Section outlines from U.S. Geological Survey Big Delta B-2, 1958; B-3, 1958; B-4, 1960; C-2, 1958; C-3, 1958; C-4, 1958, Quadrangles, Alaska

SCALE 1:63,360

1 0 1 2 3 4 MILES

1 0 1 2 3 4 5 KILOMETERS

TOTAL MAGNETIC FIELD AND ELECTROMAGNETIC ANOMALIES OF THE SALCHA RIVER - POGO MINING AREA, CENTRAL ALASKA

BIG DELTA QUADRANGLE

2000

DESCRIPTIVE NOTES

The geophysical data were acquired with a DIGHEM^V Electromagnetic (EM) system, Exploranium GR-820 gamma-ray spectrometer and a Scintrex cesium magnetometer. The EM and magnetic sensors were flown at a height of 100 feet. The gamma-ray spectrometer was flown at a height of 200 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 NW-SE (340°) 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 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.

ELECTROMAGNETIC ANOMALIES

Anomaly	Conductance
●	>50 siemens
○	<50 siemens
✳	Questionable anomaly
△	Weak conductivity associated with an EM magnetite response

ELECTROMAGNETICS

To determine the location of EM anomalies or their boundaries, the DIGHEM^V EM system measured inphase and quadrature components at five frequencies. Two vertical coaxial-coil pairs operated at 900 and 5500 Hz while three horizontal coplanar-coil pairs operated at 900, 7200, and 56,000 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.

APPROXIMATE MEAN DECLINATION, 1999

MAGNETIC CONTOUR INTERVAL

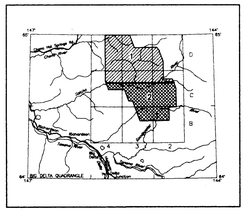
———	. . . . . 250 nT
———	. . . . . 50 nT
———	. . . . . 10 nT
— — — —	. . . . . 5 nT
▼	. . . . . magnetic low
▲	. . . . . magnetic high

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, 1995, updated to September 1999) 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.

LOCATION INDEX



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 Geoterrex-Dighem, a division of CGG Canada Ltd., in 1999. 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, 794 University Ave., Suite 200, Fairbanks, Alaska, 99709.