

Base from U.S. Geological Survey Census A-1, 1948; A-2, 1951; A-3, 1951;
Datum Reference D-1, 1944; D-2, 1951; D-3, 1951; Ketchikan A-6, 1948;
Prince Rupert D-1, 1951; Kodiak Island, Alaska

DESCRIPTIVE NOTES

KETCHIKAN SURVEY "Area 4" - March 1999
The geophysical data were acquired with a DIGHEM[®] Electromagnetic (EM) system and a Scintrex cesium magnetometer. Both 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 north-south flight lines for the northern portion and east-west flight lines for the southern portion one-quarter mile apart. The lines were flown perpendicular to the flight lines at intervals of approximately 3 miles.

An Ashtech/Racal 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 8) spheroid, 1927 North American datum using a central meridian (CM) of 135° 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.

HETTA SURVEY "Area 3" - May 1992
DOLOMI SURVEY "Area 1" - March 1991
The geophysical data were acquired with DIGHEM[®] (Dolomi Survey) and DIGHEM[®] (Hetta Survey) Electromagnetic (EM) systems and a Scintrex cesium magnetometer. Mean terrain clearance for the magnetometer and EM system were approximately 213 and 164 feet, respectively. In addition the survey recorded data from a radar altimeter, UHF navigation system, 50/60 Hz monitors, VLF receiver and video camera. The flight lines were flown with one-eighth mile line spacing with the lines flown perpendicular to the flight lines. The Dolomi Survey was flown north-south with an AS350B helicopter. The Hetta Survey was flown with an AS350B-1 helicopter. The flight lines for Hetta Survey were flown east-west except for the peninsula between Cordova Bay and Nutkwa Inlet which was flown northeast-southwest.

A Del Norte UHF electronic positioning system was used for navigation recovery. The recovery was done with a combination of UHF data and visual recovery. Positional accuracy of the 1991/92 data should be considered of low reliability.

RESISTIVITY

The DIGHEM[®] 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 55,000 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 55,000 Hz using the pseudo-layer half space model. The data were interpolated onto a regular 100 m grid using a modified Akima (1970) technique.

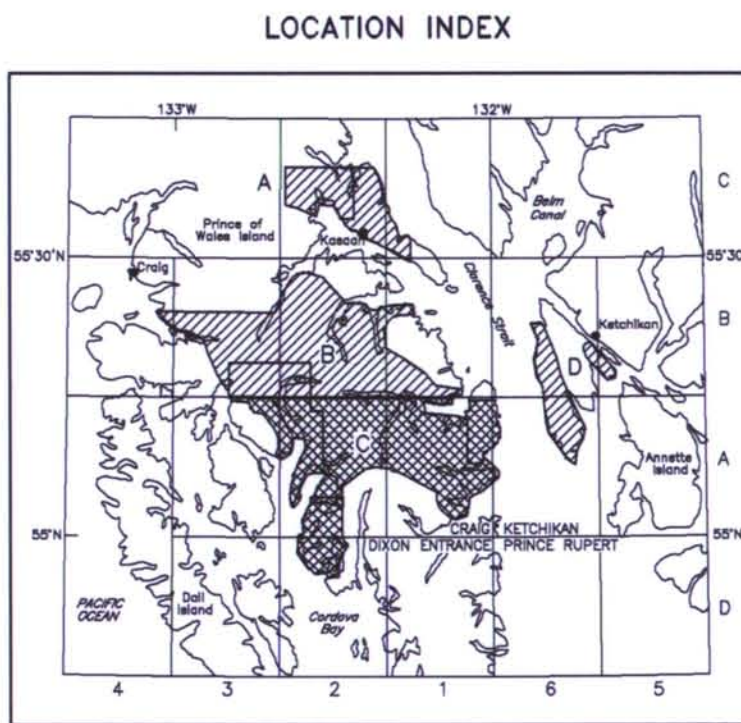
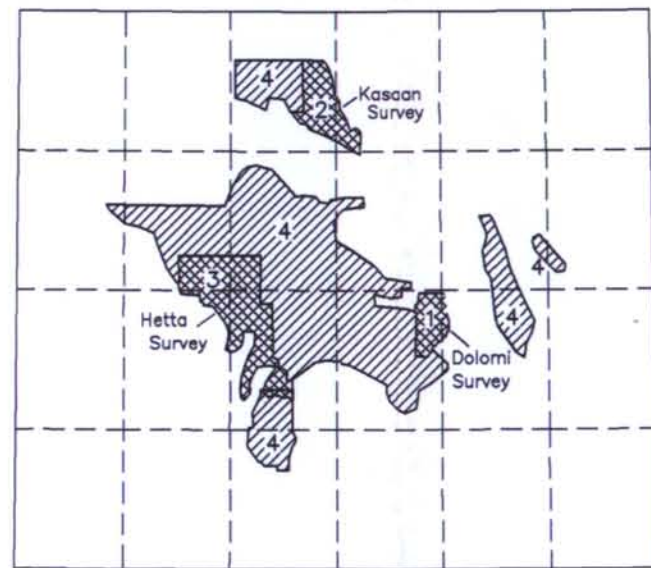
Akima, H., 1970, A new method of interpolation and smooth curve fitting based on local procedures: Journal of the Association of Computing Machinery, v. 17, no. 4, p. 589-602.

SCALE 1:63,360
1 0 1 2 3 4 MILES
1 0 1 2 3 4 5 KILOMETERS
CONTOUR INTERVAL 100 FEET
DATUM MEAN SEA LEVEL

56,000 Hz COPLANAR RESISTIVITY
OF SELECTED AREAS NEAR
KETCHIKAN,
SOUTHEAST ALASKA

MAP C - SURVEYED AREA SOUTH OF 55°15',
PRINCE OF WALES ISLAND
1999

TRUE NORTH
23.9°
APPROXIMATE MEAN
DECLINATION, 1999



SURVEY HISTORY

This map has been compiled and drawn under contract between the State of Alaska, Department of Natural Resources (DNR), Division of Geological & Geophysical Surveys (DGG), and WGM Mining & Geological Consultants, Inc. Airborne geophysical data for area 4 were acquired in 1999 by Geotrex-Digheem, a division of CGG Canada Ltd. Funding for the project was provided by the U.S. Department of the Interior, Bureau of Land Management (BLM), Ketchikan Gateway Borough, Sealaska Corporation, Alaska State Mental Health Survey, Land Office, and the cities of Thorne Bay and Coffman Cove. The data for areas 1, 2 and 3 were flown by Digheem in 1991 and 1992. These data were provided for publication by Sealaska Corporation.

This map and other products from this survey are available by mail order, or in person, from DGG, 734 University Ave., Suite 200, Fairbanks, Alaska, 99709. Some products are also available, in person only, at the BLM's Unleash Minerals Information Center, Mayflower Island, Douglas, AK.