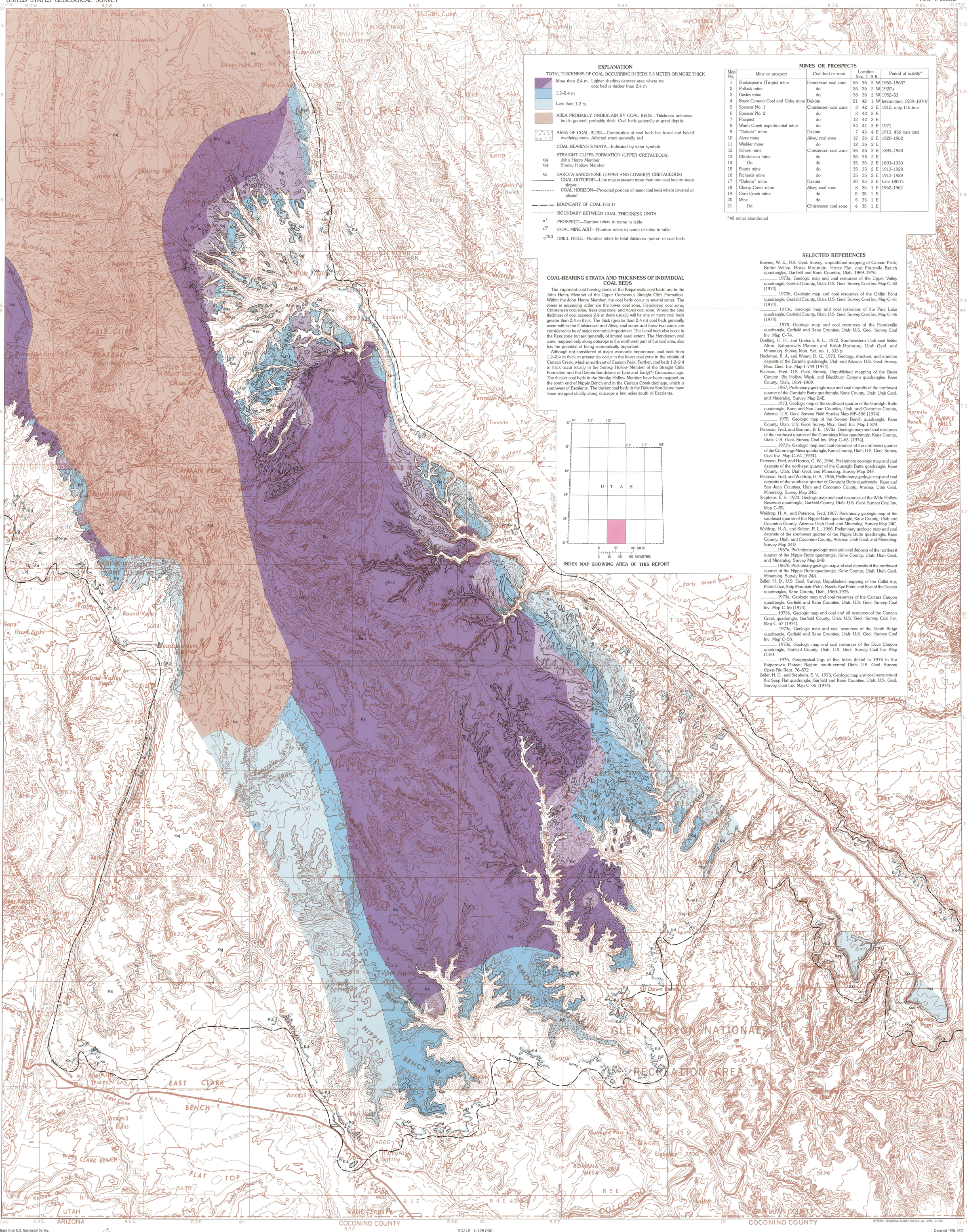

EXPLANATION

TOTAL THICKNESS OF COAL OCCURRING IN BEDS 0.3 METER OR MORE THICK

- More than 2.4 m. Lighter shading denotes area where no coal bed is thicker than 2.4 m
- 1.2–2.4 m
- Less than 1.2 m
- AREA PROBABLY UNDERLAIN BY COAL BEDS—Thickness unknown, but in general, probably thick. Coal beds generally at great depths
- AREA OF COAL BURN—Combustion of coal beds has fused and baked overlying strata. Affected strata generally red

COAL BEARING STRATA—Indicated by letter symbols

STRAIGHT CLIFFS FORMATION (UPPER CRETACEOUS)
- Ksj John Henry Member
- Kss Smoky Hollow Member

Kd DAKOTA SANDSTONE (UPPER AND LOWER(?) CRETACEOUS)

- COAL OUTCROP—Line may represent more than one coal bed on steep slopes
- COAL HORIZON—Projected position of major coal beds where covered or absent
- BOUNDARY OF COAL FIELD
- BOUNDARY BETWEEN COAL THICKNESS UNITS
- x7 PROSPECT—Number refers to name in table
- 13 COAL MINE ADIT—Number refers to name of mine in table
- o15.2 DRILL HOLE—Number refers to total thickness (meter) of coal beds

MINES OR PROSPECTS

Map No.	Mine or prospect	Coal bed or zone	Location Sec.	T.	S.	R.	Period of activity*
1	Shakespeare (Tropic) mine	Henderson coal zone	26	36	2	W	1952–1963?
2	Pollock mine	do	25	36	2	W	1920's
3	Davies mine	do	36	36	2	W	1952–53
4	Bryce Canyon Coal and Coke mine	Dakota	21	42	1	W	Intermittent, 1939–1970?
5	Spencer No. 1	Christensen coal zone	3	42	3	E	1913, only 115 tons
6	Spencer No. 2	do	3	42	3	E	
7	Prospect	do	12	42	3	E	
8	Warm Creek experimental mine	do	24	41	3	E	1971
9	"Dakota" mine	Dakota	7	43	4	E	1913, 456 tons total
10	Alvey mine	Alvey coal zone	12	36	2	E	1920–1962
11	Winkler mine	do	12	36	2	E	
12	Schow mine	Christensen coal zone	36	35	2	E	1893–1930
13	Christensen mine	do	36	35	2	E	
14	Do	do	35	35	2	E	1893–1930
15	Shurtz mine	do	35	35	2	E	1913–1928
16	Richards mine	do	35	35	2	E	1913–1928
17	"Dakota" mine	Dakota	30	35	3	E	Late 1800's
18	Cherry Creek mine	Alvey coal zone	8	35	1	E	1962–1962
19	Corn Creek mine	do	5	35	1	E	
20	Mine	do	5	35	1	E	
21	Do	Christensen coal zone	4	35	1	E	

*All mines abandoned

COAL-BEARING STRATA AND THICKNESS OF INDIVIDUAL COAL BEDS

The important coal-bearing strata of the Kaiparowits coal basin are in the John Henry Member of the Upper Cretaceous Straight Cliffs Formation. Within the John Henry Member, the coal beds occur in several zones. The zones in ascending order are the lower coal zone, Henderson coal zone, Christensen coal zone, Rees coal zone, and Alvey coal zone. Where the total thickness of coal exceeds 2.4 m there usually will be one or more coal beds greater than 2.4 m thick. The thick (greater than 2.4 m) coal beds generally occur within the Christensen and Alvey coal zones and these two zones are considered to be of major economic importance. Thick coal beds also occur in the Rees zone but are generally of limited areal extent. The Henderson coal zone, mapped only along outcrops in the northwest part of the coal area, also has the potential of being economically important.

Although not considered of major economic importance, coal beds from 1.2–2.4 m thick or greater do occur in the lower coal zone in the vicinity of Canaan Creek, which is northeast of Canaan Peak. Further, coal beds 1.2–2.4 m thick occur locally in the Smoky Hollow Member of the Straight Cliffs Formation and the Dakota Sandstone of Late and Early(?) Cretaceous age. The thicker coal beds in the Smoky Hollow Member have been mapped on the south end of Nipple Bench and in the Canaan Creek drainage, which is southwest of Escalante. The thicker coal beds in the Dakota Sandstone have been mapped chiefly along outcrops a few miles south of Escalante.

INDEX MAP SHOWING AREA OF THIS REPORT

SELECTED REFERENCES

Bowers, W. E., U.S. Geol. Survey, unpublished mapping of Canaan Peak, Butler Valley, Horse Mountain, Horse Flat, and Fourmile Bench quadrangles, Garfield and Kane Counties, Utah, 1969–1976.

_____ 1973a, Geologic map and coal resources of the Upper Valley quadrangle, Garfield County, Utah: U.S. Geol. Survey Coal Inv. Map C–60 [1974].

_____ 1973b, Geologic map and coal resources of the Griffin Point quadrangle, Garfield County, Utah: U.S. Geol. Survey Coal Inv. Map C–61 [1974].

_____ 1973c, Geologic map and coal resources of the Pine Lake quadrangle, Garfield County, Utah: U.S. Geol. Survey Coal Inv. Map C–66 [1974].

_____ 1975, Geologic map and coal resources of the Henrieville quadrangle, Garfield and Kane Counties, Utah: U.S. Geol. Survey Coal Inv. Map C–74.

Doelling, H. H., and Graham, R. L., 1972, Southwestern Utah coal fields: Alton, Kaiparowits Plateau and Kolob-Harmony: Utah Geol. and Mineralog. Survey Mon. Ser. no. 1, 333 p.

Hackman, R. J., and Wyant, D. G., 1973, Geology, structure, and uranium deposits of the Escante quadrangle, Utah and Arizona: U.S. Geol. Survey Misc. Geol. Inv. Map I–744 [1974].

Peterson, Fred, U.S. Geol. Survey, Unpublished mapping of the Basin Canyon, Big Hollow Wash, and Blackburn Canyon quadrangles, Kane County, Utah, 1964–1969.

_____ 1967, Preliminary geologic map and coal deposits of the northwest quarter of the Gunsight Butte quadrangle, Kane County, Utah: Utah Geol. and Mineralog. Survey Map 24E.

_____ 1973, Geologic map of the southwest quarter of the Gunsight Butte quadrangle, Kane and San Juan Counties, Utah, and Coconino County, Arizona: U.S. Geol. Survey Field Studies Map MF–306 [1974].

_____ 1975, Geologic map of the Sooner Bench quadrangle, Kane County, Utah: U.S. Geol. Survey Misc. Geol. Inv. Map I–874.

Peterson, Fred, and Barnum, B. E., 1973a, Geologic map and coal resources of the northeast quarter of the Cummings Mesa quadrangle, Kane County, Utah: U.S. Geol. Survey Coal Inv. Map C–63 [1974].

_____ 1973b, Geologic map and coal resources of the northwest quarter of the Cummings Mesa quadrangle, Kane County, Utah: U.S. Geol. Survey Coal Inv. Map C–64 [1974].

Peterson, Fred, and Horton, G. W., 1966, Preliminary geologic map and coal deposits of the northeast quarter of the Gunsight Butte quadrangle, Kane County, Utah: Utah Geol. and Mineralog. Survey Map 24F.

Peterson, Fred, and Waldrop, H. A., 1966, Preliminary geologic map and coal deposits of the southeast quarter of Gunsight Butte quadrangle, Kane and San Juan Counties, Utah and Coconino County, Arizona: Utah Geol. Mineralog. Survey Map 24G.

Stephens, E. V., 1973, Geologic map and coal resources of the Wide Hollow Reservoir quadrangle, Garfield County, Utah: U.S. Geol. Survey Coal Inv. Map C–55.

Waldrop, H. A., and Peterson, Fred, 1967, Preliminary geologic map of the southeast quarter of the Nipple Butte quadrangle, Kane County, Utah and Coconino County, Arizona: Utah Geol. and Mineralog. Survey Map 24C.

Waldrop, H. A., and Sutton, R. L., 1966, Preliminary geologic map and coal deposits of the southwest quarter of the Nipple Butte quadrangle, Kane County, Utah, and Coconino County, Arizona: Utah Geol. and Mineralog. Survey Map 24D.

_____ 1967a, Preliminary geologic map and coal deposits of the northeast quarter of the Nipple Butte quadrangle, Kane County, Utah: Utah Geol. and Mineralog. Survey Map 24B.

_____ 1967b, Preliminary geologic map and coal deposits of the northwest quarter of the Nipple Butte quadrangle, Kane County, Utah: Utah Geol. Mineralog. Survey Map 24A.

Zeller, H. D., U.S. Geol. Survey, Unpublished mapping of the Collet top, Petes Cove, Ship Mountain Point, Needle Eye Point, and East of the Navajo quadrangles, Kane County, Utah, 1969–1975.

_____ 1973a, Geologic map and coal resources of the Carcass Canyon quadrangle, Garfield and Kane Counties, Utah: U.S. Geol. Survey Coal Inv. Map C–56 [1974].

_____ 1973b, Geologic map and coal and oil resources of the Canaan Creek quadrangle, Garfield County, Utah: U.S. Geol. Survey Coal Inv. Map C–57 [1974].

_____ 1973c, Geolcgic map and coal resources of the Death Ridge quadrangle, Garfield and Kane Counties, Utah: U.S. Geol. Survey Coal Inv. Map C–58.

_____ 1973d, Geologic map and coal resources of the Dave Canyon quadrangle, Garfield County, Utah: U.S. Geol. Survey Coal Inv. Map C–59.

_____ 1976, Geophysical logs of five holes drilled in 1976 in the Kaiparowits Plateau Region, south-central Utah: U.S. Geol. Survey Open-File Rept. 76–872.

Zeller, H. D., and Stephens, E. V., 1973, Geologic map and coal resources of the Seep Flat quadrangle, Garfield and Kane Counties, Utah: U.S. Geol. Survey Coal Inv. Map C–65 [1974].

Base from U.S. Geological Survey, Escalante 1:250,000, 1956–70

APPROXIMATE MEAN DECLINATION, 1978

SCALE 1:125 000

CONTOUR INTERVAL 200 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

INTERIOR—GEOLOGICAL SURVEY, RESTON, VA.—1978—G77229

Compiled 1976–1977

MAP SHOWING EXTENT AND TOTAL THICKNESS OF COAL BEDS IN THE KAIPAROWITS COAL BASIN, UTAH

By
Dan E. Hansen
1978

For sale by Branch of Distribution, U.S. Geological Survey, Box 25286, Federal Center, Denver, CO 80225