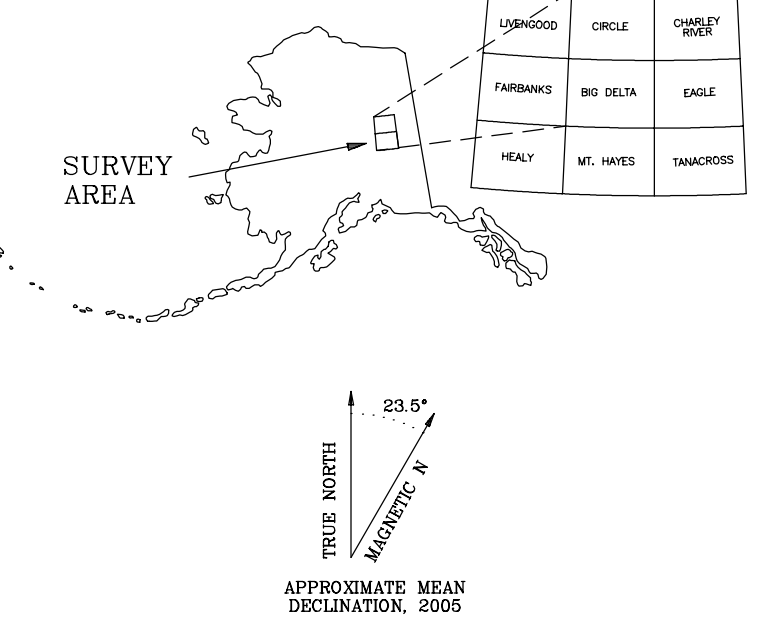
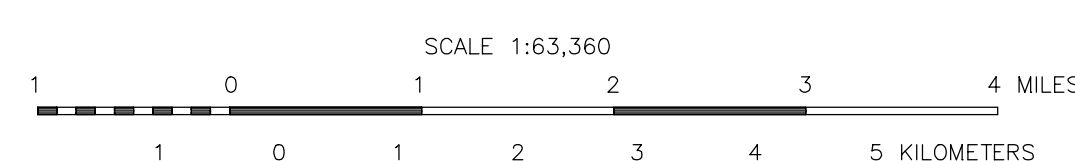


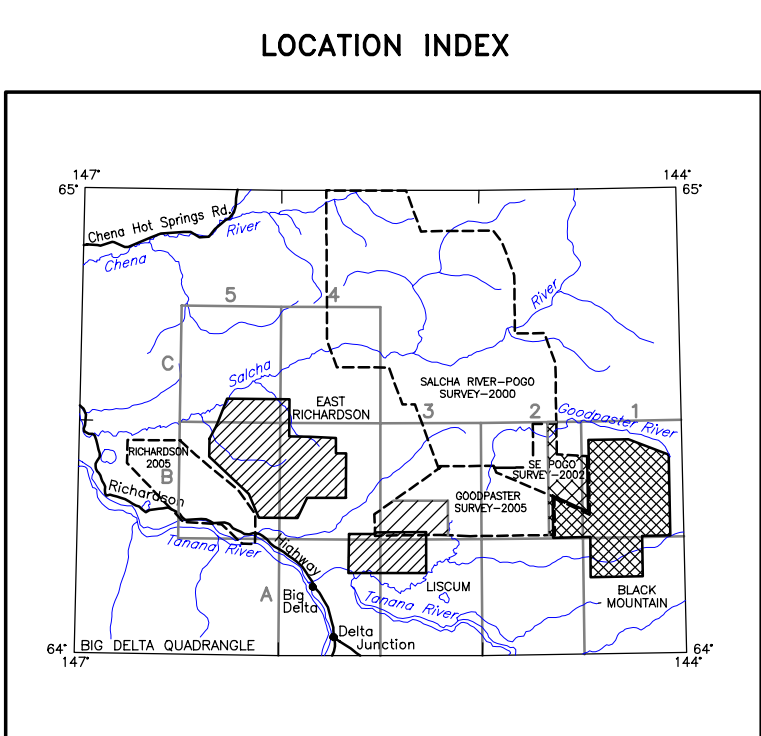
Section outline from U.S. Geological Survey Big Delta A-1, 1965, A-2, 1964, B-1, 1972, B-2, 1970, Goodpasture, Alaska.



## TOTAL MAGNETIC FIELD OF THE BLACK MOUNTAIN AREA, GOODPASTER MINING DISTRICT, INTERIOR ALASKA

PARTS OF BIG DELTA QUADRANGLE

by  
Laurel E. Burns, Fugro Airborne Surveys Corp., and Stevens Exploration Management Corp.  
2006



**DESCRIPTIVE NOTES**

The geophysical data were acquired with a DIGHEM<sup>®</sup> Electromagnetic (EM) system and a Scintrex cesium magnetometer. The EM and magnetic sensors were flown at a height of 100 feet. In addition the survey recorded data from a rotor altimeter, GPS navigation system, 50/80 Hz monitors and video camera. Flights were performed with an AS350B-2 Squirrel helicopter at a mean terrain clearance of 200 feet along N-S (0°) 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. An Ashtech GG24 NAVSTAR / GLONASS 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 1866 (UTM zone 6) spheroid, 1927 North American datum using a central meridian (CM) of 147°, 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.

**TOTAL MAGNETIC FIELD**

The magnetic total field contours were produced using digitally recorded data from a Scintrex cesium GS2 magnetometer, with a sampling interval of 0.1 seconds. The magnetic data were (1) corrected for diurnal variations by subtraction of the digitally recorded base station magnetic data, (2) adjusted for regional variations (or IGRF gradient, 2005, updated to November 2005) using olimeter adjusted (IGRF) (3) leveled to the tie line data, and 4) interpolated onto a regular 80 m grid using a modified Akima (1970) technique.

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**

- ..... 250 nT
- ..... 50 nT
- ..... 10 nT
- ..... 5 nT

**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 (DGGGS), and Stevens Exploration Management Corp. Airborne geophysical data for the new area were acquired and processed by Fugro Airborne Surveys Corp. in 2005. This map and other products from this survey are available by mail order in person from DGGGS, 3354 College Road, Fairbanks, Alaska, 99709-3707. Published maps are also available for viewing or downloading as Adobe Acrobat Files (\*.pdf) on our Web site (<http://www.dgggs-dnr.state.ak.us/pubs/>).