Summary of the Stanolind Oil and Gas Company - N.W.I. (N.P.) No. 1
Billings County, North Dakota
Well No. 555 - Permit No. 568

By James D. Peterson
January, 1957


The Stanolind Oil and Gas Company - N.W.I. (N.P.) No. 1 was spudded April 27, 1954, drilled to a total depth of 13,888 feet, plugged and abandoned as a dry hole August 31, 1954.

Logs:

Drill Stem Tests:
DST #1 13,489 to 13,528. Open 15 minutes, SI 15 minutes, 3/4" choke. Weak blow for 10 minutes, then died. Mud dropped in annulus after tool was open 8 minutes. Estimated loss 50 barrels mud in annulus. Recovered 3,000' water cushion and 1,674' of drilling mud. Bottom Hole Temperature 330°; BHPF-3,000 to 4,475, BHPSI-6,950, HP-7,580, PB-9,711.

Test Data:
Perforated 9,640-89 with 4 shots per foot. Packer set at 9,631. Swabbed sulphur water and little gas, salt water with rainbow oil, small amount of gas. Squeezed perforated 9640-89. Reperforated 9590-9620 with 4 shots per foot. Packer set at 9420. Swabbed salt water with rainbow oil, 2 barrels water per hour, squeezed perforations 9590-9620. Reperforated 9540-70, filled up fluid level 4500'. Swabbed 1500' salt water, 1/2 barrels oil per hour, 8 hours, swabbed dry. Acidized with 2000, swabbed 54 barrels fluid salt water and 1 barrel oil, 4 hours, plugged back 8100. Perforated 8118-40 with 4 shots per foot. Swabbed 45 barrels salt water per hour, 10 hours. Squeezed perforations.

Casing Record:
13 3/8" at 379' with 360 sacks of cement.
9 5/8" at 6918' with 300 sacks of cement.
7" at 9756' with 335 sacks of cement.

Plugging Record:
13878 to 13743 50 sacks of cement
13135 to 13000 50 sacks of cement
11200 to 11065 50 sacks of cement
9971 to 9700 100 sacks of cement
75 sacks with top of cement at 7650
50 sacks with top of cement at 6830
50 sacks with bottom of cement plug at 1821
50 sacks cement 342 to 410. Bottom of 13 3/8" casing.
20 sacks placed in top of 13 3/8" casing with top of plug approximately 3' below surface.

Formation tops were picked from samples and electric logs. Doubtful or obscure formation tops were not picked. Color names and identifying numbers were taken from the 1948 Rock-Color Chart distributed by the National Research Council, Washington, D.C.

**FORMATION TOPS**

<table>
<thead>
<tr>
<th>System</th>
<th>Formation</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cretaceous</strong></td>
<td>Pierre formation</td>
<td>2142</td>
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<tr>
<td></td>
<td>Niobrara formation</td>
<td>4326</td>
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<td></td>
<td>Greenhorn formation</td>
<td>4860</td>
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<td></td>
<td>Muddy formation</td>
<td>5495</td>
</tr>
<tr>
<td></td>
<td>Basal Cretaceous Sands</td>
<td>5836</td>
</tr>
<tr>
<td><strong>Jurassic</strong></td>
<td>Jurrasic shale</td>
<td>5990</td>
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<td>Piper formation</td>
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<td><strong>Triassic</strong></td>
<td>Spearfish formation</td>
<td>7010</td>
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<td><strong>Permian</strong></td>
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<td>7510</td>
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<tr>
<td></td>
<td>Opeche formation</td>
<td>7620</td>
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<td><strong>Pennsylvanian</strong></td>
<td>Minnelusa formation</td>
<td>7904</td>
</tr>
<tr>
<td><strong>Mississippian</strong></td>
<td>Big Snowy Group</td>
<td>8397</td>
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<tr>
<td></td>
<td>Kibby Lime</td>
<td>8803</td>
</tr>
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<td></td>
<td>Charles formation</td>
<td>8951</td>
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<td></td>
<td>Base of Last Salt</td>
<td>9470</td>
</tr>
<tr>
<td></td>
<td>Lodgepole formation</td>
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<td></td>
<td>Englewood formation</td>
<td>10915</td>
</tr>
<tr>
<td><strong>Devonian</strong></td>
<td>Lyleton formation</td>
<td>10950</td>
</tr>
<tr>
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<td>Nisku formation</td>
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</tr>
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<td>Duperow</td>
<td>11268</td>
</tr>
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<td><strong>Silurian</strong></td>
<td>Interlake group</td>
<td>12147</td>
</tr>
<tr>
<td><strong>Ordovician</strong></td>
<td>Upper Stony Mountain</td>
<td>12923</td>
</tr>
<tr>
<td></td>
<td>Lower Stony Mountain</td>
<td>13038</td>
</tr>
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<td>Red River formation</td>
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<td></td>
<td>Winnipeg shale</td>
<td>13745</td>
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<td>Winnipeg sand</td>
<td>13872</td>
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- **400-490** Shale, light olive gray to olive gray, earthy, calcareous, silty, lignite.
- **490-520** Shale as above, bentonite, lignite.
- **520-550** Shale, light gray, slightly bentonitic.
- **550-640** Shale, light olive gray, earthy, lumpy, calcareous; lignite inclusions.
640-700  Shale, light gray to light brown, calcareous, lumpy, silty, lignite inclusions.
700-730  Shale, as above, light brown shale, very calcareous.
730-760  Shale as above, lignite.
760-790  Shale as above, lignite inclusions.
790-820  Shale, very light gray to light brown, calcareous, earthy.
820-970  Shale, very light gray to light brown, calcareous, lumpy, shell fragments, lignite.
970-1000 Shale, light olive gray, calcareous, interbedded lignite, slightly bentonitic, shell fragments.
1000-1030 Shale as above; much lignite, shell fragments.
1030-1120 Shale, light olive gray to medium dark gray, calcareous, lumpy, lignite, few pyrite crystals, slightly bentonitic.
1120-1180 Shale, light gray, calcareous, lignite
1180-1210 Shale as above, lignite, light gray sandstone, fine to medium grained.
1210-1240 Shale, light gray to light brown, calcareous, lumpy, lignite.
1240-1300 Shale as above, slightly bentonitic, light brownish gray, calcareous sandstone, lignite.
1300-1390 Shale, light olive gray to light brown, lumpy, calcareous, slightly bentonitic, small pyrite crystals; lignite; sandstone as above.
1390-1450 Shale as above.
1450-1510 Shale as above; lignite; shell fragments.
1510-1540 Shale, light olive gray to light brown, calcareous, bentonitic interbedded lignite.
1540-1570 Shale, light olive gray to light brown, lumpy to hard, dense; poorly consolidated light gray sandstone.
1570-1600 Sandstone, very light gray, fine grained; calcareous, shale as above.
1600-1660 Shale, light olive gray, interbedded lignite, lumpy.
1660-1750 Shale, light olive gray, lumpy.
1750-1780 Shale, olive gray, lumpy, calcareous, sand grain inclusions.
1780-1810 Shale, medium light gray, lumpy.
1810-1840 Shale as above; sandstone, angular, light gray, calcareous.
1840-1870 Shale, as above, lignite.
1870-1900 Shale as above.
1900-1930 Shale, medium light gray to light brownish gray, lumpy.
1930-1990 Shale, light olive gray to pale yellowish brown, fine to sandy, white bentonitic, lumpy.
1990-2080 Shale, light gray to medium gray, calcareous, white bentonite specks.
2080-2110 Shale, light gray to medium gray, fine to silty; limestone, light olive gray, sharp fragments; greenish gray to very light gray fine grained sandstone, lignite.
2110-2140 Shale as above, calcareous; limestone as above.
2140-2170 Shale, medium dark gray, lumpy; white bentonite inclusions; limestone light olive gray, angular, sublithographic.
2170-2260 Shale, medium light gray, lumpy, soft; yellowish gray, shaley limestone.
2260-2290 Shale, medium light gray, lumpy.
2290-2320 Shale as above; slightly bentonitic.
2320-2410 Shale, medium light gray to light brown, slightly bentonitic.
2410-2470 Shale as above, limestone inclusions; light brown siltstone.
2470-2680  Shale, medium light gray to light brown, lumpy.
2680-2710  Shale as above; lignite.
2710-2740  Shale, as above; slightly bentonitic.
2740-2770  Shale, light gray; limestone, medium gray, sublithographic.
2770-2890  Shale as above, white bentonite specks.
2890-2950  Shale, medium light gray to light brown, lumpy to flaky, white bentonite specks.
2950-3010  Shale and bentonite as above, lignite.
3010-3070  Shale, medium light gray to light brown, white bentonite specks.
3070-3220  Shale, as above, shell fragments, inoceramus prisms.
3220-3310  Shale as above, pale yellowish orange to white calcite.
3310-3370  Shale, medium light gray, lumpy to platy, white bentonite specks, calcite crystals, pyrite crystals; shell fragments.
3370-3430  Shale, medium light gray to light brown, calcite crystals, white bentonite specks; lignite; dense, medium dark sublithographic limestone.
3430-3520  Shale as above.
3520-3580  Shale, medium light gray, earthy.
3580-3610  Shale as above, dense medium dark gray sublithographic limestone; shell fragments.
3610-3670  Shale, medium light gray, lumpy; white bentonite specks; lignite inclusions.
3670-3730  Shale, medium light gray, white bentonite specks, pyrite, lignite; shell fragments.
3730-3820  Shale as above; sublithographic limestone; shell fragments, calcite.
3820-3910  Shale, light gray to medium dark gray, white bentonite; sub-lithographic limestone, shell fragments.
3910-3940  Shale, medium light to medium dark gray, bentonitic.
3940-3970  Shale as above; lignite.
3970-4030  Shale as above.
4030-4060  Shale as above, bentonitic, lithographic limestone.
4060-4210  Shale as above.
4210-4270  Shale, medium gray, white calcareous specks; calcite.
4270-4330  Shale, medium light gray to medium dark gray, calcareous white specks, bentonitic.
4330-4390  Shale, medium gray to dark gray, calcareous, white specks.
4390-4420  Shale, medium gray to medium dark gray, calcareous.
4420-4450  Shale, medium light gray; bentonite.
4450-4510  Shale, medium gray to medium dark gray; shell fragments, bentonite.
4510-4660  Shale as above, calcareous, non-calcareous.
4660-4720  Shale, light olive gray, shell fragments.
4720-4810  Shale, light brown to medium dark gray.
4810-4840  Shale as above; bentonite.
4840-4870  Shale, light olive gray; some bentonite.
4870-4930  Shale, medium light to medium dark gray, white calcareous specks; sublithographic limestone.
4930-4960  Shale, medium light gray to dark gray, in part calcareous; limestone, argillaceous to sublithographic.
4960-4990  Shale and limestone as above; bentonite.
4990-5010  Shale, medium gray; fine to coarse grained sublithographic limestone, pyrite; bentonite.
5010-5020 Shale, medium gray to dark gray, in part calcareous, bentonitic; sublithographic limestone; pyrite; shell fragments.
5020-5080 Shale as above; shell fragments.
5080-5090 Shale, medium gray to medium dark gray; sublithographic limestone, bentonite; calcite; pyrite; shell fragments.
5090-5110 Shale, grayish black to medium dark gray, sublithographic limestone pyrite.
5110-5120 As above; grayish yellow calcite.
5120-5130 Shale, greenish gray to medium dark gray; bentonite.
5130-5160 Shale, dark gray to medium dark gray; calcite as above; bentonite.
5160-5180 Shale as above; grayish yellow calcite, pyrite.
5180-5210 Shale as above; bentonite; grayish yellow calcite.
5210-5220 Shale as above.
5220-5250 Shale, medium dark gray to dark gray; pyrite; grayish yellow calcite, bentonite.
5250-5310 Shale as above; argillaceous limestone; shell fragments.
5310-5330 Bentonite; shale, medium gray to medium dark gray.
5330-5360 Bentonite; shale, medium dark gray.
5360-5370 Shale, medium dark gray; bentonite.
5370-5390 Shale, light olive gray to medium dark gray, fine to silty; calcite.
5390-5410 Shale, light gray to medium dark gray.
5410-5460 Shale as above; bentonite, calcite.
5460-5490 Bentonite; shale, dark gray.
5490-5510 Shale, dark gray; white bentonite.
5510-5520 Shale as above, and shale moderate red, calcareous; light gray siltstone.
5520-5530 Shale, dark gray to medium gray; sandstone, medium gray, fine grained.
5530-5550 Sandstone, very light gray, fine to medium grained.
5550-5560 Sandstone as above; shale, medium dark gray.
5560-5590 Shale, medium gray to medium dark gray.
5590-5670 Shale as above; shell fragments; bentonite; pyrite.
5670-5700 Shale, light olive gray to medium dark gray; bentonite.
5700-5740 Shale, medium dark gray, fissile, splintery.
5740-5760 Shale as above; sandstone, very light gray, medium grained.
5760-5790 Shale as above.
5790-5820 Shale, medium light gray to medium dark gray; sandstone, very light gray, fine grained; bentonite.
5820-5850 Sandstone, very light gray, fine to medium grained; shale, medium dark gray; bentonite.
5850-5930 Shale, medium light gray to medium dark gray; bentonite.
5930-5950 Sandstone, very light gray, medium grained, sub-angular to sub-rounded; shale as above.
5950-5990 Sandstone, medium to coarse grained, sub-angular, coated to vitreous, friable.
5990-6010 Shale, light olive gray to medium dark gray, lumpy to fissile.
6010-6070 Shale, medium dark gray, fissile.
6070-6090 Shale, light olive green to medium dark gray; some white bentonite; shell fragments.
6090-6100 Shale, medium dark gray, fissile.
6100-6130 Shale as above; calcite.
6130-6220 Sandstone, very light gray, fine grained, silty, calcareous; shale as above.
6220-6290  Shale, medium dark gray, fissile, sandstone as above.
6290-6440  Shale, medium light gray to medium dark gray, some white bentonite; siltstone, very light gray.
6440-6530  Sandstone, very light gray, fine grained, silty, calcareous, some glauconite; shale, greenish gray, subwaxy fissile, glauconitic, very slightly calcareous.
6530-6550  Shale as above; white bentonite.
6550-6620  Shale as above.
6620-6690  Shale as above; siltstone, very light gray to light greenish gray, fine grained, calcareous, parts glauconitic; sublithographic limestone.
6690-6720  Shale and siltstone as above.
6720-6740  Shale, grayish red, calcareous.
6740-6770  Shale, greenish gray to grayish red, calcareous; sandstone, very light gray, silty, calcareous.
6770-6830  Shale as above; very light gray calcitic dolomite and some white limestone.
6830-6840  Shale as above; limestone, white, sublithographic.
6840-6850  Shale, medium gray, calcareous.
6850-6860  Shale, greenish gray to grayish red, calcareous; limestone, very light gray to light gray, sublithographic, silty.
6860-6870  Limestone, greenish gray, subcrystalline.
6870-6880  Limestone, very light gray, subcrystalline.
6890-6910  Calcitic dolomite, very light gray to light brownish gray, subcrystalline.
6910-6950  Calcitic dolomite, as above; medium gray calcareous shale.
6950-6970  Shale, pale brown, calcareous, calcitic dolomite as above.
6970-6990  Calcitic dolomite, very light gray to light brownish gray; shale as above, silty.
6990-7020  Anhydrite; light gray dolomite, shale as above.
7020-7100  Shale, pale reddish brown to greenish gray; anhydrite.
7100-7250  Shale, grayish red to greenish gray; siltstone, pale reddish brown; anhydrite.
7250-7380  Siltstone as above; shale as above; anhydrite.
7380-7610  Shale, grayish red to greenish gray; siltstone, pale reddish brown; anhydrite.
7610-7640  Shale, siltstone as above. Few traces of limestone anhydrite.
7640-7670  Limestone, white to light brownish gray, sublithographic to chalky.
7670-7740  Limestone, white to pale red, subcrystalline to micro-sucrosic; shale as above.
7740-7770  Shale, pale reddish brown to grayish red, silty; limestone as above.
7770-7800  Shale as above; dolomite; moderate reddish orange; anhydrite.
7800-7840  Shale, pale reddish brown, silty. Anhydrite, dolomite, limestone.
7840-7870  Shale as above; anhydrite.
7870-7920  Shale as above; gypsum, anhydrite.
7920-7960  Shale as above; limestone, pale to grayish red; dolomite, grayish to moderate pink, subcrystalline.
7960-8020  Sandstone, moderate pink, medium grained.
8020-8030  Sandstone as above; shale, pale reddish brown to grayish red, silty.
8030-8050  Shale, pale reddish brown to grayish red, silty; sandstone as above.
8050-8090  Shale as above; dolomite, moderate orange pink to pale red limestone.
8090-8100  Shale, sandstone as above; white earthy dolomite, some limestone.
8100-8110  Dolomitic limestone, pale red, fragmental.
8110-8120  Dolomite, mottled grayish pink to pale red.
8120-8130  Shale, moderate reddish brown, dolomitic, silty.
8130-8150  Siltstone, pale red, dolomitic; light gray dolomite.
8150-8190  Dolomite, pale red, slabby, subcrystalline; shale as above.
8190-8230  Dolomite, very light gray to pale red; shale as above.
8230-8240  Dolomite, very light gray.
8240-8250  Shale, pale reddish brown, dolomitic, silty; dolomite as above.
8250-8280  Dolomite, very light gray to grayish red; shale as above.
8280-8360  Shale as above; dolomite as above; anhydrite.
8360-8410  Limestone, brownish gray, finely crystalline; dolomite, grayish red, finely crystalline.
8410-8420  Shale, dark gray, sooty luster, platy.
8420-8430  Shale as above; limestone, medium gray; shale, pale reddish brown, silty, calcareous.
8430-8450  Shale, pale reddish brown, silty, calcareous; limestone, medium gray, dense.
8450-8470  Shale, dark gray, sooty.
8470-8480  Shale, pale reddish brown, calcareous, silty.
8480-8500  Shale as above; shale, brownish gray and dense, medium dark gray limestone.
8500-8530  Shale, light olive gray, splintery, waxy luster and grayish red to dark gray, splintery shale.
8530-8540  Shale as above; limestone, medium light gray, finely crystalline.
8540-8570  Shale, light olive gray to medium gray, splintery.
8570-8590  Shale as above; limestone, light to medium light gray.
8590-8650  Shale, medium gray to medium dark gray, fissile to splintery. Much cavings.
8650-8670  Sandstone, white, fine grained quartz.
8670-8680  Sandstone and shale as above.
8680-8710  Shale as above.
8710-8820  Shale, light olive green to medium dark gray, variegated, splintery; some sandstone fragments. Much caving.
8820-8850  Siltstone, light brown (5YR6/4), calcareous.
8850-8870  Limestone, olive gray (5Y4/1), subcrystalline, dense.
8870-8890  Limestone as above; shale, grayish red purple (5RP4/2), calcareous.
8890-8968  Shale as above.
8968-9140  Salt indicated on logs. Samples very poor throughout this section.
9140-9170  Limestone, medium gray, dense, sublithographic. Anhydrite.
9170-9230  Salt.
9230-9312  Limestone, medium dark gray, dense. Anhydrite.
9312-9325  Salt.
9325-9400  Limestone as above.
9400-9420  Anhydrite, light gray to white, dense.
9420-9450  Limestone, as above.
9450-9500  Salt.
9500-9510  Limestone, light gray to medium gray, sublithographic, microsucrosic.
9510-9515  Anhydrite, white to very light gray, fine grained, dense.
9515-9535  Anhydrite as above; limestone, medium gray, subcrystalline, dense.
9535-9540 Anhydrite as above.
9540-9550 Limestone, medium dark gray, dense.
9550-9605 Limestone, light gray to medium dark gray, dense.
9605-9620 Limestone, light brownish gray to very light gray, medium grained, fragmental.
9620-9650 Limestone as above plus dense medium dark gray sub-crystalline limestone.
9650-9660 Limestone, medium gray to light brownish gray, medium grained.
9660-9715 Limestone as above plus dense medium light gray to medium gray, subcrystalline limestone.
9715-9725 Limestone as above; dolomite, very light gray to light gray.
9725-9735 Limestone, medium to medium dark gray, dense.
9735-9745 Limestone as above; dolomite, very light gray to medium light gray, dense.
9745-9805 Limestone, light brownish gray to medium dark gray, medium to fine grained, dense.
9805-9850 Limestone, very light gray to medium light gray, granular.
9850-9865 Limestone, medium dark gray, subcrystalline, dense.
9865-9880 Limestone as above plus light brownish gray, medium grained limestone.
9880-9895 Limestone, light brownish gray, dolomitic in part.
9895-9950 Limestone, medium gray to light brownish gray, dolomitic in part, medium grained.
9950-9960 Limestone as above; a few fragments show oolitic texture.
9960-9970 Limestone, medium dark gray, fine to medium grained.
9970-10025 Limestone, medium light gray to medium gray, argillaceous.
10025-10055 Limestone, very light gray to light brownish gray, granular, parts argillaceous.
10055-10070 Limestone, light to medium dark gray, fine grained, dense.
10070-10080 Limestone, medium gray to light brownish gray, some dolomite.
10080-10120 Limestone, white to light brownish gray, argillaceous, granular. Some medium dark gray, dense limestone.
10120-10175 Limestone, very light gray to light brownish gray, fine to crystalline, some argillaceous; shell fragments.
10175-10190 Limestone, medium light gray to medium gray, crystalline, argillaceous.
10190-10210 Limestone, very light gray to medium gray, crystalline, fair porosity.
10210-10250 Limestone as above, fine to crystalline, some shell fragments, parts argillaceous, fair to good porosity.
10250-10255 Limestone, very light gray to medium light gray.
10255-10260 Limestone, medium gray, mostly fine grained.
10260-10275 Limestone, medium to medium dark gray, crystalline, shell fragments.
10275-10285 Limestone as above, fine to crystalline.
10285-10310 Limestone, light to medium light gray, crystalline, shell fragments.
10310-10320 Limestone, light to medium gray, crystalline, fair to good porosity, shell fragments.
10320-10365 Limestone, light to medium gray, fine to crystalline.
10365-10390 Limestone, medium light gray to medium gray, fine with some crystalline.
10390-10420 Limestone as above, crystalline.
10420-10510 Limestone, medium to medium dark gray, finely crystalline to crystalline, shell fragments.
10510-10530  Limestone, medium to medium dark gray, finely crystalline to crystalline, parts microsucrosic, shell fragments.
10530-10735  Limestone, medium light to medium gray, fine grained to finely crystalline, dense, brachiopod fragments.
10735-10750  Limestone, medium dark gray to dark gray, somewhat dolomitic, dense; shale, dark gray, dolomitic, fissile.
10750-10770  Shale as above.
10770-10780  Limestone, medium light gray, dense.
10780-10790  Shale, dark gray, dolomitic, fissile.
10790-10845  Limestone, medium light to medium gray, fine to finely crystalline, argillaceous.
10845-10915  Limestone, light gray to medium gray, parts argillaceous, dense.
10915-10935  Limestone, light gray to medium gray, fine grained to very finely crystalline, argillaceous in part.
10935-10945  Limestone, medium dark gray; limestone as above.
10945-10960  Shale, dark gray, organic, fissile.
10960-10970  Shale as above; limestone, medium dark gray, fine grained, dense, argillaceous.
10970-11010  Limestone, medium light gray to medium dark gray.
11010-11030  Dolomite, light bluish gray (5B7/1), subcrystalline; limestone as above.
11030-11045  Dolomite, light gray to pinkish gray, crystalline, argillaceous in part.
11045-11065  Dolomite, pinkish to light bluish gray, fine to crystalline.
11065-11090  Dolomite, very light gray to pinkish gray, finely crystalline.
11090-11115  Dolomite as above, also greenish gray (5G6/1) dolomite.
11115-11175  Dolomite as above; limestone, medium dark gray. Much caving.
11175-11195  Dolomite, light gray, light brownish gray, greenish gray (5GY6/1), pinkish gray.
11195-11210  Dolomite, very light gray, subcrystalline to crystalline, limestone, medium light gray to medium gray.
11210-11240  Dolomite, very light gray; limestone, very light gray to medium gray.
11240-11245  Dolomite, medium gray, fine grained to crystalline.
11245-11255  Dolomite as above; limestone, medium light gray to medium gray, subcrystalline.
11255-11285  Limestone, medium gray to medium dark gray, subcrystalline. Some shale fragments.
11285-11300  Dolomite, medium light gray, finely crystalline.
11300-11320  Limestone, medium dark gray, subcrystalline, some dolomite.
11320-11340  Dolomite, very light gray, fine to crystalline, calcitic, limestone as above.
11340-11355  Limestone, medium dark gray, dense.
11355-11380  Limestone, medium light gray to medium gray, microsurosic to crystalline. Some argillaceous limestone.
11380-11430  Limestone, medium light gray, argillaceous, crystalline. Some medium to medium dark gray, subcrystalline, dense limestone.
11430-11450  Limestone, dark gray, subcrystalline, dense.
11450-11460  Limestone, light gray to medium gray, subcrystalline.
11460-11470  Limestone, medium dark to dark gray, dense.
11470-11485  Limestone, medium light to medium gray, fine to finely crystalline. Some grayish pink to pale red dolomite.
11485-11575 Limestone, medium light to medium dark gray, dense; some dark gray limestone.
11575-11605 Limestone, medium dark to dark gray, subcrystalline; some medium light gray, dense limestone.
11605-11630 Limestone, medium dark to dark gray, subcrystalline.
11630-11640 Limestone as above, also medium gray.
11640-11650 Limestone as above; some medium light gray dolomite.
11650-11660 Dolomite, medium light to medium gray.
11660-11675 Limestone, medium light to medium gray, subcrystalline.
11675-11690 Limestone, medium light to dark gray, subcrystalline.
11690-11720 Limestone, medium dark to dark gray, subcrystalline. Some dark gray shale.
11720-11730 Limestone, medium light gray to medium dark gray, subcrystalline.
11730-11750 Limestone, very light gray to light gray, subcrystalline.
11750-11760 Limestone, medium light gray to medium gray, subcrystalline.
11760-11780 Limestone, medium dark gray, subcrystalline, dense.
11780-11785 Limestone, dark gray, subcrystalline, dense.
11785-11810 Limestone, very light gray to medium gray, subcrystalline, dense.
11810-11850 Limestone, medium dark to medium gray, subcrystalline.
11850-11940 Limestone medium dark to dark gray, subcrystalline, dense; shale fragments, dark gray.
11940-11960 Limestone as above.
11960-11970 Dolomite, light gray, crystalline, calcitic; limestone, medium gray, finely crystalline.
11970-11980 Limestone, light to medium light gray.
11980-12020 Limestone, medium dark to dark gray, subcrystalline; shale fragments.
12020-12040 Limestone, light to medium gray, limestone as above.
12040-12075 Limestone, light to dark gray; light brown dolomite.
12075-12130 Limestone, medium dark to dark gray, dense, subcrystalline, dark gray shale fragments.
12130-12150 Limestone, medium to medium dark gray, dense, sub-crystalline.
12150-12190 Limestone, white to pinkish gray, sublithographic; very light gray dolomite; shell fragments.
12190-12245 Limestone, white to light brownish gray; very light gray calcitic dolomite, usually sublithographic.
12245-12285 Limestone, white to grayish pink; pale red dolomite (10R6/2).
12285-12335 Limestone, white to grayish pink; dolomite, white to pale red (10R6/2).
12335-12355 Calcitic dolomite, white to very light gray, crystalline, angular fragments, semi-translucent.
12355-12375 Calcitic dolomite as above; limestone, very light gray, dense.
12375-12400 Calcitic dolomite as above, fine to coarse crystalline; limestone as above.
12400-12440 Calcitic dolomite, white to light gray, subcrystalline to fine crystalline.
12440-12460 Calcitic dolomite, white to light gray, subcrystalline to finely crystalline.
12460-12500 Dolomite, light gray to light brownish gray (5YR6/1).
12500-12555 Dolomite, very light gray to medium gray, subcrystalline to finely crystalline.
12555-12590  Dolomite, medium light gray to medium gray, subcrystalline to medium crystalline.
12590-12605  Dolomite, very light gray to light brownish gray, mostly subcrystalline.
12605-12615  Dolomite, very light gray to medium light gray. Some chert fragments.
12615-12740  Dolomite as above, subcrystalline to microsucrosic.
12740-12790  Limestone, medium dark gray, subcrystalline; dolomite, dark gray.
12790-12805  Dolomite, medium dark to dark gray, subcrystalline. Dark gray shale fragments.
12805-12865  Dolomite, medium dark to dark gray, subcrystalline. Dense. Parts calcitic.
12865-12880  Dolomite, medium light gray, subcrystalline.
12880-12925  Dolomite, dark gray, subcrystalline, dense.
12925-12945  Dolomite, dark gray to grayish black, subcrystalline, dense, siliceous.
12945-12960  Dolomite, medium dark gray, dense.
12960-12975  Dolomite, medium dark gray to dark gray, as above; some medium gray limestone.
12975-12995  Limestone, medium to medium dark gray, subcrystalline. Dolomite as above,
12995-13020  Dolomite, light brownish gray, finely crystalline, argillaceous. Dolomite as above.
13020-13035  Dolomite, medium to medium dark gray.
13035-13055  Limestone, medium to medium dark gray, subcrystalline.
13055-13065  Dolomite, medium dark gray, subcrystalline; limestone as above.
13065-13070  Dolomite, light brownish gray to medium dark gray.
13070-13100  Limestone, medium dark gray, subcrystalline, dense.
13100-13110  Dolomite, medium dark gray.
13110-13140  Limestone, medium dark gray, subcrystalline, dense.
13140-13190  Limestone, dark gray, subcrystalline, dense.
13190-13205  Limestone, medium to dark gray, parts crystalline.
13205-13255  Limestone, dark gray, subcrystalline, dense.
13255-13274  Dolomite, light brownish gray, subcrystalline.
13274  Circulation. Dolomite as above.
13280-13300  Dolomite, light brownish to brownish gray (5YR4/1), subcrystalline to finely crystalline. Parts calcitic.
13300-13325  Dolomite, brownish gray, crystalline, argillaceous.
13325-13380  Dolomite as above. Medium dark gray, subcrystalline to finely crystalline dolomite.
13380-13425  Limestone, medium dark gray, subcrystalline, dense.
13425-13480  Limestone as above, also medium gray, crystalline limestone.
13480-13520  Limestone, medium to medium dark gray, subcrystalline.
13520-13745  Limestone, medium dark to dark gray, subcrystalline. Some dark gray dolomite fragments.
13745-13800  Shale, dark gray, slightly calcareous, limestone as above.
13800-13875  Shale, dark gray, fissile.
13880-13888  Shale as above; sandstone, white to light gray, quartz grains rounded to subrounded, medium to coarse grained.
13888  Circulation one hour - sandstone as above.