

Base from U.S. Geological Survey, 1963

SCALE 1:250,000

CONTOUR INTERVAL 100 FEET
EQUIVAL 30 METERS

APPROXIMATE MEAN ELEVATION
AT CENTER OF MAP, 1980

Geology from Detterman and others (1970)

CORRELATION OF MAP UNITS

SURFICIAL DEPOSITS AND SEDIMENTARY ROCKS	VOLCANIC ROCKS	INTRUSIVE ROCKS	PERIOD
Qs	Qv1, Qv2, Qv3	Tt1	QUATERNARY
Tm	Tv	Tt2	TERTIARY
Ts	Tv	Tt2	
Khc	Kvc	Kic	CRETACEOUS
Jhs	Jvc	Jic	LOWER CRETACEOUS TO MIDDLE JURASSIC

DESCRIPTION OF MAP UNITS

SURFICIAL DEPOSITS AND SEDIMENTARY ROCKS

- Qs SURFICIAL DEPOSITS—unconsolidated alluvium, colluvium, glacial, marine, swamp and oolite deposits; mostly sand, silt, gravel and pebbles
- Tm MILKY RIVER FORMATION OF GALLAGHER (1924) AND BEAR LAKE FORMATION—Milky River Formation (Pliocene); mainly volcanogenic sandstone and conglomerate, non-marine; Bear Lake Formation (Miocene); sandstone, conglomerate, siltstone, shale, and coal; shallow marine to non-marine
- Ts TOLSTOI FORMATION OF BURK (1965) (Paleocene and Eocene)—Sandstone, conglomerate, siltstone, dark shale, coal; high percent volcanic debris; mainly non-marine
- Khc HODGSON AND CHIGNIK FORMATIONS—Hodgson Formation (Upper Cretaceous); dark shale and siltstone; deep water deposit; Chignik Formation (Upper Cretaceous); sandstone, shale, conglomerate, siltstone, and coal; shallow water to non-marine
- Jhs HENRIKSEN LIMESTONE AND STANFORDSON, HANSEN, AND SHELFORD FORMATIONS—Henriksen Limestone (Lower Cretaceous); thin-bedded calcarenite composed of (locally) platy and thin calcareous sandstone; Stanfordson Formation (Upper Jurassic and Lower Cretaceous); thin-bedded feldspathic and taconitic sandstone; Hansen Formation (Upper Jurassic); dark siltstone and shale in upper part; light arenaceous sandstone and conglomerate in lower part; Shelford Formation (Middle Jurassic); dark siltstone and shale

VOLCANIC ROCKS

- Qv1 AND REBILIS FLOW DEPOSITS—Volcanic ash, tuff, and breccia; include air-fall, ash flow, and avalanche deposits; unsorted to well-sorted; poorly to well-stratified; includes low flow
- Kvc CINDER AND SPATTER CONES, AND DOMES—Cinders, scoria, and associated pyroclastic rock
- Tv VOLCANIC ROCKS—Andesite and dacite flows, tuff, volcanic breccia, and lahars
- Jvc VOLCANIC ROCKS—Rhyolite, andesite, dacite, and basalt flows; tuff, volcanic rubble flows, and lahars; includes hypabyssal plugs and domes
- Jhs MESHIK FORMATION (Miocene or Oligocene)—Basalt flows, volcanic rubble flows, and lahars; also volcanogenic sedimentary rock

INTRUSIVE ROCKS

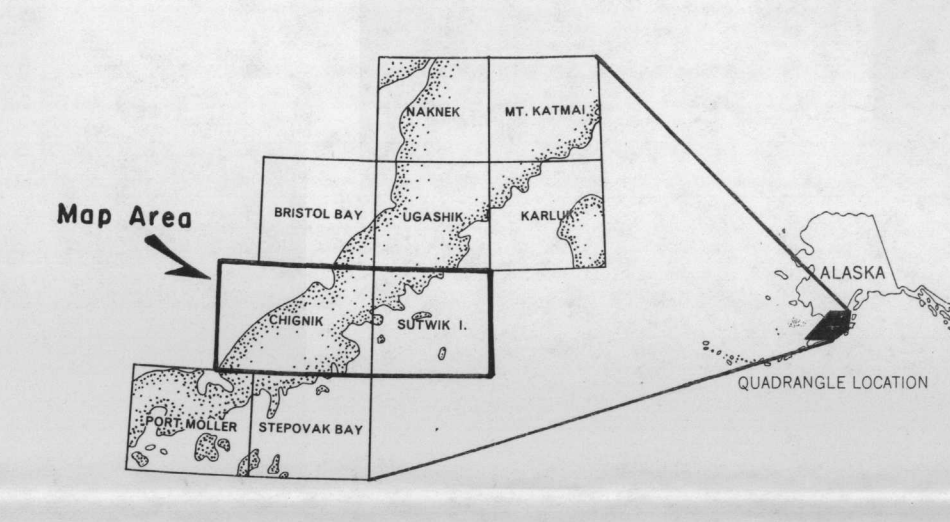
- Tt1 INTRUSIVE ROCKS—Quartz diorite, diorite, and gabbro; medium- to coarse-grained, mainly small plutons
- Tt2 GRANODIORITE—Seefel Islands pluton; medium- to coarse-grained; hornblende- and biotite-bearing

GEOLOGIC MAP SYMBOLS

- Contact—dotted where concealed
- Fault—dashed where approximately located, dotted where concealed, quartered where probable, 1, western side; 2, downthrown side. Arrows indicate relative lateral movement
- Thrust or high-angle reverse fault—dotted where concealed, sawtooth on upper plate
- Folds—showing trace of axial plane; dashed where approximately located; dotted where concealed. Arrow indicates direction of plunge
- Anticline
- Syncline
- Volcanic crater
- Volcanic vent or cinder cone
- Hornfels
- Alteration
- Dikes and sills
- Exploratory drill hole
- Hot spring
- Native Corporation boundary

GRAVITY SYMBOLS

- Land gravity station
- Offshore gravity station
- Supplementary control from Gulf Oil Corporation
- Approximate axis of relative positive anomaly
- Approximate axis of relative negative anomaly
- GRAVITY ANOMALY CONTOURS—Showing simple Bouguer anomalies; dashed where approximately located. Measured to indicate relative negative anomaly. Contour interval 10 milligals. Contours and free-air anomalies in offshore area in eastern part of map.



THIS MAP IS ONE OF A SERIES. ALL BEARING THE NUMBER MF-1053. BACKGROUND INFORMATION RELATING TO THIS MAP IS PUBLISHED AS U.S. GEOLOGICAL SURVEY CIRCULAR 802 AVAILABLE FREE FROM BRANCH OF DISTRIBUTION, U.S. GEOLOGICAL SURVEY, 1200 SOUTH MADS STREET, ARLINGTON, VA 22202

GRAVITY ANOMALY AND INTERPRETATION MAP OF THE CHIGNIK AND SUTWIK ISLAND QUADRANGLES, ALASKA

By
J. E. Case, David F. Barnes, R. L. Detterman, Robert L. Morin, and Robert F. Sikora
1981