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GEOPHYSICAL LOGS OF FOUR DRILL HOLES, ACORD LAKES AND EMERY WEST QUADRANGLES, SEVIER COUNTY, UTAH

By

Howard F. Albee

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This report has not been edited for conformity with Minerals Management Service and U.S. Geological Survey editorial standards or stratigraphic nomenclature.

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1 foot = 0.3048 meter

GEOPHYSICAL LOGS OF FOUR COAL DRILL HOLES, ACORD LAKES AND EMERY WEST QUADRANGLES, SEVIER COUNTY, UTAH

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INTRODUCTION

This report presents the geophysical logs for four drill holes drilled during 1981 in the Skumpah Creek area (Acord Lakes quadrangle) and The Pines area (Emery West quadrangle), Sevier County, Utah. Figures 1 and 2 show drill-hole locations, and figures 3-7 are the geophysical logs. The drilling was done by a private drilling company under contract to the U.S. Geological Survey. The sites of all the drill holes are within the Wasatch Plateau Known Recoverable Coal Resource Area (KRCRA). Three of the sites are in the Richfield Ranger District of the Fishlake National Forest and one site is in the Ferron Ranger District of the Manti-LaSal 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), Doelling (1972), and Smith (1981).

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 one hole was core drilled. Table 2 gives the drilling and logging information for the four completed holes. All drill holes were bottomed in the Upper Cretaceous Star Point Sandstone.

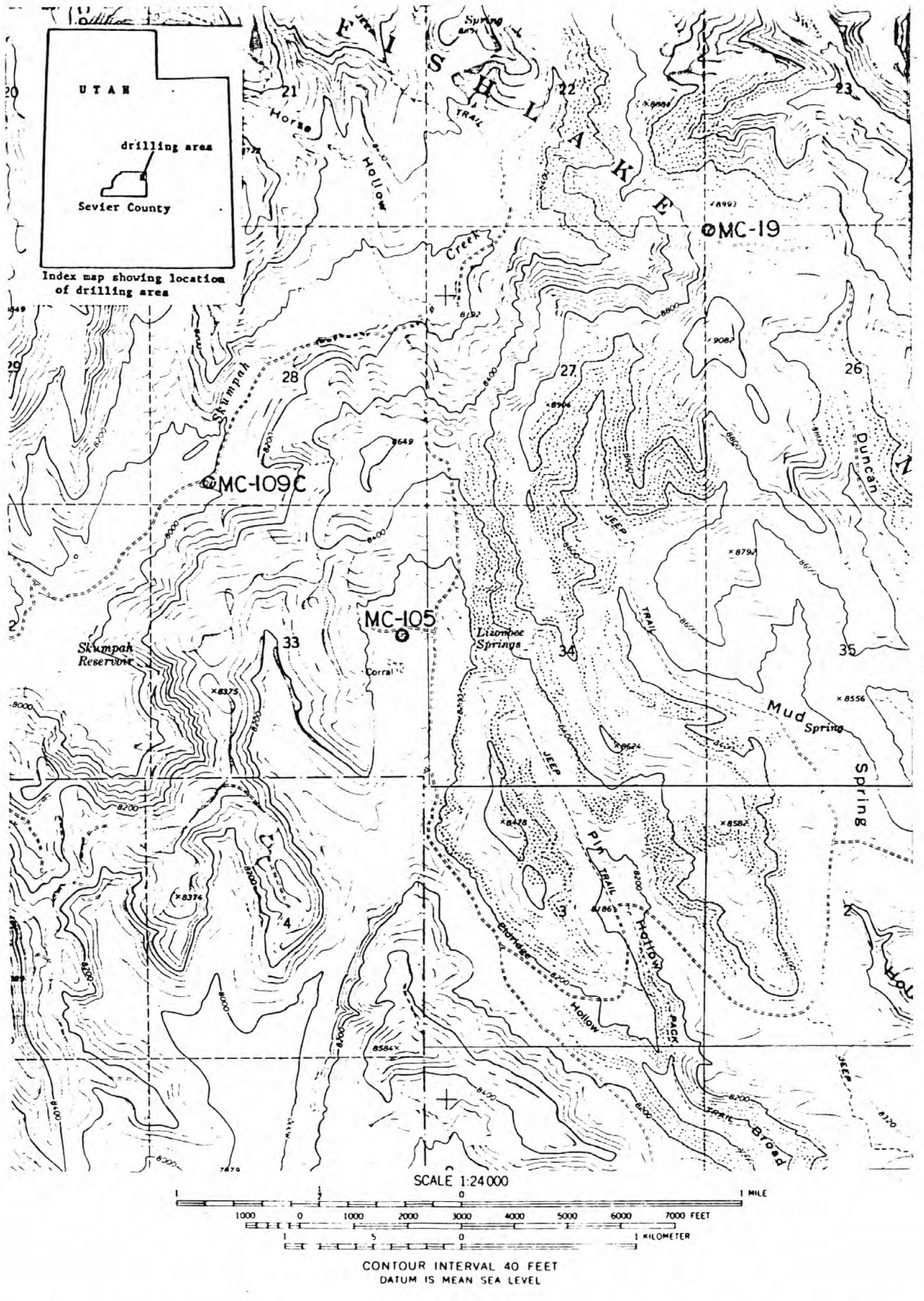

Figure 1.--Map showing drill-hole locations in the Skumpah Creek area of the Acord Lakes quadrangle, Sevier County, Utah.

Figure 2.--Map showing drill-hole location in The Pines area of Emery West quadrangle, Sevier County, Utah.

Table 1.--Generalized section of rock formations exposed in the drilling area, Sevier County, Utah (from Smith, 1981).

System	Series	Stratigraphic unit		Thickness Feet	Description
TERTIARY	Eocene				
	Paleocene	Wasatch Group	Flagstaff Limestone	200-1500	Dark yellow-gray to cream limestone, evenly bedded with minor amounts of sandstone, shale, and volcanic ash, ledge-former.
			North Horn Formation (Lower Wasatch)	500-2500	Variegated shales with subordinate sandstone, conglomerate and freshwater limestone, thickens to north, slope-former.
CRETACEOUS	?				
	Maestrichthian	Mesaverde Group	Price River Formation	600-1000	Gray to white gritty sandstone interbedded with subordinate shale and conglomerate, ledge and slope-former.
	Campanian		Castlegate Sandstone	150-500	White to gray, coarse-grained often conglomerate sandstone, cliff-former, weathers to shades of brown.
			Blackhawk Formation *MAJOR COAL SEAMS*	700-1000	Yellow to gray, fine- to medium-grained sandstone, interbedded with subordinate gray and carbonaceous shale, several thick coal seams.
			Star Point Sandstone	90-1000	Yellow-gray massive cliff-forming sandstone, often in several tongues separated by Masuk Shale, thickens westward.
	Santonian		Masuk Shale	300-1300	Yellow to blue-gray sandy shale, slope-former, thick in northern and central plateau area thins southward.

Table 2.--Drilling and logging depths for four drill holes in the Skumpah Creek and The Pines areas, Acord Lakes and Emery West quadrangles, Sevier County, Utah

Drill-hole No.	Location	Sec.	T.S.	R.E.	Estimated collar elevation (feet)	Drilling depth (feet) Rotary	Core	Logging depth (feet)
MC-105	E½	33	21	4	8,150	1,400	---	1,390
MC-109C	SW¼	28	21	4	8,010	1,080	1,080-1,265	1,258
MC-19	NW¼	26	21	4	8,920	1,960	---	1,960
TP-3	NW¼SW¼	24	21	5	8,600+	1,107	---	1,047

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.

Smith, A. D., 1981, Muddy Creek coal drilling project, Wasatch Plateau, Utah: Utah Geological and Mineralogical Survey Special Studies 55, 57 p.

Spieker, E. M., 1931, The Wasatch Plateau coal field, Utah: U.S. Geological Survey Bulletin 819, 219 p.