ALASKA DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

PROFESSIONAL REPORT 124
Reger and others, 2021
SHEET 6 OF 18
Explanatory report accompanies map
http://doi.org/10.14509/29701

Adjoining Map Sheet: Sheet 5 - Segment 3: West

EXPLANATION OF MAP SYMBOLS

NOTE: Map symbols below might not all appear on this sheet

- PHOTOINTERPRETED CONTACT—Identity and existence certain; location approximate
- STRIKE-SLIP FAULT, LEFT-LATERAL OFFSET—Identity or existence certain, location accurate. Arrows show relative motion
- STRIKE-SLIP FAULT, LEFT-LATERAL OFFSET—Identity or existence certain, location approximate. Arrows show relative motion
- THRUST FAULT—Identity and existence certain, location accurate. Sawteeth on upper (tectonically higher) plate
- THRUST FAULT—Identity and existence certain, location approximate. Sawteeth on upper (tectonically higher) plate
- THRUST FAULT—Identity or existence questionable, location inferred. Sawteeth on upper (tectonically higher) plate
- THRUST FAULT—Identity and existence certain, location concealed. Sawteeth on upper (tectonically higher) plate
- THRUST FAULT—Identity or existence questionable, location concealed. Sawteeth on upper (tectonically higher) plate
- LINEAMENT
- ANTICLINE—Identity and existence certain, location accurate.
- ANTICLINE—Identity and existence certain, location inferred.
- ANTICLINE—Identity and existence certain, location concealed.
- ANTICLINE—Identity or existence questionable, location concealed.
- FOSSIL LOCALITY
- RADIOCARBON LOCALITY
- SOIL PIT LOCALITY
- VENTIFACT LOCALITY
- TRENCH LOCALITY
- TEPHRA LOCALITY DISCUSSED IN REPORT (Schaefer, 2002)
- MAP LOCALITY DISCUSSED IN TEXT

DESCRIPTION OF SURFICIAL-GEOLOGIC MAP UNITS

This map shows the distribution of unconsolidated deposits and undifferentiated bedrock exposed at the surface along the Alaska Highway corridor from the southern Big Delta Quadrangle to the eastern edge of the Nabesna Quadrangle at the Canada border. Units were mapped by interpreting false-color infrared ~1:65,000-scale aerial photographs taken in July 1978, August 1980, August 1981, and July 1983, and verified by field checking in 2006–2010.

Map units are identified by the symbols described below. Symbols shown in parentheses, such as (Qcf), indicate combined map units consisting of bedrock overlain by thin or discontinuous deposits of the map unit. Map units with (e) such as Qfb(e) indicate zones of groundwater emergence in the mapped unit. Map units with a question mark such as Qca? indicate an uncertain identification. Detailed unit descriptions are included in Appendix A.

NOTE: Not all map units appear on each sheet

UNCONSOLIDATED DEPOSITS

Estimated contents of sand and silt, based on field observations, are indicated by the terms "trace" and "some." "Trace" implies a general composition of 4 to 12 percent. "Some" implies a general composition of 12 to 30 percent. Estimated compositions <4 percent are not recorded in the field. Terms used to describe the estimated percentages of cobbles and boulders are "numerous", "scattered", and "rare." "Numerous" implies that drilling through the deposit would encounter two cobbles or boulders in an interval of 0.6 m; "scattered" implies that drilling would encounter two cobbles or boulders in an interval of 3 to 4.5 m; "rare" implies that drilling would encounter two cobbles or boulders in an interval of >4.5 m.

ALLUVIAL DEPOSITS

- Qa — UNDIFFERENTIATED FLOODPLAIN ALLUVIUM
- Qaa — ACTIVE-FLOODPLAIN ALLUVIUM
- Qai — INACTIVE-FLOODPLAIN ALLUVIUM
- Qab — ABANDONED-FLOODPLAIN ALLUVIUM
- Qaf — ALLUVIAL-FAN DEPOSITS
- Qat — STREAM-TERRACE ALLUVIUM
- Qfb — UNDIFFERENTIATED FLOOD DEPOSITS
  - Qfbo — DELTA FLOOD DEPOSITS
  - Qfby — DONNELLY FLOOD DEPOSITS
  - Qfs — SLACKWATER FLOOD DEPOSITS
- Qft — TERRACE DEPOSITS OF TOK RIVER ALLUVIAL FAN

COLLUVIAL DEPOSITS

- Qc — UNDIFFERENTIATED COLLUVIUM
  - (Qc)
- Qca — SNOW-AVALANCHE DEPOSIT
- Qcd — DEBRIS-FLOW DEPOSIT
- Qcf — MIXED COLLUVIUM AND ALLUVIUM
  - (Qcf)
- Qcft — TECTONICALLY DEFORMED COLLUVIAL–FLUVIAL
- Qcg — ROCK–GLACIER DEPOSITS
- Qcl — LANDSLIDE DEPOSITS
- Qcr — ROCK-FALL DEPOSITS
- Qct — TALUS

EOLIAN DEPOSITS

- Qe — UNDIFFERENTIATED EOLIAN DEPOSITS
- Qel — LOESS
- Qer — RETRANSPORTED SILT AND SAND COMPLEXLY MIXED WITH LOWLAND LOESS
- Qes — EOLIAN SAND

GLACIAL DEPOSITS

- Qgdh — TILL AND ASSOCIATED MORAINAL DEPOSITS OF HOLOCENE GLACIATION
- Qgdy — TILL AND ASSOCIATED MORAINAL DEPOSITS OF DONNELLY GLACIATION
- Qgdo — TILL AND ASSOCIATED MORAINAL DEPOSITS OF DELTA GLACIATIONS
- QTgdp — UNDIFFERENTIATED GLACIAL DRIFT OF PRE-DELTA GLACIATIONS

GLACIOFLUVIAL DEPOSITS

- Qgfh — OUTWASH OF HOLOCENE GLACIATION
- Qgfyy — OUTWASH OF LATE DONNELLY GLACIATION
- Qgfy — OUTWASH OF DONNELLY GLACIATION
- Qgfey — ESKER–KAME COMPLEX OF DONNELLY GLACIATION
- Qgfo — OUTWASH OF DELTA GLACIATION
- Qgfeo — ESKER–KAME COMPLEX OF DELTA GLACIATION

MANMADE DEPOSITS

- Qhf — ARTIFICIAL FILL

LACUSTRINE DEPOSITS

- Qlb — LAKE-BOTTOM DEPOSITS
- Qld — DELTA DEPOSITS
- Qlr — DEPOSITS OF ICE-SHOVED RIDGES

PALUDAL DEPOSITS

- Qp — SWAMP DEPOSITS

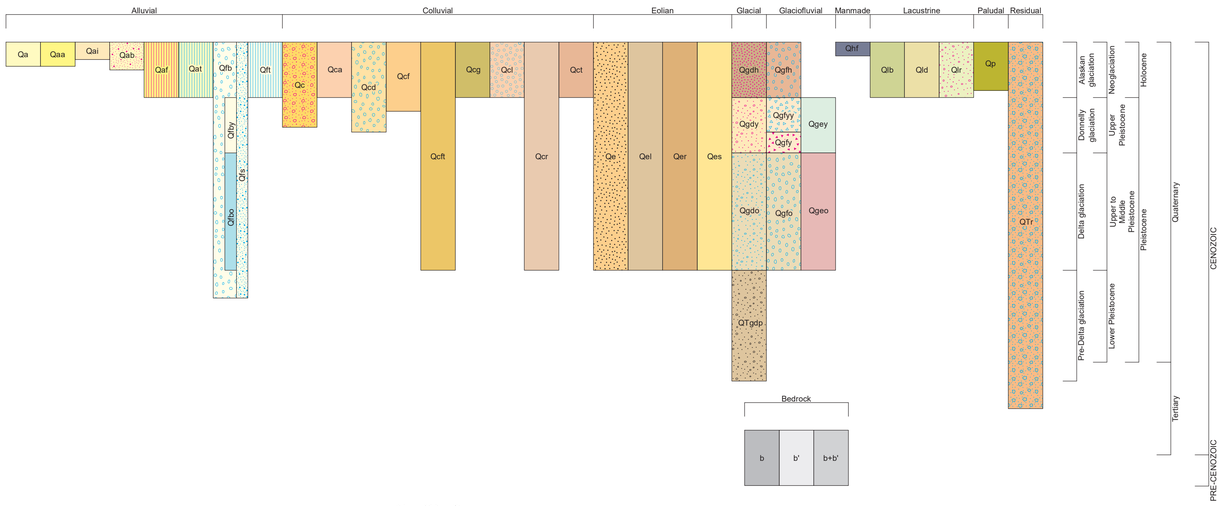
RESIDUAL DEPOSITS

- QTr — BLOCK RUBBLE

BEDROCK

- b — UNDIFFERENTIATED BEDROCK
- b' — THINLY COVERED BEDROCK
- b+b' — BEDROCK AND THINLY COVERED BEDROCK

CORRELATION OF MAP UNITS



Geologic field investigations by:
R.D. Reger[1] (2006-2012), D.S.P. Stevens[2] (2006-2008), T.D. Hubbard[2] (2008-2012)
Geologic interpretation by:
R.D. Reger[1] (2006-2014), T.D. Hubbard[2] (2008-2014)
Airphoto interpretation by:
R.D. Reger[1] (2006-2014), T.D. Hubbard[2] (2008-2014)
Lidar interpretation by:
R.D. Reger[1], T.D. Hubbard[2] (2010-2014)
Active faults mapped by:
G.A. Carver[4] (2007,2008), R.D. Koehler[3] (2009-2011)
Geologic GIS data layers created by:
D.S.P. Stevens[2] (2007, 2008), G. Davidson[2] (2009), T.D. Hubbard[2] (2009-2013), R.E. Westbrook[2] (2010, 2011), P.G. Ekberg[2] (2010-2012), E.S. Spangler[2] (2013,2014)
Cartography by:
P.G. Ekberg[2] (2015-2021), T.J. Naibert[2] (2016)
Editorial review by:
P.K. Davis[2] (2014, 2015)
Peer review by:
D.N. Solie (2016)[5]
R.A. Combellick (2016)[6]

Topographic base map from:
U.S. Geological Survey topographic maps
Nebesna C-1 (1955 - minor revisions 1963)
Nebesna D-1 (1952 - minor revisions 1967)
Nebesna D-2 (1955 - minor revisions 1978)
Nebesna D-3 (1955 - minor revisions 1962)
Projection:
Universal Transverse Mercator Zone 7 North
Datum:
North American Datum of 1927

List of Map Sheets

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Sheet 2 - Segment 1: East
Sheet 3 - Segment 2: West
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Permafrost Maps
Sheet 7 - Segment 1: West
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Sheet 10 - Segment 2: East
Sheet 11 - Segment 3: West
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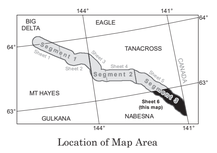
Engineering Geologic Maps
Sheet 13 - Segment 1: West
Sheet 14 - Segment 1: East
Sheet 15 - Segment 2: West
Sheet 16 - Segment 2: East
Sheet 17 - Segment 3: West
Sheet 18 - Segment 3: East



Location of Map Area

SURFICIAL-GEOLOGIC MAP, ALASKA HIGHWAY CORRIDOR, DELTA JUNCTION, ALASKA, TO THE CANADA BORDER: SEGMENT 3 EAST

by
R.D. Reger[1], T.D. Hubbard[2], and R.D. Koehler[3]
2021

SCALE 1:63360

1 1/2 0 1 2 3 4 5 MILES
1 0 1 2 3 4 5 6 7 KILOMETERS

NABESNA C-1 -- CONTOUR INTERVAL 100 FEET
NABESNA D-1, D-2, AND D-3 -- CONTOUR INTERVAL 50 FEET
NABESNA C-1 -- SUPPLEMENTAL CONTOUR INTERVAL 50 FEET
NABESNA C-1, D-1, AND D-3 -- DATUM IS MEAN SEA LEVEL
NABESNA D-2 -- NATIONAL GEODETIC VERTICAL DATUM OF 1929

APPROXIMATE MEAN DECLINATION, 2016

MAP LOCATION

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