

NORTH DAKOTA GEOLOGICAL SURVEY CIRCULAR NO. 158

Summary of Northwest Oil Drilling Company - Walter Hamann No. 1
Dunn County, North Dakota
Well No. 824 - Permit No. 837

by David. S. Johnson
November, 1956

The Northwest Oil Drilling Company - Walter Hamann #1 is located in
C SE SE of section 8, T. 141N., R. 91W. Elevation 2103 G.L., 2113 K.B.

The Northwest Oil Drilling Company - Hamann #1 was spudded February
15, 1955 and 10 3/4" casing was set at 357 feet with 225 sacks of cement. The
well was drilled to a total depth of 8411 feet, plugged and abandoned
as a dry hole on April 3, 1955.

LOGS: Schlumberger electric, 350'-8411'
Schlumberger microlateral, 7400'-8411'

CORES: 8094-8151, recovered 52 feet

TESTS:

DST #1, 7794-7869. Perforated interval. 7794-7814', 7863-7869' using
3/4" top choke; 3/4" bottom choke. Tool open 3 hours; shut in 30 minutes.
Immediate fair blow decreasing to weak blow after 15 minutes. Blow died after
25 minutes. Recovered 280' of drilling mud possibly slightly water cut.
Initial hydrostatic pressure 4535 psi, IFP 20 psi, FFP 250 psi, thirty minute
shut in pressure 1175 psi, FHP 4450 psi.

DST #2, 8063-8093, 3/4" top choke, 3/4" bottom choke. Tool, open 2 1/2
hours, shut in 30 minutes. Immediate weak blow dying after 10 minutes.
Recovered 105 feet of drilling mud. IHP 4575 psi, IFP 0 psi, FFP 250 psi,
thirty minute SIP 2200 psi, FHP 4550 psi.

PLUGGING RECORD:

15 sacks of cement at 6920'
15 sacks of cement at 5730'
15 sacks of cement at 5050'
20 sacks of cement at 350'
5 sacks of cement at surface

Formation tops were determined from samples and the electric and
microlateral logs. Doubtful or obscure formation tops were not picked.
Colors and identifying numbers are taken from the 1948 Rock-color Chart.

FORMATION TOPS

Cretaceous System	
Pierre formation	1563
Niobrara formation	3263
Greenhorn formation	3893
Lower Cretaceous sands	4740
Jurassic System	

Jurassic	5039
Piper Lime	5638
Triassic System	
Spearfish	5809
Permian System	
Minnekahta formation	6155
Opeche formation	6190
Pennsylvanian System	
Minnelusa formation	6291
Mississippian System	
Amsden formation	6562
Big Snowy Group	7001 ?
Charles formation	7414
Base of last salt	7753
Lodgepole	8405
Total Depth	8411

450-510	Shale, light gray, soft, lumpy, slightly calcareous.
510-570	Shale as above, some lignite.
570-750	Shale, light gray, lumpy, soft, slightly calcareous.
750-810	Shale, light gray, lumpy, slightly calcareous and bentonitic.
810-840	Shale, medium light gray, lumpy, calcareous.
840-930	Shale as above, some lignite.
930-1000	Shale, light gray, lumpy.
1000-1060	Shale, medium light gray lumpy, slightly silty.
1060-1090	Shale as above, lignite.
1090-1150	Shale, medium light gray, lumpy compact.
1150-1270	Shale, medium light gray, spongy, some lignite.
1270-1300	Shale, very light gray-medium light gray lumpy, slightly calcareous.
1300-1420	Shale, medium light gray, compact. Some shale as above.
1420-1480	Sandstone, shaley, medium light gray.
1480-1600	Shale, medium light gray, sandstone as above, lignite.
1600-1690	Shale, medium light gray, lumpy, compact.
1690-1750	Shale as above, calcareous.
1750-1870	Shale, medium light gray, compact, some spongy.
1870-1990	Shale as above, some slightly calcareous.
1990-2080	Shale, medium light gray, compact, bentonite flakes.
2080-2140	Shale, medium light gray, compact, pyrite.
2140-2290	Shale as above, bentonite.
2290-2440	Shale, medium light gray, compact, lumpy.
2440-2590	Shale, medium light gray, compact, some lumpy, probably caving.
2590-3100	Samples missing.
3100-3120	Shale, medium gray, splintery, compact, some limestone, medium light gray, hard, crystalline, probably caving.
3120-3140	Shale, medium light gray, compact.
3140-3180	Shale, light gray, lumpy, soft, micaceous.
3180-3220	Shale, medium light gray, splintery, compact.
3220-3240	Samples missing.
3240-3260	Shale as above, some limey shale, medium light gray, hard.
3260-3300	Samples as above, lignite.
3300-3360	Shale, medium gray, white specks, shale as above, Inoceramus fragments.
3360-3380	Shale as above, some lignite.

3380-3400 Shale, medium light gray, compact, calcareous.
 3400-3420 Shale, dark gray, white specks, Inoceramus fragments.
 3420-3440 Shale, medium light gray, compact, pyrite.
 3440-3520 Shale, medium light gray, lumpy, calcareous, pyrite.
 3520-3580 Shale, medium light gray, medium dark gray, compact.
 3580-3660 Shale, samples burned.
 3660-3700 Shale, medium light gray, compact, some is splintery.
 3700-3840 Shale, medium light gray, compact.
 3840-3920 Shale, medium gray, compact, somewhat splintery.
 3920-3960 Shale, medium dark gray, calcareous, white specks.
 3960-4020 Shale, medium light gray, compact. Some medium gray shale.
 4020-4100 Shale as above, Inoceramus fragments.
 4100-4180 Shale, medium light gray, compact, finely disseminated mica.
 4180-4270 Shale as above, some light greenish gray (5GY8/1) shale, soft, some dark gray shale.
 4270-4310 Shale, medium dark gray, compact, splintery.
 4310-4390 Shale, medium gray-light gray, compact. The light gray shale is silty.
 4390-4410 Shale, medium gray, compact.
 4410-4470 Shale as above, some dark gray shale, slatey.
 4470-4510 Shale, medium light gray, compact.
 4510-4570 Shale, medium dark gray, compact, some splintery.
 4570-4670 Shale, medium dark gray, splintery, fissile.
 4670-4730 Shale as above.
 4730-4750 Siltstone, light brownish gray, shale fragments as above contained within.
 4750-4830 Sandstone, light gray, very fine grained, calcareous, with interbedded medium gray shale.
 4830-4850 Sandstone as above.
 4850-4890 Shale, medium dark gray-medium light gray, compact.
 4890-4910 Shale as above, very light gray sandstone, very fine grained, much pyrite.
 4910-4930 Shale as above, some pyrite.
 4930-4950 Sandstone, light gray, very fine grained.
 4950-4970 Shale, dark gray-medium gray, some sandstone, as above.
 4970-4990 Sandstone, very light gray, very fine-grained shale cavings.
 4990-5040 Shale, medium dark gray, slatey, sandstone as above.
 5040-5060 Siltstone, grayish red (5R4/2), light olive gray (5Y6/1) compact shale.
 5060-5140 Shale, variegated, compact.
 5140-5150 Shale, variegated, compact, siderite nodules, pyrite. Samples are badly contaminated.
 5150-5190 Sample as above, bentonite. Sandstone cavings.
 5190-5200 Samples missing.
 5200-5220 Shale, variegated, mostly greens and maroons, some silty.
 5220-5270 Sample as above, sandstone stringers, fine grained white.
 5270-5310 Shale, medium light gray-medium dark gray, splintery, some variegated. Some dusky red shale (5R3/4).
 5310-5320 Shale, variegated, compact, mostly browns and maroons.
 5320-5330 Shale, medium light gray, splintery, some dark gray shale.
 5330-5360 Shale, variegated, compact, shale as above, caved siderite nodules from Dakota sandstone. Pyrite.
 5360-5370 Shale, medium light gray. Some variegated shale and much caving material.

5370-5380 Shale as above, shale medium dark gray, splintery.
 5380-5400 Sandstone, white, fine grained, calcareous, well indurated. Shale as above.
 5400-5430 Shale, greenish gray (5GY6/1), medium gray, compact.
 5430-5450 Shale, medium light gray-medium dark gray, compact, some splintery and slatey.
 5450-5460 Shale as above, some shale, light greenish gray (5G8/1) micaceous.
 5460-5470 Sandstone, very light gray, fine grained, calcareous, shale as above.
 5470-5500 Shale, medium light gray, dark gray, compact.
 5510-5520 Limestone, very light gray, sublithographic. Shale as above.
 5520-5550 Shale, greenish gray (5GY6/1) dark gray, compact, some light gray limestone, argillaceous.
 5550-5570 Shale as above, shale, dusky red (5R3/4), compact, some is slightly calcareous.
 5570-5600 Limestone, pinkish gray, crystalline, argillaceous, shale as above.
 5600-5640 Shale, variegated, mostly medium light gray in color, compact.
 5640-5680 Limestone, very light gray-pinkish gray, very fine grained, shale cavings, some white dolomite and sandstone, medium grained.
 5680-5720 Dolomite, yellowish gray (5Y8/1) sublithographic, limey, shale cavings.
 5720-5750 Limestone, very light gray, very fine grained.
 5750-5770 Gypsum, white, limestone and shale cavings.
 5770-5800 Shale, medium light gray, splintery.
 5800-5820 Gypsum, white, much caving material.
 5820-5850 Dolomite, pale reddish brown, hard, silty, some siltstone, moderate red (5R4/6).
 5850-5890 Siltstone, pale reddish brown, (10R5/4), compact, some dark gray-medium gray shale, may be caving.
 5890-5930 Shale, medium light gray, compact, siltstone as above. Some sublithographic limestone, yellowish gray (5Y8/1).
 5930-5960 Sandstone, white, grains subround, medium size, siltstone, pale reddish brown (10R5/4) much caving.
 5960-5980 Shale, moderate reddish orange (10R6/6), silty, calcareous.
 5980-5990 Sample, all caving.
 5990-6040 Siltstone, pale reddish brown (10R5/4), compact, shale cavings.
 6040-6080 Siltstone, moderate reddish orange (10R6/6), lumpy, calcareous, caving material.
 6080-6110 Gypsum, white, much caving material.
 6110-6120 Shale, moderate reddish brown, compact, hard.
 6120-6130 Limestone, grayish orange pink (10R8/2), shale and siltstone as above.
 6130-6170 Shale, moderate reddish brown (10R6/6) much caving, poor samples.
 6170-6200 Limestone, grayish orange pink (5YR7/2) sublithographic, slightly argillaceous, mottled.
 6200-6210 Siltstone, moderate reddish orange (10R6/6), shaley, limestone, as above, cavings? very poor samples.
 6210-6270 Siltstone as above, slightly dolomitic, also shale, pale reddish brown (10R5/4), compact, small amounts of white gypsum.
 6270-6290 Siltstone as above, sandy.
 6290-6310 Sandstone, pale reddish brown (10R5/4) fine grained, shows porosity.
 6310-6320 Shale, medium light gray, compact.

6320-6330 Sandstone, pale reddish brown (10R5/4), unsorted.
 6330-6400 Dolomite, grayish orange pink, (5YR7/2) crystalline, some sandstone, same color, unsorted.
 6400-6410 Sandstone, light red (5R6/6) unsorted, dolomitic shows porosity, some dolomite as above containing anhydrite.
 6410-6470 Dolomite, grayish orange pink, (10R8/2), crystalline.
 6470-6480 Sample missing.
 6482 Trip.
 6480-6500 Samples are caving material.
 6500-6520 Dolomite, grayish orange pink, mottled, some anhydrite. Sandstone, light red (5R6/6) unsorted.
 6520-6570 Sandstone, grayish orange, pink, (10R8/2), dolomitic, shows porosity. Dolomite as above.
 6570-6610 Dolomite, grayish orange pink-moderate orange pink (10R7/4) a little anhydrite.
 6610-6620 Dolomite and sandstone as above.
 6620-6640 Shale, medium dark gray, splintery, slaty. Some anhydrite, white with mottled pink, maybe caving.
 6643 Trip.
 6640-6660 Sample as above.
 6660-6670 Chert, very light gray, shale as above.
 6670-6680 Dolomite, light brownish gray (5YR6/1), crystalline.
 6680-6690 Sandstone, pinkish, gray (5YR8/1), fine grained.
 6690-671 Dolomite as above, also some lavender dolomite.
 6710-6747 Shale, medium dark gray, splintery, much caving material.
 6747 Trip.
 6747-6770 Caving material.
 6770-6780 Shale, grayish red purple (5RP4/2) compact, much caving.
 6774 Stuck drill pipe, spotted 40 barrels diesel fuel on bottom.
 6780-6800 Dolomite, grayish pink (5R8/2) crystalline. Sandstone, light red-moderate pink.
 6800-6850 Dolomite, yellowish gray (5Y8/1) crystalline. Sandstone as above.
 6850-6860 Dolomite, light brown (5YR6/4) crystalline, dense.
 6860-6870 Shale, variegated, compact.
 6870-6890 Dolomite, light brown (5YR6/4) crystalline, some grayish pink, very poor samples.
 6890-6910 Shale, variegated, mostly grayish red (5R4/2) compact.
 6910-6920 Dolomite, some sandy, light brownish gray, dense.
 6920-6930 Sample unidentifiable.
 6930-6935 Shale, grayish red, and subround sand grains, much caving, some variegated shales.
 6935 Trip.
 6935-6950 Sample as above.
 6950-6980 Shale, variegated, much caving.
 6980-7000 Shale, very dusky red purple (5RP2/2) compact.
 7000-7020 Shale, dark gray, splintery, some variegated as above.
 7020-7030 Sandstone, vitreous-yellowish brown, shows porosity.
 7030-7060 Shale, dark gray, sandstone as above. Pyrite.
 7060-7080 Shale, grayish green (10GY5/2), much caving.
 7080-7094 Limestone, white, sublithographic interbedded with shale as above, and some medium light gray shale.
 7094 Trip.
 7094-7120 Shale, green and gray as above, much caving-thin interbedded limestones as above.

7120-7160 Sample as above but medium light gray shale predominates.
 7160-7190 Sandstone, vitreous-white, fine grained friable. Some sandstone moderate pink (5R7/4).
 7190-7230 Sandstone, grayish orange pink, texture as above, a few traces of gypsum and moderate red (5R4/6), shale.
 7230-7250 Sample is all caving material.
 7237 Trip.
 7250-7290 Sandstone, shale (dolomitic) and gypsum as above. Dolomite, dusky red (5R3/4) dense.
 7290-7295 Limestone, medium light gray, dense.
 7295 Trip.
 7295-7300 Sample is caving.
 7300-7320 Limestone, very light gray, crypto crystalline, dense, some medium light gray as above.
 7320-7330 Limestone, light gray, oolitic.
 7330-7340 Sandstone, frosted grains, subround, friable.
 7340-7356 Limestone, medium gray-light gray.
 7356 Trip.
 7356-7380 Caving material.
 7380-7395 Limestone as above, much caving.
 7395 Trip.
 7395-7420 Caving material.
 7420-7450 Anhydrite, medium gray, caving material, some pinkish gray (5YR8/1), dolomite also medium light gray.
 7450-7475 Anhydrite, white, dense. Some limestone, light brownish gray, dense, crypto crystalline.
 7475-7485 Caving material. Some salt picked from log.
 7485-7492 Salt picked from log.
 7492 Circulated 1 3/4 hours - Salt picked from log.
 7492-7510 Salt, picked from microlateral log. Samples caving.
 7510-7520 Anhydrite, light gray, massive.
 7520-7555 Anhydrite as above, limestone, yellowish gray (5Y8/1) oolitic, much caving material.
 7555-7575 Anhydrite, white, limestone, yellowish gray (5Y8/1) very poor samples.
 7575-7590 Anhydrite, white-brownish gray, mottled.
 7590-7605 Salt, picked from logs, samples are caving.
 7605 Circulate 1 1/2 hours.
 7605-7615 Anhydrite and limestone as above.
 7615-7630 Anhydrite, white, massive.
 7630-7640 Limestone, light gray, massive, anhydrite, as above.
 7640-7655 Limestone, very light gray, very fine grained.
 7655-7665 Anhydrite, white-very light gray, massive, limestone as above.
 7665-7680 Samples are all cavings, probably interbedded anhydrite and limestone.
 7680-7690 Limestone, light gray, massive, anhydrite as above.
 7690-7700 Anhydrite, white, massive.
 7700-7710 Anhydrite as above, limestone, light gray, massive.
 7710-7720 Limestone, medium light gray, very argillaceous and shaley.
 7720-7753 Salt, picked from logs, samples, are caving.
 7731 Circulated 1 hour.
 7750-7760 Cavings, some intermixed limestone and anhydrite.
 7760-7780 Anhydrite, medium light gray, massive, much caving.
 7780-7795 Dolomite, light gray, limey, anhydritic, dense.

7795-7805 Anhydrite, light gray, massive.
 7805 Trip.
 7815-7820 Anhydrite, very light gray, dense, much caving.
 7820-7835 Limestone, light brownish gray, oolitic, some anhydrite, brownish gray.
 7835-7850 Limestone, pale brown (5YR5/2) fragmental.
 7842 Circulate 45 minutes.
 7850-7855 Anhydrite, white-light gray, dense.
 7855-7860 Limestone, very light brownish gray, oolitic.
 7859 Circulate 1 1/2 hours.
 7860-7870 Limestone as above.
 7870-7875 Shale, medium light gray, maybe caving.
 7875-7880 Limestone, very light brownish gray, crystalline.
 7880-7885 Anhydrite, white, dense.
 7885-7905 Limestone, light brownish gray, oolitic, anhydrite as above.
 7906 Circulated 1 1/2 hours.
 7905-7935 Limestone as above.
 7935-7960 Limestone as above, intermixed with white anhydrite.
 7960-8005 Anhydrite, white-light gray, dense, limestone, light grayish brown, oolitic.
 8005-8043 Salt stringers, inferred from microlateral log.
 8005-8035 Anhydrite, white-very light gray, dense.
 8028 Circulate 15 minutes.
 8035 Circulate 1 hour.
 8035-8070 Anhydrite, white-very light gray, dense.
 8070-8094 Anhydrite as above, limestone, brownish gray, dense.
 8088 Circulate 1 3/4 hours.

 CORE
 8094-8095 Limestone, brownish gray, microcrystalline, dense.
 8095-8110 Limestone, light brownish gray (5YR6/1).
 8110-8120 Limestone, dark brownish gray, crystalline.
 8120-8125 Limestone, brownish gray, crystalline.
 8125-8130 Limestone, very light brownish gray, very fine grained.
 8130-8135 Limestone, brownish gray, crystalline.
 8135-8151 Limestone, light brownish gray, crystalline.

 END OF CORE
 8151 Trip.
 8151-8155 Caving material.
 8155-8165 Limestone, brownish gray, crystalline.
 8165-8200 Limestone, light brownish gray, crystalline.
 8200-8225 Limestone, very light gray-tan, crystalline.
 8225-8240 Caving material.
 8228 Trip.
 8240 Limestone as above, circulate 100 minutes.
 8240-8250 Limestone as above, some dark brown, crystalline.
 8250-8280 Limestone, very light brownish gray, crystalline.
 8280-8290 Limestone as above, anhydrite stringers, white-medium gray.
 8290 Circulate 100 minutes.
 8290-8315 Limestone as above, shows porosity, a few oolites.
 8315-8400 Limestone, very light brownish gray, crystalline.
 8400-8410 Limestone, light brownish gray, crystalline.
 8410-8415 Limestone, medium gray, argillaceous, dense.