








MAP B - SURVEYED AREA IMMEDIATELY NORTH OF 55°15',
PRINCE OF WALES ISLAND

MAGNETIC CONTOUR INTERVAL

 250 nT
 50 nT
 10 nT
 5 nT

 magnetic low

 magnetic high

The map shows the Katsina region of Nigeria, divided into several districts. The districts are labeled as follows: Katsina, Hafia, and Dalami. The Katsina district is the largest and is shaded with diagonal lines. The Hafia district is located to the west of Katsina and is shaded with a cross-hatch pattern. The Dalami district is located to the south of Katsina and is shaded with a diagonal line pattern. The map also shows the locations of the Katsina, Hafia, and Dalami surveys, which are indicated by small squares with numbers 1, 2, and 3 respectively. The map includes a grid and labels for each survey area.

This map had been compiled and drawn under contract between the State of Alaska, Department of Natural Resources (DNR), Division of Geological & Geophysical Investigations and Geographical Information Systems, Inc. (IBNR geophysical data for area 4 were acquired in 1999 by Geotrex—Dighem, a division of CGG). The lead geologist for the project was provided by the Alaska Department of Natural Resources, Division of Management (BLM), Ketchikan Gateway Borough, Sealaska Corporation, Alaska State Mental Health Trust Land Administration, and the Alaska Department of Natural Resources. The data for areas 1, 2 and 3 were flown by Dighem in 1991 and 1992. These data were provided for publication in 1999.

This map and other products from this survey are available by mail order, or in person, from DGGG, 794 University Ave., Suite 200, Fairbanks, Alaska, 99709. Some products are available for purchase from the Alaska Department of Natural Resources, Minerals Information Center, Moscow, Lower Sushinsk, Alaska, 99571.

KETCHIKAN SURVEY "Area 4" – March 1999
The geophysical data were acquired with a DIGHEM[®] geophysical magnetic (G) 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 AS30B-2 Squirrel helicopter at a mean terrain clearance of 200 feet along north-south flight lines one-quarter mile apart. Tie 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 130°W. The scale factor was 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
The geophysical data were acquired with a DIGHEM[®] Electromagnetic (EM) system 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 east-west flight lines were flown one-eighth mile apart with tie lines flown perpendicular to the flight lines. The survey was flown with an AS350B-1 helicopter.

A Del Norte UHF electronic positioning system was used for navigation. Flight path recovery was done with a combination of UHF data and visual recovery. Positional accuracy of the 1992 data should be considered of low reliability.

To determine the location of EM anomalies or their boundaries, 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 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 and other cultural EM sources were easily identified and located. The EM anomalies that are indicated are classified by conductance.

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