ohm·m

7726
7381
7099
6838
6624
6426
6246
6074
5911
5751
5606
5468
5327
5194
5073
4960
4854
4750
4650
4557
4461
4372
4284
4201
4124
4048
3973
3890
3819
3736
3657
3581
3502
3426
3344
3262
3181
3099
3018
2930
2847
2767
2681
2594
2510
2419
2327
2229
2133
2024
1913
1798
1666
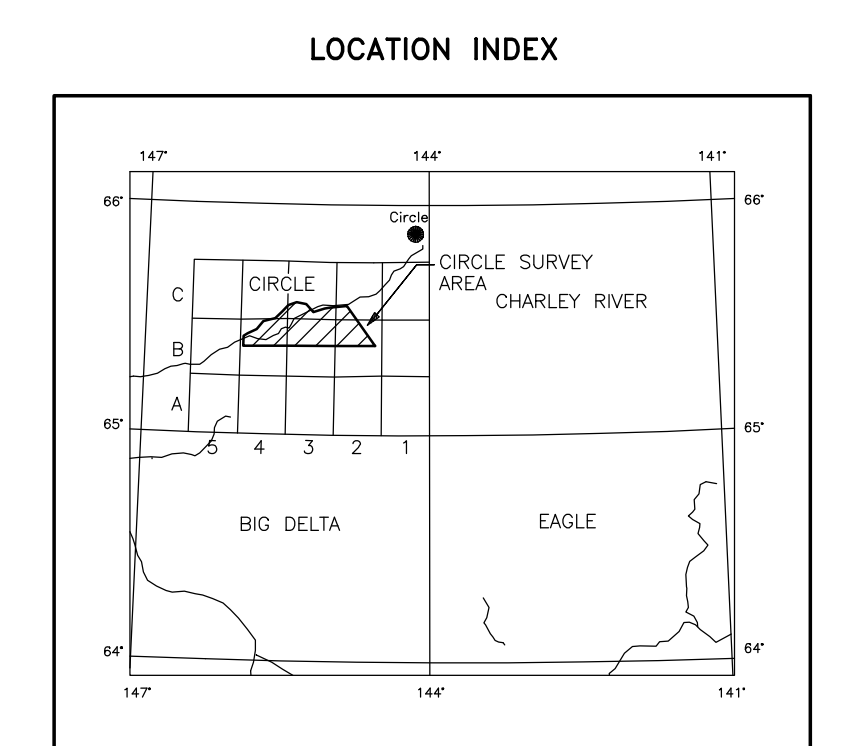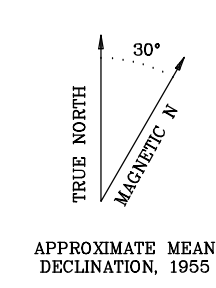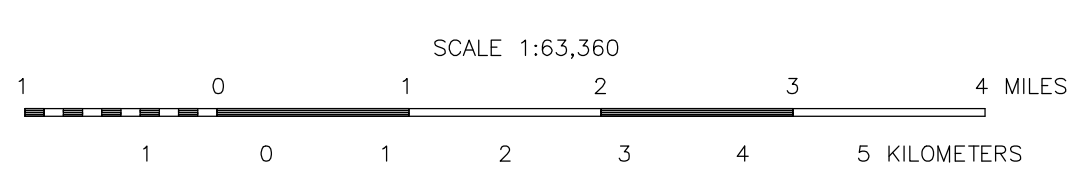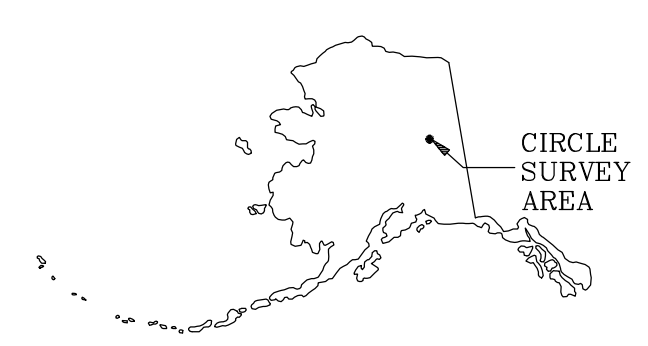1518
1352
1195
1040
903
786
683
582
488
390

Section outlines from U.S. Geological Survey topographic bases:
Circle B-2,3,4; C-2,3,4; Quadrangles, Alaska, 1952, 1955

CIRCLE
SURVEY
AREA

SCALE 1:63,360

1   0   1   2   3   4 MILES

1   0   1   2   3   4   5 KILOMETERS

APPROXIMATE MEAN
DECLINATION, 1955

DESCRIPTIVE NOTES

The geophysical data were acquired with a DIGHEM V Electromagnetic (EM) system, a Scintrex cesium CS2 magnetometer, and a Herz VLF system installed in an AS350B-1 Squirrel helicopter. In addition, the survey recorded data from a radar altimeter, GPS navigation system, 50/60 Hz monitors and video camera. Flights were performed at a mean terrain clearance of 200 feet along 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 three miles.
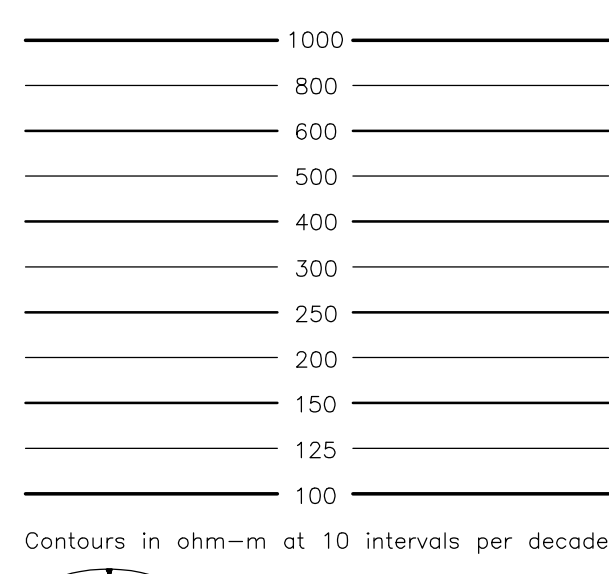
A Sercel Real-Time Differential Global Positioning System (RT-DGPS) was used for both navigation and flight path recovery. The helicopter position was derived every 0.5 seconds using both real-time and post-processing differential positioning to a relative accuracy of better than 10 m. Flight path positions were projected onto the Clarke 1866 (UTM) spheroid, 1927 North American datum using a Central Meridian (CM) of 147°, a north constant of 0 and east constant of 500,000. Positional accuracy of the presented data is better than 10 m with respect to the UTM grid.

RESISTIVITY

The DIGHEM² EM system measured inphase and quadrature components at five frequencies. Two vertical coaxial coil-pairs operated at 900 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 7200 Hz using the pseudo-layer half space model. The data were interpolated onto a regular 100 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.

RESISTIVITY CONTOURS

1000
800
600
500
400
300
250
200
150
125
100

Contours in ohm-m at 10 intervals per decade

resistivity low

7200 Hz COPLANAR APPARENT RESISTIVITY
OF THE CIRCLE MINING DISTRICT,
INTERIOR ALASKA

PARTS OF CIRCLE QUADRANGLE

by
Laurel E. Burns, Fugro Airborne Surveys Corp., and Stevens Exploration Management Corp.
2004

LOCATION INDEX

CIRCLE SURVEY AREA
CHARLEY RIVER
EAGLE
BIG DELTA

SURVEY HISTORY

The map has been compiled and drawn under contract between the State of Alaska, Department of Natural Resources, Division of Geological & Geophysical Surveys, and Stevens Exploration Management Corp. The map was produced by Fugro Airborne Surveys and supercedes the earlier full color version released by DGGS in 1994. Airborne geophysical data for the area were acquired and processed in 1993 under contract between DGGS and WGM, Mining and Geological Consultants, Inc. The subcontractor acquiring and processing the data was DIGHEM, a division of CGG Canada Ltd. Other products from this survey are available from DGGS, 3354 College Road, Fairbanks, Alaska, 99709-3707.