

LITHOLOGIC DESCRIPTION OF ROCK SPRINGS WELL NO. 1-3
NENWNE SEC 15 T18N R106W SWEETWATER COUNTY, WYOMING

February 14, 1967

by
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Footage	Description
26.0-28.9	Shale, oil, and siltstone, light to medium gray, some light greenish-gray, tan, dense, sandy siltstone lenses at 27.2 feet.
28.9-32.9	Missing.
32.9-34.1	Shale, oil, dark gray, some black, varved with tan dolomitic shale layers below 33.9 feet, abundant carbonate (?) crystals scattered throughout shale.
34.1-34.7	Shale, oil, medium greenish-gray to gray, olive drab, dark shale streak at 34.6 feet, zones and individual crystals common.
34.7-36.8	Shale, oil, greenish-tan to medium greenish-gray, silty, dense, rare crystals.
36.8-40.1	Shale, oil, light to medium gray, silty, dense, banded in part below 38.6 feet, occasional horizontal layers of crystals, slightly calcareous.
40.1-41.5	Shale, oil, light to medium greenish-gray, both diagonal and horizontal stringers of crystals.
41.5-44.2	Missing.
44.2-46.7	Shale, oil, medium gray to greenish-gray, crystals in horizontal layers and some stringers and individual pods of tan dolomitic shale at 45.4 feet, thin, fine-grained layer of gray sandstone at 46.0 feet.
46.7-48.0	Shale, oil, as above, and yellowish green with numerous patches and areas of tan crystalline limestone associated with dark crystals, metaliferous in appearance, possibly pyritic or pyrrhotite (?).
48.0-50.1	Shale, oil, light gray, zones of medium gray to greenish-gray, thin layers tan to gray dolomitic shale around 49.0 feet, silty, hard crystals rare.
50.1-52.8	Shale, oil, medium gray to medium and dark greenish-gray, silty in part below 51.7 feet, rare crystals.
52.8-53.8	Shale, oil, medium to dark greenish-gray to minor dark gray, abundant scattered crystals.
53.8-54.2	Shale, oil, dark gray to black, abundant crystals.
54.2-55.3	Shale, oil, medium gray to greenish-gray, finely laminated in part, abundant crystals, contorted stringers of cream to tan, lithographic, dense dolomite from 54.6 to 54.7 feet.
55.3-56.6	Shale, oil, greenish-gray to yellowish-green, finely laminated, abundant crystals and zones or groups of crystals.
56.6-57.8	Shale, oil, as above but dense and not laminated, with stringers of tan, crystalline limestone and pyrite or pyrholusite (?) less yellowish tone.
57.8-63.2	Shale, oil, light to medium gray with streaks of tan, very silty, sandy in part, horizontal zones of calcite (?) crystals, slightly calcareous to limy, sandstone layers are porous, limy and dolomitic zones abundant below 61.8 feet.

Footage	Description
63.2-64.5	Shale, oil, medium gray, silty.
64.5-67.2	Shale, oil, medium gray with dark gray bands, most of which have abundant large crystals, some greenish-gray zones contain numerous very small crystals.
67.2-69.3	Shale, oil, dark brownish-gray to black, rare crystals, trace gilsonite at 68.0 feet.
69.3-69.9	Shale, oil, greenish-gray with layers of yellowish-gray, abundant crystals both as single and in horizontal bedding planes.
69.9-70.2	Shale, oil, light gray, silty, dense, slightly dolomitic.
70.2-72.4	Shale, oil, greenish-gray and grayish-green, laminated in part, abundant crystals.
72.4-74.5	Shale, oil, gray, minute rare crystals, platy fracturing, trace green in parts.
74.5-77.4	Shale, oil, medium to dark gray, rare greenish-gray streak containing crystals, limestone concretion, purple to brown, very fine crystalline, dense, found at 75.5 and 77.1 feet.
77.4-77.8	Shale, oil, greenish-gray, some dark gray, abundant crystals.
77.8-80.4	Shale, oil, medium gray with some dark shale streaks, some shades of greenish-gray, some crystals as individuals, rare zones of abundant crystals.
80.4-82.2	Shale, oil, dark gray to black with tan to buff, to gray fine-grained sandstone at 80.5 feet, friable, slight oil stain.
82.2-82.3	Sandstone, buff to dark gray, fine-grained, porous, fairly friable, oil stained, shaley in part, dark gray color may be caused by hydrocarbon residue.
82.3-83.8	Shale, oil, medium to dark gray, platy fracturing.
83.8-84.2	Sandstone, buff, tan with dark shaley sand streaks probably as fracture fillings, fine-grained, porous, pyritic, slight oil stain.
84.2-87.4	Shale, oil, medium to dark gray, streaks of greenish-gray, crystals abundant, occasional layers and pods of tan dolomitic shale, with purple dense finely crystalline limestone concretion at 85.0 feet.
87.4-89.0	Shale, oil, dark gray to black, minor varves.
89.0-89.1	Sandstone, buff, tan, brown, very fine to fine-grained, numerous fractures filled with dark gray to black shale and pyrite, upper half saturated with oil, poor porosity.
89.1-92.8	Shale, oil, broadly banded, medium to dark gray, greenish-gray, dark tan to brownish-gray, abundant crystals in greenish-gray and some gray zones, occasional pods of tan dolomitic shale; several gray to brown contorted sandstone modules or concretions, dolomitic, slightly pyritic at 92.0 feet fracture at 90.0 feet containing oil stain and residue.
92.8-92.9	Limestone, dolomitic, purple, dense, hard, very finely crystalline, occurs as concretion or inclusion in the dark shale matrix.
92.9-95.0	Shale, oil, medium to dark gray, rare zones of crystals, some inclusions of brown dolomitic shale.
95.0-95.1	Sandstone, light gray to brown and dark maroonish brown, very fine-grained, slight fracturing, heavy oil stain.

Footage	Description
95.1-97.7	Shale, oil, dark gray to black, with rare layers of tan to brown dolomitic shale, lighter gray below 97.2 feet, rare crystals.
97.7-97.8	Sandstone, light gray, bluish-gray, brown, salt and pepper appearance, fine-grained, vuggy porosity, oil stain and residue, fractured.
97.8-98.6	Shale, oil, medium to dark gray, occasional zone dark greenish-gray with abundant crystals, laminations evident below 98.3 feet.
98.6-99.0	Sandstone, pink, buff, tannish-gray, very fine-grained, occasional gray shale partings, slightly dolomitic, <u>M-BED</u> .
99.0-99.4	Shale, oil, dark gray to black, brown dolomitic shale as thin layers and concretions or inclusions.
99.4-99.9	Shale, oil, medium gray, brownish-gray.
99.9-105.6	Missing
105.6-106.5	Shale, oil, brownish-gray and greenish-gray with occasional thick band of tan dolomitic shale, injected gray sandstone, fine-grained, contorted, salt and pepper, porous at 105.9 feet.
106.5-107.6	Shale, oil, medium to dark greenish gray, dark gray to black, with layers and concretions of tan dolomitic shale, wavy band of same at 107.0 feet.
107.6-107.8	Ash, siltstone, sandstone, bluish-gray, buff, maroonish-gray, interbedded with and injected into tan to pale green shale, sandstone is very fine-grained, fractured, slightly oil stained.
107.8-108.0	Dolomite, brown, finely crystalline, shaley in part, hard.
108.0-109.0	Shale, oil, medium to dark gray to black, some brown layers of dolomitic shale.
109.0-109.1	Ash, siltstone, sandstone, white, pink, earthy, very fine-grained, tuffaceous (?) fractures filled with dark gray shale and pyrite, some red (fe?) stain.
109.1-112.0	Shale, oil, light to medium greenish-gray with bands of tan to buff shale, conchoidal fracturing.
112.0-113.6	Shale, oil, medium gray, some dark gray, finely laminated with tan dolomitic shale which is also found as variously sized pods or lentils.
113.6-114.1	Shale, oil, tan to light brown, varved, dolomitic, dense, -silty with zones and layers of finely crystalline dolomite.
114.1-115.6	Shale, oil, medium to dark gray, broadly banded with occasional tan dolomitic shale.
115.6-115.7	Shale, oil (?), buff to tan, silty to chalky, dolomitic.
115.7-118.5	Shale, oil, broadly banded tan, dolomitic, silty, dense shale and dark gray to sooty black, some brownish-gray shale below 118.3 feet.
118.5-118.8	Sandstone, bluish-gray, very fine-grained to earthy, very porous, containing stringers and irregular pods of very calcareous, brown to olive drab shale, zone of orange-yellow blebs in gray sandstone matrix.
118.8-118.9	Ash, sandstone, white to gray, salt and pepper, very fine-grained to silty, micaceous (biotite?), porous.
118.9-121.5	Shale, oil, very thinly varved layers of tan to brown, dolomitic, and medium to dark gray with several thin layers of bluish-gray silty sandstone.

Footage	Description
121.5-121.6	Ash, siltstone, white, gray with dark greenish-gray shale partings, earthy in part, partings show minor slickensides, very calcareous.
121.6-122.7	Shale, oil as in 118.9-121.5 feet.
122.7-124.8	Shale, oil, medium to chocolate brown, dark gray, black, some black carbonaceous residue in brown shale.
124.8-125.1	Ash, siltstone, white, light gray, chalky, very porous, friable.
125.1-125.4	Sandstone, light gray, very fine to fine-grained, salt and pepper, micaceous, porous, silty, tuffaceous (?).
125.4-125.8	Shale, oil, medium to dark brownish-gray with varves of tan to light brown shale, both dolomitic to limy.
125.8-126.0	Limestone, grayish-brown, finely crystalline hard, dense.
126.0-127.4	Shale, oil, dark gray, some medium gray, varved in part.
127.4-128.2	Shale, oil, tan to light brown, dense, slightly dolomitic, silty, two zones of medium gray oil shale.
128.2-128.6	Sandstone, light gray to bluish-gray, salt and pepper, silty, chalky, friable in part, fine-grained, micaceous in part, tuffaceous (?), very porous.
128.6-130.0	Shale, oil, medium to dark gray, brownish-gray, grayish-brown, thinly varved with light gray and tan from 129.7-129.9 feet.
130.0-130.7	Shale, oil, light to medium gray, silty, calcareous, trace fish scale fragments.
130.7-130.9	Shale, oil, tan, grayish-tan, silty, slight porosity.
130.9-131.3	Shale, oil, greenish-gray, silty, very calcareous.
131.3-131.5	Shale, oil, brown to gray, very calcareous, with limestone fragments and slightly fossiliferous, fish scale segments.
131.5-131.9	Shale, light to medium gray to greenish-gray, calcareous.
131.9-132.2	Shale, tan, dense, silty, conchoidal fracturing.
132.2-135.3	Shale, oil, tan, light to medium gray, greenish-gray, tannish-gray, calcareous, several zones of fragmented limestone and crushed fossils including fish scales.
135.3-135.4	Sandstone, bluish-gray, very fine to fine-grained, silty, very porous.
135.4-136.3	Shale, oil, medium greenish-gray, buff, gray, very calcareous, trace dolomite, fine crystalline.
136.3-137.6	Shale, oil, distinctly and thinly varved, dark gray to black and tan, dolomitic layers, occasional pods, and inclusions of same tan shale.
137.6-155.8	Shale, oil, banded tan, light gray, medium gray, and some brown, occasional pod of tan limey shale, partly porous, vertical to diagonal fractures at 140.5 to 140.8, 141.3 to 143.5, 143.6 to 144.3 feet, some darker gray zones below 153.1 feet, thin blue clayey zone, silty at 152.1 feet.
155.8-158.4	Shale, oil, finely laminated and varved, brown to brownish-gray and tan to cream, dolomitic shale, papery fracturing down to 157.7 feet.
158.4-158.5	Sandstone, gray to bluish-gray, very fine-grained silty, salt and pepper, porous, injected into and interbedded with greenish-gray shale, both fractured.

Footage	Description
158.5-159.8	Shale, oil, tan, brown, brownish-gray, finely laminated, tan at top becoming darker with depth.
159.8-160.4	Shale, tan, dense, silty slightly calcareous.
160.4-163.2	Shale, oil, broadly banded, gray, olive drab, tan, medium brown, some dark gray, silty in part, calcareous.
163.2-164.1	Shale, oil, light brown, dense, silty with thin discontinuous tan streaks of shale, both calcareous.
164.1-166.3	Shale, oil, as in 160.4-163.2 feet.
166.8-167.2	Siltstone, tan to light brown, dense, slightly calcareous.
167.2-167.8	Shale, oil, medium to dark brown, grayish-brown.
167.8-168.1	Siltstone, tan, brown, laminated, calcareous, sandy.
168.1-168.8	Shale, oil, as in 167.2-167.8 feet.
168.8-169.1	Shale, cream to tan, dense, silty, slightly calcareous.
169.1-170.1	Shale, oil, medium to dark brown, grayish-brown, blocky fracturing.
170.1-170.5	Shale, oil, tan, silty, dense, slightly calcareous.
170.5-172.9	Shale, oil, thinly laminated, various shades of tan, brown, and gray, occasional limy nodules.
172.9-173.5	Siltstone, tan, light brown, broadly and thinly banded with brownish-gray oil shale.
173.5-174.5	Shale, oil, medium brownish-gray to dark gray to black, distinctly laminated with cream, tan and light brown siltstone and silty shale some of which is in large pods or concretions, occasional thin stri of bluish-gray, fine-grained sandstone, clayey.
174.5-176.5	Shale, oil, medium gray to dark gray, dull, several beds of tan shale from 175.5-175.7 feet.
176.5-180.9	Siltstone and marlstone, tan, gray, light brown, with minor beds of oil shale, light to dark gray, several zones bluish-gray, clayey very fine-grained sandstone, hairline fractures.
180.9-181.0	Sandstone, light gray, salt and pepper, very fine-grained to earthy fractured, porous, interbedded with dark gray oil shale, some pyrite in fractures, mottled to contorted appearance.
181.0-181.4	Shale, oil, medium gray, brownish-gray, blocky fracturing.
181.4-182.4	Shale, oil, light greenish-gray, medium gray, silty in streaks.
182.4-182.6	Shale, tan, and dark gray, the latter injected into fractures in the former, some grayish-green.
182.6-183.1	Shale, oil, tan, light to medium tannish-gray, the lighter injected into the darker shale.
183.1-183.5	Shale, oil, light to medium gray, injected with cream to tan and light brown shale, very silty.
183.5-186.0	Shale, oil, medium to dark gray, numerous laminations of tan to light brown silty shale with volcanic layers of gray ash, gray shaly ash bed at 185.5 impregnated with abundant globules of amber resin and showing affinity for any liquid.
186.0-186.1	Clay and siltstone, gray, with blebs of olive green color scattered through matrix, fractured, soft, crumbly.
186.1-186.2	Sandstone, tan, buff, fine-grained, very silty, friable, with thin pellicular zone at top of sample.

Footage	Description
186.2-187.1	Shale, oil, banded tan, silty, marly with light to medium gray bands.
187.1-187.3	Shale, light brown, dolomitic, trace fish scales, injected with cream to tan shale, calcareous, may be large inclusion.
187.3-189.4	Shale, oil, dark gray, some light to medium gray, some dark greenish-gray, blocky fracturing.
189.4-189.5	Shale, cream to tan, dense, dolomitic.
189.5-189.7	Shale, limestone, light to dark brown, partly fossiliferous, numerous paper-thin layers of gilsonite, limestone fragmental.
189.7-190.9	Shale and mudstone, light to dark gray, some greenish-gray, occasional fractures, very calcareous, some zones of limestone fragments.
190.9-192.0	Shale, oil, medium gray, blocky fracturing.
192.0-192.2	Shale, oil, tan, gray, and brown beds, very limy, layers of microfossils and fragmental limestone, sandy in part.
192.2-192.6	Shale, tan, dense, silty, dolomitic.
192.6-192.8	Shale, oil, medium to dark gray, some laminated with dark grayish-brown.
192.8-195.3	Limestone, tan and light to medium gray, very finely crystalline, very shaley, some porosity, sandy in part, some microfossils.
195.3-196.7	Limestone, medium to dark gray, brownish-gray, layers of fragmented fossils, very shaley.
196.7-197.0	Shale, oil, tan and light to medium gray, dense, slightly dolomitic, silty.
197.0-197.7	Limestone, same as 195.3-196.7 feet.
197.7-197.8	Shale, mudstone, cream to tan, clayey, slightly calcareous.
197.8-198.0	Limestone, same as 197.0-197.7 feet.
198.0-198.2	Coquina, white to gray, abundant fossils, partly fragmented, some gray shale as matrix filling.
198.2-207.2	Limestone, shaley, and very calcareous shale, light to medium gray, some tan, silty in part, abundant fossils, shell fragments, fragments larger in size below 200.1 feet, some darker gray zones below 204.3 feet.
207.2-208.1	Limestone and shale as above.
208.1-209.0	Limestone, medium to dark gray, very shaley, silty.
209.0-209.3	Limestone, light to dark gray, banded with shaley limestone beds, sandy, silty, fossiliferous in part.
209.3-209.6	Coquina, white to gray, abundant fossils, fragmented, gray shale matrix. Base of Green River Formation and top of Wasatch Formation at 209.6 feet.
209.6-210.3	Sandstone, medium to dark gray, very fine-grained porous, contains minor fossil shell fragments, silty, zone of fossils predominant at 209.9 feet.
210.3-210.7	Sandstone, light grayish green, very fine-grained, silty grading to a sandy siltstone, porous.
210.7-216.3	Shale, light to medium gray, very silty but losing silt with depth, some slightly sandy, becoming lighter gray below 215.0 feet.
216.3-217.4	Sandstone, gray, fine-grained, calcareous, friable, porous.