

**43-101 Technical Report and Mineral Resource Estimate on the  
Penguin Lake Project (Round Lake Property), NTS 23C/01,  
Quebec**

for



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## 1.0 EXECUTIVE SUMMARY

This Report was prepared at the request of Mr. John Langton, President of Cartier Iron Corporation ("Cartier Iron"), a Canadian based, publicly-held company trading on the Canadian National Stock Exchange (CNSX) under the symbol "CFE". The purpose of this report is to provide an independent, NI 43-101 compliant technical report (the "Report") and Mineral Resource Estimate (MRE) completed on a group of claims (the "Penguin Lake Project" or the "Project") within the Round Lake Property, and to provide recommendations for further exploration.

On September 28<sup>th</sup>, 2012, Cartier Iron Corp. (known as Northfield Metals Inc. at the time) announced the execution of a Binding Provisional Agreement with Champion Iron Mines Limited, granting Cartier the option to acquire a 65% interest in seven (7) iron-rich mineral concessions (the "Gagnon Holdings") comprising 378 claims, totalling 200.24 square kilometres (km<sup>2</sup>) in the Gagnon Terrane of the southern Labrador Trough, north-eastern Québec.

In February 2013, three (3) of these mineral concessions — Penguin Lake, Black Dan and Aubrey-Ernie — along with 264 additional new claims that were staked by Cartier Iron, were amalgamated into the Round Lake Property (*see Cartier Iron press release of February 20, 2013*). Prior to the amalgamation, the "Penguin Lake Property", referred to herein as the Penguin Lake Project, comprised 60 claims covering 3,191 hectares (ha) or 31.91 square kilometres (km<sup>2</sup>). The newly created Round Lake Property comprises 519 contiguous claims, covering 274.66 km<sup>2</sup>. The Gagnon Holdings now comprise 5 distinct groups of claims, covering a total of 344 km<sup>2</sup>.

The Penguin Lake Project is approximately 110 km southwest of the town of Fermont (Quebec), and 130 km southwest of the iron mining centre of Labrador City/Wabush, in Newfoundland-Labrador (NL). The Trans-Quebec-Labrador Road (Highway #389) passes north-south through the central part of the Round Lake Property and less than 1 kilometre (km) southeast of the Penguin Lake Project, providing year-round access to the area. The Project is within National Topographic System (NTS) Map Sheets 23C/01 and is part of the Regional Municipality of Caniapiscau.

Cartier Iron's Gagnon Holdings lie within the southern domain (the Gagnon Terrane) of the Paleo-Proterozoic fold and thrust belt known as the Labrador Trough, which hosts extensive Lake Superior-type iron formations.

The bedrock in the Gagnon Terrane is characterized by open to tight, upright and overturned, shallowly plunging folds that refold early recumbent folds. At least 3 stages of deformation are readily evident from fold interference patterns. Tectonic repetition and thickening of the formations comprising the Knob Lake Group is common in the area. The style and intensity of deformation are important factors economically, as it is the thickened, near-surface, synformal hinges that are most favourable for open pit mining. Metamorphism of the Gagnon Terrane during the Grenville Orogeny recrystallized the primary iron formations, producing coarse-grained sugary quartz, magnetite, and specular hematite schists; the target of Cartier Iron's exploration programmes.

Champion Iron Mines' 2008 magnetic airborne geophysical survey and 2011 airborne gravimetric and electromagnetic/magnetic geophysical survey outlined strong magnetic-response signatures of iron formations on the Gagnon Holdings.

Phase I of the Project's exploration programme comprised 10 diamond-drill holes totalling 3,315 metres, which are summarized in this Report. The MRE was calculated using compiled data from the 2013 drill-holes. The reader is referred to the MRNFQ Assessment Report entitled "*Assessment Report on the 2013 Diamond-Drilling Programme: Penguin Lake Project, Province of Québec, NTS 23C/01*" (GM# pending), for details on Cartier Iron's 2013 exploration programme.

The Mineral Resource Estimate (MRE) reported herein refers to the Penguin Lake Project, being carried out on the Round Lake Property, and was calculated using the latest Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions and adopted by CIM Council on Dec 11, 2005, and in effect as at the effective date of this report, May 1<sup>st</sup>, 2013.

The Mineral Resource Estimate reported herein utilized conventional statistical analysis, variography and grade interpolation via Gemcom® block modelling. Utilizing 4.0 m composites for iron (Fe), the block models, within an interpreted three-dimensional (3D) solid domain coded with the rock code, bulk density, and classified into the Measured, Indicated and Inferred categories.

The Inferred Resource estimate in this report was developed to determine whether further exploration on the Penguin Lake Property was warranted. Highlights of the estimation procedure include:

- a Gemcom database developed by MRB & Associates (MRB) was used in the estimate, using the GEMCOM down-hole survey calculations and GEMLOGGER drill-logs;
- calculations were done using the Gemcom block models software system;
- ordinary inverse distance method was used for the primary estimate;
- a block size of 20 m x 20 m x 12 m was employed;
- a bulk density of 3.30 tonnes per cubic metre was used for this estimated resource based on analytically determined densities that are equivalent to similar material being exploited by active projects in the region.

The following table presents a summary of the Resources, using ore blocks. The results indicate a natural geological cut-off to the modelled oxide iron formation near 25% Total Iron (FeT) as indicated by the minimal 0.6% of tonnes that are below the 25% FeT cut-off grade. There are no tonnes estimated below the economic cut-off grade of 15%.

**Categorized Global Mineral Resource & Cut-off Grade Sensitivity**

	Global Inferred Mineral Resource				Below Cut-off Grade			
Cut-off Grade	Tonnes	Grade			Tonnes	Grade		
		FeT %	CaO %	MgO %		FeT %	CaO %	MgO %
15%	534.8	33.1	3.1	2.8	0.0	0.0	0.0	0.0
20%	534.7	33.1	3.1	2.8	0.1	15.4	2.1	1.7
25%	531.4	33.2	3.0	2.8	3.4	23.2	4.7	3.0
30%	466.4	33.9	2.9	2.8	68.4	28.2	4.1	2.7

<sup>1</sup>Mineral Resource estimates were calculated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions. Mineral resources, which are not mineral reserves, do not have demonstrated economic viability. The mineral resource estimate may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues. The quantity and grade of estimated Inferred Resource reported herein are uncertain and there has been insufficient exploration to categorize them as an Indicated or Measured Resource. It is uncertain if further exploration will result in reclassification of Inferred Mineral Resources to the Indicated or Measured Mineral Resource categories.

A preliminary open pit "shell" was generated by Eugene Puritch, P. Eng. of P&E Mining Consultants (Brampton, ON) from the resource block model in order to evaluate the sensitivity of the resource to potential exploitation and report the in-pit mineral resources. Parameters specified for generating the pit shell are shown in the following table.

#### Pit Shell Parameters

Parameter	Value
FeT Price	\$1.77/dmtu (\$115/tonne conc.)
Mining (Overburden)	\$2.00/tonne mined
Mining (Ore & Waste)	\$2.50/tonne mined
Processing	\$4.60/tonne milled
Transportation Rail & Port	\$12.00/tonne conc.
G&A	\$1.50/tonne milled
Process Recovery	82%
Pit Slopes	48°
\$US / \$Cdn Exchange Rate	1.00 / 1.00

In-pit mineral resource estimate (at a 15% FeT cut-off grade) and the sensitivity of the in-pit mineral resource estimate to 5% FeT incremental increases in cut-off grade are shown below.

#### Categorized In-Pit Mineral Resource<sup>1</sup> & Cut-Off Grade Sensitivity

Cut-off Grade	Global Inferred Mineral Resource				Below Cut-off Grade			
	Tonnes	Grade			Tonnes	Grade		
		FeT %	CaO %	MgO %		FeT %	CaO %	MgO %
15%	531.2	33.1	3.1	2.8	0.0	0.0	0.0	0.0
20%	531.1	33.1	3.1	2.8	0.1	15.4	2.1	1.7
25%	527.8	33.2	3.0	2.8	3.4	23.2	4.7	3.0
30%	463.9	33.9	2.9	2.8	67.3	28.2	4.1	2.7

<sup>1</sup>Mineral Resource estimates were calculated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions. Mineral resources, which are not mineral reserves, do not have demonstrated economic viability. The mineral resource estimate may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues. The quantity and grade of estimated Inferred Resource reported herein are uncertain and there has been insufficient exploration to categorize them as an Indicated or Measured Resource. It is uncertain if further exploration will result in reclassification of Inferred Mineral Resources to the Indicated or Measured Mineral Resource categories.

A comparison of the In-Pit and Global Mineral Resource estimates at the 15% FeT cut-off grade demonstrates the amenability of the global mineral resource to potential exploitation by open pit mining with 99.3% of the global mineral resource estimate reporting inside the pit shell.

The following recommendations, along with estimated costs of the programmes, are shown below.

### Phase 1

- Complete initial metallurgical test work;
- Complete preliminary economic evaluation;

Contingent on a positive economic evaluation:

### Phase 2

- Definition drilling to convert Inferred resources to Measured and Indicated;
- Exploration drilling of NE Trend for additional potential Inferred resources;
- Update Mineral Resource Estimate and complete PEA/Prefeasibility.

<b>Penguin Lake Project - Recommended Work Programs &amp; Budgets</b>			
<b>Phase 1</b>			<b>Budget</b>
Metallurgical Testing			\$100,000
Scoping Analysis			\$100,000
Contingency 15%			\$30,000
<b>Subtotal Phase 1</b>			<b>\$230,000</b>
<b>Phase 2</b>	<b>Drilling (metres)</b>	<b>Cost / metre</b>	<b>Budget</b>
Definition Drilling (M+I Res) - Penguin Lake Deposit	4,000	\$500	\$2,000,000
Metallurgy			\$250,000
Prefeasibility Study			\$500,000
Contingency 15%			\$412,500
<b>Subtotal Phase 2</b>			<b>\$3,162,500</b>
<b>Total</b>			<b>\$3,392,500</b>



## 2.0 INTRODUCTION AND TERMS OF REFERENCE

This Report was prepared at the request of Mr. John Langton, President of Cartier Iron Corp., a Canadian based, publicly-held company trading on the Canadian National Stock Exchange (CNSX) under the symbol of CFE. The purpose of this report is to provide a summary of the 2013 exploratory diamond-drilling programme completed on the Penguin Lake Project, to provide an independent, Mineral Resource Estimate, in accordance with National Instrument (NI) 43-101, on the Penguin Lake deposit, and to provide recommendations for further exploration on the Round Lake Property.

In 2013, the Penguin Lake mineral concession was amalgamated, along with the adjacent Black Dan and Aubrey-Ernie concessions, into the Round Lake Property (see Cartier Iron's press release of February 20, 2013). The Round Lake Property is part of Cartier's portfolio of mineral concessions - known as the Gagnon Holdings - that are located in the Gagnon Terrane of northeastern Quebec, within the Regional Municipality of Caniapiscau, Quebec, Canada (**Figure 1**, **Figure 2** and **Table 1**). The Gagnon Holdings are currently being explored pursuant to an option agreement with Champion Iron Mines Limited (TSX:CHM), whereby Cartier Iron was granted the right to earn a 65% interest in the iron-rich mineral concessions (see Cartier Iron's press release dated December 11, 2012).

**Table 1: Summary of Cartier Iron's Gagnon Holdings**

Property	# of claims	Area (ha)	Area (km <sup>2</sup> )
Aubertin-Tougard	52	2,758.59	27.59
Big Three Lake	9	476.86	4.77
Jeannine Lake	13	691.69	6.92
Round Lake*	519	27,465.86	274.66
Silicate-Brutus	56	2,974.70	29.75
<b>Totals (February, 2014)</b>	<b>649</b>	<b>34,367.70</b>	<b>343.69</b>

\*Includes mineral concessions formerly known as Penguin Lake, Black Dan and Aubertin-Tougard.

The former Penguin Lake property, referred to in publicly available documents published prior to the amalgamation, comprised a contiguous group of 60 claims, now wholly within the Round Lake Property. For the purposes of this Report, the former Penguin lake property is referred to herein as the Penguin Lake Project or the "Project".

The objective of this Report is to provide details of the 2013 surface diamond-drilling exploration campaign on the Project, which was designed to help evaluate the iron resources on the Project, and to present a Mineral Resource Estimate that was calculated based on the 2013 and historic (1961) drilling results.

This Report was prepared by Chrystal Kennedy (P.Ge.), of Geochryst Geological Consulting based in Nova Scotia, and Abderrazak Ladidi (P.Ge.) of MRB & Associates ("MRB"), a geological consulting company based in Val-d'Or, Québec. The Report was prepared, in accordance with National Instrument (NI) 43-101 standards of disclosure for mineral resource estimate Technical Reports.

The bulk of the historical geological information was distilled from the SIGEOM/EXAMINE database of the MRNFO, and incorporates all known assessment work data filed by exploration companies,

as well as geological work performed or commissioned by the Quebec government, and Champion Iron Mines Inc. Results and details pertaining to the 2013 diamond-drilling programme were provided by Cartier Iron Corp.

All of the information held by Champion Iron Mines pertinent to their claims that now comprise Cartier Iron's Gagnon Holdings, was made available for use in this Report. In addition, the Author made use of publicly available Assessment Reports, on-line resources, publications of the Geological Survey of Canada, scientific papers from various earth science Journals and from internal company documents from various companies that have carried out previous work in the area. A list of the principal material reviewed and used in the preparation of this document is included in the References section of this document.

Both Ms. Kennedy and Mr. Ladidi (the "Authors") are Qualified Persons according to National Instrument (NI) 43-101, and are of the opinion that the recommended exploration programme is appropriate, consistent with those of other junior mineral exploration companies currently operating in the area, and required in order to help further determine the mineral potential of the Project.

## **2.1 Site Visits**

Mr. Abderrazak Ladidi, who is independent of Cartier Iron, and who is a Qualified Person (QP) under the terms of NI 43-101, conducted a site visit of the Penguin Lake Project on June 25<sup>th</sup>, 2013, accompanied by John Langton, a representative of Cartier Iron Corp. The on-site property visit, facilitated by all-terrain vehicle, explored the general landscape and surface features of the Property. In addition, a number of drill-sites (inactive) and outcrops were visited.

During his visit to the area, Mr. Ladidi also reviewed the historic drill core stored at the Cartier Iron logging and storage facility in Wabush, Newfoundland. As part of the programme to validate Cartier Iron's assay results, Mr. Ladidi selected a series of drill-hole core intersections for independent re-assay. An effort was made to sample a range of grades. At no time were any employees of Cartier Iron advised as to the identification of the samples to be chosen during the visit.

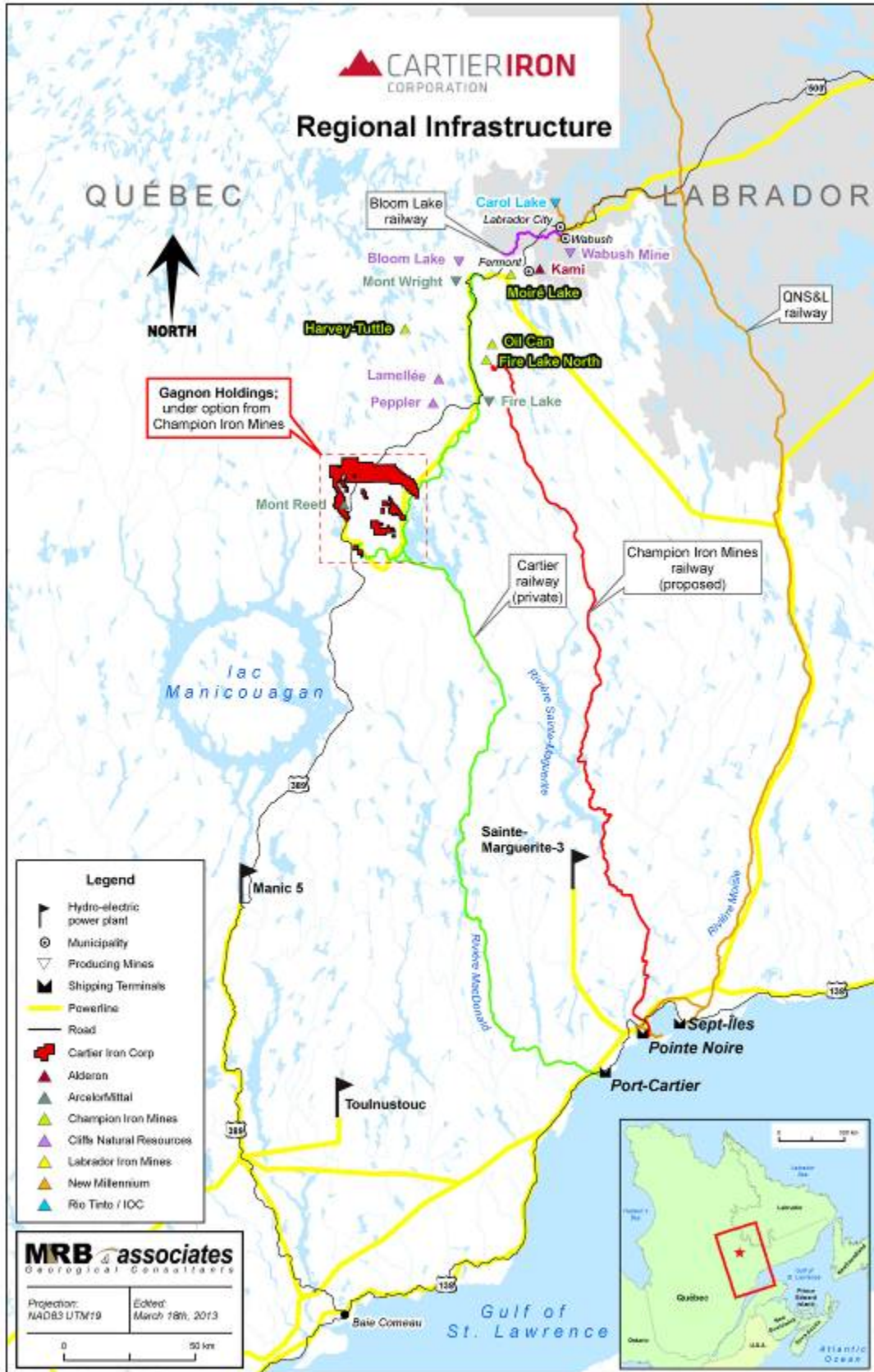
Ms. Chrystal Kennedy (P.Geo.), a QP as defined in NI 43-101, managed the 2013 drilling programme for Cartier Iron and visited the Penguin Lake Project site numerous times.

## **2.2 Terms of Reference**

Unless otherwise stated, all currency amounts are reported in Canadian dollars (\$). Grid coordinates and maps are based on Zone 19 of the Universal Transverse Mercator (UTM) system, using the 1983 North American Datum (NAD 83) geoid. Units of measurement include kilometres (km) and metres (m) for distance, and hectares (ha) or square kilometres (km<sup>2</sup>) for area, and metric tonnes (t) for mass.



Figure 1: Regional Location Map of the Gagnon Holdings in northeastern Quebec



### 3.0 RELIANCE ON OTHER EXPERTS

The Authors have assumed, and relied on the fact, that all the information and existing technical documents listed in the References section herein (refer to **Section 19.0**) are accurate and complete in all material aspects. Any incoming participant(s) in the project should make its own inquiries to satisfy itself as to the accuracy and validity of the data.

The Authors believe that the basic assumptions are factual and correct and the interpretation work to be reliable, although some of these data predates National Instrument (NI) 43-101. The Authors have not carried out any independent geological surveys of the Property, and have relied solely on compiled information and results of field work by Cartier Iron for geological descriptions. Ms. Kennedy supervised all aspects of the drill programme and is confident in the results of the programme. Mr. Ladidi, independently conducted analytical controls on some of the recent (2013) diamond-drilling core (see **Section 12.0**), in order to verify the previous results and render the drill-hole database to be in accordance with NI 43-101.

The mineral resources presented in this study are estimates of the size and grade of the deposit based on drill-core assays, and on assumptions and parameters currently available. The level of confidence in the estimates depends upon a number of uncertainties that include, but are not limited to, future changes in metal prices and/or production costs, differences in size, grade and recovery rates from those expected, and changes in project parameters. In addition, there is no assurance that implementation of resource extraction will be realized. A.S. Horvath Engineering (Hawkesbury, ON) reviewed and approved the resource calculations prepared by Mr. Ladidi.

Although copies of the tenure documents were reviewed, an independent verification of land title and tenure was not performed. The Authors have not verified the legality of any underlying agreement(s) that may exist concerning the licenses or other agreement(s) between third parties but has relied on Cartier Iron to have conducted the proper legal due diligence.

Information on tenure and permits was obtained from the Ministère des Ressources Naturelles et de la Faune Québec (MRNFQ) website at <http://www.mrnfp.gouv.qc.ca/mines/index.jsp>, and the MRNFQ GESTIM claim management system.

This Technical Report constitutes a NI 43-101 compliant, Inferred Mineral Resource estimate. It has been prepared by Abderrazak Ladidi (P.Ge.), of MRB & Associates (Geological Consultants), of Val-d'Or, Québec, and Chrystal Kennedy (P.Ge.) of Geochryst Consulting of Halifax, Nova Scotia. Both authors are considered independent qualified persons (QP). The responsibilities for the various sections in this Report are listed in **Table 2**.

A draft copy of this Report has been reviewed for factual errors by Cartier Iron. Any statements and opinions expressed in this document are given in good faith and in the belief that such statements and opinions are not false and misleading at the date of this Report.

The effective date of the Inferred Mineral Resource calculation is May 1<sup>st</sup>, 2013. This report is considered current as at February 3<sup>rd</sup>, 2014.

**Table 2: Section Responsibilities of Authors**

Section	Description	Responsibility	Comments and Exceptions
1.0	Summary	Chrystal Kennedy	
2.0	Introduction	Chrystal Kennedy	
3.0	Reliance on other Experts	Chrystal Kennedy	
4.0	Property Description and Location	Chrystal Kennedy	
5.0	Accessibility, Climate, Local Resource, Infrastructure and Physiography	Chrystal Kennedy	
6.0	History	Chrystal Kennedy	
7.0	Geological Setting and Mineralization	Chrystal Kennedy	
8.0	Deposit Types	Chrystal Kennedy	
9.0	Exploration	Chrystal Kennedy	
10.0	Drilling	Chrystal Kennedy	
11.0	Sample Preparation, Analyses and Security	Chrystal Kennedy Abderrazak Ladidi	
12.0	Data Verification	Chrystal Kennedy Abderrazak Ladidi	
13.0	Mineral Processing/Metallurgical Testing	Chrystal Kennedy	
14.0	Mineral Resource Estimate	Eugene Puritch Abderrazak Ladidi	
15.0	Adjacent Properties	Chrystal Kennedy	
16.0	Other Relevant Data and Information	Chrystal Kennedy	
17.0	Interpretation and Conclusions	Chrystal Kennedy Abderrazak Ladidi	Contributions based on expertise and scope of work
18.0	Recommendations	Chrystal Kennedy Abderrazak Ladidi	Contributions based on expertise and scope of work
19.0	References	Chrystal Kennedy	Compiled for both authors.

## 4.0 PROPERTY DESCRIPTION AND LOCATION

Cartier Iron's Gagnon Holdings currently comprise 5 non-contiguous blocks of mineral claims (**Figure 3** and **Table 1**) including the Round Lake Property, which is an amalgamation of the formerly separate, though contiguous, Black Dan, Penguin Lake and Aubrey-Ernie mineral concessions.

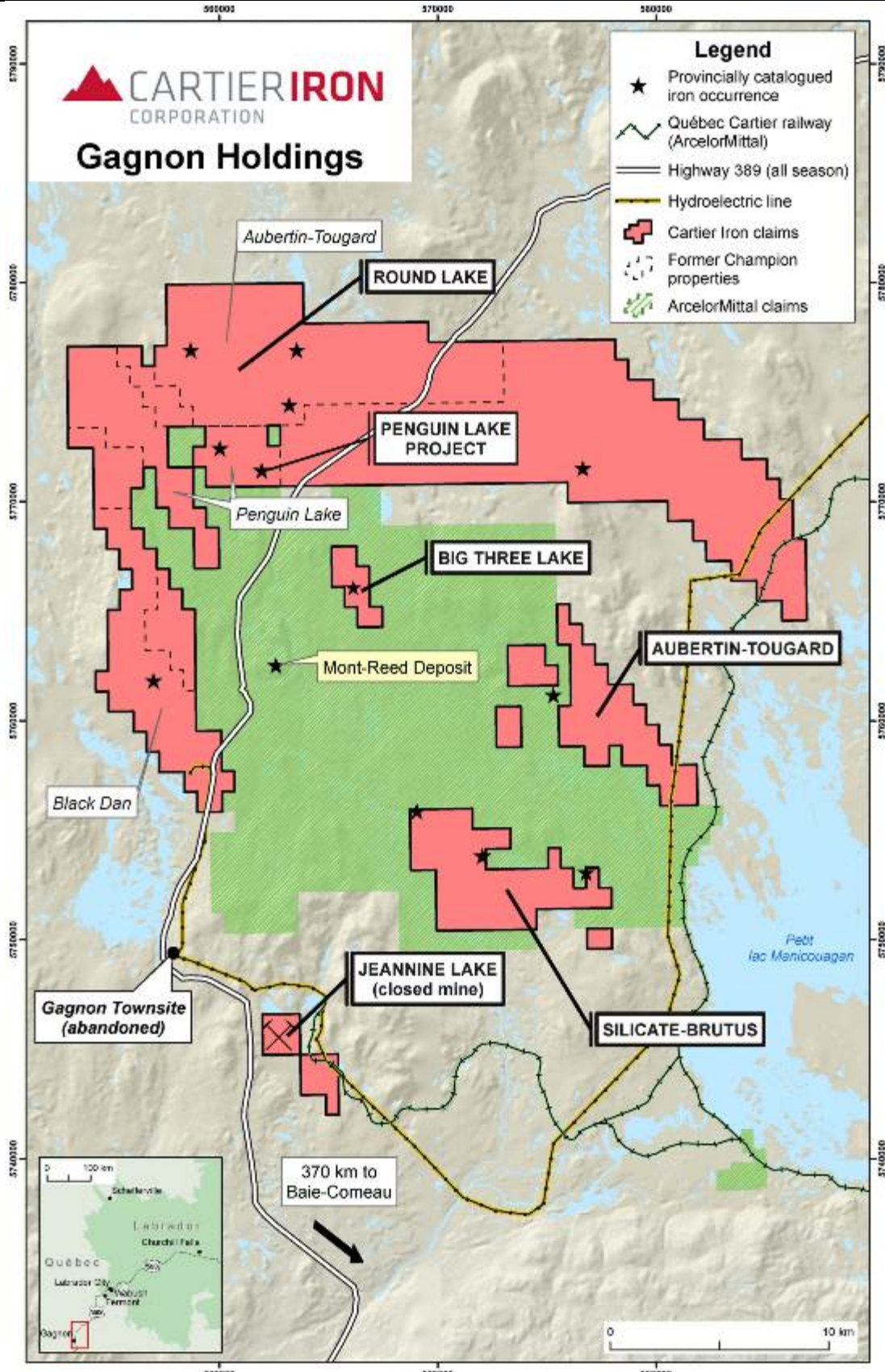
### 4.1 Penguin Lake Project

The Project is situated within National Topographic System (NTS) Map Sheet 23C/01, approximately 110 km southwest of the town of Fermont (Quebec) and straddles the Clement and Laussedat townships (**Figure 3**); the area is also delineated as part of the Regional Municipality of Caniapiscau (see **Figure 1**). The Project is part of the Round Lake Property, which comprises 519 mineral claims, covering 27,465.86 hectares or 274.66 km<sup>2</sup> (**Figure 4** and **Map 1**).

The centre of the Project has Universal Transverse Mercator (UTM) coordinates 560800 East, 5772000 North, in Zone 19 of the North American Datum (NAD) 83 geoid.

The Project has not been legally surveyed. The boundary of each claim block was defined using the MRNFO website at [www.mrnfp.gouv.qc.ca/mines/index.jsp](http://www.mrnfp.gouv.qc.ca/mines/index.jsp), and the GESTIM claim management system.

All claims comprising the Round Lake Property, which include those of the Penguin Lake Project area, are in good standing. The renewal dates, as of August 2013, and the rental fees, required minimum work and excess credits are shown in **Appendix I**. Details on claims renewals, work credits, claim access rights, allowable exploration, development, mining works, and site rehabilitation are summarized in the Mining Act of Quebec available at [www2.publicationsduquebec.gouv.qc.ca](http://www2.publicationsduquebec.gouv.qc.ca).



**Figure 3: Location Map of the Penguin Lake Project**



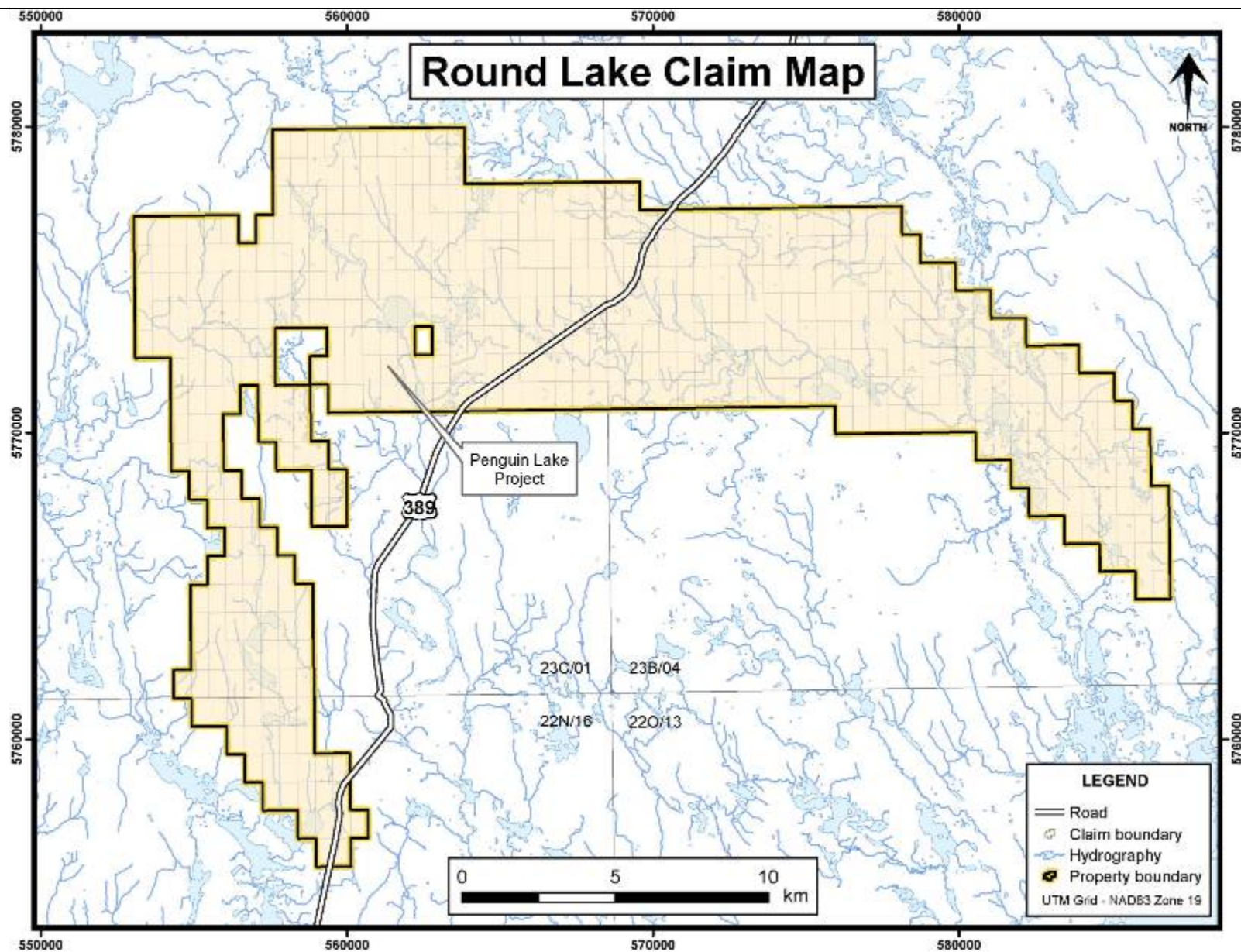


Figure 4: Claim Map of the Round Lake Property.

## **5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE, PHYSIOGRAPHY**

### **5.1 Accessibility**

The Trans-Quebec-Labrador Road, which is designated as Highway #389 in Quebec and Highway #500 in Labrador, runs from Baie-Comeau (Quebec) to Fermont (Quebec), through Wabush-Labrador City (Newfoundland and Labrador), terminates in Goose Bay (Newfoundland and Labrador) and provides year round access to the area.

Wabush Airport (IATA: YWK, ICAO: CYWK), some 2 km northeast of Wabush, is the main airport servicing the western Labrador/north-eastern Québec region. The airport is classified in the Regional/Local category according to the National Airports Policy. Local air service is also available from the Wabush Water Aerodrome (TC LID: CCX5) located near Wabush on Little Wabush Lake. Flights are offered from June until October. Car rentals are available at the airport.

Labrador City, the “sister city” of Wabush, is accessible by train via the Tshiuetin Rail Transportation Inc. railway. The railway tracks link Sept-Îles to Emeril Junction and Schefferville. The passenger train does not travel directly to Labrador City, so passengers travelling to and from Labrador City must take highway #500 to Emeril Junction, a 45-minute drive from Labrador City.

There is no direct all season road access to the Project; however, Highway #389 transects the central part of the Round Lake Property and is less than 1 kilometre southeast of the Project (see **Figure 2** and **Figure 3**). The Property is accessible by a winter drill road off Highway #389 at kilometre marker 464, just south of the bridge over the River Blough.

### **5.2 Climate**

The Fermont area and vicinity has a sub-arctic, continental taiga climate with very severe winters, typical of north-central Quebec. Winter conditions last 6 to 7 months, with heavy snow from December through April. The prevailing winds blow from the west and average 14 km per hour, based on records at the Wabush Airport. Daily average temperatures exceed 0°C for only five months per year. Daily mean temperatures for Fermont average -24.1° and -22.6°C in January and February, respectively. Snowfall in November, December, and January generally exceeds 50 cm per month and the wettest summer month is July with an average rainfall of 106.8 mm. Mean daily average temperatures in July and August are respectively, 12.4° and 11.2°C. Because of its relatively high latitude, extended day-light enhances the summer work-day period. Although winter conditions are considered harsh, drilling operations can be carried out year-round.

### **5.3 Physiography**

The physiography around the Round Lake Property is largely attributed to the lithologies and structures of the underlying rocks, which in turn were sculpted by glaciation. Topography is typical of sub-arctic terrain with local lake elevations of approximately 630 m. Retreating glaciation left a veneer of moraine boulder till and eskers that cover much of the local bedrock and control the drainage. The local water system empties southward to the Gulf of St. Lawrence through the Thémines and Blough River systems.

Lakes, swamps and grassy meadows fill bedrock and drift depressions. Most of the terrain is forested with a typical mixture of fir and tamarack, with local stands of aspen and yellow birch. Ground cover is generally in the form of grasses, caribou moss, and shrubs; the latter typically comprising willow, arctic birch, alders and Labrador tea.

## 6.0 EXPLORATION HISTORY

\*Note: The GESTIM and E-Sigeom sites allow on-line searching of the Province of Quebec's database of Provincial Assessment Reports or "Gestimes Minières" (GM's). The data are accessible online at <https://gestim.mines.gouv.qc.ca/> and <http://sigeom.mrnf.gouv.qc.ca/>.

Since the 1950's the area of the Project has seen limited exploration programmes completed by various companies. A compilation of all available historical geological, geophysical and drill-hole information was completed for Champion in order to help evaluate the economic potential of the claim block. Relevant information was digitized and entered into an ArcGIS project-database. The historical work pertaining to the Project, but not necessarily to the entire Round Lake Property, is summarized below.

### 6.1 Historic exploration and development work: Penguin Lake Project

#### **GM 03488A - Cartier Mining Company Limited (1955)**

Assessment report from work completed in area 16E in close proximity to the Project which includes two (2) geological maps, two (2) dip needle survey maps and a topographical map. Outcrop locations are delineated on maps but no written report is included.

#### **GM 04218B - Cartier Mining Company Limited (1955)**

The document includes a drill-hole location map with claims and logs for holes R-1 to R-5; no written report. All the drill-holes intersected iron formation, mainly quartz-specularite with varying amounts of magnetite.

The drill-holes were sampled, but no assays results are given.

#### **GM 04474 - Cartier Mining Company Limited (1955)**

This report covers the work carried out in 1955 (see **GM03488A**). It includes detailed geology descriptions and map with outcrop locations. Besides geological mapping, five (5) AX diamond-drill holes were completed; totalling 1,473 feet (see **GM04218B**). A number of distinctive iron meta-sediments were described, with quartz-specularite iron formation being the most common; specularite is present as small discontinuous lenses in the quartz or as discrete crystals throughout. Iron oxides (mainly specularite) make up 20% to 50% of the rock.

The specularite iron formation beds range in thickness from a few feet to 120 feet.

#### **GM 06535A – Quebec Cartier Mining Company (1957)**

Report on heavy liquid separation on two surface samples and drill core samples from area 16E. The samples were obtained in 1955 by surface trenching around rocky and Lorna Lake, Quebec. The diamond-drill core samples indicate that there was a total of 371.5 feet of material containing over 15% Fe. The higher-grade drill core, where it represented a mineable unit over 30 feet in thickness, was grouped into composites for heavy-liquid testing. The results are compared to a bulk sample from Jeanine Lake; liberation data indicate that concentration of this material is feasible, but the ore would require finer grinding. The report includes a claim map.

#### **GM 09608 - Quebec Cartier Mining Company (1959)**

Assessment Report on detailed geological and geophysical mapping in the Lorna Lake area. In addition, 3 diamond-drill holes totalling 137 feet were completed with a portable rig. Approximately 1.5 miles of picket lines were cut as control of the mapping programme. The report includes logs for drill-holes 16E-W-1, 16E-W-2 and 16E-W-3, a geological map, a geological cross-section, a dip needle survey map and a claim map including drill-hole locations.

**GM 10536B – Jubilee Iron Corporation (1960)**

Report is an independent review of work carried on properties held by Jubilee Iron Corporation. This is a general report with little information on the properties; it includes a map of the mining properties and claim maps for Claire Lake Group, Cotton Ball Lake Group and Pekans River Group.

**GM 10801 – Canadian Javelin Ltd., Jubilee Iron Corporation (1960)**

Report on a magnetometer survey on the Sneak Lake claim group. A total of 32 magnetic traverses were completed, spaced at intervals from 500 feet to 1300 feet. A steeply dipping tabular body about 50 metres thick and 9 km long was magnetically located on an outcrop composed of silicate (grunerite) iron formation.

The report includes numerous geophysical maps.

**GM 11261 - Quebec Cartier Mining Company (1960)**

Report on a diamond-drilling campaign from area 16E; thirty-seven (37) diamond-drill holes totalling 6,203 feet were completed. The iron formation and its structure are detailed in the report. The report includes logs, outcrop studies, dip needle traverses and some ground magnetometer work. It also includes two geological maps comprising drill-hole locations and a claim map.

**GM 12096 - Quebec Cartier Mining Company (1961)**

Geological survey, mapping, drilled 10 holes in Round Lake / Penguin Lake area, encountered magnetite hematite iron formation up to 50% in logs. Two (2) mineralized zones (Zone 1 and Zone 2) are recognized at Penguin Lake. Nine holes on four sections were drilled in Zone 1 (Holes 1-9) for a total of 2,250 ft. Forty-six million tons of iron-ore, grading 30% Fe was outlined. Zone 2 comprises a node of mineable ore 600 ft by 350 ft close to the surface. A single drill hole (Hole 10) cut 340 ft of iron formation and outlined one million tons of mineable material. Additional possible reserves of three million tons could be expected from continuations of the same formation along the single band for 2,000 ft to the east.

**GM 58495-58496 - Quebec Cartier Mining Company (1961)**

This Report records the details of an airborne Mag/EM geophysical survey flown by Sial Geosciences Inc, over the area around the Mont Reed deposit (10 km south of Penguin Lake) and the Fire Lake deposit (60 km northeast of Penguin Lake), for Quebec Cartier Mining Co. between the 16<sup>th</sup> and 26<sup>th</sup> of June, 2000. A total of 3,563 line kilometres were flown, at 200 metre line-spacing, using the electromagnetic, multi-frequency, SIGHEM-5 System, 1,168 km over the Mont Reed area. Geophysical anomaly maps are reproduced in Report GM 58496. The survey overlapped part of the Lake Penguin claim block, including part of the Lac Pingouin occurrence, which emits has a similar geophysical signature to the Mont Reed deposit.

**GM 13035 – Ministère des Ressources naturelles (1963)**

Summary of iron reserves per company and deposit area within a 100-mile radius of Mouchalagane Lake. The report includes a location map of the deposits.

**GM 13528 - Jubilee Iron Corp (1963)**

This is a general report on the properties held by Jubilee Iron Corporation including properties in Quebec. Jubilee Iron holds 10 claim blocks located in northern Quebec between the holdings of Quebec Cartier Mining and Wabush Iron Co., in Labrador. Basic exploration was completed on all properties with substantial diamond drilling programmes completed on at least two blocks. Properties include: Javelin Lake; Simone Lake; Peppler Lake; O'Keefe Lake; Purdy Lake; Audrea Lake; Star Lake; Harvey Lake; North Lake and Cotton Ball Lake-Cassé Lake. Report contains a brief discussion of historic resource estimations of some properties.

**GM 14281 - Jubilee Iron Corp (1964)**

This is a general report on the properties held by Jubilee Iron Corporation including properties in northeastern Quebec. Jubilee Iron holds 9 claim blocks located in northern Quebec between the holdings of Quebec Cartier Mining and Wabush Iron Co., in Labrador. A summary of exploration that was completed on all properties is included. Properties include: O'Keefe Lake; Star Lake; Harvey Lake; Cotton-Ball; Purdy Lake; Audrea Lake; Javelin Lake; Simone Lake; Peppler Lake. Report contains a brief discussion of historic resource estimations of some properties.

**GM 26140 - Roger Sirois (1970)**

The report is a study of the possible exploration potential in an area 100 mile radius around Hydro-Quebec's Montagnais sub-station. Report summarizes known deposits.

**RG 178 – Ministère des Ressources naturelles du Quebec, Midway Ore Company Ltd, Quebec Cartier Mining Company, Quebec South Shore Steel Corp. (1977)**

Geological report on the Gagnon region, covering an area of about 1800 km<sup>2</sup>, which includes the iron deposits of the Lac Jeanine mine, Mount Reed, at Rond and Pingouin lakes, at Silicates Lake, in the Black-Dan – Blough Lake belt, and at Aubertin and Boidie lakes; a total potential exceeding one billion tons of mineable ore containing 30% iron. The report describes general geology, economic geology, structural geology and geochemistry of the studied area. It also includes geological maps of the Lac Barbel and Rivière Themines areas.

**MB 88-38 and MB 89-33 – MRN (1988, 1989)**

These reports summarize the analytical results of the Fermont lake-bottom sediment survey and present statistical maps, by element, for some elements only. The statistics were calculated for approximately 6000 samples. The results show anomalies for copper, zinc, lead, molybdenum, uranium, titanium, barium, strontium and rare-earth-elements.

**GM 59085 - BHP Diamonds Inc. (1998)**

During the spring/summer of 1998, BHP Diamonds Inc. completed a regional, heavy-mineral sampling programme in northeast Quebec. The objectives were to define areas with economic potential. The sought-after commodities were diamonds in kimberlite intrusions, base-metals associated with massive-sulphide deposits, Broken Hill-type deposits within the Grenville, and gold occurrences associated with massive-sulphides and shear-zones. A total of 1,561 – 25 kg samples were collected in glacial till, eskers and drumlins at 3 km station intervals, on lines spaced approximately 50 km apart.

**GM 61232 - Anglo American Exploration (Canada) Ltd. (2002)**

Summary of the company's regional exploration programme (the Grenville Zinc Project) focused on exploring for potential Broken Hill-type and Franklin/Sterling-type zinc deposits in the eastern part of the Gagnon Terrane, south of the town of Fermont (Quebec). Work included regional stream sediment, till, prospecting and rock sampling. A total of 40 sites were sampled in the Gagnon terrane; 9 regional stream sediment sample sets; 28 regional till sample sets; and 9 local rock samples were collected.

**DP 200102 – Ministère des Ressources naturelles et de la Faune du Québec (2004)**

Digital data from airborne geophysical survey which includes NTS map sheet 220/13. No maps, just technical data.

**DP 200601 - Ministère des Ressources naturelles et de la Faune du Québec (2006)**

Digital data from airborne geophysical survey which includes NTS map sheet 220/13. No maps, just technical data.

**GM 60719 - Virginia Gold Mines (2001)**

During 2001, Virginia Gold Mines evaluated the potential for Cu-Ni-PGE deposits in the Grenville Province. A number of smaller-size targets in the Penguin Lake area were evaluated by conventional prospecting and airborne surveys. This report presents all the results of the 2001 exploration programme; however, no data relevant to iron exploration is incorporated.

**GM 63919 – GPR Geophysics Report & Survey Data: 2008 Airborne Survey, Fermont Properties for Champion Minerals Inc. (2008)**

Between July 15-23 and August 15-28, 2008, GPR Geophysics International Inc. (GPR) of Longueuil, Quebec, completed a 3,855 line-km, helicopter-borne, magnetic, gamma-ray spectrometry and EM-VLF geophysical survey for Champion Iron Mines Inc. over the Fermont properties (NTS sheets 023/O13, 023/C01, 023/B04, 023/B05, 023/B06, 023/B11, 023/B12 and 023/B14).

The total magnetic field, horizontal magnetic gradient, VLF total field, VLF quadrature and gamma-ray spectrum were measured by the helicopter-borne system. DGPS positioning, magnetic diurnal changes and radar altitude data were also collected.

The iron mineralization is well defined by the magnetic geophysical surveys. Magnetic highs outline magnetite-rich iron formations, whereas magnetic lows tend to be hematite-rich iron formations and zones of secondary iron enrichment that have resulted from near-surface oxidation of the iron formation.

**GM 64596 – Champion Minerals Inc., (2009)**

This assessment report summarizes a 5-day helicopter reconnaissance field investigation of Champion's Fermont Suite of mineral concessions. Exploration work included field reconnaissance mapping and sampling, geochemical analysis and GIS compilation of previous work. The objective of the reconnaissance was to investigate the presence and extent of iron formations on the Fermont properties. The report includes a location map of the Fermont properties, a geological map and vertical gradient magnetic survey map.

**GM 65900 – Fugro Airborne Survey – for Champion Minerals Inc. (2011)**

FALCONTM Airborne Gravity Gradiometer Survey, Fermont, Quebec. This technical report provides details of the airborne gravity survey flown by Fugro Airborne Surveys ("Fugro") over Champion's Fermont Holdings from May 31 to July 14, 2011, and submitted September 2011 as a separate Assessment Report.

**GM #Pending – Cartier Iron Corp. (2013) – "Assessment Report on the 2013 Diamond-Drilling Programme: Penguin Lake Project, Province of Québec, NTS 23C/01"**

Contains details of Cartier Iron's 10-hole, 3315 m, diamond-drilling programme carried out from Jan. 19<sup>th</sup> to Feb. 23<sup>rd</sup>, 2013. Submitted June 20<sup>th</sup>, 2013.

## 7.0 GEOLOGICAL SETTING AND MINERALIZATION

### 7.1 Regional Geology

The Gagnon Terrane comprises the southern domain of the Paleo-Proterozoic fold and thrust belt known as the Labrador Trough, which hosts an extensive iron formation and associated sedimentary rocks. The Labrador Trough, also known as the Labrador-Quebec Fold Belt, is part of the New Quebec Orogen, and extends for more than 1,100 km along the eastern margin of the Superior craton from Ungava Bay to the Manicouagan impact crater, Quebec. The fold and thrust belt is about 100 km wide in its central part and narrows considerably to the north and south (**Figure 5**). It marks the collision between the Archean Superior Province and the Rae Province during the Hudsonian Orogeny (circa 1.82 Ga to 1.79 Ga). Rocks of the Rae Province were transported westward over the Archean Superior Province basement creating a foreland fold and thrust belt marked by a series of imbricate thrusts (**Figure 6**).

The Labrador Trough is divided into three geological/metamorphic domains. The Southern Domain (Gagnon Terrane) is defined by the northern limit of the Grenville Orogenic Belt at approximately 53°24'00" North latitude, which is represented by the biotite metamorphic isograd (**Figure 5**). The Southern Domain encompasses Labrador Trough rocks that were metamorphosed during the Grenville Orogeny (circa 1.16 Ga to 1.13 Ga according to *Saucier et al., 2012*), which involved northward thrusting, northeast-southwest folding, abundant gabbro, anorthosite and pegmatite intrusions, and high-grade metamorphism. The metamorphism was responsible for the recrystallization of primary iron formations, producing coarse-grained sugary quartz, magnetite, and specular hematite schists that are amenable to concentration and beneficiation. The Gagnon Terrane is underlain chiefly by Archean basement-complex rocks that host isolated infolded synforms of highly deformed and metamorphosed iron formations and associated sedimentary rocks (the Sokoman Formation) that were originally deposited in the western (miogeosynclinal) part of the proto-Labrador Trough.

The Central Domain hosts regionally metamorphosed, mainly greenschist-grade, iron-formation deposits comprising Achaean, mainly sedimentary, rocks including iron formations, volcanic rocks and mafic intrusions (the Kaniapiskau Supergroup). The Kaniapiskau Supergroup is sub-divided into the Knob Lake and Doublet groups. Rocks in the Southern Domain are recognized as the metamorphosed equivalents of the Central Domain's Knob Lake Group.

The Northern Domain, north of the Leaf Bay area (58°30'00" North latitude), comprises regionally metamorphosed rocks (lower amphibolite facies), much like those of the Southern Domain.

It is believed that only one iron-formation assemblage is present throughout the region. This formation varies in thickness and appears to have underlain the greater part of the original Labrador geosyncline. The economically important succession of quartzite-slate-iron formation, and their metamorphosed equivalents, persists throughout the three Domains.

### 7.2 Regional Structural Geology

Three stages of deformation are recognized in the Southern Domain. The first stage, associated with the New Québec Orogeny, produced linear belts that trend northwest in the Central Domain. The second stage, developed during the Grenville Orogeny, reoriented the northwest trending linear belts to the east and northeast. Thrust faults associated with these two transpressional events are common, but sometimes very difficult to identify. Bedding planes are generally recognizable in the quartzite, dolomite and iron formation.

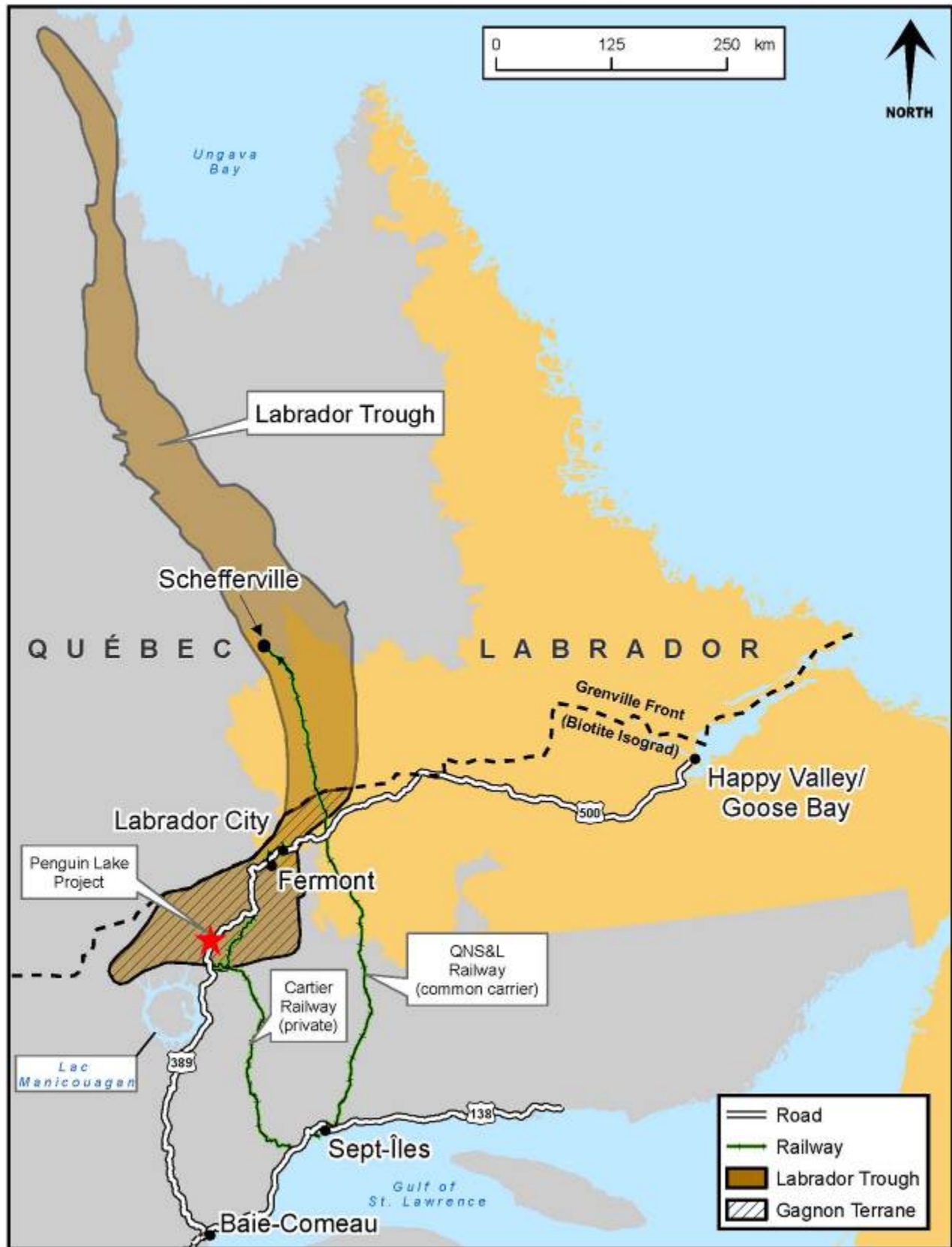
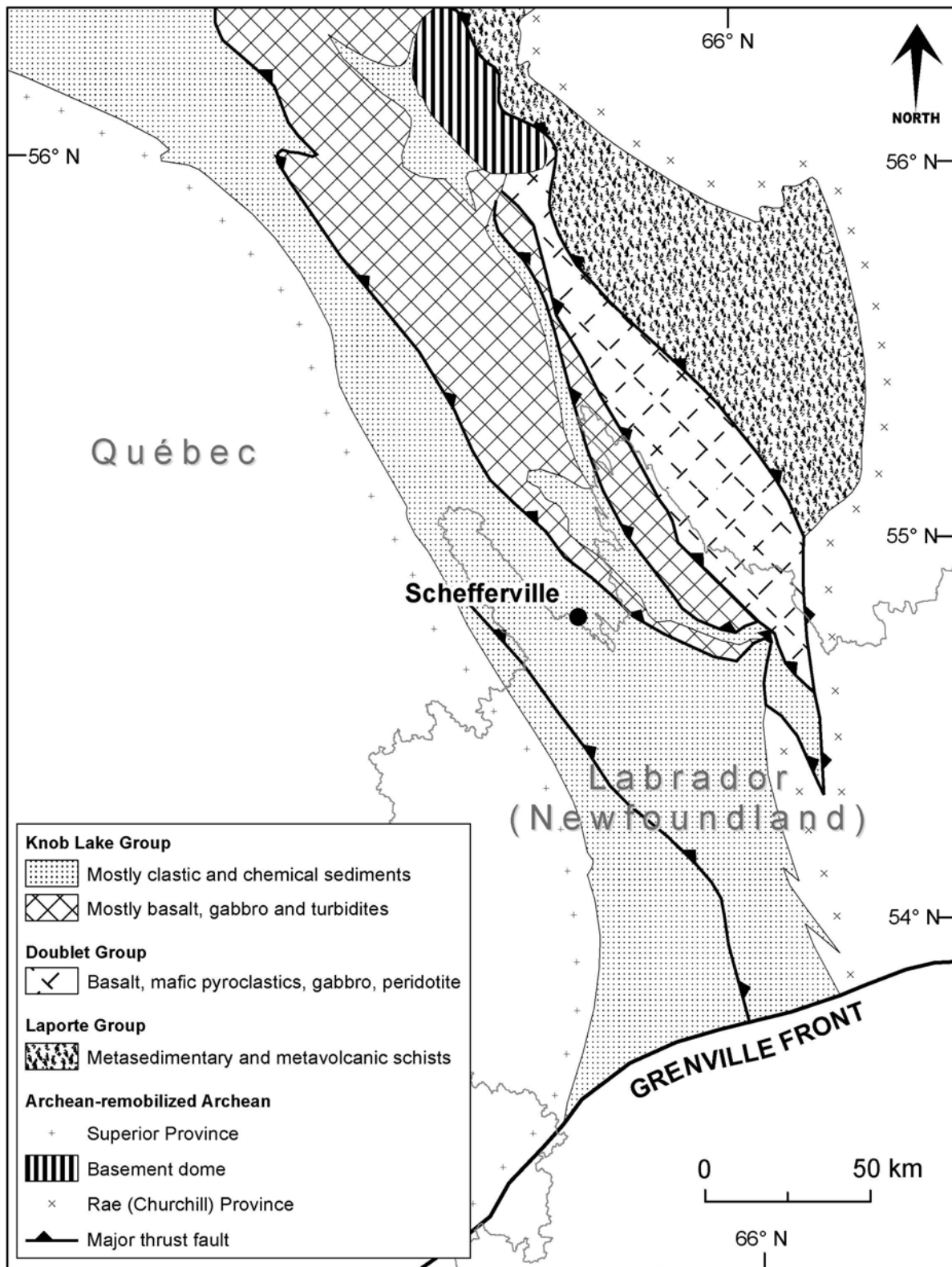


Figure 5: Map showing the Location of the Labrador Trough.





**Figure 6: Lithotectonic Subdivisions of the Central Labrador Trough (from Williams and Schmidt, 2004).**

Asymmetrical, overturned and recumbent folds are common throughout the Gagnon Terrane. The complex interference patterns evident on geological maps of the area indicate that a third phase of deformation has affected this domain.

Stratigraphic-reversals, -truncations, and -repeats that thicken the iron formation are common due to folding and structural transposition. Late, brittle faults have redistributed the sequences only slightly compared with the influence of the ductile deformation.

### 7.3 Local Geology

Cartier's Gagnon Holdings are underlain by the litho-tectonic Gagnon Terrane (*Brown et al., 1992*) within the Grenville Province of Western Labrador. Archean granitic and granodioritic gneisses and migmatites of the Ashuanipi Basement/Metamorphic Complex form the basement to most of the terrane and comprise white to grey, coarse-grained hornblende-epidote-biotite granitic and tonalitic gneisses. Garnetiferous amphibolites are inter-layered with the gneisses in the basement sequence.

Unconformably overlying and infolded with the basement gneisses are the metamorphosed equivalents of the Lower Proterozoic Knob Lake Group, including crystalline limestone (siliceous dolomite), glassy quartzite, silicate-carbonate quartzite, magnetite-quartz iron formation, specularite-quartz iron formation, silicate-magnetite iron formation, garnet-biotite gneiss and garnet-mica schist. Quartzo-feldspathic and graphite-biotite gneisses overlie the metamorphosed iron formation sequence. The platformal sedimentary rocks of the Knob Lake Group were formerly known as the Gagnon Group in the Gagnon Terrane (**Table 3**).

The Knob Lake Group is a continental-margin metasedimentary sequence, consisting of pelitic schist, iron formations, quartzite, dolomitic marble, semi-pelitic gneiss and subordinate, local mafic volcanic rocks. The Knob Lake Group was deformed and subjected to metamorphism ranging from greenschist to upper amphibolite facies within a northwest-verging ductile fold and thrust belt, during the Grenville Orogeny (*Brown et al., 1992; van Gool et al., 2008*). The sequence is best exposed in the region west of Wabush Lake, extending southeast into the province of Quebec, and northeast beyond the north end of Shabogamo Lake. Intrusive rocks include pegmatites and aplite dykes, granodiorite plutons, amphibolites, gabbros and peridotite bodies.

### 7.4 Stratigraphy

In the Gagnon Terrane, the Knob Lake Group is represented by six formations (in ascending order); the Attikamagen, Denault, Wishart, Sokoman, Menihek and Shabogamo (**Table 4**). The stratigraphic and lithologic classifications used by Cartier Iron for geological and drill-log descriptions are compiled in **Table 3**.

#### 7.4.1 Attikamagen Formation

The Attikamagen Formation is the oldest stratigraphic sequence within the Knob Lake Group. The Formation, which can reach 300 m in thickness, unconformably overlies the Archean Ashuanipi Basement Metamorphic Complex, and predominantly consists of brownish to creamy, banded, medium- to coarse-grained, quartz-feldspar-biotite-muscovite schist and lesser gneiss. Accessory minerals include chlorite, garnet, kyanite and calcite. The Attikamagen Formation is best preserved east of Wabush and Shabogamo Lakes. In the extreme northwest, the Formation tapers and disappears, leaving upper units of the Knob Lake stratigraphy in contact with the Archean basement (*Gross, 1968*).

**Table 3: Equivalent Rock Successions in the Central and Southern Domains of the Labrador Trough (modified from Gross, 1968).**

<div style="border: 1px solid black; padding: 5px; margin: 0 auto; width: 80%;"> <p style="text-align: center;">PROTEROZOIC</p> <p style="text-align: center;"><b>Helkian</b> <b>Shabogamo Group</b> <b>Gabbro Diabase</b></p> </div>		
----- Intrusive Contact -----		
	<p>PROTEROZOIC</p> <p><b>Aphebian</b></p> <p>Kaniapiskau</p>	
Churchill Province		Grenville Province
<b>(Low-Grade Metamorphism)</b> Knob Lake Group		<b>(High-Grade Metamorphism)</b>
<p><b>Menihék Formation</b> Black shale, siltstone</p>		<p><b>Nault Formation</b> Graphite, chloritic, and micaceous schist</p>
<p><b>Sokoman Formation</b> Cherty iron formation</p>		<p><b>Wabush Formation</b> Quartz magnetite-specularite-carbonate iron formation</p>
<p><b>Wishart Formation</b> Quartzite, siltstone</p>		<p><b>Carol Formation</b> Quartzite, quartz-muscovite-garnet schist</p>
<p><b>Denault Formation</b> Dolomite, calcareous siltstone</p>		<p><b>Duley Formation</b> Meta-dolomite and calcite marble</p>
<p><b>Attikamagen Formation</b> Gray shale, siltstone</p>		<p><b>Katsao Formation</b> Quartz-biotite-feldspar and gneiss</p>
<div style="border: 1px solid black; padding: 5px; margin: 0 auto; width: 80%;"> <p style="text-align: center;">ARCHEAN</p> <p style="text-align: center;"><b>Ashuanipi Complex</b> <b>Granitic and granodioritic gneiss,</b> <b>mafic intrusives</b></p> </div>		
----- Unconformity -----		
<p><b>Note: The Duley, Carol and Wabush Formations are included in the Gagnon Group.</b></p>		

#### 7.4.2 Denault Formation

Conformably overlying the Attikamagen Formation is the Denault Formation. This Formation consists of coarse-grained, banded, dolomitic and calcitic marble up to 75 m thick with minor tremolite, quartz, diopside and phlogopite as accessory minerals. In the Wabush Lake area the Denault Formation has only been identified east and south of the Lake, and represents a transition between the shallow and deeper parts of the continental shelf. Stromatolites have been described to the south of Wabush Mine. Locally, the Formation can be sub-divided into three sub-units consisting of the lower siliceous horizon, the middle low silica (<5% SiO<sub>2</sub>) horizon and the upper siliceous horizon. Low-silica Denault Formation dolomite is mined and added to the iron pellets, and acts as a flux in the smelting process.

**Table 4: Stratigraphic and Lithologic Classifications used by Cartier Iron Corp.**

FORMATION	MEMBER	CODE	ROCK DESCRIPTION	
Shabogamo	Felsic Intrusions	FEL	Felsic Dyke	
		PEG	Pegmatite	
		QMZ	Quartz Monzonite	
Menihek	Gabbro + Mafic	MAF	Mafic Dyke	
		GAB	Gabbro	
	Hornblende Schist	AMP	Amphibolite	
		HBG	Hornblende-Quartz Gneiss	
	Quartz-Mica-Schist	QMS1	Quartz-Feldspar-Mica-Garnet-Gneiss	
		QMS2	Schist	
Sokoman	Iron Formation	Not stratigraphically equivalent to UIF, MIF and LIF members (Table 4)	IF1	Quartz-Specularite Iron Formation
			IF2	Quartz-Magnetite Iron Formation
			IF3	Quartz-Specularite-Magnetite Iron Formation
			IF4	Quartz-Magnetite-Specularite Iron Formation
			IF5	Quartz-Magnetite-Silicate Iron Formation
			IF6	Quartz-Magnetite-Carbonate Iron Formation
			IF7	Quartz-Magnetite-Silicate-Carbonate Iron Formation
			IF8	Quartz-Carbonate Iron Formation
			IF9	Quartz-Silicate Iron Formation
			IF10	Silicate-Carbonate Iron Formation
			IF11	Lean-Quartz Iron Formation
Wishart	Quartzite	QTZ1	Quartzite	
		QTZ2	Quartz Muscovite Schist	
Denault	Marble	DUL1	Calcite Marble	
		DUL2	Dolomite Marble	
Attikamagen	Basement Gneiss	KAT1	Quartz-Feldspar-Biotite Gneiss	
		KAT2	Quartz-Biotite +/- Muscovite Schist	
Ashuanipi Complex	Basement	ASH1	Granodiorite Gneiss	
		ASH2	Granite	

### 7.4.3 Mackay Formation

Overlying the Denault Formation is the Mackay River Formation. It consists of aqueous meta-tuffaceous sediments and conglomerate units. This sequence is not present in the Fermont area and occurs mainly northeast of Shabogamo Lake, northeast of Labrador City.

### 7.4.4 Wishart Formation

The Wishart Formation conformably overlies the Denault Formation and locally unconformably overlies the Attikamagen Formation. It consists of a 60 m to 90 m thick sequence of white, massive to foliated quartzite, which is typically resistant to weathering and erosion, forming prominent hills in the Wabush Lake region. This Formation appears to pinch out to the north and has not been mapped north of Shabogamo Lake. The Wishart Formation can be subdivided into the Lower, Middle and the Upper members based on variation in composition and texture. The Lower Member consists of white to reddish brown, quartz-muscovite schist with varying percentages of garnet and kyanite. The Middle Member is a coarsely crystalline orthoquartzite that is generally massive to banded. Accessory minerals include carbonates, amphiboles (varying from tremolite and/or anthophyllite to grunerite and/or cummingtonite), garnets, micas (muscovite, sericite and biotite) and chlorite. Bands of iron-rich carbonates or their weathered products, limonite and goethite, may also occur. The Upper Member exhibits a gradational contact with the overlying Sokoman Formation, and generally consists of bands of carbonate alternating with bands of quartzite. The presence of thin layers of muscovite and biotite schist (pelitic layers) is common. Accessory minerals include grunerite, garnets, kyanite and staurolite.

Parts of the Middle Member containing very low concentrations of impurities are locally mined for silica. Shabogamo Mining is currently actively mining silica on their property immediately south of Iron Ore Company of Canada's Luce Deposit located 10 km north of Labrador City.

### 7.4.5 Sokoman Formation

The Sokoman Formation (**Table 5**), also known as the Wabush Iron Formation, is the ore-bearing unit in the Gagnon Terrane and is subdivided into Lower, Middle and Upper members. The Sokoman Formation conformably overlies the Wishart Formation, but also locally shares its basal contact with the Denault, Mackay, and Attikamagen formations, and the Ashuanipi Metamorphic Complex.

The Lower Member (LIF) consists of a 0 m to 50 m thick sequence of fine- to coarse-grained, banded quartz carbonate, and/or quartz carbonate magnetite, and/or quartz carbonate (i.e., siderite, ankerite and ferro-dolomite), silicate (i.e., grunerite, cummingtonite, actinolite, garnets), and/or quartz carbonate silicate magnetite, and/or quartz magnetite specularite sequences. This member generally contains an oxide band up to 10 m thick near the upper part.

The Middle Member (MIF), which forms the principal iron ore sequence, consists of a 45 m to 110 m thick sequence of quartz magnetite, and/or quartz specularite magnetite, and/or quartz specularite magnetite carbonate, and/or quartz specularite magnetite anthophyllite gneiss and schist sequence. Actinolite and grunerite rich bands may be present in this member, although they are generally attributed to in-folding of the upper member. A vertical zonation is typically present with finer-grained quartz magnetite dominated iron formation forming the basal section. Manganese content (rhodochrosite and pyrolucite) ranging from 0.4% to 1.0% Mn is associated with this sequence. Martite may also occur in weathered zones via supergene alteration of magnetite (Wabush Mines, Canning prospect and D'Aigle Bay area). The upper part of the MIF horizon is predominantly comprised of coarser-grained quartz specular hematite iron formation.

**Table 5: Stratigraphy of the Sokoman Formation**

FORMATION	MEMBER	ROCK DESCRIPTION
Sokoman	Upper IF (UIF)	Quartz-(Actinolite-Grunerite) Gneiss
		Quartz-Grunerite Gneiss
		Quartz-(Carbonate-Grunerite) Gneiss
		Quartz-Carbonate Gneiss
		Quartz-Carbonate-Magnetite Gneiss
		Quartz-Grunerite-Magnetite Gneiss
		Quartz-Magnetite-Grunerite Gneiss
		Quartz-Magnetite-Carbonate Gneiss
		Quartz-Carbonate Gneiss
		Quartz-(Carbonate-Grunerite) Gneiss
	Middle IF (MIF)	Quartz-Magnetite-Specularite Gneiss
		Lean Quartz-Specularite Gneiss
		Quartz-Specularite Gneiss
		Quartz-Specularite-Anthophyllite (Talc) Gneiss
		Quartz-Magnetite-Specularite Gneiss
		Quartz-Magnetite Gneiss
	Lower IF (LIF)	Quartz-Magnetite-Carbonate Gneiss
		Quartz-Carbonate Gneiss
		Quartz-(Carbonate-Grunerite) Gneiss
		Quartz-Magnetite-Specularite Gneiss
		Quartz-Magnetite-Carbonate Gneiss
Quartz-Carbonate-Magnetite Gneiss		
Quartz-Carbonate Gneiss		
Quartz-(Carbonate-Grunerite) Gneiss		

The Upper Member (UIF) consists of a 45 m to 75 m thick sequence, similar in composition to the LIF, and can generally be differentiated through contact relationships with the overlying and underlying formations and the presence of increased grunerite or actinolite content. A magnetite-rich zone may be present in the lower part of this Member.

Hydrous iron oxides (limonite and goethite) have been observed in all members of the Sokoman Formation. Limonite and/or goethite are present in weathered and fractured zones and are derived primarily from alteration of carbonates (*Muwais, 1974*). Pyrolusite (a manganese oxide) may occur in a distinct zone at the base of the MIF but has also been observed in all members of the Sokoman Formation typically associated with surficial or supergene enrichment, extending to depth along and adjacent to structural discontinuities, such as fault and fracture zones.

#### 7.4.6 Menihek Formation

The Menihek Formation consists of a 15 m to 75 m thick sequence of pelitic sediments. The Formation is commonly fine-grained, foliated and variably comprised of a quartz-feldspar-mica (biotite-muscovite)-graphite schist. Garnets, epidote, chlorite and carbonates are accessory minerals. This unit is well preserved adjacent to the craton in the southern region and within broad synclinal regions in the north.

#### 7.4.7 Shabogamo Intrusive Suite

The Shabogamo Intrusive Suite comprises the youngest Precambrian rocks in the Wabush Lake area. It consists of massive, medium- to coarse-grained mafic intrusions (gabbro, olivine gabbro and amphibolites), non-magnetic, sill-like bodies with ophitic to sub-ophitic textures. These sills may be locally discordant and have a tendency to be schistose near the contact with other rock formations. Most of the gabbro sills are composed of plagioclase, pyroxene, olivine and minor amounts of magnetite and ilmenite. The amphibolite equivalents commonly consist of hornblende, biotite, garnets and chlorite. Pyrite, muscovite, and feldspar are accessory minerals.

### 7.5 Property Geology

The Gagnon Holdings are primarily underlain by gneiss of the Ashuanipi Basement Complex. Highly metamorphosed sedimentary rocks and iron formation of the Denault and Sokoman formations snake through the area following complex fold interference patterns (*Figure 7*).

The rock formations exposed in this area form part of the crystalline sequence of metamorphosed Precambrian sediments identified in other parts of the southern district. Like their counterparts they underwent minor alteration following primary deposition and subsequent high-grade regional metamorphism during the Grenville Orogeny.

The rocks of this area belong to the same sequence as those of the Mont Reed deposit. The iron formation is characteristically made up of a series of alternating magnetite and hematite rich horizons, capped by quartz-silicate-carbonate rock and graphitic gneiss, and underlain by silicates, quartz, marble and gneiss formations. A search of the MRNF on-line database returned results for seven (7) occurrences, in the vicinity of Penguin Lake:

1. Anse East (Reference number 23C/01-0005)
2. Lac Aubrey (Reference number 23C/01-0002)
3. Lac Heart (Reference number 23C/01-0003)
4. Lac Pingouin-Zones 1 & 2 (Reference number 23C/01-0004)
5. Mont Reed (Reference number 23C/01-0007)
6. Thémis 4 (Reference number 23C/01-0001)
7. Big Three Lake (Reference number 23C/01-0008)

The available data on these occurrences dates back to 1952 and describes the rock-type hosting the mineralization, and an estimate of grade.

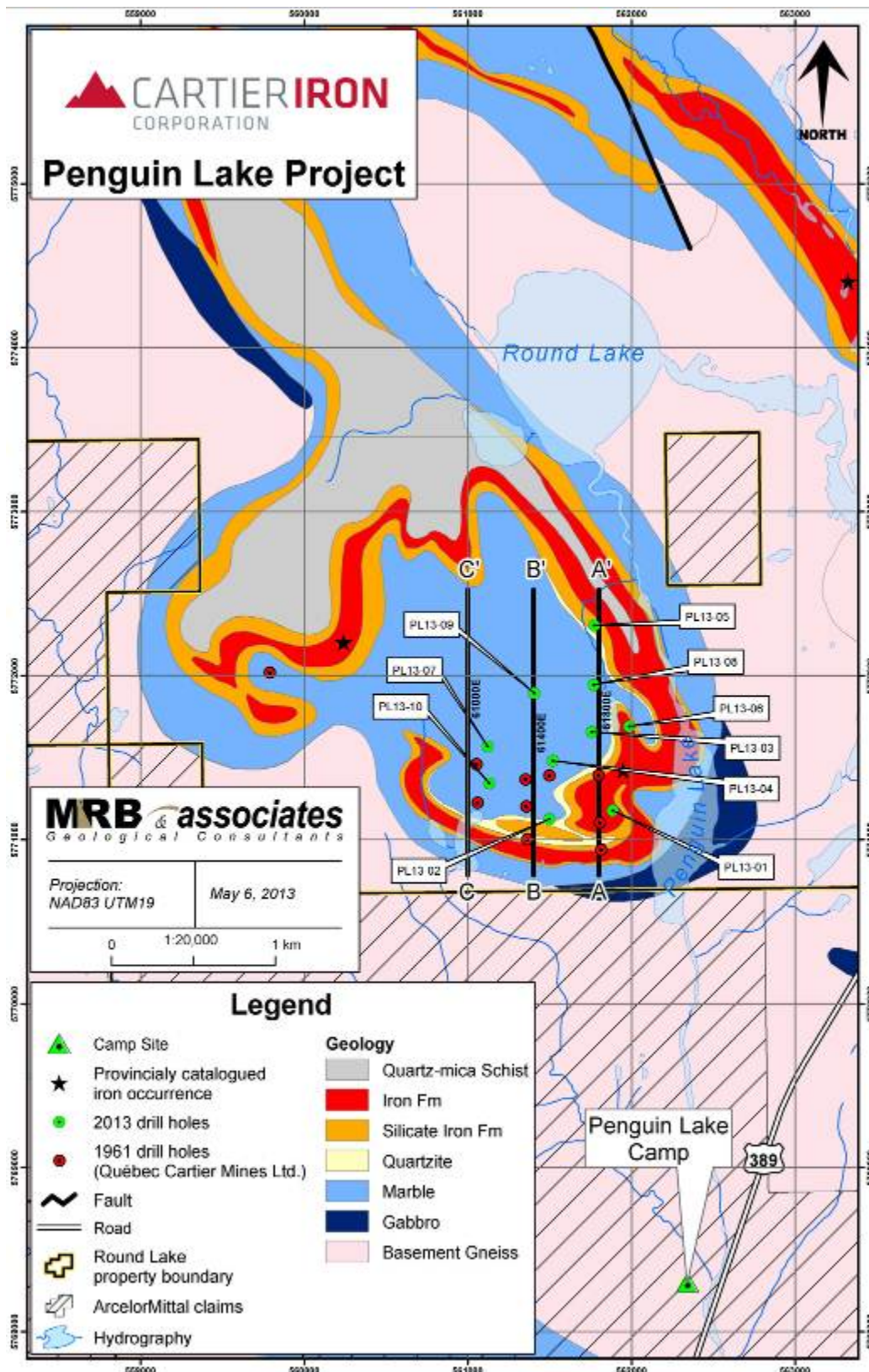


Figure 7: Simplified geology map of the Penguin Lake Project area.



### 7.5.1 Structure

The surface distribution pattern of rocks at Penguin Lake is a reflection of the complex interference pattern created by multiple phases of deformation that have affected the local and regional geology. The first phase(s) of deformation were likely related to the transpressional, New Quebec Orogeny, which produced generally northwest-trending, linear fold and thrust belts in areas of the Labrador Trough that were unaffected by the Grenville Orogeny.

Rocks in the southern Domain were affected by the Grenville Orogeny, which refolded and reoriented the linear fold belts. The intense metamorphism associated with the Grenville Orogeny has obliterated and masked most of the earlier structural discontinuities, such as thrusts and faults making structural interpretation of the current geometry somewhat speculative.

A simplified structural model of the iron formation at the Penguin Lake Project invokes flat-lying (recumbent) folds - the result of imbricate thrusting - deformed by at least 2 subsequent deformational events into a crude, bowl-shaped geometry (**Figure 7**). The southeast "rim" of the bowl is exposed just west of Penguin Lake, and revealed as an inverted "comma"- shaped magnetic response anomaly (**Figure 8**). This interpretation is borne-out by the results of the 2013 drilling campaign (**Figure 9a, 9b and 9c**).

A few late, brittle faults have been outlined by various mapping programs. They are later than the main folding events and are typically of high angle and small displacement, having little effect on the overall distribution of the local rock units.

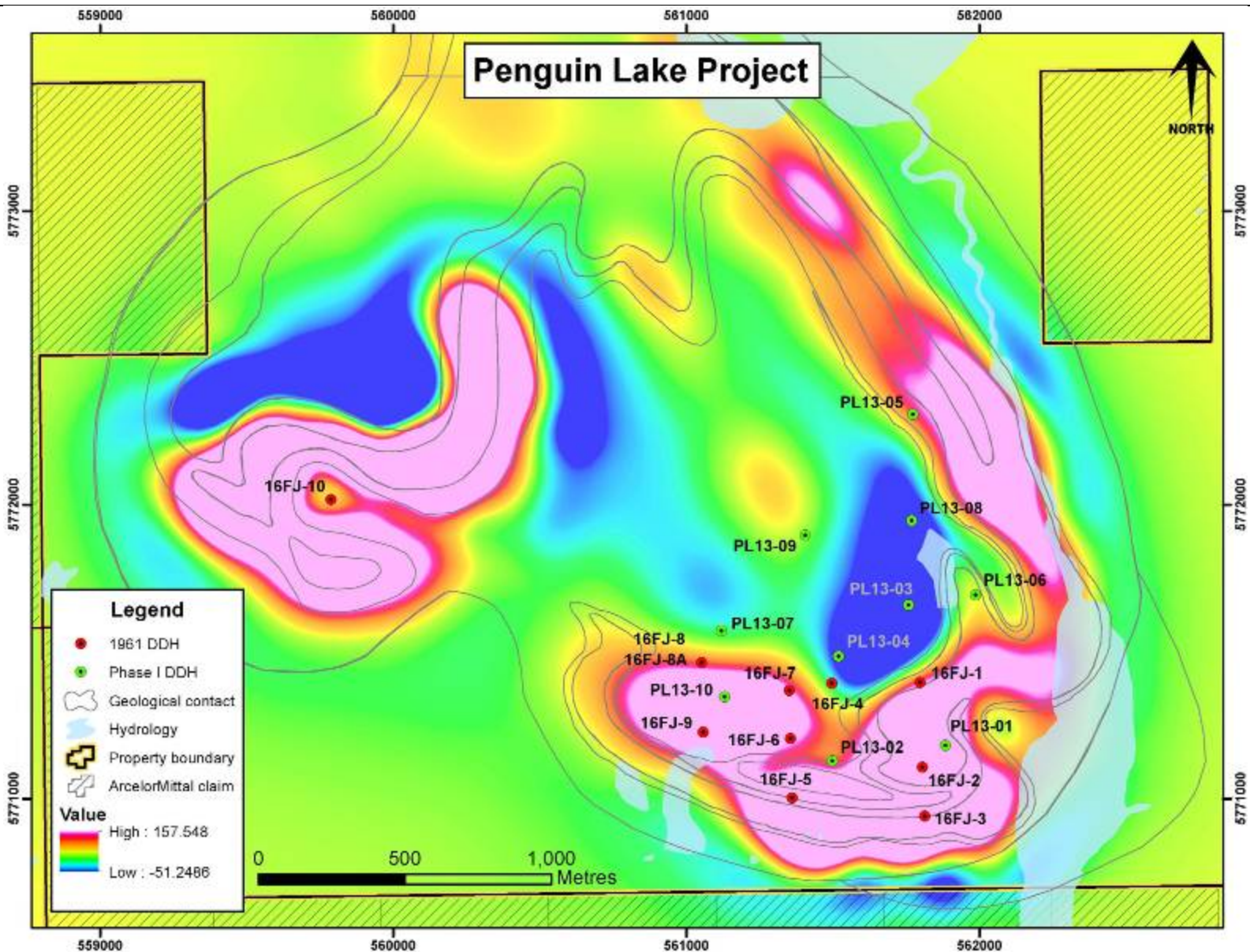


Figure 8: 1<sup>st</sup> derivative magnetic response: Penguin Lake Project

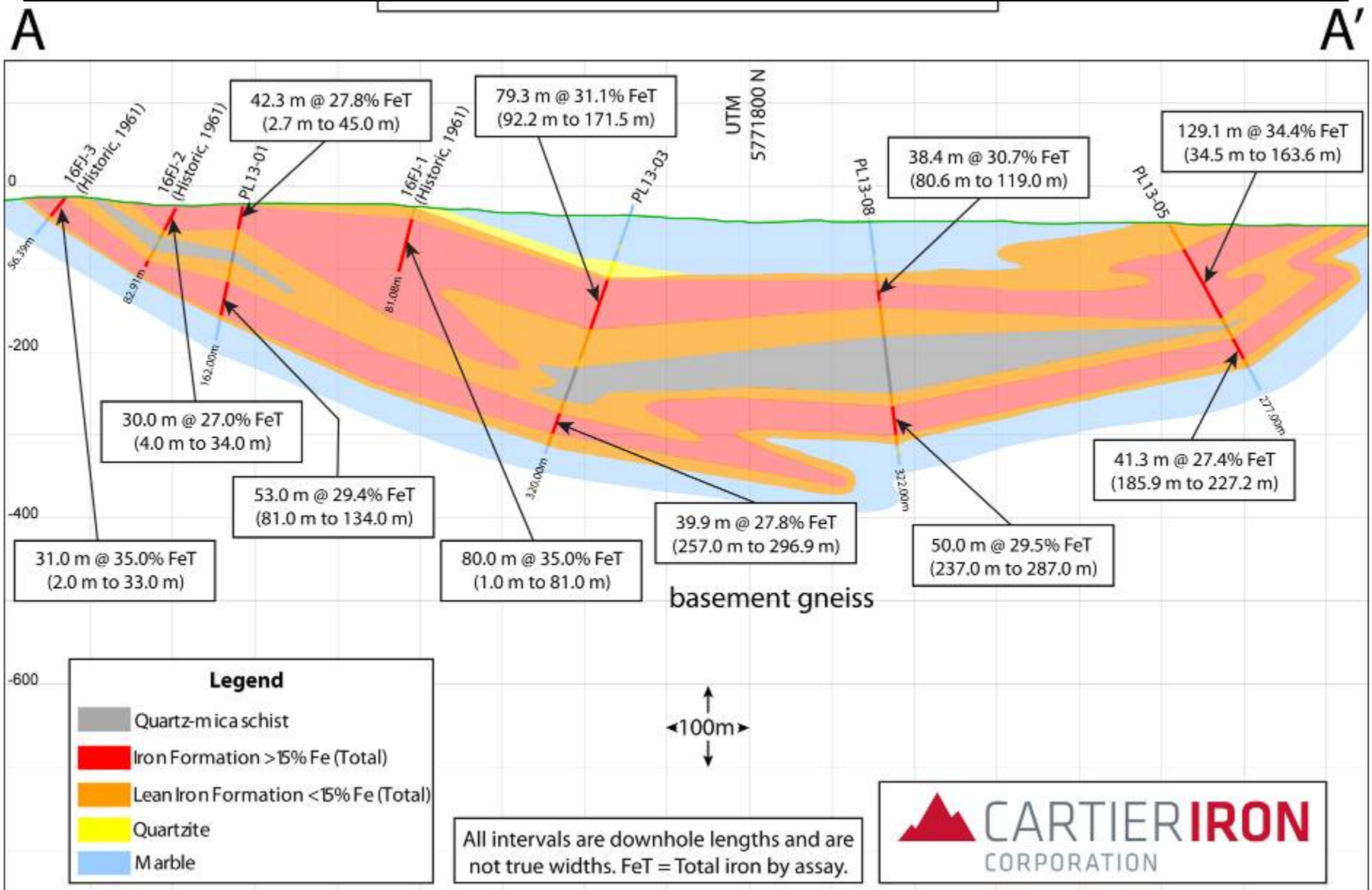


Figure 9a: Penguin Lake Project Section A-A' (see Figure 8).

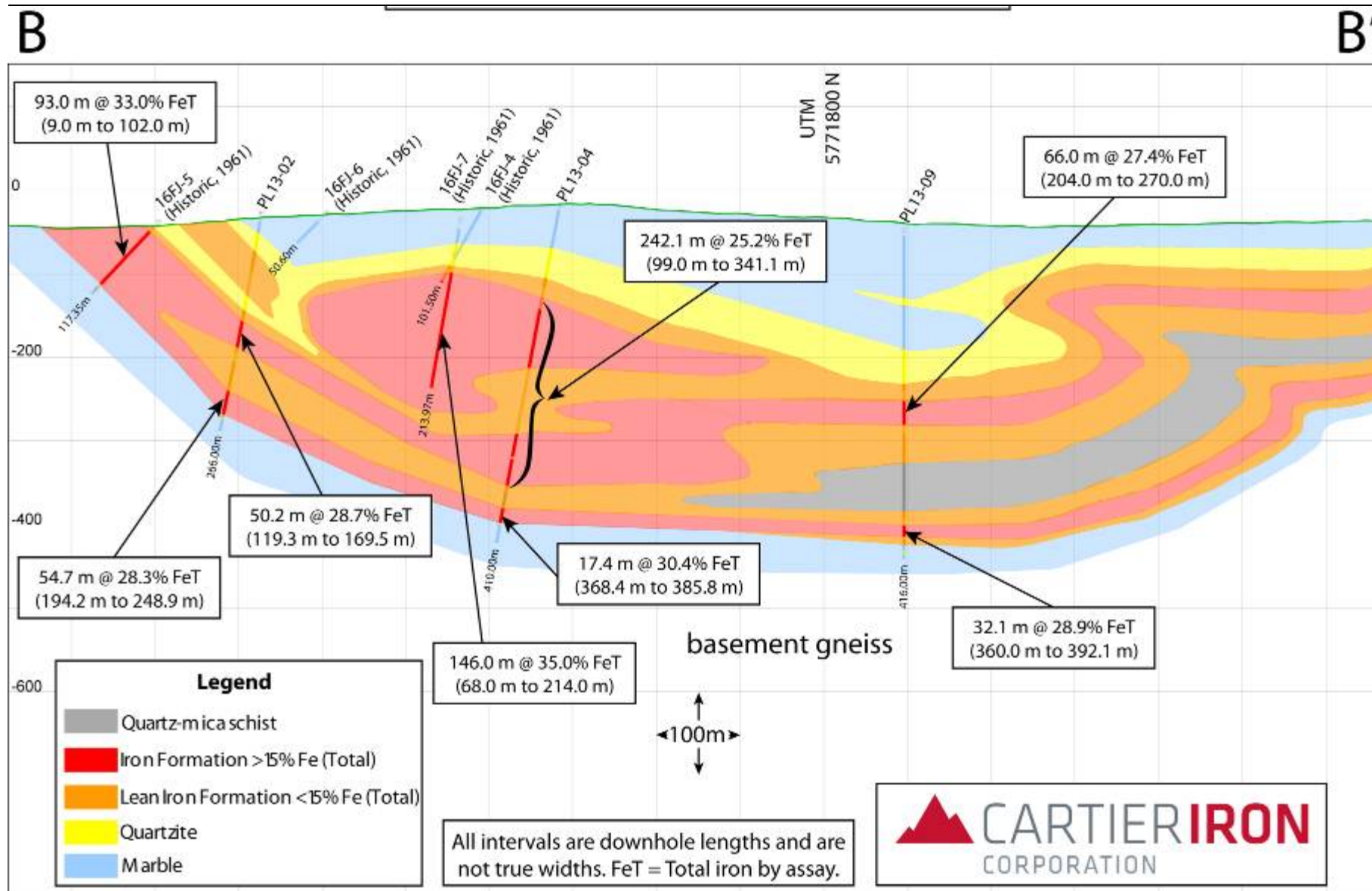


Figure 9b: Penguin Lake Project Section B-B' (see Figure 8).

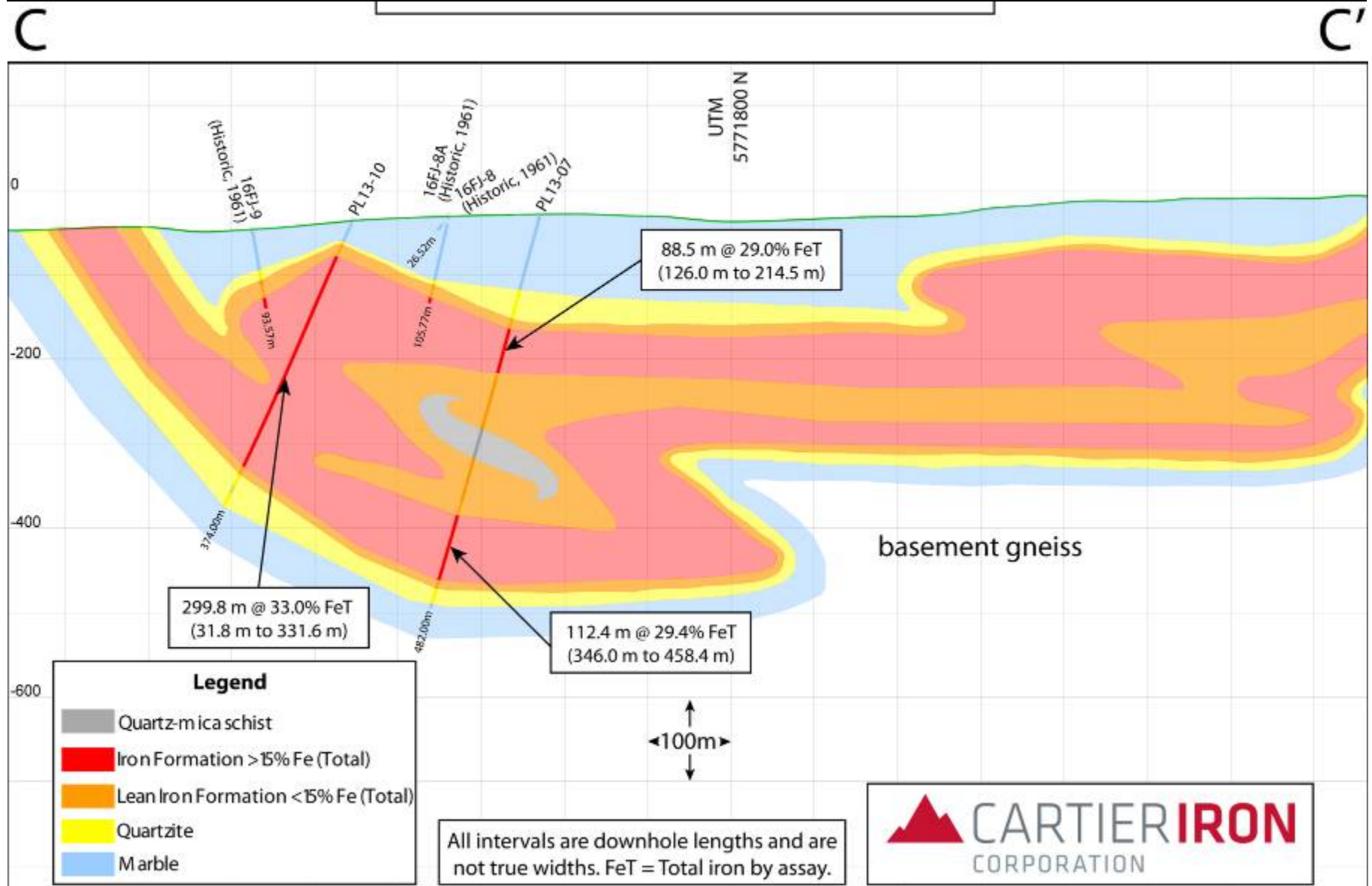


Figure 9c: Penguin Lake Project Section C-C' (see Figure 8).

## 7.6 Mineralization

Lake Superior-type iron formations form a major part of the succession of folded Proterozoic sedimentary and volcanic rocks that were deposited within an extensive basin, some interconnected, along the north-eastern and south-western craton margins of the Superior Province of the Canadian Shield. The Labrador-Québec fold belt, consisting of sedimentary and volcanic sequences and intrusions deposited in smaller interconnected sub-basins, is the largest continuous stratigraphic-tectonic unit that extends along the eastern margin of the Superior-Ungava craton.

The principal iron formation unit of the Labrador-Québec fold belt, the Sokoman Formation, extends for more than 1,000 km and includes those iron formations in the Gagnon Terrane that were subjected to deformation and regional metamorphism associated with the Grenville Orogeny (1.3 Ga to 1.0 Ga). The metamorphic grade ranges from greenschist facies near the Grenville Front to amphibolite-granulite facies farther south. As a result of deformation and metamorphism, the iron formation was structurally thickened in fold hinges and coarsely recrystallized to a quartz specular hematite with varying amounts of magnetite.

The Sokoman Formation occupies a stratigraphic position between shallow-water, high-energy sediments (Wishart) and deep-water, largely lower-energy sediments (Menihék). Stratigraphic relationships indicate that the Sokoman Formation is part of a transgressive sequence (Clark and Wares, 2006). The deposits consist of banded sedimentary units composed of bands of iron oxides within quartz (chert)-rich rock.

The principle iron deposits found in the FIOD can be grouped into two types: quartz specular hematite and quartz specular hematite-magnetite.

The iron in the UIF, MIF and LIF is for the most part in its oxide form, mainly as specular hematite ( $\text{Fe}_2\text{O}_3$ ) and specularite in its coarse-grained form and as magnetite ( $\text{Fe}_3\text{O}_4$ ). Some of the iron is contained in iron silicates such as amphibole (grunerite,  $\text{Fe}_7\text{Si}_8\text{O}_{22}(\text{OH})_2$  and actinote,  $\text{Ca}_2(\text{Mg}, \text{Fe})_5\text{Si}_8\text{O}_{22}(\text{OH})_2$ ) and in carbonate such as ankerite ( $\text{Ca}[\text{Fe}, \text{Mg}, \text{Mn}][\text{CO}_3]_2$ ). The main gangue mineral in the iron formation deposits is quartz that constitutes approximately 50% of the formation.

The Sokoman Formation is classified as a Lake Superior-type iron formation (Clark and Wares, 2006). This type is composed mainly of magnetite and hematite and is commonly associated with mature sedimentary rocks. Generally little metamorphosed and altered, the Sokoman can be termed 'taconite'; however, in the Grenville Province where the FIOD is situated; the iron formation is more strongly metamorphosed and recrystallized.

The increased grain size of the FIOD formations makes mining and beneficiation easier; however, the additional episode(s) of folding have complicated the structural pattern in the FIOD.

Several models to explain the origin of the Sokoman Formation are presented in Clark and Wares (2006) and include an oxidizing shallow-marine paleo-environment for iron deposition (e.g., Dimroth, 1975); a volcanic-hydrothermal source (e.g., Gross 1996); and a sea rich in reduced iron that was used up during the accumulation of the sediments (e.g., Kirkham and Roscoe, 1993).

## 8.0 DEPOSIT TYPES

Iron formations are classified as chemical sedimentary rock containing greater than 15% iron consisting of iron-rich beds usually interlayered on a centimetre scale with chert, quartz, or carbonate. Ore is mainly composed of magnetite and hematite and commonly associated with mature sedimentary rocks.

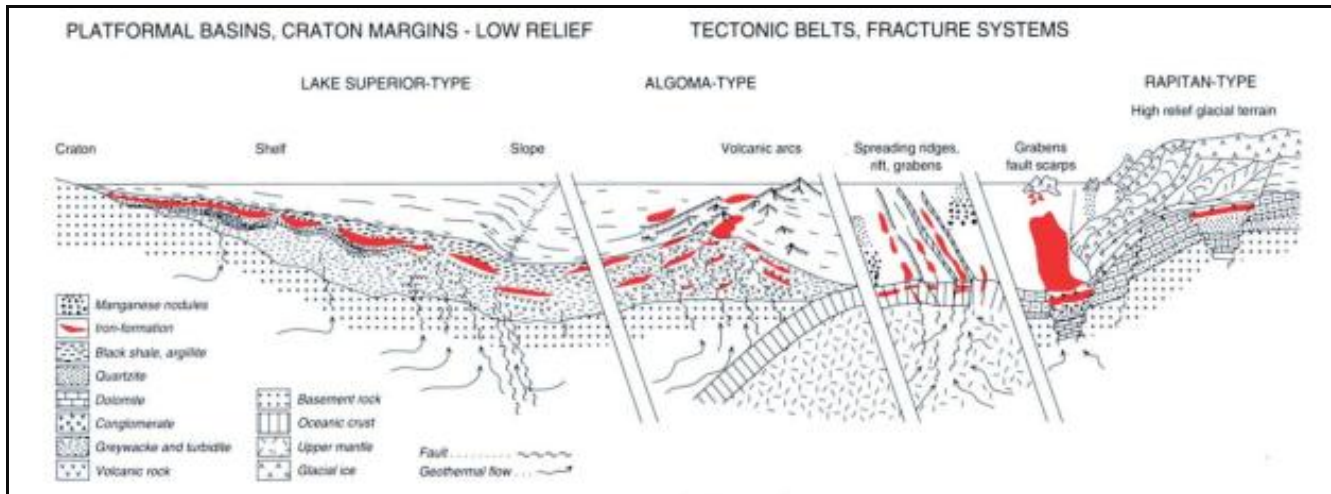
Stratiform iron formations are distributed throughout the world in the major tectonic belts of the Precambrian shields and in many Paleozoic and Mesozoic fold belts as well as parts of the present day ocean floor. Gross (2009) noted that the enormous size of some of the Archean and Paleoproterozoic iron formations reflect the unique global tectonic features and prevailing depositional environments of the time.

Although various models have been used to explain the deposition of iron formations in the past, current thinking (summarized in Cannon, 1992, Gross, 1996, Gross, 2009) supports the idea of iron formation deposition resulting from the syngenetic precipitation of iron-rich minerals in a marine setting due to hydrothermal exhalative activity on the ocean floor. The iron is thought to have formed in stable tectonic-sedimentary environments where silica, iron, ferrous and non-ferrous metals were available in abundance, mainly from hydrothermal sources, and where conditions were favourable for their rapid deposition with minimal clastic sediment input.

Hydrothermal processes related to volcanism and major tectonic features are thought to be the principal source of iron and other metals. Deep fractures and crustal dislocations over hot spots and high thermal gradients penetrating the upper mantle enabled convective circulation that in turn led to alteration and leaching of metals from the upper crust, including possible contributions by magmatic fluids. Deposition of the iron was influenced by the pH and Eh of the ambient water and biogenic anaerobic processes may have also played a role (Gross, 1996, Gross, 2009). Iron formations are important hosts of enriched iron and manganese ore and gold deposits, and are often marker horizons for massive-sulphide deposits.

Post depositional events such as weathering, groundwater circulation and hydrothermal circulation can modify the deposits, and the mineralogy is usually recrystallized and coarsened by medium- to high-grade regional metamorphism. Protracted supergene alteration can be an important economic factor in upgrading the primary iron formation (Gross, 1996).

Iron formations can be classified into three types, related to the major tectonic environments in which they were formed: Lake Superior-type, Algoma-type and Rapitan-type. The Lake Superior-type was deposited on continental shelf and marginal basins adjacent to deep seated fault, and in fracture systems and subduction zones along craton borders. Development of Lake Superior-types was related to global tectonic systems that caused the breakup of cratons, shields or plates in the Paleoproterozoic. Algoma-type iron formations formed along volcanic arcs and rift systems, and other major disruptions of the earth's crust (*Error! Reference source not found.*). Rapitan-type iron formation have distinctive lithological features being associated with diamictite, and were deposited in grabens and fault scarp basins along rifted margins of continents or ancient cratons in sequences of Late Proterozoic and Early Paleozoic rocks.



**Figure 10: Tectonic environments of iron formation deposits (Gross, 1996)**

The Labrador Trough iron deposits, including the Penguin Lake deposit, are classified as Lake Superior-type, which are the principal sources of iron throughout the world.

### **Lake Superior-Type Iron Formations**

Extensive Lake Superior-type iron formations occur on all continents, as part of relatively stable sedimentary-tectonic systems that developed along the margins of cratons or epicontinental platforms. Most of the thicker iron formations were deposited in shallow basins on continental shelves and platforms in neritic environments, interbedded with mature sedimentary deposits (Gross, 2009).

The following are definitive characteristics of ore deposits of the Lake Superior-type iron formations (Gross, 1996):

- Iron content is 30% or greater;
- Discrete units of oxide lithofacies iron formation are clearly segregated from silicate, carbonate or sulphide facies and other barren rock;
- Iron is uniformly distributed in discrete grains or grain-clusters of hematite, magnetite and goethite in a cherty or granular quartz matrix;
- Iron formations, repeated by folding and faulting, provide thick sections amenable to mining, and;
- Metamorphic enlargement of grain size has improved the quality of the ore for concentration and processing.

Iron formation deposition occurred contemporaneously with volcanism in linear tectonic belts along the continental margins. Most of the sedimentary-tectonic belts in which they were deposited were characterized by extensive volcanic activity that coincided with deepening of the linear basins or trough in the offshore areas, and by extrusion and intrusion of mafic and ultramafic rocks throughout the shelf and marginal rift belts after the main periods of iron formation deposition (Gross, 2009).



## 9.0 EXPLORATION

There has been no recent exploration activities conducted on the Penguin Project other than two airborne geophysical surveys (magnetic response and gravimetric) completed by Champion Iron Mines in 2008 and 2011.

The results from the airborne surveys (**GM63919** and **GM65900**) outlined strong, coincident magnetic and gravimetric signatures, interpreted as iron formation, in the area of the Penguin Project (*Figure 11* and *Figure 12*).

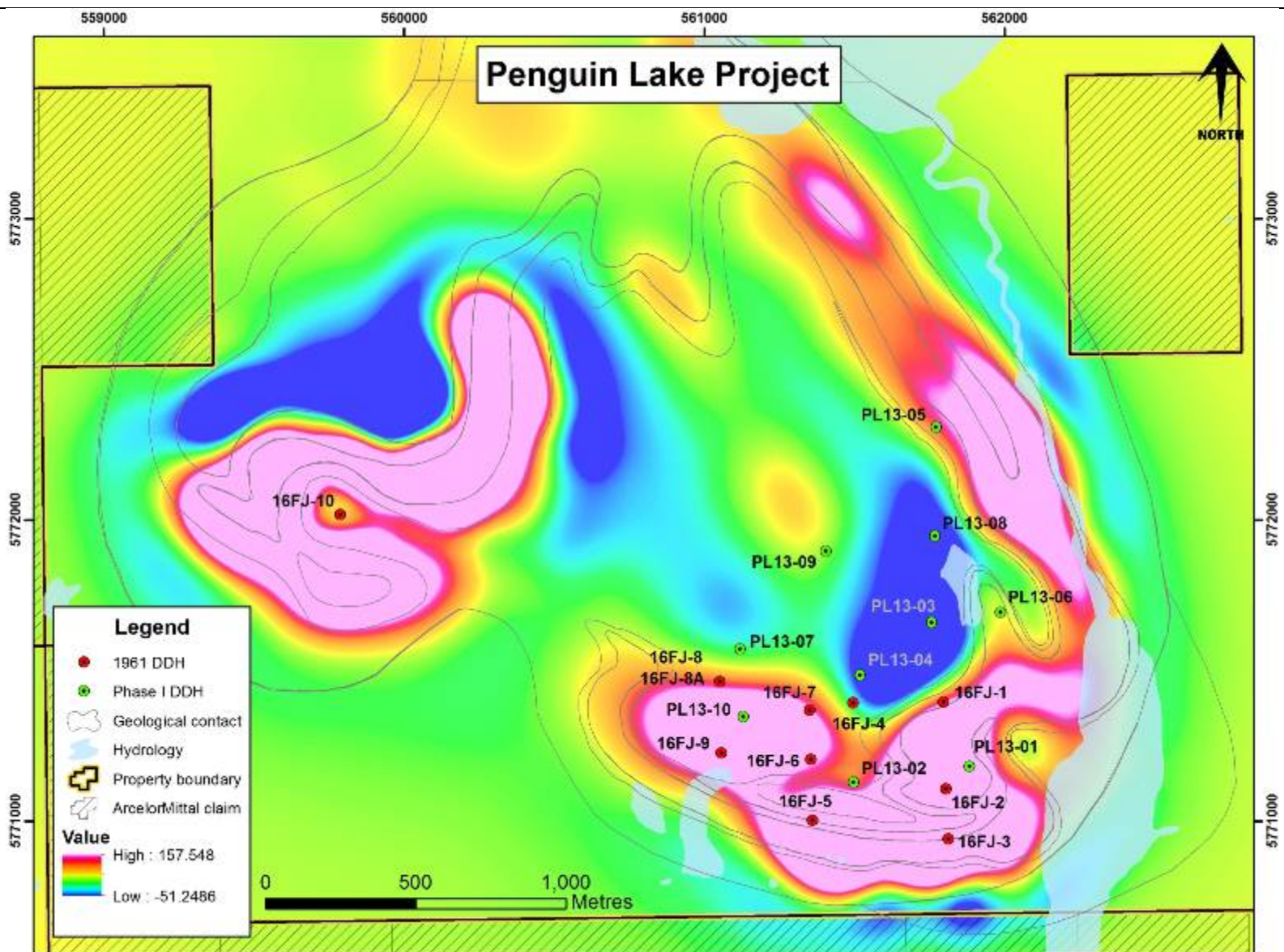


Figure 11: Penguin Lake Project area showing historic (16FJ-series) and Cartier Iron (PL13-series) drill-hole locations, underlain by 1<sup>st</sup> derivative magnetic-response anomalies.

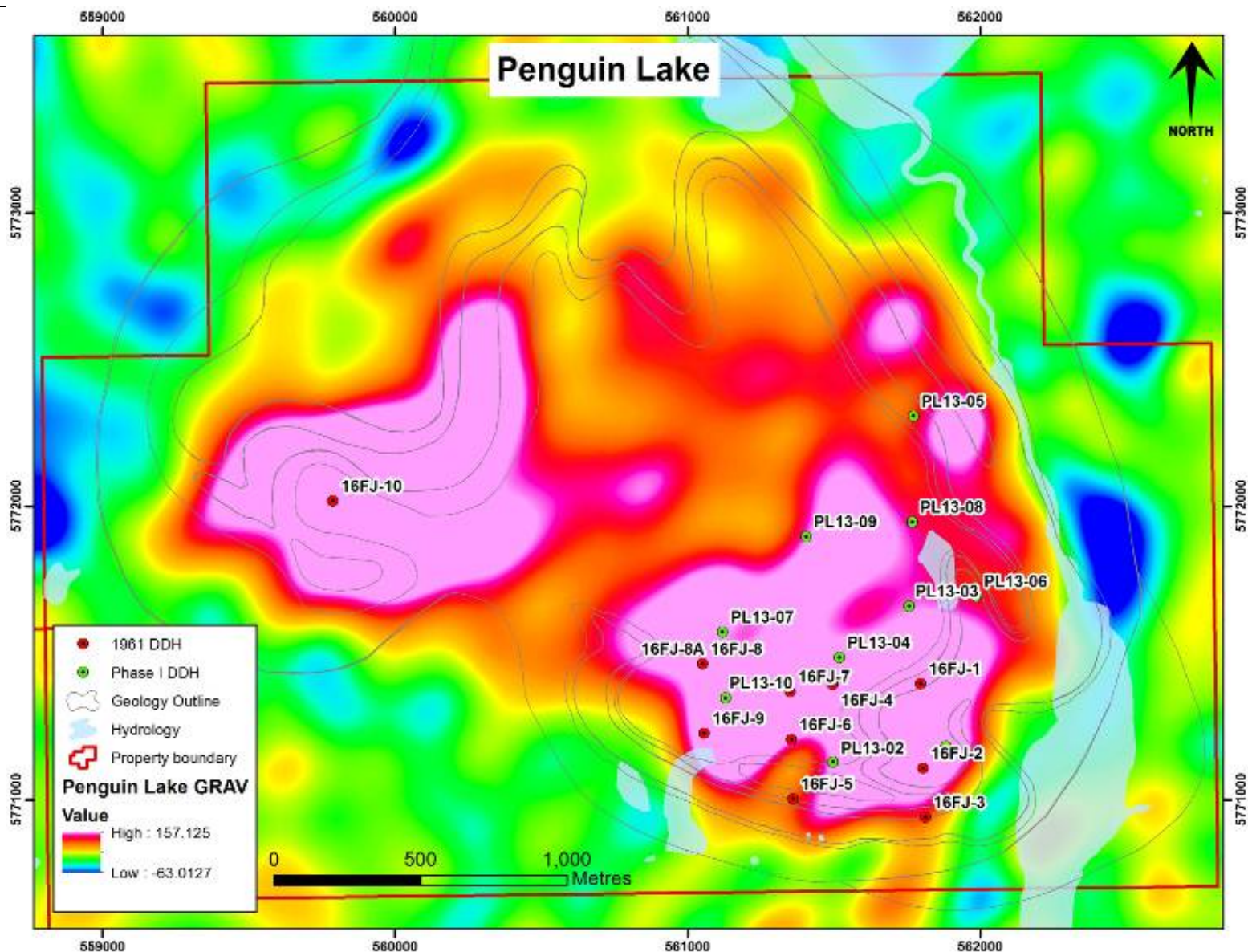


Figure 12: Penguin Lake Project area showing historic (16FJ-series) and Cartier Iron (PL13-series) drill-hole locations, underlain by 1<sup>st</sup> derivative gravimetric-response anomalies.

## 10.0 DRILLING

Cartier Iron's diamond-drill program, was the first ground exploration programme completed on the Penguin Lake Project area since 1961. Magnetic inversion techniques were used to determine the geometry of the iron formation source in order to determine drill targets.

Logan Drilling Limited of Stewiacke, Nova Scotia were commissioned to carry out the diamond drilling to test several magnetic anomalies within the project area. Ground-supported drilling commenced on January 16<sup>th</sup>, 2013 and was completed on February 23<sup>rd</sup>, 2013 with two, skid-mounted "Ground Duralite 1000" drills carrying out the campaign.

Ten (10), NQ-diameter diamond-drill holes (PL13-01 to PL13-10), totalling 3,315 metres were completed at the Project. The objective of the programme was to intersect magnetite/ hematite-rich iron formation, coincident with strong magnetic-response anomalies in the area of the catalogued "Lac Pingouin Zone 1" iron occurrence (see <http://sigeom.mrnf.gouv.qc.ca/> Cogite # 23C/01-0004). The Lac Penguin occurrence has an historic mineral resource\* of 46.7 Million tonnes grading 30% FeT, estimated from the results of nine historic diamond-drill holes.

*\*The historical Mineral Resource estimate was not calculated in accordance with National Instrument 43-101 Mineral Resources and Mineral Reserves standards, and should therefore not be relied upon. A Qualified Person has not done sufficient work to upgrade or classify these Historical Mineral Resources as current NI 43-101 compliant Mineral resources.*

The Phase I drilling campaign intersected a total of **1600 metres of iron formation** with an **average grade of 29.5% FeT**. A list of composite assay results from the drill programme is shown in **Table 6**. Selected "best" intervals include: **242 m grading 25.2% FeT** from hole PL13-04; **129 m grading 34.4% FeT** in hole PL13-05; **112 m of 29.4% FeT** encountered in hole PL13-07, and; **300 m grading 33% FeT** in hole PL13-10.

Hole locations were initially determined using a hand held GPS unit (a Garmin Rino530HCx) having an accuracy of +/- 5 m. Azimuths for the holes were established using the Reflex Northfinder Azimuth Pointing System (APS) to the strongly magnetic rocks in the area. The hole location was also checked with the APS with an accuracy of +/- 2.5 m. A Reflex Maxibor (non-magnetic) tool was used on the drill rig for down-hole orientation surveys. The absolute drill hole collar locations were determined using a Trimble ProXH receiver with a Zephyr antenna, providing a precision of 20-40 cm.

The surface location of the diamond-drill holes is shown in **Figure 13** and drill-hole particulars are shown in **Table 6**. A summary of selected best intervals from the programme is presented in **Table 7**.

**Table 6: Summary of 2013 Drill-holes: Penguin Lake Project**

Hole #	Easting	Northing	Final Length (m)	Azimuth ° (True)	Dip °
PL13-01	561883	5771180	162.00	180	-78.4
PL13-02	561497	5771128	266.00	180	-81.6
PL13-03	561757	5771659	320.00	160	-69.4
PL13-04	561518	5771484	410.00	180	-79.3
PL13-05	561771	5772308	277.00	055	-44.0
PL13-06	561985	5771693	286.00	110	-49.0
PL13-07	561119	5771570	482.00	180	-75.0
PL13-08	561768	5771946	322.00	075	-64.3
PL13-09	561404	5771896	416.00	090	-74.7
PL13-10	561129	5771346	374.00	180	-65.0
		<b>Total Metres:</b>	<b>3,315.00</b>		

**Table 7: Summary of Selected Intersections\*: 2013 Drilling Programme**

Hole #	Hole Length (m)	Azimuth ° (True)	Dip °	From (m)	To (m)	Interval (m)	Total Fe (%)	Composite Interval
PL13-01	162.0	180	-78	2.7	45.0	42.3	27.8	42.3 m @ 27.8% FeT
				81.0	134.0	53.0	29.4	53.0 m @ 29.4% FeT
PL13-02	266.0	180	-82	119.3	169.5	50.2	28.7	50.2 m @ 28.7% FeT
				194.2	248.9	54.7	28.3	54.7 m @ 28.3% FeT
PL13-03	320.0	160	-69	92.2	171.5	79.3	31.1	79.3 M @ 31.1% FeT
				257.0	296.9	39.9	27.8	39.9 m @ 27.8% FeT
PL13-04	410.0	180	-79	99.0	341.1	242.1	25.2	242.1 m @ 25.2% FeT
				368.4	385.8	17.4	30.4	17.4 m @ 30.4% FeT
PL13-05	277.0	55	-44	34.5	163.6	129.1	34.4	129.1 m @ 34.4% FeT
				185.9	227.2	41.3	27.4	41.3 m @ 27.4% FeT
PL13-06	286.0	110	-49	3.9	66.9	63.0	26.9	63.0 m @ 26.9% FeT
				106.0	150.0	44.0	26.3	44.0 m @ 26.3% FeT
				202.0	256.4	54.4	30.5	54.4 m @ 30.5% FeT
PL13-07	482.0	180	-75	126.0	214.5	88.5	29.0	88.5 m @ 29.0% FeT
				346.0	458.4	112.4	29.4	112.4 m @ 29.4% FeT
PL13-08	322.0	75	-64	80.6	119.0	38.4	30.7	38.4 m @ 30.7% FeT
				237.0	287.0	50.0	29.5	50.0 m @ 29.5% FeT
PL13-09	416.0	90	-75	204.0	270.0	66.0	27.4	66.0 m @ 27.4% FeT
				360.0	392.1	32.1	28.9	32.1 m @ 28.9% FeT
PL13-10	374.0	180	-65	31.8	331.6	299.8	33.0	299.8 m @ 33.0% FeT
							<b>Overall:</b>	<b>1600 m @ 29.5% FeT</b>

\*The described intersections refer to core-length intervals and do not represent true widths of the mineralized zones.

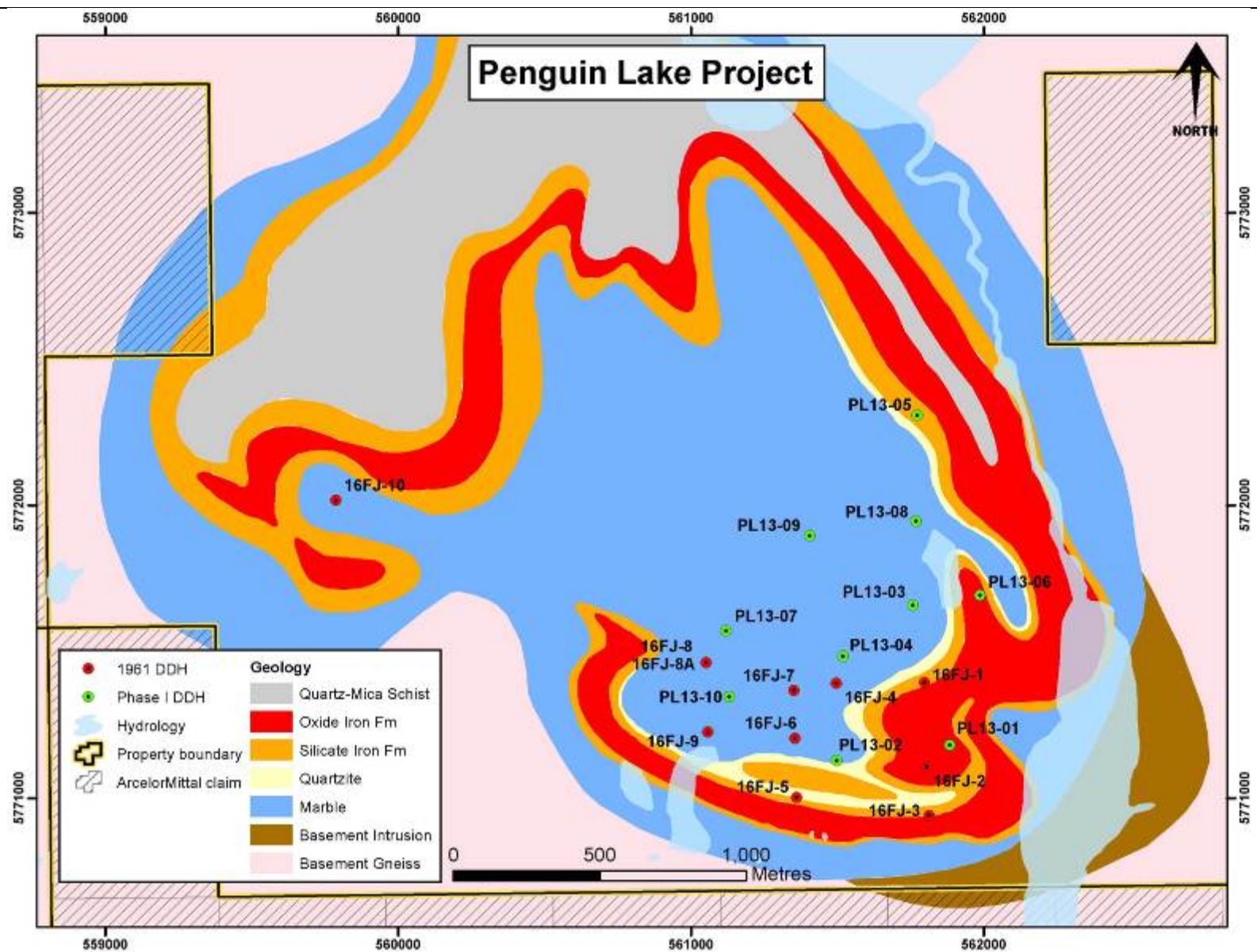


Figure 13: Simplified geology map of the Penguin Lake Project area showing historic and 2013 diamond-drill holes.

## 11.0 SAMPLE PREPARATION, ANALYSES AND SECURITY

All drill core logging and sample preparation was conducted by qualified personnel, as required by NI 43-101 standards, at Cartier Iron's field facilities located near Highway #389 at kilometre marker 495.

The HQ and NQ-sized drill core was split in half and one-half of the drill core was kept in the core tray for reference purposes and the other half core was individually bagged, tagged, sealed and packed in large nylon rice bags, which were securely closed with zip-ties and placed in 45 gallon drums for transport. Samples were picked up on site by Transport Segro, as arranged by Sanmac Shipping, and then shipped to ALS Laboratories' ("ALS") Minerals facility in Sudbury, Ontario for sample preparation. For quality assurance/quality control (QA/QC) purposes, analytical "blanks" and certified reference material (CRM) "standards" were included at regular intervals in the submitted sample sequence by Cartier Iron as part of their QA/QC procedure.

Sample preparation at ALS included the following procedures and operations:

- Log sample into tracking system;
- Record mass of sample material received;
- Pulverize the sample to a particle size finer than 90% at minus 200 mesh. (excess material is stored for the client as a coarse reject).

The pulverized pulp samples were sent to their analytical laboratory in Vancouver, BC for analysis.

The split-core samples were analysed for Fe (iron) and multi-element content including CaO (calcium oxide), MgO (magnesium oxide), MnO (manganese oxide), P<sub>2</sub>O<sub>5</sub> (phosphorus oxide) and other oxides such as Al<sub>2</sub>O<sub>3</sub> (aluminum oxide). Iron content as well as other elements' content (%) was determined by X-ray fluorescence (XRF). For quality control purposes blank, duplicate and analytical control standards were inserted into the sample sequence by ALS as part of an internal QA/QC check.

ALS is an internationally recognized minerals testing laboratory operating in 16 countries and has an ISO 9001:2000 certification. Several of its laboratories have also been accredited to ISO 17025 standards for specific laboratory procedures by the Standards Council of Canada (SCC). ALS routinely performs assaying for junior mining companies.

It is the authors' opinion that the sample preparation, analyses and security procedures employed by Cartier Iron conform to the accepted industry standards.

## 12.0 DATA VERIFICATION

### 12.1 Site Visit

Mr. Abderrazak Ladidi, who is independent of Cartier Iron, and who is a Qualified Person (QP) under the terms of NI 43-101, conducted a site visit of the Penguin Lake Project on June 25<sup>th</sup>, 2013, accompanied by John Langton, a representative of Cartier Iron Corp. The on-site property visit, facilitated by all-terrain vehicle, explored the general landscape and surface features of the Property. A number of drill-sites (inactive) and outcrops were visited. It was noted that all visited drill collars were correctly labelled and reflected the azimuth and dip recorded in the logs.

During his visit to the area, Mr. Abderrazak also reviewed the historic drill core stored at the Cartier Iron logging and storage facility in Wabush, Newfoundland, and noted that the core on hand was securely stored and in very good condition. Core trays were well labelled, and observation suggested that the core cutting/splitting was well done. Sample tags were noted as being in place, and the tags and sampled sections corresponded to those indicated in the core logs. Twelve mineralized intervals were collected from eight diamond-drill holes by taking a quarter split of the half core remaining. These samples were subsequently independently assayed to validate Cartier Iron's reported results. An effort was made to sample a range of grades. At no time were any employees of Cartier Iron advised as to the identification of the samples to be chosen during the visit.

Ms. Chrystal Kennedy (P.Geo.), a QP as defined in NI 43-101, managed the 2013 drilling programme for Cartier Iron and visited the Penguin Lake Project site numerous times.

### 12.2 Independent Sampling

In order to authenticate Cartier Iron's assay results and allow for a 43-101 compliant resource estimate to be undertaken, Mr. Ladidi selected a series of core intervals from the 2013 Penguin Lake Project drill-holes to be re-sampled for analysis. The work was carried out on June 24<sup>th</sup> under the direct supervision of Mr. Ladidi. A total of twelve (12) samples were obtained from eight (8) separate drill-holes (**Table 8**).

**Table 8: Historic DDH Intervals Selected for Re-assay**

Original sample (Cartier Iron)	Sample (MRB)	Hole	From (m)	To (m)	Interval (m)
958557	A00066401	PL13-01	18.00	21.10	3.10
957554	A00066402	PL13-02	55.00	59.00	4.00
957598	A00066403	PL13-02	182.22	186.25	4.03
958621	A00066404	PL13-03	146.38	150.50	4.12
958636	A00066405	PL13-03	191.50	194.50	3.00
957654	A00066406	PL13-04	177.75	181.60	3.85
957701	A00066407	PL13-04	325.25	329.25	4.00
957706	A00066408	PL13-04	341.08	344.30	3.22
958696	A00066409	PL13-05	106.50	110.50	4.00
957746	A00066410	PL13-07	195.55	198.55	3.00
958851	A00066411	PL13-08	147.00	151.00	4.00
957854	A00066412	PL13-10	134.10	137.71	3.61



To collect the samples, the half-core that remained from previously assayed core-intervals was again halved, leaving a quarter-core interval for reference purposes. The quarter-core samples were individually bagged, tagged, sealed and packed in large nylon bags, which were securely closed and subsequently delivered by MRB & Associates personnel to Hodge Brothers Transport in Wabush (NL), who delivered them to ALS in Val d'Or, Quebec for sample preparation and assay.

The samples collected were analyzed using multi-element techniques corresponding to those utilized for the original (Cartier Iron) samples. A comparison of the MRB independent sample verification results versus the original assay results are summarized in **Table 9** and **Figure 14**.

**Table 9: Comparison of Original and Re-assay Results**

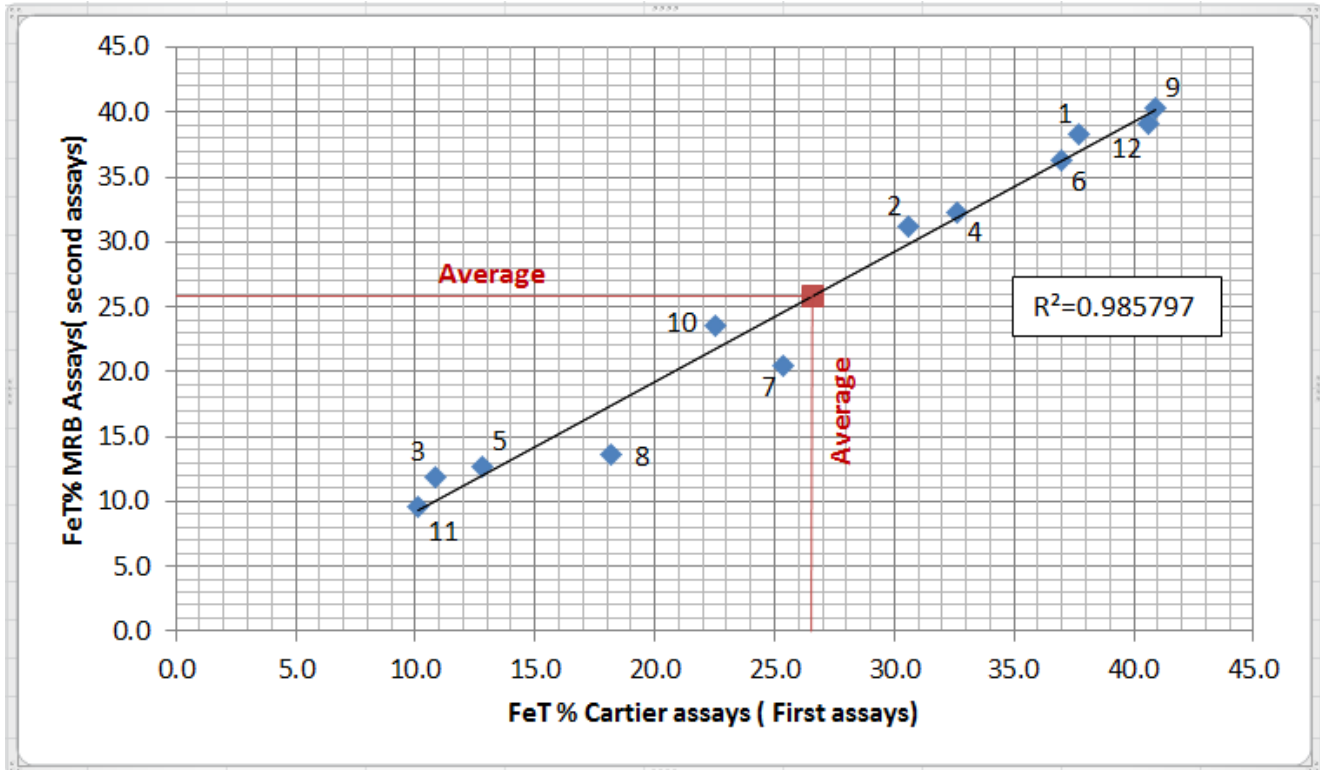
Sample Pair	Sample (MRB)	FeT% (MRB assay)	Sample (Cartier)	FeT% (Cartier assay)	% Change
1	A00066401	37.7	958557	38.3	-0.6
2	A00066402	30.6	957554	31.2	-0.6
3	A00066403	10.9	957598	11.9	-0.9
4	A00066404	32.6	958621	32.2	0.4
5	A00066405	12.8	958636	12.7	0.1
6	A00066406	37.0	957654	36.3	0.7
7	A00066407	25.4	957701	20.5	4.9
8	A00066408	18.2	957706	13.6	4.7
9	A00066409	40.9	958696	40.3	0.6
10	A00066410	22.5	957746	23.6	-1.1
11	A00066411	10.2	958851	9.6	0.6
12	A00066412	40.6	957854	39.1	1.5
<b>Averages:</b>		<b>26.6</b>		<b>25.8</b>	<b>0.8</b>

### 12.3 Quality Assurance and Quality Control (QA/QC)

Certified Reference Materials (CRM) and blanks were inserted into the sample stream approximately every 25 samples, for QA/QC purposes. In addition, field duplicates consisting of ¼ core were collected every 25 samples, and coarse reject and pulp duplicates were prepared at the lab from every 25<sup>th</sup> sample. Blanks were placed after high-grade core samples and field duplicates were selected with a bias towards mineralized core material, rather than barren rock. There are a total of 20 QA/QC samples in every 100 core samples. Three different CRM's, GBAP-8, OREAS 44P and SCH-1, were used for the Penguin Lake Project drill programme.

The OREAS standard was developed by Ore Research & Exploration Pty Ltd., Australia, and were purchased through a Canadian Supplier. It is a composite standard produced from a range of oxidized materials including Blackwood greywacke (central Victoria), Bulong laterite (Yilgarn, Western Australia), Iron Monarch hematite ore (Whyalla, South Australia) Hilton North gossan and Mount Oxide ferruginous mudstone (Mount Isa region, Queensland). The dominant constituent was obtained from the flank of a mineralised shear zone within Ordovician flysch sediments in the

Blackwood area of central Victoria. The sedimentary succession hosting the shear zone consists predominantly of medium-grained greywackes together with subordinate interbedded siltstone and slate. Hydrothermal alteration in the vicinity of the mineralisation is indicated by the development of phyllite. The shear zone is manifested by foliated sericitic and chloritic fault gouge and goethitic quartz veins.



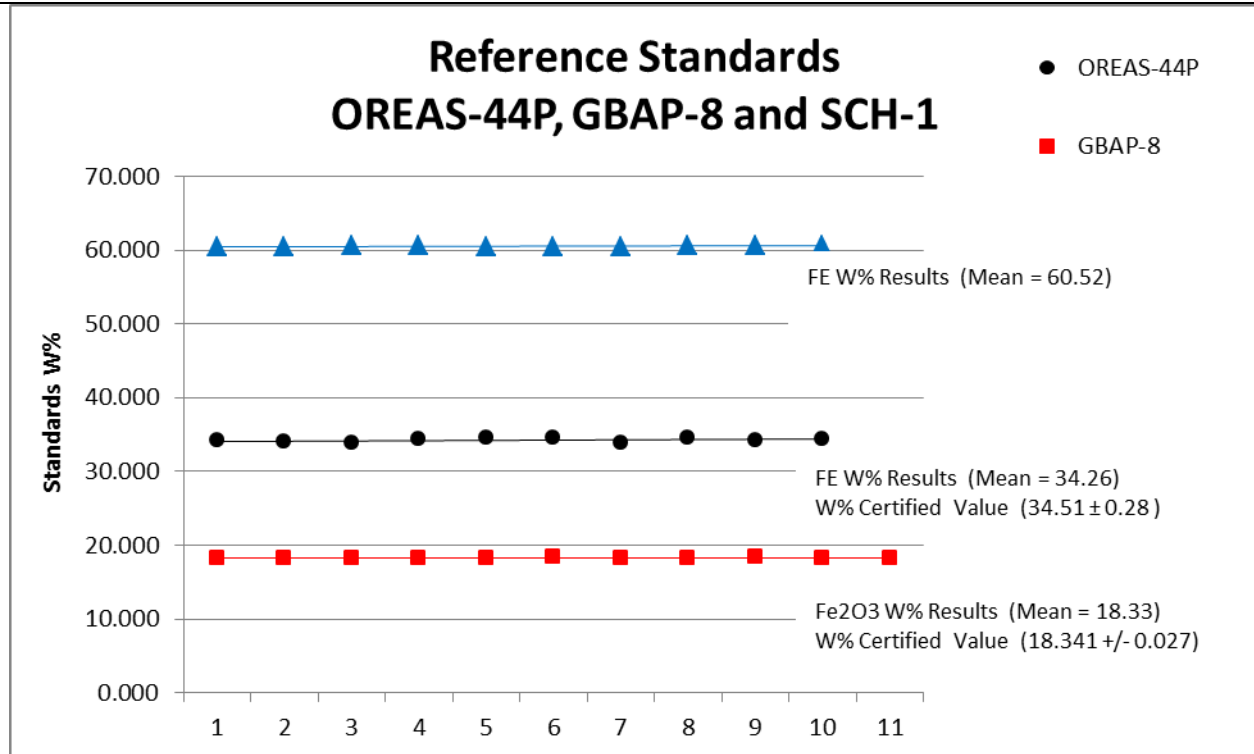
**Figure 14: Plot of sample pairs. Correlation coefficient ( $R^2$ ) = 0.985  
Average difference of assay values = 0.8%**

The GBAP-8 standard is a certified Bauxite Reference material purchased from Geostats Pty Ltd., (mining industry consultants) and certified reference material manufacture from Western Australia. It was sourced from Pulp Bauxite and was certified on 22/12/2010. This reference material was tested at 5 laboratories by XRF analyses and is tested regularly to ensure stability and homogeneity.

The SCH-1 CRM was purchased from CANMET in Ottawa. The material for reference ore SCH-1 was donated to the C.C.R.M.P. by the Iron Ore Company of Canada in 1973. The ore is from the Schefferville, Quebec, area and is composed of hematite with a mixture of unidentified hydrous oxides of iron, minor magnetite and trace pyrolusite. The gangue consists mainly of quartz with minor amounts of feldspar and traces of biotite, chlorite and amphibole.

### 12.3.1 Performance of Certified Reference Materials (CRF)

There were ten data points for the Oreas 44P CRM. The Oreas 44P data passed the warning limits and generally showed good precision, with little scatter. The SCH-1 CRF had ten data points, as well, and also showed good precision with little scatter. The same held true for the eleven data points for the GBAP-8 CRM (**Figure 15**). The authors considers that the standards demonstrate reasonable accuracy. There is no impact to the resource estimate.



**Figure 15: Performance of Certified Reference Material samples**

### 12.3.2 Performance of Blanks

The blank material was obtained from a barren marble near North Gull Lake (Lac Gull Nord) adjacent to Highway #389, near kilometre marker 485. A blank sample was inserted, where practical, every 25<sup>th</sup> sample into the stream of core samples. There were 30 blank samples analyzed. The average of the blanks was 0.37% FeT, with a standard deviation of 0.01 (**Figure 16**).

The author considers that the results of the blank values demonstrate that contamination was not an issue.

### 12.3.3 Performance of Duplicates

Three types of duplicates were produced; field (1/4 core), coarse reject and pulp. 30 field pairs, 30 coarse reject pairs and 28 pulp duplicate pairs were analyzed.

All three duplicate types were scatter graphed (**Figure 17**, **Figure 18** and **Figure 19**) and all were found to have excellent precision at all levels, except for one outlier in the field duplicates. This sample, 957740 returned an assay value of 32.1% FeT and the field duplicate returned a value of 32.0% FeT. This can be explained because there could be slight variations in mineralization between the two pieces of 1/4 core from the same interval. Re-assaying is not recommended.

The authors consider the data to be of good quality and satisfactory for use in the resource estimate.

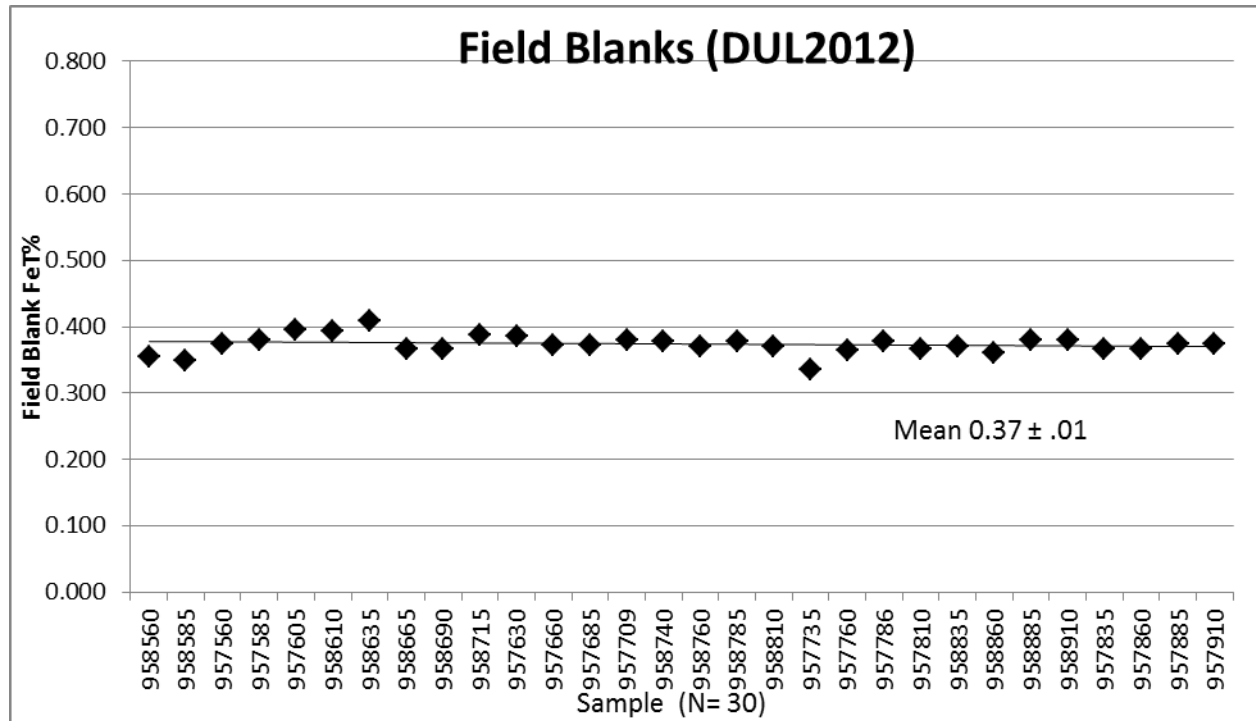


Figure 16: Performance of field blanks

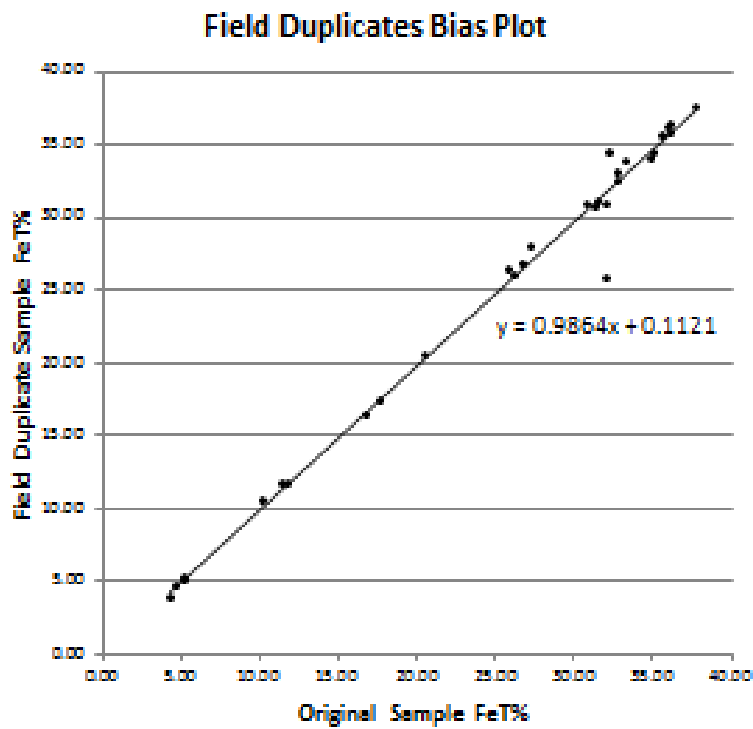
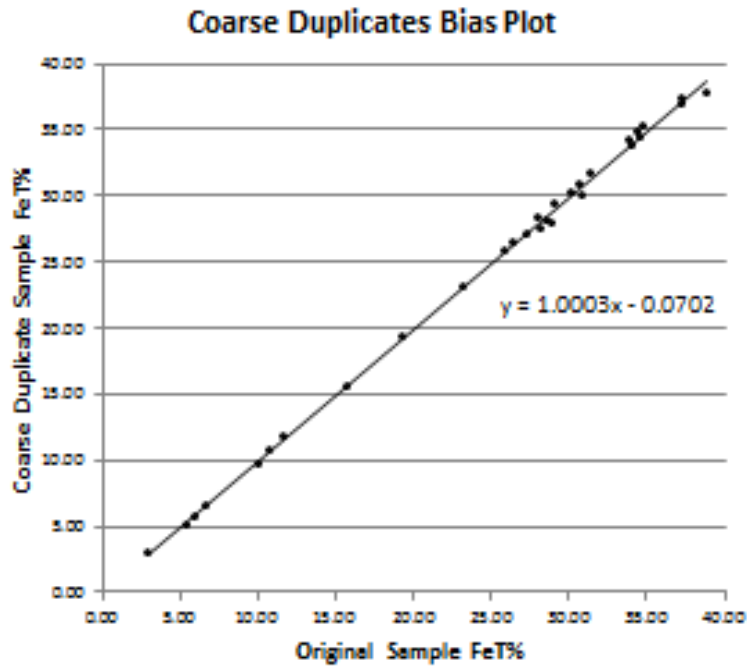
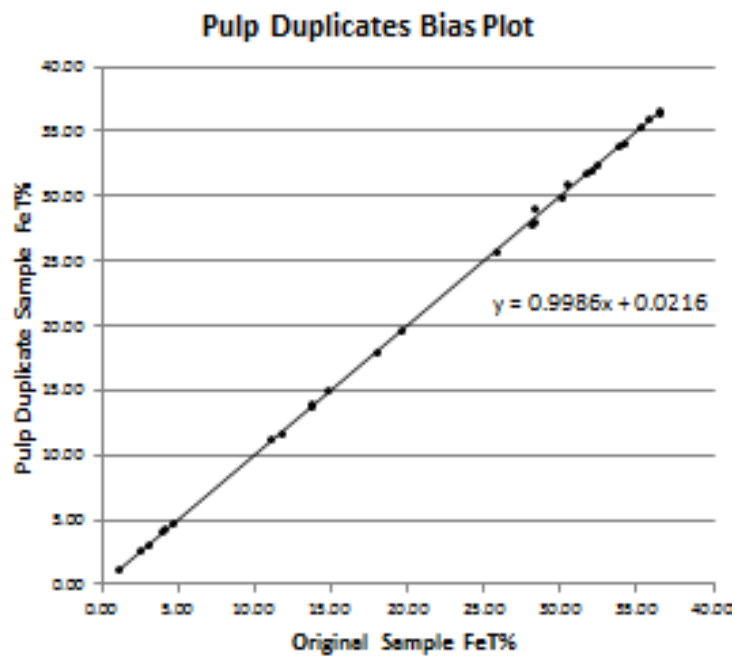


Figure 17: Performance of field duplicates



*Figure 18: Performance of course-fraction duplicates*



*Figure 19: Performance of pulp duplicates*

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

This section is not applicable to this Report, as neither mineral processing nor metallurgical testing has been conducted on the Project.

## **14 MINERAL RESOURCE ESTIMATE**

### **14.1 Introduction**

MRB & Associates Ltd. of Val d'Or, QC developed the 3D geological wireframe models for the Penguin Lake deposit from a GEMS v6.5 project database containing results of ten (10) diamond-drill holes completed in 2013 by Cartier Iron Corporation ("Cartier Iron"). The resource block model and mineral resource estimate was developed under the supervision of Abderrazak Ladidi, P.Geo., OGO, who is an independent QP in terms of NI 43-101.

The effective date of this mineral resource estimate is May 1, 2013.

The mineral resource estimate presented herein is reported in accordance with the Canadian Securities Administrators' National Instrument 43-101, and has been deemed to be in conformity with generally accepted CIM "Estimation of Mineral Resource and Mineral Reserves Best Practices" guidelines. Reported mineral resources are not mineral reserves, and do not have demonstrated economic viability. There is no guarantee that all or any part of the mineral resource will be converted into a mineral reserve. The quantity and grade of the reported Inferred resources may not be realized.

### **14.2 Reliance on Other Experts**

MRB provided supervision of the 2013 diamond drilling program at the Penguin Lake Project and develop the GEMS project database to interpret results and model the Penguin Lake deposit for the Mineral Resource Estimate (MRE). Drill hole locations were surveyed by MRB using high-precision Trimble GPS.

All analytical results of total Iron ( $Fe_T\%$ ) were imported to the database from electronic files received from ALS Canada Ltd. of Vancouver, British Columbia, and validated with original laboratory Certificates of Analysis.

A preliminary open-pit "shell" was generated from the resource block model in order to report the in-pit mineral resources. Eugene Puritch (P.Eng.) of P&E Mining Consultants (Brampton, ON), generated the pit shell under the supervision of Mr. Ladidi.

### **14.3 Data Validation**

The GEMS project database contains the drill-hole database, digital surface and bedrock topographies, claim group boundary polygons, digital surface geology, interpreted geological cross-sections, and a series of processed airborne magnetic contour maps, including total magnetic field and first- and second-vertical derivatives.

Prior to commencing the resource calculations for the Penguin Lake deposit, the GEMS project drill-hole database was validated by MRB using the GEMS system database validation routines, which

check for the most common and critical data errors. MRB reconciled all identified errors with original data source, and all reported errors were accordingly corrected.

The database validation includes: checking for duplicate entries; interval, length or distance values less than or equal to zero; out-of-sequence intervals; intervals or distances greater than the reported drill hole length; inappropriate collar locations, and; missing intervals and/or coordinate fields. No significant errors were noted in the drill-hole database.

MRB believes that the supplied databases are suitable for mineral resource estimation.

#### **14.4 Penguin Lake Geological Model**

The Penguin Lake deposit 3D geological model of the host iron formation (IF) units was developed by MRB using a combination of diamond-drill core geology, 2<sup>nd</sup> vertical derivative airborne magnetic contours, and surface and bedrock topographies.

##### Surface Topography

The drill hole collar co-ordinates and elevations for the ten 2013 drill holes incorporated in the database were rectified by MRB with surface topographic data provided by Champion Iron Mines Ltd's. ("Champion") 2011 airborne LIDAR digital elevation survey, and used to generate an enhanced digital topographic surface for the Penguin Lake project.

##### Bedrock Topography

Analysis of down-hole depths-of-overburden recorded in the database, for the 10 drill holes completed by Cartier Iron to date, indicate a relatively narrow depth-of-overburden range, from 1.7 m to 10.7 m, with a mean of 4.5 m, a median of 3.7 m, and a mode of 3.5 m.

In order to generate a bedrock/overburden interface surface from the limited number of drill holes, the bedrock topography was created by duplicating the surface topography 4 m below surface elevation, and then reconciling the bedrock surface to each drill-hole/bedrock intersection point.

Previous work by MRB and Champion has shown that the "zero-contour" of the 2<sup>nd</sup> vertical derivative magnetic response correlates well with the exposure of iron formation strata at surface. The thickness of the IF, indicated by the zero magnetic contour, however, often exceeds the actual thickness indicated by the projected drill hole intersections.

##### Iron Formation Mineral Zone Solids

Historic drilling in the area of the current Penguin Lake project was largely focused at the southern end of the deposit and comprised 9 holes of a 10-hole programme completed by Quebec Cartier Mining Co. in 1961. Cartier completed 6 of 10 drill holes in 2013 in close proximity to these historic holes, with similar geological results. MRB believes the historic data is substantially valid and hence the geological information from the historic drill holes was used to assist in the geological interpretation of the deposit. As the historic reports and logs contain no assay data, and are not considered NI43-101 compliant, the historic drill holes were not used for mineral resource grade estimation.

A series of cross-sections were generated for all drill holes, and polylines of the interpreted IF were digitized on each section, from surface to depths of less than 500 m. The cross-sectional interpretation polylines were constrained to the high-grade iron oxide facies mineralization, and do NOT include the iron silicate nor iron carbonate dominated facies of mineralization. The 2<sup>nd</sup> vertical

derivative magnetic contours were used to assist interpretation of the IF at surface, between cross-sections and along strike. Successive polylines were connected and a 3D wireframe solid of the interpreted IF geology was generated.

The claim group boundary was used to clip all parts of the interpreted IF solid that occurred outside the limits of the original Penguin Lake claim group, and to ensure that no mineral resources would be reported outside the limits of Cartier Iron's currently held claims.

**Figure 20** displays the ten (10) 2013 diamond drill holes and the ten (10) historic diamond-drill holes completed on the claims that comprise the original Penguin Lake property (heavy blue outline).

**Figure 21** displays the 2<sup>nd</sup> vertical derivative magnetic results with the bedrock surface trace of iron formation shown as interpreted from the drilling and magnetic results.

**Figure 22** displays a plan of the 3D modelled iron formation solid that has been clipped to the limits of the original Penguin Lake claims.

The total volume of the geologically interpreted IF solid below bedrock surface at the Penguin Lake deposit is in the order of 402 million cubic metres, and represents the maximum possible volume of oxide iron formation for mineral resource estimation. The 3D modelled iron formation is modelled structurally in the form of a multiply re-folded overturned synform. **Figure 23** displays a plan of the 3D modelled iron formation solid that was subdivided into 3 domains, including: the Upper Limb zone (cyan); the Lower Limb zone (blue), and; the Hinge Zone (purple), in order to better control the interpolation of grade within the respective domains.

The northwest half of the modelled deposit is interpreted from an extrapolation of drilling information from the southeast half of the deposit, the 2<sup>nd</sup> vertical derivative magnetic response and a single historic drill hole located in the western part of the deposit. As there is no recent drilling completed in the northwest half of the deposit, this part of the modelled deposit was clipped and removed from grade estimation in the mineral resource model. **Figure 24** displays the part of the 3D modelled Iron Formation solid that was retained for mineral resource estimation after clipping the northwest part of the deposit.

#### 14.5 Rock Types, Rock Codes, Domain Codes and Bulk Densities

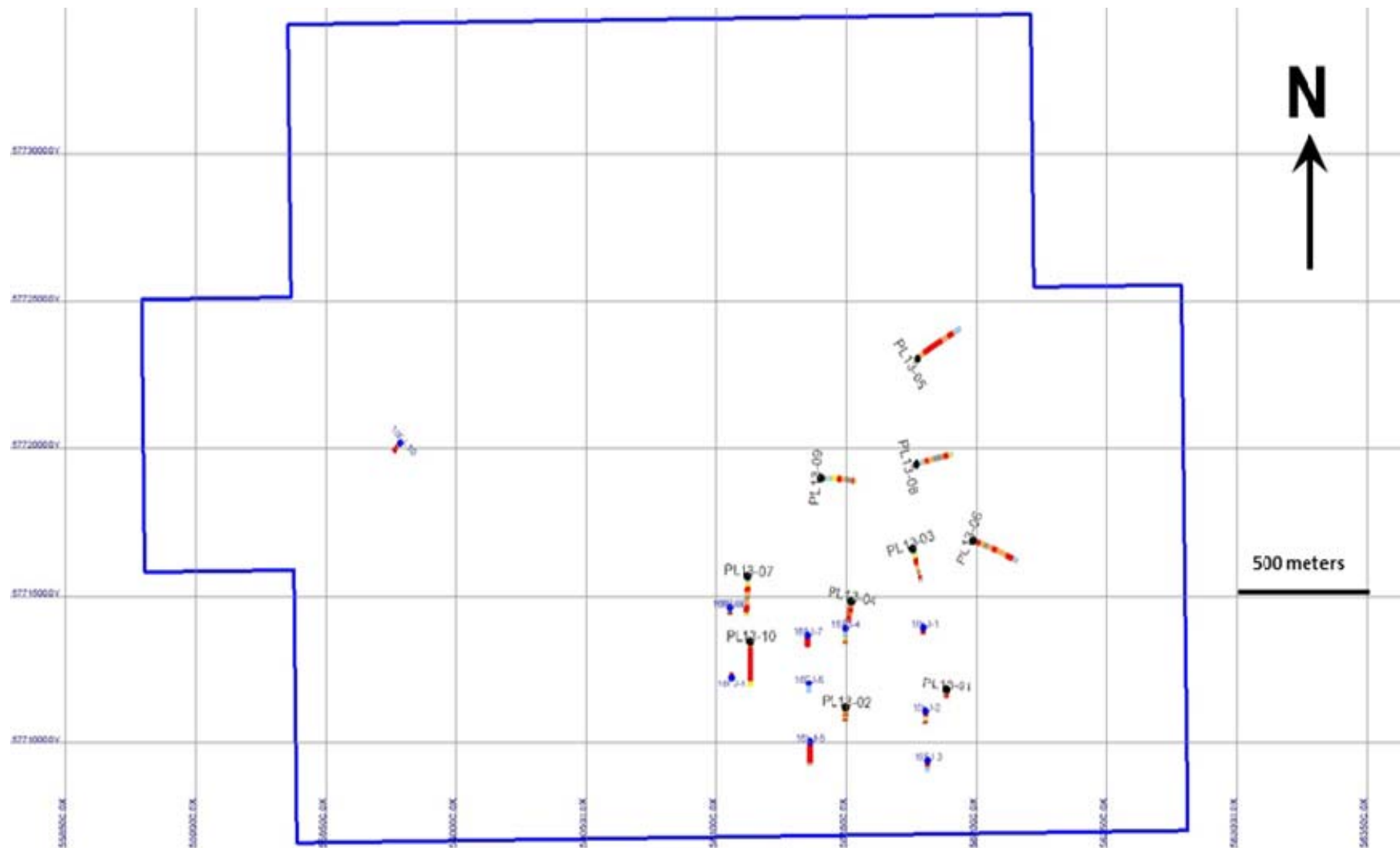
**Table 10** documents the rock types, rock codes, and average bulk densities that were used to develop the mineral resource block model.

**Table 10: Rock Types, Rock Codes and Average Bulk Densities**

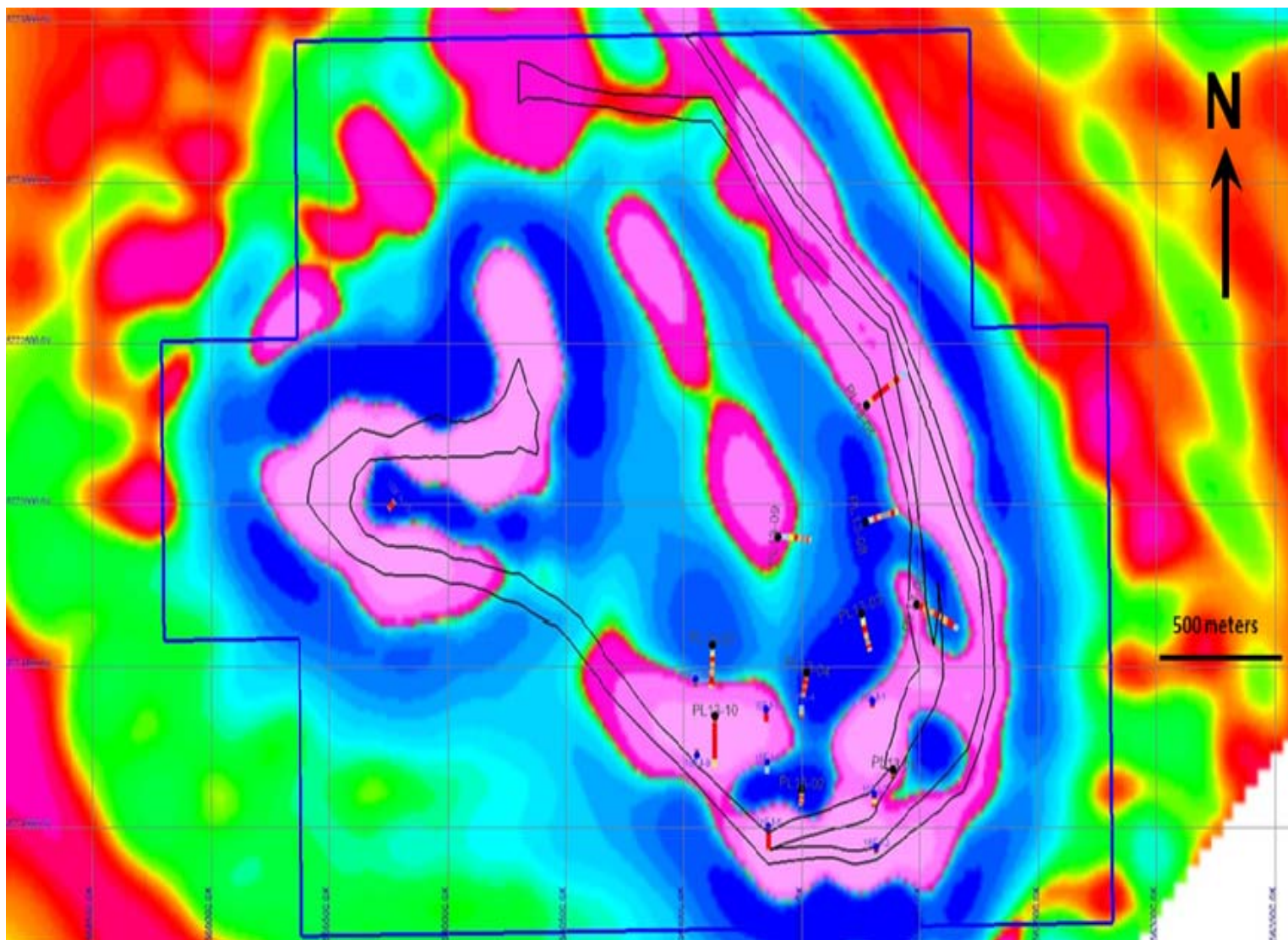
Rock Type	Rock Code	Bulk Density T/M <sup>3</sup>
Air	0	0
Overburden	98	1.80
Waste Rock	99	3.00
IF	100	Regression of Fe <sub>T</sub> % grade
IF – Target (no grade estimate)	104	3.30

**Table 11** documents additional domain codes that were used to create the domain model (**Figure 23**) for better control of grade interpolation within the respective structural domains of the deposit.

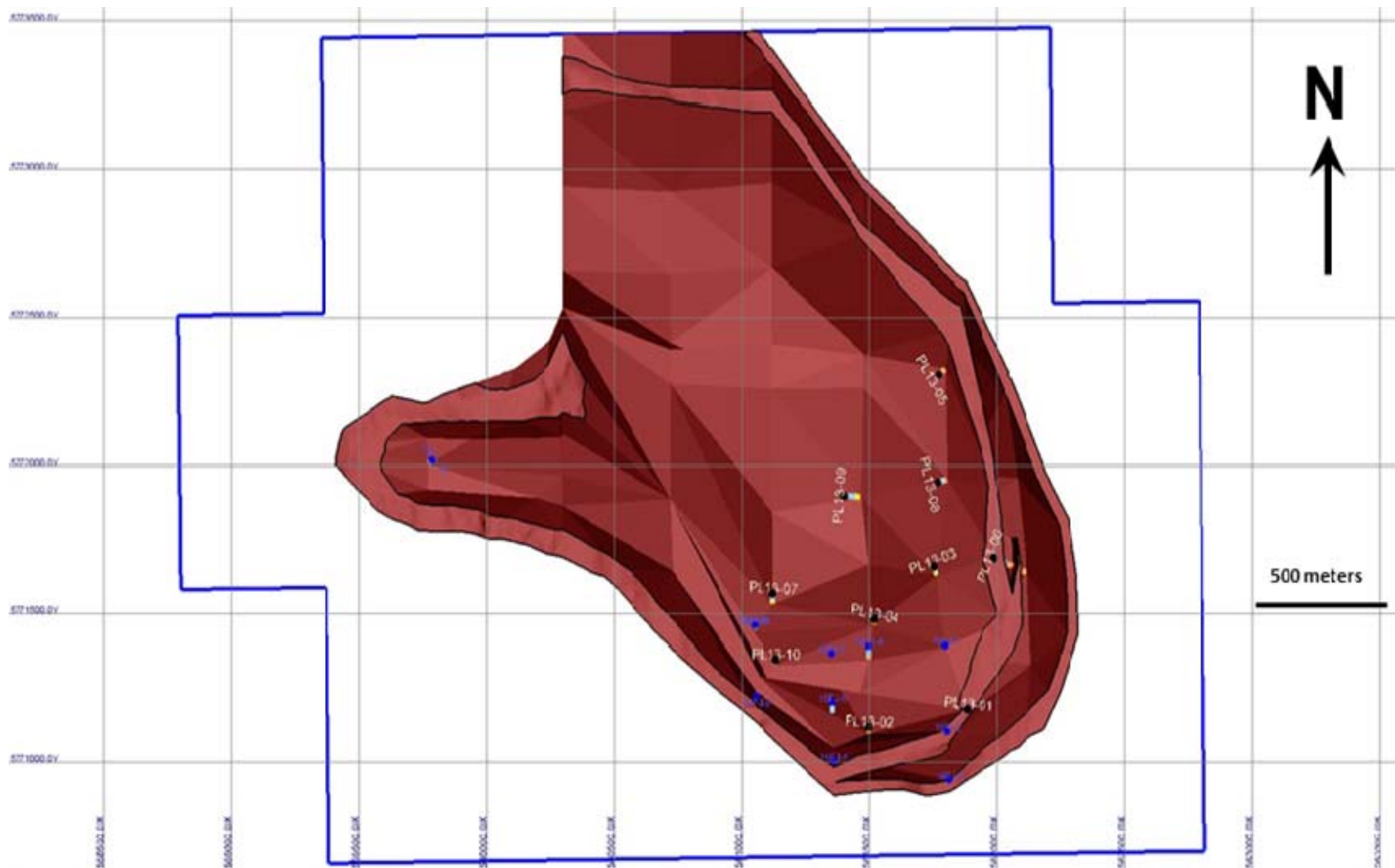




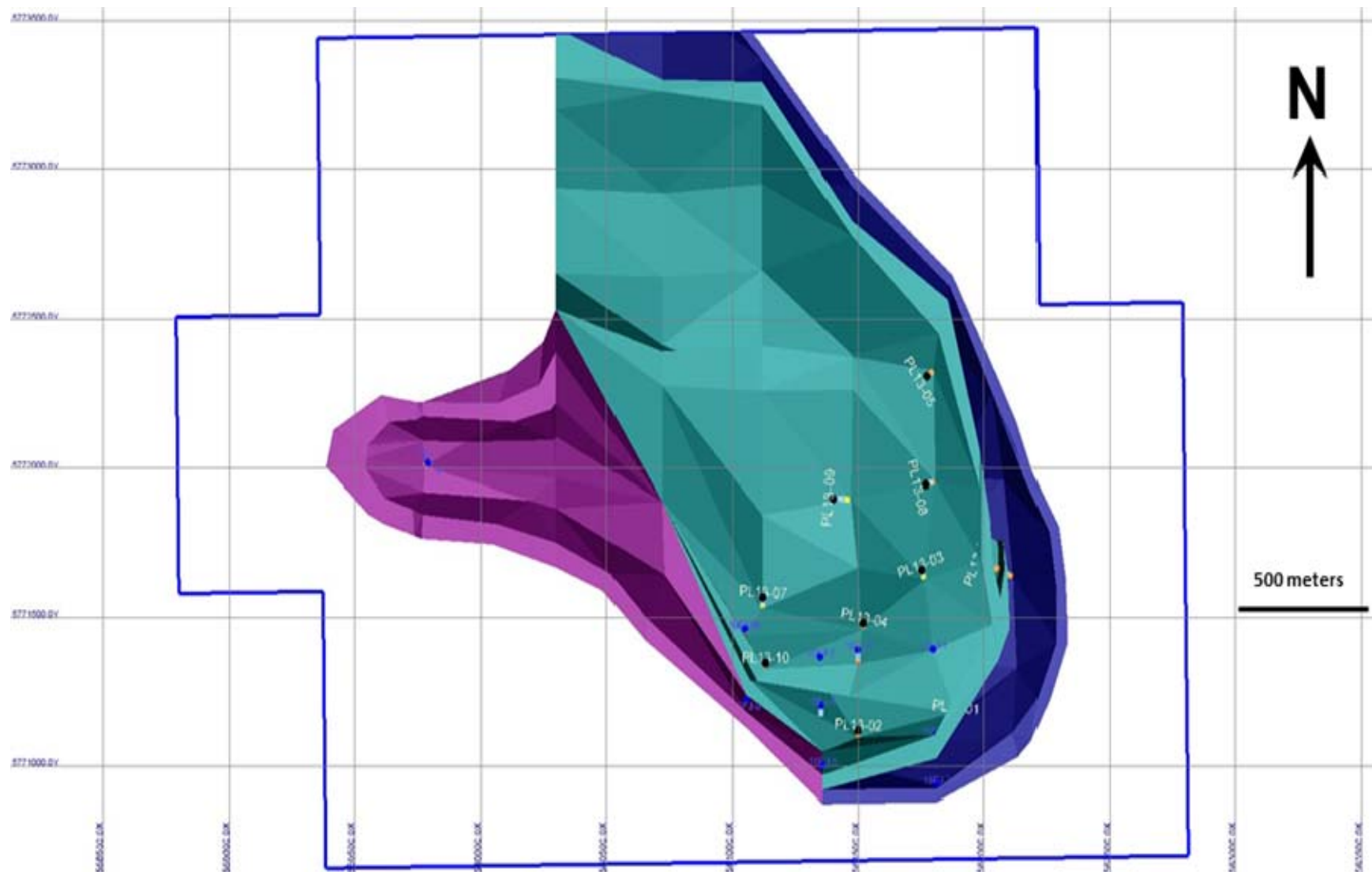
*Figure 20: Plan view - recent (black hole numbers) and historic (blue hole numbers) diamond-drill holes*



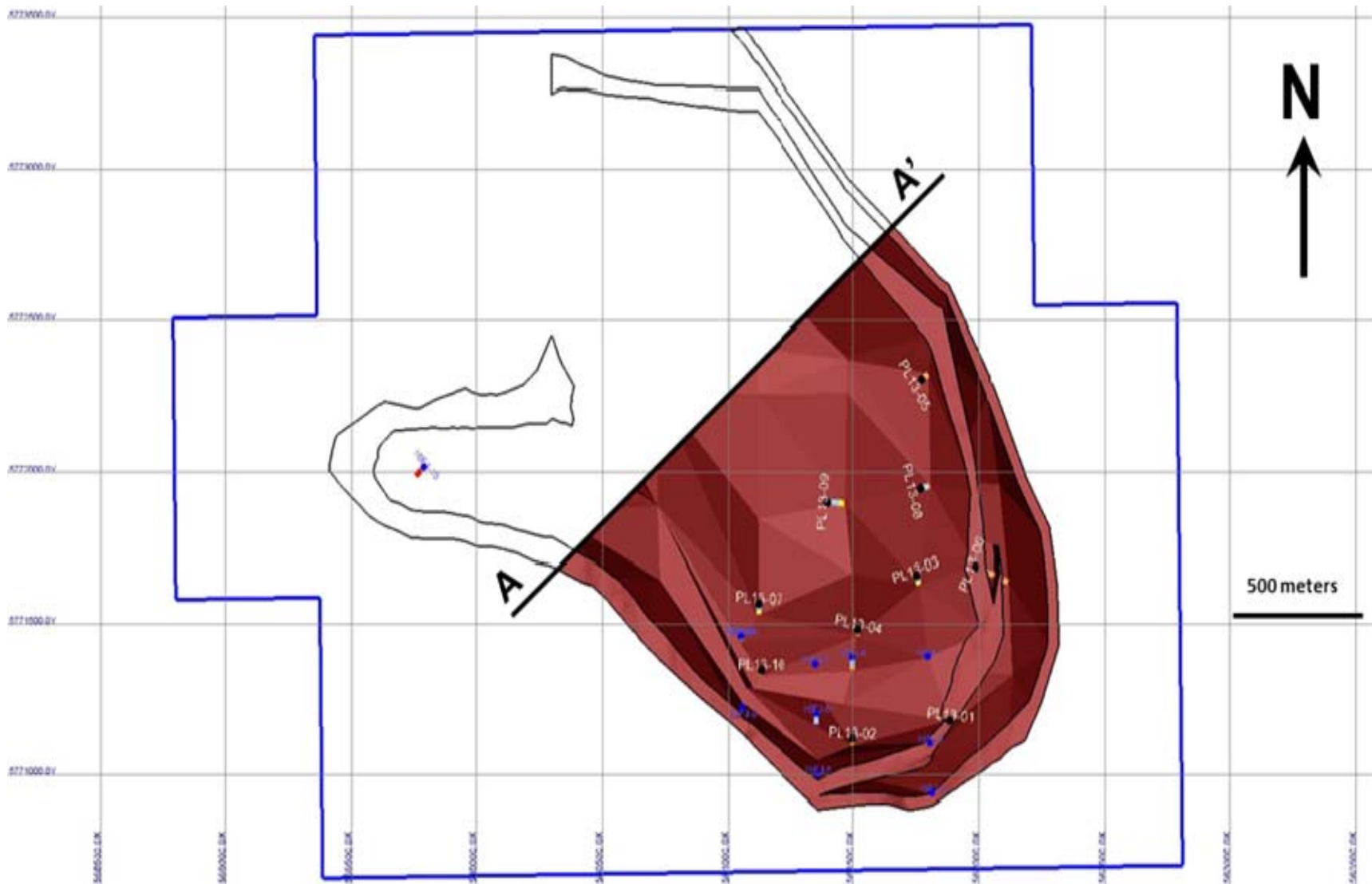
*Figure 21: Plan view - 2<sup>nd</sup> vertical derivative magnetics and interpreted IF bedrock trace.*



*Figure 22: Plan view - iron formation 3D modelled solid*



**Figure 23: Plan view - iron formation domains; 3D modelled solids**



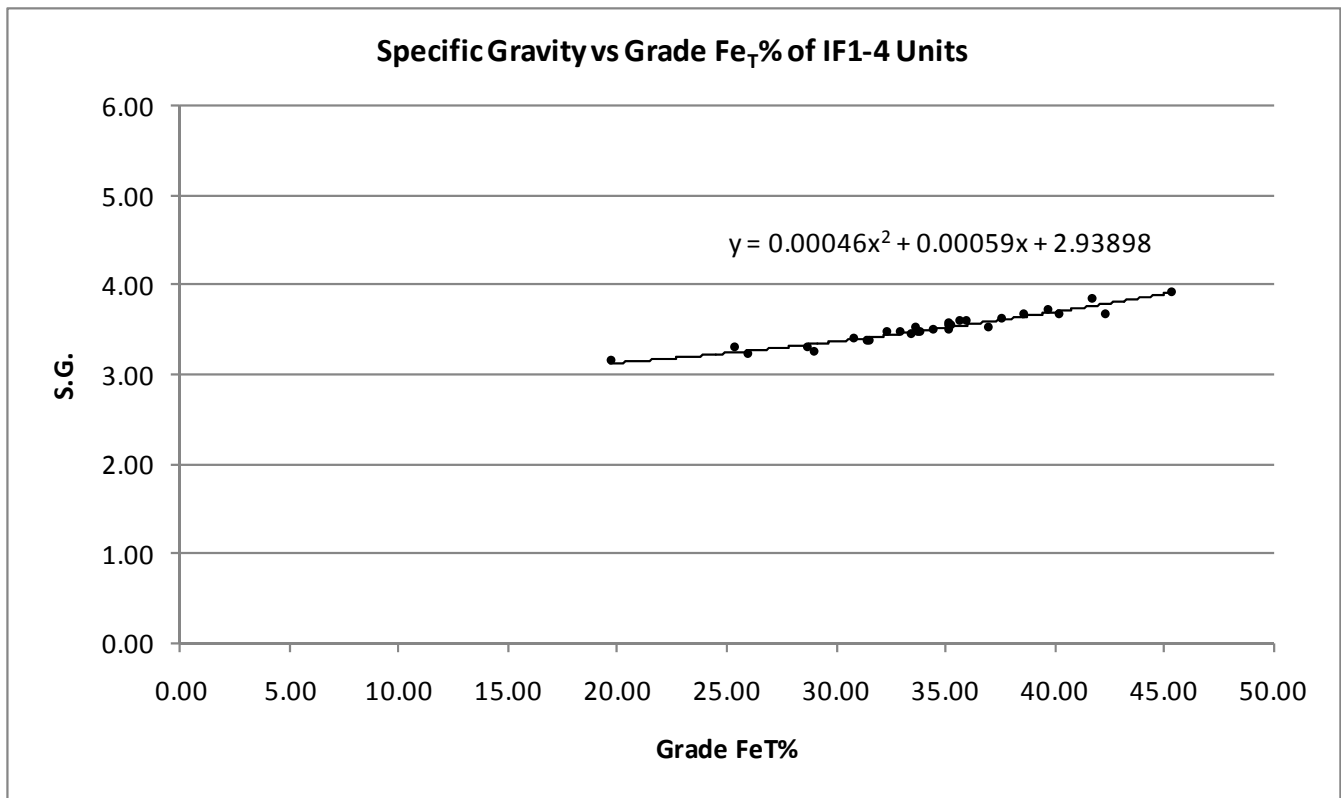
*Figure 24: Plan view - 3D modelled iron formation limited to area of drill data*

**Table 11: Domains and Domain Codes**

Domain	Domain Code
IF – Upper Limb	101
IF – Lower Limb	102
IF – Hinge Zone	103

A total of twenty-nine (29) 10 cm split-core samples from the oxide facies iron formation were collected for bulk specific gravity (SG) determinations, which were carried out using the sealed wax method. These samples were subsequently analyzed by ALS Laboratories for total iron (Fe<sub>T</sub>%) content. Results yielded a mean SG of 3.51, with individual results ranging from a minimum of 3.15 to a maximum of 3.93.

**Figure 25** displays the results of a regression analysis completed on the SG and Fe<sub>T</sub>% results. The resulting polynomial regression defines the relationship of sample bulk density to total iron grade and was used to calculate an SG for each 4 m composite interval used for mineral resource estimation.



**Figure 25: Graph showing regression analysis of specific gravity vs grade Fe<sub>T</sub>%**

A total of twenty-five (25) 10 cm split-core samples of waste rock were collected for bulk SG determinations and yielded a mean SG of 2.79, with individual results ranging from a minimum of 2.64 to maximum of 2.95. The waste rock types included marble, quartzite and quartz-sericite schist.

An additional twenty-seven (27) 10 cm split-core samples of silicate-carbonate dominated iron formation waste rock were collected for bulk SG determinations. Results yielded a mean SG of 3.14, with individual results ranging from a minimum of 2.66 to a maximum of 3.72.

Similarly, thirty-two (32) 10 cm split-core samples of mixed oxide and silicate-carbonate iron formation waste rock were collected for bulk SG determinations. Results yielded a mean SG of 3.49, with individual sample results ranging from a minimum of 3.08 to a maximum of 3.82.

The logged core-length intervals for each rock type provide some indication to the percent distribution of the various waste rock types surrounding, and/or internal to, the deposit. The mixed oxide-silicate iron formation unit is currently included as a waste rock type, and not modelled for mineral resource estimation. Metallurgical testing to determine whether the mixed oxide-silicate iron formation could yield adequate recoveries to be included in future mineral resource estimates, is planned.

A total of 3,315 m of drilling was completed in the 10 diamond-drill holes including;

44.9 m (1.4%) of overburden,  
1,267.6 m (38.2%) of oxide iron formation,  
394.2 m (11.9%) of mixed oxide-silicate iron formation,  
425.0 m (12.8%) of silicate-carbonate iron formation, and  
1,183.3 m (35.7%) of other waste rock types

The waste rock types currently include approximately 20% mixed oxide-silicate iron formation, 20% silicate-carbonate iron formation and 60% other waste rock types.

Using the estimated percent distribution of waste rock types and the mean SG results for each of the waste types, a weighted average SG for all waste rock is estimated as follows:

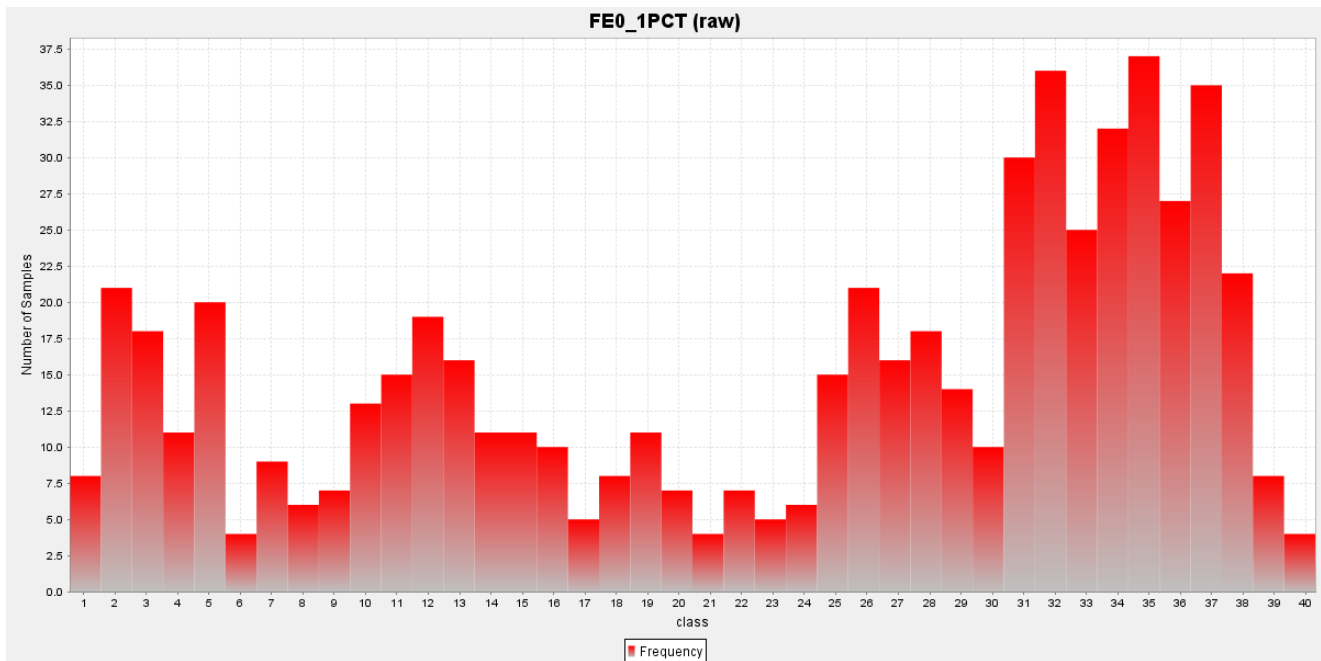
$$(20\% * 3.49) + (20\% * 3.14) + (60\% * 2.79) = 3.00$$

#### 14.6 Drill Hole Sample Assays and Composite Statistics

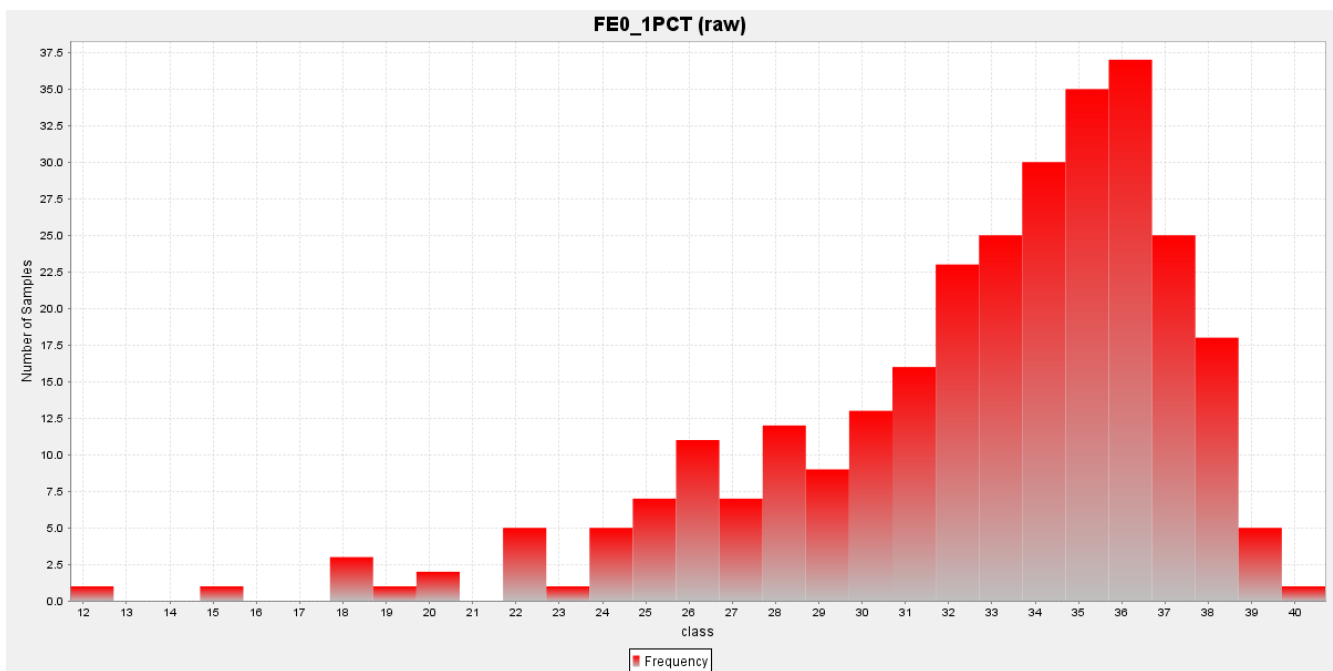
The drill hole database used for mineral resource estimation contains ten (10) recent drill holes, with collar and down-hole surveys, logged lithologies, mineral percentages, sample assays of total iron ( $Fe_T\%$ ), and a suite of Whole Rock Oxide Elemental assays, including  $CaO\%$  and  $MgO\%$ .

A total of 602 samples reside in the assay table of the database. **Figure 26** displays a histogram of all  $Fe_T\%$  sample assays.

The histogram of raw assay data is notably multi-modal most probably related to sub-populations associated with the various iron formations and lithologies sampled. **Figure 27** displays a histogram of raw assay data within the confines of the modelled IF mineralized domain solids.



**Figure 26: Histogram of Total Iron (FeT%) sample assays**



**Figure 27: Histogram of Total Iron (FeT%) sample assays in IF domain solids**



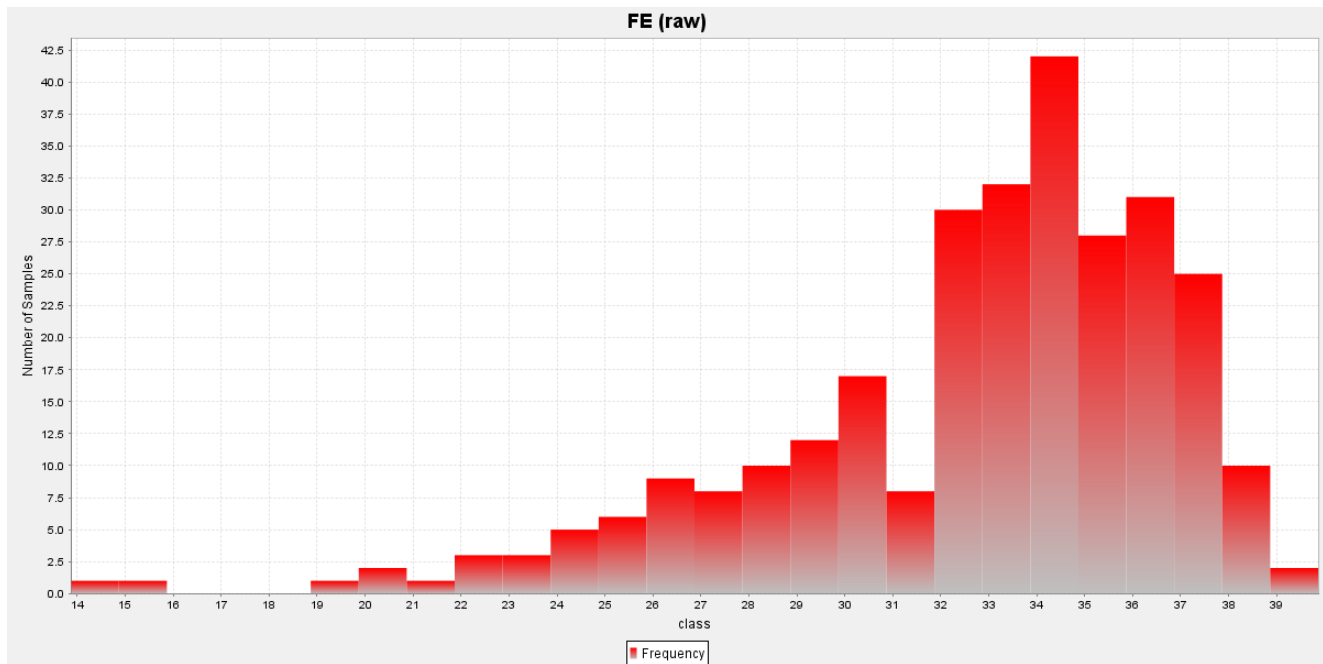
The histograms demonstrate that the 3D modelled IF domain solids do a good job of isolating samples from the single high grade sub-population of oxide iron formation. The other modes, indicated at lower grade levels in the histogram of all Fe<sub>T</sub>% assays (**Figure 26**), likely correspond to the various categories of waste (i.e., mixed oxide-silicate iron formation, silicate-carbonate iron formation and the other waste rock types including, marble, quartzite and quartz-sericite schist).

The drill hole sample assays were composited on 4 m, equal-sample-length intervals within the limits of the defined oxide iron formation domains, namely: IF-ULimb; IF-LLimb; and; IF-Hinge.

The compositing process started at the first point drill holes intersected each domain solid and halted upon exit. The individual composites were checked to ensure all IF domain contacts were honoured and, when the last composite exiting each domain solid was less than 0.4 m (i.e., less than 10%) of the 4 m composite interval, the composite was deleted to avoid creating excessive composite points that might bias mineral resource estimation. As each of the IF-domains are uniquely Domain coded (**Table 11**), the compositing process back-codes the domain codes to each 4 m composite point calculated in the database.

**Figure 28** displays the histogram of 4 m composite Fe<sub>T</sub>% grades within the oxide IF domains.

**Table 12** provides basic statistics for each of the histograms generated.



**Figure 28: Histogram of Total Iron (Fe<sub>T</sub>%) for 4 m composites in IF domain solids**

**Table 12: Summary Statistics for Fe<sub>T</sub>% Assays and 4m Composites**

	All Assays Fe <sub>T</sub> %	IF Domain Assays Fe <sub>T</sub> %	4m IF Domain Composites Fe <sub>T</sub> %
Number of Values	602	293	285
Minimum	0.56	11.70	13.87
Maximum	40.30	40.30	39.15
Mean	23.40	32.72	32.69
Median	27.30	33.90	33.80
Standard Deviation	11.89	4.69	4.26
Coefficient of Variation	0.51	0.14	0.13

### 14.7 Grade Capping

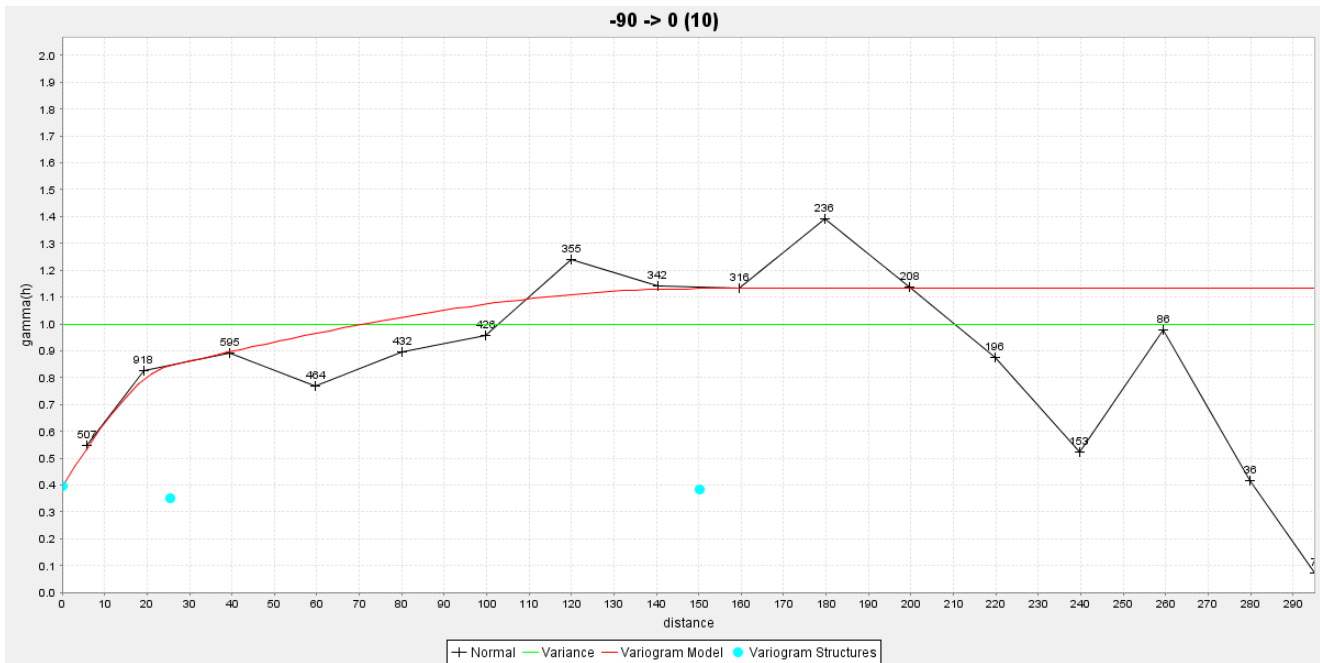
As demonstrated by the histograms and summary statistics of Fe<sub>T</sub>% assays and composites, the sample population does not appear to contain any extreme Fe<sub>T</sub>% assay values that might be considered “outliers”, and would therefore require special treatment, especially within the values confined to the modelled IF-Domain solids. No grade capping of assays or composites was deemed necessary.

### 14.8 Variography

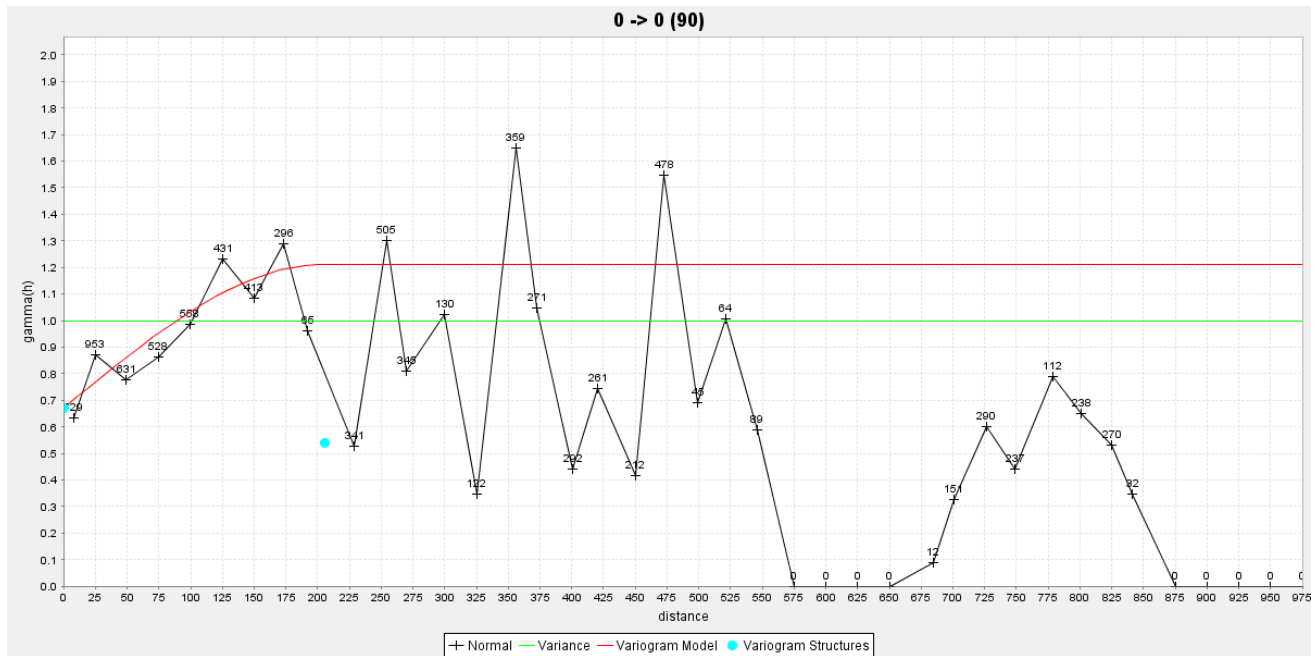
**Figure 29** displays results of a linear down-hole variogram generated from the 4 m composite Fe<sub>T</sub>% grades constrained within the modelled IF-domains. The modelled variogram has a nugget value of 0.40 with an indicated range up to 150 m at a total sill of 1.1. A nested model is suggested with a second shorter range indicated at 25 m.

**Figure 30** display results of a 3D omni-directional variogram generated from the 4 m composite Fe<sub>T</sub>% grades constrained within the modelled IF-domains. The modelled variogram has a nugget value of 0.67 with an indicated range up to 205 m at a total sill at 1.2.

Directional specific oriented variograms yielded erratic results that could not be modelled, primarily due to the limited number of drill holes and insufficient composite points along any specific orientation.



**Figure 29: Linear down-hole variogram of 4 m composites**



**Figure 30: 3D omni-directional variogram of 4 m composites**

Although directional specific variograms could not be modelled from the limited number of drill holes completed, the linear down-hole and 3D omni-directional variograms suggest grade continuity over ranges of 200+ m along-strike and 25 m to 150 m across-strike. The ranges of these variograms are expected to be extended as future drilling adds additional data points. This is supported by noting the far fewer number of sample pairs at distances beyond the currently modelled sills and maximum ranges of the respective variograms.

## 14.9 Block Model

In order to estimate mineral resources of the Penguin Lake project, a block model was created sufficient in size to encompass the entire 3D modelled deposit. The block model is oriented along an azimuth of 320 degrees and parallel to the apparent strike of the deposit. **Table 13** provides details of the block model geometry.

**Table 13: Penguin Lake Block Model Definition**

Penguin Lake	Origin	Blocks	Block Size
X	561,000 E	170	20 m
Y	5,769,250 N	240	20 m
Z	800 m	50	12 m
Rotation	40 degrees (counter clock-wise)		

### 14.9.1 Rock Block Model

The Rock block model was constructed by initializing all blocks in the model to waste rock code 99. The IF solid was used to select blocks greater than 1% inside the solid and assign these blocks IF rock code 100.

The bedrock topographic surface was used to select blocks greater than 50% above bedrock surface and the selected blocks assigned Overburden rock code 98. The surface topography was subsequently used to select blocks greater than 50% above surface topography and the selected blocks assigned Air rock code 0.

The Penguin Lake property boundary polygon was used to select all blocks outside the property limits and re-initialize the blocks to Air rock code 0, to ensure no blocks outside the property limits would be included in the mineral resource estimate. A 2nd clipping polygon was used to select the IF rock code 100 blocks in the northern half of the deposit and re-assign these blocks IF rock code 104. Blocks with IF rock code 104 represent blocks too far removed from drilling data to be grade estimated however represent exploration target potential of the modelled deposit within the property limits.

### 14.9.2 Domain Block Model

The Domain block model was constructed identically to the Rock block model excepting that the subdivided IF Domain solids (IF-Upper Limb, IF-Lower Limb and IF-Hinge) were used to select blocks to be populated with the respective domain codes.

The Domain block model was used during the grade interpolation process to limit interpolation of grades within the defined domains of the deposit.

### 14.9.3 Percent Block Model

A Percent block model was generated using the modelled 3D IF solid and GEMS “needling” process to calculate and store the percentage of the modelled IF solid contained within each block.

The Percent block model was used to more accurately report volumetrics for the IF and resulting tonnage for the mineral resource estimate.

### 14.9.4 Density Block Model

A density block model was constructed using the Rock block model to select the specific rock types and populate the corresponding density model blocks with the respective densities as shown earlier in **Table 10**.

The IF blocks of the rock model that were grade estimated were selected and the corresponding blocks of the density model were assigned densities according to the polynomial regression that defines the relationship of bulk density to grade as demonstrated earlier in **Figure 25**.

The IF blocks of the rock model that were not grade estimated were selected and the corresponding blocks of the density model were assigned a default density of 3.3 t/m<sup>3</sup>.

### 14.9.5 Grade Block Models

A grade model for each of Fe<sub>T</sub>%, CaO% and MgO% were generated using an extraction point file of the 4 m composite grades within the modelled IF solid. The composite point file also contains the back coded domain codes for each composite point.

Grade block models were generated using an interpolation profile to specify the source data and parameters for grade interpolation.

An inverse distance squared algorithm was used to interpolate grades.

Each of the grade models were generated in two passes using differing search ellipse and parameter definitions to assist in the categorization of the mineral resource estimate.

The Domain block model was used to control the interpolation of grade into blocks from composite points within the same or associated domains as displayed in **Table 14**.

**Table 14: Interpolation Profile - Target and Source Domain Codes**

Domain	Target Domain Code	Source Composite Code
IF – Upper Limb	101	101, 103
IF – Lower Limb	102	102, 103
IF – Hinge Zone	103	101, 102, 103

The following parameters were established for each of the two interpolation passes that were used to generate each of the respective grade models.

**Interpolation Pass 1 – Indicated Resource Parameters**

Minimum number of samples = 4  
Maximum number of samples = 18  
Maximum number of samples per hole = 3 (i.e., minimum of 2 holes)  
Search ellipse = 150 m spherical

**Interpolation Pass 2 – Inferred Resource Parameters**

Minimum number of samples = 1  
Maximum number of samples = 18  
Maximum number of samples per hole = 3 (i.e., minimum of 1 hole)  
Search ellipse = 300 m spherical

It should be further noted that although the current variography does not support the ranges for the search ellipse used for interpolation, evidence of continuity over these distances is supported by geophysical response, as well as by other similar and more advanced projects in the district. Further drilling will add to the limited data points from the 10 drill holes currently available for variography analysis.

Although a spherical search ellipse is specified for each of the interpolations, the maximum distance available to search and interpolate grades is restricted within the IF domain solids. The modelled IF domain solids are continuous for lengths over 300 m both along strike and down-dip; however, not across the width of the deposit. The domain solids and blocks therefore restrict both the search and interpolation of grade in this direction. The target and source rock codes specified in the interpolation profiles do not allow grades from the IF Upper Limb domain to be used for estimation of blocks within the IF Lower Limb domain and vice versa. However, points within the IF Hinge domain that join the two limbs may be used to estimate blocks within each limb and vice versa as shown in **Table 14**.

**14.9.6 Class Block Models**

An integer value was stored in a Class block model for blocks estimated from the 1<sup>st</sup> Pass interpolation that would allow these blocks to be categorized as Indicated Resources. Only blocks not grade estimated during the 1<sup>st</sup> Pass interpolation were subject to the 2<sup>nd</sup> Pass interpolation. Blocks estimated during the 2<sup>nd</sup> Pass interpolation are categorized as Inferred Resources in the Class model.

It should be noted that an initial interpolation was completed with the minimum number of composite samples set at 7, and maximum of 3 per hole (i.e., minimum 3 holes), and the spherical search distance limited to 75 m. These blocks would have been categorized as Measured Resources however no blocks were grade estimated from the interpolation using these criteria.

#### 14.10 Mineral Resource Estimate

##### Global Mineral Resource Estimate

The Rock, Grade, Percent, Density and Class block models were utilized in the volumetrics reporting process to report the global mineral resources. Since <1% of the global mineral resource reported to the Indicated category, and currently only 10 widely spaced drill holes (from 220m to 430m) define the entire resource, the estimate reported is categorized entirely as Inferred Mineral Resources.

**Table 15** shows the categorized global mineral resource estimate at a 15% FeT cut-off grade and the sensitivity of the mineral resource estimate to 5% FeT incremental increases in cut-off grade.

**Table 15: Categorized Global Mineral Resource and Cut-off Grade Sensitivity**

	Global Inferred Mineral Resource				Below Cut-off Grade			
Cut-off Grade	Tonnes	Grade			Tonnes	Grade		
		FeT%	CaO%	MgO%		FeT%	CaO%	MgO%
<b>15%</b>	<b>534.8</b>	<b>33.1</b>	<b>3.1</b>	<b>2.8</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
20%	534.7	33.1	3.1	2.8	0.1	15.4	2.1	1.7
25%	531.4	33.2	3.0	2.8	3.4	23.2	4.7	3.0
30%	466.4	33.9	2.9	2.8	68.4	28.2	4.1	2.7

(1) Mineral Resource estimates were calculated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions.

(2) Mineral resources, which are not mineral reserves, do not have demonstrated economic viability. The mineral resource estimate may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.

(3) The quantity and grade of estimated Inferred Resource reported herein are uncertain and there has been insufficient exploration to categorize them as an Indicated or Measured Resource. It is uncertain if further exploration will result in reclassification of Inferred Mineral Resources to the Indicated or Measured Mineral Resource categories. The results indicate a natural geological cut-off to the modelled oxide iron formation near 25% FeT as indicated by the minimal 0.6% of tonnes that are below the 25% FeT cut-off grade. There are no tonnes estimated below the economic cut-off grade of 15%.

##### In-pit Mineral Resource Estimate

A preliminary open pit "shell" was generated from the resource block model in order to evaluate the sensitivity of the resource to potential exploitation and report the in-pit mineral resources. Eugene Puritch, P. Eng. of P&E Mining Consultants (Brampton, ON) generated the pit shell under the direction of Abderrazak Ladidi, P. Geo. (OGQ) of MRB.

**Table 16** provides the parameters specified for generating the pit shell.

**Table 16: Pit Shell Parameters**

Parameter	Value
FeT Price	\$1.77/dmtu (\$115/tonne conc.)
Mining (Overburden)	\$2.00/tonne mined
Mining (Ore & Waste)	\$2.50/tonne mined
Processing	\$4.60/tonne milled
Weight Recovery	38%
Transportation Rail & Port	\$12.00/tonne conc. (\$4.56/tonne milled)
G&A	\$1.50/tonne milled
Process Recovery	82%
Pit Slopes	48°
\$US / \$Cdn Exchange Rate	1.00 / 1.00

**Table 17** provides the categorized in-pit mineral resource estimate at a 15% FeT cut-off grade and the sensitivity of the in-pit mineral resource estimate to 5% FeT incremental increases in cut-off grade.

**Table 17: Categorized In-Pit Mineral Resource and Cut-Off Grade Sensitivity**

Cut-off Grade	Global Inferred Mineral Resource				Below Cut-off Grade			Tonnes	Grade	
	Tonnes	Grade			Tonnes	Grade				
		FeT %	CaO %	MgO %		FeT %	CaO %			MgO %
15%	531.2	33.1	3.1	2.8	0.0	0.0	0.0	0.0		
20%	531.1	33.1	3.1	2.8	0.1	15.4	2.1	1.7		
25%	527.8	33.2	3.0	2.8	3.4	23.2	4.7	3.0		
30%	463.9	33.9	2.9	2.8	67.3	28.2	4.1	2.7		

(1) Mineral Resource estimates were calculated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions.

(2) Mineral resources, which are not mineral reserves, do not have demonstrated economic viability. The mineral resource estimate may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.



(3) The quantity and grade of estimated Inferred Resource reported herein are uncertain and there has been insufficient exploration to categorize them as an Indicated or Measured Resource. It is uncertain if further exploration will result in reclassification of Inferred Mineral Resources to the Indicated or Measured Mineral Resource categories.

A comparison of the In-Pit and Global Mineral Resource estimates at the 15% FeT cut-off grade demonstrates the amenability of the global mineral resource to potential exploitation by open pit mining with 99.3% of the global mineral resource estimate reporting inside the pit shell.

**Table 18** provides a simple validation of the estimated resource grades by comparing the estimated block grades at a 0.01% FeT cut-off to the Fe<sub>T</sub>% grades for the constrained raw assays and 4m composites used for mineral resource estimation.

**Table 18: Comparison of Raw Assays, Composites and Block Grades**

	Grade Fe <sub>T</sub> %
Raw Assays	32.72%
4m Composites	32.69%
Blocks	33.12%

**Figure 28** displays a 3D isometric view of historic drill holes (not used for grade estimation), NI 43-101 compliant drill holes used for the Mineral Resource Estimate, the Class/Category model blocks and the pit shell generated by the mineral resource.

The Inferred Mineral Resource blocks (orange & yellow) shown in **Figure 28** yield the global Inferred Mineral Resource estimate of 534.8 million tonnes (MT) grading 33.1% Fe<sub>T</sub> at a 15% FeT cut-off. The pit shell (cyan), shown in the same figure, can be seen to contain near 100% of the In-Pit Inferred Mineral Resource estimate of 531.2 MT grading 33.1% Fe<sub>T</sub>.

#### 14.11 Exploration Target Potential

**Figure 31** displays green blocks representing iron formation blocks in the resource model that are too far removed (i.e., >300 m) from the nearest drill hole composite point to be grade estimated. As a result, no grade was estimated for these blocks. Similarly, the blocks of iron formation in the NW part of the deposit (pink-grey colour) were clipped from resource estimation as there is no recent drilling in this part of the deposit, and hence the blocks of modelled iron formation remain grade un-estimated in this area.

The blocks of iron formation in the model that were: 1) not grade estimated, or; 2) not included for resource estimation, were assigned an average density of 3.30 t/m<sup>3</sup> (see **Table 10**) to estimate a tonnage for the remaining modelled IF.

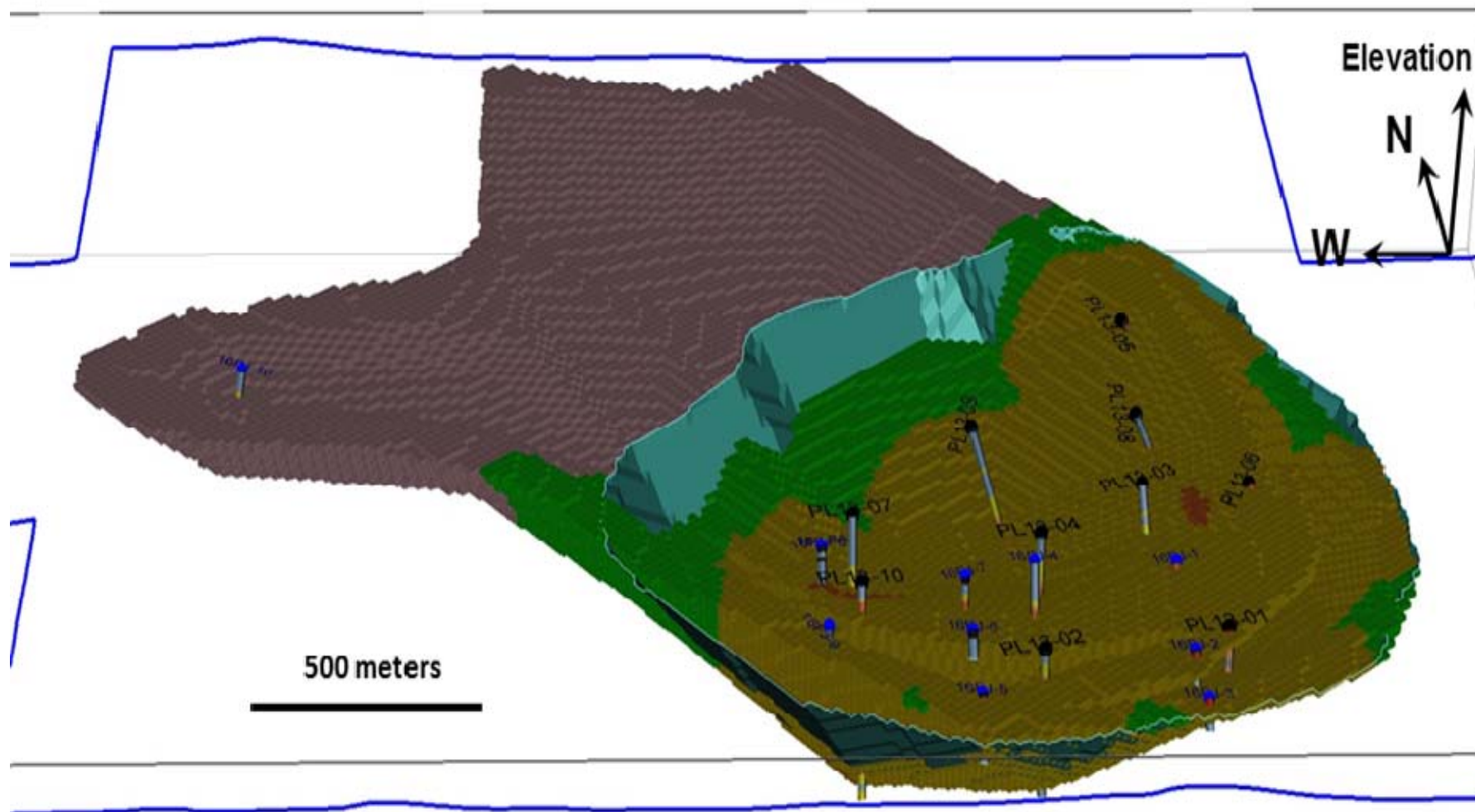
The grade un-estimated blocks of iron formation within the resource block model, shown in green in **Figure 31**, total 248.8 Mt, including 63.7 Mt within the existing pit shell. The blocks of iron formation excluded from resource estimation (pink-grey in **Figure 31**) total 562.5 Mt.

A total of 811.3 Mt of modelled iron formation remains grade un-estimated.

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Exploration target potential<sup>1</sup> of 700 Mt to 900 Mt is suggested from the estimates provided at an assumed grade of 32-33% FeT similar to the current mineral resource estimate.

<sup>1</sup>Exploration Target Potential is not Mineral Resources. The quantity and grade of the estimated Exploration Target Potential reported herein are untested and there has been insufficient exploration to categorize them as Mineral Resources. It is uncertain if further exploration will result in reclassification of the Exploration Target Potential as Mineral Resources.



*Figure 31: 3D isometric view of pit shell, mineral resource blocks and 43-101 compliant DDH's*

## **15.0 ADJACENT PROPERTIES**

There are other Properties owned by Cartier Iron and ArcelorMittal in the vicinity of the Penguin Lake Project; however, as at the time of writing, the author was not aware of any active exploration activities in the immediate area of the Penguin Lake Project or of the Round Lake Property.

## **16.0 OTHER RELEVANT DATA AND INFORMATION**

The Authors are not aware of any environment, permitting, legal, title, taxation, socio-political issues, nor any other additional technical data available at the effective date of the Report that might lead an accredited investor to a conclusion contrary to that set forth in this Report, or that would materially affect the future exploration or potential mine development on the Round Lake Property.

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## 17.0 INTERPRETATION AND CONCLUSION

Cartier Iron is in the process of exploring its mineral concessions in the Gagnon Terrane of the southern Labrador Trough (the "Gagnon Holdings") to evaluate them for high-quality iron-ore targets. Detailed exploration and drilling is proposed for several of the claim blocks in order to validate the historical work and potentially delineate or increase the historical mineral resources.

The economic potential of the iron formation underlying the Penguin Lake Project area was recognized over sixty years ago; however, the remoteness of the area and the discovery of other nearby deposits made the Penguin Lake deposit a lower priority target that has remained essentially unexplored since the early 1960's.

The objective of Cartier Iron's recent drilling programme was to define a mineral resource as defined under NI 43-101 at the Penguin Lake occurrence based on the results of historical drilling and the presence of a large geophysical magnetic anomaly.

The Phase I drilling campaign carried out by Cartier Iron in January and February of 2013 comprised 10 holes with a cumulative length of 3315 m. Over 1600 metres of iron formation grading, on average, 29.5% FeT, were intersected.

Based on the interpretation of historic and recent drill logs, analysis of geophysical magnetic-response and gravity-response data, structural interpretation, and geological information, a preliminary geometric model of the iron formation underlying the Project has been generated.

The Penguin Lake Project overlies strong geophysical magnetic anomalies coincident with favourable iron-formation-bearing strata. A simplified structural model of the iron formation at the Penguin Lake Project invokes flat-lying (recumbent) folds - the result of imbricate thrusting - deformed by at least 2 subsequent deformational events into a bowl-shaped geometry. This interpretation is borne-out by the results of the 2013 drilling campaign, which was focused on the southeast part of the "bowl". Cartier's 2013 drilling shows that iron formation around the perimeter "bowl" converge inward the inner part of "bowl" is also underlain by iron formation. The iron-formation is open to the west of the Phase I drill-holes, where it is interpreted to re-surface in the area coincident with a large magnetic-response anomaly. Historic drill-hole 16FJ-10 (1961, see GM12096), which was collared in the central part of this anomaly, ended in low-grade iron formation after encountering 98 m of hematite-magnetite and magnetite iron formation.

The 2013 Penguin Lake drilling programme was successful in intersecting substantial intervals of economic-grade iron formations and delineating a sizable inferred iron resource from the magnetite-hematite-rich iron formation on the Property.

The Penguin Lake deposit consists of both magnetite-rich "Oxide" iron formation and a "Mixed" magnetite-silicate iron formation hosted in a bowl-shaped domain. An Inferred Mineral Resource totalling 531.2 million tonnes (MT) grading 33.1% Total Iron (FeT) at a 15% Fe cut-off grade has been calculated based on 10 drill holes totalling 3,315 m.

**Table 19: Penguin Lake Inferred Mineral Resource Estimate at Varying Iron Cut-off Grades**

	Global Inferred Mineral Resource				Below Cut-off Grade			
Cut-off Grade	Tonnes	Grade			Tonnes	Grade		
		FeT %	CaO %	MgO %		FeT %	CaO %	MgO %
<b>15%</b>	<b>534.8</b>	<b>33.1</b>	<b>3.1</b>	<b>2.8</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
20%	534.7	33.1	3.1	2.8	0.1	15.4	2.1	1.7
25%	531.4	33.2	3.0	2.8	3.4	23.2	4.7	3.0
30%	466.4	33.9	2.9	2.8	68.4	28.2	4.1	2.7

<sup>1</sup>Mineral Resource estimates were calculated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Reserve Definitions. Mineral resources, which are not mineral reserves, do not have demonstrated economic viability. The mineral resource estimate may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues. The quantity and grade of estimated Inferred Resource reported herein are uncertain and there has been insufficient exploration to categorize them as an Indicated or Measured Resource. It is uncertain if further exploration will result in reclassification of Inferred Mineral Resources to the Indicated or Measured Mineral Resource categories. The tonnage numbers are rounded according to NI 43-101 standards. Grades are calculated from Total Fe% ("FeT%") sample assays completed by ALS Minerals using the "High Grade/Ores Method" XRF analysis.

## 18.0 RECOMMENDATIONS

The Phase I drilling programme and Mineral Resource Estimate are deemed to have been a success. To advance the Project, the following work is recommended:

### Phase I

- metallurgical sampling and analysis of selected composite core-samples - SATMAGAN (saturated magnetic analysis), specific gravity determinations of the main rock formations/members, Davis Tube and HLS (heavy liquid separation) tests of various mesh-sized fractions to determine optimal iron-recovery properties;
- blasting and collection of bulk sample(s) for further metallurgical tests;
- Preliminary Economic Assessment of the project

Contingent on positive metallurgical results and economic assessment:

### Phase II

- Definition drilling to convert Inferred resources to Measured and Indicated category;
- additional metallurgical tests;
- Update Mineral Resource Estimate and complete Prefeasibility Study (PFS) of the Project

**Table 20: Penguin Lake Project - Recommended Work Programmes & Budgets**

Phase 1			Budget	
Metallurgical Testing			\$100,000	
Scoping Analysis (PEA Study)			\$100,000	
Contingency 15%			\$30,000	
<b>Subtotal Phase 1</b>			<b>\$230,000</b>	
Phase 2		Drilling (metres)	Cost / metre	Budget
Definition Drilling (M+I Res) - Penguin Lake Deposit		4,000	\$500	\$2,000,000
Metallurgy				\$250,000
Prefeasibility Study				\$500,000
Contingency 15%				\$412,500
<b>Subtotal Phase 2</b>			<b>\$3,162,500</b>	
<b>Total</b>			<b>\$3,392,500</b>	

The significant iron resource identified at the Penguin Lake Project warrants further work to increase the classification of the current Inferred Resources to the Indicated and Measured Resource categories and to define the ultimate extent of the deposit.

## 19.0 REFERENCES

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**CERTIFICATE OF QUALIFICATION**

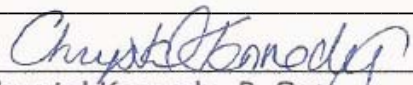
**Chrystal M. Kennedy.**

I, **Chrystal M. Kennedy**, *P. Geo.*, do hereby certify that:

1. This Certificate applies to "43-101 TECHNICAL REPORT AND MINERAL RESOURCE ESTIMATE ON THE PENGUIN LAKE PROJECT" dated February 3<sup>rd</sup>, 2014;
2. I reside at Pleasant Harbour, Halifax County, Nova Scotia, Canada;
3. I am owner, President and senior geologist of Geochryst Geological Consulting 16316 Highway 7, Halifax, NS, CANADA B0J 3H0;
4. I received a Bachelor of Science degree (Honours) in Biology in 1993 and a Bachelor of Science degree in Geology in 1996 from Dalhousie University;
5. I am a registered member in good standing of the Association of Professional Geoscientists of Nova Scotia, Registration Number 105 and l'Ordre des Géologues du Québec, Numéro de membre 1737;
6. I have worked as a geologist since 1997 in Nova Scotia, Quebec, Newfoundland and Labrador and New Brunswick;
7. 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 relevant work experience, I fulfil the requirements to be a "qualified person" for the purposes of NI 43-101;
8. I am one of the qualified persons responsible for the Technical Report entitled: "43-101 TECHNICAL REPORT AND MINERAL RESOURCE ESTIMATE ON THE PENGUIN LAKE PROJECT";
9. I am specifically responsible for preparation of sections 1-10, 13,15,16 and 19 and components of sections 11,12, 17 and 19 of this report, and have reviewed all sections of the report;
10. I have substantial professional experience with respect to geology of the Labrador Trough and am intimately familiar with geology and mineral occurrences of the area referenced in the Technical Report;
11. I have visited the properties that are the subject of the Technical Report;
12. I am independent of Cartier Iron Corporation Ltd., applying all of the tests in section 1.5e

Dated this 3<sup>rd</sup> day of February, 2014, in Pleasant Harbour, Nova Scotia, Canada

[Original signed and sealed by]

  
\_\_\_\_\_  
Chrystal Kennedy, P. Geo.  
President, Senior Geologist  
Geochryst Geological Consulting



**CERTIFICATE OF QUALIFICATION**  
**Abderrazak Ladidi**

I, **Abderrazak Ladidi, P. Geo.** of MRB & Associates 1748 chemin Sullivan, Suite 2100, Val-d'Or (Québec) J9P 7H1 do hereby certify that:

1. This Certificate applies to "*43-101 TECHNICAL REPORT AND MINERAL RESOURCE ESTIMATE ON THE PENGUIN LAKE PROJECT*" dated February 3<sup>rd</sup>, 2014;
2. I graduated from the University of Morocco in 1999 with a B.Sc. in Geology and from Abtibi Témiscamingue's University, Rouyn Noranda in 2011 with a Masters Degree in Engineering ,and I have practised my profession continuously since that time;
3. I am currently working and living in Quebec and I am a Professional Geologist currently licensed by the *Ordre des géologues du Québec* (License 1265);
4. 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 relevant work experience, I fulfil the requirements to be a "qualified person" for the purposes of NI 43-101;
5. I have worked as an exploration and field geologist since 2006. I have knowledge and experience with regard to a number of mineral deposit types including the procedures involved in resource calculation for iron ore deposits, and with the preparation of reports relating to them;
6. I have been retained by Cartier Iron Corp. (a body corporate having a registered office at 20 Adelaide Street East, Suite 301, Toronto, Ontario, Canada M5C 2T6) as a contract/consulting geologist, and not as an employee;
7. I have no prior involvement with Cartier Iron Corp. ("Cartier Iron") other than as a QP, nor with the Property that is the subject of this Report;
8. I have prepared and take responsibility for all sections of this Report entitled "*43-101 TECHNICAL REPORT AND MINERAL RESOURCE ESTIMATE ON THE PENGUIN LAKE PROJECT*" dated February 3<sup>rd</sup>, 2014;
9. I visited the Penguin Lake Property on June 25<sup>th</sup>, 2013;
10. I have no personal knowledge, as of the date of this certificate, of any material fact or change, which is not reflected in this report;
11. I am "independent" of Cartier Iron with respect to the conditions described in Section 1.5 of NI 43-101;
12. I have read NI 43-101 and Form 43-101F1 and have prepared the technical report in compliance with them and in conformity with generally accepted Canadian mining industry practice. As of the date of the certificate, to the best of my knowledge, information and belief, this report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

DATED this 3<sup>rd</sup> Day of February, 2014



**Abderrazak Ladidi M.Eng., P. Geo.**



**APPENDIX I**

**Summary of Claim Statistics: Round Lake Property**

PROJECT	# CLAIMS		EXPIRY DATE	AREA (ha)	EXCESS	WORK REQUIRED	RENT FEES	OWNER
PENGUIN	CDC	2187524	August 31, 2013	52.91	\$450.00	\$450.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	2187525	August 31, 2013	52.91	\$0.00	\$450.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	2187526	August 31, 2013	52.90	\$450.00	\$450.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	2187527	August 31, 2013	52.90	\$450.00	\$450.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	2187528	August 31, 2013	52.90	\$450.00	\$450.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	2187529	August 31, 2013	52.90	\$450.00	\$450.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	2187530	August 31, 2013	52.89	\$450.00	\$450.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	2187531	August 31, 2013	52.89	\$450.00	\$450.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	2187532	August 31, 2013	52.89	\$450.00	\$450.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	2187533	August 31, 2013	52.89	\$450.00	\$450.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	2187534	August 31, 2013	52.89	\$450.00	\$450.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	2187535	August 31, 2013	52.89	\$0.00	\$450.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	2187536	August 31, 2013	52.88	\$450.00	\$450.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	2187537	August 31, 2013	52.88	\$450.00	\$450.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	2187538	August 31, 2013	52.88	\$450.00	\$450.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	2187539	August 31, 2013	52.88	\$450.00	\$450.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	2187540	August 31, 2013	52.88	\$450.00	\$450.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	2187541	August 31, 2013	52.87	\$450.00	\$450.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	2187542	August 31, 2013	52.87	\$450.00	\$450.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	2187543	August 31, 2013	52.87	\$450.00	\$450.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	2187544	August 31, 2013	52.87	\$450.00	\$450.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2140730	January 9, 2014	52.90	\$1.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2140731	January 9, 2014	52.90	\$1.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2140732	January 9, 2014	52.90	\$1.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2140733	January 9, 2014	52.89	\$1.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2140734	January 9, 2014	52.89	\$1.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2140735	January 9, 2014	52.89	\$1.00	\$900.00	\$126.00	CHAMPION IRON MINES
BLACK DAN	CDC	2204887	February 10, 2014	53.02	\$0.00	\$450.00	\$126.00	CHAMPION IRON MINES
BLACK DAN	CDC	2204888	February 10, 2014	53.02	\$0.00	\$450.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2151730	May 13, 2014	52.89	\$772.30	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2151731	May 13, 2014	52.89	\$772.30	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2151732	May 13, 2014	52.89	\$772.30	\$900.00	\$126.00	CHAMPION IRON MINES

PROJECT	# CLAIMS		EXPIRY DATE	AREA (ha)	EXCESS	WORK REQUIRED	RENT FEES	OWNER
AUBREY-ERNIE	CDC	2151733	May 13, 2014	52.89	\$772.30	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2151734	May 13, 2014	52.89	\$772.30	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2151735	May 13, 2014	52.89	\$772.30	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2151736	May 13, 2014	52.89	\$772.30	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2151737	May 13, 2014	52.88	\$772.18	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2151738	May 13, 2014	52.88	\$772.18	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2151739	May 13, 2014	52.88	\$772.18	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2151755	May 13, 2014	52.88	\$772.18	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2151756	May 13, 2014	52.88	\$772.18	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2151766	May 14, 2014	52.90	\$1.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2151767	May 14, 2014	52.90	\$1.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2151768	May 14, 2014	52.90	\$1.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2151769	May 14, 2014	52.90	\$1.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2151770	May 14, 2014	52.90	\$1.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2151771	May 14, 2014	52.89	\$1.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2151772	May 14, 2014	52.89	\$1.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2151773	May 14, 2014	52.89	\$1.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2151774	May 14, 2014	52.89	\$1.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2151775	May 14, 2014	52.89	\$1.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2151777	May 14, 2014	52.90	\$1.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2151778	May 14, 2014	52.89	\$1.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2151779	May 14, 2014	52.89	\$1.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2151780	May 14, 2014	52.88	\$1.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2151781	May 14, 2014	52.88	\$1.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2151782	May 14, 2014	52.88	\$1.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2151783	May 14, 2014	52.87	\$1.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2151784	May 14, 2014	52.87	\$1.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2151896	May 14, 2014	52.88	\$1.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2151897	May 14, 2014	52.88	\$1.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2153292	May 20, 2014	52.86	\$1.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2153293	May 20, 2014	52.86	\$1.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2012806	May 24, 2014	52.88	\$7.18	\$1,350.00	\$126.00	CHAMPION IRON MINES

PROJECT	# CLAIMS		EXPIRY DATE	AREA (ha)	EXCESS	WORK REQUIRED	RENT FEES	OWNER
AUBREY-ERNIE	CDC	2012807	May 24, 2014	52.88	\$7.18	\$1,350.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2012808	May 24, 2014	52.88	\$7.18	\$1,350.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2012809	May 24, 2014	52.88	\$0.00	\$1,350.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2012810	May 24, 2014	52.88	\$7.18	\$1,350.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2012811	May 24, 2014	52.88	\$7.18	\$1,350.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2012812	May 24, 2014	52.88	\$7.18	\$1,350.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2012813	May 24, 2014	52.88	\$7.18	\$1,350.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2012814	May 24, 2014	52.88	\$7.18	\$1,350.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2012815	May 24, 2014	52.88	\$7.18	\$1,350.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2012816	May 24, 2014	52.88	\$7.18	\$1,350.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2012817	May 24, 2014	52.88	\$7.18	\$1,350.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2012818	May 24, 2014	52.88	\$7.18	\$1,350.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2012819	May 24, 2014	52.87	\$0.00	\$1,350.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2012820	May 24, 2014	52.87	\$7.06	\$1,350.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2012821	May 24, 2014	52.87	\$7.06	\$1,350.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2012822	May 24, 2014	52.87	\$7.06	\$1,350.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2012823	May 24, 2014	52.87	\$7.06	\$1,350.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2012824	May 24, 2014	52.87	\$7.06	\$1,350.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2012825	May 24, 2014	52.86	\$6.94	\$1,350.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2012826	May 24, 2014	52.86	\$6.94	\$1,350.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2012827	May 24, 2014	52.86	\$6.94	\$1,350.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2012828	May 24, 2014	52.86	\$6.94	\$1,350.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2012829	May 24, 2014	52.85	\$6.82	\$1,350.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2012830	May 24, 2014	52.85	\$6.82	\$1,350.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2012831	May 24, 2014	52.85	\$6.82	\$1,350.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2012832	May 24, 2014	52.85	\$6.82	\$1,350.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	CDC	2012833	May 24, 2014	52.85	\$6.82	\$1,350.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	2158123	June 3, 2014	52.93	\$0.00	\$900.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	2158124	June 3, 2014	52.93	\$0.00	\$900.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	2158125	June 3, 2014	52.93	\$0.00	\$900.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	2158126	June 3, 2014	52.92	\$0.00	\$900.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	2158127	June 3, 2014	52.92	\$0.00	\$900.00	\$126.00	CHAMPION IRON MINES

PROJECT	# CLAIMS		EXPIRY DATE	AREA (ha)	EXCESS	WORK REQUIRED	RENT FEES	OWNER
PENGUIN	CDC	2158208	June 3, 2014	52.97	\$596.00	\$900.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	2158209	June 3, 2014	52.97	\$0.00	\$900.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	2158210	June 3, 2014	52.96	\$0.00	\$900.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	2158211	June 3, 2014	52.96	\$0.00	\$900.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	2158212	June 3, 2014	52.95	\$0.00	\$900.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	2158213	June 3, 2014	52.95	\$0.00	\$900.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	2158214	June 3, 2014	52.95	\$0.00	\$900.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	2158215	June 3, 2014	52.94	\$0.00	\$900.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	2158216	June 3, 2014	52.94	\$0.00	\$900.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	2158217	June 3, 2014	52.94	\$0.00	\$900.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	2158218	June 3, 2014	52.93	\$21.00	\$900.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	2158219	June 3, 2014	52.93	\$0.00	\$900.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	2158220	June 3, 2014	52.93	\$0.00	\$900.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	2158221	June 3, 2014	52.92	\$0.00	\$900.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	2158222	June 3, 2014	52.92	\$2.00	\$900.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	2158223	June 3, 2014	52.91	\$0.00	\$900.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	2158224	June 3, 2014	52.91	\$0.00	\$900.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	2158225	June 3, 2014	52.91	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	2158226	June 3, 2014	52.90	\$0.00	\$900.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	2158227	June 3, 2014	52.90	\$0.00	\$900.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	2158228	June 3, 2014	52.90	\$1.00	\$900.00	\$126.00	CHAMPION IRON MINES
BLACK DAN	CDC	2159987	June 8, 2014	53.03	\$0.00	\$1,200.00	\$54.25	CHAMPION IRON MINES
BLACK DAN	CDC	2159988	June 8, 2014	53.03	\$0.00	\$1,200.00	\$54.25	CHAMPION IRON MINES
BLACK DAN	CDC	2159989	June 8, 2014	53.03	\$0.00	\$1,200.00	\$54.25	CHAMPION IRON MINES
BLACK DAN	CDC	2159993	June 8, 2014	53.02	\$1.00	\$900.00	\$126.00	CHAMPION IRON MINES
BLACK DAN	CDC	2159994	June 8, 2014	53.02	\$1.00	\$900.00	\$126.00	CHAMPION IRON MINES
BLACK DAN	CDC	2159995	June 8, 2014	53.01	\$1.00	\$900.00	\$126.00	CHAMPION IRON MINES
BLACK DAN	CDC	2159996	June 8, 2014	53.01	\$1.00	\$900.00	\$126.00	CHAMPION IRON MINES
BLACK DAN	CDC	2159997	June 8, 2014	53.01	\$1.00	\$900.00	\$126.00	CHAMPION IRON MINES
BLACK DAN	CDC	2159998	June 8, 2014	53.00	\$1.00	\$900.00	\$126.00	CHAMPION IRON MINES
BLACK DAN	CDC	2159999	June 8, 2014	53.00	\$1.00	\$900.00	\$126.00	CHAMPION IRON MINES
BLACK DAN	CDC	2160000	June 8, 2014	53.00	\$1.00	\$900.00	\$126.00	CHAMPION IRON MINES

PROJECT	# CLAIMS		EXPIRY DATE	AREA (ha)	EXCESS	WORK REQUIRED	RENT FEES	OWNER
BLACK DAN	CDC	2241575	July 19, 2014	53.01	\$0.00	\$450.00	\$126.00	CHAMPION IRON MINES
BLACK DAN	CDC	2243005	July 27, 2014	53.02	\$1.00	\$450.00	\$126.00	CHAMPION IRON MINES
BLACK DAN	CDC	2243006	July 27, 2014	53.01	\$0.00	\$450.00	\$126.00	CHAMPION IRON MINES
BLACK DAN	CDC	2243725	July 28, 2014	53.08	\$0.00	\$1,200.00	\$54.25	CHAMPION IRON MINES
BLACK DAN	CDC	2243726	July 28, 2014	53.08	\$0.00	\$1,200.00	\$54.25	CHAMPION IRON MINES
BLACK DAN	CDC	2243727	July 28, 2014	53.07	\$0.00	\$1,200.00	\$54.25	CHAMPION IRON MINES
BLACK DAN	CDC	2243728	July 28, 2014	53.07	\$0.00	\$1,200.00	\$54.25	CHAMPION IRON MINES
BLACK DAN	CDC	2243729	July 28, 2014	53.07	\$0.00	\$1,200.00	\$54.25	CHAMPION IRON MINES
BLACK DAN	CDC	2243730	July 28, 2014	53.07	\$0.00	\$1,200.00	\$54.25	CHAMPION IRON MINES
BLACK DAN	CDC	2243731	July 28, 2014	53.06	\$0.00	\$1,200.00	\$54.25	CHAMPION IRON MINES
BLACK DAN	CDC	2243732	July 28, 2014	53.06	\$0.00	\$1,200.00	\$54.25	CHAMPION IRON MINES
BLACK DAN	CDC	2243733	July 28, 2014	53.06	\$0.00	\$1,200.00	\$54.25	CHAMPION IRON MINES
BLACK DAN	CDC	2243734	July 28, 2014	53.06	\$0.00	\$1,200.00	\$54.25	CHAMPION IRON MINES
BLACK DAN	CDC	2243735	July 28, 2014	53.06	\$0.00	\$1,200.00	\$54.25	CHAMPION IRON MINES
BLACK DAN	CDC	2243736	July 28, 2014	53.05	\$0.00	\$1,200.00	\$54.25	CHAMPION IRON MINES
BLACK DAN	CDC	2243737	July 28, 2014	53.05	\$0.00	\$1,200.00	\$54.25	CHAMPION IRON MINES
BLACK DAN	CDC	2243738	July 28, 2014	53.05	\$0.00	\$1,200.00	\$54.25	CHAMPION IRON MINES
BLACK DAN	CDC	2243739	July 28, 2014	53.05	\$0.00	\$1,200.00	\$54.25	CHAMPION IRON MINES
BLACK DAN	CDC	2243740	July 28, 2014	53.05	\$0.00	\$1,200.00	\$54.25	CHAMPION IRON MINES
BLACK DAN	CDC	2243741	July 28, 2014	53.05	\$0.00	\$1,200.00	\$54.25	CHAMPION IRON MINES
BLACK DAN	CDC	2243742	July 28, 2014	53.04	\$0.00	\$1,200.00	\$54.25	CHAMPION IRON MINES
BLACK DAN	CDC	2243743	July 28, 2014	53.04	\$0.00	\$1,200.00	\$54.25	CHAMPION IRON MINES
BLACK DAN	CDC	2243744	July 28, 2014	53.04	\$0.00	\$1,200.00	\$54.25	CHAMPION IRON MINES
BLACK DAN	CDC	2243745	July 28, 2014	53.04	\$0.00	\$1,200.00	\$54.25	CHAMPION IRON MINES
BLACK DAN	CDC	2243746	July 28, 2014	53.04	\$0.00	\$1,200.00	\$54.25	CHAMPION IRON MINES
BLACK DAN	CDC	2243747	July 28, 2014	53.03	\$0.00	\$1,200.00	\$54.25	CHAMPION IRON MINES
BLACK DAN	CDC	2243748	July 28, 2014	53.03	\$0.00	\$1,200.00	\$54.25	CHAMPION IRON MINES
BLACK DAN	CDC	2243749	July 28, 2014	53.03	\$0.00	\$1,200.00	\$54.25	CHAMPION IRON MINES
BLACK DAN	CDC	2243750	July 28, 2014	53.03	\$0.00	\$1,200.00	\$54.25	CHAMPION IRON MINES
BLACK DAN	CDC	2243751	July 28, 2014	53.02	\$0.00	\$450.00	\$126.00	CHAMPION IRON MINES
BLACK DAN	CDC	2243752	July 28, 2014	53.02	\$82.00	\$450.00	\$126.00	CHAMPION IRON MINES
BLACK DAN	CDC	2243753	July 28, 2014	52.99	\$0.00	\$450.00	\$126.00	CHAMPION IRON MINES



PROJECT	# CLAIMS		EXPIRY DATE	AREA (ha)	EXCESS	WORK REQUIRED	RENT FEES	OWNER
BLACK DAN	CDC	2243754	July 28, 2014	52.99	\$38.00	\$450.00	\$126.00	CHAMPION IRON MINES
BLACK DAN	CDC	2243755	July 28, 2014	52.99	\$0.00	\$450.00	\$126.00	CHAMPION IRON MINES
BLACK DAN	CDC	2243756	July 28, 2014	52.98	\$316.00	\$450.00	\$126.00	CHAMPION IRON MINES
BLACK DAN	CDC	2243757	July 28, 2014	52.98	\$316.00	\$450.00	\$126.00	CHAMPION IRON MINES
BLACK DAN	CDC	2243758	July 28, 2014	52.98	\$316.00	\$450.00	\$126.00	CHAMPION IRON MINES
BLACK DAN	CDC	2243759	July 28, 2014	52.97	\$316.00	\$450.00	\$126.00	CHAMPION IRON MINES
BLACK DAN	CDC	2243760	July 28, 2014	52.97	\$316.00	\$450.00	\$126.00	CHAMPION IRON MINES
BLACK DAN	CDC	2243761	July 28, 2014	52.96	\$316.00	\$450.00	\$126.00	CHAMPION IRON MINES
BLACK DAN	CDC	2243762	July 28, 2014	52.96	\$316.00	\$450.00	\$126.00	CHAMPION IRON MINES
BLACK DAN	CDC	2243763	July 28, 2014	52.96	\$316.00	\$450.00	\$126.00	CHAMPION IRON MINES
BLACK DAN	CDC	2243764	July 28, 2014	52.96	\$316.00	\$450.00	\$126.00	CHAMPION IRON MINES
BLACK DAN	CDC	2243765	July 28, 2014	52.96	\$316.00	\$450.00	\$126.00	CHAMPION IRON MINES
BLACK DAN	CDC	2243766	July 28, 2014	52.96	\$316.00	\$450.00	\$126.00	CHAMPION IRON MINES
BLACK DAN	CDC	2243767	July 28, 2014	52.95	\$316.00	\$450.00	\$126.00	CHAMPION IRON MINES
BLACK DAN	CDC	2243768	July 28, 2014	52.95	\$316.00	\$450.00	\$126.00	CHAMPION IRON MINES
BLACK DAN	CDC	2243769	July 28, 2014	52.95	\$316.00	\$450.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	33521	August 26, 2014	52.93	\$0.00	\$1,800.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	33522	August 26, 2014	52.93	\$0.00	\$1,800.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	33523	August 26, 2014	52.93	\$0.00	\$1,800.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	33524	August 26, 2014	52.92	\$0.00	\$1,800.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	33525	August 26, 2014	52.92	\$0.00	\$1,800.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	33526	August 26, 2014	52.92	\$0.00	\$1,800.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	33527	August 26, 2014	52.92	\$0.00	\$1,800.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	33528	August 26, 2014	52.92	\$0.00	\$1,800.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	33529	August 26, 2014	52.91	\$0.00	\$1,800.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	33530	August 26, 2014	52.91	\$0.00	\$1,800.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	33531	August 26, 2014	52.91	\$0.00	\$1,800.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	33532	August 26, 2014	52.91	\$0.00	\$1,800.00	\$126.00	CHAMPION IRON MINES
PENGUIN	CDC	33533	August 26, 2014	52.91	\$0.00	\$1,800.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE		2176069	January 6, 2015	52.88	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE		2176070	January 6, 2015	52.87	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE		2176071	January 6, 2015	52.87	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES

PROJECT	# CLAIMS	EXPIRY DATE	AREA (ha)	EXCESS	WORK REQUIRED	RENT FEES	OWNER
AUBREY-ERNIE	2176072	January 6, 2015	52.87	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	2176073	January 6, 2015	52.87	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	2176074	January 6, 2015	52.87	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	2176075	January 6, 2015	52.87	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	2176076	January 6, 2015	52.87	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	2176077	January 6, 2015	52.87	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	2176078	January 6, 2015	52.86	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	2176079	January 6, 2015	52.86	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	2176108	January 6, 2015	52.89	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	2176109	January 6, 2015	52.89	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	2176110	January 6, 2015	52.89	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	2176111	January 6, 2015	52.89	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	2176112	January 6, 2015	52.89	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	2176113	January 6, 2015	52.89	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	2176114	January 6, 2015	52.89	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	2176115	January 6, 2015	52.89	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	2176116	January 6, 2015	52.88	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	2176117	January 6, 2015	52.88	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	2176118	January 6, 2015	52.88	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	2176119	January 6, 2015	52.87	\$0.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	2176120	January 6, 2015	52.87	\$0.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	2176121	January 6, 2015	52.87	\$22.18	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	2176122	January 6, 2015	52.87	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	2176123	January 6, 2015	52.87	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	2176124	January 6, 2015	52.87	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	2176125	January 6, 2015	52.87	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	2176126	January 6, 2015	52.87	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	2176127	January 6, 2015	52.87	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	2176128	January 6, 2015	52.87	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	2176129	January 6, 2015	52.87	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	2176130	January 6, 2015	52.87	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE	2176131	January 6, 2015	52.86	\$0.00	\$900.00	\$126.00	CHAMPION IRON MINES

PROJECT	# CLAIMS	EXPIRY DATE	AREA (ha)	EXCESS	WORK REQUIRED	RENT FEES	OWNER	
AUBREY-ERNIE		2176132	January 6, 2015	52.86	\$0.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE		2176133	January 6, 2015	52.86	\$22.06	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE		2176134	January 6, 2015	52.86	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE		2176135	January 6, 2015	52.86	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE		2176136	January 6, 2015	52.86	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE		2176137	January 6, 2015	52.86	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE		2176138	January 6, 2015	52.86	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE		2176139	January 6, 2015	52.86	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE		2176140	January 6, 2015	52.86	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE		2176141	January 6, 2015	52.86	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE		2176142	January 6, 2015	52.86	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE		2176143	January 6, 2015	52.86	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE		2176144	January 6, 2015	52.85	\$5.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE		2176145	January 6, 2015	52.85	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE		2176146	January 6, 2015	52.85	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE		2176147	January 6, 2015	52.85	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE		2176148	January 6, 2015	52.85	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE		2176149	January 6, 2015	52.85	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE		2176150	January 6, 2015	52.84	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE		2176151	January 6, 2015	52.84	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE		2176152	January 6, 2015	52.84	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE		2176153	January 6, 2015	52.84	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE		2176154	January 6, 2015	52.84	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE		2176155	January 6, 2015	52.84	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE		2176156	January 6, 2015	52.84	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE		2176157	January 6, 2015	52.84	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE		2176158	January 6, 2015	52.84	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE		2176159	January 6, 2015	52.84	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE		2176160	January 6, 2015	52.84	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE		2176067	January 6, 2015	52.89	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
AUBREY-ERNIE		2176068	January 6, 2015	52.88	\$140.00	\$900.00	\$126.00	CHAMPION IRON MINES
Round Lake	CDC	2377188	January 30, 2015	53.02	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation

PROJECT	# CLAIMS		EXPIRY DATE	AREA (ha)	EXCESS	WORK REQUIRED	RENT FEES	OWNER
Round Lake	CDC	2377189	January 30, 2015	53.01	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377190	January 30, 2015	53.01	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377191	January 30, 2015	53.00	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377192	January 30, 2015	53.00	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377193	January 30, 2015	53.00	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377194	January 30, 2015	53.00	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377195	January 30, 2015	52.99	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377196	January 30, 2015	52.99	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377197	January 30, 2015	52.99	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377198	January 30, 2015	52.99	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377199	January 30, 2015	52.98	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377200	January 30, 2015	52.98	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377201	January 30, 2015	52.97	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377202	January 30, 2015	52.94	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377203	January 30, 2015	52.94	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377204	January 30, 2015	52.94	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377205	January 30, 2015	52.93	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377206	January 30, 2015	52.93	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377207	January 30, 2015	52.93	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377208	January 30, 2015	52.93	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377209	January 30, 2015	52.92	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377210	January 30, 2015	52.92	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377211	January 30, 2015	52.92	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377212	January 30, 2015	52.92	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377213	January 30, 2015	52.91	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377214	January 30, 2015	52.91	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377215	January 30, 2015	52.91	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377216	January 30, 2015	52.90	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377217	January 30, 2015	52.90	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377218	January 30, 2015	52.90	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377219	January 30, 2015	52.89	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377220	January 30, 2015	52.89	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation















PROJECT	# CLAIMS		EXPIRY DATE	AREA (ha)	EXCESS	WORK REQUIRED	RENT FEES	OWNER
Round Lake	CDC	2377413	January 30, 2015	52.87	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377466	January 30, 2015	53.00	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377467	January 30, 2015	53.00	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377468	January 30, 2015	52.99	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377469	January 30, 2015	52.99	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377470	January 30, 2015	52.99	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377471	January 30, 2015	52.99	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377472	January 30, 2015	52.98	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377473	January 30, 2015	52.98	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377474	January 30, 2015	52.98	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377475	January 30, 2015	52.98	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377476	January 30, 2015	52.98	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377477	January 30, 2015	52.98	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377478	January 30, 2015	52.97	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377479	January 30, 2015	52.97	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377480	January 30, 2015	52.97	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377481	January 30, 2015	52.97	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377482	January 30, 2015	52.97	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377483	January 30, 2015	52.97	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377484	January 30, 2015	52.97	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377485	January 30, 2015	52.97	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377486	January 30, 2015	52.96	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377487	January 30, 2015	52.96	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377488	January 30, 2015	52.96	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377489	January 30, 2015	52.96	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377490	January 30, 2015	52.96	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377491	January 30, 2015	52.96	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377492	January 30, 2015	52.96	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377493	January 30, 2015	52.96	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377494	January 30, 2015	52.95	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377495	January 30, 2015	52.95	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377496	January 30, 2015	52.95	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation

PROJECT	# CLAIMS		EXPIRY DATE	AREA (ha)	EXCESS	WORK REQUIRED	RENT FEES	OWNER
Round Lake	CDC	2377497	January 30, 2015	52.95	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377498	January 30, 2015	52.95	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377499	January 30, 2015	52.95	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377500	January 30, 2015	52.95	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377501	January 30, 2015	52.95	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377502	January 30, 2015	52.95	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
Round Lake	CDC	2377503	January 30, 2015	52.95	\$0.00	\$135.00	\$126.00	Cartier Iron Corporation
	<b>519 claims</b>			<b>27,465.86</b>	<b>31,650.56</b>	<b>277,890.00</b>	<b>63,313.25</b>	





**MAP 1**

**Claim Map: Round Lake Property**

# Map 1: Round Lake Claim Map

NORTH

**LEGEND**

-  Road
-  Claim boundary
-  Hydrography
-  Property boundary

UTM Grid - NAD83 Zone 19

