UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

CHANDALAR

ALASKA
TOPOGRAPHIC SERIES

OPEN FILE REPORT

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EXPLANATION

BEDDED ROCKS

Pleistocene and Recent

Qal / Qu / Qg / Qt — Surficial deposits

Qu, surficial deposits, undifferentiated
Qal, flood-plain alluvium. Age; Recent
Qg, glacial drift. Age; Pleistocene
Qt, terrace deposits. Age; Pleistocene

UNCONFORMITY

Tb — Vesicular basalt

UNCONFORMITY

Kb — Bergman Group

Conglomerate and graywacke

UNCONFORMITY

Lower and Upper Mississippian

Ml — Lisburne Group
Limestone and dolomite. Incomplete thickness approximately 500 feet

Upper Devonian and Lower Mississippian

MDk — Kayak Shale and Kanayut Conglomerate

Kayak Shale, estimated thickness 150 to 1,000 feet. Age; Early Mississippian
Kanayut Conglomerate, estimated thickness 150 feet. Age; Late Devonian

Late Dev non marine 3,300' chert pebble congl @ Shainin Lake,

Upper Devonian

Dsq / Ds / Dsp / Dst — Slate and sandstone

Ds, black slate and phyllite with some sandstone and with basal conglomerate locally mapped by symbol
Dsq, quartzitic sandstone and slate
Dst, black siliceous siltstone
Dsp, green and purple phyllite and sheared, partly volcanic conglomerate
Estimated thickness 3,000 to 3,500 feet

LOCAL UNCONFORMITY

Dsg — Siltstone and grit

Mainly gray-green clastic rocks, probably in part equivalent to lower part of Ds, and locally intertongued with Dl

LOCAL UNCONFORMITY

Dl / Dls — Limestone and siltstone

Dl, mainly thin-bedded silty limestone and siltstone
Dls, mainly calcareous to noncalcareous phyllite
Maximum estimated thickness 2,500 feet; locally thin to absent

DEVONIAN

LOCAL UNCONFORMITY

Middle (?) Devonian

Dsk — Skajit Limestone

Mostly massive marble and limestone. Incomplete thickness approximately 500 to 2,000 feet

Dv / Dvc — Volcanic rocks and chert

Dv, andesite flows and diorite
Dvc, red green, black and white locally radiolarian chert

Dgw / Dp — Graywacke and phyllite

Dgw, lithic graywacke and slate
Dp, black phyllite and slate; includes a little chert
Probably equivalent to Ds

DEVONIAN(?)

LOW-GRADE SCHIST (GREEN SCHIST FACIES)

Dg / Dgs — Greenstone and greenschist

Dg, schistose diorite and andesite
Dgs, albite-epidote chlorite muscovite schist

Dqm / Dqq / Dqs / Dqg — Quartz-mica schist

Dqm, quartz-muscovite schist and quartzite
Dqq, pyritic silicified siltstone and quartzite
Dqs, black fine-grained schist
Dqg, quartz-muscovite schist and intercalated greenstone and greenschist
Equivalent to Ds

Dq — Quartzite and schist

Quartz-muscovite schist. Locally biotitic schist and fine-grained, thin-bedded, locally biotitic quartzite. Equivalent to Dp

Dgh — Garnet-hornblende greenschist

Dgt — Garnet-mica schist

Equivalent to Dp

Db — Biotite schist

Albite-biotite-garnet schist
Equivalent to Dqg

Da / Daq — Albite-chlorite-mica schist

Da, gray and green, locally pyritic albite-chlorite-muscovite schist with some quartz and biotite. Few granitic sills
Daq, albite-chlorite-mica schist and interbedded chloritic quartzite with epidote, garnet, and biotite
Probably equivalent to Ds and Dsg

Dac — Calcareous schist Dcm and albite-chlorite-mica schist Da, undifferentiated

Dcm — Calcareous schist and marble

Equivalent to Dl

Dca — Chloritized amphibole schist

Probably retrogressively metamorphosed Dch

HIGH-GRADE SCHIST (ALMANDINE-AMPHIBOLITE FACIES) AND HORNFELS

Dh — Hornblende hornfels

Dbs — Biotite-staurolite schist

Equivalent to Dqm in southeast part of quadrangle; to Dq in southwest part

Dch — Calc-silicate hornfels and calcareous schist

GRANITIC INTRUSIVE ROCKS AND MIGMATITE

Upper Paleozoic or Mesozoic

MzPzg / MzPzp — Granitic rocks

MzPzg, gneissic biotite granite, quartz monzonite and granodiorite
MzPzp, mainly porphyritic quartz monzonite and granodiorite

Dm — Migmatite

QUATERNARY — TERTIARY(?) — CRETACEOUS — UPPER PALEOZOIC OR MESOZOIC — MISSISSIPPIAN — DEVONIAN AND MISSISSIPPIAN — DEVONIAN AND DEVONIAN(?)

EXPLANATION

Contact
Dashed where approximately located; short dashed where inferred; dotted where concealed. Zigzag line; gradational contact used only in cross section

Scratch boundary
Used only in cross section

Fault
Dashed where approximately located; queried where doubtful; dotted where concealed. U, upthrown side; D, downthrown side

Thrust fault
Dashed where approximately located; queried where doubtful; dotted where concealed. Sawteeth on upper plate

Anticline
Showing trace of axial plane and plunge of axis. Dashed where approximately located; dotted where concealed

Syncline
Showing trace of axial plane and plunge of axis. Dashed where approximately located; dotted where concealed

Overturned anticline
Showing trace of axial plane, direction of dip of limbs and plunge of axis. Dashed where approximately located

Moraine

30 — Strike and dip of beds
Probably includes some overturned beds

25 — Strike and dip of foliation
Foliation generally parallel to bedding

25 — Strike of beds and foliation from distant views and photo-interpretation
Probably includes some overturned beds

Horizontal beds

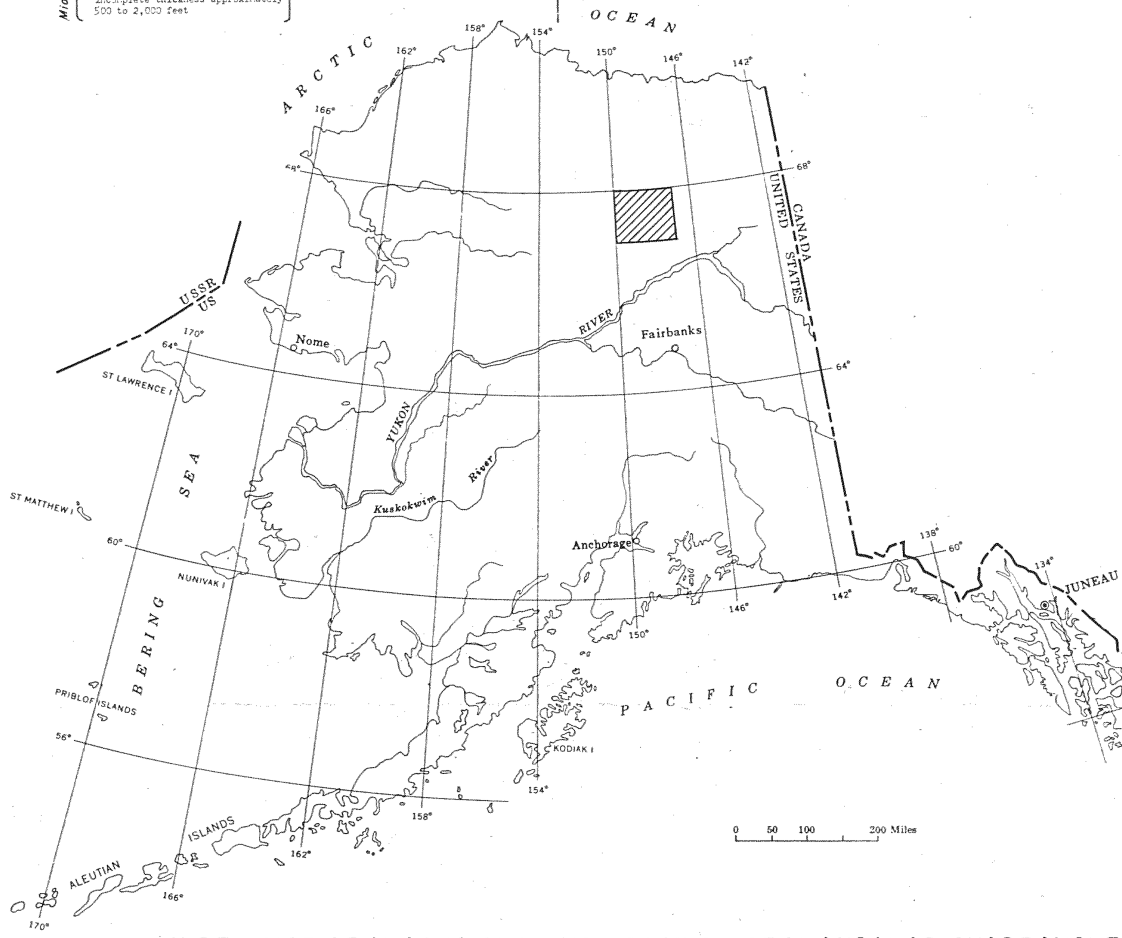
F — Fossil locality

Lode gold mine
Gold in quartz, with arsenopyrite. Many gold prospects in Tobin Creek-McLellan Creek area not shown

Placer gold mine
Recently worked deposits

Cu — Occurrence of metallic minerals
Letter symbol indicates metal. Metals occur as small amounts sulfides; malachite azurite stains; palladium, silver, zinc and nickel from x-ray analyses

Cu60 — Stream bed sediment analysis, showing concentration of metal in parts per million
Location not shown for samples with less than 60 ppm copper, 50 ppm lead, 150 ppm zinc, 40 ppm arsenic, or 6 (six) ppm antimony



INDEX MAP OF ALASKA SHOWING LOCATION OF CHANDALAR QUADRANGLE

Base from Topographic map
U.S.Geologic Survey, 1956

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

OPEN FILE REPORT

GEOLOGIC MAP OF THE CHANDALAR QUADRANGLE, ALASKA

By
W. P. Brosge' and H. N. Reiser

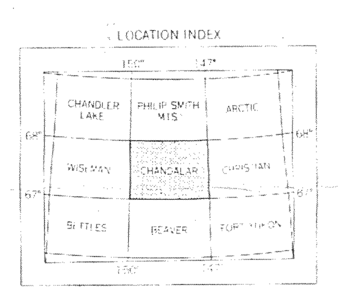
SCALE 1:250 000

5 0 5 10 15 20 25 MILES

CONTOUR INTERVAL 200 FEET
DATUM IS MEAN SEA LEVEL

1958 MAGNETIC DECLINATION OF SOUTH EDGE OF SHEET RANGES FROM 28°30' TO 30°30' EAST

1962

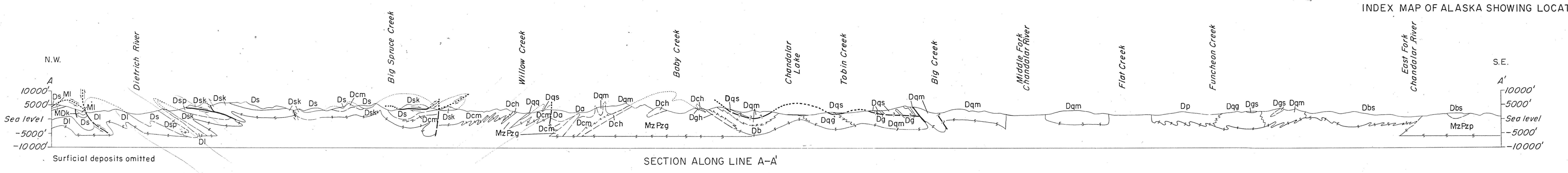


Geology by J.B. Mertie, Jr., 1923; W.P. Brosge', H.N. Reiser, D.F. Kellum, J.O. Berkland, 1959; W.P. Brosge', H.N. Reiser, J.O. Berkland, N.K. Hagen, 1960

Quaternary geology largely from interpretation of aerial photographs

X-ray analyses by J.O. Berkland, 1960-61

Stream sediment analyses by W.W. Janes, J.B. McHugh and H.H. Mehnert, 1960



SECTION ALONG LINE A-A'