

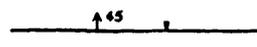
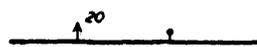
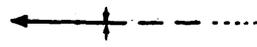
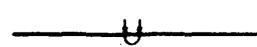
DEPARTMENT OF THE INTERIOR  
U.S. GEOLOGICAL SURVEY

**GEOLOGIC MAP OF THE GULKANA B-1 QUADRANGLE,  
SOUTH-CENTRAL ALASKA**

**By D. H. Richter, J. C. Ratté, H. R. Schmoll,  
W. P. Leeman, J. G. Smith, and L. A. Yehle**

GEOLOGIC QUADRANGLE MAP  
Published by the U.S. Geological Survey, 1989

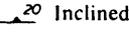
**GEOLOGIC MAP SYMBOLS**  
**COMMONLY USED ON MAPS OF THE UNITED STATES GEOLOGICAL SURVEY**  
(Special symbols are shown in explanation)

-  Contact – Dashed where approximately located; short dashed where inferred; dotted where concealed
-  Contact – Showing dip; well exposed at triangle
-  Fault – Dashed where approximately located; short dashed where inferred; dotted where concealed
-  Fault, showing dip – Ball and bar on downthrown side
-  Normal fault – Hachured on downthrown side
-  Fault – Showing relative horizontal movement
-  Thrust fault – Sawteeth on upper plate
-  Anticline – Showing direction of plunge; dashed where approximately located; dotted where concealed
-  Asymmetric anticline – Short arrow indicates steeper limb
-  Overturned anticline – Showing direction of dip of limbs
-  Syncline – Showing direction of plunge; dashed where approximately located; dotted where concealed
-  Asymmetric syncline – Short arrow indicates steeper limb
-  Overturned syncline – Showing direction of dip of limbs
-  Monocline – Showing direction of plunge of axis
-  Minor anticline – Showing plunge of axis
-  Minor syncline – Showing plunge of axis

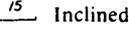
Strike and dip of beds – Ball indicates top of beds known from sedimentary structures

-  70° Inclined     Horizontal
-  Vertical     40° Overturned

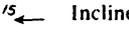
Strike and dip of foliation

-  20° Inclined     Vertical     Horizontal

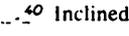
Strike and dip of cleavage

-  15° Inclined     Vertical     Horizontal

Bearing and plunge of lination

-  15° Inclined     Vertical     Horizontal

Strike and dip of joints

-  40° Inclined     Vertical     Horizontal

Note: planar symbols (strike and dip of beds, foliation or schistosity, and cleavage) may be combined with linear symbols to record data observed at same locality by superimposed symbols at point of observation. Coexisting planar symbols are shown intersecting at point of observation.

Shafts

-  Vertical     Inclined

Adit, tunnel, or slope

-  Accessible     Inaccessible

 Prospect

Quarry

-  Active     Abandoned

Gravel pit

-  Active     Abandoned

Oil well

-  Drilling     Shut-in     Dry hole abandoned
-  Gas     Show of gas
-  Oil     Show of oil