

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

Core samples of the Green River Formation from Skyline Oil Company's Watson corehole 1-A drilled in NE1/4NE1/4SW1/4 (2,420 ft E of W line and 2,215 ft N of S line) of sec 5, T 11 S, R 25 E, S.L.M., Uintah County, Utah

Surface elevation: 5,532 feet

Mahogany marker (estimated from adjacent corehole): 432 feet

Cored interval: 510-1,940 feet

From	To	Description
510.0	511.0	Marlstone and oil shale: Buff and tan to some dark brownish gray (2.5Y and 10YR 7/2-6/3, some 5/3-2/2). Distinct distorted and broken to smooth laminations and some faint bedding; some small loop structures lower part. Irregular to regular, thick to thin parting; conchoidal to smooth fracture.
511.0	512.1	Oil shale and marlstone: Very light buff to dark brownish gray and rare brownish black (2.5Y 8/2-2/2, rare 1/2). Smooth laminations in dark and light bands; common small loop structures. Slightly irregular thick parting; conchoidal fracture.
512.1	513.0	Marlstone and oil shale: Buff to rare dark brownish gray (2.5Y 7/2-5/2, rare 4/2-2/2). Smooth laminations to very faint bedding; some loop structures and displacements. Irregular parting; conchoidal fracture.
513.0	514.6	Oil shale, very lean: Medium to dark olive gray and brownish gray (5Y and 2.5Y 5/1-3/2), some neutral gray (N5-4). Faint smooth laminations; some small loop structures. Irregular thick parting; conchoidal to smooth fracture. Very common very fine disseminated pyrite and pyrite streaks.
514.6	515.8	Oil shale and marlstone: Gray buff to medium and rare dark brownish gray (2.5Y 8/1-4/2, rare 3/2), some light to medium gray (N7-4). Smooth laminations; some to common loop structures. Slightly irregular thick parting; conchoidal fracture. Some very fine disseminated dark gray flecks and rare pyrite.
515.8	517.2	Marlstone and rare oil shale: Buff to rare medium and dark brownish gray (2.5Y 7/2-6/2, rare 5/2-2/2). Smooth laminations; common small loop structures and displacements. Regular to irregular, thick to medium parting; conchoidal to smooth fracture. Some very fine gray flecks and pyrite.
517.2	518.6	Marlstone and oil shale: Buff to medium and rare dark brownish gray (2.5Y 7/2-5/3, rare 4/3-3/2). Faint distorted bedding to smooth laminations; some small irregular loop structures. Irregular parting;

^{1/} By L. G. Trudell, completed August 1964

Illustration No. SBR-4227P (Sheet 1 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

From	To	Description
		very conchoidal fracture. A 1-1/2-inch brownish-black oil-saturated tuff with some pyrite at 518.1 feet. Some very fine black flecks, streaks, and fracture fillings in lower part. Sample of buff marlstone with fine black flecks and streaks from 518.4 feet: X-ray - dolomite, analcite, calcite, quartz, feldspar, pyrrhotite?
518.6	522.2	Marlstone: Very light buff to rare tan and brownish gray (2.5Y 8/2-7/2, rare 6/3-4/2). Faint smooth to distorted laminations and some very faint bedding; some loop structures and displacements. Very regular to some irregular thick parting; conchoidal and some smooth fracture. Some very fine disseminated gray flecks and fracture fillings.
522.2	525.6	Marlstone and oil shale: Very light buff to tan (2.5Y 8/2-5/3). Faint to distinct smooth laminations; common small loop structures and displacements. Irregular parting; conchoidal fracture. Rare fine dense dark brown streaks and lenses. A 0.2-foot brownish-black oil-saturated tuff with common fine disseminated pyrite at 523.1 feet. Sample of tuff from 523.1 feet: X-ray - analcite, pyrrhotite; some quartz, feldspar.
525.6	526.8	Marlstone: Buff to medium and rare dark brownish gray (2.5Y 8/1 and 8/2-5/1 and 5/2, rare 4/2-2/2) and light to medium neutral gray (N8-5). Smooth laminations. Regular to very irregular thick parting; very conchoidal fracture. Rare dark gray to black silty-textured pyritic laminae and streaks.
526.8	528.0	Marlstone and oil shale: Very light buff to medium and rare dark brownish gray (2.5Y 8/2-4/2, rare 3/2-2/2). Smooth to slightly irregular and distorted laminations. Very regular to irregular thick parting; very conchoidal fracture. Some fine disseminated dark gray specks and pyrite in upper part.
528.0	528.8	Tuff and oil shale: Dark brown and brownish-gray oil-saturated tuff (10YR 3/3 and 3/2-2/2), gray-buff to brown oil shale (2.5Y 8/1-4/3). Thick irregular dense crystalline tuff injections in contorted and displaced oil shale. Very irregular parting and fracture. Sample of tuff from 528.1 feet: X-ray - dolomite, calcite, trace analcite.

Illustration No. SBR-4227P (Sheet 2 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

From	To	Description
528.8	529.5	Marlstone and oil shale: Gray buff to brownish gray (2.5Y 8/1-5/2, rare 4/3). Smooth laminations. Regular thick parting; conchoidal fracture. Rare dark gray pyritic streaks.
529.5	531.5	Marlstone: Very light buff and gray buff (2.5Y 8/1-7/2). Faint smooth laminations. Regular to some irregular thick parting; conchoidal fracture. Common fine gray pyritic streaks.
531.5	536.0	Marlstone: Very light to medium gray (N8-5) and gray buff to rare light brownish gray (2.5Y 8/1-8/2, rare 7/2-6/2). Smooth and rare slightly distorted laminations. Regular to very irregular thick parting; conchoidal and some irregular fracture. Very rare dark brownish-gray laminae. Sample of medium gray marlstone from 532.8 feet: X-ray - dolomite, feldspar (sanidine).
536.0	537.2	Oil shale: Gray buff to brownish gray and tan (2.5Y 8/1-5/2 and 5/3, rare 4/1-4/2). Smooth and rare distorted and displaced laminations. Regular to irregular thick parting; conchoidal fracture. Dark gray silty-textured pyritic tuff lamina at 536.4 feet (like 523.1 feet).
537.2	539.5	Marlstone: Very light to rare medium gray (N8-7, rare 6-5) and gray buff to light and rare medium brownish gray (2.5Y 8/1-6/2, rare 5/3-4/2 upper part). Smooth laminations. Very regular to irregular thick parting; conchoidal to smooth fracture.
539.5	540.6	Oil shale: Gray buff and buff to dark brownish gray and brown (2.5Y 7/1 and 8/2-3/2 and 3/3, rare 2/2). Smooth laminations; rare small loop structures and displacements. Very regular to some irregular thick parting; conchoidal fracture.
540.6	541.6	Marlstone: Very light buff to rare medium and dark brownish gray (2.5Y 8/2-6/2, rare 5/2-2/2). Smooth laminations; some displacements and loop structures (fairly large ones near top). Regular to some irregular thick parting; conchoidal fracture.
541.6	542.6	Marlstone: Buff to light and very rare medium brownish gray (2.5Y 8/2-6/2, rare 5/2). Smooth to slightly irregular and distorted laminations and some distorted bedding; rare displacements. Regular to irregular thick parting; very conchoidal fracture.
542.6	543.6	Marlstone or very lean oil shale: Buff to light and some medium brownish gray (2.5Y 7/2-6/2, some 5/2-4/2, rare 8/2). Smooth and some very irregular and distorted laminations. Irregular

Illustration No. SBR-4227P (Sheet 3 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
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From	To	Description
		thick parting; very conchoidal fracture. Some very fine dark crystals in one horizon at 543.5 feet.
		Sample of oil shale with very fine crystals from 543.5 feet: X-ray - dolomite, quartz, feldspar, analcite, biotite.
543.6	544.6	Oil shale: Medium to dark brownish gray and some brownish black (2.5Y 5/2-3/2, some 2/2-1/2), some very slight resinous luster. Irregular and slightly distorted to smooth laminations. Irregular thick parting; conchoidal and rare very slight hackly fracture.
544.6	545.5	Oil shale: Medium brown to dark brownish gray and some brownish black (2.5Y 4/3-2/2, some 1/2), some resinous luster. Smooth to rare slightly irregular and distorted laminations; some loop structures. Regular to irregular medium to thick parting; conchoidal fracture. A thin irregular dark brown oil-saturated tuff stringer at 545.3 feet.
545.5	546.5	Oil shale: Dark and rare medium brownish gray to brownish black (2.5Y 2/2-1/2, rare 3/2-5/2), very common resinous and some waxy luster. Very faint to some moderately distinct, smooth to slightly irregular and distorted laminations. Regular thick to some thin shaly parting; slight hackly fracture; slightly elastic and tough. Rare fine dark brown silty-textured stringers and streaks with some pyrite.
		Sample of rich resinous oil shale from 546.0 feet: X-ray - dolomite; some quartz, feldspar, analcite.
546.5	548.1	Oil shale: Light to medium and some dark brownish gray (2.5Y 6/1 and 6/2-4/1 and 4/2, some 3/2-2/2, rare 7/1-7/2). Distinct very smooth laminations. Regular to some irregular thick shaly parting; conchoidal fracture. Very common fine dark pyrite (?) specks concentrated in certain laminae.
		Sample of lean oil shale with fine dark specks from 547.0 feet: X-ray - dolomite, quartz, calcite, feldspar, analcite.
548.1	549.5	Oil shale: Light to dark brownish gray and brown, some buff (2.5Y 6/2 and 6/3-3/2 and 3/3, some 7/2 and 2/2). Distinct very smooth laminations. Regular to some irregular thick shaly parting; conchoidal and some irregular fracture. Common fine dark specks in upper part.
549.5	550.5	Oil shale: Brownish black to dark brown (2.5Y 1/2-3/4), common resinous and some waxy luster (especially upper half). Irregular and distorted to smooth laminations; some irregular loop structures

Illustration No. SBR-4227P (Sheet 4 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

From	To	Description
		in upper part. Regular to irregular thick shaly parting; conchoidal to some hackly fracture. A 1-3/4-inch gray to yellowish-gray silty tuff with some contorted shale stringers near top. Common very fine pyrite streaks and blebs.
550.5	551.8	Oil shale: Medium to dark brown and brownish gray, rare tan and brownish black (2.5Y 4/3-2/2, rare 5/3-6/3 and 1/2). Very smooth laminations. Regular to irregular thick shaly parting; conchoidal to irregular fracture. Common fine pyrite blebs. A thin granular oil-stained tuff stringer at 550.8 feet.
551.8	552.6	Oil shale: Light to some dark olive gray and brownish gray (5Y and 2.5Y 6/2-4/2, some 3/2, rare 2/2). Very smooth laminations. Irregular thick parting; irregular to conchoidal fracture. Common fine pyrite blebs. A 2-inch gray to yellowish-gray fine granular tuff band at top; a 1-1/2-inch light to medium brown tuff band with very common very fine disseminated iridescent black flecks near base. Sample of gray to yellowish-gray tuff from 551.9 feet: X-ray - analcite, quartz, some feldspar. Sample of light brown tuff from 552.5 feet: X-ray - quartz, analcite, feldspar.
552.6	553.5	Oil shale: Buff to medium and rare dark brownish gray (2.5Y 7/2-5/2, some 4/2-3/2; some very slight olive tint). Very smooth laminations. Regular to irregular thick parting; conchoidal fracture. Very rare fine dense dark brown crystalline stringers.
553.5	554.8	Oil shale: Light to dark brownish gray and olive gray, rare gray buff to buff white (2.5Y and 5Y 7/2-2/2, rare 8/1-9/2). Very distinct smooth laminations. Irregular to some regular thick parting; conchoidal to some smooth fracture. A 2-inch light to dark brownish-gray banded silty to fine granular tuff at base.
554.8	556.9	Oil shale: Tan and light brownish gray to rare brownish black (2.5Y 6/3 and 6/2-3/2, some 2/2-1/2 upper part). Distinct to faint smooth laminations. Regular to irregular thick shaly parting; conchoidal to irregular fracture. Common fine pyrite blebs and rare streaks. Rare thin tuff stringers and lenses with common pyrite.
556.9	558.2	Marlstone and oil shale: Very light buff to some tan and rare dark brownish gray (2.5Y 8/2-7/2, some 6/3-5/3, rare 4/3-2/2; very slight olive tint lower part). Faint to very distinct smooth

Illustration No. SBR-4227P (Sheet 5 of 63)

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Core samples of the Green River Formation from Skyline Oil Company's
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From	To	Description
		laminations. Irregular to regular thick parting; conchoidal to irregular fracture.
558.2	559.7	Marlstone and rare oil shale: Buff white to buff and some tan to rare medium brown (2.5Y 9/2-7/2, some 6/3-5/3, rare 4/3-4/2). Faint to rare distinct regular smooth to some very distorted and displaced laminations. A 1-inch dull dark gray gritty band at 558.7 feet. (Footage adjustment in this interval--actually 2.0 feet of core.)
559.7	560.8	Oil shale: Very light buff to brownish gray (2.5Y 8/2-5/2, rare 4/2; some very slight olive tint). Very smooth laminations. Very regular to some irregular thick shaly parting; conchoidal fracture. Rare fine dense gray to brownish-gray crystalline laminae.
560.8	562.8	Oil shale: Buff to medium and some dark brownish gray (2.5Y 7/2-4/2, some 3/2-2/2; some slight olive tint). Distinct to some faint smooth laminations. Regular to very irregular, thick to medium parting; conchoidal to irregular fracture. A 3/4-inch gray-buff to yellowish-brown crystalline tuff band at 561.3 feet.
562.8	563.8	Oil shale and marlstone: Buff to rare dark brownish gray and brown (2.5Y 7/2-6/2, some 5/2-4/2, rare 4/3-3/2; some slight olive tint). Very smooth laminations. Regular to irregular thick parting; conchoidal fracture. Rare fine pyrite blebs. A thin light to medium gray band with very rare purple grains at 563.0 feet. Sample of thin gray silty-textured band with rare purple grains from 563.0 feet: X-ray - analcite, quartz, some feldspar.
563.8	564.8	Oil shale: Buff to some dark brown and brownish gray (2.5Y 7/2-4/2, some 4/3-3/2, rare 2/2). Very smooth laminations. Regular to irregular thick parting; conchoidal fracture.
564.8	565.8	Oil shale: Dark and some medium brown to brownish black (2.5Y 3/3-1/2, some 3/4-4/4). Moderately distinct to faint smooth laminations. Regular to irregular, medium to thick parting; conchoidal to irregular fracture. Common fine pyrite blebs in lower part. A thin dark brownish-gray oil-saturated tuff stringer at 565.7 feet.
565.8	567.0	Oil shale: Light to dark brownish gray and rare brownish black (2.5Y 6/2-3/2, rare 2/2-1/2). Smooth laminations. Irregular and some regular medium to thick parting; conchoidal to irregular fracture. Some fine pyrite streaks. Irregular medium to dark gray

Illustration No. SBR-4227P (Sheet 6 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

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From	To	Description
		tuff stringers with common fine yellowish-buff streaks and some fine contorted shale stringers in upper 0.2 foot.
567.0	568.0	Oil shale and marlstone: Very light buff to dark brownish gray (2.5Y 8/2-3/2, rare 2/2, some very slight olive tint). Smooth laminations. Regular to irregular, thick to medium parting; conchoidal fracture. A very thin buff earthy band with some pyrite blebs near top. Some dull dark gray to black silty laminae at 567.4 feet. Very rare fine gray pyritic streaks.
568.0	569.5	Oil shale: Tan to dark brownish gray and rare brownish black (2.5Y and 10YR 6/3-3/2, rare 2/2-1/2). Smooth laminations. Regular to some irregular, medium to thick shaly parting; slightly conchoidal fracture. Some fine pyrite blebs near top. A 1/2-inch brown (10YR 5/4) silty tuff band with some very fine pyrite at 569.2 feet.
569.5	570.5	Oil shale: Medium and some light to dark olive gray and brownish gray (5Y and 2.5Y 5/2-4/1, some 6/2-3/2, rare 2/2). Smooth laminations. Regular to irregular thick parting; conchoidal fracture. Rare fine pyrite streaks and blebs.
570.5	572.0	Oil shale and some marlstone: Very light buff to medium and rare dark brownish gray (2.5Y 8/2-4/2, rare 9/2 and 3/2-2/2; some slight olive tint). Smooth laminations. Irregular to some very regular, thick to medium parting; slightly conchoidal fracture.
572.0	573.4	Oil shale: Olive buff and buff to medium and some dark olive gray and brownish gray (5Y and 2.5Y 7/2-4/2 and 4/1, some 8/2 and 3/2-3/1). Smooth laminations. Irregular to some very regular, thick to medium parting; conchoidal fracture.
573.4	574.4	Oil shale: Light to dark olive gray and tan to brownish black (5Y 6/2-3/1 and 2.5Y 6/3-1/2), rare resinous luster. Regular wavy to smooth laminations. Very irregular to slightly irregular parting; irregular to conchoidal and some very slight hackly fracture. Some thin stringers and irregular pieces of light gray to brownish-gray tuff (?). Middle part badly broken up into irregular pieces; length and continuity of sample doubtful; uneven sample split. Sample of dense gray to brownish-gray tuff from irregular piece at 573.8 feet: X-ray - analcite, feldspar; some quartz, pyrite.
574.4	574.7	Missing?
574.7	576.7	Oil shale and marlstone: Very light buff to medium and rare dark brownish gray (2.5Y 8/2-5/2, some 4/2, rare 3/2-2/2). Smooth

Illustration No. SBR-4227P (Sheet 7 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

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From	To	Description
		laminations. Irregular to some very regular, thick to medium parting; conchoidal fracture. Fine dull dark gray silty laminae at 576.3 and 576.6 feet.
576.7	577.7	Oil shale: Light brownish gray and some buff to medium and very rare dark brownish gray (2.5Y 6/2-4/2, some 7/2, rare 3/2-2/2; some slight olive tint). Smooth laminations. Very regular thick shaly parting; conchoidal fracture.
577.7	578.1	Oil shale: Buff and tan to some dark brownish gray (2.5Y 7/2 and 6/3-4/2, some 3/2-2/2). Smooth and rare slightly distorted and displaced laminations. Regular thick to medium shaly parting. Rare fine dense brownish-gray crystalline stringers.
578.1	579.1	Oil shale: Dark and some medium brownish gray to brownish black (2.5Y 3/2-1/2, some 5/3-4/2), common resinous and rare waxy luster. Moderately distinct to very faint, smooth to slightly distorted laminations; some small irregular loop structures. Regular to slightly irregular, thick to medium shaly parting; hackly fracture. An irregular 1-inch light brownish-gray to yellowish-buff, dense to granular tuff stringer in distorted shale at 578.7 feet.
579.1	580.7	Oil shale: Light to dark brownish gray, some buff and brownish black (2.5Y 6/2-2/2, some 8/2-1/2). Smooth laminations. Regular thick shaly parting; very slight hackly to conchoidal fracture. Rare small dense dark brownish-gray lenses.
580.7	580.9	Oil shale: Dark and some medium olive gray to olive black (5Y 2/2-1/2, some 3/2-4/2). Irregular distorted and displaced laminations and streaks. Slightly irregular parting; very slight hackly fracture. A thin irregular olive-black silty tuff stringer in middle.
580.9	581.6	Oil shale: Medium to dark olive gray (5Y 5/2-3/2) and some brownish gray to rare brownish black (2.5Y 4/2-3/2, rare 2/2-1/2). Smooth to slightly distorted laminations; some loop structures and displacement. Regular to slightly irregular thick shaly parting; slightly irregular to some hackly fracture.
581.6	582.7	Oil shale: Dark brownish gray to brownish black, rare medium brown and olive gray (2.5Y 2/2-1/2, some 3/2-3/3, rare 4/3 and 5Y 4/2); common resinous luster. Faint smooth to slightly irregular and distorted laminations; some loop structures and displacements. Regular to some irregular thick shaly parting;

Illustration No. SBR-4227P (Sheet 8 of 63)

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From	To	Description
582.7	583.2	slightly conchoidal and rare hackly fracture. Rare small brown to dark brownish-gray lenses. Very vitreous to waxy black streaks. An irregular 1/2-inch brownish-black oil-saturated tuff at base. Oil shale: Medium to dark olive gray (5Y 5/1-2/1), some tan to yellow buff (2.5Y 6/3-8/3). Smooth and rare slightly distorted laminations. Irregular thick parting; very slight hackly to conchoidal fracture. Some thin dense gray to brown laminae and streaks near top.
583.2	584.3	Oil shale and some marlstone: Gray buff and olive buff to medium and rare dark olive gray (5Y 8/1 and 8/2-4/1 and 4/2, rare 3/1-2/1). Smooth laminations. Very regular thick to rare thin shaly parting; conchoidal to irregular fracture. Rare dark gray silty laminae and streaks.
584.3	585.9	Marlstone and rare oil shale: Very light buff to light and very rare medium to dark brownish gray and olive gray (2.5Y 9/2-6/2, rare 5/2-3/2; 5Y 7/1-6/1, rare 5/1-4/1). Smooth to some very irregular and distorted laminations. Very regular to some irregular, thick to medium shaly parting; very irregular to conchoidal fracture. A thin dark brown oil-saturated tuff band near top. A 3/4-inch band of thin brown granular tuff stringers and fine brownish-black oil-shale stringers at 585.3 feet.
585.9	587.2	Oil shale: Dark brownish gray to brownish black (2.5Y 2/2-1/2, rare 3/2). Very faint smooth to distorted laminations with common fine distinct dense brown to tan streaks and stringers. Regular thick shaly parting; slightly irregular to regular and rare hackly fracture.
587.2	588.2	Oil shale: Medium to dark olive gray and brownish gray (5Y and 2.5Y 5/2-3/2, some 2/2). Smooth laminations. Slightly irregular to regular thick shaly parting; slight hackly to slightly irregular fracture. Some thin dense gray to brownish-gray tuff stringers near top.
588.2	589.0	Oil shale: Dark brownish gray to brownish black and rare medium brown (2.5Y 2/2-1/2, rare 3/2-4/3), some resinous luster. Smooth to some irregular and distorted laminations. Regular to some irregular, thick to medium shaly parting; slight to sharp hackly fracture. Common medium to small dense brown lenses and streak in distorted shale at 588.7 to 588.8 feet.

Illustration No. SBR-4227P (Sheet 9 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

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From	To	Description
589.0	590.5	Oil shale: Medium to dark olive gray (5Y 4/2-3/2, rare 2/2). Faint smooth laminations. Regular to some irregular, medium to thick shaly parting; conchoidal to irregular fracture.
590.5	591.3	Oil shale and marlstone: Buff to medium and rare dark brownish gray (2.5Y 8/2-5/2, some 4/2-3/2; some very slight olive tint). Distinct smooth laminations. Regular to slightly irregular thick shaly parting; conchoidal to irregular fracture.
591.3	592.7	Oil shale: Light to dark olive gray and brownish gray, rare brownish black (5Y and 2.5Y 6/2-2/2, rare 7/2 and 1/2). Smooth to irregular distorted laminations; rare loop structures. Regular to some irregular thick shaly parting; conchoidal and some slight hackly fracture. Some fine brown tuff stringers in upper part.
592.7	593.2	Oil shale: Dark brownish gray to brownish black (2.5Y 2/2-1/2). Very faint smooth to distorted laminations. Slightly irregular thick parting; slightly irregular fracture. Common fine brown tuff stringers and lenses in lower part.
593.2	594.0	Oil shale: Tan to dark brownish gray and some brownish black (2.5Y 5/3-3/2, some 2/2-1/2). Fairly distinct smooth and some slightly irregular and distorted laminations; rare small loop structures and displacements. Some fine tan to dark brown tuff stringers in lower part.
594.0	597.0	Siltstone, marlstone and some oil shale: Light gray (N8-6) and olive buff to some medium and dark olive gray (5Y 8/1-6/2, some 5/2-3/2). Faint to some distinct, smooth to some irregular, distorted, and displaced laminations. Regular to some irregular thick shaly parting; irregular to conchoidal fracture. Sample of light gray calcareous siltstone from 594.5 feet: X-ray - quartz, dolomite; some feldspar, calcite, analcite, biotite, pyrite.
597.0	598.2	Marlstone and some oil shale: Olive buff to medium and rare dark olive gray (5Y 7/1 and 7/2-5/2, rare 4/2-3/1), dolomitic. Smooth to very irregular, contorted, and broken laminations, stringers, and streaks. Regular to irregular thick parting; slightly conchoidal to very irregular fracture. Some fine resinous black streaks in upper part.
598.2	599.9	Oil shale: Medium to dark olive gray and dark brown to brownish black (5Y 5/2-2/1 and 2.5Y 3/3-1/2), some resinous luster. Very

Illustration No. SBR-4227P (Sheet 10 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
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From	To	Description
		irregular and distorted to some smooth laminations and streaks. Slightly irregular to very irregular thick parting; hackly to conchoidal fracture.
599.9	601.7	Oil shale: Medium to dark olive gray and rare olive black (5Y 5/2-2/1, rare 1/1). Distorted to very contorted and broken laminations, stringers, and streaks. Very irregular parting; slightly irregular to very irregular fracture. Some dark brown and brownish-gray tuff lenses and stringers.
601.7	602.7	Oil shale: Dark brownish gray to brownish black (2.5Y 3/2-1/2), some resinous luster. Very irregular and contorted to smooth laminations. Irregular to some regular thick parting; slight hackly to irregular fracture. Some tuff stringers.
602.7	605.9	Marlstone and oil shale: Light to medium and rare dark olive gray (5Y 7/1-4/1, rare 3/1-2/2; some almost neutral), some buff to light brownish gray (2.5Y 7/2-6/2). Smooth to some slightly irregular and distorted laminations; some small irregular loop structures and displacements in lower part. Regular to some irregular thick parting; conchoidal to irregular fracture. Common fine dark gray pyritic flecks and streaks in lower part.
605.9	611.5	Marlstone: Gray buff to rare medium brownish gray (2.5Y 8/1-7/1, rare 6/1-5/2). Faint smooth to slightly irregular and distorted laminations; common very small irregular loop structures and displacements. Regular to some irregular thick parting; conchoidal fracture. Some fine dark gray blebs and streaks--especially in upper part. A 0.1-foot gray-buff to medium gray silty band with common fine pyrite blebs at 607.8 feet.
611.5	624.3	Mudstone and siltstone: Light gray, calcareous. Faintly bedded and streaked to some massive; rare faint smooth laminations. Irregular parting; conchoidal to irregular fracture.
624.3	625.8	Marlstone: Light olive gray (5Y 8/1-6/1; almost neutral) and rare buff to medium brownish gray (2.5Y 7/2-4/2). Faint smooth laminations; common small loop structures and displacements. Regular to irregular thick parting; conchoidal fracture. Some very faintly bedded mudstone in upper part. Some very fine dark gray specks and streaks in lower part.
625.8	627.0	Marlstone and oil shale: Light to medium olive gray (5Y 7/1-5/1; almost neutral) and buff to medium brownish gray (2.5Y 8/2-5/2,

Illustration No. SBR-4227P (Sheet 11 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

From	To	Description
		some 4/2). Smooth to slightly distorted laminations; common small loop structures and displacements. Slightly irregular thick parting; very conchoidal to irregular fracture. Rare gray pyritic streaks and stringers.
627.0	630.6	Marlstone: Very light buff to rare medium and dark brownish gray (2.5Y 8/2-6/2, rare 5/2-3/2). Very faint smooth to irregular distorted laminations; common irregular loop structures and displacements. Slightly irregular to very irregular parting; slightly irregular to conchoidal fracture. Some faintly bedded mudstone in lower part.
630.6	631.7	Marlstone and oil shale: Light to medium and some dark brownish gray and olive gray (2.5Y and 5Y 6/2-5/2, some 4/2-2/2). Slightly distorted to contorted and broken laminations; some faint smooth bedding. Slightly irregular thick parting; irregular to conchoidal fracture.
631.7	633.5	Oil shale: Dark olive gray to black (5Y 2/2-1/1), rare resinous luster. Faint irregular, distorted, and displaced laminations, stringers, and streaks. Regular to slightly irregular thick shaly parting; irregular to slight hackly fracture. Some thin dense to silty-textured dark brownish-gray stringers. Sample of dark olive-gray oil shale from 632.2 feet: X-ray - dolomite; some analcite, quartz, illite, feldspar. Sample of dark brownish-gray stringers with some oil shale from 633.1 feet: X-ray - dolomite; trace quartz, feldspar, analcite.
633.5	634.3	Oil shale: Dark olive gray to some black (5Y 3/1-2/1, some 1/1), rare medium to dark brownish gray (2.5Y 4/2-3/2); rare very slight resinous luster. Faint slightly irregular and distorted laminations. Regular thick shaly parting; irregular fracture. Rare very small dark brownish-gray pyritic lenses.
634.3	635.6	Oil shale: Medium to dark olive gray (5Y 5/2-2/1). Slightly irregular and distorted to smooth laminations; common small irregular loop structures and displacements. Regular to slightly irregular thick shaly parting; irregular to slight hackly fracture. Some fine dark gray to black pyritic blebs, streaks, lenses, and stringers.

Illustration No. SBR-4227P (Sheet 12 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

From	To	Description
635.6	637.1	Oil shale and marlstone: Very light buff and gray buff to medium and some dark brownish gray (2.5Y 8/2 and 8/1-4/2, some 3/2-2/2; some slight olive tint). Smooth to irregular distorted laminations. Very regular to some irregular thick shaly parting; slightly conchoidal to irregular and rare slight hackly fracture.
637.1	638.0	Oil shale: Dark and some medium olive gray to black (5Y 3/2-1/2, some 4/2; some slight brown tint), some resinous luster. Smooth to distorted laminations; thin contorted zone at top. Regular to slightly irregular thick shaly parting; fairly smooth to irregular fracture. Some thin dark brownish-gray stringers in contorted zone at top (like 633.1 feet).
638.0	638.3	Oil shale: Dark olive gray to black (5Y 2/2-1/1), some resinous luster. Very faint distorted and broken laminations and some <u>very</u> faint streaked bedding. Slightly irregular thick shaly parting; hackly fracture.
638.3	639.7	Oil shale: Dark and rare medium olive gray to black (5Y 3/2-1/1, rare 4/2), rare very slight resinous luster. Faint very irregular, distorted, and broken laminations, stringers, and streaks; some very faint bedding. Slightly irregular to very irregular, medium to thick parting; irregular to slight hackly fracture. Rare small irregular dark brownish-gray lenses.
639.7	640.3	Oil shale: Medium to dark olive gray (5Y 4/2-2/1). Very irregular, distorted, and broken laminations, stringers, and streaks. Irregular thick parting; slight hackly to conchoidal fracture. Sharp smooth contact with rich shale below.
640.3	641.1	Oil shale: Dark brownish gray to brownish black (2.5Y 2/2-1/2, rare 3/2), very common resinous luster. Faint smooth to slightly irregular and distorted laminations. Very regular thick shaly parting; smooth to slightly irregular fracture. Some thin to fine, buff to tan tuff stringers (one at 641.0 feet is strongly bitumen impregnated).
641.1	642.6	Marlstone and some oil shale: Very light buff to rare medium and dark brownish gray (2.5Y 9/2-6/2, rare 5/2-2/2), some olive gray to black in lower 0.2 foot. Faint and some distinct, smooth to irregular distorted laminations. Regular to irregular thick parting; irregular to conchoidal fracture. A 0.1-foot dark brown to brownish-black dense to fine granular oil-stained tuff at top.

Illustration No. SBR-4227P (Sheet 13 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

From	To	Description
		A thin gray silty-textured crystalline band at 641.3 feet. A 0.2-foot buff-white chalky band with common small light brown translucent crystalline masses at 642.0 feet.
		Sample of chalky band with crystalline masses from 642.0 feet: X-ray - dolomite; some quartz, analcite.
642.6	643.8	Oil shale: Dark brownish gray and olive gray to black (2.5Y and 5Y 2/2-1/2, some 3/2). Very faint smooth to slightly irregular and distorted laminations and streaked bedding. Regular and some irregular, thick to medium shaly parting; slightly irregular to rare hackly fracture. A very irregular thin black oil-saturated tuff with some pyrite at 642.8 feet.
643.8	644.6	Oil shale: Dark brownish gray to brownish black (2.5Y 2/2-1/2), some slight resinous luster. Faint very irregular and distorted laminations and stringers to very faint smooth bedding. Slightly irregular to very irregular thick parting; hackly to irregular fracture. Some thin dark brownish-gray tuff stringers and lenses in upper part. A 1-inch irregular dark brownish-gray to brownish-black bitumen-impregnated granular tuff at base.
644.6	645.3	Oil shale: Black and some dark olive gray and brownish gray (5Y and 2.5Y 1/1, some 2/2-3/2), very common resinous and some waxy luster. Very faint smooth to distorted laminations and streaked bedding. Slightly irregular thick parting; hackly to conchoidal fracture. Some thin dark brownish-gray stringers and lenses--especially in lower part.
645.3	646.0	Oil shale: Medium olive gray to black (5Y 4/2-1/1) and some light to dark brownish gray (2.5Y 6/2-3/2). Contorted and broken to fairly smooth laminations and stringers. Irregular thick parting; hackly to slightly conchoidal fracture. Common dark brownish-gray stringers and lenses near top. Some thin very irregular to vermiform light olive-gray to buff stringers in middle part.
646.0	648.0	Oil shale and marlstone: Light buff to medium brownish gray (2.5Y 8/2-4/2), some light olive gray to rare black in upper part (5Y 6/2-3/2, rare 2/2-1/1). Faint to some moderately distinct, smooth and rare distorted laminations. A 2-inch buff-white to tan, chalky to silty band with some oil-shale stringers at top. Some thin gray silty stringers and streaks in distorted marlstone at 646.7 to 646.9 feet. Very faintly bedded buff mudstone in lower 0.3 foot.

Illustration No. SBR-4227P (Sheet 14 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

From	To	Description
648.0	650.4	Oil shale and shale: Medium to dark olive gray (5Y 5/2-2/1) and light to dark neutral gray (N6-3). Faint slightly distorted and displaced to very smooth laminations. Very regular and some irregular, thick to medium shaly parting; conchoidal fracture. Badly broken up; uneven sample split.
650.4	652.0	Shale: Medium to dark gray (N5-3). Faint smooth laminations. Regular to some irregular, medium to thick parting; very conchoidal fracture. Sample of gray shale from 651.7 feet: X-ray - quartz, dolomite, analcite, feldspar, illite, pyrite.
652.0	656.0	Missing.
656.0	663.0	Oil shale: Buff and gray buff to medium and rare dark olive gray (5Y 7/2 and 7/1-5/2 and 5/1, rare 4/2-3/1; slight brown tint to almost neutral). Faint to some distinct, very smooth to rare slightly distorted laminations; rare small displacements. Very regular to slightly irregular, thick to medium parting. Some fine dark gray pyritic blebs, stringers, and fracture fillings.
663.0	664.8	Marlstone and some oil shale: Gray buff to light and rare medium olive gray in upper half (5Y 7/1-6/2, rare 5/2-4/2), buff white to rare medium brownish gray in lower half (2.5Y 9/2-7/2, some 6/2, rare 5/2). Very faint smooth bedding and some smooth to slightly distorted laminations. Irregular to regular, thick to medium parting; very smooth to conchoidal fracture.
664.8	672.0	Like 656.0-663.0 feet.
672.0	672.7	Oil shale: Light to dark olive gray and rare black (5Y 6/2-3/2, rare 2/2-1/2). Smooth laminations; common small loop structures and displacements. Irregular to some regular, thick to medium parting; conchoidal to irregular fracture.
672.7	673.9	Marlstone and siltstone: Buff white to gray buff (2.5Y 9/1-7/1 and 7/2, some 7/3). Very faint smooth to slightly distorted and displaced laminations. Regular to irregular, thick to some thin parting; slightly irregular to conchoidal fracture. A 1-1/2-inch dark brown oil-stained tuff near top.
673.9	675.0	Oil shale: Dark olive gray and brownish gray to some black (5Y and 2.5Y 3/2-2/2, some 1/1). Faint very irregular, distorted and broken laminations, stringers, and streaks. Irregular thick parting; irregular and some hackly fracture. Some thin irregular

Illustration No. SBR-4227P (Sheet 15 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

From	To	Description
		dense brown stringers and lenses. Some very fine pyrite blebs and streaks.
675.0	678.6	Oil shale: Medium to dark olive gray (5Y 4/2-3/1, some 5/2 upper part). Very faint smooth to slightly irregular and distorted laminations and some very faint bedding. Regular to irregular, thick to rare thin parting; irregular to conchoidal fracture. Very common fine pyrite blebs. Thin dense to silty-textured dark brown to brownish-gray tuff bands at 675.3, 676.4, and 677.0 feet.
678.6	680.7	Marlstone and oil shale: Buff white to medium and rare dark olive gray and brownish gray (5Y and 2.5Y 9/2-4/2, rare 3/2-2/2). Faint and some distinct slightly irregular and distorted laminations; very common loop structures and displacements. Regular to some irregular thick parting; irregular to conchoidal and rare slight hackly fracture.
680.7	681.3	Oil shale: Medium to dark olive gray and brownish gray (5Y and 2.5Y 4/2-3/2, rare 5/2-2/1). Slightly irregular and distorted to smooth laminations; common displacements. Irregular parting; conchoidal fracture. Rare fine pyrite blebs.
681.3	683.3	Siltstone, marlstone, and some oil shale: Gray buff to light and rare dark olive gray (5Y 8/1-6/2, rare 5/2-3/2) and some buff to rare dark brownish gray (2.5Y 7/2-3/2). Faint and some distinct slightly irregular and distorted laminations; common loop structures and displacements. Regular to slightly irregular, thick to medium parting; slightly irregular to conchoidal fracture. Some very irregular thin white to gray silty-textured stringers and streaks.
683.3	684.6	Oil shale: Medium to dark olive gray and rare black (5Y 5/2-3/2, rare 2/2-1/1). Faint to distinct slightly irregular and distorted laminations; very common loop structures. Regular to some irregular thick parting; irregular to conchoidal and some slight hackly fracture. Common fine dark gray pyritic streaks, lenses, and blebs.
684.6	685.6	Oil shale: Buff to medium and rare dark olive gray (2.5Y 7/2-4/2, rare 3/2). Slightly irregular and distorted laminations; common small irregular loop structures. Irregular thick parting; irregular to conchoidal fracture. Common very small gray-buff silty-textured lenses and streaks.

Illustration No. SBR-4227P (Sheet 16 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

From	To	Description
		Sample of lean oil shale with fine silty-textured streaks from 684.8 feet: X-ray - analcite, quartz, dolomite, feldspar, illite.
685.6	687.5	Marlstone: Light and rare medium to dark olive gray (5Y 7/1 and 7/2-6/2, rare 5/1 and 5/2-3/1), silty. Faint slightly irregular and distorted laminations; very common loop structures and displacements. Regular to irregular thick parting; conchoidal to irregular fracture. Some very fine gray to black pyritic streaks and specks.
687.5	691.6	Mudstone: Light olive gray (5Y 7/1-6/1; almost neutral), calcareous. Very faint smooth to slightly distorted streaked bedding and some massive. Regular to irregular thick parting; conchoidal to fairly smooth fracture.
691.6	696.5	Mudstone: Light to some medium olive gray (5Y 7/1 and 7/2-6/2, some 5/2), calcareous. Very faint smooth to slightly distorted streaked bedding and some laminations with common irregular loop structures and displacements. Irregular thick parting; conchoidal to irregular fracture.
696.5	698.5	Marlstone: Light to medium olive gray (5Y 6/1 and 6/2-5/2, rare 4/2; some slight brown tint), silty. Slightly irregular and distorted laminations; very common small loop structures and displacements. Irregular to slightly irregular thick parting; conchoidal to irregular fracture.
698.5	700.3	Oil shale and marlstone: Light to medium and some dark olive gray (5Y 6/1 and 6/2-5/2, some 4/2-3/2, rare 2/2; some slight brown tint). Slightly irregular and distorted laminations; very common loop structures and displacements. Irregular to slightly irregular thick parting; irregular to conchoidal fracture. Some fine dark gray pyritic streaks. A 0.3-foot medium to dark gray silty band with some distorted and broken oil-shale stringers and very irregular fine black pyritic stringers and blebs at 699.5 feet. Sample of thick gray silty band with pyrite stringers from 699.6 feet: X-ray - analcite; some quartz, feldspar, illite, chlorite?, pyrrhotite?
700.3	702.1	Oil shale: Medium to dark olive gray (5Y 4/2-3/1, rare 5/2 and 2/1). Faint and some moderately distinct, smooth to slightly irregular and distorted laminations; common loop structures and

Illustration No. SBR-4227P (Sheet 17 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

From	To	Description
		displacements. Slightly irregular thick parting; very irregular to conchoidal fracture. Rare pyrite streaks.
702.1	703.4	Oil shale: Medium to dark olive gray (5Y 4/2-2/1, rare 5/2). Faint to very faint smooth laminations; rare loop structures. Regular to some irregular thick parting; very irregular to conchoidal fracture. Some to common very fine pyrite blebs and streaks.
703.4	704.8	Oil shale: Light to dark olive gray and rare olive buff and black (5Y 6/2-2/1, rare 7/2 and 1/2; some slight brown tint). Faint to some distinct, slightly irregular and distorted to smooth laminations; some loop structures and displacements (some displacements up to 3/16 inch in lower part). Regular to irregular, medium to thick shaly parting; very irregular to conchoidal fracture. Some to common fine pyrite blebs. A thin dense brown dolomite stringer at 704.2 feet.
704.8	705.8	Marlstone and some oil shale: Light buff to some medium and dark olive gray and brownish gray (5Y and 2.5Y 8/2-6/2, some 5/2-2/2). Faint to some very distinct very smooth laminations. Very regular thick to medium shaly parting; very irregular to conchoidal fracture.
705.8	706.6	Oil shale: Medium to some dark brownish gray and rare tan and brownish black (2.5Y 5/2-4/2, some 3/2-2/2, rare 5/3 and 1/2). Very smooth laminations. Very regular to some irregular thick parting; conchoidal fracture. Rare pyrite blebs.
706.6	708.9	Oil shale: Dark brownish gray and some brownish black (2.5Y 2/2, some 1/2, rare 3/2). Very faint smooth laminations. Very regular to some irregular, thick to medium shaly parting; slightly irregular to conchoidal fracture. Common fine pyrite blebs.
708.9	712.6	Oil shale: Dark and rare medium olive gray, some black in lower part (5Y 3/2-2/1, some 1/1, rare 4/2). Faint to very faint smooth laminations. Regular to some irregular thick parting; irregular to conchoidal fracture. Some to <u>very</u> common fine pyrite blebs and rare small lenses and streaks.
712.6	713.6	Oil shale: Medium to dark olive gray (5Y 4/2-3/1, rare 2/1). Faint smooth laminations. Regular thick to medium shaly parting; fairly smooth to conchoidal fracture. Common very fine pyrite blebs and streaks.
713.6	715.0	Oil shale: Medium olive gray to black (5Y 4/1-1/1). Faint smooth to some slightly irregular and distorted laminations; common loop

Illustration No. SBR-4227P (Sheet 18 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

From	To	Description
		structures and displacements. Regular to irregular, thick to medium parting; irregular to conchoidal fracture. Very common fine pyrite blebs and streaks.
715.0	717.0	Siltstone: White to light gray (N9-6) and rare buff to tan (2.5Y 7/2-6/3), very calcareous. Faint smooth to slightly irregular and distorted laminations. Regular to irregular thick parting; slightly conchoidal fracture. Rare fine black flecks.
717.0	718.9	Marlstone, siltstone, and some oil shale: Gray buff to some medium olive gray (5Y 8/1-6/2, some 5/2-4/2). Faint smooth laminations. Regular to irregular thick parting; slightly irregular to conchoidal fracture. Some fine pyrite blebs.
718.9	720.9	Oil shale: Light to medium and rare dark olive gray (5Y 6/2-4/2, rare 7/2 and 3/2-2/1). Faint to moderately distinct smooth laminations. Very regular to some irregular thick to medium shaly parting; conchoidal fracture. Some very fine pyrite blebs. A 1/2-inch gray to yellowish-gray silty band with very common fine pyrite at 720.1 feet. Sample of thin gray to yellowish-gray silty band with pyrite from 720.1 feet: X-ray - analcite, pyrrhotite, quartz, feldspar.
720.9	722.0	Oil shale: Medium to dark olive gray, rare buff near base (5Y 4/1 and 4/2-3/1, rare 7/2). Faint and rare distinct very smooth laminations. Regular thick shaly parting; conchoidal fracture. Common fine pyrite blebs.
722.0	723.0	Marlstone: Buff white to light olive gray and brownish gray (5Y and 2.5Y 9/2-6/2 and 6/1; some almost neutral). Very faint smooth to some irregular distorted laminations. Regular to slightly irregular, medium to very thin shaly parting; slightly conchoidal fracture.
723.0	724.0	Oil shale and some marlstone: Light to medium and rare dark olive gray, some buff to gray buff (5Y 7/2-4/2, some 8/2-8/1, rare 3/2; some slight brown tint). Faint smooth laminations. Regular to some irregular, thick to thin parting; conchoidal to irregular fracture.
724.0	725.0	Oil shale: Buff to dark olive gray and brownish gray (5Y and 2.5Y 8/2-3/2). Distinct smooth laminations. Regular to some irregular, medium to thin shaly parting; slightly conchoidal fracture.

Illustration No. SBR-4227P (Sheet 19 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

From	To	Description
725.0	726.3	Oil shale: Light to some dark olive gray and rare black (5Y 7/2-4/2, some 3/2, rare 2/1-1/1; some slight brown tint). Moderately distinct to faint, smooth to some slightly irregular and distorted laminations. Regular to irregular, thick to medium parting; conchoidal fracture. Rare thin olive-gray crystalline stringers. Some fine pyrite blebs in dark shale at base.
726.3	727.2	Oil shale: Light to rare dark olive gray (5Y and 7.5Y 6/1 and 6/2-4/1 and 4/2, rare 3/1). Very faint smooth to slightly irregular and distorted laminations and streaked bedding. Regular to irregular thick parting; very conchoidal to irregular fracture. A thin dark gray silty pyritic band at base.
727.2	727.8	Oil shale: Medium to dark olive gray and rare black (7.5Y 4/2-2/1, rare 1/1). Very faint smooth laminations. Regular to irregular parting; conchoidal to hackly fracture. Very common fine pyrite blebs. Very rare thin olive-gray to black pyritic stringers.
727.8	728.7	Oil shale: Medium to rare dark brownish gray and olive gray (2.5Y and 5Y 5/2-4/2, rare 3/2-2/2). Smooth to slightly irregular and distorted laminations. Regular to irregular, thick to medium parting; irregular to conchoidal fracture. A 0.1-foot gray to dark brownish-gray silty band near base.
728.7	731.6	Siltstone, marlstone, and oil shale: Light gray (N8-7) and light to rare dark olive gray (5Y 8/2-4/2, rare 3/2). Very faint to some very distinct smooth laminations and some very faint bedding. Very regular to irregular thick parting; conchoidal fracture.
731.6	733.6	Oil shale: Very light to some dark olive gray (5Y and 7.5Y 8/2-4/2, some 3/2-2/2). Distinct to some faint smooth laminations. Regular to irregular, thick to medium parting; very conchoidal fracture. Common fine pyrite blebs in dark shale at 732.5-732.6 feet.
733.6	734.7	Marlstone and oil shale: Light gray (N7) and very light to medium olive gray (5Y 8/2-4/2). Moderately distinct to very faint smooth laminations and some very faintly bedded bands. Regular to irregular thick parting; very conchoidal fracture. A very irregular thin dark gray silty very pyritic stringer at 733.8 feet.
734.7	739.0	Siltstone, mudstone, and marlstone: Light gray (N7-6) and some light to medium olive gray and brownish gray (5Y and 2.5Y 7/1-

Illustration No. SBR-4227P (Sheet 20 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

From	To	Description
		4/2). Very faint to rare distinct smooth laminations and some very faintly bedded to massive bands. Regular to irregular thick parting; smooth to very conchoidal fracture.
739.0	740.4	Oil shale: Light to medium and some dark olive gray (5Y 6/1 and 6/2-4/2, some 3/2; some slight brown tint). Faint smooth laminations. Regular to irregular, medium to thick parting; very conchoidal to irregular fracture. Rare dark brown laminae.
740.4	742.1	Oil shale: Light to dark olive gray (5Y 6/1 and 6/2-3/2). Faint to very faint smooth laminations. Regular to very irregular thick parting; very conchoidal fracture. Rare thin gray pyritic stringers. Some very fine pyrite blebs in lower part.
742.1	743.1	Oil shale: Dark olive gray to black (5Y 3/2-1/1). Very faint smooth laminations. Very irregular to some regular, thin to medium parting; very irregular to conchoidal fracture. Very common fine pyrite blebs in upper part.
743.1	744.1	Oil shale: Light to dark olive gray (5Y 6/2-3/2). Very faint to moderately distinct smooth laminations. Irregular to slightly irregular, thick to medium parting; very conchoidal fracture. A 2-inch medium to light gray, silty to fine sandy-textured band at 743.3 feet.
		Sample of thick gray band from 743.3 feet: X-ray - analcite; some biotite, feldspar, quartz, pyrite.
744.1	747.5	Marlstone, siltstone, and some oil shale: Light gray (N7-6) and light to rare dark olive gray and brownish gray (5Y and 2.5Y 8/2-5/2, rare 4/2-3/2). Very faint to rare distinct smooth laminations and some very faintly bedded bands. Very regular to some irregular, thick to rare thin parting; very conchoidal to irregular and some very smooth fracture.
747.5	748.0	Missing?
748.0	750.0	Siltstone: Light gray (N7-6) and rare light to medium olive gray (5Y 7/1-5/1). Faint smooth laminations to rare massive. Irregular thick parting; very conchoidal fracture.
750.0	750.7	Missing?
750.7	752.8	Oil shale: Light to medium and rare dark olive gray (5Y and 7.5Y 7/1 and 7/2-4/2, rare 3/2-2/1), rare buff to dark brownish gray (2.5Y 7/2-2/2). Distinct to faint smooth laminations. Very regular to some irregular, thick to medium parting; very conchoidal to some smooth fracture.

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

From	To	Description
752.8	753.0	Missing?
753.0	753.7	Oil shale and marlstone: Buff to medium brownish gray (2.5Y 8/2-4/2) and light to medium gray (N7-5). Distinct to faint smooth laminations. Irregular parting; irregular to conchoidal fracture.
753.7	754.0	Missing?
754.0	754.8	Oil shale: Light to dark olive gray (5Y 7/2-3/2, rare 2/2). Faint to moderately distinct smooth laminations. Regular to irregular, medium to thick parting; conchoidal to fairly smooth fracture. Rare very thin dark gray stringers.
754.8	755.4	Oil shale and some marlstone: Light to rare dark olive gray (5Y 7/1 and 6/2-4/2, rare 3/2; some slight brown tint to almost neutral). Distinct to faint smooth laminations. Regular thick parting; fairly smooth to conchoidal fracture. Some fine chalky buff-white streaks.
755.4	756.0	Missing?
756.0	756.6	Oil shale: Light to dark olive gray (5Y 8/2-3/2; some slight brown tint). Distinct smooth laminations. Regular to irregular, thick to medium parting; conchoidal to some very slight hackly fracture. Some very fine yellowish-buff streaks. Rare fine dark gray silty stringers.
756.6	759.3	Marlstone and some siltstone: Buff white to some medium olive gray (5Y 9/1-6/1 and 6/2, some 5/2-4/2) and light to medium gray (N7-5). Very faint to some moderately distinct, smooth to slightly irregular and distorted laminations. Regular to some irregular, thick to medium parting; conchoidal to fairly smooth fracture.
759.3	760.8	Marlstone and some oil shale: Light to medium and rare dark olive gray (5Y 6/1 and 6/2-5/1 and 5/2, rare 4/2-2/2; some slight brown tint), rare light to medium neutral gray (N7-5). Very faint to moderately distinct smooth laminations. Regular to very irregular, medium to thick parting; very conchoidal to irregular fracture.
760.8	761.8	Marlstone and rare oil shale: Light gray (N7-6) and light to some medium olive gray (5Y 7/1 and 7/2-6/1 and 6/2, rare 5/2-4/2 and 4/1; some slight brown tint). Faint to some moderately distinct smooth laminations. Irregular thick parting; very conchoidal fracture.
761.8	763.6	Marlstone: Light gray (N7-6) and some light olive gray (5Y 7/1 and 7/2-6/1 and 6/2). Faint to moderately distinct smooth

Illustration No. SBR-4227P (Sheet 22 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

From	To	Description
		laminations. Irregular to some regular thick parting; conchoidal fracture.
763.6	765.0	Marlstone and oil shale: Light to some dark olive gray and buff (5Y 6/1 and 6/2-4/2, some 3/1 and 8/2). Faint and rare distinct smooth laminations. Irregular thick parting; conchoidal fracture. Rare very thin gray silty stringers.
765.0	766.6	Marlstone: Light gray (N8-6; some slight olive tint), silty in parts. Faint smooth to slightly irregular and distorted laminations. Regular to irregular thick parting; conchoidal to irregular fracture. A 2-inch dark brownish-gray silty oil-stained tuff at 765.3 feet (probably like 743.3 feet).
766.6	767.6	Oil shale: Light to medium and rare dark olive gray (5Y 6/1 and 6/2-5/2, some 4/2, rare 3/2). Faint smooth laminations. Regular to irregular, thick to medium parting; conchoidal fracture.
767.6	768.4	Oil shale: Medium to dark olive gray (5Y 5/2-3/1) and some dark brownish gray (2.5Y 3/2-2/2). Faint smooth laminations. Regular to slightly irregular, medium to thin shaly parting; conchoidal to some hackly fracture. Rare fine gray to tan tuff stringers.
768.4	769.0	Oil shale: Medium to dark olive gray (5Y 4/1-3/1; almost neutral in lower part). Very faint smooth laminations. Regular to some irregular, medium to thin shaly parting; irregular and rare hackly fracture.
769.0	770.0	Marlstone and oil shale: Light to medium gray (N6-4) and light to rare dark olive gray (5Y 6/1 and 6/2-4/1 and 4/2, rare 3/1-2/1). Smooth laminations. Regular to some irregular thick parting; irregular to conchoidal fracture.
770.0	776.4	Marlstone and rare oil shale: Light to medium gray (N7-5) and light to rare medium and dark olive gray (5Y 7/1 and 7/2-6/1 and 6/2, rare 5/2-3/1). Faint to rare distinct smooth laminations. Regular to some irregular thick parting; very conchoidal to some fairly smooth fracture. (1.0 foot missing.)
776.4	777.1	Oil shale: Light to rare dark olive gray and brownish gray (5Y and 2.5Y 7/2-4/2, rare 3/2). Very faint to moderately distinct smooth laminations. Very regular to some irregular, thick to thin parting; conchoidal to fairly smooth fracture.
777.1	779.1	Marlstone: Light to rare medium olive gray (5Y 7/1 and 7/2-6/1 and 6/2, rare 5/2) and some light neutral gray (N7-6). Moderately

Illustration No. SBR-4227P (Sheet 23 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

From	To	Description
		distinct to very faint smooth laminations and some very faint bedding. Regular to irregular thick parting; conchoidal fracture. Some medium to dark gray very pyritic streaks in middle part.
779.1	784.0	Oil shale: Medium to rare light and dark olive gray (5Y 5/2-4/2, rare 7/1-6/2 and 3/2; some slight brown tint near base). Very faint to rare moderately distinct smooth laminations; faint contorted and folded laminations in upper 0.3 foot. Very regular to some irregular, thick to medium parting; very conchoidal fracture. Some to common very fine black flecks and pyrite blebs.
784.0	784.7	Oil shale: Very light to medium olive gray (5Y 8/1 and 8/2-5/2, rare 4/2). Faint to distinct smooth laminations. Regular thick parting; conchoidal fracture. Rare fine pyrite streaks.
784.7	785.3	Oil shale: Medium to dark olive gray and very rare black (5Y 4/2-3/2, rare 2/2-1/1; rare slight brown tint). Very faint smooth laminations. Irregular medium to thick parting; irregular to conchoidal fracture. Some very fine pyrite blebs in lower part. Sample of olive-gray oil shale with pyrite from 785.2 feet: X-ray - dolomite, quartz, feldspar; some montmorillonite, analcite.
785.3	786.1	Oil shale: Dark to some medium olive gray and rare black (5Y 3/2-2/1, some 4/2, rare 1/1). Very faint smooth to slightly irregular and distorted laminations. Regular to irregular, thick to medium and rare thin parting; irregular to conchoidal and rare slight hackly fracture. Some fine pyrite blebs in upper part. Some fine buff specks and streaks in lower part.
786.1	787.1	Marlstone and limestone (?): Light gray (N8-7), light olive gray (7.5Y 7/1-6/1), and some buff white to tan (2.5Y 9/2-7/3); silty in parts. Faint fairly smooth to very irregular and distorted laminations and some distorted bedding. Regular to some irregular thick parting; smooth to conchoidal fracture. Some very distinct dark olive-gray to black oil-shale laminae in upper part. Sample of buff-white to very light gray silty and slightly chalky limestone (or marlstone?) from 786.5 feet: X-ray - dolomite, quartz, some analcite.
787.1	787.8	Marlstone and oil shale: Light to medium olive gray (5Y 7/2-5/2, some 4/2; some slight brown tint). Faint to very faint irregular and distorted to smooth laminations. Regular to irregular, medium

Illustration No. SBR-4227P (Sheet 24 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

From	To	Description
		to thin shaly parting; irregular to some hackly fracture. A very irregular olive-gray dense to silty-textured vertical stringer (?) fracture filling (?), or recrystallized mass (?) with interfingering discolored marlstone in upper 0.2 foot.
787.8	788.5	Oil shale: Medium to dark brownish gray and rare brownish black (2.5Y 5/3-2/2, rare 1/2), some olive gray in lower part (5Y 4/2). Faint to fairly distinct smooth laminations. Regular to irregular, thick to medium parting; irregular to some slight hackly fracture. A very irregular thin silty stringer near top. A very thin gray silty-textured tuff band at 788.2 feet. A very thin dense brown dolomite band at 788.3 feet.
788.5	789.3	Oil shale: Dark olive gray to black (5Y 2/1-1/1, rare 3/2). Very faint smooth laminations and streaked bedding; some small displacements in middle part. Regular to irregular, thick to medium parting; slightly irregular to slightly conchoidal fracture. Common very fine pyrite blebs. Some fine irregular buff laminae and streaks near base. A thin distorted gray silty vertical stringer starts at 789.2 and extends into marlstone below--laminae are pushed up adjacent to stringer.
789.3	791.9	Marlstone and rare oil shale: Buff to rare medium and dark olive gray and brownish gray (5Y and 2.5Y 8/1 and 8/2-6/1 and 6/2, rare 4/2-2/1), some light to medium neutral gray in lower part (N7-5). Very faint to rare distinct smooth laminations. Very irregular parting; very conchoidal fracture. Badly broken up and probably mixed up; uneven sample split. Vertical gray silty stringer runs in and out of core at least down to 791.0 feet. A thin zone of platy marlstone breccia with gray silty matrix (like vertical stringer?) at 790.3 feet. Sample of silty-textured gray vertical stringer from 789.3 to 791.0 feet: X-ray - pyrite, feldspar (sanidine), analcite, dolomite.
791.9	792.9	Oil shale: Dark and rare medium brownish gray to brownish black (2.5Y 2/2-1/2, rare 3/2-4/2; some slight olive tint). Very faint smooth to some irregular and distorted laminations and streaked bedding. Very irregular thick to medium parting; very irregular fracture. Upper part very badly broken up into small irregular pieces. Vertical gray stringer runs in and out of section and terminates at 792.8 feet.

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

From	To	Description
792.9	793.9	Oil shale and marlstone: Light to rare dark olive gray (5Y 6/2-4/2, rare 3/2; some slight brown tint). Very faint smooth to slightly distorted and displaced laminations. Regular to very irregular thick parting; irregular to conchoidal fracture. A thin gray vertical stringer runs from 793.3 to 793.6 feet with a fine irregular fracture extending to base.
793.9	796.4	Oil shale: Dark brownish gray to brownish black (2.5Y 2/2-1/2; some very slight olive tint). Smooth to very irregular and distorted laminations and streaked bedding. Slightly irregular to very irregular, medium to thick parting; hackly to irregular fracture. A thin irregular to vermiform gray vertical stringer runs from 794.0 to 796.0 feet and another one starts just above base. Some irregular dense brown dolomite stringers, streaks, and lenses in middle part. A 1/2-inch irregular brownish-black granular oil-saturated tuff and some thin contorted stringers from 795.5 to 795.7 feet. Sample of brownish-black oil shale from 796.2 feet: X-ray - quartz, dolomite, feldspar, analcite, illite, pyrite.
796.4	798.1	Oil shale: Dark olive gray to black (5Y 3/2 and 3/1-1/1; some very slight brown tint). Faint slightly irregular and distorted to smooth laminations. Irregular medium to thick parting; very irregular to some conchoidal fracture. Rare very fine brown to buff crystalline streaks. Two fine to thin vermiform gray vertical stringers from top to 797.3 feet. Very sharp slightly irregular contact with marlstone below.
798.1	798.8	Marlstone and limestone: Light gray (N8-6), some yellowish buff in upper part (2.5Y 7/2-7/3) and light to medium olive gray in lower part (5Y 8/1-5/2). Fairly smooth laminations to slightly distorted and displaced streaked bedding. Slightly irregular thick parting; conchoidal fracture.
798.8	800.1	Oil shale: Dark to rare medium olive gray and black (5Y 3/1-2/1, rare 4/2 and 1/1). Faint to very faint irregular, distorted, and broken to fairly smooth laminations. Regular to irregular, medium to thick parting; irregular to conchoidal and rare hackly fracture. A very large medium olive-gray vertical marlstone stringer with interfingering shale stringers in upper 0.5 foot. Some tan to buff dolomite stringers and streaks in lower part.

Illustration No. SBR-4227P (Sheet 26 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

From	To	Description
800.1	802.0	<p>Marlstone and limestone: Very light to rare medium olive gray (5Y 8/1-6/2, rare 5/2-5/3; some almost neutral) and some light to medium brownish gray (2.5Y 6/2-4/3). Very irregular and discontinuous laminations, stringers, and streaks; some smooth streaked bedding. Slightly irregular thick parting; slightly conchoidal fracture. Common irregular thin brownish-gray silty stringers and streaks--some oil stained. A 2-inch medium to dark gray, silty to very fine sandy-textured oil-stained band at 800.5 feet.</p> <p>Sample of gray band from 800.5 feet: X-ray - analcite, pyrite, quartz, feldspar.</p>
802.0	803.0	<p>Marlstone and oil shale: Light to medium and rare dark grayish olive and olive gray (5Y 6/3 and 6/2-4/3, rare 3/2-2/1 and 7/3; some moderate brown tint). Irregular discontinuous streaks and stringers to smooth laminations. Irregular thick parting; conchoidal fracture. A very irregular thin dense dark gray stringer at base.</p>
803.0	804.7	<p>Oil shale: Dark olive gray and some black (5Y 3/1-2/1; some 1/1). Faint smooth laminations. Very regular to some irregular, thick to medium shaly parting; conchoidal to smooth fracture. Some very irregular thin gray silty stringers with intricately contorted inter-fingering shale stringers and yellowish-buff rims. Rare very irregular thin resinous black stringers.</p> <p>Sample of thin gray stringer from 804.2 feet: X-ray - pyrite, feldspar (sanidine), some analcite.</p>
804.7	805.7	<p>Oil shale and marlstone: Medium to dark olive gray (5Y 4/1-2/1) and some neutral gray (N5-4). Faint smooth to slightly irregular and distorted laminations; rare small irregular loop structures. Regular thick parting; conchoidal fracture.</p>
805.7	806.5	<p>Oil shale: Dark olive gray (5Y 3/2-2/1). Very faint slightly irregular and distorted laminations; some small irregular loop structures. Regular to some irregular, thick to medium parting; conchoidal to irregular fracture.</p>
806.5	807.2	<p>Oil shale: Dark olive gray and rare black (5Y 3/2-2/1, rare 1/1). Very faint smooth laminations and streaked bedding. Very regular thick to medium parting; smooth to slightly conchoidal fracture. Rare very thin dark gray to yellowish-tan stringers.</p>

Illustration No. SBR-4227P (Sheet 27 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

From	To	Description
807.2	812.0	Marlstone, limestone, and some oil shale: Very light buff to some medium olive gray and brownish gray (5Y and 2.5Y 9/2-6/2, some 5/2-4/2). Faint to some distinct, fairly smooth to very irregular and distorted laminations; some very faint smooth bedding. Regular to some irregular thick parting; slightly conchoidal to irregular fracture. A 0.1-foot gray silty band at 809.3 feet. Sample of very light buff chalky limestone from 809.6 feet: X-ray - dolomite, some quartz.
812.0	813.0	Oil shale: Dark to rare medium olive gray and black (5Y 3/1-2/1, rare 4/2 and 1/1), some brownish gray and brown in upper part (2.5Y 5/3-4/2). Faint smooth laminations to very faint smooth bedding. Regular to irregular, thick to medium parting; irregular fracture.
813.0	814.0	Oil shale: Medium to dark olive gray (5Y 4/1-2/1; almost neutral). Very faint smooth bedding to very irregular and distorted laminations, stringers, and streaks. Regular to very irregular thick parting; very irregular fracture. A very irregular dense medium olive-gray vertical stringer (?) with common fine interfingering dark olive-gray stringers and distorted shreds in upper 0.4 foot. Some small massive pyrite blebs and streaks in very distorted section near base.
814.0	817.7	Oil shale: Dark olive gray and brownish gray (5Y and 2.5Y 3/1-2/1; almost neutral). Very faint smooth bedding to very faint smooth laminations. Very regular to some irregular, medium to thick shaly parting; very irregular to slightly irregular fracture. Rare thin dense yellowish-buff dolomite bands and laminae. Common very fine pyrite blebs in lower part.
817.7	819.2	Marlstone: Light buff to rare brown and brownish gray (2.5Y 8/2-6/3, rare 5/3-4/2). Very faint to rare distinct smooth to some irregular, distorted, and displaced laminations. Regular to rare irregular thick parting; irregular fracture. A 2-inch dark gray fine sandy-textured tuff at top; rare thin gray stringers in other parts.
819.2	821.2	Oil shale: Dark olive gray (5Y 3/1-2/1; almost neutral). Very faint slightly distorted to smooth laminations and streaked bedding. Very regular to some irregular, medium to thick shaly parting; irregular to slightly conchoidal fracture. Some very irregular

Illustration No. SBR-4227P (Sheet 28 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

From	To	Description
		tan to yellowish-gray silty injections with some pyrite in upper part. Very common fine pyrite blebs in lower part.
821.2	822.2	Oil shale: Medium to dark olive gray (5Y 5/3-2/1; some almost neutral). Faint to very faint smooth laminations. Regular to some irregular, medium to thick shaly parting; irregular to conchoidal fracture. Some fine pyrite blebs. Rare thin buff to tan dolomite bands.
822.2	823.2	Oil shale: Dark olive gray and rare black (5Y 3/1-2/1, rare 1/1; almost neutral). Very faint smooth laminations. Regular to rare irregular, thick to medium shaly parting; slightly conchoidal to irregular fracture. Common fine pyrite blebs. A 1-inch gray and rare tan to buff silty tuff band at 822.4 feet. Parting surfaces at 822.5 feet are covered with large diamond shaped gar scales.
823.2	824.5	Limestone (?): Buff white to rare light brownish gray (2.5Y 9/2-8/2, rare 7/2-6/2). Very faint smooth to slightly irregular and distorted laminations and rare massive. Very regular to slightly irregular, thick to medium parting; slightly irregular fracture. Common very fine gray laminae and streaks. Some medium to dark shale laminae near top and bottom.
824.5	825.5	Oil shale: Dark olive gray (5Y 3/2-2/1), some medium to dark brownish gray near top (2.5Y 4/3-3/2). Very faint smooth to rare slightly distorted laminations. Regular to some irregular, thick to medium shaly parting; irregular to conchoidal fracture. A 0.1-foot olive-gray to dark gray silty band at 825.2 feet.
825.5	826.1	Limestone (?): Like 823.2 to 824.5 feet.
826.1	828.0	Oil shale: Medium and rare light olive gray to black (5Y 5/3-1/1, rare 7/2-6/3) and rare tan to buff (2.5Y 6/3-7/2). Moderately distinct to very faint, smooth to very irregular, distorted, and displaced laminations; some <u>very</u> faint smooth bedding. Very regular to some irregular, thick to medium shaly parting; slight conchoidal to irregular and some slight hackly fracture. A thin brown granular tuff (?) lens near base.
828.0	828.5	Siltstone, fine sandstone, and some marlstone: Light gray (N8-7) and some buff white to medium olive gray (5Y 8/2-5/2), very calcareous. Very irregular and distorted stringers and some platy marlstone and limestone breccia inclusions. Slightly irregular parting and fracture.

Illustration No. SBR-4227P (Sheet 29 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

From	To	Description
		Sample of fine sandstone with some marlstone stringers from 828.3 feet: X-ray quartz, dolomite; some analcite, feldspar, calcite.
828.5	830.0	Oil shale: Medium to dark olive gray, rare light olive gray and black (5Y 4/2-2/1, some 5/2, rare 6/2 and 1/1; some slight brown tint to almost neutral). Faint smooth and rare distorted laminations. Regular to rare irregular, thick to medium shaly parting; slightly irregular to rare hackly fracture. Some very irregular thin gray stringers extending into shale from above. Common buff limestone laminae and streaks at 828.8 to 828.9 feet.
830.0	831.1	Oil shale: Dark olive gray (5Y 3/2-3/1, some 2/1). Very faint smooth laminations. Regular thick to medium shaly parting; slightly conchoidal to irregular fracture. Some very fine pyrite blebs. Common light to medium blue-gray limestone bands and laminae in upper 0.3 foot.
831.1	832.9	Limestone and marlstone: Buff white to light and rare medium olive gray (5Y 9/2-6/2, rare 5/2). Very faint distorted streaked bedding to massive and some faintly mottled. Irregular to rare regular thick parting; irregular to slightly conchoidal fracture. Rare very fine gray laminae, streaks, and stringers.
832.9	833.5	Oil shale: Light to medium olive gray and rare yellowish buff (5Y 6/2-4/2, rare 7/2-8/3). Very faint smooth to slightly irregular and distorted laminations and streaked bedding. Slightly irregular thick to medium shaly parting; irregular to conchoidal fracture.
833.5	833.9	Oil shale: Dark and rare medium olive gray to black (5Y 2/1-1/1, rare 3/2-4/2). Very faint smooth bedding and rare moderately distinct laminations. Regular thick to thin shaly parting; smooth and rare very slight hackly fracture. Two thin buff limestone bands in upper part--lower one has very common ostracods.
833.9	835.5	Limestone, marlstone, and some oil shale: Buff white to some medium and rare dark brownish gray (2.5Y 9/2-6/2, some 5/2, rare 4/2-3/2). Moderately distinct to very faint, smooth to irregular, distorted, and displaced laminations and some very faint bedding. Regular to some irregular, thick to medium parting; conchoidal to smooth fracture. A 1-inch zone of platy marlstone breccia in limestone and some siltstone matrix at 835.2 feet.

Illustration No. SBR-4227P (Sheet 30 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

From	To	Description
835.5	836.6	Limestone: Buff white to rare light tan (2.5Y 9/2-8/3, rare 7/3-6/3). Massive to very faint irregular streaked bedding. Irregular to slightly irregular thick parting; slightly irregular fracture. Earthy to fine irregular oolitic (?) texture. Some very lean oil shale at base.
836.6	837.6	Oil shale: Medium to dark olive gray and rare black (5Y 4/2-2/1, some 5/2, rare 1/2; some slight brown tint). Faint distorted to smooth laminations and some streaked bedding. Regular to slightly irregular, thick to rare thin shaly parting; irregular to some hackly fracture. A 1-inch dense dark brown dolomite band near top. A 1-inch irregular reddish-brown silty to very fine sandy-textured stringer at 836.8 feet. A 3/4-inch light gray to brownish-gray silty limestone band near base. Sample of reddish-brown stringer from 836.8 feet: X-ray - analcite, quartz, some feldspar.
837.6	840.6	Limestone: Buff white to rare light brownish gray and tan (2.5Y 9/2-8/2, rare 7/2-6/2 and 6/3). Very faint irregular streaked bedding to massive. Irregular to some regular thick parting; slightly irregular fracture. A 3/4- x 1-1/2-inch dense brown dolomite nodule at 838.7 feet. Some very irregular oil-shale shreds and interfingering stringers near base.
840.6	842.6	Oil shale: Dark olive gray to some black (5Y 3/2-2/1, some 1/1), some medium to dark brownish gray in upper part (2.5Y 5/3-3/2). Very faint smooth to distorted bedding and some laminations. Regular to some irregular, thick to medium shaly parting; slightly irregular to very irregular fracture. A very thin vitreous black brittle organic streak at 841.0 feet.
842.6	843.9	Limestone: Like 837.6 to 840.6 feet.
843.9	844.6	Oil shale: Tan to dark brown and brownish gray (2.5Y 6/3-3/3 and 3/2, rare 2/2). Faint smooth to slightly distorted streaked bedding; some very faint displaced laminations in upper part. Slightly irregular thick parting; slightly irregular fracture.
844.6	845.6	Oil shale: Dark brownish gray to brownish black (2.5Y 2/2-1/2, rare 3/2). Very faint smooth bedding and some streaks. Slightly irregular thick to medium shaly parting; slightly irregular and some very coarse hackly fracture. Rare small irregular hard resinous black lenses.

Illustration No. SBR-4227P (Sheet 31 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

From	To	Description
845.6	847.6	Oil shale: Dark olive gray and rare black (5Y 3/1-2/1, rare 1/1). Very faint smooth laminations. Regular to some irregular, medium to thick shaly parting; irregular fracture. A 0.1-foot dense brownish-gray dolomite band near top.
847.6	848.9	Oil shale: Dark olive gray (5Y 3/1, rare 4/2; some slight brown tint). Very faint smooth bedding and some laminations. Regular to irregular, thick to medium parting; irregular fracture.
848.9	850.4	Oil shale: Medium to dark brownish gray (2.5Y 4/2-3/2; some very slight olive tint). Very faint slightly distorted to smooth streaked bedding. Slightly irregular to irregular thick parting; conchoidal to irregular fracture.
850.4	851.8	Marlstone and some oil shale: Light buff to some medium and rare dark brownish gray (2.5Y 8/2-6/2, some 5/2-4/2, rare 3/2). Faint to some distinct irregular, distorted, and displaced laminations. Irregular to slightly irregular thick parting; conchoidal fracture. Very silty marlstone in lower 0.2 foot. Some thin irregular dense gray stringers at base.
851.8	852.8	Oil shale and marlstone: Light to some dark olive gray (5Y 6/2-4/2, some 3/1). Distinct to faint slightly irregular, distorted, and displaced laminations. Irregular thick parting; conchoidal fracture. Rare thin gray silty stringers.
852.8	855.2	Marlstone: Light to medium olive gray (5Y 6/1 and 6/2-4/1 and 4/2). Faint irregular, distorted, and displaced to fairly smooth laminations and streaked bedding. Slightly irregular thick parting; conchoidal fracture.
855.2	886.0	Marlstone, mudstone, and siltstone: Very light to medium and rare dark olive gray. Faintly bedded and irregularly streaked to massive and some faint smooth to irregular laminations. Irregular to some very regular thick parting; conchoidal fracture. Moderately distinct smooth laminations from 871.0 to 873.0 feet.
886.0	887.5	Marlstone and rare oil shale: Light to medium olive gray (5Y 6/2-5/2, rare 4/2; rare slight brown tint). Very faint to rare moderately distinct smooth laminations. Irregular to regular thick parting; very conchoidal fracture. Common fine black flecks and pyrite blebs.
887.5	888.8	Marlstone and oil shale: Medium to rare dark olive gray (5Y 5/2-4/2, rare 3/2-2/1). Faint smooth to slightly irregular, distorted,

Illustration No. SBR-4227P (Sheet 32 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

From	To	Description
888.8	889.5	and displaced laminations. Regular to irregular thick parting; very conchoidal fracture. Common fine pyrite blebs. Oil shale: Dark olive gray and some black (5Y 3/2-2/1, some 1/1). Faint smooth to slightly irregular, distorted, and displaced laminations. Regular to some irregular, medium to thick shaly parting; irregular to conchoidal fracture. Very common fine pyrite blebs. Rare thin brown to gray silty-textured stringers.
889.5	891.3	Marlstone, limestone, and rare oil shale: Very light to some medium and rare dark olive gray (5Y 8/2-6/2, some 5/2, rare 4/2-3/2; some slight to moderate brown tint in lower part). Faint smooth to distorted bedding and some smooth to irregular and distorted laminations, stringers, and streaks. Irregular thick parting; conchoidal fracture. Some very irregular thin to fine vertical limestone stringers in marlstone.
891.3	893.8	Oil shale: Dark and some medium brown and brownish gray to brownish black (2.5Y 3/3-1/2, some 4/2-4/3; some very slight olive tint near top and bottom), rare satiny luster. Very irregular distorted and broken to rare smooth laminations, stringers, streaks, and shreds. Very irregular to some regular, thick to rare thin parting; very conchoidal to irregular and rare hackly fracture. Some thin dense buff dolomite stringers in lower part.
893.8	895.0	Oil shale, marlstone, and limestone: Light buff to rare dark brownish gray and brownish black (2.5Y 8/2-4/2, rare 3/2-1/2; some slight olive tint). Irregular distorted laminations and streaks to fairly smooth laminations and bedding. Irregular thick parting; conchoidal fracture. A large tapering and interfingering limestone stringer extends into distorted shale near base.
895.0	896.4	Oil shale: Dark olive gray to black (5Y 3/2-1/1), some brown to dark brownish gray near top (2.5Y 4/3-2/2). Faint irregular, distorted, and displaced laminations. Slightly irregular to very irregular, medium to thick parting; conchoidal to irregular fracture. Rare very irregular thin gray to brownish-gray stringers. Very common fine pyrite blebs in lower part.
896.4	897.9	Oil shale, marlstone, and limestone: Very light to dark olive gray (5Y 8/2-2/2) and light tan to dark brownish gray (2.5Y 7/3-2/2). Very faint bedding to faint and some very distinct very irregular

Illustration No. SBR-4227P (Sheet 33 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

From	To	Description
897.9	900.0	and distorted laminations, stringers, and streaks. Irregular to slightly irregular thick parting; conchoidal to irregular fracture. Oil shale: Dark olive gray, some black in upper part (5Y 3/2-2/1, some 1/1). Faint slightly irregular and distorted to smooth laminations. Regular to some irregular, thick to rare thin shaly parting; irregular to conchoidal fracture. Common fine pyrite blebs. A 1-inch irregular olive-gray granular tuff (?) at 899.3 feet. Sample of olive-gray granular crystalline tuff from 899.3 feet: X-ray - analcite, pyrite, some quartz.
900.0	903.2	Oil shale, marlstone, and limestone: Light to medium and some dark brownish gray and olive gray (2.5Y and 5Y 8/2-5/2, some 4/2-3/1). Faint to moderately distinct slightly irregular, distorted, and displaced to smooth laminations. Regular to irregular thick parting; very conchoidal fracture. Rare thin gray crystalline stringers.
903.2	904.5	Oil shale: Medium to dark olive gray and black (5Y 4/2-1/1). Very faint distorted and displaced to fairly smooth laminations and streaked bedding. Regular to irregular, thick to medium parting; irregular to conchoidal fracture. A 0.3-foot light to medium gray granular tuff with some limonite stains at 904.1 feet (like 899.3 feet).
904.5	905.5	Oil shale: Medium to dark olive gray (5Y 5/2-3/2, rare 2/1). Very faint smooth laminations. Very regular to some irregular, thick to rare thin shaly parting; conchoidal fracture. Some very fine pyrite blebs.
905.5	907.8	Limestone, marlstone, and some oil shale: Very light to medium olive gray and rare black (5Y 8/2-4/2, rare 1/2). Moderately distinct to very faint, smooth to distorted laminations and streaked bedding. Regular to some irregular thick parting; conchoidal fracture. Platy marlstone breccia with some small irregular gray crystalline patches at 907.6-907.7 feet. Dark olive-gray to black oil shale in lower 0.1 foot.
907.8	916.1	Oil shale, marlstone, and limestone: Buff and very light olive gray to black (2.5Y 8/3-1/2 and 5Y 8/2-1/2). Very faint to some very distinct, smooth to very irregular and distorted laminations, stringers, and streaks; rare massive. Regular to irregular, thick

Illustration No. SBR-4227P (Sheet 34 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

From	To	Description
		to rare thin parting; conchoidal to irregular and rare hackly fracture. Some thin very oolitic limestone zones. Sample of oolitic limestone from 910.9 feet: X-ray - dolomite; some quartz, analcite.
916.1	917.3	Oil shale: Dark and rare medium olive gray to black (5Y 2/1-1/1, rare 3/2-4/2; some slight brown tint in upper part). Faint to very faint, smooth to slightly irregular and distorted laminations and streaked bedding. Regular to some irregular, medium to thick shaly parting; irregular to some coarse hackly fracture. Rare very thin irregular silty-textured pyrite stringers and streaks.
917.3	918.2	Oil shale and marlstone: Light to dark olive gray and rare black (5Y 7/2-2/1, rare 1/1). Very faint to moderately distinct smooth to irregular, distorted, and displaced laminations. Regular to irregular thick parting; conchoidal fracture. Some gray limestone streaks in upper part.
918.2	919.0	Marlstone and oil shale: Light buff and light to rare dark olive gray (2.5Y 8/2 and 5Y 8/2-6/2, rare 5/2-2/1). Moderately distinct to faint, fairly smooth to irregular distorted laminations and streaks. Irregular thick parting; irregular to conchoidal fracture. Dense to oolitic limestone in upper inch.
919.0	919.9	Oil shale: Dark and some medium olive gray to black (5Y 3/2-1/1, some 4/2). Faint slightly irregular and distorted laminations. Regular to slightly irregular, medium to thick shaly parting; conchoidal to some hackly fracture. Some fine pyrite blebs in lower part. Rare thin olive-gray vermiform stringers.
919.9	920.8	Oil shale: Medium to dark olive gray and rare black (5Y 4/1 and 4/2-2/1, rare 1/1; almost neutral to some slight brown tint). Slightly irregular and distorted laminations. Regular to irregular, medium to thick parting; irregular to conchoidal and rare hackly fracture. Common fine pyrite blebs. Rare olive-gray vermiform stringers.
920.8	922.0	Oil shale and limestone: Light buff to brown and dark brownish gray to black (2.5Y 8/2-4/3 and 3/2-1/2). Very faint fairly smoothly laminated oil shale with thick bands of brecciated to irregularly streaked limestone. Irregular thick parting; irregular to conchoidal fracture. Some oolites in limestone. Common fine pyrite blebs in oil shale.

Illustration No. SBR-4227P (Sheet 35 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

From	To	Description
922.0	923.2	Oil shale: Dark olive gray (5Y 3/2-3/1, some 2/1). Very faint smooth laminations. Regular to slightly irregular, medium to thick shaly parting; conchoidal fracture. Very rare fine pyrite blebs.
923.2	924.3	Oil shale: Dark olive gray to black (5Y 2/1-1/1, some 3/1). Very faint smooth laminations. Very regular medium to thick shaly parting; slightly conchoidal fracture. Common fine pyrite blebs and streaks in lower part.
924.3	926.0	Oil shale: Dark and rare medium olive gray to black (5Y 3/2-1/1, rare 4/2-5/2). Faint slightly irregular and distorted to smooth laminations. Very regular to some irregular, medium to thick shaly parting; conchoidal to irregular and some hackly fracture. Some thick to very thin, buff to brownish-gray, earthy to dense and rare oolitic marlstone and limestone bands in upper half.
926.0	927.0	Marlstone and rare oil shale: Very light buff to tan and rare medium to dark brownish gray (2.5Y 9/3-6/3, rare 5/2-2/2). Very irregular contorted and broken laminations, stringers, and streaks. Very irregular parting and fracture. Sample of very light buff earthy to chalky marlstone from 926.2 feet: X-ray - dolomite, quartz.
927.0	928.0	Oil shale: Dark olive gray to black (5Y 3/2-1/1), some medium to dark brown in upper part (2.5Y 4/3-3/3). Faint and some moderately distinct, slightly irregular and distorted to smooth laminations and streaked bedding. Regular to slightly irregular, thick to thin shaly parting; irregular to conchoidal fracture. Common fine oolites in upper part.
928.0	929.2	Marlstone and oil shale: Light to dark gray (N7-3) and medium to rare dark olive gray (5Y 5/2-4/2, rare 3/2-2/1). Faint to fairly distinct smooth laminations. Regular to some irregular, thick to medium shaly parting; conchoidal and some irregular fracture.
929.2	935.0	Marlstone and oil shale: Buff to medium and rare dark olive gray and brownish gray (5Y and 2.5Y 8/2-4/2, rare 3/2), some light to medium gray (N7-4). Fairly distinct to very faint, slightly irregular and distorted to smooth laminations. Regular to some very irregular thick parting; conchoidal and some irregular fracture. Rare thin gray silty-textured limestone stringers and streaks. A 0.2-foot buff limestone band at 931.0 feet; a 0.7-foot buff limestone band at base.

Illustration No. SBR-4227P (Sheet 36 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

From	To	Description
935.0	939.0	Marlstone and oil shale: Light to some dark olive gray and rare black (5Y 6/2-4/2, some 3/2, rare 2/1-1/1). Moderately distinct to faint, slightly irregular and distorted laminations; common loop structures and displacements. Regular to very irregular thick parting; very conchoidal fracture. Some very irregular fine dark gray pyritic stringers.
939.0	945.5	Marlstone, mudstone, and rare oil shale: Light to medium and very rare dark olive gray to black (5Y and 7.5Y 6/2-4/2, rare 3/2-1/1). Faint slightly irregular and distorted laminations to massive. Irregular to slightly irregular thick parting; very conchoidal to irregular fracture.
945.5	946.9	Oil shale: Medium to dark olive gray (5Y and 7.5Y 4/2-2/1). Very faint slightly irregular and distorted to smooth laminations. Regular to some irregular, thick to thin shaly parting; very conchoidal to irregular fracture. Some fine pyrite blebs and streaks.
946.9	947.9	Marlstone, limestone, and rare oil shale: Very light buff to medium brownish gray (2.5Y 9/2-5/2). Very faint contorted to distorted streaked bedding. Irregular parting; irregular to conchoidal fracture. Rare oolitic zones.
947.9	949.6	Oil shale: Medium brown to brownish black (2.5Y 4/3-1/2) and dark olive gray (5Y 3/2-2/1), rare resinous luster. Faint irregular and distorted to smooth laminations and streaked bedding. Regular to some irregular, medium to some thin shaly parting; irregular to coarse hackly fracture.
949.6	950.8	Marlstone: Very light to rare medium olive gray (5Y 8/2-6/2, rare 5/2; some slight brown tint). Faint to very faint irregular, distorted, and displaced to fairly smooth laminations. Irregular thick parting; irregular to conchoidal fracture.
950.8	952.2	Oil shale: Light to dark olive gray and brownish gray, rare buff (5Y and 2.5Y 6/2-3/2, rare 8/2 and 2/2). Very faint to some distinct, smooth to slightly irregular, distorted, and displaced laminations. Regular to some irregular, thin to thick shaly parting; irregular to conchoidal fracture.
952.2	954.0	Oil shale: Medium to dark olive gray (5Y 4/2-2/1), some dark brownish gray near top (2.5Y 3/2-2/2). Faint to very faint, smooth to slightly irregular and distorted laminations. Regular to

Illustration No. SBR-4227P (Sheet 37 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

From	To	Description
		slightly irregular, thick to some thin shaly parting; conchoidal to very irregular fracture.
		Sample of normal dark olive-gray oil shale from 953.2 feet: X-ray - quartz, analcite, illite, feldspar, calcite, dolomite.
954.0	955.8	Limestone and marlstone: Light buff to light tan limestone (2.5Y 8/3-7/3), very light to rare medium olive-gray marlstone (5Y 8/2-6/2, rare 5/2; slight brown tint). Faintly bedded and streaked to massive fine granular to oolitic limestone in upper part; marlstone with faint to very faint, fairly smooth to irregular distorted laminations and streaked bedding in lower part. Slightly irregular to irregular, medium to thick parting; fairly smooth to conchoidal fracture.
955.8	956.8	Oil shale: Light to dark olive gray and some buff to rare black (5Y 6/2-2/1, some 7/2-8/2, rare 1/2). Faint to some distinct, irregular and distorted to smooth laminations. Very regular to rare irregular, medium to thick shaly parting; conchoidal to some smooth fracture.
956.8	960.3	Limestone: Buff white (2.5Y 9/2) and very light to rare medium gray (N8-6, rare 5-4), very oolitic (some fragmental). Massive to faint slightly distorted bedding and some very irregular and distorted laminations, stringers, and streaks. Irregular parting and fracture. Upper 0.3 foot composed entirely of loosely packed oolites with some tarry fillings.
960.3	962.3	Limestone and marlstone: Light to medium and rare dark gray. Massive to very faint distorted streaked bedding. Irregular to some slightly irregular thick parting; irregular to conchoidal fracture. Limestone is very oolitic.
962.3	970.0	Marlstone: Light to medium gray and olive gray. Faint smooth to distorted laminations and some very faint bedding. Irregular to some regular, thick to rare medium parting; conchoidal fracture. Some thin gray oolitic to silty limestone stringers.
970.0	971.5	Marlstone: Olive gray (5Y and 7.5Y 5/1-4/1; almost neutral). Very faint smooth to slightly distorted bedding and some laminations and streaks. Irregular to some regular, thick to medium parting; very conchoidal to irregular fracture.
971.5	974.7	Marlstone and rare oil shale: Medium and rare dark olive gray (5Y and 7.5Y 5/1 and 5/2-4/1 and 4/2, rare 3/1; some almost neutral). Very faint to faint, smooth to very irregular, distorted, and displaced

Illustration No. SBR-4227P (Sheet 38 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

From	To	Description
		laminations and streaks. Irregular and rare slightly irregular thick parting; very conchoidal fracture. A 2-inch very light buff limestone band at 972.4 feet.
974.7	976.7	Oil shale and marlstone: Medium to dark olive gray (5Y 4/2-3/1, some 5/2-2/1). Faint to very faint slightly irregular, distorted, and displaced laminations and streaked bedding. Regular to some very irregular, thick to medium shaly parting; irregular to very conchoidal fracture.
976.7	982.0	Marlstone: Medium and rare dark olive gray (5Y 5/2-4/2, rare 3/2-3/1). Very faint slightly irregular and distorted laminations and streaked bedding. Regular to very irregular, medium to thick parting; very conchoidal to very irregular fracture. Some very fine pyrite blebs in lower part. Some gray limestone stringers near base.
982.0	985.0	Limestone and marlstone: Buff white to light and rare medium olive gray (5Y 9/2-6/2, rare 5/2-4/1; some slight brown tint). Very irregular, distorted, and some contorted to fairly smooth laminations and streaked bedding. Slightly irregular to irregular, medium to thick parting; slightly irregular to very conchoidal fracture. Some oolitic zones. Some brownish-gray slightly oil-stained (?) streaks in upper part.
985.0	987.4	Limestone: Buff and tan to some brown (2.5Y 8/3-6/3, some 5/3-4/3), very oolitic (some very fragmental). Massive and speckled; some irregular stringers. Irregular parting and fracture. Some slight oil stains and bitumen impregnations. Some dark oil-shale stringers at 985.9-986.1 feet. Some medium to small irregular massive earthy limestone fragments in oolitic matrix at base.
987.4	988.4	Limestone, marlstone, and some oil shale: Buff white to medium and rare dark olive gray and brownish gray (5Y and 2.5Y 9/2-4/2, rare 3/2), some light to medium greenish gray in upper part (10Y 7/1-5/2). Faint to very distinct, very irregular and distorted laminations, stringers, and streaks. Some very irregular vertical limestone or marlstone stringers.
988.4	989.5	Marlstone and oil shale: Light to medium and rare dark brownish gray, olive gray, and greenish gray (2.5Y to 10Y 7/2-5/2, rare 4/2-3/2). Faint slightly distorted to smooth laminations and streaked bedding. Irregular thick parting; conchoidal fracture.

Illustration No. SBR-4227P (Sheet 39 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

From	To	Description
989.5	992.4	Some buff streaks and specks in upper part. Some thin to fine vermiform buff vertical stringers in lower part. Limestone, marlstone, and rare oil shale: Buff white to light and rare medium olive gray (5Y 9/2-6/2 and 6/1, rare 5/2 and 5/1-4/1; some almost neutral). Faint fairly smooth to irregular distorted streaked bedding and some laminations. Common very coarse oolites and some irregularly laminated algal stringers in upper 0.5 foot. Common faint fine oolites in other parts.
992.4	1,006.2	Siltstone and fine sandstone: Very light gray buff to some medium gray, very calcareous. Faint distorted streaks and rare distinct laminations to massive; some crossbedding. Some gray marlstone near top.
1,006.2	1,019.5	Marlstone, mudstone, and siltstone: Light to medium gray and olive gray, very calcareous. Very faint smooth to distorted bedding and some very faint to fairly distinct laminations and stringers. Some irregular dark gray mottling near base.
1,019.5	1,025.0	Limestone: Very light buff to some light brownish gray. Massive and rare distorted laminations and stringers. Common very oolitic zones with some black bitumen specks.
1,025.0	1,028.2	Marlstone and mudstone: Light to medium greenish gray and olive gray. Very faint slightly distorted laminations and streaked bedding to massive. Some fine pyrite blebs and streaks in upper part.
1,028.2	1,036.4	Limestone, siltstone, and rare marlstone: Light to medium gray, some buff in upper part. Massive to some very irregular laminations and stringers. Common very oolitic zones.
1,036.4	1,045.4	Marlstone, mudstone, and siltstone: Very light to medium olive gray and rare neutral gray. Very faint and rare distinct, irregular and distorted to smooth laminations, stringers, and streaked bedding; rare massive siltstone.
1,045.4	1,050.8	Siltstone and some very fine sandstone: Very light to rare medium olive gray. Massive and some very faint smooth to distorted streaked bedding and rare laminations.
1,050.8	1,053.1	Marlstone and mudstone: Light to medium olive gray. Very faintly bedded to faint smooth laminations.
1,053.1	1,055.2	Limestone and marlstone: Light to some medium gray and olive gray. Faint very irregular and distorted laminations.
1,055.2	1,061.1	Same as 1,050.8-1,053.1 feet.

Illustration No. SBR-4227P (Sheet 40 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

From	To	Description
1,061.1	1,062.1	Marlstone and oil shale: Medium to some dark olive gray (5Y 5/2-4/2, some 4/2; rare slight brown tint). Faint very distorted streaked bedding to some smooth laminations. Irregular to some very smooth, thick to medium parting; irregular to very conchoidal fracture.
1,062.1	1,064.8	Limestone, marlstone, and rare oil shale: Buff white to rare medium and dark olive gray and brownish gray (5Y and 2.5Y 9/2-6/2, rare 5/2-3/2). Very faint and rare distinct, very irregular and distorted to rare smooth laminations and streaks; rare massive. Irregular to rare regular, thick to medium parting; irregular to conchoidal fracture. Some very irregular vertical stringers (marlstone in marlstone) in lower part.
1,064.8	1,066.0	Marlstone and rare oil shale: Medium and rare dark olive gray (5Y 5/2 and 5/1-4/2 and 4/1, rare 3/1; some almost neutral). Faint distorted and displaced to fairly smooth laminations. Irregular and rare regular, thick to medium parting; very conchoidal fracture. Some very irregular buff vertical stringers in upper part.
1,066.0	1,068.8	Marlstone and limestone: Light to medium olive gray (5Y 6/1-4/1, rare 4/2) and light to medium neutral gray (N6-5). Faint smooth to very irregular and distorted laminations and stringers. Slightly irregular to very irregular, thick to medium parting; very conchoidal to irregular fracture.
1,068.8	1,077.0	Limestone: Buff to light brownish gray and some light to rare dark gray; very oolitic. Massive and some faint contorted stringers. Dark gray in upper 0.5 foot.
1,077.0	1,079.7	Mudstone and siltstone: Light to medium gray (some very slight olive tint). Faint irregular distorted streaks and stringers to very faint streaked bedding.
1,079.7	1,084.4	Limestone: Buff white to buff and some light to medium gray; very oolitic. Massive and rare distorted stringers.
1,084.4	1,088.7	Marlstone: Light to some dark gray (some very slight green tint). Moderately distinct slightly irregular and distorted laminations and stringers to very faint bedding. Rare small oolitic patches.
1,088.7	1,109.8	Siltstone and mudstone: Gray buff and light to medium greenish gray, very calcareous. Massive to very distorted streaks, stringers, and rare laminations.
1,109.8	1,124.0	Siltstone and very fine sandstone: Buff white to gray buff, very calcareous, massive. Some fine oolites in upper part.

Illustration No. SBR-4227P (Sheet 41 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

From	To	Description
1,124.0	1,153.2	Siltstone, fine sandstone, and some mudstone: Light to medium gray and some greenish gray, very calcareous. Distorted to contorted laminations, stringers, and streaks; some massive. Some carbonaceous woody plant fossils.
1,153.2	1,155.9	Limestone: Buff to light brownish gray. Massive; finely fragmental to spongy with some drusy calcite.
1,155.9	1,159.9	Marlstone and rare oil shale: Light to medium and rare dark olive gray (5Y 7/1-4/1, rare 3/1-2/1). Very irregular and distorted to some smooth laminations, stringers, and streaks. Irregular to some regular, thick to medium parting; very conchoidal fracture.
1,159.9	1,164.7	Limestone: Buff to light brownish gray, massive, very oolitic (some diameters up to 1/8 inch, rarely 1/4 inch). Some recrystallized calcite in upper part.
1,164.7	1,172.9	Marlstone, mudstone, and some limestone: Light to medium and very rare dark olive gray, some neutral gray. Very irregular distorted to contorted and rare smooth laminations, stringers, and streaks; some very faint streaked bedding.
1,172.9	1,174.5	Limestone: Buff to gray buff and some light to medium gray; very oolitic, sandy in lower part. Massive; some thin irregular marlstone stringers near top.
1,174.5	1,181.7	Sandstone, siltstone, and rare marlstone: Gray buff to medium gray, very calcareous, some parts very oolitic. Moderately distinct to very faint, smooth to distorted bedding and rare very irregular and distorted laminations and stringers; some crossbedding.
1,181.7	1,182.6	Marlstone: Light olive gray. Very faint smooth laminations and streaked bedding.
1,182.6	1,191.0	Sandstone, some siltstone, and rare marlstone: Gray buff to light gray and rare light to medium olive gray, very calcareous. Faint bedding and rare slightly distorted laminations and stringers; some crossbedding. Common oolites near top.
1,191.0	1,194.0	Mudstone and siltstone: Light to some medium greenish gray and some gray buff, calcareous. Massive to some very distorted and rare smooth laminations and stringers.
1,194.0	1,203.3	Sandstone and siltstone: Gray buff to light gray, very calcareous. Massive to fairly distinct streaked bedding. Some fine black coaly streaks and stringers in lower part.

Illustration No. SBR-4227P (Sheet 42 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

From	To	Description
1,203.3	1,222.0	Mudstone, siltstone, and some sandstone: Light to medium olive gray and some gray buff to medium gray, very calcareous. Massive to very faintly bedded and some faint distorted to rare smooth laminations and stringers.
1,222.0	1,234.8	Mudstone, marlstone, and rare limestone: Medium and some light olive gray and rare neutral gray. Very faint distorted to smooth streaked bedding and some very distorted to smooth laminations and stringers. A 4-inch band of very oolitic gray limestone at 1,229.0 feet. (Darkest part gave no oil in test tube.)
1,234.8	1,241.8	Sandstone: Gray buff to buff and rare light tan, calcareous. Massive to very faint smooth bedding.
1,241.8	1,261.3	Mudstone and marlstone: Medium to some light olive gray (almost neutral). Massive to very faintly bedded and rare distorted to smooth laminations. Dense to very oolitic limestone with some marlstone stringers from 1,244.9 to 1,245.6 feet. Rare fine black plant fragments in middle part (in silty micaceous mudstone). Sample of micaceous mudstone from 1,251.5 feet: X-ray - quartz, dolomite, analcite, feldspar, illite, kaolin or chlorite.
1,261.3	1,262.7	Marlstone: Medium gray (N5-4) and some medium to rare dark brownish gray (2.5Y 5/2-4/2, rare 3/2). Faint slightly irregular and distorted to smooth laminations and some very faintly bedded bands. Very regular to some irregular thick shaly parting; very conchoidal fracture. Rare thin dense brown dolomite bands.
1,262.7	1,263.7	Marlstone: Medium and rare dark olive gray (5Y 5/1-4/1, rare 3/1; almost neutral to some slight brown tint). Faint smooth to some slightly irregular and distorted laminations. Regular to some irregular, thick to rare thin shaly parting; very conchoidal to irregular fracture. Some very thin dense brown to gray pyritic dolomite bands and stringers. Very rare thin pyrite lenses.
1,263.7	1,264.7	Oil shale: Medium brown and rare tan to dark brownish gray (2.5Y 5/3-2/2, rare 6/3; slight olive tint in upper part). Faint smooth to irregular, distorted, and displaced laminations and some streaked bedding. Very regular to rare irregular, thin to thick shaly parting; conchoidal fracture.
1,264.7	1,265.4	Oil shale: Dark to rare medium brownish gray and brownish black (10YR and 2.5Y 3/2-2/2, rare 4/3 and 1/2). Very faint smooth

Illustration No. SBR-4227P (Sheet 43 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

From	To	Description
		to slightly distorted laminations. Very regular to some irregular, thick to medium shaly parting; conchoidal to irregular fracture. Some dense brown pyritic dolomite laminae. Sample of dark brownish-gray oil shale from 1,265.3 feet: X-ray - analcite, quartz; some illite, feldspar, pyrite.
1,265.4	1,267.2	Oil shale and some marlstone and limestone: Dark brownish gray to brownish black and some tan to gray buff (2.5Y 3/2-1/2, some 4/3-8/1). Distinct to faint contorted stringers to distorted and some smooth laminations. A 2-inch irregular dense gray crystalline band at 1,266.0 feet. A 3-inch zone of buff to gray-buff limestone stringers with some oolites at 1,266.5 feet. Sample of gray band from 1,266.0 feet: X-ray - dolomite, analcite, feldspar, pyrite, some quartz.
1,267.2	1,268.9	Marlstone (?) and some oil shale: Light buff to tan and some light brownish gray to brownish black (2.5Y 8/2-6/3, some 6/2-1/2). Very faint slightly distorted streaked bedding to smooth laminations. Regular to some irregular, thick to thin shaly parting; irregular to conchoidal and rare hackly fracture. A 1-1/2-inch brownish-black oil-shale zone at 1,268.1 feet; rare thin oil-shale bands and stringers in other parts. Sample of light tan earthy marlstone from 1,267.6 feet: X-ray - dolomite; some quartz, montmorillonite.
1,268.9	1,271.2	Oil shale: Dark brownish gray and some brownish black (2.5Y 3/2-2/2, some 1/2; some moderate olive tint near base). Very faint smooth and rare irregular distorted laminations. Very regular to slightly irregular, medium and rare thin shaly parting. Very common dense limestone laminae and rare thin stringers in upper part. Very common very small to fine dense tan dolomite lenses at 1,270.9-1,271.0 feet.
1,271.2	1,274.9	Limestone, marlstone, and some oil shale: Buff white to buff and tan, some dark brownish gray to brownish black (2.5Y 9/2-7/2 and 7/3, some 3/2-1/2). Massive to distorted laminations and stringers. Irregular to some slightly irregular thick parting; slightly conchoidal fracture. Some oolitic to irregular granular zones. Brownish-black faintly bedded oil shale from 1,272.0 to 1,272.5 feet (rare vitreous black organic crusts on parting surfaces). A 0.1-foot gray to yellowish-gray band at 1,273.7 feet (like 1,266.0 feet?)

Illustration No. SBR-4227P (Sheet 44 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

From	To	Description
1,274.9	1,276.0	Oil shale, marlstone, and limestone: Light to medium and rare dark olive gray (5Y 6/2-4/2, rare 3/2), some buff in upper part (2.5Y 8/2-7/2). Fairly distinct smooth to distorted laminations and stringers in upper part; very faint streaked bedding to massive in lower part. Slightly irregular to irregular, medium to thick parting; conchoidal to irregular fracture. Some light gray granular limestone in lower part.
1,276.0	1,278.1	Limestone and marlstone: Light to medium and rare dark gray (N7-4, rare 3; some very slight olive tint in upper part). Distinct to very faint, smooth to irregular distorted laminations, stringers, and bands. Regular to irregular, thick to medium parting; conchoidal to irregular fracture. Granular and rare oolitic limestone.
1,278.1	1,280.6	Mudstone, marlstone, and some limestone: Light to medium gray. Massive to very faint streaked bedding and some smooth to distorted laminations and stringers. Regular to irregular thick parting; irregular to conchoidal fracture. Very oolitic dark gray limestone in lower 0.5 foot.
1,280.6	1,286.3	Mudstone and marlstone: Light to medium olive gray. Very faint smooth laminations and bedding to massive. Slightly irregular to very irregular, thick to medium parting; very conchoidal and some irregular fracture.
1,286.3	1,291.2	Mudstone and siltstone: Light gray to gray buff and some light to medium olive gray, very calcareous. Massive to faintly bedded and some distorted stringers. Irregular parting; slightly irregular to very conchoidal fracture. Sample of very calcareous gray siltstone from 1,286.4 feet: X-ray - quartz, dolomite, calcite, feldspar, some analcite.
1,291.2	1,299.4	Mudstone: Light to medium olive gray. Faintly bedded to massive and rare distorted laminations and stringers. Irregular parting; very conchoidal fracture.
1,299.4	1,310.2	Limestone: Buff white to tan and some light brownish gray, very oolitic to pisolitic. Massive to some very faint distorted bedding and stringers. Irregular parting; slightly irregular to slightly conchoidal fracture. Some sparry calcite near top. A very irregular 0.1-foot band of brownish-black oil shale at 1,300.3 feet. Some very large pisolites (up to 3/4 inch) from 1,307.6 to 1,308.7 feet.
1,310.2	1,329.4	Siltstone and mudstone: Gray white to rare medium and dark gray, some yellow buff near top. Faint slightly distorted laminations to

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

From	To	Description
		very faint streaked bedding and some massive; some very distorted stringers. Irregular parting; irregular to conchoidal fracture. Some fine to small massive pyrite blebs in middle part.
1,329.4	1,332.7	Mudstone: Light to dark gray and greenish gray. Very faint distorted bedding to massive. Irregular parting and fracture. Very common fine interlaced calcite stringers in upper part.
1,332.7	1,345.4	Siltstone and mudstone: Gray buff and light to medium olive gray. Faintly bedded to massive and some distorted laminations and stringers. Irregular parting and fracture.
1,345.4	1,350.3	Mudstone: Light to medium olive gray and some neutral gray. Faint distorted laminations to very faint bedding. Irregular parting; very conchoidal fracture.
1,350.3	1,351.9	Limestone: Buff to tan, very oolitic, massive. Irregular parting and fracture. Some sparry calcite in upper part.
1,351.9	1,362.0	Siltstone: Buff white to medium gray and some light olive gray, very calcareous. Massive and some distorted stringers. Irregular parting and fracture.
1,362.0	1,378.5	Siltstone and some mudstone: Light to medium and rare dark gray and some olive gray, very calcareous. Distorted laminations and streaks to some massive. Irregular to rare regular, thick to rare thin parting; conchoidal to irregular and rare hackly fracture.
1,378.5	1,383.0	Mudstone: Medium and some light and dark greenish gray and olive gray. Faintly laminated to massive. Irregular to some regular, thick to medium parting; very irregular fracture. (No oil in test tube.)
1,383.0	1,395.4	Siltstone (same as 1,362.0-1,378.5) and mudstone (same as 1,378.5-1,383.0).
1,395.4	1,407.0	Siltstone: Buff to light gray, very calcareous. Very faintly bedded and streaked to massive. Irregular parting; slightly conchoidal to smooth fracture. Some faint contorted stringers in lower part.
1,407.0	1,411.7	Mudstone, marlstone, and limestone: Gray buff to medium and rare dark olive gray (some almost neutral to very slight brown tint). Very faintly bedded to faint and some distinct very irregular, distorted, and displaced laminations and stringers (interlaminated marlstone and limestone). Irregular to rare regular, thick to medium parting; conchoidal to coarse irregular hackly fracture. (No oil in test tube.)

Illustration No. SBR-4227P (Sheet 46 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

From	To	Description
1,411.7	1,412.5	Limestone: Yellow buff to gray, very oolitic. Massive with some fine distorted marlstone stringers. Some sparry calcite.
1,412.5	1,434.6	Siltstone and mudstone: Gray white to medium gray, olive gray, and greenish gray. Very faint distorted bedding and some massive to very distorted laminations and stringers. Irregular parting and fracture. Some very irregular intersecting stringers in mudstone in upper part.
1,434.6	1,454.4	Siltstone and very fine sandstone: Buff white to gray white and rare light gray, very calcareous. Massive to faint distorted streaks and stringers; rare crossbedding. Irregular to slightly irregular parting; conchoidal to fairly smooth fracture. Rare light to medium olive-gray mudstone.
1,454.4	1,460.0	Mudstone and siltstone: Gray buff and light to medium olive gray. Distorted laminations and stringers to some massive. Irregular parting; irregular to very conchoidal fracture.
1,460.0	1,475.8	Mudstone and limestone (?): Light to medium olive-gray mudstone and light gray limestone. Faintly bedded to very irregular and distorted laminations, stringers, and some thick bands (interbedded mudstone and limestone). Very irregular medium to thick parting; very irregular coarse hackly to conchoidal fracture. (No oil in test tube.)
1,475.8	1,479.1	Siltstone and very fine sandstone: Buff and gray buff, very calcareous, massive.
1,479.1	1,487.0	Mudstone (same as 1,460.0-1,475.8) and siltstone (same as 1,475.8-1,479.1).
1,487.0	1,495.0	Mudstone: Light to medium olive gray and some greenish gray. Very faintly bedded to some faint slightly irregular and distorted laminations. Irregular to slightly irregular, thick to medium parting; very irregular coarse hackly to conchoidal fracture.
1,495.0	1,497.0	Mudstone: Medium and rare dark olive gray (5Y 5/1 and 5/2-4/1 and 4/2, rare 3/2; some slight brown tint to almost neutral). Very faintly bedded and some faint smooth to irregular distorted laminations. Regular to irregular, medium to thick parting; irregular to conchoidal and rare slight hackly fracture.
1,497.0	1,498.5	Marlstone: Buff to some brownish gray and olive gray (2.5Y and 5Y 8/2-6/2, some 5/2-4/2). Faint smooth to irregular distorted laminations; a thin intricately contorted and displaced zone at

Illustration No. SBR-4227P (Sheet 47 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

From	To	Description
		1,497.7 feet. Regular to irregular thick parting; conchoidal to irregular fracture.
1,498.5	1,499.5	Oil shale: Dark brownish gray to brownish black (2.5Y 2/2-1/2, rare 3/2). Very faint slightly irregular and distorted to smooth laminations and streaked bedding. Regular to slightly irregular, medium to thick shaly parting; conchoidal and rare very slight hackly fracture. A very thin irregular oil-stained crystalline tuff stringer at 1,498.9 feet. Some thin to fine pyrite streaks in lower part.
1,499.5	1,501.2	Oil shale: Dark brownish gray (2.5Y 3/2-2/2; some very slight olive tint). Very faint smooth to slightly distorted laminations and streaked bedding. Regular to some irregular, medium to thick shaly parting; very irregular fracture. Some thin to fine pyrite stringers and streaks in upper part. A very irregular thin very pyritic oil-stained tuff at 1,500.5 feet.
1,501.2	1,502.2	Oil shale and marlstone: Light to dark brownish gray and rare buff (2.5Y 6/2-2/2, rare 7/2). Faint slightly irregular and distorted to smooth laminations and some very faint streaked bedding. Regular to some irregular, thick to medium parting; irregular to conchoidal fracture.
1,502.2	1,505.0	Marlstone and oil shale: Buff to dark brownish gray (2.5Y 7/2-2/2) and some very light to medium olive gray (5Y 7/2-5/2). Distinct to very faint, fairly smooth to some irregular, distorted, and displaced laminations. Regular to irregular thick parting; irregular to conchoidal fracture. Some thin buff-white to light gray limestone stringers.
1,505.0	1,508.6	Marlstone: Light to medium olive gray (5Y 6/1-4/1 and 4/2; some almost neutral). Very faint smooth to slightly irregular and distorted laminations and streaked bedding. Regular to some irregular, medium to thick shaly parting; slightly irregular to conchoidal fracture. Very rare resinous black plant (?) fossils. Common light to medium gray limestone stringers in lower 0.4 foot.
1,508.6	1,510.5	Marlstone and oil shale: Buff to medium olive gray and brownish gray (5Y and 2.5Y 7/2-4/2, rare 8/2). Faint to distinct, smooth to slightly distorted laminations and streaked bedding. Regular to some very irregular, medium to thick parting; conchoidal to irregular fracture.

Illustration No. SBR-4227P (Sheet 48 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

From	To	Description
1,510.5	1,512.0	Oil shale: Medium brown to dark brownish gray (2.5Y 4/3-2/2; some slight olive tint). Very faint slightly irregular, distorted, and displaced laminations to very faint streaked bedding. Regular to very irregular, thick to medium parting; very conchoidal to very irregular fracture. Badly broken up and mixed up; sample length doubtful; uneven sample split.
1,512.0	1,514.0	Limestone and some marlstone: Light to medium gray (N7-5) and some yellowish buff to medium and rare dark olive gray (5Y 8/2-4/2, rare 3/2). Massive limestone with very irregular and distorted thin marlstone stringers. Regular to irregular thick parting; conchoidal fracture. Very common very small oolites in upper part.
1,514.0	1,518.0	Marlstone and siltstone: Gray buff and light to medium olive gray. Smooth to very irregular and distorted laminations and stringers; some massive. Regular to irregular thick parting; conchoidal to irregular fracture. Some medium to thick light gray massive limestone bands.
1,518.0	1,526.1	Mudstone and marlstone: Light to medium olive gray. Very faintly bedded and some faint smooth laminations. Irregular medium to thick parting; very irregular to some conchoidal fracture. Rare thin limestone bands.
1,526.1	1,529.5	Limestone and siltstone: Buff, gray buff, and some light tan to medium and rare dark gray; rare greenish gray and olive gray. Massive with some very irregular and distorted stringers. Very oolitic in upper part. Some sparry calcite near top.
1,529.5	1,535.2	Mudstone and some marlstone: Light to medium and rare dark olive gray. Massive to very faintly bedded and some smooth to distorted laminations.
1,535.2	1,550.6	Siltstone, very fine sandstone, and some mudstone: Buff and gray buff to very light greenish gray and some medium gray to olive gray, very calcareous. Faintly bedded to massive and some distorted stringers.
1,550.6	1,555.5	Mudstone and limestone: Light to medium olive gray and some neutral gray. Faint distorted laminations and stringers and some very faint bedding.
1,555.5	1,559.5	Mudstone: Medium and some light olive gray, very calcareous. Very faintly bedded to massive. Rare thin limestone stringers.

Illustration No. SBR-4227P (Sheet 49 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

From	To	Description
1,559.5	1,562.0	Mudstone and limestone (same as 1,550.6-1,555.5).
1,562.0	1,567.2	Siltstone: Gray buff, very calcareous. Massive to very faintly bedded and some very faint smooth laminations. Rare medium gray fine-grained sandstone.
1,567.2	1,574.9	Mudstone: Medium and rare light olive gray (rare very slight brown tint). Very faintly bedded to massive and rare very faint slightly distorted to smooth laminations. Rare thin limestone stringers in upper part.
1,574.9	1,576.3	Oil shale and limestone: Medium to dark brownish gray (2.5Y 5/2-3/2; slight olive tint). Faint very irregular and distorted streaks and stringers. Slightly irregular to very irregular, thick to medium parting; very irregular to conchoidal fracture. Some neutral gray limestone in middle part.
1,576.3	1,578.7	Mudstone and marlstone: Medium olive gray (5Y 5/1-4/1). Massive to very faint slightly irregular and distorted laminations. Regular to irregular, medium to thick parting; conchoidal to very irregular fracture.
1,578.7	1,582.9	Oil shale and marlstone: Medium to dark olive gray and brownish gray (5Y and 2.5Y 5/2-3/2, rare 2/2 in upper part). Faint very irregular and distorted to some fairly smooth laminations, stringers, and streaks. Very irregular to some regular, medium to thick parting; very irregular fracture. Some thin very irregular and distorted gray to gray-buff limestone stringers (very common in lower 0.7 foot). Rare thin to medium, brown to buff dolomitic limestone bands.
1,582.9	1,586.8	Limestone and some marlstone: Light to medium gray, very silty in middle part. Faint to some distinct, very irregular and distorted to fairly smooth laminations and stringers (interlaminated limestone and marlstone); some massive limestone in middle part. Slightly irregular to very irregular, thick to some medium parting; irregular to conchoidal fracture.
1,586.8	1,598.2	Mudstone: Light to medium and rare dark olive gray, calcareous. Very faintly bedded to massive and some faint smooth to slightly distorted laminations. Very irregular to rare regular, medium to thick parting; very irregular fracture. Some thin limestone stringers in upper and lower parts. (No oil in test tube.)

Illustration No. SBR-4227P (Sheet 50 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

From	To	Description
1,598.2	1,599.8	Mudstone and some limestone: Medium to some light and dark gray (some very slight olive tint). Massive to some slightly irregular and distorted laminations and stringers (mudstone and limestone). Very irregular to some slightly irregular, medium to thick parting; very irregular fracture.
1,599.8	1,606.0	Siltstone: Gray buff to light and some medium olive gray, very calcareous. Very faintly bedded to massive and some very irregular and distorted stringers.
1,606.0	1,611.6	Mudstone: Medium and some light olive gray, calcareous. Very faintly bedded to some very faint smooth laminations. Rare thin limestone stringers.
1,611.6	1,613.7	Limestone and marlstone: Light to some medium olive gray and rare neutral gray. Thin to thick massive limestone bands with inter-laminated marlstone.
1,613.7	1,632.8	Mudstone: Light to medium olive gray (some almost neutral and rare slight brown tint), calcareous. Massive to some very faint smooth laminations. Some thin limestone stringers in upper part. Some light to medium brownish-gray oil shale at 1,624.7-1,625.3 feet.
1,632.8	1,636.2	Oil shale (?): Light to medium olive gray and brownish gray, some buff (5Y and 2.5Y 6/2-4/2, some 7/2). Very faint to rare distinct, smooth to slightly irregular, distorted, and displaced laminations. Very regular to some irregular, medium to thick shaly parting; irregular to very conchoidal fracture. A thin light to medium gray crystalline calcite band at 1,633.9 feet.
1,636.2	1,639.0	Marlstone and mudstone: Light to medium olive gray (some almost neutral). Very faint smooth laminations to some massive.
1,639.0	1,648.0	Marlstone and mudstone: Light to medium and some dark gray (some very slight olive tint). Very faint smooth and some slightly distorted laminations to massive. (Darkest part gave trace oil in test tube.)
1,648.0	1,657.2	Marlstone: Light to medium gray and olive gray. Very faint smooth laminations and some very faint bedding. Very common fine irregular gray-buff limestone streaks and stringers in lower foot.
1,657.2	1,661.5	Oil shale: Medium to dark olive gray (5Y 4/2-3/2, rare 2/2; some slight brown tint). Very faint smooth laminations to very faint bedding. Very irregular to some regular, medium to thick parting; very irregular fracture. Badly broken up; uneven sample split.

Illustration No. SBR-4227P (Sheet 51 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

From	To	Description
1,661.5	1,663.5	Oil shale: Dark olive gray (5Y 3/2-2/1; some slight brown tint). Very faint smooth to slightly distorted laminations and streaked bedding. Regular to very irregular, medium to thin parting; very irregular to conchoidal and rare hackly fracture.
1,663.5	1,665.0	Oil shale: Dark olive gray and brownish gray to black (5Y and 2.5Y 3/2-1/2). Very faint smooth streaked bedding. Very irregular to some regular, thick to medium parting; very conchoidal fracture. A 1-1/2-inch gray to yellowish-gray dense crystalline limestone band near top.
1,665.0	1,666.5	Oil shale and marlstone: Medium to dark olive gray (5Y 5/2-2/2; some slight brown tint) and buff to tan (2.5Y 8/2-6/3). Very faint smooth streaked bedding to moderated distinct slightly irregular and distorted laminations. Irregular to some very regular, medium to thick parting; irregular to conchoidal fracture. Upper part very badly broken up and mixed up; sample length doubtful; uneven sample split.
1,666.5	1,667.5	Oil shale: Dark brownish gray to brownish black (2.5Y 2/2-1/2, some 3/3), some satiny luster. <u>Very</u> faint smooth to slightly distorted bedding. Irregular medium to thick parting; irregular fracture. Some thin dark brown silty tuff stringers in upper part. A 1-inch irregular dense brown dolomite stringer at top.
1,667.5	1,670.0	Marlstone and some oil shale: Medium to dark olive gray (5Y 4/1 and 4/2-3/1 and 3/2), some dark brownish gray near top (2.5Y 3/2-2/2). Very faint smooth streaked bedding. Irregular medium to some thin parting; very irregular fracture.
1,670.0	1,672.2	Marlstone: Light to medium olive gray (5Y 6/1-4/1 and 4/2; some almost neutral). Very faint smooth laminations and streaked bedding. Irregular medium to thick parting; very irregular to conchoidal fracture. Very rare glossy diagonal shear surfaces with fine slickensides. A 1-1/2-inch gray silty-textured limestone band at base.
1,672.2	1,677.3	Oil shale: Dark olive gray and brownish gray, some medium in middle part, rare black in lower part (5Y and 2.5Y 3/2-2/2, some 4/2, rare 1/2). Very faint slightly distorted streaked bedding. Irregular medium to thick parting; very irregular to conchoidal fracture.
		Sample of dark brownish-gray oil shale from 1,677.2 feet: X-ray - illite, quartz, dolomite; some feldspar, analcite.

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

From	To	Description
1,677.3	1,678.9	Oil shale: Medium to dark olive gray (5Y 4/2-2/2, common slight brown tint). Faint distorted and displaced laminations, stringers, and streaks. Irregular medium to thick parting; very irregular fracture. Some very irregular thin gray limestone stringers near base.
1,678.9	1,685.0	Mudstone: Light to some medium olive gray, silty, calcareous, massive. A large gray silty-textured limestone nodule at 1,683.6.
1,685.0	1,691.6	Mudstone: Light to medium olive gray, very calcareous. Massive to very faintly bedded and distorted laminations and streaks. Irregular medium to thick parting; very irregular fracture.
1,691.6	1,692.5	Marlstone: Medium to dark brownish gray (some slight olive tint). Very faint irregular distorted laminations. Common thin irregular light gray limestone stringers in lower part. (Darkest part gave trace oil in test tube.)
1,692.5	1,694.9	Marlstone and mudstone: Medium to some very light olive gray, calcareous, some silty. Faint very distorted streaks, stringers, and rare laminations.
1,694.9	1,704.8	Siltstone: Gray buff to buff and some light to medium olive gray (almost neutral), very calcareous. Distinct to faint, thin to fine, distorted to contorted stringers and streaks; rare medium to very thick irregular mudstone bands with contorted laminations.
1,704.8	1,727.4	Mudstone and marlstone: Light to medium and very rare dark olive gray (some almost neutral and rare slight brown tint), very calcareous. Very faintly bedded and some massive to very faint smooth to distorted laminations. Rare thin to fine limestone stringers and laminae in upper part. A thin dense brown dolomite band at 1,720.0 feet. (Darkest, brownest part gave very slight trace oil in test tube.)
1,727.4	1,731.6	Marlstone: Medium to dark olive gray and some brownish gray (5Y 4/1 and 4/2-3/2, some 2.5Y 4/2-2/2). Very faint to faint, slightly irregular and distorted to smooth laminations. Very regular to some irregular, medium to thin shaly parting; conchoidal to very irregular fracture.
1,731.6	1,733.4	Oil shale: Medium to dark brownish gray (2.5Y 5/2-3/2, rare 2/2). Very faint smooth laminations to very faint bedding. Very regular to some irregular, medium to thick shaly parting; irregular to conchoidal fracture.

Illustration No. SBR-4227P (Sheet 53 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

From	To	Description
1,733.4	1,736.7	Oil shale: Dark brown to brownish black (2.5Y 3/3-1/2), some satiny luster. Very faint smooth streaked bedding and some medium to thick bands. Very regular to some irregular, medium to thick and some thin shaly parting; irregular to conchoidal and rare hackly fracture. A thin irregular very light gray silty stringer at 1,735.0 feet (some very thin massive pyrite streaks immediately above). Sample of thin light gray silty stringer from 1,735.0 feet: X-ray - montmorillonite, illite or biotite, feldspar, quartz, analcite.
1,736.7	1,739.6	Oil shale: Dark olive gray and brownish gray to rare black (5Y and 2.5Y 3/2-2/2, rare 1/2). Very faint smooth laminations and streaked bedding. Very regular to rare irregular, thick to rare thin shaly parting; very irregular to some hackly fracture. Rare glossy shear surfaces in lower part.
1,739.6	1,740.6	Oil shale: Dark brownish gray to some dark brown and brownish black (2.5Y 3/2-2/2, some 3/3 and 1/2; slight olive tint near top). Very faint to faint slightly irregular, distorted, and displaced to smooth laminations. Regular to slightly irregular, medium to very thin shaly parting; irregular to coarse hackly fracture.
1,740.6	1,741.7	Oil shale: Medium to dark brownish gray and brown, rare brownish black (2.5Y 4/2 and 4/3-2/2, rare 3/4 and 1/2); rare satiny luster. Very faint to faint, smooth and rare distorted laminations and streaked bedding. Regular to some irregular, medium to thick shaly parting; irregular to conchoidal fracture. A very thin irregular very light slightly olive-gray earthy stringer at 1,741.5 feet.
1,741.7	1,743.6	Oil shale: Dark brown to brownish black (2.5Y 3/3-1/2). Very faint smooth to irregular distorted laminations and some medium to thick bands (brown color). Regular to some very irregular, medium to thick shaly parting; conchoidal to irregular fracture. Rare diagonal wavy shear surfaces with fine slickensides.
1,743.6	1,746.7	Oil shale: Dark olive gray (5Y 3/2-2/2; common slight brown tint). Very faint slightly distorted laminations and streaked bedding. Regular to some very irregular, medium to thick shaly parting; very irregular coarse hackly to conchoidal fracture. Rare glossy diagonal shear surfaces with fine slickensides.

Illustration No. SBR-4227P (Sheet 54 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

From	To	Description
1,746.7	1,764.5	Marlstone and mudstone: Medium to dark olive and some light olive gray (some slight brown tint to almost neutral). Very faint smooth to slightly distorted bedding and rare laminations. (Darkest part gave "b" in test tube.)
1,764.5	1,773.0	Marlstone: Medium to dark gray and some olive gray. Very faintly bedded to very faint smooth and some slightly distorted laminations.
1,773.0	1,780.6	Oil shale (?): Dark and some medium olive gray (5Y 3/2-2/2, some 4/2; some slight brown tint). Very faint smooth to slightly distorted laminations and streaked bedding. Regular to some very irregular, thick to thin shaly and rare papery parting; very irregular fracture. Upper 3 feet badly broken up; uneven sample split.
1,780.6	1,784.2	Oil shale: Dark brown and brownish gray (2.5Y 3/2-3/3, some 2/2). Very faint smooth to slightly distorted laminations and streaked bedding. Slightly irregular to very irregular, medium to thick parting; very irregular fracture.
1,784.2	1,791.7	Marlstone and oil shale: Light to dark gray (N7-3) and light to dark brownish gray and olive gray (2.5Y and 5Y 6/2-3/2, rare 2/2). Moderately distinct to very faint smooth laminations and streaked bedding. Very regular to some irregular, medium to very thin shaly parting; conchoidal to irregular fracture. Common thin to medium, light gray to buff limestone bands.
1,791.7	1,793.2	Marlstone and oil shale: Buff to light brownish-gray and some tan earthy marlstone (2.5Y 8/2-6/2, some 6/3), dark brown and brownish-gray oil shale (2.5Y 3/3-2/2). Thick massive to faintly streaked bands of marlstone in upper and lower parts; oil shale with very faint smooth streaked bedding in middle part. Regular to some irregular, thick to medium shaly parting; conchoidal to very slight hackly fracture.
1,793.2	1,795.0	Oil shale: Dark brown and brownish gray (2.5Y 3/3-2/2). Very faint smooth streaked bedding and rare laminations. Regular and rare irregular, medium to thick shaly parting; irregular to conchoidal fracture.
1,795.0	1,797.3	Oil shale: Tan to medium and some dark brownish gray (10YR and 2.5Y 6/3-4/2, some 3/2-2/2). Faint to very faint smooth laminations and streaked bedding. Regular to irregular, medium to thick parting; conchoidal to irregular fracture.

Illustration No. SBR-4227P (Sheet 55 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

From	To	Description
1,797.3	1,801.0	Oil shale: Dark brownish gray (2.5Y 3/2-2/2). Very faint smooth laminations to <u>very</u> faint smooth bedding. Very regular to some irregular, medium to thin shaly parting; slightly conchoidal fracture. Very rare very thin light colored silty-textured pyrite streaks. Rare to very common ostracods on parting surfaces.
1,801.0	1,802.0	Oil shale: Medium to dark brownish gray (2.5Y 4/2-2/2). Faint to very faint smooth laminations and streaked bedding. Regular thick to medium shaly parting; slightly conchoidal to smooth fracture. Common ostracods.
1,802.0	1,803.0	Oil shale: Same as 1,797.3 to 1,801.0 feet.
1,803.0	1,804.2	Oil shale: Dark brownish gray and rare brownish black (2.5Y 2/2, rare 3/2 and 1/2). Very faint smooth streaked bedding and rare laminations. Regular to some irregular, medium to thin shaly parting; irregular fracture. A 0.3-foot irregular dense brown dolomite band at 1,803.7 feet.
1,804.2	1,805.3	Oil shale: Medium brown and brownish gray to some brownish black (2.5Y 4/3 and 4/2-3/2, some 2/2-1/2). Faint to very faint, slightly irregular and distorted to smooth laminations and some very faint bedding. Regular to some irregular, medium to thin shaly parting; irregular to some hackly fracture. Some thin dense brown dolomite bands. Some very thin light gray silty stringers near top. Some irregular diagonal fractures with fine olive-green silty coatings in middle part.
1,805.3	1,806.5	Oil shale: Dark brownish gray to brownish black and some medium to dark brown (2.5Y 2/2-1/2, some 4/3-3/3), common satiny to resinous luster. Very faint smooth to slightly distorted streaked bedding and some faint to distinct laminations and thin bands. Regular to irregular, medium to thick parting; irregular to some coarse hackly fracture. A very irregular thin dense gray crystalline stringer at 1,806.3 feet.
1,806.5	1,807.1	Oil shale: Medium olive gray and brown to rare buff and brownish black (5Y 4/2 and 2.5Y 4/3-6/3, rare 7/2 and 1/2). Fairly distinct irregular distorted laminations to very faint smooth streaked bedding. Irregular to slightly irregular, thick to thin parting; irregular fracture. Some thin to medium dense brown dolomite stringers.

Illustration No. SBR-4227P (Sheet 56 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

From	To	Description
1,807.1	1,807.7	Oil shale: Dark brownish gray and rare brownish black (2.5Y 2/2, rare 3/2 and 1/2). Very faint smooth bedding and rare laminations. Regular to slightly irregular, thin to medium shaly parting; slightly irregular fracture.
1,807.7	1,808.3	Oil shale: Medium to dark olive gray and some brown (5Y 4/2-3/2, slight brown tint; some 2.5Y 5/3). A very irregular dark brownish-gray interfingering injection in distinctly laminated shale in upper 0.1 foot; very faint smooth to distorted streaked bedding in other parts. Irregular parting and fracture.
1,808.3	1,810.1	Oil shale: Dark brownish gray (2.5Y 3/2-2/2) and some medium to dark olive gray (5Y 4/2-3/2; slight brown tint). Very faint smooth to rare distorted streaked bedding. Regular to slightly irregular, thin to thick shaly and rare papery parting; irregular to some hackly fracture. An irregular 2-inch dense brown to tan dolomite band at 1,809.1 feet. Olive-gray shale from 1,809.3 to 1,809.6 feet. Sample of brown to tan band from 1,809.1 feet: X-ray - dolomite; some quartz, analcite.
1,810.1	1,811.1	Oil shale: Medium to dark brown and olive gray (2.5Y 4/3-2/2 and 5Y 3/2-2/2). Very faint smooth to distorted laminations and streaked bedding. Regular to some irregular, medium to thin shaly parting; irregular coarse hackly fracture.
1,811.1	1,813.1	Oil shale: Dark brown and brownish gray (2.5Y 3/3-2/2; some slight olive tint). Very faint smooth to slightly distorted streaked bedding and rare laminations. Regular to some very irregular, thick to thin shaly parting; very irregular coarse hackly fracture. A 1-inch blue-gray silty band near base. Sample of gray band from 1,812.9 feet: X-ray - montmorillonite; some pyrite, analcite.
1,813.1	1,814.1	Oil shale: Dark brownish gray and olive gray, rare tan and brownish black (2.5Y and 5Y 3/2-2/2, rare 2.5Y 5/3 and 1/2). Very faint smooth streaked bedding and rare distinct laminations and thin bands. Regular to some irregular, medium to thin shaly parting; irregular coarse hackly fracture.
1,814.1	1,816.2	Oil shale: Dark and rare medium to light olive gray (5Y 3/2-2/1, rare 4/2-6/3). Very faint smooth streaked bedding. Regular to some very irregular, medium to very thin shaly parting; coarse hackly fracture. Rare dense light brownish-gray dolomite bands.

Illustration No. SBR-4227P (Sheet 57 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

From	To	Description
		A very thin white to dark gray stringer near base. Rare black fossil fragments near base.
1,816.2	1,817.2	Dolomite and oil shale: Tan dolomite (2.5Y 5/3-6/3) and brownish-gray to brownish-black oil shale (2.5Y 4/2-1/2). Very distinct smooth to slightly distorted laminations and thin bands. Regular to slightly irregular, thick to medium shaly parting; irregular to conchoidal fracture. A 3/4-inch massive olive-gray mudstone band at 1,816.7 feet.
1,817.2	1,819.2	Oil shale: Dark brownish gray to some medium brown (2.5Y 2/2, some 3/2-5/3). Very faint smooth to slightly distorted laminations and some fairly distinct thin to thick dolomite bands. Slightly irregular to some very irregular, medium to very thin shaly parting; irregular hackly fracture. Common irregular shear surfaces with slickensides.
1,819.2	1,820.3	Oil shale and dolomite: Dark brownish-gray to brownish-black oil shale (2.5Y 2/2-1/2) and medium brown dense to silty-textured dolomite (2.5Y 4/3). Very faint smooth to distorted streaked bedding in oil shale; three thin to very thick (lower one 3 inches) irregular dolomite bands. Regular to irregular, thin to thick parting; irregular fracture. Some irregular shear surfaces. Rare parting surfaces with very fine coppery specks. Some slight oil stain and fine pyrite blebs in lower dolomite band. Sample of shale and fine coppery specks scraped off of parting surfaces from 1,819.6 to 1,820.3 and 1,822.4 to 1,822.6 feet: X-ray - zinc, lead, copper, quartz.
1,820.3	1,822.6	Oil shale: Dark brownish gray (2.5Y 3/2-2/2; rare very slight olive tint). Very faint smooth laminations. Very regular thick to thin shaly parting; irregular fine to coarse hackly fracture. Very common ostracods on parting surfaces. A 1-inch blue-gray band at 1,821.4 feet (like 1,812.9 feet). A thin irregular light gray stringer with fine dark flecks at 1,821.9 feet. Sample of light gray stringer from 1,821.9 feet: X-ray - montmorillonite, illite or biotite, kaolin, some quartz?, feldspar?
1,822.6	1,824.2	Oil shale: Light to dark brownish gray (2.5Y 6/2-2/2; some slight olive tint). Distinct smooth to distorted and displaced laminations. Regular to slightly irregular, thick to thin shaly parting; irregular

Illustration No. SBR-4227P (Sheet 58 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

From	To	Description
1,824.2	1,825.1	coarse hackly fracture. Some thick tan to gray-buff dolomite bands in upper part. A very irregular and displaced gray limestone stringer with very common ostracods (?) at 1,823.5 feet. Dolomite (?) and some oil shale: Tan to brown dolomite (2.5Y 5/3-4/3) and dark brownish-gray to brownish-black oil shale (2.5Y 2/2-1/2). Thick massive to faintly laminated, dense to blebby-textured dolomite bands with distinct medium to fine smooth oil-shale bands and laminae. Regular to slightly irregular, thick to rare thin shaly parting; smooth to slightly conchoidal and rare hackly fracture. Sample of thick massive brown blebby-textured band from 1,824.8 feet: X-ray - dolomite, some quartz.
1,825.1	1,826.2	Oil shale: Dark brownish gray (2.5Y 2/2, rare 3/2; slight olive tint). Very faint smooth bedding and some laminations. Very regular to rare irregular, medium to thin shaly parting; irregular to coarse hackly fracture.
1,826.2	1,827.4	Limestone, dolomite, and oil shale: Brownish-gray and brown limestone and dolomite (2.5Y 5/2 and 5/3-3/3), dark brownish-gray to brownish-black oil shale (2.5Y 2/2-1/2). Thick to medium, massive to faintly streaked limestone and dolomite bands and very faintly bedded oil shale. Regular to some very irregular, thick to thin parting; smooth to conchoidal and some coarse hackly fracture. Very common ostracods (?) in limestone near top. A 1-inch gray silty-textured band with some fine interfingering shale stringers near base.
1,827.4	1,828.5	Oil shale: Medium to rare dark brownish gray (2.5Y 5/1-4/1, rare 3/1). Faint smooth to irregular, distorted, and displaced laminations. Slightly irregular medium to thick shaly parting; slightly irregular fracture. Some thin to fine light gray limestone stringers and streaks.
1,828.5	1,829.7	Oil shale: Dark brownish gray to rare brownish black (2.5Y 3/2-2/2, rare 1/2; some slight olive tint). Very faint smooth to slightly distorted streaked bedding. Regular to some irregular, medium to thin shaly parting; irregular to coarse hackly fracture. A very thin light gray band with very fine dark flecks at 1,829.3 feet; some fine irregular stringers extending into shale below.
1,829.7	1,830.2	Limestone, oil shale, and some dolomite: Brownish-gray to tan and brown dolomite and limestone (2.5Y 5/2 and 5/3-4/3), medium to

Illustration No. SBR-4227P (Sheet 59 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

From	To	Description
		dark brownish-gray and rare brownish-black oil shale (2.5Y 4/2-2/2, rare 1/2). Medium to thick bands of limestone and dolomite; faint slightly distorted streaked bedding in oil shale. Irregular parting; slightly conchoidal to irregular fracture. Very common ostracods (?) in limestone. Rare glossy shear surfaces with slickensides.
1,830.2	1,831.3	Oil shale: Dark to some medium brownish gray and brown (2.5Y 2/2-3/2, some 3/3-4/3), some dark olive gray in lower part (5Y 3/2-2/2). Very faint and some distinct smooth laminations and streaked bedding. Very regular medium to thin shaly parting; slightly conchoidal and rare hackly fracture. Some ostracods in lower part.
1,831.3	1,831.9	Limestone: Light buff to tan (2.5Y 8/2-6/3) and some light to medium gray (N6-5). Massive to faint irregular streaks; some fine distinct dark oil-shale laminae. Irregular to some very regular parting; slightly conchoidal to irregular fracture. Common very fine pellets or oolites (some dark gray to black). Sample of gray limestone with fine pellets from 1,831.5 feet: X-ray - dolomite; some quartz, pyrite, calcite.
1,831.9	1,836.7	Marlstone: Medium to dark and rare light olive gray (some almost neutral). Very faint and rare moderately distinct smooth laminations and bedding. Very regular to some very irregular, medium to thin shaly and rare papery parting; irregular to very hackly fracture. Some thin to medium brownish-gray limestone bands near top. A thin soft earthy blue-gray band at 1,835.5 feet. Very badly broken up and some parts mixed up; true length doubtful; uneven sample split. Sample of blue-gray band from 1,835.5 feet: X-ray - montmorillonite.
1,836.7	1,838.6	Oil shale: Dark brownish gray to rare dark brown and brownish black (2.5Y 3/2-2/2, rare 4/3 and 1/2). Very faint smooth bedding to faint laminations. Very regular to slightly irregular, medium to thin shaly parting; irregular to hackly fracture. Common medium to thin, buff to brownish-gray limestone bands in lower 0.4 foot. Sample of dark brownish-gray oil shale from 1,837.6 feet: X-ray - mixed layer clay, illite, quartz; some feldspar, dolomite, pyrite.

Illustration No. SBR-4227P (Sheet 60 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

From	To	Description
1,838.6	1,840.7	Marlstone: Medium to dark gray (N4-2) and rare dark brownish gray (2.5Y 2/2). <u>Very</u> faint smooth streaked bedding. Slightly irregular to regular, thick to thin shaly parting; slightly irregular to slightly conchoidal and rare hackly fracture. <u>Very</u> common ostracods. Sample of gray marlstone from 1,839.0 feet: X-ray - mixed layer clay, illite, calcite, quartz, pyrite.
1,840.7	1,842.0	Oil shale and limestone: Dark brownish-gray to brownish-black oil shale (2.5Y 3/2-1/2), tan to brownish-gray limestone (2.5Y 7/3-5/2). <u>Very</u> faint smooth to distorted bedding and rare laminations; medium to thick irregular dense limestone bands. Slightly irregular to very irregular, thick to thin parting; irregular hackly to some conchoidal fracture.
1,842.0	1,843.5	Oil shale and marlstone: Dark and rare medium olive gray and brownish gray (5Y and 2.5Y 3/2-2/2, rare 4/2-5/2; some almost neutral). <u>Very</u> faint smooth bedding and some faint to rare moderately distinct smooth to slightly irregular and distorted laminations. Regular to very irregular parting; very irregular fracture. <u>Very</u> badly broken up and mixed up; true length doubtful; grab sampled.
1,843.5	1,853.0	Missing.
1,853.0	1,856.2	Marlstone (?): Dark olive gray and some brownish gray. Core swollen, cracked, and deformed to completely disintegrated (probably by swelling clay). Some unaltered parts show very faint smooth streaked bedding. Grab sampled; true length doubtful. Sample of unaltered marlstone from 1,855? feet: X-ray - mixed layer clay, illite, quartz, dolomite.
1,856.2	1,858.9	Oil shale: Dark and rare medium brown and brownish gray (2.5Y 3/3-2/2, rare 4/2-4/3; some slight olive tint). <u>Very</u> faint fine smooth laminations. <u>Very</u> regular thin to medium shaly parting; conchoidal to some hackly fracture. Some irregular glossy shear surfaces. Rare ostracods (?).
1,858.9	1,864.5	Oil shale and limestone: Dark olive-gray to rare black oil shale (5Y 3/2-2/2, rare 1/1; rare slight brown tint), buff to tan and rare dark brown limestone (2.5Y 8/2-5/3, rare 4/3-3/3). <u>Very</u> faint smooth bedding and rare laminations in oil shale; thick massive to faintly bedded earthy limestone bands with some very

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

From	To	Description
		distinct smooth to distorted oil-shale laminae and stringers. Very regular to some irregular, thick to very thin shaly parting; conchoidal to hackly and some irregular fracture. Very common ostracods. Mostly oil shale from 1,860.5 to 1,861.4 feet; all oil shale from 1,862.3 to 1,863.4 feet.
		Sample of earthy buff limestone from 1,859.4 feet: X-ray - dolomite, some quartz.
1,864.5	1,866.1	Oil shale and limestone: Medium to dark brown and brownish gray (2.5Y 4/3-3/3 and 3/2-3/1; some almost neutral). Moderately distinct to faint, smooth to some very irregular and distorted laminations (interlaminated brown ostracodal limestone and brownish-gray oil shale). Very regular to slightly irregular, thick to thin shaly parting; fine irregular hackly fracture.
1,866.1	1,866.7	Mud and oil-shale breccia (disintegrated oil shale like 1,853.0-1,856.2 feet?).
1,866.7	1,868.9	Oil shale: Dark and rare medium brownish gray (2.5Y 3/2-3/1, rare 4/2). Very faint smooth to rare slightly distorted laminations and streaked bedding. Very regular to slightly irregular, medium to thin shaly parting; fairly smooth to fine and rare coarse hackly fracture. Very common ostracods. Some thin light brownish-gray ostracodal limestones near base.
1,868.9	1,869.6	Limestone: Buff to light brownish gray (2.5Y 7/2-6/2). Faintly bedded to massive; rare fine shale stringers and streaks. Irregular parting; very conchoidal to smooth fracture. Earthy to blebby (ostracods?).
1,869.6	1,872.4	Oil shale (?): Medium to dark olive gray and brownish gray (5Y and 2.5Y 4/2-3/2), some dark neutral gray (N3-2). Very faint smooth streaked bedding to some massive. Regular to some very irregular, medium to thick shaly parting; very irregular fracture. Common ostracods and clam-shell fragments. Lower part badly broken up and mixed up; uneven sample split.
1,872.4	1,879.0	Limestone and very calcareous siltstone: Light to medium gray, some brownish gray in upper part. Massive in upper part; common fine contorted streaks and stringers in lower part. Very common ostracods near top.
1,879.0	1,886.3	Mudstone and rare oil shale: Medium to dark olive gray and brownish gray (some almost neutral), very calcareous. Faint

Illustration No. SBR-4227P (Sheet 62 of 63)

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples of the Green River Formation from Skyline Oil Company's
Watson corehole 1-A (Con.)

	From	To	Description
Top of Tw?	1,886.3	1,917.0	contorted stringers and streaks to massive. Very irregular parting and fracture. Some clam-shell fragments. Mudstone and siltstone: Very light to some medium olive gray and greenish gray, very calcareous. Massive to faintly mottled; some distorted to contorted laminations, stringers, and streaks in lower part.
	1,917.0	1,940.0	Mudstone: Medium to dark olive gray, greenish gray, and purplish gray; some purplish red to reddish brown; very calcareous. Massive to mottled. Very badly broken up; some parts very friable. Rare dark brown to black coaly stringers in lower part. Dense to oolitic tan limestone from 1,937.4 to 1,938.5 feet. Sample of reddish-brown mudstone from 1,930.5 feet: X-ray - illite; some quartz, feldspar, kaolin?, hematite?
Bottom of core.			