalky and fossiliferous. Fair inter-crystalline and vugular porosity with good show of live brown oil, dull yellow fluorescence and fair cut.

DST #1 4090 - 4105' 5 minute preflow, weak to strong blow. Open 60 minutes, weak to strong blow. Recovered 2163' sulphur water.
Initial Hydrostatic Pressure - 2046 lbs.
Final Hydrostatic Pressure - 2046 lbs.
Initial Flow Pressure - 503 lbs.
Final Flow Pressure - 970 lbs.
Initial Closed in Pressure - 970 lbs.
(60 min.)
Final Closed in Pressure - 970 lbs.
(120 min.)

Toronto

(4202 - 4218)

Dolomite, tan, finely crystalline to sucrosic, live oil in wet sample, dull yellow fluorescence, slow cut.

Lansing

(4261 - 4274)

Limestone, white to cream, slightly chalky - finely crystalline - slightly oolitic and oolitic. Fair oolitic porosity with scattered show of light brown oil, good fluorescence and cut.

DST #2 4268 - 4285' 10 minute preflow, very weak to weak blow. Open 60 minutes, very weak blow in 5 minutes, increased to weak blow. Recovered 612' muddy water.
Initial Hydrostatic Pressure - 2046 lbs.
Final Hydrostatic Pressure - 2046 lbs.
Initial Preflow Pressure - 19 lbs.
Final Preflow Pressure - 75 lbs.
Initial Closed in Pressure - 1045 lbs.
(60 min.)
Final Closed in Pressure - 1045 lbs.
(120 min.)
Initial Flow Pressure - 75 lbs.
Final Flow Pressure - 299 lbs.

(4334 - 4344)
Circulated @ 4335'

Limestone, gray-cream, finely crystalline to granular and slightly fossil-

iferous. Fair pin-point and vugular porosity with scattered show of live oil, fair fluorescence and cut plus slight odor.

(4374 - 4382)
Circulated @ 4390'

Dolomite, buff to gray, finely sucrosic, good light yellow fluorescence, fair cut, no free oil.

Marmaton

(4601 - 4606)
Circulated @ 4605'

Limestone, gray mottled, semi-chalky. No show.

(4629 - 4637)

Limestone, white, chalky.

(4664 - 4674)

Sandstone, gray, very finely crystalline, calcareous. No show.

Cherokee

(4745 - 4869)

No shows were noted in the Cherokee section. It is comprised of alternating shales and limestones. The shales are dark gray to black, the latter being very carbonaceous. The limestones vary from tan through dark gray to brown, finely crystalline to dense. In the lower portion they become darker in color and argillaceous. The lower portion also contains occasional dark brown to black opaque cherts.

Atoka

(4869 - 4978)

No shows were noted in the Atoka section. It also consists primarily of alternating shales and limestones. The shales are dark gray to black, frequently carbonaceous. The limestones range from tan to gray through dark brown to black. The lower portion frequently contains dark brown to black, opaque, pyritic chert.

Morrow

(4978 - 5083)

This portion of the Morrow consists of pale green to gray-green shales with occasional thin stringers of gray marly limestone and gray-green, fine grain, shaley sandstone.

(5083 - 5132)

(Lower Morrow Limestone) Limestone, white to buff, finely crystalline, dense, slightly chalky, oolitic and glauconitic. Trace of coarse grain, angular, pyritic, shaley sand.

Mississippian

(5132 - 5170)

(St. Louis) The upper portion of the St. Louis is limestone. It ranges from gray to tan, finely crystalline to dense and minutely oolitic or pelletal to tan, sublithographic.

(5174 - 5185)

Dolomite, tan, very finely sucrosic with inclusions of large, rounded, clear to frosted quartz sand grains. The dolomite has fair vugular and inter-crystalline porosity with very light, pale yellow fluorescence - no cut or stain.

Spargen

(5266 - 5280)

Dolomite, tan-resinous, granular to argillaceous. Trace of orange vitreous chert. 90 minute circulation sample at 5265' has considerable white-gray marbled chalky material.

(5280 - 5306)

Upper portion is dolomite, brown, finely crystalline to dense with a trace of sucrosic dolomite with a show of live oil, fluorescence and cut. Lower portion is dolomite, brown, finely crystalline to sucrosic. Fair to good inter-crystalline porosity with fair show of live oil, bright yellow fluorescence and good cut.

(5316 - 5330)

Dolomite, gray-tan-brown, some mottled, finely crystalline to sucrosic. Fair inter-crystalline porosity and scattered good vugular porosity with fair show of live oil, good bright yellow fluorescence and cut.

DST #3 5260 - 5335' 60 minute preflow, very weak blow - gradual increase to steady weak blow - declined slightly at end of period. 30 minute open - no blow. Recovered 10' clean oil + 120'

Slightly oil cut mud.
Initial Hydrostatic Pressure - 2457 lbs.
Final Hydrostatic Pressure - 2429 lbs.
Initial Preflow Pressure - 31 lbs.
Final Preflow Pressure - 54 lbs.
Initial Closed in Pressure - 916 lbs.
(60 min.)
Final Closed in Pressure - 934 lbs.
(120 min.)
Initial Flow Pressure - 63 lbs.
Final Flow Pressure - 72 lbs.

Warsaw

(5350 - 5354)

Chert, white to gray, some mottled, vitreous to slightly weathered. Plus trace of dolomite, brown-mottled, finely crystalline to granular. Poor matrix porosity with slight show of free oil on fractured surfaces, fair fluorescence and cut.

(5363 - 5370)
Circulated 90 min.
@ 5370

Chert, white to gray, spicular, vitreous, translucent to opaque - some slightly devitrified. Also limestone, gray-tan, mottled, coarsely crystalline and trace of dolomite, tan-buff, very finely crystalline. Considerable large white to clear calcite crystals. Fair show of live oil on fresh fracture surfaces and good fluorescence and fair cut.

DST #4, 5335 - 5370' 5 minute preflow - strong blow immediately. 60 minute open - strong blow throughout. Recovered 2135' formation water.
Initial Hydrostatic Pressure - 2552 lbs.
Final Hydrostatic Pressure - 2479 lbs.
Initial Preflow Pressure - 53 lbs.
Final Preflow Pressure - 295 lbs.
Initial Closed in Pressure - 966 lbs.
(60 min.)
Final Closed in Pressure - 961 lbs.
(120 min.)
Initial Flow Pressure - 304 lbs.
Final Flow Pressure - 948 lbs.

Osage

(5400 - 5410)
Circulated 90 min.
@ 5410

Chert, white-gray-tan, spicular, vitreous to slightly devitreous, opaque to translucent. Dolomite, white-tan-brown,

glauconitic, dense - finely crystalline - near sucrosic. Large calcite crystals associated with both chert and dolomite. Drilling samples and first circulation samples had trace live oil of fresh surfaces, good bright fluorescence - slow cut. Last circulation sample had pale, dull fluorescence and essentially no cut.

DST #5, 5402 - 5410'. 30 minute pre-flow - weak blow, increasing to fair blow. 60 minute open - weak blow, increased to fair blow. Recovered 500' formation water.

Initial Hydrostatic Pressure - 2605 lbs.

Final Hydrostatic Pressure - 2586 lbs.

Initial Preflow Pressure - 18 lbs.

Final Preflow Pressure - 86 lbs.

Initial Closed in Pressure - 952 lbs.
(60 min.)

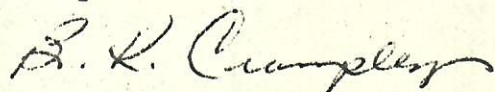
Final Closed in Pressure - 961 lbs.
(120 min.)

Initial Flow Pressure - 90 lbs.

Final Flow Pressure - 226 lbs.

Total Depth (Electrical log - 5412')

Respectfully submitted,



B. K. Crumpley, Geologist

GENERAL INFORMATION

International Nuclear Corporation No. 1 Miller

Location: From Cheyenne Wells, Colorado -
1 mile west on Highway 40, south 3
miles, 1 mile west - cross country,
south and west to location.

Contractor: L&F Drilling Company, Lamar, Colorado.

Surface Casing: 12 1/4" conductor pipe @ 927'
8 5/8" @ 977'

Hole Size: 7 7/8".

Rotary Completion: 4/8/69

1st Drilling Time

3400 - 10	3-5-4-3-5	7-6-6-5-6	
10 - 20	6-5-4-7-8	6-2-6-7-11	
20 - 30	11-7-4-5-5	5-4-7-6-6	
30 - 40	5-4-3-4-3	3-5-5-7-6	
40 - 50	4-5-6-5-7	8-8-5-5-4	
30 - 60	4-6-6-5-4	4-4-5-5-4	
60 - 70	5-6-4-5-4	4-5-4-5-4	
70 - 80	4-4-5-5-6	5-7-5-5-7	
80 - 90	6-5-9-8-9	10*-3-2-3-2	*Bit trip
90 - 00	2-2-2-3-2	3-2-2*-3-2	*Mud up
3500 - 10	2-2-2-2-2	3-2-1-2-1	
10 - 20	1-1-1-2-1	1-1-1-1-2	
20 - 30	2-2-2-2-3	2-2-2-2-2	
30 - 40	2-1-2-2-3	3-2-2-2-2	
40 - 50	2-2-3-3-2	3-2-2-3-2	
50 - 60	2-2-2-2-2	2-2-3-2-2	
60 - 70	1-2-2-2-1	2-2-1-2-1	
70 - 80	2-1-2-1-2	2-2-2-2-1	
80 - 90	1-1-1/2-1/2-1/2	1/2-1-1-1-1	
90 - 00	1-1-1-1/2-1/2	1/2-1/2-1-1/2-1/2	
3600 - 10	1-1-1-2-1	2-2-2-1-2	
10 - 20	1-1-1-2-2	2-2-2-2-2	
20 - 30	2-2-2-2-2	2-3-2-3-2	
30 - 40	3-3-4-4-4	4-3-3-4-4	
40 - 50	4-5-4-5-4	3-3-3-3-4	
50 - 60	4-4-5-3-3	3-3-3-3-4	
60 - 70	3-4-4-4-3	5-3-4-4-4	
70 - 80	4-4-4-5-4	4-4-4-3-4	
80 - 90	4-3-3-5-5	3-5-3-5-4	
90 - 00	3-3-4-4-4	4-4-2-2-3*	*Rough
3700 - 10	4-4-2-3-2*	4-2-4-4-5	*Rough
10 - 20	6-6-7-3-4	5-4-4-4-4	
20 - 30	5-6-5-5-8	5-7-5-2-4	
30 - 40	6-7-6-4-5	4-4-9-8-7	
40 - 50	4-7-6-5-3	5-6-3-3-3	
50 - 60	3-3-3-3-3	4-4-3-3-4	
60 - 70	3-4-3-3-4	5-4-4-5-3	
70 - 80	3-3-3-4-4	6-8-5-6-5	
80 - 90	3-3-3-4-3	3-3-3-3-3	
90 - 00	3-3-3-3-4	4-4-4-4-3	

3800 - 10	4-4-3-3-5	6-2-3-4-4	
10 - 20	3-2-3-3-4	3-3-4-3-3	
20 - 30	3-4-3-3-4	3-4-4-4-3	
30 - 40	4-3-3-2-3	3*-2-1-2-1	*Bit trip
40 - 50	2-2-1-1-2	2-2-2-3-2	
50 - 60	4-4-2-2-2	1-2-2-2-1	
60 - 70	2-2-2-3-2	1-1-3-2-2	
70 - 80	2-2-2-2-2	1-2-2-3-3	
80 - 90	2-3-2-3-2	2-1-1-3-2	
90 - 00	2-2-2-2-2	2-3-2-2-2	
3900 - 10	2-2-2-4-2	3-2-3-2-3	
10 - 20	2-3-3-2-2	1-2-3-4-3	
20 - 30	3-2-2-3-2	3-2-2-1-3	
30 - 40	2-2-2-2-2	2-2-2-2-3	
40 - 50	2-3-3-2-2	4-4-2-2-3	
50 - 60	3-2-3-2-3	2-3-3-2-3	
60 - 70	3-2-2-4-4	4-3-3-2-3	
70 - 80	4-3-3-2-3	2-3-2-3-2	
80 - 90	3-2-2-2-4	5-4-3-5-4	
90 - 00	4-5-4-5-5	4-5-3-2-3	
4000 - 10	2-2-3-3-2	2-6-2-1-1	
10 - 20	5-7-5-2-2	3-3-2-3-4	
20 - 30	3-3-3-3-3	3-3-3-4-4*	*CFS
30 - 40	2-4-3-3-4	4-4-4-4-4	
40 - 50	4-4-4-5-4	5-3-4-4-4	
50 - 60	5-3-4-1-1	1-6-5-4-3*	*CFS
60 - 70	5-3-4-3-5	6-6-4-5-6*	*CFS
70 - 80	5-7-6-5-3	4-4-3-3-4	
80 - 90	2-2-2-3-3	2*-2-5-5-5	*CFS
90 - 00	5-3-4-2-3	3-2-3-2-2*	*CFS
4100 - 10	3-3-2-2-2*	2-3-2-2-2	*CFS,
10 - 20	2-2-1-1-2	2-1-1-4-3	DST #1
20 - 30	3-3-3-3-4	2-4-3-2-2	
30 - 40	1-2-3-3-5	2-2-4-4-3	
40 - 50	3-2-4-5-5	3-2-3-2-3*	*CFS
50 - 60	3-2-2-3-4	4-4-3-3-3	
60 - 70	4-4-3-4-5	4-4-5-4-4	
70 - 80	5-4-4-4-4	4-2-2-2-5	
80 - 90	4-5-5*-5-3	3-6-3-2-4	*Rough
90 - 00	5-4-4-5-4	4-4-5-5-5	
4200 - 10	3-4-3-3-2	2-2-2-2-2	
10 - 20	2-2-1-1-2	2-2-2-1-1	
20 - 30	1-2-2-2-2	3-4-4-6-6	
30 - 40	6-6-3-3-3	4-4-5-3-3	
40 - 50	3-3-3-3-4	4-4-4-5-3	
50 - 60	5-4-5-4-4	5-5-5-6-5	
60 - 70	4-1-1-1-3	2-4-3-3-2	
70 - 80	3-3-3-3-4	4-4-4-4-5	
80 - 90	4-4-7-4-6*	2-2-2-3-2	*CFS,
90 - 00	2-2-2-2-2	2-3-3-2-4	DST #2

4300 - 10	3-2-3-3-3	2-2-2-3-4	
10 - 20	4-4-3-3-3	4-4-4-4-3	
20 - 30	3-3-5-4-4	3-2-3-2-2	
30 - 40	2-3-2-3-4*	6-4-6-4-4	*CFS
40 - 50	5-6-4-5-3	6-5-6-4-2	
50 - 60	3-4-3-5-7	5-6-5-4-5	
60 - 70	3-4-4-5-6	3-2-2-4-2	
70 - 80	3-6-6-4-4	3-2-1-1-1	
80 - 90	1-1-2-4-4	2-5-4-5-5*	*CFS
90 - 00	9-6-6-7-4	6-6-7-6-6	
4400 - 10	7-2-4-6-5	7-8-6-4-3	
10 - 20	3-2-3-3-3	3-3-3-2-2	
20 - 30	2-2-2-3-2	4-3-6-5-3	
30 - 40	5-5-3-5-4	5-4-4-3-4	
40 - 50	3-4-4-4-3	3-3-2-4-2	
50 - 60	4-4-3-3-5	6-7-5-4-3	
60 - 70	3-4-5-5-6	4-5-5-5-5	
70 - 80	4-4-4-3-4	6-3-3-4-4	
80 - 90	2-4-5-5-6	3-5-6-6-5	
90 - 00	5-4-5-4-3	3-3-3-3-3	
4500 - 10	4-3-3-3-3	3-5-2-3-2	
10 - 20	2-3-4-4-5	4-4-3-4-4	
20 - 30	4-3-4-2-3	2-3-2-2-3	
30 - 40	3-2-2-3-3	2-3-2-4-6	
40 - 50	4-6-4-6-2	3-3-4-6-7	
50 - 60	7-7-6-4-3	5-4-6-6-6	
60 - 70	5-3-4-4-6	7-7-7-7-6	
70 - 80	6-7-7-5-6	5-7-7-7-9	
80 - 90	6-6-7-7-5	5-4-3-4-5	
90 - 00	5-8-7-6-8	3-1-2-2-2	
4600 - 10	3-4-3-4-4*	4-3-3-2-2	*CFS,
10 - 20	2-2-3-5-4	4-5-3-4-4	Bit trip
20 - 30	4-5-4-4-2	5-5-4-2-3	
30 - 40	4-3-2-3-2	5-5-5-4-5	
40 - 50	3-5-6-3-6	3-5-5-8-6	
50 - 60	2-3-7-7-3	4-4-5-4-5	
60 - 70	4-3-4-4-3	4-3-3-5-3	
70 - 80	3-3-3-3-2	4-4-5-3-6	
80 - 90	8-4-6-4-5	5-6-3-5-5	
90 - 00	6-4-4-4-5	3-5-4-5-5	
4700 - 10	6-8-5-6-7	5-6-6-7-4	
10 - 20	6-6-6-6-7	7-6-6-6-7	
20 - 30	6-6-6-7-7	8-8-7-6-6	
30 - 40	6-7-8-10-5	4-6-5-6-6	
40 - 50	7-8-8-7-2	2-7-6-4-4	
50 - 60	5-4-3-7-8	9-8-10-7-6	
60 - 70	2-2-2-3-3	10-11-13-12-9	
70 - 80	10-4-7-10-7	8-13-12*-7-5	*Bit trip
80 - 90	3-3-4-5-5	6-6-4-4-5	
90 - 00	4-2-5-6-3	2-4-4-7-5	

4800 - 10	6-5-4-4-4	7-3-9-6-6	
10 - 20	5-5-4-5-7	9-5-5-4-4	
20 - 30	9-5-5-7-4	2-5-4-5-4	
30 - 40	5-2-2-2-6	8-7-6-7-6	
40 - 50	9-5-4-5-4	9-9-9-7-6	
50 - 60	6-8-11-7-11	12-14-21-4-5	
60 - 70	4-7-3-3-3	5-6-7-12-11	
70 - 80	9-6-6-15-9	4-5-14-9-17	
80 - 90	7-8-4-3-4	4-8-12-13-11	
90 - 00	12-13-17-22*-4	3-5-3-3-1	*Bit trip
4900 - 10	2-2-3-2-2	3-3-1-2-5	
10 - 20	3-3-6-7-5	6-3-5-8-7	
20 - 30	6-6-7-8-8	8-8-10-10-8	
30 - 40	6-4-8-11-11	6-6-5-12-8	
40 - 50	8-8-6-9-7	9-10-11-14-13	
50 - 60	16-10-12-15-20	12-13-15-13-11	
60 - 70	12-13-11-10-9	9-9-8-9-10	
70 - 80	11-10-11-11-8	10-11-5-4-4	
80 - 90	5-5-6-6-5	5-5-6-5-6	
90 - 00	6-5-6-8-6	7-7-6-7-7	
5000 - 10	6-6-8-6-6	6-6-4-7-5	
10 - 20	6-7-5-7-4	3-5-5-7-6	
20 - 30	7-6-7-6-9	9-6-10-10-7	
30 - 40	5-8-9-8-9	8-7-9-8-9	
40 - 50	10*-4-4-2-4	4-4-4-4-4	*Bit trip
50 - 60	4-4-4-4-3	5-4-5-4-5	
60 - 70	3-5-3-4-3	3-3-4-4-4	
70 - 80	4-4-4-3-4	3-3-3-3-4	
80 - 90	4-3-4-4-4	4-4-5-5-3	
90 - 00	5-4-6-6-6	6-5-5-4-4	
5100 - 10	3-5-6-4-6	5-6-6-5-5	
10 - 20	6-6-5-5-4	4-4-5-5-6	
20 - 30	3-3-4-6-6	7-5-6-7-5	
30 - 40	5-5-4-6-7	10-7-6-7-13	
40 - 50	15-15-13-13-16	15-15-16-19-17	
50 - 60	19-18-16-15-19	18-14-15-20-20	
60 - 70	16-17-16-15-16	16-17-18*-4-4	*Bit trip
70 - 80	4-4-4-4-3	3-3-3-3-3	
80 - 90	2-4-3-6-3	5-4-5-6-6	
90 - 00	5-5-7-4-6	6-4-6-8-7	
5200 - 10	8-9-10-7-9	8-7-9-7-7	
10 - 20	8-10-7-9-9	7-7-8-8-10	
20 - 30	7-4-6-5-11	8-9-11-10-15	
30 - 40	12-15-14-14-10	13-6-15-11-18	
40 - 50	23-10-19-20-19	19-20-22-16-15	
50 - 60	19-11-22-19-19	20-21-23-24-25*	*Bit trip
60 - 70	8-8-7-7-5	5-6-6-4-3	
70 - 80	7-7-5-5-4	5-5-6-5-5	
80 - 90	6-4-4-2-9	5-5-5-6-5	
90 - 00	5-3-5-6-4	4-4-5-4-4	

5300 - 10
10 - 20
20 - 30
30 - 40
40 - 50
50 - 60
60 - 70
70 - 80
80 - 90
90 - 00

4-5-6-6-5
7-6-8-8-3
5-5-5-8-7
12-15-13-14-16*
10-9-10-9-9
7-10-8-10-10
9-7-8-8-10
7-8-7-6-6
5-6-6-7-7
8-7-7-8-6

7-7-8-8-8
4-4-7-6-5
5-5-5-8-10
6-6-10-7-12 *DST #3,
11-10-9-8-9 New Bit
10-10-9-8-10
10-10-9-10-9* *DST #4
6-5-6-5-5
6-7-8-7-9
8-7-6-5-4

5400 - 10

4-4-5-4-5

5-5-5-5-11* *CFS,
DST #5

Rotary Total Depth 5410'