ALASKA DIVISION OF GEOLOGICAL &
GEOPHYSICAL SURVEYS

REPORT OF INVESTIGATIONS 97-15a
REIFENSTUHL AND OTHERS 1997
Explanatory booklet accompanies map

Base modified from U.S. Geological Survey 1:63,360 Tanana B-1 Quadrangle, Alaska (1950), Universal Transverse Mercator projection, 1927 North American datum.

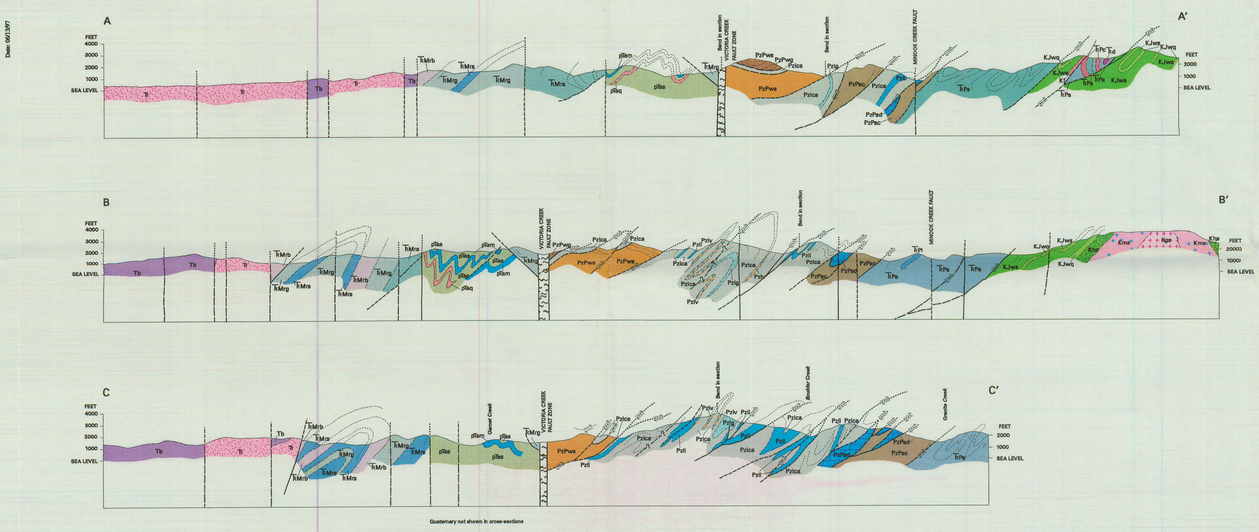
APPROXIMATE MEAN DECLINATION, 1998

SCALE 1:63,360

CONTOUR INTERVAL 100 FEET
DATUM IS MEAN SEA LEVEL

ALASKA
STUDY AREA
MAP LOCATION

Sources of geologic data: Field mapping, all authors (1988); air photo interpretation, D.S. Pinney (1995; 1997); 1:250,000 scale mapping of the Tanana Quadrangle, Chapman and others (1982); Nenana Mountains area, compiled and modified from U.S. Geological Survey Nenana Mountains area unpublished geologic and geochemical data, H. Nokes (Dover, Regional Native Corporation) and J. Di Mainili (ADA, Inc.) (1987-1991). For Minook Creek area, Bundtzen and others (1994). Alaska Railbelt Digital Mapping Project, Alaska Department of Natural Resources, Division of Geological & Geophysical Surveys. Digital cartography by A.B. Stumann and S.A. Haug.



Date: 10/13/97

GEOLOGIC MAP OF THE TANANA B-1 QUADRANGLE, CENTRAL ALASKA

By

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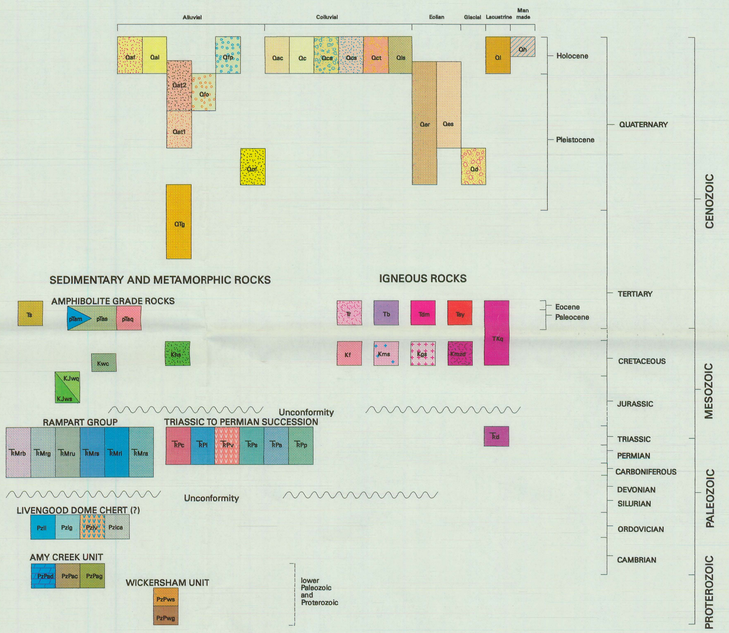
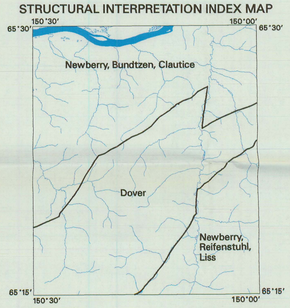
1997

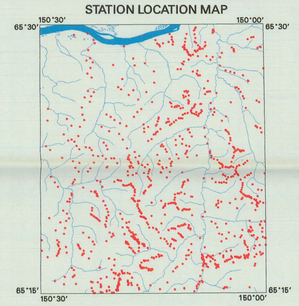
CORRELATION OF MAP UNITS



STRUCTURAL INTERPRETATION INDEX MAP



STATION LOCATION MAP



DESCRIPTION OF MAP UNITS

ALLUVIAL DEPOSITS

- Alluvial fan deposits
- Alluvium in modern stream channels
- Younger alluvial terrace deposits
- Older alluvial terrace deposits
- Old fan deposits of lower Chapman Creek
- Floodplain alluvium bordering modern streams
- Outwash fan deposits
- High-level bench gravel

COLLUVIAL DEPOSITS

- Undifferentiated alluvial and colluvial valley fill deposits
- Undifferentiated colluvium
- Colluvial apron and fan deposits
- Solifluction deposits
- Talus deposits
- Landslide deposits

EOLIAN DEPOSITS

- Primary and reworked upland silt
- Dune sand deposits

GLACIAL DEPOSITS

- Modified drift of Elephant Mountain Glaciation

LACUSTRINE DEPOSITS

- Undifferentiated lacustrine deposits

MANMADE DEPOSITS

- Mine tailings

SEDIMENTARY AND IGNEOUS ROCKS

- Sedimentary rocks
- Rhyolite
- Basalt
- Quartz syenite dikes
- Mafic dikes
- Quartz veins

AMPHIBOLITE GRADE ROCKS

- Marble
- Pelitic schist
- Quartzite

CRETACEOUS AND JURASSIC ROCKS

- Wilber Creek unit
- Hornfelsed sedimentary rocks
- Wolverine quartzite unit
- Sandstone and shale

ELEPHANT MOUNTAIN PLUTON

- Granite
- Monzonite
- Monzodiorite
- Felsic dikes

TRIASSIC TO PERMIAN SUCCESSION

- Sandstone and shale
- Argillite
- Tuff
- Limestone
- Chert
- Pebble conglomerate
- Gabbroic dike

RAMPART GROUP

- Argillite and chert
- Basalt
- Gabbro
- Sedimentary rocks undifferentiated
- Limestone
- Rampart Group undifferentiated

LOWER PALEOZOIC AND PROTEROZOIC ROCKS
LIVENGOOD DOME CHERT (?)

- Chert and cherty argillite
- Graywacke and gritty quartzite
- Volcanic unit
- Limestone

AMY CREEK UNIT

- Dolostone
- Greenstone
- Cherty-argillite and chert

WICKERSHAM UNIT

- Calcareous siltstone and sandstone
- Grit and quartzite

MAP SYMBOLS

- Contact—Dashed where approximately located; queried where inferred or continuation unknown
- Victoria Creek Fault Zone—Major dextral strike-slip fault zone connecting Tintina and Kaltag faults; width of crushed zone indicated by cross-hatching based on widths of saddles along the topographic lineament marking the fault zone. Identifiable but structurally detached blocks of various metamorphic and Rampart Group lithologies mapped separately within crushed zone where observed
- Thrust Fault—Low- to moderate-angle, brittle to semi-ductile thrust fault, or ductile zone of mylonitic or blasto mylonitic shearing, which internally imbricates a rock sequence or imbricates the tectonic contact between sequences; normally displaces older rocks onto relatively younger ones, except where thrust is "out of sequence" or where bedding-parallel segment of thrust is exposed; dashed where approximately located, queried where inferred or continuation unknown, dotted where concealed
- High-angle Normal Fault—Some inferred from geophysical lineament or apparent geophysical offset, or from topographic lineament. Arrow shows direction and amount of dip where known; U, upthrown side, D, downthrown side. Dashed where approximately located, queried where inferred or continuation unknown, dotted where concealed
- Bedding trace—Approximate trace of bedding on topographic surface, showing stratigraphic or structural "form"
- Fold Axis—Dashed where approximately located; queried where inferred; arrow shows direction of plunge
- Anticline
- Syncline
- Overturned anticline
- Overturned syncline
- Bedding attitude; shows dip where known
- Inclined, vertical, horizontal
- Overturned—Bar and ball show facing (top) where known
- Cleavage—Mostly axial planar cleavage at low angle to bedding except in axial areas of folds, where pencil cleavage is locally developed; shows dip where known
- Inclined, vertical
- Metamorphic foliation or schistosity; shows dip where known
- Inclined, vertical
- Lineation—Includes mineral lineation or streaking, intersection of bedding and foliation, pencil cleavage, crenulation or minor fold axes, slickensides; shows plunge where known
- Joint—Shows dip where known
- Vertical joint

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