



CORRELATION OF MAP UNITS

SURFICIAL DEPOSITS AND SEDIMENTARY ROCKS	VOLCANIC ROCKS	INTRUSIVE ROCKS	Geologic Period	Time Period
Qs	Qv		Holocene and Pleistocene	QUATERNARY
Tm	Tv	Tjd	Pliocene to Oligocene	TERTIARY
	Tm		Oligocene and Eocene	
Te		Ti	Eocene and Paleocene	CRETACEOUS
Khc			Upper Cretaceous	
K3sn			Lower Cretaceous	CRETACEOUS AND JURASSIC
Js			Middle Jurassic	JURASSIC
Jk		Jqd	Lower Jurassic	
Jl			Upper Triassic	TRIASSIC
Pls			Upper Permian	PERMIAN

DESCRIPTION OF MAP UNITS

SURFICIAL DEPOSITS AND SEDIMENTARY ROCKS

Qs	SURFICIAL DEPOSITS (HOLOCENE AND PLEISTOCENE) - Unconsolidated alluvium, alluvial fans, and glacial, marine, lake, swamp, eolian, and landslide deposits; mainly silt, sand, gravel, pebbles, and rock fragments
Tb1	BEAR LAKE FORMATION (MIOCENE) - Sandstone, siltstone, shale, minor coal, and conglomerate; nonmarine
Te	TOLSTOI FORMATION (EOCENE AND PALEOCENE) - Sandstone, conglomerate, siltstone, shale, coal, and tuff; dominantly volcanoclastic and nonmarine
Khc	HOODOO AND CHIGNIK FORMATIONS, UNDIVIDED (UPPER CRETACEOUS) - Hoodoo Formation: dark rhythmically-bedded siltstone and shale, minor thin sandstone; deep-water marine. Chignik Formation: sandstone, conglomerate, siltstone, and shale; mainly shallow marine
K3sn	STANTUKOVICH AND NAKNEK FORMATIONS, UNDIVIDED (LOWER CRETACEOUS AND UPPER JURASSIC) - Stantukovich Formation of Late Jurassic and Early Cretaceous age: thin-bedded feldspathic sandstone, commonly laminated; minor siltstone and shale. Naknek Formation of Late Jurassic age: thin-bedded sandstone, siltstone, and dark shale with limestone concretions in upper part. Massive arkosic sandstone and conglomerate in lower part; abundant granitic- and metamorphic-rock clasts in conglomerate. Upper part marine; lower part nonmarine (fluvial)
Js	SHELIKOF FORMATION (MIDDLE JURASSIC) - Dark siltstone and shale with limestone concretions, sandstone, and conglomerate; nonmarine to near-shore marine, and deep-water turbidite
Jk	KIALAGVIK FORMATION (MIDDLE AND LOWER JURASSIC) - Sandstone, siltstone, mudstone, and shale; mainly shallow water marine
Jl	TALKEETNA FORMATION (LOWER JURASSIC) - Tuffaceous sandstone, siltstone, and limestone; minor bedded tuff
Pls	LIMESTONE (UPPER PERMIAN) - Light-gray massive crystalline limestone

SEDIMENTARY AND VOLCANIC ROCKS

Rlv	LIMESTONE AND VOLCANIC ROCKS (UPPER TRIASSIC) - Light- to dark-gray thin-bedded to massive limestone, limestone conglomerate, and basalt
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VOLCANIC ROCKS

Qv	VOLCANIC ROCKS (HOLOCENE AND PLEISTOCENE) - Block and ash flows, debris flows, volcanic mud flows, cinder cones, and andesitic and dacitic lava flows; includes minor hypabyssal rocks
Tv	VOLCANIC ROCKS (PLIOCENE TO OLILOCENE) - Basalt, andesite, and dacite lava flows, volcanic breccia, and rubble flows; locally includes hypabyssal rocks
Tm	MESHIK FORMATION (OLIGOCENE AND EOCENE) - Basalt flows, volcanic rubble flows, and lahars; locally minor volcanogenic sedimentary rocks

INTRUSIVE ROCKS

Tjd	QUARTZ DIORITE (PLIOCENE TO OLILOCENE) - Agrippina Bay pluton; hornblende-biotite and pyroxene-biotite quartz diorite; medium to coarse grained
Ti	INTRUSIVE ROCKS (PLIOCENE TO OLILOCENE) - Diorite, quartz diorite, hypabyssal andesite and dacite
Jqd	QUARTZ DIORITE (MIDDLE AND LOWER JURASSIC) - Medium to coarse grained, hornblende and biotite bearing; part of the Alaska-Aleutian Range batholith

GEOLOGIC MAP SYMBOLS

--- ---	CONTACT--Dotted where concealed
--- ---	FAULT--Dotted where concealed; queried where probable. U, upthrown side; D, 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; dotted where concealed; queried where probable. Arrow indicates direction of plunge
--- ---	Anticline
--- ---	Syncline
---	LINEAMENT
○	VOLCANIC CRATER
●	VOLCANIC VENT OR CINDER CONE (OTHER THAN WITHIN CRATERS)
■	HORNRELS
■	ALTERATION--Includes sericitic alteration and silicification
+	EXPLORATORY DRILL HOLE
▲	OIL SEEPS
●	HOT SPRING
●	COLD SPRING
●	GAS SEEP--Carbon dioxide

Base from U.S. Geological Survey, 1963  
Universal Transverse Mercator projection

SCALE 1:250 000

CONTOUR INTERVAL 200 FEET  
DOTTED LINES REPRESENT 100-FOOT CONTOURS  
NATIONAL GEODETIC VERTICAL DATUM OF 1929

Geology from Detterman and others (1983)

Explanatory pamphlet accompanies map

GEOLOGIC INTERPRETATION

MAPS SHOWING AEROMAGNETIC SURVEY AND GEOLOGIC INTERPRETATION OF THE UGASHIK AND PART OF KARLUK QUADRANGLES, ALASKA

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