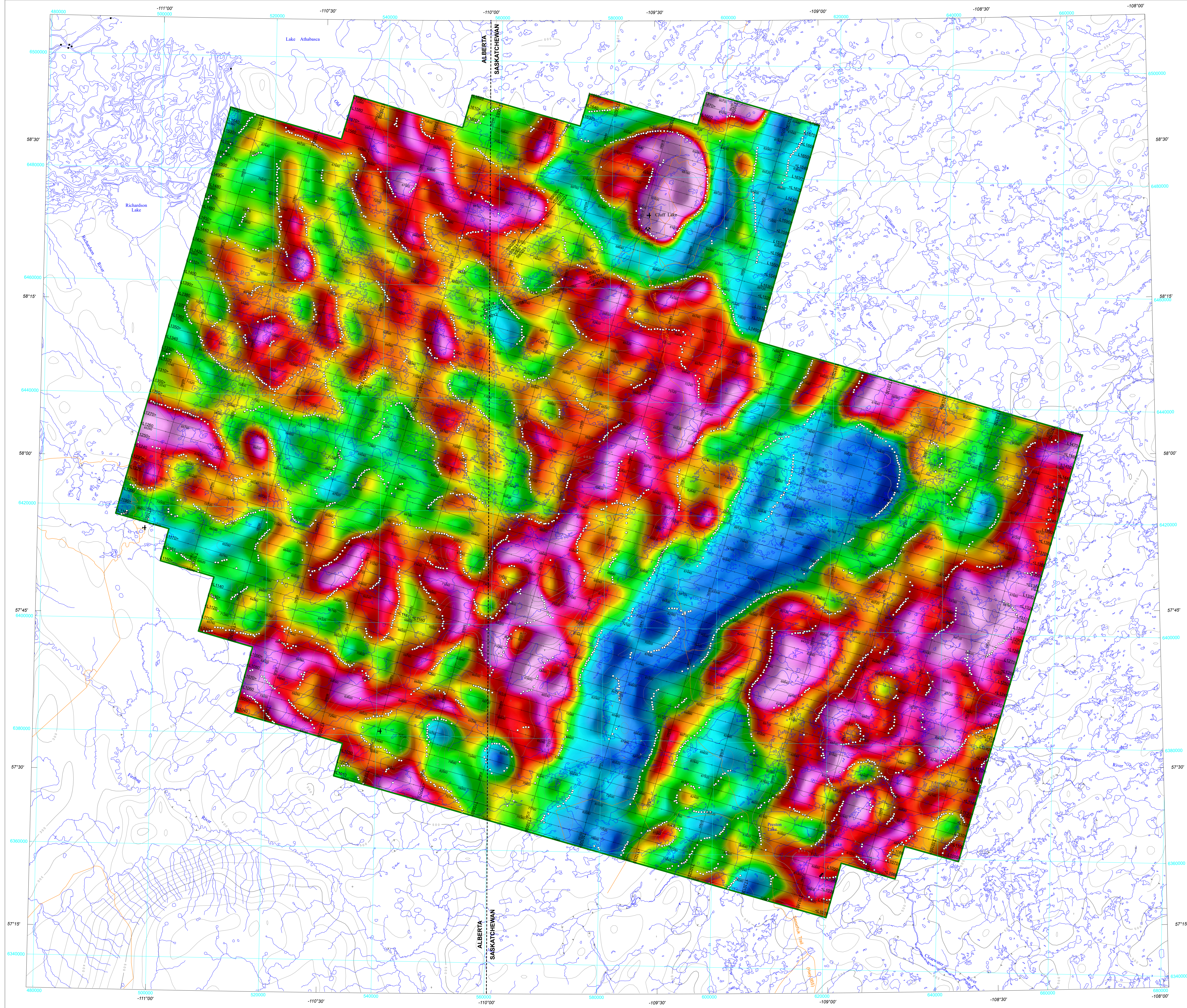


FIRST VERTICAL DERIVATIVE OF THE BOUGUER GRAVITY ANOMALY



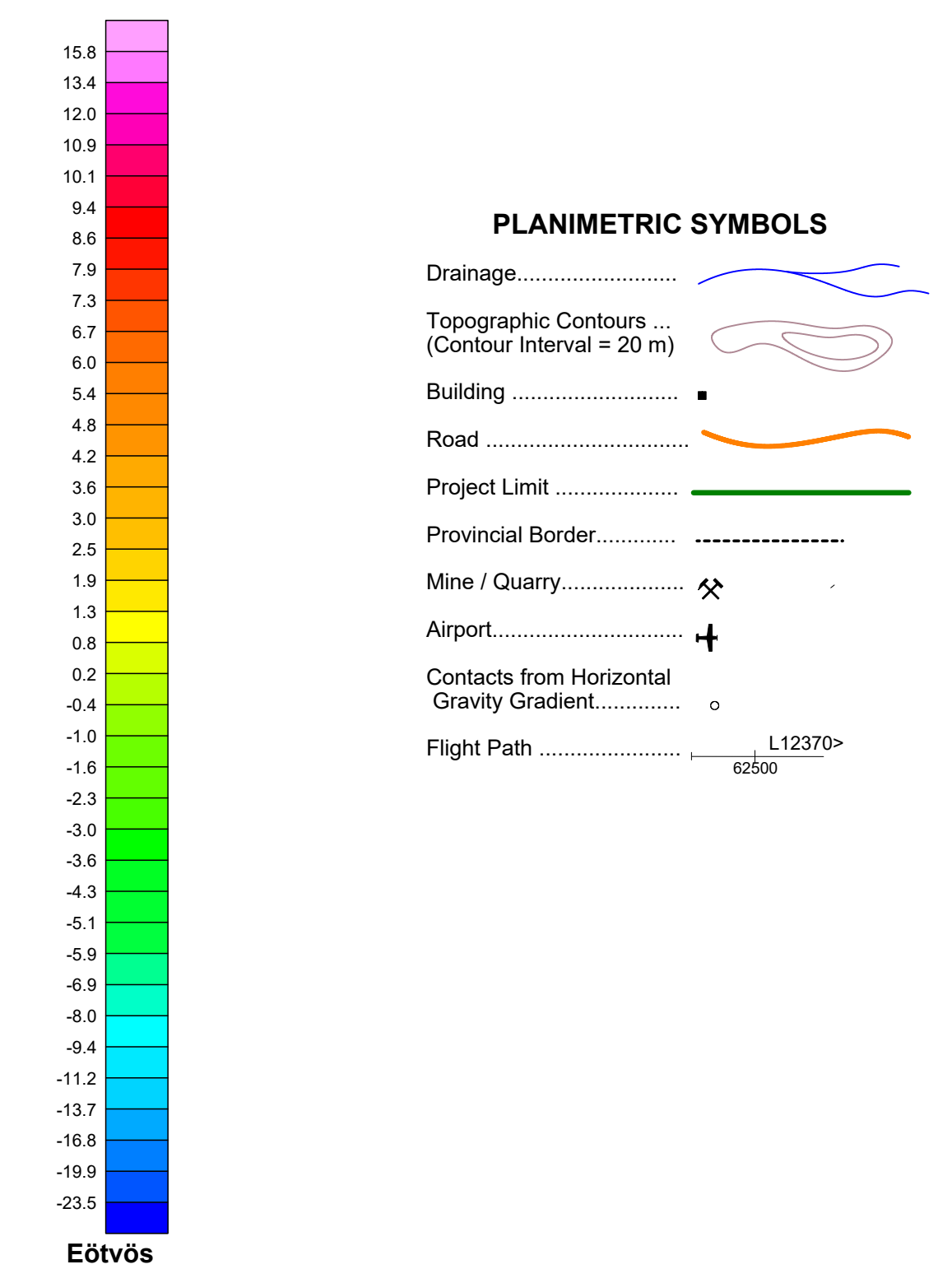
First Vertical Derivative of the Bouguer Gravity Anomaly

These data were acquired during an airborne gravity survey carried out by Sander Geophysics Limited from September 16, 2018 to October 9, 2018. The data were measured with an AIRGrav gravimeter installed in a Cessna 208B Grand Caravan (C-GSGV). The nominal traverse and control line spacings were, respectively, 2000 m and 10000 m. The nominal aircraft altitude was 150 m above ground. The traverse lines were orientated N105°E with orthogonal control lines. The flight path was recovered following post-flight differential corrections to the raw Global Positioning System (GPS). The survey was flown on a pre-determined flight surface to minimize altitude differences between the traverse and control lines. All gravimetric measurements were referenced to the International Gravity Standardization Network 1971 (IGSN71). The theoretical values of gravity were based on the Geoidetic Reference System of 1980 (GRS80). The Bouguer anomaly was obtained after Eotvos and free air corrections, and a complete topographic correction using a 3D mass prism forward modeling with a density of 2.67 g/cm<sup>3</sup>. This topographic correction is equivalent to the traditional three step correction: Simple Bouguer, curvature of the Earth (Bullard) and terrain. A low-pass filter of a half-wavelength of 3000 m with a pass of 0% at 2250 m and 100% at 4500 m was applied to the gridded data. The precision of the Bouguer anomaly is estimated at ±0.26 mGal. The differences at the intersections of traverse and control lines were computer analysed to obtain levelled Bouguer anomalies along the flight line. These levelled values were then interpolated to a 500 m grid. The calculation of the first vertical derivative of the Bouguer anomaly was performed on the grid using a fast Fourier transform.

Digital versions of this map are available for free download through GEOSCAN (<https://geoscan.nrcan.gc.ca>) and the Alberta Geological Survey website (<https://www.ags.gov.ca>). Corresponding digital profile and gridded data as well as similar data for adjacent airborne geophysical surveys can be downloaded, at no charge, from Natural Resources Canada's Geoscience Data Repository for Geophysical Data at [http://gdr.ags.nrcan.gc.ca/index\\_e.html](http://gdr.ags.nrcan.gc.ca/index_e.html). The same products are also available, for a fee, from the Geophysical Data Centre, Geological Survey of Canada, 601 Booth Street, Ottawa, Ontario K1A 0E8. Telephone: 613-995-5326, email: [info@gsd.nrcan.gc.ca](mailto:info@gsd.nrcan.gc.ca).

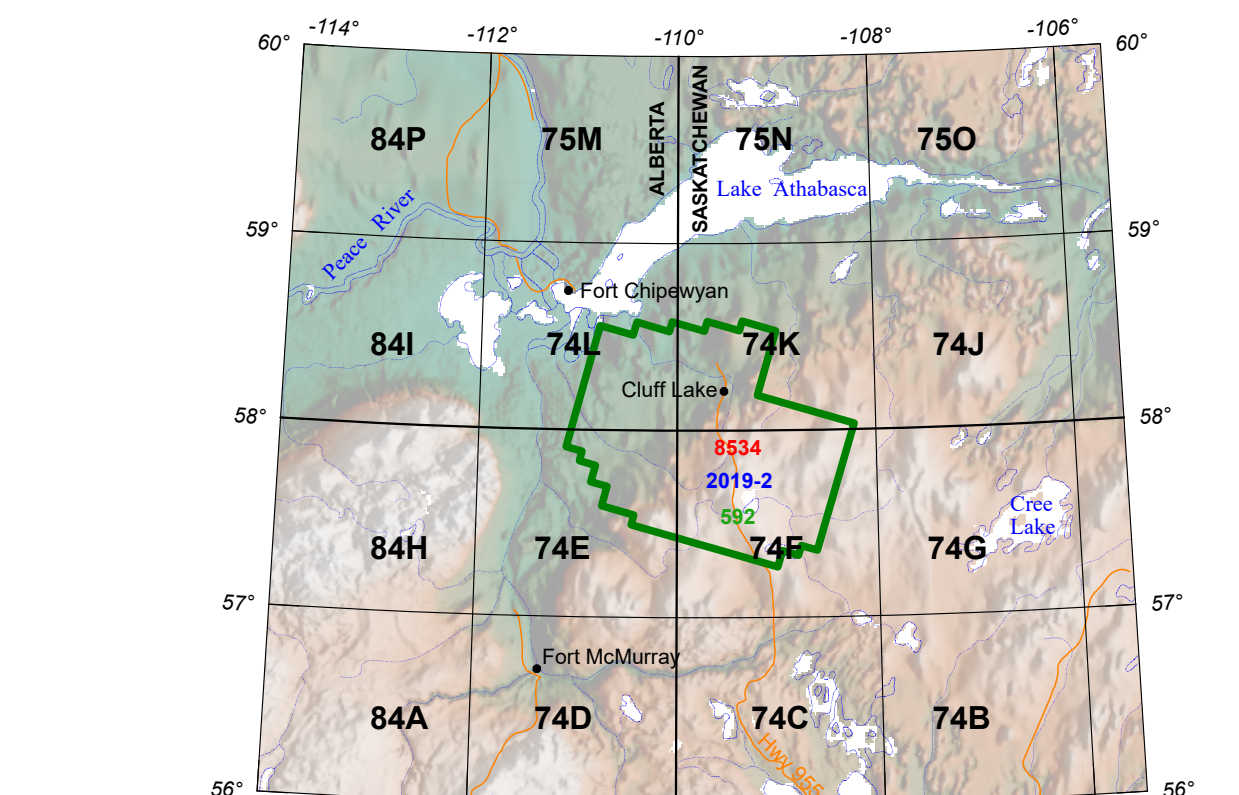
Acknowledgments

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NTS map sheet numbers in black GSC open file number in red

SGS open file report number in blue AER/AGS map number in green



NATIONAL TOPOGRAPHIC REFERENCE SYSTEM AND GEOPHYSICAL MAP INDEX

<b>AER/AGS MAP</b> 592 ALBERTA ENERGY REGULATOR ALBERTA GEOLOGICAL SURVEY 2019	<b>OPEN FILE DOSSIER PUBLIC</b> 8534 GEOLOGICAL SURVEY OF CANADA COMMISSION GÉOLOGIQUE DU CANADA 2019
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**GEOLOGICAL SURVEY OF CANADA OPEN FILE 8534**  
**ALBERTA GEOLOGICAL SURVEY MAP 592**  
**SASKATCHEWAN GEOLOGICAL SURVEY OPEN FILE REPORT 2019-2**

**FIRST VERTICAL DERIVATIVE OF THE BOUGUER GRAVITY ANOMALY**

**AIRBORNE GRAVITY SURVEY OF THE PATTERSON LAKE AREA**  
**ATHABASCA BASIN**

**ALBERTA AND SASKATCHEWAN**  
**PARTS OF NTS 74-E, F, K AND L**

Scale 1:250 000  
Universal Transverse Mercator Projection  
North American Datum 1983

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Base map at the scale of 1:250 000 from Natural Resources Canada, with modifications  
Elevations are in metres above sea level

