

Base by U.S. Geological Survey, 1966  
10,000-foot grid based on Alaska  
coordinate system, zone 4

SCALE 1:63 360  
0 1 2 3 4 MILES  
0 1 2 3 4 KILOMETERS

CONTOUR INTERVAL 100 FEET  
DOTTED LINES REPRESENT 50-FOOT CONTOURS  
DATUM IS MEAN SEA LEVEL

Geology by Clyde Wahrhaftig, 1945, 1946, 1948,  
1952, 1957, 1958, and 1963; C. A. Hickox, 1945  
and 1946; J. W. James, 1948; J. H. Birman, 1952,  
and R. E. Zartman, 1957; assisted by J. V. Adkins  
and P. W. Gates, Jr., 1945; A. C. Spreng and  
J. W. Harvey, 1946; John Nicola and T. T. Sumida,  
1957; and Lawrence H. Mayo, 1963

**EXPLANATION**

Qa Alluvium May include fan deposits and stream gravel	Qca Alluvium	Qoa Alluvium and pebbles	Qob Alluvium and pebbles Stippled where deposited by Savage River
Qcb Alluvium and pebbles	Qcd Alluvium and pebbles	Qce Alluvium and pebbles	Qcf Alluvium and pebbles
Qga Alluvium and pebbles	Qgc Alluvium and pebbles	Qgd Alluvium and pebbles	Qge Alluvium and pebbles
Qha Alluvium and pebbles	Qhb Alluvium and pebbles	Qhc Alluvium and pebbles	Qhd Alluvium and pebbles
Qia Alluvium and pebbles	Qib Alluvium and pebbles	Qic Alluvium and pebbles	Qid Alluvium and pebbles
Qja Alluvium and pebbles	Qjb Alluvium and pebbles	Qjc Alluvium and pebbles	Qjd Alluvium and pebbles
Qka Alluvium and pebbles	Qkb Alluvium and pebbles	Qkc Alluvium and pebbles	Qkd Alluvium and pebbles
Qla Alluvium and pebbles	Qlb Alluvium and pebbles	Qlc Alluvium and pebbles	Qld Alluvium and pebbles
Qma Alluvium and pebbles	Qmb Alluvium and pebbles	Qmc Alluvium and pebbles	Qmd Alluvium and pebbles
Qna Alluvium and pebbles	Qnb Alluvium and pebbles	Qnc Alluvium and pebbles	Qnd Alluvium and pebbles
Qoa Alluvium and pebbles	Qob Alluvium and pebbles	Qoc Alluvium and pebbles	Qod Alluvium and pebbles
Qpa Alluvium and pebbles	Qpb Alluvium and pebbles	Qpc Alluvium and pebbles	Qpd Alluvium and pebbles
Qqa Alluvium and pebbles	Qqb Alluvium and pebbles	Qqc Alluvium and pebbles	Qqd Alluvium and pebbles
Qra Alluvium and pebbles	Qrb Alluvium and pebbles	Qrc Alluvium and pebbles	Qrd Alluvium and pebbles
Qsa Alluvium and pebbles	Qsb Alluvium and pebbles	Qsc Alluvium and pebbles	Qsd Alluvium and pebbles
Qta Alluvium and pebbles	Qtb Alluvium and pebbles	Qtc Alluvium and pebbles	Qtd Alluvium and pebbles
Qua Alluvium and pebbles	Qub Alluvium and pebbles	Quc Alluvium and pebbles	Qud Alluvium and pebbles
Qva Alluvium and pebbles	Qvb Alluvium and pebbles	Qvc Alluvium and pebbles	Qvd Alluvium and pebbles
Qwa Alluvium and pebbles	Qwb Alluvium and pebbles	Qwc Alluvium and pebbles	Qwd Alluvium and pebbles
Qxa Alluvium and pebbles	Qxb Alluvium and pebbles	Qxc Alluvium and pebbles	Qxd Alluvium and pebbles
Qya Alluvium and pebbles	Qyb Alluvium and pebbles	Qyc Alluvium and pebbles	Qyd Alluvium and pebbles
Qza Alluvium and pebbles	Qzb Alluvium and pebbles	Qzc Alluvium and pebbles	Qzd Alluvium and pebbles

**UNCONFORMITY**

Nenana Gravel  
Buff to reddish-brown, poorly consolidated, pebble to  
boulder conglomerate and coarse sandstone, with  
interbedded mudflow deposits, thin claystone layers,  
and local thin siltstone beds

**LOCAL UNCONFORMITY**

Lignite Creek Formation  
In the vicinity of Slate Creek and west of upper Dry  
Creek, buff crossbedded pebbly arkosic sandstone  
with lenses of pebble and cobble conglomerate and  
possibly some clay beds

Grubstake and Lignite Creek Formations, undivided  
Grubstake Formation is greenish-gray siltstone and  
claystone at top of unit  
Lignite Creek Formation is interbedded buff crossbed-  
ded pebbly arkosic sandstone and greenish-gray silt-  
stone and clay with thin beds of platy-weathering sub-  
bituminous coal. Pebbles in the sandstone are 55  
percent or more igneous and metamorphic rocks and  
65 percent or less quartz, chert, quartzite, and argil-  
lite

**MAJOR UNCONFORMITY**

METAMORPHIC ROCKS NORTH OF  
FISH AND PANGUINGUE CREEKS

Schist and slate  
Generally fine-grained yellow, pale-green, and maroon  
schist and slate. Chiefly quartz-sericite schist and  
meta-chert. Near hill 3103 contains areas of micro-  
cline-bearing schist. In the extreme northwest, inter-  
bedded maroon schist is chloritoid- and hematite-  
bearing quartz-sericite schist. May be correlative  
with the Precambrian or lower Paleozoic Nikola  
Group or the Mississippian(?) Totlatanka Schist

Gneiss and schist  
Coarse microcline-quartz-sericite gneiss and inter-  
bedded black carbonaceous schist. Probably correlative  
with the Mississippian(?) Totlatanka Schist

Schist, quartzite, and marble  
Interbedded quartz-sericite schist, quartz-calcite-seri-  
cite schist, schistose quartzite, and impure marble.  
Generally brown to gray to greenish gray. Medium  
to coarse grained. In thin section shows cataclastic  
as well as crystalloblastic textures. May be correlative  
with the Precambrian or Paleozoic Keey Peak  
Formation

Stretched conglomerate  
Lithologically similar to the stretched conglomerate of  
the Keey Peak Formation in Healy D-2 and D-3  
quadrangles

Schist  
Quartz-sericite schist, sericite schist, and black schist,  
which may be correlative with the Precambrian or  
Paleozoic Birch Creek Schist or the Precambrian or  
Paleozoic Keey Peak Formation. Along the north  
margin of this unit is a probably discontinuous belt  
of interbedded black carbonaceous schist and  
black oolitic recrystallized limestone

Birch Creek Schist  
Quartz-sericite schist, sericite schist, quartzite, quartz-  
sericite-carbonate schist, locally green chloritic and  
epidiotic schist, black carbonaceous schist, and im-  
pure marble. Locally contains disseminated pyrite

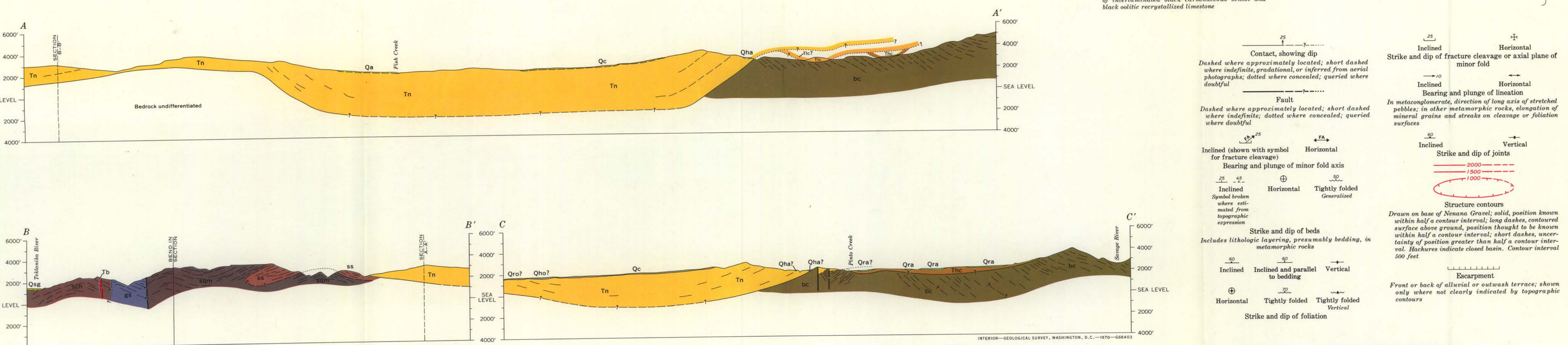
**COAL-BEARING GROUP**

Coal-bearing group, undivided

**QUATERNARY**

**TERTIARY**

**PRECAMBRIAN OR PALEOZOIC**



**GEOLOGIC MAP OF THE HEALY D-5 QUADRANGLE, ALASKA**

By  
Clyde Wahrhaftig  
1970

**SELECTED BIBLIOGRAPHY**

Pévé, Troy L., Wahrhaftig, Clyde, and Weber, Florence, 1966, Geologic map of the Fairbanks quadrangle, Alaska: U.S. Geol. Survey Misc. Geol. Inv. Map I-455, scale 1:250,000

Wahrhaftig, Clyde, 1951, Geology and coal deposits of the western part of the Nenana coal field, Alaska, in: Barnes, F. F., and others, Coal investigations in south-central Alaska, 1944-46: U.S. Geol. Survey Bull. 963-E, p. 169-186

Wahrhaftig, Clyde, 1958, Quaternary geology of the Nenana River valley and adjacent parts of the Alaska Range: U.S. Geol. Survey Prof. Paper 293-A, p. 1-68

Wahrhaftig, Clyde, 1968, Schists of the central Alaska Range: U.S. Geol. Survey Bull. 1254-E, p. E1-E22

Wahrhaftig, Clyde, Wolfe, Jack A., Leopold, Estella B., and Lanphere, Marvin A., 1969, The coal-bearing group in the Nenana coal field, Alaska: U.S. Geol. Survey Bull. 1274-D, p. D1-D30