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Report
Drone Magnetometer Survey
Claims
189751, 202446, 293602, 305658, 312455, and 344452
Hislop Township
Larder Lake Mining Division

1st vertical derivative contours on air photo mosaic

Prepared for:
Kenneth Timmins

April 16, 2019 Prepared by: Rochelle Collins, P. Geo.

Table of Contents

Summary

Hislop Claim 4282102, held by Kenneth W. Timmins, is situated 14.5 km southeast of Matheson, Ontario. Post conversion to the online Mine Lands Administration System (MLAS, April 10, 2018) Hislop Claim 4282102 is comprised of 6 cell units (i.e., unpatented mining claims) 189751, 202446, 293602, 305658, 312455, and 344452 in Hislop Township, Larder Lake Mining Division. It is accessible from Highway 11 via Miller Road.

A survey using a Geometrics MFAM magnetometer mounted on a DJI M600 drone was conducted by Zen Geomap of Timmins over the six claims in Hislop Township on February 1, 2019. The survey was performed to evaluate the potential for gold bearing structures on the property.

The flight grid on the property totaled 18.9line km. The flight grid (center of grid UTM Zone 17, 548,050E, 5,368,600N) consisted of 17 north-south grid lines and 3 tie-lines. Spacing of 50m was used for grid lines. Spacing of 325m was used for tie lines.

The 2019 survey was conducted using a Geometrics MFAM magnetometer mounted on a DJI M600 Pro hexacopter drone. Results, conclusions and recommendations are provided on page 10 of this report.

Introduction

Mining claims 189751, 202446, 293602, 305658, 312455, and 344452 are located in Hislop township, Larder Lake Mining Division.

A general location and access map is presented as *Figure 1*.
A detailed claim location map is presented as *Figure 2*.

On February 1st, 2019 above claims were surveyed using a Geometrics MFAM magnetometer mounted on a DJI M600 drone. Zen Geomap of Timmins, Ontario, carried out the magnetic survey on a contract basis for the client. The survey was performed in order to evaluate the potential for gold bearing structures within the property.

Data processing and maps were completed between February 1 to February 12, 2019.
Assessment report was prepared between February 15 to April 16, 2019.

Location and Access

The mining claims are located approximately 14.5 kilometers southeast of Matheson, Ontario in Hislop Township, Larder Lake Mining Division. Access was gained from Timmins by travelling 80.5 kilometers east to Matheson on Hwy 101 and a further 12.2 kilometers south on Hwy 11 to Miller Road. Travelling north and then east along Miller Road 2.3 kilometers to arrive near the southern end of the 6 claim blocks.

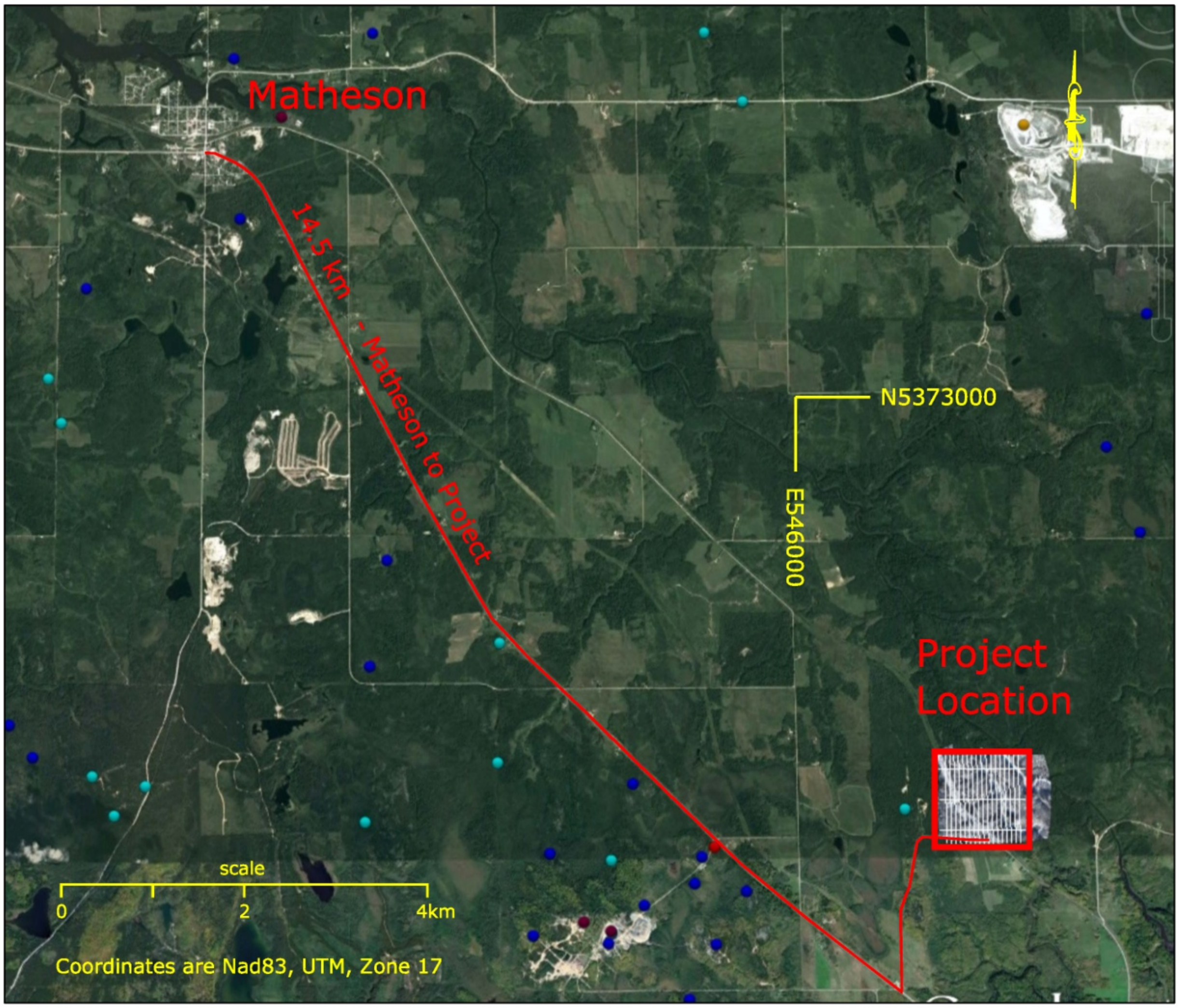


Figure 1 – Location and Access

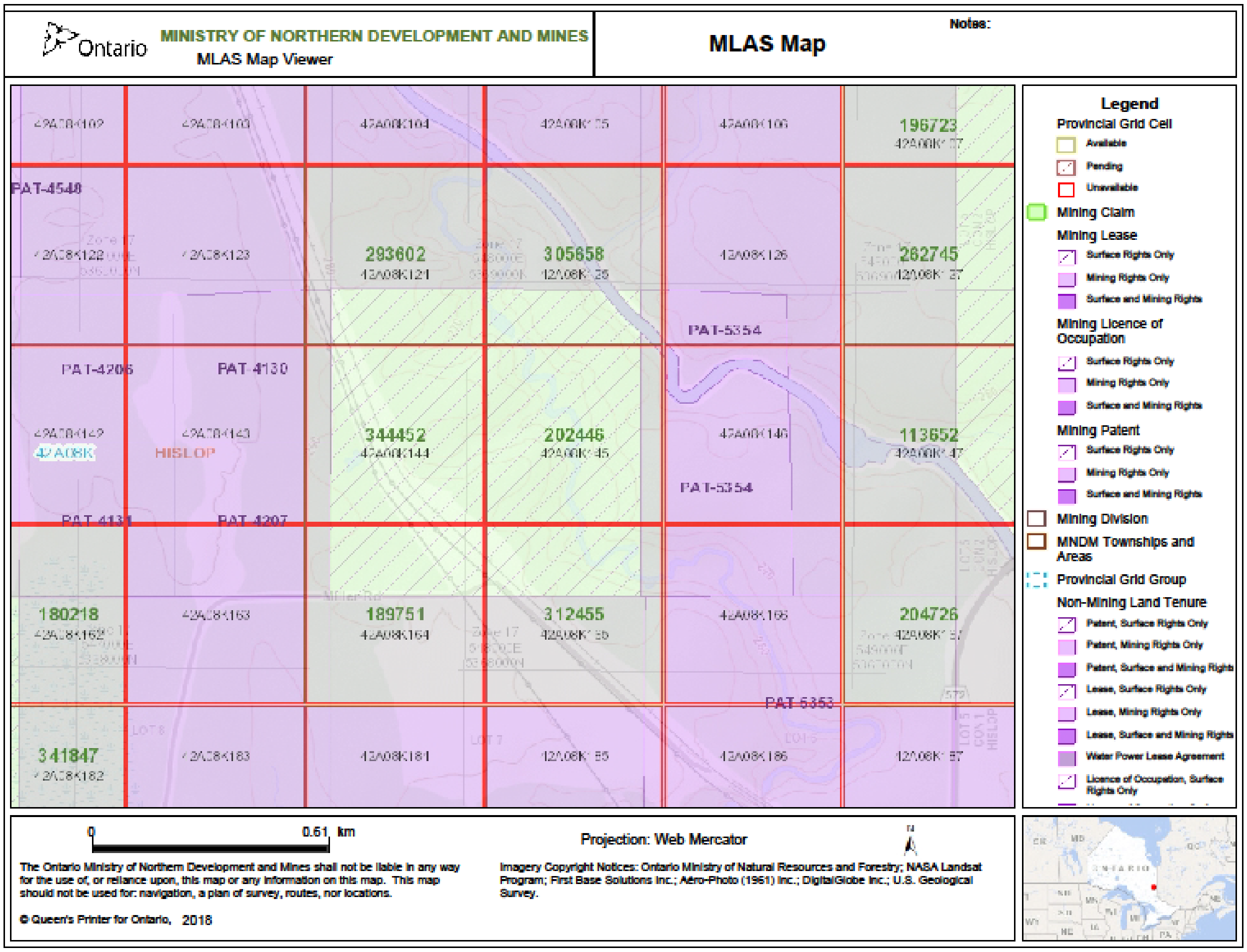


Figure 2 – Claim Map

Regional and Local Geology

Regional Geology

The regional geology of Hislop township has been compiled from sources L. S. Jensen 1985, Precambrian Geology of the Ramore Area; Lomas, S., Geology Report Glimmer Property, Hislop Township; K.A. Jensen, Geology Survey of the NW Hislop Claim Group and the authors knowledge of the area. Most of Hislop Township is underlain by a northwest trending, steeply dipping, south facing monoclinal succession of magnesium and iron-rich tholeiitic basalts, tholeiitic andesites, dacites and rhyolites of the Kinojevis Group. Hislop Township is underlain by rocks of the Kinojevis and Stoughton-Roquemaure Groups. These two groups are separated by the Destor-Porcupine Fault Zone (DPFZ) to the north of the property.

Local Geology

The local geology description has been restated in this report from the February 20, 2012 Assessment Report “A Report on Property Geology and Sampling, Prepared and Submitted for Assessment Hislop Claim #4249316” prepared by K.W. Timmins. Due to snow coverage at the time of the report and scope of work the author has been unable to perform a geological field visit of the property.

Interpretation is based on field work, mapping, references, and study and assaying of several outcrops. The first outcrops of mention are located near the northern boundary of the central area of the property on the west side of Wild Goose Creek appearing within the fault.

Three granitic outcrops appear to be present at this location and the most southerly outcrop of inferred granite appears to have overprinted a quartz-monzonite flow (or an alkalic flow breccia), with perhaps Temiskaming Conglomerate within the monzonite.

Immediately adjacent to the south of the above mentioned rocks, and dextrally located 20m to the north-east at the creek edge are rocks that exhibit a dark-green-brown mottled tone and are expected to grade as greenschist or a granite on sampling completion.

It is understood that the location of these rocks is concurrent with the mode of placement of rock strata within the country rock locally, as researched by K.W. Timmins.

Rocks adjacent within the creek previously observed are cited on Ontario Geological Survey Map P. 2860 Jensen (1985), where they are marked as type 6a and 6b, both as tholeiitic basalts, 6a described as fine grain lava and 6b described as pillowed lava.

A final outcrop in the southeast corner, on the south side of the Wild Goose Creek and abutting the property line, is found half-way up an eroded 20m clay bank and is dark-grey to black, is shown cited in Ontario Geological Survey Map P. 2860 Jensen (1985), marked as tholeiitic Basalt, type 6a described as fine grained lava.

At the northeast corner of the property within the triangular shape of the piece of land on the north side of the Black River a grey coloured outcrop exists on the north shore of the Black River and is cited in Ontario Geological Survey Map P. 2860 Jensen (1985), marked as tholeiitic basalt, type 5a fine grain lava.

Structure

The local structural description has been restated in this report from the February 20, 2012 Assessment Report "A Report on Property Geology and Sampling, Prepared and Submitted for Assessment Hislop Claim #4249316" prepared by K.W. Timmins. Due to snow coverage at the time of the report and scope of work the author has been unable to perform a geological field visit of the property.

The property has three known faults that pass through the Black River Fault at right angles to the northeast. They carry on from the Black River Fault through the property. The Black River Fault cuts the top northeast corner of the property striking northwest along the Black River, a stress fracture also exists, located at the north half of the east boundary of the property.

The "Southern Property Fault" exists at the southeast corner of the property sub-parallel with an approximate 50 meters straight stretch of the Wild Goose Creek, striking southeast.

The "Central Property Fault" is well exposed on it's southern limit, west of the Wild Goose Creek in the north-central area of the property and is striking southeast.

The "North Property Fault" passes through the northwest property corner only traversing the corner of the property striking in a southeast direction as well.

Type of Mineral Deposit

The client is exploring for gold bearing structures in a region known for past and existing gold deposits. Magnetometer is an effective tool for gold exploration.

Property History

The area of Hislop Township has been the subject of gold prospecting and discoveries since 1935. Cell claims 189751, 202446, 293602, 305658, 312455, and 344452 were converted to the Mine Lands Administration System on April 10th, 2018 from the legacy claim 4282102. The claim was staked by Kenneth Walter Timmins (Client #407626) on May 6, 2016.
The claims are held 100% by Kenneth Walter Timmins (Client #407626) and are currently valid until May 6, 2019.

Prospecting work consisting of mapping and outcrop sampling was conducted on the property. See assessment report from February 20, 2012 "A Report on Property Geology and Sampling, Prepared and Submitted for Assessment Hislop Claim #4249316 prepared by K.W. Timmins.

Summary of 2018 drone magnetic survey

The program consisted of a drone magnetic survey carried out on a grid with 17 north-south lines spaced at 50m and 3 east-west tie-lines spaced at 325m.

Total line kilometers: 18.9 (see *Figure 3* – Grid Map)

Altitude: 50m AGL

A Geometrics MFAM magnetometer mounted on a DJI M600 Pro hexacopter drone was used to survey all grid lines. A Geometrics G856AX proton procession magnetometer was operated as a base station throughout the survey to provide diurnal correction. Equipment specifications are provided in *Appendix I, II and III*.

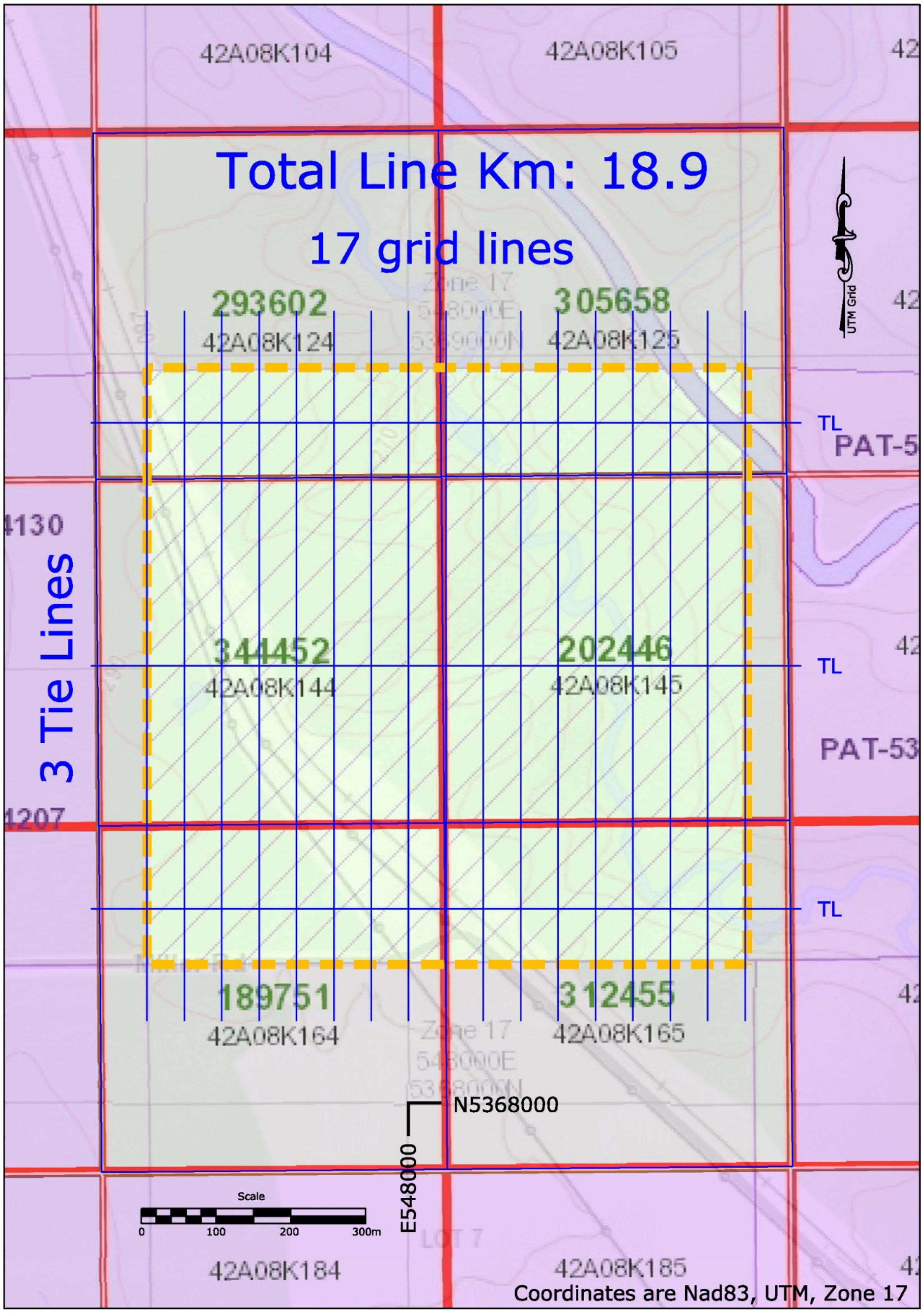


Figure 3 – Grid Map

Processing

Magnetometer data was collected on 2 Geometrics MFAM sensors operating at 1000hz. The data was processed through a custom program operating in Python. This converts raw data from Geometrics MFAM into a format compatible with Geosoft Oasis Montaj.

Customized import templates were used within Geosoft, to identify and separate mag readings into organized grid and tie lines. This step eliminates extraneous mag data collected as the drone travels to and from the grid. Grid and tie line data were corrected to remove heading error and lag. Corrected grid data was then leveled based on tie lines.

Discussion of Results

The magnetic survey presents a range of values of approx 800nT.

Higher magnetic values are present along the south limit and west central portion of grid. There is a magnetic-low feature in the east central portion of grid that continues on a S-W orientation for approx 700m.

The calculated 1st vertical derivative map indicates a relatively steep gradient between mag high and low features. This may indicate the interface between 2 or more rock types.

Possible faults have been interpreted, included as a 3rd map.

Conclusions and Recommendations

The magnetic survey helps to identify the location of contacts between different rock units along with possible faults, which could be useful for gold exploration.

As the client collected samples during the 2012 field season (where assay results were pending, upon completion of 2012 report), it is recommended that sample locations along with any significant Au values be plotted and overlaid onto the 1st vertical derivative map.

This would help to present any Au values on a new and detailed magnetic backdrop.
The goal would be to look for a relationship between Au values and any of the contacts or possible faults identified during the current survey.

The cost for this type of compilation would be $500 or less and could provide meaningful guidance for future sampling.

Certificate of Qualifications

I, Rochelle Collins, of the City of Timmins, Province of Ontario, do hereby certify that:

(1) I am a professional Geologist, residing at 287 Lois Crescent, Timmins Ontario, P4P 1G6.

(2) I hold a B.Sc. Honours degree in Geology and Geography (1997) from McMaster University of Hamilton, Ontario and an EMBA candidate of Queen's University of Kingston, Ontario (2020).

(3) I am a registered professional geoscientist with the Association of Professional Geoscientists of Ontario (#1412)

(4) This report is based on my observations and interpretation of the geophysical data on the Pipestone East and Prosser areas and preparation of maps and figures, in 2018.

(5) I have no personal interest in the property covered by this report.

(6) Permission is granted for the use of this report, in whole or in part, for assessment and qualification requirements but not for advertising purposes.

Rochelle Collins

Dated at Timmins, Ontario

Rochelle Collins, P. Geo., B.Sc.

This 16th day of April, 2019.

References

1. Timmins, Kenneth W., A Report on Property Geology and Sampling, Prepared and Submitted for Assessment Hislop Claim 4249316., February 20, 2012.

2. Jensen, L.S. 1985: Precambrian Geology of the Ramore Area, Northwestern part, District of Cochrane; Ontario Geological Survey, Map P. 2860, Geological Series – Preliminary Map. Scale 1:15840 or 1 inch to ¼ mile. Geology 1974

3. Lomas, S., Geology Report Glimmer Property, Hislop Township Hemlo-Glimmer Joint Venture Beatty – Hislop Townships Larder Lake Mining Division, Ontario MTS 42A/9, Noranda Exploration Company Limited., p 2., Regional Geology, October 1991

4. Jensen, K.A.. Geology Survey of the NW Hislop Claim Group in Hislop Township Larder Lake Mining Division, District of Cochrane, Ontario. p 2 Regional Geology. October 2001.

Appendix I

Geometrics MFAM Magnetometer Specifications

System Basics

- System utilizes 2 MFAM sensors
- Sensors are controlled by 1 sensor module
- Sensor module communicates with a Texas Instruments main board
- Sensitivity: 0.00003nT
- Sensors operate at 1000Hz (collect 1000 readings per second on both sensors)

Technical Specifications

SPECIFICATIONS:

Mechanical:
Enclosure Dimensions: 9" x 6 5/8" x 1 3/16"
Sensor Cable length (Development box to Sensor): 20.5 inches
Power:
AC adapter: 13.5 to 16 Volts DC at 1.0A
Battery Pack: 12 volt 1800 mA-Hour Lithium Polymer

FEATURES:

1) **TIVA TM4C1294NCPDT Micro controller:** This is a 32 bit ARM Cortex-MF4 based microcontroller running at up to 120 MHz. It has 1024K of flash, with 256K bytes of RAM, and 6 KBytes of EEPROM.

2) **USB 2.0 Micro Connector:** USB functionality is provided by the TIVA microcontroller and TIVAWare support libraries.

3) **Four User LEDs:** Four user controlled LEDs are wired to TIVA microcontroller GPIO pins PK0, PK1, PN0, and PN1.

4) **Two User Switches:** Two user read switches are wired to the microcontroller pins PK6 and PJ1.

5) **One Microcontroller Reset Switch:** This switch is used to reset the microcontroller.

6) **Wi-Fi port for TI CC3100 Wi-Fi Booster Pack:** The Development board layout allows a TI CC3100 Wi-Fi Booster pack to be directly plugged in. Using TIVAWare libraries, software can be developed to allow Wi-Fi communication between the Development board and a computer.

7) **USB XDS110 Port for Firmware Downloading and Debugging:** This second USB port is used as a debug/firmware download interface between the TI Code Composer Studio development suite and the Development Kit.

8) **Two RS-232 Serial Ports with RJ-45 Connectors:** Two general purpose serial ports are available to the user. The first serial port is wired to TIVA microcontroller UART4, and supports RTS and CTS handshaking. The second serial port is wired to TIVA microcontroller UART5. This port supports only TxD and RxD. Both of these ports use +/- 8 volt voltage swings, and support baud rates up to 920 KBaud. Note that these two ports are wired as Data Terminal Equipment (DTE) Thus to connect either of these two ports to a computer it would need to connect through a null modem. .

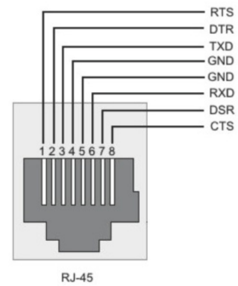


Figure 3: Serial Port Pinout

9) **On Board GPS Module:** An Adafruit GPS module is included with the Development Kit. It features 66 channels, -165 dBm sensitivity, and 3 Meter accuracy. An external GPS antenna is included so that signals can be received inside the box even with the cover in place. By default the GPS powers up to 9600 baud with several GPS sentences being output. The firmware that comes with the Development kit reconfigures the GPS to output only an RMC sentence at 115200 baud. This RMC string is sent with the output TCP data packet as described in the "Ethernet Data Format" section. The GPS is wired to UART7 on the TIVA microcontroller using 0-3.3 volt logic swings.

   The 1PPS pulse from this GPS goes to the MFAM development module and disciplines the cycle rate to exactly 1 kiloSamples per second.

10) **Micro SD Card Slot for Storing Data Locally:** A micro SD card slot is available for the user to read and write data using a SPI interface. It is connected to SPI port 1 of the TIVA microcontroller.

11) **10 MHZ Timing Reference Input Port:** This input port takes a 10 MHz reference signal from a GPS disciplined reference oscillator, buffers and squares it up, and sends it to the MFAM module. The purpose of this signal is to lock the MFAM clocking system to this reference signal so that the Larmor frequency can be measured to an absolute standard. At this time, the MFAM does not support this feature. This function will be implemented in the future.

12) **Ethernet port with Power over Ethernet Compatibility**: The Tiva microcontroller contains a fully integrated Ethernet MAC and PHY. In addition, the Ethernet port can power the Development Kit via Power over Ethernet (PoE) using an Ethernet power injector.

13) **1.8 Amp-Hour Battery pack:** Three on board lithium/polymer batteries can power the system for 2 hours. A switch on the Development board allows the battery to be turned on/off. In addition, if the battery voltage falls below 8 volts the MFAM module will automatically shut down while keeping the microcontroller alive.

14) **Integrated Battery Charging system:** A lithium/polymer battery charging system is on board. If the battery switch is turned on, and the AC power adapter is plugged in, the batteries will be charged.

15) **Four Differential Analog Input Channels:** There are four differential analog inputs available for use. Channels 0 and 1 are +/- 2.5 volts full scale, while channels 2 and 3 are 0 to +5 volts full scale. In the firmware supplied with the Development kit (which sends MFAM/GPS data to the MFAMConsole program on the computer), all four channels are sampled synchronously with the MFAM data input to the Tiva are included in the data stream.

16) **On board Power/Status LEDs:** Several Status and Power LEDs are arranged along the front edge of the board. They include the four user LEDs, Power status LEDs (which power source is powering the board, and whether the battery is charging or the voltage low). They are listed in the Front and Back Panel Connection and Indicator section below.

Appendix II

Geometrics G856AX
Proton procession magnetometer specifications

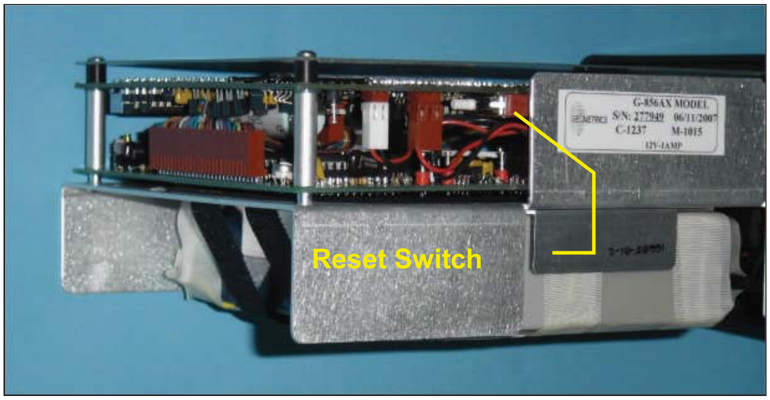


Figure 23. Internal reset switch.

Specifications

- Displays - Six digit display of magnetic field to resolution of 0.1 gamma or time to nearest second. Additional three-digit display of station, day of year, and line number.

- Resolution - Typically 0.1 gamma in average conditions. May degrade to lower resolution in weak fields, noisy conditions or high gradients.

- Absolute accuracy - One gamma, limited by remnant magnetism in sensor and crystal oscillator accuracy.

- Clock - Julian clock with stability of 5 seconds per month at room temperature and 5 seconds per day over the temperature range of -20 to +50 degrees Celsius.

- Tuning - Push button tuning from keyboard with current value displayed on request. Tuning range 20 to 90 μT.

- Gradient - Tolerates gradients to 1800 gammas/meter. When high Tolerance gradients truncate count interval, maintains partial reading to an accuracy consistent with data.

- Cycle Time - Complete field measurement in three seconds in normal operation. Internal switch selection for faster cycle (1.5 seconds) at reduced resolution or longer cycles for increased resolution.

- Manual Read - Takes reading on command. Will store data in memory on command.

- Memory - Stores more than 5700 readings in survey mode, keeping track of time, station number, line number day and magnetic field reading. In base station operation, computes for retrieval but does not store time of recording designated by sample interval, allowing storage of up to 12,000 readings.

- Output - Plays data out in standard RS-232 format at selectable baud rates. Also outputs data in real time byte parallel, character serial BCD for use with digital recorders.

- Inputs - Will accept an external sample command.

- Special - An internal switch allows:
  - adjustment of Functions polarization time and count time to improve performance in marginal areas or to improve resolution or speed operation
  - three count averaging
  - choice of lighted displays in auto mode.

- Physical -
  - Instrument console: 7 x 10 ½ x 3 ½ inches (18 x 27 x 9 cm), 6 LB (2.7 kg)
  - Sensor: 3 1/2 x 5 inches (9 x 13 cm), 4 LB (1.8 kg)
  - Staff: 1 inch x 8 feet (3cm x 2.5m), 2 LB (1kg)

- Environmental: Meets specifications from 1 to 40°C. Operates satisfactorily from -20 to 50°C.

- Power - Depending on version, operates from internal rechargeable Gel-cells or 9 D-cell flashlight batteries . May be operated from external power ranging from 12 to 18 volts external power. Power failure or replacement of batteries will not cause loss of data stored in memory.

- Standard system (P/N 16600-02) components:
  - Sensor (P/N 16076-01) and sensor cable (P/N 16134-01)
  - Console (P/N 16601-01)
  - Staff, one top section (P/N 16535-01), two middle sections (P/N 16536-01) and 1 bottom section (P/N 16537-01)
  - Carry harness (P/N 16002-02)
  - Two sets of rechargeable batteries (P/N 16697-01) and battery charger (P/N 16699-01)
  - Carrying case (P/N 16003-01)
  - Download cable (P/N 16492-01)
  - Hardcopy operation manual (P/N 18101-02)
  - Magnetometer CD (P/N 26648-01)

- Optional accessories:
  - Tripod kit for base-station operation (P/N 16708-02)
  - Gradiometer kit (P/N 166651-01)
  - Gradiometer carry/storage case (16003-01)

Appendix III - DJI Matrice 600 Pro Specifications

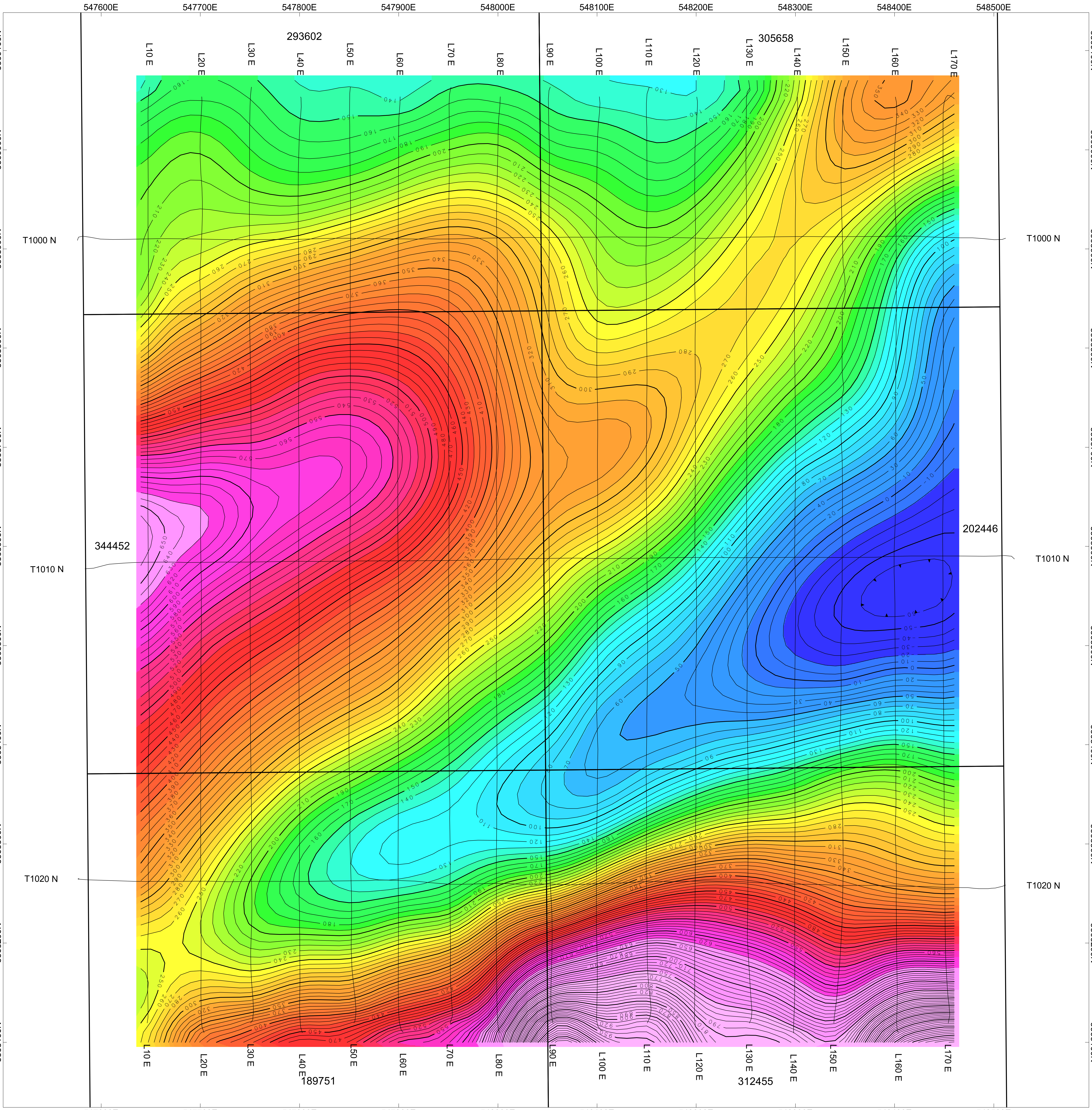
Specifications

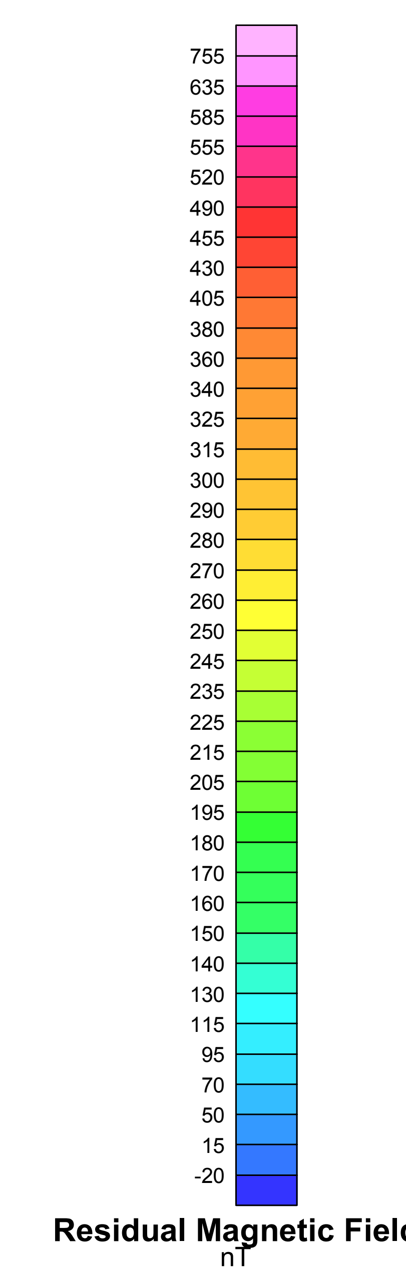
• Aircraft	
Diagonal Wheelbase	1133 mm
Dimensions	1668 mm × 1518 mm × 727 mm with propellers, frame arms and GPS mount unfolded (including landing gear) 437 mm × 402 mm × 553 mm with propellers, frame arms and GPS mount folded (excluding landing gear)
Weight (with six TB47S batteries)	9.5 kg
Weight (with six TB48S batteries)	10 kg
Max Takeoff Weight Recommended	15.5 kg
Hovering Accuracy (P-GPS)	Vertical: ±0.5 m, Horizontal: ±1.5 m
Max Angular Velocity	Pitch: 300°/s, Yaw: 150°/s
Max Pitch Angle	25°
Max Wind Resistance	8 m/s
Max Ascent Speed	5 m/s
Max Descent Speed	3 m/s
Max Speed	40 mph / 65 kph (no wind)
Max Service Ceiling Above Sea Level	2170 propellers: 2500 m, 2195 propellers: 4500 m
Hovering Time* (with six TB47S batteries)	No payload: 32 min, 6 kg payload: 16 min
Hovering Time* (with six TB48S batteries)	No payload: 38 min, 5.5 kg payload: 18 min
Flight Control System	A3 Pro
Supported DJI Gimbals	Ronin-MX; ZENMUSE™ Z30, Zenmuse X5/X5R, Zenmuse X3, Zenmuse XT, Zenmuse Z15 Series HD Gimbal: Z15-A7, Z15-BMPCC, Z15-5D III, Z15-GH4
Retractable Landing Gear	Standard
Operating Temperature	14° to 104° F (-10° to 40° C)
• Remote Controller	
Operating Frequency	920.6 MHz to 928 MHz (Japan); 5.725 GHz to 5.825 GHz, 2.400 GHz to 2.483 GHz
Max Transmission Distance	FCC Compliant: 3.1 mi (5 km), CE Compliant: 2.2 mi (3.5 km) (Unobstructed, free of interference)
Transmitter Power (EIRP)	10 dBm @ 900M, 13 dBm @ 5.8G, 20 dBm @ 2.4G
Video Output Port	HDMI, SDI, USB
Operating Temperature	14° to 104° F (-10° to 40° C)
Battery	6000 mAh LiPo 2S
• Charger (Model: MC6S600)	
Voltage Output	26.1 V
Rated Power	600 W
Single Battery Port Output Power	100 W
• Standard Battery (Model: TB47S)	
Capacity	4500 mAh
Voltage	22.2 V
Battery Type	LiPo 6S
Energy	99.9 Wh
Net Weight	595 g
Operating Temperature	14° to 104° F (-10° to 40° C)
Max Charging Power	180 W
• Optional Battery (Model: TB48S)	
Capacity	5700 mAh
Voltage	22.8 V
Battery Type	LiPo 6S
Energy	129.96 Wh
Net Weight	680 g
Operating Temperature	14° to 104° F (-10° to 40° C)
Max Charging Power	180 W

* Hovering time is based on flying at 10 meters above sea level in a no-wind environment and landing with a 10% battery level.

Download the detailed user manual at:
www.dji.com/matrice600-pro

※ This content is subject to change without prior notice.





Scale 1:2500

50 0 50 100 150

metres

NAD83 / UTM zone 17N

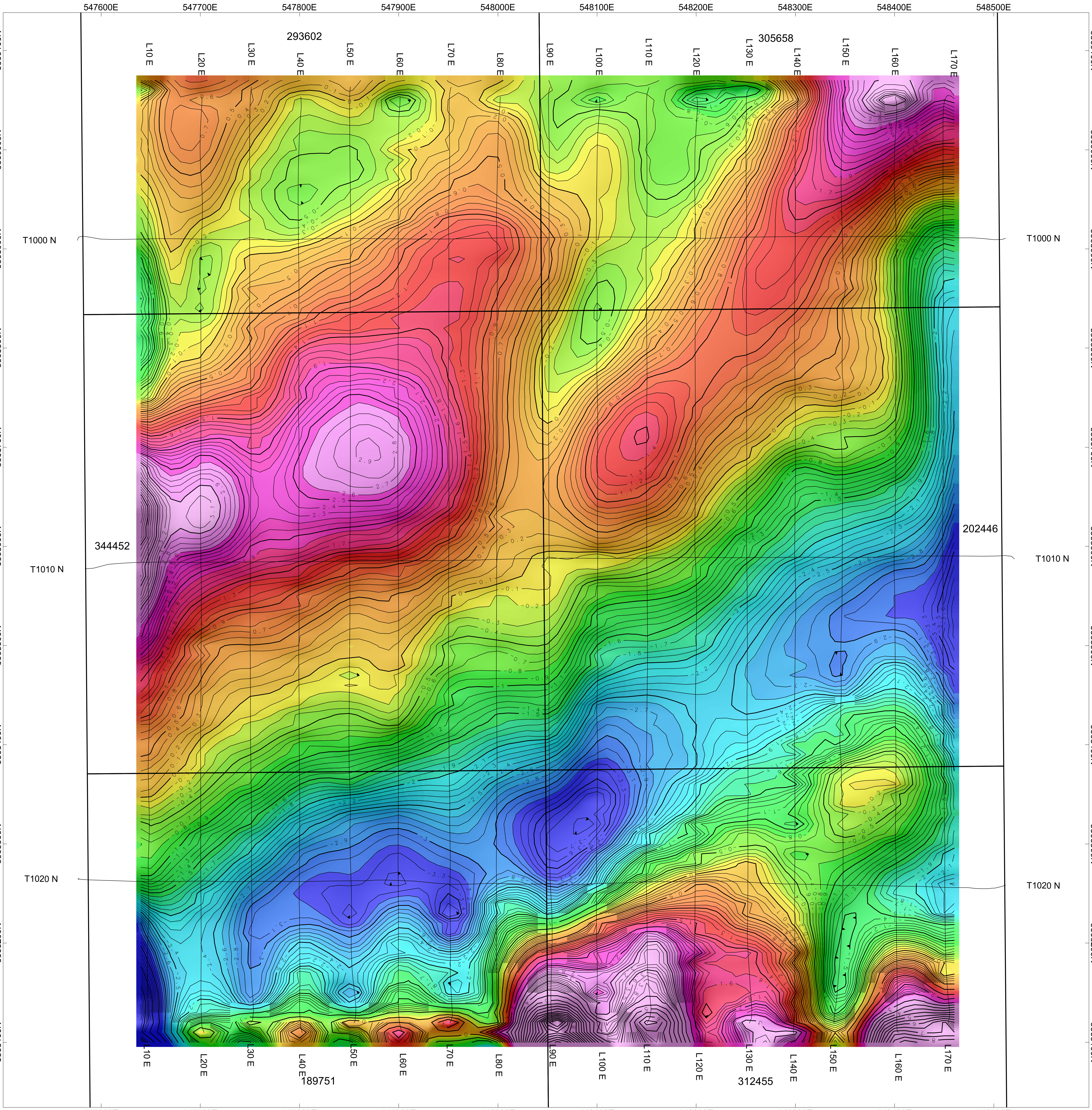
LINE KILOMETRES SURVEYED: 18.9

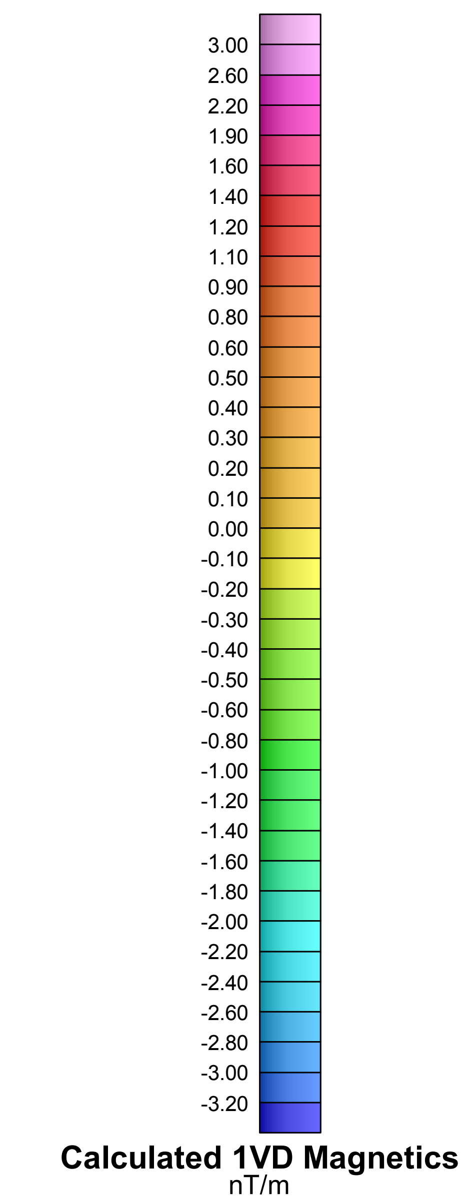
KENNETH TIMMINS

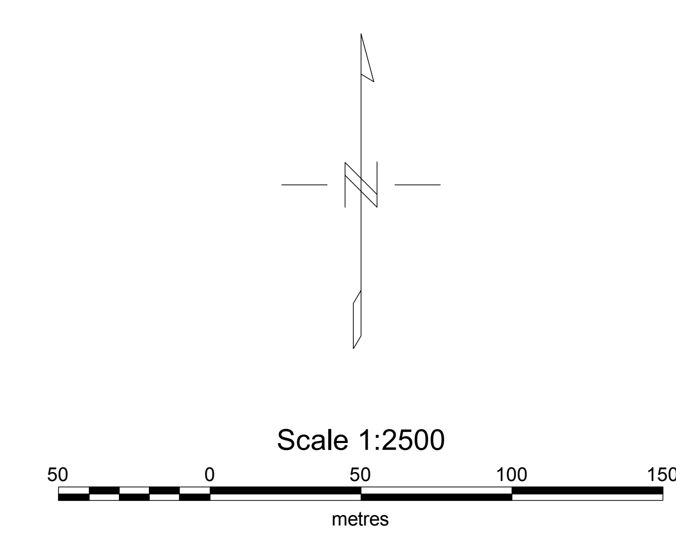
HISLOP PROPERTY
DRONE SURVEY - MAGNETIC CONTOURS
FEBRURARY 1, 2019

HISLOP TOWNSHIP - LARDER LAKE MINING DIVISION
CLAIMS: POSTED ON MAP
CONTOUR INTERVAL = 10, 50 nT
INSTRUMENT: GEMETRICS MFAM MAGNETIC SENSOR - M600 PRO DRONE

SURVEYED BY: ZEN GEOMAP INC.







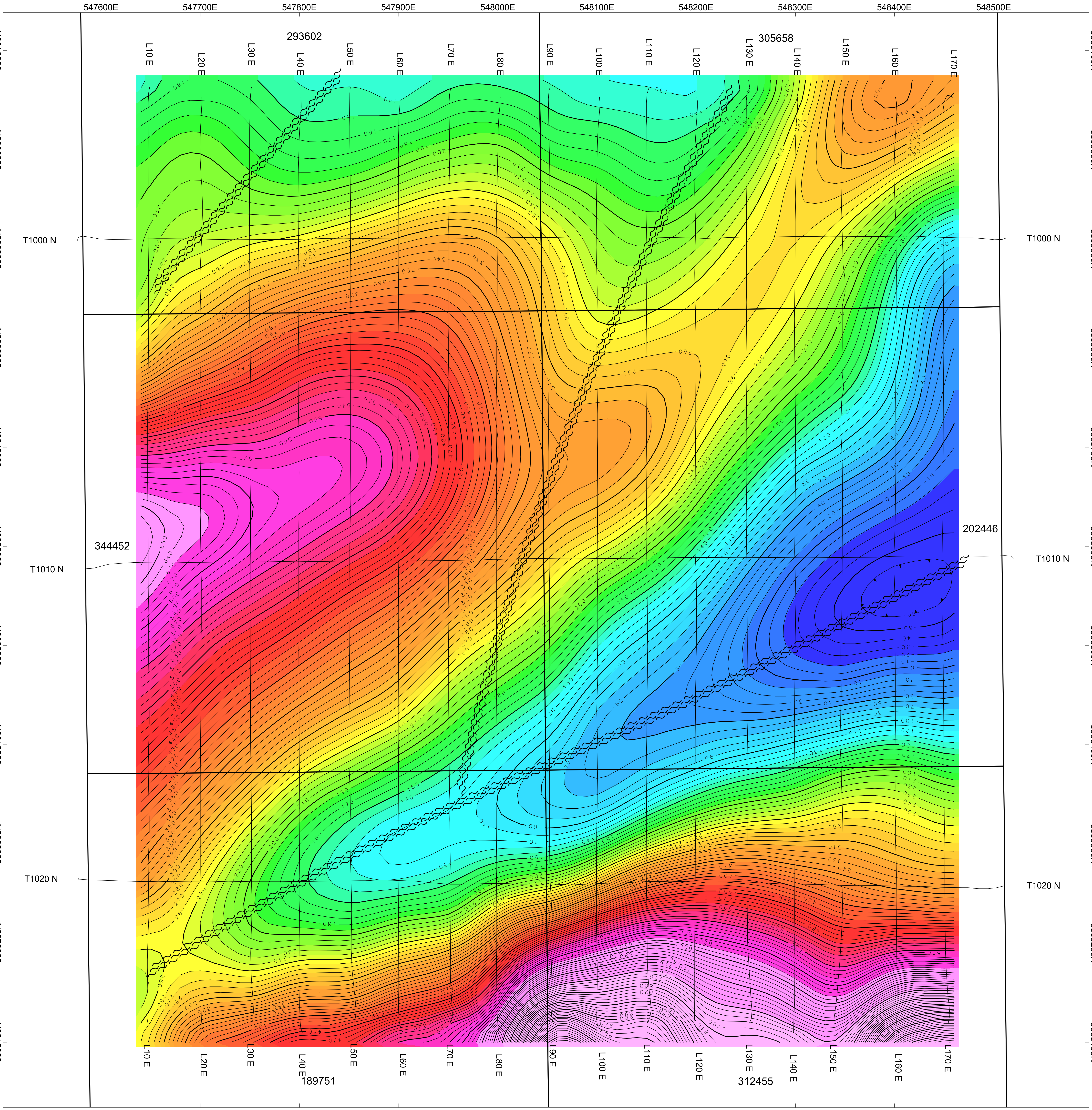
LINE KILOMETRES SURVEYED: 18.9

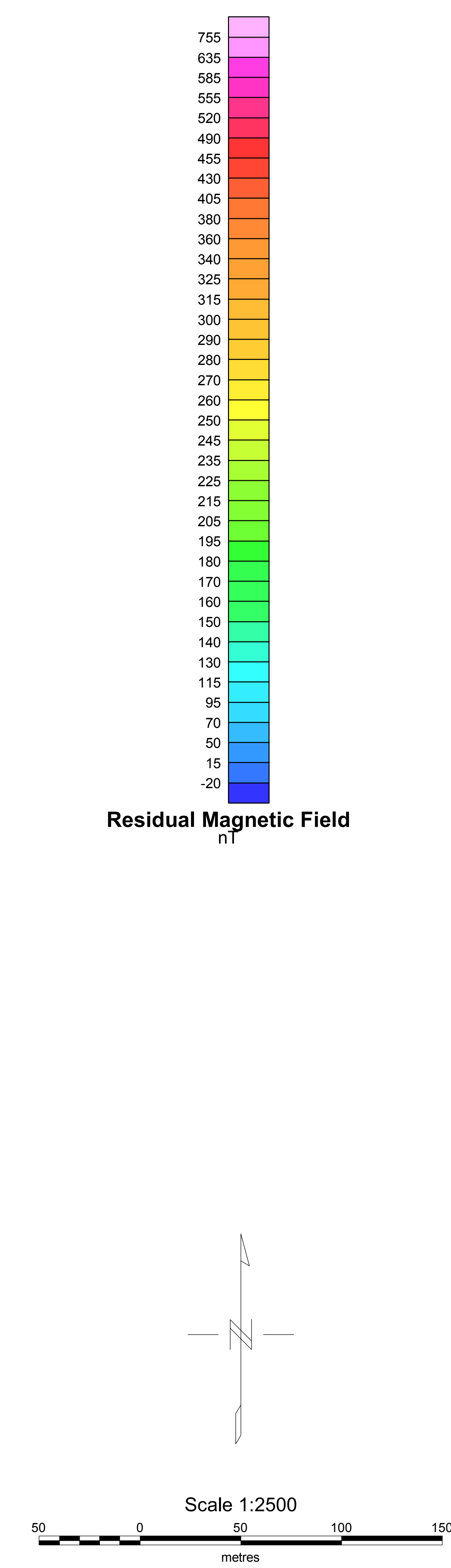
KENNETH TIMMINS

HISLOP PROPERTY
DRONE SURVEY - CALCULATED 1VD MAGNETICS
FEBRURARY 1, 2019

HISLOP TOWNSHIP - LARDER LAKE MINING DIVISION
CLAIMS: POSTED ON MAP
CONTOUR INTERVAL = 0.1, 0.5 nT/m
INSTRUMENT: GEMETRICS MFAM MAGNETIC SENSOR - M600 PRO DRONE

SURVEYED BY: ZEN GEOMAP INC.





LINE KILOMETRES SURVEYED: 18.9

KENNETH TIMMINS

HISLOP PROPERTY
DRONE SURVEY - MAGNETIC CONTOURS
FEBRURARY 1, 2019

HISLOP TOWNSHIP - LARDER LAKE MINING DIVISION
CLAIMS: POSTED ON MAP
CONTOUR INTERVAL = 10, 50 nT
INSTRUMENT: GEMETRICS MFAM MAGNETIC SENSOR - M600 PRO DRONE

SURVEYED BY: ZEN GEOMAP INC.