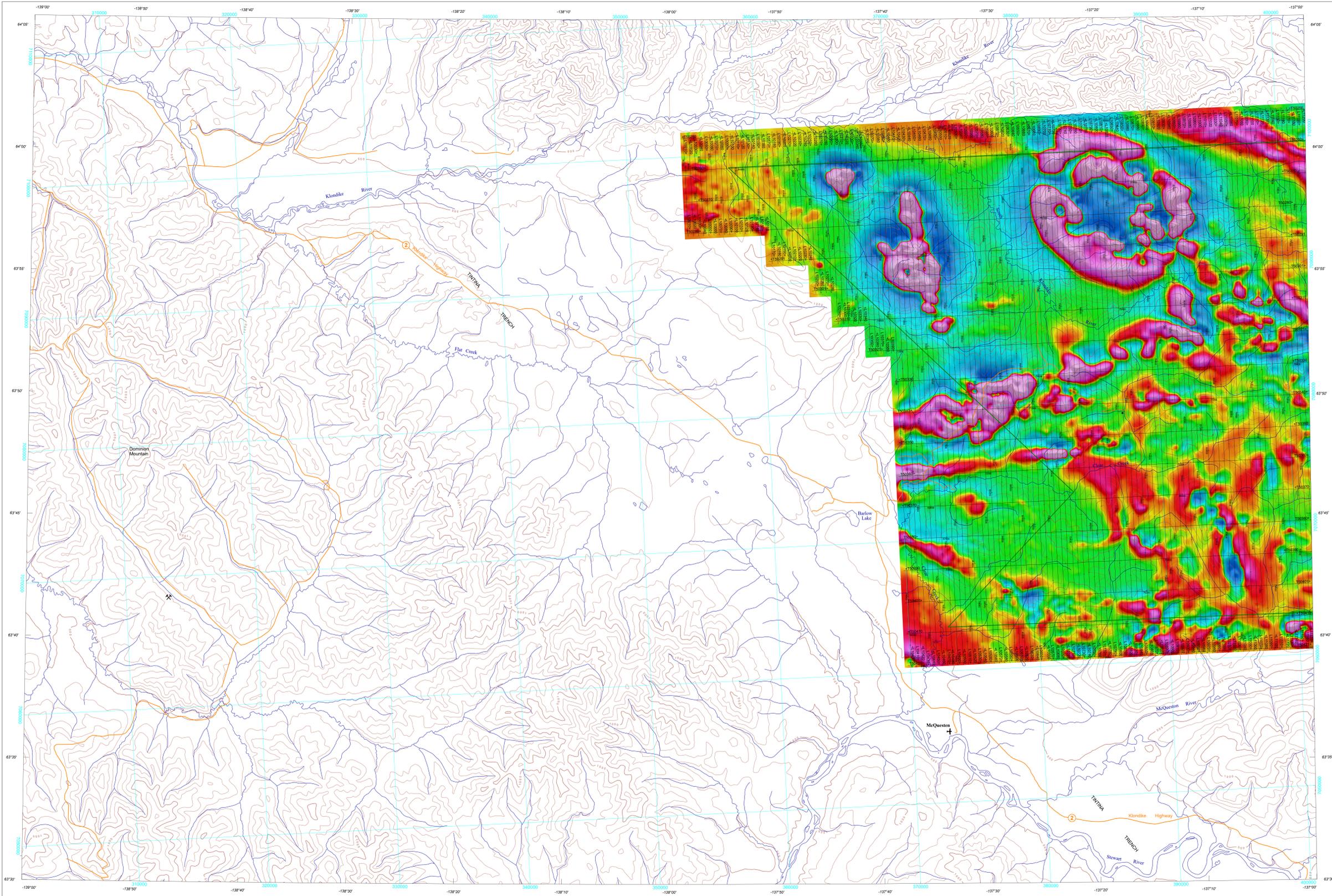


FIRST VERTICAL DERIVATIVE OF THE MAGNETIC FIELD



First Vertical Derivative of the Magnetic Field
 This map of the First Vertical Derivative of the Magnetic Field was derived from data acquired during an aeromagnetic survey carried out by Geo Data Solutions (GDS) Inc. from January 19, 2020 to March 28, 2020. The data were recorded using a split-beam cesium vapor magnetometer (sensitivity = 0.025 nT) mounted in the tail boom of a Beechcraft King Air aircraft (C-441B). The nominal traverse and control line spacing were, respectively, 400 m and 2400 m, and the aircraft flew at a nominal terrain clearance of 150 m. Traverse lines were oriented N-E with orthogonal control lines. The flight path was reconstructed following post-flight differential corrections to the raw Global Positioning System (GPS) data and inspection of ground images recorded by a vertically-oriented video camera. The survey was flown on a pre-determined flight surface to minimize differences in magnetic values at the intersections of control and traverse lines. These differences were computer-analysed to obtain a mutually leveled set of flight magnetic data. The leveled values were then interpolated to a 100 m grid. The International Geomagnetic Reference Field (IGRF) defined at the average GPS altitude of 1630 m for the year 2020.2 was then removed. Removal of the IGRF, representing the magnetic field of the Earth's core, produces a residual component related almost entirely to magnetizations within the Earth's crust.

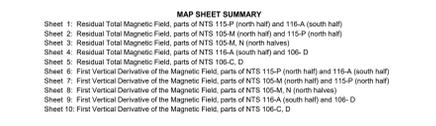
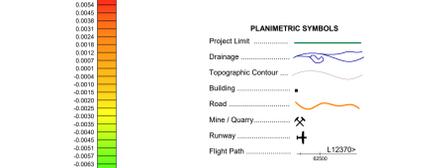
The first vertical derivative of the magnetic field is the rate of change of the magnetic field in the vertical direction. Computation of the first vertical derivative involves long-wavelength features of the magnetic field and significantly improves the resolution of closely spaced and superposed anomalies. A property of first vertical derivative maps is the coincidence of the zero-value contour with vertical contact at high magnetic latitudes (Heath, 1962).

This publication is available for free download through GEOCAN (<https://geocan.nrcan.gc.ca>). Corresponding digital profile and gridded data as well as similar data for adjacent airborne geophysical surveys are available from Natural Resources Canada's Geoscience Data Repository for Aeromagnetic data at <http://gdr.nrcan.gc.ca>. For more information about the survey, please contact the Geophysical Data Centre, Geological Survey of Canada, 601 Booth Street, Ottawa, Ontario K1A 0E8. Telephone: (613) 995-5235; email: mail:mgdr@geology.gov.yk.ca

Copies of this map may also be obtained from the Yukon Geological Survey, Energy, Mines and Resources, Government of Yukon, P.O. Box 2763 (K-102), Whitehorse, Yukon, Y1A 2C8. Telephone: (867) 667-2011, email: geology@gov.yk.ca, website: <http://www.geology.gov.yk.ca>.

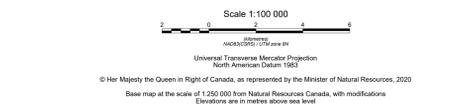
Reference
 Hook, P.J., 1965. Gradient measurements in aeromagnetic surveying. *Geophysics*, v. 30, p. 891-900.

Acknowledgements
 The author thanks the field crew chief, Saïeb Elmoussou (Geo Data Solutions GDS Inc.) for his cooperation and for his able technical assistance for the duration of this survey contract. Douglas Oroschuk (GSC) for his cartographic design expertise and Mark Pilkington (GSC) for his helpful comments and suggestions to improve the map.

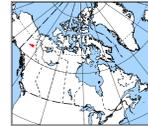


GEOLOGICAL SURVEY OF CANADA OPEN FILE 8728
 YUKON GEOLOGICAL SURVEY OPEN FILE 2020-7
AEROMAGNETIC SURVEY OF THE NASH CREEK AREA
 YUKON
 PARTS OF NTS 105-M, N, 106-C, D, 115-P AND 116-A
FIRST VERTICAL DERIVATIVE OF THE MAGNETIC FIELD
 PARTS OF NTS 115-P (NORTH HALF) AND 116-A (SOUTH HALF)

Author: F. Kiss
 Data acquisition and data compilation by Geo Data Solutions (GDS) Inc., Laval, Quebec
 Contract and project management by the Geological Survey of Canada, Ottawa, Ontario
 Digital cartography by D. Oroschuk, Geological Survey of Canada
 Permanent link: <https://doi.org/10.4095/526147>



This aeromagnetic survey and the production of this map were funded by phase 2 of the Geo-Mapping for Energy and Minerals program (GEM-2) of the Lands and Minerals Sector, Natural Resources Canada.



OPEN FILE / DOSSIER PUBLIC 8728
 GEOLOGICAL SURVEY OF CANADA COMMISSION GEOLOGIQUE DU YUKON
 2020
 SHEET 6 OF 10 / FEUILLE 6 DE 10

Recommended citation
 Kiss, F., 2020. Aeromagnetic Survey of the Nash Creek Area, Yukon, Parts of NTS 105-M, N, 106-C, D, 115-P and 116-A. Geological Survey of Canada, Open File 8728. Yukon Geological Survey Open File 2020-7. Scale 1:100 000. <https://doi.org/10.4095/526147>