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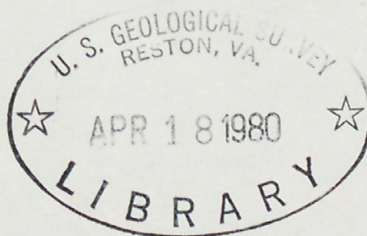
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GEOPHYSICAL LOGS OF 13 DRILL HOLES,
ACORD LAKES QUADRANGLE, UTAH

By

Howard F. Albee



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This report has not been edited for conformity
with U.S. Geological Survey editorial standards
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1 foot = 0.3048 meter

GEOPHYSICAL LOGS OF 13 COAL DRILL HOLES, ACORD LAKES QUADRANGLE, UTAH

By Howard F. Albee

INTRODUCTION

This report presents the geophysical logs for 13 drill holes drilled during 1979 in the Convulsion Canyon-Duncan Mountain area, Acord Lakes quadrangle, Sevier County, Utah. The drilling was done by the Utah Geological and Mineralogical Survey under contract to the U.S. Geological Survey. The sites of all of the drill holes are within the Wasatch Plateau Known Recoverable Coal Resource Area (KRCRA) and in the Richfield Ranger district of the Fishlake National Forest. The purpose of the drilling was to identify and evaluate coal resources under public lands that may be included in a future coal leasing program.

The area is underlain by Cretaceous and younger rocks (table 1). The coal seams of economic interest are in the lower 200 ft of the Upper Cretaceous Blackhawk Formation, a complex sequence of intertonguing sandstone, shale and coal. Regional dip of the strata in the area is approximately 2° to the northwest. The geology and coal resources of the area were described by Spieker (1931) and Doelling (1972).

Most of the drill holes were rotary drilled and the thicknesses and depths were determined from geophysical logs. In order to obtain data on the quality of the coal, the coal-bearing section in selected holes was core drilled. Table 2 gives the drilling and logging information for the 13 completed holes. All drill holes were bottomed in the Upper Cretaceous Star Point Sandstone.

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R. 5 E.

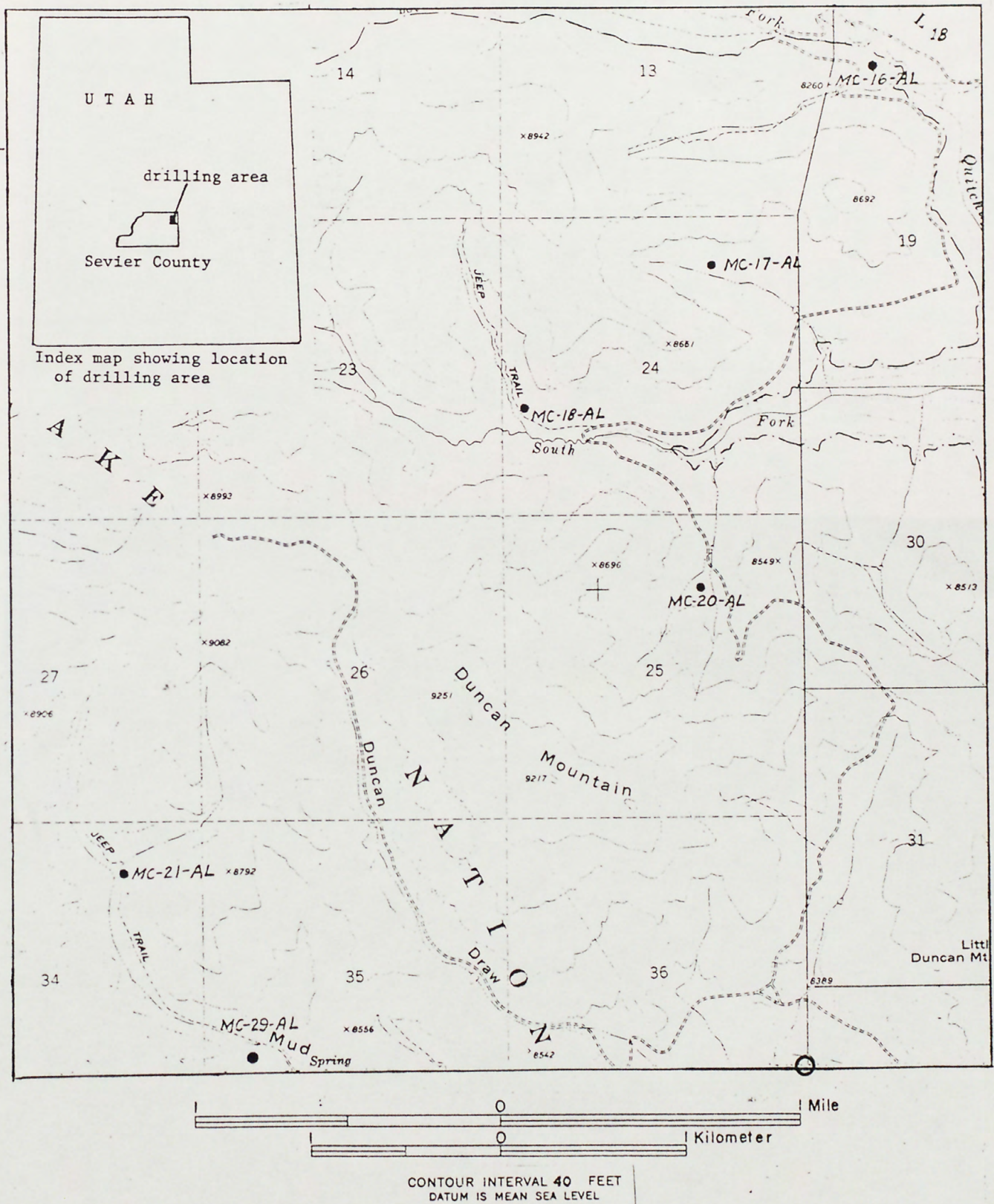
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Figure 1.--Map showing drill-hole locations in the Duncan Mountain area of the Acord Lakes quadrangle, Sevier County, Utah. Only 200-ft contours are visible because of reproduction problems. The circle on section line matches up with the one on figure 2.

R. 4 E.



Figure 2.--Map showing drill-hole locations in the Convulsion Canyon area of the Acord Lakes quadrangle, Sevier County, Utah. Only 200-ft contours are visible because of reproduction problems. The circle on section line matches up with the one on figure 1.

AGE	STRATIGRAPHIC UNIT	MEMBER	CHARACTER OF BEDS	THICKNESS (FEET)		
				Eastern part	Western part	
Eocene	Wasatch Formation		Shale, variegated; similar to lower member		1,000-1,200	
		Flagstaff Limestone Member	Limestone, blue, gray, and white; forms massive cliff		800-1,000	
			Shale, variegated, chief colors red, chocolate, purple, gray; limestone, drab, white, and gray; sandstone, steel-gray and cream-colored; conglomerate	1,000	2,000	
Unconformity						
Upper Cretaceous	Mesaverde Group	Price River Formation	Sandstone, gray to white, gritty; gray conglomerate; very little shale	600	1,000	
			Castlegate Sandstone Member	Sandstone, very massive, coarse, white to gray; weathers buff; conglomeratic	150-500	150-200
		Blackhawk Formation	Sandstone, buff to gray, medium-to fine-grained; shale and coal; of continental origin	700-950	1,000	
		Star Point Sandstone	Sandstone, massive, buff to gray, of marine to brackish-water origin; in places penetrated by tongues of marine Mancos Shale	300-450	1,000+	
	Mancos Shale	Upper shale member	Shale, marine, blue-black to gray, sandy; of Montana age	300-1,300	(?)	
		Emery Sandstone Member	Sandstone, massive- to thin-bedded; forms steplike cliffs; contains Eagle fossils	50-800	(?)	
		Middle shale member	Shale, marine, blue-gray; contains Niobrara fossils and includes the Garley Canyon Sandstone Member	1,650-2,400	(?)	
		Ferron Sandstone Member	Sandstone, buff, brown, and white, coal-bearing; contains Carlile fossils	50-800	(?)	
		Lower shale member	Shale, marine, blue-gray; contains lower Colorado fossils	600	(?)	
		Dakota (?) Sandstone	Sandstone, brownish-gray, cross-bedded, conglomeratic	20		
	Cretaceous(?)	Morrison Formation		Shale, variegated; sandstone, gray to brown; limestone, gray and green; conglomerate	300+	

Table 1.--Formations exposed in the drilling area, Acord Lakes quadrangle, Sevier County, Utah. (Adapted from Spieker, 1931.)

Table 2.--Drilling and logging depths for 13 drill holes in the Convulsion Canyon-Duncan Mountain area, Acord Lakes quadrangle, Sevier County, Utah

Drill-hole No.	Location			Estimated collar elevation (feet)	Drilling depth (feet)		Logging depth (feet)
	Sec.	T.S.	R.E.		Rotary	Core	
MC-16-AL	SW $\frac{1}{4}$ SW $\frac{1}{4}$	18	21	5	8,260	1,260	1,252
MC-17-AL	NW $\frac{1}{4}$ NE $\frac{1}{4}$	24	21	4	8,300	1,255	1,255
MC-18-AL	NW $\frac{1}{4}$ SW $\frac{1}{4}$	24	21	4	8,260	925 293	1,214
MC-20-AL	NW $\frac{1}{4}$ NE $\frac{1}{4}$	25	21	4	8,340	1,210	1,202
MC-21-AL	NW $\frac{1}{4}$ NE $\frac{1}{4}$	34	21	4	8,440	1,280 163.5	1,432
MC-22-AL	SW $\frac{1}{4}$ NE $\frac{1}{4}$	3	22	4	8,190	1,080	1,079
MC-24-AL	NW $\frac{1}{4}$ SW $\frac{1}{4}$	10	22	4	8,140	1,020	1,007
MC-25-AL	NE $\frac{1}{4}$ SW $\frac{1}{4}$	13	22	4	8,360	1,140	1,126
MC-26-AL	SW $\frac{1}{4}$ NE $\frac{1}{4}$	11	22	4	8,300	947	947
MC-27-AL	NW $\frac{1}{4}$ SE $\frac{1}{4}$	15	22	4	8,270	1,100	1,082
MC-28-AL	SE $\frac{1}{4}$ SW $\frac{1}{4}$	2	22	4	8,300	1,160	1,028
MC-29-AL	SW $\frac{1}{4}$ SW $\frac{1}{4}$	35	21	4	8,310	1,125	1,125
BCR-4	SW $\frac{1}{4}$ NE $\frac{1}{4}$	2	22	4	8,300	906 130	1,036

REFERENCES

- Doelling, H. H., 1972, Central Utah coal fields; Sevier-Sanpete, Wasatch Plateau, Book Cliffs, and Emery: Utah Geological and Mineralogical Survey Monograph Series, no. 3, 496 p.
- Spieker, E. M., 1931, The Wasatch Plateau coal field, Utah: U.S. Geological Survey Bulletin 819, 219 p.

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