

From U.S. Geological Survey Electronic D-4, 1984/1986, Fairbanks, Alaska.

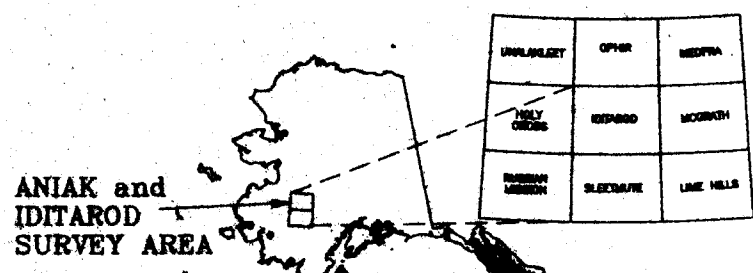
**DESCRIPTIVE NOTES**

The geophysical data were acquired with a DIGHEM<sup>®</sup> electromagnetic (EM) system and a Scintrex cesium magnetometer. Both were flown at a height of 100 feet. In addition the survey recorded data from a radar altimeter, GPS navigation system, 50/60 Hz monitors and video camera. Flights were performed with an AS300B-2 Squirrel helicopter at a mean terrain clearance of 200 feet along NW-SE (340°) survey flight lines with a spacing of a quarter of a mile. The lines were flown perpendicular to the flight lines at intervals of approximately 3 miles. The blank regions indicate an area where the survey aircraft had to detour around populated areas.

An Ashtech G24 NAVSTAR / GLOPASS Global Positioning System was used for navigation. The helicopter position was derived every 0.5 seconds using post-flight differential positioning to a relative accuracy of better than 5 m. Flight path positions were projected onto the Clarke 1886 (UTM zone 4) spheroid, 1927 North American datum using a central meridian (CM) of 152° a north constant of 0 and an east constant of 500,000. Positional accuracy of the presented data is better than 10 m with respect to the UTM grid.

**ELECTROMAGNETICS**

To determine the location of EM anomalies or their boundaries, the DIGHEM<sup>®</sup> EM system measured in-phase and quadrature components of five frequencies. Two vertical coplanar coil pairs operated at 900 and 500 Hz while three horizontal coplanar coil pairs operated at 900, 2000, and 35,000 Hz. EM data were sampled at 0.1 second intervals. The EM system responds to bedrock conductors, conductive overburden, and cultural sources. The type of conductor is indicated on the electromagnetic map by the interpretive symbol attached to each EM anomaly. Determination of the type of conductor is based on EM anomaly shapes at the center and comparison responses together with conductor and magnetic correlation and topography. The magnetic correlation and the flight track video were examined to locate cultural sources.



ANIAK and IDITAROD SURVEY AREA

ELECTROMAGNETIC ANOMALIES	
●	Conductance >100 siemens
○	50-100 siemens
○	20-50 siemens
○	10-20 siemens
○	5-10 siemens
○	1-5 siemens
○	<1 siemens
○	Questionable anomaly
○	EM magnetic response
○	Interpretive symbol
B	Bedrock conductor
N	Narrow bedrock conductor (thin sheet)
S	Conductive cover (horizontal thin sheet)
H	Broad conductive rock unit, deep conductive weathering, thick conductive cover (thick sheet)
E	Edge of broad conductor (edge of half space)
L	Culture, e.g., power line, metal building or fence

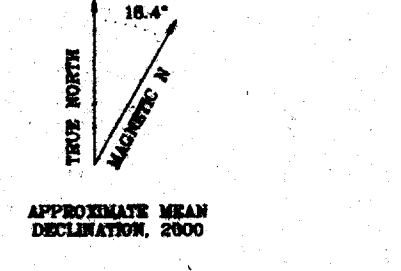
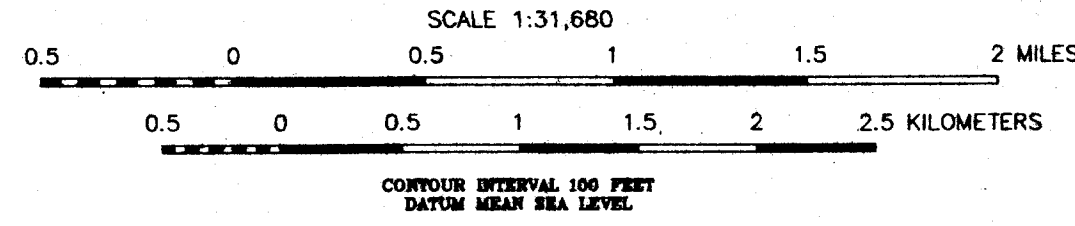
**TOTAL MAGNETIC FIELD AND DETAILED ELECTROMAGNETIC ANOMALIES OF PARTS OF THE ANIAK AND IDITAROD MINING DISTRICTS, SOUTHWESTERN ALASKA**

SHEETMUTE D-6  
2000

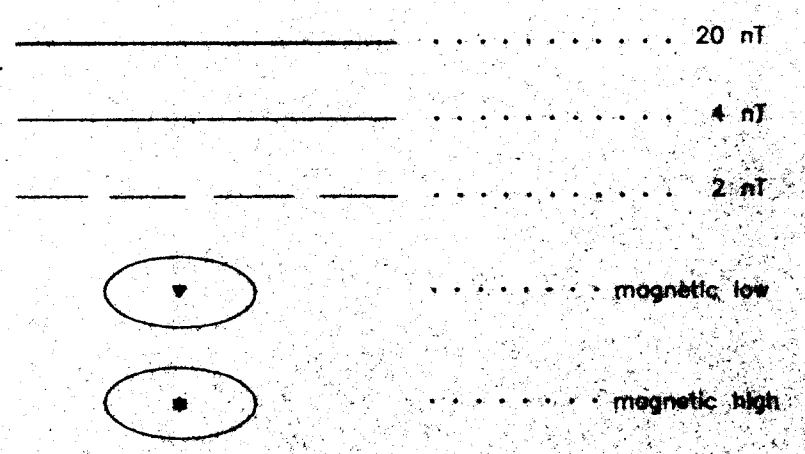
**TOTAL MAGNETIC FIELD**

The total magnetic field data were acquired with a sampling interval of 0.1 seconds, and were (1) corrected for diurnal variations by subtraction of the digitally recorded base station magnetic data, (2) leveled to the tie line data, and (3) interpolated onto a regular 100 m grid using a modified Akima (1970) technique. The regional variation (or IGRF gradient, 2000, updated to May 2000) was removed from the leveled magnetic data.

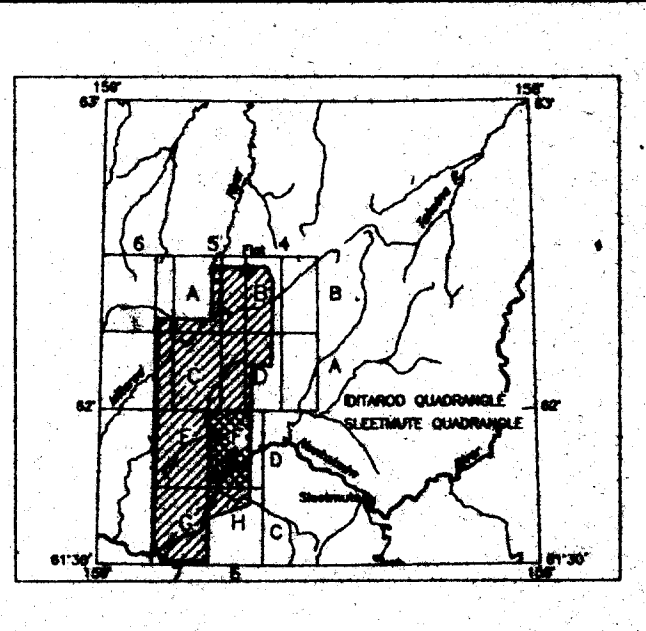
Akima, H., 1970. A new method of interpolation and smooth curve fitting based on local procedures. Journal of the Association of Computing Machinery, v. 17, no. 4, p. 589-602.



MAGNETIC CONTOUR INTERVAL



**LOCATION INDEX FOR SCALE 1:31,680**



**SURVEY HISTORY**

This map has been compiled and drawn under contract between the State of Alaska, Department of Natural Resources, Division of Geological & Geophysical Surveys (DGGS), and Stevens Exploration Management Corp. Airborne geophysical data for the area were acquired by Fugro Airborne Surveys in 2000. Funding for the project was provided by the U.S. Department of Interior Bureau of Land Management (BLM). Laurel Burns was the contract manager for DGGS.

This map and other products from this survey are available by mail order or in person from DGGS, 724 University Ave., Suite 200, Fairbanks, Alaska, 99709. Some products are also available in person only at the BLM's Bureau of Mineral Information Center, 100 Savilka Road, Douglas, Alaska, 99824.