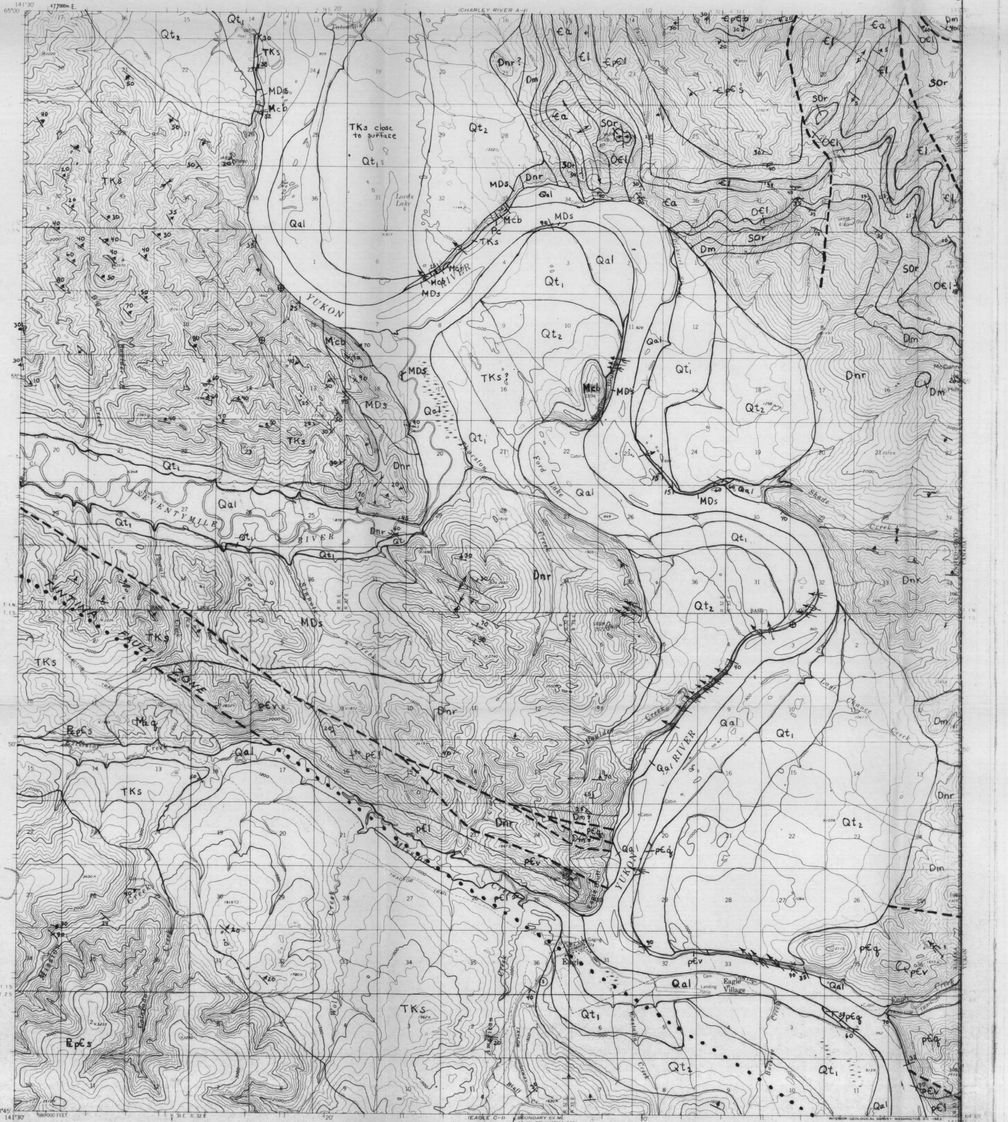
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY



SCALE 1:63 360

CONTOUR INTERVAL 100 FEET
DATUM IS MEAN SEA LEVEL

Base by Topographic Division
U.S. Geological Survey, 1956

This map is preliminary and has not been edited or reviewed for conformity with Geological Survey standards.

OPEN FILE MAP 65-20
SHEET 1 OF 2

PRELIMINARY GEOLOGIC MAP OF THE EAGLE D-1 QUADRANGLE EAST CENTRAL ALASKA

By
Earl E. Brabb and Michael Churkin, Jr.
1965

REPORT
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EXPLANATION

Qal / Qt2 / Qt1 — Surficial deposits

Qal, flood-plain deposits

Qt_2, river-terrace deposits, low level

Qt_1, river-terrace deposits, high level

TKs — Sandstone, mudstone, and conglomerate

Sandstone and conglomerate, poorly sorted, composed mostly of lithic fragments and about 5 percent potash feldspar. Mudstone contains leaves, spores, and pollen. Thin lignitic coal beds common. Nonmarine. Thickness at least 5,000 feet

Lower Cretaceous (Albian?) to Eocene — QUATERNARY; CRETACEOUS AND TERTIARY

UNCONFORMITY

NORTH OF TINTINA FAULT ZONE
STRATIGRAPHIC POSITION REASONABLY CERTAIN

Pc — Sandstone, conglomerate, and shale

Sandstone, arenite, and wacke composed of chert and quartz grains cemented by calcite. Interbedded conglomerate has varicolored chert pebbles and cobbles. Contains productid brachiopods, plant fragments, bryozoa, corals, and gastropods. Coal chips common. Interbedded shale nonfossiliferous. Thickness about 300 feet

PERMIAN(?)

DISCONFORMITY(?)

Mcb — Calico Bluff Formation

Rhythmically interbedded dark-brownish-gray bioclastic limestone and shale. Contains rich invertebrate fauna and a few gymnosperm pollen and spores. Thickness about 1,400 feet

Upper Devonian and Mississippian — MISSISSIPPIAN

MDs — Siliceous shale and chert

Grayish-black laminated siliceous shale and chert. Minor dark-gray siltstone, quartzite, and limestone. Contains plant stems and a few brachiopods. Thickness about 3,000 feet

DEVONIAN AND MISSISSIPPIAN

Dnr — Nation River Formation

Upper Devonian — Rhythmically interbedded mudstone, sandstone, gritstone, and conglomerate. Graded beds common. Mudstone is olive-gray and nearly everywhere has plant fragments and spores of probable Late Devonian age. Sandstone is olive-gray chert-quartz arenite and wacke, commonly with carbonate cement. Gritstone and conglomerate composed mostly of varicolored chert granules and pebbles. Thickness about 3,000 feet

Dm — McCann Hill Chert

Middle Devonian — Thin-bedded and laminated dark- to light-gray chert, siliceous shale, and minor chert gritstone. Contains plant fragments, poorly preserved spores, and rare conodonts, gastropods and cephalopods. Basal part of formation has beds of dark-gray bioclastic limestone with remarkably varied fauna including trilobites, corals, brachiopods, fish, and ostracods of Middle Devonian (Eifelian) age. Thickness 200 to 800 feet

DEVONIAN

DISCONFORMITY

Sor — Road River Formation

Dark-gray graptolitic shale with lesser amounts of grayish-black laminated chert and very minor dark-gray limestone, greenish-gray dolomite, grayish-black chert arenite and chert conglomerate. Chert, chert arenite, and chert conglomerate occur mainly in basal part of formation. Graptolites indicate that all series of the Ordovician and Silurian may be represented with the exception of the Trematdoc and possibly the Arenig and Wenlock. Thickness 400 to 900 feet

SILURIAN

ORDOVICIAN

DISCONFORMITY

Oel — Limestone

Middle and Upper Cambrian — Very fine to medium grained pale yellowish-brown limestone. Laminated to very thick bedded, shaly to massive parting. Has interbeds of edgewise limestone conglomerate, oolitic limestone and sandy limestone. Minor dolomite, grayish-black chert, dark-gray fissile shale, siltstone, and at base, limestone boulder conglomerate. The medium-grained sandy (chert and quartz) limestone commonly contains trilobites and brachiopods. Age, Middle and Late Cambrian and (near triangulation station Crow) includes earliest Ordovician. Maximum thickness 400 feet

CAMBRIAN

Ea — Argillite

Lower Cambrian — Light-olive-gray argillite, siltstone, and cross-laminated quartzite with worm(?) burrows. Oolitic and sandy limestone near base has Archaeocyathus of Early Cambrian age. Thickness about 900 feet

El — Limestone

Light-gray fine- to medium-grained laminated limestone, dolomitic limestone, and dolomite. Extensively silicified and commonly oolitic. Forms massive cliffs. Nonfossiliferous. Maximum thickness about 1,000 feet

CAMBRIAN

pCl — Limestone

Upper Precambrian and Lower Cambrian(?) — Tindir Group — Dark-gray laminated limestone with slabby and platy parting. Has interbeds of greenish-gray shale, siltstone and sandstone. Includes minor pale yellowish-brown sandy limestone, light-gray laminated dolomite, and chert-carbonate gritstone. Thickness 800 to 1,500 feet

pCs — Sandstone and shale

Light-gray thin- to medium-bedded sandstone (dolo-arenite) and olive gray shale. Minor gritstone and conglomerate. Dolo-arenite composed mostly of rounded dolomite grains with subordinate chert and quartz grains. Cross-laminations common. Weathers very pale orange and resembles crystalline dolomite at a distance. Gritstone and conglomerate composed mostly of dolomite and chert clasts and some granules, pebbles, and cobbles of granitic, volcanic and metamorphic rocks. Thickness about 2,500 feet

pCb — Basalt and red beds

Dark-greenish-gray basalt and tuff. Red beds mostly grayish-red shale and siliceous shale. Minor greenish-gray shale, jasper, greenstone-dolomite conglomerate, hematitic doloarenite, and vitric tuff and lava, largely replaced by hematite and carbonate. Thickness at least 2,500 feet

PRECAMBRIAN AND CAMBRIAN(?)

STRATIGRAPHIC POSITION UNCERTAIN

pCq — Quartzite and argillite

Greenish-gray laminated quartzite with interbeds of greenish-gray and dark-gray argillite. Minor grayish red argillite, siliceous shale, chert, and dark-gray sandy limestone. Quartzite contains a few worm(?) tubes. Includes small areas of intrusive(?) greenstone. Probably equivalent to upper part of Tindir Group or possibly to argillite of Early Cambrian age. Thickness at least 1,000 feet

pCv — Greenstone

Fine-grained greenstone that is probably altered andesite or basalt. Interlayered with tuff, volcanic conglomerate, laminated quartzite, argillite, siliceous shale, and chert. Includes coarse-grained greenstone that may be altered basic intrusive rock. Probably equivalent to basalt and red beds of Tindir Group

pCl — Limestone

Dark-gray medium-grained limestone. Has interbeds of dark-gray shale and argillite, siliceous shale, chert, calcareous siltstone, dolomite, tuff, and greenstone. Thickness at least 1,000 feet

PRECAMBRIAN(?)

SOUTH OF TINTINA FAULT ZONE

Mzq — Quartz monzonite

MESOZOIC(?)

pCc — Chlorite schist

Mainly fine-grained grayish-green chlorite schist. Minor quartz-muscovite schist, quartz biotite schist, quartz-sericite schist, and marble. Derived by regional metamorphism of argillaceous, sandy, and volcanic rocks. Represents greenschist facies

PRECAMBRIAN(?) AND PALEOZOIC

OPEN FILE MAP
SHEET 1 OF 2

Contact, approximately located

Fault, approximately located
Dotted where concealed, U, upthrown side; D, downthrown side

Anticline

Showing trace of axial plane and direction of plunge

Syncline

Showing trace of axial plane and direction of plunge

Plunge of minor anticline

Plunge of minor syncline

Strike and dip of bedding

Field measurement		Photo-interpretation or reconnaissance measurement from helicopter
45	Inclined	45
90	Vertical	90
70	Overturned	
⊕	Horizontal	

Strike and dip of foliation

45 Inclined — Vertical

FOSSIL IDENTIFICATIONS

(Identifications by paleontologists of the Paleontology and Stratigraphy Branch, U. S. Geological Survey, unless otherwise noted)

Cambrian - A. R. Palmer

Ordovician and Silurian - R. J. Ross, Jr., W. B. N. Berry (University of California), W. A. Oliver, Jr., R. A. Scott, J. W. Huddle, J. M. Berdan

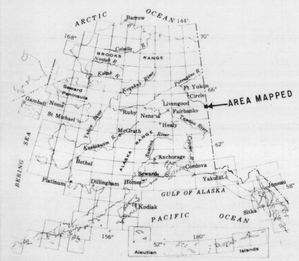
Devonian - W. A. Oliver, Jr., R. A. Scott, J. M. Berdan, J. W. Huddle, A. R. Palmer, M. Gordon, Jr., H. Duncan, J. T. Dutro, Jr., S. H. Mamay, A. R. Ormison (Harvard)

Carboniferous and Permian - M. Gordon, Jr., R. A. Scott, I. G. Sohn, H. Duncan, J. T. Dutro, Jr., S. Mamay, J. C. Melik (Mobil Exploration Co.)

Cretaceous and Tertiary - J. A. Wolfe, R. A. Scott, R. H. Tschudy

FIELD ASSISTANTS

1960 R. N. Passero and H. J. Roepke
1961 J. C. Melik and R. L. Taylor
1962 A. Aadland
1963 D. L. Giles and R. H. Rohrbacher



INDEX MAP SHOWING LOCATION OF EAGLE D-1 QUADRANGLE