21 January, 2016
NTS: 041 O 15

# Total Magnetic Field and VLF Surveys on the Swayze Property

## Claim 4275471

## Swayze Township

## Porcupine Mining Division

## 380850E, 5299450N
## UTM Z17N NAD83

**Report Prepared for:**

2254022 Ontario Ltd.
Suite 108, 70-C Mountjoy St N.
Timmins, ON
P4N 4V6

**Report Completed by:**

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Kencana Technical Services Inc.
3048 Seneca Dr.
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# 1.0 Introduction

The Swayze property is comprised of three (3) wholly owned (100%) uncontiguous unpatented mining claims in Swayze and Dore townships by 2254022 Ontario Ltd. The claims border the patents constituting the historical Kenty mine property to the west, northeast, and east. Information about the claims are available in Table 1 below. A regional scale location map of the property is shown in Map 1, and a detailed claim map is shown in Map 2.

| CLAIM | DUE DATE | ASSESSMENT | TOWNSHIP | SIZE |
|---|---|---|---|---|
| 4271227 | 02/13/2016 | 1200 | ROLLO (G-3246) | 3 |
| 4270364 | 01/31/2016 | 2400 | SWAYZE (G-3249) | 6 |
| 4275471 | 04/16/2016 | 2400 | DORE (G-1108) | 6 |

## 1.1 Location and Access

The property is located approximately 115 km southwest of Timmins, and 190 km northwest of Sudbury. Access to the property is by a well maintained lumber road, accessible by summer, and intermittently in the winter depending on the road maintenance due to logging operations. The property can be accessed from the north via highway 101 to the Folyet Timber road 10 km east of Folyet. Access from the south is from the Dore road at the 50 km marker west of the Sultan Industrial Road and Highway 144 junction. Several smaller ATV roads accessible from the Dore/Folyet Timber roads transect claims 4270364 and 4275471.

# 2.0 Past Work

The claim groups have seen work done on regional scale surveys by the Ontario Geological survey, limited diamond drilling and stripping by junior miners, and extensive prospecting by a local prospector, Charles Mortimer.

## 2.1 OGS Surveys, Donovan (1965)

Donovan (1965) mapped Swayze and Dore townships at a scale of 1:50,000. Claim 4275471 is shown to be underlain by predominantly massive intermediate volcanics, flanked to the north with porphyritic textured felsic volcanics with lenses of metasediments. On a regional scale NW trending fault are noted, as well as ENE trending synclinal and anticlinal fold axis, although none are noted on claim 4275471.

## 2.2 Geological Survey of Canada, Heather and Shore (1999)

The Geological Survey of Canada mapped the Swayze Greenstone Belt at a scale of 1:50,000 (Heather and Shore, 1999). General fault and fold structures agree with those observed by Donovan (1965), although additional high strain deformation zones are noted. More differentiation of volcanic sequences are made, leading to a more detailed representation of the geology underlying claim 4270364. This map shows the claim underlain by intrusive ultramafic volcaincs flanked by mafic volcanics, with northern and southernmost areas of the claim groups underlain by felsic volcanics with metasediment horizons. The geology of the claim is shown in Map 3, modified from Heather and Shore (1999).

## 2.3 Red Pine Exploration Inc. (2010)

Red Pine Exploration Inc. explored the claims directly surrounding the Kenty mine, which include the current claim group. Their work program consisted of linecutting, IP, stripping and trenching, and limited diamond drilling. Trenching and striping identified several anomalous gold values associated with quartz-carbonate altered volcanics, and more limited showings associated with a felsic porphyry unit. Some higher grade assays were reported associated with north-south trending quartz veins with instances of visible gold. Diamond drilling showed very limited anomalous samples occurring in relation to the felsic porphyry unit.

## 2.4 Charles Mortimer

Several pits and trenches of varying age are noted on the current claim group, mostly occurring on claim 4275471, with limited assays reported. Several altered and weathered pits and trenches were noted during the completion of the survey.

# 3.0 Current Work Program

The current work program looked to complete a reconnaissance survey on claims 4275471 with a total field magnetic and VLF survey. Survey lines were completed at 100 meter intervals, with the eastern most 4 lines completed with magnetic and VLF survey lines, and the remaining lines with just total magnetic field survey lines. This resulted in majority of the claim area being covered by the survey, with the exception of the northeastern portion of the claim, which had restricted access due to a small river. A total of 10.7 km of survey lines were completed (4.8 km magnetic/VLF survey km)

## 3.1 Magnetic Survey

A GSM-19 Overhauser Magnetometer with a synchronized GPS system was used to collect magnetic field readings. Readings were collected at 2 second intervals, and were corrected for diurnal variations using a stationary proton procession magnetometer and applied using Gem-Link 5.2 software. Base station readings were collected at 15 second intervals using a reference field of 56,000 nT. A summary of the magnetometer specifications is shown in Table 2.

**Table 1. Specifications for GSM-19 Overhausser Magnetometer**

| | |
|---|---|
| **Sensitivity:** | 0.022 nT @ 1Hz |
| **Resolution:** | 0.01 nT |
| **Accuracy:** | 0.1 nT |
| **Range:** | 20,000 - 120,000 nT |
| **Sampling Interval:** | 2 s |

## 3.2 VLF Survey

VLF readings were taken at paced distances of approximately 10 - 20 meters depending on the terrain. The Cutler, Maine (24.0 kHz) station was used and percentage in-phase and out-of-phase (quadrature) components measured relative to the horizontal field. Only station readings with signal strengths

greater than seven picoTesla (7 pT) were utilized in interpretation. The instrument has self-leveling features, and a sensitivity of 0.1 % for phase component measurements.

### 3.3 Data Processing and Interpretation

Magnetic field measurements were selected for signal strength values greater than 39 to ensure quality readings. Magnetic field measurements were interpreted using Surfer 11 software employing the Kriging interpolation method. An anisotropic search was selected with the semi-major axis perpendicular to the line direction. The resulting grid was smoothed using a 9x9 Gaussian filter to better delineate trends, and the resulting contour map is shown in Map 4.

The VLF profiles were interpolated linearly with respect to line direction from the raw VLF in-phase and out-of-phase components. These were overlain on a map with projection of the In-Phase and Out-of-Phase (Quadrature) readings projected perpendicular to the line direction, at a scale of 1 cm to 100 %. A map of VLF profiles is shown in Map 5, and the VLF profiles with the magnetic field are shown on Map 6.

## 4.0 Results

The total magnetic field survey shows the central portion of the claim underlain by a variably magnetized unit, with the northern contact and southern contact of this unit showing linear magnetic highs. The southern contact and magnetic high strikes at approximately 70 degrees, and the north contact strikes at approximately 120 degrees. It appears these trends may converge to the east of the claim boundary. The northern trend is bounded to the south by a weakly low magnetic unit, which appears to represent the ultramafic intrusive unit (SNui) on the regional geology map (Heather and Shore, 1999). This magnetic low may suggest that this unit is present, and the magnetic low due to the serpentine and/or talc alteration of this unit.

The VLF survey shows that the relatively flat magnetic unit to the north of the northern magnetic high is associated with a weak to moderate conductor which may be caused by a geological contact. The central portion of the variably magnetized unit is possibly associated with a very weak conductor in the magnetic low trend to the south of the northern magnetic high trend.

## 5.0 Conclusions and Recommendations

The magnetic highs appear to occur on the contacts areas between the altered intrusive ultramafic unit and the mafic volcanics to the south and north. This model is interesting in that it suggests a favourable structure for gold mineralization. Several large stripping areas from both Red Pine Exploration Inc. and Mortimer leave several opportunities to follow up on these anomalies to test the potential for gold mineralization on these anomalies. Prospecting is recommended on these anomalies along strike of this anomaly/contact zone. A compilation of Red Pine IP anomalies and trenching is also suggested to better characterize the mineralization in this area. Additionally the area of magnetic highs could be surveyed at 50 meter intervals for total magnetic field to better delineate the magnetic anomalously zone and locate more detailed structures.

The VLF conductor appears asymmetric in nature and occurs near the inferred contact with the felsic volcanic unit, with the anomaly appearing to increase in strength to the east. This is inferred to be a low priority target to follow up with, and may be caused by the contact between rock types, or possibly graphitic horizons in a felsic volcanic/metasediment unit. The author is of the opinion it has minimal relation to auriferous geological structure.

## 6.0 Works Cited

Donovan, J. F. (1965). *Geology of Swayze and Dore Townships, Geological Report No. 33.* Toronto: Ontario Geological Survey.

Heater, K. B., & Shore, G. T. (1999). *Geology, Swayze Greenstone Belt, Ontario, Open File 2284a (Sheet 1).* Ottawa: Geological Survey of Canada.

Salo, R. W. (2010). *Report of Prospecting, Trenching and Soil Sampling on the Abitibi West and Mortimer Project Properties; Swayze Greenstone Belt.* Red Pine Exploration Inc.

## Appendix A: Statement of Author Qualifications

1. I have graduated from Queen's University with a Bachelor of Science Degree in Engineering, majoring in geological engineering
2. I hold  a current Ontario prospector's license (License Number: 1007743)
3. I have conducted and interpreted previous radiometric, magnetic, and VLF surveys over the past 3 years.

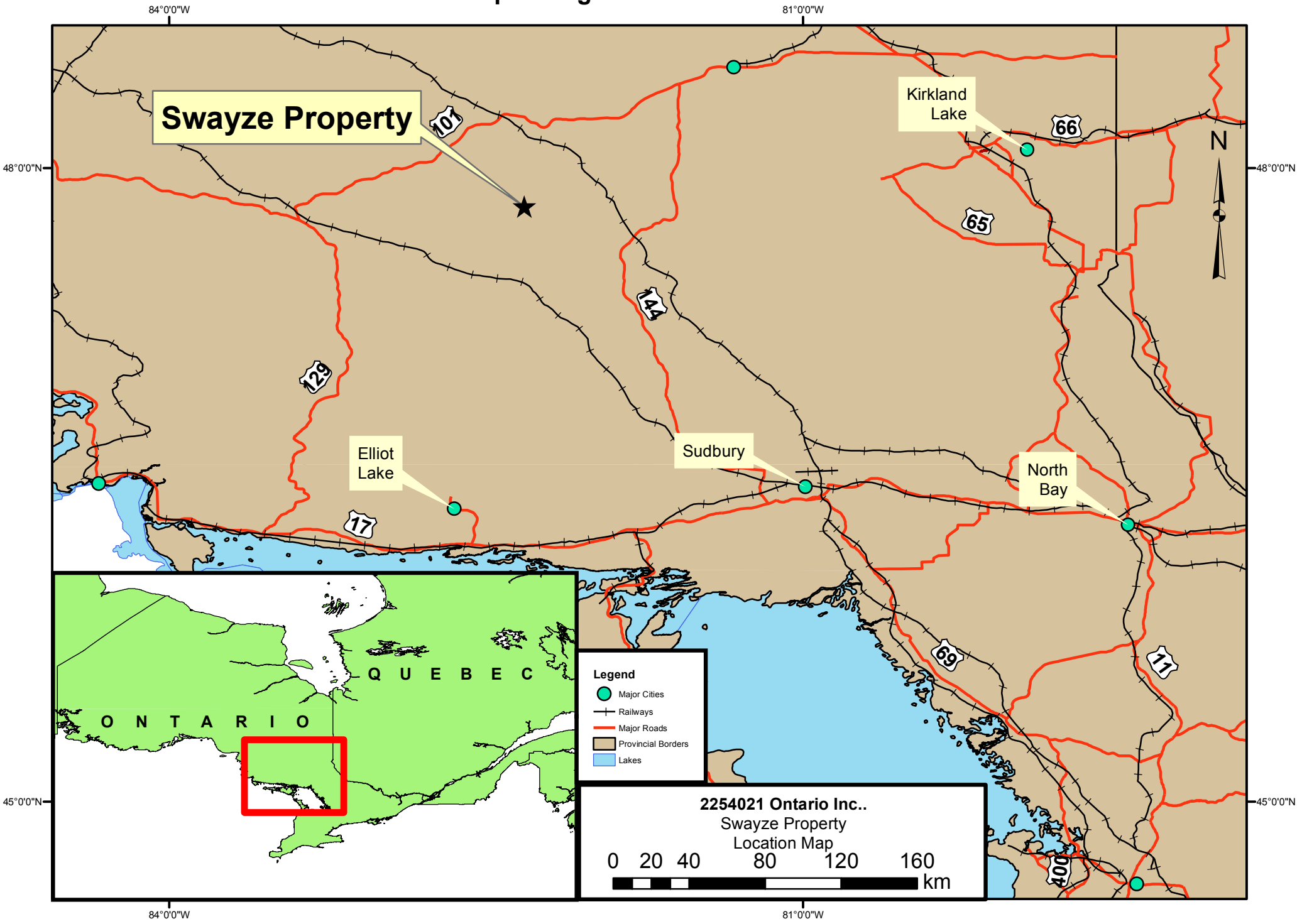
To the best of my knowledge and abilities, the statements, information and conclusions made in this report and accompanying maps and figures are correct. The author of the report also has an ownership interest in the claims mentioned in this report.

Signed:

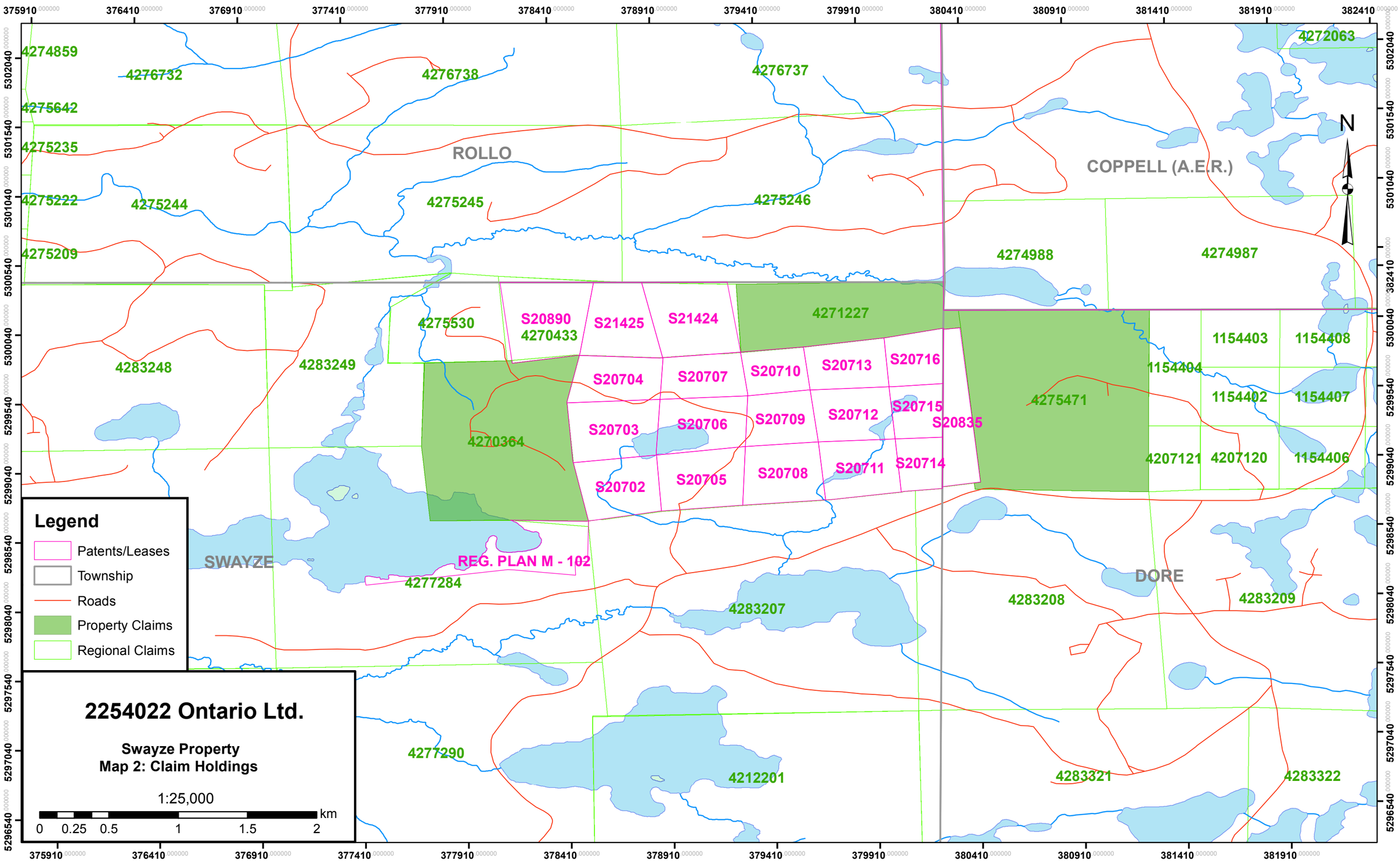
Lucas Currah

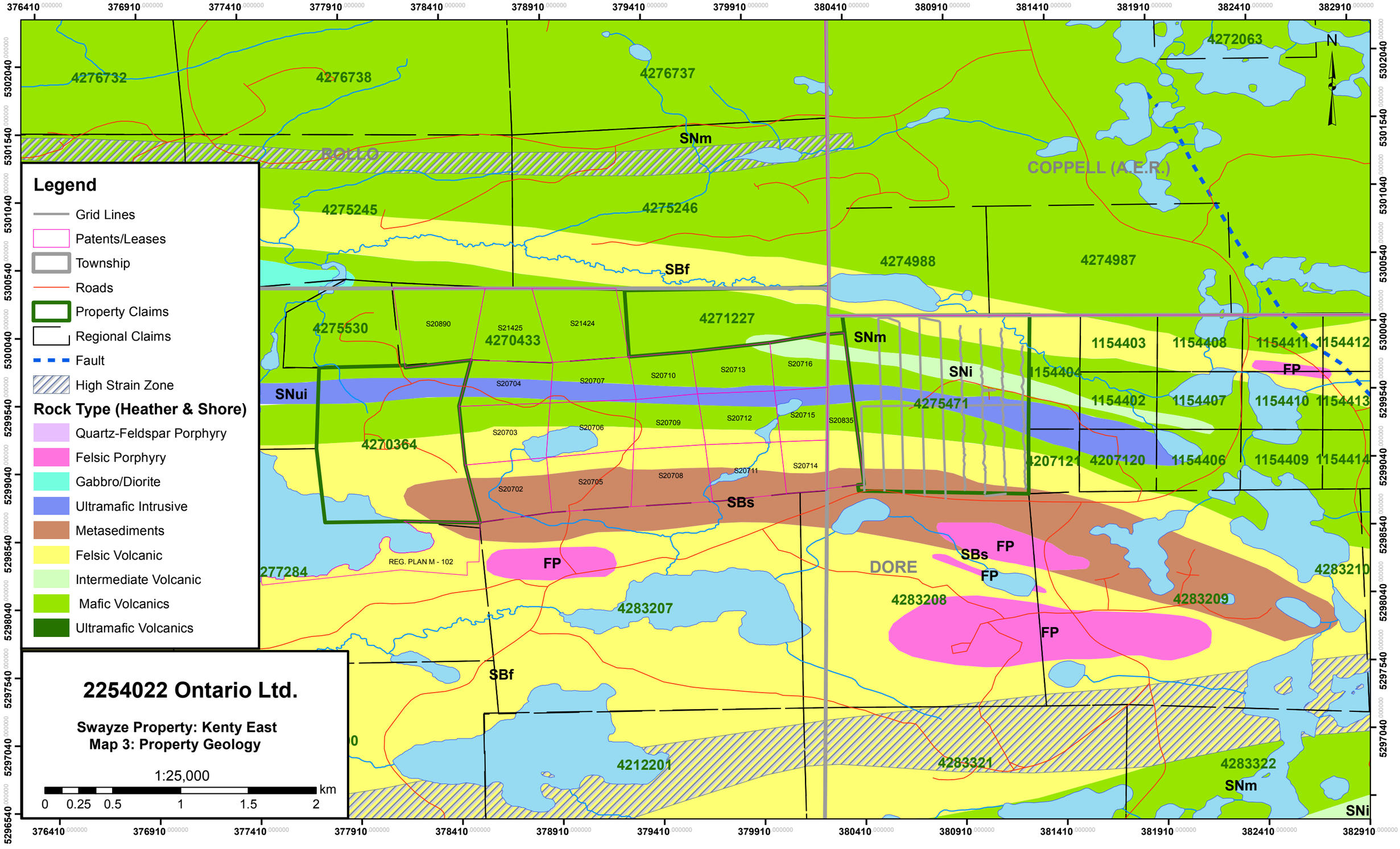
21 January, 2016

# Map 1: Regional Location



# Map 2: Property Claim Holdings




Legend
Grid Lines
Patents/Leases
Township
Roads
Property Claims
Regional Claims
Fault
High Strain Zone
Rock Type (Heather & Shore)
Quartz-Feldspar Porphyry
Felsic Porphyry
Gabbro/Diorite
Ultramafic Intrusive
Metasediments
Felsic Volcanic
Intermediate Volcanic
Mafic Volcanics
Ultramafic Volcanics
2254022 Ontario Ltd.
Swayze Property: Kenty East
Map 3: Property Geology
1:25,000
0 0.25 0.5 1 1.5 2 km
N
ROLLO
COPPELL (A.E.R.)
DORE
REG. PLAN M - 102
4276732
4276738
4276737
4272063
4275245
4275246
4274988
4274987
4275530
4270433
4271227
4270364
4275471
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4207120
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SBf
SNui
SNi
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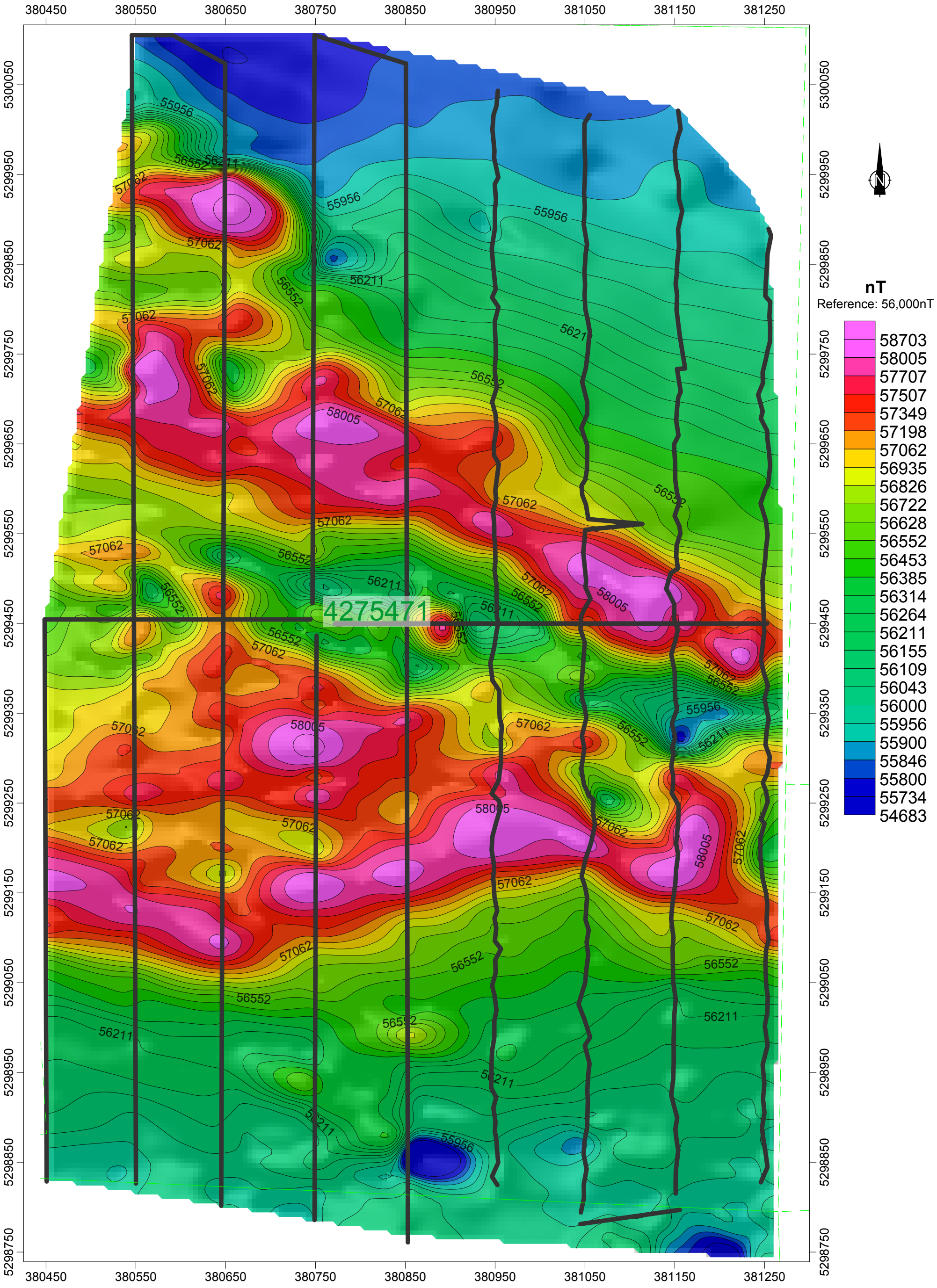


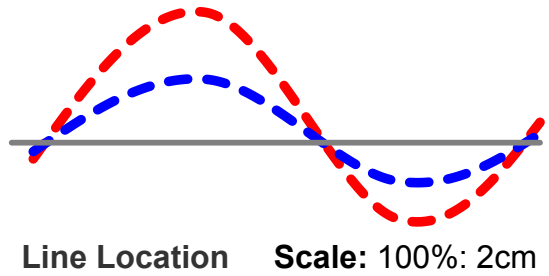

# 2254022 Ontario Ltd.

Swayze Property: Kenty East
Total Field Magnetic Map

**Surveyor:** Lucas Currah
**Date:** August, 2015
**Claims:** 4275471
**Kilometers:** 11
**Instrument:** GSM-19 Overhauser Magnetometer/VLF
**Sign Convention:** Increasing north field positive

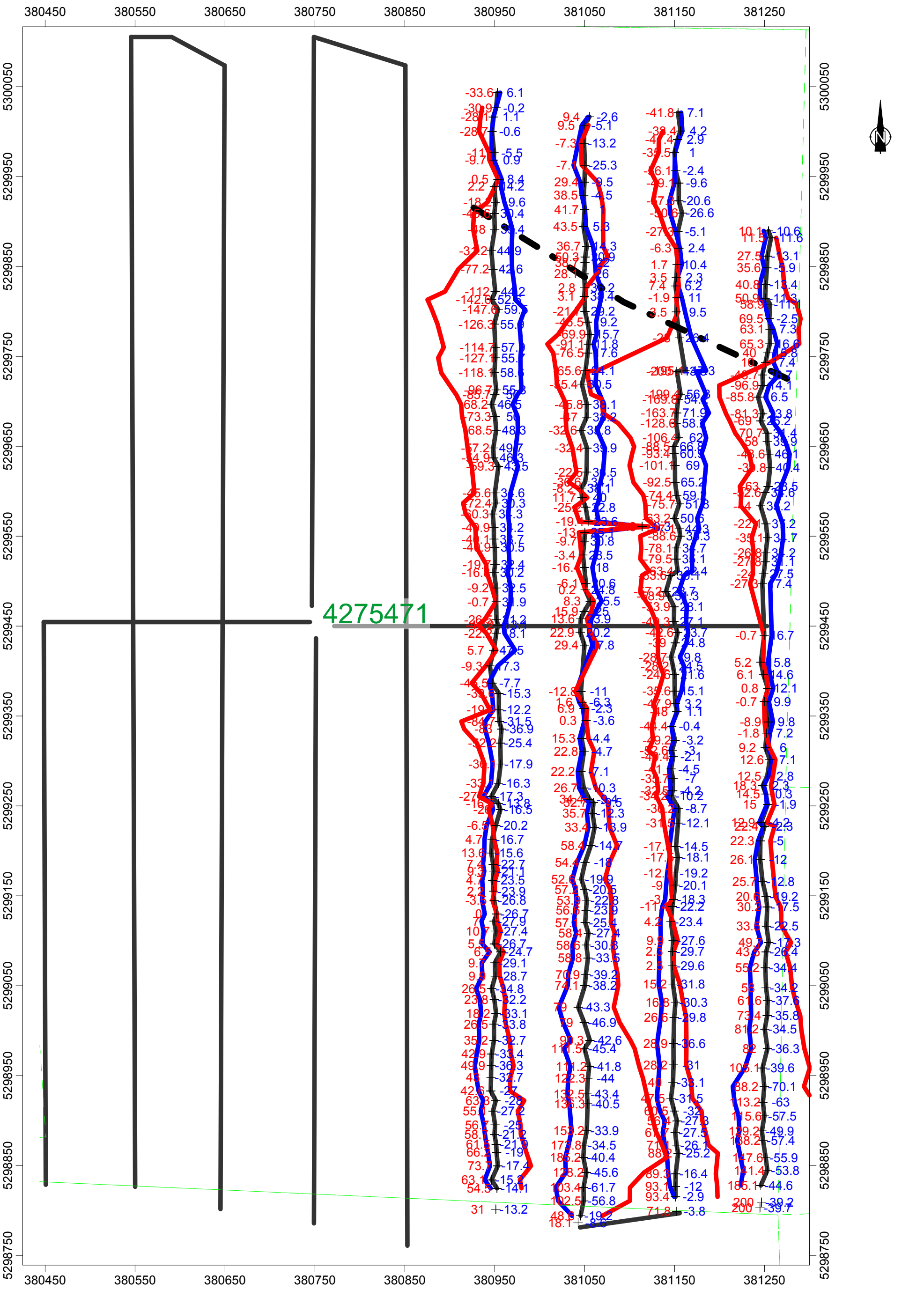
**Scale:** 1:10,000 **Datum:** UTM NAD83 Z17N

0m 200m 400m 600m 800m



Line Location
In-Phase (%)

**Scale:** 100%: 2cm
Quadrature (%)



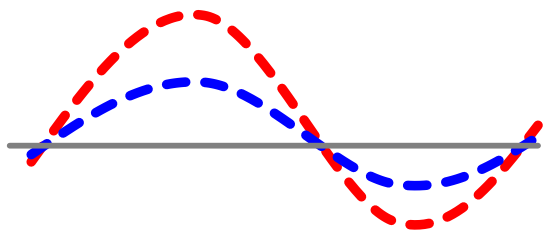

# 2254022 Ontario Ltd.

Swayze Property: Kenty East
VLF Profiles Map

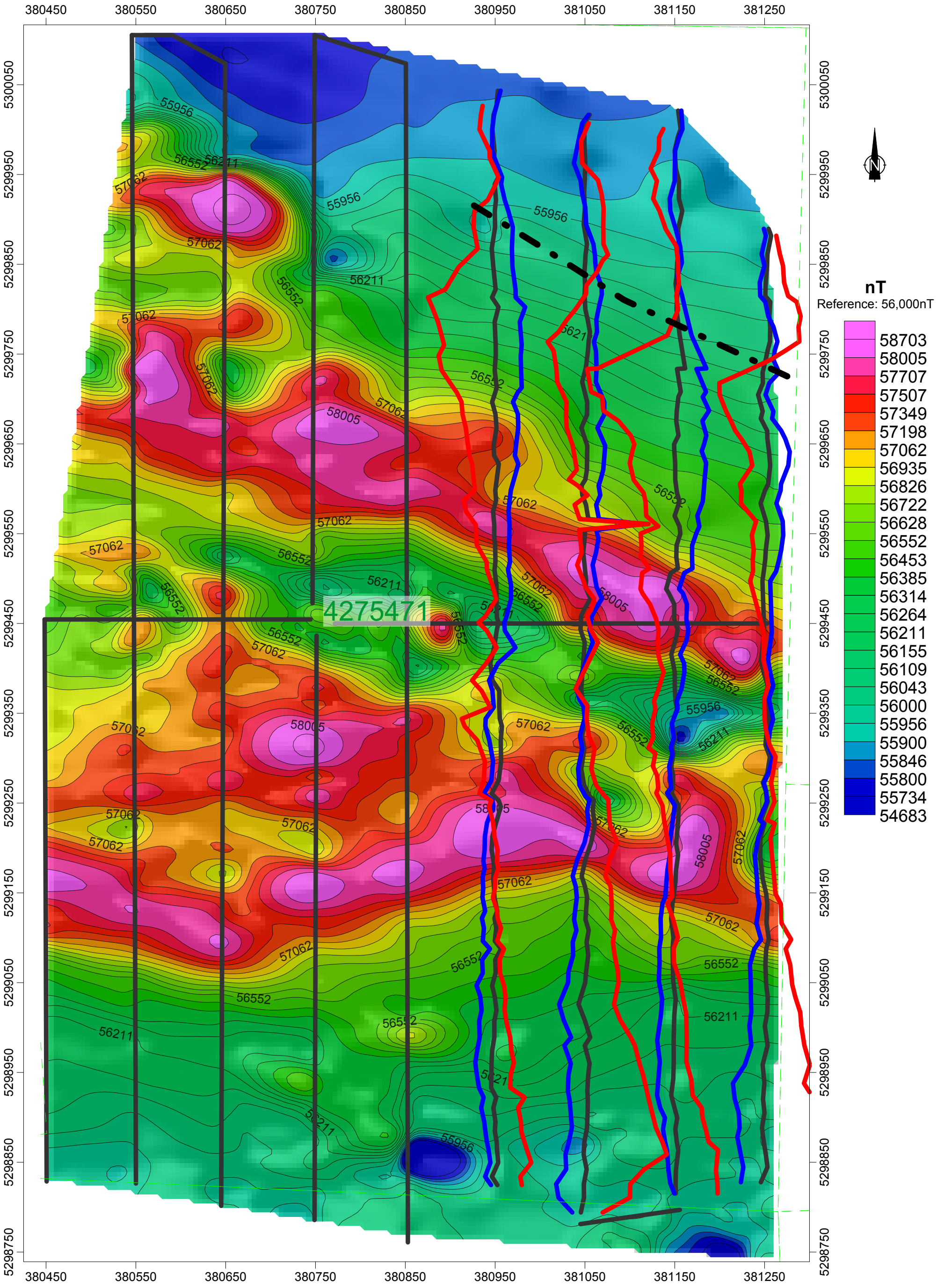
**Surveyor:** Lucas Currah
**Date:** August, 2015
**Claims:** 4275471
**Kilometers:** 11
**Instrument:** GSM-19 Overhauser Magnetometer/VLF
**Sign Convention:** Increasing north field positive

**Scale:** 1:10,000 **Datum:** UTM NAD83 Z17N

0m 200m 400m 600m 800m



Line Location
In-Phase (%)
**Scale:** 100%: 2cm
Quadrature (%)

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Swayze Property: Kenty East
Total Field Magnetic and
VLF Profiles Map

**Surveyor:** Lucas Currah
**Date:** August, 2015
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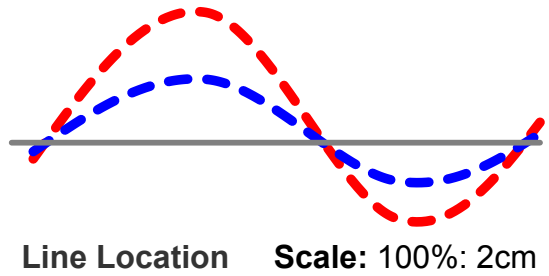
0m 200m 400m 600m 800m



**Line Location** **Scale:** 100%: 2cm
**In-Phase (%)** **Quadrature (%)**