

# **MEGASTAR DEVELOPMENT CORPORATION**

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**TECHNICAL REPORT ON THE RALLEAU PROPERTY**

**EYOU ISTCHEE-BAIE-JAMES TERRITORY**

**LEBEL-SUR-QUEVILLON AREA, QUEBEC**

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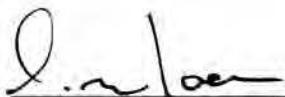
**J6T 6N2**

**Effective date: May 30<sup>th</sup>, 2015**

**Signing date: July 10<sup>th</sup>, 2015**

## Date and Signature Page

This report entitled "Technical Report on the Ralleau Property, Eeyou Istchee-Baie-James Territory, Lebel-Sur-Quevillon Area, Quebec", dated July 10<sup>th</sup>, 2015, was prepared and signed by the following author:



Roger Moar, B.Sc., OGQ (No. 733)



Signed at Salaberry de Valleyfield on July 10<sup>th</sup>, 2015

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## **1. SUMMARY**

Megastar Development Corporation (TSX.V: MDV) retained Roger Moar, consulting geologist, on July 22nd 2014 to conduct a geological mapping and a lithogeochemical sampling program on the Ralleau property. Fieldwork has been carried out over a period of 44 days between August 5th to August 29th and September 10th to September 28th 2014. The author has also been mandated for completion of an independent technical report in compliance with the Canadian National Instrument 43-101 (Standards of Disclosure for Mineral Projects).

The Ralleau property is located in the west-central part of the Province of Quebec, Canada. It is readily accessible via Lebel-sur-Quévillon located approximately 620 km N-NW of Montreal and 160 km NE from Val d'Or along highways. The Ralleau property lies 67 km E-NE of the town of Lebel-sur-Quévillon along a network of forestry roads. The property is situated in Category III lands as defined in the James Bay and Northern Quebec Agreement. Category III Lands are public lands on which Native people can, while respecting the principles of conservation, carry on their traditional activities year-round, and on which they have exclusive rights to certain animal species. It straddles Cree family traditional territories or Cree Traplines of Mr Sammy Blacksmith (trapline No W24C) and Mr Clarence Blacksmith (trapline No W24D) members of the Cree First Nation of Waswanipi.

The Ralleau property currently consists of 89 designated claim cells totalling 5 014 Ha (50.14 km<sup>2</sup>) and covering one block of contiguous claims among Ralleau and Wilson townships and the National Topographic Sheets (NTS) 32F01 (Lac de la Ligne). The listing of the claims indicates that all mining titles are owned 100% by Megastar and are in good standing as of May 30<sup>th</sup>, 2015. Expiry dates varying from July 31st, 2015 to September 11th, 2016. According to the surface area and the location of the claims, Megastar must spend as minimum work requirement totalling \$159 600 in order to support the renewal of these claims.

The Ralleau property is located within the Urban-Barry Belt in the central-east portion of the North Volcanic Zone of the Archean Abitibi Greenstone Belt. The Urban-Barry Belt extends over 135 km and is 4-20 km wide. It is bordered in the north by the Mountain and Father plutons and in the south by the

Wilson and Souart plutons that range from granodioritic to tonalitic in composition. The Ralleau property is located within the Urban Formation in the western part of the Urban-Barry Belt.

The Urban Formation comprises mafic to intermediate volcanic rocks; and felsic volcanics of dacitic to rhyolitic composition attributed to the Novellet Member. These lithological units mainly strike WNW-ESE, changing to E-W in the western portion of the property and to NE-SW in the eastern portion of the property. These changes in orientation may be related to the Urban and Cameron Deformational Zones. The Ralleau Syncline is oriented E-W. It has been interpreted to coincide with the Urban Deformational Zone forming a two km wide corridor through the central part of the greenstone belt. The area experienced amphibolite-facies metamorphism; however, the central part of the Urban Formation appears to have been exposed to greenschist-facies conditions. The rocks surrounding the synvolcanic felsic intrusives record contact metamorphic to amphibolite-facies conditions.

The geological mapping and a lithogeochemical sampling program on the Ralleau property has been carried out in order to refine the accuracy of the geological map, obtain a better understanding of the geological setting of the property and to ultimately define potential targets for VMS mineralization. All geological data has been compiled and merged with earlier reconnaissance mapping to produce geological maps covering the property at 1: 7 500 scale. A limited amount of fieldwork due to the time constraint has been carried out in the Lake Sheilann area. The mapping program significantly improved understanding of the geological setting of the property. Of particular interest is a better delineation of felsic units of the Novellet Member which may have an important association with potential mineralization in a bimodal mafic VMS model.

The lithogeochemical sampling program was conducted to map compositional variations across the Ralleau property. Classification diagrams were used, in part, to confirm field classification of rock samples but also to establish a geological context that can then be compared to other mining districts. It should be noted that the region experienced metamorphism and deformation. All rocks have therefore suffered varying intensity of alteration which may obscured mineralogical, textural and geochemical properties of the rocks. Classification diagrams indicate that the lithological units range from mafic to felsic compositions which is consistent with bimodal volcanism, a prospective trait of VMS deposits in the Abitibi. They furthermore suggest that the geological setting of the Ralleau property is favorable for

Abitibi-style VMS mineralization. Further analytical data including immobile incompatible elements are required to corroborate interpretation.

Zonal alteration patterns are key features in volcanic rocks surrounding VMS deposits. The intensity of hydrothermal alteration was evaluated using combined the alteration indexes of Ishikawa (AI) and the chlorite-carbonate-pyrite index (CCPI) into an “alteration box plot”, a method developed by *Large et al.* (2001). The alteration box plot indicates that while most samples plot in the field of least altered rocks, some samples plot in the carbonate zone of alteration. However, the plot also suggests that above average sericite alteration is not common in rock samples.

The intensity of hydrothermal alteration was also calculated using Normat a software program that calculates normative minerals and alteration indices (*Piché and Jebrick, 2006*). Alteration indexes IFRAIS and ISER were used in this study. The IFRAIS and ISER alteration indexes quantify the degree of overall “freshness,” thus paragonitization and sericitization, respectively. Unaltered rocks have an IFRAIS value of 100, whereas totally altered rocks have a value to 0. Rocks that are completely altered have an ISER value to 100 and unaltered rocks have a value to 0. Anomalous IFRAIS values appear NE of Lake Wilson and east of Lake Sheilann. By contrast, anomalous sericite values only occur east of Lake Sheilann. K2O enrichment is anomalous north of Lake Wilson, near the western limit of the property, whereas anomalous Na2O depletion was detected in a sample from the north-central part of the property.

A total of ninety-four (94) grab samples were analyzed for a group of 33 elements. Assay results from a grab sample collected in an old trench located approximately 30 m S-SE of historical drill hole SA-5. Grab sample yielded 0.19% Cu and 0.84% Zn (Sample Q592641). Shear zone-hosted mineralization consists of disseminated (10%) pyrite with trace amount of chalcopyrite. Most of the forty-seven (47) grab samples sent for gold assays returned low values. A weakly anomalous gold value was obtained from a grab sample (No Q592576) collected 1.5 km NE of Lake Wilson, just outside the north boundary of the property. Assay results returned 0.039 g/t Au from a weakly to moderately carbonatized andesite which contained disseminations of sulphides.

The Ralleau property is underexplored and has been subject of basic grassroots exploration. Based on what is currently known about the geology of the property, it represents a favorable setting for bimodal-mafic VMS mineralization. A three-stage exploration program totalling \$388,765 is proposed to further

define prospective areas of VMS mineralization within the Urban Formation.

## **2. INTRODUCTION**

Megastar Development Corporation (TSX.V: MDV) retained Roger Moar, consulting geologist, on July 22<sup>nd</sup> 2014 to conduct a geological mapping and a lithogeochemical sampling program on the Ralleau property. Fieldwork has been carried out over a period of 44 days between August 5<sup>th</sup> to August 29<sup>th</sup> and September 10<sup>th</sup> to September 28<sup>th</sup> 2014. The author has also been mandated for completion of an independent technical report. The author completed the technical report titled "Technical Report on the Ralleau Property, Eeyou Istchee-Baie-James Territory, Lebel-Sur-Quevillon Area, Quebec" and dated July 10<sup>th</sup>, 2015. The title ownership and status information documented in this technical report are considered current as of May 30<sup>th</sup>, 2015. The technical report has been prepared in compliance with the Canadian National Instrument 43-101 (Standards of Disclosure for Mineral Projects).

### **2.1. Purpose of the Report**

The purpose of this technical report is to provide an independent evaluation of the Ralleau property, summarize the data on which this assessment is based and make recommendations to undertake a specific exploration program in order to determine the potential for base and precious metal mineralization.

### **2.2. Sources of Information**

This report is based on a review of the available data including public assessment files and government reports available in the public records as well as pertinent report and maps, and data provided by Mr Christiaan F. Staargaard, director of Megastar Development Corporation. Where cited, references are referred to in the present technical report by author and date. All references are listed in Section 19 (References).

### **2.3. Property Visits**

The author conducted a geological mapping and lithogeochemical rock sampling program on the Ralleau property between August 5<sup>th</sup> to August 29<sup>th</sup> and September 10<sup>th</sup> to September 28<sup>th</sup> 2014.

### **2.4. Units**

All measurements quoted in this report are expressed in metric unless otherwise stated. Geochemical analyses are reported in parts per million (ppm) unless otherwise stated. All dollars referred to in this technical report are expressed in Canadian dollar (\$).

## **2.5. Terms and Definitions**

« Megastar » refers to Megastar Development Corporation, « MERNQ » refers to *Ministère de l'Energie et des Ressources Naturelles du Québec*, « GESTIM » refers to *Gestion des Titres Miniers - Ministère de l'Energie et des Ressources Naturelles du Québec*.

### **3. RELIANCE ON OTHER EXPERTS**

Author's opinions contained herein and effective on May 30<sup>th</sup> 2015, are relied upon historical data, assessment files, government reports and recent exploration work conducted by Megastar Development Corporation available in the public records. For the purpose of this report, the author has also relied, and believes that there is a reasonable basis to rely on the technical report entitled "NI 43-101 Technical Report - Ralleau Project NTS 32F/01 & 32F/02, Chibougamau District, Quebec", dated February 9<sup>th</sup>, 2011 and prepared by Mr John Stephens, P. Geo.. While the author carefully reviewed all the available information, the author cannot guarantee its accuracy and completeness.

The mining title ownership and status information documented in this technical report were obtained from information provided by the *Ministère de l'Energie et des Ressources Naturelles du Québec (MERNQ)* on the *GESTIM* website and are considered current as of May 30<sup>th</sup>, 2015. The title ownership and status information provided by the *MERNQ* website are not considered valid legal opinion.

The author has not verified and is not qualified to comment on any legal issues related to royalties, back-in rights, payments, agreements, permitting or environmental matters.

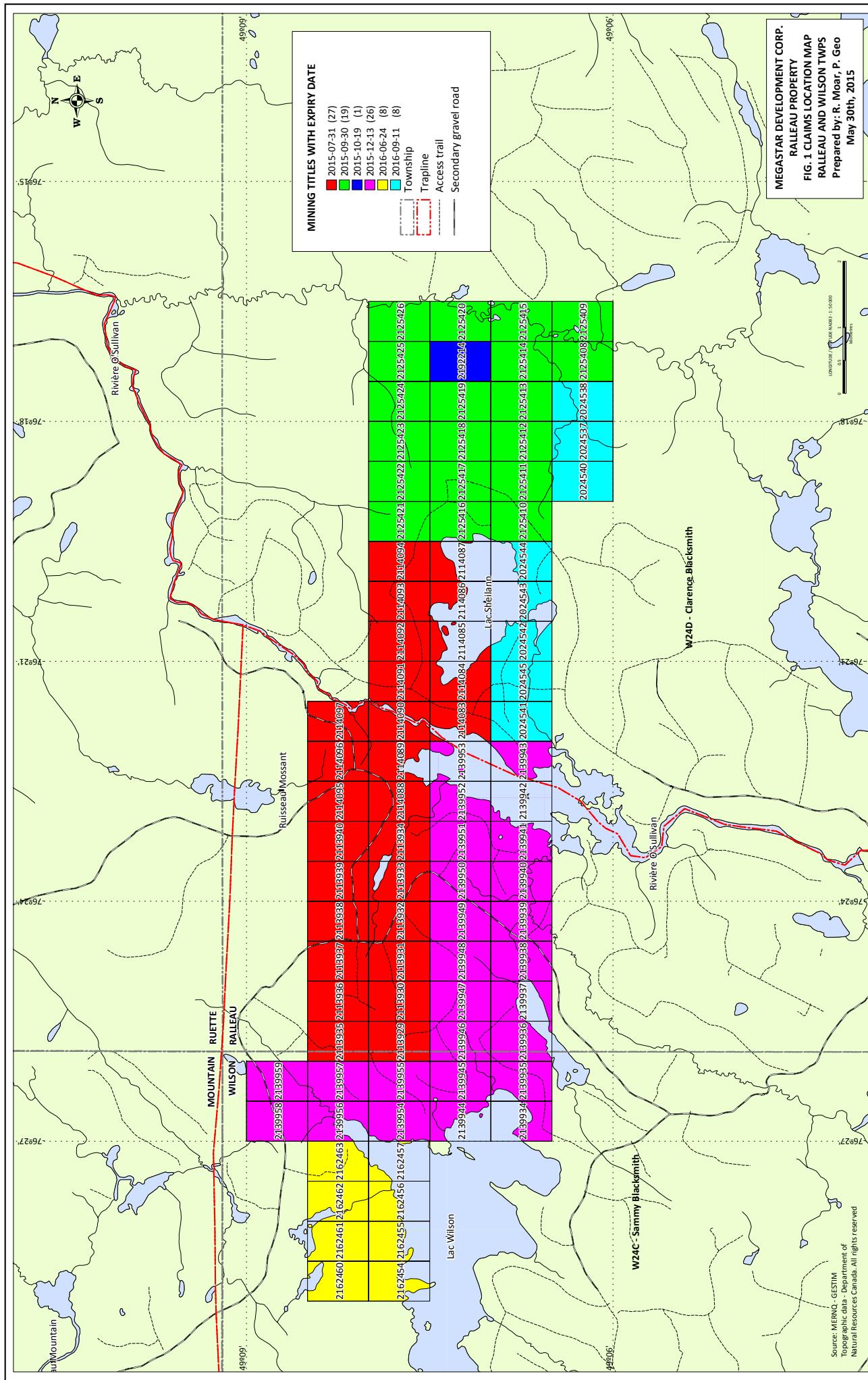
## **4. PROPERTY DESCRIPTION AND LOCATION**

The Ralleau property is located in the west-central part of the Province of Quebec, Canada, approximately 680 km N-NW of Montreal. The property is readily accessible by road from the town of Lebel-sur-Quévillon. It is located between latitudes 49°06'00"N and 49°09'00"N and longitudes 76°16'30" W and 76°29'00" W (Fig. 1). The property covers the Ralleau and Wilson townships and the National Topographic Sheets (NTS) 32F01 (Lac de la Ligne).

The property is situated in Category III lands as defined in the *James Bay and Northern Quebec Agreement*. Category III Lands are public lands on which Native people can, while respecting the principles of conservation, carry on their traditional activities year-round, and on which they have exclusive rights to certain animal species. The Eeyou Istchee James Bay Regional Government established pursuant to the *Agreement on Governance in the Eeyou Istchee James Bay Territory* signed by the Cree and the Government of Quebec on July 2012, exercises jurisdictions, functions and powers on Category III Lands located south of the 55<sup>th</sup> parallel. The Regional Government is formally constituted with equal representation of Aboriginal and non-Aboriginal populations. The Ralleau property straddles Cree family traditional territories or Cree Traplines of Mr Sammy Blacksmith (*trapline* No W24C) and Mr Clarence Blacksmith (*trapline* No W24D) (*Cree Mineral Exploration Board*, 2014) members of the Cree First Nation of Waswanipi.

### **4.1. Mineral Tenure**

The Ralleau property currently consists of 89 designated claim cells totalling 5 014 Ha (50.14 km<sup>2</sup>) and covering one block of contiguous claims among Ralleau and Wilson townships located on the Lac de la Ligne topographic sheet (Fig. 1). Each claim covers an area of 30 seconds in latitude and 30 seconds in longitude. The author has verified the status of the claims of the Ralleau property provided by MERNQ on the GESTIM website as of May 30<sup>th</sup>, 2015. The listing of the claims indicates that all mining titles are owned 100% by Megastar and are in good standing. Expiry dates varying from July 31<sup>st</sup>, 2015 to September 11<sup>th</sup>, 2016. A complete list of mining titles forming the Ralleau property and owned by Megastar is provided in Appendix I. According to the surface area and the location of the claims, Megastar must spend a minimum work requirement totalling \$159 600 in order to support the renewal of these claims.



#### **4.2. Royalties, Back-in rights, Payments and Agreements**

Twelve contiguous designated claim cells totalling 675.93 Ha (6.76 km<sup>2</sup>) were acquired by agreement between Megastar and Nievex Geoconsultant Inc. (Megastar - news releases dated June 1<sup>st</sup>, 2005 and July 25<sup>th</sup>, 2005). The agreement entitles Megastar to acquire a 100% interest in the claims by payment of \$1 000 and the issuance of 250,000 shares in the capital of Megastar Development Corporation to the vendor. In addition, Megastar grants a two percent net smelter return ("NSR") to the vendor. One percent (1%) of the NSR can be purchased by Megastar at anytime for \$1 000 000. The mining titles have been transferred to Megastar as of January 29<sup>th</sup> 2007 (*MRNFQ - Régistre public des droits miniers, réels et immobiliers*, Registration No 52122).

#### **4.3. Environmental Liabilities**

As of the effective date of the report and to the best of the author's knowledge, the Ralleau property is not subject to any environmental liabilities.

#### **4.4. Permits**

No permit was required to conduct the geological mapping and lithogeochemical sampling program during summer 2014.

Other than obtain the *Permis d'intervention forestière en vue d'activités minières* issued by the MERNQ, there are no significant factors and risks that may affect access, title or the right or ability to perform the exploration work recommended for the Ralleau property at the time of this report. Authorizations and permits with regard to the Ralleau property will be obtained from governmental agencies when required.

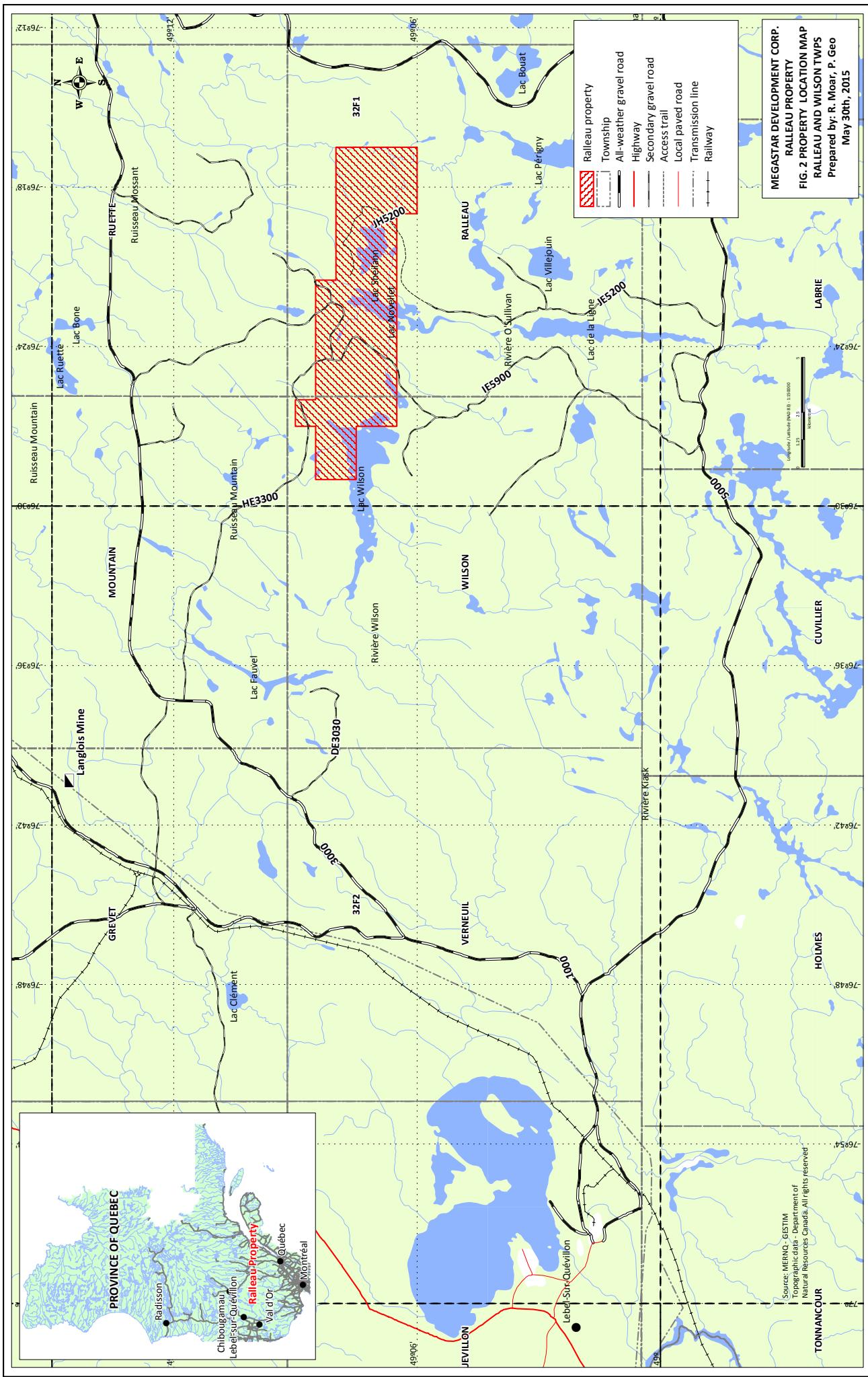
## **5. ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY**

### **5.1. Accessibility**

The Ralleau property is readily accessible via Lebel-sur-Quévillon located approximately 620 km N-NW of Montreal and 160 km NE from Val d'Or along highways. The town of Lebel-sur-Quévillon is accessible via highway 113 which links highway 117 a few kilometers north of the sector of Louvicourt of the town of Val d'Or; and highway 167 some 10 km south of Chibougamau. The Ralleau property lies 67 km E-NE of the town of Lebel-sur-Quévillon along a network of forestry roads (Fig. 2). The property is accessible by gravel road from Lebel-sur-Quévillon, 30 km eastward on gravel haul road 5000 and 23 km northward along secondary gravel road IE 5900. The western and the northern portion of the property can also be reached 16 km north-eastward along main gravel haul road 3000 and 19 km south-eastward along secondary gravel road HE3300. Road 3000 connects with gravel haul road 1000 at 9.5 km north of road 5000. The eastern portion of the property covering the Lake Sheilann area can be accessed by truck via secondary gravel road JE5200 and all terrain vehicles (ATV) along winter road JH5200. The northern portion of road JE5200 is obstructed in many places by dense alder growth. Secondary gravel road JE5200 intersects road 5000 at 50 km east of Lebel-sur-Quévillon. Travel within the property is by all terrain vehicles (ATV) or snowmobiles along secondary forestry roads, or on foot. Total driving time from Lebel-sur-Quévillon to the Ralleau property can vary between 1 hour and 1 hour and 30 minutes depending on road conditions.

### **5.2. Local Resources and Infrastructure**

Lebel-sur-Quévillon, situated in the administrative region of Northern Quebec, is a small town providing housing, servicing, supplies, consumable, transport facilities and experienced workforce. Services also include a health care center with emergency services, primary and secondary schooling and provincial government services. The current population of Lebel-sur-Quévillon is 2 159 people (*Statistics Canada, 2014*). Lebel-sur-Quévillon has a municipal airstrip but it should be noted that there are presently no regular flights. The town of Val d'Or located 160 km southwest has a regional airport with daily scheduled flight to Montreal. Other infrastructure in Lebel-sur-Quévillon area includes the



Barraute-Lebel-sur-Quévillon-Franquet-Matagami freight railway line operated by *Chemin de fer d'intérêt local du nord du Québec (CFILINQ)*, a semi-autonomous division of *Canadian National (CN)*, serving the administrative region of Abitibi-Témiscamingue and Nord-du-Québec; a 315 kV powerline supplying Lebel hydroelectric substation; and a 120 kV transmission line from Lebel substation to the Langlois mine (Nyrstar) located at 18 km NW of the northwestern corner of the Ralleau property. The Comtois sawmill (Resolute Forest Products) and the Langlois mine (Nyrstar) are main businesses operating in the Lebel-sur-Quévillon area.

### **5.3.Climate**

The Lebel-sur-Quévillon area is characterized by a cold temperate continental climate with cold winters and generally warm and short summers. Climate data was collected at Lebel-sur-Quévillon meteorological station by Environment Canada from 1971 to 2000. Temperatures in January range between -12° and -23.4° C with an average temperature of -17.7° C. July is the warmest month with temperature ranging from 10.1° C to 23.1° and an average temperature of 17.1° C. The annual average daily temperature at Lebel-sur-Quévillon is slightly over the freezing point at 1.0°C. The annual precipitation is averaged to 924.4 mm of which 226 cm as snowfall and 703.8 mm as rainfall. Snow accumulation and freeze-up of lakes begin in November and snow remains on the ground until the end of April. Coldest temperatures occur between the months of January and February. Exploration activities can be carried out throughout the year.

### **5.4.Physiography**

The Ralleau property lies in the Mistassini Highlands natural province of the Canadian Shield. The Mistassini Highlands is characterized by an irregular topography and consists of relatively flat lands dotted with hills averaging 300 to 450 m in elevation. Glacial deposits are abundant and variable in thickness.

The Ralleau property has a range in elevation from 370 m to 430 m with the highest area located north of Lake Sheilann. The hill immediately to the north of Lake Sheilann reaches an elevation of approximately 430 meters above sea level and is the highest hills on the property (Fig. 3). A few hills to the north of Lake Wilson attain an altitude of approximately 410 meters. The central and southern portion of the property is characterized by a low relief topography and an overall soft slope towards the

northern part of the property.



Figure 3 Hill located north of Lake Sheilann

The water from the central and eastern part of the property drains into Lake Novellet which feed into the O'Sullivan River (Fig. 4) and ultimately reach the James Bay via the Nottaway river systems.



Figure 4 O'Sullivan river – View northwestward

Lake Wilson situated at an elevation of about 366 m above sea-level drains into the River Wilson which

flows south-west to Lake Quévillon. Although the area was logged in the past decades it supports typical boreal forest species including black spruce in the swamps and jack pine in the drier areas (Fig. 5).



Figure 5 Typical relief and vegetation – Central area of the property - View northward

## 6. HISTORY

Major geologic features at a scale of 1: 63 360 (one inch to one mile) were published by the Ministère des Mines du Québec, by *Fairbairn (1940, 1946)* for the Ralleau, Effiat and Carpicket townships. More recently, the Lac de la Ligne area (NTS 32F01) has been mapped at a scale of 1: 50 000 by *Bandyayera (2003)*. This work was undertaken mainly in order to update the geological maps of the Urban-Barry Greenstone Belt and evaluate the mineral potential of the area. Regional mapping covers the entire Ralleau property.

The area under study is covered by regional helicopter-borne magnetic and electromagnetic INPUT MK VI surveys conducted in 1984 by Questor Surveys Ltd (*Relevés Geophysiques Inc., 1985*). Regional magnetic data over the study area were acquired at a nominal lines spacing of 200 meters and a nominal mean terrain clearance of 120 meters.

### PREVIOUS EXPLORATION

Limited exploration work has carried out sporadically on portions of the Ralleau property since the end of the 1950's. Exploration work consisted of reconnaissance geological mapping, line cutting and ground geophysical surveys, and preparation of reconnaissance reports. In a few cases, companies conducted limited amounts of diamond drilling to test electromagnetic and/or magnetic anomalies. Most of the historical works have been conducted in the Lake Sheilann area. The following table presents a summary of exploration work conducted on the Ralleau property.

Table 1 Historical work conducted on the Ralleau property				
Assessment Report No	Year	Company	Type of work	Area / Results
GM 05363	1956	SPES Exploration Ltd	Geological mapping and prospecting program	Geological mapping program covering the area situated between the Lake Sheilann and Perigny river; the exploration program failed to encounter any significant base or precious metal mineralization.
GM 04721	1956	Dome Exploration	8 inclined ddh's (SA-1, SA1-A and SA-2 to SA-7)	Holes drilled int the western area of Lake Sheilann; best assay results yielded 0.53%

**Table 1 Historical work conducted on the Ralleau property**

<b>Assessment Report No</b>	<b>Year</b>	<b>Company</b>	<b>Type of work</b>	<b>Area / Results</b>
		(Quebec) Ltd	totalling 610 m.	Cu and 9.49 g/t Ag over 1.86 m in hole SA-6 and 0.61% Cu and 2.97 g/t Ag over 1.46 in hole SA-1.
GM 05419	1956	Malartic Gold Fields Ltd	Geological and ground electromagnetic surveys (Squire vertical loop electromagnetic unit (VLEM)) followed by a pack sack drilling program in spring 1957	Work carried out in the southwestern area of Lake Novellet at 450 m south of the southern limit of the Ralleau property; presence of an E-W trending conductor extending over 1 km; follow up consisted of several unsuccessful attempts to test the conductor by short pack sack drill holes.
GM 07306A GM 07306-B	1957	Malartic Gold Fields Ltd	Limited ground electromagnetic surveys (Squire and Ronka electromagnetic surveys); three pack sack drill holes (N1, N2 and N3) totalling 31.4 m	Same location as GM 05419; short vertical holes did not explain the electromagnetic conductor previously outlined in 1956.
GM 15993	1965	Anglo American Nickel Mining Corporation Ltd	Ground magnetic survey (MF-1 fluxgate magnetometer)	Survey covering the east and NE areas of lake Sheilann; the survey, totalling approximately 50.6 km, was conducted along lines oriented N-S spaced at 183 m interval with readings taken every 15 m; results indicate several narrow E-W elongated magnetic anomalies and two NW-SE magnetic anomalies.
GM 18253	1966	Anglo American Nickel Mining Corporation Ltd	Ground electromagnetic (Crone JEM dual frequency unit) and magnetic surveys	Same location as GM 15992; the EM survey outlined two parallel conductors oriented NW-SE in the western portion of the property; conductors are coincident with two NW-SE magnetic anomalies outlined in 1965; follow up with detailed geophysical surveys along grid lines oriented N030°.
GM 19519	1967	Anglo American Nickel Mining Corporation Ltd	4 inclined ddh's (R-1, R-1 (A), R-2 and R-3) totalling 421.2 m.	Holes were collared to test two parallel EM conductors (GM 18253). Any assay results reported. Holes encountered disseminated, semi-massive to massive sulphides mineralization associated with graphite stringers; mineralized intercepts as follows: R-1A: 1% pyrrhotite and chalcopyrite over 4.57 m; R-1: 20% pyrrhotite over 2.90 m and up to 30% pyrrhotite over 1.52 m; R-2: 60% pyrrhotite ±pyrite over 15.24 m and 10-20% sulphides ±chalcopyrite over 12.74 m; R-3: 20% pyrrhotite ±chalcopyrite over 1.07 m

**Table 1 Historical work conducted on the Ralleau property**

<b>Assessment Report No</b>	<b>Year</b>	<b>Company</b>	<b>Type of work</b>	<b>Area / Results</b>
GM 38840	1979	Shell Canada Ltd	Evaluation report	General geological compilation covering Verneuil, Wilson, Ralleau and Effiat townships.
GM 44514	1986	Mines Sullivan Inc.	Evaluation report	The Ralleau property is covered by regional magnetic and electromagnetic INPUT MK VI survey. CDI Surveys Inc. performed an interpretation of geophysical data. The interpretation outlined 31 EM conductors and delineated 8 target areas of which two are located on the Ralleau property (western and southeastern area of Lake Sheilann).
GM 44513	1986	Mines Sullivan Inc. / Ressources Onyx Inc.	Geochemical sampling program	Survey conducted over the Novellor project covering portion of the Ralleau, Effiat and Carpique twps. Humus samples were systematically collected over a 400 m X 400 m grid and analyzed for Au. Assay results indicated anomalous values of 60 ppb Au above a very low background level of <5 ppb Au in a sample collected 2 km south of the southeastern limit of the Ralleau property.
GM 45088	1986-1987	Mines Sullivan Inc. / Ressources Onyx Inc.	Ground VLF-EM (Geonics EM-16, NAA (24.0 kHz) and NSS (21.4 kHz)) and magnetic (Unimag instrument) surveys	Surveys carried out on Grid I of the Novellor project covering an area of 7.68 km <sup>2</sup> in the central part of the Ralleau property.
GM 47599	1988	Ressources Onyx Inc.	Induced polarization (IP) survey (totalling 70.0 line kilometers; in line pole-pole configuration)	Survey carried out over the West grid of the Novellor project located between the western and the southeastern area of Lake Sheilann. The IP survey delineated 32 anomalous axis oriented NW-SE to E-W. A total of 9 IP anomalies were recommended for drill testing.
GM 52058	1991	Claims Coda and Derosier	Technical evaluation	Technical evaluation report regarding 58 claims located in the Mountain, Ruette, Wilson and Ralleau twps.
GM 52037	1992	Explorateurs-Innovateurs Quebec Inc. / Soquem - Claims Coda and Derosier	Beep Mat prospecting and rock sampling	Airborne EM anomalies were investigated by a Beep Mat survey. Eleven shallow conductors associated with disseminated pyrite mineralization were delineated. Assay results did not return any significant value.

According to a review of historical documents, there is no historical mineral resource or mineral reserve estimate at the Ralleau property, and there is no historical mineral production.

## **7. GEOLOGICAL SETTING AND MINERALIZATION**

The following sections describe the regional and local geological settings of the Ralleau property and are largely based on work by *Bandyayera et al.* (2003). The Property Geology sub-section is based on the previous NI 43-101 Technical Report prepared by SEMIco Ltd which has been reviewed in order to include results of the geological mapping program carried out by the author during the summer 2014 field season.

### **7.1. Regional Geology**

The Ralleau property is situated within the Urban-Barry Belt located in the central-east portion of the North Volcanic Zone (*Chown et Al.*, 1992) of the Abitibi Greenstone Belt (Fig. 6). With the exception of Proterozoic diabase dykes (Psen), all the rocks in the area formed during the Archean (Fig. 7). The volcanic rocks of this region are generally grouped into two lithostratigraphic sequences: (1) the Urban-Barry Belt, which covers the central part of the region and (2) the Currie-LeSueur Belt in the north-west area. The latter is stratigraphically associated with the Obatogamau Formation which represents the first volcanic cycle of the Roy Group (*Cimon*, 1977) on the southern flank of the Chibougamau Anticline. The Obatogamau Formation forms a sequence of tholeiitic basalts with up to 60% plagioclase phenocrysts and occurs as either pillow lavas or as massif or brecciated flows. The Currie-LeSueur Belt forms a 17 km long, east-west trending band that is generally about 8 km wide. The belt is truncated in the South by the Cameron Deformation Zone and in the east by the Mossant fault.

The Urban-Barry Belt extends over 135 km and is 4-20 km wide. This greenstone belt is delimited in the north by the Mountain (Amou) and Father plutons (Afat) and in the south by the Wilson (Awil) and Souart (Asou) plutons. These intrusives range in composition from granodiorite to tonalite. The Urban-Barry Belt consists mainly of volcanic rocks that vary in age from 2791 Ma to 2707 Ma. It is cross-cut by oblique thrust-faults oriented E-W to ENE-WSW which form imbricated structural blocks that increase in age from the NW to the SE (*Rhéaume and Bandyayera*, 2007). Based on the work of *Bandyayera et al.* (2002), *Bandyayera et al.* (2003), *Bandyayera et al.* (2004a), *Bandyayera et al.* (2004b) and *Rhéaume and Bandyayera* (2007) the Urban-Barry Belt has been subdivided into five formations : the Fecteau (2791 Ma), Lacroix, Chanceux, Macho (2718 Ma), and Urban Formations (2707-2714 Ma). The Ralleau property

is located in the Urban Formation at the far west of the Urban-Barry Belt.

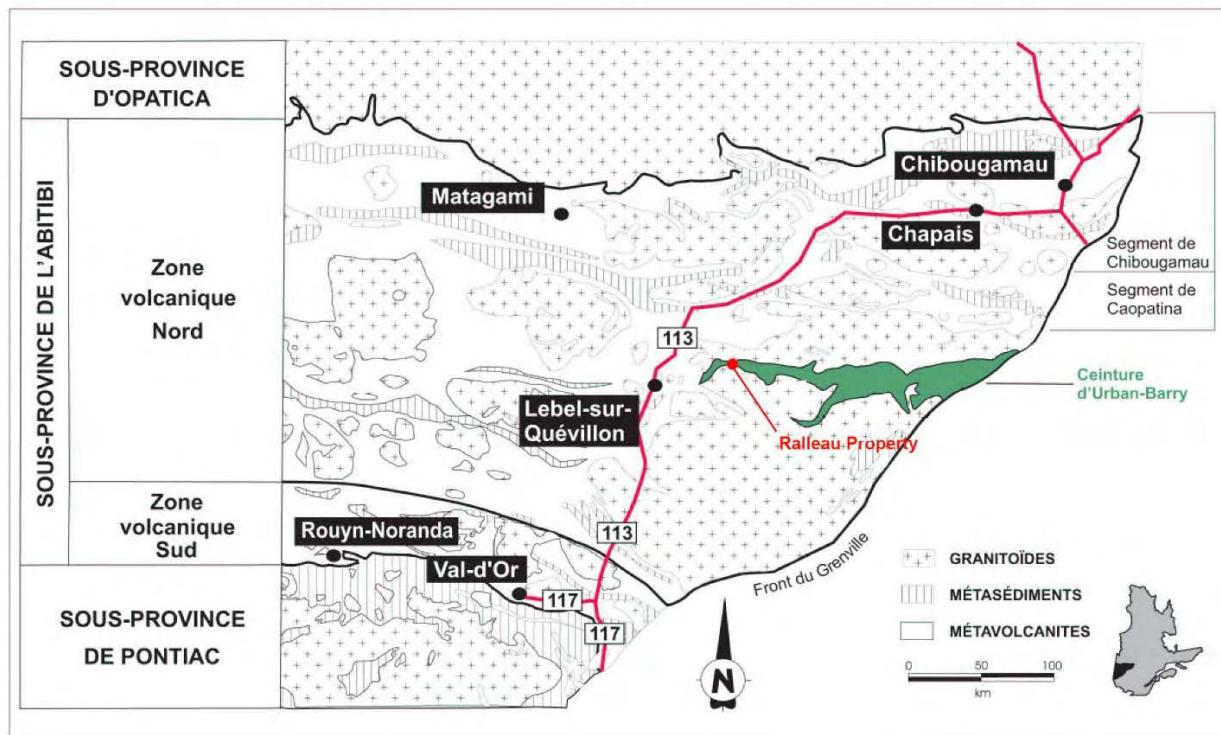
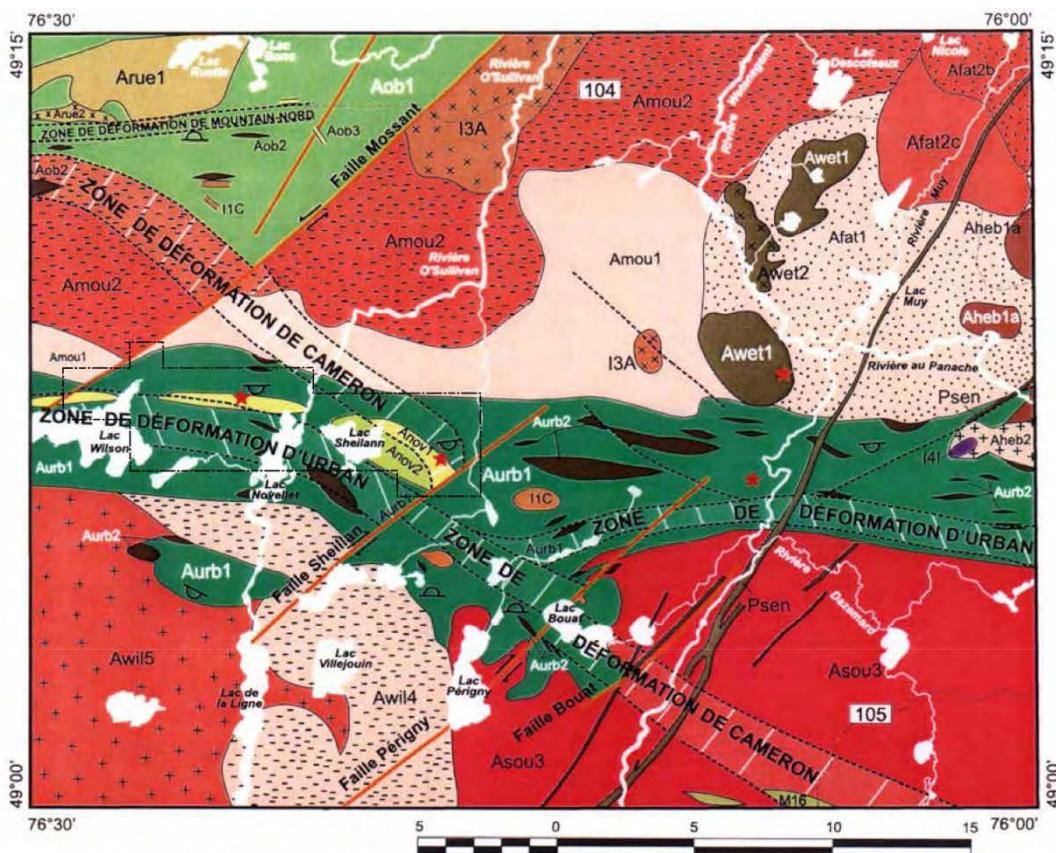


Figure 6 Urban-Barry Greenstone Belt

(Modified from Bandyayera, 2003)

The Urban Formation was first described near lakes Picquet and Mesplet (*Bandyayera et al., 2002*). The formation extends over more than 125 km between the Grenville Front and Lake Wilson. It is composed principally of tholeiitic, glomeroporphyritic basalts (Aurb1) and approximately 5% synvolcanic gabbros (Aurb2), felsic volcanics (Aurb3), and various metasediments (Aurb4). The two main felsic volcanic units of the Urban Formation are the Novellet (2714 Ma) (*Bandyayera et al., 2002*) and Freeman (2707 Ma) (*Bandyayera et al., 2004b*) members. The Freeman member (Afre) forms a 25 km long and 4 km wide band in the Lake Hébert area (NTS 32G03). This unit is mainly composed of rhyolitic to dacitic flows, lapilli tuffs and blocky tuffs of calc-alkaline affinity. At its limit, it is interdigitated with the Urban Formation. The Novellet Member (Anov) is composed mainly of volcanic and volcanoclastic rocks (Anov1) and undifferentiated tuffs of intermediate to felsic composition of calc-alkaline affinity. The felsic volcanic rocks of the Novellet Member have been dated at  $2714.1 \pm 1.1$  Ma (*Bandyayera et al., 2003*). The Novellet Member crops out on the Ralleau property north of Lake Wilson and east of Lake Sheilann.



#### Légende stratigraphique Protérozoïque

Psen	Dyke de diabase	Intrusion de Ruette	Granophyre à hornblende
<b>Archéen</b>			Gabbro
<b>Pluton d'Hébert</b>		<b>Intrusion de Wetetnagami</b>	Gabbro-diorite
Aheb2	Tonalite gneissique à folie		Gabbro-gabbronorite
Aheb1a	Diorite massive ou folie	<b>Formation d'Urban</b>	
<b>Pluton de Father</b>		Aurb2	Gabbro (filons-couches)
Afat2b	Granodiorite à grains grossiers	Aurb1	Basalte gloméroporphyrique
Afat2c	Granodiorite à grains moyens		
Afat1	Tonalite à biotite ± hornblende	<b>Membre de Novellet</b>	
<b>Pluton de Mountain</b>		Anov2	Tufs indifférenciés
Amou2	Granodiorite à biotite ± épido	Anov1	Volcanites et volcanoclastites felsiques (2714 Ma)
Amou1	Tonalite à biotite ± hornblende		
<b>Pluton de Wilson</b>		<b>Formation d'Obatogamau</b>	
Awil5	Granodiorite à biotite	Aob3	Volcanites et volcanoclastites felsiques
Awil4	Tonalite à biotite ± épido	Aob2	Gabbro (filons-couches)
<b>Pluton de Souart</b>		Aob1	Basalte gloméroporphyrique
Asou3	Granodiorite à biotite ± hornblende		

#### Légende lithologique

IIC	Granodiorite	Aob1	Gabbro	M1	Péridotite	M16	Amphibolite	
								Site anomal en métaux
								Chemin forestier

Limit of Ralleau property

Figure 7 Regional geology  
(Modified from Bandyayera *et al.*, 2003)

The Urban-Barry Belt is located in a large syncline bordered by felsic intrusive plutons. The belt is characterized by an overall E-W oriented schistosity consistent with the overall structural fabric of the Abitibi sub-province. The region has been sub-divided into several structural domains based on the orientation of planar and linear fabrics (*Bandyayera et al., 2003*). The Urban Deformation Zone forms a two km wide corridor through the central part of the greenstone belt. The schistosity is oriented N265°-N275° with a sub-vertical dip.

The Cameron Deformation Zone is a NW-SE trending, late-stage structural zone, characterized by a series of anastomozing shear planes/zones associated with sub-horizontal shear indicators. The Mossant, Sheilann, Perigny and Bouat faults are late-stage, brittle structures. They are oriented NE-SW but are not associated with any significant displacement. The other important structures in the area are the Ralleau Syncline and the Mountain Anticline. The Ralleau Syncline is oriented approximately E-W and is interpreted to coincide with the Urban Deformation Zone. The Mountain Pluton is a synvolcanic intrusion separating the Urban-Barry and Currie Le Sueur Belts and is at the center of the Mountain Anticline. The Mountain Anticline is based on the observation that the stratigraphic polarity is oriented towards the North in the Obatogamau Formation and towards the South in the Urban Formation. These extensive regional folds suggest a N-S compressional phase that affected all of the Abitibi (*Chown et al., 1992*).

Overall, the area experienced amphibolite-facies, regional metamorphism characterized by the assemblage hornblende +actinolite +chlorite +biotite ± garnet (*Bandyayera et al., 2003*). However, in the central part of the Urban Formation the predominant mineral assemblage is albite +epidote +actinolite +chlorite +carbonates which is more consistent with greenschist-facies conditions. The rocks surrounding the synvolcanic felsic intrusives record amphibolite-facies, contact metamorphic conditions characterized by the assemblage hornblende +biotite +garnet.

*Rhéaume and Bandyayera (2007)* reviewed the lithostratigraphy of the Urban-Barry, Chapais and Chibougamau regions and proposed a sequence of three volcano-sedimentary cycles for the Urban-Barry Belt dated between 2791 to 2707 Ma. The volcanic rocks of the Urban Formation (2714-2707 Ma) are interpreted to represent the third and last volcano-sedimentary cycle of the Urban-Barry Belt. With the exception of the volcano-sedimentary Haüy Formation, which has been dated at  $2691.7 \pm 2.9$  Ma (*Davie*

*et al., 2007*), the Urban Formation is younger than the volcanic rocks of the Chibougamau-Chapais region. *Rhéaume and Bandyayera (2007)* proposed three interpretations to explain the age difference: either (1) the volcanic events that formed the Urban Formation did not affect the Chibougamau-Chapais area, (2) the equivalent rocks were eroded, or (3) they represent a local submarine volcanic basin, contemporary with the erosion of the volcanic centers in the Chibougamau-Chapais region.

## **7.2. Property Geology**

Bedrock exposures are scarce due to the extensive glacial deposits and swampy organic material covering most areas of the property. The current interpretation of property geology described below and shown in accompanying maps is based on the geological mapping program carried out during the summer of 2014 as well as previous geological mapping programs, and geophysical and drill hole data. Only geological reconnaissance work was carried out by the author in the areas north, east and south-east of Lake Sheilann. Geological information covering these areas is largely based on previous field mapping conducted in 2010 by MRB and Associates.

The Ralleau property is situated within the western portion of the Urban-Barry Greenstone Belt. The geology of the property is dominated by mafic to intermediate volcanic rocks of the Urban Formation; and felsic volcanics of dacitic to rhyolitic composition of the Novellet Member. These lithological units mainly strike WNW-ESE, changing to E-W in the western portion of the property and to NE-SW in the eastern portion of the property. These changes in orientation may be related to the Urban Deformational Zone and the Cameron Deformational Zone. The Ralleau Syncline has also been interpreted to coincide with the Urban Deformational Zone (*Bandyayera et al., 2003*). Overall, the area experienced amphibolite-facies metamorphism; however, the central part of the Urban Deformational Zone appears to have been exposed to only greenschist-facies conditions.

### **7.2.1. The Urban Formation**

The Urban Formation is composed primarily of a series of intermediate to mafic volcanic rocks but also contains the Novellet Member, a suite of dacitic and rhyolitic volcanic rocks. At its northern limit, the Urban Formation is in contact with the tonalitic Mountain Pluton. Overall, mafic and andesitic rocks make up approximately 85% of the Urban Formation.

The mafic rocks form a variety of textures including aphyritic, porphyritic, amygdular and pillow units. The basalts are greyish green to dark green on weathered surfaces and dark greyish green on a fresh surface. Mafic lavas are aphanitic and locally contain 2-5% amygdules (2-3mm) filled with calcite and occasionally with quartz. The porphyritic units contain up to 15% plagioclase phenocrysts (2-5mm). Pillowed basalts contain a relatively common epidote alteration at the center of the pillows, which was observed both in the central part of the property and near the Mountain Pluton in the north. Moderately deformed pillow basalts occur in the NE corner of the Ralleau Township and at the northern extremity of the property. The long axis of the pillows are oriented parallel to the regional foliation and measured between 0.60 and 0.80 m. Pillowed mafic flows strike at N274°-N284° with stratigraphic tops oriented to the south. These units are chloritized, variably carbonatized and locally silicified.

A porphyritic, pillow andesite unit forms a band, with an apparent thickness of 220 m, at the contact of the felsic volcanic Novellet Member and the mafic rocks of the Urban Formation. Several outcrops of this unit were mapped in the central part of the property, as well as west of Lake Sheilann. The andesites are a medium greenish grey on weathered surfaces and a light, greyish green on fresh surfaces. They contain 15-30% subhedral plagioclase phenocrysts (2-4 mm) in a fine-grained matrix with 5-15% euhedral amphibole and fine-grained biotite. The pillows are moderately to strongly deformed and vary in thickness between 15 and 30 cm. The long axis of the pillows measure approximately 50 cm and are oriented N270°-N283° with a steep to subvertical dip to the North. The borders (2 cm) of the pillows have a rusty appearance and contain disseminated pyrite. The center of the pillows are depleted in mafic minerals and are weakly altered to epidote. The pillows are commonly deformed and contain a series of parallel fractures, several decimeters apart. The fractures are oriented N-NW to N-NE and are locally filled with quartz.

Intermediate volcanoclastic rocks crop out only rarely on the property. They have been logged in drill core and mapped on a few outcrops located north and west of Lake Wilson Lake, north of Lake Novellet, at the mouth of the O'Sullivan River and NW of Lake Sheilann. They form relatively continuous bands (several tens of meters wide) at the contact with the Novellet Member. The intermediate tuffs are layered with alternating, centimeter-scale bands of greyish beige rock interlayered with darker-colored, greenish grey rocks. The lighter colored layers are fine-grained and composed of plagioclase, quartz, and 10% mafic minerals, including biotite, amphibole and chlorite. The darker colored bands are coarser-grained and contain approximately 50% mafic minerals. This unit contains less than 1% quartz-carbonate

veins oriented parallel to the foliation. Fine-grained pyrite occurs locally disseminated parallel to the plan of foliation. Monogenic lapilli tuffs of intermediate composition are grey and beige on weathered surfaces and pale greenish-grey on fresh surfaces. This unit contains 30-40% elongated, felsic volcanic fragments in a fine-grained, chloritized matrix with minor pyrite. Sericite and biotite define the foliation.

Metasediments crop out only rarely on the property. Nevertheless, a few outcrops of metasediments have been identified among the mafic and intermediate layers of the Urban Formation. A first outcrop (Outcrop RM-14-006) was mapped in the central part of the property, approximately 500 m south of the felsic rocks of the Novellet Member.

It consists of thinly laminated, schistosed, very fine-grained metasediments interlayered within massive mafic lavas. Dark thin laminas indicate the presence of graphite. The metasediments are sericitized and weakly mineralized with pyrite. The bedding is oriented at N286°/70°. Thin layers of wacke occur sporadically within pillowed and porphyritic intermediate lava flows. A thin wacke layer has also been mapped north of Lake Wilson (outcrop No RM-14-109). The rock is pale grey on weathered surface and medium grey on fresh surface. It forms a massive to thinly laminated, pluricentimetric- to pluridecimetric-scale thick layer. The unit is moderately magnetic and contains 3-4% finely disseminated magnetite.

Several gabbro sills intrude the Urban Formation. They are massive to very weakly foliated, medium-grained and contain about equal proportions of chloritized amphibole and plagioclase. The gabbros are also weakly to strongly carbonatized. These sills are concordant with the regional foliation.

Amphibolite occurs between lakes Novellet and Sheilann (outcrops RM-14-136, RM-14-137 and RM-14-148). This unit includes amphibolites and garnet-amphibolites, which are interpreted to be recrystallized and metamorphosed basalts. Fresh rocks are dark greenish grey and weathered surfaces are dark green. They vary from medium- to coarse-grained and display a foliated texture. The amphibolites consist mainly of hornblende, 10% plagioclase and up to 15% garnet porphyroblasts (1-10 mm). Amphibolites are weakly mineralized with pyrite and pyrrhotite and are variably carbonatized.

### **7.2.2. The Novellet Member**

The Novellet Member regroups a suite of dacitic to rhyolitic felsic volcanic rocks found in the center and near the western limit of the property. It accounts for approximately 10% of the property. It has an apparent width of 150-180 m in the center of the property and of 300-350 m at the western limit of the property. The felsic lavas are light grey in color and weather greyish-white to white. They contain 3-15%, millimeter-scale, blue quartz, 3-7% acicular amphibole and minor biotite in a fine-grained, quartz-feldspathic matrix. Subhedral phenocrysts (2-5 cm) of white plagioclase occur locally. The schistosity is oriented N260°/68° à N270°/90°. Quartz veins are relatively rare and unmineralized. Alteration is characterized primarily by silicification, albitization and a weak sericitization.

A suite of felsic volcaniclastic was mapped on a hill north of Lake Wilson (outcrop RM-14-111). The rocks are light grey on a fresh surface and weather to white on outcrops. This unit contains 20% angular to sub-rounded blocks (6.4-21 cm) and 30-40% lapilli fragments (0.2-3 cm). The matrix is fine-grained, tuffaceous and is composed of sericitized plagioclase, quartz and 20-25% fine-grained biotite. The fragments contain 5-15% rounded quartz phenocrysts (2-8m) and are commonly elongated parallel to the foliation (N270°).

Few outcrops of felsic tuffs or reworked felsic volcaniclastics were mapped in Lake Wilson area (outcrops RM-14-123 to RM-14-126). The rocks are grey on a fresh surface and greyish-white when weathered. They are very fine-grained and composed primarily of quartz and feldspar with 3-7% biotite and disseminated magnetite. These units contain up to 15% angular to sub-rounded fragments (2mm) of grey and blue quartz and 5-10% fragments/phenocrysts of white plagioclase. Locally, the rocks developed a schistose texture and are strongly sericitized. Overall, the unit is weakly mineralized with trace amounts of disseminated pyrite.

### **7.2.3. The Mountain Pluton and Felsic Intrusive Units**

The Mountain Pluton crops out north of the Urban Formation and is a relatively homogenous, synvolcanic intrusion in the center of the Mountain Anticline. The unit crops out at the NW limit of the Ralleau property. A biotite tonalite is the main intrusive phase of the Mountain Pluton on the property. In the field, this unit either occurs as small, isolated outcrops or as large zone of exposed rock on hill tops in the NE part of the Wilson canton. The biotite tonalite is pale grey on fresh surfaces and weathers to a whitish grey. The unit is medium-grained and very homogenous. It contains 60% subhedral plagioclase,

30% interstitial, blue quartz and approximately 10% fine-grained biotite. The Mountain Pluton also contains a granodiorite phase with 20-25% K-feldspar which crops out a few hundred meters north of the property line.

A small quartz-feldspar porphyry (QFP) dyke intruding mafic volcanic rocks of the Urban Formation has been mapped on the central northern limit of the Ralleau property, less than 1 km southwest of the Ruisseau Mossant (outcrop No RM-14-064). The QFP dyke forms a small escarpment oriented E-W with an estimated thickness of 10 m. Although, the dyke does not crop out a lot, it is interpreted to be concordant with the regional foliation. It is beige on weathered surfaces and speckled beige and medium grey on fresh surfaces. This unit contains 25-40% whitish, subhedral plagioclase phenocrysts (2-4 mm), 7% fine black biotite flakes and 3% millimeter-scale blue quartz eyes stretched or flattened parallel to the schistosity ( $N276^\circ$ ), set in a fine-grained quartzo-feldspathic groundmass. The unit is weakly sericitized and weakly mineralized with finely disseminated pyrite.

#### **7.2.4. Structural Geology**

The rocks experienced intense deformation associated with the Urban Deformation Zone. It is characterized by intermediate to high strain producing a weak to moderate schistosity. Structural measurements indicated that the schistosity varies from  $N288^\circ/85^\circ$ , in the southeast area of Lake Sheilann, to  $N270^\circ/89^\circ$  in western portion of the property, whereas the schistosity in the central area is generally oriented  $N283^\circ/89^\circ$ . The Ralleau Syncline is based on the geological observation that there is a reversal of the stratigraphic polarity on either side of the Urban-Barry Belt (*Bandyayera et al., 2003*). The axis of the syncline is oriented approximately E-W and is interpreted to coincide with the Urban Deformational Zone.

Several small, NW-SE oriented brittle faults or fractures displaying centimeter- to decimeter-scale dextral displacement were mapped on the property. The brittle fault/fractures crosscut all lithological units and are the last deformational event at the Ralleau property.

The Urban Deformational Zone hosts several decimeter- to meter-scale shear zones. They are characterized by well developed shear planes oriented E-W and dipping towards the North. These shear zones are associated with chlorite, biotite and sericite alteration and locally contain minor pyrite.

### **7.2.5. Mineralization**

In 1956, 8 inclined diamond drill holes (SA-1, SA1-A and SA-2 to SA-7) totalling 610 m are bored in the western area of Lake Sheilann by Dome Exploration (Quebec) Ltd (GM 04721). Best assay results yielded 0.53% Cu and 9.49 g/t Ag over 1.86 m in hole SA-6 and 0.61% Cu and 2.97 g/t Ag over 1.46 in hole SA-1. At this location, felsic and hydrothermally altered rocks which locally host up to 50% sulphides have been identified within felsic to intermediate rocks, portions of which exhibit moderate to strong sericitic and occasionally chloritic alteration.

## 8. DEPOSIT TYPES

The Ralleau property is still relatively underexplored and has only been the subject of basic grassroots exploration. Based on what is currently known about the geology of the property, it is a setting favorable for volcanic massive sulfide (VMS) mineralization. The following section describing volcanic massive sulphide deposits is largely based on *Franklin (1996)*, *Galley et al. (2007)*, *Gibson et al. (2007)* and *Hannington (2014)*.

Volcanic massive sulphide (VMS) deposits commonly refers to volcanic-associated (*Franklin, 1996*), volcanic-hosted (*Large, 1992; Large et al., 2001*) and volcanogenic (*Galley et al., 2007; Hannington, 2014*) massive sulphide deposits. VMS deposits are important sources of Cu, Zn, Pb; may contain economically recoverable significant Ag and Au; and are significant sources of Co, Sn, Se, Mn, Cd, In, Bi, Te, Ga and Hg recovered as byproduct metals. There are close to 350 known VMS deposits (>200 000 t) in Canada and over 800 known worldwide. They contribute 27% of Canada's historical Cu production, 49% of its Zn, 20% of its Pb, 40% of its Ag, and 3% of its Au (*Galley et al., 2007*). Thirteen of these VMS deposits were producing mines as of 2006. Based on the polymetallic character of the mineralization, VMS deposits are considered economically viable exploration targets and one of the best deposit types for security against fluctuating prices of base metals.

Important Canadian deposits include: the Kid Creek deposit (Ontario), deposits in the Bathurst mining district (New Brunswick) and deposits of the Noranda mining district (Quebec). The Langlois mine, a volcanogenic massive-sulphide (VMS) deposit, located 18 km to the northwest of the Ralleau property, hosts total mineral reserves totalling of 3.18 Mt grading 10.05% Zn, 0.67% Pb, 0.23% Cu and 48.37 g/t Ag; with measured and indicated mineral resources totalling 4.85 Mt grading 10.33% Zn, 0.25% Pb, 0.66% Cu, 51.70 g/t Ag; and inferred mineral resources totalling 0.86 Mt grading 7.19% Zn, 0.19% Pb, 0.38% Cu, 43.12 g/t Ag (Nyrstar - news release dated April 30<sup>th</sup>, 2014).

VMS deposits occur worldwide in submarine volcanic terranes that range in age from Archean to actively-forming deposits on the modern seafloor. These deposits are composed of a mound-shaped to tabular, stratabound massive sulphide lens (>40%) formed either on or immediately below the seafloor,

and discordant to semi-discordant, extensively altered, stockwork veins and disseminated sulphides referred to as the “feeder zone”, “stringer zone” or “alteration pipe” that represent fluid flow conduits below the seafloor. VMS deposits have been variably classified according to their metal content (the copper-zinc and the zinc-lead-copper group) (*Franklin et al., 1981*); or ratios of precious metals (gold-silver) to base metals (*Poulsen and Hannington, 1995*). Based on base metal ratios, characteristics of the depositional environment and alteration habit, Canadian VMS deposits have been also subdivided into Noranda-type (Cu-Zn) and Mattabi-type (Zn-Cu-Pb) by *Morton and Franklin (1987)*. Recent classification for VMS deposits are based on lithostratigraphic and lithotectonic environment of formation (*Barrie and Hannington, 1999; Franklin et al., 2005; Galley et al., 2007*). The lithostratigraphic types of VMS are shown in Fig. 8. According to this classification, the most probable deposit type for the Ralleau property is bimodal mafic model.

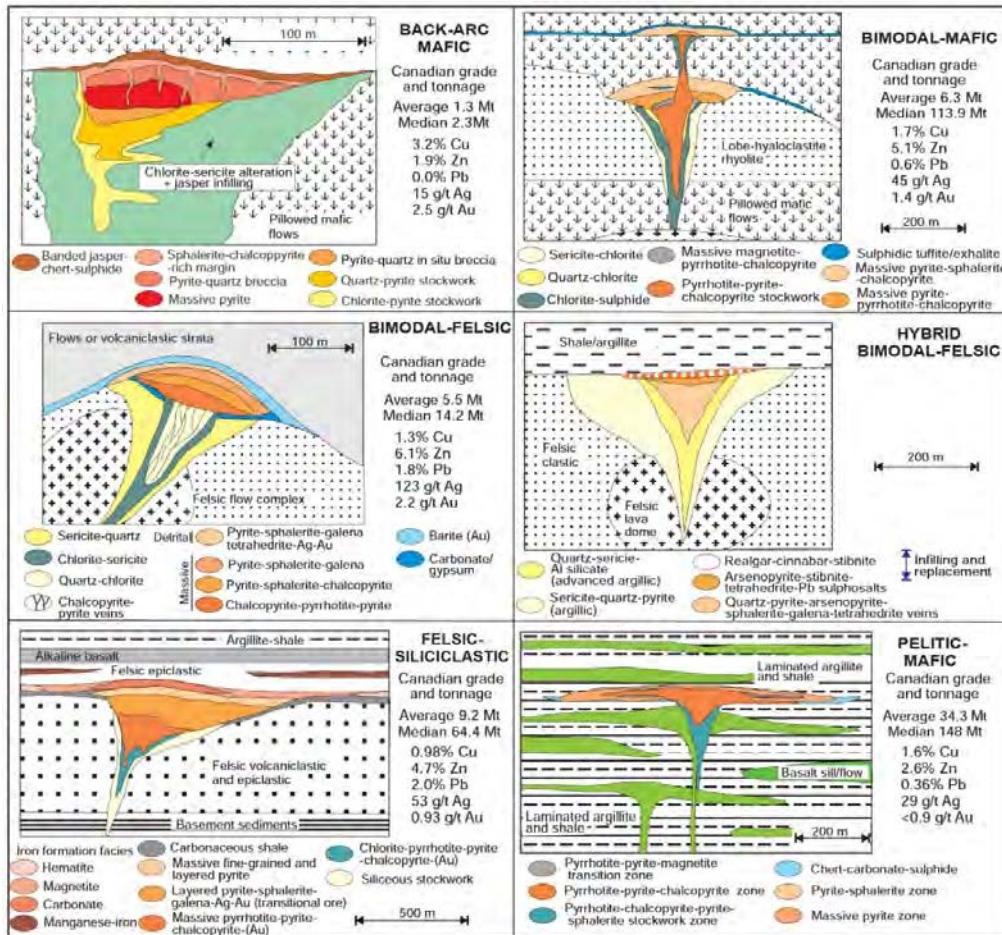


Figure 8 Lithological classification of VMS deposits

Proposed by *Barrie and Hannington (1999)*, modified by *Galley et al., (2007)*.

VMS deposits occurring in mafic volcanic rocks are characterized by significant amounts of Fe sulphides such as pyrite ( $\text{FeS}_2$ ), accompanied by less abundant pyrrhotite ( $\text{Fe}_{1-x}\text{S}$ ) or marcasite ( $\text{FeS}_2$ ), and variable amounts of chalcopyrite ( $\text{CuFeS}_2$ ) and sphalerite ( $\text{ZnS}$ ). VMS deposits dominated by felsic rocks are generally characterized by abundant but variable amounts of pyrite, chalcopyrite, and sphalerite, along with significant galena ( $\text{PbS}$ ) and tetrahedrite ( $(\text{Cu},\text{Fe})_{12}\text{Sb}_4\text{S}_{13}$ ). Many deposits also show a zonation pattern in which the upper stockwork is dominated by chalcopyrite-pyrite±magnetite, the basal part of the massive ore body is dominated by pyrite-chalcopyrite, and the upper and outer margins of the massive sulfide ore are dominated by sphalerite ±galena± barite. The gangue material varies greatly according to several parameters such as metamorphic grade, age, and geologic setting of the VMS deposits. For deposits that occur at lower greenschist facies, the gangue material may consist of quartz, carbonate, barite, sericite, and chlorite. At higher metamorphic grades, chloritoid, garnet, amphibole, cordierite, gahnite, staurolite, kyanite, and andalusite are common gangue constituents.

Alteration zones surrounding VMS deposits are caused by a complex interplay of ore-forming fluids, circulating seawater and host-rock interaction processes. Hydrothermal alteration is widely variable from district to district and even among individual VMS deposits. Alteration pipes beneath Cu-Zn deposits formed in deep water are generally characterized by a chloritic core and a sericitic outer zone (Franklin, 1996). VMS deposits within the Matagami camp are also characterized by the presence of talc, magnetite and phlogopite. Alteration associated with Zn-Pb-Cu deposits is dominated by sericite and quartz. The alteration zones associated with the stringer zone may extend vertically for several hundred meters below the VMS deposits and up to ten meters laterally forming a proximal hanging-wall alteration zone. Most proximal alteration zones can be traced for up to twice the diameter of the massive sulfide deposit and may extend to depths roughly 10 times the thickness of the deposit. Many deposits overlie stratified alteration zones that can have a strike length of 5–50 km and thicknesses of 1–3 km, especially in caldera settings (Galley *et al.*, 2007). Thus, alteration zones make a much broader exploration target than the deposits themselves.

## **9. EXPLORATION**

The following describes all relevant exploration work conducted by Megastar on the Ralleau property since acquisition in 2005. It is largely derived from the previous NI 43-101 technical report (*Stephens, 2011*) with some minor modifications included.

The exploration work consisted of reconnaissance geology and reporting (2005); line cutting (2006); ground geophysical surveys (2006); diamond drilling (2006); stripping and channel sampling (2008); heliborne geophysical survey (2008); a program of reconnaissance geological mapping to follow-up heliborne geophysical anomalies (2010); and a geological mapping and lithogeochemical sampling program (2014). This following section provides details for all this work except for diamond drilling which will be discussed in Section 10 of the present report. The results of the 2014 geological mapping and lithogeochemical sampling program are described in this section.

### **9.1. Geological Compilation**

Megastar completed limited geological compilation (GM 63677) in the fall of 2005 shortly after the acquisition of the initial block of 12 designated claim cells. Additional compilation work was done in the spring of 2010, to bring together the results of the various work programs completed between 2005 and 2010 (*Langton and Stephens, 2010*).

### **9.2. Line Cutting**

Following the acquisition of the property in 2005, Megastar initiated field exploration work in January of 2006, consisting of approximately 75 line-km of line cutting over areas of the initial block of 12 designated claim cells, in preparation for ground geophysical surveys (Megastar - news release dated Jan 31, 2006). Parallel cut lines were oriented N-S, spaced at 100 m intervals and stations marked with a picket every 25 m.

### **9.3. Ground Geophysical Surveys**

A ground magnetic survey and time-domain Pulse-EM survey (GM 62775) were completed on the Ralleau property during March 2006 following completion of the line cutting. The objective was to refine

the geological interpretation, and to define on the ground a group of three isolated airborne INPUT MK VI electromagnetic anomalies.

The ground magnetic survey, totalling 78.9 line-km, was conducted using a GSM-19 proton precession magnetometer with a sensitivity of  $\pm 0.1$  nt. Readings were collected at 12.5 m intervals along grid lines. Diurnal corrections were applied using a base station magnetometer collecting readings at 20 seconds intervals. Survey products include a series of maps at a scale of 1:5 000. Total magnetic field profiles and contours, as well as vertical magnetic gradient.

The surveyed area is characterized by a moderate to strong magnetic relief with the total magnetic field fluctuating from 55 200 to 59 000 nanotesla (nt). The area can be subdivided into three magnetic domains. The first one covers the northern portion of the grid. It forms an arcuate magnetic zone with values up to 1 400 nt above the magnetic background and extending over 2 km. The eastern portion of this zone is likely produced by two or three distinct magnetic bodies for a total width estimated at 100 to 200 m. This magnetic domain is interpreted to be related with mafic rock units. The second magnetic domain occupies the central part of the grid. It is characterized by a low magnetic relief with variations in total field intensity lower than 200 nt. This domain is punctuated by narrow and linear magnetic anomalies. The third domain occurs in the SW part of the surveyed area. Results indicated a broad (200 m) strong magnetic zone trending at N100°. This domain shows a strong magnetic relief forming a 200 m zone with variations ranging from 500 to 1500 nt. According to the vertical gradient map, the principal zone of magnetic high could be constituted of two or three more or less continuous magnetic horizons. Several magnetic breaks along main magnetic axes are interpreted as major structural features oriented NE-SW to NW-SE.

The Pulse-EM survey, totalling 39.3 line-km, was executed with a Crone Geophysics Pulse-EM (PEM) systems using 16.66 milliseconds time-base, a 1500 usec ramp-time and 20 sampling channels. The survey was based on six transmitter loops (900 m X 1300 m) on the grid, with survey lines at 100 m spacings. The readings were taken every 25 m for the vertical component (Z) and the horizontal component (X) which is parallel to the survey lines. Detailed interpretation shows seven conductors of variable intensities designated by the letters A to G. Five of these anomalies are coincident with INPUT MK VI anomalies. Conductors B, C, E and F were considered first priority targets with well defined electromagnetic responses. Five diamond drillholes (MAR-06-01 to MAR-06-05) (GM 63676) were

completed by Megastar between March and April 2006 in order to investigate Pulse-EM anomalies.

#### **9.4. Stripping and Channel Sampling**

In December 2007, a stripping and channel sampling program was completed on the Ralleau property (GM 63732). The program was designed to follow up on an historical Cu-Zn occurrence located less than 1 km NE of Lake Sheilann as well as to sample a rusty sulphidized outcrop.

The first trench, referred as Site No 1, covers an area of 50 m in length by 7 m wide. Thirty-two channel samples were collected from nine channels totalling 37.83 m and varying in length from 0.81 m to 11.54 m. The sampling length varie from 0.42 m to 1.62 m with an average length of 1.18 m. Best assays results returned anomalous Cu and Zn values with 346 ppm Cu over 1.23 m (Sample No 522027), 373 ppm Cu over 1.27 m (Sample No 572038) and 478 ppm Zn over 1.41 m (Sample No 572024). Twelve grab samples were also collected of which one returned anomalous Cu values of 353 ppm Cu (Sample No 502036). The sulphide mineralization is weakly to heavily disseminated and occurs along the contact of felsic and mafic rocks.

A group of three other trenches referred to as Site No 2 are located between Lakes Sheilan and Novellet approximately three kilometers west of Site No 1. All trenches encountered water, prohibiting sampling. Trenches were rehabilitated and abandoned.

Fifty (50) samples collected during channel sampling on Site No 1 were sent to ALS Chemex, a commercial laboratory, in Val d'Or, Quebec. Samples were prepared using standard preparation procedures used by ALS Chemex. Entire samples were crushed to 70% less than 2 mm, split off up to 250 g, pulverize split to better than 85% passing 75 microns, and homogenized. All samples were assayed for gold by fire assay and atomic absorption spectroscopy; silver, copper and zinc using aqua regia digestion and atomic absorption spectroscopy. Eight of these samples were also sampled for whole rock analyses of 14 metal compounds as well as yttrium and zirconium by X-Ray fluorescence spectrometry.

#### **9.5. VTEM Helicopter-borne Survey**

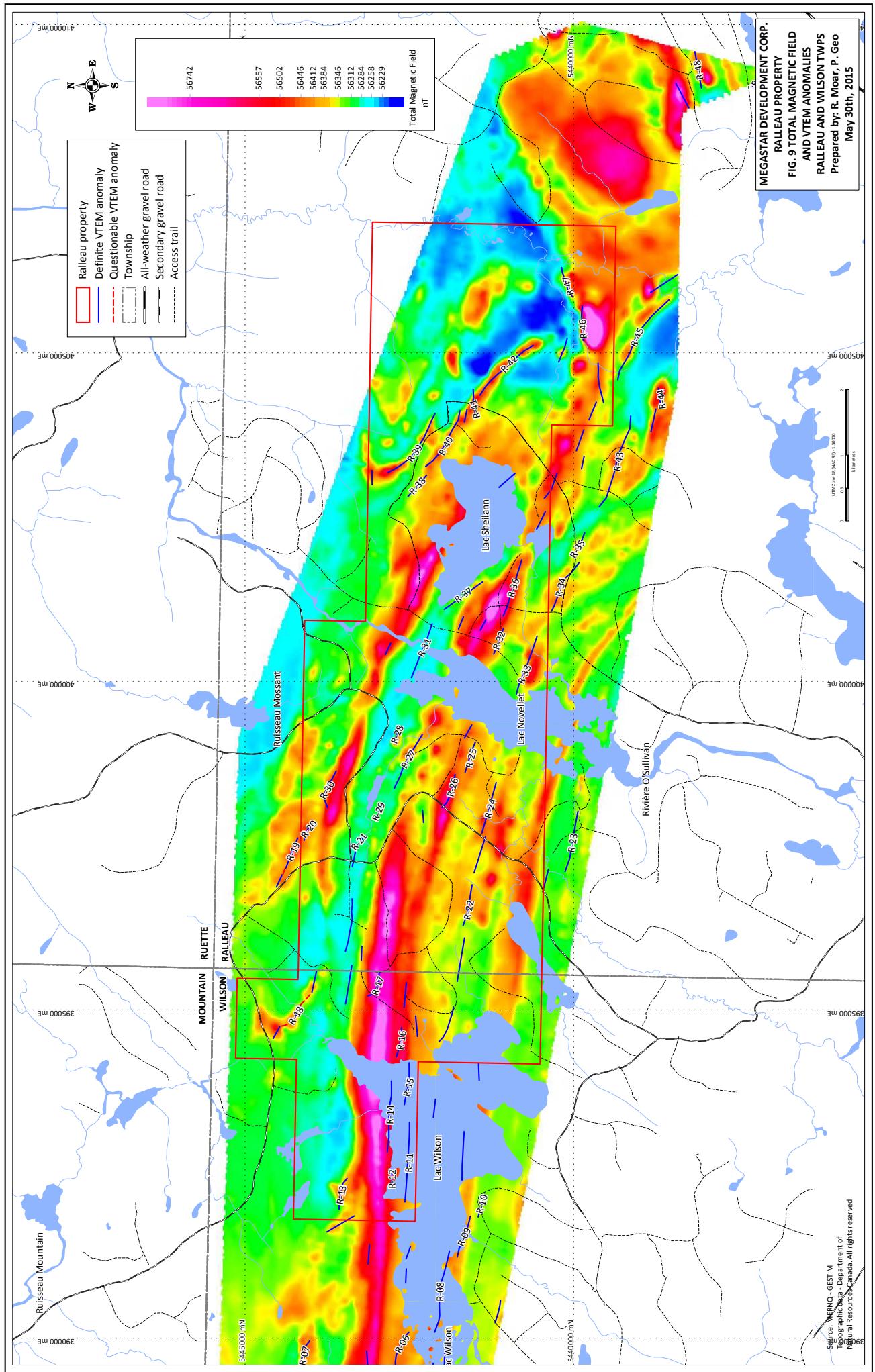
In late April of 2008, Megastar engaged Abitibi Geophysique Ltd of Val d'Or, Quebec, and Geotech Ltd. of Aurora, Ontario, to conduct a helicopter-borne electromagnetic geophysical survey known as Versatile Time-Domain Electromagnetic (VTEM). The survey area totalled 1,456 line kilometers over 8,000

hectares, on Megastar's entire 100% owned Ralleau project area (additional cells were acquired following the survey). Flight lines were spaced at 75 meter intervals, and accurately located using a GPS device and a radar altimeter for elevation.

The VTEM survey demonstrated that geological units on the Ralleau property exhibit high contrast of magnetic signature, of an order of magnitude of approximately 1630 nT. Magnetic lineaments follow the orientation of the Urban Deformation Zone, oriented generally E to W on the west side of the property, changing to ESE to WNW on the SE end of the property. These have been interpreted as two distinct fault systems from the magnetic data, one oriented at approximately N360°, and a second at N060° to N070°. The magnetic lineaments are interpreted to be mafic to ultramafic formations that existed before the development of the fault systems.

The survey identified 49 discrete anomalies based on the contoured results of the early and late time channels of the Z component off-time of the B-field. Most are oriented E to W, although a few are oriented between N090° and N135°. The anomalies range in length from 200 m to as much as 1 400 m. The particular amplitude and wavelengths indicate varying depths from shallow to deep, and varying widths from thin to thick. Generally, the conductors dip toward the north.

The 49 discrete anomalies have been classified as priorities 1 to 4 based on conductivity and strike length (Fig. 9). Eight (8) of these anomalies were classified as Priority 1, an additional eight as priority 2, 13 were classified as priority 3, and finally 20 more were classified as priority 4. From its analysis of the anomalies identified from the survey, Abitibi Geophysique Ltd recommended ground follow-up work on all of the priority 1, 2 and 3 anomalies, and drilling on all of the priority 1 and 2 anomalies once additional modelling has been completed. It should be emphasized that any such drill targets identified have been determined without the benefit of a thorough geological evaluation. Geological evaluation may result in the upgrading or downgrading of certain of the exploration targets identified from the VTEM survey. As well as the 49 anomalies identified by Abitibi Geophysique Ltd, there exists a large number of anomalies that were not classified. Abitibi Geophysique Ltd has suggested that the poorer anomalies may be the result of ionic sources, originating from overburden troughs, fault or shear zones, geological contacts, disseminated sulphides, or sphalerite.



### **9.6.2010 Reconnaissance Geological Survey**

During the summer of 2010, Megastar conducted a reconnaissance geological survey (GM 65611) on its property at that time consisting of 220 designated claim cells covering an area of 124 km<sup>2</sup>. The reconnaissance geological survey was initiated to follow-up on the anomalies previously identified from the helicopter-borne VTEM survey and to gain a better understanding of the geological setting of the property. Fieldwork was carried out by five individuals trained in earth science and working under contract to *MRB and Associates*, a geological consulting firm located in Val-d'Or, QC. The field crew were under the guidance Mr John Stephens, P. Geo., of *SEMICO Ltd*, a geological consulting firm based in Wellington, ON.

The reconnaissance geological survey, in conjunction with a reinterpretation of the magnetic information received from the airborne geophysical survey, has resulted in a number of modifications to the original geological understanding of the property. Although the geological picture remains similar to what existed before, the location, shape, and size of many of the felsic volcanic units and the mafic intrusive units have been modified to conform to what is now known about the property. Similarly, the structural interpretation has also been modified to conform to field observations and the lineations observed on the most recent magnetic maps.

The relocation of the geological units and the new interpretation of the regional structure have resulted in several significant changes, including:

- Repositioning of the Lake Wilson felsic volcanic lenses unit further north but following the same general trend;
- Shifting of the Lake Wilson felsic volcanic lenses toward the west, and a reduction in its width from 400 m to just over 100m;
- Identification of a narrow siliceous or cherty horizon within the core of the Lake Wilson felsic volcanic lenses;
- Extension of the Lake Novellet felsic volcanic lenses toward the east, across Lake Sheilann, and an increase in its width toward the west;
- Field correlation of observed mafic intrusive rocks in the field with many of the magnetic high features observed on the magnetic maps, and interpretation of similar magnetic high features to also be mafic intrusive rocks;

- Repositioning of many of the earlier mapped mafic intrusives due to direct field observation and correlation with magnetic maps;
- Elimination of several of the faults or shears indicated on the original maps;
- Modification to other of the faults or shears on the original maps;
- Addition of several new faults or shears;
- Repositioning of several regional shears based on correlation with the topography of the property.

One hundred and sixty-one (161) grab samples were collected during the course of the mapping in 2010. Samples location are shown on a compilation map that accompanies the technical report prepared by SEMICo Ltd in 2011. All samples were sent to ALS Chemex Laboratories in Val d'Or, Quebec for multi-element (109), whole rock (35), gold (22), and platinum and palladium (5) analysis. Out of 109 grab samples submitted for trace element geochemistry, twelve samples returned over 200 ppm Cu with a maximum of 584 ppm Cu (Sample 108412). Eight samples returned values exceeding 200 ppm Zn with a maximum value of 1 190 ppm Zn (Sample 7899). No significant values were obtained from grab samples sent for gold, platinum or palladium analysis. Proximal alteration associated with discordant sulfide-silicate stockwork vein systems includes chlorite-quartz-sulfide or sericite-quartz-pyrite+/-aluminosilicate rich assemblages and is typically strongly depleted in Na and Ca due to high-temperature feldspar destruction (*Galley et al., 2007*). Thirteen grab samples are reported as having anomalous copper-zinc as well as K-enrichment and Na and Ca depletion.

### **9.7.2014 Geological Mapping and Lithogeochemical Sampling**

The geological mapping and lithogeochemical program was carried out by the author assisted by Mr. Martin Heiligmann, Ph. D. (McGill), over a period of 44 days period between August 5<sup>th</sup> to August 29<sup>th</sup> and September 10<sup>th</sup> to September 28<sup>th</sup> 2014.

#### **9.7.1. Geological Mapping Program**

The geological mapping program was conducted along N-S oriented traverses as well as various forestry roads and access trails throughout the property. Traverses totalling 94 km were spaced at 400 m interval with infill at 200 m interval along the linecutting grid. The 2014 exploration program has been conducted in order to refine the accuracy of the geological map, obtain a better understanding of the geological setting of the property and to ultimately define potential targets for VMS mineralization. A total of 158

outcrops over an area of 20 km<sup>2</sup> have been mapped during the course of the survey. All geological data has been compiled and merged with earlier reconnaissance mapping to produce geological maps covering the western and the eastern part of the property at 1: 7 500 scale. A limited amount of fieldwork has been carried out in the Lake Sheilann area and most of the outcrops have been mapped in the central and the western portion of the property. A description of geological stations is provided in Appendix II. Section 7.2 “Property Geology” of the present report presents a complete description of lithological units and structural settings observed throughout the 2014 geological mapping program.

A total of ninety-four (94) grab samples of representative lithological units or mineralization were collected and were analyzed for a group of 33 elements.. Grab sample descriptions with assay results are listed in Appendix III. All certificates of assay are provided in Appendix V. Table 2 shows a description of grab samples collected during the 2014 geological mapping program for which significant assay results for Cu and Zn were obtained.

Table 2 Significant assay results and description of grab samples collected during the 2014 geological mapping program						
Sample		Coordinates (UTM NAD 83 - Zone 18)		DESCRIPTION	Cu (ppm)	Zn (ppm)
Sample No	Geological station	Easting (mE)	Northing (mN)			
Q592576	RM14029	395 878	5 444 293	Weakly to moderately carbonatized fine-grained andesite; 2-3% pyrite and chalcopyrite associated with a shear zone oriented at N278° / 88°	2070	190
Q592641	RM14150	401 501	5 441 397	Sericitized and chloritized shear zone (10 cm) affecting intermediate volcanic; up to 10% pyrite with minor amount of chalcopyrite	1920	8360
Q592645	Trench No 1	404 228	5 441 569	Massive, fine-grained basalt; moderately carbonatized with 3% disseminated PY	720	130

Forty-seven grab samples were sent for gold assays. A weakly anomalous gold value was obtained from a grab sample (No Q592576) collected 1.5 km NE of Lake Wilson, just outside the north boundary of the property. Assay results returned a weakly anomalous value of 0.039 g/t Au from a weakly to moderately carbonatized andesite which contained disseminations of sulphides.

### **9.7.2. Lithogeochemical Sampling Program**

In total, 62 grab samples from the Ralleau property were analyzed by ALS Minerals of Val D'Or for whole rock and trace element data. The samples were selected on the basis that they represent typical geological units, so that they can be used to map compositional variations across the Ralleau property. In addition, some samples were chosen because they experienced hydrothermal alteration, as indicated by the presence of minerals such as carbonates, sericite and chlorite. It should also be noted that the region experienced greenschist to amphibolite-facies metamorphism and that all samples are therefore, to some extent altered.

#### **9.7.2.1. Classification**

The whole rock data was used to determine the composition and affinity of the samples and to delimit their geological setting. Classification diagrams were used, in part, to confirm field classification of rock samples but also to establish a geological context that can then be compared to other mining districts. For example, VMS deposits in the Abitibi commonly occur in extensional and arc-related geological settings that typically contain bimodal volcanic rocks of tholeiitic to transitional affinity (*Galley et al., 2007*).

Plots of whole rock data were generated using Geochemical Data Toolkit (*Janousek et al., 2006*) and Microsoft Excel. The Geochemical Data Toolkit is a program used for recalculating data and plotting a wide range of classification diagrams.

For the classification plots, samples were color-coded by rock type based on field identification (see Table 3). Analyses were recalculated to 100% excluding water and carbon dioxide.

**Table 3 Classification of whole rock samples**

<b>Unit</b>	<b>Generic field name</b>	<b>No of samples</b>	<b>Symbol</b>	<b>Color</b>
V1	Felsic volcanic	15	diamond	grey
V1[Tuf]- S3	Reworked felsic volcanic / metasediment	2	square	blue
V1[Tuf]-S10	Reworked felsic volcanic /cherty metasediment	1	circle	blue
V2	Intermediate volcanic/andesite	19	triangle	magenta
V2[Tuf]	Intermediate volcanoclastic	9	diamond	cyan

**Table 3 Classification of whole rock samples**

Unit	Generic field name	No of samples	Symbol	Color
V3	Mafic volcanic/basalt	14	diamond	green
I3A	Gabbro	1	circle	black
QFP	Quartz feldspar porphyry	1	triangle	black

### TAS CLASSIFICATION

The TAS diagram, proposed by *Le Bas et al.* (1986) and modified by *Le Maitre et al.* (2002), is used to assign names to common types of volcanic rocks. It is based on the relationship between the total alkali and silica content (TAS – Total Alkali versus SiO<sub>2</sub>), as their relative proportions are important in determining actual and normative mineralogy.

With the exception of a few outliers, samples from the Ralleau property all plot in the subalkaline/tholeiitic part of the diagram (Fig. 10). Compositionally, the samples span the range from mafic to felsic compositions, consistent with bimodal volcanism, a prospective trait of VMS deposits in the Abitibi. Despite the alteration and metamorphism that the samples experienced, the field classifications are generally consistent with the basalt to rhyolite classification derived from the TAS diagram. Note that the few outliers that plot just outside the limit of the subalkaline/tholeiite field or the data points in the trachybasalt and basaltic trachyandesite are probably due to alteration of the samples.

**TAS (Le Bas et al. 1986)**

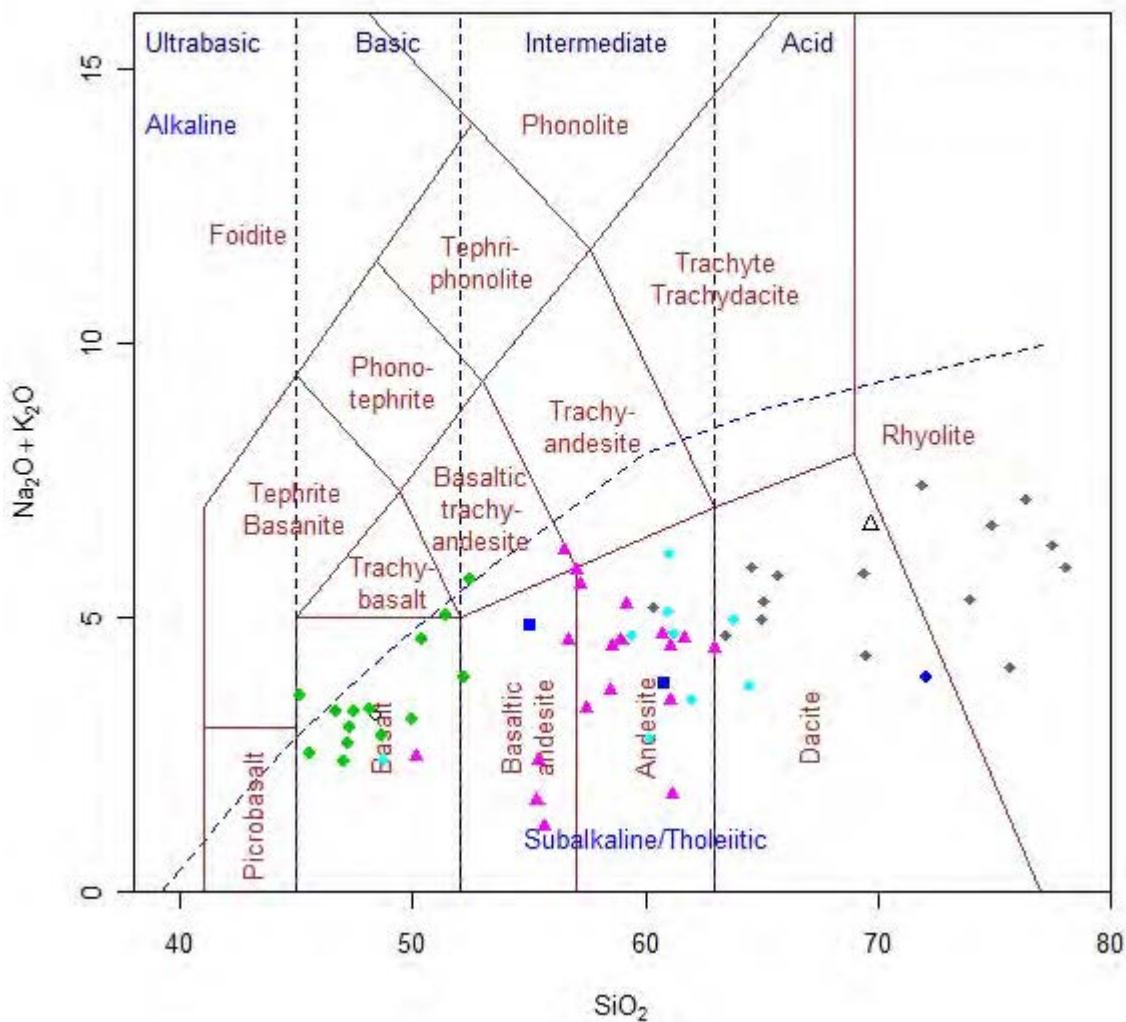


Figure 10 TAS classification

#### AFM triplot and SiO<sub>2</sub>-FeOt/MgO diagram

AFM and SiO<sub>2</sub>-FeOt/MgO diagrams are both used to distinguish tholeiitic from calc-alkaline magma affinities. AFM diagrams (*Irvine and Baragar, 1971*) are triangular plots with apices A = K<sub>2</sub>O+Na<sub>2</sub>O, F = FeO total and M = MgO (Fig. 11). All data is in weight % oxides and normalized to 100%. The SiO<sub>2</sub>-FeOt/MgO diagram proposed by *Miyashiro (1974)* separates volcanic rocks on the basis of silica abundance versus their iron/magnesium ratio (Fig. 12). Samples with high FeOt/MgO ratios are grouped in the tholeiite field in the upper left part of the diagram. Note that mafic and some intermediate samples plot in the tholeiite field on the upper left of the diagram, while the more felsic samples plot in

the calc-alkaline field. Both diagrams show that the bulk of the mafic rocks (V3 – green) and a significant fraction of the intermediate andesitic rocks (V2 – purple) plot in the tholeiite field of the diagrams. The AFM diagram also shows a linear trend between the A and F apices of the diagram that could be interpreted as a fractionation trend resulting from the crystallization of a primitive, mantle derived magma. Both diagrams suggest that the geological setting of Ralleau property is favorable for Abitibi-style VMS mineralization.

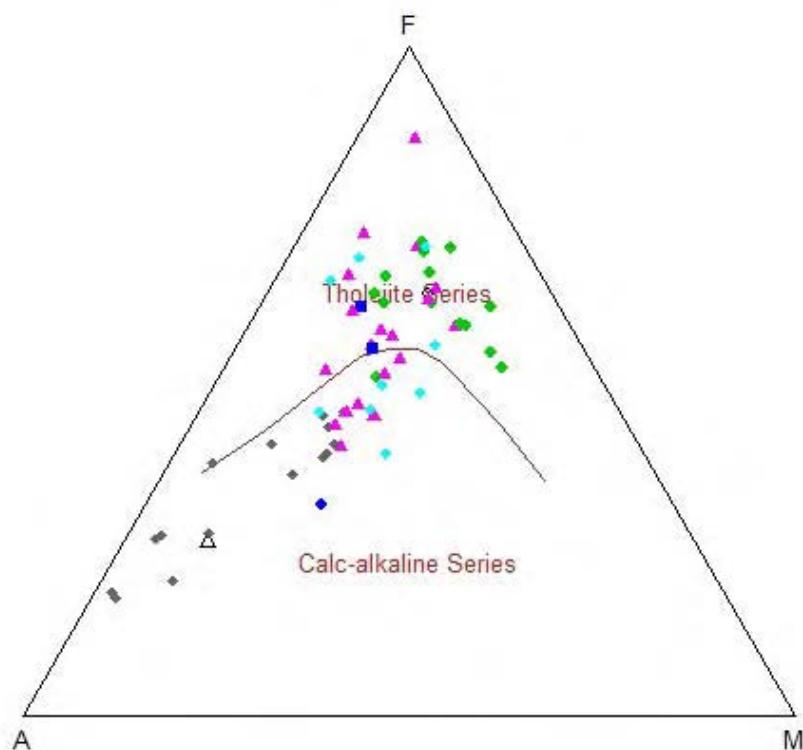


Figure 11 AFM classification  
(Irvine and Baragar, 1971). A =  $K_2O+Na_2O$ , F = FeO total and M = MgO

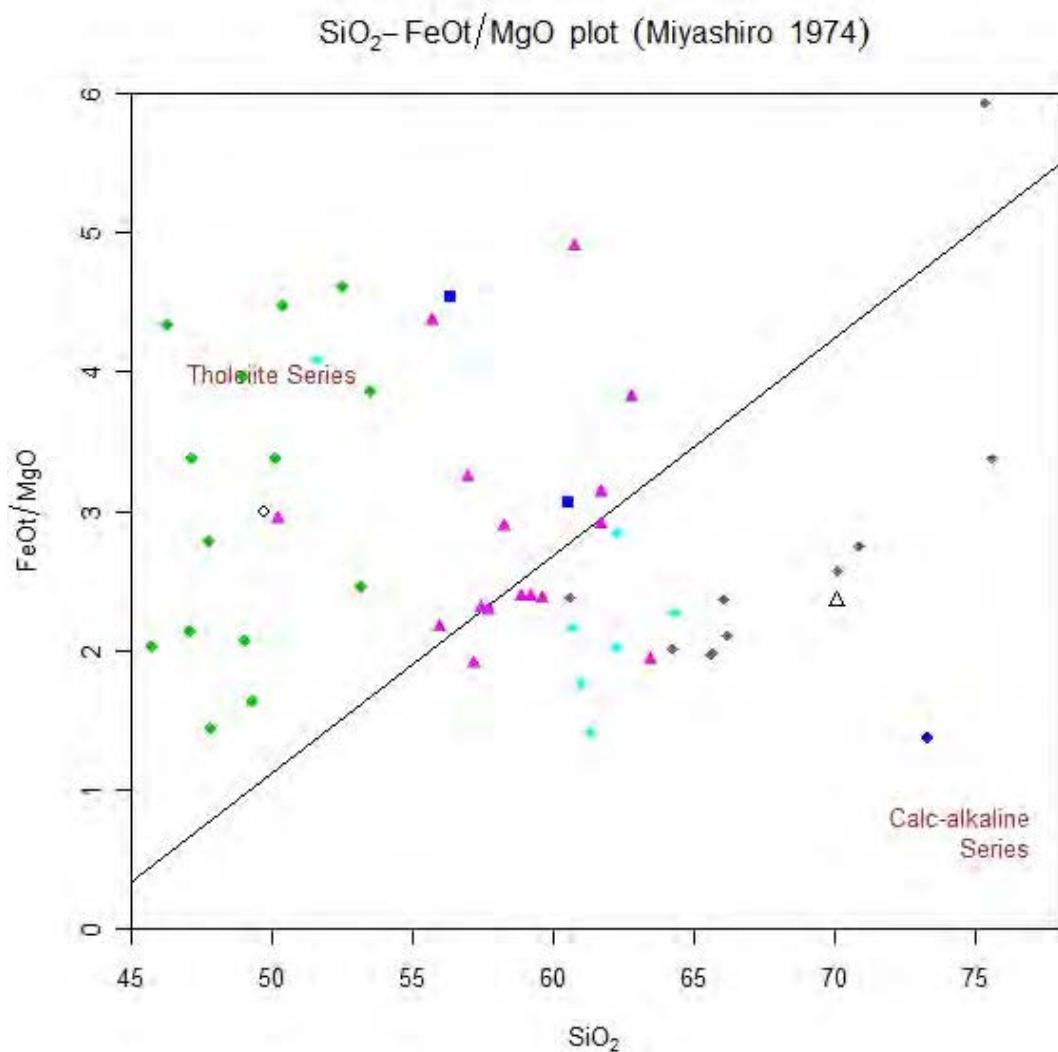
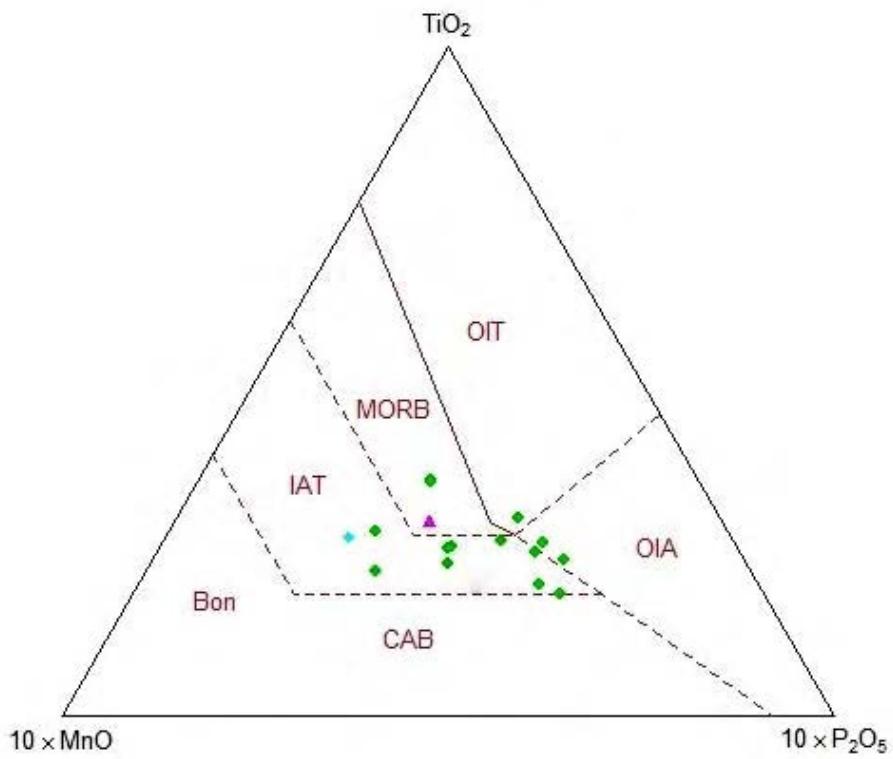


Figure 12 SiO<sub>2</sub>-FeOt/MgO diagram

### Mullen

*Mullen (1983)* proposed a geotectonic classification diagram for basaltoids, based on the relative proportions of MnO, TiO<sub>2</sub> and P<sub>2</sub>O<sub>5</sub> found in basalt from different tectonic environments. Mafic rocks with SiO<sub>2</sub> between 45 and 54% from the Ralleau property plot primarily in ‘island arc tholeiite’ field of the plot (Fig. 13). Samples near the margins but outside of the ‘island arc tholeiite field’ are interpreted as having ‘drifted’ due to alteration. The island arc geological setting of the mafic units would place the Ralleau property into a favorable geological context for VMS mineralization.



$45 < \text{SiO}_2 < 54$

Figure 13 Mullen geotectonic diagram

CAB – calc-alkaline basalts, IAT – island arc tholeiite, MORB – mid-ocean ridge basalt, OIT – Ocean Island

Tholeiite

#### 9.7.2.2. Alteration

The degree of hydrothermal alteration that a rock has experienced is often difficult to evaluate. A number of methods have been proposed using whole rock and trace element data as well as normative calculations.

Aluminum and titanium are generally considered immobile during alteration and their ratio has been used to evaluate the extent of hydrothermal alteration (*Gaboury, 2006*). *Gaboury (2006)* suggested that

this diagram can be used for both intrusive and extrusive rocks of mafic to felsic compositions. The spread in the data is interpreted to indicate the extent of hydrothermal alteration experienced by the rocks (Fig. 14).

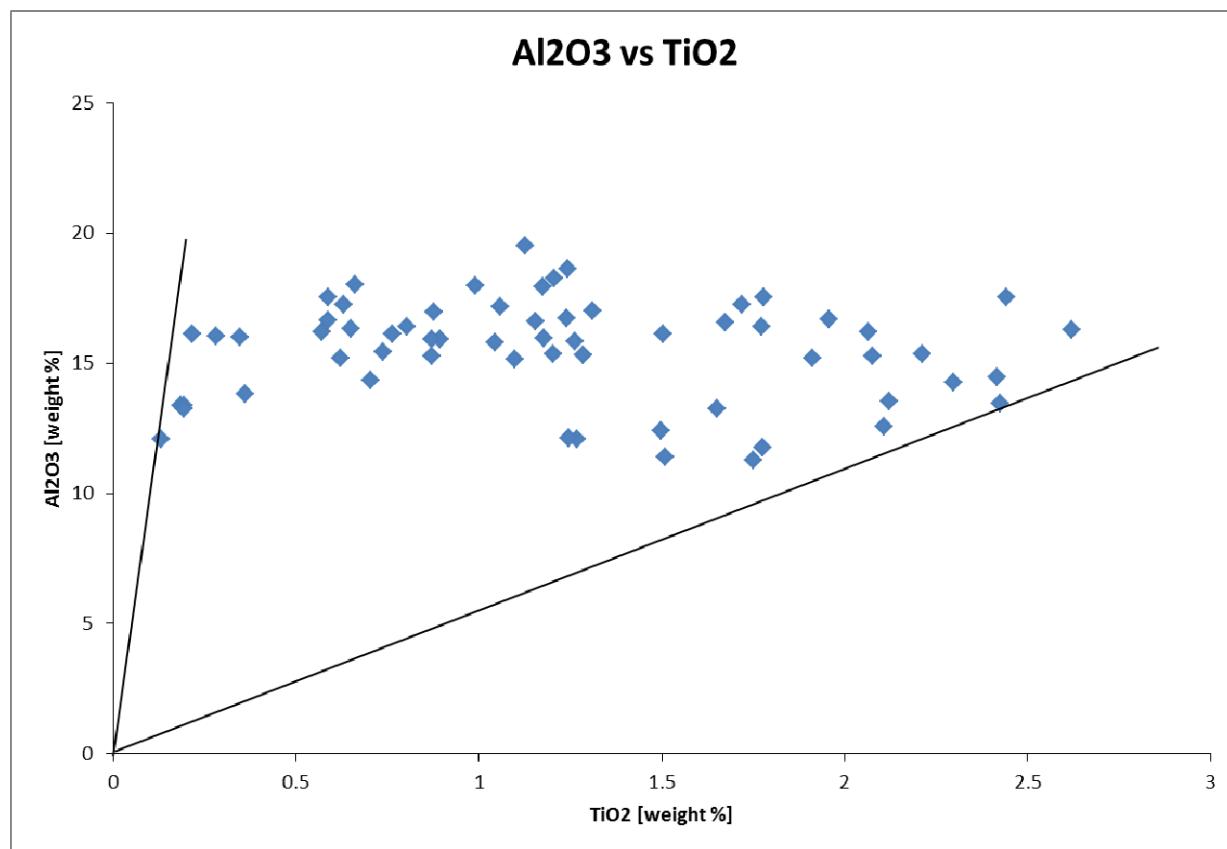


Figure 14 Al<sub>2</sub>O<sub>3</sub> vs TiO<sub>2</sub> diagram

Blue diamonds represent whole rock samples and the black lines show the fan-shaped distribution of altered samples.

Zonal alteration patterns are key features in volcanic rocks surrounding VMS deposits. *Large et al. (2001)* combined the alteration indexes of Ishikawa (AI) and the chlorite-carbonate-pyrite index (CCPI) into an “alteration box plot” to evaluate the intensity of hydrothermal alteration. *Ishikawa et al. (1976)* proposed that the ratio AI = 100(K<sub>2</sub>O+MgO)/(K<sub>2</sub>O+MgO+Na<sub>2</sub>O+CaO) can be used to evaluate sericite and chlorite alteration of volcanic rocks in Kuroko-style deposits. The index attempts to evaluate the breakdown of sodic plagioclase to sericite and quartz and the alteration of sericite to chlorite. The first reaction is common in the outer alteration zone of Kuroko VMS deposits, while the second reaction approximates alteration closer to the core of the mineralization. The limitation of the Ishikawa Index is

that it does not take into account carbonate alteration (which may lead to a decrease in AI) and does not separate sericitic from chloritic alteration. The chlorite-carbonate-pyrite index (CCPI) is based on the equation:  $CCPI = 100(MgO+FeOt)/(MgO+FeO+Na_2O+K_2O)$ . Since chlorite commonly forms close to VMS deposits, the index has been developed to measure an increase in MgO and FeOt. The index also accounts for the formation of Mg-Fe carbonate alteration (siderite, ankerite and dolomite), and pyrite, magnetite and hematite enrichment (*Large et al., 2001*).

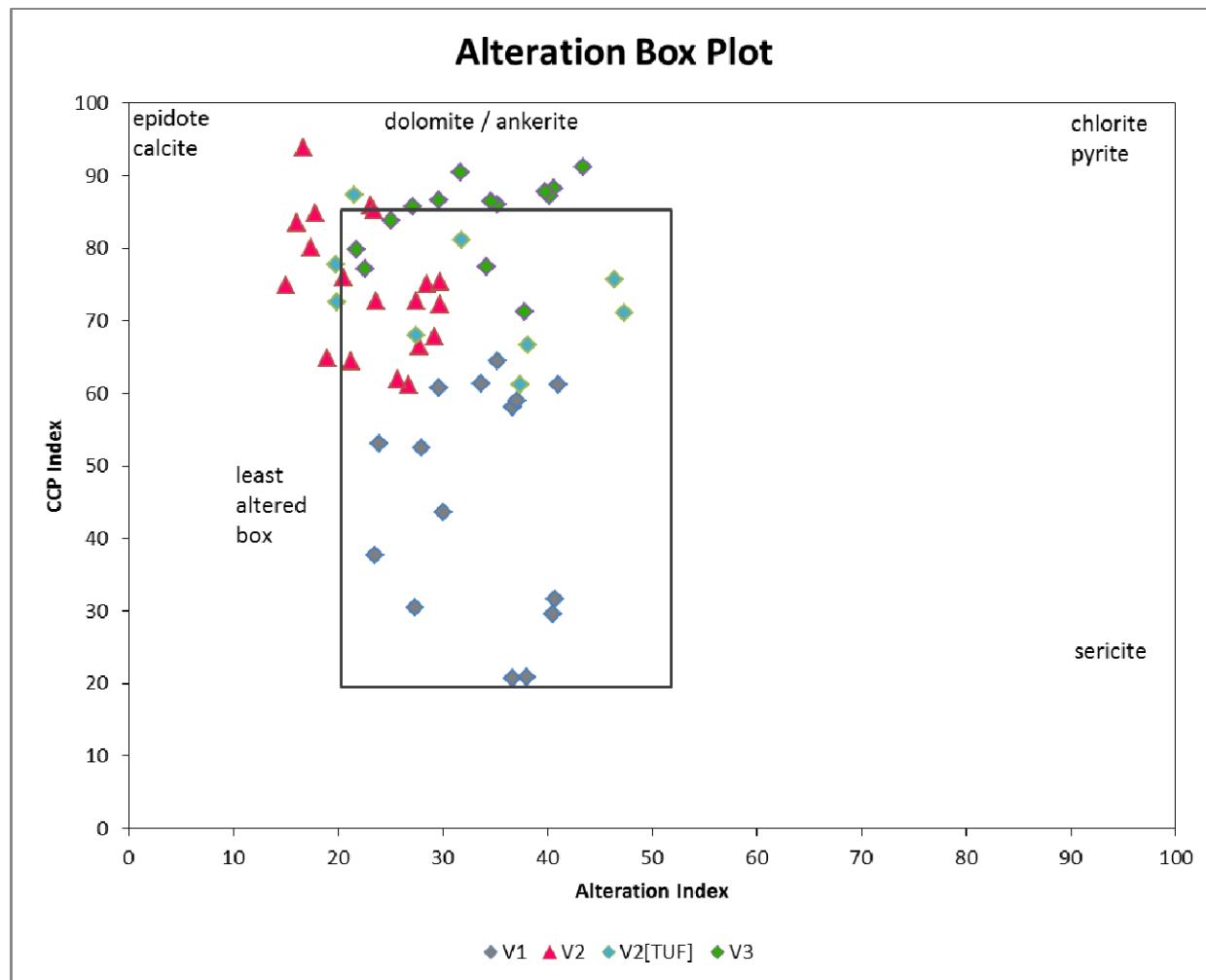


Figure 15 Alteration box plot

The black box shows the zone of least altered sample compositions

The alteration box plot (Fig. 15) shows that while most samples plot in the field of least altered rocks (indicated by the box), some samples plot in the carbonate zone of alteration (samples outside the box). However, the plot also suggests that above average sericite alteration is not common in Ralleau samples.

## NORMATIVE MINERALS AND ALTERATION INDICES

Normat is a software program that calculates normative minerals and alteration indices (*Piche and Jebrack, 2006*). The program calculates normative minerals based on the CIPW norm and Bowen's crystallization sequence and then transforms anomalous compositions into alteration minerals. The formulas used are based on published chemical reactions, experimental geochemistry and by equations calibrated with empirical data. Normat is also calibrated for greenschist- and amphibolite-facies metamorphic environments.

Alteration indexes used in this study are IFRAIS and ISER. They are based on ratios between normative peraluminous alteration minerals and the sum of alteration and normative feldspars and clino-pyroxene precursor minerals. These equations quantify alkali element depletion based on the stoichiometric proportions of Na<sub>2</sub>O, K<sub>2</sub>O, and CaO versus Al<sub>2</sub>O<sub>3</sub> in feldspars and peraluminous minerals. The IFRAIS and ISER alteration indexes quantify the degree of overall "freshness," thus paragonitization and sericitization, respectively (*Piche and Jebrak, 2006*).

The IFRAIS index is computed using equation: IFRAIS = 100 × (Ab + Or + An + Cpx) / ((HChl + HSer + HPrI + HPrG) + (Ab + Or + An + Cpx)). Unaltered rocks have an IFRAIS value of 100, whereas totally altered rocks have a value to 0.

Similarly, ISER is calculated using equation: ISER = 100 × ISER/((HChl + HSer + HPrG + HPrI) + (Ab + Or + An + Cpx) ). Rocks that are completely altered have an ISER value to 100 and unaltered rocks have a value to 0.

In both equations, Ab is albite, Or is orthoclase, An is anorthite, Cpx is clinopyroxene, HChl is hydrothermal chlorite, HSer is hydro- thermal sericite, HPrG is hydrothermal paragonite, and HPrI is pyrophyllite.

IFRAIS values plotted on the geology map (See the stratigraphic legend on Fig. 20) of the property show anomalous samples NE of Lake Wilson and east of Lake Sheilann (Fig. 16). By contrast, anomalous sericite values only occur east of Lake Sheilann (Fig. 17). K<sub>2</sub>O enrichment is anomalous north of Lake Wilson (Fig. 18), near the western limit of the property, whereas anomalous Na<sub>2</sub>O depletion was detected in a

sample from the north-central part of the property (Fig. 19).

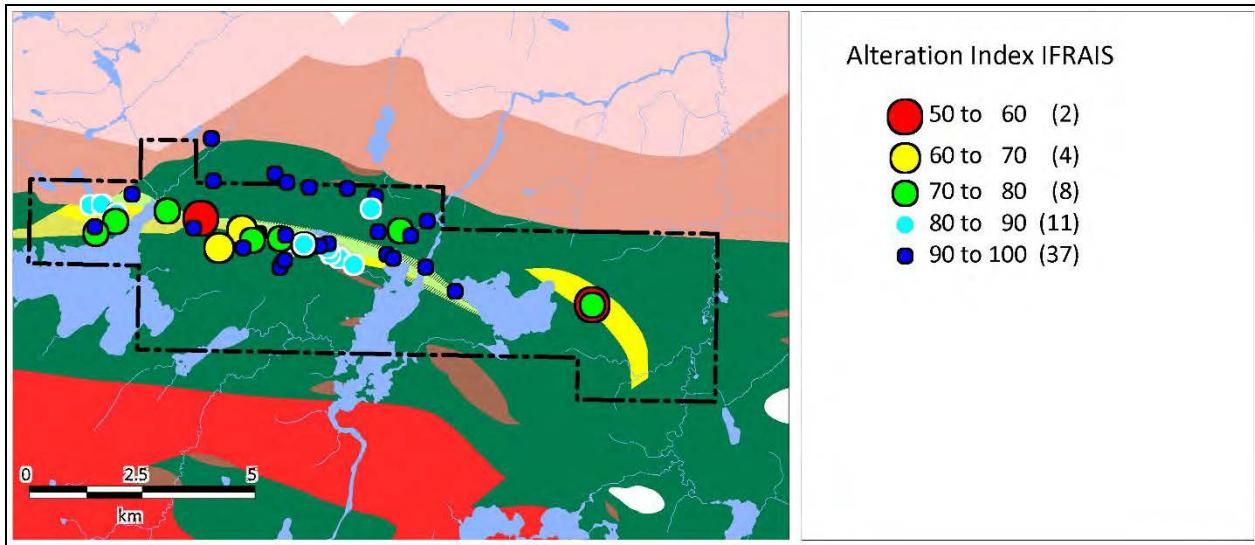


Figure 16 Alteration index IFRAIS (Normat)

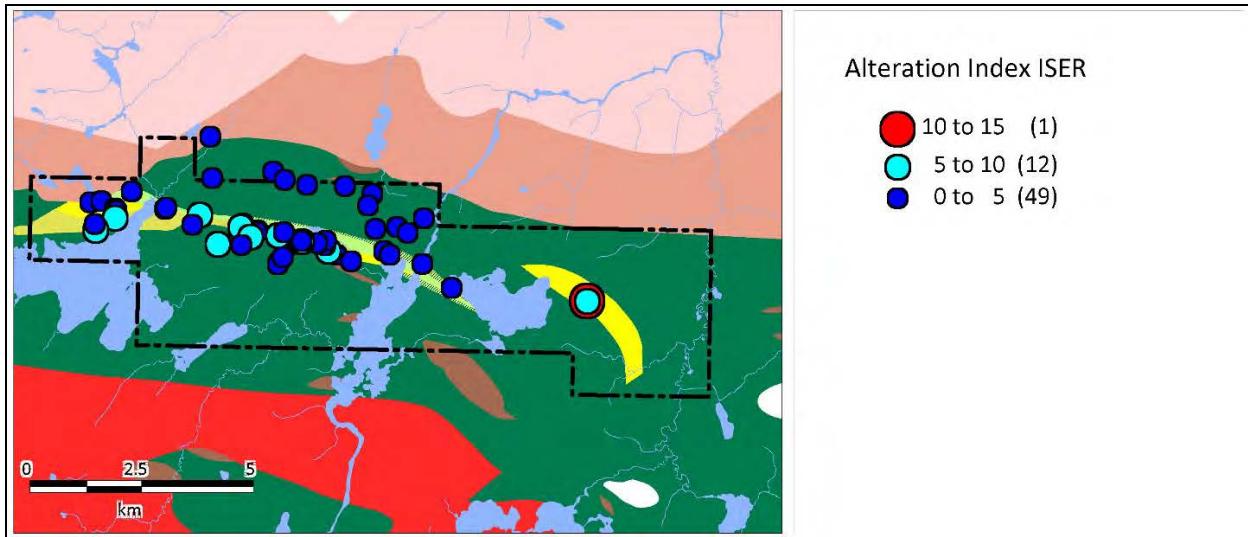


Figure 17 Alteration index ISER (Normat)

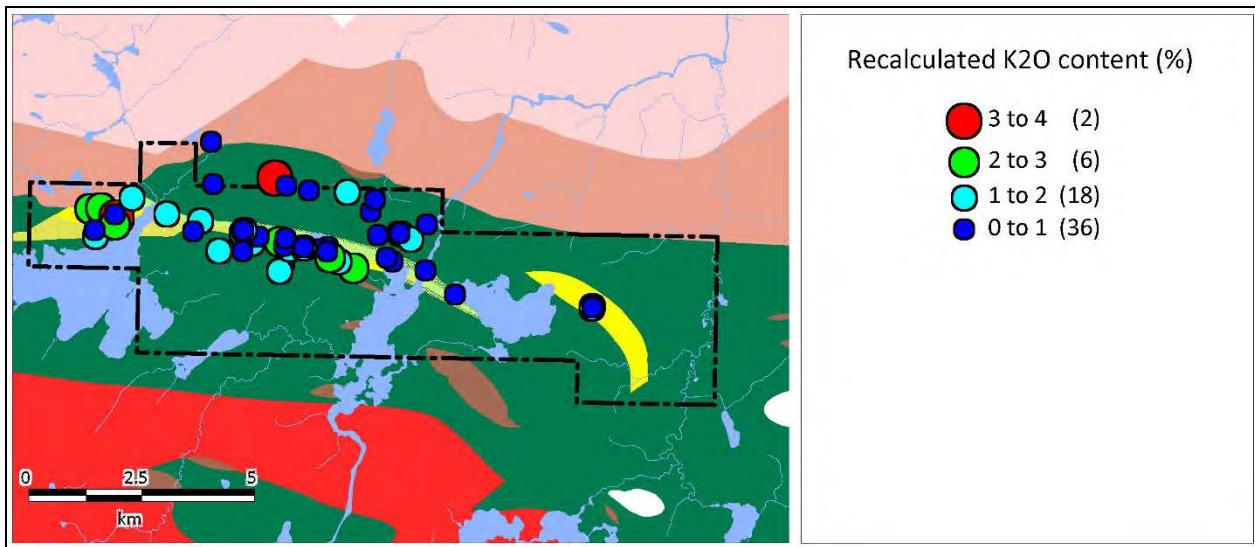


Figure 18 Recalculated K<sub>2</sub>O content

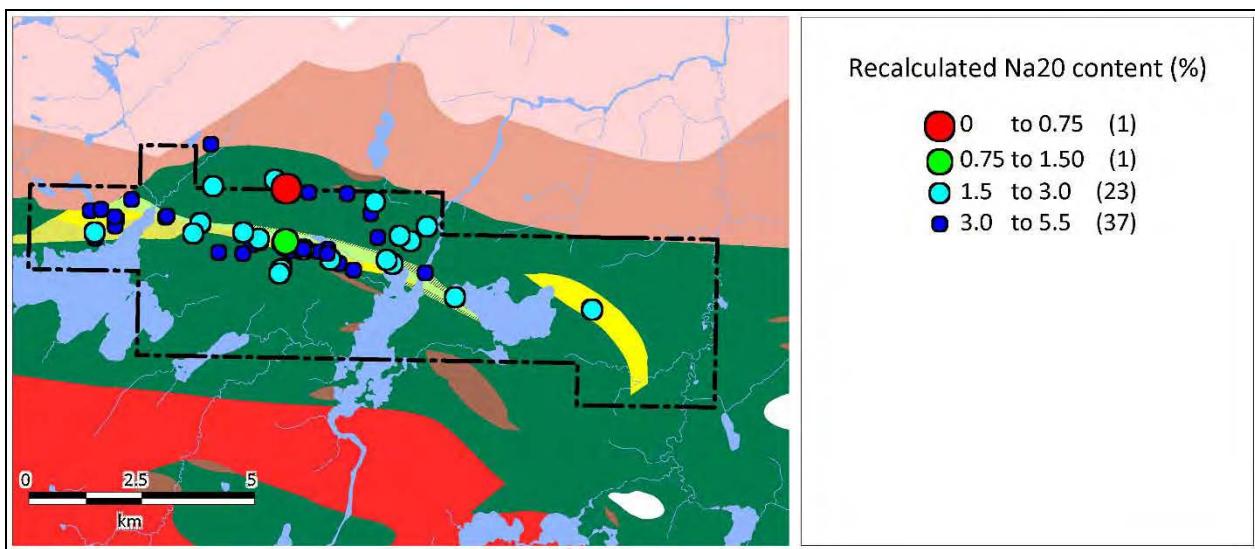


Figure 19 Recalculated Na<sub>2</sub>O content

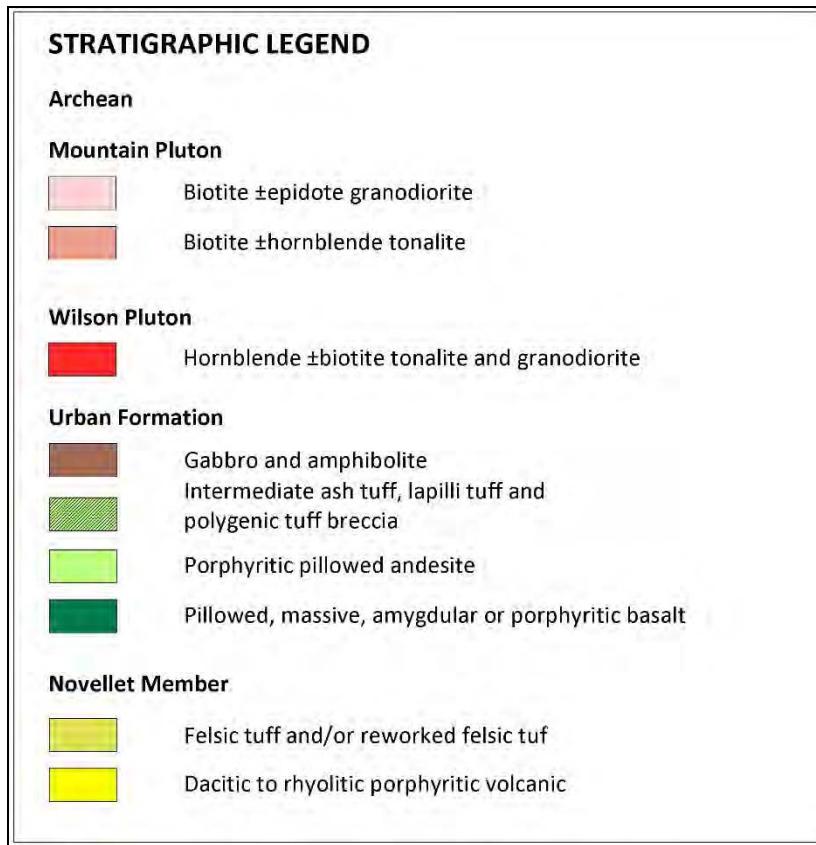


Figure 20 Stratigraphic legend of the Ralleau property

## 10.DRILLING

During spring 2006, Megastar conducted a diamond drilling program. The geological compilation map (west area) in pocket shows the location of the five diamond drill holes (MAR-06-01 to MAR-06-05) completed on the Ralleau property. The program consisted of 1 545.70 m of BQ diamond drilling to test electromagnetic Pulse-EM anomalies (A, B, C, D and F) located during March 2006 (GM 62775). Technical parameters of diamond drill holes are summarized in Table 4. During the course of the 2014 geological mapping and lithogeochemical sampling program, casings of holes MAR-06-01, MAR-06-02 and MAR-06-04 have been localized, identified in the field, and positioned using a hand-held GPS (Global Positioning System) unit in Universal Transverse Mercator (UTM) system in the North American Datum 1983 (NAD83).

**Table 4 Technical parameters of 2006 diamond drill holes (BQ Caliber)**

DDH No	Coordinates - UTM NAD 83 - Zone 18		Coordinates - Grid		Azimuth (°)	Plunge (°)	Length (m)	Sampling		
	Easting (mE)	Northing (mN)	Line	Station				Number of samples	Total Length (m)	% Sampling
MAR-06-01	397 695	5 443 980	L22+00E	7+50N	360	-50	299.70	23	31.35	10.46
MAR-06-02	397 498	5 444 372	L20+00E	11+50N	180	-50	297.00	33	46.20	15.56
MAR-06-03	397 275	5 443 238	L18+00E	0+00	360	-50	299.00	32	37.05	12.40
MAR-06-04	397 866	5 442 897	L24+00E	3+25N	360	-50	300.00	39	48.41	16.14
MAR-06-05	398 846	5 442 459	L34+00E	7+25N	360	-50	350.00	66	91.60	26.17
<b>TOTAL</b>							<b>1 545.70</b>	<b>193</b>	<b>254.61</b>	<b>16.47</b>

All Pulse-EM conductors were reportedly explained by variable amount of pyrite and /or pyrrhotite mineralization in drill holes intersections. The 2006 diamond drilling program did not returned any Au, Ag, Cu or Zn values of economic significance despite the favorable VMS geological setting encountered in holes MAR-06-03, MAR-06-04 and MAR-06-05. It is reported from whole rock analyses that sericitized

quartz phryic rhyolitic units are slightly depleted in Na<sub>2</sub>O whereas other samples exhibited an anomalous normative orthoclase zone affecting andesitic to dacitic rocks. The sericitized rhyolitic unit intersected in hole MAR-06-05 is also characterized by low ISER values; a normative mineral alteration index (Piché and Jébrak, 2006) which quantifies the degree of overall sericitization. These alteration styles are often associated with VMS environments.

The following table summarized anomalous Cu and Zn values obtained during the 2006 diamond drilling program.

Table 5 Significant assay results - 2006 diamond drill holes						
DDH No	Sample No	From (m)	To (m)	Length (m)	Cu (ppm)	Zn (ppm)
MAR-06-02	63358	241.50	243.00	1.50	19	<b>473</b>
MAR-06-03	61220	66.00	67.50	1.50	47	<b>1 475</b>
MAR-06-03	61244	216.00	216.30	0.30	<b>631</b>	<b>2 130</b>

## **11.SAMPLE PREPARATION, ANALYSES AND SECURITY**

A total of ninety-nine (99) grab samples of representative lithological unit or mineralization were collected during the course of the geological mapping and lithogeochemical sampling program on the Ralleau property in 2014.

### **11.1. Sample Preparation**

All grab samples were collected on surface using hammer and chisels. Samples were megascopically described in the field. Geological description includes rock type, color, texture, alteration, mineralization and structural data. The sample number was written on an aluminum tag and left at the sampling site. The date, GPS position in UTM coordinates and optional comments were added to the non-detachable tag of the sampling book. The sampling sites were positioned using a handheld Garmin (model GPSmap 60CSx) GPS (Global Positioning System) in Universal Transverse Mercator (UTM) system using the North American Datum 1983 (NAD83). All samples were collected under the supervision of the author. In the field, samples were placed into transparent plastic bags clearly marked with the sample number. A waterproof and tear resistant sample tag was also added into the sample bag. Samples bags were immediately sealed with cable ties and placed into labeled and numbered shipping bags at the end of each day.

Samples preparation at the laboratory followed standard preparation procedures of ALS Minerals at Val D'Or. Samples were weighed, dried and crushed so that 70% of the sample was finer-grained than 10 mesh (2mm). A 250 g split from each sample was crushed to 200 mesh (0.075 mm). Crushing equipment is cleaned with compressed air after each sample and with a neutral cleaning agent after each sample batch.

### **11.2. Analyses**

Ninety-four (94) samples were analyzed by ALS Minerals for a group of 33 elements. Samples were digested with a mix of four acids (method ME-ICP61a), specifically nitric acid ( $\text{HNO}_3$ ), perchloric acid ( $\text{HClO}_4$ ), hydrofluoric acid (HF) and hydrochloric acid (HCl), and then analyzed by Inductively Coupled Plasma Atomic Emission Spectrometry (ICP/AES). Forty-seven (47) samples were also analyzed for gold using conventional fire assay with atomic absorption (method Au-AA24) on a 50 g pulp sample. The

detection limit for Au is 0.005 ppm with an upper detection limit of 10 ppm. Sixty-two (62) representative samples were also analyzed for whole rock using lithium borate fusion and X-ray fluorescence (method ME-XRF26). This method has a detection limit of 0.01% for major oxides.

A detailed description of the sample preparation protocol and of the analytical procedures with their detection limits is given in Appendix VI of this report.

As part of the quality assurance and quality control protocol (QA/QC), two standards and two blanks were added to verify reproducibility, precision and contamination in the lab. Standards are certified for Au and Cu and unmineralized blanks were collected in the field by the author. These control samples were added to the submitted samples in the field and represent 3.88% of the total samples collected during the 2014 field season.

An unmineralized, massive, medium-grained tonalite with no visible mineralization or alteration was used as a blank sample. The standards were provided by *Analytical Solutions Ltd* of Toronto and were prepared by *ORE Research and Exploration Pty Ltd* of Australia. Both companies are certified for QA/QC programs. Certified values of standard sample OREAS 502, with a 95% confidence level ( $\pm 1.96$  standard deviations ( $\sigma$ )), are  $0.491 \pm 0.009$  g/t Au and  $0.755 \pm 0.009\%$  Cu. Certified values for standard sample OREAS 504, at a 95% confidence level, are  $1.48 \pm 0.02$  g/t Au and  $1.137 \pm 0.014\%$  Cu.

Table 6 Assay Results – QA / QC			
Sample No	Type	Cu (ppm)	Au (g/t)
Q592619	Blank	-10	-0.005
Q592625	Blank	-10	-0.005
Q592650	Standard OREAS 502	7460	0.481
Q592575	Standard OREAS 504	11000	1.540

Analytical results listed in Table 6 show that the blank samples (Q592619 and Q592625) yielded values below the detection limit for both Au and Cu, indicating that there was no contamination in the laboratory. The analytical results for standard samples « OREAS 502 » (Q592650) and « OREAS 504 » (Q592575) are within 2 sigma of the certified values for both Au and Cu. These results are deemed

acceptable and no re-analysis is current planned.

### **11.3. Security**

Sampling was done under the supervision of the author. The sealed sample bags were placed into labeled and numbered shipping bags at the end of each day. All samples were kept locked up until the moment they were shipped. Samples were transported and submitted to ALS Minerals by the author at the end of each work period. The laboratory did not report any damage either the sample bags or the shipping bags. No incident, risking the security of the samples, has been observed or reported during the sampling, preparation or analysis process.

## 12. DATA VERIFICATION

Along with a review of all available technical data and geoscientific literature, the geological setting and mineralization of the Ralleau property have been reviewed by the author based on his own mining exploration experience. During the 2014 exploration program on the Ralleau property, the author has verified the location of three diamond drill holes completed in 2006 and one historical drill holes collared west of Lake Sheilann in 1956. Casing locations were clearly identified in the field, photographed and accurately positioned using a handheld GPS (Global Positioning System) Garmin unit in Universal Transverse Mercator (UTM) system in the North American Datum 1983 (NAD83). Table 7 shows the results of the collar verification.

Table 7 Verification of diamond drill hole location on the Ralleau property							
DDH No	Previous coordinates			Verified Coordinates			Comment
	Easting (mE)	Northing (mN)	Elevation (m)	Easting (mE)	Northing (mN)	Elevation (m)	
MAR-06-01	397 688	5 443 970	N/A	397 695	5 443 980	398	NW casing left in place; continuous water flow has been observed in the casing
MAR-06-02	397 502	5 444 364	N/A	397 498	5 444 372	412	NW casing left in place
MAR-06-04	397 861	5 442 897	N/A	397 866	5 442 897	386	NW casing left in place
SA-5	N/A	N/A	N/A	401 492	5 441 426	383	AW casing left in place

Location of historical diamond drill holes is consistent with information reported from previous exploration work on the Ralleau property.

## **13. MINERAL PROCESSING AND METALLURGICAL TESTING**

There have been no mineral processing and metallurgical tests carried out on material on any of the material collected on the Ralleau property.

## **14. MINERAL RESOURCE ESTIMATES**

The Ralleau property is at the early stage of exploration and consequently there is no sufficient data to support a mineral resources estimate.

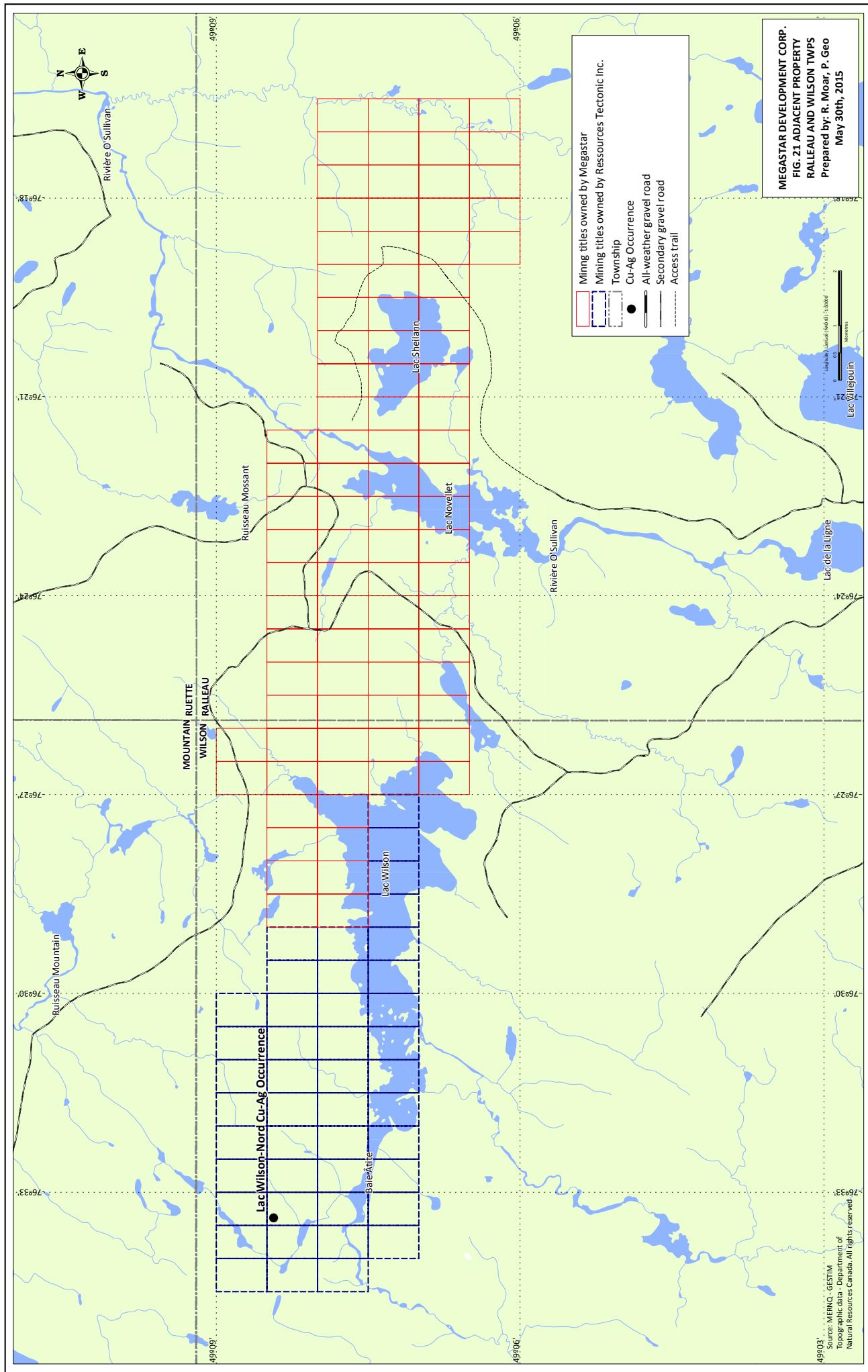
## 15. ADJACENT PROPERTIES

The discussion below is based on public information available as of the date of the report. The author has not verified the information unless otherwise stated.

The Ralleau property is adjacent to a block of 45 contiguous claims owned 100% by *Ressources Tectonic Inc.* (Fig. 21). This property is located next to the western portion of the Ralleau property and covers an area of 25.35 km<sup>2</sup> in the Wilson Township. The author is not aware of any exploration work carried out by *Ressources Tectonic Inc.* on this property. Public assessment files indicate that this property hosts a copper and silver occurrence known as Lac Wilson-Nord. This showing is located less than 2 km NW of Baie Âtite and 5.3 km west of the Ralleau property.

The Lac Wilson-Nord copper and silver occurrence was discovered by Mr William Saganash while trapping (GM 15336). In 1964, the area and mineralized zone were investigated by a series of trenches. Rock chip samples returned 1.90% Cu over 11.43 m, 1.12% Cu over 4.57 m and 1.24% Cu over 3.05 m (GM 15336). During the same time period, eight short diamond drill holes (J-1 to J-8) totalling 762 m were completed by *Mining Corporation of Canada Ltd* (GM 15348). The first seven holes were drilled in order to test the extent of the disseminated to massive sulphide mineralization. These holes failed to return copper values comparable to those discovered during trenching. Best intercepts returned 0.33% Cu over 14.33 m in hole J-4. A detailed compilation of the historical geological and drilling data by *SEREM Ltd* (GM 39363) reported that a further five diamond drill holes (M-1 to M-5), totalling 616 m, were completed by *Madison Syndicate* and *Atlantic Syndicate* in 1968. Holes M-1 to M-4 were designed to evaluate vertical and lateral continuity of the copper mineralization. Assay results returned low grade copper values, such as 0.42% Cu over 8.54 m in hole M-1 and 0.37% Cu over 8.84 m in hole M-3 (GM 39363).

During the Summer of 1981, *SEREM Ltd* collected a series of channel samples from the original showing which yielded values of 1.56% Cu and 17.2 g/t Ag over 14.0 m, and 5.43% Cu and 56 g/t Ag over 2.0 m (GM 39363). The mineralization occurs in rhyolite and agglomerate horizons, composed of blocs and fragments of rhyolite and mafic rocks with 30-60% amphibolite needles. These units are cross-cut by



felsic and mafic dykes. The ore occurs as disseminated to massive pyrite, pyrrhotite and chalcopyrite mineralization. The mineralization occurs as veins, fracture infilling or as masses and in the matrix around the rhyolite fragments. The mineralized zone is oriented N070°-N110°, with a dip of 50°-85° degrees to the north. In 1989, *SEREM Ltd* conducted an initial drill program (89-WA-01 to 89-WA-03) of 462 m to test Pulse-EM conductors (GM 49242). Anomalous values did not exceed 800 ppm Zn over 1.5 m and 850 ppm Cu over 0.60 m in drill hole 89-WA-02. In 1997, *Cambior* conducted a second drill program (WA-97-04 to WA-97-06) totaling 953.4 m (GM 54960). This drill program was designed to test MELIS conductors in the western part of the property (GM 53530). Drill hole WA-97-04, located approximately 240 m E-NE of the Lac Wilson-Nord showing, yielded slightly anomalous values of Cu. The Cu occurred in a silicified and carbonatized, intermediate volcanic unit with disseminated pyrite and pyrrhotite. Drill hole WA-97-06, located 2.4 km E-SE of the Lac Wilson-Nord showing yielded 1.56 g/t Au in a quartz vein cross-cutting a feldspar-porphyry dyke.

Public assessment files show that no exploration was conducted in the area of the Lac Wilson-Nord showing since 1997. Information concerning the Lac Wilson-Nord copper and silver occurrence does not necessarily imply that similar mineralization is present on the Ralleau property.

## **16. OTHER RELEVANT DATA AND INFORMATION**

The Ralleau property is situated in Category III lands property and straddles Cree family traditional territories. Consequently, consultation with the Cree First Nation of Waswanipi may be necessary prior to exploration work conducted on the Ralleau property.

The Ralleau property is for the present time, without a known economical ore body. The proposed program is a grass-root exploration program mainly oriented toward geological, geophysical and geochemical data acquisition which can lead to the discovery of economic mineral deposit.

No other information or explanation is necessary to make this technical report understandable and not misleading.

## **17. INTERPRETATION AND CONCLUSIONS**

The Ralleau property is located within the Urban-Barry Belt in the central-east portion of the North Volcanic Zone of the Archean Abitibi Greenstone Belt. The Urban-Barry Belt extends over 135 km and is 4-20 km wide. It is bordered in the north by the Mountain and Father plutons and in the south by the Wilson and Souart plutons that range from granodioritic to tonalitic in composition. The Ralleau property is located within the Urban Formation in the western part of the Urban-Barry Belt.

The Urban Formation comprises mafic to intermediate volcanic rocks; and felsic volcanics of dacitic to rhyolitic composition attributed to the Novellet Member. These lithological units mainly strike WNW-ESE, changing to E-W in the western portion of the property and to NE-SW in the eastern portion of the property. These changes in orientation may be related to the Urban and Cameron Deformational Zones. The Ralleau Syncline is oriented E-W. It has been interpreted to coincide with the Urban Deformational Zone forming a two km wide corridor through the central part of the greenstone belt. The area experienced amphibolite-facies metamorphism; however, the central part of the Urban Formation appears to have been exposed to greenschist-facies conditions. The rocks surrounding the synvolcanic felsic intrusives record contact metamorphic to amphibolite-facies conditions.

The geological mapping and a lithogeochemical sampling program on the Ralleau property has been carried out in order to refine the accuracy of the geological map, obtain a better understanding of the geological setting of the property and to ultimately define potential targets for VMS mineralization. All geological data has been compiled and merged with earlier reconnaissance mapping to produce geological maps covering the property at 1: 7 500 scale. A limited amount of fieldwork due to the time constraint has been carried out in the Lake Sheilann area. The mapping program significantly improved understanding of the geological setting of the property. Of particular interest is a better delineation of felsic units of the Novellet Member which may have an important association with potential mineralization in a bimodal mafic VMS model.

Sixty-two (62) grab samples selected to represent typical geological units were analyzed for whole rock and trace element data. The samples were collected on the basis that they can be used to map

compositional variations across the Ralleau property. Classification diagrams were used, in part, to confirm field classification of rock samples but also to establish a geological context that can then be compared to other mining districts. It should be noted that the region experienced metamorphism and deformation. All rocks have therefore suffered varying intensity of alteration which may obscured mineralogical, textural and geochemical properties of the rocks.

The TAS diagram, proposed by *Le Bas et al. (1986)* and modified by *Le Maitre et al. (2002)*, indicate with the exception of a few outliers, that rock samples plot in the subalkaline/tholeiitic part of the diagram. AFM (*Irvine and Baragar, 1971*) and SiO<sub>2</sub>-FeOt/MgO (*Miyashiro, 1974*) diagrams are both used to distinguish tholeiitic from calc-alkaline magma affinities. Both diagrams show that the bulk of the mafic rocks and a significant fraction of the intermediate andesitic rocks plot in the tholeiitic field of the diagrams. A linear trend between the A and F apices depicted in the AFM diagram could be interpreted as a fractionation trend resulting from the crystallization of a primitive, mantle derived magma. Based on a geotectonic classification diagram for basaltoids (*Mullen, 1983*), mafic rocks from the Ralleau property plot primarily in ‘island arc tholeiite’ field of the diagram. Rock samples near the margins but outside of the ‘island arc tholeiite field’ are interpreted as having ‘drifted’ due to alteration. Classification diagrams indicate that the lithological units range from mafic to felsic compositions which is consistent with bimodal volcanism, a prospective trait of VMS deposits in the Abitibi. They furthermore suggest that the geological setting of the Ralleau property is favorable for Abitibi-style VMS mineralization. Further analytical data including immobile incompatible elements are required to corroborate interpretation.

Zonal alteration patterns are key features in volcanic rocks surrounding VMS deposits. Lithogeochmical data was used to characterize the intensity of hydrothermal alteration. *Large et al. (2001)* combined the alteration indexes of Ishikawa (AI) and the chlorite-carbonate-pyrite index (CCPI) into an “alteration box plot” to evaluate the intensity of alteration. The limitation of the Ishikawa Index is that it does not take into account carbonate alteration (which may lead to a decrease in AI) and does not separate sericitic from chloritic alteration. Since chlorite commonly forms close to VMS deposits, the CCPI index has been developed to measure an increase in MgO and FeOt. The alteration box plot indicates that while most samples plot in the field of least altered rocks, some samples plot in the carbonate zone of alteration. However, the plot also suggests that above average sericite alteration is not common in rock samples.

The intensity of hydrothermal alteration was also calculated using Normat a software program that

calculates normative minerals and alteration indices (*Piche and Jebrack, 2006*). Alteration indexes IFRAIS and ISER were used in this study. The IFRAIS and ISER alteration indexes quantify the degree of overall “freshness,” thus paragonitization and sericitization, respectively. Unaltered rocks have an IFRAIS value of 100, whereas totally altered rocks have a value to 0. Rocks that are completely altered have an ISER value to 100 and unaltered rocks have a value to 0. Anomalous IFRAIS values appear NE of Lake Wilson and east of Lake Sheilann. By contrast, anomalous sericite values only occur east of Lake Sheilann. K<sub>2</sub>O enrichment is anomalous north of Lake Wilson, near the western limit of the property, whereas anomalous Na<sub>2</sub>O depletion was detected in a sample from the north-central part of the property.

A total of ninety-four (94) grab samples were analyzed for a group of 33 elements. Assay results from a grab sample collected in an old trench located approximately 30 m S-SE of historical drill hole SA-5. Grab sample yielded 0.19% Cu and 0.84% Zn (Sample Q592641). Shear zone-hosted mineralization consists of disseminated (10%) pyrite with trace amount of chalcopyrite. Most of the forty-seven (47) grab samples sent for gold assays returned low values. A weakly anomalous gold value was obtained from a grab sample (No Q592576) collected 1.5 km NE of Lake Wilson, just outside the north boundary of the property. Assay results returned 0.039 g/t Au from a weakly to moderately carbonatized andesite which contained disseminations of sulphides.

## **18. RECOMMENDATIONS**

The Ralleau property is underexplored and has been the subject of basic grassroots exploration. Based on what is currently known about the geology of the property, it represents a favorable setting for bimodal-mafic VMS mineralization. The three-stage exploration program proposed is oriented toward geological, geophysical and geochemical data acquisition to further define prospective areas of VMS mineralization within the Urban Formation.

Since the VMS deposits are closely correlated with zonal alteration patterns, lithogeochemical methods represent an effective approach to locate favourable horizons indicative of VMS mineralization. It is recommended to extend the lithogeochemical and mapping program over the eastern portion of the Ralleau property covering an area approximately 8 km<sup>2</sup>. It is also recommended to include immobile incompatible elements (Zr, Y, Nb and REE (Rare Earth Elements)) in the analytical data in order to establish geochemical affinities and define precursor volcanic rock type. These elements are generally considered immobile during hydrothermal alteration and metamorphism. The objective of Phase I will be to delineate prospective alteration zones associated with electromagnetic anomalies outlined by the helicopter-borne VTEM survey.

Based on positive results generated from the Phase I, a Pulse-EM survey is recommended as follow-up to the lithogeochemical sampling program. The third phase of the proposed exploration program is conditional on positive results generated from Phase II. It comprises a 1 500 m diamond drilling program to test high-priority targets delineated by the Pulse-EM survey.

### **Cost Estimate**

#### **Phase I - Lithogeochemical sampling and mapping program (3 weeks)**

Geologist and field assistant	\$17,000
Assays	\$10,660
Transportation	\$3,425
Room & board	\$5,400
Field equipment	\$750

Final report	\$4,200
Contingencies (10%)	\$4,145
	<b>Total Phase I</b>

**Phase II – Pulse-EM survey**

Linecutting (36 km)	\$18,000
Pulse EM survey (30 line-km)	\$35,000
Mobilization / demobilization	\$2,200
Interpretation & report	\$5,000
Contingencies (10%)	\$6,020
	<b>Total Phase II</b>

**Phase III – Diamond drilling program**

NQ Diamond drilling, 1 500m @\$120/m	\$180,000
Core logging, sampling and field supervision	\$25,500
Assays	\$21,410
Room & board	\$8,100
Transportation	\$5,000
Permitting	\$1,000
Miscellaneous equipment & rental	\$1,775
Final report	\$9,000
Contingencies (10%)	\$25,180
	<b>Total Phase III</b>

**Grand total**      **\$388,765**

The author has reviewed the proposed program for the Ralleau property as recommended and is of the opinion that the properties have sufficient merit to justify the program and proposed budget.

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## **20. CERTIFICATE OF QUALIFICATION**

I, Roger Moar, do hereby certify that:

1. I am a consultant geologist with office at 583 De la Brise, Salaberry de Valleyfield, Quebec, J6T 6N2, Canada.
2. I graduated with a Bachelor of Science Degree in Geology from the University of Montreal in 1993.
3. I am a member in good standing with the Ordre des Géologues du Québec (No. 733).
4. I have worked as a geologist for a total of nineteen years since my graduation from university.
5. I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past and relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
6. I am responsible for the preparation of the technical report titled "Technical Report on the Ralleau Property, Eeyou Istchee-Baie-James Territory, Lebel-Sur-Quevillon Area, Quebec" and dated July 10<sup>th</sup>, 2015, (the "Technical Report"). I have conducted a geological mapping program on the Ralleau property between August 5<sup>th</sup> to August 29<sup>th</sup> and September 10<sup>th</sup> to September 28<sup>th</sup> 2014.
7. I am not aware of any material fact or material change with respect to the subject matter of the Technical Report that is not reflected in the Technical Report, the omission to disclose which makes the Technical Report misleading.
8. I am independent from the issuer applying all of the tests in section 1.5 of National Instrument 43-101.
9. I have read National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.
10. I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.

Dated this July 10<sup>th</sup>, 2015



Signature of Qualified Person  
Roger Moar, B.Sc., OGQ (No. 733)



## **APPENDIX I LIST OF MINING TITLES**

**MEGASTAR DEVELOPMENT CORP.**  
**RALLEAU PROPERTY**  
**LIST OF MINING TITLES**  
**AS OF MAY 30th, 2015**

**MEGASTAR DEVELOPMENT CORP.**  
**RALLEAU PROPERTY**  
**LIST OF MINING TITLES**  
**AS OF MAY 30th, 2015**

## **APPENDIX II GEOLOGICAL STATION DESCRIPTIONS**

LIST OF ABBREVIATIONS	
I1D	Tonalite
I3A	Gabbro
M16	Amphibolite
QFP	Quartz-feldspar porphyry dyke
S3	Wacke
S6D	Mudstone
V1	Felsic volcanic
V1/V2[TUF]	Felsic / intermediate tuff
V1[TUF]	Felsic tuff
V2	Intermediate volcanic
V2[TUF]	Intermediate tuff
V2J	Andesite
V3A	Andesitic basalt
V3B	Basalt
AMY	Amygdular
APH	Aphanitic
BA	Banded
BR	Brecciated
CG	Coarse-grained
DEF	Deformed
EQ	Equigranular
FG	Fine-grained
FO	Foliated
LA	Laminated
LPL	Lapilli
MA	Massive
MAG	Magnetic
MG	Medium-grained
PID	Pillowed
POR	Porphyritic
SCHS	Schistosed
VFG	Very fine-grained
BO+	Biotitized
CB+	Carbonatized
CL+	Chloritized
EP+	Epidotized
SR+	Sericitized
CP	Chalcopyrite
GR	Garnet
MG	Magnetite
PO	Pyrrhotite
PY	Pyrite
QZ	Quartz
SULP	Sulphide

RALEAU PROPERTY  
GEOLOGICAL STATION DESCRIPTIONS

OUTCROP	UTM NAD 83 - Zone 18	LITHOLOGY A						LITHOLOGY B						LITHOLOGY C						LITHOLOGY D						
		AREA	EASTING	NORTHING	%	LITHOLOGY	TEXTURE	ALTERATION	MINERALIZATION	%	THROG	TEXTURE	ALTERATION	MINERALIZATION	%	LITHOLOGY	TEXTURE	ALTERATION	MINERALIZATION	%	LITHOLOGY	TEXTURE	ALTERATION	MINERALIZATION		
RM14001	3000	397231	5445920	100V3B	PID																					
RM14002	800	397216	5444659	100V3B	PID																					
RM14003	90	397231	5444440	100V3B	PID																					
RM14004	48	397351	5442556	100V3B	PID																					
RM14005	30	397239	5442977	100V3B	PID																					
RM14006	1	397318	5442365	100V3-5D	SLS	F/G																				
RM14007	50	397454	5442655	100V3B	PID																					
RM14008	24	397465	5442677	100V3B	PID																					
RM14009	150	398653	5451314	100V3	PID																					
RM14010	150	398656	5451317	100V3	MA																					
RM14011	48	398594	5451301	100V3B	TO	DE																				
RM14012	6	398594	5451292	100V3	TO	DE																				
RM14013	60	398573	5451305	100V3	PO/PID																					
RM14014	10	398538	5451313	100V3/TOF	COL/SH																					
RM14015	15	398572	5451309	100V3	COL/SH																					
RM14016	25	398572	5451312	100V3	COL/SH																					
RM14017	55	398572	5451315	100V3	COL/SH																					
RM14018	23	398571	5451315	100V3	COL/SH																					
RM14019	40	398571	5451317	100V3A	COL/SH																					
RM14020	50	398518	5451306	100V3B	VEG																					
RM14021	200	398558	5451322	100V3A	MA/CM/G																					
RM14022	60	398553	5451327	100V3A	ED/CM/G																					
RM14023	25	398523	5451309	100V3/TOF	COL/SH																					
RM14024	316	398523	5451311	100V3	COL/SH																					
RM14025	150	398748	544357	100V3A	PO/PID																					
RM14026	25	398648	544357	100V3A	PO/WM																					
RM14027	25	398625	544357	100V3A	PO/R																					
RM14028	20	398299	544345	100V3A	MA/VIG																					
RM14029	6	398298	544345	100V3A	MA/VIG																					
RM14030	400	39838	5444293	100V2	MA/VIG																					
RM14031	4	398489	5444308	100V2	MA/VIG																					
RM14032	25	398423	5444311	100V2	PO/PID																					
RM14033	25	398422	5444311	100V2	PO/D?																					
RM14034	150	398303	5444371	100V2	MA/VIG																					
RM14035	200	398731	5444365	100V2	MA/VIG																					
RM14036	4	398767	5444256	100V2	PO/D MAG SH																					
RM14037	24	398753	5444226	100V2	M/G																					
RM14038	6	398783	5444298	50V1	FO/POR																					
RM14039	10	398787	5444233	100V2	PO/PID																					
RM14040	125	398744	5443093	100V2	PO/PID																					
RM14041	440	397517	5443093	100V2	PO/PID																					
RM14042	60	397516	5443032	100V1	PO/PID																					
RM14043	50	397435	5442963	100V1	PO/VG																					
RM14044	60	397435	5442950	10V1	PO/PID																					
RM14045	90	397626	5442954	100V2	PO/PID/DEF																					
RM14046	310	397615	5442971	100V2	PO/PID																					
RM14048	100	397718	5443020	100V2	PO/PID																					
RM14049	50	397768	5443238	100V2	PO/PID																					
RM14050	2	397210	5443238	100V2	PO/PID																					
RM14051	8	397315	5443238	100V2	PO/PID																					
RM14052	18	397323	5443233	100V2	PO/S																					
RM14054	40	398210	5443161	100V2	MA/EG																					
RM14055	18	398210	5443161	100V2	MA/EG																					
RM14056	3	398369	5443231	100V2	FO/EG																					
RM14057	12	398359	5443486	100V2	MA/SCHS/VG																					
RM14058	200	398846	5443074	100V2	DID/DEF																					
RM14059	240	398679	5443053	100V2	DID/DEF																					
RM14060	240	398679	5444057	100V2	DID/DEF																					
RM14061	300	398678	5444081	100V2	DID/DEF																					
RM14062	375	398341	5443074	100V2	PO/VG																					
RM14063	90	398301	5443074	100V2	PO/VG																					
RM14064	410	398340	5443047	100V2	PO/VG																					
RM14065	150	398848	5443214	100V2	MA/VG																					
RM14066	6	398201	5443049	100V2	PO/VG																					
RM14067	120	398343	5443247	100V2	PO/R																					
RM14068	25	398340	5443178	100V2	MA/VG																					
RM14069	40	398333	5443687	100V2	MA/H-CHS																					
RM14070	150	398349	5443165	100V2	AMV																					
RM14071	90	398359	5443211	100V2	PO/SCHS																					
RM14072	240	398351	5443051	100V2	AMV/H																					
RM14073	100	398504	5443051	100V2	PO/R																					
RM14074	36	398504	5443051	100V2	AMV/MG																					
RM14075	375	398441	54430																							

RALLEAU PROPERTY  
GEOLOGICAL STATION DESCRIPTIONS

OUTCROP	STATION	UTM NAD 83 - Zone 18	LITHOLOGY A				LITHOLOGY B				LITHOLOGY C				LITHOLOGY D						
			AREA	EASTING	NORTHING	% LITHOLOGY	ALTERATION	MINERALIZATION	% THOL.	TEXTURE	ALTERATION	MINERALIZATION	%	LITHOLOGY	TEXTURE	ALTERATION	MINERALIZATION	%	LITHOLOGY	TEXTURE	ALTERATION
RM14084	9	398971.5	5413250	30013A	MAEQ MG																
RM14085	120	398972	5413255	1001VB	F0VFG	CB+															
RM14086	400	398980	5413207	90VB	FOVFG																
RM14087	250	400214	5413083	1001V(V2)TUF	BAG FMAG	EP+ CB+															
RM14088	16	398875	5413298	10013A	MAEQ MG																
RM14089	500	399011	5412254	10013A	MAEQ MG																
RM14090	50	3988938	5412267	1001VB	MAFG																
RM14091	400	398858	5412246	1001V	FOVFG	SR+															
RM14092	100	398865	5412293	1001V	FOVFG																
RM14093	16	398843	5412281	1001V	VFG																
RM14094	20	398873	5412281	1001V	FC																
RM14095	100	398838	5412235	1001V	SCS FG																
RM14096	120	398839	5412204	1001V	PODIFG																
RM14097	150	398828	5412271	1001V	TIPY																
RM14098	16	398828	5412252	1001V	PODIFG																
RM14099	200	398815	5412252	1001V	PODIFG																
RM14100	90	398829	5412279	1001TUF	F	PODIFG															
RM14101	500	398850	5412255	1001V	MAEQ MG																
RM14102	100	398829	5412255	1001V	MAEQ MG																
RM14103	10	398879	5412243	1001V	MAEQ MG																
RM14104	100	398871	5412255	1001V	MAEQ MG																
RM14105	160	398771	5412312	70V7	PODIFG																
RM14106	12	398765	5412315	1001V	PODIFG																
RM14107	480	397254	5412015	1001V	PODIFG																
RM14108	100	398812	5412523	951LD	WAMGR																
RM14109	24	398782	5412384	80VZ	PODIFG																
RM14110	90	398746	5412781	80VZ	PODIFG																
RM14111	90	398646	5412673	1001V(LP1)BM	MAEQ MG																
RM14112	300	398646	5412445	1001V	MAEQ MG																
RM14113	16	398289	5412408	1001V	MAEQ MG																
RM14114	90	398227	5412010	1001V	MAEQ MG																
RM14115	100	398191	5412016	1001V	MAEQ MG																
RM14116	10	398140	5412375	1001V	MAEQ MG																
RM14117	250	398266	5412379	1001V	MAEQ MG																
RM14118	600	398331	5412378	1001V	MAEQ MG																
RM14120	105	398653	5412323	95V	POR QZ [PG]	SR+															
RM14121	20000	397255	5412375	1001V	POR QZ [PG]	SR+															
RM14122	50	398592	5412416	1001V(TUF)	SH VFG MAG	SR+ CL+															
RM14123	75	391243	5412316	5412347	1001V(TUF)	VFG															
RM14124	40	391236	5412335	5412383	1001V(TUF)	FG MAG															
RM14125	316	391233	5412377	85V1TUF	SH MAG																
RM14126	10	391237	5412379	80V1TUF	MAEQ MG																
RM14127	25	391239	5412407	1001V	MAEQ MG																
RM14128	6	391276	5412316	5412381	1001V(TUF)	SCS FG															
RM14129	45	391237	5412327	5412352	1001V	MAEQ MG															
RM14131	150	391232	5412345	5412385	1001V	MAEQ MG															
RM14132	30	391237	5412351	5412373	1001V	PODIDF															
RM14133	310	391237	5412351	5412382	1001V	PODIDF															
RM14134	320	391239	5412351	5412382	1001V	PODIDF															
RM14135	310	391239	5412351	5412382	1001V	PODIDF															
RM14136	60	391239	5412351	5412382	1001V	PODIDF															
RM14137	160	391239	5412416	5412416	1001V	PODIDF															
RM14138	21	401345	5412316	5412316	1001V	PODIDF															
RM14139	200	401338	5412437	5412437	1001V	PODIDF															
RM14140	200	401324	5412457	5412457	1001V	PODIDF															
RM14141	25	401293	5412402	5412426	1001V	PODIDF															
RM14142	40	401265	5412405	5412405	1001V	PODIDF															
RM14143	24	401207	5412417	5412417	1001V	PODIDF															
RM14144	30	401215	5412415	5412418	1001V	PODIDF															
RM14145	20	401265	5412405	5412454	1001V	PODIDF															
RM14146	15	401198	5412454	5412454	1001V	PODIDF															
RM14147	80	401203	5412437	5412437	1001V	PODIDF															
RM14148	15	401153	5412487	5412487	50M16	PODIDF															
RM14149	750	401438	5412452	5412452	95V2J	PODIDF															
RM14150	40	401501	5412437	5412437	1001V	PODIDF															
RM14151	100	401716	5412415	5412415	1001V	PODIDF															
RM14152	16	401277	5412407	5412407	1001V	PODIDF															
RM14153	20	391242	5412423	5412423	1001V	PODIDF															
RM14154	8	391234	5412422	5412422	1001V	PODIDF															
RM14155	250	400865	5412342	5412342	1001V	PODIDF															
RM14156	240	400850	5412304	5412304	1001V	PODIDF															
RM14157	16	400862	5412365	5412365	1001V	PODIDF															
RM14158	6	400544	5412286	5412286	1001V	PODIDF															

OUTCROP	UTM/IA 83 - Zone 18	SUMMARY	
GEOLOGICAL STATION	AREA	EASTING	NORTHING
RML4001	3000	397231	5445020 VBB RID
RML4002	800	397216	5444559 VBB RID
RML4003	90	397231	5444440 VBB RID SH
RML4004	48	397361	5442556 VBB RID MAG EP+
RML4005	30	397299	5442572 VBB RID
RML4006	1	397318	5442635 S-SED LA SCH VFG SKR GP
RML4007	50	397454	5442655 VBB RID EP+
RML4008	24	397477	5442677 VBB RID
RML4009	150	398635	545134 VBB RID
RML4010	150	398635	545134 VBB RID
RML4011	48	398545	545101 VBB RID DEF TR/PY
RML4012	6	398934	545129 VBB RID
RML4013	600	396535	545335 POR RID TR/PY D 5% SULF
RML4014	30	396458	545335 VBB RID (SULF) SKR SR+
RML4015	16	397279	545329 VBB RID
RML4016	320	397252	545329 TO SOH5 VFG SH + TR/PY
RML4017	150	397252	545329 LA FEEGL VFG VAA VFG
RML4018	220	397291	545150 VBB RID
RML4019	40	398487	545137 VBB RID
RML4020	500	398518	544372 BA FORC QM CG TR/PY
RML4021	200	398358	544372 BA MAC QM CG / VBB FOR TR/PY
RML4022	60	397551	544372 VBB MAC QM CG / VBB FOR TR/PY
RML4023	25	397232	545231 VUJU MAF G
RML4024	316	397232	545231 VUJU MAF G
RML4025	150	397248	545357 VAA FORC RID
RML4026	25	398625	545357 VAA FORC RID
RML4027	6	395299	5444245 VAA FORC TR/PY
RML4028	20	396200	5453846 VAA FORC TR/PY
RML4029	400	395838	5444239 VAA FORC SH
RML4030	4	393849	5444208 VAA FORC SH
RML4031	25	398546	5444311 VZ PIDT
RML4032	6	395861	5444328 VZ PIDT
RML4033	150	393803	5444371 VMA VFG
RML4034	200	397731	5444365 VMA VFG
RML4035	4	397607	5442556 VBB RID MAG SH EP+
RML4036	24	397553	5442628 VBB RID
RML4037	6	397853	VFO POR / VZ FOR PID
RML4038	10	397807	5442898 VZ PIDT
RML4039	25	397454	5443039 VZ POR RID
RML4040	125	394943	5443031 VZ POR RID
RML4041	40	397517	5443032 VZ POR RIDEP+
RML4042	60	397516	5443032 VZ POR RID
RML4043	50	397435	5442615 VFC VFG SKR
RML4044	60	397495	5442600 VFC VFG SKR
RML4045	90	397624	5442964 VZ POR RID EP
RML4046	60	397624	5442964 VZ POR RID EP
RML4047	310	397619	544221 VZ POR RID SH + TR/PY
RML4048	100	397718	5443040 VZ POR RID
RML4049	50	397760	5443039 VZ POR RID
RML4050	25	397702	5443022 VZ POR RID
RML4051	80	397515	5443010 /21TUFI O VFG
RML4052	10	397533	5443033 VZ POR RID
RML4053	18	397373	5443131 VZ POR RID
RML4054	40	397010	5443161 VZ POR RID
RML4055	18	397509	5443160 VZ POR RID
RML4056	32	395980	5442939 VZ POR RID
RML4057	12	393519	5442931 VZ POR RID
RML4058	200	398636	5434389 VBB RID
RML4059	240	398639	5434379 VBB RID MAG
RML4060	240	398639	5444053 VBB RID DEF
RML4061	525	398675	5444057 VBB RID DEF
RML4062	250	398727	5444172 VBB RID DEF
RML4063	375	398735	5444227 VBB RID DEF
RML4064	300	398816	5444225 VBB RID DEF
RML4065	150	398838	544374 VBB RID MAG
RML4066	6	393001	5434039 VZ FOR VFG
RML4067	120	393430	543347 VBB FOR
RML4068	25	393440	5433781 VBB FOR
RML4069	40	393338	5433687 VBB FOR SCSH TR/PY
RML4070	150	393456	5433165 VZ ANVY CIE TR/PY
RML4071	90	393519	543317 VZ ANVY CIE TR/PY
RML4072	200	393564	543221 VZ POR SCIS
RML4073	240	393574	543251 VZ ANVY MAG+
RML4074	100	393504	543289 VZ ANVY MAG+
RML4075	36	393504	543289 VZ ANVY MAG+
RML4076	375	393441	543241 1/2 EQ LONG / V3A FOR
RML4077	90	393560	5444658 1/2 EQ LONG / M16 MAG / V3A POR
RML4078	250	393613	543282 VZ FOR
RML4079	50	393678	543287 VZ ANVY
RML4080	400	393659	543270 VZ FOR
RML4081	40	393821	543285 VZ FOR
RML4082	6	393821	543281 VZ FOR
RML4083	90	393793	543293 VZ FOR

OUTCROP	UTM/AD 83 - Zone 18	SUMMARY
GEOLOGICAL AREA	EASTING NORTHING	
<b>VI TUFI LKR DFL</b>		
RM14084	9 3989915	54.3290 / 3A MA EQMG
RM14085	120 3989927	54.3255 / VBB TOTFCB / 3A EQMG / VV VFG SCIS / VV VFG SCHS
RM14086	400 3989930	54.3203 / VBB TOTFCB / 3A EQMG / VV VFG SCIS / VV VFG SCHS
RM14087	250 4002124	54.3083 / VV VZTUFU FG MAG EP+ CB+
RM14088	16 398875	54.3295 / 3A MA EQMG
RM14089	500 398011	54.2254 / 3A MA EQMG
RM14090	50 3988939	54.2267 / VBB MA FG
RM14091	400 398938	54.2246 / VV VFG SR+
RM14092	100 398635	54.2251 / VV VFG
RM14093	16 398443	54.2281 / VV VFG
RM14094	20 398379	54.2203 / VV VFG
RM14095	100 398338	54.2233 / VV VFG
RM14096	120 398335	54.2204 / VV VFG
RM14097	150 398208	54.2222 / VV VFG
RM14098	16 398218	54.2222 / VV VFG
RM14099	200 398212	54.2222 / VV VFG
RM14100	400 398205	54.2222 / VV VFG / VV VFG Tr/PY
RM14101	90 398310	54.2155 / 3A MA EQMG
RM14102	500 398209	54.2155 / 3A MA EQMG
RM14103	10 398597	54.2144 / 3A MA EQMG
RM14104	100 398311	54.2139 / 3A MA EQMG
RM14105	160 397211	54.2131 / VV VFG / VV VFG UBM
RM14106	120 397655	54.2131 / VV VFG / VV VFG UBM
RM14107	480 397254	54.2131 / VV VFG / VV VFG UBM
RM14108	100 398182	54.2152 / 3A MA MAGB / VV VFG / VV VFG UBM
RM14109	24 397249	54.2152 / 3A MA MAGB / VV VFG / VV VFG UBM
RM14110	90 397430	54.2152 / VV VFG / VV VFG UBM
RM14111	90 398746	54.2152 / VV VFG / VV VFG UBM
RM14112	3000 393370	54.2144 / 3A MA EQMG
RM14113	16 392289	54.2144 / 3A MA EQMG
RM14114	90 393227	54.2100 / 3A MA EQMG
RM14115	100 393191	54.2086 / 3A MA EQMG
RM14116	100 393140	54.2075 / VV VFG / VV VFG UBM
RM14117	250 393265	54.2075 / 3A MA EQMG
RM14118	100 393381	54.2075 / VV VFG / VV VFG UBM
RM14119	6000 398602	54.2053 / VV VFG / VV VFG UBM
RM14120	105 398682	54.2052 / VV VFG / VV VFG UBM
RM14121	20000 397725	54.2052 / VV VFG / VV VFG UBM
RM14122	75 398959	54.2046 / VV VFG / VV VFG UBM
RM14123	75 392243	54.2046 / VV VFG / VV VFG UBM
RM14124	40 392356	54.2046 / VV VFG / VV VFG Tr/PY
RM14125	36 392356	54.2046 / VV VFG / VV VFG Tr/PY
RM14126	10 392337	54.2046 / VV VFG / VV VFG Tr/PY
RM14127	25 392359	54.2046 / VV VFG / VV VFG Tr/PY
RM14128	150 392376	54.2046 / VV VFG / VV VFG Tr/PY
RM14129	6 392768	54.2038 / VV VFG / VV VFG Tr/PY
RM14130	45 392815	54.2032 / VV VFG / VV VFG Tr/PY
RM14131	150 392832	54.2032 / VV VFG / VV VFG Tr/PY
RM14132	30 392327	54.2032 / VV VFG / VV VFG Tr/PY
RM14133	210 392329	54.2032 / VV VFG / VV VFG Tr/PY
RM14134	100 392329	54.2032 / VV VFG / VV VFG Tr/PY
RM14135	100 392329	54.2032 / VV VFG / VV VFG Tr/PY
RM14136	65 392351	54.2032 / VV VFG / VV VFG Tr/PY
RM14137	160 392959	54.1915 / 3A MA EQMG
RM14138	21 401345	54.1915 / 3A MA EQMG
RM14139	3000 403318	54.1915 / 3A MA EQMG
RM14140	2000 403324	54.1915 / 3A MA EQMG
RM14141	25 401293	54.1915 / VV VFG / VV VFG Tr/PY
RM14142	40 401267	54.1915 / VV VFG / VV VFG Tr/PY
RM14143	24 401207	54.1915 / VV VFG / VV VFG Tr/PY
RM14144	30 401215	54.1915 / VV VFG / VV VFG Tr/PY
RM14145	20 401265	54.1915 / VV VFG / VV VFG Tr/PY
RM14146	15 401198	54.1954 / VV VFG / VV VFG Tr/PY
RM14147	80 401203	54.1942 / VV VFG / VV VFG Tr/PY
RM14148	15 401153	54.1937 / VV VFG / VV VFG Tr/PY
RM14149	2000 401324	54.1937 / VV VFG / VV VFG Tr/PY
RM14150	40 401438	54.1937 / VV VFG / VV VFG Tr/PY
RM14151	40 401501	54.1937 / VV VFG / VV VFG Tr/PY
RM14152	16 401716	54.1937 / VV VFG / VV VFG Tr/PY
RM14153	20 397428	54.2237 / VV VFG / VV VFG Tr/PY
RM14154	8 397324	54.2237 / VV VFG / VV VFG Tr/PY
RM14155	250 400635	54.2342 / VV VFG
RM14156	240 400630	54.2304 / VV VFG
RM14157	16 400632	54.2365 / VV VFG
RM14158	6 400544	54.2286 / VV VFG

### **APPENDIX III GRAB SAMPLES DESCRIPTIONS AND ASSAY RESULTS**

**RALLEAU PROPERTY**  
**GRAB SAMPLES DESCRIPTIONS AND ASSAY RESULTS**

Sample_Nu	Type	UTM coordinates (NAD 83 - Zone 18)				DESCRIPTION				ME-ICP61a				AU-AA24	
		Geological station	Easting (mE)	Northing (mN)	Lithology	Mineralization	Ag_ppm	Cu_ppm	Ni_ppm	Pb_ppm	Zn_ppm	Au_ppm	Au_ppm		
Q592551	Grab	RM14002	397215	5444443	Moderately silicified basalt intersected by 2% QZ veinlets; shear zone oriented at N326°	Tr of PY	-1	70	50	-20	90	-0.005			
Q592552	Grab	RM14086	399980	5443207	Shear zone (0.80 m) oriented at 284°/78°; CL+; SR+; affecting felsic volcanic	No apparent mineralization	-1	60	210	-20	130	0.020			
Q592553	Grab	RM14003	397230	5444439	2 deformed QZ veins (5-10 cm) oriented at N094°; orange rusty weathering on wallrocks	No apparent mineralization	-1	10	-10	-20	20	-0.005			
Q592554	Grab	RM14004	397361	5442456	Pillowed basalt; strongly magnetic		-1	-10	-20	90					
Q592555	Grab	RM14004	397361	5442456	Decimetric wide, massive, equigranular coarser-grained mafic horizon; non magnetic		-1	20	20	-20	90				
Q592556	Grab	RM14006	397318	5442365	Thinly laminated metasediment; schistosized; presence of thin black graphitic laminae (3 mm) SR+	Tr of PY	-1	20	-10	-20	20	-0.005			
Q592557	Grab	RM14009	396853	5442134	Pillowed intermediate volcanic	Tr-2% PY	-1	50	10	-20	120	-0.005			
Q592558	Grab	RM14010	396856	5443117	Weakly foliated very fine-grained felsic volcanic; 5-7% mafic minerals (AM)		-1	30	10	-20	70				
Q592559	Grab	RM14011	396855	5443101	Pillowed basalt	Tr of PY	-1	60	150	-20	110				
Q592560	Grab	RM14013	396543	5442286	Pillowed porphyritic intermediate volcanic		-1	40	60	-20	60	-0.005			
Q592561	Grab	RM14013	396525	5443278	Centimetric to pluricentimetric wide alteration zone affecting pillowed porphyritic intermediate volcanic; SR+; oriented at N080°	5% PY+PO	-1	70	50	-20	80	-0.005			
Q592562	Grab	RM14014	396488	5443219	Shear zone (0.60 m) oriented at 082°/68°; affecting laminated reworked felsic tuff or metasediment	No apparent mineralization	-1	20	30	-20	90	-0.005			
Q592563	Grab	RM14015	396709	5443009	Weakly foliated, equigranular, medium-grained gabbro		-1	40	90	-20	130				
Q592564	Grab	RM14016	396712	5442998	Schistosized and SR+ reworked felsic volcanic / metasediment	Tr of PY	-1	70	110	-20	120				
Q592565	Grab	RM14017	397474	5444259	Reworked intermediate tuff or metasediment; well laminated; very fine-grained; interlayered greenish grey and grey bluish millimetric wide laminae	Up to 10% disseminated PO±PY±CP	-1	170	40	-20	220	-0.005			
Q592566	Grab	RM14017	397474	5444259	Massive, fine-grained intermediate volcanic Andesitic basalt; presence of subbed (1 mm) GR; CB filling fractures	Tr of disseminated PY	-1	10	-10	-20	200	-0.005			
Q592567	Grab	RM14018	397971	5444150	Massive, very fine-grained intermediate volcanic - andesite; intersected by few QZ-CC veinlets (3-5 mm)		-1	10	10	-20	190				
Q592568	Grab	RM14022	397553	5442869	Foliated, fine-grained felsic volcanic; up to 10% subedral PG phenocrysts (1-2 mm); <1% QZ veins (<2 cm) oriented along S1	Tr of PY	-1	40	30	-20	60	-0.005			
Q592569	Grab	RM14022	397553	5442869	QZ vein (2 cm) intersecting felsic volcanic; transposed along S1	No apparent mineralization	-1	10	-20	-20	-20	-0.005			
Q592570	Grab	RM14023	397423	5442931	Coarse-grained QZ vein (2-5 cm)	No apparent mineralization	-1	-10	10	-20	30	-0.005			
Q592571	Grab	RM14023	397423	5442931	Massive, fine-grained intermediate volcanic; 5% acicular AM		-1	40	20	-20	100				
Q592572	Grab	RM14024	397325	5443033	Homogeneous porphyritic felsic volcanic; 3-5% blue anedial QZ phenocryst (2 mm); 5-7% subedral PG phenocrysts (2 mm); very fine-grained siliceous groundmass with 5% BO; presence of SR along foliation planes		-1	-10	-10	-20	80				
Q592573	Grab	RM14024	397325	5443033	QZ vein (2 cm) crosscutting felsic volcanic at N080°/74°		-1	-10	-10	-20	20	-0.005			

**RALLEAU PROPERTY**  
**GRAB SAMPLES DESCRIPTIONS AND ASSAY RESULTS**

Sample_Nu	Type	UTM coordinates (NAD 83 - Zone 18)			DESCRIPTION			ME-ICP61a			AU-AA24		
		Geological station	Easting (mE)	Northing (mN)	Lithology	Mineralization	Ag_ppm	Cu_ppm	Ni_ppm	Pb_ppm	Zn_ppm	Au_ppm	
Q592574	Grab	RM14027	399299	5444245	Angular boulder (10-15 lbs); QZ vein (7 cm) intersecting medium-grained granodiorite	5% disseminated PY	-1	10	20	-20	30	-0.005	
Q592575	Standard OREAS 504						4	11000	30	20	110	1.540	
Q592576	Grab	RM14029	395878	5444293	Weakly to moderately B+ fine-grained intermediate volcanic	2-3% PY-CP	2	2070	70	-20	190	0.039	
Q592577	Grab	RM14029	395878	5444293	Metric wide shear zone oriented 288°/88°; affecting fine-grained intermediate volcanic; SR+, BO- (5%) volcanic	2-4% disseminated PY	-1	250	60	-20	140	0.012	
Q592578	Grab	RM14029	395878	5444293	Flat-lying QZ vein (10 cm) crosscutting intermediate volcanic	No apparent mineralization	-1	-10	10	-20	-20	-0.005	
Q592579	Grab	RM14029	395854	5444296	SI+ fine-grained intermediate volcanic	No apparent mineralization	-1	10	40	-20	40		
Q592580	Grab	RM14035	397619	5442670	QZ vein (20 cm) within shear zone oriented at 270°/78°	No apparent mineralization	-1	-10	10	-20	-20	-0.005	
Q592581	Grab	RM14035	397619	5442670	Shear zone (0.80 m) oriented at 270°/78°; SR+, SI+		-1	40	70	-20	120	-0.005	
Q592582	Grab	RM14037	397853	5442898	Moderately foliated porphyritic felsic volcanic; 3% blue anedrial QZ phenocrysts (2.4 mm); very fine-grained siliceous groundmass with <3% AM; presence of SR along foliation planes		-1	10	30	-20	70		
Q592583	Grab	RM14037	397853	5442898	Pillowed porphyritic intermediate volcanic; 15-20% subedral PG phenocrysts (2-3 mm); very fine-grained intermediate groundmass with 10% mafic minerals (AM-BO+CL); strongly deformed / flattened pillows		-1	20	30	-20	70		
Q592584	Grab	RM14039	397454	5443089	Pillowed porphyritic intermediate volcanic; 15% subedral PG phenocrysts (2-3 mm); very fine-grained intermediate groundmass with 20% mafic minerals	2-3% PO; Tr of CP	-1	40	60	-20	290		
Q592585	Grab	RM14047	397695	5443021	Shear zone (0.25 m) oriented at N280°; affecting pillowved porphyritic intermediate volcanic	Tr of disseminated PY	-1	50	80	-20	60	-0.005	
Q592586	Grab	RM14047	397695	5443021	Coarse-grained QZ vein (15 cm) intersecting pillowved porphyritic intermediate volcanic at 234°/50°		-1	30	100	-20	90	-0.005	
Q592587	Grab	RM14053	397034	5443137	Slightly SR+ shear zone (0.25 m) oriented at 266°/88°; affecting pillowved porphyritic intermediate volcanic	2-3% disseminated PY	-1	-10	10	-20	30	-0.005	
Q592588	Grab	RM14054	397010	5443161	Cl+ and weakly BO+ shear zone (1 m) oriented at 280°/72°; affecting pillowved porphyritic intermediate volcanic	No apparent mineralization	-1	50	40	-20	90	-0.005	
Q592589	Grab	RM14055	396509	5442809	Cl+, weakly schistosed, fine-grained intermediate volcanic - andesite	Tr of disseminated PY	-1	50	50	-20	70		
Q592590	Grab	RM14056	395980	5442831	Strongly deformed QZ vein (2-4 cm) intersecting very fine-grained andesitic basalt; strongly EP+ and CB+ wallrocks	2-3% disseminated PY	-1	30	140	-20	80	-0.005	
Q592591	Grab	RM14056	395980	5442831	Moderately foliated, very fine-grained andesitic basalt		-1	10	30	-20	160		
Q592592	Grab	RM14057	395579	5443488	Well foliated, very fine-grained mafic volcanic; 2% PG/QZ phenocrysts (1.5 mm); presence of SR and BO along foliation planes		-1	30	20	-20	200		

**RALLEAU PROPERTY**  
**GRAB SAMPLES DESCRIPTIONS AND ASSAY RESULTS**

Sample_Nu	Type	UTM coordinates (NAD 83 - Zone 18)			DESCRIPTION			ME-ICP61a			AU-AA24		
		Geological station	Easting (mE)	Northing (mN)	Lithology	Mineralization	Ag_ppm	Cu_ppm	Ni_ppm	Pb_ppm	Zn_ppm	Au_ppm	
Q592593	Grab	RM14058	398686	5443979	Shear zone (12 cm) oriented at 285°/80°; orange rusty weathering; affecting weakly foliated to massive, fine-grained basalt	3% disseminated PY or forming very thin stringers transposed along S1	-1	30	20	-20	200	-0.005	
Q592594	Grab	RM14064	398816	5444125	Quartz-feldspar porphyry dyke; 25-40% subedral PG phenocrysts (2 mm); 3% anhedral QZ phenocrysts (2 mm); fine-grained felsic groundmass with 7% BO; thickness estimated to 10 m	Tr of disseminated PY	-1	10	10	-20	50		
Q592595	Grab	RM14067	399430	5443947	Porphyritic mafic volcanic; 5-15% subedral PG phenocrysts (2.5 mm)	<1% disseminated PY	-1	140	50	-20	120		
Q592596	Grab	RM14067	399430	5443947	Massive aphanitic basalt	Tr of disseminated PY	-1	-10	80	-20	160		
Q592597	Grab	RM14069	399338	5443687	Massive aphanitic intermediate volcanic / andesite	Tr of disseminated PY	-1	20	10	-20	150		
Q592598	Grab	RM14070	399496	5443165	Moderately schistosized amygdular intermediate volcanic - andesite; 4% amygdules (4 mm) filled with CC	Tr of disseminated PY	-1	10	-20	160			
Q592599	Grab	RM14075	399501	5443841	Quartz vein (70 cm) intersecting sheared contact of massive medium-grained gabbro and porphyritic intermediate volcanic; orange rusty weathering surface; oriented at N280°, Cl+wallrocks	No apparent mineralization	-1	20	10	-20	30	-0.005	
Q592600	Grab	RM14079	399678	5443454	Quartz vein (4-11 cm) crosscutting andesitic basalt at N265°, Cl+wallrocks	No apparent mineralization	-1	10	10	-20	80	-0.005	
Q592601	Grab	RM14080	399689	5442670	Well foliated, banded, fine-grained felsic / intermediate tuff; <1% ankerite-calcite veinlets; presence of BO along foliation planes	Tr of disseminated PY	-1	30	60	-20	100		
Q592602	Grab	RM14081	399821	5442585	Homogeneous, massive, fine-grained intermediate volcanic; 15% euhedral (acicular) AM		-1	40	30	-20	100		
Q592603	Grab	RM14086	399980	5443207	Massive, fine-grained, fractured basalt		-1	100	80	-20	180		
Q592604	Grab	RM14086	399980	5443207	Weakly foliated, fine-grained felsic volcanic horizon (0.40-0.80 m) oriented at 284° / 73°		-1	10	-10	-20	50		
Q592605	Grab	RM14084	399915	5443290	QZ-CC vein (5 cm) intersecting strongly CB+, foliated, fine-grained basalt		-1	70	60	-20	130	-0.005	
Q592606	Grab	RM14087	400214	5443083	Moderately EP+ and CB+, fine-grained well banded intermediate volcanic - tuff		-1	30	10	-20	120		
Q592607	Grab	RM14087	400214	5443083	Strongly EP+ and CB+, fine-grained well banded intermediate volcanic - tuff		-1	20	10	-20	80		
Q592608	Grab	Boulder	398686	5441824	Angular to sub-rounded boulder (10 lbs); quartz-calcite vein with strongly BO+ wallrocks	Malachite stains; 7% CP	-1	340	40	-20	30	-0.005	
Q592609	Grab	Boulder	398883	5441778	Partially exposed angular boulder (1 m X 0.60 m); SR+ felsic volcanic; orange rusty alteration surface	3-5% disseminated PY	-1	130	50	-20	90	-0.005	
Q592610	Grab	RM14091	398958	5442446	Well foliated, fine-grained intermediate volcanic; 10-15% very fine-grained BO		-1	10	30	-20	80		
Q592611	Grab	RM14092	398635	5442591	Well foliated, fine-grained felsic volcanic; 2-3% very fine-grained BO		-1	40	40	20	70		
Q592612	Grab	RM14093	398443	5442681	Weakly foliated, fine-grained felsic tuff; presence of feldspathic quartz sub-rounded fragments (0.5 mm); 3-5% very fine-grained BO; Tr amount of CL		-1	20	30	-20	70		
Q592613	Grab	RM14094	398379	5442803	Homogeneous, fine-grained intermediate volcanic; <1% anhedral PG phenocrysts (1-2 mm)		-1	40	20	-20	110		

**RALLEAU PROPERTY**  
**GRAB SAMPLES DESCRIPTIONS AND ASSAY RESULTS**

Sample	UTM coordinates (NAD 83 - Zone 18)				DESCRIPTION	ME-ICP61a				AU-AA24			
	Sample_Nu	Type	Geological station	Easting (mE)	Northing (mN)	Lithology	Mineralization	Ag_ppm	Cu_ppm	Ni_ppm	Pb_ppm	Zn_ppm	Au_ppm
Q592614	Grab	RM14096	398395	5442904	Porphyritic intermediate volcanic; 15-20% anedral and subbedular PG phenocrysts (2-5 mm)	-1	50	60	-20	-20	90		
Q592615	Grab	RM14098	398198	5442852	Homogeneous, massive, fine-grained, intermediate volcanic	Tr of disseminated PY	-1	40	40	-20	90		
Q592616	Grab	RM14100	394060	5443999	Intermediate tuff; 5% fragments (2-5 mm) of green AM and BO; 2-3% cavities (<1.0 mm) with quartz filling; intermediate fine-grained groundmass	Tr of disseminated PY	-1	30	70	-20	90		
Q592617	Grab	RM14107	397269	5443056	Angular boulder (0.6 m X 0.6 m) with strong orange rusty weathering; partially exposed; SR+, fine to very fine-grained felsic tuff with presence of angular to sub-rounded QZ fragments (2-5 mm); up to 10% AM forming eudialyte grains (0.25-0.50 mm)	Tr of finely disseminated PY	-1	30	50	20	90	0.005	
Q592618	Grab	RM14108	395812	5445223	Reworked felsic volcanic / metasediment forming a magmatic enclave within medium-grained tonalite; moderately SR+ with orange rusty weathered surface	Tr-5% PO <sub>±</sub> PY	-1	90	60	-20	70	-0.005	
Q592619	Blank					-1	-10	-10	-20	-20	30	-0.005	
Q592620	Grab	RM14116	393140	5443756	Felsic volcanic; 15-20% anedral QZ phenocrysts (2-3 mm); 7% mafic minerals	-1	-10	-10	-20	-20	20		
Q592621	Grab	RM14118	393381	5443780	Felsic volcanic; 15-20% anedral QZ phenocrysts (1-3 mm); 10% BO forming plurimillimetric to centimetric (2-10 mm) wide masses	-1	-10	-10	-20	-20	30		
Q592622	Grab	RM14120	393685	5443623	Mafic volcanic; massive; very fine-grained; presence of anedral QZ fragments (2 mm) close to the contact with felsic volcanic; Tr of disseminated PY	Tr of disseminated PY	-1	10	-10	-20	120		
Q592623	Grab	RM14121	393725	5443572	Felsic volcanic; 15% angular to sub-rounded QZ fragments (2.5 mm); 5-10% subbedular (2-5 mm) whitish PG; 3-5% fine-grained BO; weakly developed foliation oriented at N27°.	-1	40	-10	-20	-20	80		
Q592624	Grab	RM14122	393692	5443416	Schistosized and moderately Cl+/SR+ intermediate volcanic / tuff; <1% CC veinlets transposed along S1	<1% disseminated PY	-1	50	30	-20	-20	80	
Q592625	Blank				Felsic volcanic; 5-7% sub-angular to sub-rounded fragments (1 mm) of blue QZ; fine-grained felsic groundmass with 5-7% BO; slightly magnetic unit with finely disseminated MG	-1	-10	-10	-20	-20	30	-0.005	
Q592626	Grab	RM14124	393256	5443147	Mafic volcanic forming a 0.40 m thick horizon; schistosized and moderately Cl+/SR+ intermediate volcanic; <1% CC veinlets transposed along S1	Tr of disseminated PY	-1	-10	-10	-20	-20	70	
Q592627	Grab	RM14126	393237	5443279	QZ vein (2-3 cm) located at contact of felsic and intermediate volcanic; oriented at N27° / 68°; absence of visible mineralization	Tr of disseminated PY	-1	70	90	-20	-20	130	
Q592628	Grab	RM14126	393237	5443279	Intermediate very fine-grained volcanic - andesite; massive to moderately schistosized; 20% mafic minerals (AM); moderately magnetic with 3% finely disseminated MG	Tr of disseminated PY	-1	40	40	-20	-20	150	-0.005
Q592629	Grab	RM14133	394809	5443610	Monogenic intermediate lapilli tuff; 30-40% felsic fragments (1-10 cm) stretched along S1; fine-grained tuffaceous intermediate groundmass	Tr of disseminated PY	-1	80	90	-20	-20	70	
Q592630	Grab	RM14134	394832	5443637	Massive, fine-grained basalt	-1	30	110	-20	-20	100		
Q592631	Grab	RM14135	395418	5443254									

**RALLEAU PROPERTY**  
**GRAB SAMPLES DESCRIPTIONS AND ASSAY RESULTS**

Sample_Nu	Type	UTM coordinates (NAD 83 - Zone 18)			DESCRIPTION			ME-ICP61a			AU-AA24	
		Geological station	Easting (mE)	Northing (mN)	Lithology	Mineralization	Ag_ppm	Cu_ppm	Ni_ppm	Pb_ppm	Zn_ppm	Au_ppm
Q592637	Grab	RM14146	401198	5441854	Felsic / intermediate volcanic - tuff; well banded with alternance of centimetric to pluricentimetric wide felsic and intermediate layers; 80% fine-grained felsic layers; 20% coarser-grained mafic-rich layer; moderately CB+.	5% disseminated PY	-1	70	70	-20	120	-0.005
Q592638	Grab	RM14147	401203	5441842	Small excavated? block collected in the vicinity of the outcrop; semi-massive (25-30%) QZ forming a 3 cm thick layer in intermediate volcanic tuff	25-30% PO	1	320	120	20	110	0.005
Q592639	Grab	RM14148	401153	5441887	Porphyroblastic amphibolite; 10-15% pale rose anedral GR porphyroblasts (1-10 mm) set in a fine-grained AM-rich groundmass; <1% CC veinlets oriented along S1	<5% disseminated PY-PO	-1	80	30	-20	90	-0.005
Q592640	Grab	RM14148	401153	5441887	QZ vein (2 cm) hosted in a 10 cm wide shear zone oriented at N330°; no apparent mineralization							-0.005
Q592641	Grab	RM14150	401501	5441397	Decinetic wide shear affecting felsic / intermediate volcanic; oriented at N266° / 42°; SR+ and CL+	Up to 10% PY; Tr of CP	-1	1920	110	40	8360	0.008
Q592642	Grab	RM14150	401501	5441397	Felsic / intermediate volcanic intersected by a massive PY veinlet (1 mm) oriented along S1	Massive PY veinlet (1 mm)	-1	120	60	30	420	-0.005
Q592643	Grab	RM14150	401501	5441397	Excavated block from the trench; semi-massive PY forming a centimeter thick layer; overall 20% PY	20% PY	-1	300	60	-20	320	-0.005
Q592644	Grab	Trench No 1	404231	5441599	Very fine-grained well schistosized felsic volcanic; <1% anedral QZ fragments (2-4 mm) stretched along S1; 2% mafic minerals (RO+CL); presence of SR		-1	50	20	-20	130	
Q592645	Grab	Trench No 1	404228	5441569	Massive, fine-grained basalt; moderately CB+	3% disseminated PY	-1	720	470	-20	130	
Q592646	Grab	Trench No 1	404224	5441570	Well laminated felsic volcanic - tuff; 10% angular FP-QZ fragments (1-10 mm); 10% mafic minerals oriented along S1	<1% disseminated PO	-1	90	420	-20	50	
Q592647	Grab	Trench No 1	404227	5441584	Strongly deformed OZ-TL vein (3 cm) located at contact of metasedimentary unit and felsic volcanic; oriented at N282°; no apparent mineralization							-0.005
Q592648	Grab	Trench No 1	404222	5441569	Strongly deformed medium-grained QZ vein (5 cm) oriented at N278°; no apparent mineralization							-0.005
Q592649	Grab	Trench No 1	404221	5441581	Well laminated metasedimentary unit; very fine-grained; SR+; 50 oriented at N292°		-1	10	20	-20	50	-0.005
Q592650	Standard OREAS 502						2	7460	30	30	110	0.481
Q592651	Grab	Trench No 1	404225	5441577	Metasediment with orange rusty weathering surface; 15% cherty layers (1 cm); presence of very thin PY-rich and SR/GP-rich laminae; intrafolial folds; moderately to strongly CB+.	Up to 10% PY-PO	-1	120	50	-20	300	0.012
Q592652	Grab	Trench No 1	404228	5441573	Metasediment with orange rusty weathering surface	1% finely dispersed PY-PO	1	210	580	-20	250	-0.005
Q592653	Grab	Trench No 1	404221	5441565	Intermediate / felsic tuffaceous fine-grained groundmass; 30% sub-angular to sub-rounded FP-QZ fragments (2-6 mm) oriented along S1; 15-20% fine-grained BO		-1	270	460	-20	90	
Q592654	Grab	RM14013	396518	5443263	Lenticular QZ vein (17 cm) located at contact of reworked intermediate volcanic and intermediate porphyritic volcanic; no apparent mineralization							-0.005

**RALLEAU PROPERTY**  
**GRAB SAMPLES DESCRIPTIONS AND ASSAY RESULTS**

Sample_Nu	Type	UTM coordinates (NAD 83 - Zone 18)			DESCRIPTION			ME-ICP61a			ME-ICP61b			AU-AA24		
		Geological station	Easting (mE)	Northing (mN)	Lithology	Mineralization	Ag_ppm	Cu_ppm	Ni_ppm	Pb_ppm	Zn_ppm	Au_ppm	Au_ppm	Au_ppm	Au_ppm	
Q592655	Grab	RM14154	397324	5442378	Porphyritic intermediate volcanic; 15-20% subedral PG phenocrysts (1-3 mm); intermediate groundmass with 15-20% mafic minerals (AM-BG)	Tr of disseminated PY	1	40	40	-20	-20	90				
Q592656	Grab	RM14153	397428	5442537	Well schistosized aphanitic intermediate volcanic; moderately CL+		-1	10	40	-20	-20	110				
Q592657	Grab	RM14156	400580	5443404	Homogeneous, massive, very-fine-grained basalt		-1	110	100	-20	-20	180				
Q592658	Grab	RM14158	400544	5442386	Intermediate tuff; few very-fine-grained felsic lapilli (3 cm X 0.5 cm) were observed; fragments are stretched along S1 [265° / 60°]		-1	40	60	-20	-20	80				

## **APPENDIX IV WHOLE ROCK ANALYSIS**

WHOLE ROCK ANALYSIS  
RECALCULATED ANALYTICAL DATA WITH ALTERATION INDEXES

Sample	Geological Station	LithoCode	ANALYTICAL DATA RECALCULATED AT 100% ANHYDROUS												ALTERATION INDEX				
			Al2O3	BaO	CaO	Cr2O3	K2O	MgO	MnO	Na2O	P2O5	S03	SiO2	SrO	TiO2	H2O+	Total	ISHIKAWA - AI	CHLORITE-CARBONATE-PYRITE INDEX - CCPi
Q592551	RM14002	V3	15.53	0.08	8.76	-0.01	10.87	2.93	4.00	0.14	2.65	0.28	0.04	51.56	0.03	1.46	1.57	100.00	37.79
Q592554	RM14004	V3	13.35	0.01	9.70	-0.01	16.11	0.35	4.29	0.24	2.78	0.55	0.01	49.77	0.06	2.41	0.37	100.00	83.72
Q592555	RM14004	V3	16.13	0.02	11.74	0.01	13.78	0.41	4.46	0.17	2.85	0.29	0.01	47.04	0.06	1.93	0.79	100.00	25.05
Q592557	RM14009	V2	15.74	0.02	9.13	-0.01	12.87	0.61	2.65	0.27	1.74	0.13	0.48	54.40	0.06	0.75	1.16	100.00	23.07
Q592558	RM14010	V1	15.55	0.04	4.56	-0.01	4.85	0.87	2.08	0.10	4.83	0.16	0.01	65.10	0.02	0.88	0.86	100.00	53.06
Q592559	RM14011	V3	16.48	0.01	9.86	0.03	13.01	0.24	8.15	0.19	2.42	0.19	0.04	46.37	0.04	1.27	1.56	100.00	83.18
Q592560	RM14013	V2	17.75	0.03	7.18	-0.01	7.02	1.11	3.32	0.10	5.00	0.15	0.17	55.55	0.03	1.17	1.42	100.00	26.67
Q592561	RM14013	V2	17.70	0.01	11.36	0.01	11.12	0.61	3.39	0.16	1.72	0.14	2.28	47.69	0.04	1.18	2.60	100.00	23.43
Q592562	RM14014	V1	15.54	0.04	2.33	-0.01	7.07	1.73	2.69	0.10	4.02	0.12	0.09	62.96	0.03	0.76	2.42	100.00	40.99
Q592563	RM14015	13A	15.59	0.01	11.50	0.02	13.54	0.19	4.08	0.26	2.91	0.31	0.10	46.82	0.05	1.57	3.05	100.00	22.85
Q592564	RM14015	V1[TUF]S3	16.37	0.04	5.43	0.02	12.46	1.59	2.41	0.22	3.13	0.34	0.09	53.48	0.04	1.63	2.63	100.00	32.16
Q592566	RM14017	V2	11.23	0.01	9.49	-0.01	18.10	0.54	1.48	0.43	0.63	0.48	0.35	54.99	0.02	1.49	0.78	100.00	16.61
Q592567	RM14018	V2	11.99	0.02	6.01	-0.01	13.83	0.47	1.42	0.22	2.99	0.50	0.04	60.85	0.03	1.26	0.32	100.00	17.38
Q592568	RM14022	V1	17.44	0.06	5.39	-0.01	7.15	1.92	2.71	0.08	3.13	0.12	0.99	67.72	0.04	0.64	1.62	100.00	64.42
Q592571	RM14023	V2	19.18	0.03	6.32	-0.01	7.30	0.91	2.86	0.10	4.86	0.19	0.14	56.49	0.03	1.11	0.85	100.00	61.91
Q592572	RM14024	V1	13.07	0.07	0.90	-0.01	1.52	2.54	0.26	0.02	3.68	0.02	0.01	76.61	0.01	0.18	1.10	100.00	38.00
Q592579	RM14029	V2	15.12	0.01	11.00	0.01	7.26	0.16	2.25	0.09	1.59	0.24	0.01	60.47	0.06	0.72	1.01	100.00	16.68
Q592582	RM14037	V1	13.73	0.05	3.74	0.01	5.40	1.50	1.77	0.09	2.70	0.11	0.14	64.73	0.03	0.23	1.00	100.00	33.68
Q592583	RM14037	V2	15.53	0.02	5.72	-0.01	6.73	0.72	3.14	0.09	3.65	0.12	0.06	62.33	0.03	0.85	0.91	100.00	61.25
Q592584	RM14039	V2	16.02	0.01	14.33	0.01	6.86	0.60	2.85	0.09	1.02	0.14	0.55	54.05	0.03	1.11	1.74	100.00	29.18
Q592589	RM14055	V2	16.87	0.02	6.38	-0.01	7.31	0.39	2.77	0.12	4.78	0.14	0.11	58.58	0.02	1.04	0.87	100.00	22.75
Q592590	RM14056	V3	16.12	0.04	4.42	-0.01	14.55	0.92	3.39	0.33	3.88	0.60	0.08	49.15	0.04	2.24	4.24	100.00	34.18
Q592591	RM14056	V3	15.50	0.03	5.50	-0.01	20.33	1.02	4.35	0.36	2.40	0.37	0.05	43.51	0.02	2.46	3.10	100.00	40.15
Q592592	RM14064	QFP	15.78	0.06	2.99	-0.01	3.01	1.26	1.15	0.03	5.35	0.09	0.06	69.07	0.06	0.34	0.74	100.00	22.40
Q592594	RM14064	V3	17.17	0.02	8.21	0.01	13.81	0.73	2.78	0.29	3.78	0.17	0.82	49.36	0.05	1.74	1.07	100.00	22.61
Q592595	RM14067	V3	15.59	0.01	14.97	0.77	6.33	0.22	4.27	0.41	0.01	46.21	0.04	0.92	100.00	21.21	64.41	35.19	85.54
Q592596	RM14067	V2	13.47	0.03	4.31	-0.01	14.55	0.62	4.03	0.24	4.03	0.33	0.33	49.10	0.02	2.11	0.27	100.00	35.37
Q592598	RM14070	V2	12.64	0.02	6.94	-0.01	12.58	0.34	1.59	0.24	0.00	0.37	0.14	57.03	0.02	1.57	2.43	100.00	15.00
Q592601	RM14080	V2[TUF]	14.96	0.02	7.59	0.01	9.00	0.77	3.74	0.14	2.00	0.20	0.01	59.52	0.03	0.85	1.05	100.00	31.80
Q592602	RM14081	V2	16.25	0.02	5.59	-0.01	5.34	0.56	0.52	0.16	2.76	0.14	0.05	56.57	0.04	1.20	1.49	100.00	20.53
Q592603	RM14086	V3	13.95	0.01	8.14	-0.01	18.55	0.41	4.24	0.23	2.84	0.20	0.09	47.18	0.02	2.33	1.84	100.00	29.50
Q592604	RM14086	V1	15.76	0.07	0.85	-0.01	3.07	1.93	0.42	0.04	5.38	0.09	0.01	71.07	0.03	0.21	1.08	100.00	23.37
Q592606	RM14087	V2[TUF]	11.67	0.04	6.45	-0.01	11.59	0.79	1.43	0.22	2.60	0.56	0.25	59.85	0.02	1.41	3.13	100.00	19.73
Q592607	RM14087	V2[TUF]	11.43	0.05	6.91	-0.01	9.55	1.29	0.99	0.15	2.34	0.53	0.15	62.44	0.03	1.17	2.98	100.00	72.54
Q592610	RM14091	V1	15.95	0.08	4.80	-0.01	5.34	2.13	2.44	0.08	3.10	0.11	0.03	64.51	0.04	0.56	0.84	100.00	36.63
Q592611	RM14092	V1	16.81	0.03	6.18	-0.01	5.25	1.53	2.36	0.07	3.06	0.12	0.01	62.61	0.03	1.33	1.00	100.00	29.60
Q592612	RM14093	V1	16.27	0.04	5.98	-0.01	5.20	2.21	2.36	0.08	2.68	0.11	0.04	64.17	0.03	1.18	100.00	37.04	59.01
Q592613	RM14094	V2	14.99	0.01	4.82	-0.01	9.37	0.47	2.84	0.16	3.94	0.16	0.02	60.35	0.02	1.26	1.11	100.00	27.42
Q592614	RM14096	V2	17.59	0.03	5.33	-0.01	8.49	0.76	3.35	0.12	4.78	0.07	0.02	56.63	0.04	1.15	0.93	100.00	27.72
Q592615	RM14121	V1	13.07	0.11	1.60	-0.01	7.34	0.81	1.73	0.20	3.71	0.13	0.05	60.45	0.03	1.13	1.89	100.00	18.97
Q592616	RM14100	V2[TUF]	16.12	0.04	5.22	0.01	6.56	1.59	4.18	0.10	3.47	0.12	0.02	60.57	0.02	0.64	100.00	38.06	66.61
Q592618	RM14108	V1[TUF]S3	14.70	-0.01	7.88	0.01	8.16	0.40	3.25	0.17	2.09	58.51	0.02	0.60	1.70	100.00	20.10	72.72	
Q592620	RM14116	V1	13.99	0.07	0.88	-0.01	1.82	2.78	0.21	0.04	4.22	0.03	0.02	75.55	0.01	0.19	1.04	100.00	36.70
Q592621	RM14118	V1	11.96	0.11	1.12	-0.01	1.86	2.36	0.78	0.03	3.50	0.02	0.01	77.54	0.02	0.13	0.57	100.00	40.46
Q592622	RM14120	V3	15.14	0.02	8.48	-0.01	14.01	0.54	2.74	0.32	3.34	0.67	0.03	51.82	0.04	2.18	0.66	100.00	21.72
Q592623	RM14121	V1	13.07	0.11	1.60	-0.01	2.89	3.07	0.44	0.07	3.52	0.03	0.01	74.24	0.02	0.19	0.75	100.00	40.69
Q592624	RM14122	V2[TUF]	17.48	0.07	3.24	-0.01	7.76	1.95	2.45	0.09	4.42	0.15	0.02	59.57	0.04	0.95	2.26	100.00	37.36
Q592626	RM14124	V1	13.45	0.07	2.03	-0.01	3.88	1.81	0.53	0.09	3.42	0.07	0.10	72.85	0.02	0.35	1.34	100.00	30.03
Q592627	RM14126	V3	14.91	0.03	10.59	0.02	13.55	0.76	5.94	0.22	4.11	0.32	0.04	4.17	0.04	1.90	41.17	100.00	34.55

WHOLE ROCK ANALYSIS  
RECALCULATED ANALYTICAL DATA WITH ALTERATION INDEXES

Sample	Geological Station	LithoCode	ANALYTICAL DATA RECALCULATED AT 100% ANHYDROUS												ALTERATION INDEX					
			Al2O3	BaO	CaO	Cr2O3	Fe2O3	K2O	MgO	MnO	Na2O	P2O5	S03	SiO2	SrO	TiO2	H2O+	Total	ISHIKAWA - AI	CHLORITE-CARBONATE-PYRITE INDEX - CCP1
Q592629	RM14133	V2	14.93	0.03	6.25	-0.01	11.58	0.77	3.21	0.21	3.74	0.27	0.21	56.01	0.04	1.88	0.86	100.00	28.99	75.12
Q592630	RM14134	V2[TUF]	14.53	0.04	3.88	0.01	9.96	1.19	5.07	0.11	3.34	0.18	0.07	57.72	0.01	1.14	2.76	100.00	46.44	75.62
Q592631	RM14135	V3	15.11	0.02	9.28	0.02	13.78	0.18	7.66	0.21	2.60	0.21	0.02	47.95	0.04	1.23	1.39	100.00	39.75	87.82
Q592637	RM14146	V2[TUF]	14.45	0.02	12.34	0.01	13.72	0.77	3.02	0.29	1.48	0.14	0.41	45.42	0.01	1.56	6.36	100.00	21.51	87.25
Q592644	Trench No 1	V1	17.07	0.04	2.83	-0.01	2.75	1.27	0.96	0.04	4.43	0.16	0.21	68.29	0.04	0.57	1.34	100.00	23.39	37.66
Q592645	Trench No 1	V3	11.29	0.03	9.42	0.13	18.63	0.45	8.29	0.39	1.98	0.24	1.45	43.89	0.04	2.07	1.70	100.00	43.38	91.17
Q592649	Trench No 1	V1	11.16	0.09	1.99	0.14	3.83	0.95	1.02	0.09	3.09	0.14	0.31	74.88	0.04	1.73	0.52	100.00	27.94	52.51
Q592653	Trench No 1	V1[TUF]S10	15.45	0.05	2.83	-0.01	2.92	1.42	1.93	0.08	2.39	0.08	0.05	70.58	0.05	0.27	1.92	100.00	39.09	54.47
Q592655	RM14154	V2	16.31	0.05	7.50	0.01	8.47	1.03	3.20	0.13	2.52	0.14	1.20	56.61	0.03	0.84	1.97	100.00	47.33	71.13
Q592656	RM14153	V2	15.67	0.04	6.42	-0.01	9.23	0.80	3.49	0.25	3.74	0.21	0.01	58.65	0.03	1.03	0.44	100.00	29.69	75.30
Q592657	RM14156	V3	14.16	0.02	9.66	-0.01	18.84	0.38	5.02	0.23	1.96	0.20	0.05	46.86	0.02	2.28	0.33	100.00	31.69	90.36
Q592658	RM14158	V2[TUF]	14.52	0.03	6.77	0.01	7.25	0.79	3.22	0.15	3.81	0.35	0.02	60.08	0.03	1.06	1.81	100.00	27.44	67.93

RALLEAU PROPERTY  
NORMAT - ALTERATION INDEXES

Sample_Nu	Geological station	Easting (mE_)	Northing (mN)	LithoCode	IFRAIS	ISER
Q592551	RM14002	397215	5444443	V3	100.000	0.000
Q592554	RM14004	397361	5442456	V3	100.000	0.000
Q592555	RM14004	397361	5442456	V3	100.000	0.000
Q592557	RM14009	396863	5443134	V2	96.446	0.663
Q592558	RM14010	396856	5443117	V1	92.451	0.800
Q592559	RM14011	396855	5443101	V3	98.410	0.098
Q592560	RM14013	396543	5443286	V2	100.000	0.000
Q592561	RM14013	396525	5443278	V2	99.584	0.079
Q592562	RM14014	396488	5443219	V1	69.314	6.767
Q592563	RM14015	396709	5443009	I3A	100.000	0.000
Q592564	RM14016	396712	5442998	V1[TUF]-S3	75.081	6.243
Q592566	RM14017	397474	5444259	V2	100.000	0.000
Q592567	RM14018	397971	5444150	V2	97.364	0.249
Q592568	RM14022	397553	5442869	V1	81.099	5.447
Q592571	RM14023	397423	5442931	V2	85.517	1.573
Q592572	RM14024	397325	5443033	V1	77.938	6.899
Q592579	RM14029	395854	5444296	V2	100.000	0.000
Q592582	RM14037	397853	5442898	V1	76.709	6.238
Q592583	RM14037	397853	5442898	V2	89.863	1.170
Q592584	RM14039	397454	5443089	V2	100.000	0.000
Q592589	RM14055	396509	5442809	V2	98.736	0.065
Q592591	RM14056	395980	5442831	V3	61.141	5.244
Q592592	RM14057	395579	5443488	V3	58.954	8.959
Q592594	RM14064	398816	5444125	QFP	90.309	1.300
Q592595	RM14067	399430	5443947	V3	96.142	0.433
Q592596	RM14067	399430	5443947	V3	100.000	0.000
Q592597	RM14069	399338	5443687	V2	86.531	1.244
Q592598	RM14070	399496	5443165	V2	100.000	0.000
Q592601	RM14080	399689	5442670	V2[TUF]	91.930	1.638
Q592602	RM14081	399821	5442585	V2	100.000	0.000
Q592603	RM14086	399980	5443207	V3	98.381	0.141
Q592604	RM14086	399980	5443207	V1	77.303	4.329
Q592606	RM14087	400214	5443083	V2[TUF]	99.393	0.102
Q592607	RM14087	400214	5443083	V2[TUF]	100.000	0.000
Q592610	RM14091	398958	5442446	V1	85.748	4.433
Q592611	RM14092	398635	5442591	V1	88.327	2.890
Q592612	RM14093	398443	5442681	V1	82.159	6.269
Q592613	RM14094	398379	5442803	V2	83.264	1.224
Q592614	RM14096	398395	5442904	V2	90.846	0.869
Q592615	RM14098	398198	5442852	V2	100.000	0.000
Q592616	RM14100	394060	5443999	V2[TUF]	93.443	1.518
Q592618	RM14108	395812	5445223	V1[TUF]-S3	100.000	0.000
Q592620	RM14116	393140	5443756	V1	87.207	3.833
Q592621	RM14118	393381	5443780	V1	84.144	4.873
Q592622	RM14120	393685	5443623	V3	96.282	0.359

RALLEAU PROPERTY  
NORMAT - ALTERATION INDEXES

Sample_Nu	Geological station	Easting (mE_)	Northing (mN)	LithoCode	IFRAIS	ISER
Q592623	RM14121	393725	5443572	V1	87.752	4.467
Q592624	RM14122	393692	5443416	V2[TUF]	71.651	6.834
Q592626	RM14124	393256	5443147	V1	75.511	6.313
Q592627	RM14126	393237	5443279	V3	100.000	0.000
Q592629	RM14133	394809	5443610	V2	91.620	1.004
Q592630	RM14134	394832	5443637	V2[TUF]	74.663	4.812
Q592631	RM14135	395418	5443254	V3	100.000	0.000
Q592637	RM14146	401198	5441854	V2[TUF]	100.000	0.000
Q592644	Trench No 1	404231	5441599	V1	68.760	4.944
Q592645	Trench No 1	404228	5441569	V3	100.000	0.000
Q592646	Trench No 1	404224	5441570	V1	60.807	6.594
Q592649	Trench No 1	404221	5441581	V1[TUF]-S10	50.720	13.851
Q592653	Trench No 1	404221	5441565	V2[TUF]	75.901	7.171
Q592655	RM14154	397324	5442378	V2	90.930	1.925
Q592656	RM14153	397428	5442537	V2	94.195	0.720
Q592657	RM14156	400580	5443404	V3	100.000	0.000
Q592658	RM14158	400544	5442386	V2[TUF]	100.000	0.000

## **APPENDIX V CERTIFICATES OF ASSAY**

## CERTIFICAT VO14133483

Projet: RA

Ce rapport s'applique aux 69 échantillons de roche soumis à notre laboratoire de Val d'Or, QC, Canada le 30-AOUT-2014.

Les résultats sont transmis à:

CHRIS STAARGAARD

LUCIANO VENDITELLI

ROGER MOAR

A: MEGASTAR DEVELOPMENT CORP.  
 ATTN: ROGER MOAR  
 1130 - 789 W PENDER  
 VANCOUVER BC V6C 1H2

Ce rapport est final et remplace tout autre rapport préliminaire portant ce numéro de certificat. Les résultats s'appliquent aux échantillons soumis. Toutes les pages de ce rapport ont été vérifiées et approuvées avant publication.  
 \*\*\*\* Voir la page d'annexe pour les commentaires en ce qui concerne ce certificat \*\*\*\*

**Signature:** *Nacera Amara*  
 Nacera Amara, Laboratory Manager, Val d'Or

**Signature:** *Nacera Amara*  
 Nacera Amara, Laboratory Manager, Val d'Or



Projet: RA

**CERTIFICAT D'ANALYSE VO14133483**

Description échantillon	Méthode élément unités L.D.	CERTIFICAT D'ANALYSE VO14133483											
		WEI-21	ME-XRF26										
Poids reçu	Al2O3	BaO	CaO	Cr2O3	Fe2O3	K2O	MgO	Na2O	P2O5	SiO2	SrO	TiO2	
kg	%	%	%	%	%	%	%	%	%	%	%	%	
Q592551	1.89	15.55	0.08	8.72	<0.01	10.81	2.92	3.98	0.14	2.64	0.28	0.04	51.3
Q592552	1.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	1.45
Q592553	0.53	13.30	0.01	9.67	<0.01	16.06	0.35	4.28	0.24	2.77	0.55	0.01	49.6
Q592554	1.76	16.45	0.02	11.75	0.01	13.80	0.41	4.47	0.17	2.85	0.29	0.02	47.1
Q592555	1.68	17.70	0.03	7.16	<0.01	7.00	1.11	3.31	0.10	4.99	0.15	0.17	55.4
Q592556	1.46	15.60	0.02	9.05	<0.01	12.75	0.60	2.63	0.27	1.72	0.13	0.48	53.9
Q592557	0.81	15.65	0.04	4.56	<0.01	4.85	0.87	2.08	0.10	4.83	0.16	0.01	65.1
Q592558	1.24	16.35	0.01	9.78	0.03	12.91	0.24	8.08	0.19	2.40	0.19	0.17	46.0
Q592559	1.82	16.45	0.01	9.78	0.03	12.91	0.24	8.08	0.19	2.40	0.19	0.17	46.0
Q592560	1.36	17.70	0.03	7.16	<0.01	7.00	1.11	3.31	0.10	4.99	0.15	0.17	55.4
Q592561	1.35	18.00	0.01	11.55	0.01	11.31	0.62	3.45	0.16	1.75	0.14	2.32	48.5
Q592562	0.86	15.55	0.04	2.32	<0.01	7.03	1.72	2.67	0.10	4.00	0.12	0.09	62.6
Q592563	1.75	15.45	0.01	11.40	0.02	13.42	0.18	4.04	0.26	2.88	0.31	0.10	46.4
Q592564	0.95	16.25	0.04	5.39	0.02	12.37	1.58	2.45	0.27	3.11	0.34	0.09	53.1
Q592565	1.76	11.25	0.01	9.51	<0.01	18.14	0.54	1.48	0.43	0.63	0.48	0.35	55.1
Q592566	0.63	11.90	0.02	5.97	<0.01	13.73	0.47	1.41	0.27	2.97	0.50	0.04	60.4
Q592567	0.75	17.40	0.06	5.38	<0.01	7.14	1.92	2.70	0.08	3.12	0.12	0.99	58.6
Q592568	1.57	12.90	0.07	0.89	<0.01	1.50	2.51	0.26	0.02	3.63	0.02	0.01	75.6
Q592569	0.43	15.00	0.01	0.89	<0.01	1.50	2.51	0.26	0.02	3.63	0.02	0.01	75.6
Q592570	0.96	12.90	0.07	0.89	<0.01	1.50	2.51	0.26	0.02	3.63	0.02	0.01	75.6
Q592571	1.61	19.05	0.03	5.98	<0.01	7.25	0.90	2.84	0.10	4.86	0.19	0.04	56.1
Q592572	1.94	12.90	0.07	0.89	<0.01	1.50	2.51	0.26	0.02	3.63	0.02	0.01	75.6
Q592573	0.70	12.90	0.07	0.89	<0.01	1.50	2.51	0.26	0.02	3.63	0.02	0.01	75.6
Q592574	2.05	12.90	0.07	0.89	<0.01	1.50	2.51	0.26	0.02	3.63	0.02	0.01	75.6
Q592575	0.08	12.90	0.07	0.89	<0.01	1.50	2.51	0.26	0.02	3.63	0.02	0.01	75.6
Q592576	1.48	12.90	0.07	0.89	<0.01	1.50	2.51	0.26	0.02	3.63	0.02	0.01	75.6
Q592577	2.07	12.90	0.07	0.89	<0.01	1.50	2.51	0.26	0.02	3.63	0.02	0.01	75.6
Q592578	1.24	15.05	0.01	10.95	\	0.01	7.23	0.16	2.24	0.09	1.58	0.24	0.01
Q592579	0.43	11.77	0.01	0.89	<0.01	1.50	2.51	0.26	0.02	3.63	0.02	0.01	75.6
Q592580	1.24	13.65	0.05	3.72	0.01	5.37	1.49	1.76	0.09	2.88	0.11	0.14	67.4
Q592581	1.82	15.55	0.02	5.68	<0.01	6.69	0.72	3.12	0.09	3.63	0.12	0.06	62.0
Q592582	1.20	16.10	0.01	15.00	0.01	6.89	0.60	2.86	0.09	1.02	0.14	0.55	54.3
Q592583	1.90	16.10	0.01	15.00	0.01	6.89	0.60	2.86	0.09	1.02	0.14	0.55	54.3
Q592584	1.31	16.10	0.01	15.00	0.01	6.89	0.60	2.86	0.09	1.02	0.14	0.55	54.3
Q592585	1.92	16.85	0.02	6.97	<0.01	7.30	0.39	2.77	0.12	4.77	0.14	0.11	58.5
Q592586	1.73	16.85	0.02	6.97	<0.01	7.30	0.39	2.77	0.12	4.77	0.14	0.11	58.5
Q592587	1.05	16.85	0.02	6.97	<0.01	7.30	0.39	2.77	0.12	4.77	0.14	0.11	58.5
Q592588	0.99	16.85	0.02	6.97	<0.01	7.30	0.39	2.77	0.12	4.77	0.14	0.11	58.5
Q592589	1.63	16.85	0.02	6.97	<0.01	7.30	0.39	2.77	0.12	4.77	0.14	0.11	58.5
Q592590	1.63	16.85	0.02	6.97	<0.01	7.30	0.39	2.77	0.12	4.77	0.14	0.11	58.5

\*\*\*\*\* Voir la page d'annexe pour les commentaires en ce qui concerne ce certificat \*\*\*\*\*



Projet: RA

**CERTIFICAT D'ANALYSE VO14133483**

Description échantillon	Méthode élément unités L.D.	ME-XRF26	OA-GRA05x	ME-ICP61a												
	Total %	LOI 1000	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cu ppm	Cr ppm	Fe %	Ga ppm	ME-ICP61a
Q592551	99.60	1.57	<1	5.81	<50	740	<10	<20	6.50	<10	30	30	70	7.06	<50	
Q592552	99.77	0.37	<1	7.86	<50	50	<10	<20	1.98	<10	60	280	60	10.05	<50	
Q592553	100.25	0.79	<1	6.77	<50	<50	<10	<20	0.07	<10	10	20	10	1.24	<50	
Q592554	99.32	1.56	<1	7.86	<50	150	<10	<20	7.15	<10	40	10	<10	11.00	<50	
Q592555	99.81	1.42	<1	5.63	<50	230	<10	<20	8.67	<10	40	70	20	9.29	<50	
Q592556	99.19	1.16	<1	5.44	<50	610	<10	<20	0.56	<10	<10	30	30	2.07	<50	
Q592557	100.10	0.66	<1	2.65	<50	250	<10	<20	3.07	<10	20	10	30	8.18	<50	
Q592558	99.32	1.56	<1	7.95	<50	90	<10	<20	7.17	<10	50	190	60	2.84	<50	
Q592559	99.81	1.42	<1	5.63	<50	230	<10	<20	5.18	<10	20	50	40	8.74	<50	
Q592560	101.75	2.60	<1	6.37	<50	160	<10	<20	8.50	<10	30	50	30	2.07	<50	
Q592561	99.51	2.42	<1	4.08	<50	350	<10	<20	1.45	<10	20	30	20	4.35	<50	
Q592562	99.25	3.05	<1	6.95	<50	50	<10	<20	8.47	<10	40	130	40	8.97	<50	
Q592563	99.43	2.63	<1	4.83	<50	360	<10	<20	3.86	<10	50	170	70	7.73	<50	
Q592564			<1	5.15	<50	340	<10	<20	4.86	<10	30	20	20	10.10	<50	
Q592565	100.30	0.78	<1	5.90	<50	70	<10	<20	7.21	<10	<10	10	10	12.55	<50	
Q592566	99.36	0.32	<1	4.51	<50	110	<10	<20	4.27	<10	10	10	10	9.13	<50	
Q592567	99.88	1.62	<1	3.56	<50	360	<10	<20	3.63	<10	20	40	40	4.33	<50	
Q592568			<1	0.94	<50	<50	<10	<20	1.17	<10	<10	20	<10	0.88	<50	
Q592569			<1	1.66	<50	60	<10	<20	0.54	<10	10	30	<10	1.25	<50	
Q592570	99.40	0.85	<1	4.14	<50	220	<10	<20	4.01	<10	20	20	40	4.34	<50	
Q592571	98.75	1.10	<1	2.29	<50	520	<10	<20	0.33	<10	10	<10	10	0.79	<50	
Q592572			<1	1.00	<50	270	<10	<20	0.08	<10	30	<10	30	0.41	<50	
Q592573			<1	2.90	<50	390	<10	<20	0.87	<10	30	<10	30	1.40	<50	
Q592574			4	6.64	<50	620	<10	<20	3.06	<10	30	50	11000	7.85	<50	
Q592575			2	6.83	<50	100	<10	<20	4.33	<10	30	100	2070	6.99	<50	
Q592576			<1	5.85	<50	110	<10	<20	3.26	<10	20	90	250	6.33	<50	
Q592577			<1	0.12	<50	<50	<10	<20	0.06	<10	<10	40	<10	0.22	<50	
Q592578			99.61	1.01	5.36	<50	<10	<20	7.88	<10	10	70	10	4.74	<50	
Q592579			<1	0.49	<50	<50	<10	<20	0.08	<10	50	<10	50	0.40	<50	
Q592580			4	6.64	<50	620	<10	<20	3.06	<10	30	50	11000	7.85	<50	
Q592581			2	6.83	<50	100	<10	<20	4.33	<10	30	100	2070	6.99	<50	
Q592582			99.47	2.23	<1	3.95	<50	<20	2.55	<10	10	60	10	3.41	<50	
Q592583			99.55	0.91	<1	4.27	<50	<10	4.07	<10	20	30	20	4.21	<50	
Q592584			100.60	1.74	<1	6.13	<50	<10	20	10.20	30	60	40	4.48	<50	
Q592585					<1	7.39	<50	<10	2.39	<10	50	50	50	10.30	<50	
Q592586			<1	6.13	<50	190	<10	<20	4.92	<10	40	110	40	7.22	<50	
Q592587			<1	2.77	<50	190	<10	<20	0.98	<10	10	40	<10	2.65	<50	
Q592588			<1	5.17	<50	230	<10	<20	5.62	<10	10	40	50	5.25	<50	
Q592589			99.95	0.87	<1	4.57	<50	<10	20	4.85	<10	20	50	50	4.56	<50
Q592590					<1	7.76	<50	<10	7.69	<10	20	40	40	7.51	<50	

\*\*\*\*\* Voir la page d'annexe pour les commentaires en ce qui concerne ce certificat \*\*\*\*\*

# minerals



Projet: RA

## CERTIFICAT D'ANALYSE VO14133483

Description échantillon	Méthode élément unités L.D.	ME-ICP61a K %	ME-ICP61a La ppm	ME-ICP61a Mg %	ME-ICP61a Mn ppm	ME-ICP61a Mo %	ME-ICP61a Ni ppm	ME-ICP61a P ppm	ME-ICP61a S %	ME-ICP61a Sb ppm	ME-ICP61a Sc ppm	ME-ICP61a Sr ppm	ME-ICP61a Th ppm	ME-ICP61a Ti %	ME-ICP61a ME-ICP61a %
Q592551	0.9 <50	2.15 5.51	1130 1580	<10 <10	2.02 1.66	50 210	1180 310	<20 <20	<0.05 <0.05	<50 <50	10 40	210 120	<50 <50	0.83 0.61	0.05
Q592552	0.1 <0.1	5.51 0.28	130 1910	<10 <10	0.58 2.07	10 110	80 2460	<20 <20	<0.05 <0.05	<50 <50	<10 30	20 550	<50 <50	0.45 1.43	0.05
Q592553	0.3 <50	2.53 2.67	1910 1330	<10 <10	2.12 2.12	20 20	1280 1280	<20 <20	<0.05 <0.05	<50 <50	30 30	480 480	<50 <50	1.13 1.13	0.05
Q592554	0.3 <50	2.67	1330												
Q592555	0.3 <50	0.67	150	<10	1.33	<10	360	<20	0.06	<50	<10	140	<50	0.21	
Q592556	0.4 <50	1.25	2080	<10	1.28	10	580	<20	0.20	<50	10	490	<50	0.43	
Q592557	0.6 <50	0.85	720	<10	3.45	10	630	<20	<0.05	<50	10	160	<50	0.48	
Q592558	0.2 <50	4.84	1460	<10	1.84	150	840	<20	0.07	<50	30	370	<50	0.75	
Q592559	0.8 <50	1.68	810	<10	3.63	60	570	<20	0.06	<50	10	190	<50	0.65	
Q592560	0.8 <50	1.68	810												
Q592561	0.4 <50	1.71	1240	<10	1.30	50	620	<20	0.94	<50	10	340	<50	0.66	
Q592562	1.1 <50	1.31	780	<10	2.90	50	520	<20	<0.05	<50	10	230	<50	0.44	
Q592563	0.1 <50	2.37	2050	<10	2.14	30	1360	<20	<0.05	<50	20	410	<50	0.90	
Q592564	0.9 <50	1.15	2030	<10	2.26	110	1370	<20	<0.05	<50	20	330	<50	0.89	
Q592565	1.0 <50	0.73	1890	10	1.29	40	750	<20	3.16	<50	10	140	<50	0.90	
Q592566	0.5 <50	0.89	3370	<10	0.48	<10	2150	<20	0.13	<50	50	220	<50	0.90	
Q592567	0.4 <50	0.71	2070	<10	2.22	10	2200	<20	<0.05	<50	20	220	<50	0.75	
Q592568	1.2 <50	1.03	630	<10	2.26	30	510	<20	0.35	<50	10	220	<50	0.35	
Q592569	0.2 <50	0.08	180	<10	0.29	10	60	<20	<0.05	<50	<10	60	<50	0.05	
Q592570	0.3 <50	0.42	270	<10	1.27	10	70	<20	<0.05	<50	<10	50	<50	0.09	
Q592571	0.5 <50	1.05	780	<10	3.52	20	790	<20	<0.05	<50	10	190	<50	0.60	
Q592572	1.9 <50	0.09	170	<10	2.66	<10	100	<20	<0.05	<50	<10	70	<50	0.11	
Q592573	0.7 <50	<0.05	50	<10	1.34	<10	50	<20	<0.05	<50	<10	30	<50	<0.05	
Q592574	1.4 <50	0.48	190	<10	2.32	20	250	<20	0.27	<50	<10	310	<50	0.09	
Q592575	2.6 <50	1.88	580	640	2.17	30	990	20	1.38	<50	20	480	<50	0.34	
Q592576	0.3 <50	2.90	1070	<10	2.60	70	1660	<20	0.38	<50	10	260	<50	0.69	
Q592577	0.3 <50	2.43	920	<10	2.43	60	1500	<20	0.14	<50	10	230	<50	0.62	
Q592578	<0.1 <50	<0.05	30	<10	<0.05	10	<50	<20	<0.05	<50	<10	530	<50	0.41	
Q592579	0.1 <50	1.10	760	<10	1.20	40	1050	<20	<0.05	<50	<10	30	<50	<0.05	
Q592580	0.1 <50	0.10	40	<10	0.11	10	<50	<20	<0.05	<50	<10	30	<50	<0.05	
Q592581	0.6 <50	1.60	1590	<10	2.14	70	1480	<20	0.05	<50	10	400	<50	0.92	
Q592582	1.0 <50	0.75	700	<10	1.98	30	460	<20	0.05	<50	10	200	<50	0.38	
Q592583	0.5 <50	1.42	750	<10	2.65	30	490	<20	<0.05	<50	10	240	<50	0.48	
Q592584	0.4 <50	1.40	670	<10	0.78	60	620	<20	0.20	<50	10	240	<50	0.64	
Q592585	1.4 <50	4.57	880	<10	1.25	80	880	<20	<0.05	<50	30	70	<50	0.91	
Q592586	0.6 <50	3.05	1110	<10	2.07	100	840	<20	<0.05	<50	10	210	<50	0.62	
Q592587	0.4 <50	0.94	430	<10	0.75	10	240	<20	<0.05	<50	10	50	<50	0.31	
Q592588	0.5 <50	1.47	1200	<10	2.07	40	450	<20	0.65	<50	10	220	<50	0.56	
Q592589	0.2 <50	1.23	970	<10	3.49	50	540	<20	<0.05	<50	10	170	<50	0.58	
Q592590	0.1 <50	3.78	1250	<10	1.45	140	360	<20	<0.05	<50	20	250	<50	0.52	

\*\*\*\*\* Voir la page d'annexe pour les commentaires en ce qui concerne ce certificat \*\*\*\*\*



Projet: RA

**CERTIFICAT D'ANALYSE VO14133483**

Description échantillon	Méthode élément unités L.D.	ME-ICP61a ppm	Au-AA24 Au ppm					
Q592551	<50	<50	190	<50	90	<0.005		
Q592552	<50	<50	270	<50	130	0.020		
Q592553	<50	<50	10	<50	20	<0.005		
Q592554	<50	<50	250	<50	90			
Q592555	<50	<50	340	<50	90			
Q592556	<50	<50	40	<50	20	<0.005		
Q592557	<50	<50	110	<50	120	<0.005		
Q592558	<50	<50	130	<50	70			
Q592559	<50	<50	210	<50	110			
Q592560	<50	<50	170	<50	60	<0.005		
Q592561	<50	<50	180	<50	80	<0.005		
Q592562	<50	<50	110	<50	90	<0.005		
Q592563	<50	<50	240	<50	130			
Q592564	<50	<50	250	<50	120			
Q592565	<50	<50	190	<50	220	<0.005		
Q592566	<50	<50	20	<50	200	<0.005		
Q592567	<50	<50	<10	<50	190			
Q592568	<50	<50	100	<50	60	<0.005		
Q592569	<50	<50	30	<50	<20	<0.005		
Q592570	<50	<50	30	<50	30	<0.005		
Q592571	<50	<50	170	<50	100			
Q592572	<50	<50	<10	<50	80			
Q592573	<50	<50	<10	<50	20	<0.005		
Q592574	<50	<50	40	<50	30	<0.005		
Q592575	<50	<50	170	<50	110	1.540		
Q592576	<50	<50	80	<50	190	0.039		
Q592577	<50	<50	120	<50	140	0.012		
Q592578	<50	<50	<10	<50	<20	<0.005		
Q592579	<50	<50	120	<50	40			
Q592580	<50	<50	20	<50	<20	<0.005		
Q592581	<50	<50	230	<50	120	<0.005		
Q592582	<50	<50	80	<50	70			
Q592583	<50	<50	160	<50	70			
Q592584	<50	<50	150	<50	290			
Q592585	<50	<50	260	<50	60	<0.005		
Q592586	<50	<50	170	<50	90	<0.005		
Q592587	<50	<50	70	<50	30	<0.005		
Q592588	<50	<50	140	<50	90	<0.005		
Q592589	<50	<50	160	<50	70			
Q592590	<50	<50	190	<50	80	<0.005		

\*\*\*\* Voir la page d'annexe pour les commentaires en ce qui concerne ce certificat \*\*\*\*



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A: MEGASTAR DEVELOPMENT CORP.

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VANCOUVER BC V6C 1H2

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plus les Pages d'annexe  
Finalisée date: 14-SEPT-2014  
Compte: MEGDEV

Projet: RA

## CERTIFICAT D'ANALYSE VO14133483

Description échantillon	Méthode élément unités L.D.	WEI-21	ME-XRF26												
		Poids reçu kg	Al2O3 %	BaO %	CaO %	Cr2O3 %	MgO %	MnO %	Na2O %	P2O5 %	SiO2 %	SiO %	TiO2 %	SrO %	W %
Q592591	1.22	16.10	0.04	4.42	<0.01	14.53	0.92	3.39	0.33	3.88	0.60	0.08	49.1	0.04	2.24
Q592592	0.84	15.15	0.03	5.55	<0.01	20.73	1.01	4.31	0.36	2.38	0.37	0.54	43.1	0.02	2.44
Q592593	0.96	15.65	0.06	2.97	<0.01	2.99	1.25	1.14	0.03	5.31	0.09	0.06	68.5	0.06	0.34
Q592594	1.28	17.25	0.02	8.25	0.01	13.88	0.73	2.79	0.29	3.80	0.17	0.82	49.6	0.05	1.75
Q592595	1.62	14.85	0.02	10.50	0.01	14.84	0.76	6.27	0.22	2.45	0.41	0.01	45.8	0.04	2.02
Q592596	1.22	13.40	0.03	4.78	<0.01	11.37	0.62	2.09	0.24	4.01	0.33	0.10	60.1	0.02	2.10
Q592597	1.66	12.70	0.02	6.97	<0.01	12.64	0.34	1.60	0.34	4.02	0.37	0.14	57.3	0.02	1.58
Q592598	1.29	1.00													
Q592599	0.64														
Q592600	1.03	14.90	0.02	7.66	0.01	8.97	0.77	3.73	0.14	1.98	0.20	0.01	59.3	0.03	0.85
Q592601	1.72	16.20	0.02	9.56	<0.01	8.53	0.52	2.66	0.16	2.75	0.14	0.05	56.4	0.04	1.20
Q592602	1.04	13.90	0.01	8.11	<0.01	18.48	0.41	4.19	0.23	2.83	0.20	0.09	47.0	0.02	2.32
Q592603	0.77	15.70	0.07	0.85	<0.01	3.06	1.92	0.42	0.04	5.36	0.08	0.01	70.8	0.03	0.21
Q592604	1.41														
Q592605	2.31	11.60	0.04	6.41	<0.01	11.52	0.79	1.42	0.22	2.58	0.56	0.25	59.5	0.02	1.40
Q592606	1.54	11.40	0.05	6.89	<0.01	9.53	1.29	0.99	0.15	2.33	0.53	0.15	62.3	0.03	1.17
Q592607	1.80														
Q592608	1.33														
Q592609	1.10	15.90	0.08	4.78	<0.01	5.32	2.12	2.43	0.08	3.08	0.11	0.03	64.3	0.04	0.56
Q592610															
Q592611	0.63	16.70	0.03	6.14	<0.01	5.22	1.52	2.34	0.07	3.04	0.12	0.01	62.2	0.03	0.61
Q592612	1.15	16.15	0.04	5.04	<0.01	5.16	2.19	2.34	0.08	2.66	0.11	0.04	63.7	0.03	0.57
Q592613	1.41	14.90	0.01	4.79	<0.01	9.81	0.47	2.82	0.16	3.92	0.16	0.02	60.0	0.02	1.25
Q592614	1.08	17.55	0.03	5.92	<0.01	8.47	0.76	3.34	0.12	4.77	0.15	0.07	56.5	0.02	1.15
Q592615	1.18	15.30	0.03	7.12	<0.01	7.31	0.81	1.72	0.20	3.69	0.13	0.05	60.2	0.03	1.13
Q592616	1.10	16.05	0.04	5.89	0.01	6.53	1.58	4.16	0.10	3.45	0.12	0.02	60.3	0.02	0.64
Q592617	1.07	14.65	<0.01	7.85	0.01	8.13	0.40	2.38	/	3.24	0.12	0.17	58.3	0.02	0.60
Q592618	1.51														
Q592619	0.96														

\*\*\*\* Voir la page d'annexe pour les commentaires en ce qui concerne ce certificat \*\*\*\*

**CERTIFICAT D'ANALYSE VO14133483**

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 Finalisée date: 14-SEPT-2014  
 Compte: MEGDEV

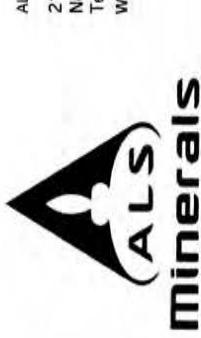
Description échantillon	Méthode élément unités L.D.	ME-XRF26	OA-GRA05x	ME-ICP61a												
	Total %	L.OI 1000	Ag %	Al ppm	As ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Fe %	Ga ppm	ME-ICP61a	
Q592591	100.00	4.24	<1	6.99	<50	370	<10	<20	3.14	<10	30	10	10	9.62	<50	
Q592592	99.22	3.10	<1	6.54	<50	330	<10	<20	4.04	<10	40	10	10	13.90	<50	
Q592593	99.22	0.74	<1	6.85	<50	330	<10	<20	3.97	<10	40	<10	30	13.65	<50	
Q592594	100.65	1.07	<1	3.21	<50	510	<10	<20	1.73	<10	10	20	10	1.76	<50	
Q592595	99.25	0.92	<1	6.18	<50	190	<10	<20	5.78	<10	40	50	140	8.96	<50	
Q592596	99.55	0.27	<1	4.19	<50	180	<10	<20	7.52	<10	40	50	<10	10.25	<50	
Q592597	100.60	2.43	<1	4.78	<50	220	<10	<20	3.39	<10	30	10	20	7.33	<50	
Q592598	99.67	1.08	<1	2.21	<50	110	<10	<20	4.88	<10	10	10	<10	8.18	<50	
Q592599			<1	2.70	<50	50	<10	<20	2.44	<10	10	40	20	2.50	<50	
Q592600			<1	5.20	<50	170	<10	<20	5.36	<10	30	60	60	5.72	<50	
Q592601	99.71	1.05	<1	5.90	<50	140	<10	<20	6.95	<10	30	20	40	5.67	<50	
Q592602	99.80	1.49	<1	6.83	<50	120	<10	<20	5.83	<10	60	30	100	12.70	<50	
Q592603	99.80	1.84	<1	2.38	<50	540	<10	<20	0.33	<10	10	10	10	1.60	<50	
Q592604	99.67	1.08	<1	4.38	<50	120	<10	<20	8.59	<10	40	20	20	5.40	<50	
Q592605			<1	2.59	<50	310	<10	<20	4.53	<10	10	10	30	7.54	<50	
Q592606	99.51	3.13	<1	4.02	<50	400	<10	<20	4.89	<10	10	10	20	6.02	<50	
Q592607	99.84	2.98	<1	2.69	<50	90	<10	<20	1.53	<10	40	40	40	3.15	<50	
Q592608			<1	1.00	<50	130	<10	<20	3.10	<10	60	60	80	130	7.77	<50
Q592609			<1	4.19	<50	590	<10	<20	3.14	<10	20	30	10	3.19	<50	
Q592610	99.75	0.84	<1	2.59	<50	210	<10	<20	4.15	<10	10	40	40	3.04	<50	
Q592611	99.43	1.33	<1	2.45	<50	320	<10	<20	3.43	<10	10	30	20	3.06	<50	
Q592612	99.34	1.18	<1	2.56	<50	130	<10	<20	3.36	<10	30	10	40	6.19	<50	
Q592613	99.51	1.11	<1	4.18	<50	240	<10	<20	4.14	<10	20	50	50	5.15	<50	
Q592614	99.87	0.93	<1	4.38	<50	290	<10	<20	4.89	<10	30	50	40	4.40	<50	
Q592615	99.70	1.89	<1	2.66	<50	290	<10	<20	4.20	<10	30	100	30	4.21	<50	
Q592616	99.62	0.64	<1	4.95	<50	290	<10	<20	4.37	<10	20	50	30	3.02	<50	
Q592617			<1	3.17	<50	420	<10	<20	5.88	<10	20	100	90	5.37	<50	
Q592618	99.73	1.70	<1	4.61	<50	120	<10	<20	0.34	<10	10	<10	10	0.94	<50	
Q592619			<1	1.93	<50	430	<10	<20								

Projet: RA

## CERTIFICAT D'ANALYSE VO14133483

Description échantillon	Méthode élément unités L.D.	ME-ICP61a																		
Q592591	0.7	<50	1.80	2480	<10	2.87	30	2580	<20	<0.05	<50	20	320	<50	20	320	<50	20	320	<50
Q592592	0.7	<50	2.32	2770	<10	1.81	20	1630	<20	0.21	<50	30	170	<50	30	170	<50	30	170	<50
Q592593	0.7	<50	2.34	2750	<10	1.88	20	1800	<20	0.19	<50	30	180	<50	30	180	<50	30	180	<50
Q592594	0.9	<50	0.45	280	<10	3.87	10	420	<20	<0.05	<50	<10	390	<50	<10	390	<50	<10	390	<50
Q592595	0.5	<50	1.38	2200	<10	2.80	50	700	<20	0.31	<50	20	380	<50	20	380	<50	20	380	<50
Q592596	0.6	<50	3.74	1720	<10	1.91	80	1890	<20	<0.05	<50	20	310	<50	20	310	<50	20	310	<50
Q592597	0.4	<50	0.97	1880	<10	2.94	10	1430	<20	<0.05	<50	20	120	<50	20	120	<50	20	120	<50
Q592598	0.2	<50	0.81	2550	<10	2.92	10	1510	<20	<0.05	<50	20	180	<50	20	180	<50	20	180	<50
Q592599	0.1	<50	0.69	380	<10	0.13	10	140	<20	<0.05	<50	10	10	<50	10	10	<50	10	10	<50
Q592600	0.2	<50	0.65	1270	<10	0.98	10	910	<20	<0.05	<50	10	170	<50	10	170	<50	10	170	<50
Q592601	0.5	<50	1.82	1070	<10	1.49	60	870	<20	<0.05	<50	10	200	<50	10	200	<50	10	200	<50
Q592602	0.4	<50	1.33	1270	<10	2.11	30	620	<20	<0.05	<50	20	290	<50	20	290	<50	20	290	<50
Q592603	0.3	<50	2.33	1770	<10	2.15	80	820	<20	<0.05	<50	20	210	<50	20	210	<50	20	210	<50
Q592604	1.5	<50	0.12	280	<10	3.91	<10	320	<20	<0.05	<50	<10	130	<50	<10	130	<50	<10	130	<50
Q592605	0.3	<50	1.05	2740	<10	0.79	60	360	<20	<0.05	<50	20	90	<50	20	90	<50	20	90	<50
Q592606	0.6	<50	0.67	1710	<10	1.95	10	2390	<20	0.09	<50	20	190	<50	20	190	<50	20	190	<50
Q592607	0.9	<50	0.39	1200	<10	1.75	10	2120	<20	0.05	<50	10	220	<50	10	220	<50	10	220	<50
Q592608	0.3	<50	0.61	280	<10	0.28	40	110	<20	1.37	<50	<10	60	<50	<10	60	<50	<10	60	<50
Q592609	0.4	<50	1.87	860	<10	2.23	50	400	<20	3.47	<50	10	200	<50	10	200	<50	10	200	<50
Q592610	1.5	<50	0.90	630	<10	2.21	30	440	<20	<0.05	<50	<10	240	<50	<10	240	<50	<10	240	<50
Q592611	1.0	<50	0.79	530	<10	2.17	40	440	<20	<0.05	<50	<10	160	<50	<10	160	<50	<10	160	<50
Q592612	1.5	<50	0.79	600	<10	1.97	30	430	<20	<0.05	<50	<10	200	<50	<10	200	<50	<10	200	<50
Q592613	0.3	<50	1.28	1230	<10	2.87	20	680	<20	<0.05	<50	10	150	<50	10	150	<50	10	150	<50
Q592614	0.5	<50	1.47	900	<10	3.47	60	600	<20	<0.05	<50	10	160	<50	10	160	<50	10	160	<50
Q592615	0.5	<50	0.61	1530	<10	2.68	40	510	<20	<0.05	<50	10	220	<50	10	220	<50	10	220	<50
Q592616	1.1	<50	2.02	770	<10	2.52	70	510	<20	<0.05	<50	10	210	<50	10	210	<50	10	210	<50
Q592617	0.9	<50	1.18	600	<10	2.40	50	560	<20	0.21	<50	10	170	<50	10	170	<50	10	170	<50
Q592618	0.3	<50	1.09	1050	<10	2.44	60	720	<20	0.76	<50	10	150	<50	10	150	<50	10	150	<50
Q592619	1.6	<50	0.07	200	<10	3.10	<10	80	<20	<0.05	<50	<10	70	<50	<10	70	<50	<10	70	<50

\*\*\*\*\* Voir la page d'annexe pour les commentaires en ce qui concerne ce certificat \*\*\*\*\*

**CERTIFICAT D'ANALYSE VO14133483**

Description échantillon	Méthode élément unités L.D.	ME-ICP61a Tl ppm	ME-ICP61a U ppm	ME-ICP61a V ppm	ME-ICP61a W ppm	ME-ICP61a Zn ppm	ME-ICP61a Au ppm	AU-AA24
Q592591	<50	<50	<50	200	<50	160		
Q592592	<50	<50	<50	190	<50	200		
Q592593	<50	<50	<50	190	<50	200	<0.005	
Q592594	<50	<50	<50	40	<50	50		
Q592595	<50	<50	<50	230	<50	120		
Q592596	<50	<50	<50	280	<50	160		
Q592597	<50	<50	<50	110	<50	150		
Q592598	<50	<50	<50	20	<50	160		
Q592599	<50	<50	<50	70	<50	30	<0.005	
Q592600	<50	<50	<50	80	<50	80	<0.005	
Q592601	<50	<50	<50	130	<50	100		
Q592602	<50	<50	<50	220	<50	100		
Q592603	<50	<50	<50	290	<50	180		
Q592604	<50	<50	<50	10	<50	50		
Q592605	<50	<50	<50	170	<50	130	<0.005	
Q592606	<50	<50	<50	30	<50	120		
Q592607	<50	<50	<50	20	<50	80		
Q592608	<50	<50	<50	50	<50	30	<0.005	
Q592609	<50	<50	<50	150	<50	90	<0.005	
Q592610	<50	<50	<50	90	<50	80		
Q592611	<50	<50	<50	100	<50	70		
Q592612	<50	<50	<50	100	<50	70		
Q592613	<50	<50	<50	210	<50	110		
Q592614	<50	<50	<50	170	<50	90		
Q592615	<50	<50	<50	200	<50	90		
Q592616	<50	<50	<50	120	<50	90		
Q592617	<50	<50	<50	160	<50	90	0.005	
Q592618	<50	<50	<50	120	<50	70	<0.005	
Q592619	<50	<50	<50	10	<50	30	<0.005	

\*\*\*\*\* Voir la page d'annexe pour les commentaires en ce qui concerne ce certificat \*\*\*\*\*

Projet: RA

**CERTIFICAT D'ANALYSE    VO14133483**

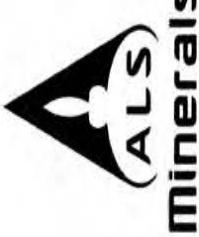
<b>COMMENTAIRE DE CERTIFICAT</b>	
<b>ADRESSE DE LABORATOIRE</b>	
Applique à la Méthode: Au-AA24 LOG-24 WEI-21	Traité à ALS Val d'Or, 1324 Rue Turcotte, Val d'Or, QC, Canada. CRU-31 PUL-31
Applique à la Méthode: ME-ICP61a	Traité à ALS Vancouver, 2103 Dollarton Hwy, North Vancouver, BC, Canada. ME-XRF26
	OA-GRA05x

Applique à la Méthode:

LOG-22  
SPL-21

Applique à la Méthode:

CRU-QC  
PUL-QC



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Page: 1  
Nombre total de pages: 2 (A - D)  
plus les pages d'annexe  
Finalisée date: 12-OCT-2014  
Compte: MEGDEV

## CERTIFICAT VO14152812

Projet: RA
Ce rapport s'applique aux 34 échantillons de roche soumis à notre laboratoire de Val d'Or, QC, Canada le 30-SEPT-2014.
Les résultats sont transmis à:
CHRIS STAARGAARD   LUCIANO VENDITTELLI ROGER MOAR

## PRÉPARATION ÉCHANTILLONS

CODE ALS	DESCRIPTION
WEI-21	Poids échantillon reçus
LOG-22	Entrée échantillon - Reçu sans code barre
CRU-QC	Test concassage QC
LOG-24	Entrée pulpe - Reçu sans code barre
PUL-QC	Test concassage QC
CRU-31	Granulation - 70 % <2 mm
SPL-21	Échant. fractionné - div. rifflés
PUL-31	Pulvérisé à 85 % <75 um

## PROCÉDURES ANALYTIQUES

CODE ALS	DESCRIPTION	INSTRUMENT
ME-ICP61a	Teneur élevée quatre acides ICP-AES	ICP-AES
AU-AA24	Au 50 g FA fini AA	AAS
ME-XRF26		XRF
OA-GRA05x	LOI pour XRF	WST-SEQ

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ATTN: ROGER MOAR

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VANCOUVER BC V6C 1H2

Ce rapport est final et remplace tout autre rapport préliminaire portant ce numéro de certificat. Les résultats s'appliquent aux échantillons soumis. Toutes les pages de ce rapport ont été vérifiées et approuvées avant publication.  
\*\*\*\* Voir la page d'annexe pour les commentaires en ce qui concerne ce certificat \*\*\*\*

Nacera Amara  
Signature: Nacera Amara  
Nacera Amara, Laboratory Manager, Val d'Or



Projet: RA

## CERTIFICAT D'ANALYSE VO141152812

Description échantillon	Méthode élément unités L.D.	WEI-21		ME-XRF26		ME-XRF26		ME-XRF26		ME-XRF26		ME-XRF26		ME-XRF26		ME-XRF26	
		Poids requu kg	Al2O3 %	BaO %	CaO %	C2O3 %	Fe2O3 %	MgO %	MnO %	Na2O %	P2O5 %	SiO2 %	SrO %	TiO2 %	Y %	Zr %	Sc %
Q592620	1.86	13.05	0.07	0.88	<0.01	1.81	2.77	0.21	0.04	4.26	0.03	0.02	75.3	0.01	0.18	0.01	0.01
Q592621	1.35	11.95	0.11	1.12	<0.01	1.86	2.36	0.78	0.03	3.50	0.02	0.01	77.5	0.02	0.13	0.02	0.01
Q592622	1.21	15.05	0.02	8.43	<0.01	13.92	0.54	2.72	0.32	3.32	0.67	0.03	51.5	0.04	2.17	0.04	0.01
Q592623	1.77	13.10	0.11	1.60	<0.01	2.90	3.08	0.44	0.07	3.53	0.03	0.01	74.4	0.02	0.19	0.02	0.01
Q592624	0.91	17.25	0.07	3.35	<0.01	7.79	1.96	2.46	0.09	4.06	0.15	0.16	59.8	0.04	0.95	0.04	0.01
Q592625	1.06																
Q592626	0.92	13.40	0.07	2.02	<0.01	3.87	1.80	0.53	0.09	3.41	0.07	0.10	72.6	0.02	0.35	0.02	0.01
Q592627	0.98	15.00	0.03	10.65	0.02	13.73	0.76	5.98	0.22	2.12	0.32	0.22	45.4	0.04	1.91	0.04	0.01
Q592628	0.55																
Q592629	1.24	14.85	0.03	6.22	<0.01	11.52	0.77	3.19	0.21	3.72	0.27	0.21	55.7	0.04	1.87	0.04	0.01
Q592630	1.50	14.55	0.04	3.89	0.01	9.97	1.19	5.08	0.11	3.34	0.16	0.07	57.8	0.01	1.14	0.01	0.01
Q592631	1.42	15.30	0.02	9.21	0.02	13.68	0.18	7.60	0.21	2.58	0.21	0.02	47.6	0.04	1.22	0.04	0.01
Q592637	1.18	14.35	0.02	12.25	0.01	13.62	0.76	3.00	0.28	1.47	0.14	0.41	45.1	0.01	1.55	0.01	0.01
Q592638	0.92																
Q592639	1.30																
Q592640	0.34																
Q592641	1.07																
Q592642	1.48																
Q592643	1.11																
Q592644	1.39	17.00	0.04	2.82	<0.01	2.74	1.26	0.96	0.04	4.41	0.16	0.21	68.0	0.04	0.57	0.04	0.01
Q592645	1.63	11.40	0.03	9.51	0.13	18.81	0.45	8.37	0.39	2.00	0.24	1.46	44.3	0.04	1.72	0.04	0.01
Q592646	1.25	11.15	0.09	1.99	0.14	3.83	0.95	1.02	0.09	3.09	0.14	0.31	74.8	0.04	1.73	0.04	0.01
Q592647	0.77																
Q592648	0.76																
Q592649	1.17	15.45	0.05	2.83	<0.01	2.92	1.42	1.93	0.08	2.39	0.08	0.05	70.6	0.05	0.27	0.05	0.01
Q592650	0.07																
Q592651	0.68																
Q592652	1.24	12.10	0.11	3.20	0.16	9.12	1.88	3.62	0.15	2.92	0.18	0.36	62.0	0.05	2.03	0.05	0.01
Q592653	0.90																
Q592654																	
Q592655	1.23	16.45	0.05	7.56	0.01	8.54	1.04	3.23	0.13	2.54	0.14	1.21	57.1	0.03	0.85	0.03	0.01
Q592656	1.61	15.60	0.04	6.39	<0.01	9.19	0.80	3.47	0.25	3.72	0.21	0.01	58.4	0.03	1.03	0.03	0.01
Q592657	0.99	14.20	0.02	8.69	<0.01	18.89	0.38	5.03	0.23	1.97	0.20	0.05	47.0	0.02	2.28	0.02	0.01
Q592658	0.91	14.50	0.03	6.72	0.01	7.19	0.78	3.19	0.15	3.78	0.35	0.02	59.6	0.03	1.05	0.03	0.01

\*\*\*\* Voir la page d'annexe pour les commentaires en ce qui concerne ce certificat \*\*\*\*

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**minerals**

Projet: RA

**CERTIFICAT D'ANALYSE VO14152812**

Description échantillon	Méthode élément unités L.D.	ME-XRF26 Total %	DA-GRA05X LOI1000 %	ME-ICP61a Ag ppm	ME-ICP61a Al %	ME-ICP61a As ppm	ME-ICP61a Ba ppm	ME-ICP61a Be ppm	ME-ICP61a Bi ppm	ME-ICP61a Ca %	ME-ICP61a Cd ppm	ME-ICP61a Co ppm	ME-ICP61a Cr ppm	ME-ICP61a Cu ppm	ME-ICP61a Fe %	ME-ICP61a Ga ppm	ME-ICP61a Ga ppm
Q592620		99.72	1.04	<1	1.93	<50	470	<10	<20	0.32	<10	<10	40	<10	0.88	<50	
Q592621		99.98	0.57	<1	2.75	<50	810	<10	<20	0.48	<10	<10	10	<10	1.01	<50	
Q592622		99.47	0.66	<1	6.50	<50	60	<10	<20	0.07	<10	<10	20	<10	9.11	<50	
Q592623		100.30	0.75	<1	3.54	<50	870	<10	<20	0.81	<10	<10	20	<10	1.61	<50	
Q592624		100.45	2.26	<1	4.12	<50	450	<10	20	2.11	<10	<10	20	<10	4.53	<50	
Q592625				<1	2.52	<50	490	<10	<20	0.34	<10	<10	20	<10	1.08	<50	
Q592625		99.72	1.34	<1	3.67	<50	480	<10	<20	1.20	<10	<10	10	<10	2.23	<50	
Q592627		100.70	4.17	<1	6.51	<50	160	<10	<20	7.48	<10	<10	50	<10	8.77	<50	
Q592628		99.56	0.86	<1	5.79	<50	180	<10	<20	4.49	<10	<10	40	<10	7.29	<50	
Q592630		100.25	2.76	<1	5.97	<50	230	<10	<20	2.81	<10	<10	40	<10	8.38	<50	
Q592631		99.40	1.39	<1	7.37	<50	50	<10	<20	6.58	<10	<10	50	<10	8.98	<50	
Q592637		99.45	6.36	<1	6.57	<50	160	<10	<20	8.89	<10	<10	40	<10	9.00	<50	
Q592638				<1	5.39	<50	<50	<10	<20	5.41	<10	<10	100	<10	21.9	<50	
Q592639				<1	6.08	<50	<50	<10	<20	5.75	<10	<10	70	<10	15.05	<50	
Q592640				<1	6.31	<50	<50	<10	<20	6.00	<10	<10	100	<10	1920	12.95	
Q592641				<1	6.41	<50	160	<10	<20	3.68	<10	<10	50	<10	120	7.76	
Q592642				<1	4.53	<50	280	<10	<20	1.02	<10	<10	60	<10	300	12.20	
Q592643				<1	3.03	<50	220	<10	<20	1.53	<10	<10	40	<10	50	1.46	
Q592644				<1	5.66	<50	210	<10	<20	6.71	<10	<10	70	<10	720	12.35	
Q592645		101.20	2.07	<1	3.22	<50	690	<10	<20	1.19	<10	<10	840	<10	90	2.28	
Q592646		100.05	0.52	<1	1.10	<50	330	<10	<20	1.65	<10	<10	30	<10	10	1.69	
Q592647				<1	5.42	<50	950	<10	<20	2.37	<10	<10	100	<10	1030	270	
Q592648		100.10	1.92	<1	3.56	<50	330	<10	<20	1.65	<10	<10	30	<10	10	1.69	
Q592650				2	4.83	<50	880	<10	20	2.96	<10	<10	20	<10	7460	5.04	
Q592651				<1	4.66	<50	560	<10	<20	0.46	<10	<10	20	<10	120	5.22	
Q592652				1	3.67	<50	360	<10	<20	0.15	<10	<10	90	<10	210	12.00	
Q592653		99.62	1.57	<1	5.42	<50	950	<10	20	2.37	<10	<10	100	<10	1030	270	
Q592654																	
Q592655		100.90	1.97	1	5.09	<50	370	<10	<20	5.38	<10	<10	30	<10	40	5.27	
Q592656		99.65	0.44	<1	5.34	<50	230	<10	<20	4.64	<10	<10	20	<10	5.75	<50	
Q592657		100.45	0.33	<1	7.00	<50	60	<10	<20	6.87	<10	<10	60	<10	110	12.40	
Q592658		99.29	1.81	<1	4.71	<50	170	<10	<20	4.77	<10	<10	30	<10	40	4.60	

\*\*\*\*\* Voir la page d'annexe pour les commentaires en ce qui concerne ce certificat \*\*\*\*\*

Projet: RA

**CERTIFICAT D'ANALYSE    VO14152812**

Description échantillon	Méthode élément unités L.D.	ME-ICP61a K %	ME-ICP61a La ppm	ME-ICP61a Mg %	ME-ICP61a Mn ppm	ME-ICP61a Na %	ME-ICP61a Mo ppm	ME-ICP61a Pb ppm	ME-ICP61a S %	ME-ICP61a Sc ppm	ME-ICP61a Sr ppm	ME-ICP61a Th ppm	ME-ICP61a Ti %	ME-ICP61a
Q592620	1.8 <50	0.06	150	<10	2.98	<10	80	<20	<0.05	<50	<10	70	<50	0.10
Q592621	1.8 <50	0.32	180	<10	2.46	<10	50	<20	<0.06	<50	<10	130	<50	0.07
Q592622	0.4 <50	1.42	2410	<10	2.41	<10	2940	<20	<0.05	<50	<10	280	<50	1.27
Q592623	2.2 <50	0.16	430	<10	2.50	<10	100	<20	<0.05	<50	<10	160	<50	0.11
Q592624	1.3 <50	0.99	620	<10	2.81	30	610	<20	0.06	<50	10	270	<50	0.51
Q592625	1.5 <50	0.08	220	<10	3.20	<10	100	<20	<0.05	<50	<10	60	<50	0.07
Q592626	1.3 <50	0.19	600	<10	2.39	<10	240	<20	<0.05	<50	<10	170	<50	0.19
Q592627	0.6 <50	3.26	1560	<10	1.51	90	1410	<20	0.08	<50	20	360	<50	1.08
Q592628	0.5 <50	1.59	1540	<10	2.63	40	1140	<20	0.08	<50	20	360	<50	1.07
Q592629	0.9 <50	2.73	830	<10	2.37	90	770	<20	<0.05	<50	10	120	<50	0.61
Q592630	0.1 <50	4.28	1510	<10	1.89	110	900	<20	<0.05	<50	30	330	<50	0.72
Q592631	0.6 <50	1.58	2180	<10	1.07	70	640	<20	0.16	<50	30	110	<50	0.93
Q592637	0.1 <50	1.73	1940	<10	0.07	120	490	<20	7.79	<50	20	280	<50	0.42
Q592638	0.1 <50	1.61	3750	<10	0.37	30	460	<20	2.10	<50	10	70	<50	0.34
Q592640	<0.1 <50	1.65	2260	<10	0.10	110	1080	40	3.77	<50	20	220	<50	0.39
Q592641	1.1 <50	1.15	2780	<10	1.21	60	780	30	1.78	<50	20	220	<50	0.62
Q592642	2.0 <50	0.76	1290	<10	1.72	60	550	<20	9.24	<50	10	170	<50	0.50
Q592643	0.9 <50	0.30	260	<10	3.10	20	580	<20	0.07	<50	<10	230	<50	0.30
Q592644	0.4 <50	4.68	2830	<10	1.44	470	1070	<20	0.58	<50	30	320	<50	1.03
Q592645	0.7 <50	0.45	570	<10	2.23	420	600	<20	0.11	<50	10	250	<50	0.94
Q592646	0.9 <50	0.81	540	<10	1.68	20	320	<20	<0.05	<50	<10	370	<50	0.12
Q592648	0.9 <50	0.81	540	<10	1.68	20	320	<20	<0.05	<50	<10	370	<50	0.12
Q592650	2.5 <50	1.26	560	270	2.05	30	1040	30	0.91	<50	10	330	<50	0.43
Q592651	1.5 <50	0.42	280	<10	0.98	50	390	<20	1.54	<50	<10	210	<50	0.10
Q592652	0.7 <50	2.50	2450	<10	0.17	580	690	<20	0.85	<50	20	40	<50	0.89
Q592653	1.3 <50	1.93	1140	<10	2.15	460	740	<20	0.14	<50	20	430	<50	1.21
Q592654	0.9 <50	1.48	980	<10	1.83	40	580	<20	0.46	<50	10	270	<50	0.48
Q592655	0.6 <50	1.69	1880	<10	2.65	40	850	<20	<0.05	<50	10	260	<50	0.58
Q592656	0.3 <50	2.82	1660	<10	1.43	100	870	<20	<0.05	<50	30	200	<50	1.33
Q592657	0.6 <50	1.56	1070	<10	2.68	60	1520	<20	<0.05	<50	10	310	<50	0.58
Q592658														

Projet: RA

**CERTIFICAT D'ANALYSE VO14152812**

Description échantillon	Méthode élément unités L.D.	ME-ICP61a ppm	Au-AA24 Au ppm					
Q592620	<50	<50	<10	<50	<50	<50	20	
Q592621	<50	<50	<10	<50	<50	<50	30	
Q592622	<50	<50	80	<50	<50	<50	120	
Q592623	<50	<50	<10	<50	<50	<50	80	
Q592624	<50	<50	160	<50	<50	<50	80	
Q592625	<50	<50	10	<50	<50	<50	30	<0.005
Q592626	<50	<50	20	<50	<50	<50	70	
Q592627	<50	<50	270	<50	<50	<50	130	<0.005
Q592628	<50	<50	250	<50	<50	<50	150	
Q592629	<50	<50	170	<50	<50	<50	70	
Q592630	<50	<50	260	<50	<50	<50	100	
Q592631	<50	<50	240	<50	<50	<50	120	<0.005
Q592637	<50	<50	130	<50	<50	<50	110	0.005
Q592638	<50	<50	80	<50	<50	<50	90	<0.005
Q592639	<50	<50						
Q592640	<50	<50	150	<50	<50	<50	8360	<0.005
Q592641	<50	<50	200	<50	<50	<50	420	<0.005
Q592642	<50	<50	140	<50	<50	<50	320	<0.005
Q592643	<50	<50	70	<50	<50	<50	130	
Q592644	<50	<50						
Q592645	<50	<50	240	<50	<50	<50	130	
Q592646	<50	<50	180	<50	<50	<50	50	<0.005
Q592647	<50	<50						
Q592648	<50	<50						
Q592649	<50	<50	50	<50	<50	<50	50	<0.005
Q592650	<50	<50	130	<50	<50	<50	110	0.481
Q592651	<50	<50	40	<50	<50	<50	300	0.012
Q592652	<50	<50	180	<50	<50	<50	250	<0.005
Q592653	<50	<50	250	<50	<50	<50	90	<0.005
Q592654	<50	<50						
Q592655	<50	<50	140	<50	<50	<50	90	
Q592656	<50	<50	150	<50	<50	<50	110	
Q592657	<50	<50	280	<50	<50	<50	180	
Q592658	<50	<50	140	<50	<50	<50	80	



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Total # les pages d'annexe: 1  
Finalisée date: 12-OCT-2014  
Compte: MEGDEV

Projet: RA

## CERTIFICAT D'ANALYSE VO14152812

### COMMENTAIRE DE CERTIFICAT

#### ADRESSE DE LABORATOIRE

Traité à ALS Val d'Or, 1324 Rue Turcotte, Val d'Or, QC, Canada.

Au-AA24  
LOG-24  
WEI-21

CRU-QC  
PUL-QC

Applique à la Méthode:

ME-ICP61a

LOG-22  
SPL-21

Traité à ALS Vancouver, 2103 Dollarton Hwy, North Vancouver, BC, Canada.  
ME-XRF26

OA-GRA05x

Page: Annexe 1

Total # les pages d'annexe: 1  
Finalisée date: 12-OCT-2014  
Compte: MEGDEV

## **APPENDIX VI METHOD SAMPLE PREPARATION AND ANALYSES**

## SAMPLE PREPARATION PACKAGE

# PREP- 31

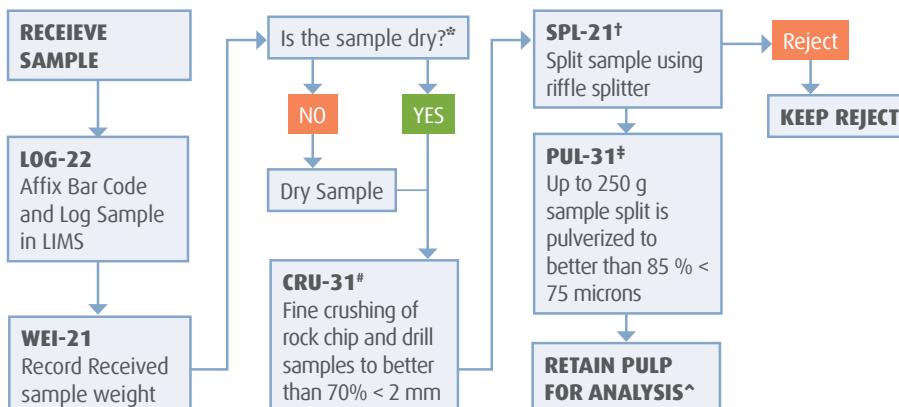
### STANDARD SAMPLE PREPARATION: DRY, CRUSH, SPLIT AND PULVERIZE

Sample preparation is the most critical step in the entire laboratory operation. The purpose of preparation is to produce a homogeneous analytical sub-sample that is fully representative of the material submitted to the laboratory.

The sample is logged in the tracking system, weighed, dried and finely crushed to better than 70 % passing a 2 mm (Tyler 9 mesh, US Std. No.10) screen. A split of up to 250 g is taken and pulverized to better than 85 % passing a 75 micron (Tyler 200 mesh, US Std. No. 200) screen. This method is appropriate for rock chip or drill samples.

METHOD CODE	DESCRIPTION
LOG-22	Sample is logged in tracking system and a bar code label is attached.
DRY-21	Drying of excessively wet samples in drying ovens. This is the default drying procedure for most rock chip and drill samples.
CRU-31	Fine crushing of rock chip and drill samples to better than 70% of the sample passing 2 mm.
SPL-21	Split sample using riffle splitter.
PUL-31	A sample split of up to 250 g is pulverized to better than 85% of the sample passing 75 microns.

### FLOW CHART - SAMPLE PREPARATION PACKAGE – PREP-31 STANDARD SAMPLE PREPARATION: DRY, CRUSH, SPLIT AND PULVERIZE



\*If samples air-dry overnight, no charge to client. If samples are excessively wet, the sample should be dried to a maximum 120°C. (DRY-21)

#QC testing of crushing efficiency is conducted on random samples (CRU-QC).

†The sample reject is saved or dumped pending client instructions. Prolonged storage (> 45 days) of rejects will be charged to the client.

‡QC testing of pulverizing efficiency is conducted on random samples (PUL-QC).

^Lab splits are required when analyses must be performed at a location different than where samples received.



## GEOCHEMICAL PROCEDURE

# ME- ICP61a

### EVALUATION OF HIGH GRADE MATERIALS USING CONVENTIONAL ICP- AES ANALYSIS

#### SAMPLE DECOMPOSITION

**HNO<sub>3</sub> -HClO<sub>4</sub> -HF-HCl digestion (ASY-4A02)**

#### ANALYTICAL METHOD

##### Inductively Coupled Plasma - Atomic Emission Spectroscopy (ICP - AES)

The sample is digested in a mixture of nitric, perchloric and hydrofluoric acids. Perchloric acid is added to assist oxidation of the sample and to reduce the possibility of mechanical loss of sample as the solution is evaporated to moist salts. Elements are determined by inductively coupled plasma – atomic emission spectroscopy (ICP-AES).

**NOTE:** Four acid digestions are able to dissolve most minerals; however, although the term "near- total" is used, depending on the sample matrix, not all elements are quantitatively extracted.

ELEMENT	SYMBOL	UNITS	LOWER LIMIT	UPPER LIMIT	DEFAULT OVER-LIMIT METHOD
Silver	Ag	ppm	1	200	Ag-0662
Aluminum	Al	%	0.05	50	
Arsenic	As	ppm	50	100,000	
Barium	Ba	ppm	50	50,000	
Beryllium	Be	ppm	10	10,000	
Bismuth	Bi	ppm	20	50,000	
Calcium	Ca	%	0.05	50	
Cadmium	Cd	ppm	10	10,000	
Cobalt	Co	ppm	10	50,000	Co-0G62
Chromium	Cr	ppm	10	100,000	
Copper	Cu	ppm	10	100,000	Cu-0G62
Iron	Fe	%	0.05	50	
Gallium	Ga	ppm	50	50,000	
Potassium	K	%	0.1	30	
Lanthanum	La	ppm	50	50,000	
Magnesium	Mg	%	0.05	50	
Manganese	Mn	ppm	10	100,000	

# ME-ICP61a

ELEMENT	SYMBOL	UNITS	LOWER LIMIT	UPPER LIMIT	DEFAULT OVER-LIMIT METHOD
Molybdenum	Mo	ppm	10	50,000	Mo-OG62
Sodium	Na	%	0.05	30	
Nickel	Ni	ppm	10	100,000	Ni-OG62
Phosphorus	P	ppm	50	100,000	
Lead	Pb	ppm	20	100,000	Pb-OG62
Sulphur	S	%	0.1	50	
Antimony	Sb	ppm	50	50,000	
Scandium	Sc	ppm	50	50,000	
Strontium	Sr	ppm	10	100,000	
Thorium	Th	ppm	50	50,000	
Titanium	Ti	%	0.05	30	
Thallium	Tl	ppm	50	50,000	
Uranium	U	ppm	50	50,000	
Vanadium	V	ppm	10	100	
Tungsten	W	ppm	50	50,000	
Zinc	Zn	ppm	20	100,000	Zn-OG62

**ELEMENTS LISTED BELOW ARE AVAILABLE UPON REQUEST**

ELEMENT	SYMBOL	UNITS	LOWER LIMIT	UPPER LIMIT	DEFAULT OVER-LIMIT METHOD
Cerium	Ce	ppm	50	500	
Hafnium	Hf	ppm	10	10,000	
Lanthanum	La	ppm	10	10,000	
Lithium	Li	ppm	100	10,000	
Niobium	Nb	ppm	10	10,000	
Phosphorus	P	ppm	10	10,000	
Rubidium	Rb	ppm	10	10,000	
Selenium	Se	ppm	25	10,000	
Tin	Sn	ppm	10	10,000	
Tantalum	Ta	ppm	10	10,000	
Tellurium	Te	ppm	10	10,000	
Yttrium	Y	ppm	10	10,000	
Zirconium	Zr	ppm	10	10,000	



## FIRE ASSAY PROCEDURE

# Au-AA23 & Au-AA24

### FIRE ASSAY FUSION, AAS FINISH

#### SAMPLE DECOMPOSITION

**Fire Assay Fusion** (FA-FUS01 & FA-FUS02)

#### ANALYTICAL METHOD

##### Atomic Absorption Spectroscopy (AAS)

A prepared sample is fused with a mixture of lead oxide, sodium carbonate, borax, silica and other reagents as required, inquarted with 6 mg of gold-free silver and then cupelled to yield a precious metal bead.

The bead is digested in 0.5 mL dilute nitric acid in the microwave oven, 0.5 mL concentrated hydrochloric acid is then added and the bead is further digested in the microwave at a lower power setting. The digested solution is cooled, diluted to a total volume of 4 ml with de-mineralized water, and analyzed by atomic absorption spectroscopy against matrix-matched standards.

METHOD CODE	ELEMENT	SYMBOL	UNITS	SAMPLE WEIGHT (G)	LOWER LIMIT	UPPER LIMIT	DEFAULT OVERLIMIT METHOD
Au-AA23	Gold	Au	ppm	30	0.005	10.0	Au-GRA21
Au-AA24	Gold	Au	ppm	50	0.005	10.0	Au-GRA21

**GEOLOGICAL COMPILATION MAPS OF RALLEAU PROPERTY (1: 7 500)**

