

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY^{1/}

Core samples from U.S. Bureau of Mines Wyoming Corehole No. 2 drilled in 1971 in NW1/4SE1/4 (1,161 feet S of center line and 1,610 feet W of E line) of sec 28, T 22 N, R 107 W, Sweetwater County, Wyoming

Surface elevation: 6,721 feet
Cored interval: 720.0 to 1,117.2 feet

From	To	Description
LANEY MEMBER OF GREEN RIVER FORMATION		
720.0	727.3	Sandstone and sandy mudstone: Olive gray to gray green. Massive to faintly bedded. Some zones are tightly cemented with gray calcite. Some white powder left by evaporating pore fluid.
727.3	728.4	Mudstone: Medium and some light olive gray, mostly calcareous. Faint to some moderately distinct laminae.
728.4	729.6	Sandy mudstone: Medium to light olive gray. Massive to faintly streaked. Abundant streaks of gray calcite cement.
729.6	730.6	Mudstone: Medium and some light olive gray, calcareous. Faintly laminated. Abundant ostracods.
730.6	733.2	Sandstone: Olive gray, medium to very fine grained. Massive to faintly streaked; rare crossbedding. Some white powder left by evaporating pore fluid. Rare black carbonaceous flecks.
733.2	735.6	Sandstone: Medium to some dark olive gray, medium to fine grained. Faintly mottled and streaked to massive.
735.6	739.0	Siltstone and sandy mudstone: Olive gray, slightly calcareous. Faint streaked bedding. Rare slight crossbedding. Some gray to white coatings left by evaporating pore fluid.
739.0	740.8	Sandstone and sandy mudstone: Olive gray. Faintly streaked and mottled.
740.8	744.9	Sandstone: Medium to dark olive gray, medium to fine grained. Massive to faintly streaked. Some tightly cemented gray calcareous streaks and thick zones.
744.9	748.5	Sandstone and sandy siltstone: Medium to some light olive gray, slightly calcareous. Faint streaked bedding and some very fine laminae. Abundant powdery surface coatings left by evaporating pore fluid. Rare carbonaceous flecks.
748.5	752.5	Sandy mudstone and fine sandstone: Medium to light olive gray. Massive to faintly streaked. Rare carbonaceous flecks.
752.5	755.9	Sandstone: Olive gray, fine to medium grained. Faintly mottled and variegated. Abundant slight powdery surface coatings. Rare tight calcite cement.

^{1/} By L. G. Trudell

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From	To	Description
755.9	761.0	Siltstone and mudstone: Medium to light olive gray, noncalcareous to slightly calcareous. Faint streaked bedding; some distorted to contorted zones.
761.0	768.0	Sandstone and siltstone: Olive gray and brownish gray, few dark gray to black carbonaceous layers and streaks in upper part. Faintly streaked and layered to very faintly variegated. Some white surface coatings in upper part.
768.0	771.8	Siltstone and mudstone: Medium to light olive gray and some buff, slightly calcareous. Faintly streaked and variegated.
771.8	773.0	Siltstone: Light to medium and rare dark olive gray, slightly calcareous. Faint to fairly distinct, very distorted to fairly regular streaks, stringers, and laminae. A fine blebby tan limestone stringer at 772.8.
773.0	775.0	Oil shale: Medium to dark olive gray, calcareous. Faint very fine laminae and streaked bedding. Regular thick to some thin parting. Some ostracods in upper part. Rare small light brownish-gray earthy lenses. A 2-inch finely laminated light brownish-gray dolomite band at 773.4. Few fine light to medium gray silty laminae in lower part (some biotitic).
775.0	776.2	Oil shale: Medium to some dark brownish gray and olive gray, calcareous. Faint to moderately distinct very fine laminae. Slightly irregular thick to rare thin parting. Rare small black apatite nodules near top. Sample of brownish-gray oil shale from 775.7 feet: X-ray - calcite, quartz, analcite, illite.
776.2	781.0	Footage correction; reset depth recorder.
781.0	782.0	Oil shale: Medium to some light brownish gray, calcareous. Faint very fine laminae and streaked bedding. Becoming interbedded with brownish-gray and gray siltstone in lower 0.2 foot.
782.0	787.1	Siltstone and sandstone: Medium to some light olive gray and brownish gray, slightly to moderately calcareous. Massive to faintly streaked. Few thin irregular oil-shale stringers in upper foot. Some chalky white surface coatings from evaporation of pore fluid.
787.1	787.5	Oil shale: Medium to dark brownish gray with abundant very fine buff slightly earthy streaks and laminae. A thin gray mudstone stringer at 787.4.

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From	To	Description
787.5	789.0	Mudstone: Olive gray, calcareous. Abundant fine distorted to contorted and displaced oil-shale streaks and stringers and rare laminated bands. Thin brittle black organic streaks at 788.4.
789.0	791.0	Mudstone and siltstone grading to sandstone at base: Olive gray, slightly calcareous. Massive with some slightly distorted oil-shale zones and fine to thin shredded streaks and stringers.
791.0	793.7	Sandstone and siltstone: Olive gray, slightly calcareous, massive. A 1-inch dark brownish-gray oil-shale band at 793.0.
793.7	794.0	Oil shale: Dark brownish gray and olive gray. Faintly laminated. Common very fine gray mudstone laminae in lower part. Some ostracods.
794.0	794.5	Sandy mudstone: Medium and some dark olive gray. Faintly streaked and variegated.
794.5	795.6	Dolomite and limestone: Tan to buff. Wavy algal heads at top; faintly mottled and irregularly layered in other parts. Sample of buff limestone from 795.3 feet: X-ray - dolomite.
795.6	796.3	Oil shale (mudstone): Medium to some dark olive gray and brownish gray, slightly dolomitic. Faintly laminated. Some interfingering limestone stringers near top. Rare biotite in lower part. Sample of oil shale with rare biotite from 796.2 feet: X-ray - dolomite, quartz, analcite, ferroan, feldspar.
796.3	797.9	Siltstone and sandstone: Light to medium olive gray, slightly calcareous in parts. Faintly streaked to massive; finely laminated with dark brownish-gray carbonaceous mudstone and shale with some ostracods at 796.7-796.9 and 797.4-797.9. Some chalky surface coatings.
797.9	800.3	Siltstone, mudstone, and some sandstone: Olive gray to slightly brownish gray, slightly calcareous. Very faint distorted to regular streaked bedding. Rare brownish-gray carbonaceous stringers and streaks.
800.3	802.8	Oil shale: Medium to dark and some light brownish to almost neutral gray, calcareous in parts. Distinct to faint, slightly irregular to regular laminae. Irregular to regular, thick to rare thin parting. Abundant thick to fine gray silty to sandy layers and streaks. Very abundant ostracods in upper part.

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From	To	Description
		Sample of dark brownish-gray oil shale from 801.0 feet: X-ray - analcite, quartz, illite, calcite, feldspar, pyrite.
		Sample of dark to medium gray oil shale from 802.3 feet: X-ray - analcite, quartz, illite, feldspar, dolomite, pyrite.
802.8	804.3	Marlstone: Buff to nearly white, earthy, silty, calcareous. Faintly streaked.
804.3	805.7	Marlstone: Tan and buff to rare medium brown, earthy, silty to sandy, slightly calcareous to dolomitic. Faint streaked bedding and some laminae.
		Sample of buff and tan silty marlstone from 804.8 feet: X-ray - dolomite.
805.7	806.1	Mudstone: Olive green. Distorted streaked bedding with abundant stringers of buff silty marlstone as above.
806.1	806.2	Oil shale: Light to medium slightly brownish gray. Finely laminated.
806.2	808.2	Oil shale: Medium to dark slightly brownish gray, calcareous. Faint to some distinct very fine laminae and streaked bedding. Regular thick to rare thin parting. Abundant ostracods (?) on some parting surfaces. Some very fine buff earthy streaks and rare small lenses. Few thin to fine light gray silty layers in lower part.
		Sample of dark oil shale with fine buff streaks from 806.8 feet: X-ray - calcite, quartz, dolomite, illite, feldspar, analcite, pyrite.
		Sample of oil shale with fine light gray silty biotitic tuff layer from 807.7 feet: X-ray - quartz, calcite, analcite, feldspar, illite, pyrite, dolomite.
808.2	809.3	Oil shale: Medium to some dark brownish gray (slightly reddish in part), calcareous. Very finely laminated. Regular thick to medium parting. Some fine buff earthy streaks near top.
		Sample of medium to dark slightly reddish oil shale from 808.5 feet: X-ray - calcite, quartz, analcite, pyrite, illite, dolomite.
809.3	811.3	Oil shale: Medium to dark brownish and olive gray, becoming very dark with abundant distinct fine buff earthy streaks and laminae in lower 0.4 foot, calcareous. Faint to some distinct very fine laminae. Regular thick parting. Rare fine gray silty to granular tuff layers. Sparse ostracods in upper part.

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811.3	812.7	Oil shale: Medium to light and some dark olive gray, moderately to slightly calcareous. Faint to moderately distinct, smooth to some distorted and displaced laminae. Irregularly banded tan to light brownish-gray algal limestone in upper 2-inches. Thin gray analcite layer at 811.9 and a 1-inch biotitic analcite layer at base. Sample of analcite tuff band from 812.7 feet: X-ray - analcite, quartz, feldspar, calcite, biotite.
812.7	820.4	Oil shale: Medium to dark olive gray and neutral gray, calcareous. Faintly to distinctly laminated. Regular thick to medium parting. Some fine to thin, light to medium gray silty layers. Occasional ostracod covered parting surfaces.
820.4	821.4	Oil shale: Dark slightly brownish gray, dolomitic. Very faintly laminated. Regular thick to medium parting. Abundant ostracods. Sample of dark gray oil shale from 821.1 feet: X-ray - quartz, analcite, illite, feldspar, calcite, dolomite, pyrite.
821.4	822.5	Oil shale: Dark to medium gray and olive gray, slightly calcareous to dolomitic. Faint to some moderately distinct very fine laminae and streaked bedding. Slightly irregular to regular, thick to medium parting. Abundant ostracods. A 0.1-foot faintly streaked gray mudstone band at 821.6 and a 1/2-inch band at 821.9.
822.5	828.4	Oil shale: Dark to medium brownish gray and rare neutral gray, dolomitic. Faint laminae and streaked bedding. Regular to irregular, thick to medium parting. Abundant ostracods in upper part becoming sparse below 826.0. A 2-inch irregular brownish-gray to gray very fine sandy-textured tuff at base. Sample of sandy-textured biotitic tuff from 828.3 feet: X-ray - quartz, analcite, feldspar, biotite, calcite, hornblende, pyrite.
828.4	829.4	Oil shale: Dark brownish-gray to black with very abundant very distinct tan to buff laminae, calcareous. Some very small horizontal folds. Few very fine crystalline calcite streaks in lower part. Rare fine sandy-textured tuff streaks in lower part. Sample of distinctly laminated black and buff oil shale from 828.8 feet: X-ray - aragonite, quartz, calcite, dolomite, analcite, feldspar, illite.

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829.4	829.7	Oil shale and mudstone: Dark brownish-gray faintly streaked oil shale with some fine dense brown dolomite streaks in upper half; olive-gray marly mudstone with few very fine dark laminae in lower half.
829.3	830.7	Oil shale: Dark to medium brownish gray, dolomitic to calcareous. Faint very fine fairly regular to very distorted laminae and streaked bedding. Rare fine silty to sandy streaks in lower part.
830.7	831.2	Oil shale: Medium to dark brownish gray, calcareous. Faint to moderately distinct very fine distorted to fairly regular laminae and streaks. Some fine to thin gray silty to sandy laminae and streaks.
831.2	831.35	Marlstone: Gray buff to light and some medium brownish gray, silty, slightly calcareous or dolomitic. Faint to moderately distinct laminae.
831.35	831.55	Tuff: Light slightly brownish gray in upper part becoming dark gray and very biotitic near base, very fine grained. Sample of dark gray biotitic tuff from 831.5 feet: X-ray - quartz, analcite, feldspar, biotite, pyrite, hornblende.
831.55	831.60	Oil shale: Light to rare dark brownish gray, finely laminated.
831.6	833.6	Oil shale: Medium to dark brownish gray (slightly reddish in upper half foot), calcareous. Faint very fine laminae and streaked bedding; contorted zone with abundant fine brown dense to crystalline laminae and streaks at 832.6-832.8. Regular thick parting. A 1/2-inch gray fine-grained analcite band at 832.1; a thin dark gray silty lamina at 832.9.
833.6	835.9	Oil shale: Dark to medium brownish gray, calcareous. Faint very fine laminae. Fairly regular thick to some thin parting. Sample of oil shale from 835.2 feet: X-ray - calcite, quartz, analcite, illite, feldspar.
835.9	837.0	Oil shale: Medium to dark brownish gray and rare neutral gray, calcareous. Faint to some moderately distinct laminae and streaked bedding. Regular to irregular thick parting. A thin gray granular analcite layer near base.
837.0	840.3	Oil shale: Medium to some dark brownish gray, calcareous. Faint to moderately distinct laminae. Fairly regular thick parting. Occasional thin to fine, gray to brownish gray, silty to granular tuff layers. Very rare small brown nodules.

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From	To	Description
840.3	841.1	Oil shale: Medium to very dark brownish gray and some grayish brown to tan, calcareous. Faint to rare distinct laminae and streaked bedding. Regular thick to medium parting.
841.1	841.8	Oil shale: Tan to grayish brown, calcareous to dolomitic. Distinct to faint very fine laminae. Regular thick to medium parting. Sample of tan to grayish-brown oil shale from 841.4 feet: X-ray - calcite, dolomite.
841.8	842.5	Oil shale: Medium to very dark brownish gray, calcareous. Faint very fine laminae. Regular to some irregular, thick to thin parting. Rare fine gray silty laminae. Some very fine pyrite specks and streaks.
842.5	843.4	Oil shale: Medium to some dark and light brownish gray, calcareous. Fairly distinct to faint very fine laminae and streaked bedding. A 3/4-inch irregular vertical gray to brownish-gray, silty, calcareous stringer in upper half foot. A very thin light brownish-gray silty layer with abundant very fine black specks (hornblende?) at 843.1. Sample of vertical silty stringer from 842.9 to 843.0 feet: X-ray - quartz, feldspar, calcite, pyrite, dolomite, biotite, hornblende. Sample of very thin silty layer with hornblende (?) from 843.1 feet: X-ray - analcite, quartz, feldspar, calcite, pyrite, hornblende.
843.4	843.8	Oil shale and tuff: One-inch dark brownish-gray oil-shale bands at top and 843.7; 1-3/4-inch buff to light brownish-gray tuff at 843.6 with very abundant biotite in lower part (very fine dark prismatic crystalline layer at base of tuff); and a 1/2- to 1-inch irregular biotitic (?) tuff at base with a thin pyritic dolomite layer in middle. Sample of biotitic tuff at bottom of thick layer from 843.6 feet: X-ray - feldspar, quartz, biotite, hornblende, analcite, pyrite, dolomite, calcite. Sample of biotitic (?) tuff from 843.7 feet: X-ray - quartz, feldspar, calcite, analcite, biotite, dolomite, hornblende, pyrite.
TOP OF WILKINS PEAK MEMBER		
843.8	846.5	Oil shale: Olive gray to gray green, dolomitic. Faintly bedded with some very faint laminae.

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From	To	Description
		Irregular parting and fracture. Rare pyrite crystals and streaks.
		Sample of olive-gray oil shale from 844.6 feet: X-ray - dolomite, quartz, calcite, feldspar, illite, aragonite.
846.5	847.5	Oil shale: Medium to some dark olive gray and brownish gray, dolomitic. Faint streaked bedding and rare moderately distinct laminae and bands. Irregular parting and fracture.
847.5	848.1	Oil shale: Dark brownish gray, dolomitic. Faint streaked bedding. Irregular parting and fracture. Sample of dark brownish-gray oil shale from 847.7 feet: X-ray - dolomite, calcite, quartz, feldspar, aragonite, illite.
848.1	849.0	Oil shale: Grayish brown, calcareous. Very finely laminated; abundant very fine distinct buff to nearly white streaks from 848.3 to 848.6. Regular thick parting. Some very fine pyrite blebs and streaks in lower part. Sample of oil shale with abundant very fine buff streaks and lenses from 848.4 feet: X-ray - calcite, dolomite.
849.0	849.2	Oil shale: Dark brownish gray. Very finely laminated. Regular thin parting. Abundant fine pyrite lenses and streaks. Very abrupt flat contact with brown oil shale below.
849.2	850.6	Oil shale: Medium and rare light brown in upper part becoming olive gray in lower part, dolomitic. Faintly streaked with some moderately distinct fine to thin laminae. Regular to irregular, thick to some thin parting. Some very fine calcite lenses, streaks, and laminae below 850.1. Large nodular to angular dense dark slightly brownish gray cherty inclusions in lower two inches. Sample of brown oil shale from 849.3 feet: X-ray - dolomite, calcite, quartz, montmorillonite, feldspar. Sample of hard dark dense inclusions from 850.5 feet: X-ray - quartz.
850.6	852.2	Marlstone and oil shale: Light to medium brownish-gray dolomitic marlstone finely to thickly interfingered with dark brownish-gray to black oil-shale stringers and shreds. Abundant silty to granular crystalline calcite streaks, stringers, and patches--commonly

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From	To	Description
		with very fine pyrite blebs. Sparse biotite flakes and other dark minerals. Sample of marlstone with calcite and pyrite patches from 852.1 feet: X-ray - calcite, feldspar, dolomite, pyrite, quartz?, angite? or Mg calcite?
852.2	852.9	Oil shale: Black to very dark and rare medium brownish gray, dolomitic. Very faint very fine streaked bedding. Regular to irregular, thick to medium parting. Some thin to fine granular crystalline streaks in lower 0.3 foot. A thin irregular dense brownish-gray lens at 852.8. Sample of black oil shale from 852.5 feet: X-ray - quartz, feldspar, illite, dolomite, pyrite.
852.9	853.2	Tuff: Brown to light brownish gray, becoming silty in lower part. Massive, with thin black oil-shale stringers 1-inch from top. Sharp smooth upper contact; wavy lower contact. Sample of silty tuff from 853.1 feet: X-ray - K feldspar, quartz.
853.2	853.9	Oil shale: Medium and some dark olive gray, slightly calcareous. Faint to fairly distinct streaked bedding. Fairly common small pale brown granular crystalline calcite patches and streaks. Sample of oil shale with calcite patches and streaks from 853.8 feet: X-ray - calcite, dolomite, quartz.
853.9	855.0	Oil shale: Medium olive and brown, slightly to moderately calcareous. Moderately distinct to faint streaked bedding. Some granular to silty calcite streaks. A 1/2-inch buff mudstone band with abundant fine dark pyritic blebs at base; abundant biotite on lower parting surface; irregular knobby white mudstone bulges 1/2-inch into marlstone below. Sample of brown oil shale from 854.6 feet: X-ray - montmorillonite, calcite, feldspar, quartz, dolomite. Sample of white biotitic tuff from 855.00 to 855.05 feet: X-ray - K and Na feldspars, quartz, biotite, hornblende, calcite.
855.0	856.0	Marlstone: Light olive gray to medium slightly greenish gray, dolomitic. Massive to very faintly streaked.

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		Abundant fine pyritic calcite blebs in lower part. A 1/2-inch buff silty band mottled with gray pyritic specks at 855.9. Sample of buff and gray mottled band from 855.9 feet: X-ray - quartz, calcite, feldspar, pyrite.
856.0	859.3	Marlstone and oil shale: Almost neutral gray to olive and some brownish gray, dolomitic to slightly calcareous. Nearly massive to faintly streaked. Abundant fine to 3/4-inch, silty to granular crystalline calcite streaks, stringers, and patches--commonly with pyrite. Abundant disseminated pyrite in oil shale in lower part. Sample of gray marlstone from 857.8 feet: X-ray - dolomite, quartz, feldspar, illite, montmorillonite.
859.3	865.8	Marlstone: Slightly brownish and greenish gray, dolomitic. Very faint streaked bedding and rare laminae. Abundant very fine disseminated pyrite crystals. Variable amounts of calcite stringers, streaks, patches, and crystals. Sample of marlstone with abundant very fine disseminated pyrite crystals from 861.1 feet: X-ray - dolomite, quartz, feldspar, montmorillonite, illite, ferroan. Sample of marlstone with abundant calcite crystals from 864.6 feet: X-ray - calcite, quartz, montmorillonite, illite, feldspar.
865.8	869.9	Oil shale: Olive green to greenish gray, slightly calcareous. Faintly streaked. Abundant calcite streaks and patches. Abundant very fine pyrite crystals in upper part. Indistinctly bounded light gray to gray-buff silty biotitic (?) tuff at 867.1-867.2--contains small indistinct marlstone and calcite patches.
869.9	870.9	Oil shale: As above and below with very abundant light silty-textured calcite streaks.
870.9	871.9	Oil shale: Olive green, slightly calcareous. Faint streaked bedding and some slightly distorted laminae. Abundant coarsely crystalline calcite patches and streaks. Sample of oil shale with coarse calcite from 871.1 feet: X-ray - calcite, dolomite, quartz, montmorillonite, feldspar.

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871.9	873.9	Oil shale: Medium to rare dark olive and greenish gray, dolomitic. Faint streaked bedding. Abundant disseminated pyrite crystals and fine blebs. A 3/4-inch light brownish-gray silty tuff at 872.0. Sample of light brownish-gray silty tuff from 872.0 feet: X-ray - K and Na feldspars.
873.9	877.0	Oil shale: Olive green and olive gray, dolomitic to slightly calcareous. Faint streaked bedding. Abundant pyrite. Abundant fine silty-textured calcite streaks and small nodules in some zones.
877.0	879.2	Oil shale: Medium to some light grayish green, dolomitic to slightly calcareous. Faint streaked bedding. Abundant pyrite. Some calcite streaks and patches.
879.2	881.5	Oil shale: Olive green and medium to rare dark olive gray, dolomitic. Distinct to faint streaked bedding and some very fine laminae. Abundant pyrite in upper part. Sample of olive-gray oil shale from 880.5 feet: X-ray - calcite, dolomite, quartz, feldspar, illite, montmorillonite.
881.5	882.3	Oil shale: Medium to light olive, dolomitic. Faintly laminated to very faintly streaked. Some pyrite.
882.3	884.1	Marlstone: Olive and greenish to almost neutral gray, dolomitic to slightly calcareous. Faint to rare distinct laminae and bands. Abundant pyrite crystals in some zones. Occasional fine to thin gray silty streaks and layers. A 3/4-inch lenticular buff marlstone layer at 883.05. Sample of thin gray silty layer from 883.0 feet: X-ray - quartz, K feldspar, calcite, montmorillonite.
884.1	885.4	Marlstone: Light to medium grayish green, dolomitic. Faint streaked bedding. Abundant fine calcite streaks and blebs; thin zone of coarse crystals at 885.2. Sample of coarsely crystalline calcite with some marlstone from 885.2 feet: X-ray - calcite, quartz, dolomite.
885.4	886.5	Oil shale: Medium to very rare dark grayish and olive green. Faint to some distinct streaked bedding. Abundant thin light massive marlstone lenses and fine streaks in upper 2 inches. Abundant fine crystalline calcite streaks.

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886.5	887.8	Oil shale: Medium to rare dark olive green and olive gray, dolomitic. Moderately distinct to faint streaked bedding. Fairly abundant fine calcite streaks.
887.8	889.3	Oil shale: Medium to some dark olive gray and greenish gray, dolomitic. Faint streaked bedding and some very fine laminae. Abundant fine to small calcite streaks, blebs, and patches. Sample of oil shale with fine calcite blebs and streaks from 888.2 feet: X-ray - calcite, dolomite, quartz, feldspar, illite.
889.3	894.4	Oil shale: Medium to rare light greenish gray and olive gray, dolomitic. Faint streaked bedding and some laminae. Some very fine disseminated pyrite. A 1- to 1-1/2-inch light yellowish-gray to gray-buff silty tuff band at 894.3 and a thin light slightly olive gray layer at base. Sample of tuff from 894.3 feet: X-ray - quartz, K feldspar, illite.
894.4	897.2	Oil shale: Olive gray and some brownish gray, dolomitic. Faint laminae and streaked bedding. Some very fine pyritic blebs, streaks, and disseminated crystals. Irregular broken and displaced 3/4-inch dark gray to black silty layers at 896.3 and 896.5. Sample of dark gray silty layer from 896.5 feet: X-ray - Na feldspar, pyrite, quartz.
897.2	899.2	Oil shale and marlstone: Medium to rare light olive gray becoming almost neutral in lower part, slightly calcareous to dolomitic. Faint streaked bedding and some laminae. Fairly abundant fine pyrite streaks and blebs.
899.2	900.2	Oil shale: Olive gray to some light and medium brownish gray, dolomitic. Faint streaked bedding. Some silty calcareous stringers, streaks, and blebs.
900.2	901.2	Oil shale: Olive gray and brownish gray, dolomitic. Faint streaked bedding. A thin broken and displaced vermiform light brownish-gray marlstone stringer in upper 0.4 foot. Some fine dense gray and brownish-gray lenses and blebs in lower part.
901.2	902.2	Oil shale: Medium to rare dark olive gray and brownish gray. Faint streaked bedding. Few small dark gray silty nodules at 901.4.
902.2	904.0	Oil shale: Olive gray to some olive green, dolomitic. Faint streaked bedding; some laminae near top. Massive buff silty to earthy tuff at 902.4-902.7. A 1-1/2-inch massive tan dolomite (?) band at 903.6.

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from U.S. Bureau of Mines Wyoming Corehole No. 2 (Con.)

Surface elevation: 6,721 feet
 Cored interval: 720.0 to 1,117.2 feet

From	To	Description
		Sample of buff tuff from 902.6 feet: X-ray - K feldspar, quartz, calcite.
		Sample of white efflorescent powder from outside of core from 902.4-902.7 feet: X-ray - thermonatrite.
		Sample of massive tan band from 903.6 feet: X-ray - quartz.
904.0	905.1	Marlstone: Medium olive gray to almost neutral gray, dolomitic. Very faintly banded and laminated to streaked. Mostly hard and dense; irregular to conchoidal fracture. Some fine pyrite blebs and streaks. Fine silty calcite streaks becoming abundant in lower part.
		Sample of hard gray marlstone from 904.5 feet: X-ray - dolomite, quartz, feldspar, illite.
905.1	905.8	Oil shale: Olive gray. Faintly streaked, becoming speckled with very abundant fine to 1/8-inch colorless transparent calcite crystals.
		Sample of oil shale with abundant calcite crystals from 905.6 feet: X-ray - calcite, dolomite, quartz, illite, feldspar, gaylussite.
905.8	908.5	Oil shale: Dark brownish gray to some black; some satiny to resinous streaks. Faint streaked bedding; some small irregular grayish-brown dolomite lenses and nodules. Abundant fine to 1/8-inch colorless to pale yellowish-gray calcite crystals.
		Sample of very dark brownish-gray oil shale from 906.2 feet: X-ray - dolomite, quartz, calcite, feldspar, illite, pyrite.
		Sample of dark brownish-gray oil shale with calcite from 907.8 feet: X-ray - dolomite, quartz, shortite, illite, feldspar.
908.5	909.4	Oil shale: Olive gray to grayish green. Faintly streaked. Abundant coarse colorless to pale brown calcite crystals.
909.4	911.5	Marlstone and mudstone: Medium and light olive to greenish gray, dolomitic. Very faint streaked bedding. Some unctuous marlstone with irregular thin parting in upper part. Abundant very fine pyrite blebs in some zones in lower part.
		Sample of light olive-gray unctuous shaly marlstone from 910.4 feet: X-ray - dolomite, montmorillonite, quartz.
911.5	913.0	Oil shale: Olive green. Faint streaked bedding. Very abundant fine to coarse calcite crystals.

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from U.S. Bureau of Mines Wyoming Corehole No. 2 (Con.)

Surface elevation: 6,721 feet

Cored interval: 720.0 to 1,117.2 feet

From	To	Description
913.0	916.0	Oil shale: Olive gray, faint streaked bedding; finely laminated buff zone at 913.7-914.0. Abundant calcite crystals.
916.0	918.1	Marlstone: Olive gray to almost neutral, dolomitic. Faint streaked bedding. Abundant calcite crystals-- sometimes concentrated in thin layers. Sample of gray marlstone with thinly layered calcite crystals from 917.6 feet: X-ray - shortite, dolomite, quartz.
918.1	919.4	Oil shale: Medium to some dark and rare light olive gray and brownish gray, dolomitic. Faint streaked bedding. Abundant calcite crystals. Occasional small brown dolomite nodules and thin stringers in lower part. Sample of olive-gray oil shale with few calcite crystals from 918.7 feet: X-ray - dolomite, quartz, feldspar, illite.
919.4	921.1	Oil shale: Dark to some medium brownish gray, dolomitic. Faint to some fairly distinct streaked bedding and distorted laminae. Abundant coarse calcite crystals and some short vermiform stringers.
921.1	924.4	Oil shale: Olive gray to brownish gray, dolomitic. Very faint streaked bedding to some moderately distinct laminae and bands. Very abundant fine-grained calcite patches to very coarse disseminated crystals. Sample of olive-gray oil shale with fine-grained calcite patches from 921.2 feet: X-ray - shortite, dolomite, quartz, feldspar. - Sample of coarse calcite crystals from 924.0-924.3 feet: X-ray - shortite.
924.4	926.4	Oil shale: Very dark to some medium brownish gray, dolomitic. Faint streaked bedding. A fine diagonal calcite-filled fracture at 924.8-925.0. Abundant calcite crystals in lower part. Sample of dark brownish-gray oil shale from 924.6 feet: dolomite, quartz, calcite, feldspar, pyrite, illite.
926.4	926.8	Banded Tuff: Buff, silty, dolomitic. Faintly laminated to banded. Abundant very fine irregular vertical gray fracture fillings. Sample of tuff from 926.8 feet: X-ray - K feldspar, pyrite.
926.8	927.0	Oil shale: Very dark brownish gray. Faint streaked bedding and very fine laminae. Some coarse calcite crystals.

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from U. S. Bureau of Mines Wyoming Corehole No. 2 (Con.)

Surface elevation: 6,721 feet

Cored interval: 720.0 to 1,117.2 feet

From	To	Description
927.0	927.4	Oil shale: Brownish gray and olive gray. Faint very fine laminae and streaked bedding. Abundant calcite crystals.
927.4	929.6	Oil shale: Olive gray to olive green, dolomitic. Very faint streaked bedding and rare thin laminae. Very abundant coarse calcite crystals and some fine-grained patches and stringers.
929.6	933.0	Marlstone: Slightly olive to almost neutral gray, slightly calcareous to dolomitic. Faint streaked bedding and some laminae. Some fine calcite (or shortite?) streaks and stringers. Sample of marlstone with crystalline stringers from 932.8 feet: X-ray - dolomite, quartz, shortite, feldspar.
933.0	933.3	Tuff: Buff; faintly laminated and banded. Some very fine pyrite streaks and blebs. Some very fine to thin biotitic layers. Sample of biotitic tuff from 933.2 feet: X-ray - K and Na feldspars, biotite, hornblende, pyrite.
933.3	935.3	Oil shale: Medium to dark brownish gray and brown; some resinous black streaks near base. Faint to moderately distinct streaked bedding. Very abundant coarse calcite crystals and rare fine-grained crystalline streaks and patches. A thin olive-gray silty tuff stringer at 934.9. Sample of thin silty tuff stringer from 934.9 feet: X-ray - K and Na feldspars, shortite, biotite, hornblende, pyrite.
935.3	936.4	Oil shale: Olive gray. Very faintly streaked to massive. Very abundant coarse calcite crystals.
936.4	939.6	Marlstone: Medium and some light olive gray to almost neutral gray. Faintly streaked to some faint laminae and bands. Abundant calcite blebs in upper part. Abundant fine silty pyritic calcareous layers and streaks in lower part. Sample of light olive-gray marlstone with rare very fine pyritic streaks from 937.9 feet: X-ray - dolomite, quartz, calcite, pyrite, feldspar, illite.
939.6	940.6	Marlstone: Olive gray to tan, dolomitic. Very faintly bedded. Very abundant shortite (?) crystals in lower half. Sample of marlstone with abundant shortite from 940.2 feet: X-ray - shortite, dolomite, quartz.

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from U.S. Bureau of Mines Wyoming Corehole No. 2 (Con.)

Surface elevation: 6,721 feet
 Cored interval: 720.0 to 1,117.2 feet

From	To	Description
940.6	942.6	Oil shale: Medium to very dark brownish gray. Faint streaked bedding. Abundant coarse calcite crystals. Rare thin brown marlstone lenses. Sample of dark brownish-gray oil shale with some coarse calcite crystals from 942.0 feet: X-ray - dolomite, quartz, feldspar, shortite, illite.
942.6	943.0	Oil shale: Grayish brown and some olive gray. Faint to moderately distinct streaked bedding. Abundant calcite crystals.
943.0	944.6	Marlstone: Medium to light olive and rare buff, dolomitic. Faintly streaked to massive. Some coarse colorless to very pale yellowish-gray calcite crystals. A thin stringer of coarse yellowish-green shortite (?) near base. Sample of coarsely crystalline shortite from 944.5 feet: X-ray - shortite; trace quartz, pyrite.
944.6	947.2	Marlstone and mudstone: Medium to some light gray green, dolomitic. Very faintly banded. Very abundant colorless to greenish-yellow crystals, commonly concentrated in thin to 2-inch zones. Sample of greenish-gray mudstone from 946.2 feet: X-ray - dolomite, quartz, illite, feldspar.
947.2	949.6	Oil shale: Grayish brown in upper part to olive green in lower part, dolomitic. Faintly banded. Fairly abundant coarse crystals. Sample of grayish-brown oil shale from 947.3 feet: X-ray - dolomite, quartz, feldspar, pyrite.
949.6	953.1	Marlstone: Gray green. Very faintly streaked to massive. Very abundant crystals; almost solid crystals in lower 0.6 foot. A 1-inch white earthy biotitic tuff band at top (broken up). Sample of white biotitic tuff from 949.6-949.7 feet: X-ray - dolomite, quartz, K feldspar, biotite. Sample of thick crystalline zone from 952.7 feet: X-ray - shortite, gaylussite, dolomite, quartz, calcite, illite, loughlinite.
953.1	956.1	Oil shale: Very dark to some medium brownish gray; some black satiny to resinous streaks. Faint to

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from U.S. Bureau of Mines Wyoming Corehole No. 2 (Con.)

Surface elevation: 6,721 feet

Cored interval: 720.0 to 1,117.2 feet

From	To	Description
		some distinct streaked bedding. Abundant coarse disseminated crystals. A 2-inch band of dense olive-gray marlstone at 953.3.
956.1	958.2	Oil shale: Brownish gray in upper part grading to olive gray in lower part. Very faintly streaked to banded. Very abundant coarse crystals in upper part decreasing somewhat in lower part. Sample of brownish-gray oil shale with very abundant crystals from 956.3 feet: X-ray - shortite, dolomite, quartz, feldspar.
958.2	959.5	Marlstone: Slightly olive to neutral gray. Very faintly bedded. Rare coarse crystals and thin very pyritic crystalline streaks. Sample of thin very pyritic crystalline streak from 958.7 feet: X-ray - pyrite, shortite.
959.5	960.7	Marlstone: Light to medium olive gray. Very faint streaked bedding. Thinly bedded buff to tan tuffs with some biotite in upper inch. Some thin chalky white biotitic tuff layers at 960.0-960.3 (broken core). Sample of buff tuff from 959.6 feet: X-ray - K feldspar, dolomite, biotite, hornblende. Sample of chalky white tuff from 960.3 feet: X-ray - K and Na feldspars, biotite, hornblende.
960.7	962.0	Marlstone: Slightly olive and greenish gray. Faint streaked bedding. Abundant fine to coarse crystals.
962.0	966.6	Oil shale: Medium to rare dark olive gray and brownish gray. Faint streaked bedding. Very abundant colorless to greenish-yellow crystals (1/32- to 3/4-inch). Sample of very coarse greenish-yellow shortite crystals from 962.0-963.0 feet: X-ray - shortite. Sample of oil shale with colorless to very pale greenish calcite (?) crystals from 965.7 feet: X-ray - shortite, dolomite, quartz, feldspar, illite.
966.6	969.2	Oil shale and marlstone: Medium to light olive gray and olive green. Faint streaked bedding to massive. Abundant coarsely crystalline streaks, patches, and layers. A 1/2-inch buff tuff with some biotite at 967.6 feet; few fine silty biotitic streaks 1/4-inch above tuff. Sample of thin buff tuff from 967.6 feet: X-ray - K feldspar, quartz, biotite.

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from U.S. Bureau of Mines Wyoming Corehole No. 2 (Con.)

Surface elevation: 6,721 feet
 Cored interval: 720.0 to 1,117.2 feet

From	To	Description
969.2	973.0	Oil shale: Dark to medium grayish brown and some olive gray. Faint to moderately distinct streaked bedding. Abundant coarse disseminated crystals. Sample of medium to very dark grayish-brown oil shale with coarse calcite (?) crystals from 971.5 feet: X-ray - shortite, dolomite, quartz, feldspar.
973.0	973.7	Marlstone: Light olive gray and greenish gray, dolomitic. Massive to faintly streaked. Some very thin tan to reddish-brown tuffaceous layers and few coarsely crystalline streaks in lower 0.3 foot.
973.7	974.6	Marlstone: Medium and some light olive gray to almost neutral gray. Irregularly layered and streaked with very abundant fairly coarsely crystalline calcite (?). Sample of crystalline layer from 974.2 feet: X-ray - shortite; some dolomite, quartz, loughlinite.
974.6	975.1	Oil shale: Olive green to rare brownish gray. Faint streaked bedding. Abundant coarse calcite crystals.
975.1	976.1	Oil shale: Olive gray to some medium and rare dark brownish gray. Faint to some moderately distinct streaked bedding. Abundant coarse calcite. A very irregular 1-1/2-inch grayish-brown tuff stringer at base; thin short stringers extending into oil shale below. Sample of grayish-brown tuff from 976.1 feet: X-ray - K feldspar, biotite, shortite, hornblende.
976.1	977.0	Oil shale: Very dark to some medium brownish gray. Faint streaked bedding. Abundant calcite crystals and crystalline patches. Sample of dark brownish-gray oil shale from 976.4 feet: X-ray - dolomite, feldspar, quartz, illite, pyrite.
977.0	978.0	Oil shale: Olive gray to greenish gray. Faint streaked bedding. Abundant coarse calcite crystals.
978.0	979.7	Marlstone: Slightly olive and greenish gray, dolomitic. Faint streaked bedding. Abundant calcite crystals. Sample of greenish-gray marlstone from 979.3 feet: X-ray - dolomite, quartz, loughlinite, illite.
979.7	981.6	Marlstone and oil shale: Tan to medium and rare dark brownish gray and olive gray. Faint to fairly distinct streaked bedding becoming irregularly banded in lower

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from U.S. Bureau of Mines Wyoming Corehole No. 2 (Con.)

Surface elevation: 6,721 feet
 Cored interval: 720.0 to 1,117.2 feet

From	To	Description
		part. Abundant coarse calcite.
		Sample of tan marlstone from 981.4 feet: X-ray - dolomite, quartz, feldspar.
981.6	982.1	Main Tuff: Very light gray to white, earthy to chalky. Massive. Abundant very fine black specks. Thick furry white efflorescent coating on outside of core. Sample of tuff from 981.7-981.8 feet: X-ray - quartz, K and Na feldspars, biotite.
		Sample of white efflorescence from 981.6 to 982.1 feet: X-ray - thermonatrite.
982.1	984.0	Marlstone and oil shale: Tan to medium brownish gray and olive gray. Faintly streaked to variegated. Abundant calcite crystals.
984.0	986.6	Marlstone: Olive green to olive gray. Faintly variegated to streaked. Very abundant calcite (?) crystals. Sample of olive-green marlstone with very abundant coarse crystals from 985.0 feet: X-ray - shortite, dolomite, quartz, illite, feldspar, loughlinite.
986.6	988.4	Oil shale: Medium to some dark brownish gray and olive gray. Faint streaked bedding. Abundant coarse crystals and some crystalline stringers. A 3/4-inch dense silty grayish-brown tuff band at base. Sample of dense silty grayish-brown tuff from 988.4 feet: X-ray - K and Na feldspars, biotite, hornblende.
988.4	991.0	Marlstone: Gray to olive gray. Very faint streaked bedding. Abundant very coarse to fine crystals and crystalline streaks. Sample of coarse crystals from 988.9-989.6 feet: X-ray - shortite.
991.0	992.5	Oil shale: Olive to olive green. Massive to faintly streaked. Abundant calcite in parts becoming sparse and concentrated in thin zones in lower part.
992.5	996.3	Oil shale and marlstone: Olive and greenish gray to almost neutral. Abundant fairly coarse crystals.
996.3	997.6	Oil shale: Medium to some light olive and brownish gray. Faint streaked bedding. Abundant coarse to fine calcite crystals and stringers.
997.6	1,001.8	Marlstone: Gray to gray green. Faint streaked bedding. Abundant crystals and crystalline streaks. Sample of gray marlstone with crystals and crystalline streaks from 1,000.4 feet: X-ray - dolomite, quartz, shortite, pyrite, feldspar, illite.

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from U.S. Bureau of Mines Wyoming Corehole No. 2 (Con.)

Surface elevation: 6,721 feet

Cored interval: 720.0 to 1,117.2 feet

From	To	Description
1,001.8	1,002.9	Oil shale: Olive gray and olive brown to tan. Massive with some faint banding. Abundant calcite crystals.
1,002.9	1,004.5	Oil shale: Brownish gray and olive gray. Faint streaked bedding. Very abundant relatively fine disseminated calcite crystals. Sample of brownish-gray oil shale with calcite crystals from 1,003.8 feet: X-ray - dolomite, quartz, shortite, feldspar, illite.
1,004.5	1,006.5	Oil shale: Medium to dark brownish gray and olive gray becoming almost neutral in lower part. Faint streaked bedding and some fine laminae. Abundant crystals as above.
1,006.5	1,008.5	Oil shale (?): Greenish gray. Faint distorted streaked bedding. Abundant fairly fine-grained calcite streaks and stringers commonly cutting across bedding. Sample of greenish-gray oil shale with calcite stringers from 1,008.1 feet: X-ray - shortite, dolomite, illite, feldspar, quartz, loughlinite.
1,008.5	1,012.4	Marlstone: Medium to light gray with some slight brown to green tint, dolomitic. Faint streaked bedding and some thin to fine laminae. Abundant crystals. Rare fine to small massive pyrite blebs.
1,012.4	1,013.7	Marlstone: Medium to light gray green, dolomitic. Faintly streaked with some indistinct thin to fine layers. Moderately abundant fine calcite blebs and streaks. Some fine pyrite blebs. A 1-1/2-inch light dirty gray silty to very fine sandy-textured limestone band with some very fine pyrite crystals at base. Sample of silty limestone from 1,013.6-1,013.7 feet: X-ray - dolomite, calcite, quartz, shortite.
1,013.7	1,014.7	Marlstone: Slightly greenish and olive gray. Faintly streaked and layered. Abundant calcite (?) crystals.
1,014.7	1,015.7	Oil shale: Olive gray to olive green. Very faint streaked bedding. Very abundant calcite crystals.
1,015.7	1,017.3	Oil shale: Medium to dark olive gray and some brownish gray. Faint streaked bedding and some thin to fine laminae. Abundant fine to coarse calcite crystals. A thin tan silty to very fine sandy-textured stringer with some fine gray blebs at 1,015.8. Sample of thin tan tuff stringer from 1,015.8 feet: X-ray - K and Na feldspars, pyrite, shortite, biotite, hornblende.

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from U.S. Bureau of Mines Wyoming Corehole No. 2 (Con.)

Surface elevation: 6,721 feet

Cored interval: 720.0 to 1,117.2 feet

From	To	Description
1,017.3	1,019.1	Oil shale: Olive gray and olive green. Faint streaked bedding. Abundant calcite crystals; thin to fine crystalline stringers cutting bedding in lower part.
1,019.1	1,020.2	Marlstone: Almost neutral to olive gray. Faint streaked bedding. Fairly abundant calcite crystals in lower half. Some very fine pyrrhotite (?) in upper part. Sample of gray marlstone from 1,019.4 feet: X-ray - dolomite, quartz, calcite, feldspar, illite.
1,020.2	1,022.8	Oil shale: Medium to rare light olive gray and olive green, some brownish gray in lower half foot. Faint streaked bedding. Very abundant fine to coarse calcite crystals. A thin tan silty marlstone layer at 1,021.0. Sample of thin tan layer from 1,021.0 feet: X-ray - K feldspar. Sample of olive-gray oil shale with very abundant calcite crystals from 1,021.5 feet: X-ray - dolomite, quartz, shortite, feldspar, illite, calcite.
1,022.8	1,023.8	Oil shale and marlstone: Olive gray to buff. Distinctly laminated to very faintly streaked; some platy marlstone breccia at 1,022.9-1,023.0. Abundant calcite crystals. Thin dense buff marlstone lenses at base. Sample of marlstone breccia from 1,023.0 feet: X-ray - dolomite, quartz, pyrite, feldspar.
1,023.8	1,025.0	Oil shale (?): Olive gray and olive green. Faint streaked bedding and some thin laminae. Abundant fine to coarse crystals.
1,025.0	1,027.0	Marlstone and oil shale: Medium to light olive and gray green. Faintly streaked to banded and laminated. Some very fine pyrite specks and streaks. A very thin brownish-gray to light gray, silty to very fine sandy-textured layer at 1,025.5. Sample of marlstone with thin silty layer from 1,025.5 feet: X-ray - quartz, feldspar, dolomite. Sample of light gray-green marlstone from 1,026.2 feet: X-ray - dolomite, quartz, feldspar, illite.
1,027.0	1,030.2	Marlstone: Medium to light gray and gray green. Faintly laminated and banded. Abundant fine pyrite (and pyrrhotite?) specks. Rare thin light gray calcareous siltstone layers.

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from U.S. Bureau of Mines Wyoming Corehole No. 2 (Con.)

Surface elevation: 6,721 feet
 Cored interval: 720.0 to 1,117.2 feet

From	To	Description
1,030.2	1,031.7	Marlstone: Medium to some light gray and olive gray. Moderately distinct to faint laminae. Rare calcite crystals. Few fine brownish-gray to gray-buff silty biotitic layers near top.
1,031.7	1,033.9	Oil shale: Medium to light and rare dark olive and olive gray. Faintly streaked and laminated. Fairly abundant calcite crystals becoming very abundant in lower 0.3 foot. A 3/4-inch grayish-brown silty tuff at 1,032.1. A very thin blebby biotitic layer at 1,032.8. Sample of grayish-brown tuff from 1,032.1 feet: X-ray - K and Na feldspars, biotite, hornblende.
1,033.9	1,035.0	Oil shale: Medium to dark olive gray and brownish gray. Faint streaked bedding and some regular to distorted and displaced laminae. Fairly abundant fine to coarse calcite crystals. Some small to 1-inch irregular dense gray cherty nodules, lenses, and stringers. Sample of thin dense gray stringer with some coarse crystals from 1,034.6 feet: X-ray - quartz, dolomite, shortite.
1,035.0	1,036.1	Oil shale: Very dark to some medium brownish gray. Faintly streaked and laminated. Abundant fine to rare coarse disseminated crystals. Sample of dark oil shale with some disseminated crystals from 1,035.4 feet: X-ray - dolomite, quartz, calcite, feldspar, pyrite, illite.
1,036.1	1,037.1	Oil shale: Brownish gray to olive gray and olive green. Faintly streaked and laminated. Abundant fine to moderately coarse calcite crystals in upper half. Sample of oil shale with very abundant calcite crystals from 1,036.3 feet: X-ray - dolomite, calcite, quartz, feldspar, illite, shortite.
1,037.1	1,040.3	Marlstone: Medium to light gray green and some neutral gray. Faintly banded and laminated. Abundant very fine pyrrhotite (?) flecks in lower part. Sample of gray-green marlstone from 1,037.3 feet: X-ray - dolomite, calcite, quartz, feldspar, illite.
1,040.3	1,040.8	Marlstone and oil shale: Gray to olive gray. Faintly banded and laminated. Some fine-grained vermiform pyritic calcite stringers.
1,040.8	1,041.8	Oil shale: Medium to rare dark olive gray and brownish gray. Faint very fine laminae and streaked bedding.

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from U.S. Bureau of Mines Wyoming Corehole No. 2 (Con.)

Surface elevation: 6,721 feet
 Cored interval: 720.0 to 1,117.2 feet

From	To	Description
		Abundant fine-grained calcite blebs and streaks. Abundant fine pyrite blebs in middle part.
1,041.8	1,042.4	Oil shale: Medium to very dark brownish gray and olive gray. Faint streaked bedding. Some calcite blebs and streaks.
1,042.4	1,043.7	Oil shale: Dark brownish gray. Faint streaked bedding. Some calcite crystals, becoming fairly abundant in lower part.
1,043.7	1,045.0	Reset depth recorder. Core ends match.
1,045.0	1,046.0	Marlstone: Olive gray to neutral gray. Faintly banded. Abundant fine to 1/16-inch calcite crystals.
1,046.0	1,049.2	Marlstone and mudstone: Gray to some olive gray. Faintly streaked to finely laminated. Fairly abundant fine light gray silty layers. Grades to lean oil shale with abundant buff calcite blebs near base.
1,049.2	1,053.3	Oil shale: Dark to some medium olive gray and brownish gray. Faint streaked bedding. Abundant calcite crystals, patches, and streaks. Some small brownish-gray dolomite nodules near top; few thin tan dolomite streaks and lenses from 1,049.9 to 1,050.7. Sample of dark brownish-gray oil shale from 1,053.1 feet: X-ray - calcite, dolomite, quartz, feldspar, pyrite, ferroan.
1,053.3	1,054.7	Oil shale grading to marlstone: Medium to light olive gray. Faintly streaked to banded. Abundant moderately coarse calcite crystals and crystalline streaks. Sample of olive-gray oil shale with abundant calcite crystals from 1,053.9 feet: X-ray - dolomite, calcite, quartz, feldspar, shortite, illite.
1,054.7	1,057.3	Marlstone: Light olive gray to medium greenish gray. Faint streaked bedding. Fine to thick irregular gray crystalline streaks and layers becoming very abundant toward base. Sample of thick crystalline layer with some marlstone from 1,056.8 feet: X-ray - calcite, dolomite, quartz, shortite, gaylussite.
1,057.3	1,061.4	Oil shale: Medium to dark olive gray and brownish gray. Faint streaked bedding. Abundant calcite crystals, patches, and streaks.
1,061.4	1,063.0	Marlstone and mudstone: Medium to rare dark slightly olive to neutral gray. Faintly streaked to

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from U.S. Bureau of Mines Wyoming Corehole No. 2 (Con.)

Surface elevation: 6,721 feet
Cored interval: 720.0 to 1,117.2 feet

From	To	Description
		laminated and banded. Some fine calcite and pyrite blebs. A thin buff-white silty biotitic tuff stringer at 1,061.9. A 1-inch light gray blebby limestone band at 1,062.7. Sample of thin buff-white biotitic tuff stringer from 1,061.9 feet: X-ray - K and Na feldspars, quartz, biotite, hornblende.
1,063.0	1,064.0	Siltstone: Gray buff to buff white, calcareous. Faintly streaked to mottled and blebby. Occasional fine porous sandy streaks. Sample of buff siltstone from 1,063.5 feet: X-ray - dolomite, calcite, quartz.
1,064.0	1,066.6	Oil shale: Very dark to some medium brownish gray. Faint to some moderately distinct streaked bedding and rare very fine laminae. Some fine tan calcite blebs near base. Sample of very dark brownish-gray oil shale from 1,066.2 feet: X-ray - calcite, dolomite, quartz, feldspar, illite.
1,066.6	1,069.1	Oil shale: Medium olive gray and brownish gray grading to medium and some light greenish gray. Moderately distinct to very faint streaked bedding and some indistinct banding. Abundant fine calcite crystals and high angle crystalline streaks. Abundant pyrite crystals. Sample of greenish-gray oil shale with some calcite crystals and streaks from 1,068.7 feet: X-ray - calcite, dolomite, feldspar, quartz, illite.
1,069.1	1,071.2	Mudstone: Medium to light gray with some very slight green tint, slightly calcareous. Faintly streaked with some fairly distinct laminae and bands. Very abundant disseminated fine flakey pyrrhotite? Sample of gray mudstone with abundant pyrrhotite (?) from 1,069.5 feet: X-ray - dolomite, illite, feldspar, quartz, calcite.
1,071.2	1,072.2	Mudstone and marlstone: Medium to light slightly greenish and olive gray. Faint to moderately distinct laminae. Some pyrrhotite (?) in upper part. A 1-1/2-inch very light gray-buff silty limestone band at 1,071.8. A thin blebby pyritic algal layer at base.
1,072.2	1,073.1	Oil shale: Very dark brownish gray finely speckled and streaked with medium brown spherical crystalline blebs. Distinctly laminated with dense brown dolomite

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from U.S. Bureau of Mines Wyoming Corehole No. 2 (Con.)

Surface elevation: 6,721 feet
 Cored interval: 720.0 to 1,117.2 feet

From	To	Description
		in lower 0.2 foot. Abundant very fine disseminated pyrite crystals. Sample of oil shale with very fine crystalline blebs from 1,072.6 feet: X-ray - dolomite, quartz, calcite, feldspar, illite.
1,073.1	1,073.7	Oil shale: Dark brownish gray to medium olive gray. Faint very fine laminae. Abundant fine dense brown blebs and streaks in upper 0.2 foot. Abundant moderately coarse calcite crystals in lower 0.2 foot. Abundant <u>very</u> fine pyrite crystals. Sample of olive-gray oil shale from 1,073.3 feet: X-ray - calcite, dolomite, quartz, feldspar, pyrite, illite.
1,073.7	1,075.3	Oil shale: Medium to some light olive gray and olive green. Faint streaked bedding and very fine laminae. Very abundant fairly coarse calcite crystals in upper part. Very abundant very fine disseminated pyrite in lower part. Some thin contorted gray silty biotitic stringers at 1,074.7-1,074.9. Sample of olive-green oil shale with very abundant calcite crystals. from 1,073.9 feet: X-ray - calcite, dolomite, quartz, feldspar, ferroan, montmorillonite.
1,075.3	1,083.0	Mudstone: Medium to light greenish and olive gray to some almost neutral gray. Faint to moderately distinct laminae and some thick banding. Very abundant very fine flakey pyrrhotite (?). Some zones are abundantly laminated with light gray calcareous siltstone. Sample of gray-green mudstone with very abundant pyrrhotite (?) from 1,077.9 feet: X-ray - K and Na feldspars, dolomite, illite, quartz, calcite, montmorillonite.
1,083.0	1,084.5	Marlstone: Light to medium and rare dark slightly greenish to olive gray. Faint to distinct laminae and thin bands. Common fine to thin massive crystalline calcite layers (very sparkly crystals). Sample of marlstone with thin crystalline layers from 1,083.5 feet: X-ray - calcite, dolomite, quartz, illite, feldspar.
1,084.5	1,085.6	Oil shale: Black to some grayish brown and rare tan. Faint streaked bedding; some thin tan marlstone laminae near top. Some moderately coarse disseminated round crystals in upper part. Abundant fine to rare small brown dense to silty blebs, streaks, and lenses

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from U.S. Bureau of Mines Wyoming Corehole No. 2 (Con.)

Surface elevation: 6,721 feet

Cored interval: 720.0 to 1,117.2 feet

From	To	Description
		in middle part. Sample of black oil shale with disseminated crystals and some tan marlstone from 1,084.7 feet: X-ray - calcite, dolomite, quartz, feldspar, illite, pyrite.
1,085.6	1,086.0	Oil shale and marlstone: Medium to light olive gray. Very faint streaked bedding. Rare fine pyrite streaks.
1,086.0	1,087.2	Mudstone and siltstone: Medium to light slightly olive to greenish gray and some gray buff, slightly to moderately calcareous. Faint to moderately distinct laminae and bands. Micaceous in silty parts. Very fine flakey pyrrhotite (?) becoming abundant in lower part.
1,087.2	1,088.1	Marlstone (oil shale?): Light to medium olive green. Faintly banded to massive. Fairly abundant pyrrhotite (?) near top. Some fine brown dolomite streaks and laminae in lower part. Sample of olive-green marlstone from 1,087.5 feet: X-ray - dolomite, quartz, feldspar, calcite, illite, loughlinite.
1,088.1	1,089.9	Oil shale: Very dark to some medium grayish brown. Faint streaked bedding. Abundant very fine brown blebs and streaks. Abundant very fine disseminated pyrite. A thin to fine vermiform light brownish-gray limestone stringer from top to 1,088.8. Fairly abundant coarse white calcite crystals in lower 2-inches. Sample of oil shale with fine brown blebs from 1,089.1 feet: X-ray - dolomite, quartz, calcite, feldspar, illite.
1,089.9	1,090.9	Oil shale: Olive gray to olive green. Faint streaked bedding and some very fine laminae. Abundant moderately coarse calcite crystals. Abundant very fine pyrite.
1,090.9	1,092.9	Marlstone and mudstone: Medium to light slightly olive to neutral gray. Faintly streaked to laminated. Abundant flakey pyrrhotite?
1,092.9	1,095.3	Oil shale: Medium to some dark olive gray and brownish gray. Faint to fairly distinct streaked bedding. Very abundant fine round crystalline blebs in upper part to thin irregular stringers and small patches in lower part. Abundant pyrite and pyrrhotite (?) in some zones. A very irregular thin to 1-inch light

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from U.S. Bureau of Mines Wyoming Corehole No. 2 (Con.)

Surface elevation: 6,721 feet

Cored interval: 720.0 to 1,117.2 feet

From	To	Description
		brownish-gray silty dolomite stringer at 1,094.7. A 1/2-inch lenticular light gray silty biotitic tuff near base. Sample of light gray biotitic tuff from 1,095.2 feet: X-ray - calcite, quartz, feldspar, biotite, dolomite, montmorillonite, hornblende.
1,095.3	1,096.4	Oil shale: Medium to rare light olive gray and some brownish gray. Faint streaked bedding. Some moderately coarse calcite and fine pyrite in upper part.
1,096.4	1,097.6	Marlstone and siltstone: Olive gray and greenish gray to very light gray buff. Fairly distinct irregular laminae and bands. Sample of gray-buff siltstone from 1,096.7 feet: X-ray - dolomite, calcite, quartz, feldspar, illite, loughlinite.
1,097.6	1,099.4	Oil shale: Medium to very dark grayish brown, some tan in upper 0.4 foot. Distinct to faint streaked bedding and discontinuous distorted laminae. Fairly abundant very fine pyrite. Occasional thin streaks of fine-grained calcite blebs. Very abundant coarse calcite crystals in lower 3 inches. Sample of dark grayish-brown oil shale from 1,098.4 feet: X-ray - dolomite, calcite, quartz, feldspar, illite. Sample of oil shale with abundant calcite crystals from 1,099.3 feet: X-ray - calcite, dolomite, quartz, loughlinite.
1,099.4	1,100.9	Marlstone: Medium to light olive gray, becoming almost neutral in lower part. Faintly laminated. Rare fine buff mudstone laminae and streaks. A thin white silty tuff lens at 1,100.8. Sample of thin white tuff lens from 1,100.8 feet: X-ray - K feldspar, biotite, pyrite.
1,100.9	1,103.0	Marlstone and mudstone: Greenish gray to green and olive green. Faintly streaked and laminated to mottled. Some fine gray-buff silty calcareous streaks and laminae. Sample of green mudstone from 1,102.1 feet: X-ray - loughlinite, illite, montmorillonite, calcite, dolomite.
1,103.0	1,104.7	Marlstone and some oil shale: Light to medium olive gray and some buff to brownish gray. Faintly streaked

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LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from U.S. Bureau of Mines Wyoming Corehole No. 2 (Con.)

Surface elevation: 6,721 feet

Cored interval: 720.0 to 1,117.2 feet

From	To	Description
		and laminated to banded. A 1-inch pinch-and-swell light gray calcareous very fine sandy-textured band at 1,103.3; finely speckled with medium gray. Sample of light gray sandy band from 1,103.3 feet: X-ray - calcite, quartz, dolomite, feldspar, pyrite.
1,104.7	1,104.9	Marlstone and mudstone: Buff to gray buff, very calcareous. Faintly banded. Slightly unconformable contact with mudstone below.
1,104.9	1,108.9	Mudstone: Greenish gray to green, slightly calcareous. Very faintly streaked and mottled. Some fine white silty streaks near base.
1,108.9	1,110.2	Marlstone (oil shale?): Medium to light olive gray and brownish gray. Faintly streaked to laminated and banded. Abundant fine-grained calcite streaks and crosscutting stringers in upper half. A very thin vermiform to jagged stringer of green mudstone in lower part. Some fine gray-buff silty laminae and streaks in lower part.
1,110.2	1,111.9	Mudstone and claystone: Light to rare dark olive gray and gray green. Distinctly laminated and banded with light gray calcareous siltstone in upper half, becoming faintly streaked in lower half.
1,111.9	1,117.2	Mudstone: Gray green to light olive green, slightly calcareous. Very faintly mottled and streaked. Sample of light gray-green mudstone from 1,115.2 feet: X-ray - loughlinite, illite, dolomite, calcite, pyrite.

Bottom of core.

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Laramie Energy Research Center, Laramie, Wyoming

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