DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

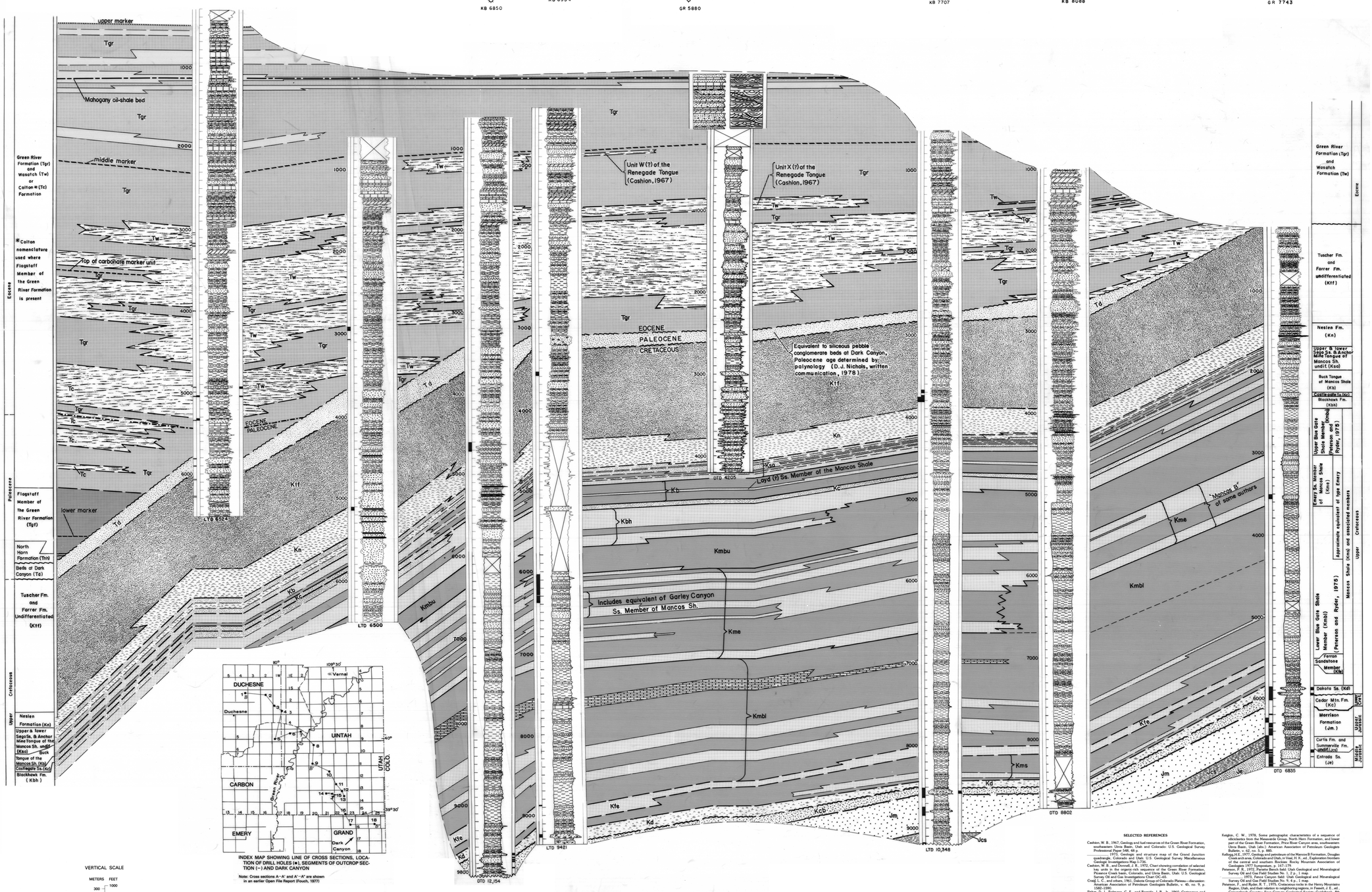
PREPARED IN COOPERATION WITH THE
UNITED STATES DEPARTMENT OF ENERGY

OPEN FILE REPORT
79-365
SHEET 2 OF 2

CONTROL POINTS AND RELATED DATA

Indicated are control point name, American Petroleum Institute (API) well number, Texaco Inc. well number (where available), Utah well number (Utah), Geological Survey (GR/L), meters/feet and shut-in pressures in pounds per square inch. Data listed where available. All intervals are given in feet. Numbers are keyed to index map and graphic logs.

1. Shell Brotherson 1-11-4H
   API 43-047-30511-00
   Initial production 1,710 barrels of oil and 2,422,000 cubic feet of gas per day. Gross producing interval 11,609-14,502 ft.
   DST 01, 6602-6908, Recovered 1,240 ft. barrel of oil and 4 barrels of oil cut mud, initial shut-in pressure 921, final shut-in pressure 1,802
   Mancos
   DST 02, 9901-9960, Gas to surface 1 hr. 30 min. at 27,000 cubic feet per day; recovered 25 barrels of water cushion, 14 barrels of oil, and 5 barrels of oil cut mud. Initial shut-in pressure 3,112, final shut-in pressure 3,112
   DST 04, 11028-11089, Gas to surface in 20 min. at 20,000 cubic feet per day. Recovered 134 barrels of gassy oil. Initial shut-in pressure 4,837, final shut-in pressure 4,837
   DST 05, 11826-11878, Recovered 67 barrels of heavily gas cut oil and 41 barrels of oil. Final shut-in pressure 8,677
   DST 06, 11970-12055, Recovered 47 barrels of oil. Initial shut-in pressure 8,711, final shut-in pressure 8,711
   DST 07, 12363-12476, Recovered 13 barrels of oil. Initial shut-in pressure 8,991, final shut-in pressure 8,944
   DST 08, 13349-13529, Recovered 90 barrels of gas cut mud. Initial shut-in pressure 7,667, final shut-in pressure 7,667
   DST 09, no internal reports, Misrun
   DST 10, 14630-14755, Misrun, initial shut-in pressure 9,824
   DST 11, 15318-15776, Recovered 127 barrels of water cushion and 28 barrels of water cut mud. Initial shut-in pressure 6,004, final shut-in pressure 6,520.
   I-16
2. Diamond Shamrock Gulf Unit
   API 43-013-30061-00
   Dry and abandoned
   DST 01, 9166-9209, Gas to surface in 28 min. Recovered 450.0 gas and water cut oil, 1,050.0 water cushion, 680.0 gas cut oil, 120.0 mud, 1,300 cubic centimeters oil, initial shut-in pressure 4,781, final shut-in pressure 3,760
   DST 02, 10750-10840, Gas to surface in 18 min. at 3,000,000 cubic feet per day, oil to surface in 18 min., no gauge, recovered 1,500 cubic centimeters oil, 11 cubic ft gas, initial shut-in pressure 6,962, final shut-in pressure 6,254
   DST 03, 10840-11100, Gas to surface in 1 hr. 15 min., not gauged, recovered 2,000.0 water cushion, 1,000.0 heavily oil and gas cut water, 4,000.0 gas cut oil, 7 cubic ft gas and 900 cubic centimeters oil, initial shut-in pressure 6,070, final shut-in pressure 5,787
3. National Treasure Mines Service Mancos 1
   API 43-013-05085-00
   Dry and abandoned
   DST 01, 3860-3968, Recovered 150 ft mud, 180 ft salty water cut mud, final shut-in pressure 500
   DST 02, 3980-4080, Recovered 75 ft mud, final shut-in pressure 15
   DST 03, 4306-4400, Recovered 10 ft mud
   DST 04, 6122-6222, Gas to surface in 20 min. at 800,000 cubic feet per day, recovered 1,200.0 gas cut mud, 1,800 gas cut mud, final shut-in pressure 2,400
   DST 05, 6390-6489, Gas to surface in 15 min. at 150,000 cubic feet per day, recovered 1,200.0 gas cut mud, 1,800 gas cut salt water, final shut-in pressure 3,000
   DST 06, 7123-7223, Recovered 1,908 ft water and gas cut mud
   DST 07, 7909-8000, Gas to surface in 1 hr. 30 min., 700 ft water, final shut-in pressure 3,650
   DST 08, 9411-9500, Recovered 2,520.0 water cushion, 1,140 ft highly oil and gas cut mud, final shut-in pressure 2
   DST 09, 9688-9697, Recovered 2,550.0 water cushion, 50 ft oil, 100 ft mud, 1,000 ft water
   DST 10, 9765-9823, Recovered 2,796.0 water cushion, 130 ft slightly oil and gas cut mud
   DST 11, 9823-9892, Recovered water cushion and 60 ft gas cut mud
   DST 12, 9600-9791, Recovered 1,800 ft mud, 280 ft water
4. Gulf Meridian 1
   API 43-047-30486-00
   Dry and abandoned no cores or drill stem tests reported
5. Davis Oil Company Ute Tribal 1-20
   API 43-013-05003-00
   Dry and abandoned
   DST 01, 2100-2165, Recovered 480 ft mud
   DST 02, 2134-2193, Recovered 33 ft mud
   DST 03, 3560-3594, Recovered 32 ft oil and gas cut mud
   DST 04, 3670-3750, Recovered 33 ft oil and 189 ft highly oil cut mud
   DST 05, 4568-4608, Recovered 62 ft slightly oil and gas cut mud, 1 ft oil
   DST 06, 5736-5780, Recovered 62 ft mud
   DST 07, 5736-5780, Recovered 14 ft oil, 75 ft oil cut mud
   DST 08, 9360-9390, Recovered 10 ft mud, final shut-in pressure 916
   DST 09, 10158-10178, Gas to surface in 2 hrs. 30 min., recovered 0.9 mud, final shut-in pressure 2,156
   DST 10, 10906-11050, Recovered 18 ft gas cut mud
   DST 11, 11046-11108, Recovered 1,000 ft gas cut mud, 620 gas cut mud, final shut-in pressure 1,630
   DST 12, 11228-11315, Gas to surface in 2 hrs. 20 min. at 30,000 cubic feet per day, recovered 3,060.0 gas cut water, 80 ft gas cut mud, final shut-in pressure 1,630
6. Davis Panette Bench 3
   API 43-047-30198-00
   Dry and abandoned
   DST 01, 2912-2972, Recovered 90.0 water cut mud, 90.0 mud cut water and 90.0 ft slightly gas cut water, initial shut-in pressure 1,425, final shut-in pressure 1,420
   DST 02, 4806-4871, Gas to surface in 8 min., continue to flow throughout, recovered 230.0 gas cut oil and 270.0 mud cut water, 90.0 mud cut mud, final shut-in pressure 1,240, final shut-in pressure 971
   DST 03, 5436-5461, Recovered 90.0 oil cut mud, initial shut-in pressure 194, final shut-in pressure 142
7. Pan American Panette Bench 1
   API 43-047-15028-00
   Gross producing interval oil per day
   Gross producing interval 5,986-6,056
   DST 01, 4111-4138, Recovered 50.0 mud, initial shut-in pressure 1,941, final shut-in pressure 1,826
   DST 02, 4117-4124, Gas to surface in 46 min., pressure too small to measure, recovered 1,000.0 gas cut mud, final shut-in pressure 1,009, final shut-in pressure 1,614
   Dakota
   DST 03, 4437-4447, Recovered 30 ft oil, initial shut-in pressure 190, final shut-in pressure 298
   DST 04, 4437-4447, Recovered 90.0 oil cut mud, 90.0 slightly oil cut mud, 250.0 slightly salty water, initial shut-in pressure 2,234, final shut-in pressure 2,244
   DST 05, 4610-4622, Recovered 20.0 oil cut mud, initial shut-in pressure 2,042, final shut-in pressure 406
   DST 06, 4862-4868, Recovered 90.0 oil cut mud, 90.0 and 1,301.0 oil, initial shut-in pressure 291, final shut-in pressure 869
   DST 07, 4867-4878, Recovered 75.0 oil, 45.0 highly oil cut mud, initial shut-in pressure 2,131, final shut-in pressure 658
   DST 08, 5034-5044, Recovered 25.0 oil, 35.0 oil cut mud, 50.0 oil and water cut mud, initial shut-in pressure 2,227, final shut-in pressure 1,227
   DST 09, 5044-5078, Recovered 1,000.0 salty fluid (oil), 720.0 oil, and 15.0 oil cut muddy water, initial shut-in pressure 2,119, final shut-in pressure 1,605
   DST 10, 5038-5055, Recovered 90.0 oil cut mud, initial shut-in pressure 1,220, final shut-in pressure 1,940
   DST 11, 5317-5332, Recovered 90.0 oil cut mud, initial shut-in pressure 194, final shut-in pressure 142
8. Mountain Fuel Supply Island 2
   API 43-047-16014-00
   Initial production 8,298,000 cubic ft gas per day
   Gross producing interval 5,946-6,056
   DST 01, 3975-4014, Misrun, water to surface in 35 min., bracish, initial shut-in pressure 1,665, final shut-in pressure 1,665
   DST 02, 3488-3514, Recovered 960 ft mud cut water, initial shut-in pressure 1,730, final shut-in pressure 1,675
   DST 03, 3568-3630, Recovered 20 ft mud, initial shut-in pressure 1,675, final shut-in pressure 1,565
   DST 04, 3774-3900, Recovered 10 ft mud cut water, initial shut-in pressure 1,535, final shut-in pressure 1,735
   DST 05, 4057-4077, Recovered 10 ft mud, initial shut-in pressure 40, final shut-in pressure 40
   DST 06, 5487-5521, Gas to surface in 4 min., gas to surface in 15 min. at 104,000 cubic feet per day, recovered 20 ft mud, initial shut-in pressure 2,208, final shut-in pressure 2,208
   DST 07, 5758-5798, Recovered 90 ft gas cut mud, initial shut-in pressure 1,402, final shut-in pressure 1,137
   DST 08, 5870-5901, Gas to surface in 4 min., gas to surface in 15 min. at 29,000 cubic feet per day, gas at 25,000 cubic feet per day, recovered 80 ft gas cut mud, initial shut-in pressure 1,826, final shut-in pressure 2,115
   DST 09, 6125-6165, Gas to surface in 7 min. at 12,000 cubic feet per day, recovered 70 ft gas cut mud, initial shut-in pressure 2,103, final shut-in pressure 2,920
   DST 11, 8154-8190, Gas to surface in 2 min. at 20,000 cubic feet per day, recovered 140 ft gas cut mud, initial shut-in pressure 1,402, final shut-in pressure 1,872
   DST 13, 8468-8500, Recovered 30 ft mud, initial shut-in pressure 362, final shut-in pressure 500
   DST 14, 8786-8900, Recovered 50 ft slightly gas cut mud, initial shut-in pressure 405, final shut-in pressure 32
   DST 15, 9048-9130, Recovered 90 ft gas cut mud, initial shut-in pressure 1,504, final shut-in pressure 1,504
   DST 16, 9138-9238, Recovered 80 ft gas cut mud, initial shut-in pressure 182, final shut-in pressure 158
   DST 17, 9277-9362, Gas to surface in 2 min., gas surface in 30 min. at 1,000 cubic feet per day, gas to surface in 45 min. at 7,000 cubic feet per day, gas to surface in 1 hr. at 15,000 cubic feet per day, gas to surface in 1 hr. 15 min. at 9,000 cubic feet per day, gas to surface in 1 hr. 30 min. at 9,000 cubic feet per day, recovered 200 ft gas cut mud, initial shut-in pressure 650, final shut-in pressure 730
   DST 18, 9403-9656, Gas to surface in 2 min., recovered 90 ft mud, final shut-in pressure 250
   DST 19, 9703-9763, Misrun
   DST 20, 9763-9901, Misrun
   DST 21, 9912-9923, Gas to surface in 5 min., gas to surface in 15 min. at 73,000 cubic feet per day, gas to surface in 30 min. at 104,000 cubic feet per day, gas to surface in 45 min. at 122,000 cubic feet per day, oil to surface in 45 min., gas to surface in 1 hr. at 67,000 cubic feet per day, oil to surface in 1 hr., gas to surface at 63,000 cubic feet per day, recovered 100 ft oil, initial shut-in pressure 3,800, final shut-in pressure 3,110
   DST 22, 9990-9940, Misrun
   DST 23, 9940-9984, Misrun
   DST 24, 9984-9900, Gas to surface in 5 min. at 125,000 cubic feet per day, gas to surface in 30 min. at 104,000 cubic feet per day, gas to surface in 1 hr. at 74,000 cubic feet per day, gas to surface in 1 hr., 30 min. at 74,000 cubic feet per day, gas to surface in 2 hrs. at 71,000 cubic feet per day, recovered 665 barrels gas cut mud, some oil, initial shut-in pressure 540, final shut-in pressure 1,140
   DST 25, 11360-11400, Gas to surface in 3 min. at 211,000 cubic feet per day, gas to surface in 15 min. at 202,000 cubic feet per day, gas to surface in 45 min. at 156,000 cubic feet per day, gas to surface at 1 hr. at 107,000 cubic feet per day, recovered 31 ft mud slightly oil stained, 1,090 ft mud-cut, initial shut-in pressure 4,514, final shut-in pressure 3,635
9. Ballco Petroleum Great Yellowstone 1
   API 43-047-15077-00
   Dry and abandoned
   DST 01, 6291-6427, Recovered 20 ft slightly gas cut mud, initial shut-in pressure 141, final shut-in pressure 71
   Morrison
   DST 02, 6483-6605, Recovered 240 ft slightly gas cut mud, initial shut-in pressure 1,260, final shut-in pressure 1,260
   DST 03, 6529-6610, Gas to surface in 8 min. at 9,000 cubic feet per day, recovered 12 ft gas cut mud, initial shut-in pressure 2,820, final shut-in pressure 2,820
   DST 04, 6508-6550, Gas to surface in 8 min. at 9,000 cubic feet per day, recovered 12 ft gas cut mud, initial shut-in pressure 2,820, final shut-in pressure 2,820
   DST 05, 6580-6710, Recovered 1,134 mud, initial shut-in pressure 2,773, final shut-in pressure 213
   DST 06, 7320-7375, Recovered 60 ft gas cut mud, initial shut-in pressure 144
   Mancos
   DST 07, 8231-8237, Misrun
   DST 08, 8238-8287, Gas to surface in 6 min. at 19,000 cubic feet per day, recovered 1,710 ft highly gas cut mud, initial shut-in pressure 1,160, final shut-in pressure 4,514
   DST 09, 8357-8370, Gas to surface in 2 min., recovered 180 ft highly gas cut mud, initial shut-in pressure 2,500, final shut-in pressure 2,248
10. Delhi-Taylor Govt. 1-15
    API 43-047-15044-00
    Gross producing interval 9924-10250
    DST 01, 9924-9970, Recovered 140 ft water, final shut-in pressure 1,199
    DST 02, 9236-9250, Gas to surface in 1 hr., recovered 180 ft mud cut water
11. Sinclair Uintah Federal 122-1
    API 43-047-15044-00
    Dry and abandoned
    DST 01, 5101-5140, Recovered 45 ft mud, initial shut-in pressure 78, final shut-in pressure 60
12. Texaco Seep Ridge 2
    API not available
    Initial production 1,662,000 cubic feet gas per day
    Gross producing interval 9,830-10,050 (Morrison)
    DST 01, 4602-4714, Recovered 370 ft slightly gas cut mud
    DST 02, 11410-11464, Recovered 40 ft mud
13. Skyline Sweet Water Creek 2
    API 43-047-30503-00
    DST 01, 3040-3091, Misrun
    DST 02, 3040-3091, Misrun
    DST 03, 6060-6280, Misrun
    DST 04, 6295-6375, Recovered 450 ft mud, initial shut-in pressure 1,803, final shut-in pressure 2,034
    DST 05, 8672-8882, Misrun
    DST 06, 9026-9076, Recovered 90 ft mud, initial shut-in pressure 1,141, final shut-in pressure 1,141
14. Continental Bull Canyon 2
    API 43-047-30172-00
    Dry and abandoned
    No cores or drill stem tests reported
15. Surface Section Bull Canyon and Lower Bottom Canyon, by T. D. Fouch, W. B. Cashion and C. W. Keighin
16. Texaco Fence Canyon 1
    API 43-048-05016-00
    Initial production 3,100,000 cubic feet gas per day
    Gross producing interval 5,946-6,056
    DST 01, 3670-3707, Recovered 65 ft mud
    DST 02, 3670-3707, Recovered 108 ft mud
    DST 03, 8516-8630, Misrun
    DST 04, 8520-8630, Recovered 210 ft mud
    DST 05, 9176-9246, Recovered 225 ft mud
    DST 06, 9176-9246, Recovered 350 ft mud and 1,110 ft salty water
17. Anschutz 051-1 Federal
    API 43-019-30172-00
    Dry and abandoned
    No cores or drill stem tests reported
18. Sinclair San Arroyo 2
    API 43-019-00065-00
    Dry and abandoned
    Initial production 1,546,000 cubic feet gas per day (Entrada); 11,000,000 cubic feet gas per day (Entrada)
    DST 01, 3568-3662, Recovered 30 ft mud
    DST 02, 3860-4020, Gas to surface in 7 min. at 1,993,000 cubic feet per day, recovered 150 ft mud, final shut-in pressure 592
    DST 03, 4190-4203, Recovered 16 ft mud, final shut-in pressure 1,495
    DST 04, 4190-4203, Recovered 30 ft mud, final shut-in pressure 1,495
    DST 05, 6370-6353, Recovered 30 ft mud, final shut-in pressure 190
    DST 06, 5368-6400, Recovered 90 ft mud
    DST 07, 6393-6448, Recovered 180 ft mud, final shut-in pressure 240
    DST 08, 6825-6840, Gas to surface in 1 min. at 1,949,000 cubic feet per day, recovered 81 ft distillate, final shut-in pressure 1,260
    DST 09, 6650-6674, Gas to surface in 2 min. at 4,465,000 cubic feet per day
    DST 10, 6685-6700, Gas to surface in 40 min. at 160,000 cubic feet per day, final shut-in pressure 1,535
    DST 11, 6710-6743, Recovered 90 ft mud
    DST 12, 6726-6743, Recovered 95 ft mud, final shut-in pressure 250
    DST 13, 6746-6791, Recovered 90 ft gas cut mud
    DST 14, 6800-6835, Recovered 2,000 gas and water cut mud and 2,700 ft salty water, final shut-in pressure 1,490



INDEX MAP SHOWING LINE OF CROSS SECTIONS, LOCATION OF DRILL HOLES (•), SEGMENTS OF OUTCROP SECTION (—) AND DARK CANYON

Note: Cross sections A–A′ and A″–A″ are shown in an earlier Open File Report (Fouch, 1977)

VERTICAL SCALE

METERS 300 200 100 0 — FEET 1000 500 0

Horizontal scale (no exaggeration in spacing)
1 inch equals approximately
2 miles or 3.2 kilometers
All drill hole depths shown in feet

SYMBOLS AND ABBREVIATIONS USED IN HEADINGS

- Dry and abandoned drill hole
- Gas well
- Gas and oil well
- Oil well

KB 6795 Kelly bushing elevation in feet
DF 6554 Derrick floor elevation in feet
GR 5721 Ground surface elevation in feet

METRIC EQUIVALENTS

1 ft = 0.30 m
1 barrel of oil/day = 159 liters of oil/day
1 barrel of oil/hour = 159 liters of oil/hour
1 thousand cubic feet of gas/day = 28.32 cubic meters of gas/day
1 barrel of water/day = 159 liters of water/day
1 pound/square inch = 7.03X10⁻² kilograms/square centimeter

PRELIMINARY CHART SHOWING DISTRIBUTION OF ROCK TYPES, LITHOLOGIC GROUPS AND DEPOSITIONAL ENVIRONMENTS FOR SOME LOWER TERTIARY, UPPER AND LOWER CRETACEOUS AND UPPER AND MIDDLE JURASSIC ROCKS IN THE SUBSURFACE BETWEEN ALTAMONT OIL FIELD AND SAN ARROYO GAS FIELD, NORTHCENTRAL TO SOUTHEASTERN UINTA BASIN, UTAH

By
T. D. Fouch and W. B. Cashion
1979

CHARACTERISTIC LITHOLOGIC PROPERTIES OF ROCK GROUPS AND THEIR INTERPRETED DEPOSITIONAL ENVIRONMENTS

Mud-supported finely laminated to very thinly bedded carbonate and calcareous claystone. Dominant colors are darker shades of gray and brown. Tan to white beds of very calcareous, very fine-grained sandstone and siltstone are locally present. Rocks are rich in organic matter. Dominant fossils are algae and nonmarine ostracodes. Some nearshore lacustrine rocks contain abundant gastropods. Most lacustrine rocks were deposited in low-energy nearshore and offshore open-lacustrine settings.
Mud-supported carbonate and calcareous claystone and some thin beds of sandstone. Carbonate and claystone colors are dominantly darker shades of gray. A few green and red variegated claystones are present. Carbonate units commonly contain nonmarine ostracodes, algae, and gastropods. Deposited in nearshore-lacustrine and marginal-lacustrine rocks formed in a marginal-lacustrine setting.

MARGINAL LACUSTRINE

Light-gray, coarse to very fine grained sandstone and siltstone, light-and medium-gray to brown, mud-supported carbonate and calcareous claystone. Sandstone beds are thin to thick and laterally persistent. Carbonate rock colors commonly consist of light shades of gray or brown to tan. Some beds contain nonmarine ostracodes, gastropods, algae, and rare dinoflagellates. Charophytes are common in some carbonate and claystone units. Plecoliths and sedilites are locally present. Rocks are commonly bioturbated and contain abundant plant roots and rhizoliths. Surface features are common. Characteristic sedimentary features include stromatolites, polygonal cracks, root traces, burrows, scour structures, and rip-up clasts. Some beds contain abundant mud and log casts. Sandstone beds are commonly lenticular and bedded, and contain small to large scale cross stratification. Grain size and cross stratification in lenticulous rocks occur in size decreasing upward cycles. Carbonate units feature grain size and cross stratification in size increasing upward cycles. Sediments believed to have been deposited in deltaic, interdistributary, lake-marginal carbonate-flat, and in lacustrine environments.
Light-gray coarse to very fine grained sandstone and siltstone, calcareous claystone, and mixed mud- and grain-supported carbonate units. Some claystone and carbonate rocks contain abundant charophytes, ostracodes, gastropods, bivalves, oolites, and pisolites. Dominant carbonate and claystone colors are tan to light and medium gray to gray brown. Some beds contain abundant plant roots and rhizoliths. Rocks are rich in organic matter. Limestone is locally abundant. Anhydrite nodules occur in some rocks in subsurface. Characteristic sedimentary features include laminated to thick beds, scour structures, abundant mud and log casts, and some burrows. Cross-stratification and grain size are arranged in size decreasing upward cycles. Rocks were formed in lacustrine and marginal-lacustrine settings.

ALLUVIAL

Red, purple, light-gray, and bright-green noncalcareous claystone, light-gray, green, and red conglomeratic and pebbly to very fine grained clayey sandstone and siltstone. Some beds contain abundant petrified wood and dinosaur bones. Some beds contain nodules occur in some Paleocene and lowermost Eocene units. Some gray rocks contain carbonaceous matter. Sedimentary features include root traces, polygonal cracks, local cross stratification, and scour structures. Some beds contain abundant mud and log casts, developed scour structures, and rip-up clasts. Cross-stratification size and grain size decrease upward in each cycle. Sediments were deposited in alluvial fan, high mudflat, lower interfluvial, and deltaic plain, and small pond settings.
Red, light-to medium-gray, and orange-clayey pebbly to very fine grained sandstone and claystone. Some beds contain abundant petrified wood and dinosaur bones. Some claystone. Tan to gray thin-bedded carbonate rocks are locally present. Gray beds commonly contain carbonaceous matter and are mottled red and orange. Sedimentary features include abundant mud and log casts, some burrows, and some root traces. Some very thick beds, well-developed scour structures, rip-up clasts, and small to large-scale cross-stratification. Cross stratification and grain size deposited in size-decreasing upward cycles. Sediments deposited in alluvial fan, high mudflat, lower interfluvial plain, and small pond settings.
Light-gray, very coarse grained sandstone and very fine to pebbly, coarse sandstone and light- to dark-gray siltstone and claystone in discontinuous beds. Rocks are commonly carbonaceous and thin coal beds may be locally abundant. Thin olive green and red claystone beds are present locally. Some rocks contain abundant petrified wood supported carbonate beds. Leaves, logs, root and log casts, and vertebrate bones are locally abundant. Sedimentary features include polygonal cracks, well-developed scour structures, rip-up clasts, concretions, some burrows, subhorizontal very thick to laminated beds, and abundant large to small scale cross-stratification. Cross stratification and grain size are arranged in size decreasing upward cycles. Rocks were formed in alluvial fan, alluvial plain, paludal, and lagoonal and littoral marine settings.
Light-gray to tan conglomeratic, very fine to medium-grained sandstone, siltstone, and some carbonaceous sandy and shale. Dominant colors are light to medium gray. Some coal beds may be present. Petrified wood supported carbonate beds are locally present. Sedimentary features include plant fossils, scour structures, rip-up clasts, some burrows, root traces, and small to large-scale cross-stratification. Beds were formed in alluvial fan, alluvial plain, paludal, and lagoonal and littoral marine settings.
Light-gray to tan conglomeratic, very fine to medium-grained sandstone, siltstone, and some carbonaceous sandy and shale. Dominant colors are light to medium gray. Some coal beds may be present. Mud-supported carbonate beds, some of which contain abundant petrified wood, are locally abundant. Sedimentary features include plant fossils, scour structures, rip-up clasts, some burrows, root traces, and small to large-scale cross-stratification. Beds were formed in alluvial fan, alluvial plain, paludal, and lagoonal and littoral marine settings.
Gray, olive-gray, pink, gray, and green very fine to medium-grained sandstone; green, purple, red, and gray claystone; and some tan to gray mud-supported carbonate units. Some claystone contains abundant petrified wood. Some sandstone beds are lenticular, laminated to very thick beds, scour structures, and rip-up clasts. Biologic constituents include vertebrate bones, charophytes, gastropods, plant remains, and ostracodes. Cross-stratification and grain size arranged in size decreasing upward cycles. Sediments deposited in alluvial plain and moderately well developed lacustrine settings.
Light-gray, very fine grained sandstone and siltstone and gray and olive-gray shale. Some olive-green units are present. Rare thin gray mud-supported carbonate beds are present locally. Fossils are rare. Predominantly laminated to medium bedded in subparallel to bedded units; subordinate lenticular small and medium scale cross stratification are present. Deposited principally in alluvial plain and in marginal-marine settings.

LITTORAL MARINE

Very fine to medium-grained sandstone, siltstone, and some carbonaceous sandy and shale. Dominant colors are light to medium gray. Some coal beds may be present. Small and medium-scale cross beds are predominant and beds recur in cycles in which grain size decreases upward. Sedimentary features include scour structures and root traces are present in the sequence. Sediments were deposited principally in the higher energy parts of shoaling sequences such as beach and barrier, river mouth, and offshore bar. Some sandstone units contain abundant mud and log casts and small-scale cross beds in size decreasing upward cycles which represent sedimentation associated with local deltas and with tidal channels.
Light- to dark-gray very fine grained sandstone and siltstone and medium- to dark-gray silty claystone and shale. Sedimentary features include horizontal to subhorizontal laminated beds, some burrows, and small-scale cross beds. Some beds contain abundant marine shark's tooth bing pieces. Sedimentary cycles generally show grain size coarsening upward. Beds are burrowed and finer grained units commonly contain marine invertebrates, ostracodes, and microfossils. Sediments were deposited dominantly as the low energy part of littoral shoal areas or in open-marine settings.

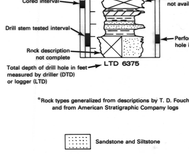
OPEN MARINE

Medium- to dark-gray calcareous and noncalcareous shale and siltstone. Sedimentary features include finely laminated to laminated beds, burrows, and small-scale cross strata. Fossils include fish scales, ostracodes, foraminifers, and mollusks. Sediments were deposited in open-marine offshore settings.
Medium- to dark-gray, mud-supported carbonate and highly calcareous claystone. Identified only in subsurface in study area. Probably represents deeper water carbonate sedimentation.

AEOLIAN

Light-gray to tan to orange, subrounded fine grained sandstone and some siltstone beds. Units contain abundant small and medium scale cross-stratification and are laminated to thin bedded. Dominantly aeolian and interfluve in origin.

SYMBOLS USED IN GRAPHIC LOGS



Total depth of drill hole in feet measured by driller (DTD) or logger (LTD)

*Rock types generalized from descriptions by T. D. Fouch and from American Stratigraphic Company logs

- Sandstone and Siltstone
- Claystone and Shale
- Mud-supported carbonate
- Grain-supported carbonate
- Coal
- Conglomerate
- Rip-up clasts

DOMINANT BED FORMS
(used in surface section only)

- Small-scale cross-stratification
- Medium-scale tabular-form cross-stratification
- Medium-scale trough-form cross-stratification
- Large-scale low-angle cross-stratification, generally with flat cleats at base
- Horizontal, laminated to average bedded, continuous to discontinuous

STRATIGRAPHIC BOUNDARIES AND CORRELATION LINES

- Formation or member boundary—Dashed where approximately located
- Facies boundary—Dashed where approximately located
- Unconformity at formation or member boundary—Approximately located
- Formation or member boundary that may be an unconformity—Approximately located

Positions of beds designated as markers were determined by geophysical log correlations; placement less certain in nonlacustrine facies

SELECTED REFERENCES

Cashion, W. B., 1967, Geology and fuel resources of the Green River Formation, southeastern Uinta Basin, Utah and Colorado: U.S. Geological Survey Professional Paper 548, 48 p.
_____ 1973, Geologic and structure map of the Grand Junction quadrangle, Colorado and Utah: U.S. Geological Survey Miscellaneous Geologic Investigations Map I-836.
Cashion, W. B., and Donnell, J. R., 1972, Chart showing correlation of selected key units in the organic-rich sequence of the Green River Formation, Piceance Creek basin, Colorado, and Uinta Basin, Utah: U.S. Geological Survey Oil and Gas Investigations Chart OC-66.
Crogl, L. C., and others, 1961, Dakota Group of Colorado Plateau—discussion: American Association of Petroleum Geologists Bulletin, v. 45, no. 9, p. 1588-1599.
Fisher, D. J., Erdmann, C. E., and Reeside, J. B., Jr., 1960, Cretaceous and Tertiary formations of the Book Cliffs, Carbon, Emery, and Grand Counties, Utah, and Garfield and Mesa Counties, Colorado: U.S. Geological Survey Professional Paper 332, 80 p.
Fouch, T. D., 1975, Lithofacies and related hydrocarbon accumulations in Tertiary strata of the western and central Uinta Basin, Utah, in Bolyard, D. W., ed., Deep drilling frontiers of the Central Rocky Mountains: Rocky Mountain Association of Geologists 1975 Symposium, p. 163-174.
_____ 1978, Correlation of lacustrine and paludal rocks in the central and western Uinta Basin, Utah: U.S. Geological Survey Professional Paper 1405-C, p. C1-C7.
_____ 1977, Preliminary chart showing distribution of rock types, lithologic groups, and depositional environments for some early Tertiary and Late Cretaceous rocks in the subsurface between Altamont oil field through the subsurface of Duchesne and Uintah counties to Sand Wash basin in north-central parts of the Uinta Basin, Utah: U.S. Geological Survey Open-File Report 77-609, 2 sheets.
Gilbert, G. K., 1877, Report on the geology of the Henry Mountains: Geographical and Geological Survey of the Rocky Mountain Region, 160 p.
Gill, J. R., and Hail, W. J., Jr., 1975, Stratigraphic sections across Upper Cretaceous Mancos Shale–Mesaverde Group boundary, northwestern Colorado and eastern Utah: U.S. Geological Survey Oil and Gas Investigations Chart OC-68.
Hale, L. A., 1972, Depositional history of the Ferron Formation, central Utah: Utah Geological Association Publication 2, p. 39-60.
Hunt, C. B