NORTH DAKOTA GEOLOGICAL SURVEY CIRCULAR NO. 212

Summary of the Dakamont Exploration Corporation - H. E. Jacobson #1
Divide County, North Dakota
Well No. 1443 - Permit No. 1455

by David S. Johnson

Dakamont Exploration Corporation, H. E. Jacobson No. 1, Divide County, North Dakota, 2011.4 s/n 1980 w/e Sec. 6, T. 162N., R. 96W., Elevation 1935.2 G.L., 1949 K.B.

The Dakamont H. E. Jacobson #1 was spudded May 17, 1957 and 10 3/4" casing was set at 528' with 397 sacks of cement and pazniex with 2% calcium chloride. The well was completed as a dry hole June 30, 1957 at a total depth of 7100 feet. The hole was respudded September 15, 1957 and 7 5/8" casing was set at 4853' with 500 sacks of cement. The well was completed as a dry hole January 10, 1958 at a total depth of 11,515 feet.

Plugging Record:
Original Plugs,

Plug #1 Ground level, 5 sacks cement. Steel plate was welded on top of 10 3/4" casing.
Plug #2 481.5'-550' 30 sacks cement
Plug #3 4162'-4241' 30 sacks cement
Plug #4 5498'-5550' 20 sacks cement
Plug #5 6448'-6550' 20 sacks cement

Final Plugs,

Plug #1 Ground level, 10 sacks cement, surface plug with steel plate welded over top of 10 3/4" surface casing.
Plug #2 2398'-2450' 15 sacks cement. 50 foot cement plug at top of 7 5/8" intermediate casing string set to depth of 4853 feet.
Plug #3 5989'-6100' 25 sacks cement. 111 foot plug at top of Madison formation.
Plug #4 7989'-8100' 25 sacks cement. 111 foot plug at top of Devonian formation.
Plug #5 9689'-9800' 25 sacks cement. 111 foot plug at top of Silurian formation.

Tests:

DST #1 Straddle packed at 6620' and 6630', open 3 hours, shut in 30 minutes, 3/4" choke on bottom, no water cushion. Immediate fair blow increasing to good and holding same to end of test. No sign of gas at surface. Recovered: 2000' gas; 50' gas cut mud, chlorides 31800 PPM, 30' black oil and gas cut mud; 30' black oil and gas cut muddy emulsion, chlorides 32,500 PPM. Normal chlorides of mud 25,000 PPM. Initial Hydrostatic pressure 3850#, initial flow pressure 75#, final flow pressure 155#, shut in pressure 710#, final hydrostatic pressure 3810#.

NOTE: This well was previously drilled to a total depth of 7100 feet and plugged and abandoned as a dry hole on June 30, 1957. The hole was then respudded and drilled to a total depth of 11,515 feet. Drill Stem Tests #2 - #5 pertain to the deepening operations only.

DST #2 7829'-7859', Tool opened 3 hours, shut in 30 minutes. No water cushion. The tool opened with an immediate weak blow of air increasing to good blow in 45 minutes which lasted for the duration of the test. Recovered: 45' of drilling mud, no shows. FP, too small to measure, HP 4355-4330#, shut in; BHP 205#.

DST #3 8385'-8400', Tool open 3 hours. Shut in 30 minutes, no water cushion. Tool opened with an immediate blow of air increasing to a strong blow in 5 minutes; gradually declining during final hour of test. Recovered: 70 feet of drilling mud; 20' of oil cut drilling mud and 112 pint of free oil recovered on top of testing tool. FP 25-75#; HP 4770-4650#, BHP 595#.

DST #4 11,479'-11,487', Tool open 3 hours, shut in 30 minutes 2076 foot water cushion. Tool opened with a weak blow of air which lasted for the duration of the test. Recovered: 2076' of water cushion - no shows; 1104' of drilling mud, no shows. FP 1101-1631#, HP 6296 6196#, BHP 2136#.

DST #5 7396'-7416', Test was run after well reached total depth and logs had been run. A conventional straddle packer test using 4 Haliburton side wall anchor tool. Tool open 4 hours, shut in 30 minutes, 975' water cushion. Tool opened with an immediate weak blow of air lasting for the duration of the test. Recovered: 975' of water cushion - no shows; 30' of drilling mud - no shows; FP 430-450#; HP 4065-4045#; BHP 2355#.

Cores:

- 6550-6654
- 6680-6738
- 7539-7597
- 7597-7655
- 7655-7713
- 7713-7801
- 7801-7859
- 11,439-11,487

Formation tops were picked from samples, radioactivity, lateral and microlateral logs; not all formation tops called in the following list. Colors were picked from the rock color chart distributed by the Geological Society of America, New York, N.Y.

FORMATION TOPS

Cretaceous System	
Pierre formation	1062
Niobrara formation	3100
Greenhorn formation	3595
Newcastle formation	4000
Jurassic System	
Sundance Group	4748
Piper limestone	5310
Triassic System	
Spearfish formation	5563
Mississippian System	
Kibbey lime	5939
Charles formation	6118

"Base of Last Salt"	6494
Nesson zone	6739
Lodgepole formation?	7186
Bakken formation	7824
Devonian System	
Qu'Appelle formation	7927
Bird Bear formation	8126
Duperow formation	8231
Souris River	8690
Dawson Bay	9070
Prairie Evaporite	9215
Winnipegosis	9663
Silurian System	
Interlake group	9848
Ordovician System	
Stony Mountain formation	10,791
Red River formation	10,828
Winnipeg formation	
Shale member	11,350
Sand member	11,430

0-650	Samples missing.
650-680	Lignite.
680-710	Shale, light gray, limy, some lignite.
710-720	Siltstone, light gray, slightly calcareous.
720-730	Siltstone, as above, some lignite.
730-740	Siltstone, as above, some lignite, limestone, very pale orange (10YR8/2) very fine grained.
740-750	Lignite.
750-760	Lignite, shale, light gray-medium gray.
760-770	Shale, light gray-medium gray, some lignite.
770-780	Shale, light gray, lumpy - calcareous.
780-790	Shale, light gray-medium gray, lumpy, some sandy siltstone, light gray.
790-800	Shale, very light gray, bentonite, micaeous.
800-970	Samples missing.
970-1000	Lignite.
1000-1030	Shale, light gray, lumpy, chert, light brownish gray.
1030-1060	Shale, medium gray, compact, some chert as above, sand grains, subangular fine grained.
1060-1090	Shale, medium gray-light gray, lumpy, some chert and pyrite.
1090-1120	Shale, as above, sandstone, white, fine grained, poorly cemented, subangular.
1120-1150	Shale, light gray, lumpy.
1150-1180	Shale, light gray-medium gray, slightly calcareous.
1180-1210	Shale, as above.
1210-1240	Shale, as above, compact, spongy. Some sandstone, white, fine grained, subangular.
1240-1270	Shale, light gray-medium gray, lumpy, platy, some shale, light brown (5YR6/4), compact, calcareous.
1270-1300	Shale, as above, limestone, very light gray, compact.
1300-1330	Shale, light gray-medium light gray, micaceous, compact, spongy.
1330-1360	Shale, medium gray, compact. Some shale as above.
1360-1390	Shale, as above.

1390-1420 Shale, medium gray, compact.
1420-1450 Shale, light gray, medium gray, compact, lumpy.
1460-1480 Shale, as above.
1480-1510 Shale, medium light gray, lumpy, slightly calcareous, some bentonite, shale, grayish black, platy.
1510-1540 Shale, as above, some bentonite.
1540-1570 Shale, medium gray, spongy, some limestone, very light gray, compact.
1570-1600 Shale, as above, bentonite.
1600-1630 Shale, medium light gray, spongy, some bentonite.
1630-1660 Shale, medium light gray, spongy, lumpy, micaceous.
1660-1690 Shale, medium light gray, lumpy, secondary calcite, light gray, compact.
1690-1720 Samples missing.
1720-1750 Sandstone, very light gray, poorly cemented, angular-subangular, shale as above, bentonite.
1750-1780 Sandstone as above, fine grained.
1780-1810 Shale, medium light gray, compact - spongy.
1810-1840 Shale, light gray, compact.
1840-1870 Shale, light brownish gray (5YR6/1), compact. Shale, as above.
1870-1900 Shale, medium, light gray, compact, platy, some bentonite.
1900-1930 Shale, medium light gray, lumpy, Inoceramus fragments, bentonite, sand grains, clear, subangular.
1930-1960 Shale, medium light gray, lumpy, Inoceramus fragments, micaceous bentonite.
1960-1990 Same as above.
1990-2020 Shale, medium light gray, spongy, fissile.
2020-2050 Shale, medium light gray, compact.
2050-2080 Shale, medium gray, fissile.
2080-2110 Shale, medium light gray, spongy fossil fragments.
2110-2140 Shale, as above, limestone, medium dark gray, dense.
2140-2170 Shale, medium light gray, lumpy, fissile, fossil fragments.
2170-2200 Shale, as above.
2200-2230 Shale, medium light gray, lumpy, siltstone, light brown (5YR6/4).
2230-2260 Shale, medium light gray, lumpy, bentonite, fossil fragments,.
2260-2290 Shale, medium light gray, lumpy, sand grains, light brown (5YR5/6), subangular, Inoceramus prisms.
2290-2320 Shale, light gray, lumpy, fissile, siltatone, light brown (5YR6/4) fossil fragments.
2320-2380 Shale, light gray, lumpy.
2380-2440 Shale, medium light gray, lumpy, fissile, Inoceramus prisms.
2440-2470 Shale, as above, sandstone, very light gray, fine grained, friable. Inoceramus prisms.
2470-2500 Sample as above, lignite.
2500-2680 Shale, medium light gray, fissile, fossil fragments, lignite.
2650-2870 Shale, medium light gray, lumpy, fissile,
2890-2920 Shale, light gray, lumpy, fossil fragments.
2920-3100 Shale, medium light gray, medium gray, fissile, fossil fragments, bentonite.
3100-3130 Shale, medium dark gray, white calcareous specks; shale as above.
3130-3190 Shale, black, platy, white specks, shale, medium light gray, fissile, lumpy.
3190-3220 Shale, medium light gray, medium dark gray, fissle, bentonite.
3220-3240 Shale, medium gray, compact, white specks.

3280-3370 Shale, as above, shale, dark gray, compact.
3370-3430 Shale, dark gray fissile, some white specks.
3430-3490 Shale, medium dark gray, compact.
3490-3610 Shale, dark gray, fissile, shale as above.
3610-3730 Shale as above, shale, medium gray, fissile.
3730-3910 Shale, grayish black, fissile.
3910-4000 Shale, grayish black, fissile, Inoceramus prisms.
4000-4030 Sandstone, very light gray, fine grained, friable, subangular, shale cavings.
4030-4120 Shale, dark gray, fissile, some sand as above.
4120-4210 Shale, dark gray fissile, some glauconite specks.
4210-4240 Siltstone, very light gray, shale, as above.

Dakota Sand
4240-4300 Sandstone, very light gray, white, fine grained, tight subangular, shale as above.
4300-4360 Shale, medium dark gray, fissile, sandstone as above.
4390-4420 Sandstone, very light gray, tight, subangular, fine grained, some bentonite, shale as above.
4420-4480 Shale, medium dark gray, fissile.
4480-4570 Shale, dark gray fissile, some shale, moderate yellowish brown (10YR5/4) fissile.
4570-4750 Shale, medium dark gray fissile, shale greenish gray (5G6/1) fissile, some shale, light brownish gray (5YR6/1), compact.
4750-5020 Shale, light greenish gray (5GY8/1), fissile, shale, medium dark gray, fissile. Some sandstone, very light gray, very fine grained.
5020-5110 Shale, greenish gray (5GY6/1), fissile, calcareous, shale medium gray, fissile.
5110-5320 Shale, grayish red (10R4/2), splintery, shale as above. Some very limey shale, very light gray.
5320-5410 Limestone, very light gray-white, very fine grained, anhydrite, shale cavings as above.
5410-5440 Limestone, light brown (5YR6/4) very light gray, dense, shale as above.
5440-5500 Shale, moderate reddish brown (10YR4/6), splintery. Shale, greenish gray (5GY4/1) fissile, limestone as above.
5500-5560 Samples as above, plus gypsum.
5560-5590 Shale, moderate reddish brown (10R4/6) compact, splintery, shale, greenish gray to dark gray, compact fissile.
5590-5620 Sandstone, moderate reddish orange (10R6/6). Shales as above.
5620-5710 Siltstone, grayish red (5R4/2), argillaceous, sandstone and shale as above.
5710-5800 Shale, greenish gray (5GY6/1) splintery, siltstone and sandstone as above.
5800-5920 Sandstone, moderate reddish brown (10R4/6), fine grained, calcareous shale as above.
5920-5950 Sample as above plus limestone, very light gray, sublithographic.
5950-5980 Limestone, yellowish gray (5GY8/1) tight, sand and shale as above.
5980-6040 Sandstone, moderate reddish brown (10R4/6), fine grained. Shale and siltstone, as above.
6040-6100 Shale, greenish gray (5G6/1) compact, splintery. Sand and siltstone as above.
6100-6120 Limestone, pinkish gray (5YR8/1) dense, anhydrite. Shale as above.
6120-6150 Shale, greenish gray (5G6/1) shale, grayish red (5Y4/2) gypsum.

6150-6160 Limestone, very light gray, lithographic, shale, greenish gray, moderate reddish brown.
6160-6220 Limestone, very light gray, lithographic, some anhydrite, shale as above.
6220-6230 Shale, greenish gray, reddish brown, splintery - compact. Limestone as above, some gypsum.
6230-6240 Limestone, light brownish gray (5YR6/1) lithographic. Shale as above.
6240-6270 Limestone, brownish gray (5YR4/1), lithographic. Shale as above.
6270-6300 Limestone, brownish gray (5YR4/1), very light gray, lithographic.
6300-6310 Limestone, brownish gray, grainy. Limestone as above.
6310-6330 Limestone, very light gray, sublithographic, limestone as above, some anhydrite.
6330-6370 Anhydrite, very light gray, white, limestone as above, some interbedded greenish gray shale.
6370-6380 Limestone, light brownish gray, lithographic.
6380-6400 Limestone, as above, anhydrite white lithographic.
6400-6420 Limestone, light brownish gray (5YR6/1) lithographic.
6420-6430 Limestone, as above, anhydrite and gypsum present.
6430-6440 Gypsum, white, limestone and anhydrite as above.
6440-6500 Limestone, light brownish gray (5YR6/1) lithographic, gypsum and anhydrite as above. Gypsum decreases in amount.
6500-6550 Limestone, light brownish gray (5YR6/1) lithographic, anhydrite, very light gray-white.

Core Chips

6550-6555 Anhydrite, light gray, lithographic.
6555-6556 Dolomite, light brown (5YR6/4) sugary, anhydrite inclusions.
6556-6558 Limestone, moderate yellowish brown (l0YR5/4), medium grained.
6558-6560 Limestone, pale yellowish brown (10YR6/2) sublithographic. Contains siderite crystals.
6560-6561 Limestone, grayish brown, very fine grained.
6561-6564 Limestone, pale yellowish brown, sucrosic. Dolomite rhombs.
6564-6565 Anhydrite, very light gray, dense.
6565-6566 Anhydrite, as above, dolomitic matrix
6566-6567 Limestone moderate brown (5YR4/4) medium grained.
6567-6568 Limestone, moderate brown (5YR3/4) recrystallized.
6568-6571 Limestone, moderate brown (5YR4/4) medium grained.
6571-6576 Dolomite, very light gray, sublithographic. Intergranular porosity.
6576-6578 Anhydrite, crystalline, dolomite as above.
6578-6581 Dolomite, very light gray, crystalline, anhydritic, some porosity.
6581-6582 Limestone, brownish gray (5YR4/1) recrystallized.
6582-6583 Anhydrite, very light gray, massive.
6583-6584 Limestone, light brown (5YR4/4) recrystallized.
6584-6585 Limestone, as above including anhydrite crystals.
6585-6591 Core samples missing.
6591-6593 Anhydrite, very light gray - very light brown, massive.
6593-6594 Limestone, moderate brown (5YR4/4), fossiliferous.
6594-6596 Limestone, moderate brown (5YR3/4) fine grained.
6596-6600 Core samples missing.
6600-6602 Anhydrite, medium light gray, massive.
6602-6604 Anhydrite, light brownish gray (5YR6/1), massive.
6604-6606 Anhydrite, medium light gray, massive.

6606-6624 Anhydrite, light brownish gray (5YR6/1) medium light gray, massive.
6624-6625 Dolomite, pinkish gray, (5YR8/1) some porosity, anhydritic.
6625-6627 Limestone, pale yellowish brown (10YR6/2) tight.
6627-6629 Limestone, pale yellowish brown (10YR6/2) tight. Dolomite rhombs.
6629-6631 Anhydrite, medium light gray, massive.
6631-6634 Dolomite, pale yellowish brown (10YR6/2) porosity, sucrosic, anhydrite.
6634-6636 Dolomite, pale yellowish brown, fine grained, poor porosity, anhydrite.
6636-6638 Dolomite, pale yellowish brown, sucrosic, fractured.
6638-6641 Dolomite, as above, less fractures, becomes more limy with depth.
6641-6642 Limestone, medium gray, fine grained, tight.
6642-6643 Limestone, as above, medium grained.
6643-6644 Anhydrite, clear, massive.
6644-6649 Dolomite, yellowish gray (5Y8/1) sucrosic, some porosity.
6649-6650 Dolomite, as above, limy, secondary anhydrite crystals.
6650-6651 Dolomite, yellowish gray, sucrosic some porosity.
6651-6653 Anhydrite, brownish gray (5YR4/1), crystalline, dolomitic,
6653-6654 Anhydrite, very light gray, massive dolomitc.
End of Cores

6654-6658 Dolomite, pale yellowish brown, some anhydrite.
6658-6680 Limestone, light brownish gray, light gray, sucrosic crystalline, fine-grained, dolomite as above, some anhydrite.

Core Chip Description
6680-6682 Dolomite, yellowish gray (5Y8/1) sucrosic, anhydrite streaks.
6682-6683 Limestone, light brownish gray, fine grained, tight.
6683-6685 Dolomite, yellowish gray (5Y8/1) fine grained, sucrosic.
6685-6687 Limestone, light brownish gray, fine grained, poor porosity.
6687-6693 Limestone, light brownish gray, fine-medium grained, tight.
6693-6701 Limestone, brownish gray (5YR4/1) fine-medium grained, tight.
6701-6702 Dolomite, pale yellowish brown, medium grained, some porosity.
6702-6703 Limestone, light brownish gray, medium grained.
6703-6709 Limestone pale yellowish brown (10YR6/2) dolomitic, medium grained sucrosic, some porosity.
6709-6711 Limestone, light brownish gray (5YR6/1) tight, dense.
6711-6712 Limestone, pale yellowish brown (10YR6/2), dolomitic, fragmental in part.
6712-6713 Limestone as above, anhydrite inclusions.
6713-6720 Limestone, as above, some porosity.
6720-6721 Limestone, pale yellowish brown, anhydrite inclusions, some inter-granular porosity.
6721-6728 Dolomite, light brownish gray, (5YR6/1) porosity, anhydrite, massive.
6728-6736 Limestone, light brownish gray, fine grained, sucrosic, some anhydrite, scattered fossils.
6736-6738 Dolomite, light brownish gray, sucrosic.
End of Core

6738-6750 Samples missing.
6750-6800 Limestone, light brownish gray, medium grained.

6800-6870 Limestone, brownish gray, (5YR4/1) fine grained, tight. Limestone as above.
6870-6900 Limestone, light brownish gray, medium grained, tight. Some shale, dark gray, fissile.
6900-7000 Limestone, light brownish gray, brownish gray, fine grained, tight, dense.
7000-7100 Limestone, as above, limestone brownish gray, medium gray. Some shale, dark gray, some limestone, white, very fine grained, dense, increases in amount with depth.

NOTE: Original TOTAL DEPTH - 7100

7100-7118 Caving material, mostly shales.
7118-7132 Samples missing.
7132-7136 Limestone, dark gray, fine grained. Caving material.
7136-7140 Samples missing.
7140-7200 Caving material, mostly shales.
7200-7236 Limestone, dark gray, fine grained, dense. Some shale stringers, caving material decreases in quantity with depth.
7236-7240 Limestone, as above, mostly caving material.
7240-7310 Limestone, dark gray, fine-medium grained, dense, argillaceous. Some very light brown limestone.
7310-7324 Limestone, brownish gray, fine grained, dense. Limestone as above.
7324-7374 Limestone, light brownish gray - very light gray, very fine grained, sublithographic.
7374-7378 Sample missing.
7378-7438 Limestone, light brownish gray, very fine grained dense. Some very light gray limestone.
7438-7440 Samples missing.
7440-7500 Limestone, dark gray-light gray, fine grained, dense. Some limestone, black, argillaceous.
7500-7539 Limestone, brownish gray (5YR4/1) yellowish gray (5Y8/1) dense.

Core Chip Samples
7539-7549 Limestone, light brownish gray, fine grained, dense.
7549-7559 Limestone, brownish gray, fine grained, dense.
7559-7655 Limestone, medium gray, very fine grained, dense, tight.
7655-7665 Limestone, brownish gray, fine grained, dense, tight.
7665-7675 Limestone, dark gray, fine grained, dense, tight.
7675-7713 Limestone, brownish gray (5Y4/1) dense, very fine grained, hard.
7713-7723 Limestone, medium dark gray, fine grained, argillaceous, shale, stringers.
7723-7733 Limestone, brownish gray (5YR4/1) fine grained, dense, tight, hard.
7733-7743 Limestone, medium dark gray, fine grained, argillaceous, shale stringers.
7743-7773 Limestone, brownish gray, medium grained, dense, tight.
7773-7793 Limestone, medium dark gray, fine grained.
7793-7821 Limestone, brownish gray (5YR4/1), fine grained, dense, tight. Grades into light brownish gray limestone.

Bakken
7821-7831 Shale, black, compact.
7831-7841 Shale, medium dark gray, compact, stringers of siltstone, light brownish gray.

7841-7851 Siltstone, yellowish gray, sandy, calcareous, hard.
7851-7866 Samples missing.
End of Core

7866-7884 Limestone, very light gray-dark gray, fine grained. Much caving material.
7884-7904 Shale, very light gray-white, highly calcareous, soft, compact. Limestone as above.
7904-7930 Shale, black, carbonaceous, splintery.

Three Forks
7930-7944 Shale, as above, some limestone, light brownish gray, fine grained. Sandstone, pinkish gray, fine grained.
7944-7960 Sample as above, with shale, white, highly calcareous.
7960-7984 Shale, very light gray, compact, highly calcareous.
7984-8000 Sandstone, pinkish gray (5YR8/1) highly calcareous, very fine grained. Shale, as above.
8000-8124 Shale, pale reddish brown (10R5/4) compact, highly calcareous. Shale, very light gray as above. The shales are probably caving material. Some shale, greenish gray (5G6/1), compact. Very poor samples. The caving material is probably from the Spearfish or the Charles salts. The cuttings are well rounded.

Nisku
8124-8150 Limestone, medium light gray, brownish gray, fine grained, dense. Some black and greenish gray shales.
8150-8190 Limestone and shale as above. Dolomite, light brownish gray, very fine grained.
8190-8204 Sandstone, yellowish gray, very fine grained, calcareous, limestone, brownish gray-light gray, dense.
8204-8240 Samples, as above, evidence of mica flakes indicates circulation trouble. Poor samples. Generally the samples are limestones and dolomites, brownish gray, light gray, fine grained.
8240-8290 Poor samples. Limestone becomes darker in color, anhydrite present.
8290-8340 Limestone, dark gray-brownish gray (5YR4/1), fine grained, tight. Some anhydrite, much caving material and poor wash.
8340-8370 Caving Material. Limestone, dark gray-brownish gray.
8370-8404 Limestone brownish gray (5YR4/1), light gray, fine grained, dense tight.
8404-8414 Limestone, as above, very poor samples.
8414-8440 Limestone, brownish gray-light gray, fine grained, dense, tight.
8440-8466 Samples missing.
8466-8494 Limestone, brownish gray (5YR4/1) fine grained, dense, tight. Some yellowish gray anhydrite. Anhydrite increases in quantity with depth.
8494-8504 Limestone, grayish black, very argillaceous, some grayish black shale. Limestone, as above.
8504-8514 Limestone, brownish gray, fine grained, dense, tight, some limestone as above.
8514-8652 Samples missing.
8652-8700 Limestone, brownish gray-light brownish gray. Some dolomite, light brownish gray and anhydrite. Samples are poor.
8700-8740 Limestone, brownish gray, fine grained, dense. Some medium light gray limestone.

8740-8804 Limestone, as above, limestone, pinkish gray, argillaceous, soft.
8804-8814 Shale, dark gray, soft. Limestone as above.
8814-8870 Limestone, medium dark gray-brownish gray, fine grained, dense.
8870-8880 Limestone, as above, argillaceous. Shale, black, compact, soft.
8880-9030 Limestone, dark gray, light brownish gray, fine grained, dense. Some dark gray argillaceous limestone, as above. Poor samples.
9030-9070 Limestone, light brownish gray (5YR6/1) dolomitic fine grained, Limestone, as above.
9070-9074 Shale, grayish black, compact, limestone, as above.
9074-9090 Limestone, light brownish gray, dolomitic, dense, tight. Some brownish gray limestone.
9090-9110 Limestone, as above, anhydrite, brownish gray.
9110-9124 Anhydrite, brownish gray, tight, salt, limestone as above.
9124-9140 Anhydrite, brownish gray, medium grained, tight. Some light brownish gray anhydrite.
9140-9154 Dolomite, brownish gray-light brownish gray, vuggy porosity.
9154-9180 Dolomite, light brownish gray, sucrosic.
9180-9214 Dolomite, as above, some dolomite, brownish gray, microsucrosic.
9214-9216 Limestone, grayish black, argillaceous, dolomite, as above.
9216-9226 Salt, picked from logs.
9226-9356 Salt, colorless, cubic cleavage.
9356-9368 Sylvite, picked from logs and samples.
9368-9607 Salt, colorless, cubic cleavage, some moderate reddish orange (10R6/6) stone.
9607 End of salt picked from logs. Samples are as follows:
9600-9630 Salt, colorless, cubic cleavage.
9630-9650 Gypsum, white-pinkish gray, calcareous, lumpy. Some brownish gray anhydrite.
9650-9660 Salt cavings.
9660-9674 Dolomite, yellowish gray-brownish gray, limy, microsucrosic, intergranular porosity. Some salt caving.
9674-9680 Salt cavings.
9680-9714 Dolomite, yellowish gray (5Y8/1) good porosity, microsucrosic.
9714-9730 Limestone, grayish black, dense, tight, very fine grained. Dolomite as above.
9730-9734 Shale, black, hard, brittle, calcareous, limestone and dolomite as above.
9734-9770 Limestone, grayish black, very fine grained.
9770-9844 Limestone, black, argillaceous, limestone, as above. Dolomite, pinkish gray, argillaceous, soft, some silty. The limestone becomes more brownish black with increased depth.
9844-9864 Dolomite, yellowish gray - buff, fine grained, dense, some moderate reddish brown (10R4/6) dolomite, silty. Caving material.
9864-9870 Dolomite, pinkish gray, fine grained, dense.
9870-9880 Sample missing.
9880-9914 Dolomite, pinkish gray-pale yellowish brown, fine grained, dense.
9914-9944 Dolomite, very light brown, fine grained, dense. Some shale, greenish gray-black. Probably stringers in the dolomite.
9944-9984 Dolomite, light brownish gray, dense, dolomite, as above.
9984-10,074 Dolomite, very light gray-pinkish gray, fine grained, dense. Some dolomite, very light brownish gray, dense.
10,074-10,084 Dolomite, as above, some dolomite, brownish gray (5YR4/1), fine grained, dense.
10,084-10,160 Dolomite, very light brownish gray-light brownish gray, dense, fine grained.

10,160-10,224 Dolomite, as above, dolomite, very light brownish gray, crystalline. Nice dolomite rhombs, vuggy.
10,224-10,280 Dolomite, as above, some sucrosic dolomite, very light brown-white, soft, light brownish gray dolomite (5YR6/1) begins to predominate as depth increases.
10,280-10,350 Dolomite, light brownish gray (5YR6/1), medium grained, dense, also dolomite as described above.
10,350-10,464 Dolomite, very light brownish gray-light brownish gray (5YR6/1) fine-medium grained. Dolomite rhombs present.
10,464-10,470 Dolomite, light brownish gray, fine grained.
10,470-10,478 Dolomite, light brownish gray-very light brownish gray, fine-grained.
10,478-10,502 Samples missing.
10,502-10,510 Dolomite, brownish gray (5YR4/1) very light brownish gray, fine grained.
10,510-10,530 Samples missing.
10,530-10,560 Dolomite, light brownish gray-very light brownish gray, fine grained dense, tight.
10,560-10,594 Dolomite, brownish gray-light brownish gray, fine-medium grained, dense, tight. Some brownish black (5YR2/1) dolomite stringers, argillaceous.
10,594-10,624 Dolomite, brownish black-brownish gray, fine grained.
10,624-10,644 Dolomite, brownish gray-light brownish gray, fine grained, dense, tight.
10,644-10,780 Dolomite, brownish black, brownish gray, fine grained. Some light brownish gray dolomite. The brownish black dolomite is argillaceous in part.
10,780-10,814 Dolomite, brownish black-light brownish gray, fine grained, some black, very argillaceous dolomite. Dolomite, very light brownish gray, sucrosic.
10,814-10,824 Dolomite, very light brown, dense, tight. Some sucrosic dolomite as above.
10,824-10,880 Limestone light brownish gray (5YR6/1) brownish gray. Dolomite as above, soft, white anhydrite stringers.
10,880-10,950 Limestone, brownish black-brownish gray, fine grained, dense, streaks of anhydrite. Some dolomite, light brown.
10,950-10,980 Dolomite, brownish gray, compact. Limestone as above. Some very soft white sublithographic dolomite stringers.
10,980-11,034 Dolomite, brownish gray (5YR4/1) fine grained, dense, dolomite, light brownish gray (5YR6/1), sucrosic.
11,034-11,070 Dolomite, brownish gray, medium grained - sucrosic. Dolomite, light brownish gray, sucrosic.
11,070-11,120 Dolomite, brownish gray, light brownish gray, medium grained.
11,120-11,130 Samples missing.
11,130-11,214 Dolomite, as above, Limestone, light gray, dolomitic, sub-lithographic soft. Increases in quantity with depth.
11,214-11,364 Limestone, light gray, sublithographic, soft. Some limestone, brownish gray, medium grained.
11,364-11,374 Shale, grayish black, compact. Limestone, as above.
11,374-11,439 Shale, dark greenish gray, compact, shale and limestone as above. The grayish black shale predominates.

Core Chip Description
11,439-11,442 Sandstone, white - clear, well cemented, medium grained, fairly well sorted, dense, tight.

11,442-11,444	Sandstone, black stained, slightly quartzitic, hard dense, some secondary calcite filling, slight cut with carbon tetrachloride
11,444-11,446	Sandstone, white - clear, hard, tight, slightly, quartzitic.
11,446-11,479	Samples missing.
11,479-	Sandstone, stained, hard, tight, slight cut with carbon tetrachloride.
11,481-	Shale, brownish black, (5YR2/1) compact, hard very slight cut.
11,483-11,485	Sandstone, clear, slightly quartzitic, hard. Slight stain.
11,485-11,486	Sandstone, as above, heavily stained. Slight cut in carbon tetrachloride.
11,486-	Sandstone, clear, slightly quartzitic, hard.
End of Core	

11,486	Shale, grayish black, compact, hard. Some sandstone as above.