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Report on the

2022 Helicopter-Borne Geophysical Survey

Van Hise Township, Kirkland Lake District,

Northeastern Ontario

NTS 41P10

CANADA NICKEL COMPANY
1900-130 King Street W
Toronto, Ontario CANADA M5X 1E3
Tel: 416-214-2250 fax: 416-367-1954
Website: www.canadanickel.com
Email: info@canadanickel.com

Prepared By:

Steve Balch
P.Geo (ON)
BECI

Edwin Escarraga
P.Geo (ON)
Canada Nickel Company

30th day of November 2022

Summary

Canada Nickel Company ("CNC") contracted the services of Balch Exploration Consulting Inc. (BECI) to carried out an AirTEM survey in Van Hise township near Kirkland Lake, Ontario, Canada. The objective of the survey is to identify a large ultramafic intrusion using the total magnetic intensity and to determine where it is most strongly serpentinized using the electromagnetic response. Exploration in the area dates to the early 1900s with the discovery of silver and cobalt. Silver production at Gowganda started in 1909 with the largest mine, Castle-Tretheway, producing almost 6 million ounces of silver from 1922 to 1929. From 1910 to 1929, almost 14 million ounces of silver were mined.

An AirTEM survey consisting of magnetic and electromagnetic measurements has been flown over the Van Hise Property located west of Gowganda, Ontario and consisting of several mineral claims owned by a group of prospectors led by Fred and Sherry Swain, in the search for large tonnage, low grade nickel, cobalt, and platinum group elements (PGE) mineralization.

The Van Hise Property is located approximately 8 km west of the town of Gowganda and crosses Highway 560, a paved road that extends east-west from Highway 144 westward to Highway 11 eastward. The Property is located near Firth Lake mostly on the north side of Highway 560.

The exploration model is based on the presence of large ultramafic sills largely composed of dunite that have been serpentinized to liberate the nickel from the silicate mineral olivine resulting in nickel grades ranging from 0.15-0.35% Ni with a typical average grade of 0.25% Ni. Total tonnage of these large ultramafic sills can easily exceed 1 Bt. Their proximity to surface makes them suitable for large-scale open pit mining methods.

The AirTEM survey has identified a major magnetic feature with associated EM response that is consistent with serpentinized ultramafic intrusions (like the Crawford Intrusion, for example). The intrusion has approximate dimension of 3 km along strike by 2 km across strike with a strike direction of 325° (NNW) and a steep dip to the southwest.

The trend identified on the Van Hise Property is confirmed by previous drilling in the late 1990s which intersected serpentinized ultramafics. The next phase of exploration would be a ground follow-up program to identify areas suitable for drill platforms for a widely spaced drill program of 400 m spaced holes, inclined at -45° to -60° inward from the contact toward the center of the intrusion to develop a resource. Holes should be limited to 400 m in length.

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1.0 Introduction

Canada Nickel Company Inc. is advancing the next generation of nickel-cobalt sulphide projects to deliver nickel and cobalt required to feed the high growth electric vehicle and stainless-steel markets. Canada Nickel Company is pursuing the development of processes to allow the production of net zero carbon nickel, cobalt, and iron products. Canada Nickel is currently anchored by its 100% owned flagship Crawford Nickel-Cobalt Sulphide Project and continues to explore its regional properties in the Timmins-Kirkland Lake districts.

The Van Hise Property is located 128 kilometres south of Crawford but only 8 km west of Gowganda. The property consists primarily of an ultramafic body having an overall strike length of 2.8 kilometres. This prospect was previously tested by Texmont Mines Ltd (1966) which intersected peridotite and altered peridotite containing locally up to 10% magnetite and disseminated sulphides. The peridotite was intersected below a thin layer of cobalt sediments (~60 ft) and a thin layer of overburden (~6 ft). Serpentine was described as dark green to pale green with a few talcose seams.

CNC contracted BECI to complete an AirTEM survey from October 25th to October 29th, 2022, totaling 772.2 kilometres of flight lines. The objective of this survey was to identify a large ultramafic intrusion using the total magnetic intensity and to determine where it is most strongly serpentinized using the electromagnetic response

2.0 Property Description, Location and Access

The Van Hise Property is in the Kirkland Lake District, Northern Ontario, Canada, starting approximately 40 km west of Kirkland Lake (Figure 1). The survey covered a single block covering the entire ultramafic intrusion, and located north of Highway 560, 8 km west of Gowganda, Ontario.

The Property is located within the NTS topographic sheet 041P, Van Hise. The approximate centre of the property is located at 47.685^{o} latitude and -80.875^{o} longitude (UTM coordinates 509350E, 5281100N Zone 17U NAD83). The Van Hise Target is comprised of 193 single mining cells, totaling approximately 4,192 hectares (Figure 2).

The mining claims are registered to Glen Walter Bray (27%), Sharon Adelia Cotton (20%), Fred Ross Swain (16%), W. Johnson Mining & oil field Services (15%), Michael T Opara (14%), Margaret Kaye Montgomery (7%), and Canada Nickel Company Inc (1%), at the time of this report. Table 1 summarizes the mining claim tenure.

The closest access road is Highway 560 which crosses the southern extent of the property. Several logging roads provide access to the northern extent of the property, one logging road located 1 km west of Firth Lake and a second logging road located roughly 6 km east of Firth Lake. The base of operations was Long Point Lodge, located on Highway 560 approximately 14 km east of Gowganda.

Figure 1. Van Hise Property Regional location.

Figure 2. Van Hise Property claim fabric.

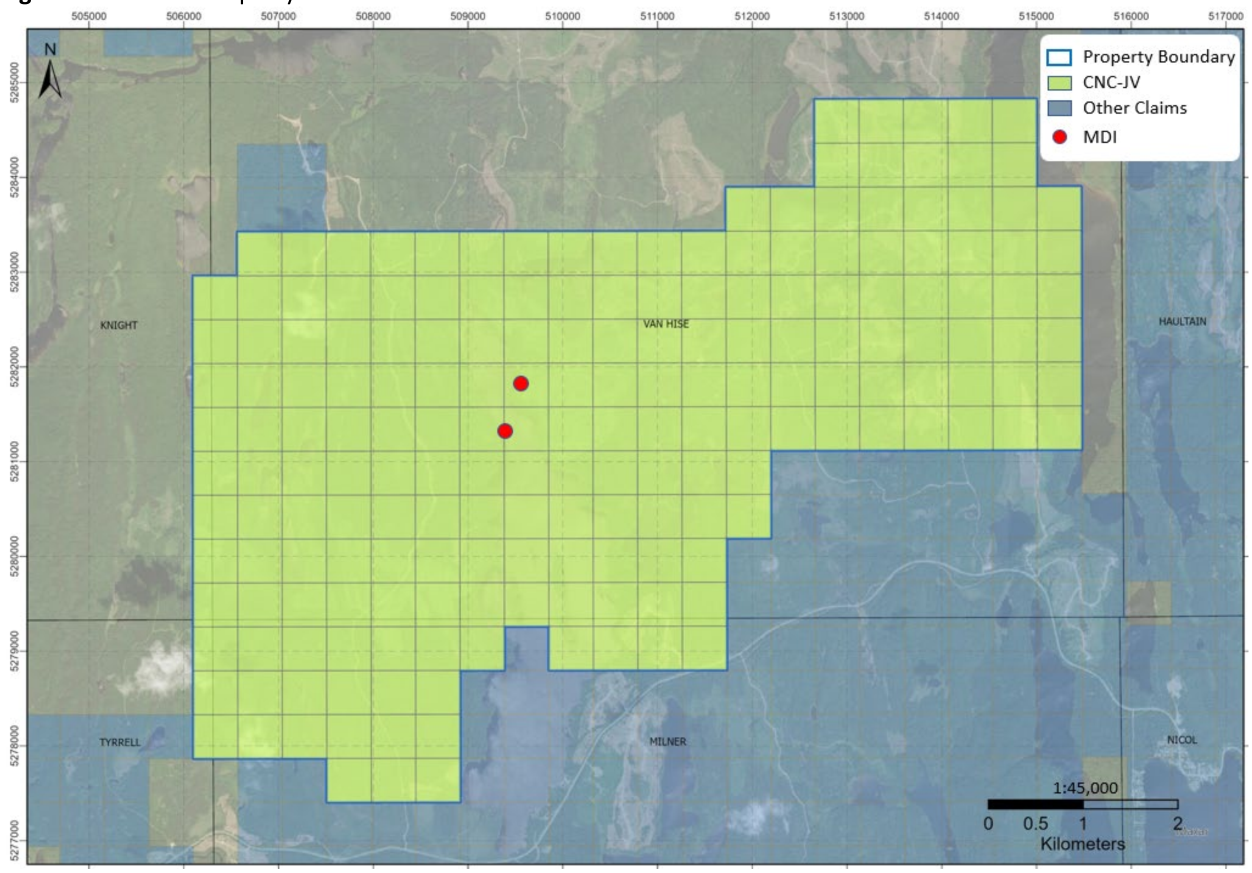

Table 1. Claim details of the Van Hise Property. Source MLAS.

Claim #	TYPE	ISSUE_DATE	CLAIM_DUE	Claim #	TYPE	ISSUE_DATE	CLAIM_DUE
333454	SCMC	2018-04-10	2023-06-04	**152687**	SCMC	2018-04-10	2022-12-04
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343506	SCMC	2018-04-10	2023-06-04
339660	SCMC	2018-04-10	2023-04-12

3.0 Climate, Physiography, Infrastructure

3.1 Climate

In the Kirkland Lake area, the long winters see average temperatures below 0 ˚C from December to April, with the lowest temperatures in January at an average of -17 ˚C. The summers are short and relatively hot with above 15 ˚C temperature highs from June to August; July is the hottest month with an average temperature high of 18 ˚C.

The area receives approximately 883 mm of precipitation annually, with 580 mm as rain and 333 mm as snow. September is the wettest month, receiving an average 90 mm of rain; February is the month with the least precipitation, only receiving on average 1.7 mm of rain and 52 mm of snow (Environment Canada).

The property lies within the Subarctic Climate zone, with short summers and long, cold winters. Snow squalls occur from October to May, and the frost-free period hardly exceeds 90 days. Fieldwork is occasionally not permitted due to forest fire danger and the MNR may prevent access to certain areas during such times. The area is also part of the Boreal Shield eco-zone which has relatively low tree growth rates and timber volumes compared with other forested eco-zones in Canada. Tree species in the Boreal Shield eco-zone include white and black spruce, balsam fir, tamarack, trembling aspen, white pine, red pine, jack pine, maple, eastern red cedar, eastern hemlock, paper birch, speckled alder, pin cherry, mountain ash, among other plants. Mammals include moose, black bear, wolf, chipmunk, beaver, muskrat, snowshoe hare, red squirrel, mice, marten, short-tailed weasel, fisher, mink, river otter, coyote, and red fox. Garter snakes and frogs are also present. Aquatic birds are seen on lakes during the ice-free season, and fish can be abundant in some lakes and the larger perennial streams.

3.2 Physiography

The Property resides within the Upper Ottawa River Drainage Basin. The landscape consists of forest cover with thick fine-grained glaciolacustrine deposits and boulder and gravel till; geological mapping indicating that outcrop composes less than 1% of the property. The thick overburden cover subdues the local landscape, with the terrain characterized by broad, poorly drained swampy tracts, spring-runoff stream beds and swales, beaver ponds, and small lakes. The area is mostly at low relief with some lithologically controlled topographic highs. Local glacial landforms also form some higher reliefs. Elevations range from 280 to 390m above sea level.

3.3 Infrastructure

Northeastern Ontario, especially the Timmins and Kirkland Lake areas, has a long exploration and mining history focused on VMS and gold deposits that dates back to the turn of the 20th century. A complete range of mining and exploration services and suppliers are available in Timmins, as well as Kirkland Lake, including exploration supplies, diamond drilling companies, machine shops, mining equipment, motels, restaurants, and a large base of skilled personnel. The well-serviced Victor M. Power airport is located 10 km north of Timmins, with flights to Toronto and several small communities. Kirkland Lake also operates its own de-certified airport regulated by Transport Canada. The airport is located 8 km from Kirkland Lake.

4.0 Exploration History

Exploration in the area dates to the early 1900s with the discovery of silver and cobalt. Silver production at Gowganda started in 1909 with the largest mine, Castle-Tretheway, producing almost 6 million ounces of silver from 1922 to 1929. From 1910 to 1929, almost 14 million ounces of silver were mined. A summary of exploration and mining in the Gowganda area was presented by Campbell (1930).

Silver production continued in the area, peaking in 1960 at 2.77 million ounces. By 1960 over 60 million ounces of silver had been mined.

In 1966 Texmont Mines Ltd drilled two exploration holes and intersected serpentinized peridotite with fine-grained sulphide and up to 10% magnetite (MLAS report 41P10NW0005).

The area was mapped with publications forthcoming in 1968 by A.O. Serifiades and in 1978 by W.H. McIlwaine.

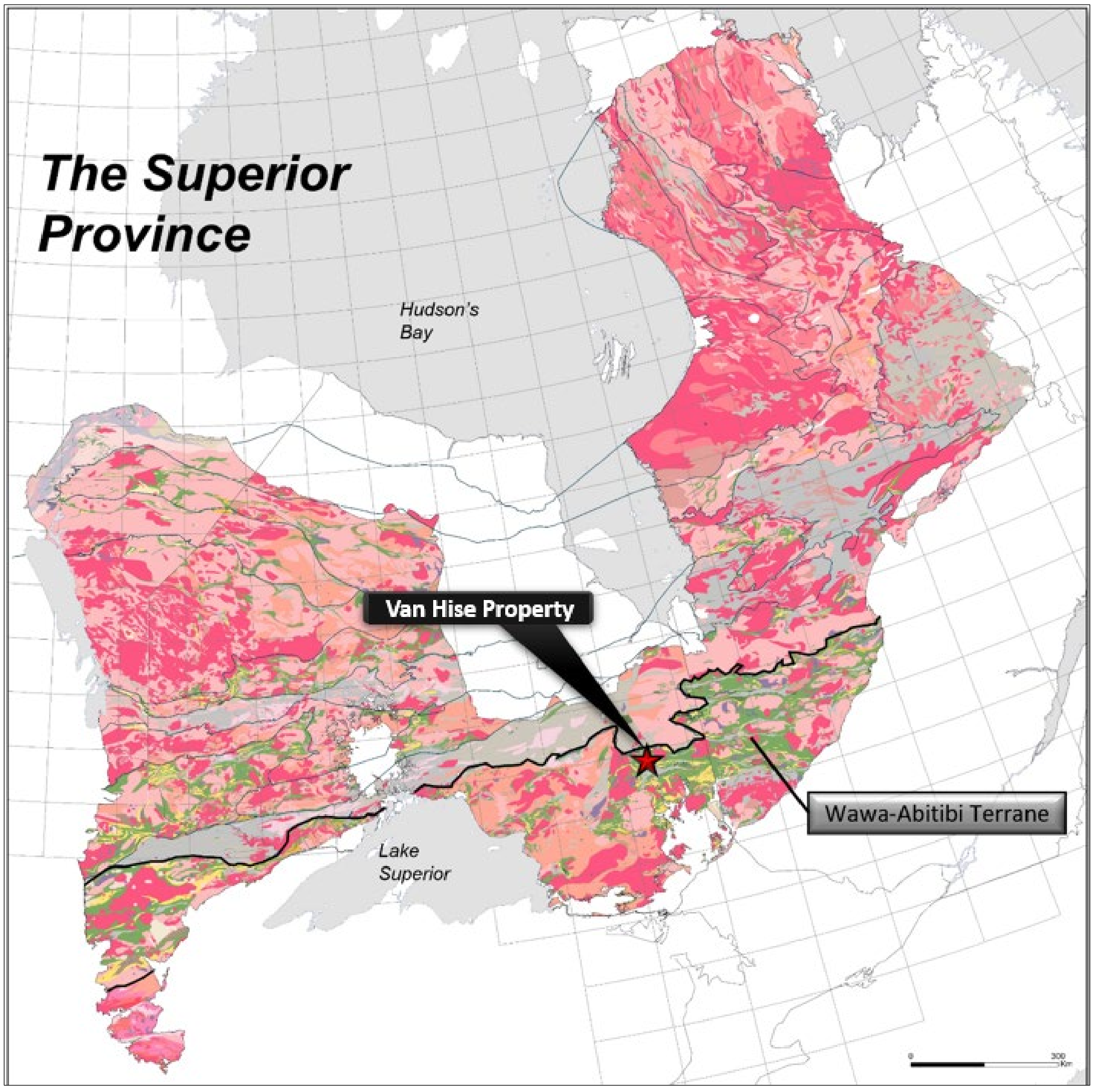
More recent exploration was described by Apex Geoscience Ltd. based on a single drillhole located on the east shore of Firth Lake. Hole FL-03-01 intersected several sequences of sediments and volcanics including a 20-foot interval of near-massive sulphide described as most likely pyrite. No assays were provided.

5.0 Geological Setting

5.1 Regional Geology

The Van Hise Property is located in the Abitibi Subprovince of the Wawa-Abitibi Terrane within the Superior Province of Canada which spans the provinces of Manitoba, Ontario and Quebec (Figure 3). The Superior Province is the earth's largest Archean craton that accounts for roughly a quarter of the planet's exposed Archean crust and consists of linear, fault bounded Subprovinces that are characterized by volcanic, sedimentary, and plutonic rocks (William et al., 1991).

Figure 3. Regional geological location of the Van Hise Property.



The following descriptions in Section 5.1, is taken from the Crawford Nickel Sulphide Project, NI 43-101 Technical Report and Preliminary Economic Assessment Ontario, Canada with an effective date of May 21, 2021, and prepared by Ausenco Engineering Canada Inc.
The supracrustal rocks of the Abitibi Subprovince or more commonly known as the Abitibi greenstone belt (AGB) are uniquely well preserved and have mostly been overprinted only at a low metamorphic grade (Monecke et al., 2017). The economic importance of the AGB is of incredible importance as it contains some of the most important gold and base metal mining camps in Canada, as well as a long history of punctuated production from ultramafic extrusive komatiite-hosted Ni-Cu-(PGE) sulphide deposits.

More than an estimated 50% of the supracrustal rocks of the AGB, including those on the property, are under tens of meters of clay-dominated cover (referred to as the “Abitibi Clay Belt” or “Great Clay Belt” and formed from the lakebed sediments of Glacial Lake Ojibway), making mineral exploration challenging and expensive and hampering the discovery rate of new metal mines. At the same time this also creates an opportunity for discovery.

The Abitibi greenstone belt has been subdivided into nine lithotectonic assemblages or volcanic episodes (Ayer et al., 2002a, 2002b and 2005); however, the relationships between these assemblages are for the most part ambiguous. Allochthonous greenstone belt models, with each terrane having been formed in a different tectonic environment, predict them to be a collage of unrelated fragments. Autochthonous greenstone belt models allow for the prediction of syngenetic mineral deposits hosted by specific stratigraphic intervals and formed within a structurally deformed singular terrane.

Proterozoic dikes of the Matachewan Dyke Swarm and the Abitibi Dyke Swarm intrude all of the rock in the region. Matachewan dikes generally trend north-northwest while the younger Abitibi Dyke Swarm trends northeast.

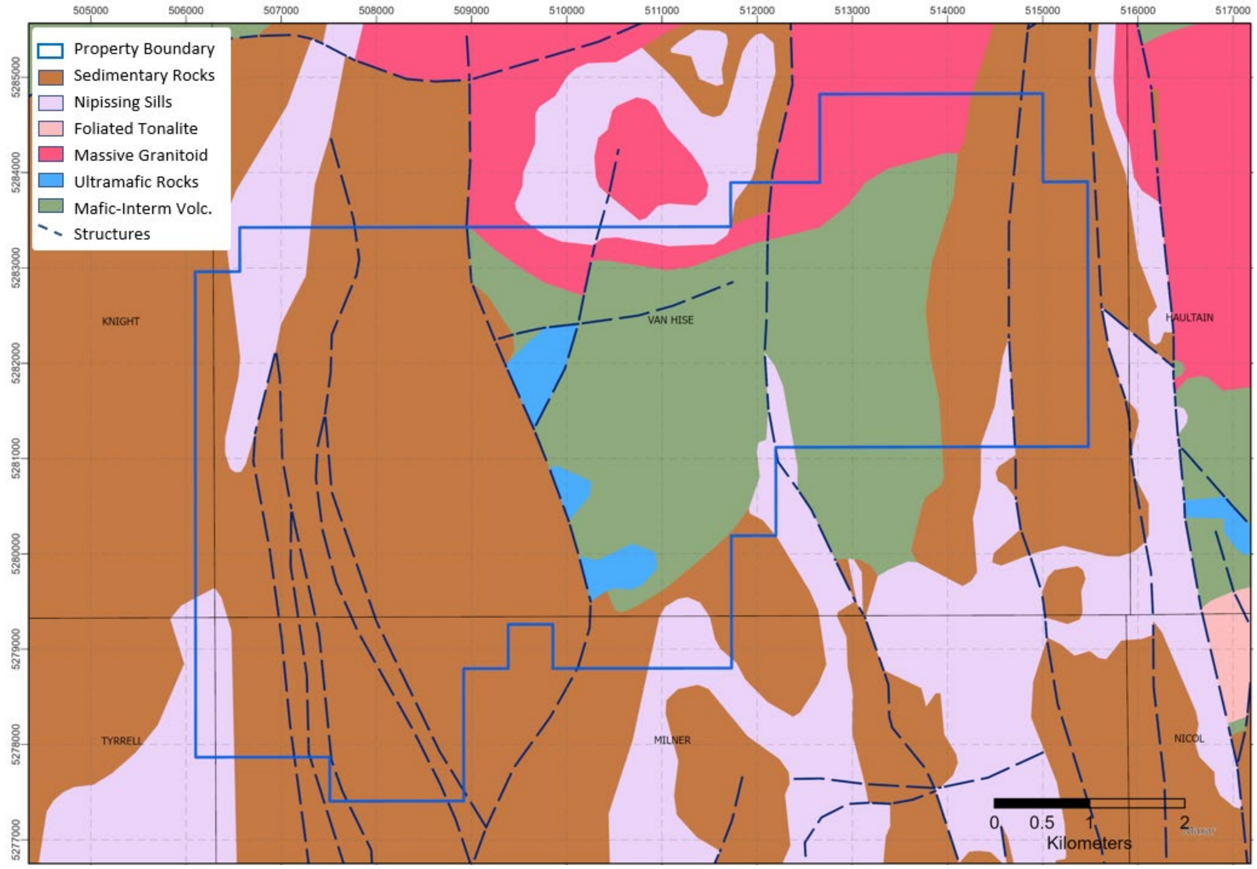
5.2 Property Geology

The geology in Van Hise Township (Figure 4) is Precambrian and consists of Nipissing diabase, Huronian sediments (Lorrain and Gowganda Formation), mafic to intermediate metavolcanics and mafic to ultramafic rocks (gabbro and dunite), the latter being evident on the eastern shore of Firth Lake.

Drilling by Texmont Mines Ltd. in 1966 on the west shore of Firth Lake and drilled to the east, intersected peridotite, and altered peridotite containing locally up to 10% magnetite and disseminated sulphides. The peridotite was intersected below a thin layer of cobalt sediments (~60 ft) and a thin layer of overburden (~6 ft). Serpentine was described as dark green to pale green with a few talcose seams.

The Texmont drilling included three nickel assays from the first hole (#01), 0.28% from 277-282 ft, 0.26% Ni from 282-287 ft and 0.51% Ni at 550 ft from a grab sample. The sample at 550 ft was described as dark green serpentine containing magnetite.

Figure 4. Van Hise area geology (OGS).



6.0 Mineralization

There are three (2) documented and registered Mineral Deposit Inventory (MDI) occurrences within the Van Hise Property. Details are provided below in Table 2.

The objective of the CNC 2022 airborne survey is to help delineate the large ultramafic intrusion in order to produce localized targets of interest for subsequent drilling.

Table 2. MNDM registered mineral occurrences in the Van Hise Property.

MDI ID Number	Occurrence Name	Easting	Northing	Commodity
MDI41P10NW00034	Firth Lake	509577	5281770	Silver
MDI41P10NW00028	Texmont	509377	5281325	Nickel

*Coordinates in NAD83 Zone 17N

7.0 2022 AirTEM Survey

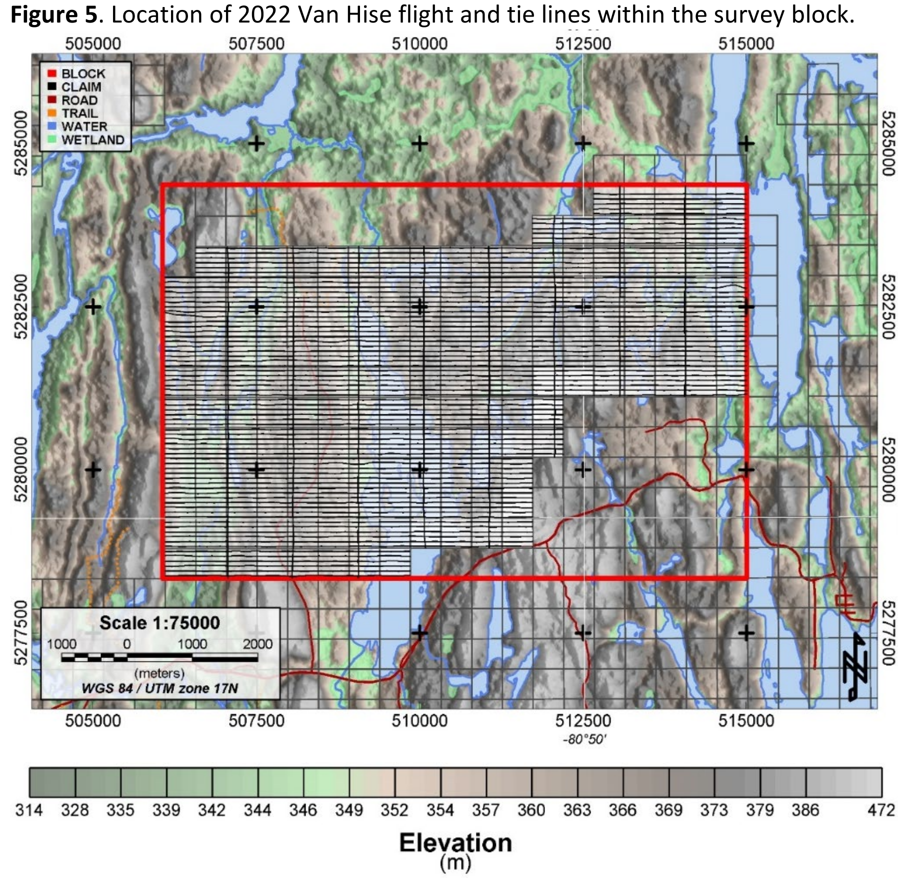
From October 25th to October 29th, 2022, CNC contracted BECI to complete an AirTEM survey consisting of magnetic and electromagnetic measurements to be flown over 770 km in the Van Hise Property located west of Gowganda, Ontario (Table 3).

Table 3. CNC 2022 Summary of flight line and tie line specifications

Area (km^2)	Type	Lines	Spacing (m)	Direction (deg)	Height (m)	Planned (km)	Actual (km)
54.0	Flight	80	75	90°/270°	40	715.6	716.8
	Tie	9	1000	0°/180°	40	54.3	55.3
	Totals					**770.0**	**772.2**

The survey was flown using the WGS-84 Datum. The Datum used to produce this report as well as the map products, grids and database is WGS-84. The projection is UTM, ZONE 17 N. All references to UTM coordinates in this report are based on the WGS-84 Datum. (Figure 5). Fuel was cached in an enclosed fuel trailer owned and operated by HeliExplore. The trailer contained 14 drums of Jet A fuel. The fuel trailer was located at the base camp, the Long Point Lodge on Highway 560 within a gravel parking lot and was blocked off with a trailer provided by the lodge owner.

Figure 5. Location of 2022 Van Hise flight and tie lines within the survey block.



7.1 Survey System

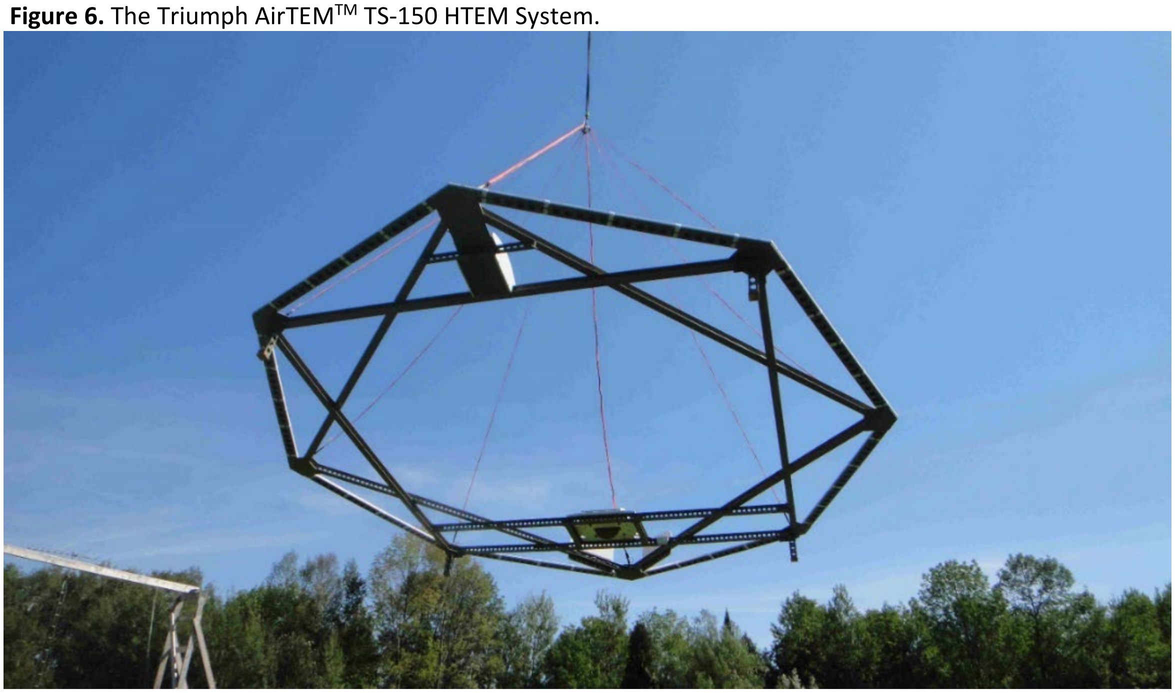
The survey system is comprised of an electromagnetic airframe and magnetic sensor housing connected to the helicopter via a tow cable and related and ancillary electronics and sensors inside the helicopter to control navigation, power, and survey height. Combined, this system measures the response from conductive sources in the surface and sub-surface, including sub-surface conductors containing minerals such as pyrrhotite and pyrite and the magnetic response from features containing minerals such as magnetite. The positions of these responses are measured using a differential GPS antenna and receiver. Flight height is measured by radar altimeter.

7.2 Electromagnetic System

The electromagnetic system (Figure 6) was developed by Triumph Instruments (Triumph) and is known as AirTEM™, a helicopter time domain electromagnetic (HTEM) system that is designed for mineral exploration, oil & gas exploration, and geologic mapping. AirTEM™ is based on the concept of a concentric transmitter and receiver geometry originally developed by Wally Boyko.

The AirTEM™ (TS-150) system features an 8.54 m diameter transmitter weighing approximately 500 Kg and producing up to 150,000 Am2 in transmitted power. The system records the full waveform and "X", "Y" and "Z" coil measurements for improved interpretation of complex conductor responses. Measurements of the total magnetic field are also provided.

Figure 6. The Triumph AirTEM™ TS-150 HTEM System.



Features

- Rigid concentric geometry
- Full waveform recording
- Software selectable base frequency
- Software selectable on-time period
- dB/dt off-time and on-time profiles
- Total magnetic field

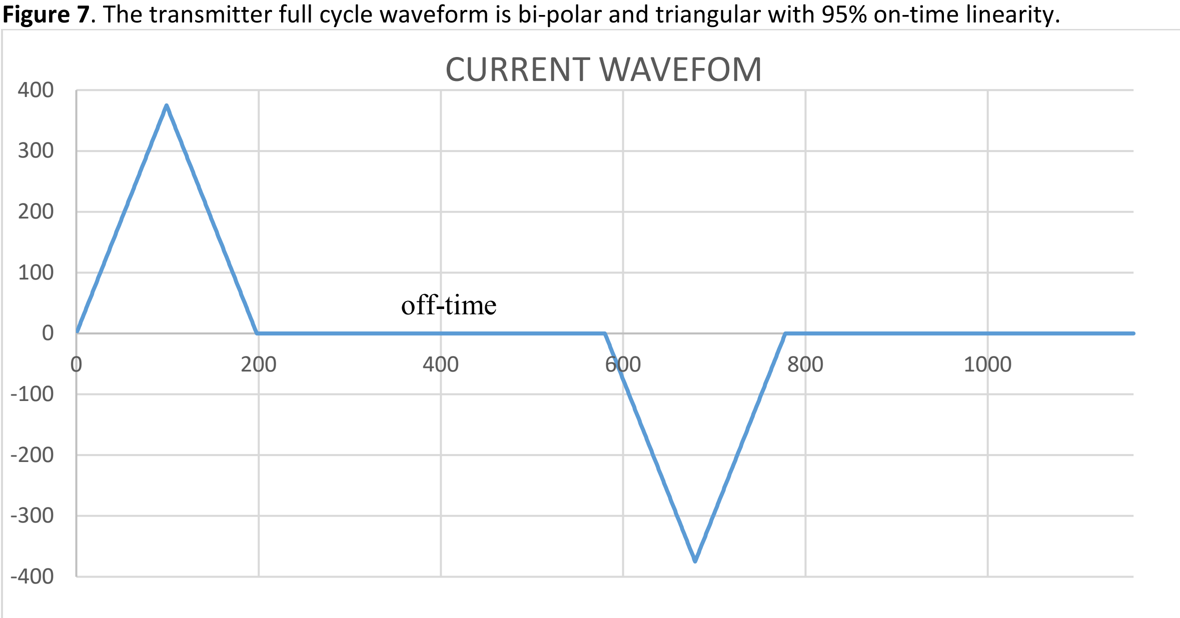
Advantages

- Excellent early off-time response
- On-time conductance discrimination
- Excellent performance in rugged terrain
- Direct drilling of targets
- Improved nomogram correlation
- Interpretation software readily available

7.3 System Waveform

The AirTEM™ system uses a bipolar linear triangular pulse as shown in Figure 7. The on-time pulse is 33% of the half-cycle. The up-going and down-going portions of the pulse are 95% symmetric with the down-going pulse being slightly shorter in time duration.

Figure 7. The transmitter full cycle waveform is bi-polar and triangular with 95% on-time linearity.



7.4 Base Frequency

This survey was flown using a 90 Hz base frequency. At this frequency the bi-polar waveform produces half-cycles 180 times per second. The total half cycle period is the inverse of 180 Hz or 5,556 µs. For a one third duty cycle the on-time pulse is 1,850 µs in duration and the off-time pulse is 3,704 µs.

The data is stacked to a 10 Hz output sample rate. Each stack is the average of 18 half-cycles, 9 positives and 9 negatives. The negative half-cycles are rectified before being added to the positive cycles. The rectified and stacked half-cycles are stored at the 10 Hz sample rate.

The half-cycle is sampled at 105 kHz or one sample every 9.48 µs producing 580 half-cycle samples, 193 during the transmitter on-time and 387 during the off-time. During the on-time there are 99 up-going samples and 94 down-going samples.

7.5 Time Channels

The time channels are defined on a logarithmic scale starting at channel 10. Channels 1 through 9 are linearly spaced, have a 5 µs width and start 10 µs after the end of the on-time pulse. For a 90 Hz base frequency there are 41 off-time channels. The time channels used are listed in Table 4.

Table 4. Time channels for the TS-150.

Channel #	Start time (ms)		Channel #	Start time (ms)		Channel #	Start time (ms)
1	0.0100		**18**	0.1455		**35**	1.4448
2	0.0150		**19**	0.1655		**36**	1.6595
3	0.0200		**20**	0.1885		**37**	1.9063
4	0.0250		**21**	0.2150		**38**	2.1901
5	0.0300		**22**	0.2454		**39**	2.5164
6	0.0350		**23**	0.2803		**40**	2.8916
7	0.0400		**24**	0.3205		**41**	3.3230
8	0.0450		**25**	0.3667		**42**	3.8190
9	0.0500		**26**	0.4199		**43**	4.3893
10	0.0557		**27**	0.4810		**44**	5.0451
11	0.0622		**28**	0.5512		**45**	5.7992
12	0.0698		**29**	0.6320		**46**	6.6662
13	0.0784		**30**	0.7249		**47**	7.6631
14	0.0884		**31**	0.8317		**48**	8.8093
15	0.0998		**32**	0.9545		**49**	10.1273
16	0.1130		**33**	1.0957		**50**	11.6427
17	0.1281		**34**	1.2581			

7.6 Magnetic System

The airborne magnetometer system consists of the housing, the sensor and control module and Larmour frequency counter. The counter output rate is 10 Hz in digital RS 232 format. Power is provided to the sensor electronics via a 28 VDC power cable on the tow cable which is terminated to a 5-pin connector at the magnetometer housing. This cable also contains conductors that carry the RS 232 signal.

The magnetometer sensor is a model CS-3 made by Scintrex Limited. It is an optical split-beam cesium magnetometer and consists of a sensor head with a 3-m cable connected to a sensor driver. The output of the sensor driver is a Larmour frequency which is linearly proportional to the earth's magnetic field. The CS-3 is shown in Figure 8 and the sensor specifications are given in Table 5.

Figure 8. Scintrex CS-3 magnetometer sensor, cable, and electronics.

The Larmour frequency is input into a frequency counter made by Triumph Instruments. The counter can convert the magnetic field to a theoretical accuracy of 0.2 pT. The output of the frequency counter is a digital value of the magnetic field with +/- 0.001 nT resolution. This value is transmitted to the EM console at a 10 Hz output rate.

The Larmour counter is not synchronized to the EM transmitter but is synchronized instead to the EM data system. This allows the frequency counter to average down the magnetic field caused by the on-time pulse from the EM transmitter. The noise resulting from lack of synchronization to the EM transmitter is removed using a high-cut frequency filter during processing which also removes the effects of dropouts when the magnetometer sensor loses lock with the magnetic field (common during turnarounds).

The magnetometer sensor housing is made from a thin-wall fiberglass tube (see Figure 9). The manufacturer is AeroComp of London, Ontario. Within the housing a two-axis gimbal holds the sensor and can be rotated in both the horizontal and vertical plane. The sensor was set to the point 45° degrees forward with a 25° azimuth for this survey. The housing contains the sensor driver electronics and the Larmour frequency counter.

Figure 9. Airborne magnetometer housing with tow cable.

A GSM-19 base station magnetometer (manufactured by Gem Systems) was used to record variations in the earth's magnetic field and referenced into the master database using a GPS UTC time stamp. This system is based on the Overhauser principle and records the total magnetic field to within +/- 0.02 nT at a one (1) second time interval.

The base station unit was erected in a geomagnetically quiet location behind Long Point Lodge near a river (Figure 10). The data was reviewed periodically to ensure a quiet environment.

Figure 10. Base station magnetometer used for diurnal corrections.

Table 5. Scintrex CS-3 specifications.

Operating Principal	Self-oscillation split-beam Cesium Vapor (non-radioactive Cs-133)
Operating Range	15,000 to 105,000 nT
Gradient Tolerance	40,000 nT/meter
Operating Zones	10° to 85° and 95° to 170°
Hemisphere Switching	a) Automatic b) Control voltage c) Manual
Sensitivity	0.0006 nT √Hz rms
Noise Envelope	Typically, 0.002 nT P-P, 0.1 to 1 Hz bandwidth
Heading Error	+/- 0.25 nT (inside the optical axis to the field direction angle range 15° to 75° and 105° to 165°)
Absolute Accuracy	<2.5 nT throughout range
Output	a) Continuous Larmor frequency proportional to the magnetic field (3.49857 Hz/nT) sine wave signal amplitude modulated on the power supply voltage b) Square wave signal at the I/O connector, TTL/CMOS compatible
Information Bandwidth	Only limited by the magnetometer processor used
Sensor Head	Diameter: 63 mm (2.5") Length: 160 mm (6.3") Weight: 1.15 kg (2.6 lb.)
Sensor Electronics	Diameter: 63 mm (2.5") Length: 350 mm (13.8") Weight: 1.5 kg (3.3 lb.)
Cable, Sensor to Sensor Electronics	3 m (9' 8"), lengths up to 5 m (16' 4") available
Operating Temperature	-40°C to +50°C
Humidity	Up to 100%, splash proof
Supply Power	24 to 35 Volts DC
Supply Current	Approx. 1.5 A at start up, decreasing to 0.5 A at 20°C
Power Up Time	Less than 15 minutes at -30°C

7.7 Navigation

Navigation was provided by the AgNav Incorporated (AgNav-2 version) GPS navigation system (Figure 11 - left) for real-time locating while surveying. The AgNav unit was connected to a Tee-Jet GPS receiver (Figure 11 – right).

Also used was a Garmin 19x antenna and receiver located on the HTEM airframe. The Garmin 19x, which is capable of sub five-meter accuracy, was sampled at 10 Hz.

Figure 11. AgNav main console (left) and Tee-Jet GPS receiver (right).

The radar altimeter transmitter and receiver antenna were fixed to the rear skids of the helicopter (one antenna on each skid) approximately 36" apart. The coaxial cables were fed through the floor of the helicopter and routed along the floor. Both coaxial cables connected to the controller which was located near the TDEM-2400 control unit. On the output side of the controller (Figure 12 - left) a proprietary 16-bit A/D convertor was connected proving digital input to the TDEM-2400 via RS 232 format. The altimeter signal was also fed into a digital read-out unit (Figure 12 - right) mounted on the dashboard of the helicopter in clear vision of the pilot to provide height above ground navigation.

Figure 12. Freeflight radar altimeter controller and digital readout.

7.8 Helicopter

The helicopter used (Figure 13) was an AS 350 SD2 with registration C-GYWB, owned and operated by Heli Explore Inc., based in La Sarre, Quebec, and contracted by BECI (together with an experienced pilot) to carry out the survey.

Figure 13. The survey used an AS 350 SD2 as shown below.

7.9 Personnel

The following personnel were involved in the survey.

Table 6. Summary of personnel.

Individual	Position	Description
Patrice Tremblay	Pilot	Helicopter pilot
Dan LeBlanc	Operator	Operated/maintained equipment
Stephen Balch	Processing	On-site processing, line-leveling, drift correction, diurnal corrections, tie-line leveling, reporting. Contractor representative
Chris Balch	Mapping	Plotting maps, printing report, folding, and binding
Edwin Escarraga	Geologist	Client representative

7.10 Data Acquisition

Data was collected through the main console (the TDS-2400, see Figure 14) which contained both the acquisition system and dc-dc power control module (booster circuit) for the transmitter coil. The TDS-2400 has a hardware controller that sets the timing for the four (4) 24-bit A/D converters that sample at 9.48 µs. The controller also generates and transmits the timing control signals to the transmitter driver located on the airframe.

The main controller also performs synchronization between the transmitter and receiver and all ancillary information (GPS, MAG, EM, RAD ALT). The ancillary information is digitized and stored at a rate of 10 Hz. The resulting data string is transmitted to a laptop computer and stored on an internal hard drive.

Figure 14. Triumph TDS-2400 EM console and acquisition system.

A rugged laptop computer running the Windows 10 operating system controls the incoming data stream from the TDS-2400. The software on the laptop (AirDAS) is capable of real-time acquisition with no data loss from 25 Hz to 300 Hz for a duty cycle that can vary from 10% to 50% (nominally set at 33%).

During the survey the Operator can monitor the incoming differential GPS data, radar altimeter, magnetometer, and all EM profiles.

After each flight data is copied from the laptop internal hard drive onto a memory stick. While there is no limit on the maximum file size during acquisition, the processing software can only process up to five (5) continuous hours of recorded data. For longer flights the data can be broken into two files.

7.11 Data Processing

Preliminary data processing is performed using BECI proprietary methods. This includes compensation, filtering and line leveling of the HTEM data. This also includes calculation of the vertical magnetic gradient, analytic signal, digital terrain model, bird height, and merging of the base station magnetic data (sampled at 1.0 sec) with the survey data (sampled at 0.1 sec).

The helicopter pilot uses "ideal" flight lines as guidance during surveying as displayed on the real-time AgNav system with the aid of a helicopter mounted GPS. A separate GPS mounted to the bird is used to record actual position. The sample rate of the GPS is 10 Hz, the same as the EM, MAG and ancillary data collected in flight.

The GPS unit outputs both latitude, longitude and easting, northing values, all in the WGS-84 Datum, using a UTM Projection. The positional data is not filtered but occasional bad data points are interpolated using a linear algorithm.

The radar altimeter is located under the base of the helicopter. The helicopter mounted radar altimeter is used to maintain terrain clearance by the pilot. A digital indicator is mounted on the dashboard of the helicopter. This installation is approved by a licensed helicopter engineer provided by the helicopter operator.

The EM data is processed using BECI proprietary software designed to compensate, filter and level both the off-time and on-time data.

The first step in processing is to determine the transmitter shut-off time and align the time gates to this position. The length of time that the transmitter is on is known as the on-time. The time gates are logarithmically spaced in the off-time and linearly spaced in the on-time.

The second processing step is the calculation of the system background transient. This is done at a suitable flight height, nominally 1,000 feet or higher, beyond the effect of any earth conductivity. During this time EM data is collected for a period of 50 seconds and averaged into a single background transient. This is subtracted from the transients recorded online.

The third step is to assign the flight line numbers to each data point so that the flight can be separated into flight lines within Geosoft.

Line-leveling and drift-correction are achieved on a flight-by-flight basis using the background transients, recorded at the start and end of each flight.

Filtering the data involves a two-step process. Spikes are removed using an algorithm based on the Naudy non-linear filtering algorithm. This is followed by an 11-point Hanning filter that has the effect of smoothing the profiles over an equivalent distance of approximating twice the nominal flight height.

Micro-leveling of the late time channels is also performed before the data file is written to disk. Conductor picks and Tau time constants are determined at this point as well.

B-field processing of the time channels uses a fully integrated on-time in addition to the integrated off-time (i.e., full waveform). The early off-time channels are evaluated for possible primary field leakage (this involves a compensation filter based on linearly derived correlation between the late on-time and early off-time samples). The exact methodology is considered proprietary.

The magnetic data (i.e., MAG from the airborne sensor and BMAG from the ground sensor) is collected without a lag time (i.e., synchronous with the HTEM data and UTC time), therefore a lag time correction is not applied. In areas where the MAG sensor has become unlocked (e.g., most often during turnarounds), the total magnetic field values are replaced with a dummy value ("*") and the data is later interpolated in Geosoft.

The raw ASCII survey data files and BMAG ASCII data files are imported into BECI software and merged using UTC time, common to both files. A quality control check of the BMAG data is made on a day-to-day basis.

Diurnal magnetic corrections are applied to the MAG data using the BMAG data. The base station data (i.e., BMAG) is linearly interpolated from a 1.0 sec sample rate to 0.1 sec to correspond to the flight data after the BMAG has been filtered with a 60 second filter.

Once the diurnal field is subtracted from the MAG data, a heading correction is applied, and the resulting total magnetic intensity (TMI) is micro-leveled.

8.0 Results

Results of the magnetic survey are presented in the form of the total magnetic intensity (TMI) which is shown in Figure 15 and the 1st vertical derivative of the TMI as shown in Figure 16. The magnetic data are dominated by the highly magnetic response of the serpentinized ultramafic unit located below Firth Lake.
The anomalous EM response is shown for early off-time (Figure 17), early mid-off-time (Figure 18), mid-off-time (Figure 19), mid late off-time (Figure 20) and late off-time (Figure 21).

Figure 15. Shaded image of the Total Magnetic Intensity (TMI) over the survey block.

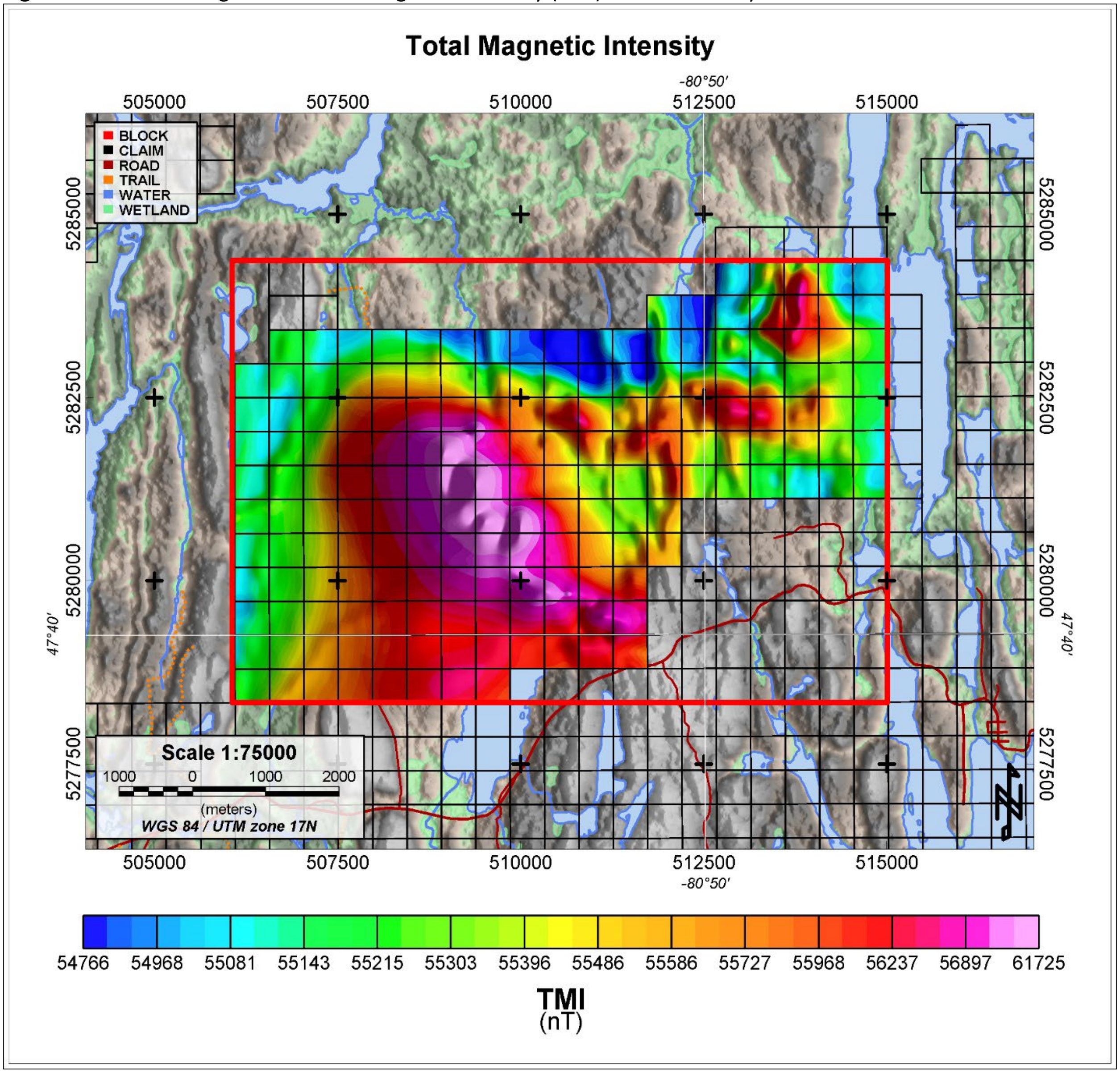


Figure 16. Shaded image of the First Vertical Derivative (1VD) over the survey block.

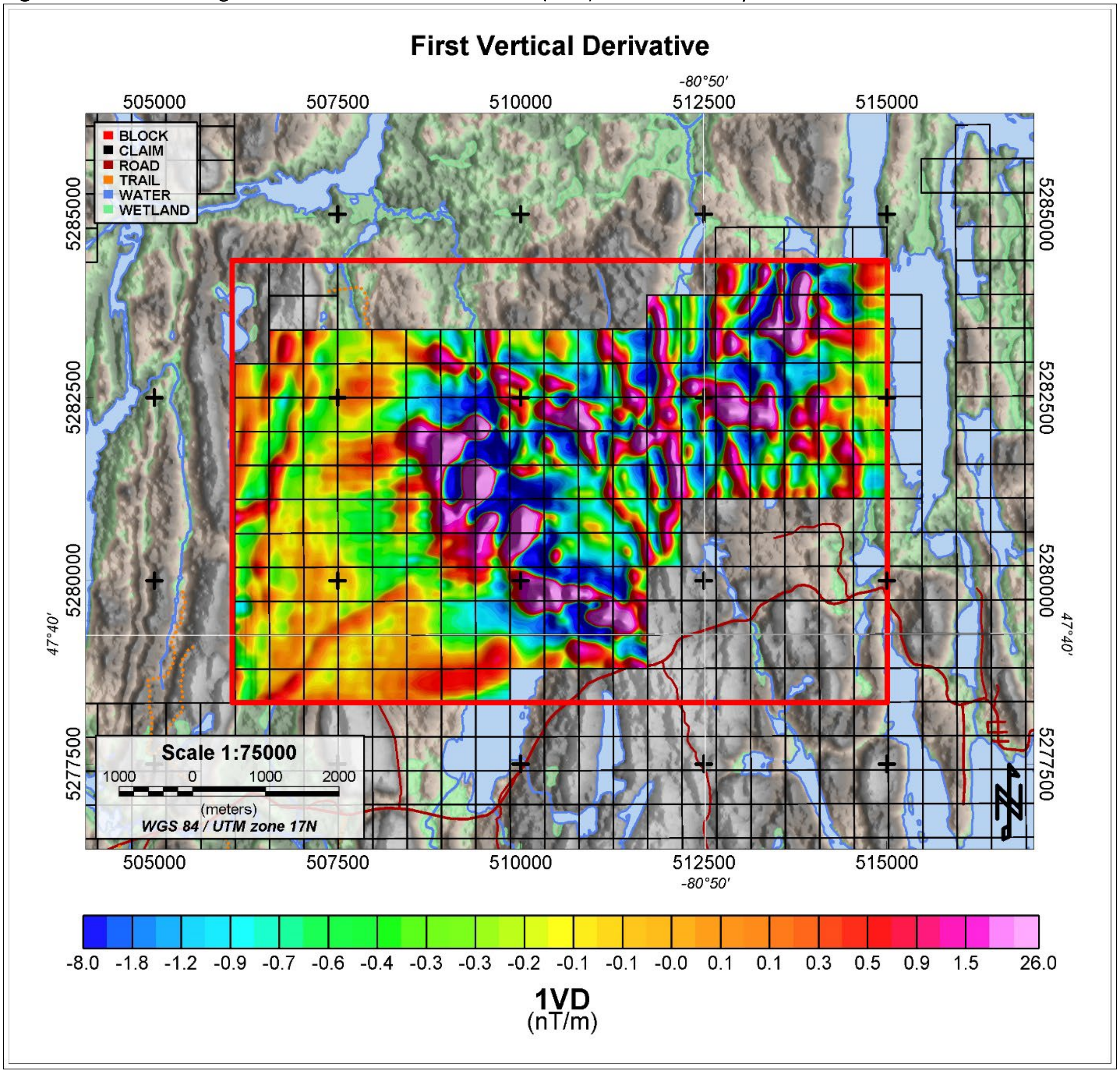


Figure 17. Image of the Early Off-Time (Zoff[0]) over the survey block.

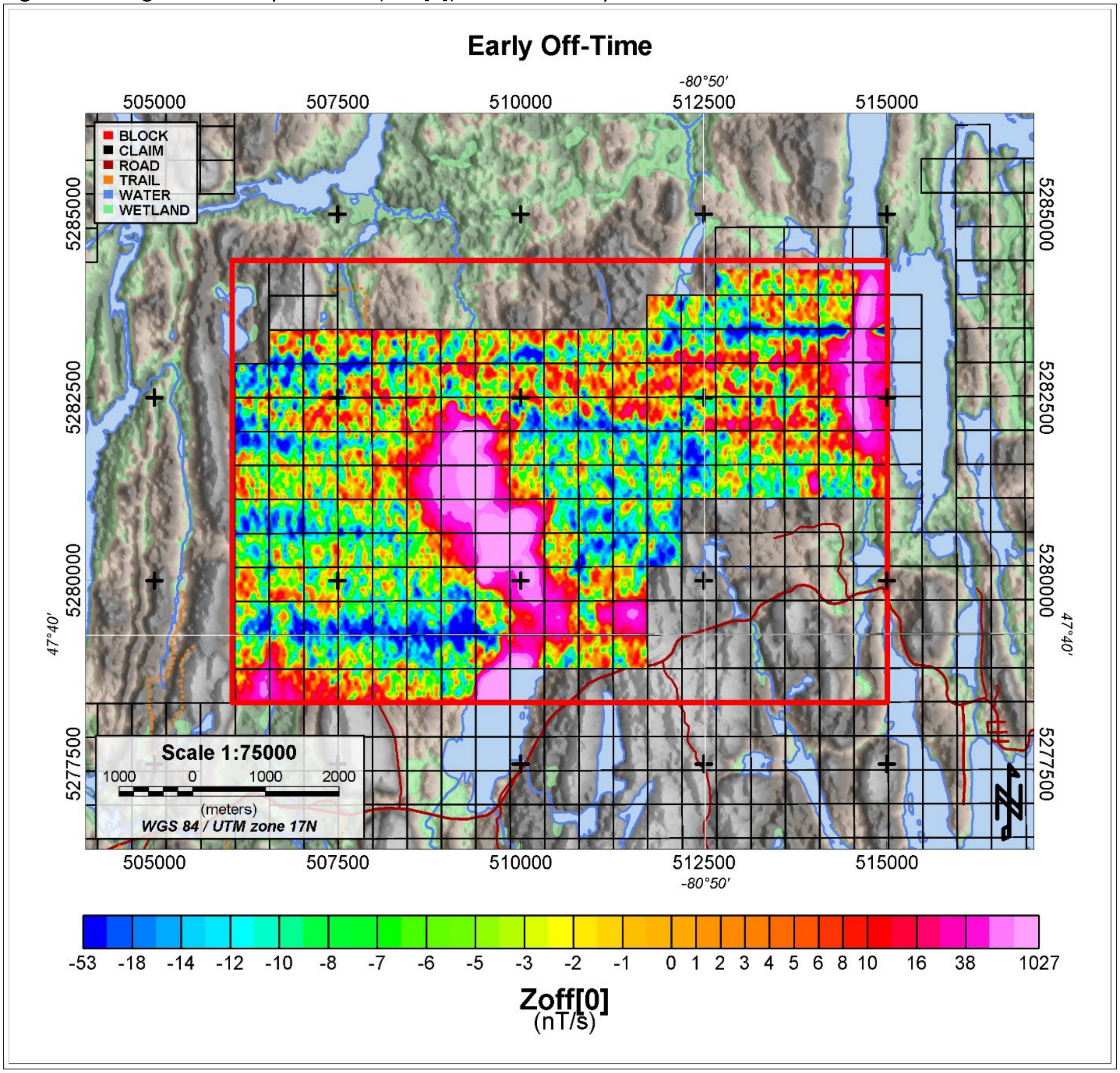


Figure 18. Image of the Early Mid Off-Time (Zoff[10]) over the survey block.

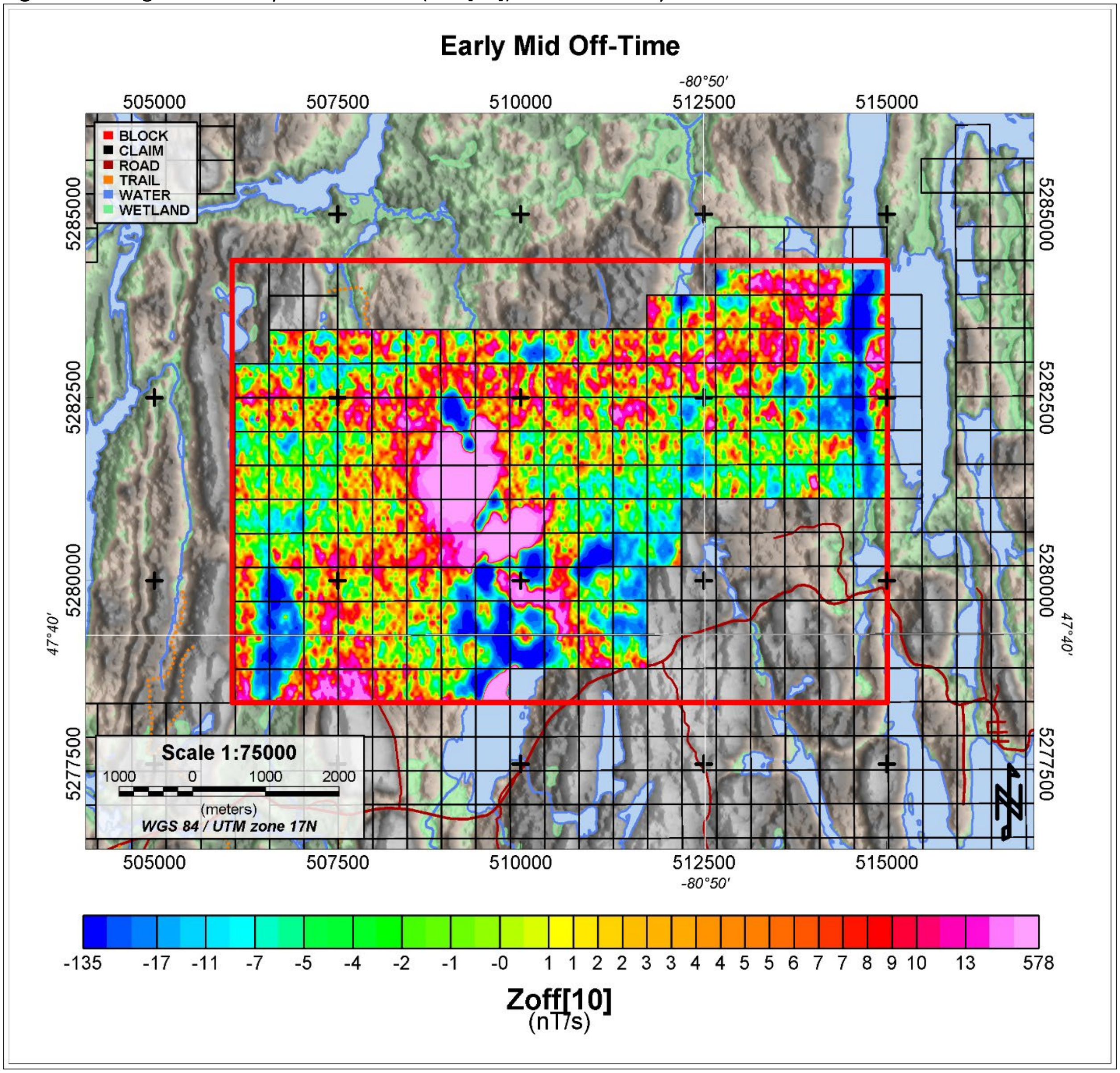


Figure 19. Image of the Mid Off-Time (Zoff[20]) over the survey block.

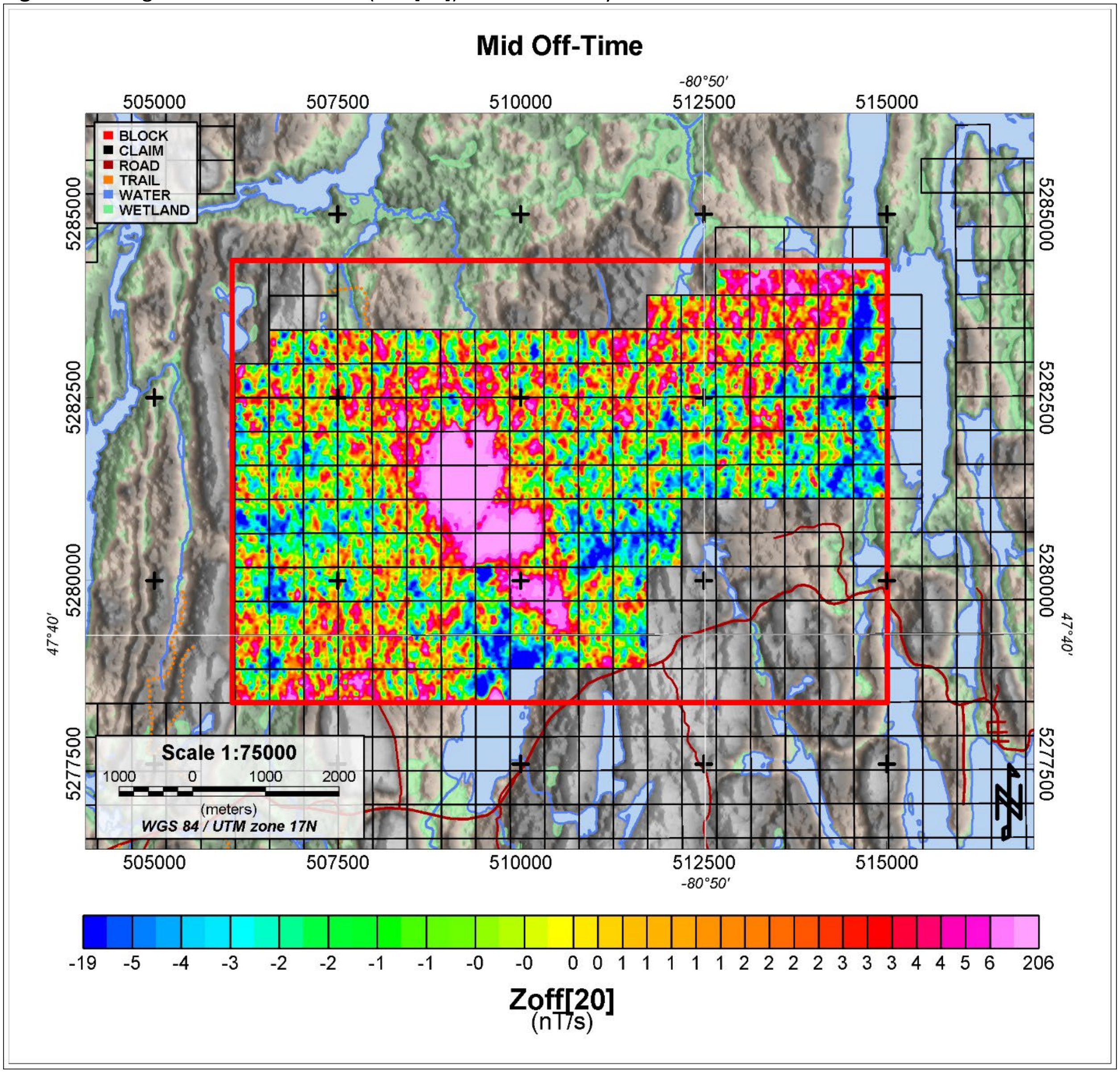


Figure 20. Image of the Mid Late Off-Time (Zoff[30]) over the survey block.

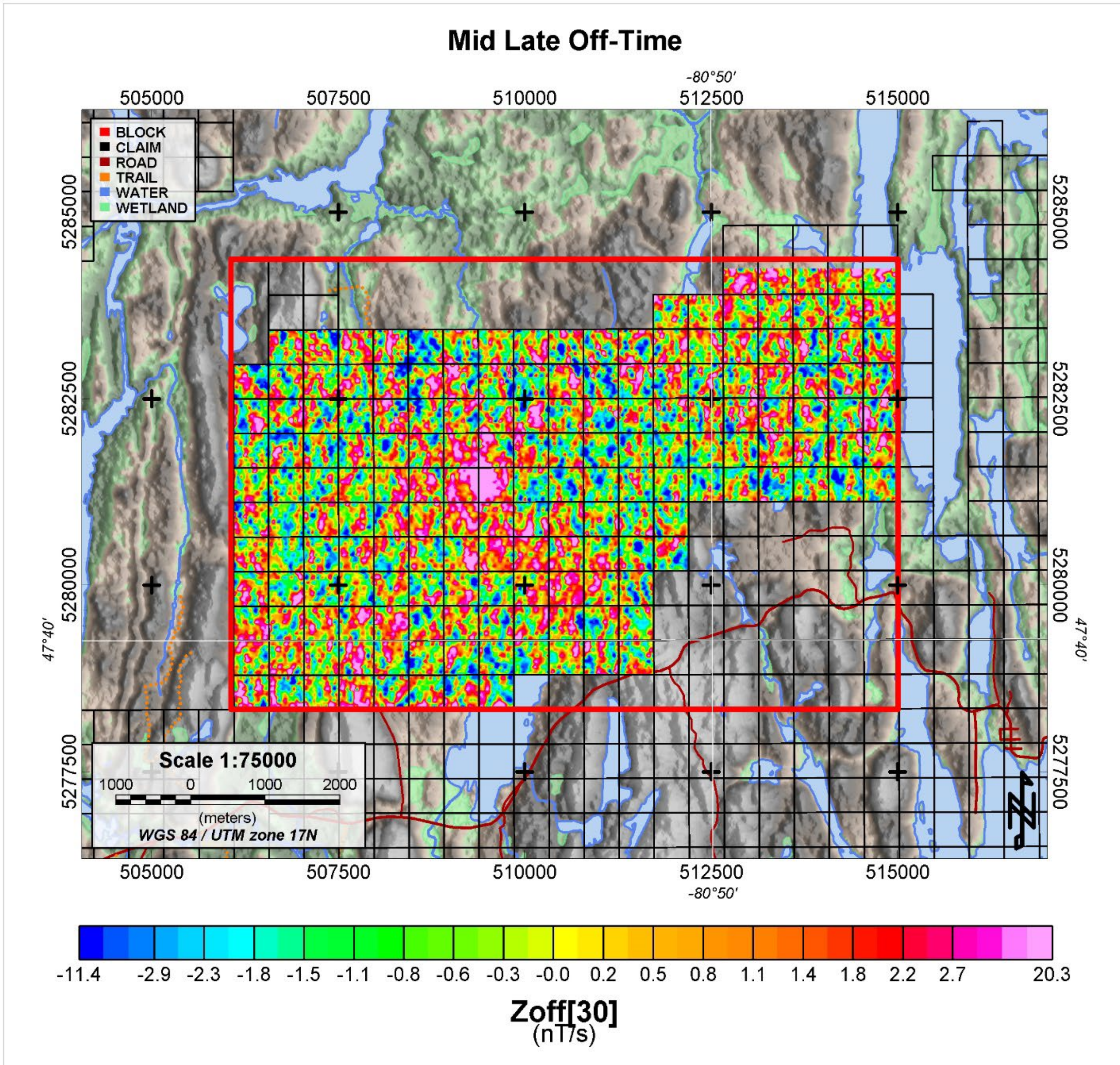
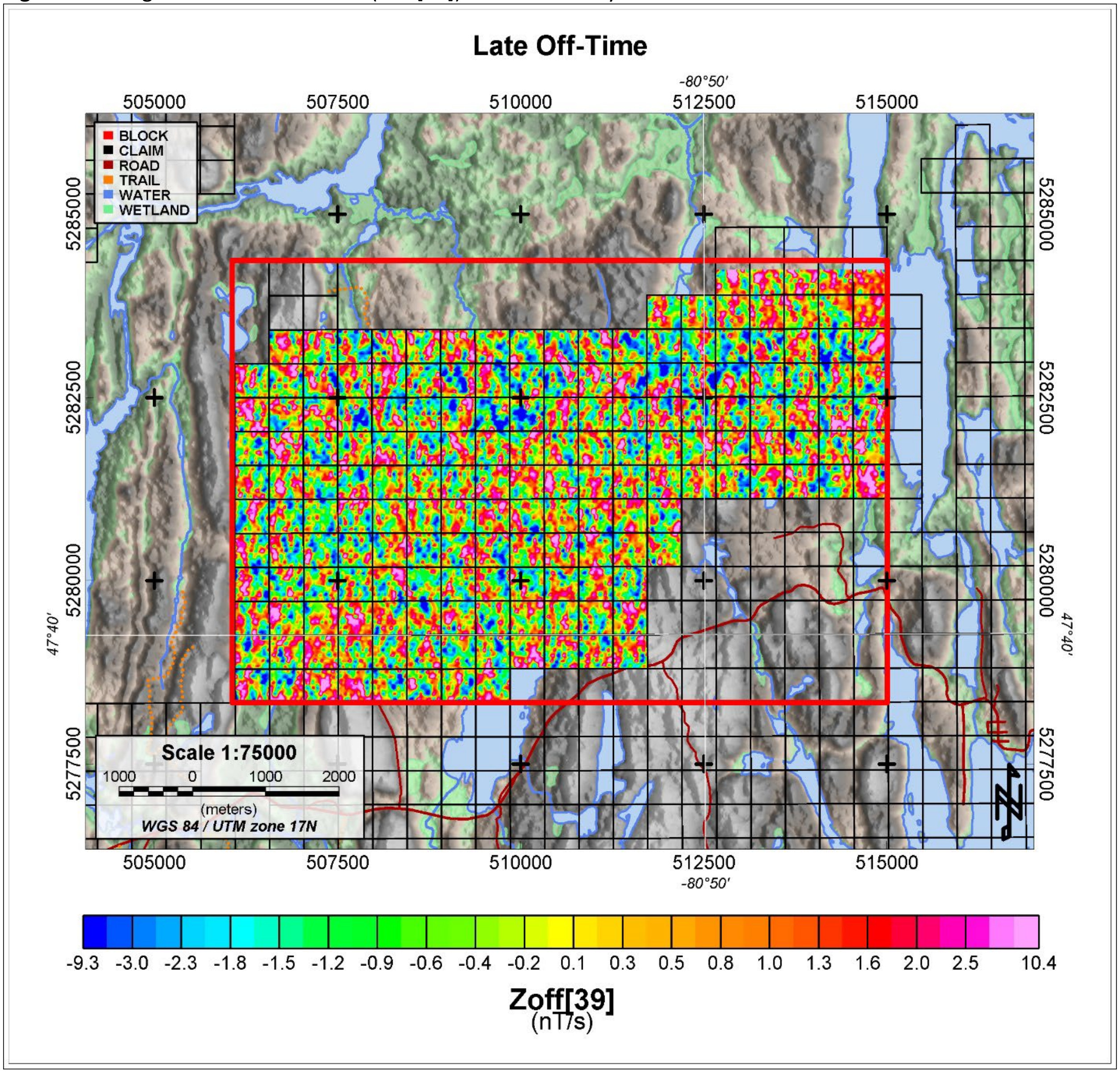


Figure 21. Image of the Late Off-Time (Zoff[39]) over the survey block



9.0 Recommendations and Conclusions

The 2022 Airborne survey succeeded at identifying a major magnetic feature with associated EM response that is consistent with serpentinized ultramafic intrusions (like the Crawford Intrusion, for example). The intrusion has approximate dimension of 3 km along strike by 2 km across strike with a strike direction of 325^{o} (NNW) and a steep dip to the southwest.

The trend identified on the Van Hise Property is confirmed by previous drilling in the late 1990s which intersected serpentinized ultramafics. The next phase of exploration would be a ground follow-up program to identify areas suitable for drill platforms for a widely spaced drill program of 400 m spaced holes, inclined at -45º to -60º inward from the contact toward the center of the intrusion to develop a resource. Holes should be limited to 400 m in length

10.0 References

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Statement of Qualifications

I, Stephen Balch, do hereby state the following to be true:

1. I am a professional geoscientist (P.Geo.) in good standing, registered with the Association of Geoscientists of Ontario (#2250),

2. I am a graduate of University of Western Ontario with a degree in Honors Geophysics (1985),

3. I am a practicing exploration geophysicist with more than 37 years experience,

4. I reside at 11500 Fifth Line, Rockwood, Ontario, N0B 2K0,

5. I own directly or indirectly approximately 640,000 shares of Canada Nickel which I hold for investment purposes,

6. I have no direct interest in the Van Hise Property,

7. I prepared this report based on my general experience and my detailed involvement with the survey and the data, and I am solely responsible for its contents.

Dated at Rockwood, Ontario on the 7th day of November 2022.

Stephen Balch, P.Geo.
Geophysicist
Balch Exploration Consulting Inc.

Statement of Qualifications

I, Edwin Escarraga, P.Geo., of Orix Geoscience Inc. do hereby certify that:

1) I am a Senior Project geologist employed by Orix Geoscience Inc., with a business address at 25 Adelaide St East. Suite 1400, Toronto ON, M5C 3A1.
2) I graduated with a M. Sc degree of Geology from Acadia University in 2010.
3) I am a Professional Geoscientist (P.Geo.) registered with the Professional Geoscientists of Ontario (PGO No. 2859) and I am a member of the Prospectors and Developers Association of Canada.
4) I am responsible for the preparation of this report titled ‘Report on the 2021 Diamond Drill Program, Van Hise Township, Porcupine Mining Division, Northeastern Ontario, NTS 42A13 and 42A14.
5) I have no prior involvement with the property that is the subject of this Report.

Dated this 1st day of December 2022.

Edwin Escarraga
____
Edwin Escarraga, P.Geo. (PGO # 2859)

Category	Date	Invoice #	Subtotal (before taxes)	Description
Contractor	2022-11-02	935634	8,000.00	Mob/Demob
Contractor	2022-11-02	935634	$ 96,250.00	Airborne HTEM Survey (Van Hise)

TOTAL	**$ 104,250.00**	for 770 ln -km

$135.38/ln-km

# Claims Flown	Ln-Km Flown
173	770

173 of 193 claims flown.

$ 602.60 per claim