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**Report on a drone magnetic survey  
over the Timmins Glencore Claims Project.  
Prosser and Wark Townships  
NTS 42A/11  
Ontario, Canada**

**Submitted to**

**GLENCORE CANADA CORPORATION  
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**MAY 2023**



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### Deliverables

- Survey report (PDF format)
- Total magnetic Intensity (TMI) map (PDF format)
- First Vertical Derivative (1VD) map (PDF format)
- Second Vertical Derivative (2VD) map (PDF format)
- Tilt derivative (TiltD) map (PDF format)
- GIS Files (SHP and Geotif)
- Grid files (Geosoft. grd format)
- Database (Geosoft GDB format and ASCII format)

## 1. INTRODUCTION

At the request of Glencore Canada Corporation., a high-resolution drone magnetic survey was carried out by Vision4K on the 8<sup>th</sup> and the 21<sup>st</sup> of February 2023 over the Timmins Glencore Claims project in Ontario province. This report summarizes the field operations and the results.

## 2. SURVEY AREA

The survey area was located in Northeastern Ontario (Prosser and Wark Townships) at approximately 25 km north from the city of Timmins (figure 1).

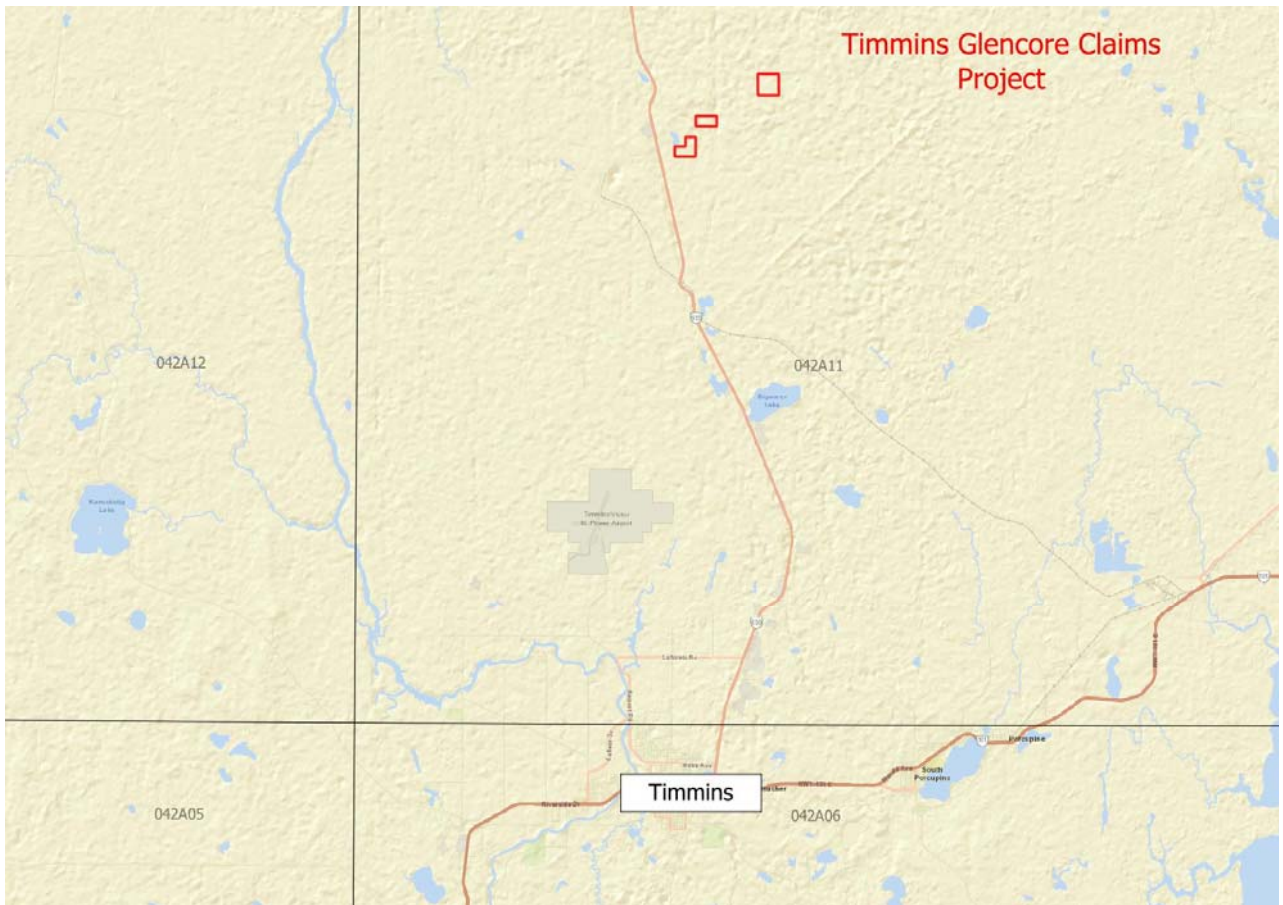


Figure 1 (project location)

The drone magnetic survey covered 19 claims (Table 1). Figure 2 shows the flight lines distribution over the mining title.

Claims	Claims	Claims	Claims	Claims	Claims	Claims
137886	150897	204422	240361	290774	313150	314433
147230	162702	210577	248417	305851	313151	333018
150896	167971	236091	261398	309273		

Table 1

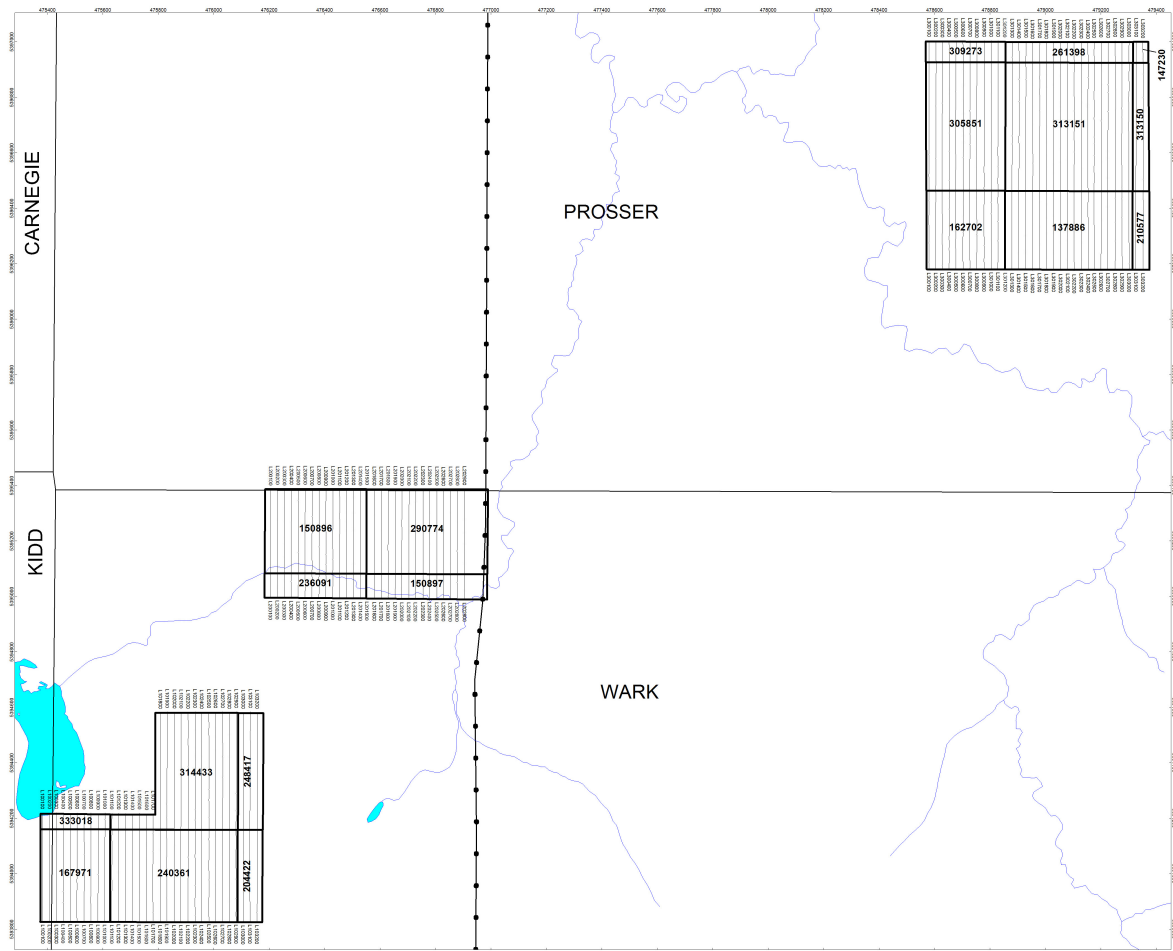


Figure 2 (mining titles and flight lines)

### 3. HISTORY OF THE PROPERTY

#### 3.1 OWNERSHIP

Glencore Canada Corporation is 100% owner of the claims referred to in this report where the work was performed. The claims were originally staked in the name of Falconbridge Limited. On Dec 4, 2007, change of name from Falconbridge Limited to Xstrata Canada Corporation was registered with the Ministry of Mines (MNDM). Subsequently there was a change of name from Xstrata Canada Corporation to Glencore Canada Corporation registered with the Ministry of Mines (MNDM) August 7, 2013, which reflects the current ownership of the properties.

#### 3.2 WORK HISTORY

In 1957, several anomalies were identified from airborne magnetic and electromagnetic surveys over the region. Few years later in 1963, the Texas Gulf Sulphur Company made the discovery of Kidd Creek world-class deposit which triggered a major staking rush in the area when announced in 1964 (Gillis, 2020). According to the Ontario Geological Survey (OGS), multiple companies proceeded with exploration work on the claims covered by this report. The Table 2 summarizes the work history based on Ontario Geological Survey (OGS) database.

YEAR	TOWNSHIP	PERFORMED FOR	WORK DESCRIPTION	URL LINKS
1964	Wark	PCE Exploration Ltd	Diamond Drilling	<a href="https://www.geologyontario.mines.gov.on.ca/persistent-linking?assessment=42A11NW0537">https://www.geologyontario.mines.gov.on.ca/persistent-linking?assessment=42A11NW0537</a>
1964	Prosser	Conwest Exploration Company Ltd	Airborne Electromagnetic	<a href="https://www.geologyontario.mines.gov.on.ca/persistent-linking?assessment=42A11NW0029">https://www.geologyontario.mines.gov.on.ca/persistent-linking?assessment=42A11NW0029</a>
1965	Prosser	Intl Nickel Co of Can Ltd	Diamond Drilling	<a href="https://www.geologyontario.mines.gov.on.ca/persistent-linking?assessment=42A14SE0201">https://www.geologyontario.mines.gov.on.ca/persistent-linking?assessment=42A14SE0201</a>
1966 - 1973	Lennox	Abitibi Mining Corp, Canico, Cromarty Expl Co Ltd, McIntyre Porcupine Mines	Airborne Electromagnetic, Airborne Magnetometer, Assaying and Analyses, Geochemical, Miscellaneous Compilation and Interpretation, Other	<a href="https://www.geologyontario.mines.gov.on.ca/persistent-linking?assessment=42A14SE0106">https://www.geologyontario.mines.gov.on.ca/persistent-linking?assessment=42A14SE0106</a>
1970	Wark	McIntyre Porcupine Mines	Compilation and Interpretation - Geology, Compilation and Interpretation - Ground Geophysics	<a href="https://www.geologyontario.mines.gov.on.ca/persistent-linking?assessment=42A14SE8398">https://www.geologyontario.mines.gov.on.ca/persistent-linking?assessment=42A14SE8398</a>
1994	Wark	Asarco Exploration Co of Canada Ltd	Electromagnetic, Magnetic / Magnetometer Survey, Open Cutting	<a href="https://www.geologyontario.mines.gov.on.ca/persistent-linking?assessment=42A11NW0005">https://www.geologyontario.mines.gov.on.ca/persistent-linking?assessment=42A11NW0005</a>
1995	Wark	Falconbridge Ltd	Electromagnetic, Magnetic / Magnetometer Survey, Open Cutting	<a href="https://www.geologyontario.mines.gov.on.ca/persistent-linking?assessment=42A11NW0057">https://www.geologyontario.mines.gov.on.ca/persistent-linking?assessment=42A11NW0057</a>
1995	Prosser	Eastmain Resources Inc	Induced Polarization, Open Cutting	<a href="https://www.geologyontario.mines.gov.on.ca/persistent-linking?assessment=42A11NW0071">https://www.geologyontario.mines.gov.on.ca/persistent-linking?assessment=42A11NW0071</a>
1995	Wark	Falconbridge Ltd	Geological Survey / Mapping	<a href="https://www.geologyontario.mines.gov.on.ca/persistent-linking?assessment=42A11NW0038">https://www.geologyontario.mines.gov.on.ca/persistent-linking?assessment=42A11NW0038</a>
1996	Wark	E Ludwig	Electromagnetic, Magnetic / Magnetometer Survey, Open Cutting	<a href="https://www.geologyontario.mines.gov.on.ca/persistent-linking?assessment=42A11NW0058">https://www.geologyontario.mines.gov.on.ca/persistent-linking?assessment=42A11NW0058</a>
1996	Wark	Falconbridge Ltd	Assaying and Analyses, Diamond Drilling	<a href="https://www.geologyontario.mines.gov.on.ca/persistent-linking?assessment=42A11NW0073">https://www.geologyontario.mines.gov.on.ca/persistent-linking?assessment=42A11NW0073</a>
1998	Wark	David Meunier	Overburden Stripping	<a href="https://www.geologyontario.mines.gov.on.ca/persistent-linking?assessment=42A11NW2005">https://www.geologyontario.mines.gov.on.ca/persistent-linking?assessment=42A11NW2005</a>
1999	Wark	Falconbridge Ltd	Assaying and Analyses, Diamond Drilling	<a href="https://www.geologyontario.mines.gov.on.ca/persistent-linking?assessment=42A11NW2017">https://www.geologyontario.mines.gov.on.ca/persistent-linking?assessment=42A11NW2017</a>
2002	Prosser	Falconbridge Ltd	Diamond Drilling	<a href="https://www.geologyontario.mines.gov.on.ca/persistent-linking?assessment=42A11NW2022">https://www.geologyontario.mines.gov.on.ca/persistent-linking?assessment=42A11NW2022</a>
2005 - 2009	Prosser	Xstrata Canada Corp	Diamond Drilling, Downhole Geophysics	<a href="https://www.geologyontario.mines.gov.on.ca/persistent-linking?assessment=20000005922">https://www.geologyontario.mines.gov.on.ca/persistent-linking?assessment=20000005922</a>
2011 - 2012	Prosser	Transition Metals Corp	Geochemical	<a href="https://www.geologyontario.mines.gov.on.ca/persistent-linking?assessment=20000007084">https://www.geologyontario.mines.gov.on.ca/persistent-linking?assessment=20000007084</a>
2012 - 2013	Prosser	Transition Metals Corp	Assaying and Analyses, Geochemical	<a href="https://www.geologyontario.mines.gov.on.ca/persistent-linking?assessment=20000008673">https://www.geologyontario.mines.gov.on.ca/persistent-linking?assessment=20000008673</a>
2016	Wark	Explor Resources Inc	Electromagnetic Very Low Frequency, Linecutting, Magnetic / Magnetometer Survey	<a href="https://www.geologyontario.mines.gov.on.ca/persistent-linking?assessment=20000014100">https://www.geologyontario.mines.gov.on.ca/persistent-linking?assessment=20000014100</a>
2022	Wark	Noble Mineral Exploration Inc	Compilation and Interpretation - Ground Geophysics, Electromagnetic Very Low Frequency, Magnetic / Magnetometer Survey	<a href="https://www.geologyontario.mines.gov.on.ca/persistent-linking?assessment=20000020534">https://www.geologyontario.mines.gov.on.ca/persistent-linking?assessment=20000020534</a>

Table 2  
5

## 4. GEOLOGICAL SETTING

### 4.1. REGIONAL GEOLOGY

The area covered in the current report is part of the Kidd-Munro assemblage which is part of the Archean Western Abitibi Sub-Province. The age of the volcanic rocks in this assemblage mostly ranges from 2717 Ma to 2710 Ma (Ayer, et al., 2002) and include mostly mafic and ultramafic rocks locally punctuated by silica-rich rhyolite centres (Hannington, Barrie, & Bleeker, 1999; Ayer, et al., 2005; Berger, et al., 2011).

The Kidd-Munro assemblage is host of the giant Kidd Creek volcanic massive sulphide. It is bordered in the south by the Porcupine Group, a regionally extensive belt of metagraywackes and turbidites (Hannington, Barrie, & Bleeker, 1999). Late Archean tonalite-trondhjemite-granodiorite plutons can also be found in the region (Gemmell, 2013). During the Kenoran Orogeny at 2700 Ma, a regional north/south compression generated east/west trending folds while verticalizing the units (Bleeker, 1999). Graphitic and argillitic sediments are also commonly found as narrow and extensive stratigraphic units in the area (Xstrata Copper, 2009).

### 4.2 LOCAL GEOLOGY

Locally, outcrop exposures are rare. The most recent geology interpretation was done by F. Santaguida (Falconbridge) in 2006. It was based on the drill core, bedrock chips, overburden samples and geophysics.

In general, the stratigraphy of the property strikes westerly, dips approximately 70° to 80° north and is offset by several north trending, possibly syn-volcanic faults. Geology of the property consists of a thick sequence of predominately massive to pillowed mafic volcanic rocks with lesser pillow breccias and in situ brecciated flows. The Ontario Geological Survey map also suggest possible presence of felsic rocks as well as clastic metasediment (Figure 3).

### 4.3 MINERAL DEPOSIT TYPE BEING EXPLORED

The goal of the exploration work was to identify a Volcanic Massive Sulphide (VMS) deposit of sufficient size and grade to be mined economically. Such deposit would, most of the time, generate a punctual magnetic anomaly.

Based on the Ontario Geological Survey (OGS), three mineral occurrences have been recorded in the area. One mineral occurrence known as W61-03 is within the area covered by the survey while the two others named DDH 8495 and Hollinger-CAF-1-71 are also located nearby west of the area surveyed.

Name	Commodity	Longitude	Latitude	Detail
<b>DDH 8495</b>	Zn, Cu, Ni	-81.349994	48.699666	<a href="https://www.geologyontario.mines.gov.on.ca/persistent-linking?mineral-inventory=MDI00000001798">https://www.geologyontario.mines.gov.on.ca/persistent-linking?mineral-inventory=MDI00000001798</a>
<b>W61-03</b>	Zn	-81.321629	48.710375	<a href="https://www.geologyontario.mines.gov.on.ca/persistent-linking?mineral-inventory=MDI42A11NW00029">https://www.geologyontario.mines.gov.on.ca/persistent-linking?mineral-inventory=MDI42A11NW00029</a>
<b>Hollinger CAF-1-71</b>	Cu, Ni, Zn	-81.348708	48.720354	<a href="https://www.geologyontario.mines.gov.on.ca/persistent-linking?mineral-inventory=MDI42A11NW00030">https://www.geologyontario.mines.gov.on.ca/persistent-linking?mineral-inventory=MDI42A11NW00030</a>

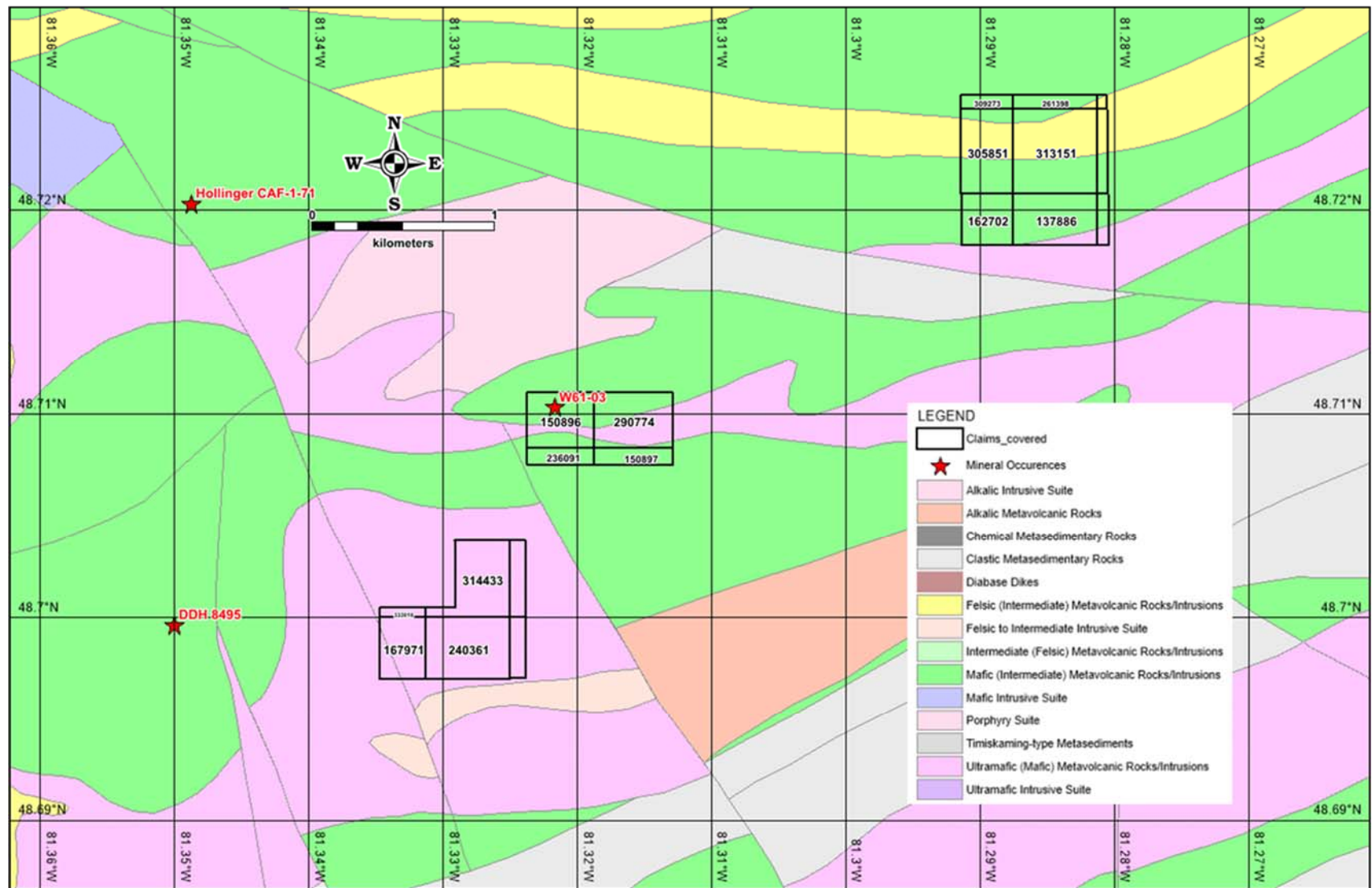


Figure 3



## 5. DATA ACQUISITION

### 5.1 EQUIPMENT

#### 5.11 DRONE

The drone used for this survey is a DJI Matrice 600 model. This drone is a multi-rotor (six motors) with a weight of 9.1 kg (including batteries). The drone navigates using two ZED-F9P dual frequency GPS receivers that communicate together via a 900 Mhz telemetry link. One GPS (base) is stationary at the staging site and the other is located on the aircraft (rover). The base GPS station sends position corrections over the radio link to the rover in order to compensate for external errors, mostly caused by atmospheric conditions, that normally dilute the precision of a single receiver to multiple metres. This method, called RTK or Real-Time Kinematics, allows the system to maintain centimetre-level accuracy in the horizontal and vertical axis, the later of which is particularly important regarding magnetic surveys. After the survey, data is reprocessed using Post-Processed Kinematics (PPK) to validate the accuracy of the real-time solution. Also, a video image of a camera pointed towards the front.

An independent control computer allows system navigation and precise control of flight altitude. The pilot can take control of the drone at any time. If a software flaw is detected, the drone returns to its take-off point autonomously.

The survey was carried out in accordance with Transport Canada regulations. The drone was correctly registered with Transport Canada, and Vision4K's operators held pilot certificates. Survey operations meet Transport Canada's Visual-line-of-sight requirements.

#### 5.12 MAGNETOMETER

The magnetometer used for the survey was a Scintrex CS-VL cesium vapour device. This magnetometer is powered by an independent battery. The CS-VL has a measurement range between 15,000 nT and 105,000 nT with a sensitivity of  $0.0006\text{nT}/\sqrt{\text{Hz}}$ .

The magnetometer is installed in a custom-built plastic bird shell (Figure 4), allowing a controlled orientation of the magnetometer during flights. The bird shell is towed at five (5) metres below the drone. The height of the sensor is variable for each survey according to the client's request and security requirements.



Figure 4

### **5.13 ACQUISITION SYSTEM AND AIM LOW™ TECHNOLOGY**

The acquisition system was built by Devbriio Geophysics, partner with Vision4K. The system is linked with the magnetometer to obtain measurements using counting circuit at a frequency of 10 Hz. The navigation software used a GPS system installed on the drone.

The system is also equipped with an active real-time altitude control and collision avoidance called AIM LOW™ and developed by Devbriio Geophysics. The AIM LOW™ allows data acquisition as close as 3m from the treetops, much lower than any competing technology in similar conditions.

### **5.2 FLIGHT SPECIFICATIONS**

The magnetic survey over the Timmins Glencore Claims project for Glencore Canada Corporation., was flown over three blocks along 25m spaced lines oriented N360° UTM for a total of 55.7 line kilometres. The full survey was flown to a mean altitude of 27m above the ground. No tie-lines were needed for the grids.

### **5.3 SURVEY OPERATIONS**

February 8<sup>th</sup> and the 21<sup>st</sup>, 2023.

## **6. DATA PROCESSING**

Preliminary data processing was carried out by Devbriio Geophysics, using proprietary software. Final data processing was carried out by Marc Boivin, P.Geo. using Geosoft OASIS Montaj.

The flight path, recorded by the acquisition program as WGS 84 latitude/longitude, was converted into the WGS84 Datum, UTM Zone 18N.

#### **Diurnal corrections**

The diurnal magnetic corrections were completed using a base station magnetometer located near the survey site and outside of a strong magnetic gradient.

#### **Lag correction**

A lag between the position of the magnetometer (in the bird) and the drone (where the GPS is located) generates a systematic location error on the magnetic data. A correction for this lag was applied to the data.

Heading errors generated by movements of the magnetometer during flights were filtered.

#### **Levelling**

Considering the very small variation in the altitude above the ground of the drone system over the entire survey, no tie lines were required for micro-levelling and no levelling correction was applied to the TMI data.

### **First and second vertical derivatives (1VD, 2VD).**

The first vertical derivative (1VD) and the second vertical derivative (2VD) were calculated using a 1D Fourier transform of the TMI along the measured data. The equations for these two derivatives are:

$$1VD = \frac{dT}{dZ} \qquad 2VD = \frac{d^2T}{dZ^2}$$

### **Magnetic Total Gradient or Analytic Signal (ASIG)**

The magnetic analytic signal (ASIG), also known as the Total Gradient, is calculated by taking the square root of the sum of the squares of each of the 3 axis derivatives. The equation for the analytic signal is:

$$ASIG = \sqrt{\left[ \left( \frac{dT}{dx} \right)^2 + \left( \frac{dT}{dy} \right)^2 + \left( \frac{dT}{dz} \right)^2 \right]}$$

where  $dT/dx$  is the calculated in-line gradient,  $dT/dy$  is the measured cross line gradient and  $dT/dz$  is the measured vertical gradient of the total magnetic field.

In general, the analytic signal is a gradient product that ignores the effects of target orientation. This turns all responses, regardless of how they interact with the earth's magnetic field, into the positive direction. Therefore, both negative anomalies and dipole effects will appear positive, centred on the target source.

The analytic signal can be used to map the edge of large magnetic bodies as well as to enhance anomalous trends that can appear insignificant in a TMI grid. The nature of the algorithm also strips out effects of deep regional responses and focuses more on the near-surface ones.

### **Magnetic Tilt Derivative (TDR)**

The magnetic tilt derivative (TDR) combines all three gradients (X, Y and Z) to produce what is called a tilt angle. This product highlights very subtle, near-surface structures in the dataset where the zero-contour line of the grid is said to represent geology contacts or edges of bodies. The distance between the zero contours and the 45° contours can give an approximation of the depth of the host body. The magnetic tilt derivative is calculated by the following equation:

$$TDR = \tan^{-1} \left[ \frac{dT/dz}{\sqrt{\left( dT/dx \right)^2 + \left( dT/dy \right)^2}} \right]$$

where  $dT/dx$  is the calculated in-line gradient,  $dT/dy$  is the calculated cross-line gradient and  $dT/dz$  is the calculated vertical gradient of the total magnetic field.

## 7. RESULTS

The final total magnetic intensity (TMI) data of the three blocks were gridded together using a five (5) metres cell size. Figure 5 shows the image of the total magnetic field (TMI) of the drone magnetic survey of the three blocks. The recorded drone TMI data ranged between 55,349 nT and 56,761 nT with a mean value at 55,624 nT.

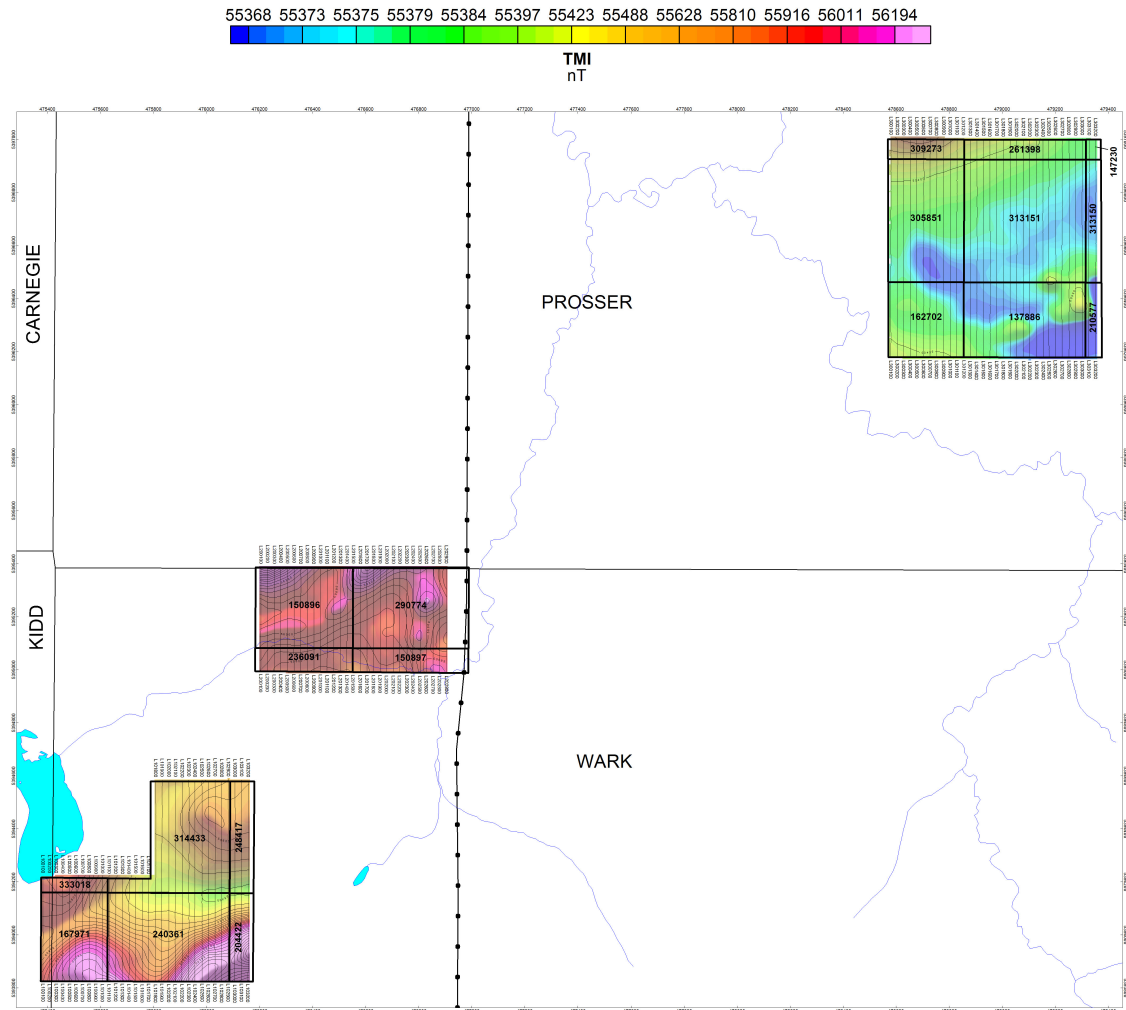


Figure 5 (Total Magnetic Intensity TMI)

The SW drone MAG grid shows a portion of a larger NE-SW high magnetic anomaly. Other partial magnetic anomalies are also defined by the drone MAG survey of the SW grid. The middle grid shows the southern part of a larger magnetic anomaly (based on the OGS data). The drone magnetic data highlighted detailed magnetic trends within the larger anomaly. The NE block shows a low magnetic response as part of a more extended low magnetic trend oriented roughly at N100°.

Figure 6 shows the calculated 1<sup>st</sup> vertical derivative of the drone magnetic. This image shows details of magnetic anomalies by enhancing near-surface magnetic sources.

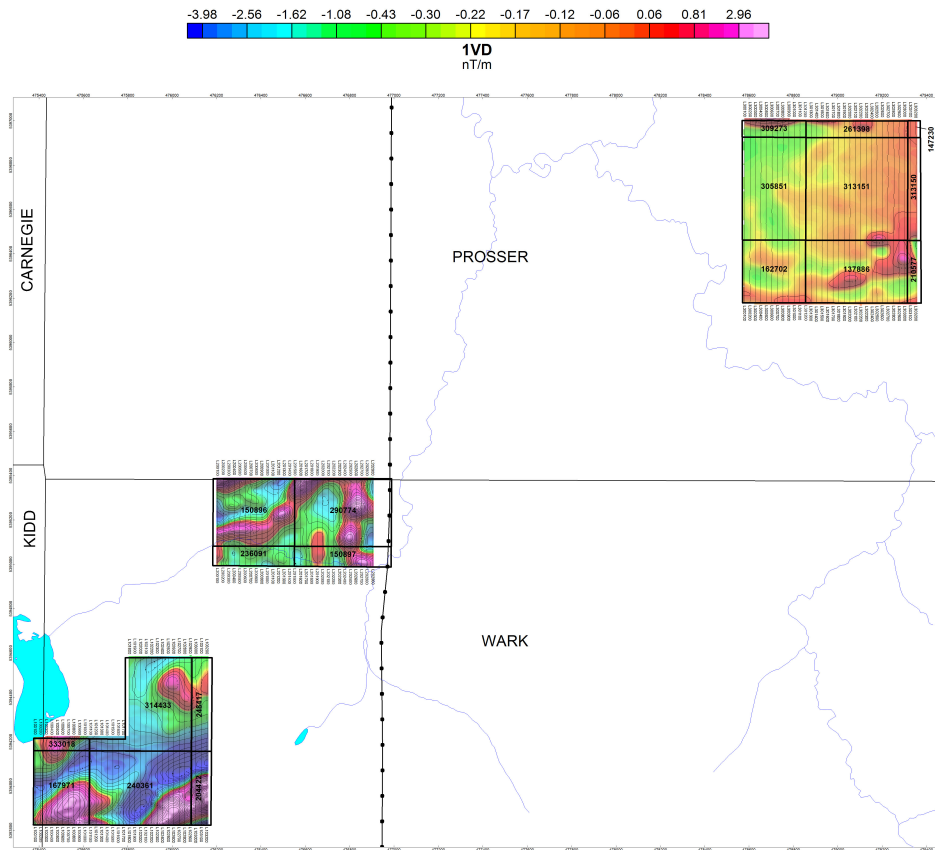


Figure 6 (First Vertical Derivative 1VD)

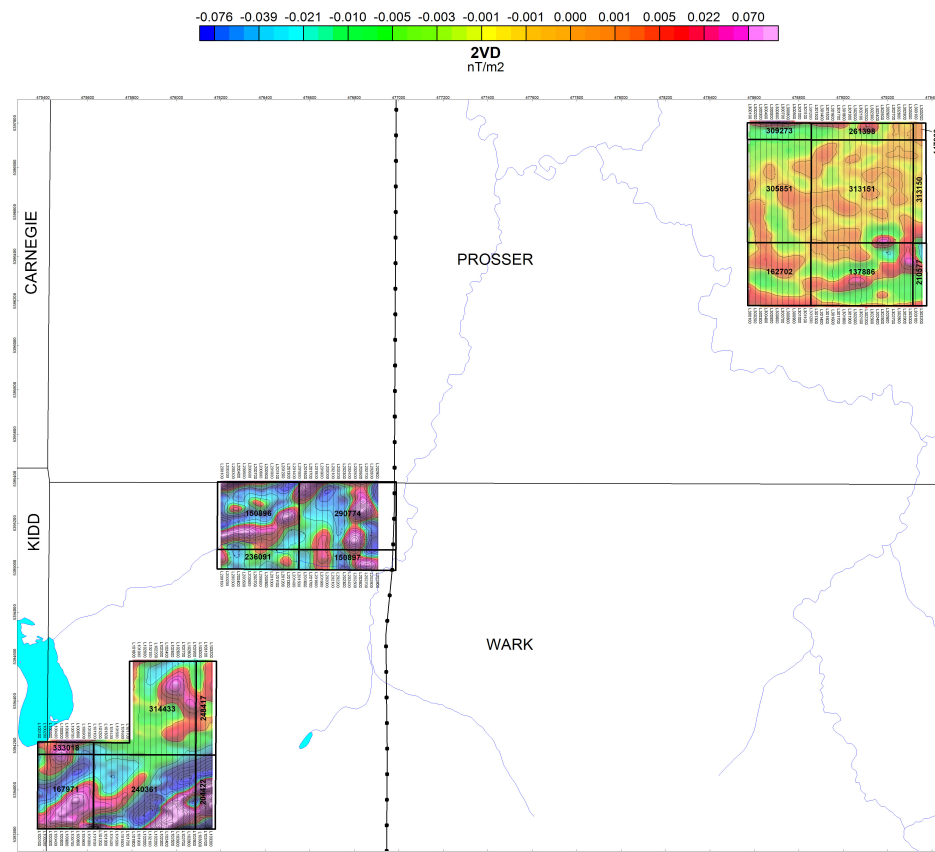


Figure 7 (Second Vertical Derivative 2VD)

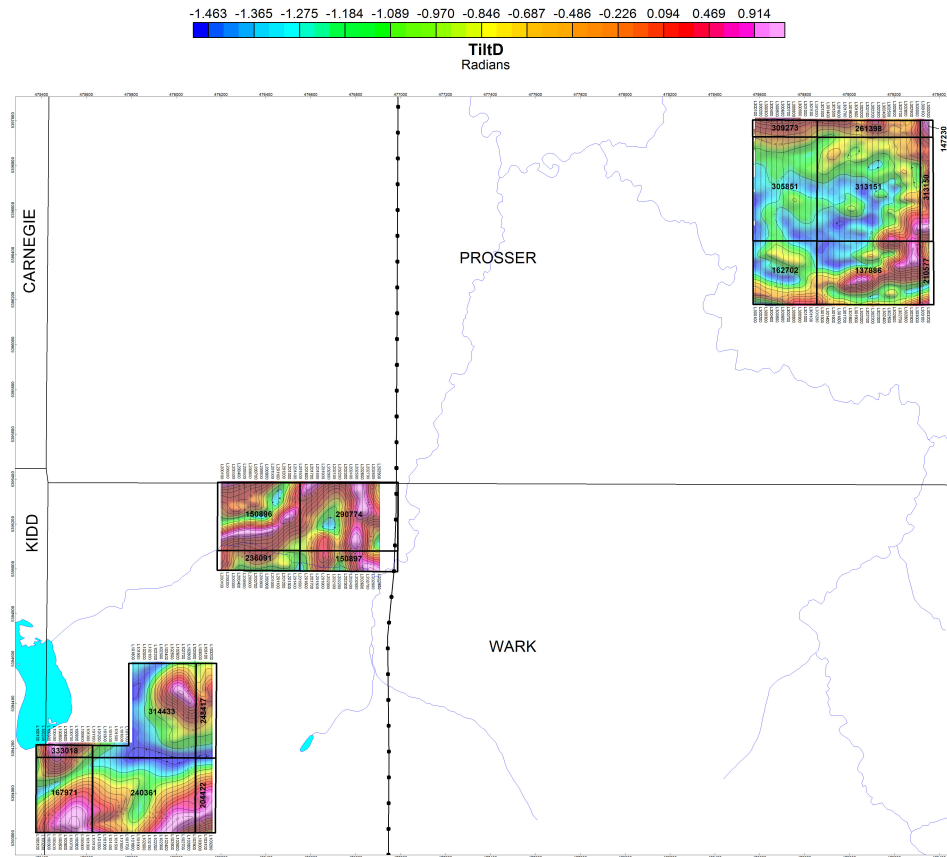


Figure 8 (Tilt Derivative TiltD)

## 8. DELIVERABLES

Final maps were created for the survey grids at scale of 1:5000 (UTM zone 17N, WGS84 datum), as follows:

- Drone MAG survey TimminsGlencoreClaims Project\_flight lines\_claims map.
- Drone MAG survey TimminsGlencoreClaims Project\_TMI map.
- Drone MAG survey TimminsGlencoreClaims Project\_1VD map.
- Drone MAG survey TimminsGlencoreClaims Project\_2VD map.
- Drone MAG survey TimminsGlencoreClaims Project\_TiltD map.

The survey comes with digital archives, including maps (PDF format), original database (Geosoft database and CSV), Geosoft grid files and GIS files (vector and geotiff).

## 9. DIGITAL DATA FORMAT

Channel	Units	Description
Line		Flight line
Date.UTC_YYYY_MM_DD_	year/month/day	Flight date
Time.UTC_HH_MM_SS_SSS_	hour:minute:second	Time
Latitude	Decimal Degrees	WGS84 Latitude data

Longitude	Decimal Degrees	WGS84 Longitude data
UTM_x	meters	UTM Easting
UTM_y	meters	UTM Northing
UTM_zone		UTM zone
Mag_ASL_m_	metres	Magnetic sensor elevation above sea level
Mag_AGL_m_	metres	Magnetic sensor terrain clearance
Mag_TMI_Ground_Base_nT_	nT	Magnetic base station measurement
Mag_TMI_Raw_nT_	nT	Raw Total Magnetic field data
Mag_TMI_Interpolated_nT_	nT	Interpolated Total Magnetic field data
Mag_Diurnal_Correction_nT_	nT	Magnetic diurnal variation data
Mag_TMI_Processed_nT_	nT	Final Total Magnetic field data

## 10. CONCLUSIONS

A high-resolution drone magnetic survey totalling 55.7 line kilometres over three (3) blocks was completed over the Timmins Glencore Claims project for Glencore Canadian Corporation., north of the city of Timmins.

The drone MAG results were used to create highly detailed geophysical information, compared to the regional magnetic coverage. However, because of the small survey coverage, it is hard to fully use the potential of such a detailed survey. If possible, it is recommended extending the drone magnetic survey if possible, in order to create larger magnetic images suitable to advanced interpretation.

Respectfully submitted,

May 2023,




Marc Boivin, P.Geo., Geophysicist

## 11. References

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## Statements of Qualification

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I, Marc Boivin, P.Geol., do hereby certify that:

1. I am an independent consulting geophysicist and good-standing member of the Association Of Professional Geoscientists Of Ontario (PGO #2104).
2. I earned a Bachelor of Science in Geology in 1983 at Université du Québec à Montréal.
3. I have practised my profession for 35 years in mining exploration geophysics.
4. I have not received and do not expect to receive a direct or indirect interest in the project covered by this report.
5. I wrote the report “**Report on a drone magnetic survey over the Timmins Glencore Claims Project. Prosser and Wark Townships. NTS 42A/11. Ontario, Canada**”

May 2023



Marc Boivin, P.Geol. (PGO #2104)

Channel	Unit	Description
Line		Flight line
Date.UTC_YYYY_MM_DD_	Year/Month/Day	Flight date
Time.UTC_HH_MM_SS_SSS_	Hour:Minutes:Seconds	Time
Latitude	Degree decimal	WGS84 latitude data
Longitude	Degree decimal	WGS84 longitude data
UTM_x	meters	(UTM WGS84, Z18N) easting coordinates
UTM_y	meters	(UTM WGS84, Z18N) northing coordinates
UTM_zone		UTM zone
Overlap		Points with measures overlapping
Mag_ASL_m_	meters	Magnetometer sensor elevation above sea level
Mag_AGL_m_	meters	Magnetometer terrain clearance
Mag_TMI_Ground_Base_nT_	nT	Magnetic base station measurement
Mag_TMI_Raw_nT_	nT	Raw Total Magnetic field data
Mag_TMI_Interpolated_nT_	nT	Interpolated Total Magnetic field data
Mag_Diurnal_Correction_nT_	nT	Magnetic diurnal variation data
Mag_TMI_Processed_nT_	nT	Final Total Magnetic field data

**MAPS**

Drone MAG survey TimminsGlencoreClaims\_Project\_claims + flight lines

Drone MAG survey TimminsGlencoreClaims\_Project\_TMI

Drone MAG survey TimminsGlencoreClaims\_Project\_1VD

Drone MAG survey TimminsGlencoreClaims\_Project\_2VD

Drone MAG survey TimminsGlencoreClaims\_Project\_TiltD

**Scale**

1:5000

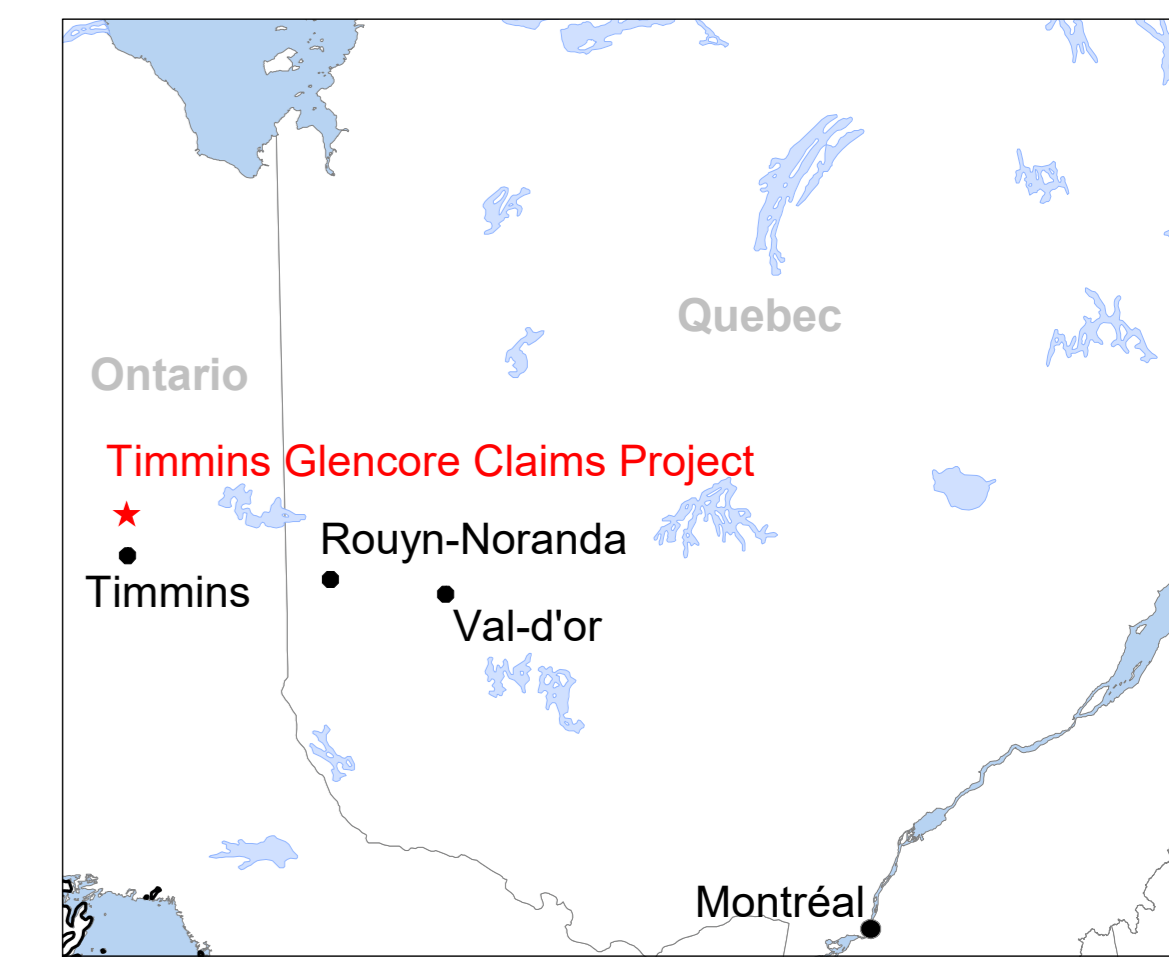
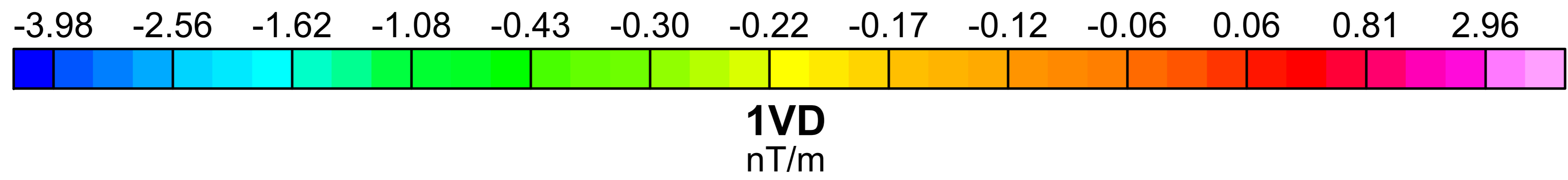
1:5000

1:5000

1:5000

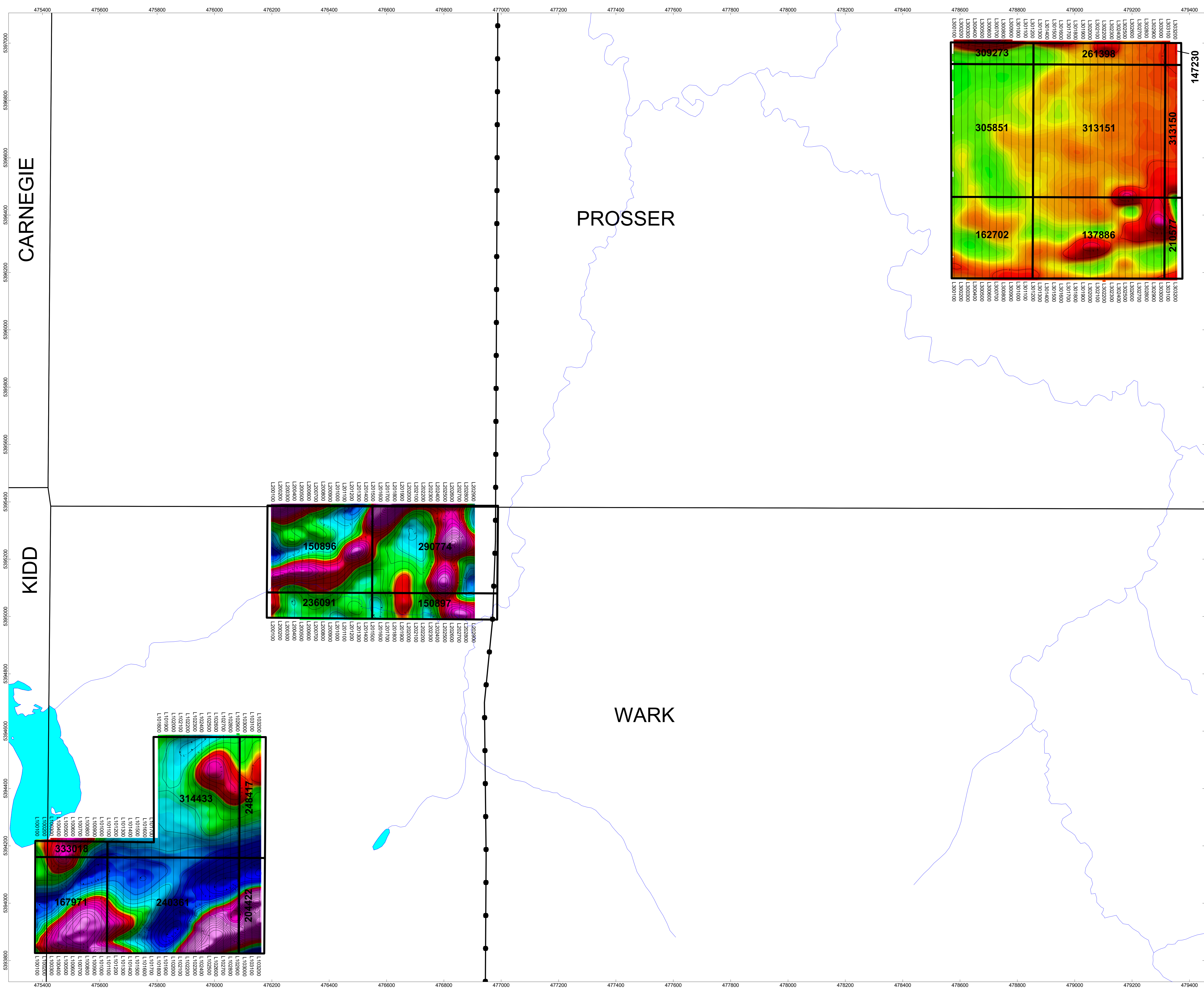
1:5000





**Flight specifications**  
 Flight line spacing: 25 m  
 Flight line azimuth: N360 °  
 Nominal MAG sensor height: 27m

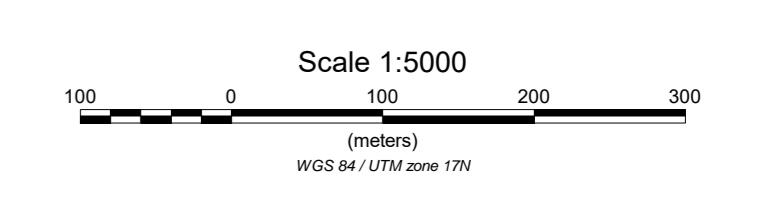
**Equipments**  
 Drone: DJI Matrice 600 UAV  
 Flight/acquisition system: AIM-LOW  
 Technology developed by: Devbrio Geophysics  
 On-board magnetometer: Scintrex CS-VL  
 Sampling rate: 10 readings/sec (10Hz)  
 Base station magnetometer: GEM System GSM-19  
 Base station sampling rate: 1 reading/3 sec (0.33Hz)



**162702** Mining titles

Water Body  
 Power Line  
 Township boundary

The topographic data base was derived from 1:50000 NRC (Natural Resources Canada)



**Glencore Canada Corporation**

**Timmins Glencore Claims project**  
**High resolution drone magnetic survey**  
**First vertical derivative map (1VD)**  
**NTS 42A/11**

Survey executed by: Vision 4K (February 2023)  
 Survey processed by: Marc Boivin, P. geo (May 2023)  
 Survey interpreted by: Marc Boivin, P. geo (May 2023)

-0.076 -0.039 -0.021 -0.010 -0.005 -0.003 -0.001 -0.001 0.000 0.001 0.005 0.022 0.070

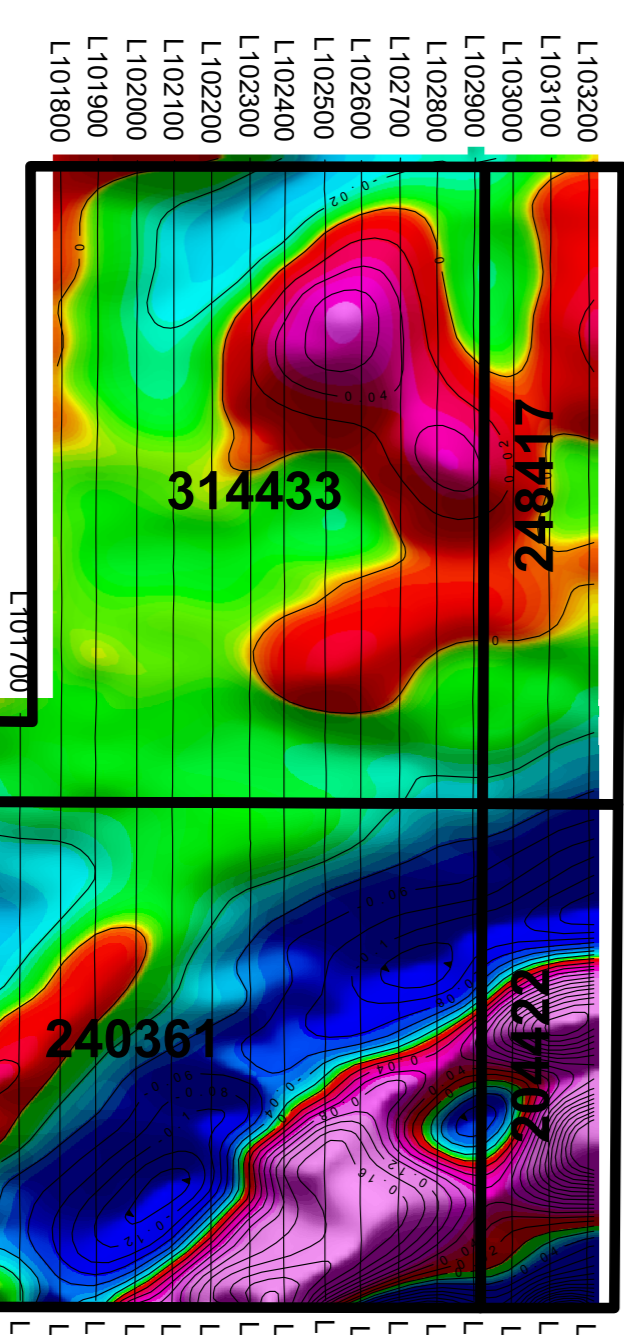
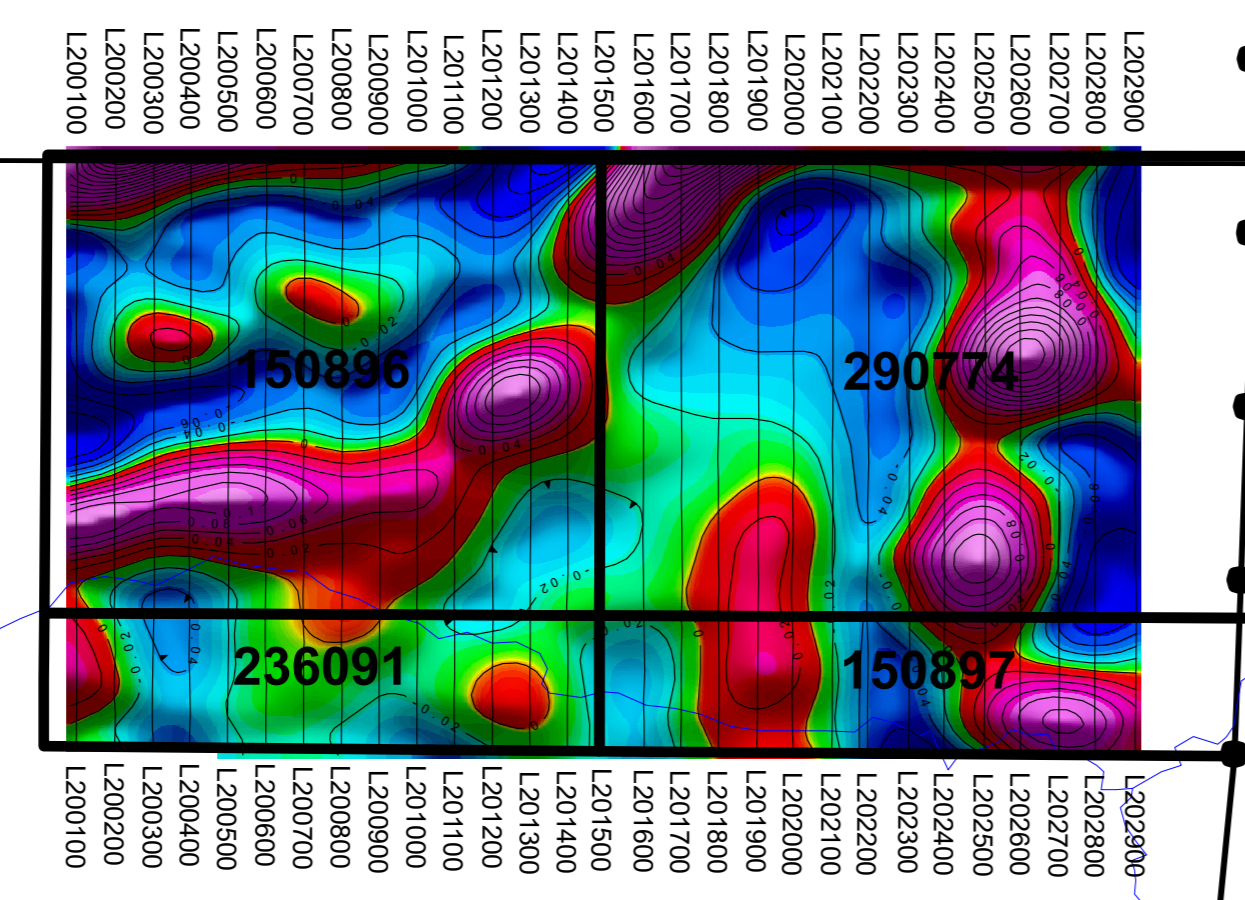
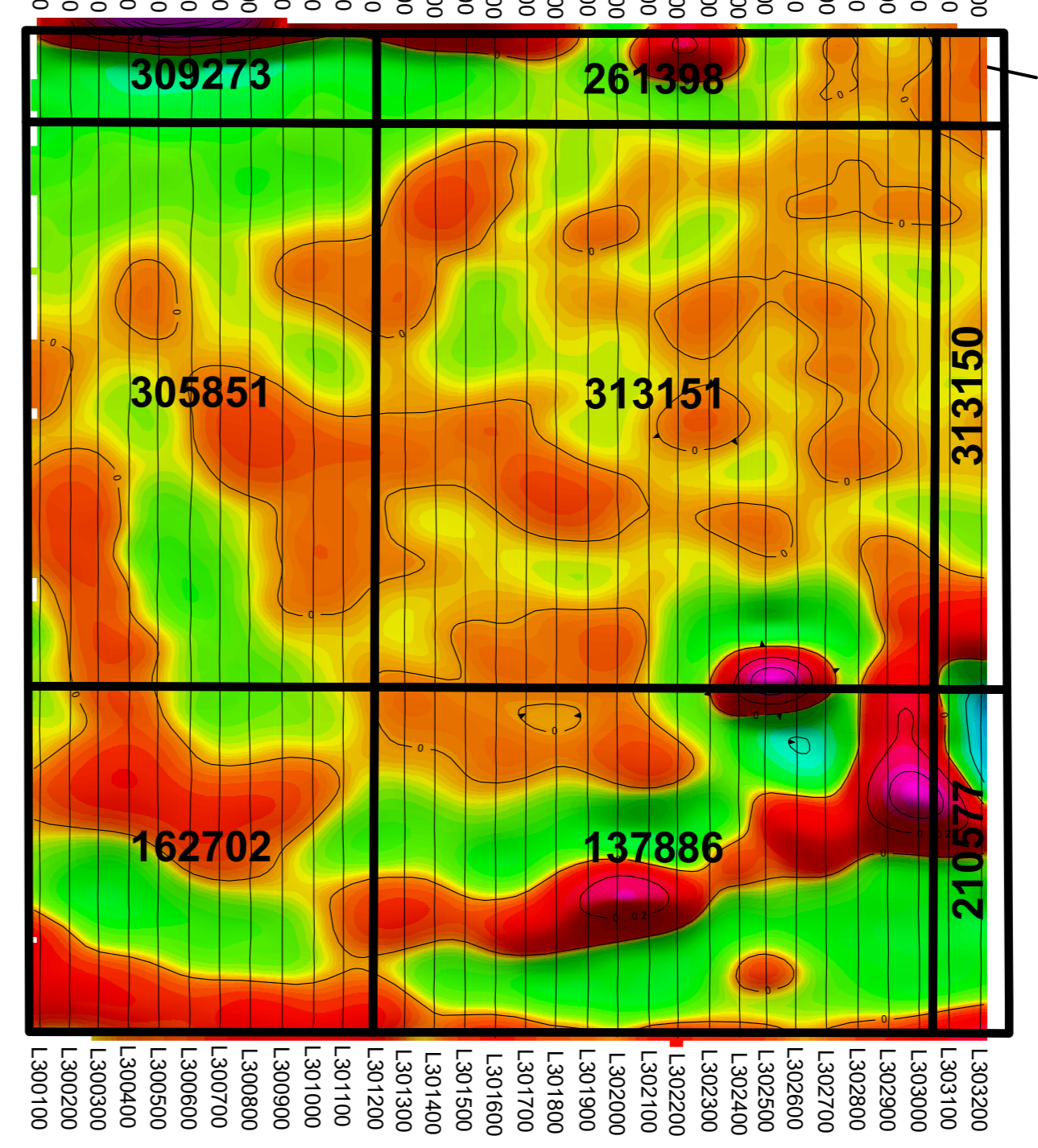
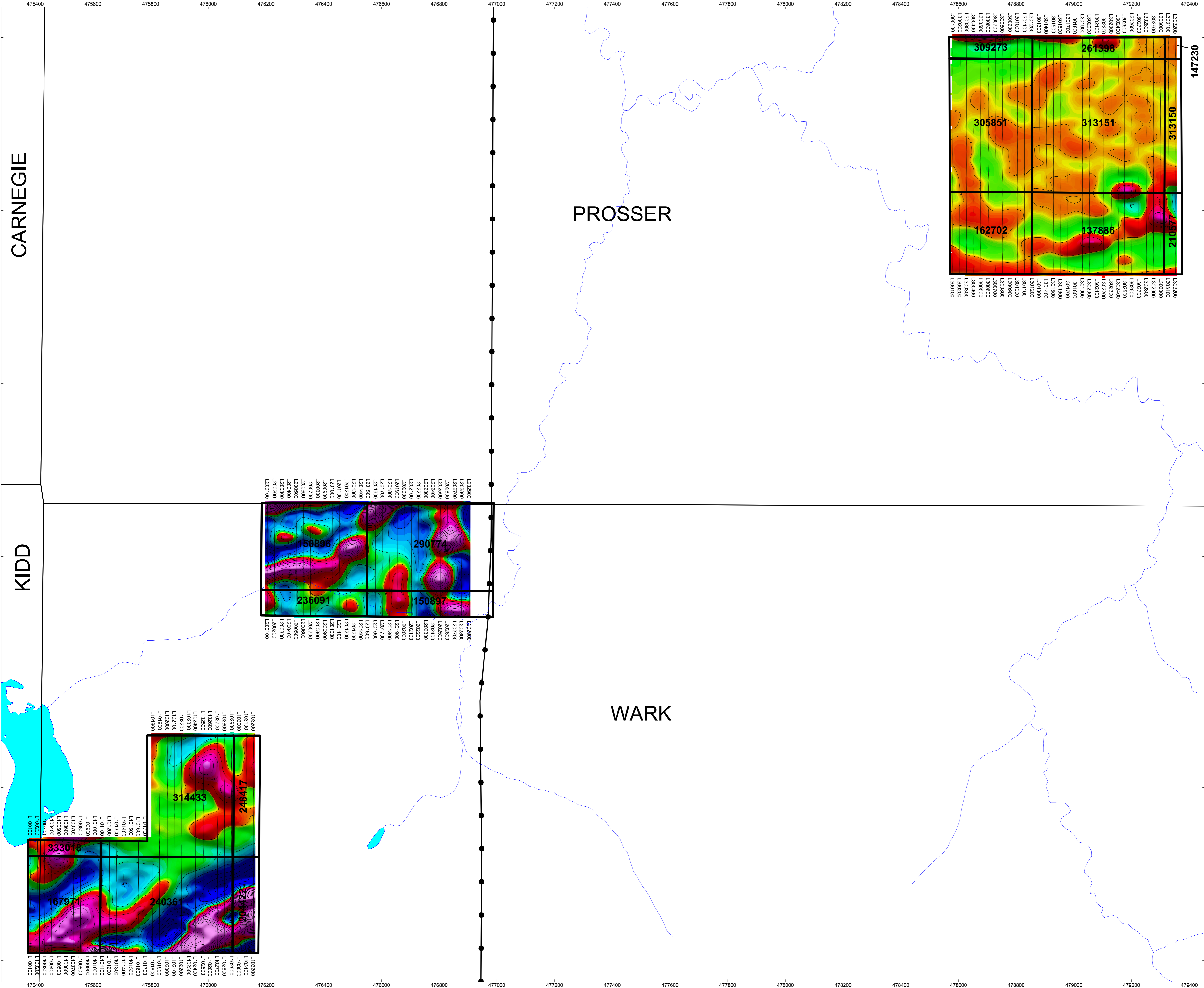


**2VD**  
nT/m<sup>2</sup>



**Flight specifications**  
 Flight line spacing: 25 m  
 Flight line azimuth: N360 °  
 Nominal MAG sensor height: 27m

**Equipments**  
 Drone: DJI Matrice 600 UAV  
 Flight/acquisition system: AIM-LOW  
 Technology developed by: Devbrio Geophysics  
 On-board magnetometer: Scintrex CS-VL  
 Sampling rate: 10 readings/sec (10Hz)  
 Base station magnetometer: GEM System GSM-19  
 Base station sampling rate: 1 reading/3 sec (0.33Hz)



**162702** Mining titles

Water Body  
 Power Line  
 Township boundary

The topographic data base was derived from 1:50000 NRC (Natural Resources Canada)

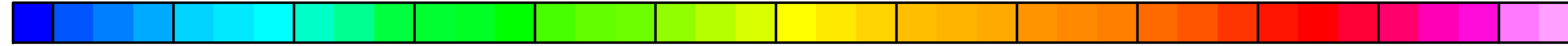
Scale 1:5000  
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 (meters)  
 UTM 18N UTM zone 18N

Glencore Canada Corporation

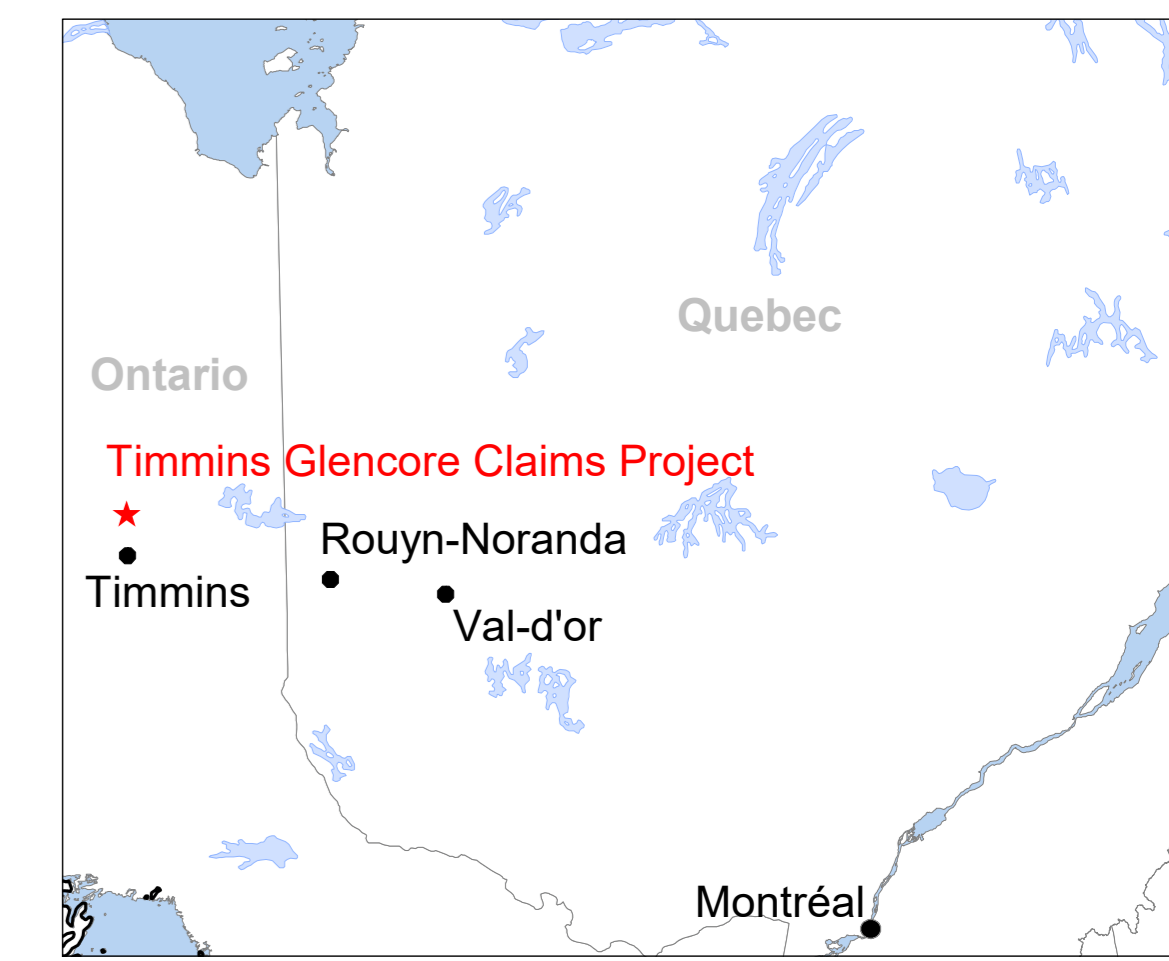
**Timmins Glencore Claims project**  
**High resolution drone magnetic survey**  
**Second vertical derivative map (2VD)**  
**NTS 42A/11**

Survey executed by: Vision 4K (February 2023)  
 Survey processed by: Marc Boivin, P.geo (May 2023)  
 Survey interpreted by: Marc Boivin, P.geo (May 2023)

-1.463 -1.365 -1.275 -1.184 -1.089 -0.970 -0.846 -0.687 -0.486 -0.226 0.094 0.469 0.914

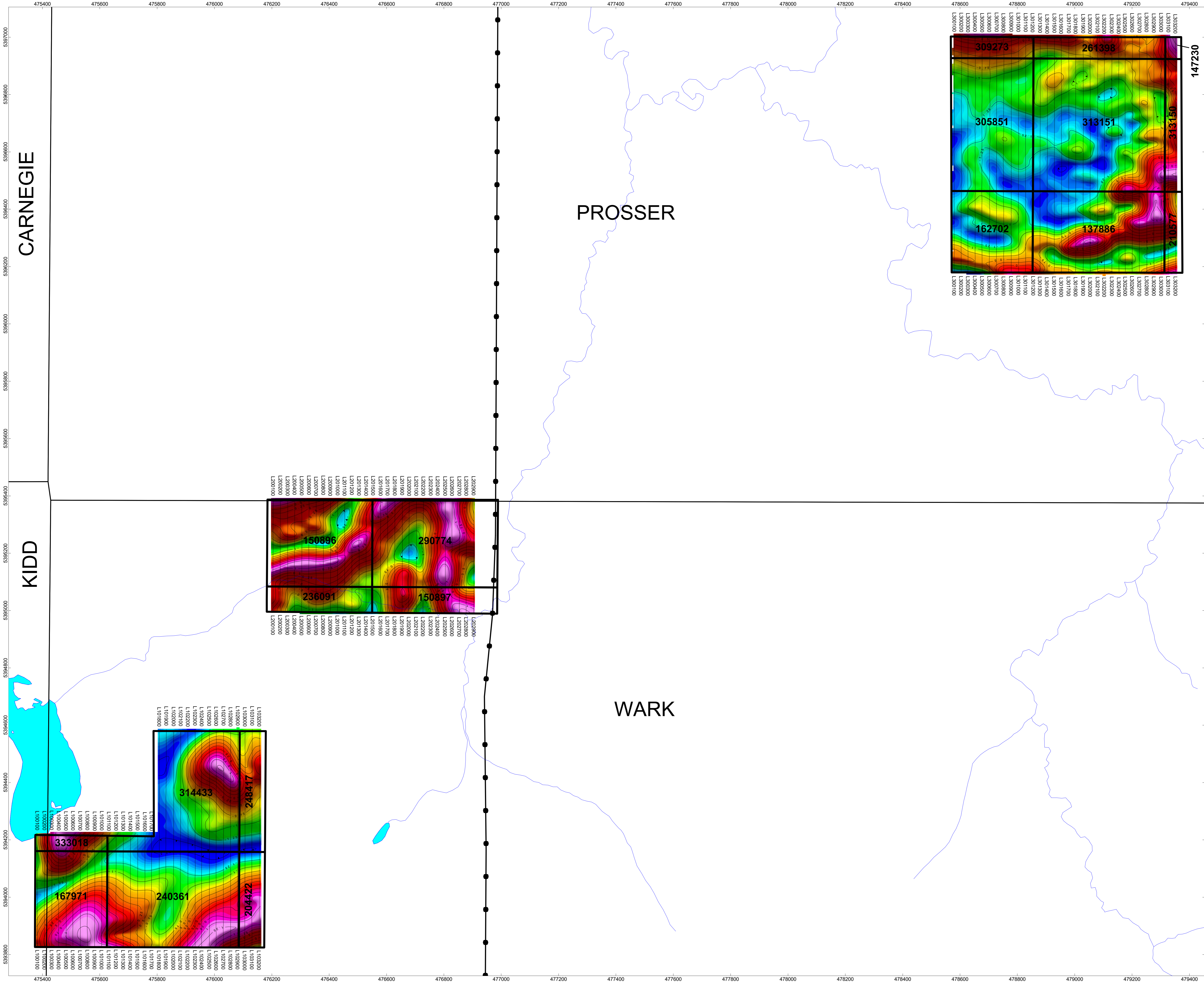


**TiltD  
Radians**

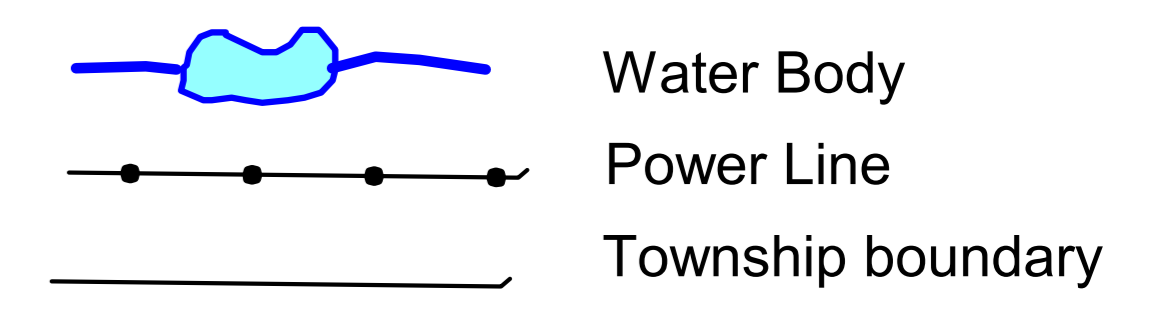


**Flight specifications**  
 Flight line spacing: 25 m  
 Flight line azimuth: N360 °  
 Nominal MAG sensor height: 27m

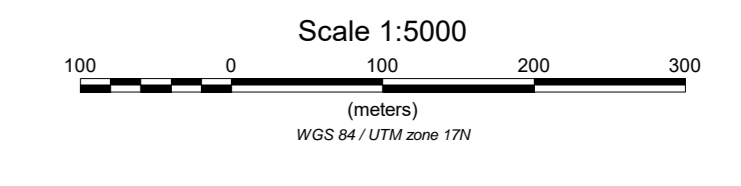
**Equipments**  
 Drone: DJI Matrice 600 UAV  
 Flight/acquisition system: AIM-LOW  
 Technology developed by: Devbrio Geophysics  
 On-board magnetometer: Scintrex CS-VL  
 Sampling rate: 10 readings/sec (10Hz)  
 Base station magnetometer: GEM System GSM-19  
 Base station sampling rate: 1 reading/3 sec (0.33Hz)



**162702** Mining titles



The topographic data base was derived from 1:50000 NRC (Natural Resources Canada)

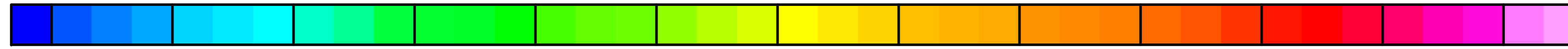


**Glencore Canada Corporation**

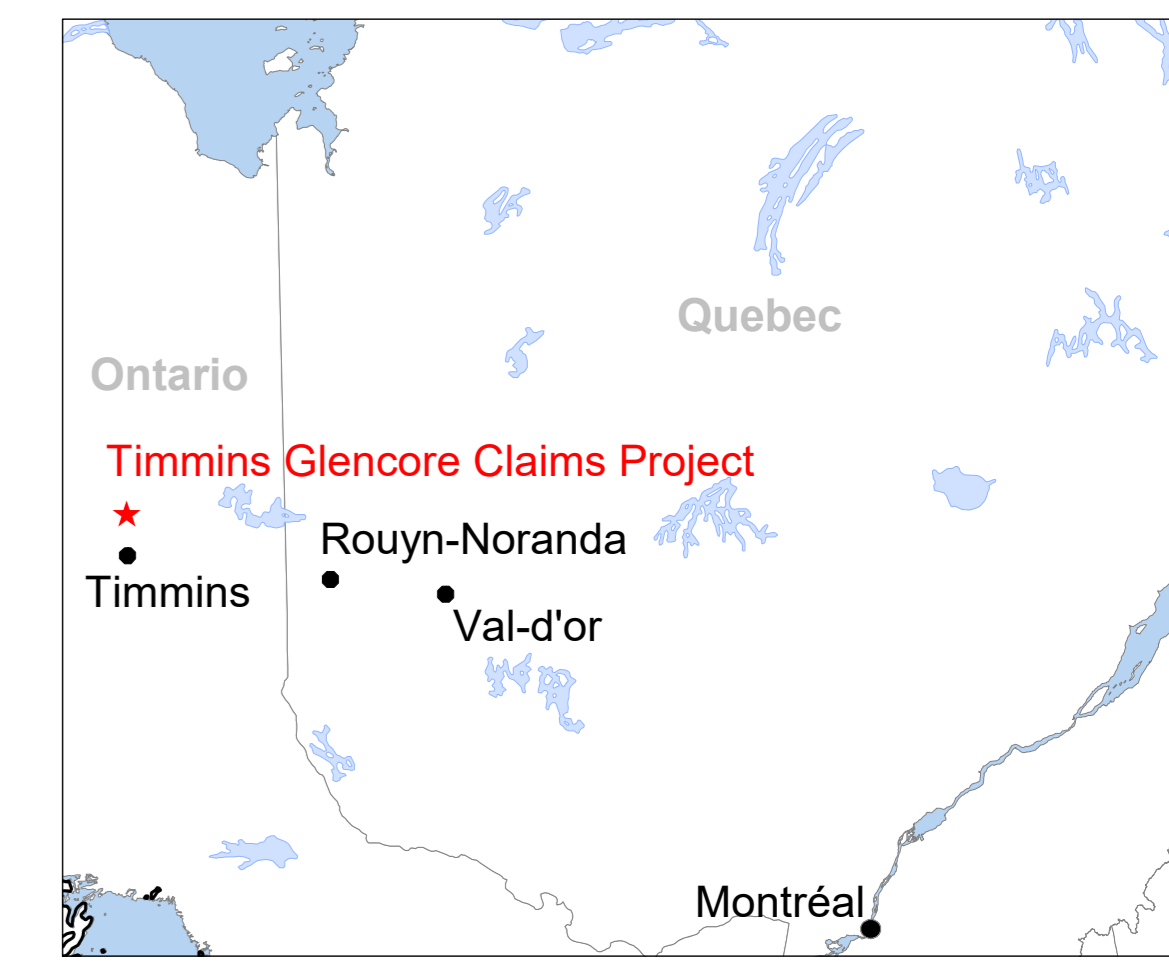
**Timmins Glencore Claims project**  
**High resolution drone magnetic survey**  
**Tilt derivative map (TiltD)**  
**NTS 42A/11**

Survey executed by: Vision 4K (February 2023)  
 Survey processed by: Marc Boivin, P.geo (May 2023)  
 Survey interpreted by: Marc Boivin, P.geo (May 2023)

55368 55373 55375 55379 55384 55397 55423 55488 55628 55810 55916 56011 56194

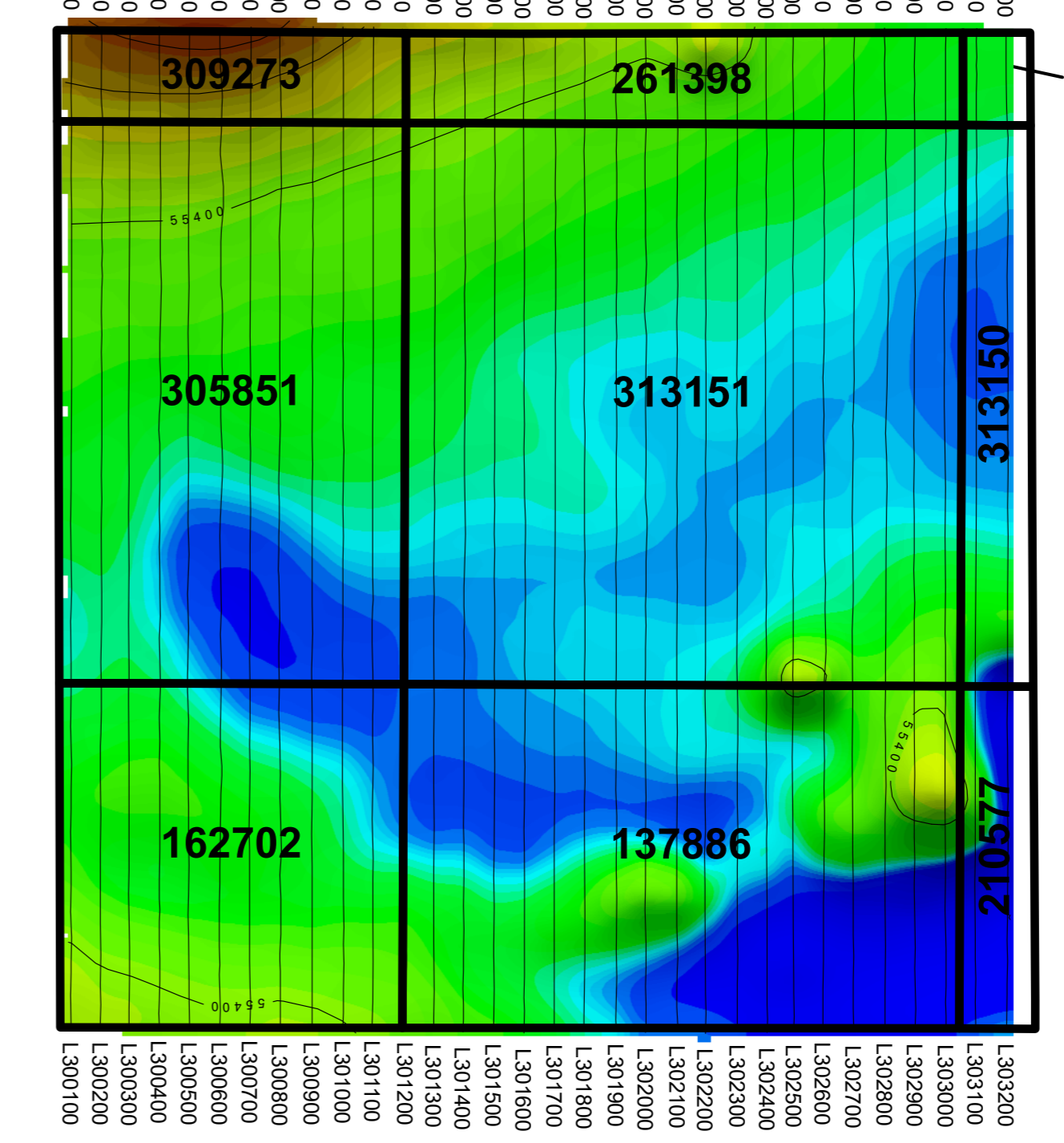
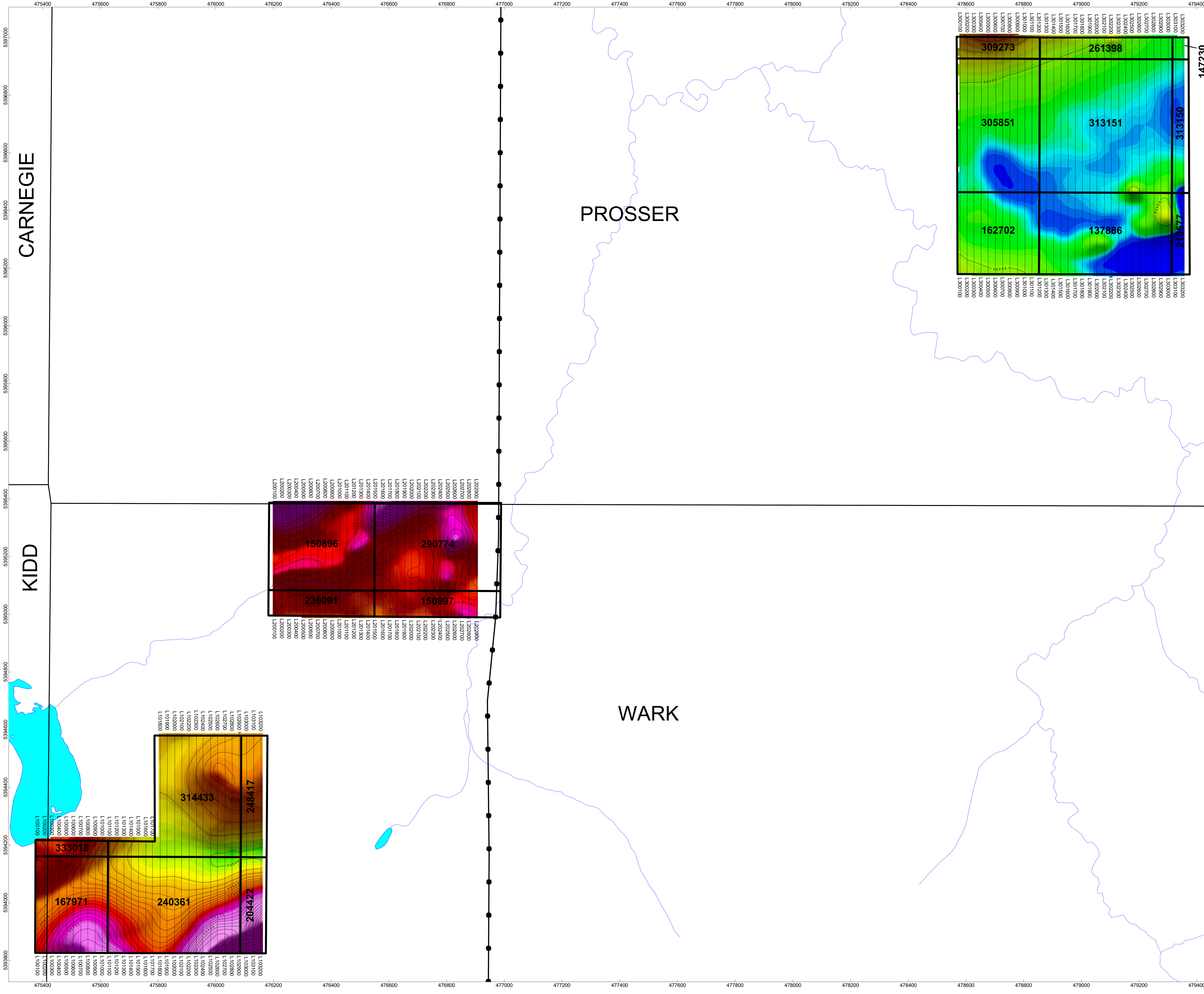


TMI  
nT

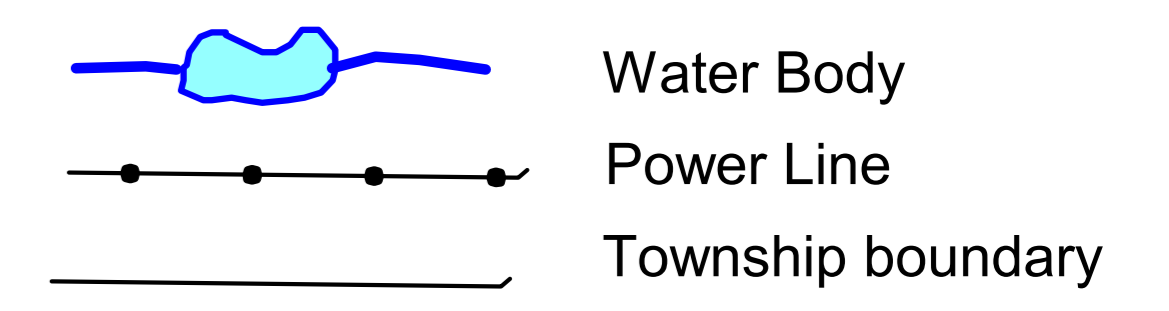


**Flight specifications**  
 Flight line spacing: 25 m  
 Flight line azimuth: N360 °  
 Nominal MAG sensor height: 27m

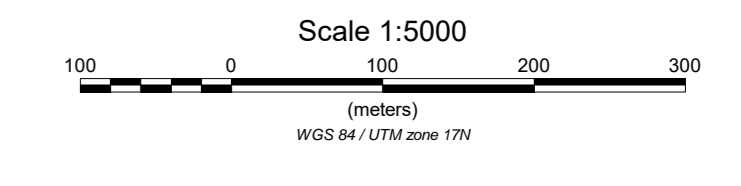
**Equipments**  
 Drone: DJI Matrice 600 UAV  
 Flight/acquisition system: AIM-LOW  
 Technology developed by: Devbrio Geophysics  
 On-board magnetometer: Scintrex CS-VL  
 Sampling rate: 10 readings/sec (10Hz)  
 Base station magnetometer: GEM System GSM-19  
 Base station sampling rate: 1 reading/3 sec (0.33Hz)



162702 Mining titles



The topographic data base was derived from 1:50000 NRC (Natural Resources Canada)



Glencore Canada Corporation

**Timmins Glencore Claims project**  
**High resolution drone magnetic survey**  
**Total magnetic intensity map (TMI)**  
**NTS 42A/11**

Survey executed by: Vision 4K (February 2023)  
 Survey processed by: Marc Boivin, P.geo (May 2023)  
 Survey interpreted by: Marc Boivin, P.geo (May 2023)