



REPORT

National Instrument 43-101 Initial Technical Report for the Minto Mine South Property

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Red Pine Exploration Inc.

Submitted by:

Golder Associates Ltd. as Report Assembler of the work prepared by or under the supervision of the Qualified Persons Named as Authors

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This National Instrument 43-101 Technical Report for the Minto South Project was prepared and executed by Brian Thomas, P.Geo., Golder Associates Ltd. and Jean-Francois Montreuil, Ph.D., Red Pine Exploration (the Authors). This report contains the expressions of professional opinions of the Authors based on (i) information available at the time of preparation, (ii) data supplied by Red Pine Exploration, and (iii) the assumptions, conditions, and qualifications set forth in this report. The quality of information, conclusions, and estimates contained herein are consistent with the stated levels of accuracy as well as the circumstances and constraints under which the mandate was performed. This report is intended to be used solely by Red Pine Exploration, subject to the terms and conditions of its contract with Golder Associates Ltd. This contract permits Red Pine Exploration to file this report as a Technical Report with Canadian securities regulators pursuant to National Instrument 43-101 - *Standards of Disclosure for Mineral Projects*. Except for the purposes legislated under Canadian securities law, any use of this report by any third party is at that party's sole risk.

TITLE PAGE

Title of Report

National Instrument 43-101 Technical Report for the Minto Mine South Property

Project Location

Wawa, Ontario

Authors

Qualified Person	Responsible for Parts
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DATE AND SIGNATURE PAGE

This technical report on the Minto South Project is submitted to Red Pine. and is effective as of December 31, 2018.

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<p><i>Signed by Brian Thomas</i></p> <p>Brian Thomas, P.Ge. (Golder Associates Ltd.) Date Signed: 2018-12-31</p>	<p>Responsible for Items 1 - 27</p>

CERTIFICATE OF QUALIFIED PERSON BRIAN THOMAS

I, Brian Thomas P.Geo., state that:

- (a) I am a Geologist at:
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33 Mackenzie Street, Suite 100
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- (b) This certificate applies to the technical report titled “**National Instrument 43-101 Initial Technical Report for the Minto Mine South Project, Wawa, Ontario**” with an effective date of: Dec 31, 2018 (the “Technical Report”).
- (c) I am a “qualified person” for the purposes of National Instrument 43-101 (the “Instrument”). My qualifications as a qualified person are as follows. I am a graduate of Laurentian University with a B.Sc. in Geology from 1994, am a member in good standing of the Association of Professional Geoscientists of Ontario (#1366) and a member in good standing of the Engineers and Geoscientists of British Columbia (#38094). My relevant experience after graduation includes over twenty-four years of experience in mine geology and mineral resource evaluation of mineral projects nationally and internationally in a variety of commodities including 9 years of experience working in gold mining operations.
- (d) My most recent personal inspection of the property described in the Technical Report occurred on June 28th and 29th, 2018.
- (e) I am responsible for all Items (1 to 27) of the Technical Report.
- (f) I am independent of the issuer as described in section 1.5 of the Instrument.
- (g) My prior involvement with the property that is the subject of the Technical Report is as follows. I have previously participated in the definition of Exploration Targets as publicly announced in the October 26th, 2017 press release entitled; “**Red Pine Exploration Reports Exploration Targets at its Wawa Gold Project**”;
- (h) I have read National Instrument 43-101. The part of the Technical Report for which I am responsible has been prepared in compliance with this Instrument; and
- (i) At the effective date of the Technical Report, to the best of my knowledge, information, and belief, the parts of Technical Report for which I am responsible, contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated at Sudbury, Ontario this 31st day of December 2018.

(original signed and sealed) Brian Thomas

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1.0 SUMMARY

This Technical Report was prepared for Red Pine and represents the initial Mineral Resource Estimate for the Minto Mine South Project (the Project). This Mineral Resource Estimate and Technical Report were prepared by Golder Associates Ltd. (Golder) following the guidelines of the Canadian Securities Administrators' National Instrument (NI) 43-101 and Form 43-101F1.

The Mineral Resource Estimate was completed by Brian Thomas, (P.Geo.) (Resource Qualified Person [QP]) with reviews completed by Jerry DeWolfe, (P.Geo.) (Associate and Senior Geological Consultant) of Golder, both of whom are defined as QP's under NI 43-101.

Brian Thomas completed a QP site visit from June 28th to 29th, 2018 to review site geology, geological procedures and conduct data verification.

The Mineral Resource estimate and supporting data summarized in this Technical Report are considered by the QP to meet the requirements of NI 43-101.

1.1 Property Description and Ownership

1.1.1 Project Description and Location

The Minto Mine South Project is located 2 kilometres (km) east of the Town of Wawa, Ontario and approximately 650 km northwest of Toronto (Figure 4-1). The Project is within the McMurray Township (NTS 41/n14) and centred on Universal Trans Mercator (UTM) North American 1983 Datum (NAD83) (Zone 16N) 669,800 m east (E) and 5,315,000 m north (N). Legal access is available via Highway 101 from Wawa and the Surluga Mine Road, a private road owned and maintained by Citabar Limited Partnership (Citabar).

Red Pine Exploration Inc. (Red Pine) holds a 60% interest in the Minto Mine South Project and the other 40% is held by Citabar Limited Partnership (Citabar) which is also a significant shareholder of Red Pine. Red Pine and Citabar are parties to an amended joint venture agreement in respect of a joint venture on the Minto Mine South Project.

The Minto Mine South Property consists of 15 patented tenures totaling 187 hectares (ha) for which Red Pine and Citabar hold the surface and mineral rights.

1.1.2 Accessibility, Climate, Local Resources, Infrastructure and Physiography

The Minto Mine South property can be accessed by driving 2 km on Highway 101 from the Town of Wawa, ON. and then turning south onto a gravel road using a 2-wheel drive vehicle. During the winter months, the main access road to the property from Highway 101 is ploughed. Areas off the main road can be accessed by snowmobiles or ATVs.

Wawa is located at 289 metres above mean sea level (m amsl). and the property is hilly with a range of elevations from 300 m to 400 m amsl. Steep ridges exist locally. The property is forested with spruce, pine, poplar and birch being the dominant species.

The vicinity to Lake Superior has a significant impact on the climate on the property. Environment Canada has recorded weather details in Wawa since 1981 (<http://climate.weather.gc.ca>) and showed that the warmest

temperatures are recorded in July and August (daily mean 15°C; daily maximum 20.8°C). The coldest temperatures are typically recorded in January (daily mean -14°C; daily minimum -20.2°C). September and October are the months with the most rainfall (~122 millimeters (mm) and ~107 mm, respectively) and the highest snowfall occurs in December (~80 centimetres (cm)). The Project site can be operated year-round.

Wawa has a population of 2,975 people (<http://www12.statcan.gc.ca/census-recensement/2011>). A 230 kV power line crosses the southern part of the property and a second power line crosses the western part of the property. An airport exists in Wawa but no commercial flights are operated from it. Algoma Central Railway was acquired by Canadian National Railways and does not operate freight service between Sault Ste. Marie and Hearst any more. Sufficient water is available from lakes and streams on the property.

1.1.3 History

Significant historic exploration was completed on the Minto Mine South Property. Exploration began in the 1890s and the site has been discontinuously explored and produced since that time. This activity involved the exploitation of 4 gold mines, including the Mariposa, Parkhill, Van Sickle, and Minto Mines. Widespread stripping and sampling of many trenches, the sinking of many additional shafts and the collection of numerous samples has also been completed on the property.

The following period, extending from the mid-late 1920s to the late 1930s, saw the peak of mining activity on the property with several mines in operation. Following 1938 (1938 – 1980), an exploration and mining hiatus occurred on the Minto Mine South Project.

Most of the exploration activities between 1980 and 1986 were conducted by or on behalf of Dunraine Mines Ltd. (Dunraine) and were centered on the historic Parkhill and Van Sickle gold mines which existed on the Minto Mine South Property.

In 1987, Citadel purchased the Parkhill Mine property from Dunraine and the Minto Mine South Project saw exploration with 31 drill holes totaling 10,768 metres (m) of drilling between 1987 and 1989. During 1989 and 1990, Van Ollie performed exploration on the Van Sickle property which included drilling of 53 drill holes totalling 18,412 m of drill core.

During the period between 1991 and 1996, the Minto Mine South Property saw another exploration hiatus and in 1997 Citadel acquired the Van Sickle Mine.

In 2007, the Wawa General Partnership, on behalf of Citabar, completed an extensive drill program which during the program, drill hole 07-385 intersected the Minto vein and provided valuable insight into the structural orientation of the vein and also provided a significant gold grade.

In 2011, Augustine collected 200 grab samples on the Minto Mine South property for geochemical analysis. Red Pine acquired the property in 2016 and has continued exploration on the property until the present.

1.2 Geology and Mineralization

The property is located in the Michipicoten greenstone belt of the Wawa Subprovince (Superior Province). The Michipicoten greenstone belt consists of three cycles of mafic and felsic metavolcanic rocks with associated subvolcanic intrusions and metasedimentary rocks (Sage, 1994). The Jubilee Stock, which hosts the mineralization on the property, is described as a high-level intrusion of dioritic to a dominantly granodioritic composition with many intrusive facies (Frey, 1987; Sage, 1993). The core of the Jubilee Stock is curved-shaped into a sigmoid form. Its long axis is oriented at 20° and it has a 6 x 1.3 km surface expression. The grains of the intrusion composing the Jubilee Stock are fine to medium and locally porphyritic and intruded its host volcanic sequence around $2,745 \pm 3$ million years before present (Ma) (Sullivan et al. 1985).

Gold mineralization is conspicuous throughout the Minto Mine South Project and mineralization is closely related to the structural setting of the property characterized by numerous shear zones, fractures and faults. The Minto vein is hosted in the Minto Mine South shear zone, which was the focus of mining in the historic Minto Mine where 23,100 ounce (oz) @ 12.56 grams per tonne (g/t) were produced. The Minto Mine South shear zone is a 3 to 20 m wide shear zone hosting a domain of higher-grade mineralization.

The domains of higher-grade mineralization in the Minto Mine South shear zone are characterized by the presence of a domain, between 0.3 to 5 m wide, where a single shear-hosted quartz vein or stacks of closely spaced shear hosted quartz veins are formed.

The gangue minerals of the mineralized quartz shears veins in the Minto Mine South shear zone comprise light to dark grey quartz, tourmaline and iron carbonate. Gold mineralization in the Minto Mine South shear zone postdates the initial quartz stage and occurs in brittle fractures crosscutting the early quartz. The earliest sulfides formed in the veins predates the main gold introduction event and includes subhedral to euhedral pyrite and pyrrhotite.

1.3 Exploration Status

As the Minto Mine South shear zone was discovered in April 2017, all the exploration work completed by Red Pine on the Minto Mine South Project prior to the discovery of the Minto Mine South shear zone was focussed on other gold showings of the Project. Red Pine began exploration work on the Minto Project in the Fall of 2014 with the collection of 24 grab samples from the main gold showings of the Project. Gold grades between trace and 17 g/t gold were detected in the grab samples. In December 2014, Red Pine completed a NQ size (47.6 mm core diameter) drill hole on the Project that intersected 6.05 g/t gold over 1.84 m in the Minto C shear zone where gold grades up to 17 g/t were detected in grab samples.

In the summer and fall of 2015, a surface exploration program on the Minto Mine South Project focussed on the gold showings around the historic Sunrise shaft, the Parkhill, Van Sickle and Mariposa mines, and near the Minto C Shear Zone. A total of 71 channel samples from 26 locations and 57 grab samples were collected from historic trenches and outcrops during that field program. Highlights from the channel samples include 35.05 g/t Au and 18.76 g/t Au over 2.2 m and 1.6 m, respectively, in the Mickelson-Sunrise vein system. In the fall of 2015, a drill program targeted the Mickelson-Sunrise vein system to follow on the high-grade gold assays detected in the channel samples. The drilling program indicated that the high-grade vein sampled at surface did not extend at depth and no significant results were obtained in the drill holes of that drilling program.

In 2016, the exploration work on the Minto Mine South Project consisted of the collection of 12 grab samples and the sampling of un-sampled intervals in two historic drill holes from the 1980s drilling program. The historic core sampling program discovered additional gold in the Minto B Shear Zone where previously un-sampled core contained 3.29 g/t gold over 10.09 m (core length).

In the spring of 2017, 4 diamond drill holes totaling 575.5 m were completed in the vicinity of the historic Parkhill Mine to follow on the exploration results from the summer 2015 exploration program where a grab sample in the Trout Creek vein contained 54 g/t gold and to test if additional gold mineralization could be found in the vicinity of the historic mine. This drilling program indicated mineralization remains around the historic Parkhill mine in the Parkhill Shear Zone, and also resulted in the identification and discovery of the Minto Lower Shear Zone. Following the completion of the drilling program near the Parkhill mine, an exploration hole was completed in the interpreted down-plunge continuity of the quartz vein mined into the Minto Mine and intersected 19.92 g/t over 3 m, resulting in the discovery of the Minto Mine South Shear Zone. Follow-up drill holes continued to intersect the Minto Mine Shear Zone and showed a good continuity of the quartz vein. A resource definition program was then planned on the Minto Mine South Shear Zone and resulted in the completion of 26,043 m of drilling from 116 surface diamond drill holes in 2017 and 2018. This exploration program followed the plunge of the quartz lens exploited in the historic Minto Mine, but also included some exploration holes in the Minto Lower structure. A total of 30 grab samples were also collected on the Minto Mine South Project in 2017 and 2018.

In all the drill programs completed on the Project between 2014 and 2018, a total of 13,532 core samples were sent for gold analyses at two independent certified laboratories. A total of 11,889 core samples were analyzed at Activation Laboratories (Actlabs) in their facilities in Timmins and Ancaster, and 1,643 samples were analyzed by SGS at their facilities in Cochrane and Lakefield. Two routine gold analytical packages were selected by Red Pine for the analysis completed by SGS and Actlabs.

For the quality assurance and quality control (QA/QC) monitoring, Red Pine relied partly on the internal analytical QC measures implemented by SGS and Actlabs and implemented its own external analytical control measures consisting of the use of control samples (blanks, certified reference materials [CRMs]) inserted in all sample batches submitted for assaying. Umpire check assaying was not performed. The routine insertion rate for CRMs and blanks was 1 standard per 20 samples and 1 blank per 25 samples sent. Additional blanks were also inserted after vein samples when many specks of visible gold were observed in the sampled vein. Red Pine also implemented a systematic check of the higher-grade samples analyzed by routine fire assay. Every samples containing gold equal or greater than 2 g/t gold on the fire assay was systematically re-analyzed by metallic screen fire assay.

1.4 Development and Operations Status

The Minto Mine South project is in the exploration stage and is not currently being developed for commercial production.

1.5 Mineral Resource Estimates

Golder performed an estimation of the Mineral Resources for the Minto Mine South Project for Red Pine, in accordance with Canadian Securities Administrators' NI 43-101. Golder's estimates conform with generally-accepted CIM "Estimation of Mineral Resource and Mineral Reserves Best Practices" guidelines.

Mineral Resources are not Mineral Reserves, and do not necessarily demonstrate economic viability. There is no certainty that all, or any part, of this Mineral Resource will be converted into Mineral Reserve. Inferred Resources are considered too speculative geologically to have economic considerations applied to them that would enable them to be categorized as Mineral Reserves.

The Mineral Resource estimates and other information in this section are forward-looking information. The material factors that could cause actual results to differ materially from the forward-looking information include any significant differences from one or more of the following material factors or assumptions that were applied in drawing the conclusions or making the estimates, forecasts or projections set forth in this Item, including: **assumptions regarding continuity of mineralization and reasonable prospects for economic extraction, interpretation of controlling structural environment and mineral domain models, selection of grade interpolation method, sample search and estimation parameters used for grade interpolation, treatment of high-grade outlier sample data.**

This Mineral Resource Estimate was completed by Brian Thomas, P.Geo., an independent Qualified Person (QP), as defined in NI 43-101. The effective date of this Resource Estimate is November 7, 2018. A site visit was last conducted between June 28th and June 29th, 2018, to inspect site conditions, review geological data collection and QA/QC procedures, visit drill collar locations, and complete verification sampling of drill core.

The Mineral Resource Estimate is based upon data provided by Red Pine from surface diamond drill programs, completed up to October 2018. The Minto South mineralization was modelled in two zones, consisting of a broad Shear Zone (Zone 1) and a narrow Vein Zone (Zone 2). A three-dimensional (3D) block model was constructed for estimating gold (Au) grades based on Inverse Distance Cubed (ID³) interpolation. High-grade, outlier samples were controlled by top-cutting assay values to 35 g/t along with a maximum distance restriction equal to the first search dimension of 60 m along strike / plunge and 40 m down dip. A mean bulk density value of 2.77 tonnes per meter cubed (t/m³) was assigned to the full model for calculating tonnage. Areas of historical mining from the Minto Mine were depleted from the block model.

Figure 1-1 provides an example cross-section with the comparison of the composite samples and block model Au estimates.

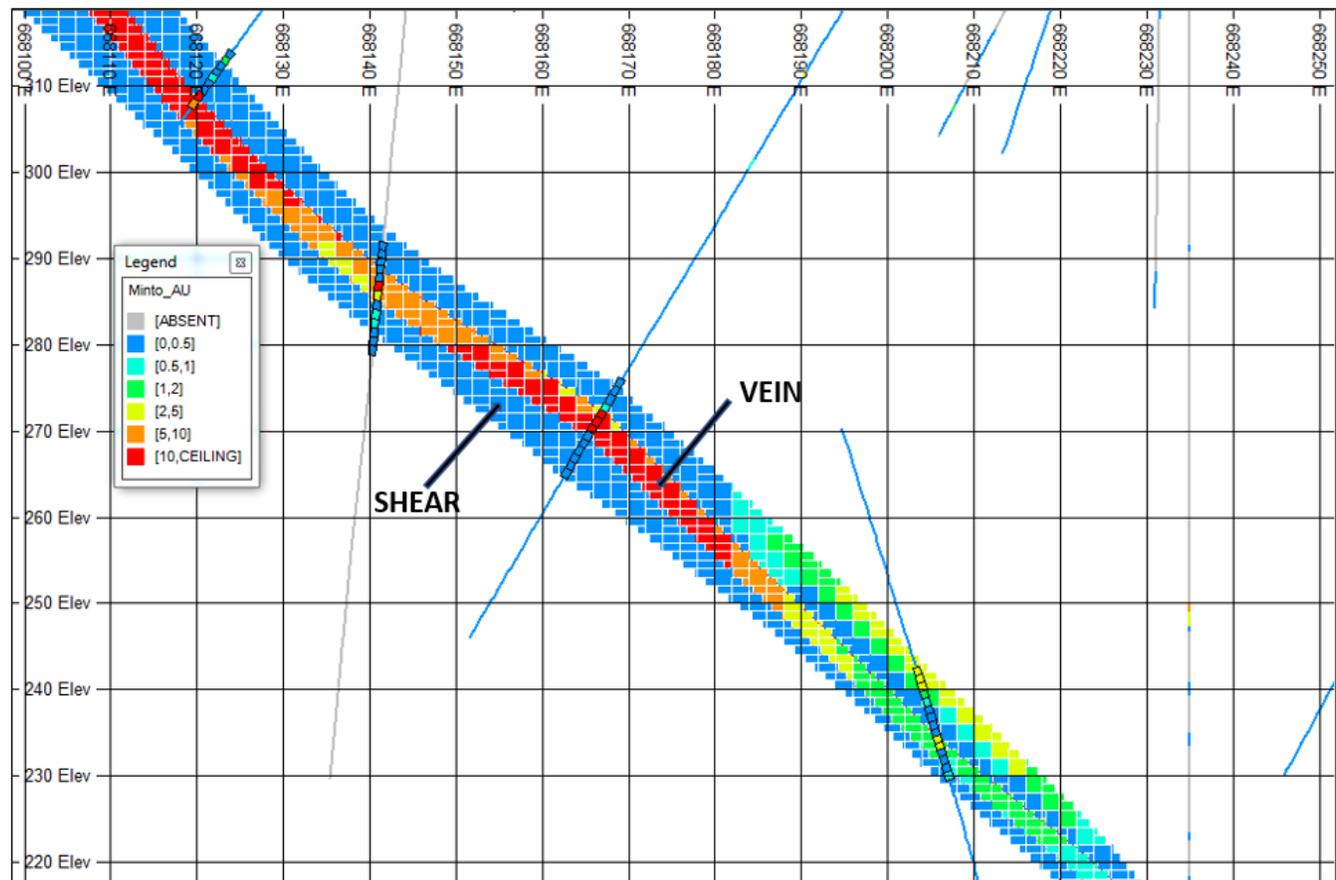


Figure 1-1: Example cross-section of Au grade distribution in the block model relative to the drillhole composites in both the Vein and Shear Zones, East-West Section facing North (5,315,460 N)

The QP has selected a 3.5 g/t break-even cut-off grade for the reporting of Mineral Resource Estimates, based on the following economic assumptions for potential underground cut and fill mining:

- Gold Price: \$1,200 per oz United States Dollar (\$USD)
- Exchange rate: \$0.75 \$USD/Canadian Dollar (\$CAD)
- Gold Recovery: 90%
- Operating Expense (OPEX): \$CAD \$160 / tonne (\$120 mining, \$25 milling, \$15 G&A)

Mineral Resources are classified according to Canadian Institute of Mining, Metallurgy, and Petroleum ("CIM") Definition Standards for Mineral Resources and Mineral Reserves (May 2014). Figure 1-2 outlines the classification of Mineral Resources for the Vein Zone.

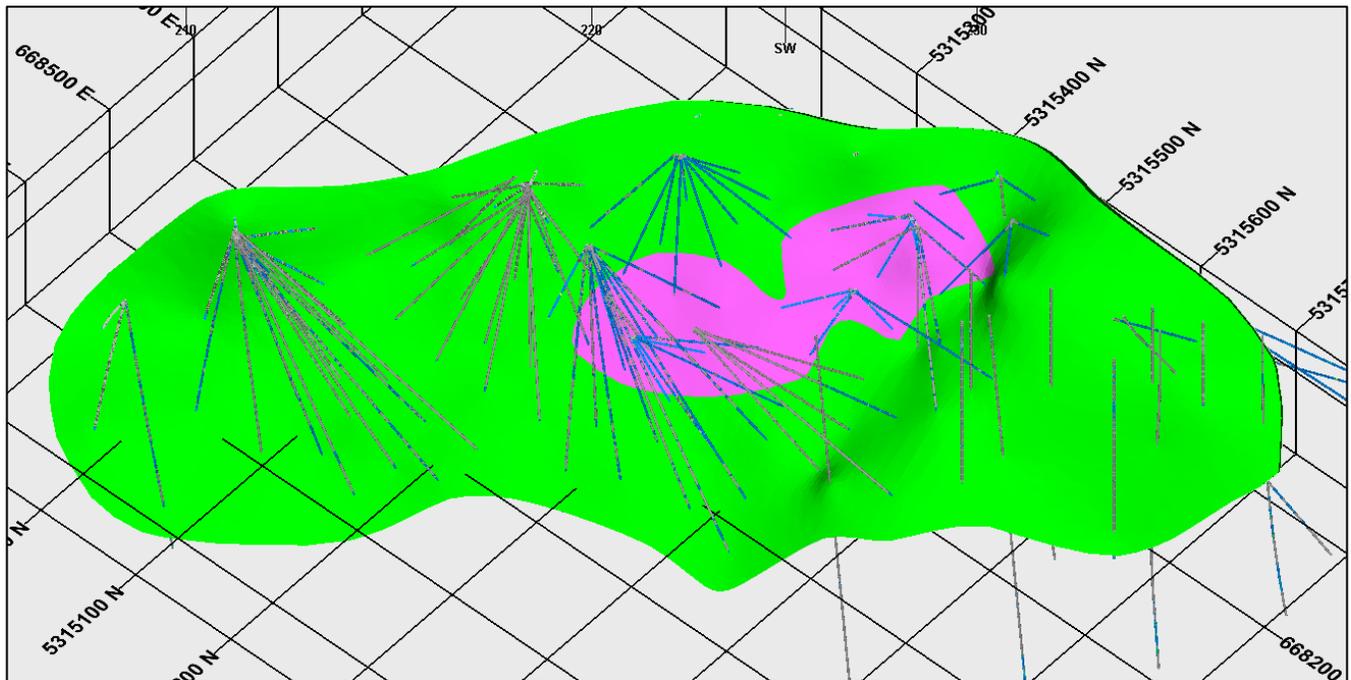


Figure 1-2: Minto South Mineral Resource Classification (Indicated is magenta, Inferred is green)

The base case Mineral Resource Estimate is reported at a cut-off of 3.5 g/t Au (Table 1-1) while other cut-offs are provided to demonstrate tonnage and grade sensitivities (Table 1-2). The Mineral Resource estimate excludes mineralization within previously mined areas.

Table 1-1: Minto South Resource Estimate (Effective Date November 7, 2018)

Resource Category	Quantity (tonnes)	Au Grade (g/t)	Contained Au (ounces)
Indicated	105,000	7.5	25,000
Inferred	354,000	6.6	75,000

Notes:

Effective date for this Mineral Resource is November 7, 2018

Mineral Resource Estimate uses a break-even economic cut-off grade of 3.5 g/t Au based on assumptions of a gold price of US\$1,200 per ounce, an exchange rate of 0.75 \$USD/\$CAD, mining cash costs of C\$120/t, processing costs of C\$25/t, G&A of C\$15/t and mean gold recoverability of 90%

Table 1-2: Minto South Mineral Resource Cut-off Sensitivity

Cut-off Grade (g/t Au)	Indicated Classification			Inferred Classification		
	Quantity (tonnes)	Au Grade (g/t)	Contained Au (ounces)	Quantity (tonnes)	Au Grade (g/t)	Contained Au (ounces)
2.5	142,000	6.3	29,000	496,000	5.6	89,000
3.0	123,000	6.9	27,000	426,000	6.0	83,000
3.5	105,000	7.5	25,000	354,000	6.6	75,000
4.0	92,000	8.0	24,000	303,000	7.1	69,000
4.5	81,000	8.5	22,000	260,000	7.5	63,000
5.0	71,000	9.1	21,000	225,000	8.0	58,000

Note: Base Case Scenario: Mineral Resource Estimate uses a break-even economic cut-off grade of 3.5 g/t Au

1.6 QP Conclusions and Recommendations

1.6.1 Conclusions

The 2018 Mineral Resource estimate was completed according to CIM best practice guidelines and is reported in accordance with NI 43-101 regulations. The QP believes that the information presented is an accurate and reasonable representation of the Minto Mine South Project and concludes that the sample database is of suitable quality to provide the basis of the conclusions and recommendations reached in this Technical Report.

Golder has taken reasonable steps to make the block model and Mineral Resource estimate as representative of the data as possible but given the nature of the deposit there are still risks related to the accuracy of the estimates related to the following:

- the variable and complex nature of the geology and structural controls on mineralization
- the nuggety nature of the gold mineralization
- the impact of outlier grade data
- inconsistent continuity of mineralization
- limited constraints on mineralization locally in the model

For these and other reasons, actual results may differ materially from these estimates. More details of the Mineral Resource Estimate are presented in Section 14 of this report.

1.6.2 Recommendations

Golder recommends that further exploration drilling be completed in order to potentially expand the Mineral Resource for the Minto Mine South Project. Golder recommends 2,500m of exploration and confirmation drilling for 2019 totalling approximately \$450,000.

Golder also recommends the completion of initial metallurgical studies and recommends that Red Pine allocates a budget of approximately \$50,000 for the completion of this work in 2019.

Table 1-3 summarizes the estimated costs of the proposed work.

Table 1-3: Summary of Recommended Work Program

Recommended Work	Estimated Cost \$CAD
Exploration Drilling (2,500 m)	\$450,000
Metallurgical Studies	\$50,000
Total Costs	\$500,000

2.0 INTRODUCTION

The Minto Mine South Project is a gold exploration project located near Wawa, Ontario, Canada. Red Pine owns 60 percent (%) of the Project while Citabar owns 40%.

This Technical Report was prepared for Red Pine and represents the initial Mineral Resource Estimate for the Minto Mine South Project. This Mineral Resource Estimate and Technical Report were prepared by Golder following the guidelines of the Canadian Securities Administrators' National Instrument 43-101 and Form 43-101F1.

The Mineral Resource Estimate was completed by Brian Thomas, (P.Geol.) (Resource Qualified Person [QP]) with reviews completed by Jerry DeWolfe, (P.Geol.) (Associate and Senior Geological Consultant) of Golder, both of which are defined as QP's under NI 43-101.

Brian Thomas completed a QP site visit between June 28 to 29, 2018 to review site geology, geological procedures and conduct data verification.

The Mineral Resource estimate and supporting data summarized in this Technical Report are considered by the QP to meet the requirements of NI 43-101.

2.1 Source of Information

This Resource Estimate and Technical Report are based on information provided by Red Pine including:

- Drill hole database consisting of:
 - Gold (Au) assays
 - Lithology, mineralogy, alteration and structural descriptions
 - Collar coordinates and down-hole survey data
 - Bulk density measurements
- Assay certificates
- Vein and shear zone interpretations
- Diabase dyke interpretation
- Historic Minto Mine development voids
- Red Pine reports
- Red Pine procedures

Further sources of information, utilized by the authors, and references are listed in Section 3.0 and 27.0.

2.2 Qualified Persons

This Technical Report was prepared by, and under the supervision of Brian Thomas (P.Ge.), an employee of Golder, who is independent of Red Pine as defined under NI 43-101. Brian is responsible for all Items of this Technical Report.

2.2.1 Acknowledgements

Golder and Red Pine would like to thank and acknowledge the following people who have contributed to the preparation of this report and the underlying studies under the supervision of the QP, including; Jesse Manna, Eric Steffler, Conrad Dix P.Ge. as well as, Jerry DeWolfe P.Ge. of Golder, Greg Warren of Golder for his contributions to the block modelling and grade estimation procedures, Jennifer Simper P.Ge., of Golder for her contributions to the report Figures and data verification, along with William Kyle, of Golder for his contributions to report compilation and formatting.

2.3 Units of Measure and Abbreviations

Unit of Measure	Abbreviation
Capital expenditure	CAPEX
Centimetre	cm
Copper	Cu
Cubic centimetre	cm ³
Cubic metre	m ³
Degree	°
Degrees Celsius	°C
Gamma (1 x 10 ⁻⁹ Tesla = 1 nanoTesla)	γ
Au	Au
Gram	g
Grams per tonne	g/t
Greater than	>
Foot (0.3048 metres)	ft
Hectare (10,000 m ²)	ha
Internal rate of return	IRR
Kilogram	kg
Kilograms per cubic metre	kg/m ³
Kilograms per square metre	kg/m ²
Kilometre	km
Less than	<
Magnetotellurics Geophysical Survey	MT
Metre	m
Metres above sea level	m asl
Mile (1.609344 kilometers)	mi
Millimetre	mm
Million	M
Million tonnes	Mt
Million tonnes per annum	Mtpa
nanoTesla	nT
Operating expense	OPEX
Ounce (troy ounce, 31.1035 grams)	oz
Ounce per short ton (34.2857 grams per tonne)	oz/t
Percent	%
Pound(s)	lb
Parts per million	ppm
Parts per billion	ppb
Relative Percentage Difference	RPD
Square kilometer	km ²
Square metre	m ²
Short Tons (907 kgs)	tons
Silver	Ag
Tonnes (1000 kgs)	t
Tonnes per day	t/d
United States Dollars in Millions	US\$M
Universal Transverse Mercator	UTM
Zinc	Zn

3.0 RELIANCE ON OTHER EXPERTS

For certain items in this Technical Report the QP has relied on a report, opinion, or statement of another expert who is not a QP, or on information provided by the Red Pine, concerning legal, political, environmental, or tax matters relevant to the Technical Report. In each case, the QP hereby disclaims responsibility for such information to the extent of his/her reliance on such reports, opinions, or statements. This reliance applies to all information provided by Red Pine for Sections 4.1 (Ownership), 4.2 (Property Land Tenure), 4.3 (Permits and Authorization) and 4.4 (Environmental Considerations) of this Report. The QP has relied upon fully and believes there is a reasonable basis for this reliance on, information provided by Red Pine regarding mineral tenure, surface rights, ownership details, royalties, environmental obligations, and applicable legislation relevant to the Minto Mine South Project. The QP has not independently reviewed the information in these sections and have fully relied upon, and disclaim responsibility for, information provided by Red Pine in these sections.

4.0 PROPERTY DESCRIPTION AND LOCATION

The Minto Mine South Project is located 2 km east of the Town of Wawa, Ontario and approximately 650 km northwest of Toronto (Figure 4-1). The Project is within the McMurray Township (NTS 41/n14). The property is centred on UTM NAD83 (Zone 16N) 669,800 m E and 5,315,000 m N. Legal access is available via Highway 101 from Wawa and the Surluga Mine Road, a private road owned and maintained by Citabar Limited Partnership (Citabar).

The province of Ontario has fully implemented the third phase of modernizing the Mining Act (MAM). On April 10, 2018, Ontario converted the manual system of ground and paper staking of unpatented and patented claims to an online system (O. Reg 454/17). As a result, pre-existing claims that were held were given new claim numbers. Following this conversion, the historical claim number would be thereafter known as the 'Legacy Claim Number' as listed in Table 4-1.

4.1 Ownership

On November 14, 2016, Red Pine announced in a press release available on the company's website and under its profile on www.SEDAR.com that it had entered into a definitive agreement (the "Arrangement Agreement") whereby Red Pine would acquire all of the outstanding securities of Augustine Ventures Inc. (Augustine) (the "Transaction") pursuant to the plan of arrangement provisions of the Business Corporations Act (Ontario) (the "Plan of Arrangement"). Red Pine exploration and Augustine were each holders of 30% interest in the Minto Mine South Project.

Upon completion of the Transaction, Augustine became a wholly-owned subsidiary of Red Pine and Red Pine carried on the business of the combined companies after reorganizing its board of directors ("Resulting Issuer"). The Resulting Issuer (Red Pine Exploration) now holds a 60% interest in the Minto Mine South Project and the other 40% is held by Citabar which is also a significant shareholder of Red Pine. Red Pine and Citabar are now parties to an amended joint venture agreement in respect of a joint venture on the Minto Mine South Project, the full text of which can be found under Red Pine's profile on www.sedar.com and the summary of these agreements herein is qualified in its entirety by the full text of these agreements. The reader is encouraged to refer to the agreements for further information.

4.2 Property Land Tenure

The Minto Mine South Property consists of 15 patented tenures totaling 187 ha for which Red Pine and Citabar hold the surface and mineral rights (Figure 4-2, Figure 4-3, and Table 4-1). The patents are in good standing and are contingent upon applicable taxes being paid to the Municipality of Wawa or the Ministry of Natural Resources and Forestry of Ontario, which Red Pine continues to do as mandated in the claim's terms and conditions. Patent details are listed in Table 4-1 whereas the taxes obligations to maintain the property in good standing are listed in Table 4-2. For 2017, the total taxes obligations to maintain the property amounted to \$10,446.38.

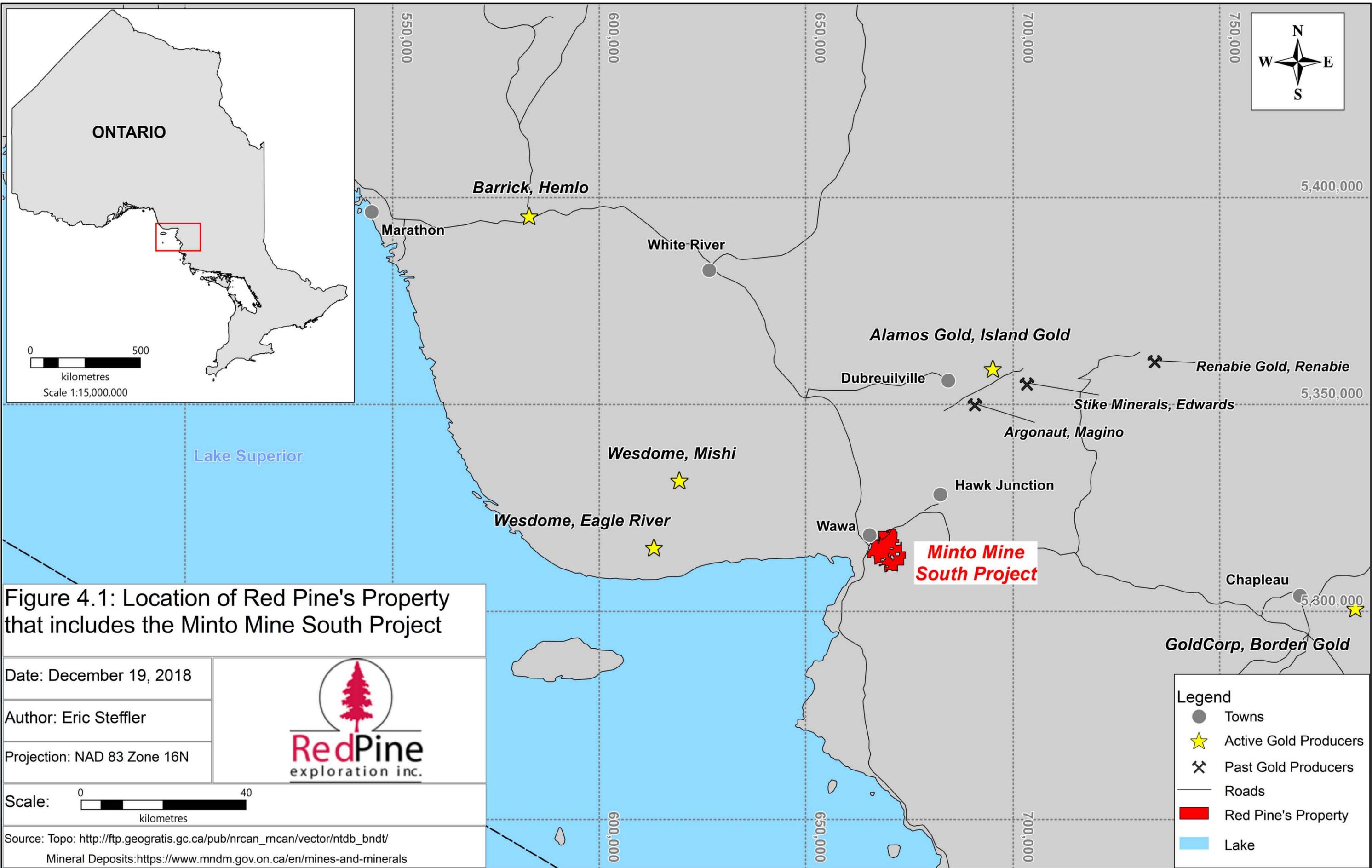


Figure 4.1: Location of Red Pine's Property that includes the Minto Mine South Project

Date: December 19, 2018

Author: Eric Steffler

Projection: NAD 83 Zone 16N

Scale: 0 40 kilometres

Source: Topo: http://ftp.geogratis.gc.ca/pub/nrcan_rncan/vector/ntdb_bndt/
 Mineral Deposits: <https://www.mndm.gov.on.ca/en/mines-and-minerals>



Legend

- Towns
- ★ Active Gold Producers
- ⚡ Past Gold Producers
- Roads
- Red Pine's Property
- Lake

Figure 4.2: Claim map showing the Patents and Claims of the Minto Mine South Project

Date: December 19, 2018

Author: Eric Steffler

Projection: NAD 83 Zone 16N

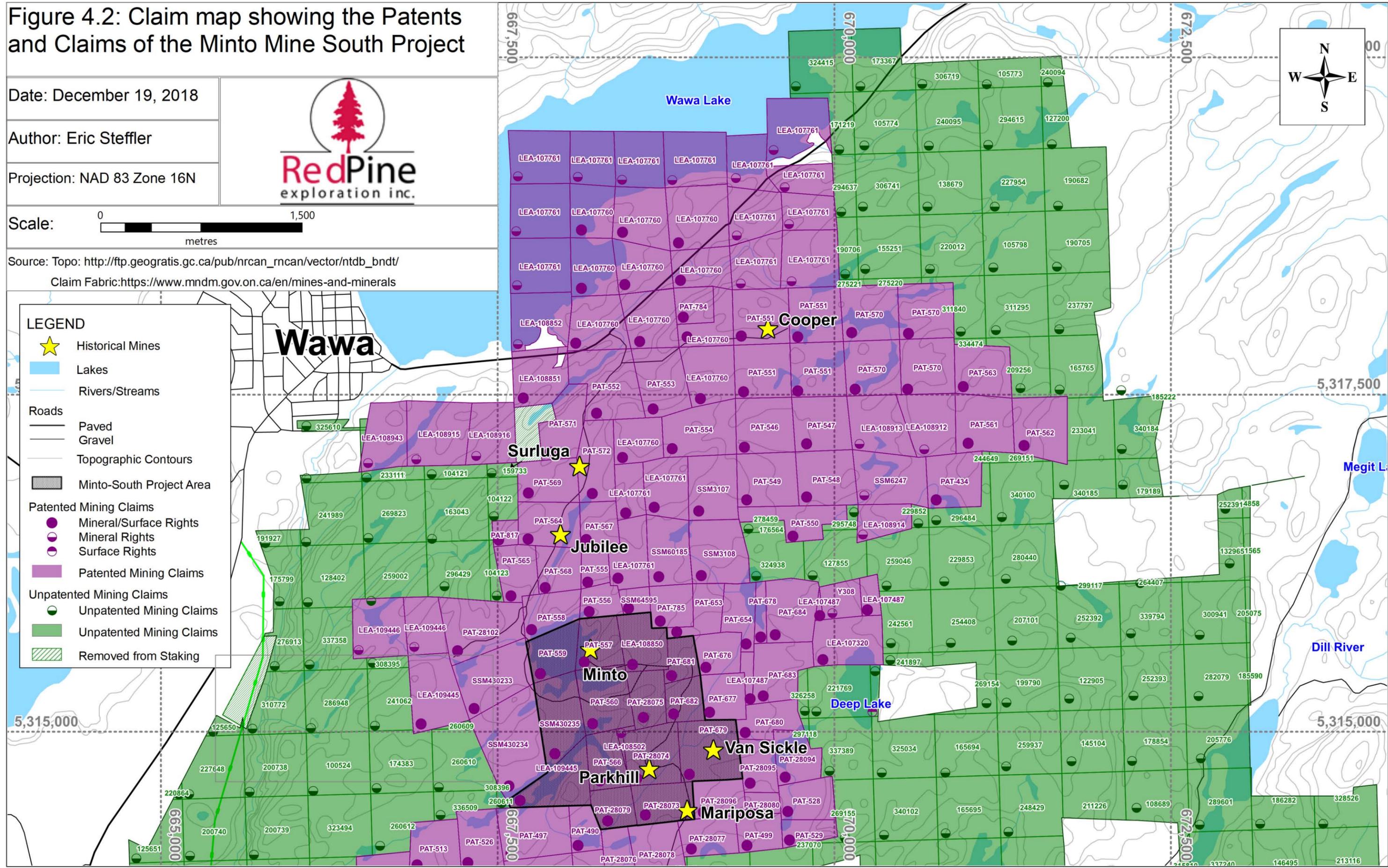
Scale: 0 1,500 metres

Source: Topo: http://ftp.geogratis.gc.ca/pub/nrcan_rncan/vector/ntdb_bndt/
 Claim Fabric: <https://www.mndm.gov.on.ca/en/mines-and-minerals>



LEGEND

- ★ Historical Mines
- Lakes
- Rivers/Streams
- Roads
 - Paved
 - Gravel
- Topographic Contours
- Minto-South Project Area
- Patented Mining Claims
 - Mineral/Surface Rights
 - Mineral Rights
 - Surface Rights
- Patented Mining Claims
- Unpatented Mining Claims
 - Unpatented Mining Claims
 - Unpatented Mining Claims
- ▨ Removed from Staking



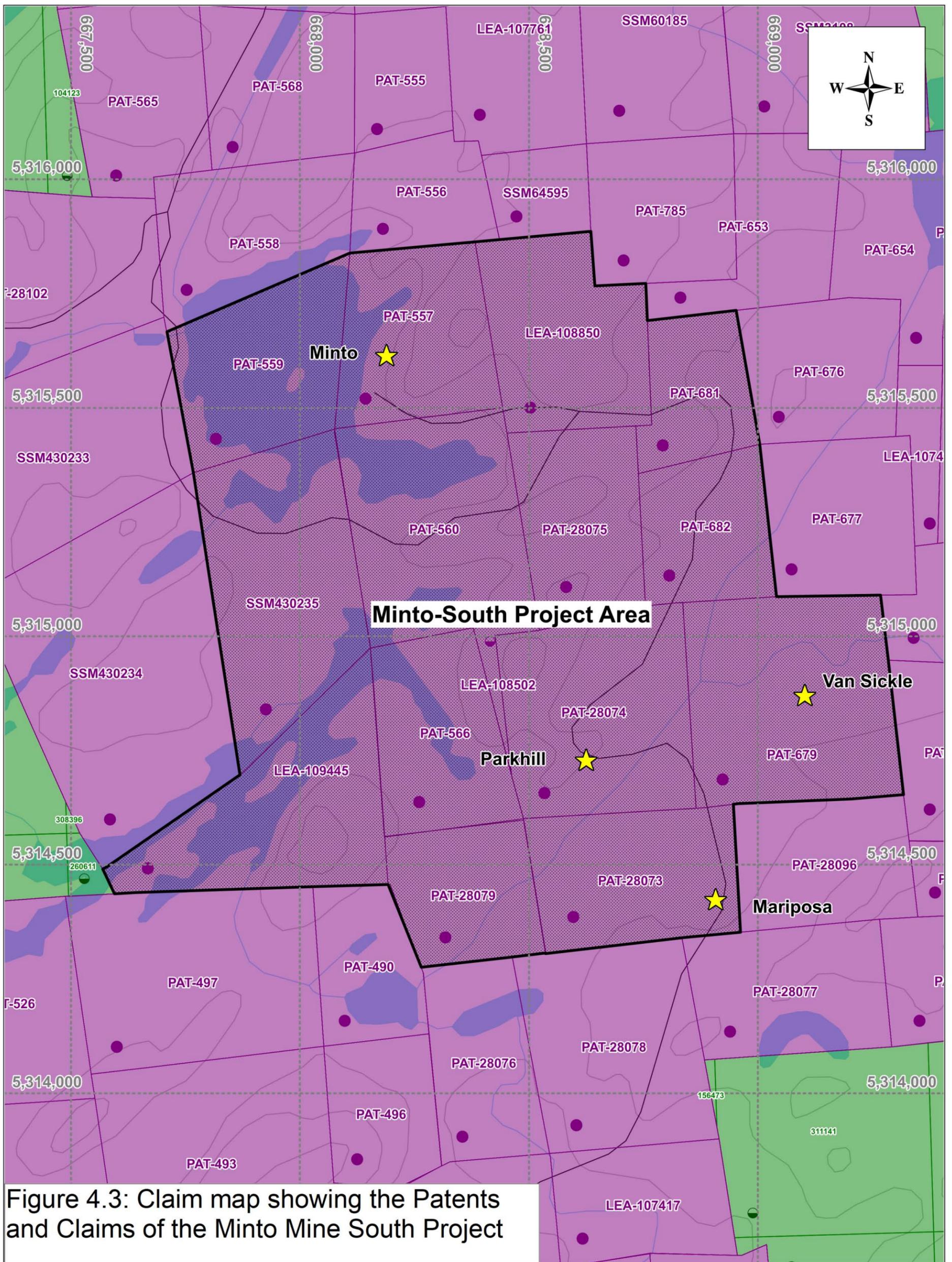


Figure 4.3: Claim map showing the Patents and Claims of the Minto Mine South Project

Date: December 19, 2018

Author: Eric Steffler

Projection: NAD 83 Zone 16N

Scale: 0 500 metres

Source: Topo: http://ftp.geogratis.gc.ca/pub/nrcan_nrcan/vector/ntdb_bndt/
 Claim Fabric: <https://www.mndm.gov.on.ca/en/mines-and-minerals>



LEGEND

- Historical Mines
- Lakes
- Rivers/Streams
- Roads
 - Paved
 - Gravel
- Topographic Contours
- Unpatented Mining Claims
- Patented Mining Claims
 - Mineral/Surface Rights
 - Mineral Rights
 - Surface Rights

Table 4-1: List of patented claims that are part of the Minto Mine South Project

Claim No.	Title Holder	Type	Legacy Claim No.	Township	Expiry
PAT-28079	Red Pine Exploration	Patented	SSM3493	McMurray	n/a*
PAT-28075	Red Pine Exploration	Patented	SSM3129	McMurray	n/a*
PAT-559	Red Pine Exploration	Patented	SSM3134	McMurray	n/a*
PAT-681	Red Pine Exploration	Patented	SSM4141	McMurray	n/a*
LEA-108850	Red Pine Exploration	Patented	SSM430232	McMurray	n/a*
LEA-108502	Red Pine Exploration	Patented	SSM581686	McMurray	n/a*
PAT-28074	Red Pine Exploration	Patented	SSM3124	McMurray	n/a*
PAT-28073	Red Pine Exploration	Patented	SSM3109	McMurray	n/a*
PAT-679	Red Pine Exploration	Patented	SSM60	McMurray	n/a*
LEA-109445	Red Pine Exploration	Patented	SSM430258	McMurray	n/a*
SSM430235	Red Pine Exploration	Patented	SSM430235	McMurray	n/a*
PAT-557	Red Pine Exploration	Patented	SSM3132	McMurray	n/a*
PAT-560	Red Pine Exploration	Patented	SSM3135	McMurray	n/a*
PAT-566	Red Pine Exploration	Patented	SSM3406	McMurray	n/a*
PAT-682	Red Pine Exploration	Patented	SSM4142	McMurray	n/a*

Note: *Patent claim expiry is contingent on applicable taxes being paid to the municipality of Wawa

Table 4-2: List of taxes obligations to maintain the Minto South property in good standing

Claim No.	Legacy Claim No.	Type of Title	Mining Tax	Lease Rent	Municipal Tax (2017)	Timber Rights
LEA-108502	SSM581686	Lease	Not Applicable	\$3.62	None	No
LEA-108850	SSM430232	Lease	Not Applicable	\$293.33	\$733.80	No
	SSM430235		Not Applicable		\$801.96	No
LEA-109445	SSM430258	Lease	Not Applicable	\$111.69	\$457.12	No
PAT-28073	SSM3109	Fee Simple Absolute	\$53.58	Not Applicable	\$737.80	No
PAT-28074	SSM3124	Fee Simple Absolute	\$73.98	Not Applicable	\$801.96	No
PAT-28075	SSM3129	Fee Simple Absolute	\$38.69	Not Applicable	\$681.66	No
PAT-28079	SSM3493	Fee Simple Absolute	\$35.45	Not Applicable	\$533.30	No
PAT-557	SSM3132	Fee Simple Absolute	\$45.97	Not Applicable	\$709.74	No
PAT-559	SSM3134	Fee Simple Absolute	\$52.77	Not Applicable	\$733.80	No
PAT-560	SSM3135	Fee Simple Absolute	\$67.99	Not Applicable	\$789.94	No
PAT-566	SSM3406	Fee Simple Absolute	\$47.27	Not Applicable	\$569.40	No
PAT-679	SSM60	Fee Simple Absolute	\$83.04	Not Applicable	\$669.64	No
PAT-681	Y330/SSM4141	Fee Simple Absolute	\$25.90	Not Applicable	\$633.54	No
PAT-682	Y331/SSM4142	Fee Simple Absolute	\$25.90	Not Applicable	\$633.54	No
Total			\$550.54	\$408.64	\$9,487.20	

4.3 Permits and Authorization

In Ontario, permits are required for exploration on unpatented mineral claims or leases. Exploration activities by Red Pine of the Minto Mine South Property became active in 2014 and include geophysical activities requiring a power generator, line cutting where the line width is less than 1.5 m, mechanized drilling where the total weight of the rig is less than 150 kilogram (kg), mechanized surface stripping where the total stripped area is less than 100 m², or pitting and trenching of a volume of 1 to 3 m³ on unpatented mineral claims or leases require an exploration plan. Plan and permit applications are submitted to the Ministry of Northern Development and Mines for review, posting on the Environmental Registry (30 days) and circulation to First Nations communities who have areas of cultural significance. Plans are typically approved within 30 days and permits within 50 days. Plans are valid for two years and permits are valid for three years.

No exploration plans or permits are required for fee simple absolute patents and for areas that are part of a closure plan. All surface rights holders must be notified of the application in advance of the submission. Thus, for the 2014-2018 drilling seasons, no permit was required. However, a magnetotellurics geophysical survey was completed on unpatented claims and required a permit. As of the effective date of this Report, exploration permit PR-16-10809 is in good standing and is valid until April 7, 2019 and is in the Red Pine name.

4.3.1 Summary of the Agreement between Red Pine and First Nation Communities

Red Pine acknowledged and agreed upon articulating a clear and mutual agreement between Red Pine and First Nation communities within the exploration area. Red Pine has made an agreement to consult with the Michipicoten First Nation (the “MFN Territory”, Section 35 of the Constitutional Act, 1982, Schedule B) and the Batchewana First Nation (the “BFN Territory”, Section 35 of the Constitutional Act, 1982, Schedule B). The general purpose of these agreements are pertaining to development of the Project while fostering a mutually beneficial working relationship, founded on principles of trust, respect and understanding if more intensive exploration and development is considered in the future.

During development of the Project, the Company agreed to the following general guidelines:

- Insuring that Batchewana and Michipicoten First Nation customs are respected at all times
- Understand Treaty Rights and Inherent Rights
- Safety is first priority for worker, general public and wildlife
- Sustainable practice intergraded into all projects dealing with environmental activities
- Protect wildlife and wildlife habitat
- Environmental impact protection
- Promoting First Nation employment opportunities

4.4 Environmental Considerations

Red Pine and Citadel are in the process of completing a mine closure plan. All patented mining claims for which mining rights are held are part of the closure plan. Golder is relying on the expert opinion of Demetri N. Georgiou, P.Eng., and Paul J. Brugger, P.Eng., of exp Global (“exp”). Exp provided Golder with a description of items that are being worked on at the time of the effective date of this report.

Since 2015, Red Pine has capped many mine shafts that were exposed to the environment to bring all open shafts up to environmental standards.

4.4.1 Summary of the Environmental Studies Completed as part of the Mine Closure Plan

On March 1, 2017, exp Global brought to Red Pines' attention that the following environmental concerns would need to be addressed:

Item 1: Capping of exposed mine shafts

- The main shaft at the Minto Mine site was capped in 2009 and the concrete pad that was located next to the shaft opening has been broken, graded and covered. The vent raise concrete cap was reinstalled to Code requirements in the spring of 2009 and is considered complete. The waste rock dump was re-contoured to a flatter profile in October 2009.
- The main shaft at the Van Sickle Mine site was capped in 2009.
- The main shaft at the Park Hill Mine site was backfilled with cemented mine waste in 1995. The Parkhill Mine zone of thin crown pillars was closed by blasting prior to 1996 and the open stope was filled prior to 1997.

Item 2: Revegetation

Due to the ongoing exploration by Red Pine Exploration, Item 3 – Revegetation has been delayed.

Item 3: Surface and Ground Water

Run-off is directed from the Parkhill and Grace to Darwin sites in a southerly direction toward Trout Creek. Trout Creek eventually enters the Michipicoten River south of the property. The Ontario Ministry of the Environment (MOE) has issued an Ontario Water Resources Act, Section 53 Certificate of Approval (COA) No. 4-0101-88-896 in 1989 with respect to the Minto Lake Tailings Dam and Pond. As per the conditions of the COA, which includes a comprehensive surface water monitoring program, the result of surface water sampling and analysis are that effluent quality continues to remain within COA limits.

No ground water issues are expected to require management at the time of final closure.

Item 4: Aquatic Plant and Animal Life

Minto Lake has been supporting a fish community of brook trout, white suckers and cyprinids and is managed by the Ministry of Natural Resources. Post closure, it is not anticipated that this arrangement will change.

Item 5: Road Spillway Construction

The reconstruction of the spillway out of Minto Lake, as per the Closure Plan. The initial design and survey work was completed in 2009 with construction completed in summer 2010.

Item 6: Acid Drainage Potential

In 2009 representative waste rock samples from the Parkhill site were sent to ALS Chemex in Vancouver for analysis of acid generating potential. The results from these samples confirmed the earlier CANMET findings i.e. that buffering capacity is moderate to high in all rock samples found at the sites.

Golder is not aware of any other significant factors or risks that may affect the access, title or the right or ability to perform work on the property.

5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE, AND PHYSIOGRAPHY

5.1 Accessibility

The Town of Wawa is located on Highway 17 (Trans-Canada Highway), approximately 480 km east of Thunder Bay, Ontario, approximately 225 km north of Sault Ste. Marie, Ontario, and approximately 650 km northwest of Toronto, Ontario. The property can be accessed by driving 2 km east on Highway 101 from Wawa and then turning south onto a gravel road using a 2-wheel drive vehicle. During the winter months, the main access road to the property from Highway 101 is ploughed. Areas off the main road can be accessed by snowmobiles and ATVs.

5.2 Local Resources and Infrastructure

Skilled and unskilled labour is available in Wawa because of the long mining history of the area. Wawa has a population of 2,970 people (<http://www12.statcan.gc.ca/census-recensement/2016>).

A 230 kilovolt (kV) power line crosses the southern part of the property and a second power line crosses the western part of the property (Figure 5-1). An airport exists in Wawa but no commercial flights are operated from it. Algoma Central Railway was acquired by Canadian National Railways and does not operate freight service between Sault Ste. Marie and Hearst any more. Passenger service no longer exists to Hawk Junction, 23 km northeast of Wawa.

Sufficient water is available from lakes and streams on the property. Surface rights for a large part of the property are held by Red Pine's joint venture partners and are sufficient for any potential mining operation.

Tailings storage areas, potential waste disposal areas, heap leach pad areas and potential processing plant sites are not relevant to the Project at this stage.

5.3 Climate

The vicinity to Lake Superior has a significant impact on the climate on the property. Environment Canada has recorded weather details in Wawa since 1981 (<http://climate.weather.gc.ca>) and showed that the warmest temperatures are recorded in July and August (daily mean 15°C; daily maximum 20.8°C). The coldest temperatures are typically recorded in January (daily mean -14°C; daily minimum -20.2°C). September and October are the months with the most rainfall (~122 mm and ~107 mm, respectively) and the highest snowfall occurs in December (~80 cm). Exploration can be completed on the property year-round.

5.4 Physiography

The Town of Wawa is located at 289 m asl. The area of the property is hilly with a range of elevations from 300 masl to 400 masl. Steep ridges exist locally. The property is forested with spruce, pine, poplar and birch being the dominant species.

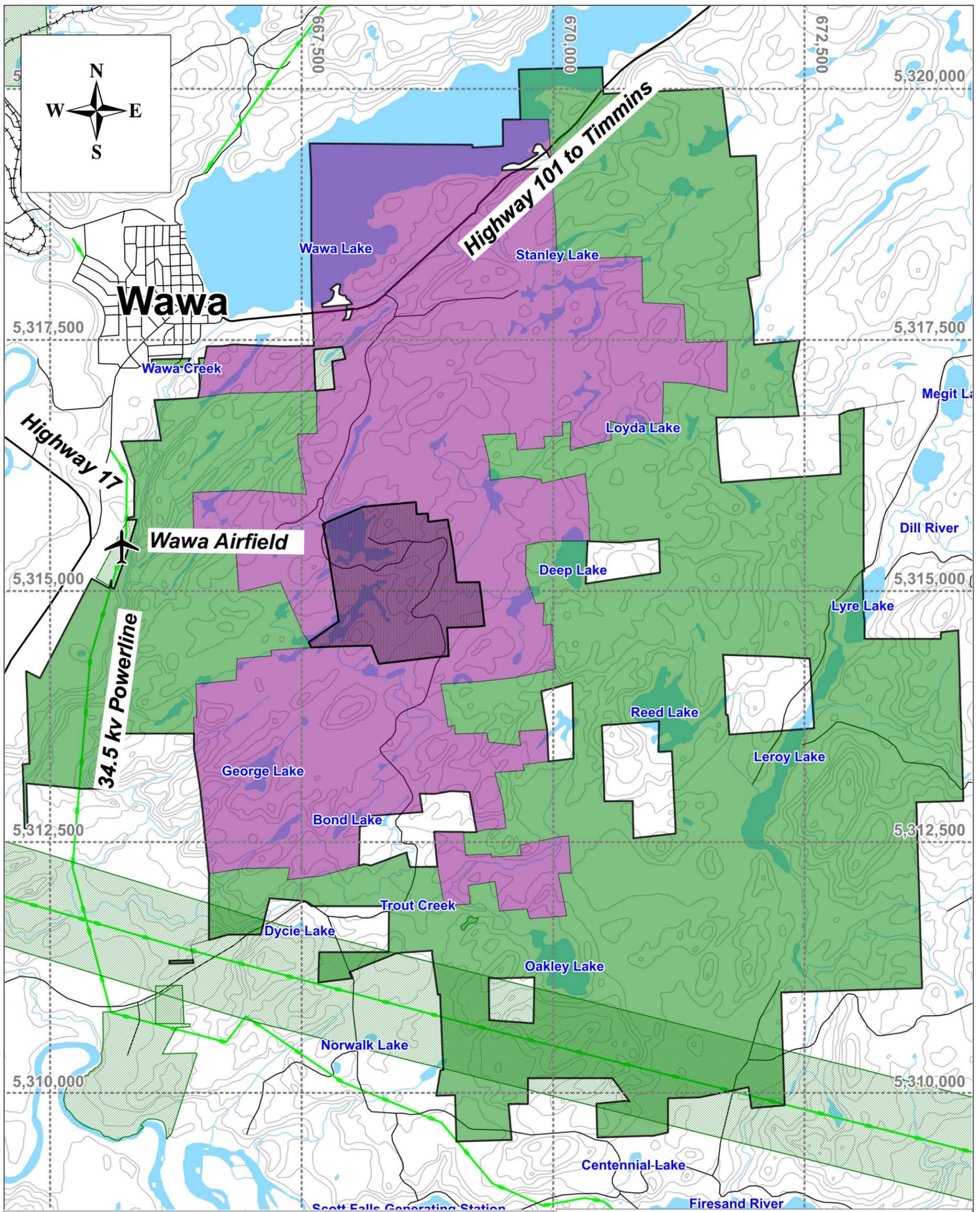


Figure 5.1: Location of Red Pine's Property that includes the Minto Mine South Project

Date: December 19, 2018

Author: Eric Steffler

Projection: NAD 83 Zone 16N

Scale: 0 2,500 metres

Source: Topo: http://ftp.geogratis.gc.ca/pub/nrcan_mcan/vector/ntdb_bnd/
 Claim Fabric: <https://www.mndm.gov.on.ca/en/mines-and-minerals>



LEGEND

- Powerlines
- Roads
 - Paved
 - Gravel
- Topographic Contours
- Railway
- Rivers/Streams
- Removed from Staking
- Lakes
- Property Boundary
- Unpatented Mining Claims
- Patented Mining Claims
- Minto-South Project Area

6.0 HISTORY

The Minto Mine South Property has a long exploration history that began in the 1890s. The property has been explored and worked since then. This long period of activity resulted in the exploitation of four gold mines. Preserved records of production have been summarized by Sage (1993) and Rupert (1997) who also provide a detailed overview of historic exploration which was extensive in some parts of the property (Table 6-1, Figure 6-1). A total of 21,526 m of drilling from 122 surface diamond drill have been recorded and compiled in Red Pine's drilling database. Widespread stripping and sampling of many trenches, the sinking of many additional shafts and the collection of numerous samples has also been completed on the property. This section presents the history of exploration and mining activity that occurred on the Minto Mine South Project and steps of the amalgamation of the different land blocks that now form the current Minto Mine South Project.

Table 6-1: Historic gold mine and gold production that were active on the Minto Mine South Project

Mine	Tonnes Milled	Au Grade (g/t)	Au Recovered (Ounces)
Mariposa	8	72.99	19
Parkhill	114,096	14.81	54,298
Van Sickle	8,372	6.34	1,710
Minto	57,335	12.56	23,100
Total	179,811	106.70	79,127

6.1 Minto Mine Discovery Period - 1897 to 1910

The Wawa area has been explored for gold since the 1890's (Rupert, 1997, Table 6-2). Gold was first discovered by William Teddy in 1897 at Mackay point and panned along the south shore of Wawa Lake at Mackey (Frey, 1987, Figure 6-1, and Figure 6-2). A staking rush followed the discovery and benefited from the change in claim staking adopted by the Ontario Government to encourage staking in 1895 (MacMillan and Rupert, 1990). This early rush period resulted in multiple discoveries.

The first work on the Minto Mine South Project started in 1897 when the vein was discovered by S. Berailldt who sold it to D. Tisdale. During that period trenching was done, several pits were sunk, and an incline shaft was sunk to a depth of 130 feet (ft) on the Minto Vein (Sage, 1993). Work on the Minto Mine was suspended in 1900. Gold values encountered in the shaft were valued on average at \$13.10 over a width of 30 inches (in) and a length of 70 ft (Sage, 1993).

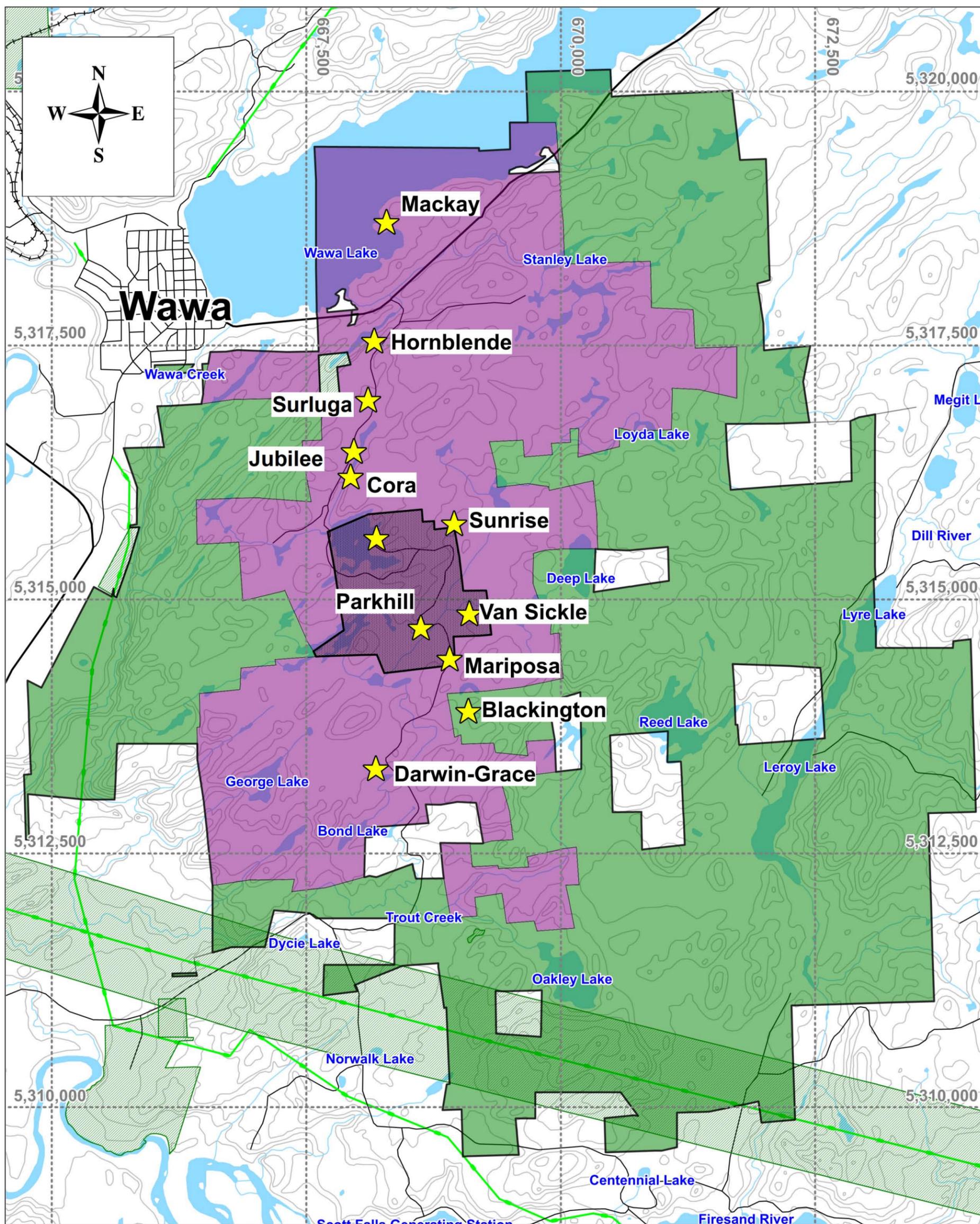


Figure 6.1: Main historic mines, shafts, and pits of the Minto Mine South Project

Date: December 19, 2018

Author: Eric Steffler

Projection: NAD 83 Zone 16N

Scale: 0 2,500 metres

Source: Topo: http://ftp.geogratis.gc.ca/pub/nrcan_mcan/vector/ntdb_bnd/
 Claim Fabric: <https://www.mndm.gov.on.ca/en/mines-and-minerals>



LEGEND

- Historical Pits and Shafts
- Removed from Staking
- Lakes
- Roads
 - Paved
 - Gravel
- Property Boundary
- Topographic Contours
- Unpatented Mining Claims
- Patented Mining Claims
- Powerlines
- Minto-South Project Area
- Railway
- Rivers/Streams

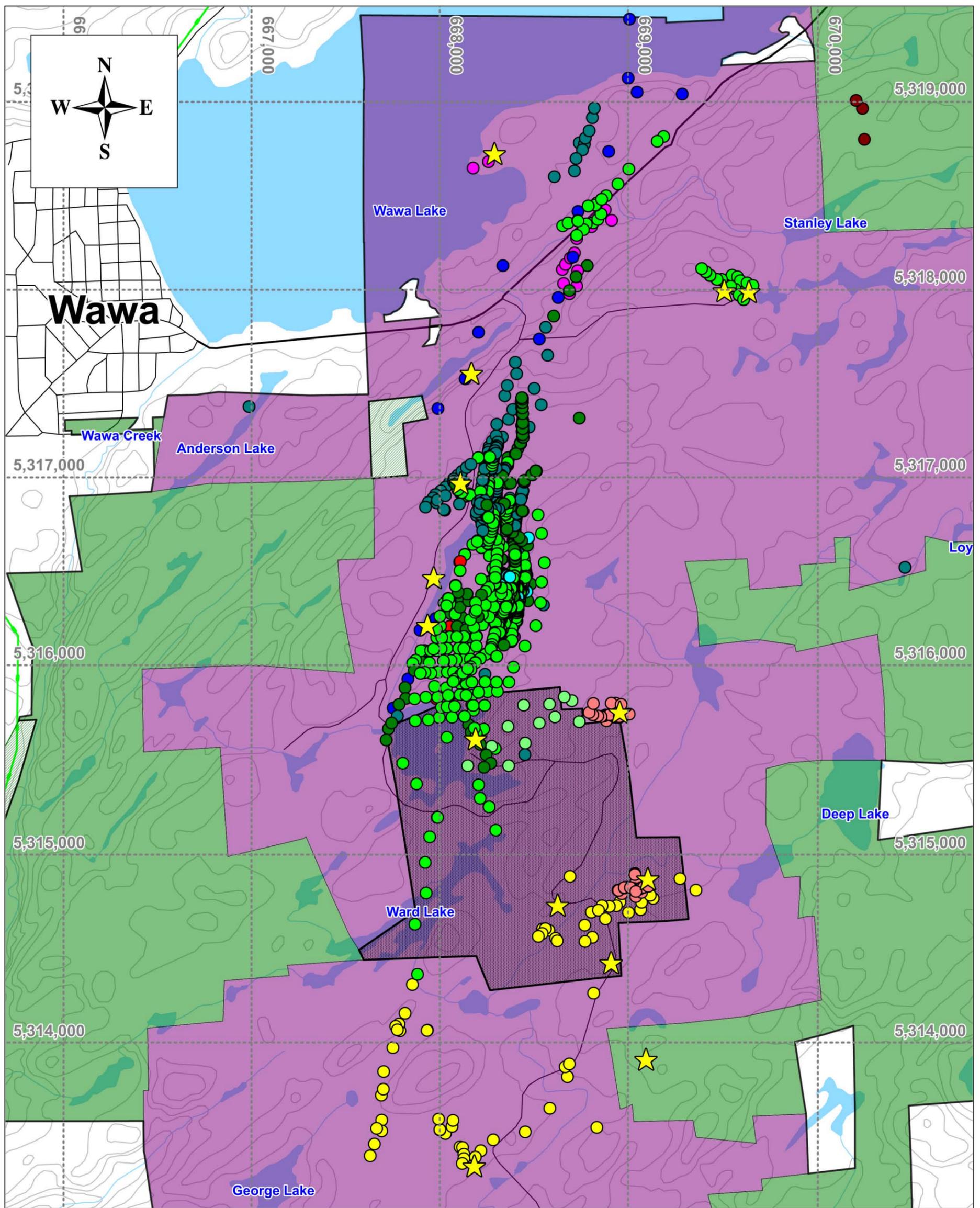


Figure 6.2: Historical drilling and operators through the history of the Minto Mine South Project

Date: December 19, 2018

Author: Eric Steffler

Projection: NAD 83 Zone 16N

Scale: 0 1,250 metres

Source: Topo: http://ftp.geogratis.gc.ca/pub/nrcan_rncan/vector/ntdb_bndt/
 Claim Fabric: <https://www.mndm.gov.on.ca/en/mines-and-minerals>



LEGEND

- ★ Historical Pits and Shafts
 - Paved Roads
 - Gravel Roads
 - Rivers/Streams
 - Topographic Contours
 - Lakes
 - ▨ Removed from Staking
 - Minto-South Project Area
 - Unpatented Mining Claims
 - Patented Mining Claims
- Historical Drilling**
- Augustine, 2011
 - Citadel, 1987 to 1989
 - Cominco, 1963 to 1964
 - Con Mine Smelt, 1934
 - Dunraine, 1980 to 1983
 - Unknown
 - Pango, 1969 to 1970
 - Pursides, 1974 to 1975
 - Surluga, 1965 to 1975
 - Van Ollie, 1969 to 1991
 - Wawa GP Inc., 2007

Table 6-2: Historic exploration and mining activity during the Discovery period of the Minto Mine South Project

Company	Year(s)	Exploration	Results	Reference
William Teddy, and J.J. Mackay and J.L. Caverhill	1897-1900	Discovery of Au on the shore of Wawa Lake at Mackay point	Staking rush in the Wawa area and discovery of Wawa Au Camp	Sage, 1993
		Pitting and trenching of auriferous quartz veins	Sinking of a 8 by 10 by 40 foot shaft	
S. Berailldt and D. Tisdale	1897-1900	Discovery of the Minto Mine; Stripping and pitting; Sinking of a 133 foot inclined shaft	Records lost	Sage, 1993

In 1902 and 1903, the Mariposa Gold Company sunk the 208 ft Mariposa shaft, inclined at 80°NE in the footwall of the Mariposa Vein with two drifted levels at 100 ft and 200 ft (Sage, 1993).

6.2 Peak of Minto Mine Mining Activity - 1925 – 1938

During the period between 1910 and 1925, the Minto Mine South Project saw an exploration and production hiatus characterized by brief periods of activity and many land transactions between different parties (Sage, 1993). The following period, extending from the mid-late 1920s to the late 1930s, saw the peak of mining activity on the property with several mines in operation. Production records exist for four of the mines during this period (Minto, Parkhill, Mariposa and Van Sickle; Figure 6-1).

From 1930-1934 the Minto Mine was operated by Minto Gold Mines Limited and produced ore. Underground operations at the Minto mine were suspended in May 1934. During the period of operation in 1934 a total of 10,243 tons of ore was mined and milled, of which 3,412 tons was obtained from the 1st level, 1,560 tons from the 2nd level, and 5,271 tons from the 3rd level (Sutherland, 1935). In 1930, a shaft was opened at the Parkhill Mine by Parkhill Gold Mines Ltd. In which 54,298 oz of gold was produced. However, the company filed for bankruptcy in 1938 (Table 6-3).

Table 6-3: Historic exploration and mining activity during the peak of mining activity on the Minto Mine South Project

Company	Year(s)	Exploration	Results	Reference
Parkhill Au Mines	1929–1938	Shaft started in 1930; Operated Parkhill mine	Production of 54,298 ounces of Au; Bankruptcy in 1938; Ore grade material reported left at the 14th level	41N15NE0087 (Amalgamation of several reports)
Minto Au Mines	1930–1939	Purchase and operation of the Cooper, Minto and Jubilee Mines; Operation of a 75 ton per day cyanide mill	Au production from the Cooper (1,627 ounces of Au), Jubilee and Minto Mines (combined production of 36,178 ounces of Au)	Sage, 1993; Rupert, 1997

6.3 Minto Mine South Operation - 1938 to 1980

No exploration or mining activity was conducted on the Minto Mine South Project during the time period of 1938 – 1980.

6.4 Parkhill and Van Sickle Exploration - 1980 to 1986

Most of the exploration activities between 1980 and 1986 were conducted by or on behalf of Dunraine Mines Ltd. (Dunraine) and were centered on the historic Parkhill and Van Sickle gold mines (Table 6-4).

Dunraine also dewatered, sampled and mapped the upper 6 levels of the Parkhill Mine and tested the grade of the Parkhill Mine tailings (Gignac, 1983; Studemeister, 1983, 1984). Dunraine also proposed a syn-genetic gold model to explore the property. In 1986, Goldun Age Resources Inc. entered an option agreement with Dunraine in 1986 and continued the dewatering of the underground workings on the Parkhill property. The underground workings were mapped, sampled and evaluated. Tilsley (1986) concluded that gold remained in pillars, floors and backs of stopes, particularly above the 1st level, but that little minable material was left below the 3rd level. He reports that, broken material and material washed from the stopes had grades comparable to the ones reported from the stopes except for material from the Mill Vein on 3rd level, which had grades up to 3 oz/ton (102.86 g/t Au; mean grade 24 g/t Au; Tilsley, 1986). Tilsley (1986) also concluded, that the mined lenses would not extend up dip to the property boundary and that there are no undiscovered lenses in the immediate footprints of the underground development.

Table 6-4: Historic drilling by Dunraine Mines on the Minto Mine South Project during the 1980-1986 period

Year	No of Holes	Total metres	Best Intersection*	Main Target of Program
1980	38	3,385	46.22 g/t Au over 0.88 m	Parkhill and Van Sickle mines

Note: *Intervals listed here do not represent true thickness

6.5 Minto Mine South Project 1986 to 1990

In 1987, Citadel purchased the Parkhill Mine property from Dunraine (Rupert, 1997). During the period of 1987 and 1988 the Minto Mine South Project, 31 drill holes were drilled by Citadel totalling 10,768 m of drill core (Table 6-5; Table 6-6). During 1989 and 1990, Van Ollie performed extensive exploration on the Van Sickle property which included drilling of 53 drill holes totalling 18,412 m of drill core.

Table 6-5: Historic drilling by Citadel and Van Ollie on the Minto Mine South Project during the 1986-1990 period

Year	No of Holes	Total Metres	Company
1987	19	6,609	Citadel
1988	12	4,159	Citadel
1989	31	10,764	Van Ollie
1990	22	7,648	Van Ollie

Table 6-6: Historic drill hole highlights by Citadel and Van Ollie on the Minto Mine South Project during the 1986-1990 period

Year	Drill Hole No	From (m)	To (m)	Best Intersection (m)*	Au (g/t)
1987	S290	225.09	230.43	5.34	4.30
1988	S316	335.43	339.85	5.64	2.80

Note: *Intervals listed here do not represent true thickness

6.6 Minto Mine South Project 1991 to 1997

During the period between 1991 and 1996, the Minto Mine South Project saw an exploration hiatus. In 1997, Citadel acquired the Van Sickle Mine (Rupert, 1997)

6.7 Minto Mine South Project - 2007-2016

6.7.1 Minto Mine South Drilling Programs – 2007 - 2013

In 2007, the Wawa General Partnership, on behalf of Citabar, completed an 8,401 m NQ-size diamond drill program at their Minto Mine South Project. Drill hole 07-385 intersected the Minto vein which provided valuable insight into the structural orientation of the vein and also provided a significant gold grade (Table 6-7; Table 6-8; Gow, 2011).

Table 6-7: Selected assay highlights for Wawa GP's 2007 drilling program

Year	No of Drill Holes	Total Metres	Company
2007	12	7,663	Wawa GP Inc.

Table 6-8: Historic drill hole highlights by Citadel and Van Ollie on the Minto Mine South Project during the 2007-2013 period

Year	Drill Hole No	From (m)	To (m)	Best Intersection (m)*	Au (g/t)
2007	07-385	61.10	62.40	1.30	10.38

Note: *Intervals listed here do not represent true thickness

6.7.2 Augustine Ventures Inc. Sampling

Augustine acquired the Surluga Project pursuant to the terms of an option agreement (the "Option Agreement") dated April 16, 2009 entered into between Citabar Limited Partnership (Citabar), Citadel Gold Mines Inc. (Citadel), Delta Uranium Inc. (Delta) and Delta Precious Metals (Ontario) Inc. (DPMI), and also pursuant to the terms of an assignment agreement (the "Assignment Agreement") dated September 15, 2010 entered into between Delta, DPMI, Citadel, Citabar and the Company. Pursuant to the terms of the Assignment Agreement, Citabar and Citadel consented to Delta and DPMI assigning their rights under the Option Agreement to the Company, whereby Delta and DPMI grant the Corporation the exclusive right to earn an undivided 60% interest in the Surluga Project (Augustine Ventures MDA, July 24, 2015).

In 2011, Augustine collected 200 grab samples on the Minto property. Table 6-9 lists samples with >1.0 g/t Au. Although Augustine completed a Lidar survey, no details of the survey (year, contractor, survey parameters, etc.) are known to the company.

Table 6-9: Assay highlights of the grab samples collected by Augustine in 2011

Sample No.	Easting	Northing	Au (g/t)	Location
1003978	668,180	5,315,784	14.03	Minto
1003953	668,166	5,315,867	8.30	Minto
1003903	668,382	5,315,387	5.64	Minto
1003920	668,242	5,315,144	3.95	Minto
1003894	668,397	5,315,385	2.96	Minto
1003963	668,242	5,315,971	2.06	Minto
1003976	668,170	5,315,779	1.88	Minto
1003873	668,447	5,315,431	1.49	Minto
1003921	668,243	5,315,145	1.27	Minto

7.0 GEOLOGICAL SETTING AND MINERALIZATION

7.1 Regional Geology

The Minto Mine South Project is in the southern part of the Michipicoten greenstone belt, one of two greenstone belts that form the Wawa Sub-province (Figure 7-1) of the Superior Province, the world's largest Archean craton (Ronacher et al., 2015). The Wawa Sub-province extends from Minnesota in the west to the Kapuskasing structural zone in the east. The Superior Province was formed by the amalgamation of numerous sub-provinces of various origins and compositions (plutonic, volcanic-plutonic, gneissic, sedimentary) that range in age from 3.0 to 2.65 Ga (Polat and Kerrich, 2000).

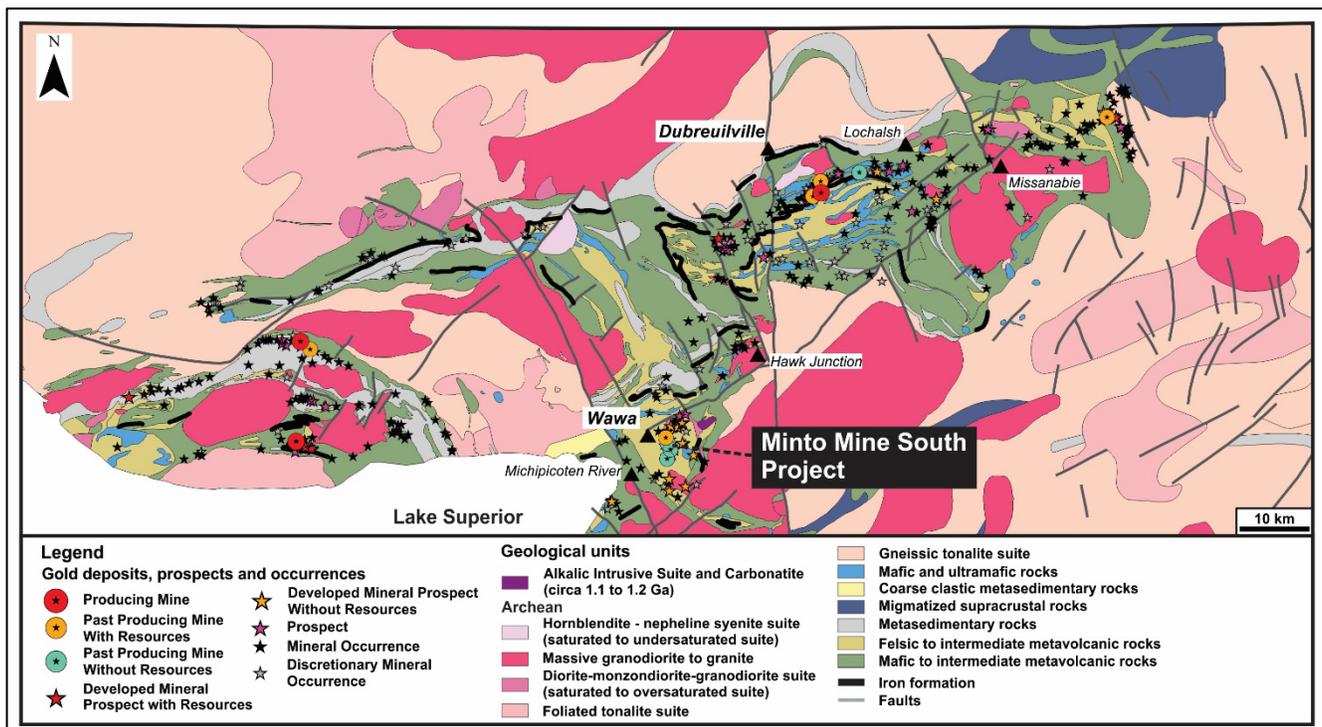


Figure 7-1: Regional Geology of the Michipicoten Greenstone Belt and location of the Minto Mine South (labelled in the figure as 'Wawa Gold Project')

7.2 Local Geology

The Michipicoten greenstone belt is an amalgamation of three cycles of mafic to felsic volcanism associated with concomitant subvolcanic intrusions (Sage, 1994). Zircon U-Pb ages date volcanic Cycle 1 to 2.9 Ga, volcanic Cycle 2 to 2.75 Ga and volcanic Cycle 3 to 2.7 Ga. Like other greenstone belts within the Superior Province, the mafic portion of the Michipicoten greenstone belt ranges in composition from basaltic to komatiitic. In the southern part of the Michipicoten greenstone belt, the main subvolcanic intrusions, emplaced during cycles 1 and 2 are the Hawk Lake Granitic Complex and the Jubilee Lake Stock. These intrusions have been interpreted to delineate the centers of calderas and to be the intrusive equivalent of the felsic to intermediate volcanic rocks within the main greenstones (Sage, 1984). The hiatus between volcanic Cycles 2 and 3 was marked by extensive banded iron formations.

Post-Archean magmatism includes diabase dikes and the emplacement of the Firesand River Carbonatite intruded along the Wawa-Hawk Lake-Manitowik Lake Fault System. The Minto Mine South Project is located within the southern part of the Michipicoten greenstone belt (Sherman, 2005).

A prominent structure in the southern Michipicoten greenstone belt is the Wawa-Hawk Lake-Manitowik Lake Fault System, which defines the boundary between a lamprophyre-rich domain to the south and lamprophyre-free domain to the north (Figure 7-1). The emplacement of the Firesand River Carbonatite along the Wawa-Hawk Lake-Manitowik Lake Fault System suggests that the fault is deep-seated, whereas the location of the Jubilee Stock and Hawk Granite Complex along the fault indicate that it may follow an older structure active during the formation of the older greenstone belt. All the rocks of the Michipicoten greenstone belt are metamorphosed at greenschist facies and its volcano-plutonic sequences have been repeatedly deformed and folded (Sage, 1994).

7.3 Property Geology

The core of the known gold corridor of the Minto Mine South Project is centered on the Jubilee Stock, a composite intrusion formed of many individual intrusions of variable composition. Almost every historic mine on the property are located within or at the margins of the Jubilee Stock. The Minto Mine South Project is situated adjacent to Minto Lake (Figure 7-2; Figure 7-3).

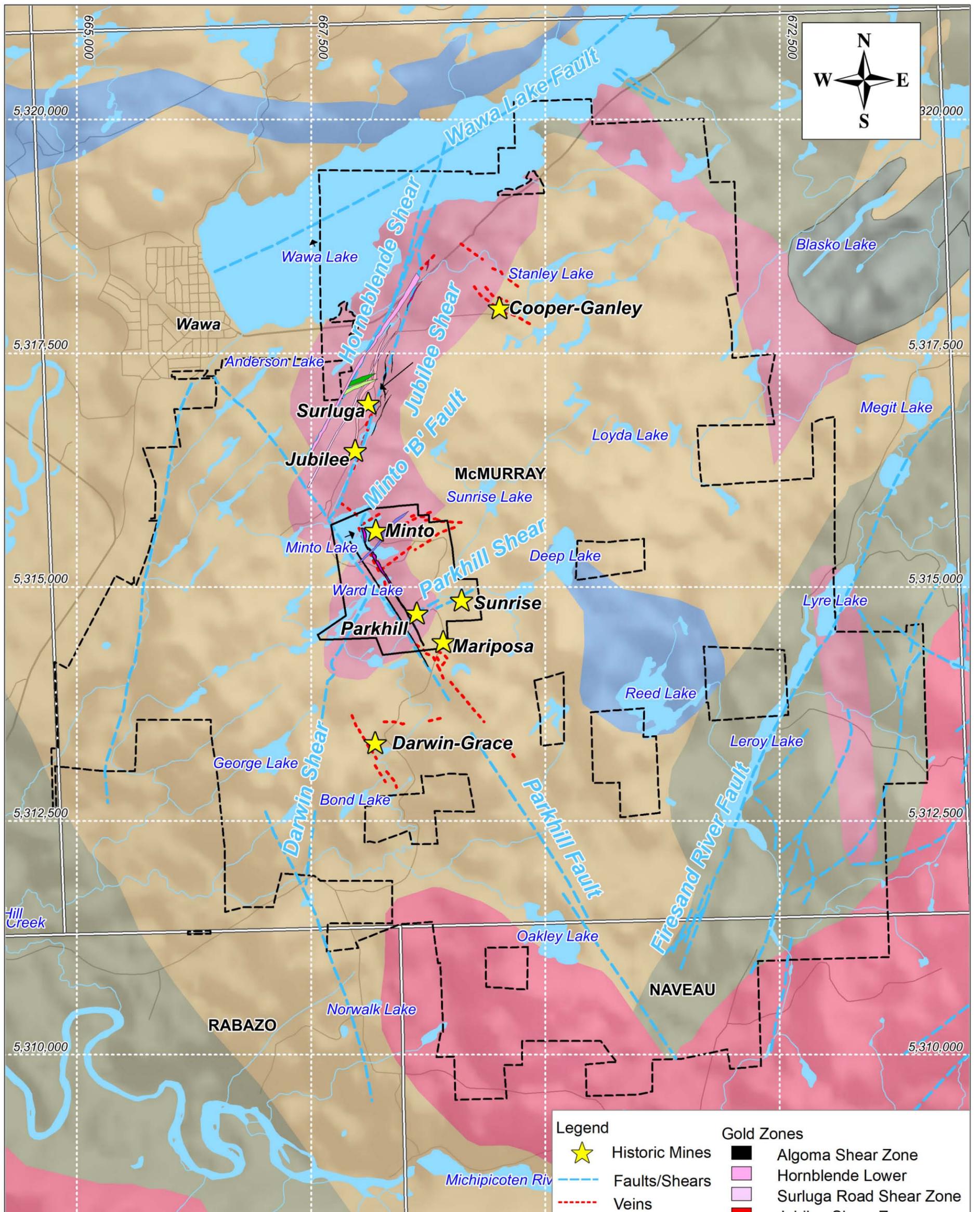


Figure 7.2: Geology Map of the Minto Mine South Project Area

Date: December 19, 2018
 Author: Eric Steffler
 Projection: NAD 83 Zone 16N



Scale: 0 to 2,500 metres

Source: Topo: http://ftp.geogratis.gc.ca/pub/nrcan_rncan/vector/ntdb_bndt/
 Geology: Ontario Geology MRD126_Rev1, Ronacher et al. (2016)

- | | | | |
|------------------------------------|--|-------------------|---------------------------|
| Legend | | Gold Zones | |
| ★ | Historic Mines | ■ | Algora Shear Zone |
| --- | Faults/Shears | ■ | Hornblende Lower |
| --- | Veins | ■ | Surluga Road Shear Zone |
| --- | Wawa Property Boundary | ■ | Jubilee Shear Zone |
| --- | Minto-South Project Area | ■ | William Gold Zone - Upper |
| --- | Townships | ■ | William Gold Zone - Lower |
| --- | Rivers/Streams | ■ | Sunrise North Shear Zone |
| --- | Lakes | ■ | Hornblende Upper |
| | | ■ | Minto A Shear Zone |
| | | ■ | Minto No4 Vein |
| Superior Province (Archean) | | | |
| ■ | Diorite-monzodiorite-granodiorite suite | | |
| ■ | Felsic to intermediate metavolcanic rock | | |
| ■ | Mafic and ultramafic rocks | | |
| ■ | Mafic to intermediate metavolcanic rocks | | |
| ■ | Massive granodiorite to granite | | |
| ■ | Metasedimentary rocks | | |

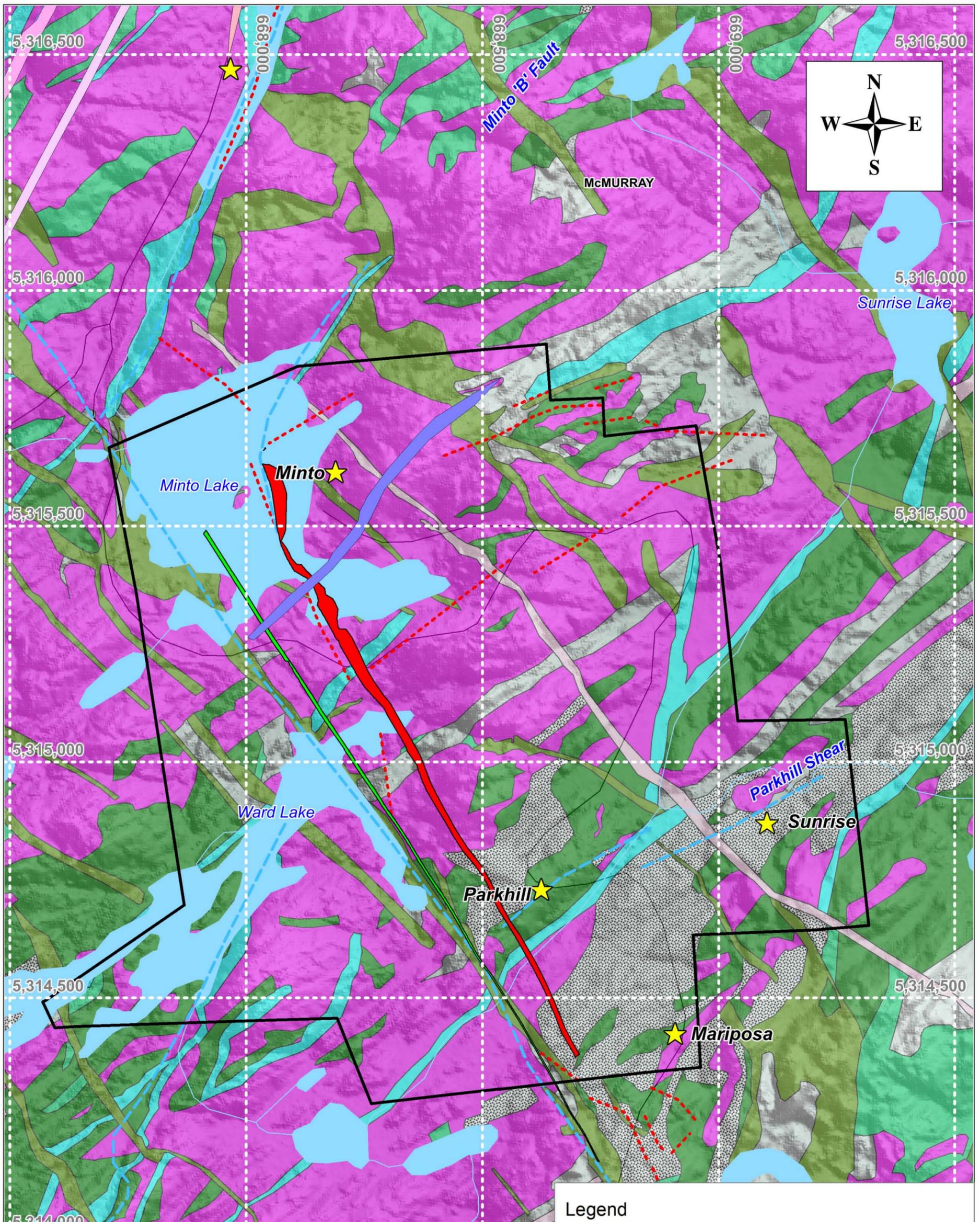


Figure 7.3: Geology map of the Minto Mine South Project

Date: December 19, 2018
 Author: Eric Steffler
 Projection: NAD 83 Zone 16N



Source: Topo: http://ftp.geogratis.gc.ca/pub/nrcan_mncan/vector/ntdb_bndt/
 Geology: Interpreted by Red Pine Exploratio

Legend

★	Historic Mines	--- (dashed blue)	Faults/Shears
— (solid blue)	Rivers/Streams	--- (dashed red)	Veins
■ (light blue)	Lakes	Gold Zones	
□ (black outline)	Minto Mine South Project	■ (blue)	Sunrise North Shear Zone
Geology		■ (red)	Minto A Shear Zone
■ (stippled)	Breccia	■ (green)	Minto No4 Vein
■ (pink)	Diabase		
■ (magenta)	Jubilee Stock		
■ (olive)	Mafic/Undivided		
■ (yellow)	Round Anomalies		
■ (cyan)	Shear Zone		
■ (light green)	Volcaniclastic/Volcanic Felsic		
■ (dark green)	Volcaniclastic/Volcanic Intermediate		

7.3.1 Jubilee Stock

The Jubilee Stock is described as a high-level intrusion of dioritic to a dominantly granodioritic composition with many intrusive facies (Frey, 1987; Sage, 1993; Figure 7-4). The core of the Jubilee Stock is curved-shaped into a sigmoid form. Its long axis is oriented at 20° and it has a 6 x 1.3 km surface expression. The grains of the intrusion composing the Jubilee Stock are fine- to medium and locally porphyritic; it intruded the host volcanic sequence around $2,745 \pm 3$ Ma (Sullivan et al. 1985). MacMillan and Rupert (1990) observed that the more massive and competent central parts of the Jubilee Stock are associated with better gold grades which they attributed to a locally favorable stress field spatially associated with the competent blocks. The compositional and geometrical complexity of the Jubilee Stock comprising many contact zones between rocks of different rheology are interpreted to be critical controls on the geometry and distribution of the gold zones. The main intrusive facies of the Jubilee Stock encountered by Red Pine are described below.

Medium-grained diorite (Figure 7-4 and Figure 7-5)

Medium-grained to coarse-grained diorite form the diagnostic unit of the core zones in Jubilee Stock and varies from a mesocratic to a melanocratic composition. Red Pine and almost every other operator of the property described the medium- to coarse-grained rocks of the Jubilee Stock as diorite. However, the name diorite is more a generic term to simplify the nomenclature of the medium-grained to coarse-grained granitic units of the Jubilee Stock. Reported petrographic work from Sage (1993) indicate a mode of 10-30% quartz, 40-55% plagioclase and 10-20% biotite without clear mention of alkali feldspar, which underlies a tonalitic composition. However, no systematic detailed petrographic and microprobe work as well as chemical discrimination work that considered the high mobility of Ca, Fe, K, Na, Rb and Sr in the hydrothermal system was done to support this classification of the medium-grained to coarse-grained granitic intrusions that could also have a tonalitic to per se granitic composition.

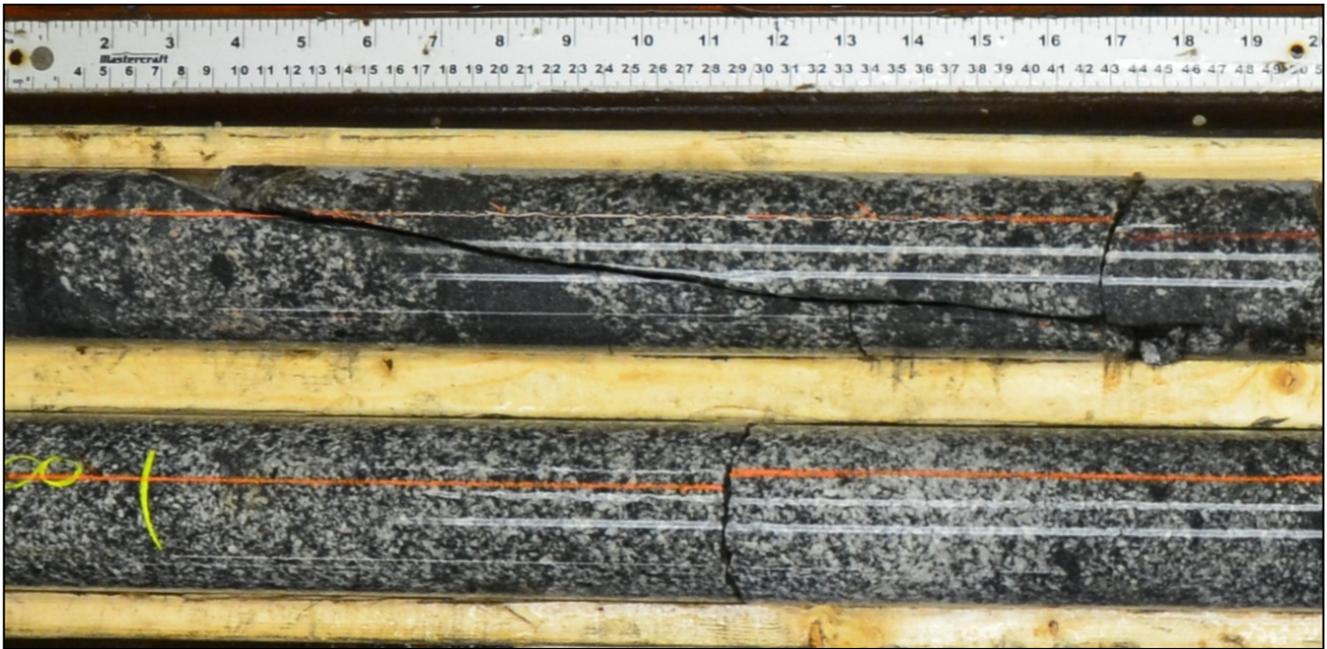


Figure 7-4: Medium- to coarse-grained facies of the Jubilee Stock diorite near the contact with the volcanic units containing enclaves of volcanic rocks

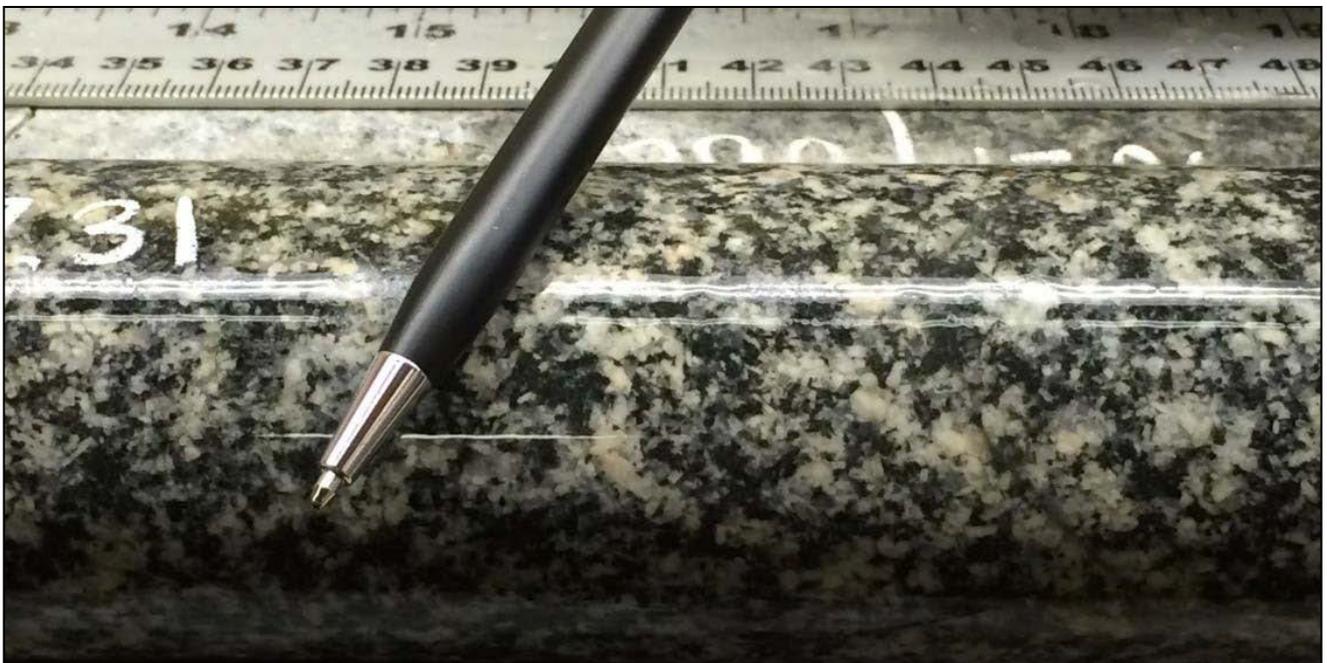


Figure 7-5: Typical Jubilee Stock diorite in the core of the Jubilee Stock

Porphyritic intrusions (Figure 7-6)

Many porphyritic intrusions surrounding the core of Jubilee Stock consist of medium- to coarse-grained granitic intrusions. The porphyritic intrusions were hypothesized by Sage (1993) to occupy the ring fracture of a large caldera centered on the Jubilee Stock. In the contact zones between different intrusions, the porphyritic intrusions are often intermixed together and with intrusions of the medium- to coarse-grained diorite. The main primary phenocryst assemblages observed in the porphyritic units are: feldspar, biotite-feldspar, quartz-feldspar and quartz. A compositional continuum and visual gradation between the medium- to coarse-grained diorite and intrusions of the feldspar-phyric, biotite-feldspar-phyric and biotite-phyric units were commonly observed, indicating the likely coeval emplacement of those units. Because of the variability in the mapping and logging of the porphyritic units, the porphyritic units of the Jubilee Stock remain undivided and not broken down in single intrusions at the time of this report.

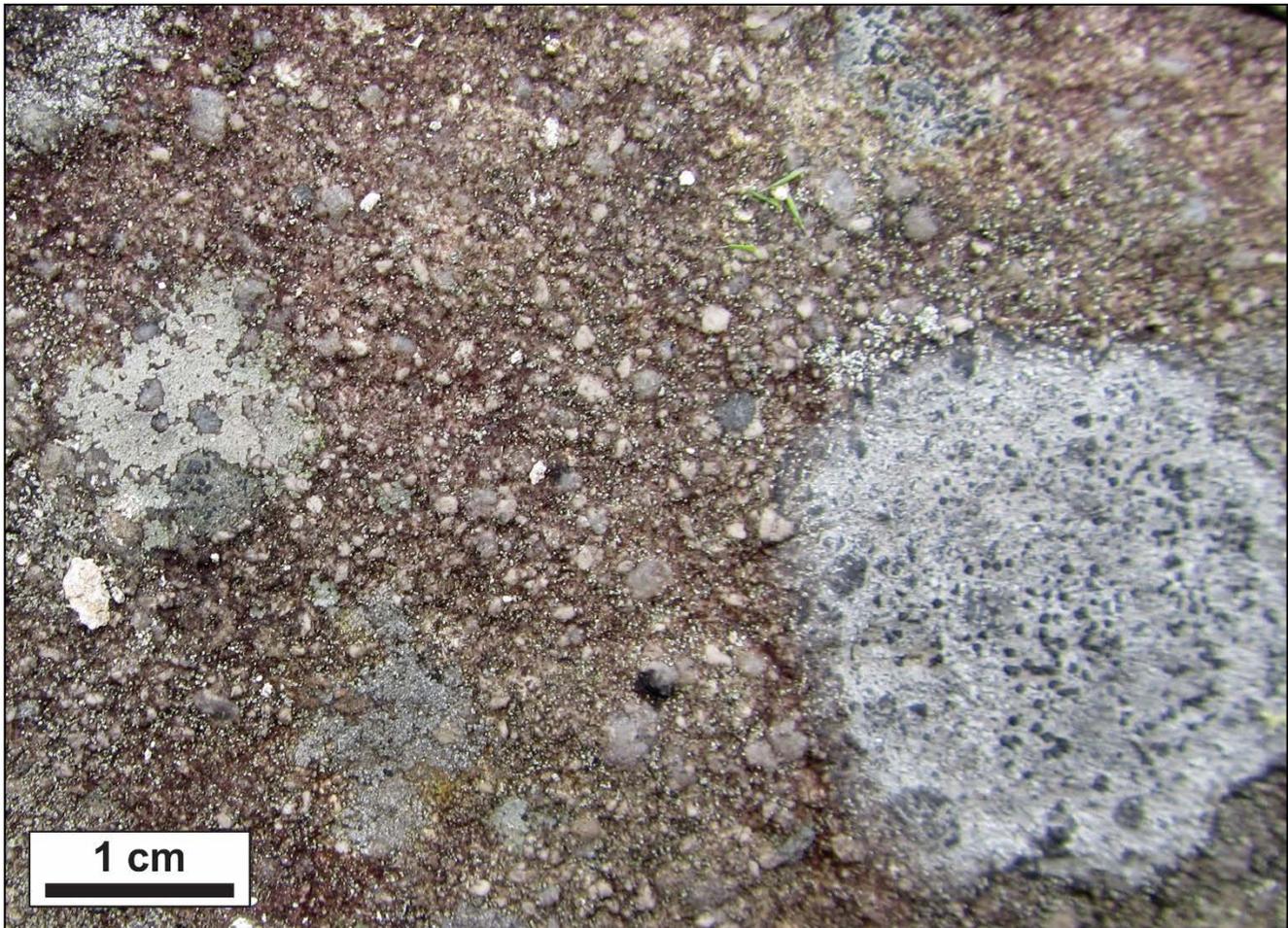


Figure 7-6: Feldspar-quartz porphyritic intrusion surface exposure near the Minto Mine South Zone.

Silicified/Albitized unit (Figure 7-7)

This unit corresponds to albitized to strongly albitized and silicified diorite, volcanic units and porphyritic intrusions and prevails in certain zones within close proximity to the Minto Mine South Property. The unit may relate to the hornfelsed units described by Sage (1993) as occurring along some of the contacts between the Jubilee Stock and the volcanic rocks. In zones of intense alteration, the primary textures of the host rocks are generally destroyed, and the unit becomes quite homogeneous making protolith identification difficult. In the transitional zones, strong alteration fronts are seen to replace the host units. The predominant precursor unit is most likely fine-grained volcanic units intruded by the Jubilee stock in which albitization was preferentially partitioned.

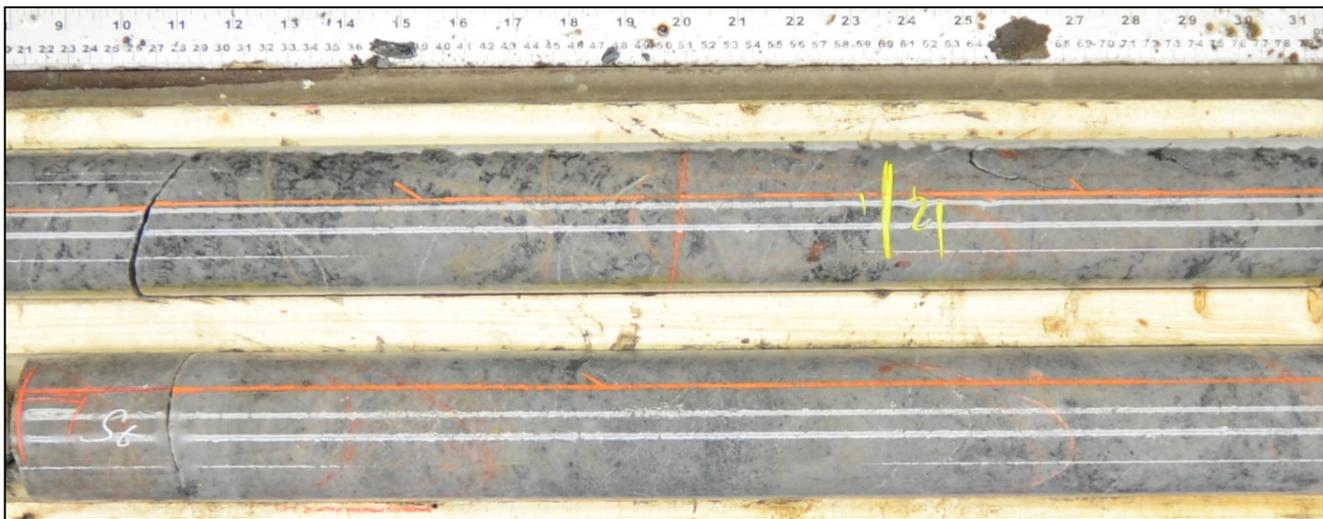


Figure 7-7: Albitized unit formed near the contacts between the Jubilee Stock and the volcanic units (Figure 7-8; Figure 7-9)

Many contact zones between the intrusions of the Jubilee Stock and between different intrusive facies of the stock are characterized by the formation of intrusive breccia zones. The breccia cement is typically composed of the coarser-grained facies' granitic intrusions, whereas the fragments, predominantly of volcanic origin, are fine- to very fine-grained and vary considerably in size, ranging from a few millimeters to tens of meters and some are partially assimilated by the dioritic magma. As reported by Sage (1993) and noted by Red Pine geologists, this is making the mapping of this unit, especially in drill cores, particularly challenging.



Figure 7-8: Intrusive breccia formed at the contact between the Jubilee Stock medium- to coarse-grained diorite and the volcanic units at the Sunrise #4 gold showing

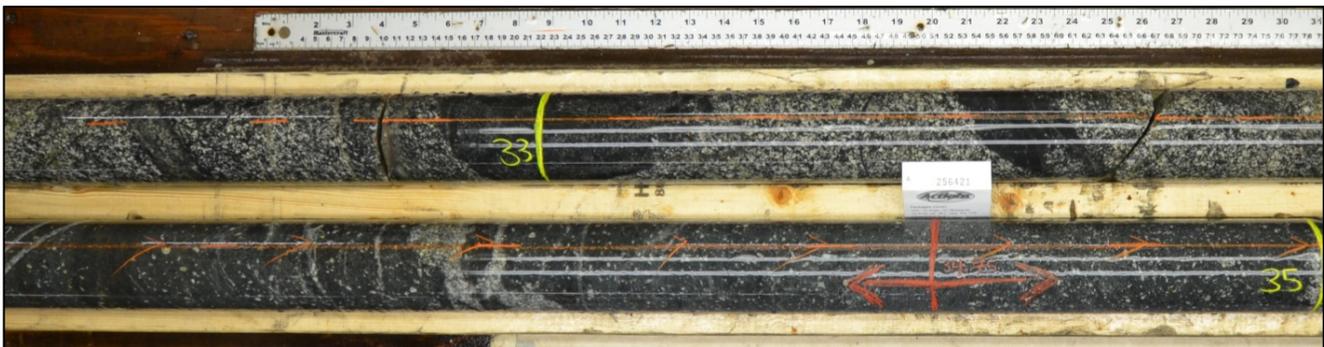


Figure 7-9: Intrusive breccia texture in drill hole and melanocratic feldspar-phyric unit in the contact zone between the Jubilee Stock coarse-grained diorite and the volcanic units

7.3.2 Gabbroic Rocks

Many mafic intrusions are documented on the Minto Mine South Project. Three main types of mafic intrusions were documented by Red Pine and were mainly discriminated based on the grain size of the core of the intrusion and the absence or presence of a porphyritic texture with feldspar phenocrysts. The three types of mafic intrusions include: coarse-grained gabbro (Figure 7-10), fine-grained gabbro (Figure 7-11) and feldspar-phyric very fine-grained gabbro, all deformed in the Minto Mine South zone. Based on the observation of magma mixing textures between felsic and a mafic magma in the Jubilee Stock, Walker (2011) also recognized that some of the mafic intrusions are comagmatic with the stock. The intersections of the mafic rocks and the gold-bearing structures of the property were observed to form zones of preferential gold enrichments.

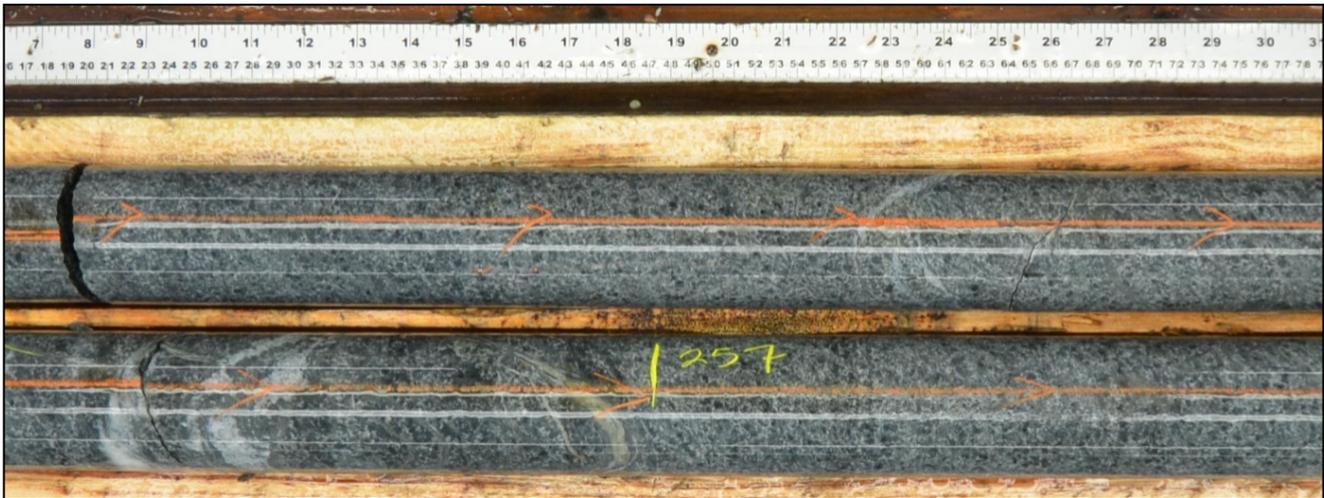


Figure 7-10: Coarse-grained gabbroic intrusion in the Jubilee Stock

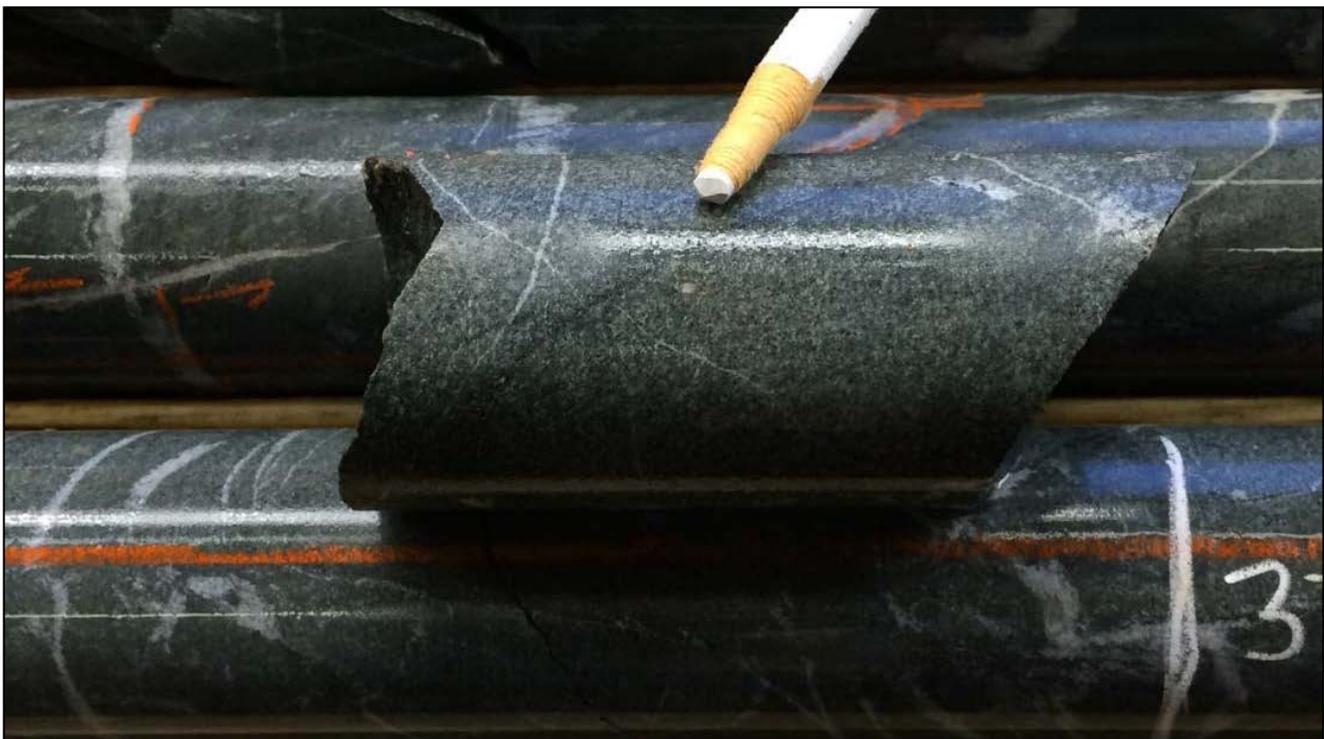


Figure 7-11: Fine-grained gabbro in the Jubilee Stock

The largest mafic intrusion on the property is in close proximity to the Minto Mine South Property and forms the Reed Lake mafic-ultramafic complex which is composed of diorite, quartz-gabbro, leuco- to meta-gabbro and pyroxenite. Sage (1993) inferred that the combined trends of the long axis of 315° for the Reed Lake and 20° for the Jubilee Stock may suggest there were emplaced in a conjugate fracture system and are possibly petrogenetically related.

7.3.3 Volcanic Units

For most the Minto Mine South Project, the descriptions of the volcanic units are constantly evolving depending on the opinion of the geologist, exploration model and time period. In many cases, the sub-volcanic porphyritic intrusions, part of the Jubilee Stock, and the volcanic units, are confused and their classification inter-changed. No systematic framework to classify and map the volcanic units of the property has so far been developed. In historic logs, many volcanic units are described as fragmental volcanoclastic units, but re-examination for some of them indicate sheared porphyritic intrusions or zones of intrusive breccias. Some of the described fragmental volcanic units are also zones of fluid-assisted brecciation during brittle-ductile deformation in the shear zones of the property and are Au mineralized.

7.3.4 Diabase and lamprophyre dykes

Swarms of lamprophyre, diabase and carbonatite dykes are observed on the Project. The dykes are typically emplaced along pre-existing zones of weakness in large fracture or fault systems. The diabase dykes are magnetic, have chilled margins and a well-developed diabasic texture in their core which make them easily recognizable. The emplacement timing of the diabase dykes remains unconstrained, but they are observed to crosscut the gold zones of the Project and are post-dating mineralization. In the southern part of the Minto Mine South Project, a diabase dyke was observed to cut the Minto Mine South Zone. The diabase dyke is approximately 16 to 20m thick and has a dip/dip direction averaging 77/151. The Minto Mine South Zone was found on both sides of the dykes without a noticeable offset of the mineralized structure.

Lamprophyre dikes are pervasive throughout the Minto Mine South Project and at least two generations of lamprophyre exist. One generation of lamprophyre dykes is possibly Archean whereas a younger generation of lamprophyre and the carbonatite dykes are likely related to the emplacement of the Firesand River Carbonatite intruded along the Wawa-Hawk Lake-Manitowik Lake Fault System. Lamprophyre dykes of the older generation are partially to completely replaced which gives them a dark- to pale-greenish color and are typically narrow ranging in width from a few centimetres to tens of centimetres. One dyke of the older generation of lamprophyre is gold mineralized, indicating that some of the lamprophyre dykes could have been emplaced prior to the formation of the gold system or that some of the gold already concentrated in the zone was remobilized and re-concentrated in the alteration haloes of the lamprophyre dyke.

The later generation of lamprophyre dykes are black, porphyritic, medium-grained and strongly magnetic with a blue amphibole alteration halo and they crosscut all the gold zones of the property. Some of the largest dykes of that generation are a few metres wide. Occasional carbonatite dykes were also observed on the Minto Mine South Project and similar to the younger generation of lamprophyre, they are likely related to the Firesand Carbonatite.

7.4 Structure and Gold Mineralization

7.4.1 Minto Mine South Zone (MMSZ)

The Minto vein is hosted in the Minto Mine South Shear Zone, which was the focus of mining in the Minto Mine historically (23,100 oz @ 12.56 g/t). The Minto Mine South Shear Zone is a 3 to 20 m wide Shear Zone hosting a domain of higher-grade mineralization. On the Minto Mine South Project, the Minto Mine South Shear Zone has been traced with sufficient confidence with diamond drilling and geological modeling over a strike length of 1.3 km and a down-dip distance of 730 m. To the north, the Minto Mine South Shear Zone is crosscut and offset by the Minto B Shear Zone. The Resource estimate presented in this technical report stops at the Minto B Shear Zone. The offset of the Minto Mine South Shear Zone is visible by the progressive bending of the Minto Mine underground developments as the mine was getting closer to the Minto B Shear Zone. The Minto Mine South Shear Zone was interpreted to continue west of the Minto B Shear Zone outside of the Minto Mine South Project over the nearby Surluga Deposit along the trace of a shear zone parallel to the Minto Mine South Shear Zone. However, it cannot at the time of this report, be determined with a reasonable degree of confidence that the structure west of the Minto B Shear Zone is the actual extension of the Minto Mine South Shear Zone. To the South, the Minto Mine South Shear Zone has been traced by diamond drilling to the vicinities of the historic Parkhill Mine and remains open for further extension.

Outside of the zones of mineralization and strong veining, the tectonic foliation and lineations of the Minto Mine South Shear Zone are poorly developed and not penetrative, making the structure sometimes hard to identify. Inside the zones of strong veining and mineralization, the structure has well-developed and penetrative tectonic foliation and lineations. Overall the structural shear envelope of Minto Mine South Zone is dipping approximately 48° to the NE and the zones of higher-grade mineralization are raking approximately 60° to the right of an observer looking down of the structure parallel to the dip direction. The domains of higher-grade mineralization in the Minto Mine South Shear Zone are characterized by the presence of a domain, between 0.3 m – 5 m wide, where a single shear-hosted quartz vein or stacks of closely spaced shear hosted quartz veins are formed. The main domain of shear hosted veining initially exploited in the Minto Mine is quite continuous in the Minto Mine South Shear Zone and was followed down-plunge over 600 m. In the zones of the Minto Mine South structure where a mature quartz domain is developed, a strongly sheared mafic unit is present either in the hangingwall or the footwall of the high-grade vein.

The gangue minerals of the mineralized quartz shears veins in the Minto Mine South Shear Zone comprise light to dark grey quartz, tourmaline and iron carbonate. Gold mineralization in the Minto Mine South Shear Zone postdates the initial quartz stage and occurs in brittle fractures crosscutting the early quartz. The earliest sulfides formed in the veins predates the main gold introduction event and includes subhedral to euhedral pyrite and pyrrhotite. During the main gold mineralization event, the early pyrite and pyrrhotite are overprinted by a new generation of anhedral pyrite and pyrrhotite associated with variable chalcopyrite, common visible gold in the best zones of the structure and locally bismuthinite. More detailed petrographic work on the mineralization paragenesis is currently on-going under a Masters thesis Project done in collaboration between the University of Windsor, Laurentian University and Red Pine. A late mineralization white quartz veining, crosscutting the sulfides and the early grey quartz, occurred in many of the mineralization. The observation of visible gold in some zones of white quartz indicate either remobilization of gold from the main stage of mineralization or a later introduction of gold in the veins. The strongly sheared mafic rocks around the domains of veining are overprinted by strong chlorite and carbonate replacement, whereas the surrounding intermediate to felsic rocks are overprinted by moderate to strong sericitic and iron carbonate replacement. Around the mature zones of the Minto Mine South Shear Zones a well-defined sericitic and carbonate alteration halo extend approximately 10 m to 20 m away from the vein. In the

immature and poorly developed zones of the structures, alteration is sericitic and carbonate alteration is confined to the weakly to moderately developed higher strain domains marking the presence of the structure.

The Minto Mine South Shear Zone is possibly one component of a network of parallel shear zone hosting domains of high-grade mineralization associated with quartz veining. Another structure, mined in the historic Parkhill Mine and historically known as the #4 vein of the Parkhill Mine, is parallel to the Minto Mine South Shear Zone (Figure 7-12). That structure was intersected by Red Pine diamond drilling and was observed at surface in historic trenches. That structure has been traced over a strike length 1.3 km. Tisley (1986) reports that from the historic records of the Parkhill Mine, the quartz veining, similar to the Minto Mine Shear zone, was quite continuous in that structure and that in the well-mineralized zones of the vein mined in the Parkhill Mine, the grade of the veins ranges between 8.57 and 10.28 g/t gold.



Figure 7-12: Intersection of the Minto A Shear Zone, related to the Minto Mine.

7.4.2 Late brittle faulting

The main brittle fault of the Minto Mine South Project is the NW-oriented and sub-vertical Parkhill Fault. Following Sage (1993), the Parkhill Fault is the southeastern extension of the northwest-striking Black Trout Lake. The age of the Parkhill Fault remains uncertain and its intrusions by gabbroic rocks, interpreted to be Archean, indicate that it is possibly a long-lived structure in the area, even possibly formed during the evolution of the gold system. The late movement along the Parkhill Fault, considering the interpreted offset of the Minto Mine South Shear Zone, is left-lateral.

7.5 Alteration

Carbonatization, sericitization, chloritization and silicification are characteristic of the zones adjacent to mineralization. Locally, the diorite is pervasively biotitized. Epidote, tourmaline and K-feldspar were also observed. In the gold structures in proximity to the Minto Mine South Property, current drill core and surface mapping reveals that quartz-sericite alteration of strongly sheared diorite is intimately associated with gold mineralization (Figure 7-13). Pink K-feldspar alteration overprints the sericite alteration. Outward from the mineralization, pre-mineralization sodic alteration is prevalent. Biotite veins outside of the immediate mineralized zone and a broad halo of chlorite-carbonate alteration also predate mineralization.



Figure 7-13: Sericitic alteration fronts formed in the shoulders of the Minto Mine South Shear Zone

8.0 DEPOSIT TYPES

Following Dube et al. (2015), gold mineralization at the Minto Mine South Project is best classified as greenstone-hosted quartz-carbonate vein deposits that are part of Precambrian Lode Gold deposits. Precambrian Lode Gold Deposits are typically related to mesothermal mineralizing systems formed around the brittle-ductile transition in continental crust close to deep-crustal, compressional and trans-tensional fault zones with complex structural histories (Dubé and Gosselin, 2007). The deposits are typically located in secondary and tertiary structures adjacent to the boundaries between geological domains of a geological province and are typically formed during the late stages of orogeny (Goldfarb et al., 2005). The host greenstone belts are characterized by tholeiitic basalts and ultramafic komatiitic flows later intruded by intermediate to felsic porphyritic intrusions, and less often by swarms of albitites and lamprophyre dykes. Metamorphic fluids are interpreted to be responsible for gold transport as bi-sulphide complexes. However, gold may have been sequestered from rocks predating the metamorphic event and remobilized during a later event (Goldfarb et al., 2005). These epigenetic gold deposits in Precambrian shields have yielded 23,000 – 25,000 t Au (Goldfarb et al., 2005).

Mineralization is hosted by veins filling shears and faults. Mineralization is concentrated at jogs or changes in strike along the larger-scale fault zones. The timing of the mineralization is typically syn- to late- deformation. Stockworks, breccias, crack-seal veins, sigmoidal veins, and disseminations in deeper parts are all common.

Typical hydrothermal alteration facies associated with this family of deposit, of which the mineralogy is strongly influenced by the composition of the host rock, include:

- potassic alteration forming muscovite/sericite and fuchsite, or biotite and K-feldspar;
- sodic alteration characterized by the formation of albite as early alteration and dikes;
- carbonatization characterized by the zoned formation of carbonate and iron carbonate;
- sulphidization characterized by the formation of pyrite, arsenopyrite and pyrrhotite;
- tourmalinization; and
- chloritization.

The typical sulfide content of these deposits is 2% – 5% with arsenopyrite and pyrite being the dominant sulfides. Pyrrhotite occurs in higher-temperature systems. Base-metals are rare but W-, B- and Te-bearing phases can occur (Goldfarb et al., 2005). Visible gold and electrum are common in some deposits but absent in others. Typical gangue minerals are quartz and carbonate. Carbonates, sericite/muscovite, chlorite, K-feldspar, biotite, tourmaline and albite are typical alteration minerals. Intermittent pressure changes in the shear zones and the resulting fluid un-mixing and water-rock interaction and associated de-sulfidation are considered the dominant precipitation mechanisms. Metamorphic fluids are interpreted to be responsible for gold transport. However, gold may have been sequestered from rocks predating the metamorphic event (Goldfarb et al., 2005).

Economically significant orogenic deposits tend to be between 2 and 10 km long, ~1 km wide and can be mined to depths of 2 – 3 km. Examples of orogenic deposits/districts are Muruntau (Uzbekistan), Ashanti (West Africa) and Golden Mile (West Australia). Canadian examples include McIntyre-Hollinger (Ontario), Red Lake (Ontario) and Kirkland Lake (Ontario).

9.0 EXPLORATION

9.1 Historic Core Sampling

Previously drilled BQ core (36.5 mm core diameter) that had been stored on site was visually inspected and logged based on the field geologist's descriptions. The information was then input into a Microsoft Excel spreadsheet for our records. The incorporation of a variety of analytical methods was utilized to best describe the lithological units. These included testing for magnetism with a magnet, reactivity with 10% hydrochloric acid (HCL), scratch testing with a nail to estimate hardness, portable X-ray fluorescence (XRF) reading, colour, texture, structure, grain size, pervasive alteration, contacts definition. These components were then used to create a lithological description of the core from intervals of the drill hole that could be recovered. This log was further subdivided by lithologies with description of alteration.

Alteration and rock type identification were supported by spot measurements using a portable XRF if uncertainty existed. The portable XRF units used by the company are programmed with predefined element ratios that characterize favourability for gold (white mica intensity ratio derived from internal work) and the nature of the host rocks (Zr/TiO₂).

9.1.1 Red Pine 2016-2017 Historic Drill Hole Sampling

During the 2016-2017 sampling program, Red Pine obtained 71 drill core samples, covering 355 m of core by processing 480 m of drill core distributed in two drill holes. Results of this program are summarized in Table 9-1, Table 9-2, Figure 9-1 and Table 9-3.

Table 9-1: Summary of Red Pine's 2016-2017 Drill Hole Program

Parameters	Value
Number of drill holes sampled	2
Number of surface drill holes sampled	2
Number of underground drill holes sampled	0
Total meterage covered (m)	480
Total meterage sampled (m)	355
Total number of core samples taken	71

Table 9-2: Historic drill holes sampled by Red Pine on the Minto Mine South Project during the sampling program of summer 2016

Hole No	Company	Year Drilled	X	Y	Z	AZ	Dip	Depth (m)	No. of samples Red Pine (2016)	Total Sampling Red Pine (m)	No. of samples Historic	Total Sampling Historic (m)
S247	Citadel	1987	668,169	5,315,848	351.00	0	-90	322.00	142.00	241.75	44.00	57.91
S255	Citadel	1987	667,869	5,315,714	345.00	0	-90	158.00	49.00	83.65	27.00	33.02

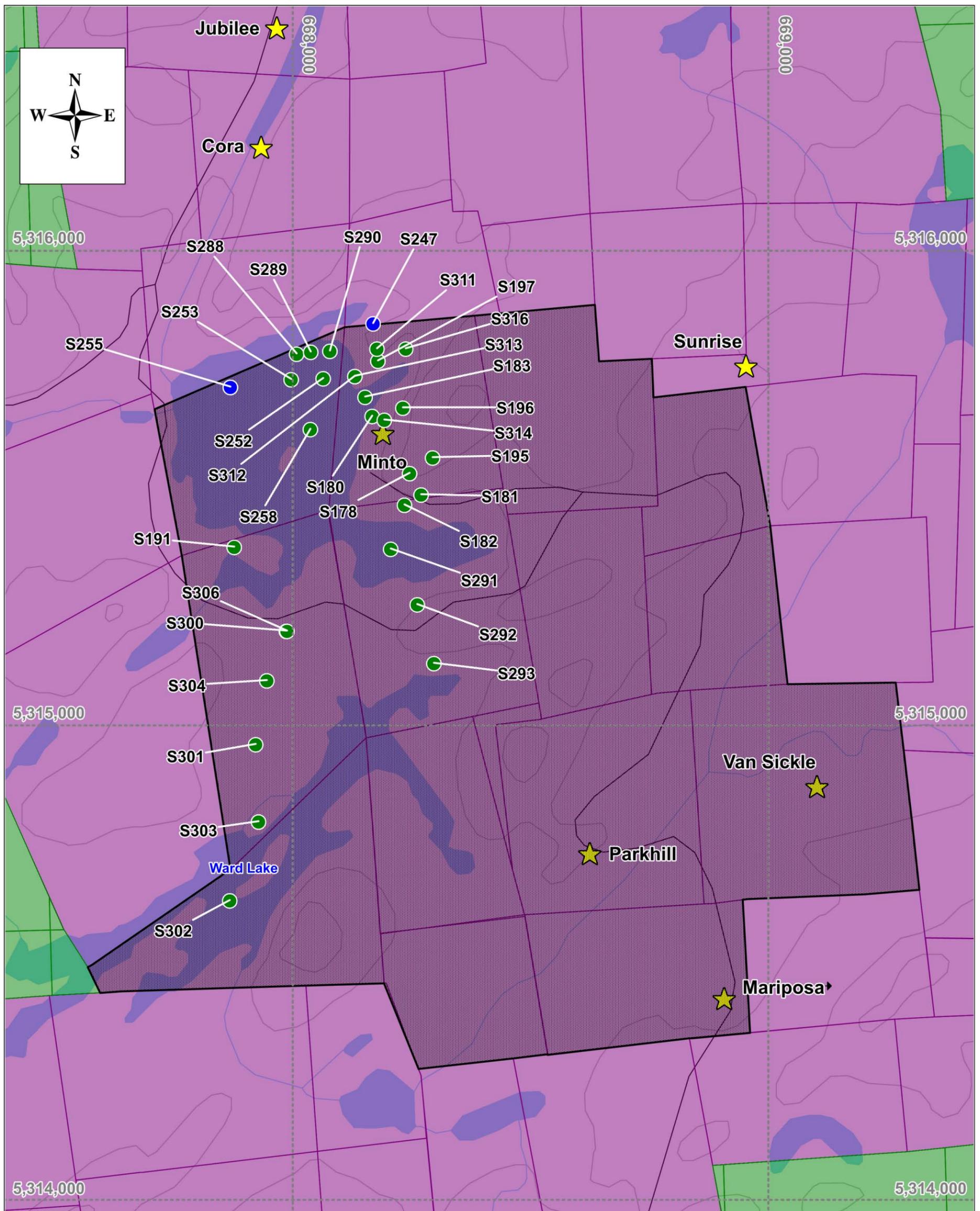


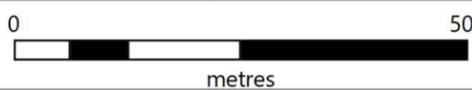
Figure 9.1: Collars of historic holes sampled during the sampling programs in 2016 and 2018

Date: December 19, 2018

Author: Eric Steffler

Projection: NAD 83 Zone 16N

Scale:



Source: Topo: http://ftp.geogratis.gc.ca/pub/nrcan_rncan/vector/ntdb_bndt/
 Claim Fabric: <https://www.mndm.gov.on.ca/en/mines-and-minerals>



LEGEND

- ★ Historical Pits and Shafts
- 2016 Historical Core Re-Sampled Collars
- 2018 Historical Core Re-Sampled Collars
- Topographic Contours
- Rivers/Streams
- Gravel Roads
- Lakes
- ▨ Removed from Staking
- Minto-South Project Area
- Unpatented Mining Claims
- Patented Mining Claims

Table 9-3: The highest gold content sample discovered in un-sampled core

Hole ID	From (m)	To (m)	Length (m)*	Au (g/t)	Au Structure
S247	85.16	95.25	10.09	3.29	Minto B

Note: *Interval listed here do not represent true thickness

Significant gold in previously un-sampled core was found in the Minto B Shear Zone in three sampled historic drill holes. Corrected for calculated true thickness, un-sampled core in the Minto B Shear Zone in drill hole S247 contained 3.29 g/t gold over 3.45 m (Table 9-4).

Table 9-4: Summary of the historic core sampling additions to known and discovered gold zones

Gold Zones with Known True Thickness	Minto B
Added mineralized length corrected for calculated true thickness (m)	No. of holes
0 m	0
0 - 0.5 m	0
0.5 - 1.5 m	1
1.5 - 3 m	0
3 - 5 m	1
5 - 7 m	0
7 - 9 m	0
>9 m	1
Added metal factor corrected for calculated true thickness (g/t Au*m)	No. of Holes
0 g/t Au*m	0
0 - 0.2 g/t Au*m	0
0.2 - 0.5 g/t Au*m	0
0.5 - 1 g/t Au*m	0
1 - 2 g/t Au*m	1
2 - 5 g/t Au*m	0
5 - 10 g/t Au*m	1
10 - 25 g/t Au*m	1
>25 g/t Au*m	0

9.1.2 Red Pine 2018 Historic Drill Hole Re-sampling

In 2018 on the Minto Mine South Project, 28 historic drill holes totaling 3,770 m were sampled of which 1,697 samples were taken from previously un-sampled core. As of the effective date of this report, gold assays have been received for 1,622 samples, with a further 75 samples being outstanding and are pending. These assay results were not used in the Mineral Resource Estimate. A summary and highlights can be viewed in Table 9-5 and Table 9-6, respectively.

Table 9-5: Summary of Red Pine's 2018 historic core re-sampling program

Parameters	Value
Number of drill holes re-sampled	28
Number of surface drill holes re-sampled	28
Number of underground drill holes re-sampled	0
Total meterage processed (m)	3,770
Total number of core samples re-sampled	1,697

Table 9-6 Highlights of the 2018 historic core re-sampling program.

Hole ID	From (m)	To (m)	Length (m)	Au (g/t)
S302	39.44	40.54	1.10	3.99
S311	267.31	270.36	3.05	5.52

9.1.3 Sampling

Upon completion of logging, samples tags are inserted in 0.1 m to 3.0 m intervals and at lithological contacts within the zone of mineralization. Tags are placed at the end of each sample. The full sample was then placed in a durable plastic sample bag with a unique sample identification (ID) tag and the other half remained in the core box within the onsite core storage area located on the property for future reference. Samples were then separated into groups of three and placed in durable rice bags for transport.

9.1.4 Core Photography

Photos were taken of all core drilled through this program. Once preparation and logging of the core was completed and sample tags had been added, photos of each box were taken individually. A chalk board with the drill hole ID, box number and meterage contained in the box is utilized for labelling purposes. If sample IDs are visible on the camera then photos are deemed to be in focus and complete.

9.2 Geophysical Surveys

9.2.1 mT Survey

Red Pine engaged EMPulse Geophysics Ltd. to conduct a transient magnetotelluric (mT) survey of the Minto Mine South Project and surrounding area. The mT survey is used to infer the earth's subsurface electrical conductivity from measurements of the earth's natural geomagnetic and geoelectric field variations. The earth's electrical structure at depth may be estimated from surface measurements of naturally occurring fluctuations in the earth's geomagnetic field along with electric field fluctuations induced within the earth by the former.

The survey was collected using a SFERIC Transient AMT system in which 137 stations at approximately 300 m spacing was collected on 19 parallel lines enclosing an area of approximately 2.5 km E-W by 5.5 km N-S (Figure 9-2). The mT results show that the Minto Mine South property lies East of a deep (1.5 km or greater), major regional structure which could possibly be hydraulically connected to the Jubilee Lake area (Figure 9-3). Further, between 1,500 m and 2,000 m, there is evidence of several deep "roots" or resistivity lows that exist below shallower anomalies in the upper several hundred meters. The location of these resistivity low anomalies exists north of Minto Lake, near the old Mariposa mine. In addition, there are strong resistivity lows in the upper several hundred meters at the west end of the northern-most lines, under Lake Wawa and at the end of line three (L3) at shallow depths (less than (<) 200 m) where a conducted airborne EM survey has been completed in the past and has responded strongly to the feature.

Data quality is fair to good for this data-set with dead-band effects generally smaller than expected. Due to thick bush and a dense root network on the forest floor, induction coil installations were generally difficult and remained quite susceptible to motion noise, especially the vertical coil. As a result, the impedance tensor and tipper, typically wind noise, dominated below approximately 20 hertz (Hz).

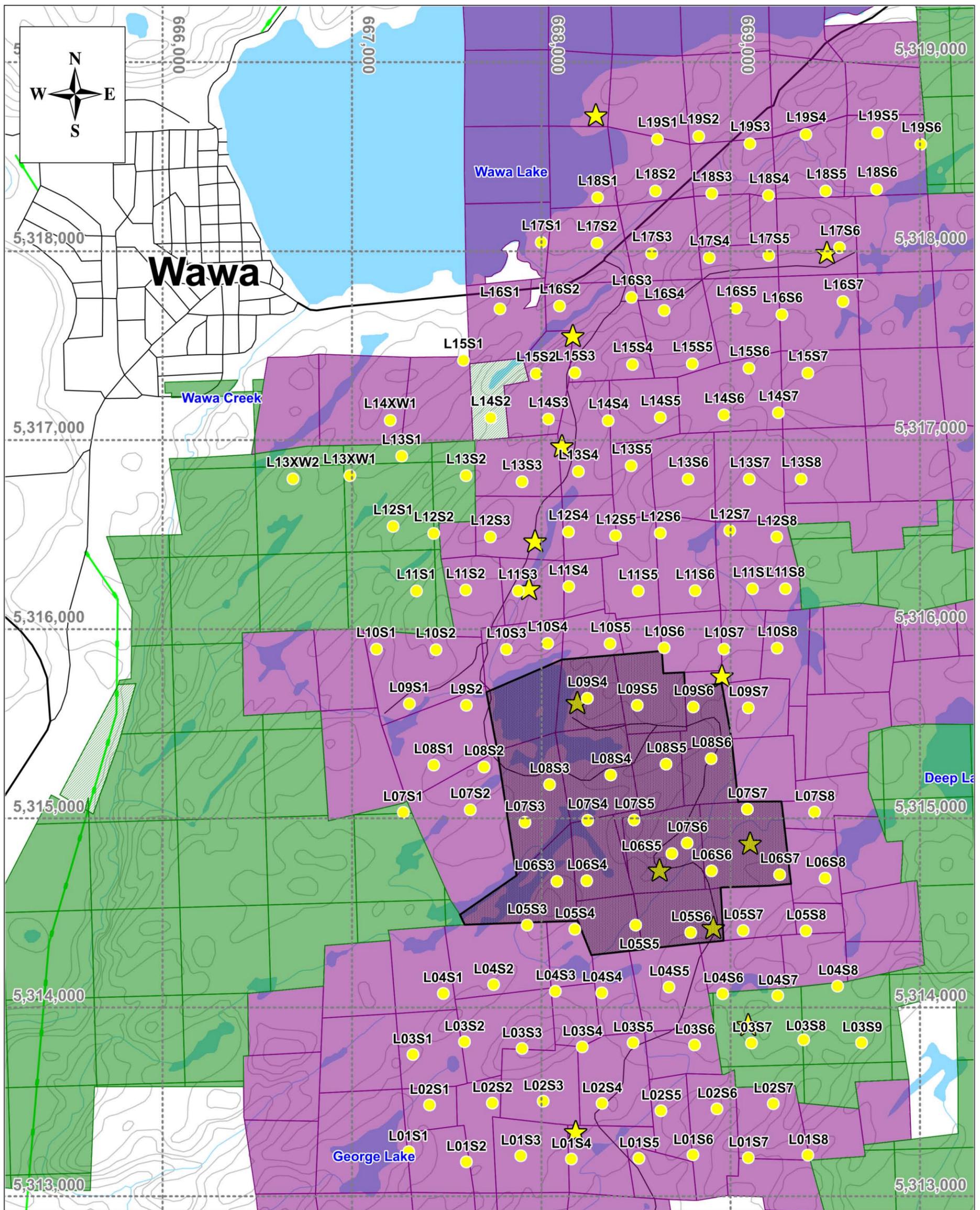


Figure 9.2: Minto Mine South Project Transient AMT Grid

Date: December 19, 2018

Author: Eric Steffler

Projection: NAD 83 Zone 16N

Scale:



Source: Topo: http://ftp.geogratis.gc.ca/pub/nrcan_rncan/vector/ntdb_bndt/
 Claim Fabric: <https://www.mndm.gov.on.ca/en/mines-and-minerals>



LEGEND

- Historical Pits and Shafts
- 2017 Transient AMT Stations
- Rivers/Streams
- Topographic Contours
- Removed from Staking
- Minto-South Project Area
- Unpatented Mining Claims
- Patented Mining Claims
- Lakes
- Roads
 - Paved
 - Gravel

9.2.2 Ground Magnetic Survey

Members of the Red Pine team conducted a ground magnetic survey of the Minto Mine South property and surrounding area between December 03, 2014 and January 26, 2015.

The survey data was collected using a GEM Systems GSMP-35 Magnetometer, an optically pumped potassium magnetometer. The data was collected at 1 Hz and the system is reported to have an accuracy of ± 0.05 nanotesla (nT) (GEM Systems Inc., 2013). The magnetic diurnal was observed using a stationary GSM-19 magnetometer and was collected at 0.2 Hz. The corrected total magnetic field was calculated during nightly processing of the data.

Most survey lines were collected in an east-west orientation, perpendicular to the strike of the Jubilee Shear Zone. The survey line spacing was 50 m. Additional lines oblique to the main east-west orientation were collected and included in the final database.

The ground magnetic survey defined the strike of the Jubilee Shear Zone and is expressed as a magnetic low striking approximately 015° . There are areas of increased magnetization within the Jubilee shear plane which require further investigation in 3D through constrained inversion, as they may be related to the shear zone. Linear features oriented east-west are also observed in the magnetic data.

The gridded results of the total magnetic intensity are displayed in Figure 9-3. A total of 69.7 line-km's was collected in global position system (GPS) mode. This represents a total area surveyed of 2.23 km².

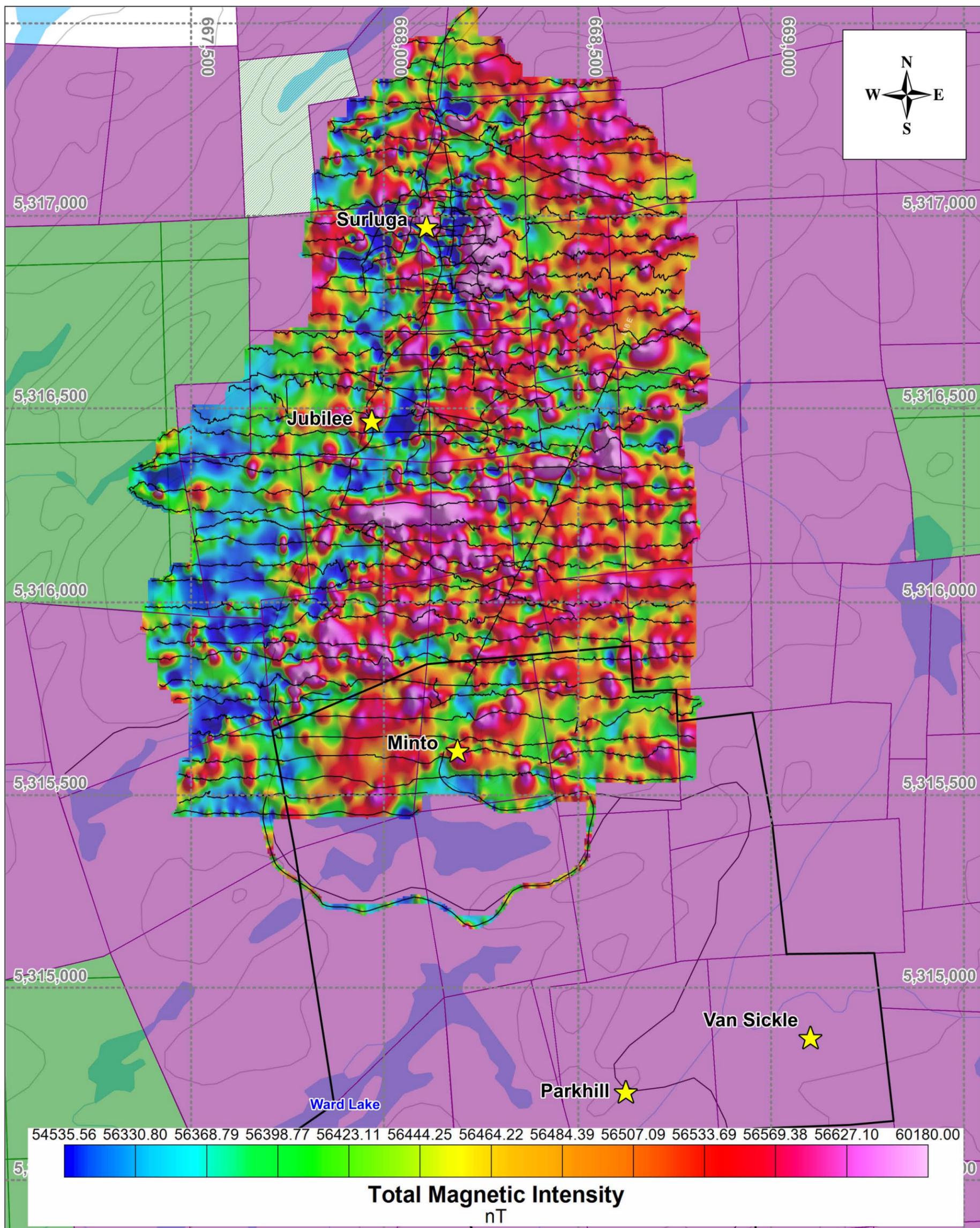


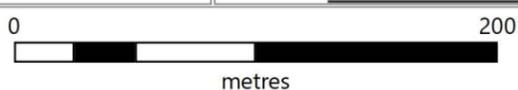
Figure 9.3: Total Magnetic Intensity of Wawa Ground Magnetic Survey

Date: December 19, 2018

Author: Eric Steffler

Projection: NAD 83 Zone 16N

Scale:



Source: Topo: http://ftp.geogratis.gc.ca/pub/nrcan_rncan/vector/ntdb_bndt/
 Claim Fabric: <https://www.mndm.gov.on.ca/en/mines-and-minerals>



LEGEND

- Historical Pits and Shafts
- Ground Mag Line Path
- Gravel Roads
- Topographic Contours
- Rivers/Streams
- Lakes
- Removed from Staking
- Unpatented Mining Claims
- Patented Mining Claims
- Minto-South Project Area

9.3 Rock Sampling

9.3.1 2014 Program

Red Pine completed a short field program from September 29 to October 3, 2014. The field work was executed by Brad Leonard, P.Geo., a consultant to Red Pine. The purpose of the program was to collect structural data and samples from the property (Leonard, 2014). A total of 59 rock samples were collected (Figure 9-4). The assay results are listed in Table 9-7.

Table 9-7: List of samples collected by Red Pine on the Minto Mine South Property in 2014

Sample No.	Area	Easting	Northing	Au (ppb)	Au (g/t)
22326	Minto Zone B	668,162	5,315,781	638	
22327	Minto Zone B	668,191	5,315,789	> 5000	17.00
22328	Minto Zone B	668,191	5,315,789	> 5000	5.51
22329	Minto Zone B	668,166	5,315,787	12	
22330	Minto Zone B	668,141	5,315,834	62	
22331	Minto Zone A	667,976	5,315,864	11	
22332	Minto Zone A	667,976	5,315,864	14	
22333	Minto Zone A	667,976	5,315,864	< 5	
22347	Parkhill	668,556	5,314,701	25	
22348	Parkhill	668,556	5,314,701	25	
22349	Parkhill	668,556	5,314,701	< 5	
22350	Parkhill	668,544	5,314,670	280	
22201	Mariposa Shaft	668,795	5,314,282	> 5000	11.00
22202	Mariposa Shaft	668,805	5,314,280	241	
22203	Mariposa Shaft	668,810	5,314,255	10	
22204	Mariposa Shaft	668,843	5,314,225	163	
22208	Van Sickle Shaft	668,992	5,314,866	3480	
22209	Van Sickle Shaft	668,992	5,314,866	< 5	
22210	Van Sickle Shaft	668,992	5,314,866	7	
22211	Van Sickle Shaft	668,992	5,314,866	< 5	
22212	Van Sickle Shaft	668,992	5,314,866	< 5	
22213	Parkhill Shear Zone	668,781	5,314,180	137	
22214	Parkhill Shear Zone	668,781	5,314,180	364	
22215	Parkhill Shear Zone	668,781	5,314,180	16	

Based on the field observations and sampling, Leonard (2014) concluded that intense alteration was restricted to the shear zones and the immediate vicinity of the shear zones. He observed three main structural trends: NNE (e.g., Jubilee Shear Zone), NNW (e.g., Minto Mine Shear Zone) and EW (e.g., Parkhill Shear Zone).

9.3.2 2015 to 2018 Program

Red Pine completed surface sampling field programs from 2015 to 2018 and collected a total of 99 grab samples. The field work was executed by Red Pine geologists. The purpose of the programs was to collect structural data and samples from the property showing and from area identified has having potential for gold mineralization. The gold grades detected range from below detection to 93 g/t gold. Highlights from the assay results for grab samples collected on the Minto Mine South Project are listed in Table 9-8 and Figure 9-4.

Table 9-8: Highlights from the grab samples collected by Red Pine on the Minto Mine South Project during the 2015- 2018 field program

Sample	Location	Year	Easting	Northing	Au (g/t)
11626	15WG-AC-025	2015	668,746	5,314,695	12.90
11619	15WG-AC-025	2015	668,764	5,314,700	54.10
11728	15WG-AC-101	2015	668,884	5,315,692	93.00
11644	15WG-AC-033	2015	668,907	5,315,695	3.39
11597	Adam_Gord_Propecting	2015	668,463	5,315,777	10.50
11725	15WG-AC-099	2015	668,723	5,315,749	6.90
1099323	15WG-JFM-073	2015	668,399	5,315,384	3.68
1473370	JFM	2016	667,830	5,315,051	3.16
1473376	JFM	2016	668,606	5,315,512	2.48
18434	AC-Parkhill	2018	668,412	5,314,937	4.43

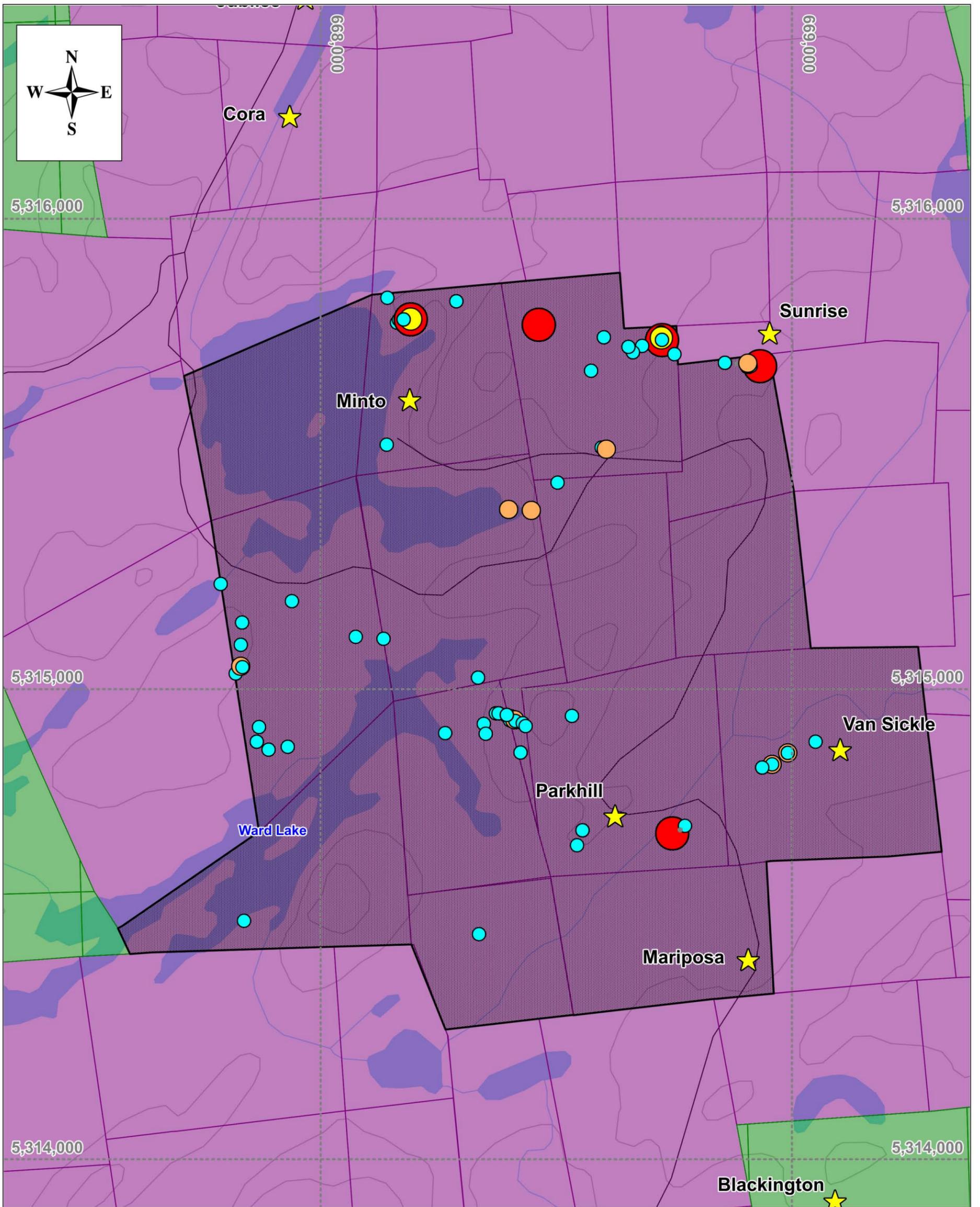


Figure 9.4: Location of grab samples collected by Red Pine from 2014 to 2018.

Date: December 19, 2018

Author: Eric Steffler

Projection: NAD 83 Zone 16N

Scale: 0 500 metres

Source: Topo: http://ftp.geogratis.gc.ca/pub/nrcan_nrcan/vector/ntdb_bndt/
 Claim Fabric: <https://www.mndm.gov.on.ca/en/mines-and-minerals>



LEGEND

- ★ Historical Pits and Shafts
 - Rivers/Streams
 - Topographic Contours
 - Gravel Roads
 - Lakes
 - Minto-South Project Area
 - Unpatented Mining Claims
 - Patented Mining Claims
- 2014 to 2018 Grab Samples Gold (grams per Tonne)
- 0 to 1
 - 1 to 5
 - 5 to 10
 - 10 to 55

9.4 Trenching

Red Pine collected 71 channel samples from 26 locations during the 2015 channel sampling program (Table 9-9). The purpose of the channel sampling was to verify historic showings. Channel samples were cut using a channel saw. The starting point of the channel was recorded in terms of UTM easting and northing. The depth and azimuth of the channel was also recorded. Samples were collected in approximately 1 m intervals (intervals range from 0.1 to 1.5 m); assay highlights of the channel samples are listed in Table 9-10. The channel samples are representative of the outcrop from which they were collected.

The areas investigated with the channel samples were in the area around the Minto Mine South Property, which includes the historic Van Sickle, Parkhill, and Mariposa mines. The best results were obtained from 15WG- AC- 035 and Mickelson 5 with samples returning gold grades of 35.05 g/t and 18.76 g/t Au over 2.2 m and 1.6 m, respectively.

Table 9-9: Locations and orientations of the channels sampled in 2015

Trench ID	Easting	Northing	Depth (m)	Dip (°)	Azimuth (°)
15WG-AC-018	669,020	5,314,854	1.70	0	338
15WG-AC-019	669,033	5,314,876	3.00	0	347
15WG-AC-020	669,035	5,314,877	1.00	0	347
15WG-AC-021	669,046	5,314,879	1.00	0	43
15WG-AC-022	669,054	5,314,880	3.00	0	358
15WG-AC-023A	669,086	5,314,882	1.00	0	333
15WG-AC-023B	669,086	5,314,882	1.00	0	333
15WG-AC-023C	669,086	5,314,882	1.00	0	333
15WG-AC-025	668,764	5,314,700	4.00	0	162
15WG-AC-026	668,943	5,315,696	1.50	0	17
15WG-AC-031	668,904	5,315,687	2.25	0	332
15WG-AC-032	668,903	5,315,695	2.35	0	337
15WG-AC-034A	668,896	5,315,692	1.00	0	20
15WG-AC-034B	668,896	5,315,692	1.00	0	20
15WG-AC-035	668,913	5,315,683	2.75	0	359
15WG-AC-125A	668,721	5,315,745	3.15	0	329
15WG-AC-125B	668,721	5,315,745	1.00	0	329
15WG-AC-006	668,212	5,315,821	4.82	0	332
15WG-AC-008	668,163	5,315,777	6.00	0	326
Mickelson1	668,931	5,315,680	4.50	0	177
Mickelson2	668,930	5,315,683	1.00	0	177
Mickelson3	668,885	5,315,690	2.75	0	177
Mickelson4	668,884	5,315,690	1.00	0	177
Mickelson5	668,883	5,315,690	1.60	0	177
Mickelson6	668,882	5,315,691	1.20	0	177
Mickelson7	668,881	5,315,692	1.00	0	177

Table 9-10: Assay highlights of the 2015 channel samples

Channel No.	From (m)	To (m)	Interval (m)*	Weighted Mean Au (g/t)
15WG-AC-035	0.00	2.20	2.20	35.05
15WG-AC-008	2.00	6.00	4.00	1.35
Mickelson5	0.00	1.60	1.60	18.76
15WG-AC-026	0.00	1.50	1.50	5.89

Note: *Assay results presented over channel sample length

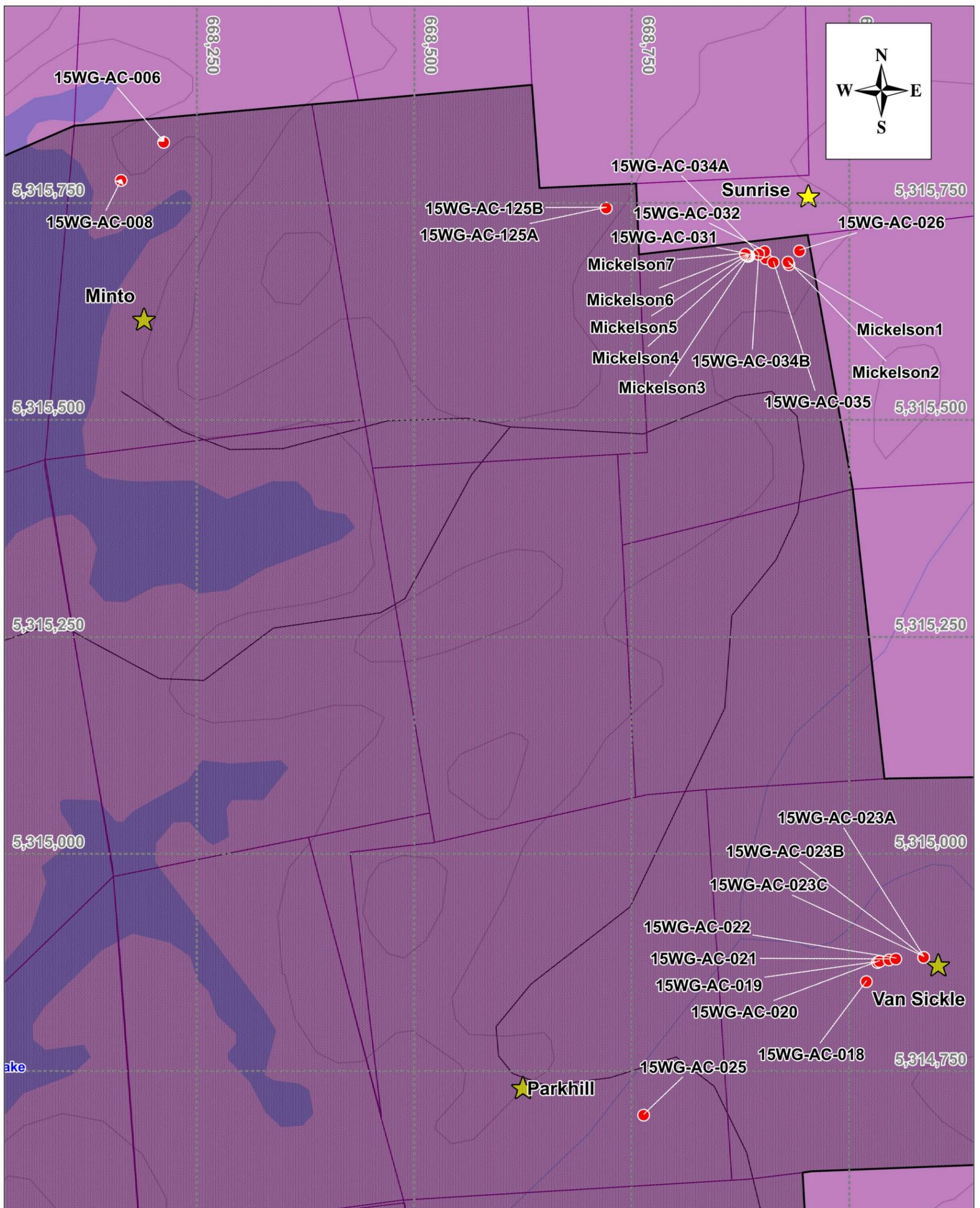


Figure 9.5: Location of channel samples collected in 2015

Date: December 19, 2018

Author: Eric Steffler

Projection: NAD 83 Zone 16N

Scale: 0 275 metres

Source: Topo: http://ftp.geogratis.gc.ca/pub/nrcan_rncan/vector/ntdb_bndt/
 Claim Fabric: <https://www.mndm.gov.on.ca/en/mines-and-minerals>



LEGEND

- Historical Pits and Shafts
- 2015 Trenching Locations
- Gravel Roads
- Topographic Contours
- Rivers/Streams
- Lakes
- Minto-South Project Area
- Patented Mining Claims

10.0 DRILLING

10.1 Drill Program Design and Implementation

The 2014-2018 Minto Mine South drilling program was initiated to further develop the gold inventory on the Minto Gold Property. This objective was approached in several different ways which included drilling along plunge of the Minto Mine workings to determine the attitude of the Minto vein target and to test the possibility that the structure hosting the Minto Mine is made of stacked shear zones. Following drilling along plunge of the Minto Mine works, the geometry of the structure was better understood, and new drilling plans were initiated to continue targeting the Minto vein down plunge.

One NQ size drill hole for a total of 342 m was completed in December 2014 by Norex drilling from Timmins, Ontario. In the Fall of 2015, Forage Rouillier of Amos, Quebec was contracted to drill 5 short HQ (63.5 mm core diameter) drill holes totalling 320.8 m on the Mickelson-Sunrise vein system at the northern boundary of the Minto Project. In 2017 and 2018, Forage Rouillier of Amos, Quebec was contracted as the driller and completed a total of 121 HQ (63.5 mm) sized drill holes producing a total of 26,618.7 m from March 17, 2017 through to October 14, 2018 (Table 10-1; Table 10-2; Table 10-3, Table 10-5 and Table 10-6).

Access to the site and within the property is readily available and easily facilitated as the extensive historic work on the property has left a substantial network of roads and trails throughout the property which are accessible via trucks and ATVs. The drills were moved around site on skids behind a bulldozer.

A map of all the 2014 to 2018 drill hole locations are illustrated in Figure 10-1.

Table 10-1: Selected assay highlights for Red Pine's 2014-2018 Minto Mine South Project drilling program

Year	No of Drill Holes	Total Metres	Company
2014	1	342	Red Pine Exploration
2015	5	321	Red Pine Exploration
2017	76	9,564	Red Pine Exploration
2018	46	11,962	Red Pine Exploration

Table 10-2: Drill hole highlights by Red Pine on the Minto Mine South Project during the 2014-2018 period

Year	Drill Hole No	From (m)	To (m)	Best Intersection (m)*	Au (g/t)
2014	SD-14-06	301.10	304.40	3.30	6.50
2016	S247	88.70	90.20	1.50	13.10
2018	S311	267.30	270.40	3.10	5.50

Note: *Intervals listed here do not represent true thickness.

Table 10-3: Summary of the 2014 and 2015 Minto Zone Red Pine drill holes

Drill Hole ID	Easting	Northing	Dip	Azimuth	Total Depth (m)
SD-14-06	668,205	5,315,774	-44.3	344.5	342.0
SM-15-32	668,917	5,315,677	-47.0	325.0	53.8
SM-15-33	668,939	5,315,706	-47.0	215.0	82.0
SM-15-37	668,897	5,315,675	-47.0	325.0	58.0
SM-15-38	668,720	5,315,742	-47.0	25.0	75.0
SM-15-39	668,724	5,315,758	-50.0	190.0	52.0
Total					662.8

Table 10-4: Summary of the 2017 drill holes in the Parkhill Mine area

Drill Hole ID	Easting	Northing	Dip	Azimuth	Total Depth (m)
PH-17-67	668,813	5,314,626	-60.0	15.0	120.0
PH-17-69	668,616	5,314,544	-54.6	300.4	147.5
PH-17-70	668,728	5,314,639	-54.0	358.0	121.0
PH-17-71	668,559	5,314,640	-75.0	125.0	187.0
Total					575.5

Table 10-5: Summary of the 2017 and 2018 Minto Zone Red Pine Diamond Drill Holes

Drill Hole ID	Easting	Northing	Dip	Azimuth	Total Depth (m)
SD-17-73	668,212	5,315,441	-57.8	291.3	121.0
SD-17-74	668,229	5,315,453	-44.9	199.9	190.0
SD-17-75	668,230	5,315,455	-69.0	237.0	127.0
SD-17-76	668,229	5,315,456	-69.0	185.0	157.0
SD-17-77	668,149	5,315,477	-52.2	302.1	31.0
SD-17-77A	668,149	5,315,477	-51.8	304.1	451.0
SD-17-78	668,149	5,315,474	-45.0	225.0	94.0
SD-17-79	668,152	5,315,474	-45.0	170.0	100.0
SD-17-80	668,174	5,315,512	-45.0	300.0	415.0
SD-17-81	668,173	5,315,510	-75.0	70.0	103.0
SD-17-82	668,172	5,315,512	-65.0	150.0	154.0
SD-17-83	668,201	5,315,642	-45.0	285.0	373.0
SD-17-85	668,309	5,315,466	-60.0	250.4	172.0
SD-17-86	668,309	5,315,466	-55.1	215.4	184.0
SD-17-88	668,302	5,315,277	-45.1	306.8	139.0
SD-17-89	668,309	5,315,467	-65.0	195.4	202.0
SD-17-90	668,309	5,315,467	-50.0	193.0	196.0
SD-17-92	668,312	5,315,462	-45.0	315.0	181.0
SD-17-94	668,463	5,315,371	-45.8	267.0	241.0
SD-17-96	668,464	5,315,371	-67.0	268.4	262.0
SD-17-99	668,466	5,315,371	-51.0	252.0	238.0
SD-17-101	668,466	5,315,371	-62.0	243.0	286.0
SD-17-103A	668,465	5,315,369	-51.9	282.0	250.0
SD-17-105	668,302	5,315,278	-61.9	320.2	142.0
SD-17-106	668,303	5,315,276	-68.8	120.1	193.0
SD-17-108	668,300	5,315,277	-46.7	324.6	148.0
SD-17-110A	668,302	5,315,278	-71.7	354.6	159.0
SD-17-111	668,303	5,315,278	-44.8	20.1	81.0
SD-17-112	668,303	5,315,279	-62.1	42.1	144.0
SD-17-114	668,303	5,315,278	-77.1	59.9	164.0
SD-17-115	668,304	5,315,274	-82.0	115.4	160.0
SD-17-117	668,304	5,315,272	-57.0	147.0	190.0
SD-17-119	668,301	5,315,275	-78.0	245.0	112.0
SD-17-120	668,302	5,315,277	-45.0	285.0	115.0
SD-17-121	668,426	5,315,287	-66.0	205.0	217.0
SD-17-123	668,423	5,315,289	-69.0	239.1	235.0
SD-17-125	668,423	5,315,289	-78.0	266.0	262.0
SD-17-126	668,424	5,315,290	-67.0	272.0	211.0
SD-17-128	668,425	5,315,290	-50.4	288.2	223.0

Table 10-5: Summary of the 2017 and 2018 Minto Zone Red Pine Diamond Drill Holes, cont.

Drill Hole ID	Easting	Northing	Dip	Azimuth	Total Depth (m)
SD-17-129	668,426	5,315,291	-57.1	324.7	292.0
SD-17-131	668,426	5,315,290	-78.0	325.0	277.0
SD-17-132	668,426	5,315,288	-50.0	10.0	106.0
SD-17-133	668,426	5,315,289	-45.0	50.0	160.0
SD-17-135	668,425	5,315,290	-63.0	339.4	313.0
SD-17-136	668,426	5,315,290	-72.0	348.0	313.0
SD-17-138	668,425	5,315,289	-66.0	355.0	340.0
SD-17-140	668,427	5,315,289	-82.2	8.8	298.0
SD-17-141	668,428	5,315,289	-84.2	100.5	301.0
SD-17-143	668,426	5,315,289	-88.0	267.6	253.0
SD-17-144A	668,426	5,315,290	-62.0	308.3	235.0
SD-17-145	668,426	5,315,287	-80.0	204.0	226.0
SD-17-147	667,975	5,315,167	-47.0	307.8	145.0
SD-17-148	667,973	5,315,164	-46.0	220.0	127.0
SD-17-149	667,973	5,315,166	-65.0	270.0	124.0
SD-17-151	668,413	5,315,206	-73.9	280.0	226.0
SD-17-152	668,412	5,315,207	-45.0	262.0	163.0
SD-17-154	668,413	5,315,209	-62.0	245.0	34.0
SD-17-154A	668,413	5,315,209	-62.0	245.0	178.2
SD-17-156	668,408	5,315,212	-45.0	227.3	141.0
SD-17-158	668,408	5,315,212	-78.3	199.9	190.0
SD-17-159	668,408	5,315,212	-56.0	205.0	199.0
SD-17-161	668,410	5,315,212	-47.0	187.0	254.0
SD-17-162	668,409	5,315,198	-49.1	158.8	223.0
SD-17-164	668,411	5,315,213	-70.0	131.8	241.0
SD-17-166	668,409	5,315,197	-63.2	179.0	229.0
SD-17-168	668,411	5,315,213	-56.3	166.1	127.0
SD-17-169	668,413	5,315,218	-76.1	324.8	205.0
SD-17-171	668,413	5,315,218	-63.0	325.0	229.0
SD-17-174	668,412	5,315,217	-79.0	142.0	250.0
SD-17-175	668,413	5,315,218	-58.8	150.0	259.0
SD-18-177	668,413	5,315,218	-55.0	168.0	220.0
SD-18-179	668,413	5,315,218	-69.0	164.0	232.0
SD-18-181	668,410	5,315,212	-84.0	50.0	31.0
SD-18-181A	668,410	5,315,212	-84.0	50.0	220.0
SD-18-183	668,410	5,315,210	-78.0	41.0	271.0
SD-18-184	668,410	5,315,210	-77.0	95.0	313.0
SD-18-187	668,425	5,315,400	-45.1	284.9	246.0
SD-18-188	668,427	5,315,400	-55.0	292.0	250.0

Table 10-5: Summary of the 2017 and 2018 Minto Zone Red Pine Diamond Drill Holes, cont.

Drill Hole ID	Easting	Northing	Dip	Azimuth	Total Depth (m)
SD-18-189	668,425	5,315,400	-45.0	300.1	256.0
SD-18-191	668,426	5,315,400	-65.0	299.6	250.0
SD-18-192	668,425	5,315,400	-51.0	323.0	295.0
SD-18-193	668,605	5,315,078	-61.0	298.0	277.0
SD-18-194	668,605	5,315,078	-70.0	300.4	289.0
SD-18-195	668,232	5,315,463	-53.0	172.0	157.0
SD-18-196	668,231	5,315,462	-45.0	222.0	115.0
SD-18-197	668,609	5,315,079	-84.9	282.1	355.0
SD-18-198	668,231	5,315,464	-58.0	293.0	157.0
SD-18-199	668,232	5,315,463	-80.2	353.7	154.0
SD-18-200	668,234	5,315,464	-65.0	35.0	226.0
SD-18-201	668,225	5,315,452	-45.8	180.0	140.0
SD-18-202	668,608	5,315,079	-64.6	250.8	268.0
SD-18-203	668,606	5,315,080	-45.0	257.0	295.0
SD-18-204	668,607	5,315,078	-56.0	264.0	256.0
SD-18-205	668,609	5,315,079	-62.0	324.0	328.0
SD-18-206	668,608	5,315,078	-76.0	316.0	340.0
SD-18-207	668,609	5,315,079	-59.0	312.0	304.0
SD-18-208	668,430	5,314,966	-75.0	247.0	223.0
SD-18-209	668,429	5,314,966	-45.0	247.0	205.0
SD-18-210	668,485	5,314,894	-54.0	244.0	196.0
SD-18-211	668,485	5,314,893	-54.1	191.2	223.0
SD-18-212	668,488	5,314,892	-45.3	165.0	313.0
SD-18-213	668,713	5,314,806	-45.3	219.9	289.0
SD-18-214	668,713	5,314,807	-55.8	231.2	289.0
SD-18-215	668,713	5,314,807	-50.9	249.9	286.0
SD-18-216	668,602	5,315,073	-72.2	331.7	331.0
SD-18-217	668,601	5,315,073	-66.1	322.3	331.0
SD-18-218	668,601	5,315,073	-53.1	322.2	352.0
SD-18-219	668,603	5,315,073	-76.7	285.8	277.0
SD-18-220	668,603	5,315,073	-68.4	290.5	274.0
SD-18-221	668,603	5,315,073	-61.3	279.3	262.0
SD-18-222	668,603	5,315,075	-81.1	179.4	325.0
SD-18-223	668,602	5,315,075	-46.3	226.1	349.0
SD-18-224	668,603	5,315,075	-65.8	210.0	259.0
SD-18-225	668,698	5,315,043	-81.9	276.2	337.0
SD-18-226	668,698	5,315,043	-72.0	206.0	319.0
SD-18-227	668,698	5,315,043	-54.2	219.0	277.0
Total					26,043

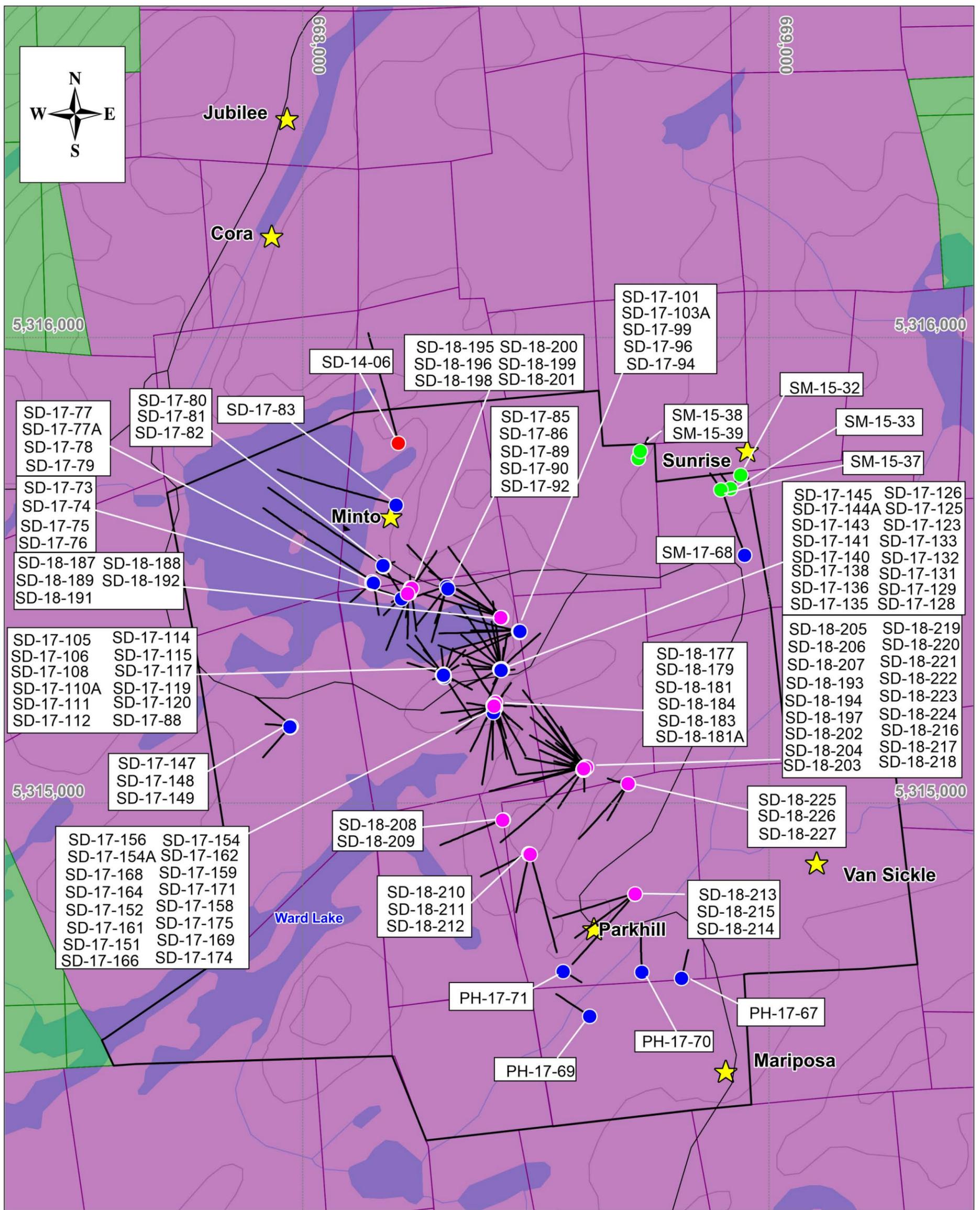


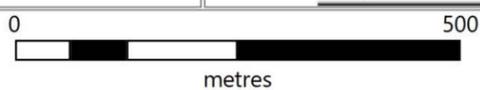
Figure 10.1: Diamond drill hole collar map

Date: December 19, 2018

Author: Eric Steffler

Projection: NAD 83 Zone 16N

Scale:



Source: Topo: http://ftp.geogratis.gc.ca/pub/nrcan_rncan/vector/ntdb_bndt/
 Claim Fabric: <https://www.mndm.gov.on.ca/en/mines-and-minerals>



LEGEND

- Historical Pits and Shafts
- Topographic Contours
- Gravel Roads
- Rivers/Streams
- Lakes
- Unpatented Mining Claims
- Patented Mining Claims
- Minto-South Project Area
- Diamond drill hole surface trace
- 2014 Drilling
- 2015 Drilling
- 2017 Drilling
- 2018 Drilling

10.1.1 Collar Survey

For the 2015, 2017 and 2018 drilling, a Reflex TN-14 gyrocompass was utilized by a Red Pine geologist to align the drill head prior to casing installation. This device uses a north seeking gyro to provide high precision drill orientation. With several drill holes coming near historic underground workings, this tool was instrumental in obtaining precise azimuth and dip from surface. The drill hole from 2014 was aligned using a compass and front sights.

All drill collars were spotted prior to drilling using a handheld Garmin Oregon GPS. This unit is limited to an accuracy of ± 5 m with minimal tree cover and moderately clear skies. Upon completion of the drill program, a TopCon RTK GPS was utilized to provide high precision collar locations and elevations. The casing for all drill holes were left in place and capped with a red bolt-on metal cap and attached 0.9 m flag (Figure 10-2). A full list of collar locations from the 2014-2018 drilling programs can be found in Table 10-5. Both the initial collar location and precise follow up positioning were completed by Red Pine personnel.



Figure 10-2: Drill collar location for SD-18-216 through SD-18-221

10.1.2 Down Hole Survey

Several down-hole surveys were carried out to gain as much information as possible from each drill hole. While drilling was undertaken, a Reflex easy shot was used to provide in-hole azimuth and dip. This survey was completed approximately 10 m below the bottom of the drill casing as well as every 30 m below that. This device uses magnetism for its measurements so in areas where ferromagnetism is prevalent in the rocks, it should be noted that this measurement can be unreliable for azimuth readings. All down hole surveys are completed by Forage Rouillier at the drill.

The down-hole survey was an important aspect to drilling as the drill holes typically flatten and bend to the right. This effectively decreases the dip and increases the azimuth. With underground workings in the area it was integral to ensure that not only the location of the collar was correct but also to effectively track the path of the drill holes as they progressed to target depth.

10.1.3 Core Recovery

Core recovery was very important to this program because of the core orientation process. The core was pieced together by a Red Pine geologist or core tech to obtain one continuous run. Therefore, any missing core is very problematic. Extensive discussion with the drilling team verified that all efforts were made to see the highest possible core recovery rates. As such, a very high level of core recovery (>95%) was achieved throughout both drilling programs.

10.1.4 Core Handling Procedure

The core was boxed at the drill and labeled with the drill hole ID and box number, as well as blocks within the core indicating the end of each drill run every 3 m. At the end of this 3 m interval, a mark indicating the bottom of the core was drawn on the last piece at the drill. A lid was placed on the box, taped shut, and transported by snowmobile and/or ATV from the drill to the core logging facility (the core shack). For the 2017 and 2018 drilling programs, these steps were completed at the drill by Forage Rouillier personnel. The core shack is located on the property, near the town of Wawa, no more than 3 km from any of the drill hole locations. After arrival at the core shack, the core boxes were opened and in the winter moved inside to defrost prior to geotechnical processing and logging. Once a truck load of samples was accumulated in the core shack, they were subsequently shipped to the lab for assay analysis. Sequentially numbered security seals are utilized on each bag of samples to maintain secure shipping and an appropriate chain of custody.

10.2 Geotechnical Core Processing

Prior to the beginning of the geological logging, core pieces were properly fitted, an orientation line was drawn, and metre marks were promptly labeled, referencing the blocks identified by the drillers every run (3 m), beginning and end of each core box were marked completing a box info file. From there, the geological logging procedure was carried out by a Red Pine geologist.

10.2.1 Structure

The Reflex ACTIII was used in conjunction with drilling to indicate the bottom of the drill core as it came out of the drill hole. The entire length of core is pieced together to obtain a continuous, or near continuous run from the top to the bottom of each hole. A solid line was then drawn on the core connecting the marks made at the drill site at the end of each run. This solid line represents the bottom of the core in the hole, providing a reference line to make structural measurements. Structural features of interest were then marked on the core and measured relative to the previously mentioned line noting the bottom of core using the alpha-beta method and level of confidence. This method utilizes a transparent tube (Holcombe Alpha-Beta Protractor) with angles relative to the long axis (alpha) and angles around the circumference of the core (beta). Later all structure data was processed by Red Pine and effectively used for future modelling.

10.2.2 SWIR

Short Wave Infrared Reflectance (SWIR) data was then systematically acquired on every metre of core. The data was acquired using a TerraSpec 4 Hi-Res Mineral Spectrometer designed by PANalytical (Figure 10-3). At the beginning of every data acquisition period, the spectrometer was allowed a 15 to 30-minute period of warming up to stabilize the signal. To obtain reflectance values that were comparable between drill holes, a Spectralon® certified reflectance standard was used during data acquisition. To correct for drifting and changing light conditions, a standard measurement was taken every 10 to 15 minutes. The spectrometer conditions were also optimized at the beginning of each period of measurement, as well as periodically during data acquisition and whenever there were drastic changes of light conditions.

SWIR data was acquired on a metre by metre basis to simplify the acquisition procedures and provide more flexibility in the order in which the core was measured. For each metre, between 4 and 6 equally spaced individual spot measurements were taken along the core. Signal biasing was addressed by avoiding taking measurements in local features (e.g. small veins). The raw spectra which was acquired using the customized software that came with the spectrometer was then processed using The Spectral Geologist (TSGTM) software to get the spectral mineralogy of each spot measurements. Different spectral scalars, specific to white micas, chlorite, carbonate, biotite and tourmaline, which were the minerals found to be directly related to the metasomatic processes related to the gold mineralizing fluids, were then calculated for each hole being measured.



Figure 10-3: TerraSpec 4 Hi-Res Mineral Spectrometer and data acquisition computer on the rolling table used to acquire SWIR data on historic core

Using a proprietary script in developed for the R software (R Project for Statistical Computing - <https://www.r-project.org/>), the data for each metre was then consolidated in one point for each set of minerals. This consolidation was based on the minerals identified by TSGTM. For each of the identified minerals in a metre, the specific spectral scalars for each data point were averaged for the entire row. The script then assigned a 'from – to' for each point and created graphics to portray the down-hole variations of spectral scalars of interest known to be spatially related to gold zones. These graphs and the detection of certain minerals help to ensure that even zones with cryptic gold indicators were sampled whereas the three-dimensional integration of the data was used to map the maturity of the shear zone at the edges for future expansion.

10.3 Core Logging and Analyses

10.3.1 Core Logging

The core was visually inspected and logged based on the field geologist's descriptions. The information was then put into the Gemslogger software, an extension of Microsoft access and in spring 2017 switched to MXDeposit software (Geosoft). Through this conversion, new lithology tables and abbreviations were created, which are included with the complete logs in the drill hole database. The incorporation of a variety of analytical methods was utilized to best describe the lithological units. These included testing for magnetism with a magnet, reactivity with 10% HCL, scratch testing with a nail to estimate hardness, portable XRF reading, colour, texture, structure, grain size, pervasive alteration and contacts definition. These components were then used to create a lithological description of the core from the top to the bottom of each hole. This log was further subdivided by lithologies with description of veining, alteration, texture, deformation, Red Pine's gold zones, and mineral abundances included.

Alteration and rock type identification were systematically supported by the SWIR analyses and by spot measurements using a portable XRF. The portable XRF units used by the company are programmed with predefined element ratios that characterize favourability for gold (white mica intensity ratio derived from internal work) and the nature of the host rocks (Zr/TiO₂).

10.3.2 Core Sampling

The selections of the sampled intervals of core was based on favourable visual indicators known to be associated with gold mineralization and on the presence of favourable alterations detected by the SWIR and portable XRF analyzers. For the Minto Mine South Project, the key visual indicators of gold mineralization, based on Red Pine's experience on the Project, are shearing, pervasively disseminated sulfides in the core (mostly pyrite), quartz veining, pervasive white mica alteration, contact zones between two units with indications of shearing and fluid circulation, and pervasive chloritization with iron carbonate alteration in mafic units. Each sampled interval of 0.5 m - 1.5 m was described in an Excel sheet and later updated with the applicable assay results.

Upon completion of logging, samples tags are inserted in 0.5 m - 1.5 m intervals and at lithological contacts within the zone of mineralization. Tags are placed at the end of each sample. Once sample locations were determined, the core was cut in half. One half was placed in a durable plastic sample bag with an ID tag and the other half remained in core storage on site located on the property for future reference. Samples were then separated into groups of 5 to 6 and placed in durable rice bags for transport.

10.3.3 Magnetic Susceptibility

A Terraplus KT-10 magnetic susceptibility meter was used to measure and record the magnetic susceptibility through every metre of each drill hole. This device provides quantitative data regarding magnetism of the rocks down the length of the drill hole. Magnetic susceptibility measurements were considered important as for many of the gold zones of the Minto Mine South Property, the shoulders of the gold zones are selectively enriched with magnetite, forming a positive magnetic susceptibility anomaly around the gold zones that are themselves demagnetized.

10.3.4 Density Measurements

Specific gravity (SG) measurements were collected on all the diamond drill holes as picked by Red Pines' geologists. One or two pieces of core per major lithological unit were selected and marked for measurement. Then SG was determined by weighing a piece of core in air and in water and calculating SG using formula:

$$SG = \frac{\text{Sample Weight in Air}}{\text{Sample Weight in Air} - \text{Sample Weight in Water}}$$

10.3.5 Core Photography

Photos were taken of all core drilled through this program. Once preparation and logging of the core is completed and sample tags have been added, photos of each box are taken individually. A chalk board with the Hole ID, box number and meterage contained in the box is utilized for labelling purposes. If sample IDs are visible on the camera then photos are deemed to be in focus and complete.

10.3.6 Core Sampling QA/QC Protocol

As part of its QA/QC protocols, a certified reference material (CRM, standard) was regularly inserted into the sampling order with a standard every 20 samples and blank every 25 samples. The standards used were Ore Research & Exploration Pty Ltd (OREAS) 209, 210, 218 & 229. These were routinely inserted into sample tag books prior to sampling to ensure appropriate spacing and regular insertion. The blanks were 200 g white lighting (high purity silica sand) and are also pre-recorded in tag books. Short descriptions of the CRM and blanks are provided in Section 11.0.

10.4 Assay Results

A summary of assay results from the 2017 and 2018 drilling programs is presented in Table 10-6. Assay highlights within the larger mineralized intervals are shown in grey and italics.

Table 10-6: Assay highlights for Red Pine's 2014-2018 Minto Mine South drilling program

Drill Hole ID	From (m)	To (m)	Interval (m)	Au (g/t)*	Au Zone
SD-14-06	301.10	304.40	3.30	6.50	
SD-17-73	18.16	19.16	1.00	1.38	Quartz vein
	43.28	44.28	1.00	3.35	
	89.87	92.87	3.00	19.92	
SD-17-74	107.61	110.61	3.00	4.75	Minto Mine South Zone
	147.24	150.20	2.96	0.50	Unnamed shear zone
SD-17-75	102.24	104.13	1.89	2.74	
SD-17-77A	45.96	51.55	5.29	2.00	
	<i>including</i>				
	45.96	46.77	0.81	9.17	
SD-17-78	48.88	49.79	0.91	1.39	Minto Mine South Zone
	53.70	57.19	3.49	11.82	
	<i>including</i>				
	55.30	56.10	0.80	51.00	
SD-17-79	78.40	80.40	2.00	6.54	
SD-17-82	119.50	130.00	10.50	1.42	
	<i>including</i>				
	119.50	122.50	3.00	2.90	
SD-17-85	54.80	62.23	8.43	1.44	Newly Discovered Au Zone
	<i>including</i>				
	54.80	57.93	3.13	2.72	
	150.10	152.30	2.20	4.94	
SD-17-86	152.31	154.31	2.00	24.90	
SD-17-88	108.90	110.90	2.00	7.37	Minto Mine South Zone
SD-17-89	166.86	170.33	3.47	8.55	
SD-17-90	166.97	169.00	2.03	15.30	
SD-17-92	165.35	167.42	2.07	4.01	Newly Discovered Au Zone
SD-17-96	4.60	5.60	1.00	6.58	Minto E Au Zone

Notes:

*Assay results reported over intersection length. In the Minto Mine South Zone, the intersection lengths are estimated to be between 70-95% true widths. In the Minto Stockwork, additional drilling is necessary to estimate the true width of the intersected zones.

Table 10-6: Assay highlights for Red Pine's 2014-2018 Minto Mine South drilling program, cont.

Drill Hole ID	From (m)	To (m)	Interval (m)	Au (g/t)*	Au Zone
SD-17-99	210.75	212.26	1.51	3.18	Minto Mine South Zone
SD-17-101	206.40	207.40	1.00	34.60	
SD-17-103A	233.66	236.67	3.01	3.01	
	<i>including</i>				
	234.62	235.62	1.00	6.60	
SD-17-106	136.62	148.00	11.38	3.13	
	<i>including</i>				
	136.62	138.35	1.73	8.09	
	141.76	144.48	2.72	7.18	
SD-17-108	133.00	135.00	2.00	5.88	
SD-17-114	134.00	135.00	1.00	2.59	
	137.80	139.80	2.00	3.57	
SD-17-115	104.60	116.90	12.30	2.96	
	<i>including</i>				
	108.90	110.90	2.00	14.20	
	113.90	115.90	2.00	2.22	
SD-17-117	126.00	130.00	4.00	13.72	
	<i>including</i>				
	127.00	128.00	1.00	40.15	
SD-17-111	54.90	55.90	1.00	5.14	Minto Stockwork
SD-17-110A	93.40	125.70	32.30	0.43	Minto Mine South and Minto Stockwork
	<i>including</i>				
		96.40	97.40	1.00	
	122.00	123.00	1.00	3.80	
SD-17-117	126.00	190.00	64.00	1.44	
	<i>including</i>				
	126.00	130.00	4.00	13.72	
	160.00	161.00	1.00	2.39	
	182.00	183.00	1.00	29.90	
	189.00	190.00	1.00	2.00	

Notes:

*Assay results reported over intersection length. In the Minto Mine South Zone, the intersection lengths are estimated to be between 70-95% true widths. In the Minto Stockwork, additional drilling is necessary to estimate the true width of the intersected zones.

Table 10-6: Assay highlights for Red Pine's 2014-2018 Minto Mine South drilling program, cont.

Drill Hole ID	From (m)	To (m)	Interval (m)	Au (g/t)*	Au Zone
SD-17-121	179.00	181.00	2.00	5.58	Minto Mine South Zone
	<i>including</i>				
	180.00	180.90	0.90	10.90	
SD-17-123	175.50	179.10	3.60	2.13	
SD-17-126	186.60	188.60	2.00	11.47	
	<i>including</i>				
	186.60	187.40	0.80	28.20	
SD-17-121	117.40	122.00	4.60	1.30	Minto Stockwork
	<i>including</i>				
	121.00	122.00	1.00	3.70	
SD-17-125	219.40	220.70	1.30	11.40	
SD-17-175	217.70	219.70	2.00	3.79	Minto Mine South Zone
	<i>including</i>				
	218.70	219.70	1.00	7.03	
SD-17-181A	201.80	205.90	4.10	3.00	
	<i>including</i>				
	204.80	205.90	1.10	5.27	
SD-18-203	191.70	193.60	1.90	2.40	
SD-18-207	288.30	290.50	2.20	2.57	
	<i>including</i>				
	289.70	290.50	0.80	4.82	
SD-18-212	275.20	276.80	1.60	4.76	Minto Lower Discovery
	<i>including</i>				
	276.20	276.80	0.60	12.47	
SD-18-213	257.70	259.90	2.20	5.40	
	<i>including</i>				
	258.30	258.90	0.60	15.83	
SD-17-159	168.80	169.80	1.00	2.50	Minto Mine South Zone
SD-17-174	193.60	199.90	6.30	9.20	
	<i>including</i>				
	193.60	195.60	2.00	16.90	
SD-17-192	247.90	249.90	2.00	7.70	Intersection New Shear Zone/Minto Mine South

Notes:

*Assay results reported over intersection length. In the Minto Mine South Zone, the intersection lengths are estimated to be between 70-95% true widths. In the Minto Stockwork, additional drilling is necessary to estimate the true width of the intersected zones.

Table 10-6: Assay highlights for Red Pine's 2014-2018 Minto Mine South drilling program, cont.

Drill Hole ID	From (m)	To (m)	Interval (m)	Au (g/t)*	Au Zone	
SD-17-194	271.90	274.20	2.30	2.70	Minto Mine South Zone	
SD-17-195	134.10	139.40	5.30	5.10		
	<i>including</i>					
SD-17-196	134.10	139.40	5.30	5.10		
	<i>including</i>					
SD-17-129	98.50	103.30	4.80	3.60		
	<i>including</i>					
SD-17-135	100.40	103.30	2.90	5.70	Minto Stockwork	
	<i>including</i>					
SD-17-162	82.00	83.00	1.00	2.27	Minto Mine South Zone	
	78.40	82.60	4.20	2.06		
SD-17-164	81.60	82.60	1.00	6.42		
	<i>including</i>					
SD-17-169	200.80	202.80	2.00	2.75		
	208.30	209.40	1.10	2.80		
SD-18-223	221.50	224.20	2.70	2.98		
	<i>including</i>					
SD-18-222	222.50	223.50	1.00	6.12	Minto Stockwork	
	<i>including</i>					
	SD-18-225	186.60	189.20	2.60	2.65	Minto Mine South Zone
		<i>including</i>				
	SD-18-223	156.90	158.10	1.20	12.52	
		167.10	170.00	2.90	9.93	
SD-18-222	198.20	204.30	6.10	1.09	Minto Mine South Zone	
	210.50	211.50	1.00	1.32		
SD-18-222	246.00	256.00	10.00	1.12	Minto Stockwork	
	<i>including</i>					
	SD-18-222	246.00	247.00	1.00	7.00	Minto Mine South Zone
		<i>including</i>				
	SD-18-222	256.00	261.10	5.10	7.15	Minto Mine South Zone
		<i>including</i>				
SD-18-222	257.60	258.60	1.00	33.73	Minto Stockwork	
	<i>including</i>					
SD-18-225	283.00	293.30	10.30	0.57	Minto Stockwork	
	<i>including</i>					
SD-18-225	283.00	284.00	1.00	4.50	Minto Stockwork	
	<i>including</i>					
SD-18-225	156.90	171.90	15.00	3.30	Minto Stockwork	
	<i>including</i>					
SD-18-225	229.30	234.60	5.30	4.19	Minto Stockwork	
	<i>including</i>					
SD-18-225	232.40	233.40	1.00	19.40	Minto Stockwork	
	<i>including</i>					

Notes:

*Assay results reported over intersection length. In the Minto Mine South Zone, the intersection lengths are estimated to be between 70-95% true widths. In the Minto Stockwork, additional drilling is necessary to estimate the true width of the intersected zones.

11.0 SAMPLING PREPARATION, ANALYSES, AND SECURITY

11.1 Historic drilling programs

For the drilling programs prior 2007, no information is available about the sample preparation, analyses and security of historic drill core. However, from visual observations of the historic core boxes, the core was split using a mechanical core splitter. Duke (2012) also indicated that samples may have been analyzed by an assay laboratory on site initially. In the 1980s and 1990s, the samples were likely sent to Wawa Assay Laboratory, an unaccredited laboratory in Wawa. Duke (2012) assumed the assay method to have been fire assay with a gravimetric finish. No information about quality control measures and sample security is available.

Details about the sample preparation, analyses and security of core samples from Wawa GP's 2007 drilling program were described by Duke (2012). The core was cut in half using a core saw; one half was returned to the core box, the other half was put in a sample bag and sent to Accurassay Laboratories (Accurassay) in Thunder Bay, Ontario. Accurassay is accredited for gold under the ISO/IEC 17025 guideline. At Accurassay, the samples were dried, crushed, split and pulverized. A 30 g aliquot was used for fire assay analysis with an atomic absorption spectroscopy finish. Accurassay was independent of Wawa GP (Duke 2012). Wawa GP inserted 12 blanks and three standards into the sample stream. In addition, Accurassay repeated one analysis for every 10 samples (Duke, 2012). Sample security was described by Dow (2011): core was moved from the drill rig to the logging area by the drillers. Samples were transported to Accurassay by a bonded carrier.

11.2 Red Pine 2014 to 2018 Sampling

The core collected by Red Pine during the 2014–2018 drilling program was sampled in regular intervals of approximately 1.0 m within the mineralized zone and approximately 1.5 m outside the immediate mineralized zone observing lithological contacts. The core was cut in half for sampling using a core saw. A total of 11,889 samples were collected during this period. Quality control quality assurance (QA/QC) certified reference material (CRM, Standards) and blanks were inserted in the sample stream every 20 samples and 25 samples, respectively. The CRM's used are listed in Table 11-1. Silica sand was used as blank. A total of 1,020 CRM's and 868 blanks were inserted (Table 11-2).

For the 2014, 2015 and the 2017 to 2018 drilling programs, core samples were placed into a plastic bag together with a pre-numbered sample tag, and then sealed. Individual sample bags were then placed into larger rice bags for shipping. For the 2014 and 2015 drilling programs, the rice bags containing the samples were transported from site to Actlabs in Timmins by Red Pine personnel. For the 2017 to 2018 drilling program, a numbered security tag was placed on each rice bag containing the individual sample bags to prevent tampering. Each security tag was recorded by Red Pine personnel and the information was transmitted to the receiving laboratory. The rice bags were then transported by Red Pine personnel to Manitoulin transport in Wawa from where the samples were shipped to the laboratory. Red Pine, in collaboration with Manitoulin and the laboratories, kept track of each shipment upon its reception at the laboratory and the laboratory validated that the security tags on each rice bag were intact upon reception of the samples.

From April 2017 to May 2017, all the core samples were shipped to SGS Canada located in Cochrane, Ontario. From, June 2017 to July 2018, all the samples were shipped to Activation Laboratories Ltd. (Actlabs) in Ancaster, Ontario. Both SGS and Actlabs are ISO/IEC 17025 certified laboratories and there is no relationship between Red

Pine and SGS or Actlabs other than that Red Pine commissioned SGS and Actlabs to analyze drill core samples from the Minto Mine South Project.

The remaining drill core is stored in Red Pine's secure drill core logging and outdoor storage facility (Figure 11-1).



Figure 11-1: Secure core storage area next to Red Pine's core logging facility in Wawa, Ontario

11.2.1 Analytical Procedures

Two independent certified laboratories were used for the gold analyses of the Minto Mine South Project. A total of 11,889 core samples were analyzed at Activation Laboratories (Actlabs) in their facilities in Timmins and Ancaster, and 1,643 samples were analyzed by SGS at their facilities in Cochrane and Lakefield. Two routine gold analytical packages were selected by Red Pine for the analysis completed by SGS and Actlabs, including:

- 1) Fire-assay with an AAS finish (SGS method GO FAI515, Actlabs method 1A2-50), and
- 2) Screen metallic on 1000 g of samples (SGS method GO FAS51K; Actlabs method 1A4).

For the fire-assay analysis, the entire sample is crushed to -10 mesh (1.7 mm), mechanically split and an aliquot of 250 g is pulverized to at least 95% -150 mesh (105 µm). Fifty grams of the pulverized sample is used for the fire assay procedure. Gold analysis was completed by AAS at Actlabs and ICP-AES at SGS.

For the metallic screen analysis, a 1,000 g split is sieved at 100 mesh (149 µm). Assays are performed on the entire +100 mesh and on two splits of the -100 mesh fraction. The final assay is calculated using the weight and gold analysis of each fraction. Metallic screen assays were completed on every samples of the Minto vein where coarse gold is relatively abundant. All the samples with a gold grade over 2 g/t from the fire assay were systematically re-analyzed by metallic screen for validation.

In addition to gold analyses, systematic multi-element analyses using ICP-MS and ICP-AES following a 4 acid near-complete digestion were completed on the drill core samples from the 2014 and 2017 to 2018 drilling programs.

Red Pine used the multi-element package GE ICM40B from SGS and the package ME-MS61 of Actlabs.

11.2.2 Physical Rock Property Measurements

Magnetic susceptibility and specific gravity ("SG") on the drill core were recorded by Red Pine. SG was determined by weighing a piece of core in air and in water (Figure 11-2) and by calculating SG using the formula:

$$SG = \frac{\text{Sample Weight in Air}}{\text{Sample Weight in Air} - \text{Sample Weight in Water}}$$



Figure 11-2: SG measurement at Red Pine's core logging facility

11.2.3 Red Pine Data Management

All the exploration data existing for the Minto Mine South Project, historic and collected during the 2014 to 2018 exploration programs, is amalgamated into three central Excel-based databases maintained internally by Red Pine. One database is for the drilling data, one database is for the trenching data and one database is for the prospecting sample data. Updates are made to the databases as new data, like geological drill logs or analytical results, becomes available or when Red Pine's internal validation procedures detect errors in the databases. Routine procedure for the validations of the CRMs inserted in every sample batches are also implemented into the drilling database of Red Pine. All the geological modelling and interpretations made for the project are using the data collected and validated in the main databases.

11.2.4 Quality Assurance and Quality Control Programs

Quality control (QC) measures are typically set in place to ensure the reliability and trustworthiness of exploration data. These measures include written field procedures and independent verifications of aspects such as drilling, surveying, sampling and assaying, data management, and database integrity. Appropriate documentation of QC measures and regular analysis of QC data are important as a safeguard for Project data and form the basis for the quality assurance (QA) program implemented during exploration.

Analytical control measures typically involve internal and external laboratory control measures implemented to monitor the precision and accuracy of the sampling, preparation, and assaying. They are also important to prevent sample mix-up and to monitor the voluntary or inadvertent contamination of samples. Assaying protocols typically involve regularly duplicating and replicating assays and inserting QC samples to monitor the reliability of assaying results delivered by the assaying laboratories. Check assaying is normally performed as an additional test of the reliability of assaying results. This generally involves re-assaying a set number of sample rejects and pulps at a secondary umpire laboratory.

This technical report concerns the exploration work completed by Red Pine between 2014 and 2018. However, as the drill holes completed in 2014 and 2015 never intersected the Minto Mine Shear zone, which is where the resource estimation was completed, the review focuses on the analytical results of the 2017 to 2018 drilling completed by Red Pine that was used for the Mineral Resource estimate.

Red Pine relied partly on the internal analytical QC measures implemented by SGS and Actlabs. In addition, Red Pine implemented external analytical control measures consisting of the use of control samples (blanks, CRM's and duplicate samples) inserted in all sample batches submitted for assaying. Umpire check assaying was not performed. The routine insertion rate was 1 standard per 20 samples and 1 blank per 25 samples sent. Additional blanks were also inserted after vein samples when many specks of visible gold were observed in the sampled vein.

Four certified gold reference materials sourced from commercial suppliers were used (Table 11-1). Silica sand provided by Actlabs was used as a field blank.

Table 11-1: Certified reference material and blank used by Red Pine during the 2017 – 2018 drilling programs

Standard	Certified Au (g/t)	1SD	2SD (Low)	2SD (High)	3SD (Low)	3SD (High)	Method Name*	Matrix	Mineralization Style
Oreas 209	1.580	0.040	1.490	1.660	1.440	1.710	FA-MS	A blend of Au-bearing Magdala ore from the Stawell Au Mine, west-central Victoria, Australia and barren tholeiitic basalt from Epping, Victoria, Australia	Orogenic lode Au
Oreas 210	5.490	0.150	5.180	5.790	5.030	5.940	FA-MS	Alkali olivine basalt and sulfide-bearing (pyrite, arsenopyrite) Au ore in quartz-sericite-carbonate schist assemblage	Orogenic lode Au
Oreas 218	0.531	0.017	0.497	0.565	0.480	0.582	FA-MS	A blend of Archean greenstone-hosted Wilber Lode primary ore from the Andy Well Au Mine and barren Cambrian greenstone sourced from a quarry north of Melbourne, Australia	Orogenic lode Au
Oreas 229	12.110	0.206	11.700	12.530	11.490	12.730	FA-MS	Archean greenstone-hosted Wilber Lode primary ore from the Andy Well Au Mine	Orogenic lode Au
Blank								Coarse silica sand provided by Actlabs - Expected grade of <0.005 g/t Au	

Note: *All standards are produced by Ore Research & Exploration Pty.

A summary of the total number of QA/QC samples inserted is presented in Table 11-2.

The exploration work completed by Red Pine was conducted using documented procedures and involved extensive verifications and validation of exploration data. During drilling, experienced Red Pine geologists implement industry standard measures designed to ensure the reliability and trustworthiness of the exploration data.

Red Pine monitored the analytical quality control data on a real-time basis. Failures of quality control samples were investigated, and appropriate actions taken, including potentially requesting re-assaying of certain batches of samples.

11.2.4.1 Review of Analytical QA/QC Data

Red Pine provided assay results for the external analytical QC samples for the period 2017 to 2018. The data was provided by Red Pine in the form of Excel™ spreadsheets. External QC samples comprised field blanks and CRM's.

Sample blanks and CRM's data were summarized on a series of control charts to highlight the performance of the control samples.

The analytical quality control data produced by Red Pine between 2017 through 2018 are summarized in Table 11-2 and presented in graphical format in Figure 11-3 through Figure 11-7.

Table 11-2: QA/QC Sample Count

Sample Type	Sample Count
Blanks	868
QC samples	1,020
Oreas 209	310
Oreas 210	384
Oreas 218	272
Oreas 229	54
Field Duplicates	0

Based on the review of the analytical quality control data, Golder concludes that the analytical results delivered by SGS Actlabs are sufficiently reliable to inform Mineral Resource estimation. In a retrospective analysis, some of the outliers in the QA/QC data were found to be caused by sample misidentification whereas others were related to analytical problems at the laboratory.

Typically, a CRM's failure was considered when the CRMs analyses was outside 3 standard deviations (SD) of the certified values. In those situations, Red Pine requested the laboratory to re-analyze the CRM and a certain number of core samples around the CRM that failed. In the few cases where multiple CRM failures were observed in one assay certificate or when many CRMs were outside the 2SD range of the certified value, Red Pine requested that the entire certificate to be re-tested.

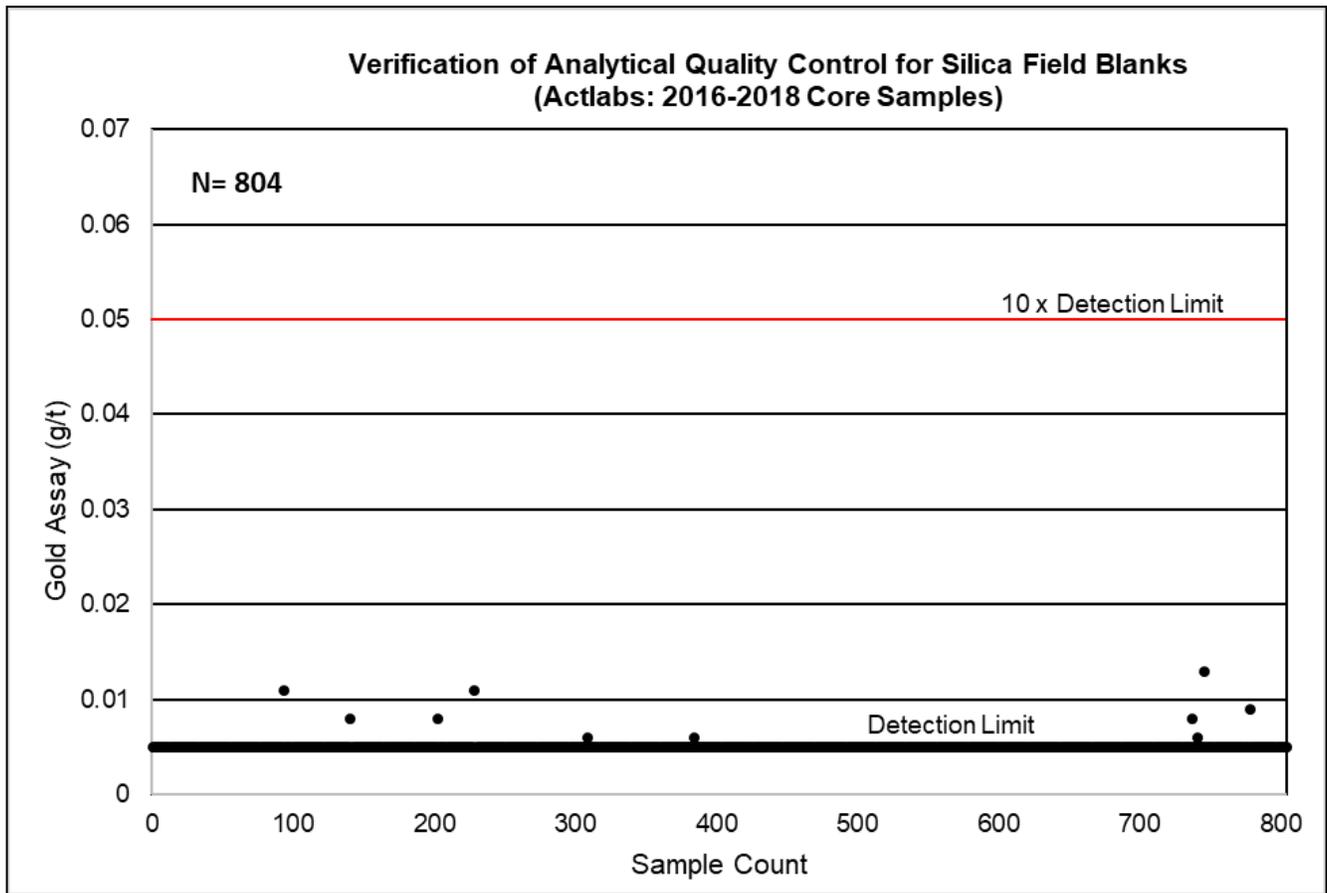


Figure 11-3: Control chart for silica field blanks by Actlabs between 2016 and 2018 on the Minto gold deposits

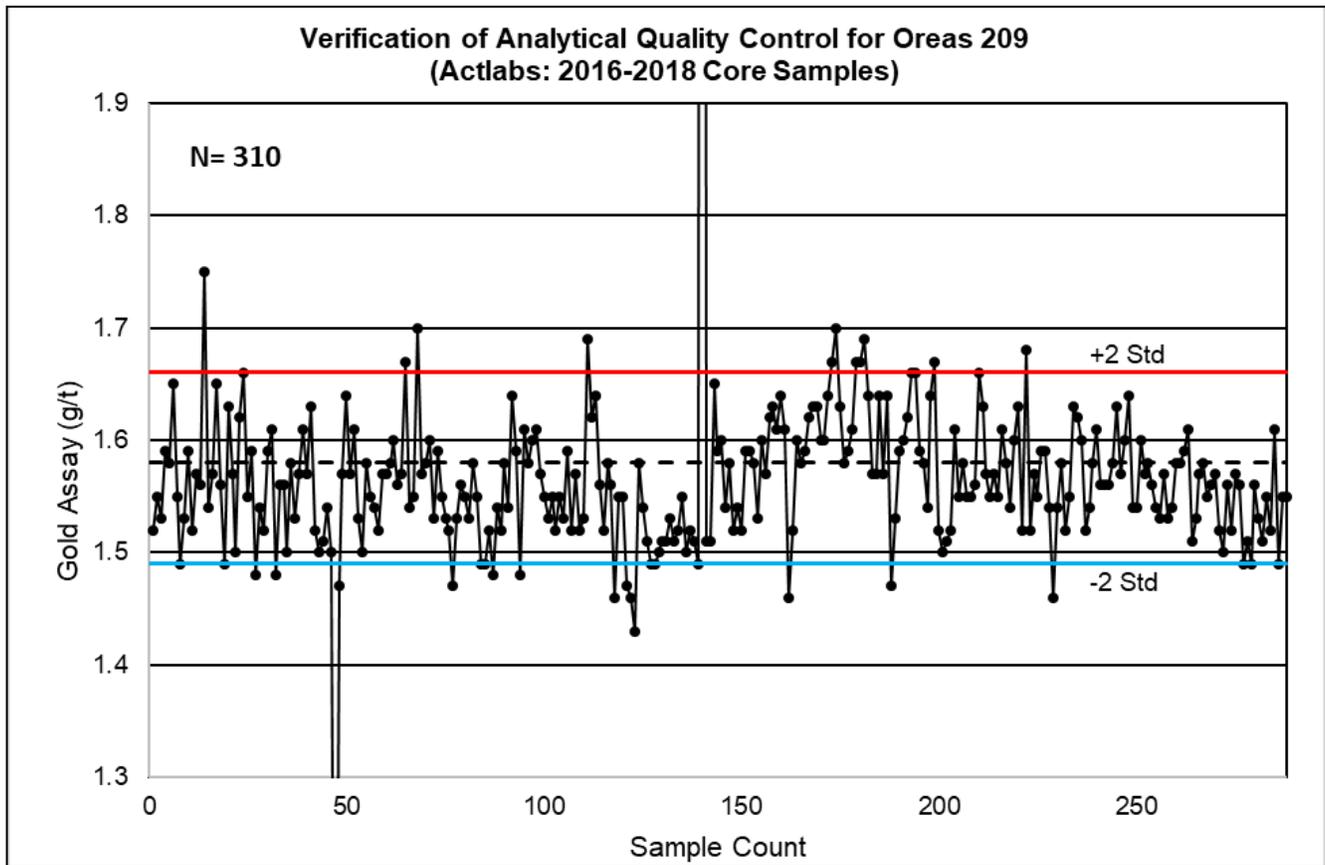


Figure 11-4: Control chart for CRM Oreas 209 by Actlabs between 2016 and 2018 on the Minto gold deposits

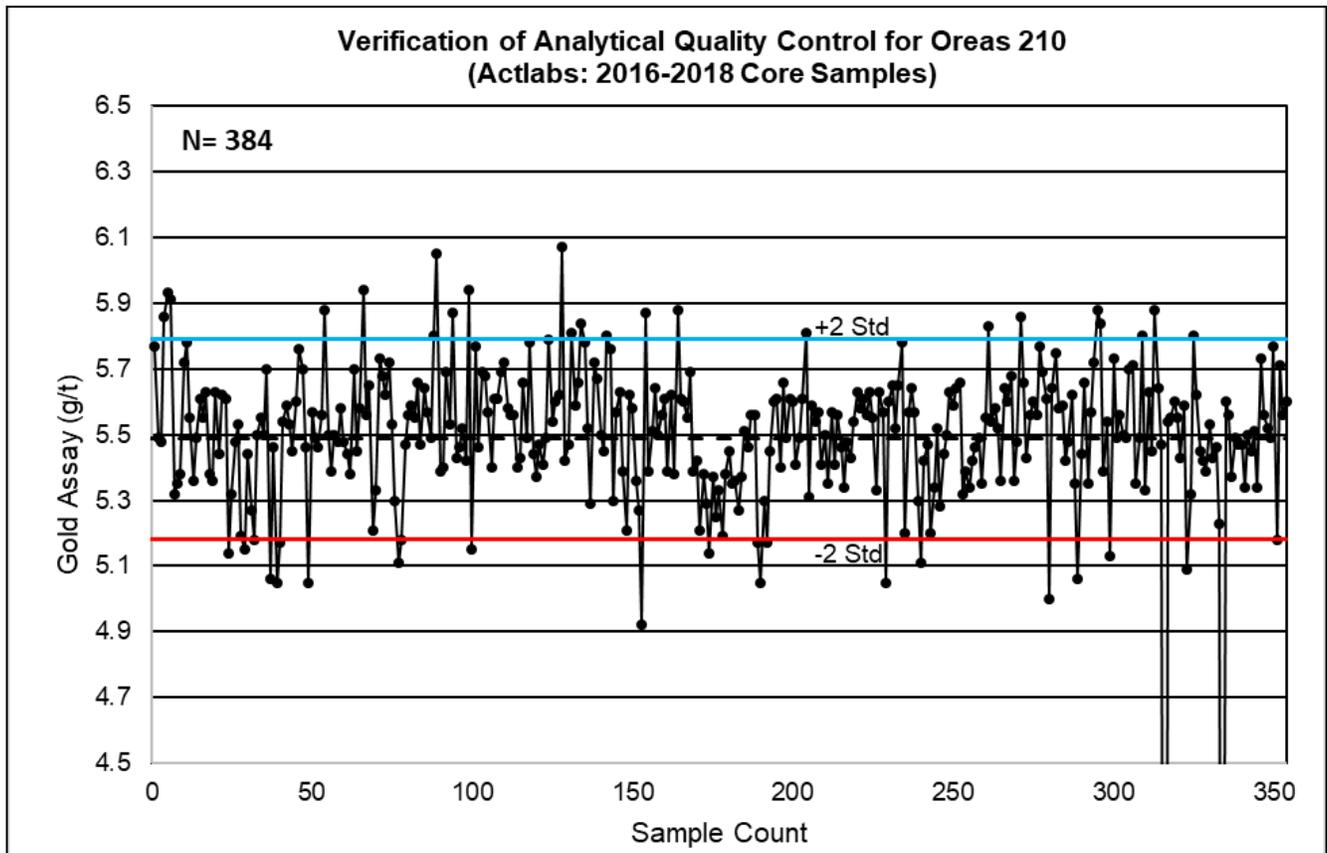


Figure 11-5: Control chart for CRM Oreas 210 by Actlabs between 2016 and 2018 on the Minto gold deposits

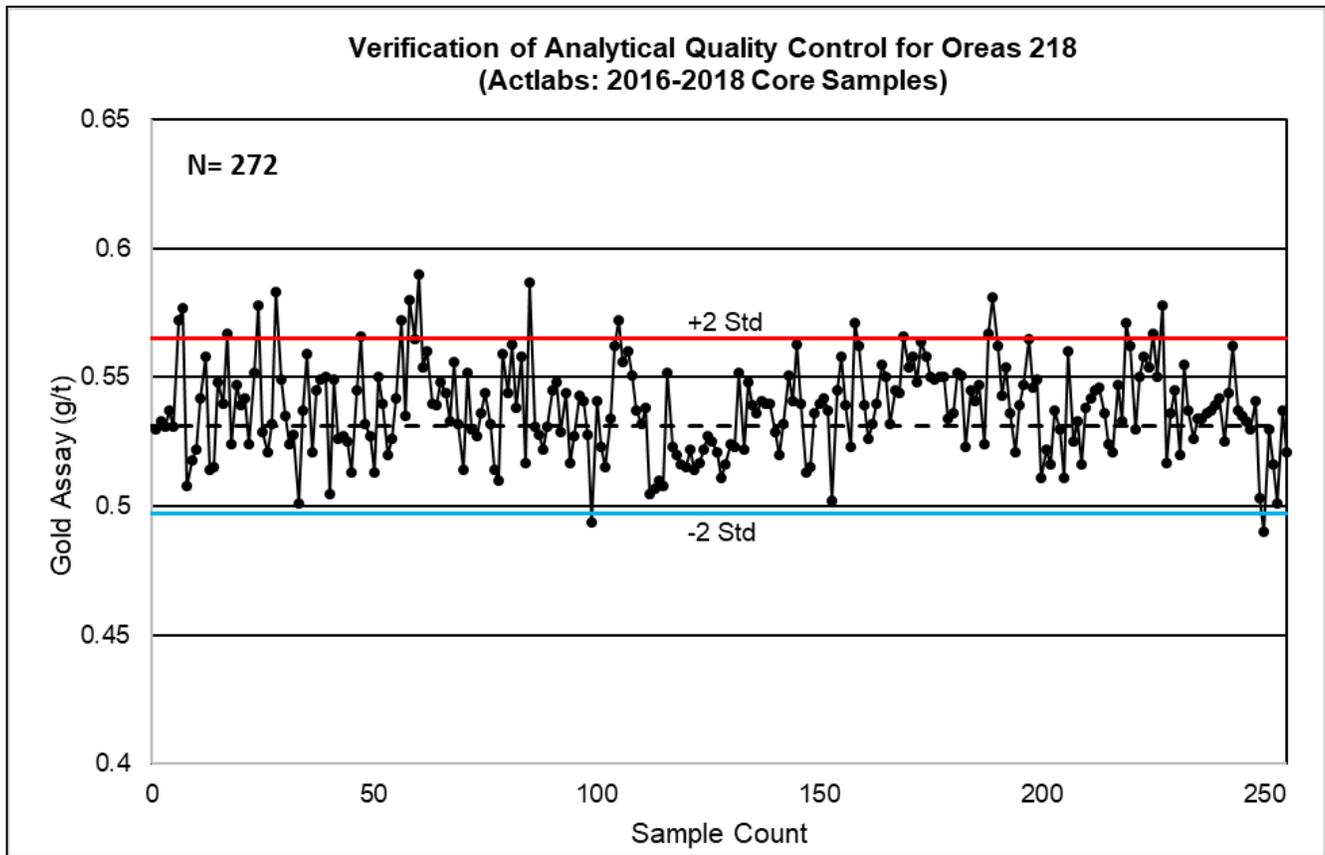


Figure 11-6: Control chart for CRM Oreas 218 by Actlabs between 2016 and 2018 on the Minto gold deposits

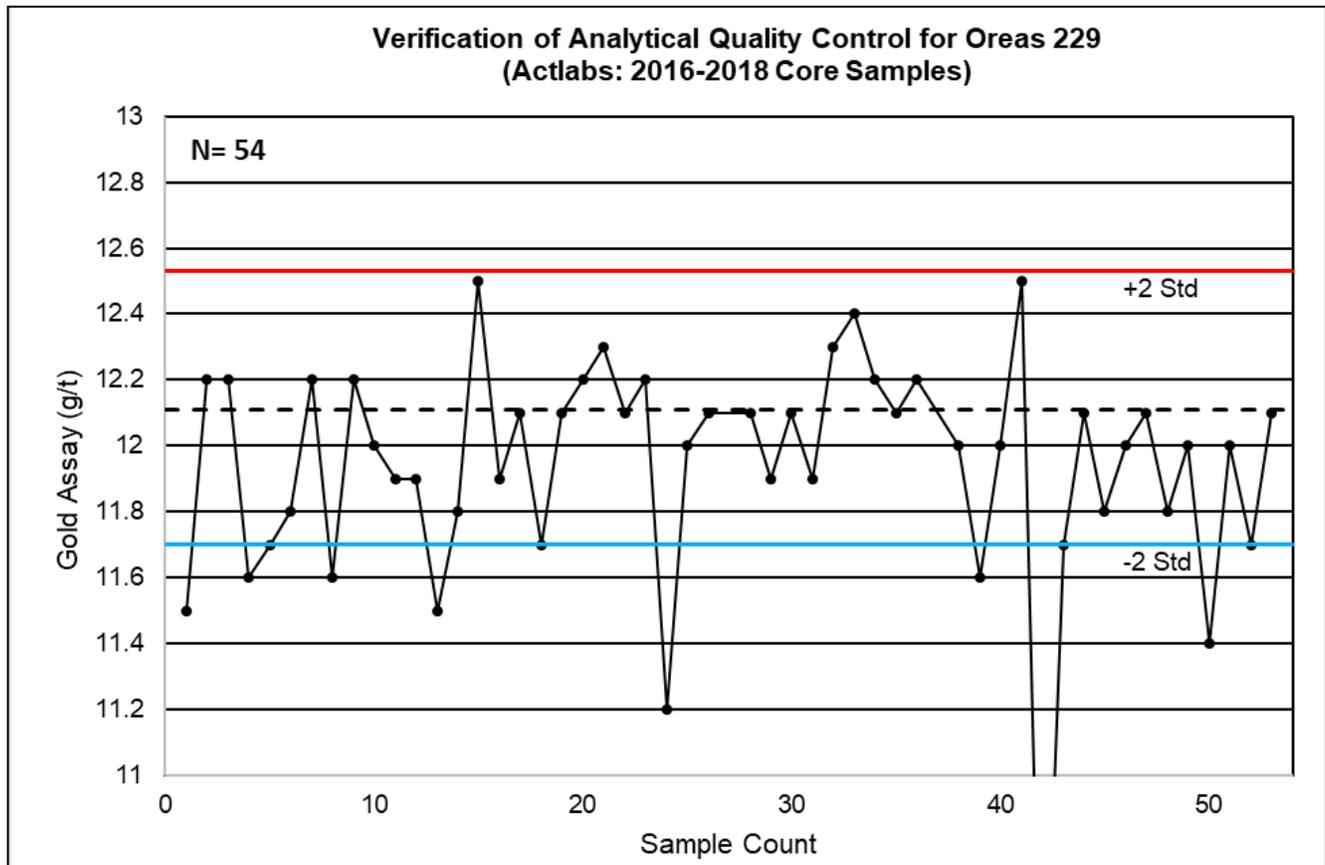


Figure 11-7: Control chart for CRM Oreas 229 by Actlabs between 2016 and 2018 on the Minto gold deposits

11.3 QP Comments on QA/QC

It is the QP's opinion that the sample preparation, security and analytical procedures used by Red Pine are consistent with industry standard practices and that the resulting data is suitable for the 2018 Mineral Resource Estimate. The Golder QP has no material concerns with the geological or analytical procedures used or the quality of the assay database.

In order to improve data security and integrity, Golder recommends storing drill hole and assay data in a relational database system rather than relying on Excel spreadsheets.

12.0 DATA VERIFICATION

Golder completed several data verification checks for the 2018 Minto South Mineral Resource Estimate. The verification process included a 2-day site visit to the project site to review geological procedures, chain of custody of drill core samples, drill collar inspections and the collection of independent samples for metal verification. Other data verification included a spot check comparison of Au assays from the drill hole database against original assay records (lab certificates) and a review of QA/QC performance for the 2017-2018 drill program. Golder has also completed additional data analysis and validation as outlined in Section 14.0.

12.1 Site Visit

A site visit to the Minto South Project site was carried out by Brian Thomas, P.Geo., QP for this Mineral Resource Estimate, from June 28 to June 29, 2018. The site visit included the following activities:

- review of site geology, mineralization and structural controls on mineralization
- review of drilling, logging, sampling, analytical, and QA/QC procedures
- review of bulk density measurement procedures
- review of site security and chain of custody of drill core from the drill to the assay lab
- confirmation of drill logs and independent assay verification on selected drill core samples
- inspection of drill hole collar locations

No significant issues were identified during the site visit and the geological data collection procedures and the chain of custody were all found to be consistent with industry standards and in accordance with Red Pine internal procedures.

12.1.1 Drill Collar Inspection

Three drill set-up locations were visited during the site visit. Golder surveyed drill hole collar locations with a handheld GPS at two of these locations to confirm the collar survey data provided by Red Pine. Figure 12-1 to Figure 12-2 represent the collar locations for drill hole SD-17-131 and the drill set-up that was active at the time of the site visit.



Figure 12-1: Drill hole SD-17-131 visited during site visit



Figure 12-2: Drill hole SD-17-131 visited during site visit, with active Rouillier Drilling rig

Golder compared the collar coordinates for drill holes SD-17-131 and SD-18-177 against the Red Pine collar survey data and found the coordinates to be accurate within the 3 m accuracy of the handheld GPS. Comparison of collar coordinates are summarized in Table 12-1.

Table 12-1: Comparison of Drill Hole Collar Coordinates

Hole ID	Easting Golder (UTM)	Easting Red Pine (UTM)	Difference Easting (m)	Northing Golder (UTM)	Northing Red Pine (UTM)	Difference Northing (m)
SD-17-131	668,429.5	668,426.4	3.1	5,315,288.7	5,315,290.2	-1.5
SD-18-177	668,411.7	668,413.0	-1.3	5,315,214.4	5,315,218.0	-3.6

12.1.2 Independent Logging and Sampling

The Golder QP selected intervals from six drill holes from the 2017-2018 drill program for validation logging and independent sample analysis as outlined in Table 12-2. Figure 12-3 and Figure 12-4 provide examples of verification intervals from drill holes SD-17-174 and SD-18-195, respectively.



Figure 12-3: Drill hole SD-17-174 core logged and sampled by QP



Figure 12-4: Drill hole SD-18-195 core logged and sampled by QP

Six quarter-sawn HQ core samples and two control samples (2 CRM standards) were submitted to ALS Chemex for gold fire assay analysis from a 50 g pulp and AA finish (Au-AA24). Two samples having assays greater than 10 g/t were re-assayed using gravimetric finish (Au-GRA22). These analytical procedures were chosen for the purpose of general verification of gold mineralization on the Minto property and are not consistent with analytical procedures used by Red Pine. It should be noted that the 2017-2018 Red Pine assay data is based on a larger volume of core (half-sawn HQ and NQ core) and they have chosen screen metallic analytical processes for vein sample analysis, as outlined in section 11, which is consistent with industry standard practice for nuggety gold distribution.

Table 12-2 and Figure 12-5 summarize the assay verification results between Golder and Red Pine samples. There is good agreement between most samples with the exception of two of the high-grade samples from drill holes SD-17-117 and SD-17-131. Golder believes that these differences may be due to the uneven distribution of gold within those sample intervals, differences in sample volumes or possibly the result of differences in analytical procedures.

Table 12-2: Comparison of Assay Verification Results

Hole ID	From (m)	To (m)	Sample No. Golder	Au Golder (ppm)	Sample No. Red Pine	Au Red Pine (ppm)
SD-17-117	127.00	128.00	P449080	9.88	498250	40.20
SD-17-73	91.75	92.87	P449081	14.95	344836	14.10
SD-17-174	195.27	196.18	P449082	4.39	543582	3.29
SD-17-131	244.21	245.30	P449083	1.75	524441	35.10
SD-18-195	134.98	135.83	P449084	9.33	543556	12.30
SD-18-188	235.94	236.90	P449085	2.26	524709	5.34
Oreas 210	-	-	P449086	5.56	Oreas 210	5.49
Oreas 229	-	-	P449087	12.50	Oreas 229	12.20

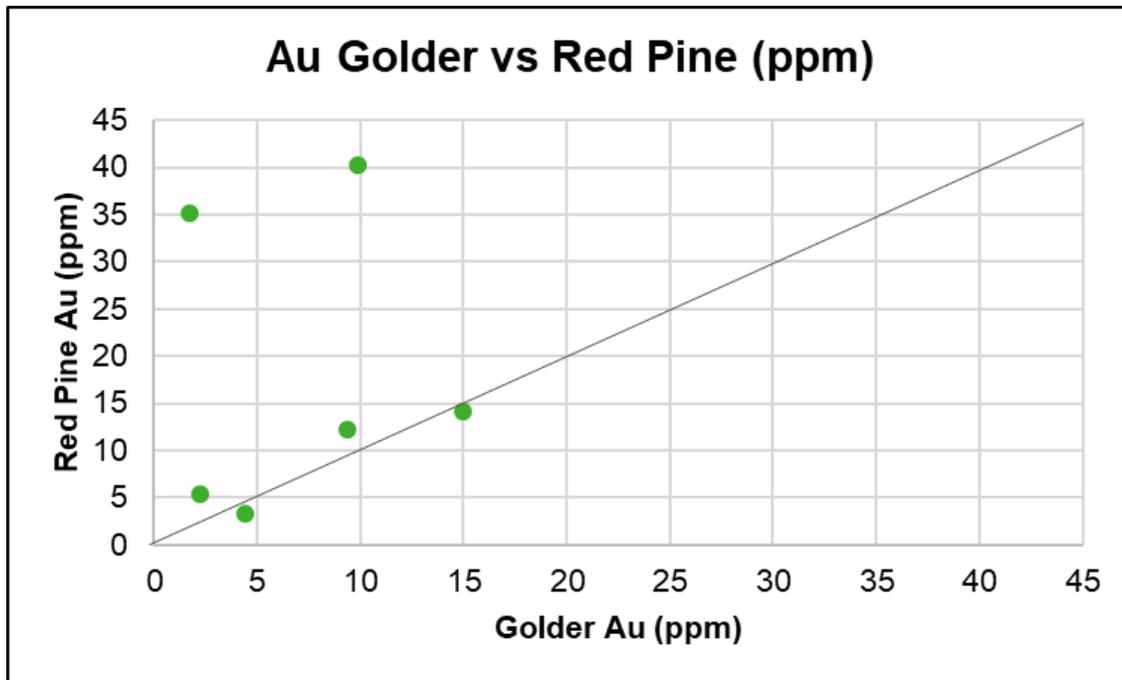


Figure 12-5: XY Scatterplot Comparison of Verification Samples

12.2 Assay Database Verification

The Golder QP completed a verification check of 161 Au assays as compared to original laboratory certificates. The verification check focused on representative areas within the modelled mineral zones, focusing on samples having a grade greater than 1.0 g/t. Golder did not identify any material issues during this verification check and all assays were found to match the laboratory certificates available. Assay certificates were not available for 15 historical samples so these samples could not be verified. A summary of the assay verification is listed in Table 12-3.

Table 12-3: Summary of Assay Comparisons to original Certificates

No. Samples	No. Samples Matching	No. Samples Not Matching	No. Samples Missing Certificate
161	146	0	15

Since some of the historical assays could not be verified, Golder recommends that 2 of the historical drill holes, containing high-grade assays, greater than 10 g/t (drill holes 07-385, S183) be twinned with new drill holes as a verification of historical data.

12.3 QA/QC Review

Red Pine has a QA/QC process in place to monitor the primary assay laboratories for potential analytical issues, as previously described in Section 11.0. Red Pine actively monitored the assay results throughout the 2017-2018 drill program and summarized the QA/QC results in graphs that were provided to Golder for review. Several failures from the CRM's were documented resulting in the re-assay of select samples. Most certified reference materials performed as expected within tolerances of three standard deviations (SD) of the mean grade. Golder is satisfied that the QA/QC process is performing as designed and that Red Pine is taking appropriate actions to ensure the quality of the data. Golder completed a check analysis of the QA/QC data as a verification of Red Pine results and is satisfied that the process is being actively monitored and is performing as designed. No analytical bias was evident from the review.

Golder recommends that Red Pine submits samples to a secondary laboratory for Au and SG check analysis to ensure that there isn't any laboratory bias for gold analysis and to confirm the accuracy of their internal SG measurements.

12.4 Conclusions

On completion of the data verification process, it is the Golder QP's opinion that the geological data collection and QA/QC procedures used by Red Pine are consistent with standard industry practices and that the geological database is of suitable quality to support the 2018 Mineral Resource Estimate, as reported in Section 14.0.

13.0 MINERAL PROCESSING AND METALLURGICAL TESTING

Red Pine has not completed any mineral processing and metallurgical testing.

14.0 MINERAL RESOURCE ESTIMATES

The Mineral Resource estimates and other information in this section are forward-looking information. The material factors that could cause actual results to differ materially from the forward-looking information include any significant differences from one or more of the following material factors or assumptions that were applied in drawing the conclusions or making the estimates, forecasts or projections set forth in this Item, including: **assumptions regarding continuity of mineralization and reasonable prospects for economic extraction, interpretation of controlling structural environment and mineral domain models, selection of grade interpolation method, sample search and estimation parameters used for grade interpolation, treatment of high-grade outlier sample data.**

14.1 Introduction

The 2018 Mineral Resource Estimate for the Minto South Project was completed by Mr. Brian Thomas, P.Geo., Senior Resource Geologist. The effective date of this resource estimate is November 7, 2018. A site visit was conducted on June 28 and 29, 2018, to inspect site conditions, review geological data collection and QA/QC procedures, visit drill collar locations, and complete verification sampling of core.

The Mineral Resource Estimate is based upon data provided by Red Pine from surface diamond drill programs, completed up to October 2018. All data received was provided in UTM coordinates and no data translations were completed for this resource estimate.

The Minto South mineralization was modelled in two zones, consisting of a broad Shear Zone and a Vein Zone. A three-dimensional (3D) block model was constructed for estimating gold (Au) grades based on Inverse Distance Cubed (ID³) interpolation. High-grade, outlier samples were controlled by top-cutting assay values to 35 g/t along with a maximum distance restriction equal to the first search dimension of 60 m along strike / plunge and 40 m down dip. A mean bulk density value of 2.77 t/m³ was assigned to the full model for calculating tonnage. Areas of historical mine development from the Minto Mine were depleted from the block model.

The software used for the 2018 Minto South Resource Estimate was Datamine Studio RM (Datamine).

14.2 Drill hole data

Red Pine provided (in Microsoft Excel files) diamond drill hole data consisting of geological descriptions, gold assays and density measurements. These files were imported into Datamine and verified as described below.

14.2.1 Diamond Drill Holes

The drill hole database consisting of 2,253 drill holes totaling 181,792 m of core and 74,572 gold assays was made available for modelling on October 2, 2018. This database covers a volume that includes the Jubilee deposit as well as the Minto South deposit. The Jubilee deposit is not included in this Resource Estimate.

For the purposes of modelling, a subset of the full data was selected between 667,420 m and 670,145 m Easting, 5,314,800 m and 5,315,900 m Northing, and -475 m and 380 m Elevation. Within this volume the database consists of 276 drill holes totaling 49,627 m of core and 18,560 gold assays.

The database was analyzed for interval errors and out of range values and was reviewed in 3D space to validate the hole locations and de-surveyed hole traces. A minor number of interval issues were identified and resolved, several down hole surveys were updated, and one collar location was corrected. The final date for the drill hole database was November 2, 2018.

The drill hole data is supported by a QA/QC process as described previously in Section 11.0. Golder has also completed independent sample verification and check logging as summarized in Section 12.0 and has not identified any material flaws in the drill hole data or data collection procedures. Data collection procedures were found to be consistent with current industry practice. The drill hole database has been determined by Golder to be of suitable quality to support the 2018 resource estimate.

14.2.2 Density Measurements

A total of 292 density measurements (from 82 drill holes) were provided from onsite drill core measurements in the Minto South volume of interest. Of these only samples from 2 drill holes pre-date 2017. The distribution of samples used for density measurement relative to the Shear Zone mineralization envelope was reviewed by the QP and found to be reasonably representative of the full deposit.

Measurements were taken from 10 cm samples from NQ and HQ sized core using the weight in air versus the weight in water method (Archimedes) based on the following formula:

$$SG = \frac{\text{Sample Weight in Air}}{\text{Sample Weight in Air} - \text{Sample Weight in Water}}$$

A full description of the density measurement process is provided in Section 11.0.

The (length-weighted) histogram of density (SG) measurements is shown in Figure 14-1. A mean density value of 2.77 t/m³ was used for tonnage calculations.

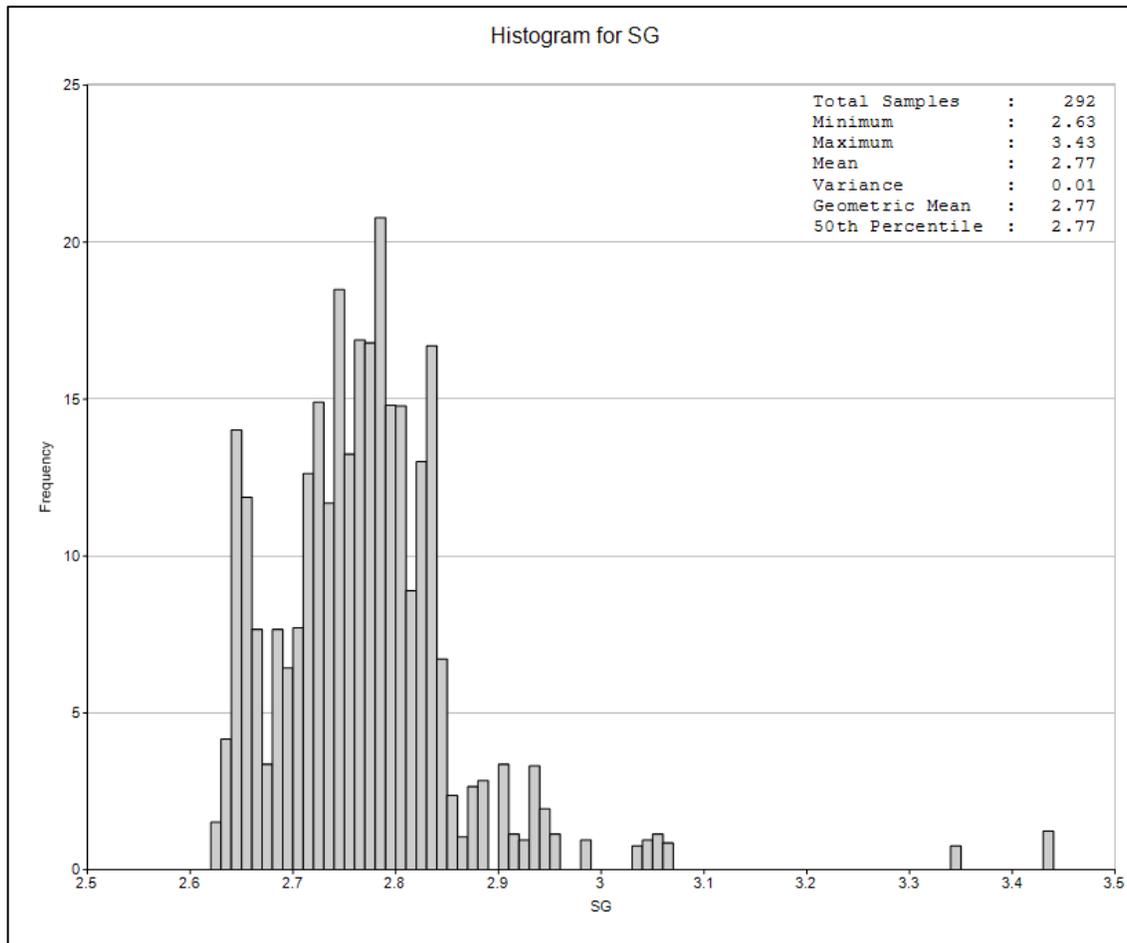


Figure 14-1: Histogram of density measurements

14.3 Mineralization/Geology Domaining

Red Pine provided (in DXF files) two mineralization envelopes consisting of a broad Shear Zone and a Vein Zone and an envelope of a Diabase Dyke cross-cutting the mineralization. The Shear Zone and a Vein Zone envelopes were created by Leapfrog software (Leapfrog). The Shear Zone domain was created using the geological boundaries of the Minto Mine South Shear Zone defined as a geological domain with a continuous penetrative tectonic foliation. The Vein Domain was created by constraining within the Minto Mine Shear zone a geological domain where quartz veining prevails and where most of the grade of the intersection is contained. The vein domain typically consisted of one coherent shear vein although in some drill holes the vein splayed in parallel shear veins separated by narrow domains of host rocks. A minimum width of 2 m was employed for the vein domain to partially reflect the potential minimum mining unit (MMU). The diabase dyke envelope was created by Leapfrog using lithology Diabase Minto as a control. The three envelopes were imported into Datamine and verified as solids (i.e. they can be used to select drill hole data and create blocks). Golder reviewed these domain boundaries and confirmed that they were representative of the Minto mineralization.

The mineralization envelopes were then trimmed to create a boundary perimeter that was generally 40 m from the nearest drill holes, apart from areas closer to the topographic surface where it is reduced to 20 m (see Figure 14-2).

The Shear Zone and Vein Zone envelopes were created independently but based on the controls used the Shear Zone should fully enclose the Vein Zone. Golder noted that in some instances the Vein Zone extends slightly outside the Shear Zone, but the volumes involved are very small and not material. Golder also noted that in most instances vertices on the envelope meshes were “snapped” to drill hole sample end-points. In the cases where they were not, Golder did not see any material issues that would result from “non-snapped” vertices.

For the purposes of modelling, the Vein Zone supersedes the Shear Zone, and the Diabase Dyke supersedes both mineralization zones.

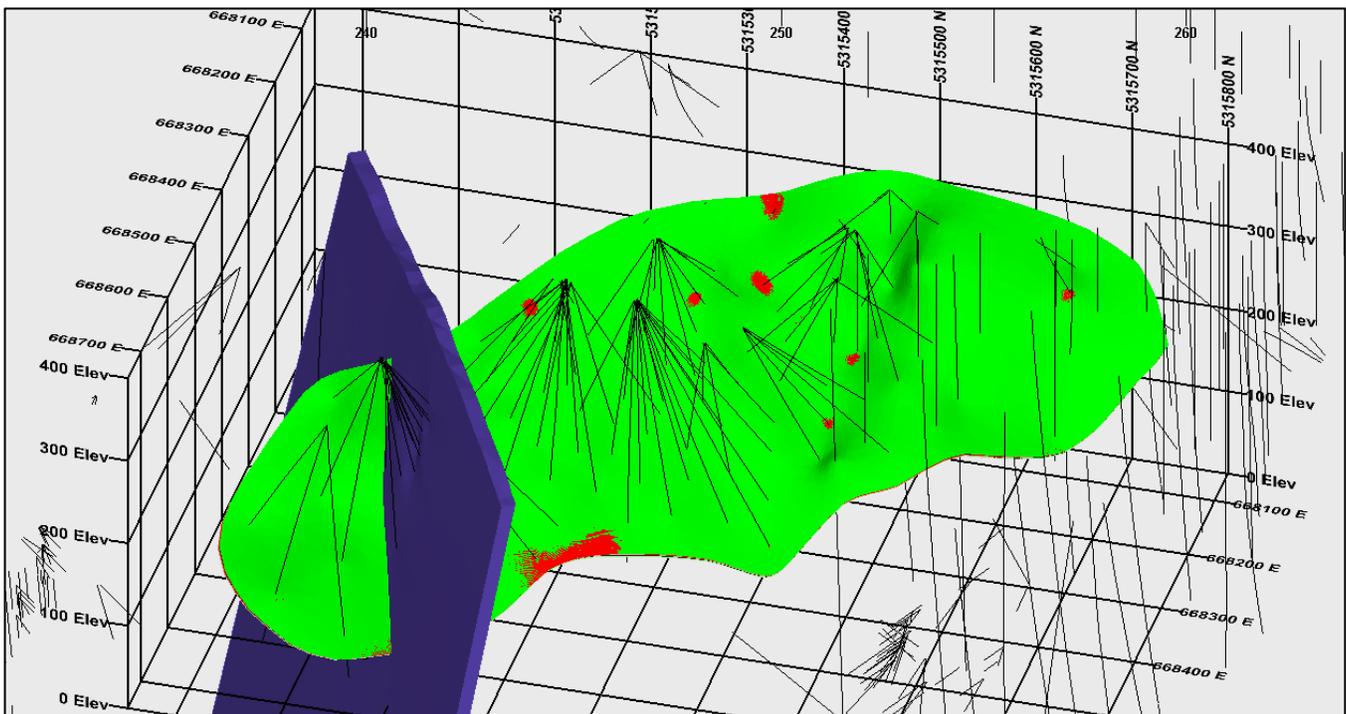


Figure 14-2: Shear Zone (green), Vein Zone (red) and Diabase Dyke (blue) envelopes

14.4 Exploratory Data Analysis (EDA)

Analysis was conducted on the drill hole data selected within each mineralization envelope to determine the nature of the Au grade distribution and the identification of high-grade outlier samples. Golder used a combination of descriptive statistics, histograms, probability plots and XY scatter plots to analyze the grade population data. The findings of the EDA analysis were used to help define modelling procedures and parameters used in the resource estimate as further described in this section.

Table 14-1 provides a summary of the Au statistics for the raw sample populations captured from within each mineralization envelope (domain).

Table 14-1: Au statistics of raw data captured within the mineralization envelopes

Domain	No. of Holes	No. of Intervals	Total Length of Samples (m)	No. Un-assayed Intervals	No. of Samples	Minimum (g/t)	Maximum (g/t)	Mean (g/t)	Std Deviation (g/t)	Coefficient of Variation (g/t)
Shear (Zone 1)	108	721	840	35	686	0.00	13.40	0.13	0.54	4.32
Vein (Zone 2)	110	494	444	19	475	0.00	51.00	2.46	6.30	2.56

Notes:

The total sample length includes un-assayed sample intervals.
Sample statistics weighted by length.

The un-assayed sample intervals were examined, and all were concluded to be barren material and the Au grade was set to zero, except for intervals in two drill holes (SD-17-80 and SD-17-83) which are known to have passed through cavities from previous underground mining. Table 14-2 provides a summary of the Au statistics for the verified sample populations captured from within each mineralization envelope (domain).

Table 14-2: Au statistics of verified data captured within the mineralization envelopes

Domain	No. of Holes	No. of Intervals	Total Length of Samples (m)	No. Un-assayed Intervals	No. of Samples	Minimum (g/t)	Maximum (g/t)	Mean (g/t)	Std Deviation (g/t)	Coefficient of Variation (g/t)
Shear (Zone 1)	108	721	840	0	721	0.00	13.40	0.10	0.49	4.82
Vein (Zone 2)	110	494	444	2	492	0.00	51.00	2.33	6.15	2.64

Note: Sample statistics weighted by length.

Figure 14-3 and Figure 14-4 show the Au histograms for verified sample data captured within the Shear (Zone 1) and Vein (Zone 2) mineralization respectively.

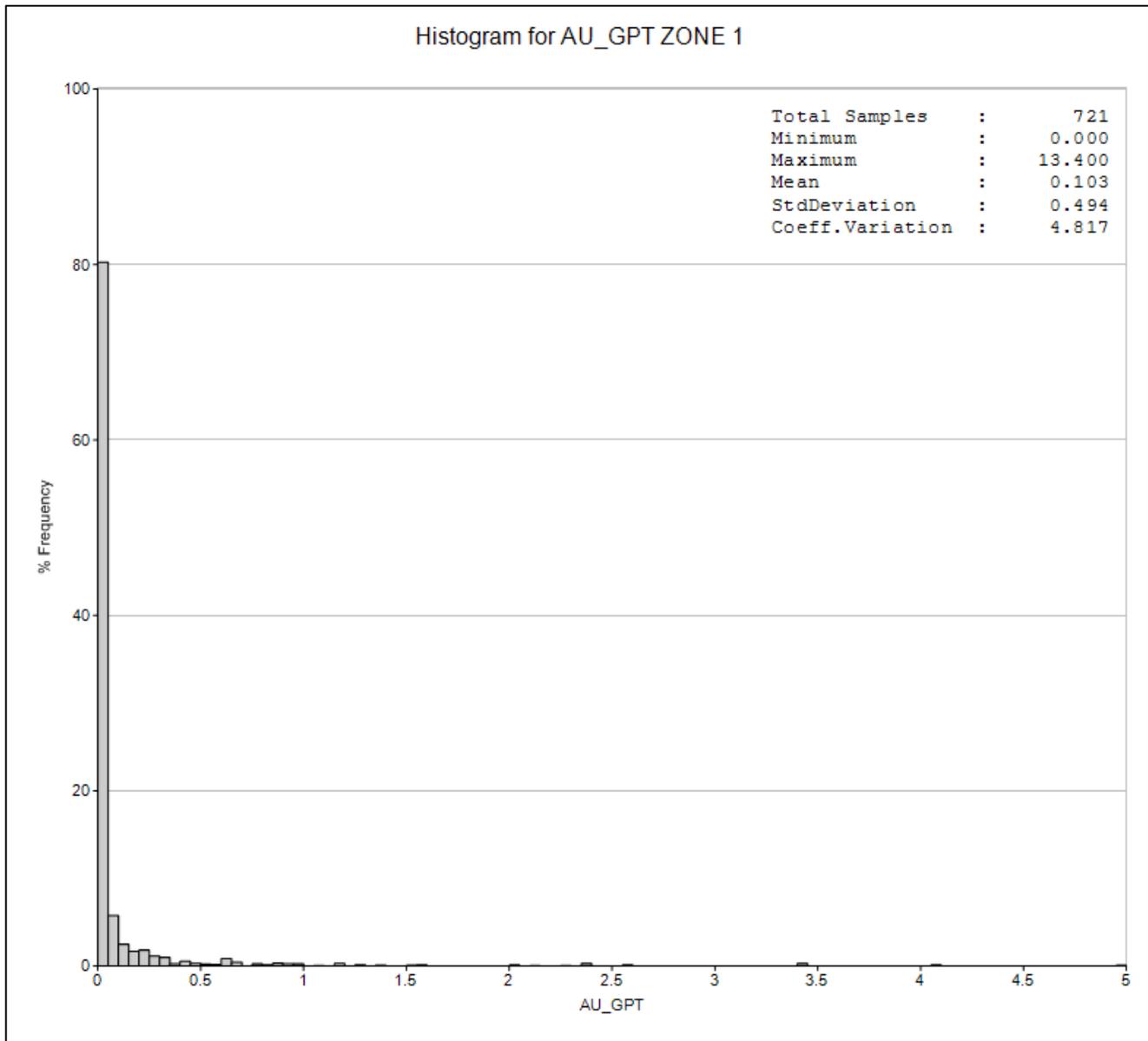


Figure 14-3: Au histogram of verified sample data within the Shear (Zone 1)

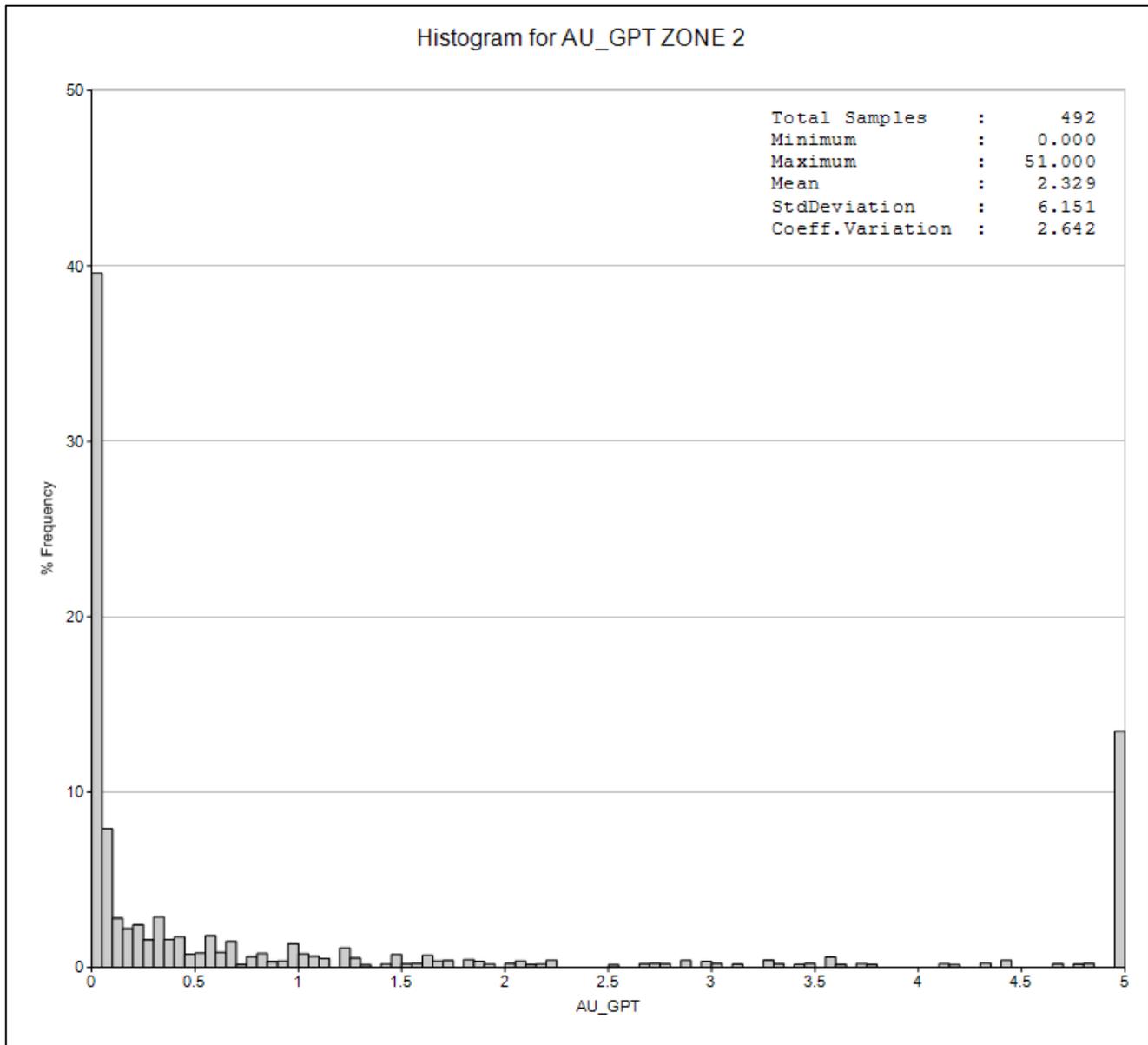


Figure 14-4: Au histogram of verified sample data within the Vein (Zone 2)

Figure 14-5 shows the cumulative probability distribution for the Vein (Zone 2) mineralization. Figure 14-6 shows the scatterplot of length versus Au grade for the Vein (Zone 2) mineralization. The red line represents the capping level chosen to top-cut Au grades.

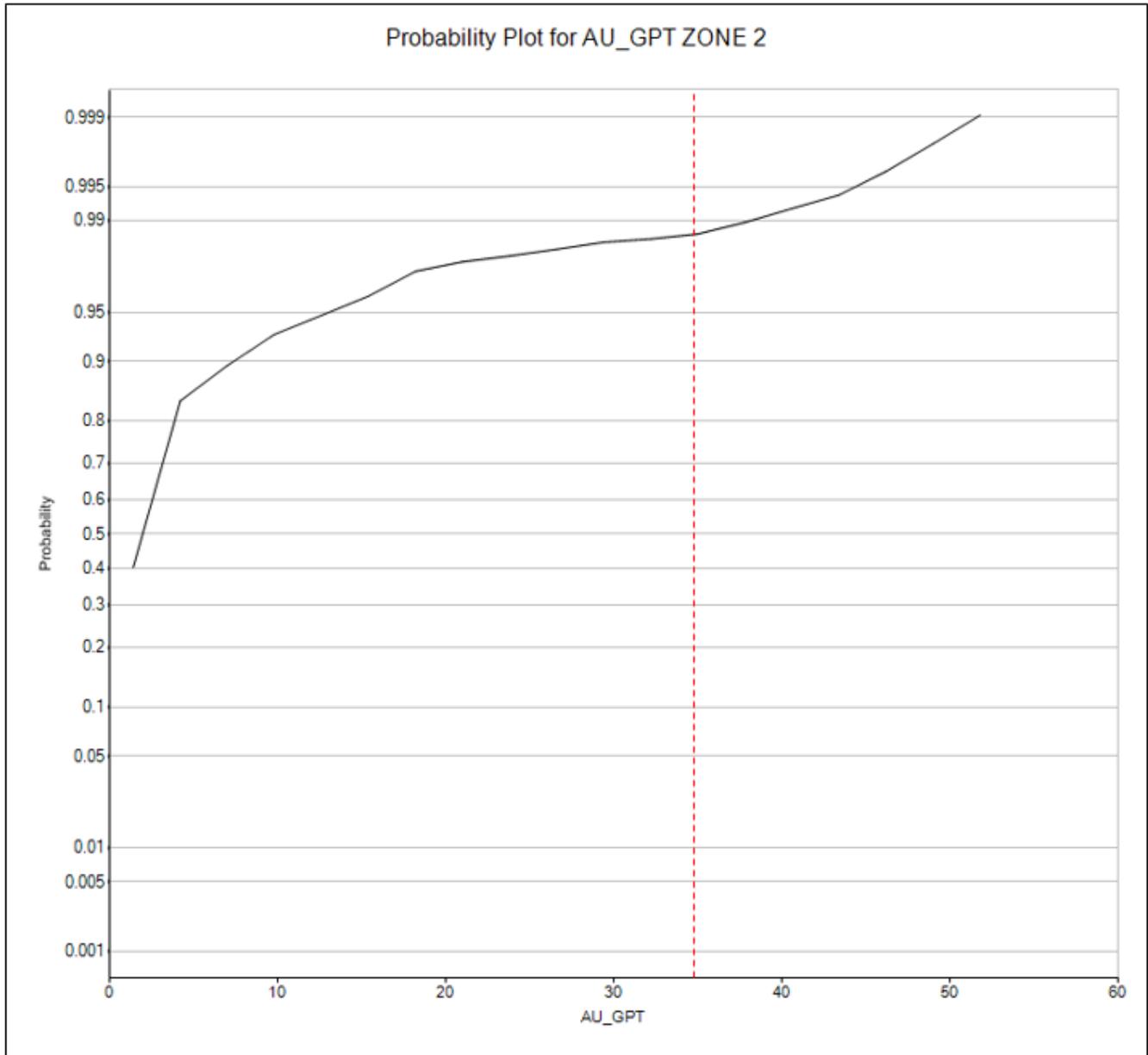


Figure 14-5: Au cumulative probability distribution of the Vein (Zone 2)

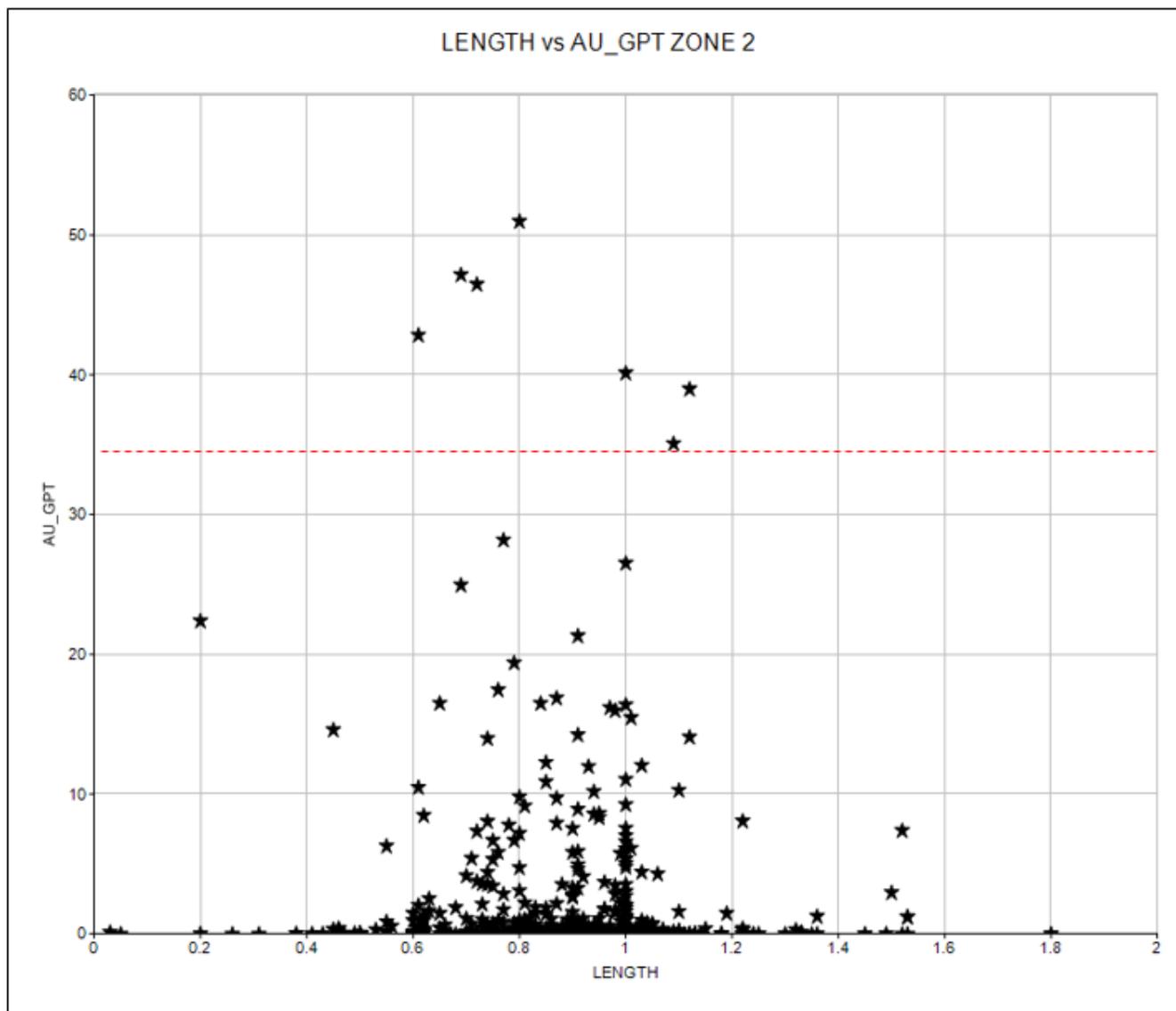


Figure 14-6: Scatterplot of length versus Au grade for the Vein (Zone 2)

The Au population in the Shear (Zone 1) has a mean value of 0.13 g/t and standard deviation of 0.54. The high standard deviation is attributed to a single sample at 13.4 g/t. Almost 76% of samples were below 0.05 g/t, with only one sample above 5.0 g/t. It was recognized that the single high-grade sample was probably part of a secondary vein running parallel to the primary vein and potentially connected to it at some point, but there were insufficient drill holes in the area to domain it separately. Its inclusion in the Shear (Zone 1) was not considered material to the overall resource estimation.

The Au population in the Vein (Zone 2) has a mean value of 2.46 g/t and standard deviation of 6.30. 36% of samples were below 0.05 g/t and 14% above 5.0 g/t. The large percentage of sub 0.05 g/t material was recognized as a natural consequence of producing a smooth continuous mineralization envelope.

The cumulative probability distribution for the Vein (Zone 2) mineralization showed an inflection point around 35 g/t. Only 7 samples exceed 35 g/t, ranging from 35.1 to 51 g/t with sample lengths ranging from 0.61 to 1.12 m.

14.5 Compositing and Capping

Compositing of samples is a technique used to give each sample a relatively equal length to reduce the potential for estimation bias due to uneven sample lengths. The sample data was found to have a wide range of sample lengths due to variable widths of the Vein. A histogram of sample length was generated to determine the most common sample length used (mode) as illustrated in Figure 14-7.

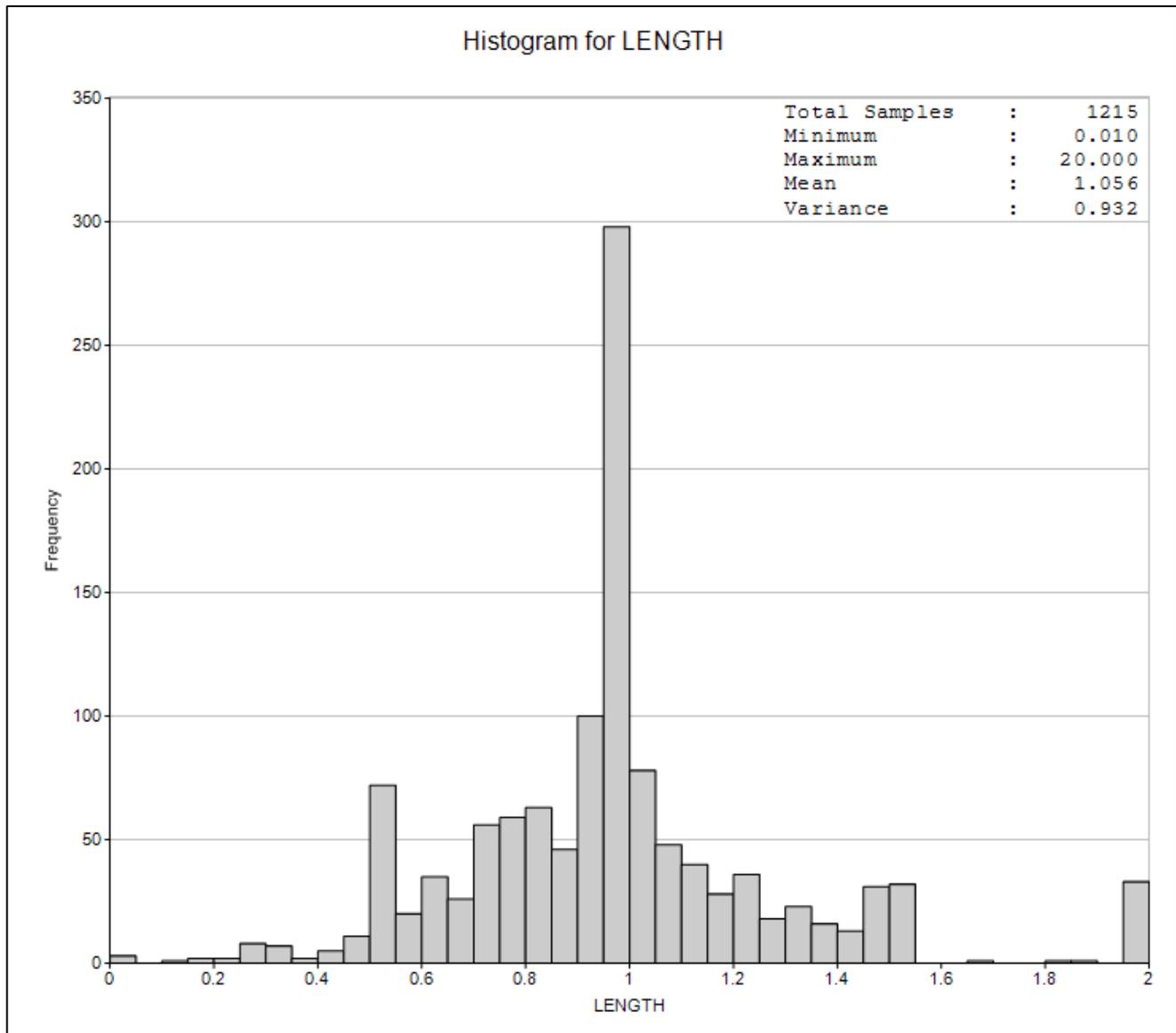


Figure 14-7: Histogram of raw sample length (m) in the combined Shear and Vein Zones

Samples captured within the mineralization envelopes were composited to a mean length of 1.0 m based on the observed modal distribution of sample lengths. An option to use a variable composite length was chosen to prevent the potential loss of sample data and reduce the potential for grade bias due the possible creation of short, and potentially high grade, composites that are generally formed along the contacts when using a fixed length. Composites were created independently for each mineralization envelope with no overlaps along boundaries. A histogram of composite length was used to confirm that the compositing was completed as expected. It displays a normal distribution around the 1.0 m composite length as shown in Figure 14-8.

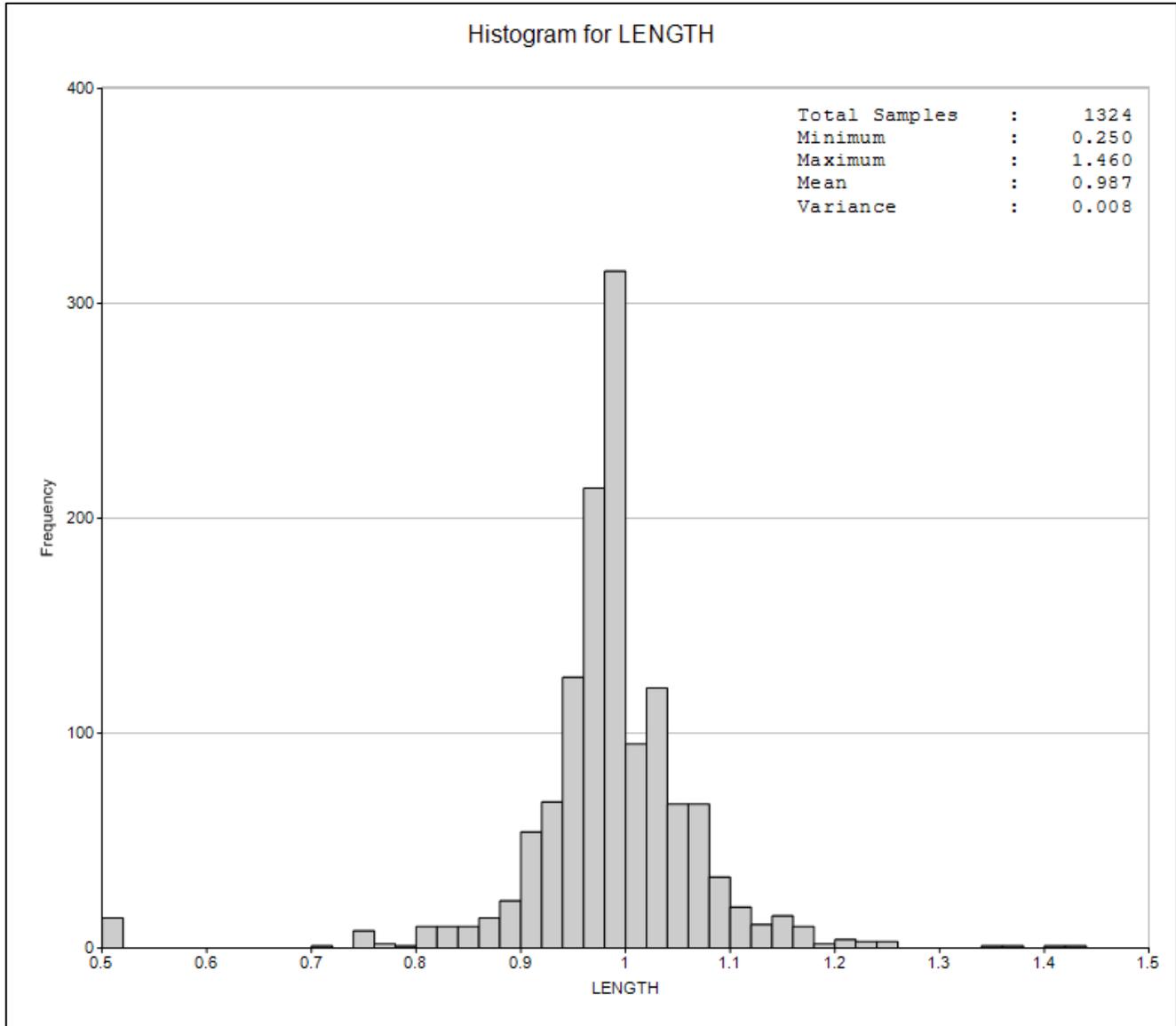


Figure 14-8: Histogram of composite length (m) in the combined Shear and Vein Zones

The composite samples were validated statistically to ensure there was no loss of data or material change to the mean grade of each sample population. Figure 14-9 and Figure 14-10 show the Au histograms for composites within the Shear (Zone 1) and Vein (Zone 2) mineralization respectively.

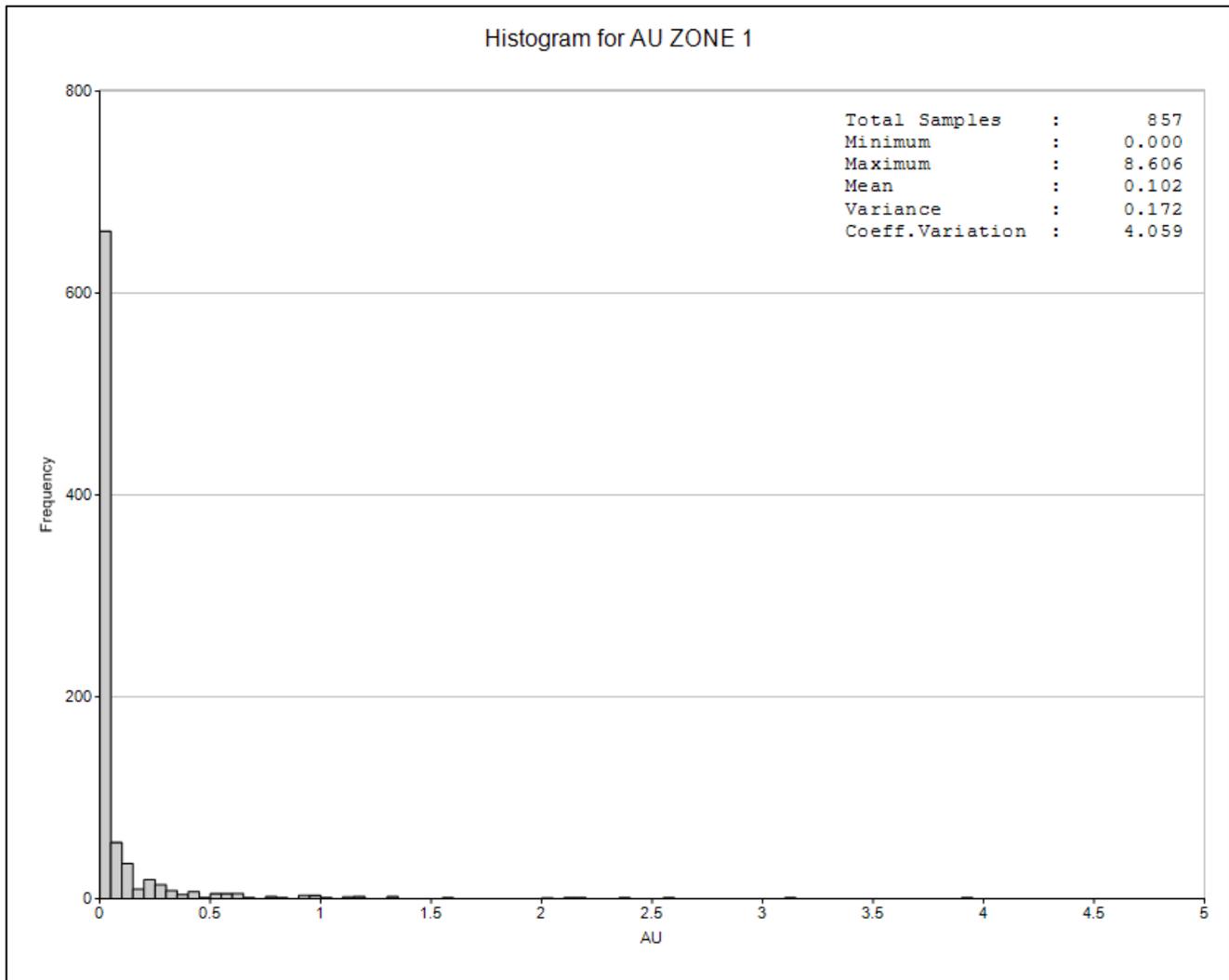


Figure 14-9: Au histogram of composites within the Shear (Zone 1)

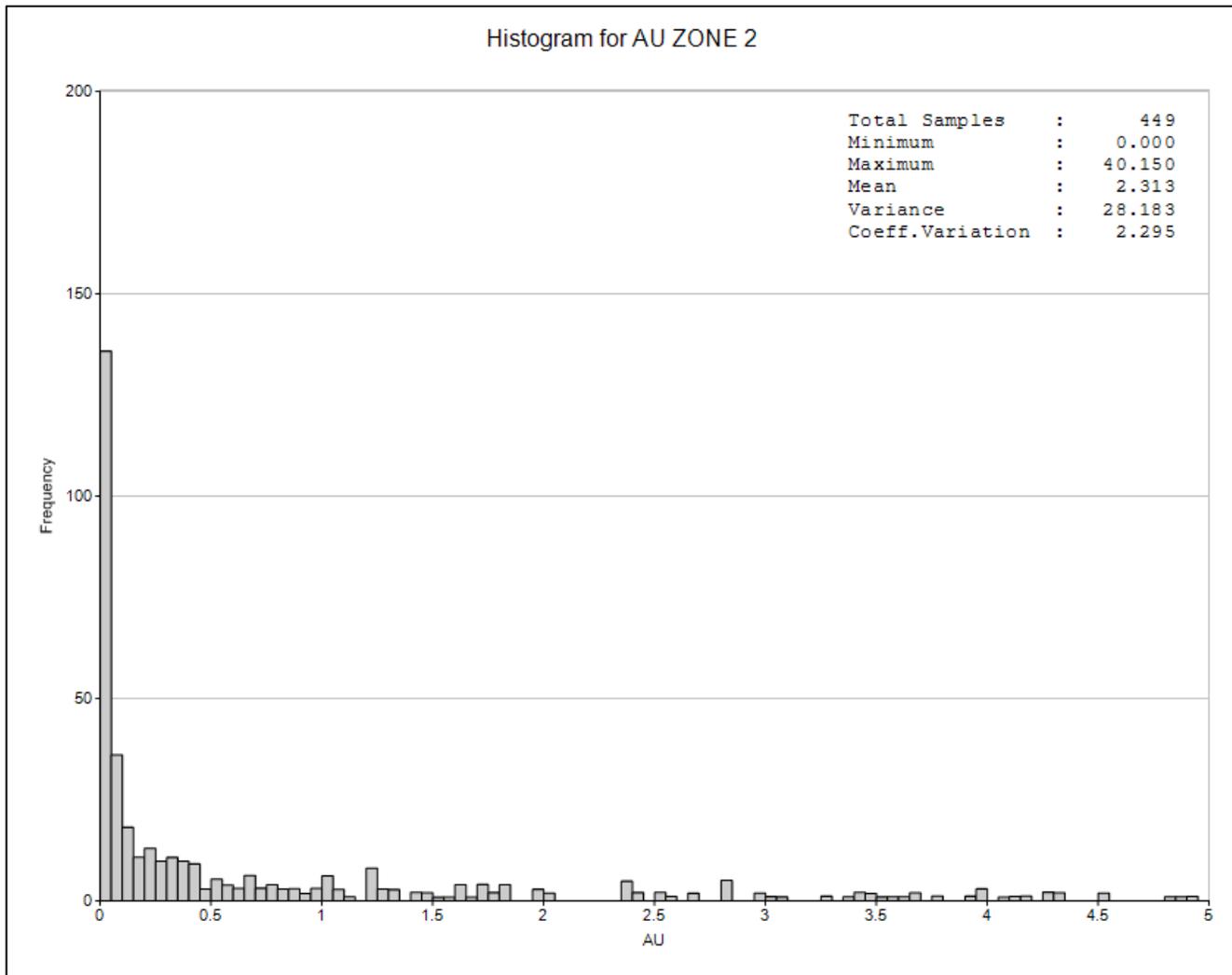


Figure 14-10: Au histogram of composites within the Vein (Zone 2)

Based on the inflection point around 35 g/t noted in the cumulative probability distribution of verified captured data within the Vein (Zone 2) mineralization, the composites were examined and only 4 exceed 35 g/t, ranging from 35.1 to 41.5 g/t. Based on the spatial locations of these composites and the lack of continuity of higher-grade material, they were capped to 35 g/t.

The impact of the EDA on the data to be used for resource estimation is summarized in Table 14-3.

Table 14-3: Summary of Au statistics during the EDA process

Domain	Raw Captured Samples			Verified Captured Samples			Composites			Composites Capped at 35 g/t		
	Mean (g/t)	Std. Dev. (g/t)	Coef. Var. (g/t)	Mean (g/t)	Std. Dev. (g/t)	Coef. Var. (g/t)	Mean (g/t)	Std. Dev. (g/t)	Coef. Var. (g/t)	Mean (g/t)	Std. Dev. (g/t)	Coef. Var. (g/t)
Shear (Zone 1)	0.13	0.54	4.33	0.10	0.49	4.82	0.10	0.42	4.06	0.10	0.42	4.06
Vein (Zone 2)	2.46	6.28	2.56	2.33	6.15	2.64	2.31	5.31	2.30	2.29	5.17	2.26

14.6 Block Model and Resource Estimation

14.6.1 Assessment of Spatial Grade Continuity

Experimental grade variograms were generated from the composite sample data in order to determine approximate search ellipse dimensions and orientations. Since ID³ was chosen for the final interpolation, the variogram models only influence the search ellipse volume (sample neighbourhood) and anisotropy (differences in search distances along each axis) and were not used to assign estimation weights to the samples.

A set of two structure spherical variogram models were fitted to the experimental variogram data in the interpreted, down-plunge direction which represents the direction of greatest grade continuity based on the available grade and structural information. An example of the Au variogram model for the major axis of the down-plunge direction is provided in Figure 14-11. Models for the semi-major and minor axes were inconclusive and not taken into account to determine sample search distances.

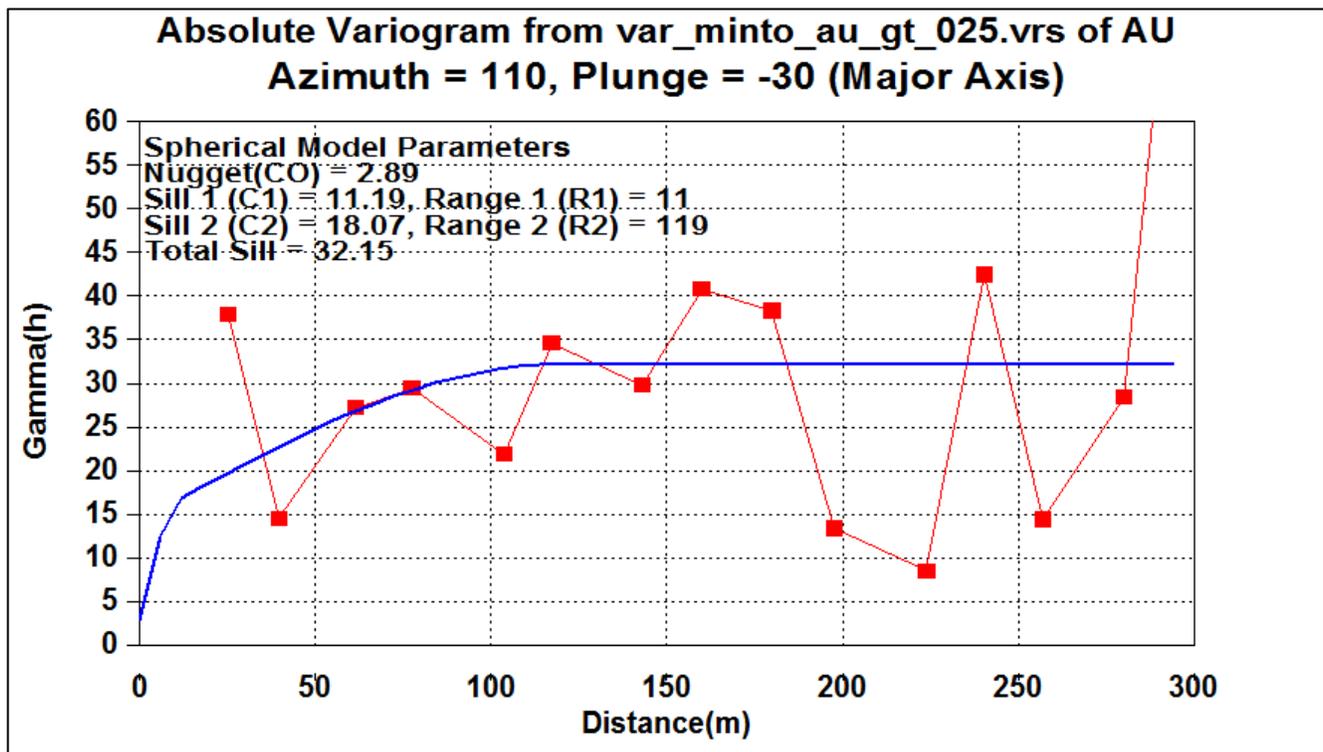


Figure 14-11: Directional Variogram Model in the Down-Plunge Direction

The down-plunge/strike and down-dip directions of the mineralization were interpreted to be the directions of greatest grade continuity. Half the second structure range of the down-plunge axis was used as the basis to define the search ellipse dimension along this axis. The search dimensions selected for the other axis' were defined by the QP based on general anisotropies observed from the data as a reasonable variogram model could not be determined. Search distances are summarized in Table 14-5.

14.6.2 Block Model Definition

The volume definition for the Minto South block model is summarized in Table 14-4. Block shape and size is typically a function of the geometry of the deposit, density of sample data, and expected smallest mining unit (SMU). On this basis, a parent block size of 2 m (E-W) by 2 m (N-S) by 2 m (Elevation) was chosen.

Table 14-4: Block model volume definition

Direction	Minimum	Maximum	Block Size	No. Blocks
Easting	668,050	668,750	2	350
Northing	5,314,850	5,315,800	2	475
Elevation	0	400	2	200

The mineralization envelopes were filled with blocks using the parameters described in Table 14-4. Block volumes were then compared to the mineral zone volumes to confirm there were no errors during the process. Block volumes for all zones were found to be within reasonable tolerance limits of the mineralization envelope volumes.

14.6.3 Interpolation Methods

Inverse Distance cubed (ID³) was the grade interpolation method chosen as the basis of the 2018 resource estimate. This method assigns estimation weights to the samples within the search volume relative to the distance of the sample data from the centre of the block. The closer the sample, the higher the weights as described in the following formula where p is defined to the power of 3.

$$\hat{v}_1 = \frac{\sum_{i=1}^n \frac{1}{d_i^p} v_i}{\sum_{i=1}^n \frac{1}{d_i^p}}$$

ID³ was chosen by the QP over Inverse Distance Squared (ID²) and Ordinary Kriging (OK) to better control the smoothing of grades, putting more weight on the samples closer to the block, due to the variable and nuggety nature of the mineralization. Nearest Neighbour (NN), ID² and OK were all estimated for global comparison and validation purposes, but not used for final resource reporting.

14.6.4 Search Strategy

A dynamic search orientation was used in the grade estimation process to account for variable orientations of mineralization. General search orientations, defined by dip and dip direction, were estimated into the blocks based on the trends implicit to the mineralization envelopes. A 30° rake to the South was applied based on geological understanding of structural and mineralization trends, supported by the assessment of spatial grade continuity described in Section 14.6.1. Figure 14-12 shows an example of dynamic anisotropic search volume control at the South end of the Vein Zone mineralization.

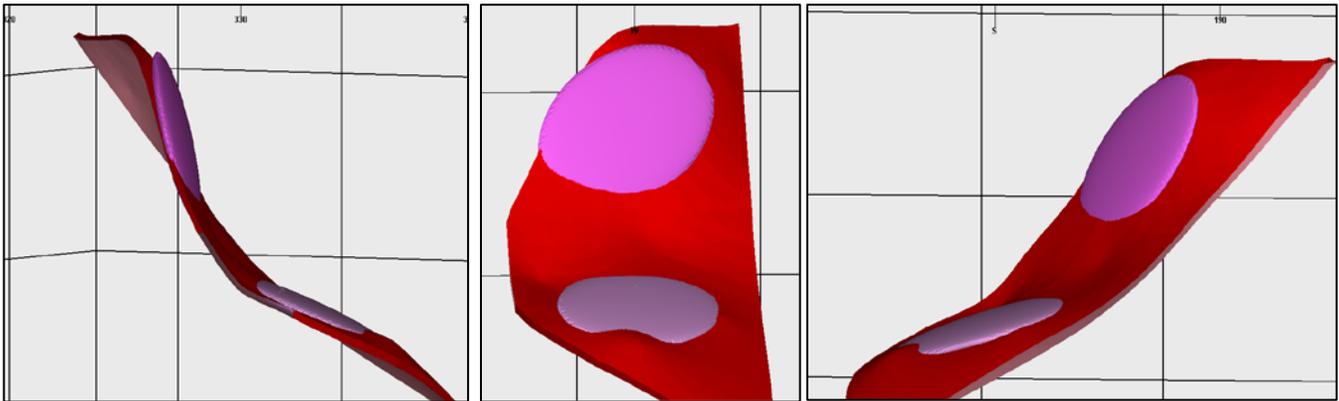


Figure 14-12: Example of dynamic anisotropic search volume control (the Vein Zone is red and search ellipses are magenta)

A total of 3 nested, anisotropic searches were used for both the Shear (Zone 1) and Vein (Zone 2). The search radii and sample controls used are summarized in Table 14-5.

Search strategies for each domain used an elliptical search with a minimum of 6 samples and a maximum of 12 samples from a minimum of 2 drill holes in the first, a second search pass with a minimum of 5 and maximum of 8 samples from a minimum of 2 drill holes and a third search with a minimum of two 2 and maximum of eight 8 samples from a minimum of 1 drill hole.

Table 14-5: Search Volume controls used for Au grade estimation

Pass	Along Strike Search Radius	Down Dip Search Radius	Across Strike (thickness) Search Radius	Min. No. of Samples	Max. No. of Samples	Max. No. Samples From Each Hole	Min No. Holes
Pass 1	60	40	6	6	12	4	2
Pass 2	120	80	12	5	8	4	2
Pass 3	180	120	18	2	8	4	1

14.6.5 Outlier Controls

Composites that were capped at 35 g/t (see Section 14.5) were restricted to influencing grade estimation within the first search volume pass only, as an additional means of mitigating the spread of high grade values and producing a level of continuity in higher grade material that is unsupported.

14.6.6 Cross-cutting Diabase Dyke

Blocks lying inside the cross-cutting Diabase Dyke were removed from the model as the dyke was emplaced post mineralization and assumed to be barren.

14.6.7 Model Validation

The block model validation process included visual comparisons between block estimates and composite grades in plan, section and 3D, along with a global comparison of mean grades and swath plots. Block estimates were visually compared to the drill hole composite data in both the Shear and Vein to ensure agreement. No material grade bias issues were identified, and the block grades compared well to the composite data as demonstrated in Figure 14-13 Figure 14-14 and Figure 14-15.

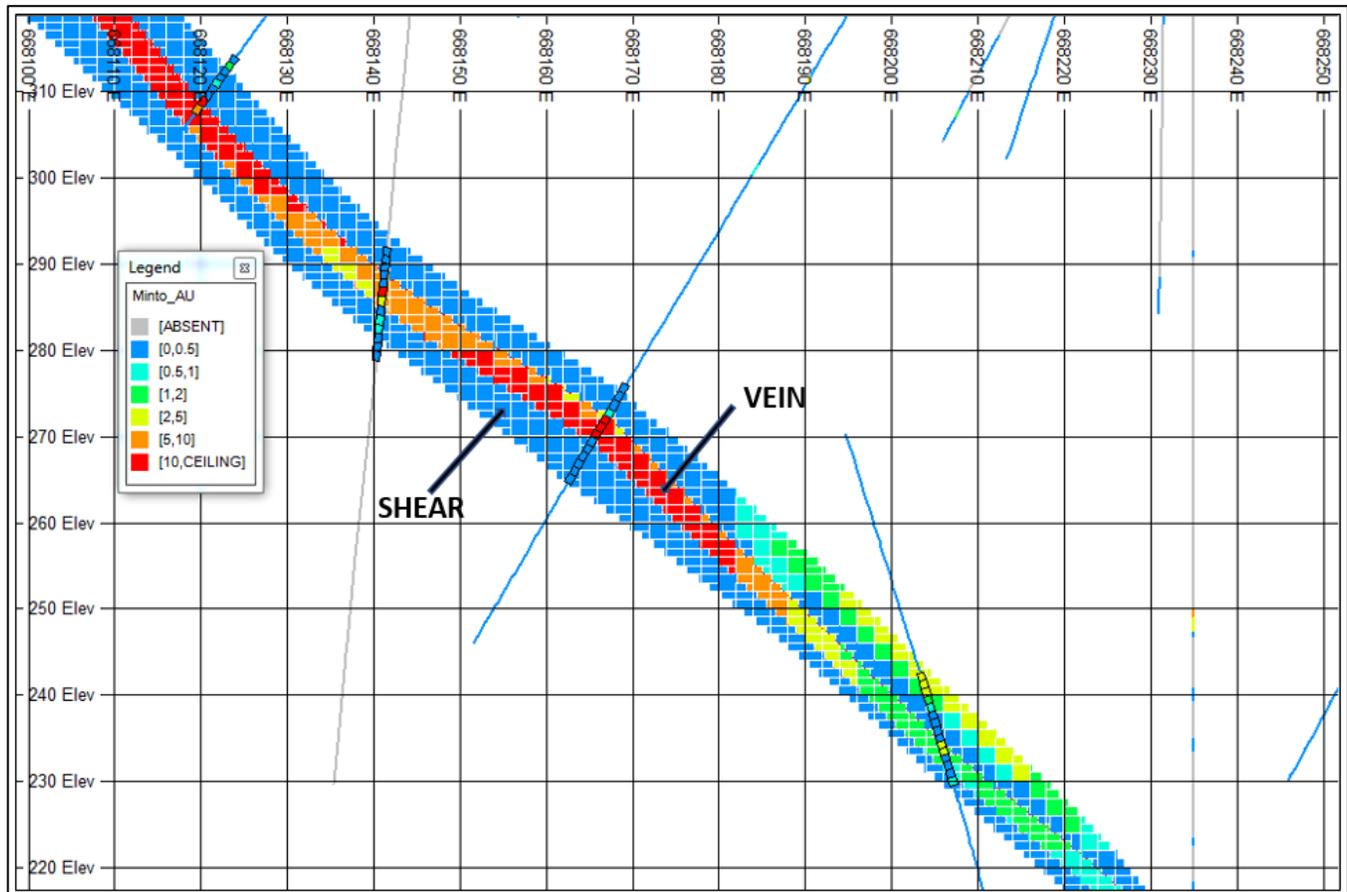


Figure 14-13: Example cross-section of Au grade distribution in the block model relative to the drillhole composites in both the Vein and Shear Zones, East-West Section facing North (5,315,460 N)

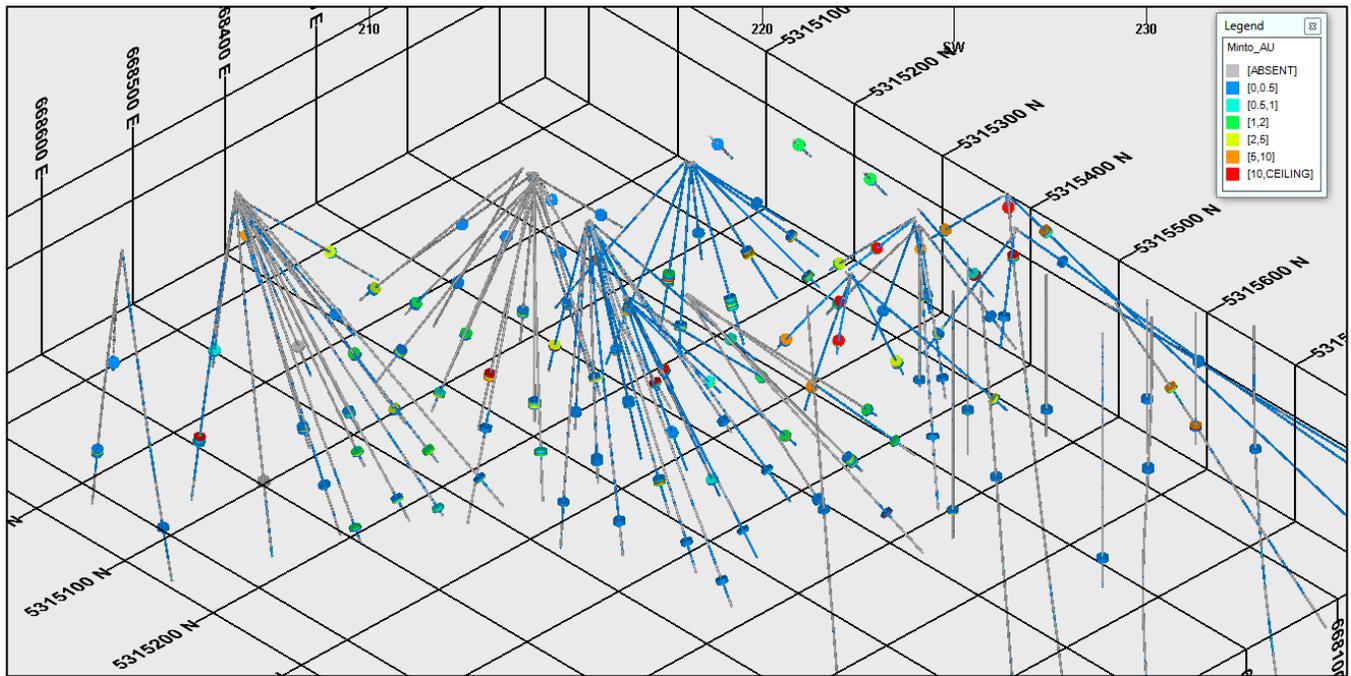


Figure 14-14: Au grade distribution of composite samples in the Vein Zone

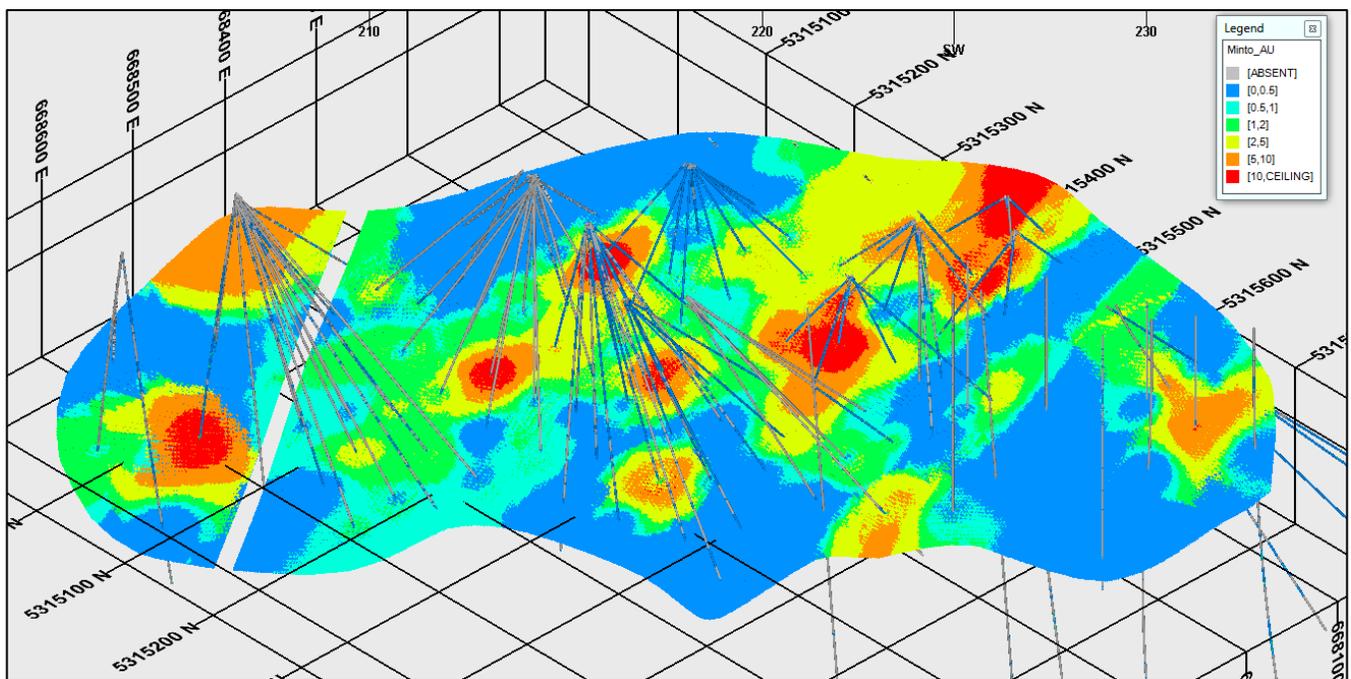


Figure 14-15: Au grade distribution in the block model of the Vein Zone

Global statistical comparisons between the composite samples, NN estimates, ID² estimates and the final estimates (ID³) for the Shear (Zone 1) and Vein (Zone 2) were compared to assess global bias, where the NN model estimates represent de-clustered composite data. Clustering of the drill hole data can result in differences between the global means of the composites and NN estimates. Similar global means of the NN and ID³ estimates indicate that there is no global grade bias in the model. The results summarized in Table 14-6 indicate that no material global bias was found in the Vein component of block model. The Shear does show some global bias due to the impact of a single high-grade sample. The bias identified in the broad shear zone is not material to the Mineral Resource estimate due to the low-grade nature of the zone.

Table 14-6: Statistical Comparison of Global Mean Grades

Strat Unit	Composite Mean (g/t)	NN Mean (g/t)	ID ² Mean (g/t)	ID ³ Mean (g/t)	Relative Difference (%)
Shear (Zone 1)	0.102	0.131	0.099	0.102	-22.0
Vein (Zone 2)	2.313	1.953	2.08	2.073	6.1

Note: The comparison is for all blocks in the model irrespective of classification.

Swath plots of Au grades were generated from slices throughout each zone to evaluate for local grade bias issues. Figure 14-16 provides a cross-sectional (E-W) example of the swath plots of the Vein (Zone 2). The swath plots compare the model grades to the de-clustered composite grades to identify potential local grade bias in the model. Review of all the swath plots did not identify any bias in the model that is material to the Resource Estimate as there was general agreement between the de-clustered composites (NN model) and the final model grades.

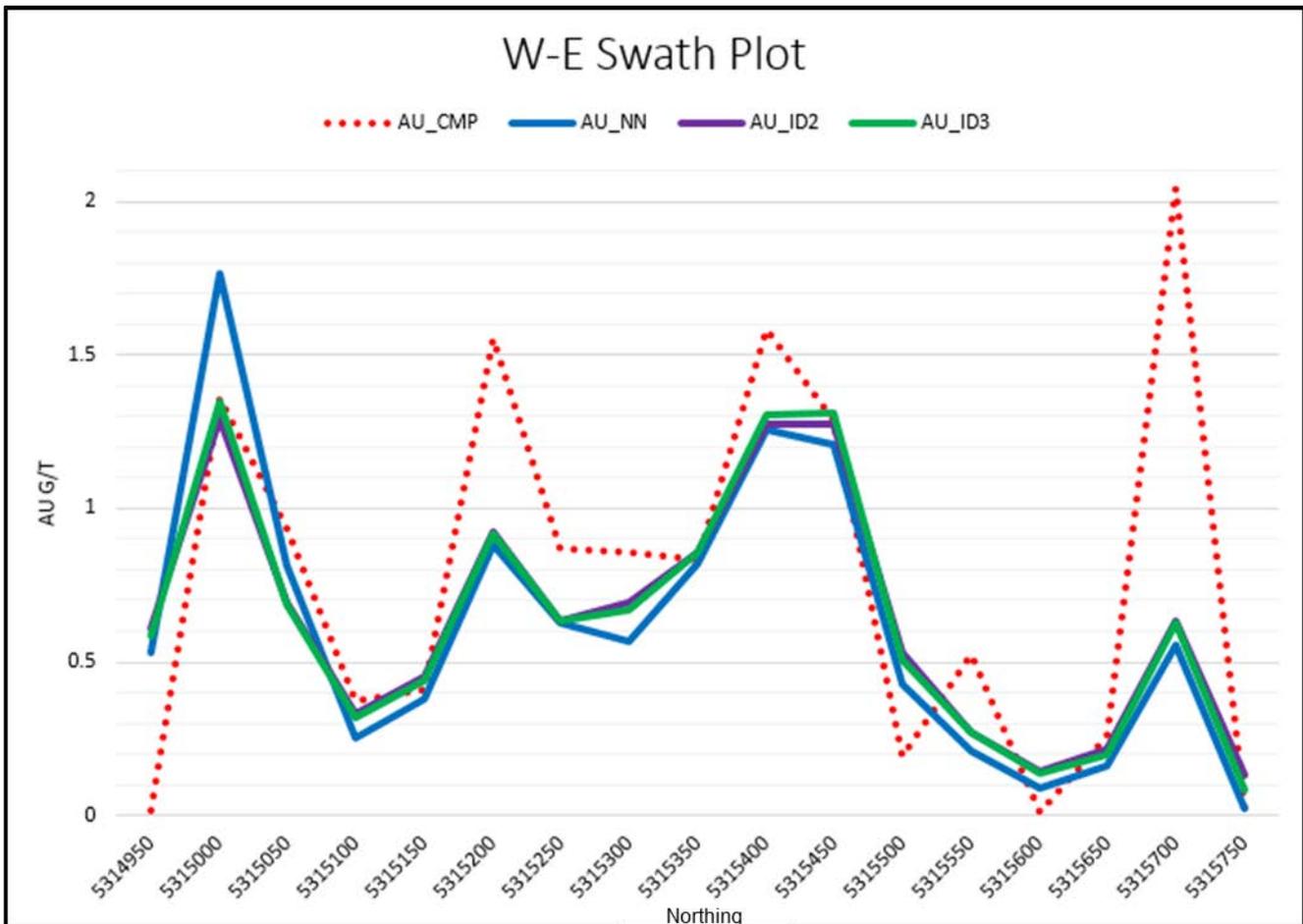


Figure 14-16: West-East swath plot of the Vein (Zone 1)

14.6.8 Previous Mining

Previous mining was known to have occurred in the northern part of the Minto South deposit. Lateral and vertical development had been digitized and placed in the correct spatial location, but no reliable information was available for the stopes. A "blanket" envelope was created to represent the best estimate of what may have been previously mined (Figure 14-17) and material inside this envelope was not included in the Mineral Resource Estimate.

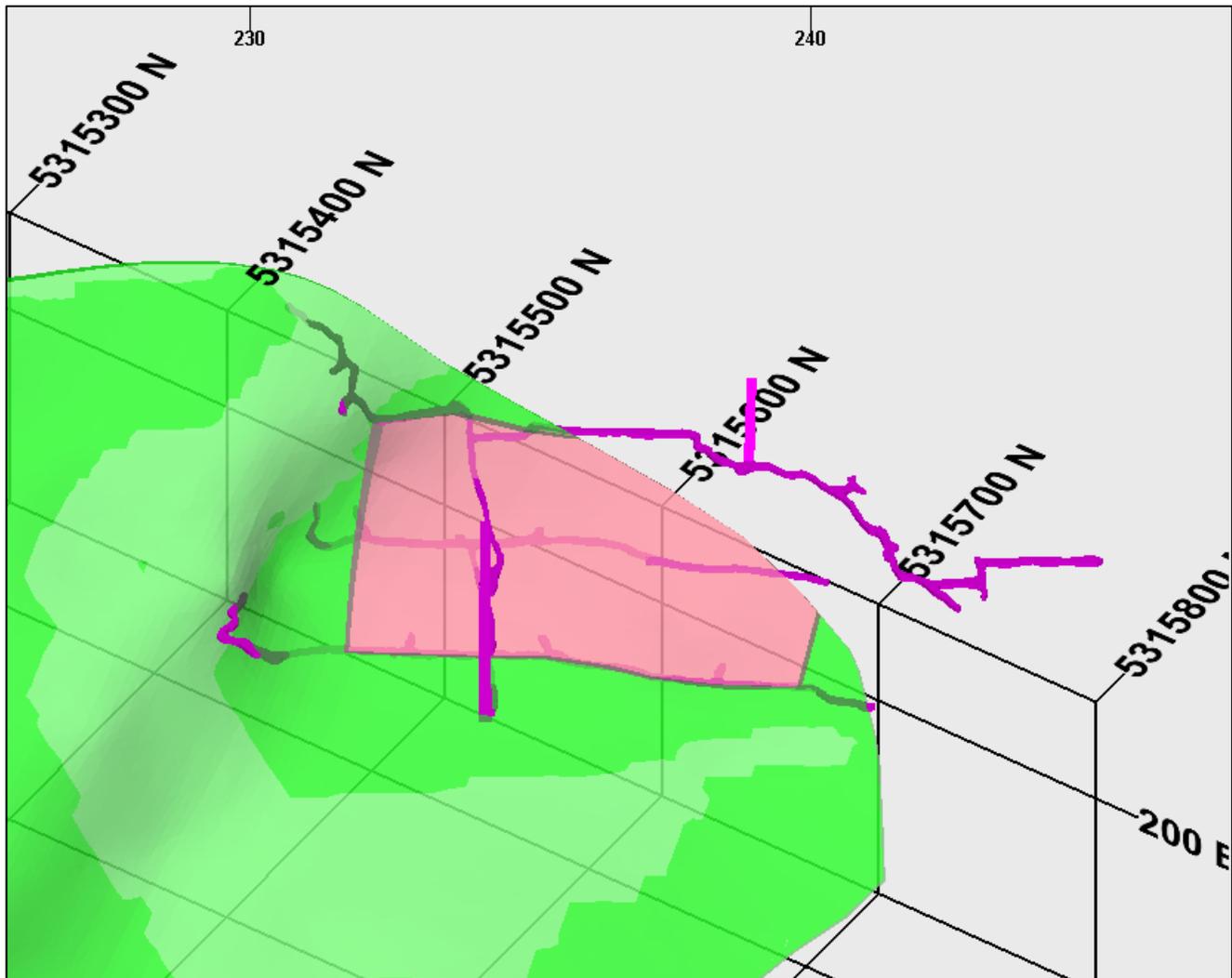


Figure 14-17: Volume extracted to account for previous mining (pink, against the Shear Zone [green]) in the northern part of Minto South (development is magenta).

14.6.9 Resource Classification

The Resource Estimate was classified in accordance with Canadian Institute of Mining, Metallurgy and Petroleum (“CIM”) Definition Standards for Mineral Resources and Mineral Reserves (May 2014). Resource classifications were assigned to broad regions of the block model based on QP confidence and judgement related to geological understanding, continuity of mineralization in conjunction with data quality, density and block model representativeness.

One of the contributing considerations in the classification was the distribution of the mean distance to the closest three drill holes (Figure 14-18).

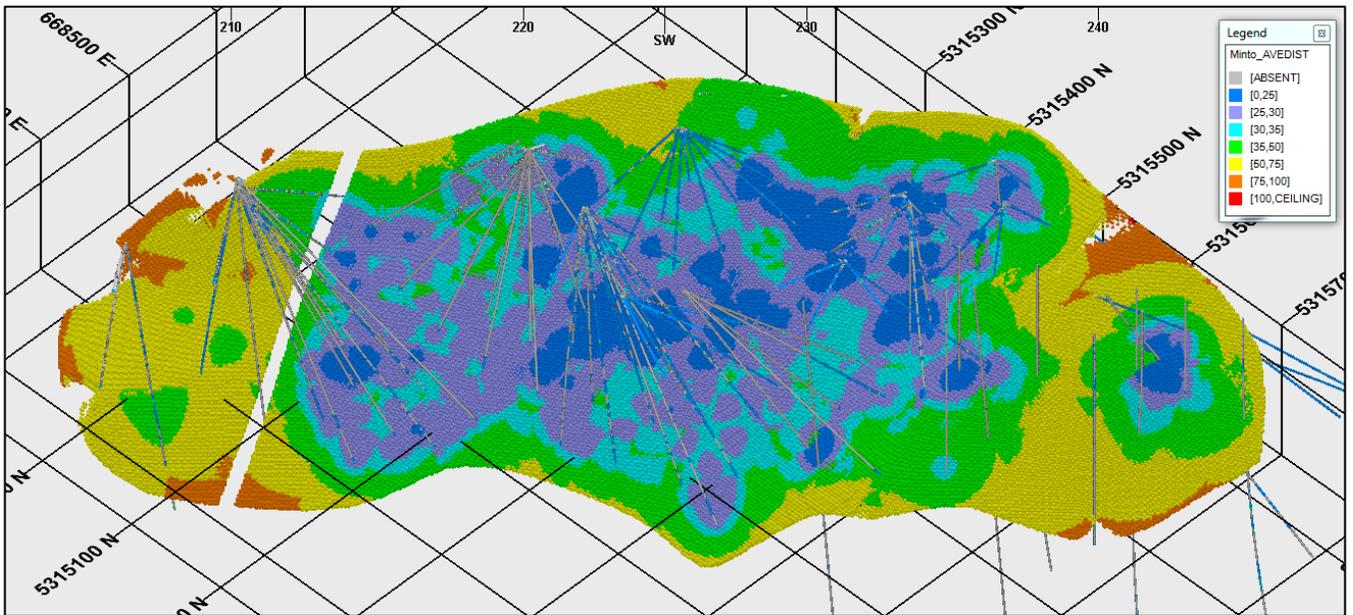


Figure 14-18: Distribution of mean distance to closest three drill holes

For the volume of Mineral Resources in the Indicated category, the mean drill hole spacing to the closest three drill holes was approximately 25 m to 30 m or less, where geology and grade continuity were reasonably understood and represented in the model (Figure 14-19). All other volumes were in the Inferred category.

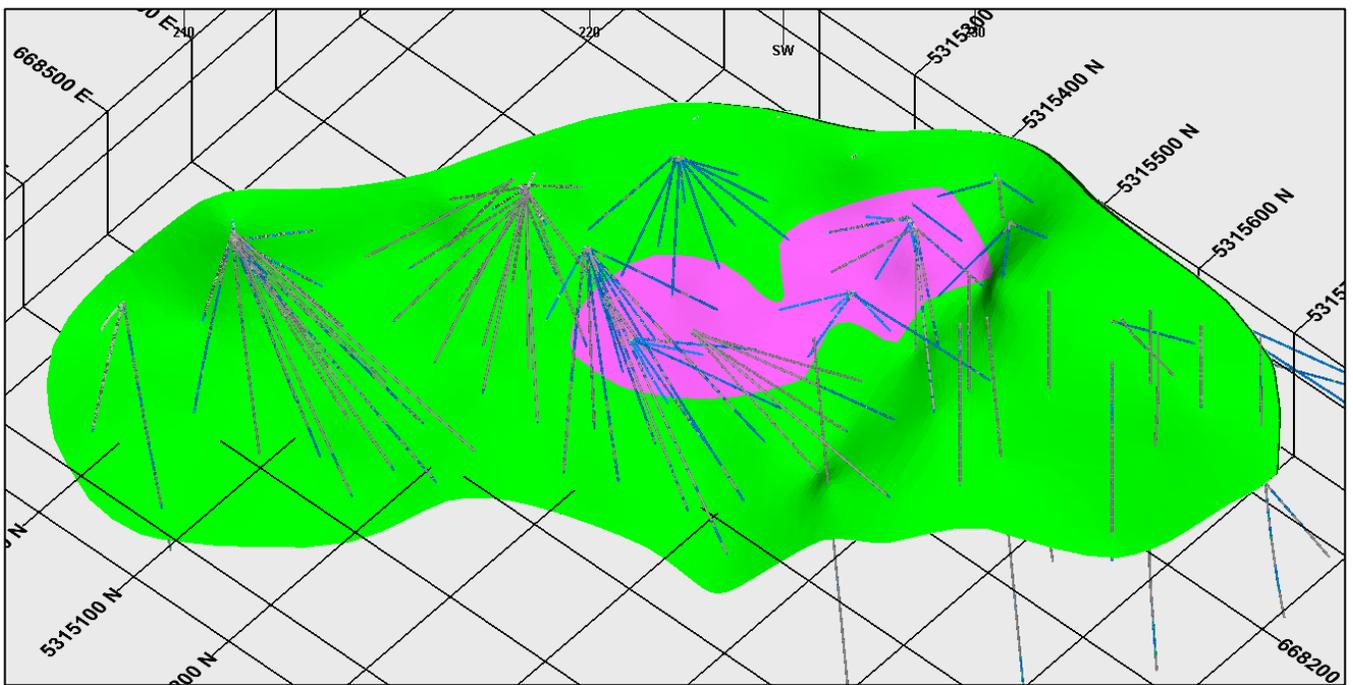


Figure 14-19: Resource Classification (Indicated is magenta, Inferred is green)

14.6.10 Cut-Off Grade

The QP has selected a 3.5 g/t break-even cut-off grade for the reporting of Mineral Resource Estimates, based on the following economic assumptions for potential underground cut and fill mining:

- Gold Price: \$1,200 \$USD
- Exchange Rate: 0.75 USD\$/CAD\$
- Mill Recovery: 90%
- Operating Expense (OPEX): \$CAD \$160/tonne (\$120 Mining, \$25 Milling, \$15 G&A)

14.6.11 Mineral Resource Statement

The Mineral Resource Estimate for the Minto South Project is reported in accordance with NI 43-101 and has been estimated in conformity with generally accepted CIM Estimation of Mineral Resource and Mineral Reserves Best Practices guidelines.

Mineral resources are not mineral reserves and do not necessarily demonstrate economic viability. There is no certainty that all or any part of this mineral resource will be converted into mineral reserve.

Inferred Mineral Resources are too speculative geologically to have economic considerations applied to them to enable them to be categorized as mineral reserves.

The base case Mineral Resource Estimate is reported at a cut-off of 3.5 g/t Au (Table 14-7) while other cut-offs are provided to demonstrate tonnage and grade sensitivities (Table 14-8). The Resource estimate excludes mineralization within previously mining areas.

Table 14-7: Minto South Mineral Resource Estimate

Resource Category	Quantity (tonnes)	Au Grade (g/t)	Contained Au (ounces)
Indicated	105,000	7.5	25,000
Inferred	354,000	6.6	75,000

Notes:

Effective date for this Mineral Resource is November 7, 2018

Mineral Resource Estimate uses a break-even economic cut-off grade of 3.5 g/t Au based on assumptions of a gold price of US\$1,200 per ounce, a USD\$/CAD\$ exchange rate of 0.75, mining cash costs of C\$120/t, processing costs of C\$25/t, G&A of C\$15/t and mean gold recoverability of 90%

Table 14-8: Minto South Mineral Resource Cut-off Sensitivity

Cut-off Grade (g/t Au)	Indicated Classification			Inferred Classification		
	Quantity (tonnes)	Au Grade (g/t)	Contained Au (ounces)	Quantity (tonnes)	Au Grade (g/t)	Contained Au (ounces)
2.5	142,000	6.3	29,000	496,000	5.6	89,000
3.0	123,000	6.9	27,000	426,000	6.0	83,000
3.5	105,000	7.5	25,000	354,000	6.6	75,000
4.0	92,000	8.0	24,000	303,000	7.1	69,000
4.5	81,000	8.5	22,000	260,000	7.5	63,000
5.0	71,000	9.1	21,000	225,000	8.0	58,000

Note: *Base Case Scenario: Mineral Resource Estimate uses a break-even economic cut-off grade of 3.5 g/t Au

It is the QP's professional opinion that the Mineral Resource has reasonable prospects for economic extraction based on reasonable grade continuity at the selected economic reporting cut-off. The QP is unaware of any known environmental, permitting, legal, title, taxation, socio-economic, marketing, political or other relevant factors that could materially affect the Mineral Resource Estimates.

15.0 MINERAL RESERVE ESTIMATES

There are no Mineral Reserve estimates for the Minto Mine South Project.

16.0 MINING METHODS

Not applicable to this technical report.

17.0 RECOVERY METHODS

Not applicable to this technical report.

18.0 PROJECT INFRASTRUCTURE

Not applicable to this technical report.

19.0 MARKET STUDIES AND CONTRACTS

Not applicable to this technical report.

20.0 ENVIRONMENTAL STUDIES, PERMITTING, AND SOCIAL OR COMMUNITY IMPACT

Not applicable to this technical report.

21.0 CAPITAL AND OPERATING COSTS

Not applicable to this technical report.

22.0 ECONOMIC ANALYSIS

Not applicable to this technical report.

23.0 ADJACENT PROPERTIES

There are many historic mines adjacent to the Minto South Project. Regionally in the Michipicoten Greenstone belt, the Island Gold mine and the historic Edward mine have mineralization styles that show some similarities with the mineralized zones of the Minto Mine South Project. In this technical report, only the historic mines with production records and deposit mineral resource estimate that are located in the immediate vicinity of the Minto Mine South Project are described below.

23.1 Surluga Deposit and Other Historic Gold Mines

The Surluga Deposit is the largest gold deposit located close to the Minto Mine South Project and contains a current Inferred Mineral Resource, estimated in May 2015 by SRK Consulting, of 1,088,000 ounces at 1.71 g/t gold (Bernier et al., 2015). The Surluga Deposit is hosted in the Jubilee Shear Zone, a brittle-ductile deformation zone that is part of a larger mineralization and deformation corridor oriented NNE. Two historic mines were operated in the Jubilee Shear Zone within the footprint of the Mineral Resource estimated for the Surluga Deposit, the Jubilee Mine in the 1930s and the Surluga Mine in the 1960s and then 1980s. The Jubilee Mine produced 107,930 tonnes at 4.29 g/t gold, whereas the Surluga Mine produced 86,082 tonnes at 3.12 g/t gold (Sage, 1993; Rupert, 1997).

In addition to the Surluga deposit, the other mines with historic production records near the Minto Mine South Project include the Grace-Darwin mine and the Cooper Mine. The Grace-Darwin mine was operated discontinuously between 1900 and 1940 and produced 41,302 tonnes at 13.27 g/t gold (Sage, 1993; Rupert, 1997). The Cooper mine was a small operation operated in the 1930s and produced 4,435 tonnes at 11.42 g/t gold (Sage, 1993; Rupert, 1997).

The qualified person has not verified the information presented in this section and that this information is not necessarily indicative of the mineralization on the property that is the subject of this technical report

24.0 OTHER RELEVANT DATA AND INFORMATION

The QP is unaware of any other data or information that is material to the Minto Mine South Project.

25.0 INTERPRETATION AND CONCLUSIONS

25.1 Interpretations

The Minto Mine South deposit is a narrow-vein, shear hosted Archean lode gold deposit located near the town of Wawa, Ontario, Canada and is hosted in the Michipicoten Greenstone belt. Red Pine has completed surface exploration drilling between 2016 and 2018 and has retained Golder to complete an initial Mineral Resource estimate and NI 43-101 Technical Report for the Project. Golder conducted a site visit and has completed sufficient data verification to form the opinion that the Red Pine database is of suitable quality and quantity to support the Mineral Resource estimate reported in this Technical Report.

The 2018 Mineral Resource estimate was evaluated using a geostatistical block modelling approach constrained by mineral domains provided by Red Pine and interpreted from the drill hole data. The block model grades were interpolated using ID³, which was evaluated as the most representative method. Other grade interpolation methodologies were assessed, including OK and ID², and determined that the ID³ estimates controlled grade smoothing the best and achieved an appropriate grade-tonnage profile relative to the characteristics of the deposit. Density was assigned to the model based on mean SG values for the deposit.

25.2 Conclusions

The 2018 Mineral Resource estimate was completed according to CIM best practice guidelines and is reported in accordance with NI 43-101 regulations. The QP believes that the current data presented is an accurate and reasonable representation of the Minto Mine south Project and concludes that the sample database is of suitable quality to provide the basis of the conclusions and recommendations reached in this Technical Report.

Golder has taken reasonable steps to make the block model and Mineral Resource estimate as representative of the data as possible but given the nature of the deposit there are still risks related to the accuracy of the estimates related to the following:

- the variable and complex nature of the geology and structural controls on mineralization
- the nuggety nature of the gold mineralization
- the impact of outlier grade data
- inconsistent continuity of mineralization
- limited constraints on mineralization locally in the model

For these and other reasons, actual results may differ materially from these estimates.

26.0 RECOMMENDATIONS

Golder recommends that further exploration drilling be completed in order to potentially expand the Mineral Resource for the Minto Mine South Project. Golder recommends 2,500 m of exploration and confirmation drilling in 2019 totalling approximately \$450,000.

Golder also recommends the completion of initial metallurgical studies and that Red Pine allocates a budget of approximately \$50,000 for the completion of this work in 2019.

Table 26-1 summarizes the estimated costs of the proposed work.

Table 26-1: Summary of Recommended Work Program

Recommended Work	Estimated Cost \$CAD
Exploration Drilling (2,500 m)	\$450,000
Metallurgical Studies	\$50,000
Total Costs	\$500,000

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