

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from Corehole No. 2, National Farmers Union Exploration Company, drilled in the SW. 1/4 of sec. 32, T. 9 S., R. 25 E., Uintah County, Utah

5507' @ assays

Surface Elevation 5420(?) feet Mahogany Marker at 500.3 feet Total Depth 560 feet

From	To	Description
0	30.0	Air drilled - no recovery.
30.0	34.9	Marlstone, silty, light brown and dark brown, massive, common stringers 1 inch and less of dark gray marlstone. Rare vertical fracture with fracture faces lightly coated with black bitumen.
34.9	39.7	Silty marlstone, tan, light gray and light brown, massive, common stringers 1/2 inch and less of dark brown and dark gray marlstone, a 1-inch band of dark gray marlstone occurs at 37.2 feet. Common vertical fracture with fracture faces lightly coated with black bitumen.
39.7	46.5	Marlstone, dark brown, light brown, and tan, poorly defined to well defined bedding. A 0.2 foot band of light gray siltstone occurs at 44.1 feet. A 1/2-inch band of silvery pyrite occurs at 44.3 feet.
46.5	47.1	Marlstone, silty, tan and light gray, massive, extensive vertical fracture with fracture faces lightly coated with red-brown bitumen.
47.1	52.2	Marlstone, dark brown and dark gray, massive to well defined bedding. Rare irregular stringers 2 inches and less of tan marlstone and blue-gray analcite. Some vertical fractures with fracture faces lightly coated with red-brown and black bitumen.
52.2	53.0	Marlstone, silty, tan, and light gray, massive. Extensive vertical fractures with fracture faces heavily coated with red-brown and black bitumen.
53.0	58.0	Marlstone, dark brown and dark gray, massive to poorly defined bedding. Rare 1/2-inch and less bands of tan siltstone. Numerous crystal cavities lined with calcite and pyrite occur between 57.1 feet and 57.4 feet.
58.0	61.3	Marlstone, tan, light brown, and light gray, massive to well defined bedding. Rare vertical fractures with fracture faces lightly coated with red-brown bitumen. A 2-inch vug containing pyrite and black bitumen occurs at 60.5 feet.
61.3	67.0	Marlstone, light gray and dark gray, massive to well defined bedding. Rare 1-inch and less lenses of finely crystalline calcite. Numerous 2-inch and less vertical fractures with fracture faces lightly coated with red-brown bitumen.

(?) The barometer elevation (5420 feet) determined by the Company is questionable, because elevation of the Mahogany marker determined from it fails to correlate with U. S. G. S. contours and with nearby coreholes.

Illustration No. SBR-2552P

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from Corehole No. 2, National Farmers Union Exploration Company, drilled in the SW. 1/4 of sec. 32, T. 9 S., R. 25 E., Uintah County, Utah (Con.)

Surface Elevation 5420 feet Mahogany Marker at 500.3 feet Total Depth 560 feet

From	To	Description
67.0	71.3	Marlstone, light brown and light gray, poorly defined to well defined bedding. A 0.3 foot vertical fracture with fracture faces lightly coated with red-brown bitumen, at 67.3 feet.
71.3	91.4	Marlstone, silty, tan and light gray, massive to well defined and slightly contorted bedding. Common inclusions 2-1/2 inch and less of coarsely crystalline calcite. A 2-inch oil stained vug containing pyrite occurs at 30.5 feet. Some vertical fractures.
91.4	102.0	Marlstone, light brown, dark brown and dark gray, massive to well defined bedding. Extensive multiple vertical fractures with fracture faces heavily coated with calcite, pyrite and black bitumen.
102.0	102.6	Marlstone, dark gray, massive to well defined bedding.
102.6	110.4	Marlstone, light gray, dark gray, and light brown, well defined bedding. Rare vertical fractures with fracture faces heavily coated with coarsely crystalline calcite. A 0.2 foot band of dark gray marlstone containing numerous 1/4 inch and less inclusions of calcite occurs at 102.6 feet.
110.4	121.8	Marlstone, light gray, light brown, and dark brown, generally massive with some well defined bedding. Common 1/2 inch and less irregular shaped inclusions of calcite impart a speckled appearance. Some vertical fractures with fracture faces lightly coated with calcite and red-brown bitumen.
121.8	126.7	Marlstone, tan, light brown, and dark gray, massive to well defined bedding. Numerous stringers 1/4 inch and less and inclusions 1/2 inch and less finely crystalline calcite.
126.7	128.7	Marlstone, dark brown, dark gray, and black, massive to well defined bedding. A 0.2 inch vertical fracture occurs at 128.5 feet.
128.7	134.4	Marlstone, light brown, and dark brown, massive to poorly defined bedding. Common vertical fractures. Rare inclusions 1/2 inch and less of pyrite and analcite.
134.4	135.0	No recovery.
135.0	142.3	Marlstone, dark brown, and dark gray, massive to well defined bedding. A 0.3 foot band of tan and light brown marlstone containing abundant bitumen in small fractures occurs at 147.0 feet. A 0.3 foot band of light gray siltstone containing small, widely scattered carbonate minerals occurs at 148.0 feet. A 1-inch calcite vug occurs at 148.6 feet.

Illustration No. SBR-2553P

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from Corehole No. 2, National Farmers Union Exploration Company, drilled in the SW. 1/4 of sec. 32, T. 9 S., R. 25 E., Uintah County, Utah (Con.)

Surface Elevation 5420 feet Mahogany Marker at 500.3 feet Total Depth 560 feet

From	To	Description
117.3	149.5	No recovery.
149.5	162.9	Marlstone, dark brown and dark gray, massive to well defined bedding. Common irregular inclusions 1 inch and less of pyrite and analcite. Rare bands 1-1/2 inch and less of tan silty marlstone. A 0.2 foot band of dark gray marlstone richly impregnated with calcite crystals occurs at 158.0 feet.
162.9	164.2	Marlstone, light gray and light brown, well defined bedding.
164.2	166.4	Marlstone, light brown and dark brown, well defined bedding. Common stringers 1-1/2 inch and less of dark gray marlstone.
166.4	176.9	Marlstone, dark gray, massive to well defined bedding. A 1-inch inclusion of calcite and red-brown bitumen occurs at 167.6 feet.
176.9	178.6	Mudstone, tan and buff, common bands 1 inch and less of light brown marlstone impregnated with calcite.
178.6	195.1	Marlstone, dark brown and dark gray, massive to well defined bedding. Rare vertical fractures with fracture faces heavily coated with red-brown bitumen. A 2-inch inclusion of blue-gray analcite occurs at 188.2 feet.
195.1	196.3	Marlstone, light gray and light brown, well defined bedding.
196.3	205.8	Marlstone, dark brown and dark gray, well defined bedding. Common stringers 1 inch and less of dark gray marlstone.
205.8	208.0	Marlstone, dark brown, light brown, and light gray, massive to well defined and contorted bedding. Rare inclusions 1 inch and less of blue-gray analcite.
208.0	208.6	Marlstone, dark gray, massive.
208.6	222.0	Marlstone, light brown and dark brown, massive to well defined bedding. Rare inclusions 1 inch and less of pyrite and blue-gray analcite.
222.0	227.1	Marlstone, light brown and light gray, well defined bedding. Common inclusions 2 inch and less of blue-gray analcite.
227.1	228.4	Marlstone, dark gray, massive to poorly defined bedding.
228.4	234.2	Marlstone, light brown and dark brown, well defined bedding.
234.2	235.1	Marlstone, dark gray, well defined bedding.
235.1	250.5	Marlstone, light brown and dark brown, massive to well defined bedding. Common stringers 2 inch long and less of blue-gray analcite.

Illustration No. SBR-2554P

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from Corehole No. 2, National Farmers Union Exploration Company, drilled in the SW. 1/4 of sec. 32, T. 9 S., R. 25 E., Uintah County, Utah (Con.)

Surface Elevation 5420 feet Mahogany Marker at 500.3 feet Total Depth 560 feet

From	To	Description
250.8	251.7	Marlstone, dark brown and dark gray, massive to well defined bedding. Common stringers 2 inch long and less of blue-gray analcite.
251.7	264.5	Marlstone, light gray, light brown, and dark brown, well defined bedding. A 2-inch band of dark brown analcite (1) occurs at 259.6 feet.
264.5	266.4	Marlstone, dark brown and dark gray. Poorly defined to well defined bedding. A 2-inch band of light gray massive siltstone occurs at 265.5 feet.
266.4	272.6	Marlstone, light gray, light brown, and dark brown, well defined bedding.
272.6	274.0	Marlstone, dark gray and dark brown, well defined bedding.
274.0	278.0	Marlstone, light brown and dark brown, well defined bedding. Analcite partings present.
278.0	298.3	Marlstone, light brown, dark brown, and dark gray, massive to well defined bedding. Analcite partings present. A 1-inch band of dark brown analcite (1) occurs at 285.6 feet.
298.3	310.2	Marlstone, light brown and dark brown, well defined bedding. Some very thin analcite partings present. A 1-inch band of dark brown analcite (1) occurs at 300.6 feet and a 1/2-inch band of same (1) occurs at 303.4 feet.
310.2	325.3	Marlstone, light brown, dark brown, and dark gray, well defined bedding. Common bands 1/2 inch and less of blue-gray and dark brown analcite (1). A 1-inch band of light gray siltstone occurs at 313.0 feet.
325.3	326.5	Marlstone, dark gray and dark brown, poorly defined to well defined bedding.
326.5	339.7	Marlstone, light brown, dark brown, and greenish-brown, well defined bedding. Common bands 1/2 inch and less of blue-gray and dark brown analcite (1).
339.7	340.8	Marlstone, dark gray, massive to well defined bedding. Rare bands 1/4 inch and less of blue-gray analcite.
340.8	347.6	Marlstone, light brown, dark brown, and greenish-brown, well defined bedding. Common bands 1/2 inch and less of light gray and blue-gray analcite.
347.6	348.6	Marlstone, dark brown and dark gray, generally massive with some well defined bedding.
348.6	354.1	Marlstone, light gray, light brown, and greenish-brown, well defined bedding. Common bands 2 inches and less of light gray and blue-gray analcite. A 1-inch band of dark gray marlstone occurs at 353.6 feet.

Illustration No. SBR-2555P

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from Corehole No. 2, National Farmers Union Exploration Company, drilled in the SW. 1/4 of sec. 32, T. 9 S., R. 25 E., Uintah County, Utah (Con.)

Surface Elevation 5420 feet Mahogany Marker at 500.3 feet Total Depth 560 feet

From	To	Description
354.1	355.1	Marlstone, dark gray, massive to poorly defined bedding.
355.1	361.1	Marlstone, light brown, dark brown, and greenish-brown, well defined bedding.
361.1	362.2	Marlstone, dark gray, massive, a 1-inch band of dark brown analcite (1) occurs at 361.2 feet.
362.2	374.2	Marlstone, light brown and dark brown, well defined bedding. Common bands 1/2 inch and less of dark brown analcite. A 0.3 foot band of dark brown analcite (1) occurs at 369.6 feet.
374.2	375.5	Marlstone, dark gray, massive to poorly defined bedding. A 1/2-inch band of oil saturated dark brown analcite (1) occurs at 375.3 feet.
375.5	378.0	Marlstone, light gray, dark gray, and light brown, well defined bedding.
378.0	379.9	Marlstone, light gray, tan, and light brown, well defined bedding.
379.9	381.4	Marlstone, light brown and dark brown, well defined bedding.
381.4	382.0	Marlstone, dark gray, massive to well defined bedding.
382.0	390.0	Marlstone, light brown, dark brown, and dark gray, well defined bedding. A 0.2 foot band of dark brown analcite (1) occurs at 384.3 feet, a 0.1 foot band at 386.7 feet, and a 0.6 foot band at 387.0 feet.
390.0	400.0	Marlstone, light brown, dark brown, and dark gray, poorly defined to well defined bedding. Common bands 1 inch and less of dark brown analcite (1). A 0.5 foot band of dark brown analcite (1) containing contorted stringers of tan marlstone occurs at 395.2 feet.
400.0	410.8	Marlstone, light brown, dark brown, and dark gray, well defined bedding. Common bands 1 inch and less of dark brown analcite (1). A 0.4 foot band of dark brown analcite (1) occurs at 404.9 feet. Numerous 1/4 inch bands of tan marlstone occur between 408.4 and 409.0 feet.
410.8	412.2	Marlstone, dark gray and dark brown, well defined bedding. A 1-inch band of yellowish-brown tuffaceous sandstone occurs at 411.6 feet.
412.2	414.8	Marlstone, light brown and dark brown, well defined bedding. A 2-inch band of yellowish-brown tuffaceous sandstone occurs at 413.6 feet.
414.8	416.1	Marlstone, light gray, tan, and light brown, well defined bedding.
416.1	424.6	Marlstone, light brown, dark brown, and dark gray, well defined bedding. Common 1/2 inch and less bands of brown analcite (1).
424.6	426.5	Tuffaceous sandstone, very fine grained, light gray and tan containing numerous contorted stringers of light brown and dark gray marlstone (upper wavy bed).

Illustration No. SBR-2556P

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from Corehole No. 2, National Farmers Union Exploration Company, drilled in the SW. 1/4 of sec. 32, T. 9 S., R. 25 E., Uintah County, Utah (Con.)

Surface Elevation 5420 feet Mahogany Marker at 500.3 feet Total Depth 560 feet

From	To	Description
426.5	436.0	Marlstone, dark brown and dark gray, poorly defined to to well defined bedding.
436.0	437.3	Marlstone, tan and light brown, well defined bedding.
437.3	440.2	Marlstone, dark brown and dark gray, well defined bedding.
440.2	444.7	Marlstone, tan, light brown, and dark brown, well defined bedding.
444.7	445.9	Marlstone, dark gray and dark brown, well defined bedding.
445.9	450.1	Marlstone, tan, light brown, and dark brown, well defined bedding.
450.1	451.9	Marlstone, dark gray and black, massive to well defined bedding.
451.9	457.9	Marlstone, tan, light brown, and dark brown, well defined bedding.
457.9	460.6	Marlstone, dark gray and dark brown, well defined bedding.
460.6	461.9	Marlstone, tan, light brown, and dark brown, well defined bedding.
461.9	463.7	Marlstone, dark gray and dark brown, well defined bedding.
463.7	468.4	Marlstone and silty marlstone, tan, light brown, and light gray, massive to well defined bedding.
468.4	472.0	Marlstone and silty marlstone, tan, light brown, and dark brown, well defined bedding.
472.0	475.8	Marlstone and silty marlstone, tan and light gray, well defined bedding.
475.8	479.2	Marlstone, light brown and dark brown, massive to poorly defined bedding.
479.2	480.1	Marlstone, dark brown, dark gray, and black, massive to well defined bedding. Rare bands 1/2 inch and less of brown analcite (1).
480.1	484.5	Marlstone, tan, light brown, and dark brown, well defined bedding. Common inclusions 1 inch and less and bands 1/2 inch and less of blue-gray and brown analcite (1).
484.5	490.7	Marlstone, light brown, dark brown, and dark gray, massive to well defined bedding. Common inclusions 1 inch and less and bands 3 inches and less of dark brown and blue-gray analcite (1).
490.7	494.2	Marlstone, dark brown and reddish-brown, poorly defined to well defined bedding.
494.2	495.9	Marlstone, light gray, light brown, and dark brown, well defined bedding.
495.9	500.3	Marlstone, dark brown, dark gray, and bluish-gray well defined bedding. Common bands 2 inches and less of light gray and tan marlstone.

Illustration No. SBR-2557P

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from Corehole No. 2, National Farmers Union Exploration Company, drilled in the SW. 1/4 of sec. 32, T. 9 S., R. 25 E., Uintah County, Utah (Con.)

Surface Elevation 5420 feet Mahogany Marker at 500.3 feet Total Depth 560 feet

From	To	Description
500.3	500.7	Analcite (Mahogany marker) blue-gray. Multiple vertical fracture with fracture faces heavily coated with black sticky oil.
500.7	505.6	Marlstone, light brown, dark brown, and bluish-gray, well defined bedding. A 0.7 foot vertical fracture with fracture faces lightly coated with red-brown bitumen occurs at 502.4 feet.
505.6	507.0	Marlstone, dark gray, dark brown, and black, well defined bedding.
507.0	508.9	Marlstone, light brown and dark brown, poorly defined to well defined bedding.
508.9	514.4	Marlstone, light brown, dark brown, and dark gray, massive to well defined bedding. A 3-inch inclusion of dirty white feldspar occurs at 510.2 feet.
514.4	515.6	Marlstone, dark gray and black, well defined and slightly contorted bedding. Black beds have a shiny luster. Common beds 1/4 inch and less of tan marlstone.
515.6	518.2	Marlstone, dark brown and dark gray, well defined and slightly contorted bedding.
518.2	519.5	Marlstone, dark brown and light brown, well defined bedding.
519.5	520.8	Marlstone, dark gray and black, massive to poorly defined bedding. A 0.2 foot band of blue-gray and brown analcite (1) occurs at 520.5 feet.
520.8	523.2	Marlstone, tan, light brown, and dark brown, well defined bedding.
523.2	524.8	Marlstone, dark brown and dark gray, massive to well defined bedding.
524.8	528.0	Marlstone, tan, light brown, and dark brown, well defined bedding.
528.0	529.1	Marlstone, dark gray and dark brown, massive to well defined bedding.
529.1	534.8	Marlstone, tan, light brown, dark brown, and dark gray, massive to well defined bedding. A 1-inch band of blue-gray and brown analcite (1) occurs at 529.7 feet.
534.8	539.4	Marlstone, tan, light brown, and dark brown, well defined bedding. Two-inch bands of dark gray marlstone occur at 537.1 feet and 538.4 feet. A 1-inch inclusion of dirty white feldspar occurs at 536.7 feet.
539.4	540.5	Marlstone, dark gray and dark brown, massive to well defined bedding. A 1-1/2-inch inclusion of dirty white feldspar occurs at 540.4 feet.

Illustration No. SBR-2558p

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from Corehole No. 2, National Farmers Union Exploration Company, drilled in the SW. 1/4 of sec. 32, T. 9 S., R. 25 E., Uintah County, Utah (Con.)

Surface Elevation 5420 feet Mahogany Marker at 500.3 feet Total Depth 560 feet

From	To	Description
540.5	545.4	Marlstone, tan, light brown, and dark brown, well defined bedding.
545.4	547.4	Marlstone, dark gray and dark brown, massive.
547.4	549.0	Marlstone, dark gray and dark brown, poorly defined to well defined bedding.
549.0	550.7	Marlstone, light brown, dark brown, and dark gray, well defined bedding. Common inclusions 1 inch and less of blue-gray analcite.
550.7	553.1	Marlstone, light brown, dark brown, dark gray, massive to well defined bedding.
553.1	558.1	Marlstone, light gray, light brown, and dark brown, well defined bedding.
558.1	559.1	Marlstone, dark gray and dark brown, well defined bedding.
559.1	560.0	Marlstone, light brown and dark brown, well defined bedding.
560.0		Bottom of hole.

(1) Note - Analcite or analcitized tuff beds or inclusions frequently appeared brown or dark brown in this core. It is probable that the dark-colored analcites were stained by bitumen.

An x-ray diffraction pattern was obtained on the sample below:

540.4 Found to be chiefly feldspar.

Illustration No. SBR-2559P

Laramie Petroleum Research Center, Laramie, Wyoming

December 18, 1958