

# Group

# National Instrument 43-101Technical Report

Pigeon River Property Hartington Township Ontario, Canada Thunder Bay Mining Division, NTS 42A4 Geology Updated Technical Report

UTM: Zone 16, 277134m E, 5332229m N, NAD83

Prepared For

Zara Resources Inc. and Hadley Mining Inc.

By

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# 1. Summary

The Pigeon River property is located in the Southern Province of the Precambrian Shield area of northern-western Ontario, and is located approximately 60 km southwest of Thunder Bay, Ontario. The property consists of 1 unpatented mining claim covering approximately 256 ha and is located in Hartington Township, Thunder Bay Mining Division of North-western Ontario. Zara Resources Inc. owns a 75% interest and Hadley Mining Inc. owns the remaining 25% interest in the property.

The property is underlain by sediments of the Animikie Group including, sulphidic black shale of the Rove Formation that are believed to be host to ultramafic rocks that potentially could host nickel-copper mineralization.

The previous property owner, Pele Mountain Resources Inc., has completed an airborne VTEM survey and associated aeromagnetic survey over the property. This was followed by four diamond drill holes totalling 991 m.

The work to date indicates that the property is underlain by areas with magnetic signatures indicating the presence of ultramafic rocks. The target model is one of maficultramafic flows with associated nickel bearing magmatic sulphides being hosted by deep water extensional basin sediments. This setting is very similar to other areas of the world hosting world class nickel deposits including the Pechenga area of Russia and the Thompson Nickel Belt of Canada. It is recommended that further work be done consisting of diamond drilling to be done to confirm the model, along with borehole geophysics. The proposed program has a budgeted cost of \$170,000.

# 2. Introduction

Sibley Basin Group (SBG) was commissioned by Zara Resources Inc. (Zara), to prepare an updated Canadian National Instrument 43-101 compliant report summarising the geology and work done to date on the Pigeon River property to reflect the change in ownership of the subject property. The property is located 60km southwest of Thunder Bay in North-western Ontario, Canada. This report was prepared by SBG using publically available documents, and company supplied reports. The objective of this report is to summarise known information, determine an appropriate genetic model to help guide future exploration and to present recommendations for future work.

#### 2.1. Terms of Reference

The scope of work entailed reviewing available information, and making recommendations for further work.

#### 2.2. Sources of Information

The geotechnical reports and maps supporting the statements made in this report have been verified for accuracy and completeness by the Author. No meaningful errors or omissions were noted.

SBG used various sources of information as references for this report. These include documents available from the Ontario Geological Survey (OGS) and the Geological Survey of Canada (GSC). In addition a search and review was completed of publicly available technical documents. These consisted primarily of work assessment reports filed by mining companies with the Ontario Ministry of Northern Development and Mines ("MNDM"), maps produced by the Ontario MNDM and the Geological Survey of Canada, and information obtained by visiting various mining and geotechnical websites. All of these supporting documents are listed in the References section.

While the author used reasonable care in preparing this document using these sources of information there is no guarantee as to their accuracy or completeness of these supporting documents.

#### 2.3. Personal Inspection

The author has visited the property several times between 2011 and 2012 with the last visit being March 2 to March 5, 2012 while providing technical and logistal support to the previous property owner, Pele Mountain Resources Inc. As the property is still in the early exploration stages and no activity has taken place since this last visit it was deemed unnecessary to conduct a personal inspection as part of the preparation of this report.

#### 2.4. Units and Currency

Units of measure are expressed in the International System of Units (metric), unless indicated otherwise. All currency values are in Canadian Dollars.

ha	hectares	AEM	Airborne Electro-Magnetic
km	Kilometres	DFO	Department of Fisheries and Oceans
m	Metres	MNDM	Ministry of Northern Development and Mines
Ν	North	NAD	North American Datum
NE	North east	NTS	National Topographic System
NW	North west	TMI	Total Magnetic Intensity
W	West	UTM	Universal Transverse Mercator

#### 2.5. List of Abbreviations

# 3. Reliance on Other Experts

This report was not prepared relying on the services of any other experts.

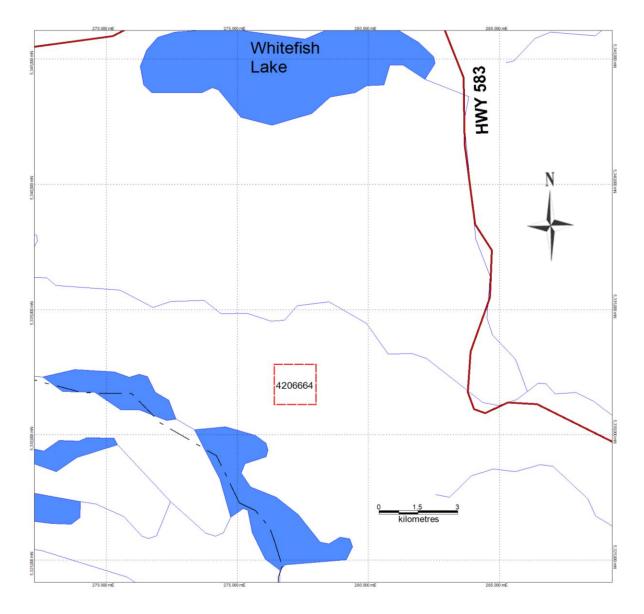


Figure 1 – Claim sketch for the Pigeon River Property.

# 4. Property Description and Location

#### 4.1. Property Description

Zara Resources Inc. owns a 75% interest and Hadley Mining Inc. a 25% interest in the Pigeon River Property in Hartington Township, Thunder Bay Mining Division of Northwestern Ontario. The property consists of 1 unpatented claims consisting of 16 claim units and covers an area of approximately 256 ha located at about UTM 277134m E, 5332229m N, Zone 16, NAD83. Figure 1 is a claim sketch outlining the property.

A summary of the claims making up the Pigeon River property is presented in Table 1. Ontario Mining Act regulations require expenditures of \$400 per year per unit, prior to expiry, to keep the claims in good standing for the following year. Assessment reports documenting the expenditures must be submitted by the expiry date.

Claim	Township	Recorded	Due Date	Status	% Option	Work Req	Total App	<b>Total Res</b>	Bank	Claim Unite	Area
4206664	HARTINGTON	2009-Dec-31	2015-Dec-31	A	100 % Y	\$6,400	\$25 <i>,</i> 600	\$39,762	0	16	256

#### Table 1 – Pigeon River property Claim Summary.

On January 7, 2013 Zara Resources Inc. (Zara) acquired a 100% interest in 28 claims, that at the time comprised the Pigeon River property, from Pele Mountain Resources Inc. (Pele) for the sum of \$700,000 payable by the issuance of 2,250,000 Common Shares of Zara at a deemed price of \$0.10 per share, and 4,750,000 Non Voting Convertible 5% Preference Shares of Zara at a deemed price of \$0.10 per share. Subsequently Zara has allowed 27 of the claims to lapse leaving the current 1 claim.

The property is also subject to a 2% NSR, of which 0.5% is granted to Pele and 1.5% is granted to 2212150 Ontario Inc. operating as Vanex Exploration. Pele has the option to buy 1% of the Vanex NSR for \$1,000,000.

On April 10, 2015, Zara announced the sale of a 25% interest in the current property to Hadley Mining Inc. (Hadley) for sum of \$9,000.

The property has not been legally surveyed.

#### 4.2. Location

The property is located in North-western Ontario, Canada, approximately 60 km southwest of Thunder Bay, Ontario and 12 km south of the village of Suomi, Ontario (see Figure 2). They are located within NTS 42A4 in UTM zone 16 (NAD 83). The Pigeon River property is centred at approximately 277134m E and 5332229m N.

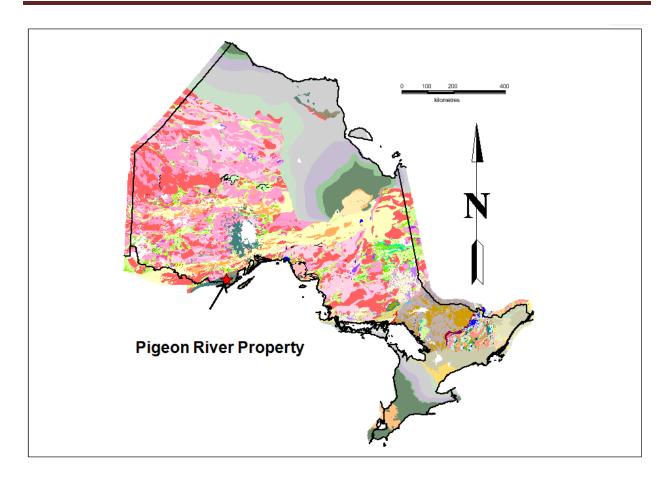


Figure 2 – Location Map (MNDM – Geology Map of Ontario, Wilson and Pelletier, 1981)

# 5. Accessibility, Climate, Local Resources, Infrastructure and Physiography

#### 5.1. Accessibility

While there are several villages in the general area (Suomi, Silver Mountain and Nolalu) the nearest community providing major services, including an international airport, is Thunder Bay, Ontario. Highway 593 provides all-season road access to the eastern portion of the property. And a number of logging roads provide reasonable access to much of the rest of the property.

#### 5.2. Climate

The climate of the North-western Ontario area is dominantly a moist continental climate moderated by the maritime effects of Lake Superior. Environment Canada records for Thunder Bay, the nearest major centre with weather records, show that summer temperatures range between 20°C and 23°C, with a mean temperature of 17.6°C in July. Winter temperatures usually range between -11°C and -15°C with an average January temperature of -15°C (http://climate.weatheroffice.gc.ca/climateData/canada\_e.html). Lakes typically freeze-up in mid-December and break-up is usually in mid-April. The region usually receives approximately

712 mm of precipitation per year, with about 26% originating as snow during the winter months. On a yearly basis the area averages about 91 days of precipitation per year.

#### 5.3. Local resources and Infrastructure

The project area is easily accessible by all season roads and numerous logging roads. Equipment and supplies can be easily acquired and transported by road from Thunder Bay, the nearest major centre 60 km to the north-east. There, one has access to an international airport, hospitals and schools. The nearest First Nation community is Fort William First Nation, also 60 km to the north-east of the property, at the south edge of the city of Thunder Bay. There are several small villages to the north and northeast of the property with the nearest communities being Suomi, Silver Mountain and Nolalu.

There is road access, both all-weather (Hwy. 593) and logging, to the immediate project area. The closest access to the Ontario power grid is at Kakabeka Falls, 38 km to the north east and that community is also the closest access to both the CNR and CPR rail systems as well as the Trans-Canada highway.

#### 5.4. Physiography

The project area is located in North-western Ontario within the Boreal Zone. Average elevation is approximately 284 m above mean sea level. The property area is predominantly rolling hills with good drainage that is part of the Lake Superior watershed. Glacial features are common in the area and consist primarily of ground moraine deposits (Mollard and Mollard, 1983). The project area is located within the drainage basins of the Arrow and Whitefish Rivers that flow eastward into the Pigeon and Kaministikwia Rivers respectively and then into Lake Superior.

The area is well forested with stands of black and white spruce (Picea glauca and mariana) and jack, red and white pine (pinus banksiana, pinus resinosa and pinus strobes) mixed with trembling aspen (Populus tremuloides), balsam poplar (Populus balsamifera) and white birch (Betula papyrifera with minor amounts of white cedar (thuja occidentalis) and tamarack (Larix Iaricina). Willows (Salix) and alders (Alnus) are present along creeks and in poorly drained areas.

# 6. History

The first geological investigation of the area was that of Ingall (1887) who described the iron-bearing rocks in the Silver Mountain and Whitefish Lake area. Gill (1926) presented a study of the stratigraphy of the Gunflint Formation from Gunflint Lake, at the international border, northeast to Silver Mountain. Tanton (1923) looked at the iron showing at Mink Mountain and then in 1931 described the silver deposits in the Thunder Bay area as far west as Whitefish Lake. Goodwin (1960) also examined the Gunflint Formation in the Whitefish Lake area.

While the northern limit of the Gunflint Formation has been examined in relative detail the area covered by the current property has not. There is no record of any regional geological mapping of the Rove Formation in the area south of Whitefish Lake. Nor is there any record of previous exploration of any kind in area covered by the current claim block.

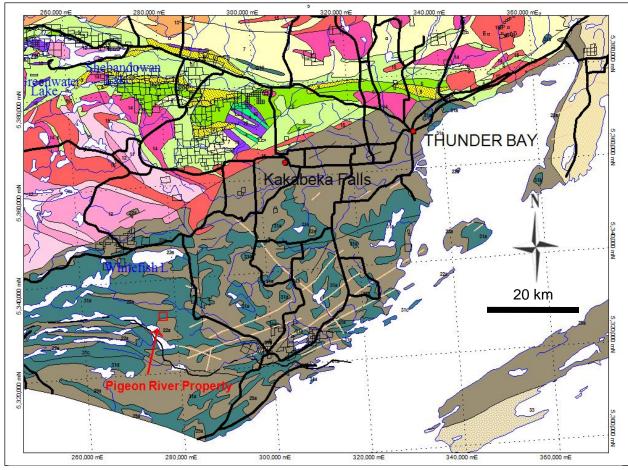


Figure 3 – Regional Geology Map.

# 7. Geological Setting and Mineralization

# 7.1. Regional Geology

The area west of Thunder Bay is underlain by rocks of the Proterozoic Animikie Group unconformably overlying Archean basement.

#### 7.1.1. Archean Basement

The Pigeon River property is located within the Animikie Basin portion of the Southern Province where it on-laps the Wawa Sub-province of the Western Superior Province of the Canadian Shield. In the vicinity of the Pigeon River property the Archean basement consists of felsic intrusive and gneisses.

#### 7.1.2. Proterozoic Rocks

The Thunder Bay area is noted for the presence of the northern extension of the Animikie Group of sediments that have been subsequently intruded by numerous diabase and gabbro sills and dikes. These sediments were deposited in a sedimentary basin formed during the Penokean Orogeny.

#### 7.1.2.1. The Penokean Orogeny and Basin Formation

The Penokean Orogeny was a period of mountain building in which an oceanic arc, the Pembine-Wausau terrane, collided with the Superior Craton from about 1880 Ma to about 1830 Ma (Schulz and Cannon, 2007). The Animikie Basin developed as a consequence of southward dipping subduction during the Penokean Orogeny. Two theories have been proposed as to the timing and subsequent emplacement of units of the basin.

One proposal favoured by many authors, including Morey and Southwick (1995), interprets the basin to be a foreland assemblage due to load-driven subsidence resulting from Penokean thrusting. The oldest volcanic rocks in the Wisconsin magmatic terrane have been dated from 1860 Ma to 1889 Ma, and which were thought to have collided with the Superior craton at about 1860 Ma (Sims et al., 1989). But based on dating relationships, the Animikie Basin must have been formed by way of back-arc extension, as a foreland setting would have developed much later in the orogeny.

Hemming et al. (1995) and Kissin and Fralick (1994) have proposed an alterantive theory of basin development involving extensionally driven subsidence in a back-arc basin environment. Fralick et al. (2002) dated volcaniclastic zircons from the Gunflint Formation at 1878.3±1.3 Ma which supports a back-arc extension model rather than a foreland setting. Deposition within this basin resulted in the formation of the Gunflint and overlying Rove Formations which together comprise the Animikie Group.

#### 7.2. Local Geology

#### 7.2.1. Gunflint Formation

The Gunflint Formation is a chemical-clastic sedimentary assemblage deposited on a south-facing shelf during a transgressive-regressive-transgressive cycle (Pufahl and Fralick, 2000). Due to cycling modes of deposition, the unit can be divided into two members. The lower member contains strand-proximal stomatolite bioherms, lagoonal ribbon chert-carbonates and offshore grainstone deposited by both tidal and storm activity, eroded from siliceous, iron oxide, and iron carbonate mud layers (Fralick and Barrett, 1995). The upper layer contains similar lithofacies to the lower layer with the addition of black shales and volcanic ash beds. In Ontario, the Gunflint Formation lies unconformably on Archean basement and is approximately 130 m thick, cropping out primarily around Thunder Bay.

#### 7.2.2. Rove Formation

Within the property area, the surface expression of the Animikie group is represented by the Rove Formation. The rocks of the Rove Formation overlie the Gunflint Formation with a discontinuity marked by an ejecta layer from the Sudbury impact at 1850 Ma (Addison et al., 2005). The unit has an approximate thickness of 500m to 600m, thickens towards the south, and is primarily flat lying or gently dipping to the southeast (Smyk and Hollings, 2007). Amurawaiye (2001) described the unit as having been deposited in a submarine ramp system with low and high-density turbidity currents moving coarser sediments into the deeper parts of the basin. Amurawaiye (2001) also states that 70% of the Rove Formation consists of organic shale whose hydrocarbon content has been degraded over time.

The rocks of the Rove Formation are divided into two zones. The lower zone is correlative with the Virginia Formation in Minnesota and consists of 100m to 150m of alternating shale-siltstone and black pyritic shale, which Maric and Fralick (2005) describe as being indicative of fluctuations in sea level. Maric and Fralick (2005) describe the upper zone as a submarine fan system consisting of 100m of black shale and fine-grained sandstone coarsening upwards into 400m of dominantly medium-grained sandstone in stacked parasequences. Heaman and Easton (2006) reported a U-Pb detrital zircon age of 1790 Ma from a sandstone sample from the upper submarine fan zone.

#### 7.3. Mineralisation

To date no mineralisation of any consequence has been found on the property.

# 8. Deposit Types

A major host to sulfide nickel deposits worldwide are strata bound ultramafic bodies within mixed sediment-volcanic sequences. All at some time have been attributed to the intrusion of ultramafic magma. Due to petrographic evidence many have now been found to be actually komatiitic flows. Examples include the Kambalda district of Western Australia, the Raglan area of Northern Quebec, the Pechenga district within the Kola Peninsula of eastern Russia and the Thompson Nickel let of Northern Manitoba.

Features shared by all is the association with major structures that had the potential of tapping the mantle (the source of the ultramafic magma), the stratabound nature of the ultramafic bodies and the fact they are typically spatially associated with sulphide-bearing organic-rich argillites.

Ultramafic magma formation requires the high melting temperatures found in the upper mantle, possibly due to hot-spot formation or a convective mantle plume. Due to the high temperature of this magma it would have a very low viscosity in the range of 0.1 and 10 Pa•s. Upward migration of ultramafic magma would result in the formation of intrusions or, if the magma reaches the surface, flows.

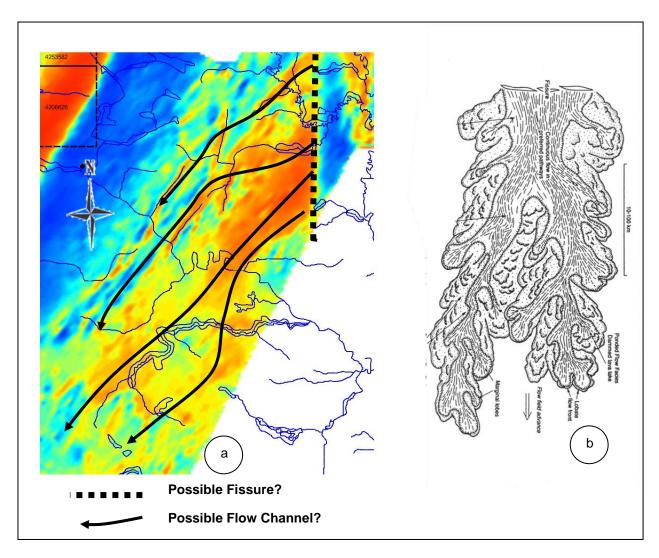


Figure 4 – Komatiite Exploration Model for the Pigeon River property

Magma buoyancy is generally the favored mechanism for ascent of any magma. But for ultramafic magmas, with an estimated density of  $\sim 2.7 - 3.0$  g/cm3, they would attain neutral buoyancy when they reach the base of the crust. As we know that ultramafic magmas reached as far as the surface there must be another means of ascent. Attaining neutral density would have resulted in ponding of the ultramafic magma at the mantle-crust interface. Over time this would have generated an overpressure that, in an extensional regime associated with thin skin tectonics believed to be active during the Archean and Proterozoic, would have allowed vertical cracks to form along which the magma could have moved upward.

For any sulfide nickel deposit to form there must have been present within the magma sufficient immiscible sulfide for the nickel to partition into. Sulfide derived from the mantle is insufficient to explain the amounts found with most sulfide nickel deposits. Geochemistry has shown that contamination by enclosing sediments has taken place. Typically with sulfide nickel deposits the enclosing sediments are sulfide-rich and

provided the source of the extra sulfide required. The sediments of the Rove Formation are characterised as being sulphide rich and would have been an excellent source of secondary sulphide.

The sediments associated with the Animikie Group formed in an extensional basin. This extensional tectonic regime likely resulted from generation of a mantle plume. Partial melting of the mantle as a result of this plume would have created ultramafic magma that due to a lack of a suitable density contrast would have pooled at the base of the crust. Thinning of the crust brought about by the extensional environment and generation of an overpressure of this large magma chamber would have allowed formation of vertical cracks along which the ultramafic magma could then move upward. Due to the associated overpressure and the low viscosity of the ultramafic magma it is unlikely that intrusive bodies would have formed. Instead the magma would have erupted onto the sulfide rich sediments of the extensional basin. Interaction with these sediments assisted by the rheological characteristics or these low viscosity flows would have resulted in the formation of nickel sulfides. Such deposits are known within the Animikie, including the relatively recent discoveries of the Eagle Ni deposit in Michigan and the Tamarac deposit in Minnesota.

The aeromagnetic survey completed by Pele Mountain in 2010 by Geotech shows the presence of several magnetically anomalous areas with no known explanation, especially since the well exposed diabase sills common in the area have no correlation at all with these magnetic anomalies. One of these magnetically anomalous areas terminates against a linear feature that is interpreted to be a fault structure that may have acted as a feeder for ultramafic magmas (see Figure 4 a.). It must be noted that the trends within this magnetically anomalous area form a network that can easily be interpreted to be flow channels as illustrated by the comparison with the diagram of the komatiite flow model developed by Barnes et al. (1999) in Figure 4b.

# 9. Exploration

To date the only work that has been done in the immediate area is that done by Pele Mountain Resources Inc. After reviewing regional government gravity and magnetic survey data they staked the original Pigeon River property, concentrating on significant regional gravity highs, during late 2009 and early 2010.

After staking, the property was covered by an airborne VTEM and magnetic survey flown by Geotech in March of 2010. Figure 5 shows the calculated vertical gradient magnetic from the survey. And Figure 6 shows the B-Field results from the same survey.

Three diamond drill holes were completed in 2010 totalling 605 metres. In 2011 a Crone PEM survey was conducted over a lake in the southern portion of the property which also is the site of a regional lake sediment Ni anomaly. A fourth hole totalling 386 metres was drilled in 2011 to test this broad late time EM anomaly. Other than narrow seams of pyrite along bedding planes within black argillite no explanation could be

found for the PEM conductor. After completion of the hole a borehole PEM survey was then done by Crone. The down hole survey detected a very strong in-hole anomaly coincident with the Rove argillite with narrow pyrite seams along bedding planes.

# 10. Drilling

To date there has been 4 hole drilled totalling 991 metres on the original Pigeon River property by the previous property owners (Pele Mountain Resources Inc.). Following is a summary of the drill results:

#### Hole PR-10-01

This hole was drilled to test a VTEM electromagnetic conductor that did not have any mag association. The final depth was 353 metres and the hole was drilled at an angle of -45° and azimuth of 085°. The hole intersected interbedded argillite and greywacke of the upper Rove Formation of the Animikie Group intruded by several diabase sills. The only mineralisation encountered was some pyrrhotite along bedding planes in black argillite.

#### Hole PR-10-02

This hole was drilled to test a VTEM electromagnetic conductor within a regional magnetic low. The final depth was 102 metres and the hole was drilled vertically. The hole intersected interbedded argillite and greywacke of the upper Rove Formation of the Animikie Group intruded by a narrow diabase sill. The only mineralisation encountered was pyrrhotite along bedding planes in black argillite and in siltstone.

#### Hole PR-10-03

This hole was drilled to test a VTEM electromagnetic conductor spatially associated with an area of gabbro and a relatively narrow magnetic trend. The final dept was 150 metres and the hole was drilled at an angle of -55° and azimuth of 107°. The hole intersected gabbro and diabase that had intruded interbedded argillite and greywacke of the upper Rove Formation of the Animikie Group. The only mineralisation encountered was some pyrrhotite stringers within a narrow alteration zone.

#### Hole PR-11-04

This hole was drilled to test a PEM electromagnetic conductor underlying a lake close to the location for hole PR-10-01 and the source of an anomalous regional lake sediment nickel anomaly. The final dept was 386 metres and the hole was drilled at an angle of -75° and azimuth of 150°. The hole intersected interbedded argillite and greywacke of the upper Rove Formation of the Animikie Group intruded by a couple of diabase sills. The only mineralisation encountered was some pyrite along bedding planes in black argillite.

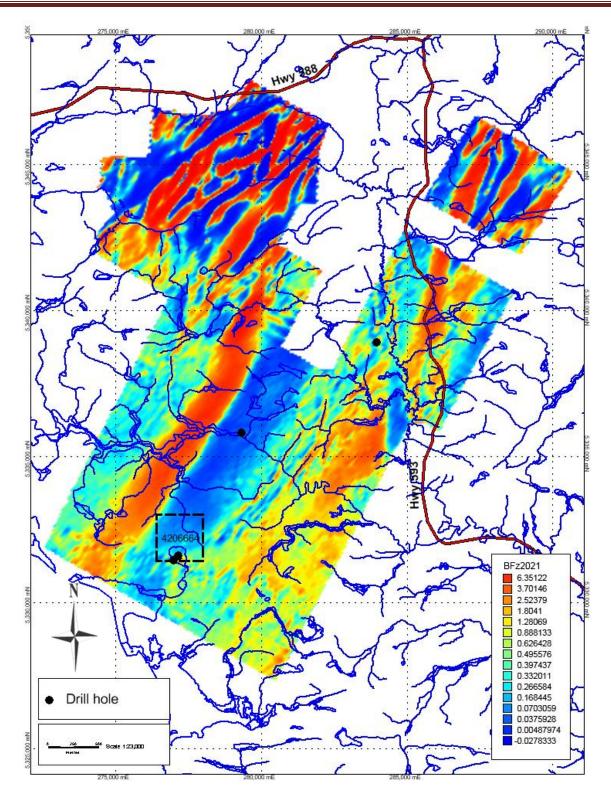


Figure 5 – Magnetic Vertical Gradient survey results over the Pigeon River property

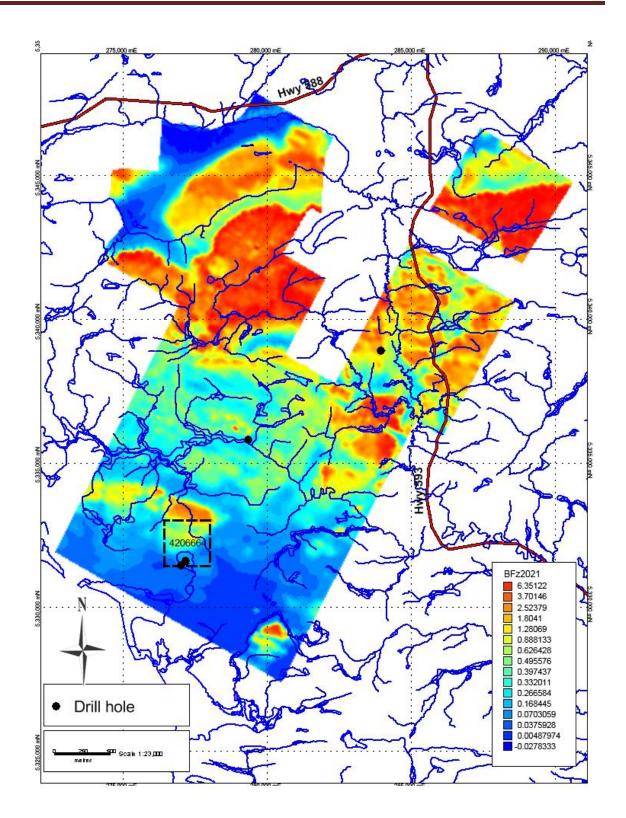


Figure 6 –VTEM B-Field survey results over the Pigeon River property

# 11. Sample Preparation, Analyses and Security

The author has previously provided technical and logistical support to portions of the drilling completed by Pele Mountain as detailed in Section 10, including logging of hole PR-11-04. He has also acted as the Qualified Person responsible for reviewing the press releases made by Pele Mountain describing the drill results for technical accuracy. And based on this experience can confirm that no mineralisation of potentially economic interest was noted in any of the drill holes and no sampling was warranted thus none were collected.

# 12. Data Verification

The data used in preparing this report consisted primarily of documents provided by Zara Resources including reports detailing the geophysical work done and copies of all drill hole logs. Other data used include information from government web sites including claims information as posted by the Ontario Ministry of Northern Development and Mines.

The procedures applied to verifying this data included reading each and every document ensuring it met generally accepted formats and procedures, and ensuring that there were no obvious errors or omissions.

Based on the data review no issues were identified that would indicate that any of the data was not suitable for reference in this report.

# 13. Mineral Processing and Metallurgical Testing

There has not yet been any mineral processing or metallurgical testing done.

#### 14. Mineral Resource Estimates

There has not yet been any mineral resource estimation done.

#### **15.** Mineral Reserve Estimates

There has not yet been any mineral reserve estimation done.

#### 16. Mining Methods

As no mining study has yet to be done on the property no mining method has been selected.

# 17. Recovery Methods

As no metallurgical studies have been done no recovery method has been selected..

#### **18. Project Infrastructure**

There is currently no project infrastructure in place.

# 19. Market Studies and Contracts

There have been no market studies done and no sales contracts signed.

# 20. Environmental Studies, Permitting and Social or Community Impact

As the project is at its infancy there as yet have been no environmental studies done. There have been no social or community impact studies done to date.

# 21. Capital and Operating Costs

As no mining study has yet to be completed there is no estimate of capital and operating costs.

# 22. Economic Analysis

There has not yet been any economic analysis done.

#### 23. Adjacent Properties

There has been no material change to the list of adjacent properties described in the attached report by Lawyer and Hebert (2011).

# 24. Other Relevant Data and Information

There is no other data or information available that can make this report understandable.

### 25. Interpretation and Conclusions

The work to date has shown the presence of several strong magnetic trends that are interpreted to be indicative of the presence of large ultramafic bodies. As the likely host of these interpreted ultramafics is sulphidic sediments of the Rove Formation it is deemed that there exists a high potential for the property to host associated nickel-copper sulphide mineralisation.

Further work consisting of additional diamond drilling followed by down hole geophysics is now required.

#### 26. Recommendations

It is recommended that additional diamond drilling be done, this time focussing on penetrating the full stratigraphy and confirming the source of the magnetic highs as being ultramafic. In addition any holes drilled should be tested by borehole geophysics to ensure massive sulphides off hole are not missed. A budget for an initial drilling program of one hole to confirm the model is presented in Table 2.

Table 2 – Budget for	recommended program.
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Item	Description	A	Amount		
Crone Borehole PEM	1 Hole	\$	5,000		
Diamond Drilling	1000 m	\$	100,000		
Support	Assaying, project supervision, etc.	\$	50,000		
Contingencies	10%	\$	15,000		
Total		\$	170,000		

#### 27. References

- Addison, W.D., Brumpton, G.R., Vallini, D.A., McNaughton, N.J., Davis, D.W., Kissin, S.A., Fralick, P.W. and Hammond, A.L., 2005. Discovery of distal ejecta from the 1850 Ma Sudbury impact event; Geology 33: 193-196.
- Amurawaiye, O., 2001. The Paleoproterozoic Rove Formation of northwestern Ontario: A turbidite-dominated shelf sequence; unpublished H.B.Sc thesis, Lakehead University, Thunder Bay, Ontario, 44p.
- Barnes, S.J., Hill, R.E.T, Perring, C.S. and Dowling, S.E., 1999, Komatiite flow fields and associated Ni-sulfide mineralisation with examples from the Yilgarn Block, Western Australia; In Keays, R.R., Lesher, C.M., Lightfoot, P.C. and Farrow, C.E.G. (eds.), Dynamic processes in magmatic ore deposits and their application in mineral exploration; Geological Association of Canada, Short Course Volume 13, p. 159-194.
- Cundari, R., 2012. Geology and geochemistry of Midcontinent Rift-related igneous rocks; unpublished M.Sc thesis, Lakehead University, Thunder Bay, Ontario, 153p.
- Ingall, E.D. 1888. Mines and Mining on Lake Superior, Part 1; *In* Annual Report, Geological Survey of Canada, Vol. III, Part H.
- Fralick, P.W. and Barrett, T.J., 1995. Depositional controls on iron formation association in Canada. In: Sedimentary facies analysis. Edited by A.G. Plint. International Association of Sedimentologists, Special Publication No. 22, p. 35-39.
- Fralick, P., Davis, D.W., and Kissin, S.A., 2002. The age of the Gunflint Formation, Ontario, Canada: single zircon U-Pb age determinations from reworked volcanic ash. Canadian Journal of Earth Sciences 39: 1085-1091.
- Gill, J.F. 1924. Gunflint Iron-Bearing Formation, Ontario; *In* Geological Survey of Canada Summary Report, Part C, pp. 28088.
- Goodwin, A.M. 1960. Gunflint Iron Formation of the Whitefish Lake Area, District of Thunder Bay; *In* Ont. Dept. Of Mines Sixty-ninth Annual Report, Part 7, p. 41-63.
- Heaman, L.M. and Easton, R.M., 2006. Preliminary U/Pb geochronology results: Lake Nipigon Region Geoscience Initiative. Ontario Geological Survey, Miscellaneous Release-Data 191, 79p.
- Hemming, S.R., McLennan, S.M. And Hanson, G.N., 1995. Geochemical and Nd/Pb isotopic evidence for the provenance of the Early Proterozoic Virginia Formation, Minnesota. Implications for tectonic setting of the Animikie Basin. Journal of Geology 103: 147-168.
- Kissin, S.A., and Fralick, P.W., 1994. Early Proterozoic volcanics of the Animikie Group, Ontario and Michigan, and their tectonic significance. Proceedings of the Institute on Lake Superior Geology 40: 18-19.
- Maric, M. And Fralick, P.W., 2005. Sedimentology of the Rove and Virginia Formations and their tectonic significance. Institute on Lake Superior Geology 51: 41-42.

- Mollard, D.G and Mollard, J.D., 1983. Northern Ontario Engineering Geology Terrain Study 71, Thunder Bay Area, NTS 52A-SW, District of Thunder Bay; Ontario Geological Survey, 39p.
- Moorhouse, W.W. 1960. Gunflint Iron in the Vicinity of Port Arthur, District of Thunder Bay; *In* Ont. Dept. Of Mines Sixty-ninth Annual Report, Part 7, p. 1-39.
- Morey, G.B. and Southwick, D.L., 1995. Allostratigraphic relationships of early Proterozoic ironformations in the Lake Superior Region. Economic Geology 90: 1983-1993.
- Pufahl, P. And Fralick, P., 2000. Depositional environments of the Paleoproterozoic Gunflint Formation; 46th Institute on Lake Superior Geology, v. 46, pt.2, Proceedings with abstracts.
- Schulz, K.J. and Cannon, W.F., 2007. The Penokean orogeny in the Lake Superior region. Precambrian Research 157, 4-25.
- Sims, P.K., Van Schmus, W.R., Schulz, K.J., and Peterman, Z.E., 1989. Tectono-stratigraphic evolution of the Early Proterozoic Wisconsin magmatic terranes of the Penokean Orogen: Canadian Journal of Earth Sciences 26: 2145-2158.
- Smyk, M. and Hollings, P., 2007. Midcontinent rift-related mafic intrusion north of the international border. Proceedings of the Institute on Lake Superior Geology 53: 53-80.
- Tanton, T.L. 1923. Iron Formation at Gravel Lake, Thunder Bay District, Ontario; *In* Summary Report, Geological Survey of Canada, Part C, pp. 1-75.
- Tanton, T.L. 1931. Fort William and Port Arthur and Thunder Cape Area, Thunder Bay District, Ontario; *In* Memoir 167, Geological Survey of Canada.

Wilson and Pelltier, 1981. General Geology Map of Ontario; MNDM, scale 1:5,000,000

# **Certificate of Qualifications**

I, Alan James Aubut, do hereby certify the following:

- I am the author of this National Instrument 43-101 technical document titled "Pigeon River Property, Hartington Township, Ontario, Canada, Thunder Bay Mining Division, NTS 42A4, Updated Technical Report, UTM: Zone 16, 277400m E, 5335500m N, NAD83", dated October 03, 2015.
- I have read National Instrument 43-101, and confirm that this report is in compliance with said instrument.
- I take responsibility for the contents of the report.
- As of October 03, 2015, the report to the best of my knowledge, information and belief contains all scientific and technical information that is required to be disclosed in order to make the report not misleading.
- I am a graduate of Lakehead University, in Thunder Bay, Ontario with the degree of Honours Bachelor of Science, Geology (1977).
- I am a graduate of the University of Alberta, in Edmonton, Alberta with the degree of Master of Science, Geology (1979).
- I have been actively practicing geology since 1979.
- Since 2009 I am a member in good standing of the Association of Professional Geoscientists of Ontario.
- From 2000 to 2009 I was a member in good standing of the Association of Professional Engineers and Geoscientists of Manitoba.
- I am a member of the Society of Economic Geologists.
- I am independent of Zara Resources Inc. as defined by Section 1.5 of NI 43-101 and do not expect to become an insider, associate or employee of the issuer.
- I am independent of Hadley Mining Inc. as defined by Section 1.5 of NI 43-101 and do not expect to become an insider, associate or employee of the issuer.
- I operate under the business name of Sibley Basin Group Geological Consulting Services Ltd.
- The business address of Sibley Basin Group Geological Consulting Services Ltd. is:

Sibley Basin Group PO Box 304 300 First St. West Nipigon, ON POT 2J0

I have personally made several site visits to the property that is subject to this report with the most recent being March 2<sup>nd</sup> to 5<sup>th</sup>, 2011 while providing technical and logistical support to the previous property owner, Pele Mountain Resources Inc..

an Aubri

Alan Aubut October 03, 2015

