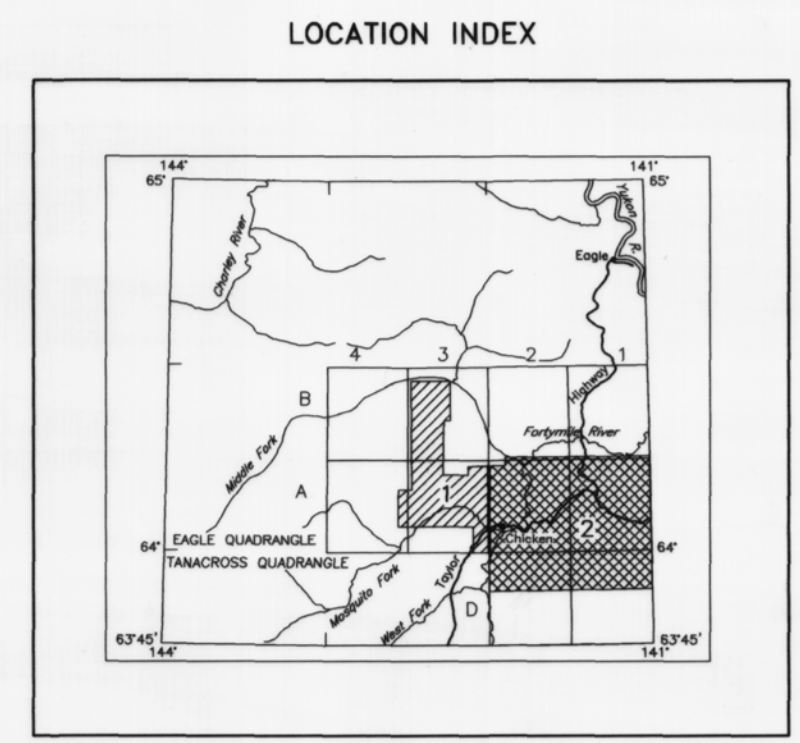
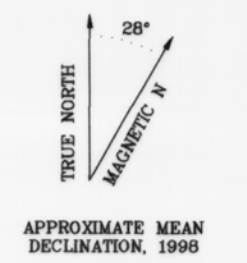
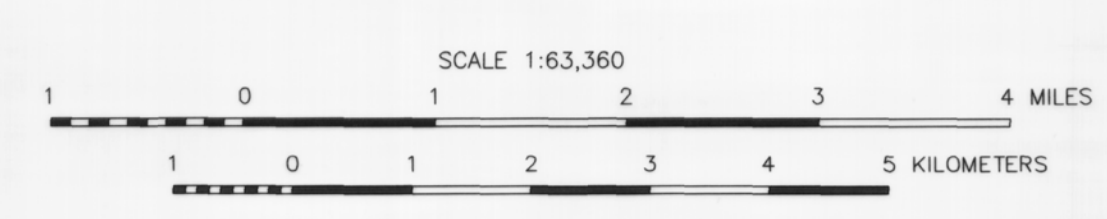
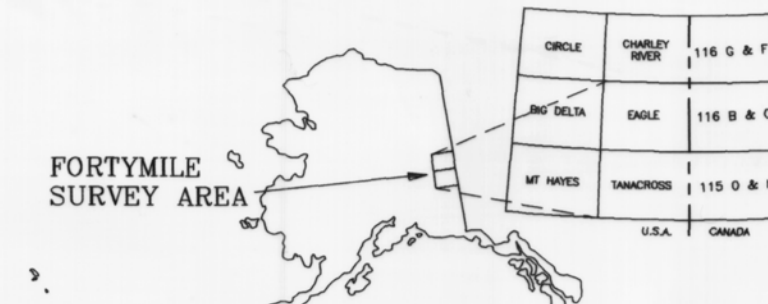


Section outline from U.S. Geological Survey Eagle A-1, 1956, A-2, 1956, B-1, 1956, B-2, 1956, Tanacross D-1, 1956, D-2, 1956, Quadrangles, Alaska.



TOTAL FIELD MAGNETICS AND ELECTROMAGNETIC ANOMALIES OF PART OF THE FORTYMILE MINING DISTRICT, ALASKA

SOUTHERN EAGLE and NORTHERN TANACROSS QUADRANGLES
1999

DESCRIPTIVE NOTES

The geophysical data were acquired with a DIGEM[®] Electromagnetic (EM) system and a Sinterex cesium magnetometer. Both were flown at a height of 100 feet. A Herz VLF system was flown at a height of 130 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 AS350B-2 Squirrel helicopter at a mean terrain clearance of 200 feet along survey flight lines with a spacing of a quarter of a mile. Tie lines were flown perpendicular to the flight lines at intervals of approximately 3 miles.

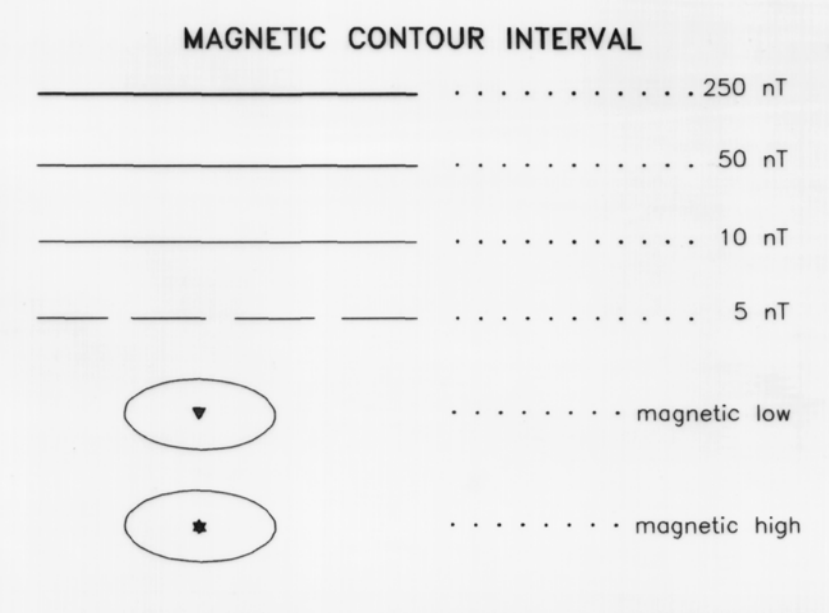
An Ashtech/Rocal Real-Time Differential Global Positioning System (RT-DGPS) was used for both navigation and flight path recovery. The helicopter position was derived every 0.5 seconds using real-time differential positioning to a relative accuracy of better than 10 m. Flight path positions were projected onto the Clarke 1866 (UTM zone 7) spheroid, 1927 North American datum using a central meridian (CM) of 141° 0' 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 DIGEM[®] EM system measured inphase and quadrature components at five frequencies. Two vertical coplanar-coil pairs operated at 900 and 5500 Hz while three horizontal coplanar-coil pairs operated at 900, 7200, and 36,000 Hz. EM data were sampled at 0.1 second intervals. The EM system responds to bedrock conductors, conductive overburden, and cultural sources. The power line monitor and the flight track video were examined to locate cultural sources. The EM anomalies that are indicated are classified by conductance.

ELECTROMAGNETIC ANOMALIES

- Anomaly >50 siemens
- Anomaly <50 siemens
- Questionable anomaly
- Weak conductivity associated with an EM magnetic response



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 (DGG), and Stevens Exploration Management Corp. Airborne geophysical data for the area were acquired by Geotrex-Dighem, a division of CGG Canada Ltd., in 1998.

This map and other products from this survey are available by mail order or in person from DGG, 794 University Ave., Suite 200, Fairbanks, Alaska, 99709.

TOTAL FIELD MAGNETICS

The total field magnetic 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, 1995, updated to September 1998) 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.