

## NOTES

Standardization of publicly available digital magnetic data from assessment reports was performed in 2019 and 2020. Residual magnetic field was calculated through removal of the IGRF. A levelled magnetic field channel was calculated by sampling the 1:250 000 compilation grid and taking the mean difference between the residual magnetic field and the overlapping points; this mean difference is applied as zero order datum shift to the residual data. This is repeated for each 1:250 000 compilation that the survey overlaps.

Up to four gridded products are produced for each survey (Residual Total Magnetic Field (TMI), Reduced-to-Pole Magnetic Field (RTP), First Vertical Derivative of the Reduced-to-Pole Magnetic Field (RTP\_VD) and Tilt Derivative of the Reduced-to-Pole Magnetic Field (RTP\_TDR) and these have pre-existing analogous 1:250 000 products from Open Files 2017-5 to 2017-59.

The outline of the assessment report data is extracted and eroded by a buffer, typically 200 m. The buffer is automatically reduced if it exceeds half the range of either the x or y coordinates. The eroded buffer is then windowed from each the four corresponding 1:250 000 compilations.

Each assessment report grid is then blended with the compilation grid through averaging common points between the grids. By previously windowing out the eroded assessment report outline from the compilation, both fidelity to the higher quality assessment report data and a smooth transition to avoid edge artifacts are achieved. This is an appropriate approach when the assessment report data are of higher quality than the compilation. Mostly this is true due to the higher resolution of data that is typical of a property-scale survey compared to a government regional-scale survey. However this is not universally the case and for every assessment report each of the four new blended grids are compared with the unaltered compilation. Assessment report grids which upon blending lower the quality of the compilation are manually rejected. A log file of accepted and rejected assessment reports for each 1:250 000 sheet is maintained.

The Yukon Geological Survey created georeferenced \*.pdf maps of the shaded relief colour contour products for each 1:250 000 map sheet. The map data are provided as GeoTiff files.

Funding for this project was provided by the Canadian Northern Economic Development Agency through their Strategic Investments in Northern Economic Development program.

## REFERENCES

Geological Survey of Canada, 2017. Canadian Aeromagnetic Data Base, Airborne Geophysics Section, Natural Resources Canada. Datasets: Atlin, BC (2001) Jennings River, BC (2006)

Miles, W., Saltus, R., Hayward, N. and Oneschuk, D., 2015. Alaska and Yukon Magnetic Compilation, Residual total magnetic field. Geological Survey of Canada, Open File 7862.

Strategic Metals Ltd., 2006. Assessment Report Describing Geophysical Surveys at the Bar Property. Yukon Energy, Mines and Resources Assessment Report 94800.

Donegal Developments Ltd., 2007. Assessment Report; Helicopter Magnetic and Radiometric Survey for It's Your Nickel Exploration Ltd.. Yukon Energy, Mines and Resources Assessment Report 94900.

It's Your Nickel Exploration Ltd., 2007. Assessment Report, Helicopter Magnetic and Radiometric Survey for It's Your Nickel Exploration Ltd. on the Turn River Uranium Project. Yukon Energy, Mines and Resources Assessment Report 94937.

Atac Resources Ltd., 2008. Assessment Report Describing Geophysical Surveys at the Rosy Property. Yukon Energy, Mines and Resources Assessment Report 95002.

Tarsis Resources Ltd., 2007. Assessment Report Describing Diamond Drilling at the Mor Property. Yukon Energy, Mines and Resources Assessment Report 95018.

Tarsis Resources Ltd., 2008. Assessment Report Describing Airborne VTEM and Magnetometer Surveys at the Caribou Creek Property. Yukon Energy, Mines and Resources Assessment Report 95105.

Logan Resources Ltd., 2007. Assessment Report, Helicopter Magnetic and Radiometric Survey for Logan Resources Ltd. on the Englishman Project. Yukon Energy, Mines and Resources Assessment Report 95212.

Teslin Lake Mining Partnership, 2009. Assessment Report on Soil Sampling and Ground Magnetic Survey : TLK Property, Yukon Territory. Yukon Energy, Mines and Resources Assessment Report 95224.

Sourdough Resources Inc., 2011. Preliminary Reconnaissance Geological Mapping and Ground Magnetometer Surveys on the Mag Property. Yukon Energy, Mines and Resources Assessment Report 96040.

## RECOMMENDED CITATION

Aurora Geosciences Ltd. and Bruce, J.O., 2020. First Vertical Derivative of the Reduced-to-Pole Magnetic Field Shaded Colour Contour Map (NTS 105C). *In*: Reprocessing of Yukon magnetic data for NTS 105C. Yukon Geological Survey, Open File 2020-11, scale 1:250 000, 4 sheets.

Any revisions or additional geological information known to the user would be welcomed by the Yukon Geological Survey.

Paper copies of this map and the accompanying report may be obtained from the Yukon Geological Survey, Energy, Mines and Resources, Government of Yukon, Room 102-300 Main St., Whitehorse, Yukon, Y1A 2B5. Email: [geology@gov.yk.ca](mailto:geology@gov.yk.ca).

A digital PDF (Portable Document File) file of this map, and available data, can be downloaded free of charge from the Yukon Geological Survey website: <https://yukon.ca/en/science-and-natural-resources/geology>.

- community
- road
- watercourse
- waterbody
- Northwest Territories border

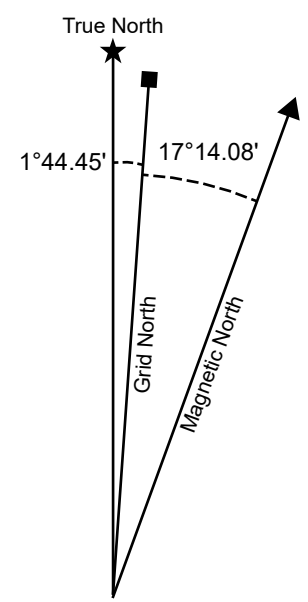


## FIRST VERTICAL DERIVATIVE OF THE REDUCED-TO-POLE MAGNETIC FIELD TESLIN (NTS 105C) YUKON

SCALE 1:250 000  
0 5 10 15 20 25  
kilometres

1:250 000-scale topographic base data produced by  
CENTRE FOR TOPOGRAPHIC INFORMATION,  
NATURAL RESOURCES CANADA

ONE THOUSAND METRE GRID  
Universal Transverse Mercator  
Projection  
North American Datum 1983  
Zone 8



Use diagram only to obtain numerical values  
APPROXIMATE MEAN DECLINATION 2020  
FOR CENTRE OF MAP  
Annual change 20.4' West

105E LAKE LABERGE	105F QUIET LAKE	105G FINLAYSON LAKE
105D WHITEHORSE	<b>THIS MAP</b>	105B WOLF LAKE
104M SKAGWAY	104N ATLIN	104O JENNINGS RIVER

Yukon Geological Survey  
Energy, Mines and Resources  
Government of Yukon

Open File 2020-11  
Sheet 3 of 4

First Vertical Derivative of the Reduced-to-Pole  
Magnetic Field Shaded Colour Contour Map (NTS 105C)  
(1:250 000 scale)

by  
Aurora Geosciences Ltd.  
and  
J.O. Bruce