

Public-data File 84-45

COMPILATION OF GEOLOGIC DATA FROM THE SLEETMUTE B-6
QUADRANGLE, ALASKA

By

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THIS REPORT HAS NOT BEEN REVIEWED FOR
TECHNICAL CONTENT (EXCEPT AS NOTED IN
TEXT) OR FOR CONFORMITY TO THE
EDITORIAL STANDARDS OF DGGS.

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INTRODUCTION

This map is one in a series of *1:63,360* geologic data bases (scale 1:63,360) from southwest Alaska. The series is scheduled for release by DGGs during 1984 and 1985. Each map is a summary of geologic field data, analytical data, fossil reports, resource information, and land status available for that quadrangle. Geologic data were obtained primarily from U.S. Geological Survey field notes collected from 1941 to 1975. Field locations were replotted on modern topographic base maps from the original trimetrogon air photos and reconnaissance topographic maps. The map numbering sequence, which follows a normal written-page progression using the township and range mile-square blocks, starts in the northwest corner of the quadrangle and ends in the southeast corner. Where necessary, station numbers (table 1) were modified to fit the format: year, geologist, and field number. Initial station numbers commonly consisted of the date followed by a number for each observation point, starting each day with number 1, for example, 6/11-1. The modified number preserves the original number but adds the year and geologist to eliminate confusion and ambiguity. For example, 47Hr6/11-1 was the first station occupied by Joseph M. Hoare on June 11, 1947. Rock descriptions (table 2) and structural data (table 3) were compiled from field notes exactly as written; no attempt was made to modify or interpret the original data. We appreciate the review of Mark Robinson.

Table 1. Correspondence of map numbers from field station numbers.

| Map no. | Field station number* | Map no. | Field station number* | Map no. | Field station number* | Map no. | Field station number* |
|---------|-----------------------|---------|-----------------------|---------|-----------------------|---------|-----------------------|
| 1 | 44Wb8/17-6 | 18 | 45Hr6/15-5a | 35 | 45Ca6/16-2 | 46 | 45Ca6/16-7 |
| 2 | 44Wc8/17-1 | 19 | 45Hr6/15-4 | | 45Hr6/16-2 | | 45Hr6/16-8 |
| 3 | 44Wb8/17-7 | 20 | 45Hr6/17-2 | 36 | 45Hr6/16-3 | 47 | 45Ca6/16-2 |
| 4 | 44Wb8/17-5 | 21 | 45Ca6/17-3 | 37 | 45Ca6/16-3 | | 45Hr6/18-2 |
| 5 | 44Wb8/17-1 | 22 | 45Ca6/17-4 | | 45Hr6/16-4 | 48 | 45Ca6/18-4 |
| 6 | 44Wb8/17-2 | 23 | 45Ca6/17-5 | 38 | 45Hr6/16-5 | 49 | 45Hr6/18-3 |
| 7 | 44Wb8/17-3 | 24 | 45Hr6/17-3 | 39 | 45Ca6/16-4 | 50 | 45Ca6/18-3 |
| 8 | 44Wb8/17-4 | 25 | 45Hr6/17-4 | 40 | 45Ca6/15-3 | 51 | 45Ca6/6-3 |
| 9 | 44Wb8/17-8 | 26 | 45Hr6/17-5 | 41 | 45Ca6/15-4 | | 45Hr6/6-3 |
| 10 | 71Sg15-25 | 27 | 45Hr6/17-6 | 42 | 45Ca6/16-11 | 52 | 45Ca6/16-10b |
| | 71Sg27 | 28 | 45Hr6/17-7 | | 45Hr6/16-13 | | 45Hr6/16-11 |
| 11 | 45Ca6/17-8 | 29 | 45Ca6/18-1 | 43 | 45Ca6/16-5 | 53 | 45Ca6/16-10a |
| 12 | 45Ca6/17-7 | 30 | 45Hr6/18-1 | | 45Hr6/16-6 | | 45Hr6/16-12 |
| 13 | 45Ca6/17-6 | 31 | 45Ca6/15-2 | 44 | 45Ca6/16-6 | 54 | 45Ca6/18-6 |
| 14 | 45Ca6/17-9 | 32 | 45Hr6/15-7 | | 45Hr6/16-7 | | 45Hr6/18-5 |
| 15 | 45Hr6/17-8 | 33 | 45Hr6/17-1 | 45 | 45Ca6/16-8 | 55 | 45Ca6/18-5 |
| 16 | 45Hr6/17-9 | 34 | 45Ca6/18-1 | | 45Ca6/18-9 | | 45Hr6/18-4 |
| 17 | 45Hr6/15-5 | | 45Hr6/18-1 | | | | |

*Year-geologist-month/day-field number; Wb = E.J. Webber, Sg = D.H. Sorg, Ca = W.M. Cady, Hr = J.M. Hoare, Wc = R.E. Wallace

Table 2. Rock descriptions from field notes.

| Map no. | Rock description | Map no. | Rock description |
|---------|---|---------|---|
| 1 | Rhyolite porphyry; these rolling hills are probably surface of basalt flows | 31 | Sandy limestone, locally dolomitic; cut by basic dike |
| 2 | Basalt flows with columnar jointing | 32 | (Float) Basalt, granite, rhyolite, diorite, and metasedimentary rocks |
| 3 | Basalt | 33 | Monzonite or latite |
| 4 | Rhyolite porphyry | 34 | Monzonite and basalt dike (80 ft wide) |
| 5 | Unaltered fissile black shale | 35 | Contact: purple weathering basalt dike (locally with olivine) and monzonite |
| 6 | Basalt cutting granite porphyry | 36 | Tuffs and agglomerate with prominent flow lines in olivine basalt |
| 7 | Boulder and gravel deposits | 37 | Tuffs and agglomerate underlying red, medium-gray and black slates |
| 8 | Shale | 38 | Volcanic sequence with minor shale |
| 9 | Nearly flat-lying aphanitic to porphyritic black basalt with columnar jointing (above rhyolite) | 39 | Interbedded tuff, agglomerate and red and medium-gray slates |
| 10 | Basalt and igneous rock with buddingtonite | 40 | (Float) Monzonite and siliceous shale |
| 11 | Massive, locally vesicular basalt flows | 41 | Silty slate and limestone in slate |
| 12 | Basalt flows and breccia | 42 | Agglomerate and tuff |
| 13 | Basalt with graywacke and shale float | 43 | Grayish-green agglomerate and tuff with shale and chert pebbles |
| 14 | Stream gravel: diorite, aplite, shale, and graywacke | 44 | Tuff and agglomerate with abundant hematite-red amygdaloidal thin-bedded tuff; monzonite |
| 15 | Very thin bedded slate interbedded with minor graywacke; igneous bodies to east and west | 45 | Grayish-green tuff and agglomerate; west of contact with quartz diorite |
| 16 | Basalt with breccia of banded chert fragments | 46 | Contact: quartz diorite to northeast and volcanic sequence to southwest |
| 17 | (Float) Diorite weathered yellow | 47 | White weathering rhyolite flows with columnar jointing |
| 18 | Basalt | 48 | Interbedded graywacke and shale with abundant plant stems |
| 19 | Metamorphosed conglomerate and graywacke | 49 | Contact: rhyolite adjacent to interbedded graywacke and shale with plant fossils |
| 20 | Siliceous, baked, thin-bedded shale and massive argillite; cross-cut by monzonite dikes (25 ft thick) | 50 | Rhyolite flows with columnar jointing |
| 21 | Monzonite | 51 | Contact: diorite on northwest and siliceous rocks to southeast. Sheared very fine-grained, recrystallized graywacke |
| 22 | Interbedded graywacke and shale with vesicular basalt float | 52 | Basalt |
| 23 | Monzonite and basalt with shale and graywacke float | | Monzonite and basalt |
| 24 | Metamorphosed very thin-bedded, dark-gray slate and graywacke (with secondary biotite) and monzonite dike | 53 | Monzonite; part of volcanic sequence? |
| 25 | Well bedded white chert, locally with lavender spots or breccia | | Basalt and tuffs |
| 26 | Thin-bedded tuffs and agglomerates with 3 in. shale fragments | 54 | Metamorphic graywacke and shale; very siliceous |
| 27 | Contorted massive argillites with large shale fragments | 55 | Interbedded graywacke and shale; lightly metamorphosed |
| 28 | Very thin-bedded slate interbedded with metamorphosed graywacke; monzonite or diorite bodies to E and W | | Metamorphosed interbedded graywacke and shale |
| 29 | (Float) Lateral moraine with siliceous graywacke, shale, and chert | | |
| 30 | (Float) Metamorphosed, siliceous slate and graywacke with <i>Inoceramus</i> sp. | | |

Table 3. Structural data.

| Map no. | Attitude of bedding flow volcanic flow planes | Other structural data | Map no. | Attitude of bedding flow volcanic flow planes | Other structural data |
|---------|---|-------------------------------|---------|---|-----------------------|
| 2 | N30W, 15NE | | 37 | N68E, 38NW | |
| 5 | N85E, 50NW | | | N59E, 12SE | |
| 12 | N82E, 55NW | | 38 | N07E, 11NW | |
| 15 | N60E, 60SE | | 39 | N07E, 11NW | |
| 16 | N45W, 50NE | | 42 | E-W, 35S | |
| 17 | | strike of diorite body N66E | | E-W, 33S | |
| | | | 43 | N46W, 08SW | |
| 19 | N07E, 75SE | | | N46W, 08SW | |
| 20 | N38E, 33NW N10E, 12NW | dike N25E, 80? | 44 | N35E, 03NW N25E, 06NW | |
| 21 | | sheeting structure N67W, 75NE | 45 | N58E, 08NW N58E, 08NW | |
| 22 | N55E, 39NW | | 47 | N62E, 10SE | |
| 24 | N30E, 75NW | | 48 | N12W, 50SW | |
| 25 | N07E, 56SE | | 49 | N12W, 50SW | |
| 26 | N12E, 50NW | | 50 | N10E, 27NW | |
| 27 | N55E, 50SE | | 51 | N21W, 77SW | |
| 28 | N62E, 45SE | dike N50E,?? | | N25W, 80NE | |
| 31 | N30E, 65NW | dike N30W,?? | 52 | N56W, 16NE | |
| 34 | | dike N15E,90 | 53 | N65W, 16NE | |
| 35 | | contact N50E,90 | 54 | N81W, 23SW | |
| | | dike N50E,?? | 55 | N66E, 14NW | |
| 36 | N67E, 38NW | | | N66E, 10NW | |

Table 4. Mines and prospects (modified from Eberlein and others, 1977).

| Map letter | Name | Map coordinates | Development category | Resources | Form | Type | Brief description | Principal reference(s) |
|------------|--------------|----------------------------|----------------------|-----------|------------------|------|--|---|
| A | Mountain Top | 61°23'47"N, 157°58'23"W | M | Sb, Hg | Fracture filling | Lode | Open space filling; veinlets contain quartz and cinnabar. Hosted in a highly altered, silicified siltstone of the Cretaceous Kuskokwim Group and altered basalt breccia. Olivine basalt dikes cut sediments locally. Stibnite in float occurs as fragments and as crystal aggregates in quartz veinlets. Reserves in sight estimated at 200 flasks of mercury. | Cobb, 1976, p. 42. Alaska Division of Geological and Geophysical Surveys unpublished information. |

Key: Mine is defined as a mineral deposit with recorded production:
M - mine with known or probable activity since 1960;
m - mine with no activity since 1960.
Prospect is defined as a deposit that has been staked with subsequent exploratory or development work, but has no known production:
p - prospect work, but has no known activity since 1960.
*Minor constituent(s) or potential byproducts in parenthesis.

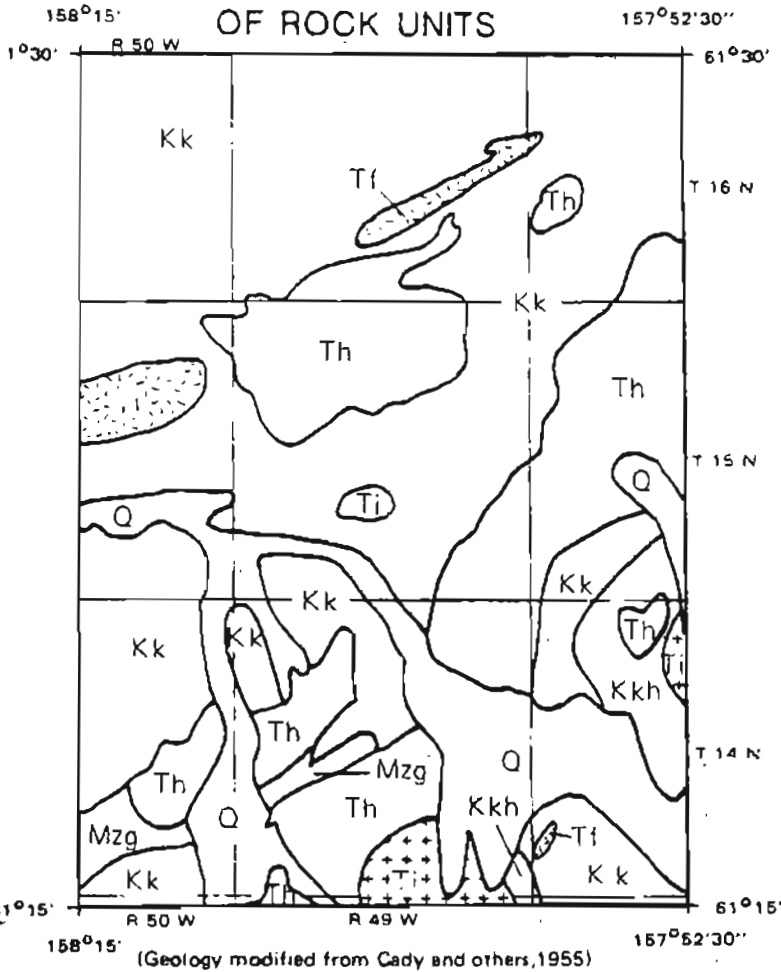
Table 5. Fossil occurrence data.

| <u>Map no.</u> | <u>Specimen no.</u> | <u>Fossils</u> | <u>Age</u> | <u>Identified by</u> | <u>References</u> | <u>Remarks</u> |
|----------------|---------------------|-----------------------|------------|----------------------|--------------------------------------|--|
| 29 | 45ACa30 | <i>Inoceramus</i> sp. | ? | W.M. Cady | Cady, 1945, unpublished field notes | Found in shaly graywacke fragments from a moraine. |
| 30 | (none) | <i>Inoceramus</i> sp. | ? | J.M. Hoare | Hoare, 1945, unpublished field notes | Found in metamorphosed slate and graywacke float. |

REFERENCES CITED

- Cady, W.M., Wallace, R.E., Hoare, J.M., and Webber, E.J., 1955, The central Kuskokwim region, Alaska: U.S. Geological Survey Professional Paper 288, 132 p.
- Cobb, E.H., 1976, Summary of references to mineral occurrences (other than mineral fuels and construction materials) in the Dillingham, Sleetmute, and Taylor Mountains Quadrangles, Alaska: U.S. Geological Survey Open-file Report 78-606, 92 p.
- Eberlein, G.D., Chapman, R.M., Foster, H.L., Gassaway, J.S., 1977, Table describing known metalliferous and selected nonmetalliferous mineral deposits in central Alaska (to accompany Open-file Map 77-188D): U.S. Geological Survey, 132 p.

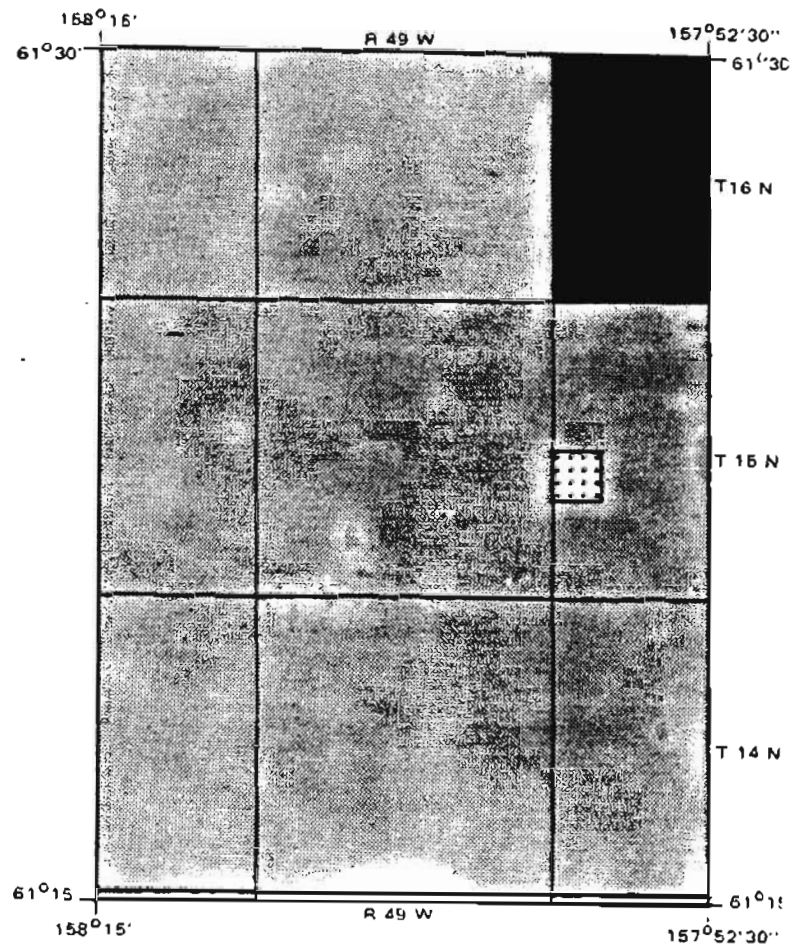
GENERALIZED DISTRIBUTION OF ROCK UNITS



EXPLANATION

- Q - Quaternary deposits
- Ti - Intrusive rocks
- Th - Holokuk basalt
- Tf - Felsic volcanic rocks
- Kk - Kuskokwim Group
- Kkh- Hornfelsed Kuskokwim Group
- Mzg - Gemuk Group

LAND STATUS






-  State selected
-  State tentatively approved
-  Native selected

Table 6

Pending Data

No - Table 7