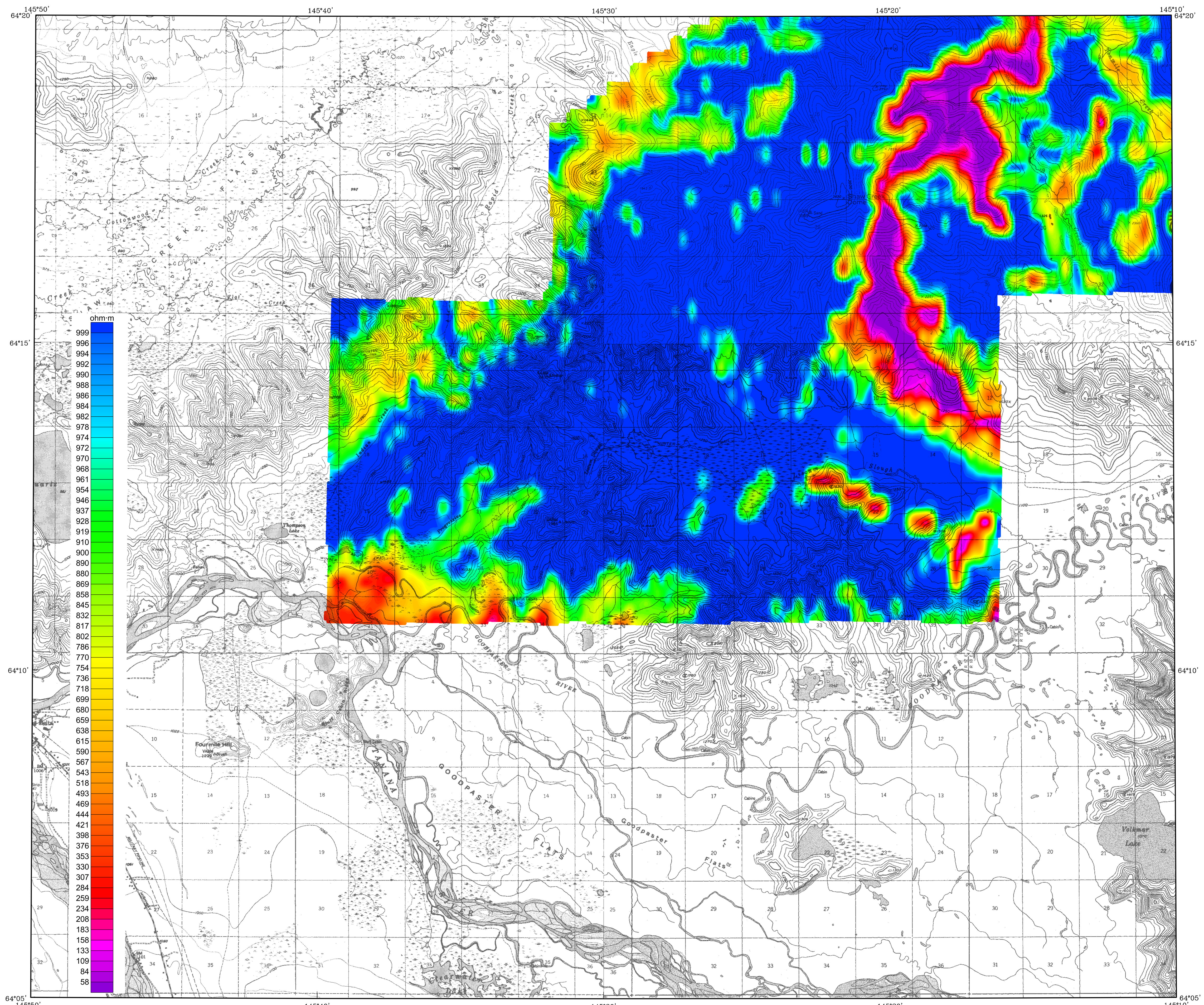
ALASKA DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS
IN COOPERATION WITH ANGLOGOLD ASHANTI (U.S.A.) EXPLORATION INC.

GEOPHYSICAL REPORT 2006-5-10a



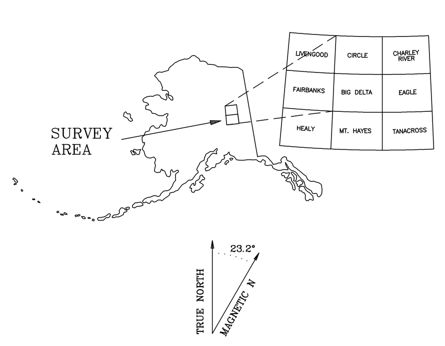
Base from U.S. Geological Survey Big Delta A-3, 1975; A-4, 1991; B-3, 1973; B-4, 1971; Quadrangles, Alaska

SCALE 1:63,360

1 0 1 2 3 4 MILES

1 0 1 2 3 4 5 KILOMETERS

CONTOUR INTERVAL 50 FEET
DATUM MEAN SEA LEVEL

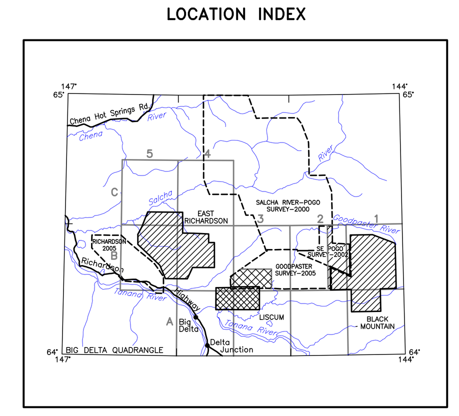


900 Hz COPLANAR APPARENT RESISTIVITY OF THE LISCUM AREA, GOODPASTER MINING DISTRICT, INTERIOR ALASKA

PARTS OF BIG DELTA QUADRANGLE

by
Laurel E. Burns, AngloGold Ashanti (U.S.A.) Exploration Inc., Fugro Airborne Surveys Corp., and Stevens Exploration Management Corp.
2006

LOCATION INDEX



DESCRIPTIVE NOTES

The geophysical data were acquired with a DIGHEM[V] 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 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 E-W (90°) survey flight lines with a spacing of a quarter of a mile on the eastern half and 3/16 of a mile on the western half. Tie lines were flown perpendicular to the flight lines at intervals of approximately 3 miles on the eastern half and 1.5 miles on the western half.

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.

RESISTIVITY

The DIGHEM[V] EM system measured inphase and quadrature components at five frequencies. Two vertical coaxial coil-pairs operated at 1000 and 5000 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. Apparent resistivity is generated from the inphase and quadrature component of the coplanar 900 Hz using the pseudo-layer half space model. The data were 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.

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 and processed by Fugro Airborne Surveys Corp. in 2005. Funding for the Liscum area survey was provided by AngloGold Ashanti (U.S.A.) Exploration Inc. and the Alaska State Legislature.

This map and other products from this survey are available by mail order in person from DGGS, 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.dggs.dnr.state.ak.us/pubs/).