

GEOCHEMICAL MAP SHOWING THE DISTRIBUTION AND ABUNDANCE OF COPPER, LEAD, AND ZINC IN THE MINUS 80 MESH STREAM-SEDIMENT IN THE BIG DELTA QUADRANGLE, ALASKA
BY T. D. HESSIN, R. M. O'LEARY, J. D. HOFFMAN, AND D. E. DETRA
1978

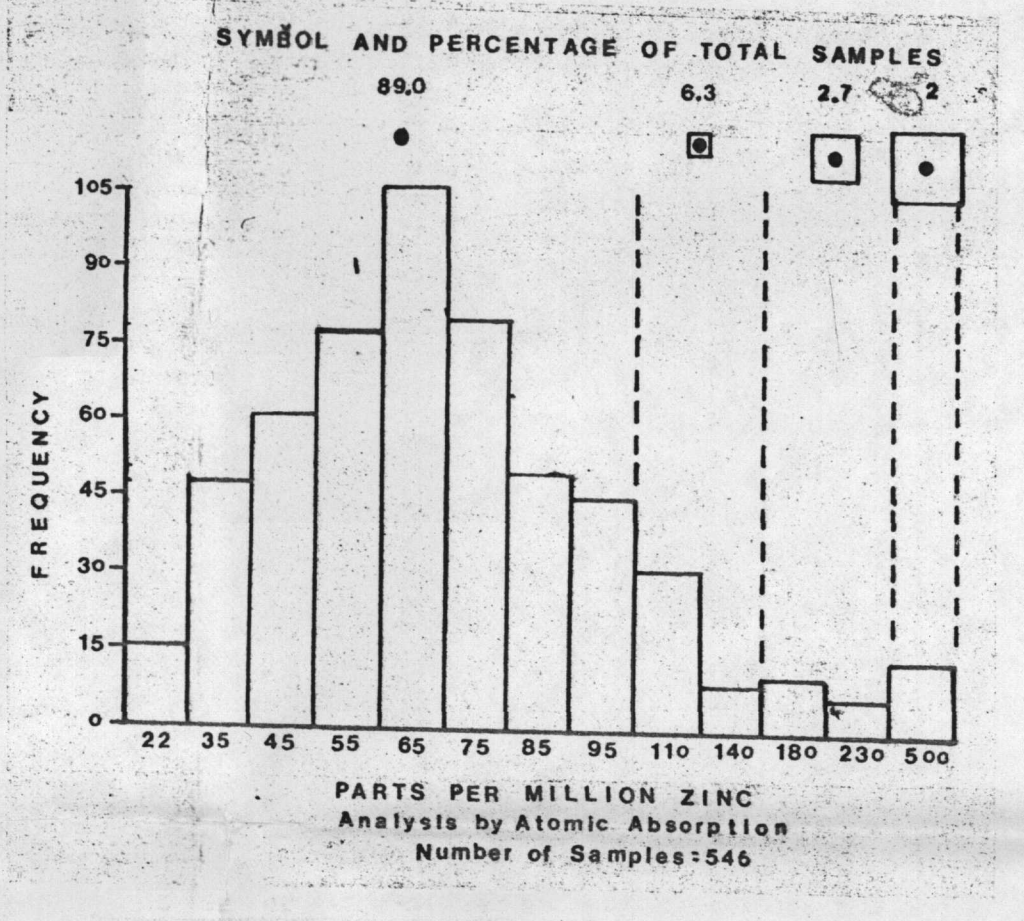
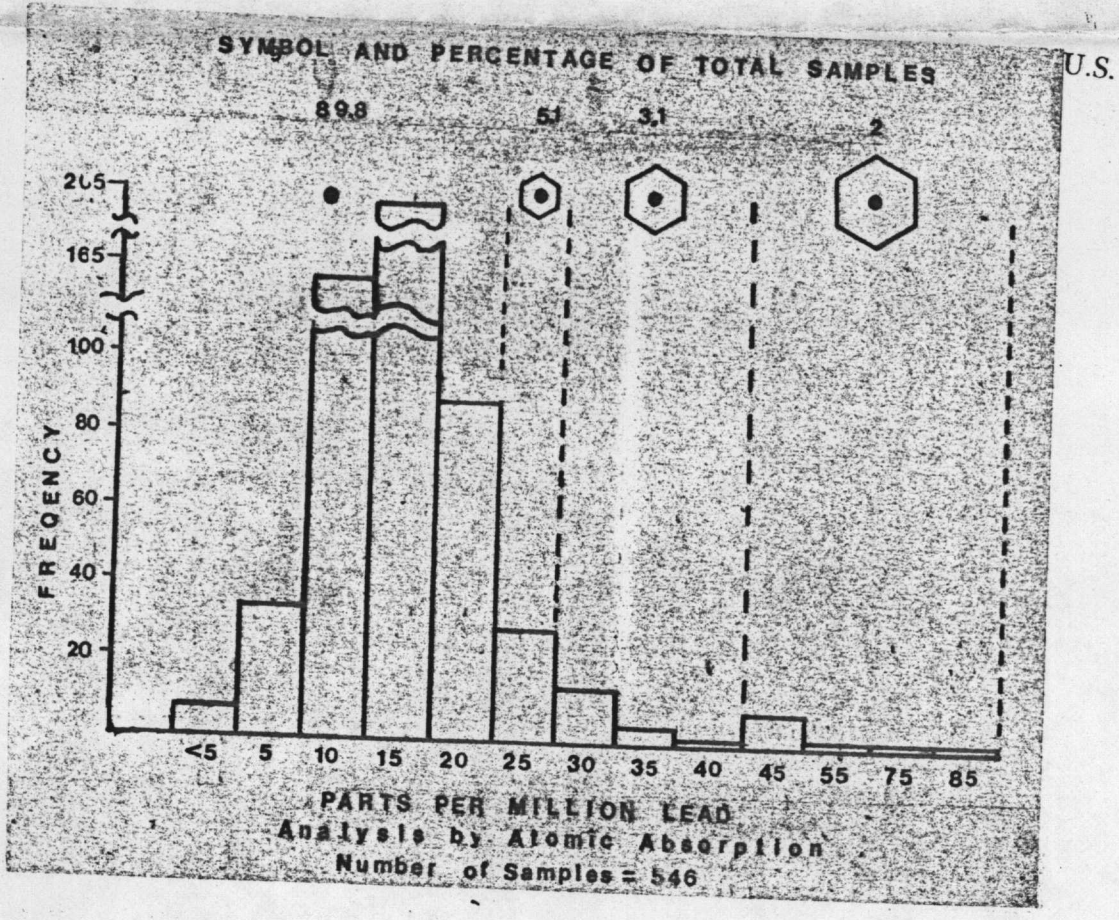
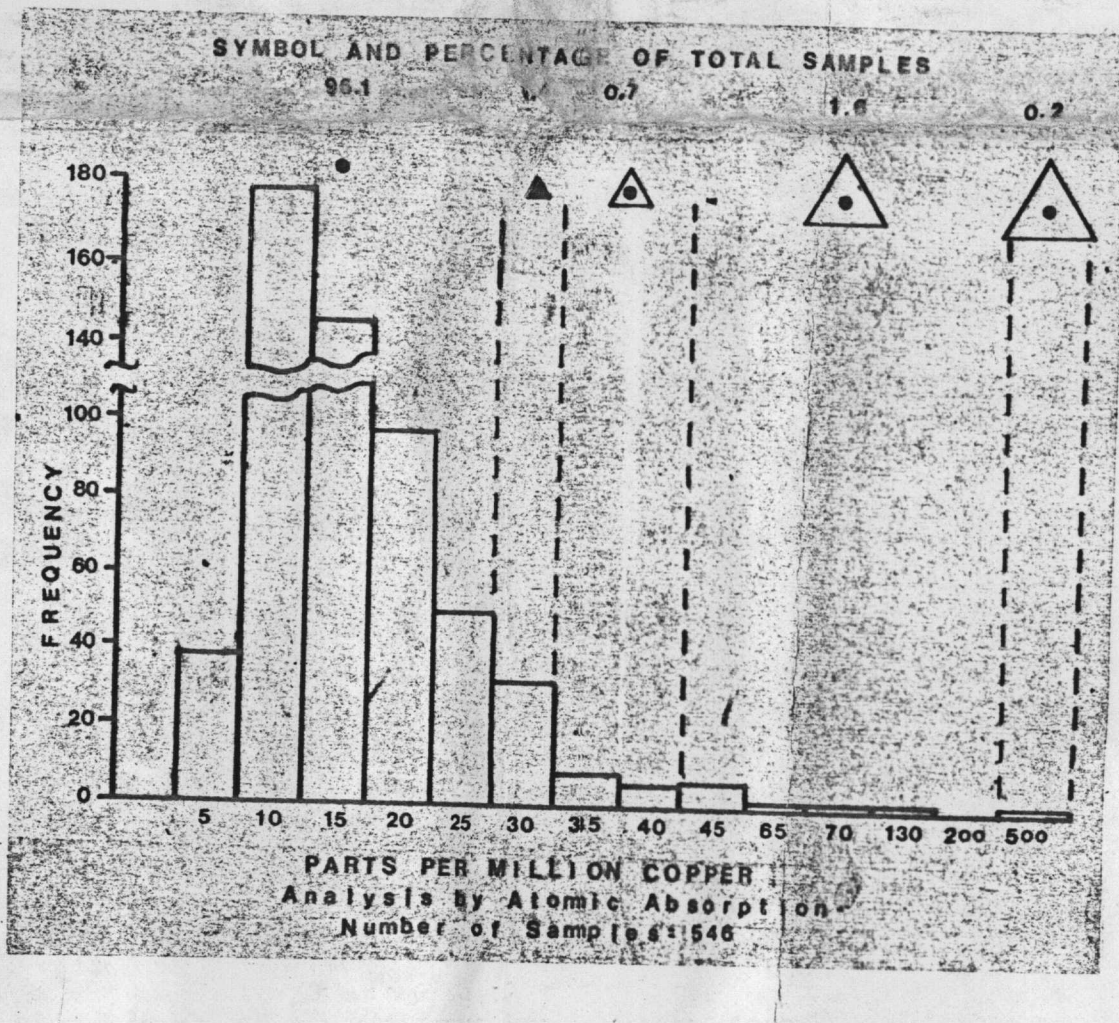
EXPLANATION

- CORRELATION OF MAP UNITS
- UNCONSOLIDATED DEPOSITS
- Quaternary: Qaf, Qaf, Qaf
- SEDIMENTARY ROCKS
- Tertiary: Tm, Tq
- IGNEOUS ROCKS
- Tertiary: Tt
 - Tertiary or Mesozoic: Tm, Tq
 - Cretaceous: Kc
- METAMORPHIC ROCKS
- Permian: Pp
 - Paleozoic: Pz
 - Paleozoic and Low Precambrian: Pz, Pp

- DESCRIPTION OF MAP UNITS
- UNCONSOLIDATED DEPOSITS
- Qaf: ALLUVIAL COLLUVIUM AND MINOR GLACIAL AND EOLIAN DEPOSITS
 - Qaf: ALLUVIAL FAN AND GLACIAL OUTWASH DEPOSITS
 - Qaf: DUNE SAND
 - Qaf: MORAINAL DEPOSITS
- SEDIMENTARY ROCKS
- Tm: MENAHA GRAVEL AND COAL-BEARING FORMATION
 - Tq: DETRITAL ROCKS
- IGNEOUS ROCKS
- Tt: FELSIC TUFF AND LAVA
 - Tm: GRANITE AND QUARTZ MONZONITE
 - Tm, Tq: UNDIVIDED GRANITIC AND DIORITIC ROCKS
 - Kc: UNDIVIDED GRANITIC AND MINOR DIORITIC ROCKS
- METAMORPHIC ROCKS
- Pp: GREENSTONE AND CHERT
 - Pz: ULTRAFELSIC ROCKS
 - Pz: CATACLASTIC SCHIST AND GNEISS
 - Pz: GREENSLATE, QUARTZITE, MARBLE, COARSE META-ARENITE
 - Pz: QUARTZITE, SLATE, CALC-PHYLLITE, AND MARBLE
 - Pz: AUGEN GNEISS AND MINOR AMOUNTS OF OTHER GNEISSIC ROCKS
 - Pz: GNEISS, SCHIST, AUGEN GNEISS, AMPHIBOLITE, AND MARBLE
- GEOLOGIC SYMBOLS
- CONTACT, APPROXIMATELY LOCATED
 - FAULT OR PROBABLE FAULT, DOTTED WHERE CONCEALED

- GEOCHEMICAL SYMBOLS
- SAMPLE SITE--Represents background values at sites where there are no anomalous values
 - ANOMALOUS VALUES--Explained on histograms
 - COPPER
 - LEAD
 - ZINC

BACKGROUND INFORMATION RELATING TO THIS MAP IS PUBLISHED AS U.S. GEOLOGICAL SURVEY CIRCULAR 783 AVAILABLE FREE OF CHARGE FROM THE U.S. GEOLOGICAL SURVEY, RESTON, VA. 22092



DISCUSSION

This map shows the distribution and abundance of copper, lead, and zinc in 546 stream-sediment samples collected in the Big Delta quadrangle in 1975 and 1977. This sampling was a part of geochemical studies made for the Alaska Mineral Resource Assessment Program. Stream sediments were collected from the active channels of streams draining areas ranging from approximately 10 to 25 km². The areas within the quadrangle that show a low density of sample sites, particularly along the major northeast-trending fault and in the northwestern part of the quadrangle, were areas where dense brush and trees prevented helicopter landings. Areas in the southwestern and south-central parts of the quadrangle were not sampled because they are covered by thick unconsolidated deposits of Quaternary material which limits effective geochemical sampling within the scope of the present geochemical studies.

The stream sediments were air-dried and sieved through an 80 mesh (0.2 mm) screen. A split of the -80 mesh material was analyzed for copper, lead, and zinc by atomic absorption (Hard and others, 1969). Map plots and histograms were produced from the analytical results. The range of anomalous values for each element was determined from the histograms and was subdivided into two or more plotting intervals represented by the symbols on the map and histograms.

Complete analytical data for all of the sample sites shown on this map are available in a U.S. Geological Survey Open-File Report by R. M. O'Leary and others (1978).

REFERENCES CITED

O'Leary, R. M., Cooley, E. F., Day, G. W., Hessin, T. D., McDougal, C. M., and McNeal, S. K., 1978, Spectrographic and chemical analyses of geochemical samples from the Big Delta quadrangle, Alaska: U.S. Geological Survey Open-File Report 78-571, 127 p.

Hard, F. N., Nakagawa, H. M., Harms, T. F., and Van Sickle, G. H., 1969, Atomic absorption methods of analysis useful in geochemical exploration: U.S. Geological Survey Bulletin 1289, 45 p.

Heber, F. R., Foster, H. D., Keith, T. E. C., and Dusel-Bacon, Cynthia, 1978, Preliminary geologic map of the Big Delta quadrangle, Alaska: U.S. Geological Survey Open-File Report 78-529A, scale 1:250,000.