

# GM 66891

TECHNICAL REPORT AND RECOMMENDATIONS, THE LAKE TOULADI FE-TI DEPOSIT

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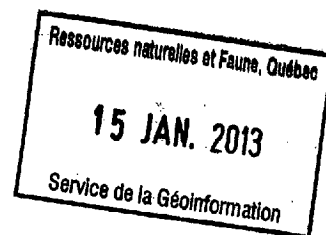
**Technical Report and Recommendations**

**The Lake Touladi Fe-Ti deposit  
Lyonne and Chabanel Townships  
Lac St-Jean area, Québec**

**NTS 32A07**

**CANAMARA ENERGY CORPORATION**

**May 10, 2010**



**GM 66891**

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### ITEM3 SUMMARY

New exploration work at the Lake Touladi Fe-Ti deposit, including an airborne magnetic survey, suggests important undiscovered mineralized zones associated with strong magnetic low signatures covering a large area (3 X 0.5 km) and probably related to ilmenite-rich or reversely polarized Ti-magnetic-rich mineralized bodies at shallow depth. SEM quantitative analyses of the oxide minerals indicate that pure ilmenite with the chemical composition reaching that of the theoretical ilmenite may form more than 65 % of the mineralization. As for mineralization processing, iron would be extracted principally from Ti-poor magnetite and titanium, form pure ilmenite and perhaps titanomagnetite and ilmenoematite.

The Fe-Ti Lake Touladi Property is located in the province of Quebec within the regional municipality of Le Domaine du Roy; NTS map sheet 32A07. The property lies on the NW side of the Lac St-Jean about 30 km from the town of Roberval. The Property consists of 68 mineral claims for a total area of 38.83 km<sup>2</sup>. The property is 100% owned by Mr. Fayz Yacoub who irrevocably granted to Canamara Energy Corp. the sole and exclusive right and option to acquire an undivided 100% interest in and to the property, free and clear of all liens, charges, encumbrances, claims, rights or interest of any other person. A new access road via the north end of the Property is viewed as an important development in improving the value of the deposit. The main showing of the Property will be soon attainable from a 1.6 km bush road leading to well-maintained logging roads that reach the village of La Doré 30 km to the north.

The Lake Touladi area is underlain by Precambrian high-grade plagioclase-rich gneiss, amphibolite, microcline granite, and metagabbro along with a few quartzite and pyroxenite that are part of the Canadian Grenville Province. The Fe-Ti deposit forms a large north-trending elongated body of metagabbro, which is locally anorthositic. The mineralized rock consists of concentration of medium-grained magnetite and ilmenite, with feldspar and ferromagnesian silicates, forming dense layers or lenses several cm thick in width, separated by narrow bands of silicate-rich material.

Four major mineralized zones, A to D, were identified through the 1950's by ground based exploration, magnetic surveying and drilling. 1800 m of short and long diamond drill holes were performed by the Roberval Mining Corporation, concentrated mainly in the A and B zones. The historical average grade for the short DDH was established at 23.6 wt. % Fe and 6.92 wt. % Titania (TiO<sub>2</sub>). Historical mineral resources for Zone A provided a tonnage of 90 Mt, running at 23.5 wt. % Fe and 6.8 wt. % TiO<sub>2</sub>. For the B zone, the historical tonnage was established at 34 Mt grading approximately 22.6% wt. % Fe and 6.2 wt. % TiO<sub>2</sub>, suggesting a resource of 124 Mt of mineralization in these two zones grading 23.3 wt. % Fe and 6.6 wt. % TiO<sub>2</sub>. The historical mineral resources estimates are being presented and treated as historic information only and have not been verified or relied upon for economic evaluation by Pacific Arc Resources or the writer. These historical mineral resources do not refer to any category of section 1.2 of the NI-43-101 Instrument such as "inferred reserved" as stated in the 2005 CIM Definition Standards on Mineral Resources and Mineral Reserves. Therefore, the author is in the opinion that the above quoted reserves for the Red Pine Lake deposit cannot be relied upon. The author has not verified or relied upon these estimates for economic evaluation and is in the opinion that only new drilling campaigns conducted in the same areas could support these claims.

A helicopter-borne magnetic geophysical survey flown over the property highlighted two NS-oriented zones of magnetic highs juxtaposed on their western side by parallel zones of strong magnetic lows. Most of the magnetite-rich zones submitted to earlier drilling (Zones A to D) are associated with magnetic highs. The interpretation of the new aeromagnetic survey in combination with the examination of previous surveys and drilling campaigns show that: a) areas defined by strong magnetic low anomalies, probably related to the presence of hematite mineralization at depth, were not investigated by drilling; b) zones characterized by strong positive anomalies were only partially explored and c), there is a newer, albeit less well defined, NS-oriented area located 1 km west of the main showing that displays a similar pattern of alternating magnetic highs and lows which should be spatially related with mineralized gabbroic lithologies.

New chemical analyses on collected grab samples reveal average Fe and TiO<sub>2</sub> contents of 25.66 and 7.59 wt.% respectively which are comparable to published values for Zone A and B (22.6-23.5 wt.% Fe and 6.2-6.8 wt.% TiO<sub>2</sub>), and composites of the short holes drilled by Roberval Mining Corporation (23.6-26.1 wt.% Fe and 6.92-7.50 wt. TiO<sub>2</sub>). Canamara Energy Corp. intends to initiate a comprehensive and systematic drilling campaign to test the new targets identified by the airborne geophysical survey and further investigate the extension of the previously discovered Fe-Ti mineralized zones. The company will also pursue a vigorous exploration program that will include overburden stripping, geological mapping and grab/channel sampling.

The Lake Touladi Fe-Ti property represents a high potential asset since the new airborne magnetic survey has unearthed important anomalous zones, both showing very high and low readings relative to background values. These highs and lows may correspond to undiscovered bodies of magnetite±ilmenite and ilmenite±magnetite-rich mineralization. The tonnage ascribed to magnetite±ilmenite-rich mineralized bodies, previously identified through drilling, can be increased substantially by drilling the expanded anomalous high reading magnetic zones. The presence of ilmenite±magnetite-rich bodies is more contentious and is inferred by a large NS-oriented structure (3 x 0.5 km) underlined by very low magnetic readings that can reach -6,000 nT relative to background values. This purported zone is covered by overburden and needs to be tested by drilling. Canamara Energy Corp. advocates a cautious approach to the future exploration campaign. Phase I of the campaign will focus on stripping, clearing and mapping a strategic 200 x 200 m area of land to unearth part of the ilmenite-rich and magnetite-rich zones. A thorough sampling program will be conducted. The prospection and mapping of the southern area of the property is proposed as well as a new airborne magnetic survey to complete the previously accomplished one. Phase I will cost \$228, 231. Contingent on result of Phase I, an important drilling program can be put in place involving 56 DDH distributed in a fence pattern over the ilmenite±magnetite and magnetite±ilmenite-rich zones. The amount devoted to the second phase is \$1, 892, 261.



#### **ITEM 4 INTRODUCTION AND TERMS OF REFERENCE**

This report was prepared for Canamara Energy Corp. in reliance on National Instrument 43-101 –Standards of Disclosure for Mineral Projects and form 43-101F1. The report provides technical geological data relevant to Canamara Energy Corp. Lake Touladi Fe-Ti Property located in the Lyonne and Chabanel Townships in NTS map sheet 32A07. The purpose of this report is to present the status of current geological information generated from Canamara Energy Corp. ongoing exploration program on the Property and to provide recommendations for future work. This report is based on information from reports available in the public record with the Ministère des richesses Naturelles et de la Faune du Québec and general geological reports and maps. All these reports were prepared before the implementation of NI 43-101. Although many authors of such reports appear to be qualified and the information was prepared to standards acceptable to the exploration community at the time, the data does not fully meet present requirements. The author does not take responsibility for the information provided from such sources. The author however believes the information provided is verifiable in the field, and that it is a reasonable representation of the deposit. The author visited the Lake Touladi Property on July 2, 2008 and collected rock samples from the main showing area.

#### **ITEM 5 RELIANCE ON OTHER EXPERTS**

The author has relied upon information provided by Canamara Energy Corp. that described the purchase option agreement into which Canamara Energy Corp. entered into the project and on data that describe the exploration rights, obligations and claim titles. To the best knowledge of the author, there are no current or pending litigations that may be material to the Lake Touladi assets. The writer also relied on one published geophysical reports entitled: “Helicopter -borne magnetic and VLF geophysical survey, Roberval area, Quebec, NTS map sheet 32A07; data acquisition report, Touladi Lake project” by Olivier Létourneau. The author extracted the procedure mechanisms and description of equipment used in the airborne survey and took the various maps included for further

interpretation. The interpretations and conclusions derived from the consultation of these two documents and presented in this Technical Report are the sole responsibility of the author.

## **ITEM 6 PROPERTY DESCRIPTION AND LOCATION**

The Lake Touladi Property is located in the province of Quebec in the regional municipality of Le Domaine du Roy, and covers part of the Lyonne and Chabanel Townships in NTS map sheet 33A07. The property lies on the NW side of the Lac St-Jean about 30 km from the town of St-Félicien and 37 km from the town of Roberval. The property is 100% owned by Mr. Fayz Yacoub and has been optioned by Canamara Energy Corp. The Lake Touladi Property consists of 68 mineral claims (polygons) for a total area of 38.83 km<sup>2</sup>, 3883 hectares (Figure 1). The center of the property is situated at UTM coordinates 670238 E and 5370139 N (NAD83; Zone 18), with the details of the titles given in Appendix 1.

The Lake Touladi Property was staked by Mr. Fayz Yacoub through the GESTIM website run by the Ministère des richesses Naturelles et de la Faune du Québec. The UTM coordinates and grid contours on the geological maps are extracted from the information given on the GESTIM website. There are no mineral resources or mineral reserves on the Lake Touladi property according to the 2005 CIM Definition Standards. There are no existing mine workings, tailing ponds, waste deposits and important natural features and improvements relative to the outside property boundaries.

Pursuant to an Agreement dated August 25, 2009 (which supersedes the former February 20, 2008 Agreement amended on August 11, 2009 and July 24, 2009) between Canamara Energy Corp. (the “**Optionee**”) and Messrs. Fayz and Ramy Yacoub (the “**Optionor**”) owner of a 100% undivided interest in 68 contiguous mineral claims of the Lake Touladi Property (“**Property**”) situated in the province of Quebec in the regional municipality of Le Domaine du Roy, Lyonne and Chabanel Townships, NTS map sheet 32A07, the Optionor hereby grants to the Optionee the sole and exclusive right and option to acquire a 100% undivided interest in and to the Property on the following terms and conditions:

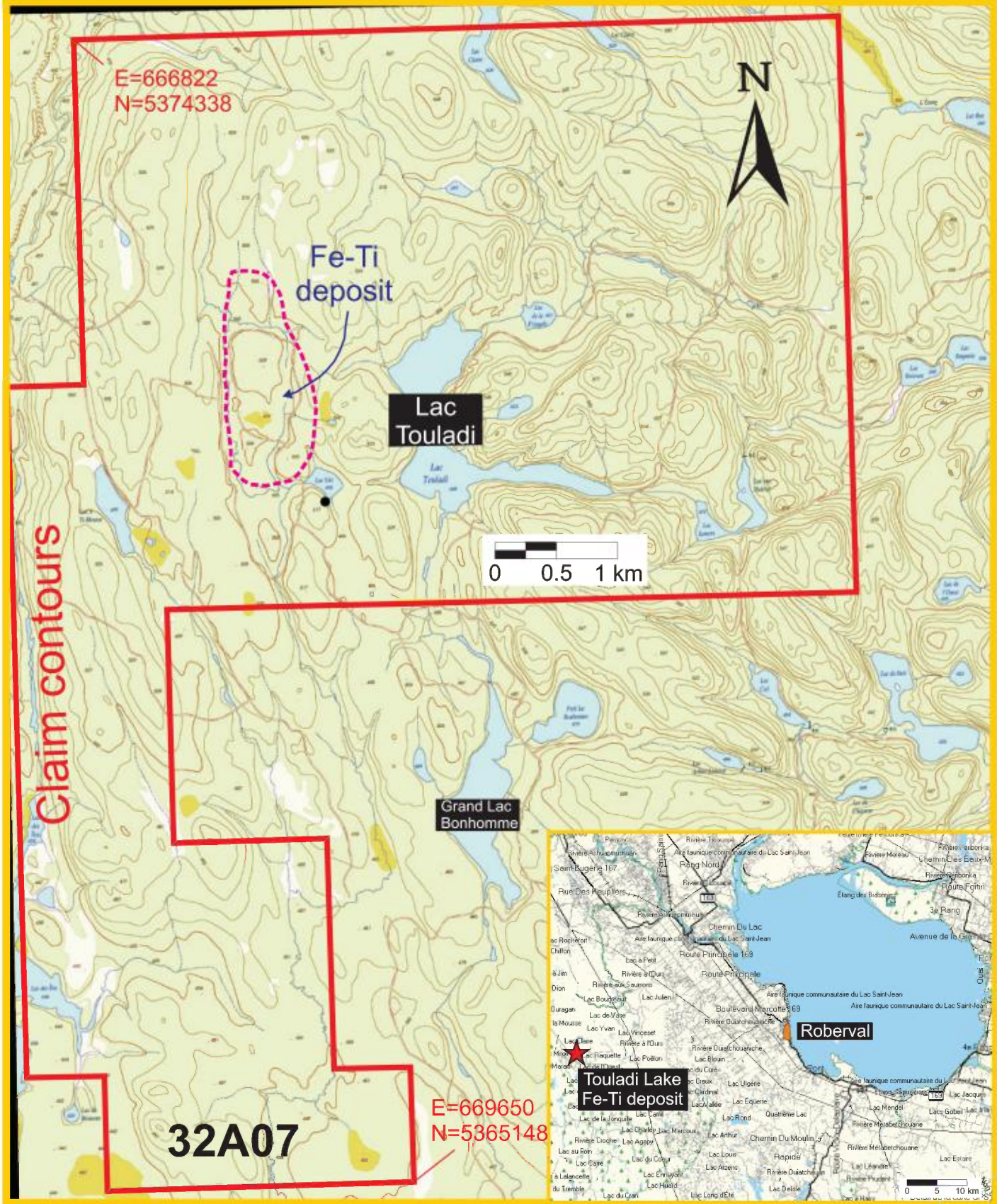


Figure 1. Claim contours of the Lake Touladi Fe-Ti Property. UTM Coord.; NAD83; Zone 18; E=Easting; N=Northing..

1a) \$50,000 payable within 7 days of the Effective Date; b) an additional \$7,000 on or before August 25, 2009, c) an additional \$7,000 on or before September 15, 2009, d) an additional \$7,000 on or before October 15, 2009 and e) an additional \$30,000 on or before November 30, 2009.

2-The **Optionee** allotting and issuing the following common shares in its capital stock to the Optionor: a) 500,000 shares deliverable within 7 days of the Effective Date, b) an additional 1,000,000 shares on or before the first anniversary of the Effective Date, c) an additional 50,000 shares on or before August 25, 2009, d) an additional 1,550,000 on or before November 30, 2009. Canamara Energy Corp. is committed to completing an Initial Public Offering (IPO) and/or Canamara will have entered into an agreement with a third party for the further development of the Property on or before December 31, 2010.

3-The **Optionee** incurring the following Expenditures on the property: a) \$100,000 on or before August 31, 2008, b) an additional \$250,000 on or before November 30, 2011 and c), an additional \$600,000 on or before November 30, 2012.

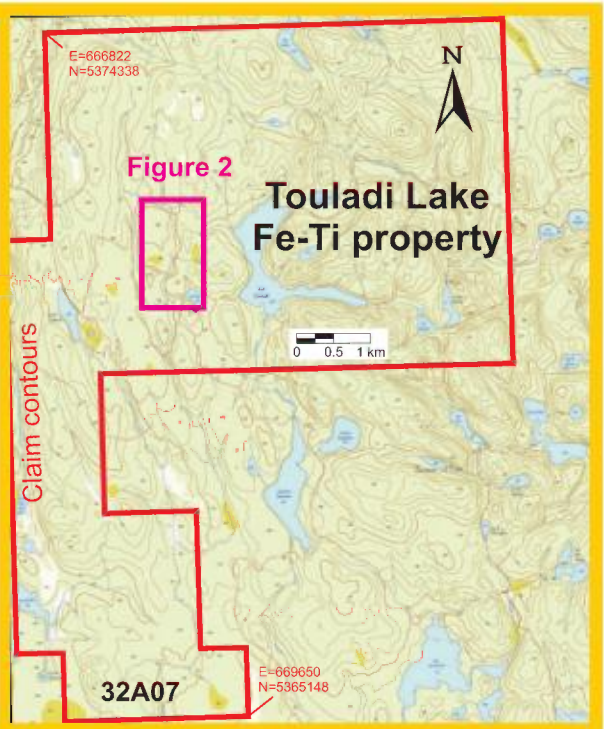
The **Optionee** will have the right at any time following the execution of this Agreement to purchase 60% of the Royalty, equal to 1.5% of the net Smelter Returns, for the sum of \$2,000,000.

The Option shall terminate in the event that the **Optionee** fails to advance any of the cash amounts stipulated above, to allot and issue any of the common shares in its capital stock or fails to incur all of the expenditures mentioned above.

Canamara Energy Corp. has stated to the author that as of May 10, 2010, all the payments to the Optionor were up to date.

There are five known mineralized zones represented by magnetite-rich bodies expressed as cm-thick layers in gabbroic/anorthosite rocks (Figure 2). Zone A is 575 m long and 130 to 350 m wide with a visual estimate of 30 to 50% magnetite. The zone may extend to 975 m in length. Zone B strike NE and measures 575 X 250 m over a low positive magnetic reading. Field observations correspond to gabbroic outcrops with 30 to 50% magnetite. Zones C (280 X 50 m), D (200 x 175 m; 35-40% magnetite) and E (a small circular bodies containing 20% magnetite) were secondary targets and were not investigated thoroughly.

According to Quebec government records, no part of the land covered by the property is a park or mineral reserve. However, part of the property is contained within the boundaries of the ZEC (Zone d'Exploitation Contrôlée) La Lièvre. A ZEC is a system of territorial infrastructures set up by the government of Quebec to manage fishing and hunting activities and see to wildlife conservation on their respective territories. The structure of the



## Precambrian (Grenville Province)


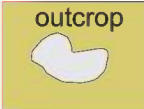


- 
outcrop  
Microcline granite
- 
outcrop  
Anorthositic gabbro  
Gabbro
- 
Diamond Drill Hole (DDH)
- 
Overgrown dirt road

Figure 2. Geology of the Lake Touladi deposit showing the location of the core hole drilled during the 1950's (see Bergmann, 1958). Four principal Fe-Ti mineralized zones, A to D, were delimited; two of which were evaluated for their tonnage.

ZEC does not impede on any mining and exploration activities carried out by private companies. To our knowledge, the property is devoid of royalties, back in rights, payments or other encumbrances. The Lake Touladi Property is not subject to environmental liabilities except for those specified in the “Loi sur les Mines” (L.R.Q. chapter M-13.1). No permit is required to conduct a drilling campaign. However, a “Permis d’Intervention en Forêt” is needed to be able to cut trees on Crown Land. This permit can easily be obtained within a month after the written request is submitted. The Touladi property sits over a land characterized by lakes and small hills. The ASL altitude varies from 500 to 540 m.

In Quebec, the mining claim is valid for a period of 2 years. During this period and/or until renewal, the owner or optionor must spend \$1, 2000 per claim validated as exploration expenses (i.e. geological mapping, geophysical survey, drilling...) for the claim to be in good standing. The renewal must be forwarded to the Quebec government, at a cost, 60 days before the claim expiration date. The renewal is obtain only if the exploration expenses satisfy all the requirements established by the Ministère des Richesses naturelles du Québec.

## **ITEM 7 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES INFRASTRUCTURE AND PHYSIOGRAPHY**

Access to the property from Montreal, Quebec, is via highway #40 east to the city of Trois-Rivière, where we proceed to highway 55 north and provincial road 155 until we reach the shore of the Lac-St-Jean at the village of Chambord. From the intersection, we turn north on provincial route 169 and travel 17 km to the city of Roberval. There are two access roads to the main showings of the Property. The arduous path brings us to the town of Roberval until we attain the intersection with the Chemin de St-Edwidge where we turn left. We proceed on this road for 10 km until reaching the village of St-Edwidge. Turning right on the intersection with the Rue Principale and crossing the bridge over the Ouiatchouaniche River we travel 1.1 km to the intersection with the Chemin de La Lièvre gravel road. We travel 8.3 km on this road to the gate of the ZEC La Lièvre. Another 22

km needs to be covered by a 4X4 vehicle upon reaching a sinuous and bumpy dirt and gravel path that needs to be travelled slowly north by ATV for 9 km until we attain the main outcrops of the showing. A more efficient and easily access road will be soon opened to the north of Lake Touladi. Logging roads built by Abitibi Bowater are accessible from provincial road 167 about 20 km NNE from the town of St-Félicien in the La Doré village. From the intersection with the St-Joseph du Nord street, we turn left and drive for 30 km to the south on dirt and gravel roads in good condition until we attain a point located to the north of Lake Touladi less than 1.6 km from the main showings. An access road through the bush is currently planned to accommodate drilling equipment and 4X4 vehicles (Figure 17). The northern access to the Lake Touladi deposit is viewed as an important development in improving the value of the Property. Just a few years ago, the access to the showing sites was considered extremely difficult. The construction of more than 30 km of well maintained logging roads reaching north of Lake Touladi will cut down the travelling time and permit access to larger and heavier equipment.

The topography of the Lake Touladi area is typical of the Canadian Shield i.e. rolling hills reaching between 60 to 350 m in height with an abrupt network of rivers and numerous lakes of irregular shapes. Continental glaciations left extensive glacial and fluvio-glacial deposits on all but the highest grounds. The drainage has been glacially disturbed, and lakes and rapids are common. The vegetation, adapted to the harsh climate and altitude, typifies the boreal forest. Deciduous trees such as the white birch and poplar are interspersed with conifers dominated by black and white spruce, gray pine and aspen. Alders grow in the damp ground. Moose, beaver and rabbit are common; bear, otter, fox and numerous small animals such as squirrel, skunk and porcupine are occasionally seen.

The Saguenay-Lac St-Jean area is characterized by a humid continental climate. Summers (mid-May to early-September) are short but temperate with average maxima and minima of 24.5°C and 13.5°C (July). Winter is harsh and starts in October and lasts until April, with an extensive cover of snow (325 cm) from November to April. Average temperatures reach -19.5°C (min) and -9.7°C (max) in January.

Access to water is facilitated by the nearby presence of Lake Touladi and Lake Tio. A

750 Kv powerline runs across the terrain about 11 km to the east. Railroad infrastructures were built along the Saguenay River-Lac-St-Jean and Lac St-Jean-Trois-Rivière axis and are less than 30 km from the main showing. The nearest major town from the property is Saguenay (pop. 146,332), which can be reached from St-Félicien by travelling 100 km ESE on provincial roads 169 and 170. The town of Saguenay harbors a university and possesses all the services and manpower necessary to develop a mining property. The nearest medium small towns from the property are St-Félicien (pop. 10,622) and Roberval (pop. 10,906).

## **ITEM 8 HISTORY**

### *8.1- Introduction*

The earliest published geological investigation of the area was that of Bray (1959) who mapped part of the Lyonne, Chabanel and Ross townships in the 32A07 NTS sheet. Bray produced a 1:63,500 scale map detailing the principal rock types i.e. gneissic hornblende-biotite granite, pyroxene monzonite, metagabbro and mixed gneiss. In 1975, Sharma and Laurin published a document that synthesized the geological studies covering a vast region of the Grenville Province centered on the Lac St-Jean area and including the 32A07 sheet. Finally, Bray (1977) presented his final report on the La Lièvre area that comprised a description of the Lake Touladi Fe-Ti mineralization.

### *8.2-The Lake Touladi Area*

Concentrations of titaniferous magnetite were discovered in 1956 by René Thibault. Between 1957 and 1959, Roberval Mining Co. staked over 220 claims on several magnetic anomalies. Most of the exploration work was directed by Bergmann (1957a, b, 1958; GM 05645, 06747A and 06747B). At first, Bergmann (1957a; GM 05645) discovered two major mineralized zones, one of which was further investigated by four short drill holes (< 25 m). Preliminary assay results proved very interesting with Fe and TiO<sub>2</sub> concentrations reaching 46.8 wt. % and 13.8 wt. % respectively. The drilling showed that the magnetite content seems to be fairly uniform throughout the investigated



zone, varying in individual holes from very massive magnetite to rock containing 30% magnetite. These discoveries propelled Roberval Mining Co. to carry out a mapping campaign concomitant with a ground-based magnetic survey (Bergman, 1957b; GM 06747A). The latter revealed five important zones. The survey also prompted Bergman (1958; GM 06447B) to conclude that magnetite showed strong reverse polarity, and that many readings were strongly negative even with outcrops with good magnetite mineralization visible. He remarked that some of the positive readings over good magnetite were relatively low due to the fact that magnetite grains presented reverse polarities. As a result the conventional contouring of high positive readings only partially outlined the mineralized zones and only in a very general way. Wherever possible, Bergmann stated that it was necessary to use geological data with the magnetic results in order to outline the mineralized zones with some degree of accuracy.

It was found that many of the areas of magnetic lows were indicative of good grade magnetic mineralization. Zone A is 575 m long and 130 to 350 m wide with a visual estimate of 30 to 50% magnetite. The zone may extend to 975 m in length. Zone B strike NE and measured 575 X 250 m over a low positive magnetic reading. Field observations correspond to gabbroic outcrops with 30 to 50% magnetite. Zones C (280 X 50 m), D (200 x 175 m; 35-40% magnetite) and E (a small circular bodies containing 20% magnetite) were secondary targets and were not investigated thoroughly (Figure 2).

In 1958, Quebec Cartier Mining sent in a geological crew to examine the surface data and drill core then available. In April and May 1959, an airborne magnetometer survey of 116.5 km<sup>2</sup> surrounding the deposit was made by Spartan Air Services Ltd. of Ottawa (Shaw, 1959; GM 08767).

In 1975, Campbell Chibougamau Mines staked claims around the Lake Touladi and optioned others covering the old property. The company proposed to conduct a detailed ground magnetometer survey followed by a drilling program consisting of 2750 m of cores (O'brien et al. 1975; GM 31346).

The vicinity of the Lake Touladi Property was further investigated by Verret (1976; GM

32269). The exploration work consisted in line cutting, geological mapping, dip needle survey and rock sampling. It was discovered that the Fe-Ti-mineralized gabbroic zones were dipping to the east and remained opened at depth.

### *8.3-Drilling*

Over 1800 m of diamond drilling was performed by the Roberval Mining Corporation, concentrated mainly in the A and B zones. A total of 18 short holes were drilled to depths ranging from 18 to 30 m at widely separated points in the two zones (Bergmann, 1958; GM 06746B). The average grade was established at 23.6 wt. % Fe and 6.92 wt. % Titania (TiO<sub>2</sub>). Table 1 presents a summary of the depth, azimuth, plunge and assay values for each short hole drilled in zones A to D. A composite samples from 6 of the short holes gave assay values of 26.1 wt.% total Fe; 7.50 wt. % TiO<sub>2</sub>; 31.60 wt. % silica; 0.80 wt. % sulphur and 0.89 wt. % phosphorus. A further 1480 m have been drilled in six long holes (A1 to A6) across zones A and B, testing them for vertical continuity to over 275 m. Figures 3a to f present a description of each long hole accompanied by the published Fe and TiO<sub>2</sub> (wt. %). A histogram of the Fe and TiO<sub>2</sub> (wt.%) assays compiled from logs of DDH A1 to A6 indicate average values of 21.2±5.4 wt. % Fe and 5.99±1.64 wt. % TiO<sub>2</sub> respectively (Figure 4).

### *8.4-Historical Mineral Resource and Mineral Estimate*

O'brien et al (1975) have calculated the historical Fe-Ti reserves for the Lake Touladi deposit. Surface mapping, magnetic surveys and drilling defined the length of the mineralized body in the A zone at 275 m. Using an economic depth cut off of 160 m, O'brien et al. (1975) obtained an historical tonnage of 90 Mt available for open pit mining running at 23.5 wt. % total Fe and 6.8 wt. % TiO<sub>2</sub>.

For the B zone, the mineralized body has a length of 550 m with an average width of 92 m. Again, using a depth cut off of 160 m, there is an historical tonnage of 34 Mt at approximately 22.6% wt. % total Fe and 6.2 wt. % TiO<sub>2</sub>. There is a possible 124 Mt of mineralization in these two zones down to a minimum depth which an economical

**Table 1.** Azimuth, plunge, depth and Fe and TiO<sub>2</sub> (wt.%) assays of the Roberval Titanium Corp. short and long DDH. From Bergmann (1958).

Hole #	Plunge (°)	Azimuth (°)	Depth (m)	Sampled (m)	Average	
					Fe (wt.%)	TiO <sub>2</sub> (wt.%)
			<b>ZONE A</b>			
5	50	90°	18.9	17.5	19.66	3.64
6	45	270°	18.9	18.9	20.94	3.15
7	50	315°	18.6	17.2	23.20	4.36
13	90	-----	28.0	15.2	22.07	4.12
14	90	-----	27.7	21.2	16.27	2.54
15	90	-----	31.2	29.7	23.06	4.12
17	90	-----	28.0	23.5	23.76	4.00
18	90	-----	26.2	14.5	22.35	3.39
24	90	-----	27.1	-----	21.92	3.51
A4	35	17	309			
A5	35	291	255			
A6	90	-----	293			
			<b>ZONE B</b>			
1	35	180	19.5	15.1	28.00	4.97
2	29	90	18.9	17.8	19.98	3.88
3	33	270	20.7	18.9	25.33	4.97
4	65	270	21.0	18.9	27.44	4.24
8	60	135	18.7	17.7	25.47	4.12
9	40	90	19.5	14.5	23.34	3.76
A1	35	266	194			
A2	35	286	186			
A3	40	286	250			
			<b>ZONE C</b>			
10	65	180°	19.5	13.3	17.46	2.67
11	90	-----	23.8	19.1	25.89	4.48
			<b>ZONE D</b>			
16	90°	-----	27.7	26.4	23.06	4.00

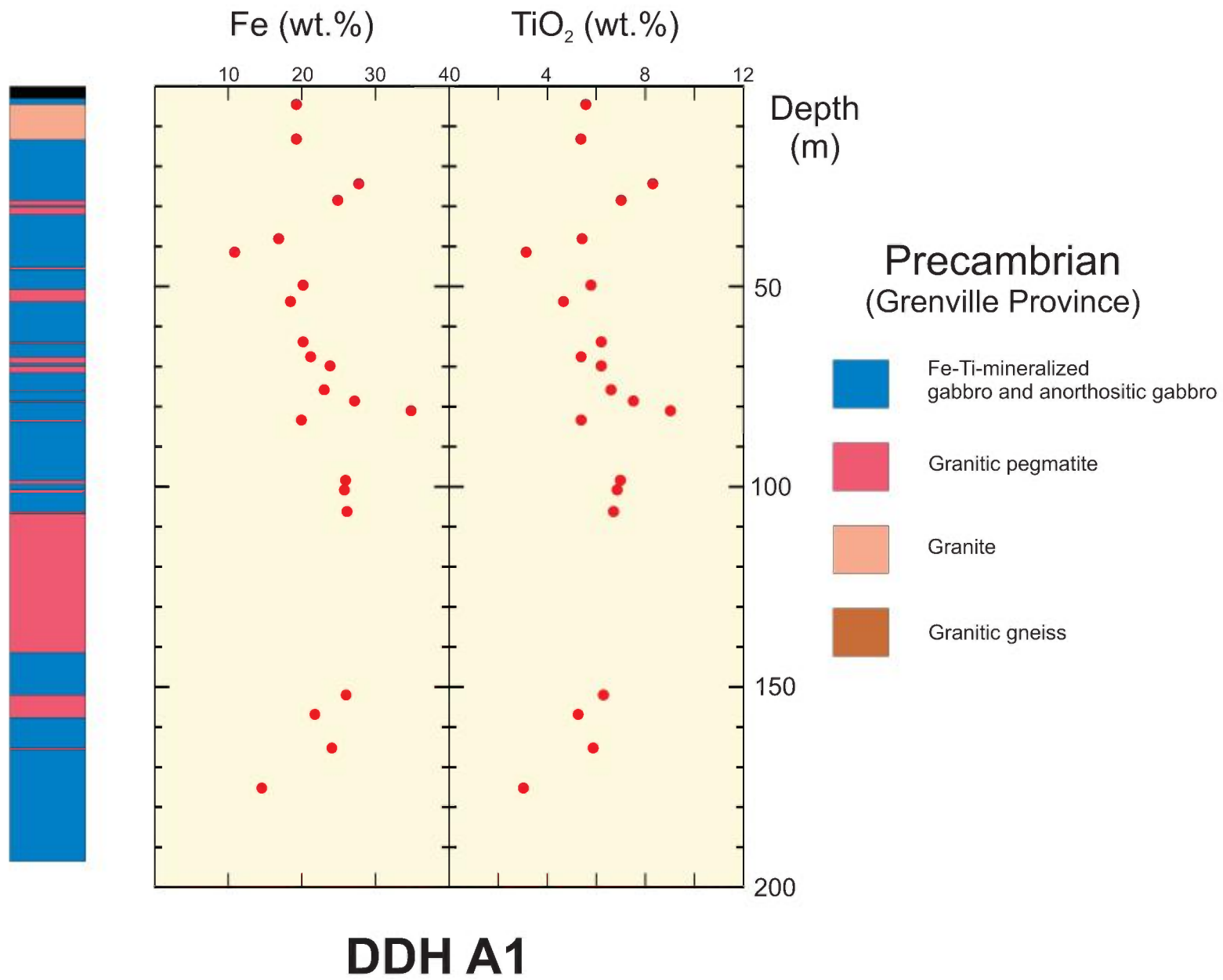
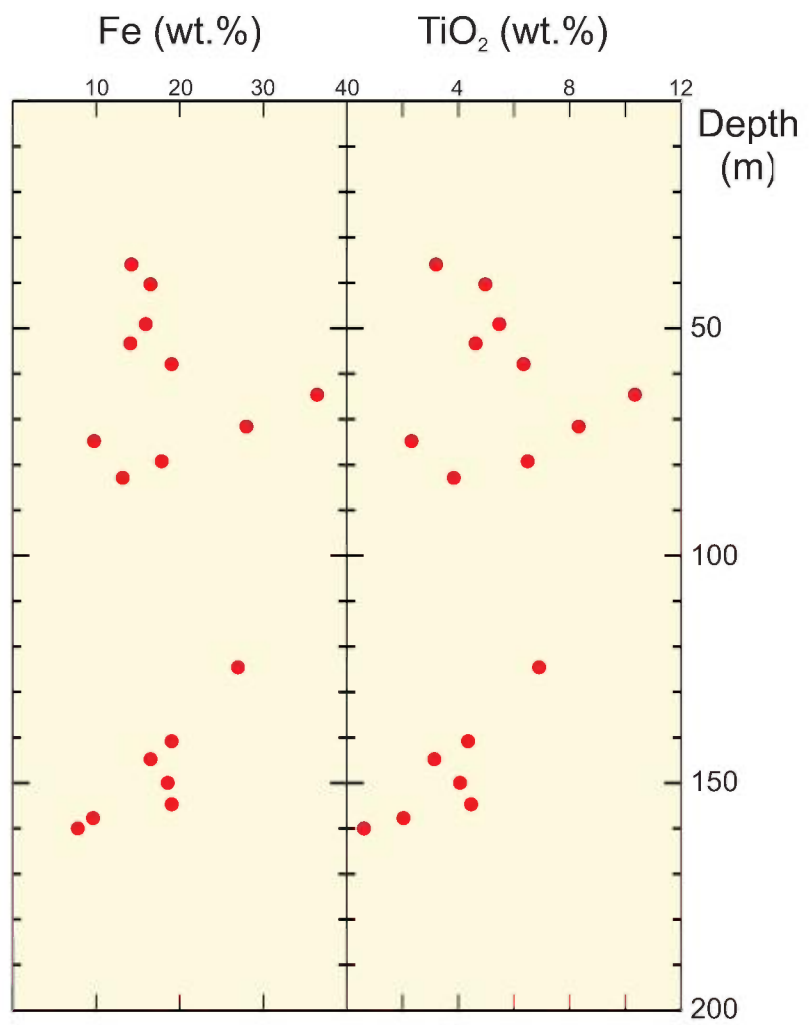


Figure 3a



**Precambrian  
(Grenville Province)**

- Fe-Ti-mineralized gabbro and anorthositic gabbro
- Granitic pegmatite
- Granite
- Granitic gneiss

**DDH A2**

Figure 3b

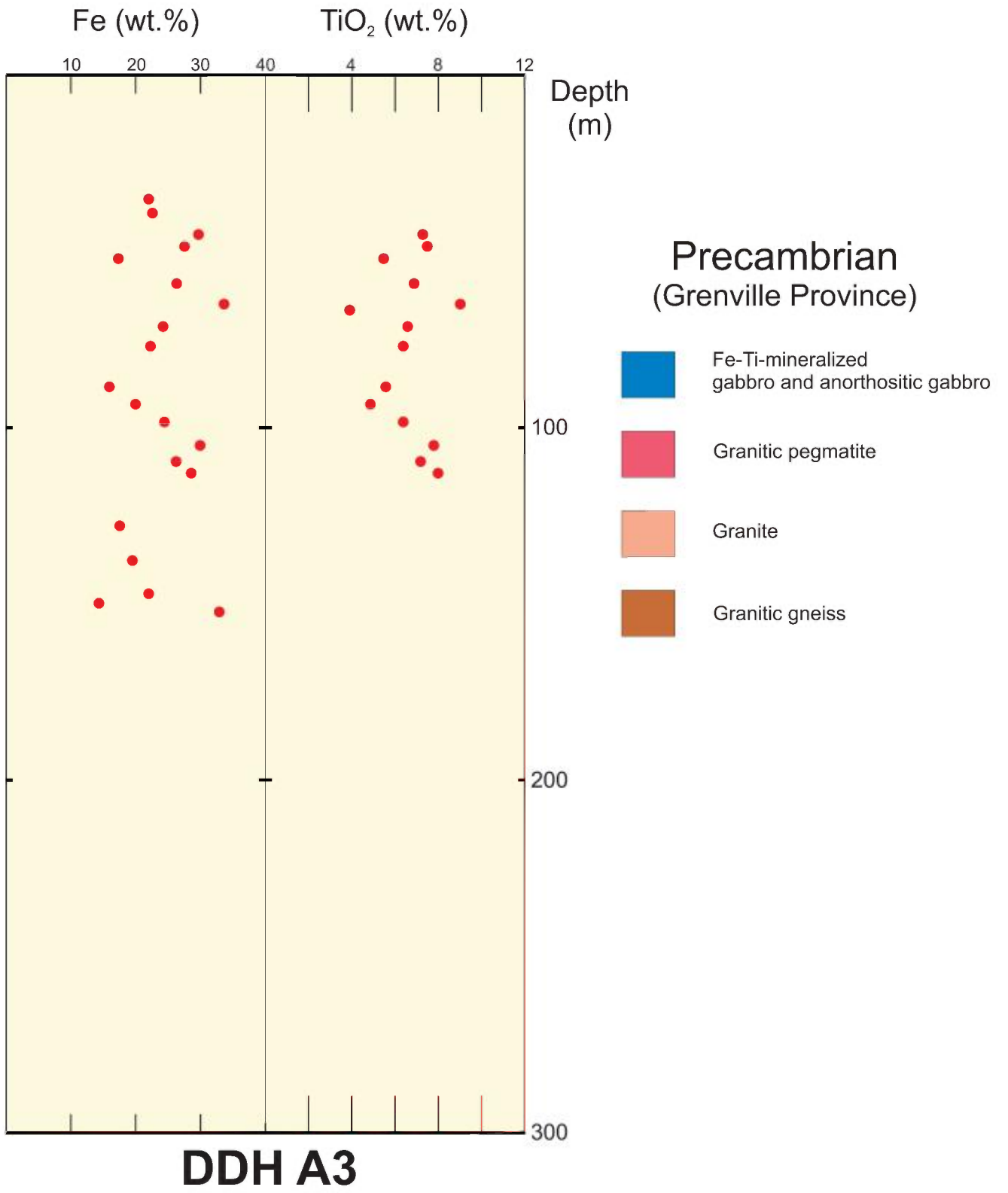
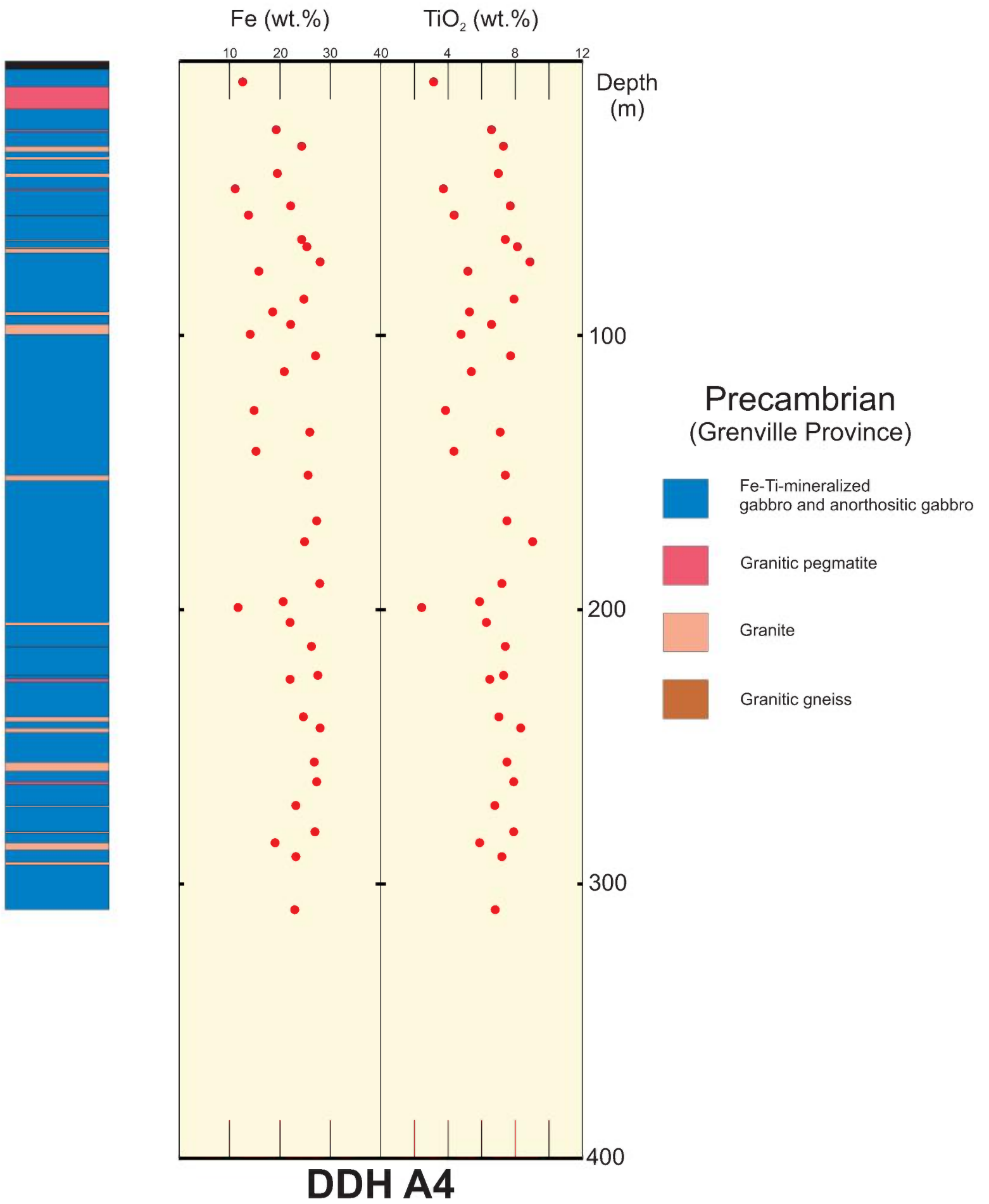


Figure 3c



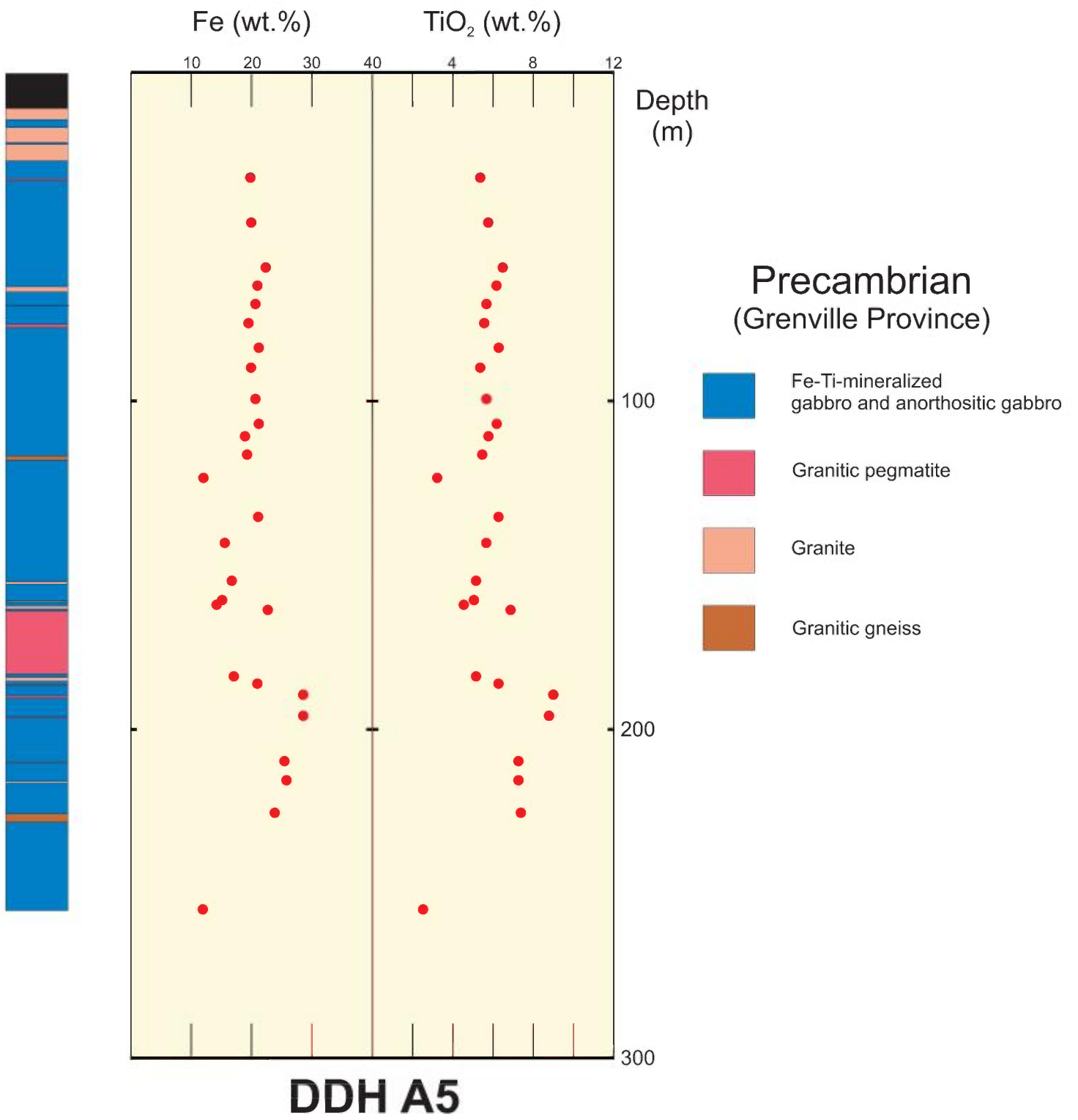


Figure 3e



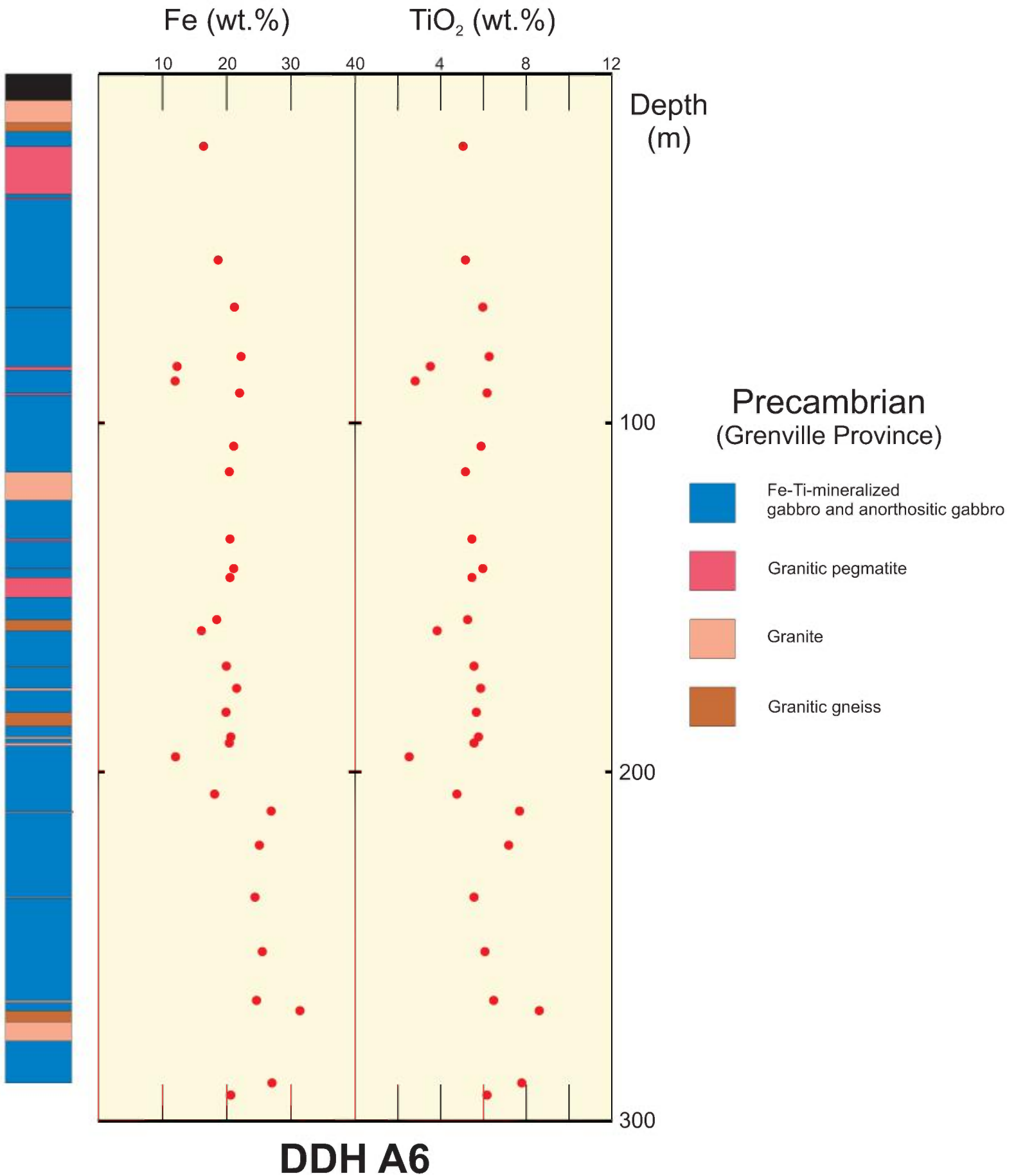


Figure 3f

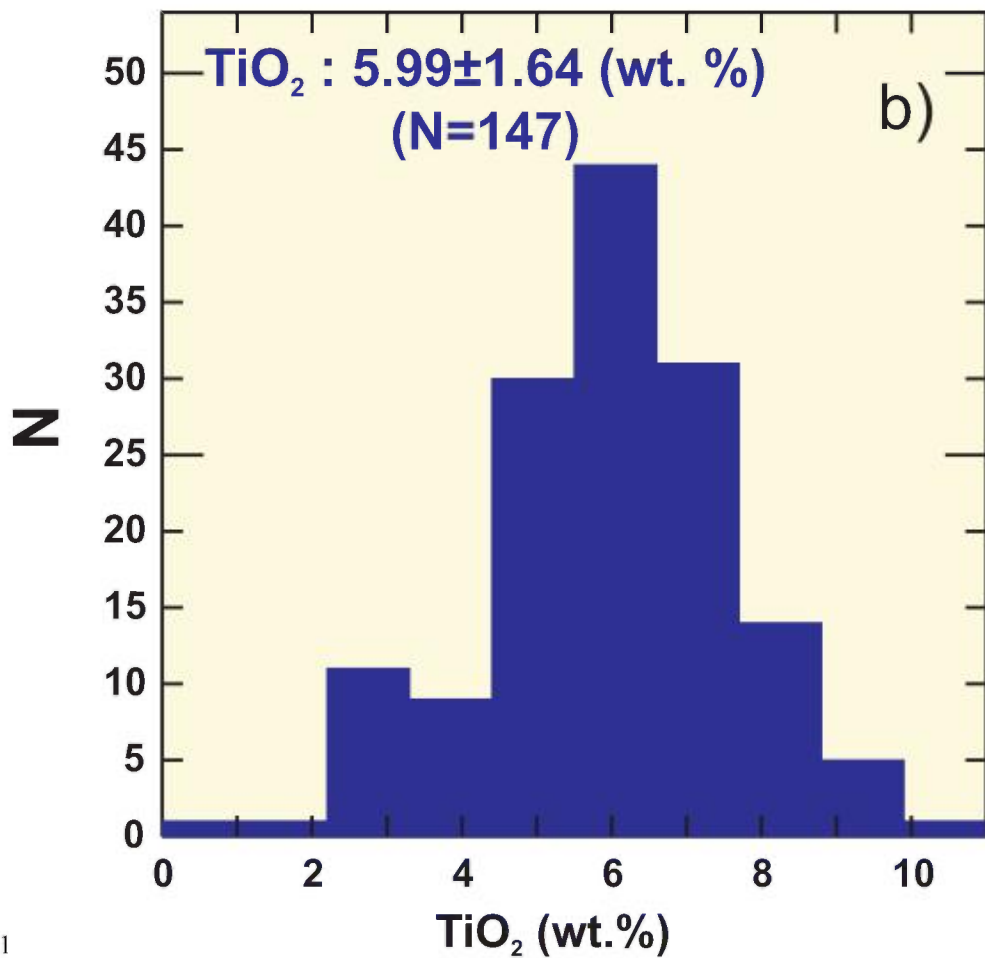
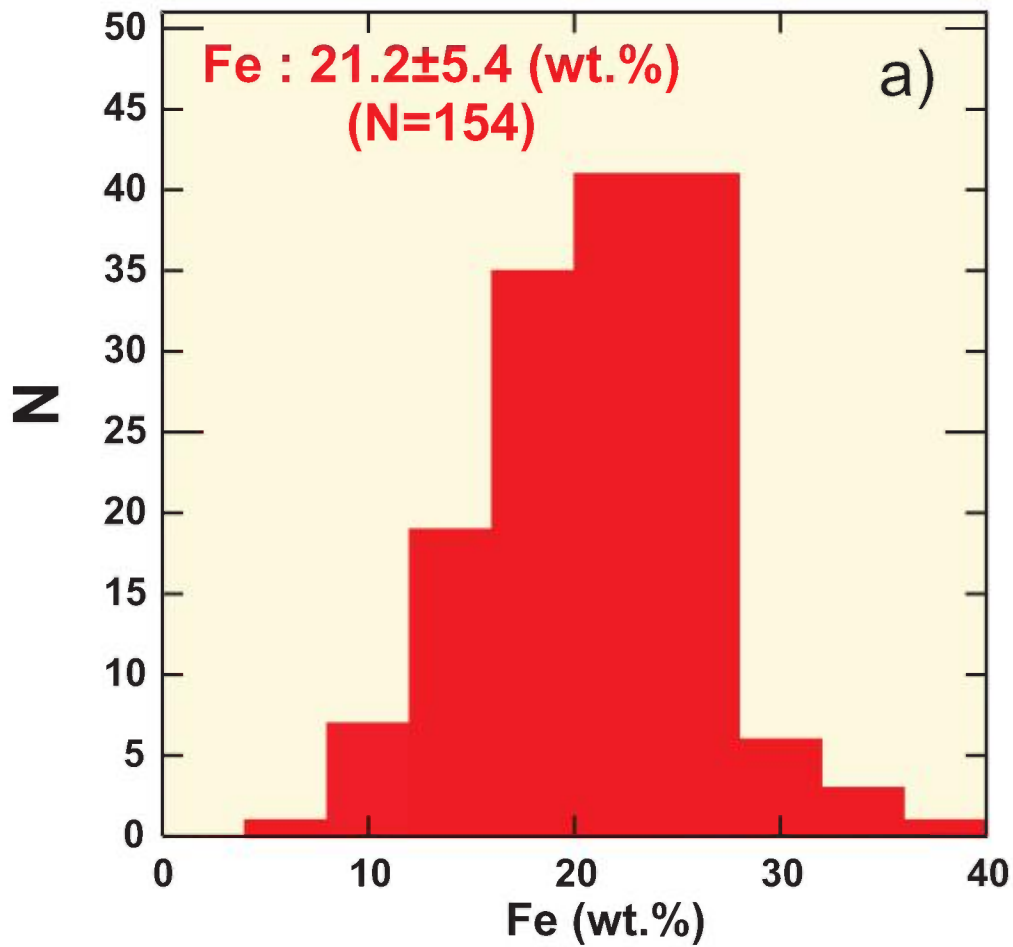


Figure 4. Histogram of the Fe (a) and TiO<sub>2</sub> (wt.%) (b) assays compiled from DDH A1 to A6. Data from Bergmann (1958).

mining operation normally attains, grading 23.3 wt. % total Fe and 6.6 wt. % TiO<sub>2</sub>. Additional tonnage may be obtained from the C, D and E zones.

Another historical estimation given in Kennedy and Volin (1959; GM 10136) asserts a value of 85 Mt for the A and D zones averaging 17 wt. % total Fe and 5.97 wt. % TiO<sub>2</sub>. Zone B has an historical reserve of 24 Mt grading 19 wt. % total Fe and 5.99 wt. % TiO<sub>2</sub>. The lower grades are attributed to the inclusion of the entire drill cores for calculations whereas the fringe of each zone has lower values down to 10 wt. % total Fe.

These historical mineral resources do not refer to any category of section 1.2 of the NI-43-101 Instrument such as “inferred reserved” as stated in the CIM Definition Standards on Mineral Resources and Mineral Reserves. The explanation lies in the inability by the author to verify the data acquired by the various historical drilling campaigns. The author has read the documents pertaining to the description of the different methods used in the historical evaluation of the reserves. The author, also acting as the QP, has not done sufficient work yet to classify the historical estimates as current mineral resources or mineral reserves. The issuer is not treating the historical estimates as current mineral resources or mineral reserves as defined in sections 1.2 and 1.3 of the NI-43-101 Instrument. Therefore, the author is in the opinion that the above quoted reserves for the Lake Touladi deposit cannot be relied upon. Finally, the author is not aware of more recent estimates or data available to the issuer.

#### *8.5-Concentration Tests*

The Ontario research Foundation has performed preliminary concentration tests on bulk sample taken from drill core rejects of 12 shallow holes. After being crushed to -100 mesh, the bulk material was magnetically concentrated. An assay of 21.5% acidic soluble iron and 6.1% TiO<sub>2</sub> was produced (Table 2). Further testing was conducted by the Institute of Mineral Research in Michigan (GM 10136) which performed magnetic concentration tests on crush core material taken from the 24 drilled holes, both long and short. The results of the magnetic concentrations procedures are given in Table 2, with specific test for four long holes. The concentration tests provided roughly similar



averages for Fe and TiO<sub>2</sub> contents. The final concentrates for zones A and B provided weighted averages of 69.90-69.12 wt. % Fe and 0.52-0.92 wt.% TiO<sub>2</sub> respectively, with SiO<sub>2</sub> values < 1 wt. %. (Table 2).

These magnetic separation tests are however inefficient in concentrating the hemoilmenite constituting part of the interesting mineralization. A simple observation of the TiO<sub>2</sub> concentrations of the head material (before the magnetic separation) for the four long holes (5.96-6.31 wt. %) (Table 2) shows that hemoilmenite is rejected during the separation because of its low magnetic susceptibility. The previous concentration tests were oriented toward extracting the iron from the titanomagnetite. Another mean of separation and concentration, such as wet high intensity magnetic separation of the residual material, must be considered to recuperate the hemoilmenite.

## **ITEM 9 GEOLOGICAL SETTING**

### *9.1- Regional and Local Geological Setting*

The Precambrian rocks underlying the Lake Touladi Property are part of the Canadian Grenville Province (Figures 5 and 6). The main crustal build up of the Grenville Province occurred through prolonged, 1.8 to 1.24 Ga, Andean-type continental arc and intracontinental back-arc magmatism with some lateral accretion of magmatic arcs (Rivers, 1997; Hanmer et al., 2000 and Gower and Krogh, 2002). The Grenville Province is subdivided into two main semi-continuous parallel stacked belts known as the parautochthonous belt and the structurally overlying allochthonous polycyclic belt, as well as into series of supracrustal dominated belts forming the allochthonous monocyclic belt. The latter comprises the Wakeham terrane, the Frontenac-Adirondack-Morin Belt and the Composite Arc Belt (Tollo et al. 2004). The property is situated within the Composite Arc Belt which comprises the ~ 100 000 km<sup>2</sup> Quebecia 'terrane' affected by the Pinwarian tectonomagmatic activity (1.52-1.46 Ga).

The Lake Touladi area is underlain by high-grade plagioclase-rich gneiss (believed to be mostly paragneiss) and amphibolite, along with quartzite and pyroxenite derived from

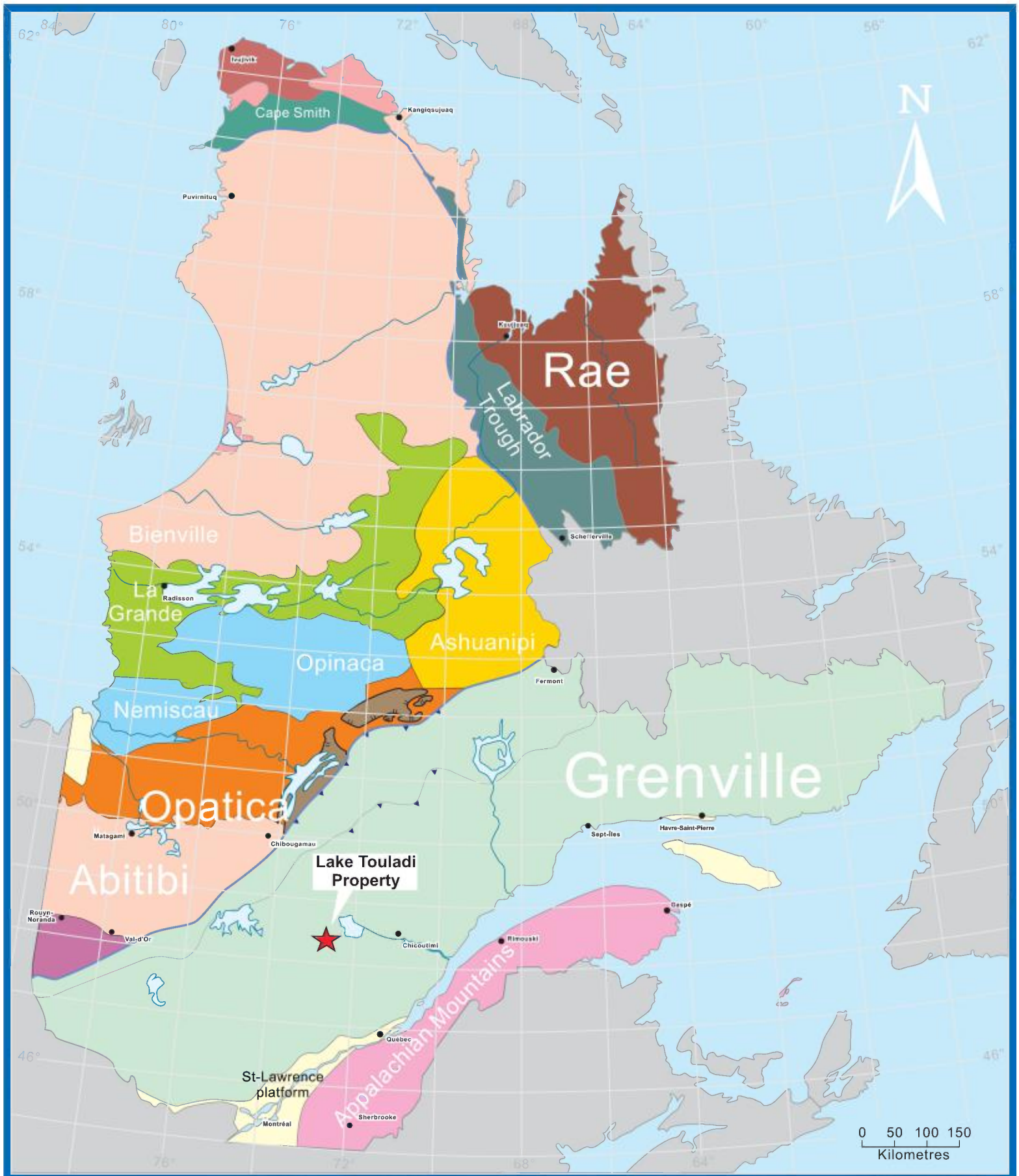


Figure 5. Geological map of the Quebec province illustrating the different geological provinces and subprovinces and the localization of the Lake Touladi Property. Modified from Boily and Gosselin (2004).

# The Grenville Province

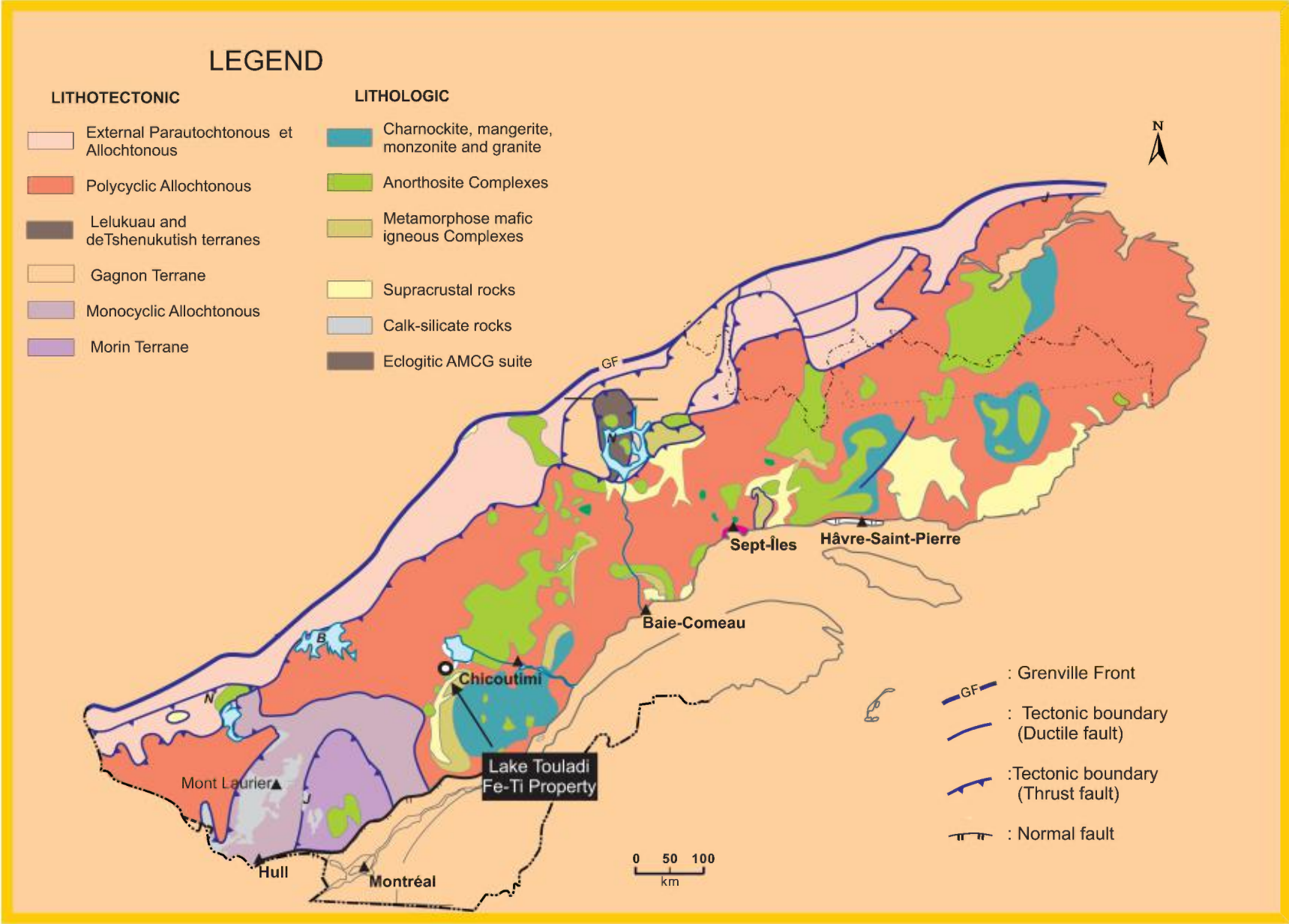


Figure 6. Geology of the Grenville Province of Québec showing the location of the Lake Touladi Property. Modified from Corriveau and Perreault (1999).

limestone. Metamorphosed sub-concordant gabbroic intrusions are found throughout the gneisses. Larger plutonic rocks intrude the older gneisses. They consist mainly of green-pyroxene-microperthite quartz monzonites and of microcline granites. A few narrow granite dykes and sills cut the earlier rocks (Bray, 1959, 1977).

The older gneisses are metamorphosed from the amphibolite to the granulite facies. Most of the geological contacts are gradational in nature and result from the extreme P-T conditions prevailing during metamorphism, which favored reaction, diffusion and melting. For instance, continuous changes from paragneiss through migmatite to granite may be seen, and a variety of hybrid rocks accompany the margins of the quartz-monzonite intrusions.

The mixed gneisses are the oldest rocks and were divided into three main types: hornblende gneiss (with minor biotite), hornblende-biotite gneiss, and biotite gneiss (with minor hornblende). The gneisses are medium to coarse-grained, and usually coarsely foliated. Gneisses of several compositions may be present in a single exposure as might be expected from a group of sediments. Some amphibolite bands alternate with coarse-grained pink granite and quartz lenses within the mixed gneisses. Layers of amphibolite, from less than 3 cm to several meters thick, occur throughout the gneisses. The amphibolites act as the resistant unit in the boudinage. It is likely that most of the amphibolites represent thin basaltic to andesitic lavas and tuffs (Figure 7).

Quartzite may form bands as much as 15 m thick and are found in association with quartzitic biotite and garnet gneisses. Pyroxenite and marble form small exposures which are conspicuous for the abundance of green pyroxene (diopside). Other common minerals are hypersthene, tremolite, biotite, hornblende, sphene and grossularite garnet. The mineralogy of the pyroxenites and marbles shows that they represent limestones and dolomites, with various argillaceous and siliceous contents, which have been metamorphosed and metasomatized.

The metagabbros occur throughout the area in the gneisses. These rocks are typically medium to coarse-grained, and composed of plagioclase, pyroxene and some magnetite,



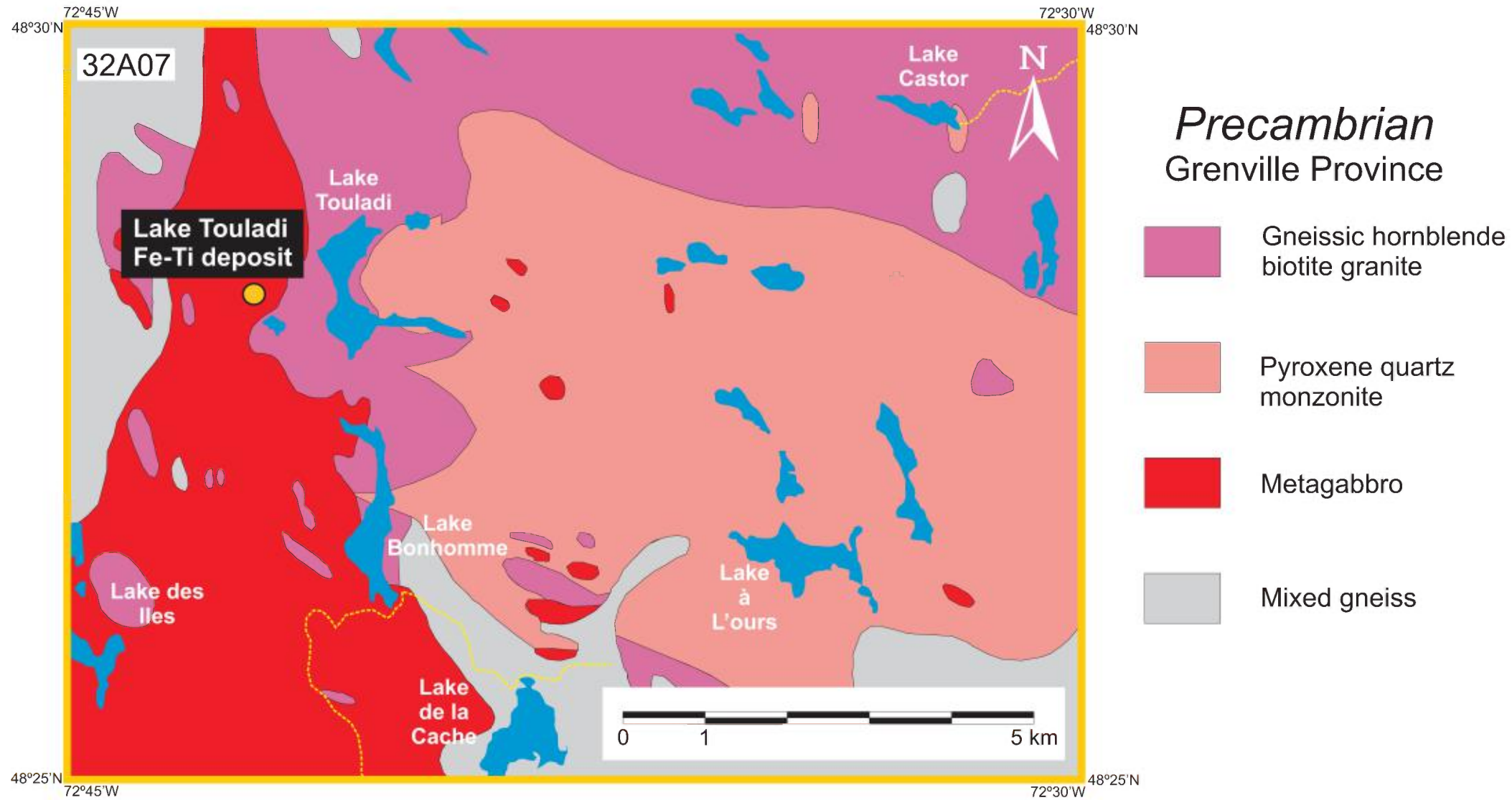


Figure 7. Geology of the Lake Touladi area. From Bray (1977)

with hornblende and biotite, near the contact with the gneisses. They show little foliation but the larger bodies may show some compositional layering. Some aplitic gabbros accompany many of the largest bodies and generally intrude the coarser rocks. Gabbros rich in titaniferous magnetite are similar in mineralogy, but apatite is more abundant. Plagioclase (labradorite or calcic andesine) may reach 80% in the anorthositic gabbros. Microcline granites come in a variety of types, from small lenses or bands in gneiss to large bodies of igneous appearance. The microperthite quartz monzonites constitute six large plutons and small sill-like bodies. The intrusion of felsic magmas produced a variety of transformations to the wall rock. About a mile SE of Touladi Lake, there is a passage from slightly altered gabbro to pure quartz monzonite.

Near large intrusions, the gneiss foliation swings to follow their contacts, giving the concordant structures so typical of the area. Most of the foliations plunge to the NE and are moderately steep. This suggests a general isoclinal folding with overturning to the SW.

### *9.2-Property Geological Setting*

The Fe-Ti deposit forms a large north-trending elongated body of metagabbro, which is locally anorthositic. The gabbro outcrop is from 1.2 to 1.6 km in width west of Lake Touladi, but magnetite concentrations are found near the eastern margin only. This is a medium to coarse-grained (3-10 mm), dark grey rock with subophitic to hypidiomorphic texture and has considerable bluish plagioclase mixed with grey or mauve plagioclase, pyroxene, hornblende, biotite magnetite and ilmenite.

On the east side, the gabbro is in contact with a coarse, locally pegmatitic, microcline granite. The granite has intruded the gabbro and produced a variety of metamorphic and metasomatic (?) effects. Dykes of granite pegmatite and aplite are also found throughout the gabbro. Foliation in all the local rocks strikes generally northward, and dips east at 70° or more.

The mineralized rock consists of concentration of medium-grained magnetite and

ilmenite, with feldspar and ferromagnesian silicates, forming dense layers or lenses several cm thick in width, separated by narrow bands of silicate-rich material. Lenticular banding is distinctive because of segregation and marked differences in the proportions of mafic silicates and iron or titanium oxides. This rock is dark grey and weathers to a rusty color. In several places, concentrations of apatite were associated with the magnetite.

## **ITEM 10 DEPOSIT TYPES**

The numerous deposits of titaniferous magnetite, magnetite-ilmenite-apatite and massive ferroan-ilmenite in the Grenville Province of Quebec are known since the 1850's. In general the deposits occur as tabular intrusions, stocks, sills or dykes in anorthosite massifs. Locally, they consist of stratiform mineralization in layered segments of anorthosite massifs or in layered mafic intrusions (Corriveau and Perreault, 1999). The Lake Touladi deposit belongs to the magmatic disseminated Fe-Ti oxides (Ti-magnetite and ilmenite) type hosted in anorthosite or mafic intrusions. The Fe-Ti mineralization is either distributed as disseminated grains or concentrated in layers in the host anorthosite and associated rocks (e.g. leuconorite, gabbro and norite). The mineralization is composed of Ti-poor magnetite or titaniferous magnetite, with ilmenite, subordinate amounts of Fe-rich spinel (hercynite) and ferromagnesian silicates and plagioclase.

The emplacement of these massive Fe-Ti-rich rocks is attributed to an oxide-rich liquid derived from a parental oxide-rich norite, ferrodiorite or jotunite emplaced either as a crystal mush or in solid state during the crystallization and cooling of anorthosite/gabbroic massifs (Force, 1991; Duschene, 1999 and Lindsley, 2003). Oxide ores, whether titanomagnetite or hemoilmenite, can form by gravitational accumulation from a ferrogabbro parent magma, and by extension, from ferrodiorite. It is proposed that extensive oxide mineralized bodies are consistent with settling and sorting of dense Fe-Ti oxide crystals in a magma chamber (Pang et al., 2008).

## **ITEM 11 MINERALIZATION**

The mineralization consists of medium-grained magnetite and ilmenite associated with feldspar and ferromagnesian silicates. There are five previously identified mineralized zones principally composed of magnetite and subordinate ilmenite. These form dense layers or lenses several cm thick in width, separated by narrow bands of silicate-rich material. The mineralization appears to be associated with a layered intrusive mass of gabbroic to anorthosite gabbroic composition. The gabbro/anorthosite was intruded into high-grade plagioclase-rich gneiss and amphibolite, along with quartzite and pyroxenite derived from limestone. The geological and structural control of mineralization is currently unknown.

## **ITEM 12 EXPLORATION**

The Issuers (Mr. Fayz Yacoub) have not done any work on the Touladi property. All the currently described work was accomplished on behalf of Canamara Energy Corp.

### *12.1- Helicopter-borne Geophysical Survey*

#### *12.1.1- Introduction*

A helicopter-borne magnetic and VLF geophysical survey was flown over the property during the period of April 24 to 25, 2008. The survey was conducted by GPR Géophysique Inc. based in Longueuil, Quebec, for Canamara Energy Corp. A total of 231 line-km was flown over the property. The surveying was completed based on 100 meters line spacing (50 meters line spacing for the detailed zone) and 1000 meters tie line spacing. The following technical details pertaining to the survey were extracted from a report entitled: “Helicopter-borne magnetic and VLF geophysical survey, Roberval area, Québec, NTS map sheet 032A/07, Data acquisition report, Touladi Lake project”

The survey helicopter was a Bell 206-L Long Ranger operated by Canadian Helicopters Inc., stationed in Les Cèdres, Quebec. The helicopter and geophysical crew were based in Roberval, Québec. Mobilization was completed for the project on April 23. A test flight

was flown after mobilization in order to validate the orientation of the sensors and check the data acquisition system operation. There was no production lost days due to bad weather conditions. The crew demobilized on the night of April 25.

The table below shows the planned survey parameters for the project. The direction of the flight lines is 0°-180°. The direction of the tie-lines is 90°-270°, with respect to UTM coordinates.

<b>Parameters</b>	<b>Specifications</b>
Mag. sampling average interval	2.2 m (0.1s)
VLF. sampling average interval	2.2 m (0.1s)
Flight-line Spacing	100 m
Flight-line Direction	(0°-180°)
Control-line Spacing	1000 m
Control-line Direction	(90°-270°)
Aircraft MTC*	60m +/- 6m
Mag. Sensor MTC*	30m +/- 6m
Ground speed	80 km/h +/- 20

\* Mean Terrain Clearance

The helicopter was equipped with a Helimager™ system, which is a towed bird system configured with three cesium vapor magnetometers, two at the end of the lateral arms and one above the central body of the bird. DGPS positioning and radar altimeter data were measured at the bird and at the helicopter, allowing a digital elevation model to be produced.

#### *12.1.2- Data Acquisition and Quality Control*

During data acquisition, quality control was carried out on the data on a daily basis by GPR's data processor to ensure that quality remained within specifications. At the end of

the planned survey, data were reviewed by GPR's team leader and reflight lines were identified. Profiles were checked after each production day to ensure correct flight path recovery and, instrument noise was evaluated and average spectral peaks were verified using Geosoft Oasis Montaj Software.

### *12.1.3- Helicopter-borne Detectors and Recording Equipment*

#### *12.1.3.1- Magnetometers*

Three Geometrics G-823A (optically pumped cesium vapor) total magnetic field sensors with a sampling interval of 0.1 second were mounted on the gradiometer, 30 meters below the helicopter. The sensors were installed at each end of the horizontal boom (6 m) and one at the upper pod (1.5 m), in order to measure the lateral and vertical gradients. The magnetometers send the measured magnetic field intensity as nanoTesla (nT) to the data acquisition system via a RS-232 port.

A Geometrics G-856 Ax (proton precession) total field magnetic sensor, with a sampling interval of 1 second was used to record the diurnal variation of the magnetic field at the base-station's location. The base station was set up at a location away from power lines and the main road to avoid interference from traffic. The location of the base-station was located a few kilometers from the helipad in a nearby forest.

A FreeFlight TRA3000 radar altimeter, combined with a TRI30 Indicator unit mounted on the helicopter provides the pilot with highly accurate altitude-aboveground-level (AGL) information. A second radar altimeter comprising the same elements was mounted on the bird, along with the GPS and magnetic sensors.

A Crescent R120 DGPS receiver that offers many differential correction options for various environments and worldwide coverage was used for in-flight navigation, with a sampling interval of 0.1 second. The antenna was mounted directly on the helicopter and allowed an accurate positioning of the bird. The DGPS system provides an accurate positioning as well as the height above the WGS-84 ellipsoid. A LED-type track bar

(from AG-NAV Inc.) was used by the pilot for efficient line tracking in any lighting conditions.

#### *12.1.3.2- Helicopter Data Acquisition and Recording System*

The Helicopter data acquisition and recording system is composed of proprietary hardware developed by Geophysics GPR International Inc. and an industry standard navigation / recording software package (Hypack Max 6.2). Data were recorded on hard disk and backed up after each flight. A dedicated laptop computer was used on-site for the purpose of displaying geophysical data for quality control, calculating and displaying the navigation, producing preliminary magnetic, spectrometry maps and backing up digital data.

#### *12.1.4 - Data Processing*

##### *12.1.4.1- Magnetic Data*

Data recorded on the helicopter were transferred after each flight to the processing computer for verification and quality control. The raw GPS data (longitude, latitude and height) were recorded in the WGS-84 geodetic system. These coordinates were transformed into the NAD83 datum, UTM projection, Zone 18N by the navigation software and compared in real-time to the theoretical coordinates of the flight paths to provide a correction to the pilot. The DGPS data (1.0 s interval) were interpolated at the same rate as the magnetic data (0.1 s interval) and exported for flight path recovery and quality control. The raw line data was transformed into Oasis Montaj .XYZ format by a proprietary software program.

Classical tie-line leveling was performed on the original Total Magnetic Intensity (TMI) data. The enhanced total magnetic field was obtained by integrating the vertical gradient in the frequency domain derived from the observed horizontal gradients using Laplace's equation. The noisy long-wavelength data originating from the horizontal gradients were replaced by the almost noise free total magnetic field long-wavelength data.

A lag correction of 0.7 second was applied to the final processed magnetic data based on a lag test executed on survey location. The magnetic data recorded at the base-station were synchronized, using the GPS time and merged with the helicopter-borne data. Subsequently, the diurnal corrections obtained by subtracting the mean value of the base-station readings were applied to the data after low pass filtering. The First Vertical Derivative (FVD) was obtained with the help of the 2D-FFT first vertical derivative calculated from the total magnetic field.

The Digital Terrain Model (DTM) was obtained by subtracting the radar altimeter readings (helicopter mounted) from the DGPS height (helicopter mounted). The radar altimeter was corrected, for a lag estimated to be 3 seconds.

#### *12.1.5-Interpretation*

##### *12.1.5.1-The Lake Touladi Magnetic Anomalies*

The results of the airborne geophysical survey can be best summarized into key maps that illustrate the First Vertical Derivative (FVD) and Total Magnetic Intensity (TMI) field variations in linear mode (Figures 8 and 9). In the area of the main Fe-Ti showing, the maps reveal an alternating pattern of strong high and low EW-oriented magnetic signatures. This corresponds to a nT/m interval of -67.2 to 264.1 in the FDV plot which translate into a 13,400 nT difference in the Total Magnetic Intensity field.

There are two NS-oriented zones of magnetic highs juxtaposed on their western side by parallel zones of strong magnetic lows. The FDV linear map allows us to recognize the four zones (A to D) associated with magnetic highs defined by earlier ground-based magnetic surveys and deemed interesting enough to be submitted to drilling (see Figure 8 and Bergmann, 1958). The positive anomaly associated in part with Zone A covers the largest area (950 X 400 m), whilst zone D anomaly has the smallest (220 x 120 m). The positive anomaly corresponding partly to zone B has roughly an area of (1100 X 189 m) with Zone C anomaly, situated 600 m to the NW, covering a surface of 710 X 110 m. The zone of magnetic low juxtaposed to the four main positive anomaly zones extends for



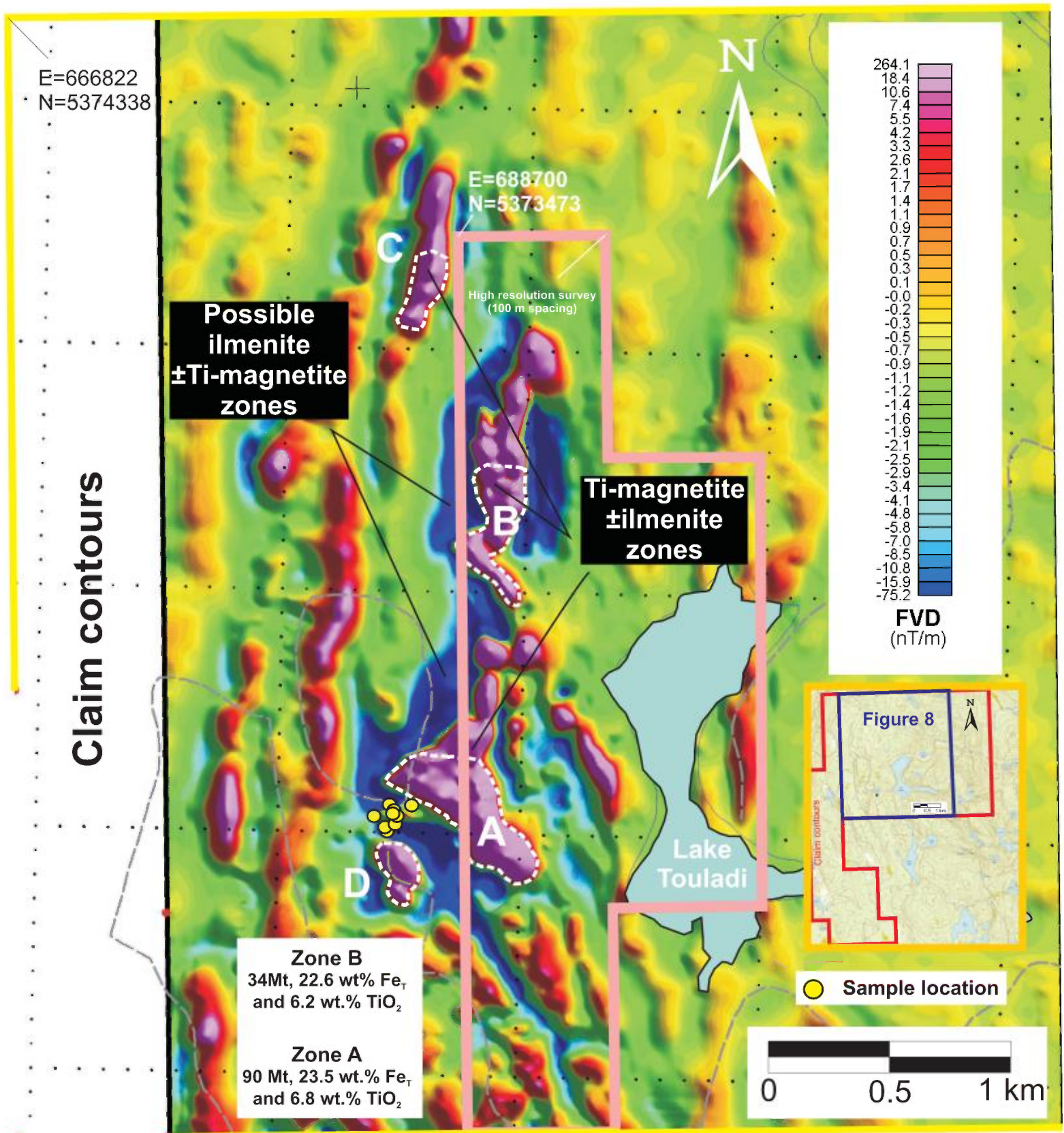


Figure 8. First Vertical Derivative map (FDV) in linear mode showing the NS-oriented alternating patterns of strong positive and negative signatures associated with the Lake Touladi Fe-Ti deposit. Zone A to D delimited by past ground-based magnetic survey and diamond drilling correspond to strong magnetic highs associated with magnetite-rich orebodies. There is a huge negative through juxtaposed to the west of the main positive anomalous zones. This zone hasn't been investigated yet and may correspond to ilmenite-rich orebodies. UTM Coord.; NAD83; Zone 18N; E=Easting; N=Northing.

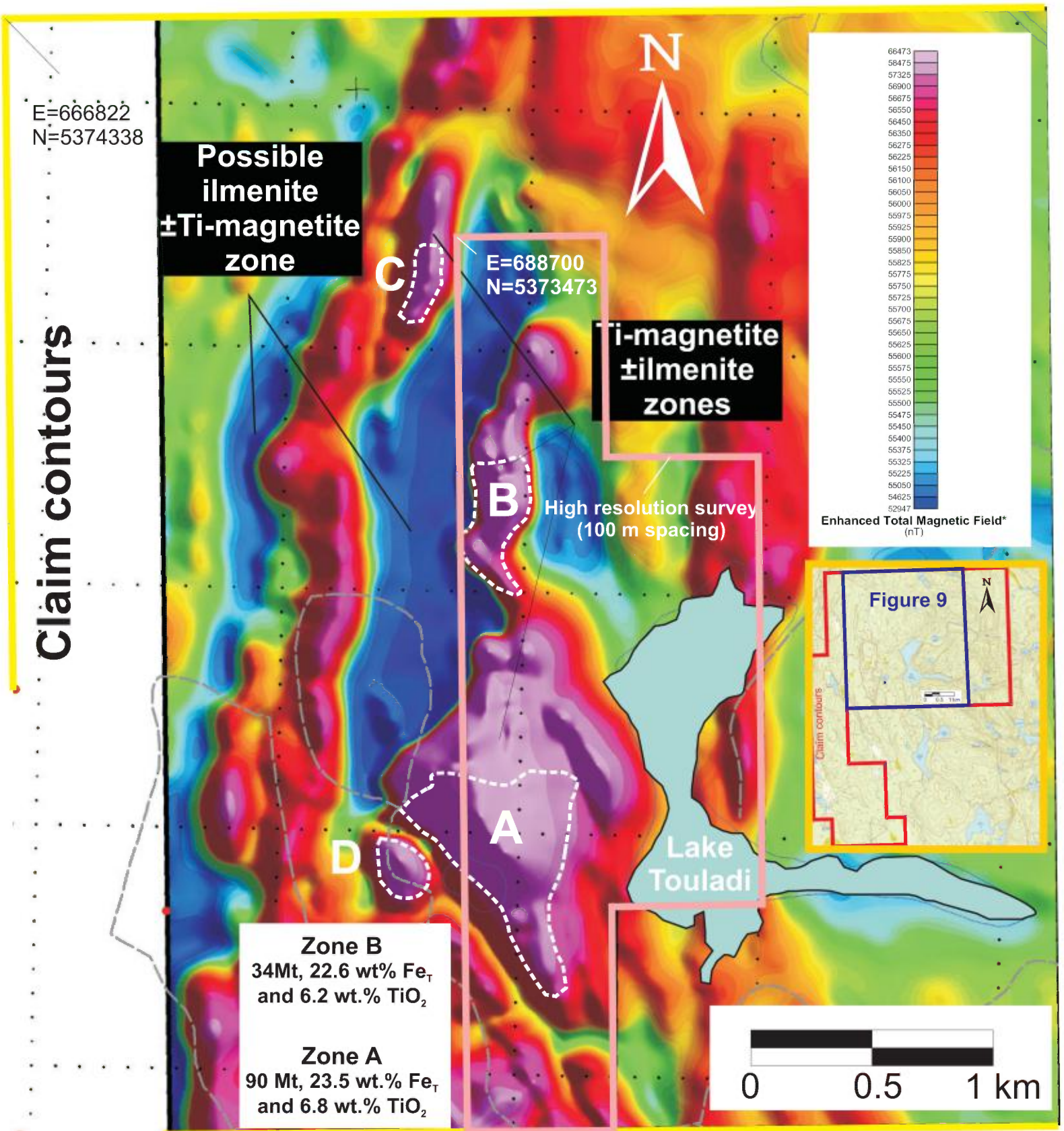


Figure 9. Enhance Total Magnetic Field (TMF) in linear mode showing the NS-oriented alternating patterns of strong high and low magnetic signatures associated with the Lake Touladi Fe-Ti deposit. Zone A to D delimited by past ground-based magnetic survey and diamond drilling correspond to strong magnetic highs associated with magnetite-rich orebodies. There is a huge magnetic through juxtaposed to the west of the main magnetic anomalous high. This zone hasn't been investigated yet and may correspond to ilmenite-rich orebodies. UTM coord.; NAD83; Zone 18N; E=Easting; N=Northing

nearly 3.3 km with a maximum width of 475 m. This extensive area seems to have been largely ignored during the previous exploration work.

Another important anomalous area, albeit less well contrasted within the background readings, appears to the west of the precedent. It extends in a SSW-NNE direction for ~3.2 km and is characterized by several small-scale areas of positive anomalous readings, some of them juxtaposed to the west by strong negative low anomalous zones.

Our airborne mag survey indicates that most of the magnetite-rich zones submitted to drilling are associated with high positive nT values (Figures 8 and 9). The position of some drill holes investigating the B zone appears to be located 50 to 160 m east of the principal area of high magnetic values in a through marked by a strong magnetic lows. The localization of two drill holes associated with zone C also falls outside the high magnetic zone. However, one must be aware that the UTM coordinates of the DDH extracted from the SIGÉOM website of the Ministère des richesses Naturelles du Quebec are subject to some uncertainty, as the their localization is sometimes approximate due to the lack of precise location on old geological maps. This is evident from the location of the short and long DDH provided by Bergmann (1958; GM06747B) which differ somewhat from that given in the SIGÉOM site.

From the interpretation of the new aeromagnetic survey and the examination of previous surveys and drilling campaigns, two important conclusions arise: a) the areas defined by strong magnetic low anomalies, probably related to the presence of hemoilmenite mineralization at depth, were not investigated by drilling; b) zones characterized by strong magnetic high anomalies were only partially explored and c), there is another, albeit less well defined, NS-oriented area located 1 km west of the main showing that displays a similar pattern of alternating magnetic highs and lows which should be spatially related with gabbroic lithologies.

From the observation of the FVD and TMI maps, it is clear that the northern segments of anomalous zones A, B and C need to be evaluated for Fe-Ti mineralization. These constitute three NS-oriented sections varying from 500 to 600 m in length (Figures 8 and 9). The western edge of the gabbroic mass as mapped by Bray (1959) may also contain

valuable Fe-Ti reserve. The signatures marked by magnetic highs and lows may not be as wide and sharp as that shown on the eastern side of the gabbroic mass but need to be assessed. The presence of the parallel zone of similar magnetic signature could be ascribed to the presence of distinct alternating layers of magnetite-rich and hemoilmenite-rich mineralization's within the gabbro/anorthosite body at depth.

#### *12.1.5.2-The Problem of Remnant Magnetism in Magnetic Surveys over Fe-Ti-rich Orebodies*

Bergmann (1958) remarked that some of the positive magnetic readings over good magnetite-rich bodies detected by ground-based surveying were relatively low. Bergman believed that this signature was related to the fact that magnetite grains presented reverse polarities. As a result, he concluded that the conventional contouring of high positive readings only partially outlined the mineralized zones and only in a very general way. Although Bergmann (1958) concluded that some low magnetic values are related to the remnant magnetism, it is possible that the strong observed negative values in FVD or low nT values are related to the occurrence of hemoilmenite-rich bodies.

Magnetic properties of iron-titanium minerals vary greatly with their composition, texture, temperature and pressure. One of the important magnetic properties of these minerals is their ability to produce magnetic anomalies. Another key attribute is their varying capacity to retain a hard component of remnant magnetism. Rocks containing magnetic minerals may have two types of magnetization: induced and remnant. Induced magnetization is created only in the presence of an external magnetic field. Remnant magnetization, however, is frozen within the rock, and the rock remains magnetized in a field-free area. Sometimes the direction of the Earth's field at the time of rock formation or alteration is preserved. Both induced and remnant magnetizations vanish above the Curie temperature (about 580°C for magnetite).

Rose (1969) conducted studies of the remnant magnetism in oriented iron-titanium ore samples and concluded that remnant magnetism is characteristically strongly developed and retained in intergrowths of iron-titanium oxide mineral, especially in ilmenite-

hematite intergrowths, but is also found in certain magnetite (magnetite-ilmenite) deposits. Therefore, the magnetic anomalies associated with titaniferous deposits are generally controlled either by titaniferous magnetite with a strong component of induced magnetism and high magnetic susceptibility, or by ilmenite-hematite with weak component of induced magnetism and low magnetic susceptibility. There is a hard component of remanent magnetism of both titaniferous magnetite and ilmenite-hematite. However, the reverse (negative) remanence of ilmenite-hematite (much less commonly of titaniferous magnetite) commonly produces a reversed or true negative magnetic anomaly. As the magnetite susceptibility of titanomagnetite is generally much higher than that of ilmenite-magnetite the magnetic properties of a mixture of both minerals are largely controlled by the titanomagnetite. The result is generally a strong positive magnetic anomaly. But when ilmenite-hematite predominates, its magnetic influence, in the form of a hard component of remanent magnetism, is more strongly felt and may either decrease or increase the resultant magnetic anomaly. Generally, its effect is to reduce the intensity of the anomaly since its polarity is commonly reverse and inclined in the direction different from that of the magnetic field induced at present. At Lake Tio, one of the largest Fe-Ti deposit in the world located on the Lower North Shore of the St-Lawrence River, Canada, a general pattern of strongly positive aeromagnetic anomalies associated with oxide-rich gabbroic anorthosite and of negative anomalies associated with ilmenite deposits seems to prevail, as it does elsewhere in the anorthositic massifs of Eastern Canada and also in the Adirondacks Mountains of New York State (Balsley and Buddington, 1958). However, it is also possible that the anomaly may be made positive, such as at St-Urbain, Quebec, by the opposition of remanent and induced magnetism where the former predominates and is either normally (positively) or reversely (negatively) polarized.

There is a possibility that the low magnetic signatures at Lake Touladi are a consequence of ilmenite exsolution at depth from Ti-magnetite mineralization. Indeed, Bray (1977) reports that polished sections of magnetite mineralization collected from surface exposures reveal all stages of ilmenite exsolution, from seriate bands and lenses to ilmenite rims about a magnetite core. This hypothesis is unlikely, since ilmenite does

occur as a discrete mineral phase. Bray (1977) described the mineralized rocks as “concentrations of medium-grained magnetite and ilmenite, with feldspar and ferromagnesian silicates, forming layers or lenses several inches thick in width, separated by narrow bands of silicate-rich material”. Furthermore, average TiO<sub>2</sub> concentration of the mineralization in zones A and B are 6.2 and 6.8 wt. % respectively, too high to be attributed solely to magnetite or Ti-rich magnetite which has exsolved ilmenite. Finally, analyses of the magnetic fraction of a metgabbro xenolith incorporated in a monzonite contained 70.02 wt. % iron and 1.11 % TiO<sub>2</sub> (Bray, 1977); close to the 1.15 wt. % value reported by Bray (1977) for the magnetite in the Lake Touladi mineralization.

Finally, a possible interpretation of the strong magnetic lows adjacent to magnetic highs is that of a magnetic shadow. Magnetic shadows, usually expressed as low magnetic values, can occur on the edge of strong magnetic highs associated with vertical to sub-vertical magnetic layers such as dykes, mineralized strata or in this case mineralized layers. Magnetic shadows are usually of low amplitude relatively to the magnetic highs. However, the Lake Touladi magnetic anomalies are as important as the magnetic highs, with a difference of amplitude reaching 6,000 nT. Magnetic lows also occur occasionally on both sides of the strong magnetic highs (Figures 8 and 9). While magnetic shadows remain a possible explanation for the presence of magnetic lows, there is a stronger possibility that they are associated with hemoilmenite bodies.

In conclusion, the extended areas depicted by the low magnetic values (shown in blue in Figures 8 and 9) may be ascribed to three possible scenarios:

- a) Mineralized bodies consisting of reversely polarized Ti-magnetite accompanied by subordinate amount of hemoilmenite having remnant reverse signatures.
- b) Magnetic shadows
- c) Mineralized bodies dominated by reversely magnetized remnant hemoilmenite with secondary amount of normally polarized Ti-magnetite.

Only extensive drilling will permit to differentiate between these three scenarios since most areas covered by strong magnetic lows show a paucity of outcrops. Nonetheless, we are currently leaning toward the third hypothesis.

#### *12.1.5.3-Comparison with Other Fe-Ti Deposits: The Bjerkreim-Sokndal Layered Intrusion*

Variations recorded in alternating patterns of magnetic lows and highs are commonly associated with Fe-Ti deposits that show layers of hematite-ilmenite and titanomagnetite mineralization. An example is the Tellnes deposit associated to the Bjerkreim-Sokndal layered intrusion, Rogaland, Norway; part of the Middle Proterozoic Rogaland anorthosite province. The Rogaland rocks contain historic and presently mined hemoilmenite ore deposits that currently produce 15% of the world's titanium. This 7 km-thick intrusion is divided into six Megacyclic units. Crystal fractionation punctuated by the influx and mixing of more primitive magmas produces sequences of early plagioclase norites, intermediate hemoilmenite norites, and late magnetite-rich norites with subordinate ilmenite (Figure 10).

There are characteristic distinct negative and positive aeromagnetic anomalies associated with numerous cumulate ilmenite layers. Aeromagnetic anomalies from the region show pronounced bands of negative and positive areas ranging over 6000nT (Figure 11). A pattern of remanence-dominance at the base to induced-dominance at the top of each cycle is clear. Pronounced negative remanent anomalies (due to reversed magnetic signal) are associated with magmatically more primitive layers having ilmenite with abundant fine hematite exsolution and up to 1% coexisting magnetite. Positive (induced) anomalies appear over the magnetite-rich layers and magnetic lows over hemoilmenite-rich layers (McEnroe et al., 2002 and Brown et al., 2005). The Lake Touladi Fe-Ti deposits could thus share some geologic and magnetic characteristics of the Bjerkreim-Sokndal layered intrusion.

#### *12.2-Rock Sample Geochemistry*

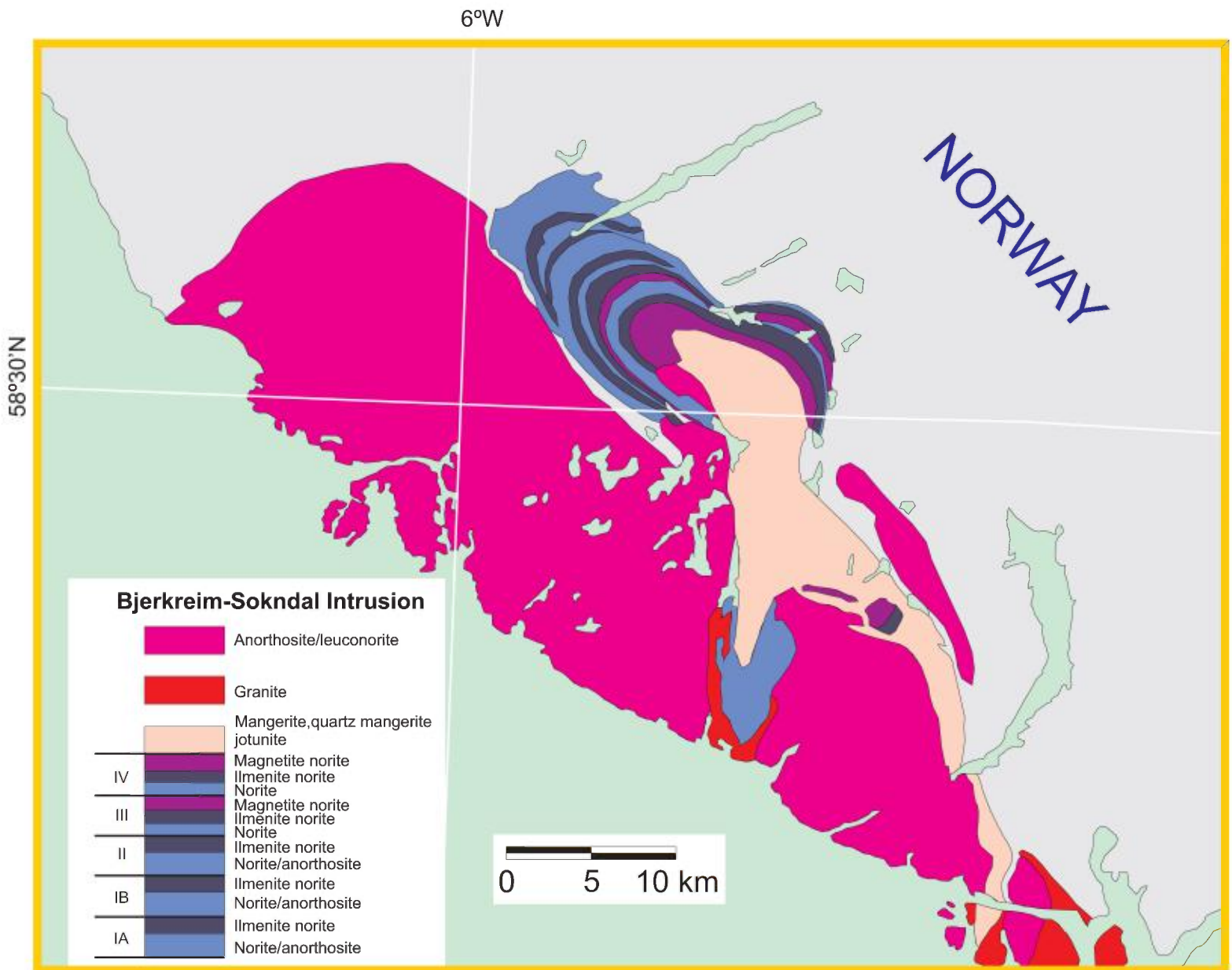


Figure 10. Regional geological map showing the major intrusive units of the Bjerkreim-Skondal Intrusion including the megacycles IA, IB, II, III and IV. From McEnroe et al. (2004).



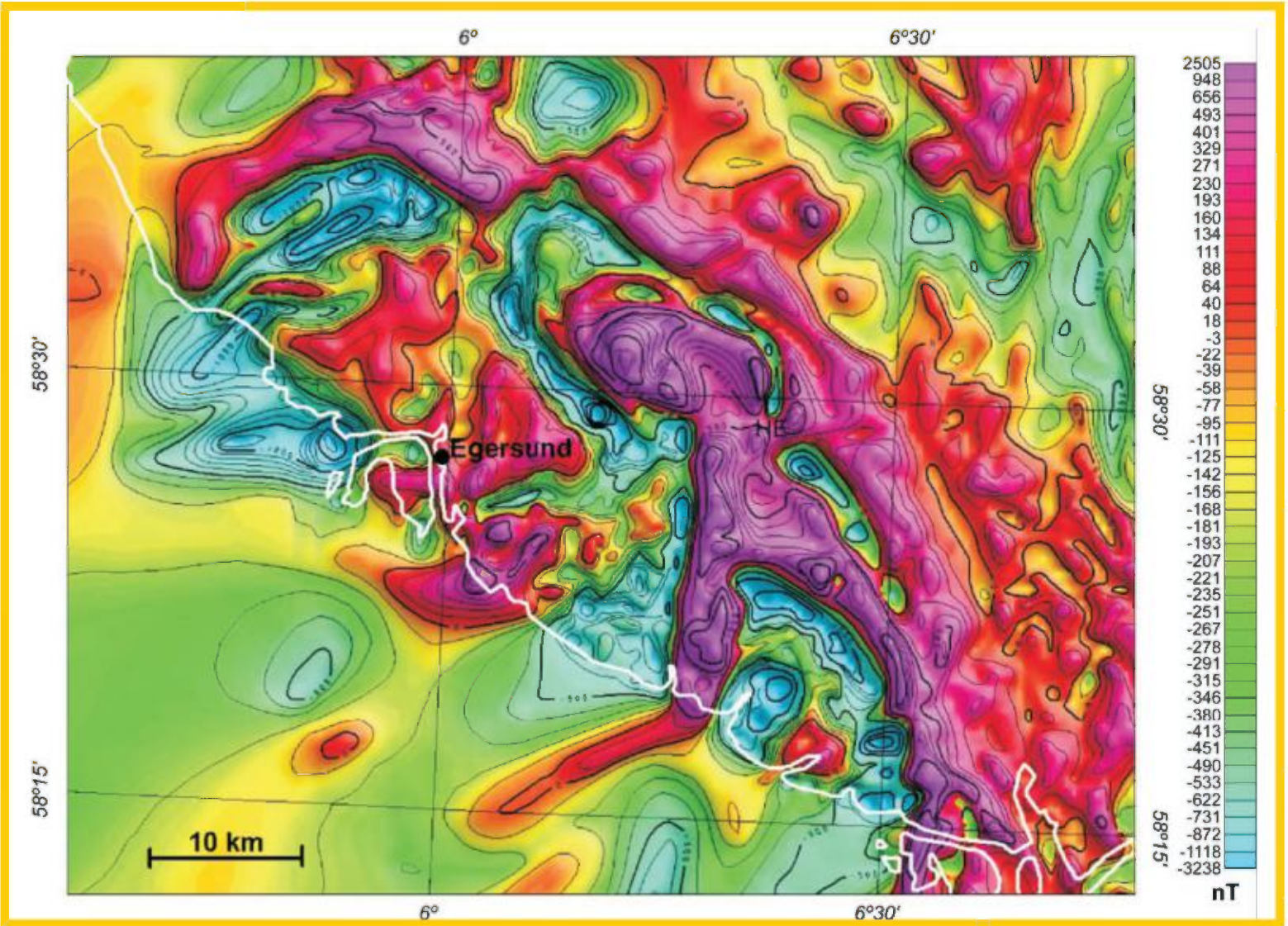


Figure 11. Regional aeromagnetic anomaly map of the Bjerkreim-Skondal Intrusion, Rogaland, Norway. The magnetic total field was reduced to anomaly values by subtracting the IGRF (1965) from total field values. The contour interval is 100 nanoteslas (nT). Color shades: pink=positive anomalies, blue=negative anomalies, green and yellow=intermediate. From McEnroe et al. (2004)

A total of ten grab samples were collected from moss covered Fe-Ti-mineralized outcrops exposed 250 m west of mineralized Zone A (Figure 12). The sampling was carried out to verify the validity of some pre-43-101 geochemical data coming from a few good exposures of Fe-Ti-mineralized rocks. The complete chemical analyses for nine samples accompanied by their UTM coordinate are presented in Table 3. These are essentially gabbros or anorthositic gabbros. On a few outcrops we can observe alternating medium to fine-grained, cm-thick layers of silicate (feldspar, pyroxene and hornblende) and oxide-rich minerals (i.e. magnetite, titanomagnetite, hematite + apatite±sulphide). Due to poor outcrop exposures, grab samples were difficult to extract and may not represent the true whole rock composition because of the layered structure of the gabbro/anorthositic gabbro. Nonetheless, the chemical analyses reveal average Fe and TiO<sub>2</sub> contents of 25.66 and 7.59 wt.% respectively which are comparable to published values for Zone A and B (22.6-23.5 wt.% Fe and 6.2-6.8 wt.% TiO<sub>2</sub>), and composites of the short holes drilled by Roberval Mining Corporation (23.6-26.1 wt.% Fe and 6.92-7.50 wt. TiO<sub>2</sub>) (Table 3). Note the low Al<sub>2</sub>O<sub>3</sub> (5.02 wt. %), K<sub>2</sub>O (0.24 wt. %), Na<sub>2</sub>O (0.89 wt. %) and S (0.11 wt. %) content, whilst P<sub>2</sub>O<sub>5</sub> assays reach > 2.3 wt. % in three samples reflecting probably the accumulation of apatite. These new 43-101 compliant chemical assays, while preliminary, strengthen our confidence in the validity of previously published assays from drill core material. However, to obtain a more comprehensive data base one needs to gather samples from channels cut perpendicular to the rock layering.

### *12.3-Petrographic and mineralogical studies*

#### *12.3.1-Analytical Procedures*

Two mineralized samples, LT-08-02 and LT-08-09, were sent to the Lakehead University Mineralogy and Experimental Laboratory (LUMINX) to obtain a petrographic description of the rocks and get a quantitative assessment of Fe-Ti oxides present.

Samples were first examined using an Olympus DP70 petrographic microscope and then submitted to the JEOL5900 SEM. The work was accomplished for Canamara Energy Corp.

For the SEM analyses, three standard 1"-diameter polished thin sections were prepared at

**Table 3.** Geochemistry of selected Fe-Ti mineralized and non-mineralized gabbroic grab samples collected from the Lake Touladi main showing.

SAMPLE	LT08-02	LT08-03	LT08-04	LT08-05	LT08-06	LT08-07	LT08-08	LT08-09	LT08-10
<b>Rock Type</b>	Mineralization in Gabbro/Anorthositic gabbro	Mineralization in Gabbro/Anorthositic gabbro	Unmineralized Gabbro/Anorthositic gabbro	Mineralization in Gabbro/Anorthositic gabbro	Mineralization in Gabbro/Anorthositic gabbro	Mineralization in Gabbro/Anorthositic gabbro	Mineralization in Gabbro/Anorthositic gabbro	Mineralization in Gabbro/Anorthositic gabbro	Mineralization in Gabbro/Anorthositic gabbro
<b>UTM Easting<sup>*</sup></b>	668454	668498	668499	668496	668557	668473	668472	668398	668462
<b>UTM Northing</b>	5371006	5371070	5371079	5371087	5371115	5371088	5371089	5371070	5371118
<b>SiO<sub>2</sub> (wt. %)</b>	38.70	27.30	49.50	31.70	29.80	25.50	27.60	20.8	35.1
<b>Al<sub>2</sub>O<sub>3</sub></b>	6.80	4.29	14.80	5.00	5.52	3.99	4.51	4.72	8.17
<b>TiO<sub>2</sub></b>	5.48	7.95	1.36	7.30	7.87	8.66	7.98	10.25	5.2
<b>CaO</b>	6.55	8.13	8.81	7.22	8.90	7.98	8.57	8.16	9.02
<b>Fe<sub>2</sub>O<sub>3T</sub></b>	19.95	28.10	8.77	26.10	24.40	29.40	27.10	31.3	18.9
<b>K<sub>2</sub>O</b>	0.37	0.19	0.75	0.21	0.29	0.16	0.20	0.192	0.314
<b>MgO</b>	>10.0	9.16	8.63	>10.0	9.26	9.40	9.76	7.25	8.84
<b>MnO</b>	0.32	0.31	0.20	0.32	0.36	0.36	0.35	0.22	0.208
<b>Na<sub>2</sub>O</b>	1.30	0.69	3.01	0.88	1.20	0.56	0.70	0.67	1.55
<b>P<sub>2</sub>O<sub>5</sub></b>	0.60	2.20	0.44	0.37	2.69	2.33	2.44	1.52	0.756
<b>S</b>	0.07	0.32	0.07	0.13	0.04	0.04	0.04	0.233	0.749
<b>V<sub>2</sub>O<sub>5</sub></b>	0.07	0.11	0.02	0.12	0.10	0.12	0.11	0.08	0.042

<sup>\*</sup>NADR83; Zone 18

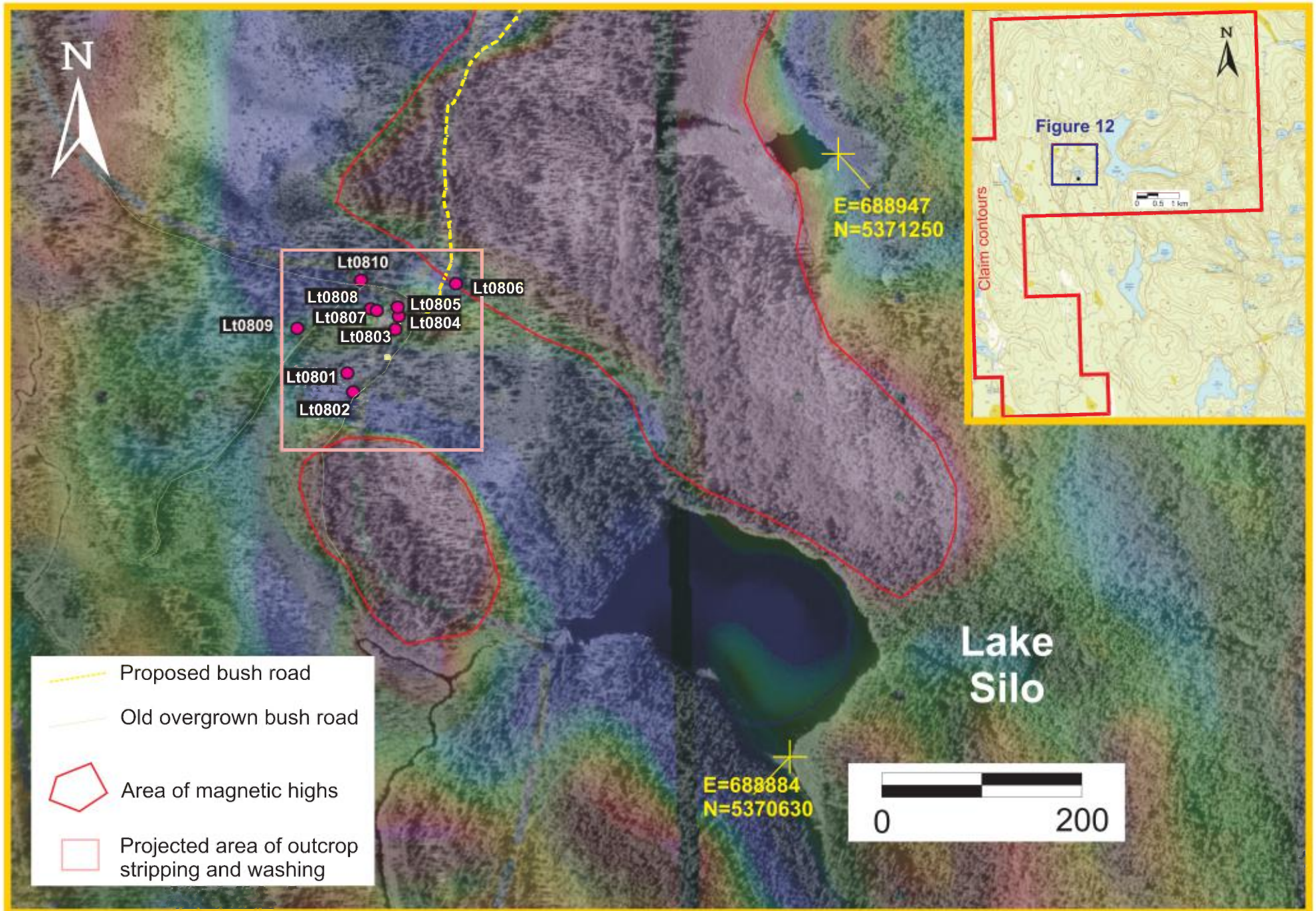


Figure 12. Localization of the collected grab samples analyzed for their Fe and TiO<sub>2</sub> concentrations. See Table 3. UTM Coord.; NAD83; Zone 18N; E=Easting; N=Northing.

the Thin Section Facility in the Department of Geology, Lakehead University. Samples were first analyzed for the identification of Fe-Ti-bearing minerals by semi-quantitative Energy-Dispersive X-ray Spectrometry (Semi-QEDS) using a JEOL JSM-5900 scanning electron microscope equipped with a Link ISIS 300 analytical system. Raw EDS spectra were acquired for 50 s (live time) with an accelerating voltage of 20 kV and beam current of 0.475 nA. The spectra were processed with the LINK ISIS SEM-QUANT software package, with full ZAF corrections applied. For the quantitative determination of the composition of Fe-Ti oxides phases, the full Energy-Dispersive X-ray Spectrometry (EDS) was used, with the raw EDS spectra acquired for 60 s (live time).

### *12.3.2-Petrography and Mineralogy of Fe-Ti Mineralization*

All samples are gabbroic in composition and are typified by a granular, coarse-grained texture. The rocks are composed of clinopyroxene, orthopyroxene, altered olivine, amphibole, plagioclase, biotite, apatite, zircon and opaque phases. The opaque phases comprise 30-45% of the samples and include: magnetite, magnetite with ilmenite exsolution, ilmenite with hematite exsolution and pure ilmenite, with minor to trace abundances of gahnite, rutile, goethite, pyrite, pentlandite, chalcopyrite and Co-bearing Fe-Ni sulfide, in decreasing order of abundance. Both samples contain magnetite with ilmenite exsolution and ilmenite with hematite exsolution. LT08-09 is also unique mineralogically, in that it contains minor amounts of barite. The relative abundances of Fe-Ti-oxide phases are: 70-75 % magnetite, 25-30% ilmenite (titanomagnetite present with exsolution lamella) and 10-15% titanomagnetite/Ti-rich hematite (as exsolution lamellae) in sample LT08-02A/B. Sample LT08-09 contains 50-65% ilmenite (mainly pure individual or paired phases) and 35-50% magnetite (mainly with ilmenite striations).

Reflected, plane polarized light (RPL) photomicrographs and SEM BSE photomicrographs show general texture and relative abundance of Fe-Ti-bearing oxide phases in sample LT0809 and LT-08-02 (figure 13a, b, c). Fe-Ti -bearing minerals in sample LT-08-02A/B include magnetite, ilmenite with hematite exsolutions along cleavage planes (Figure 13c). The sample also contains pyrite, chalcopyrite and

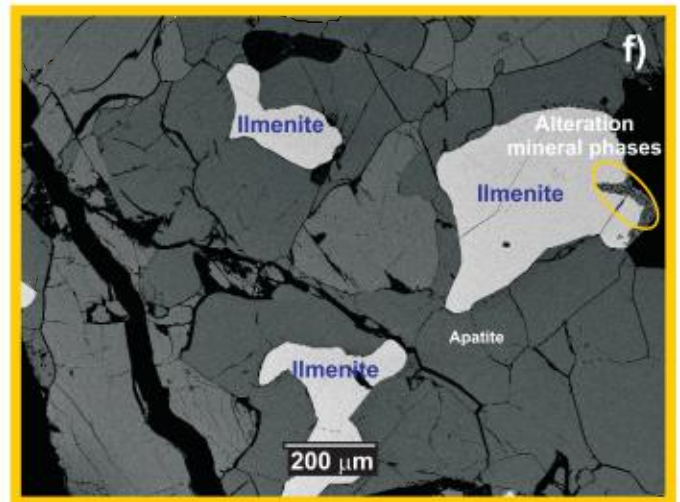
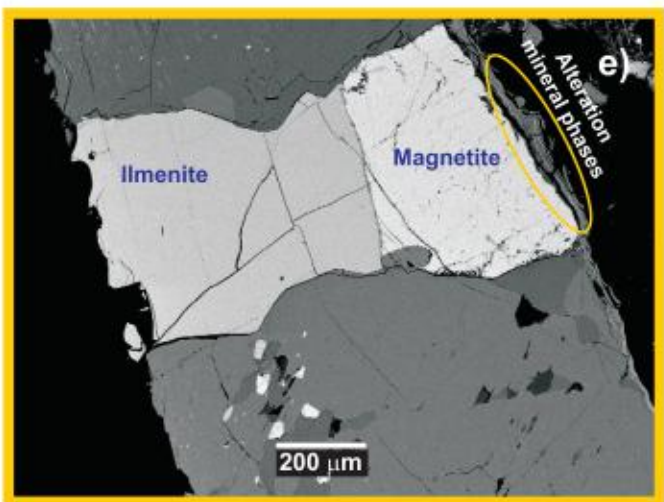
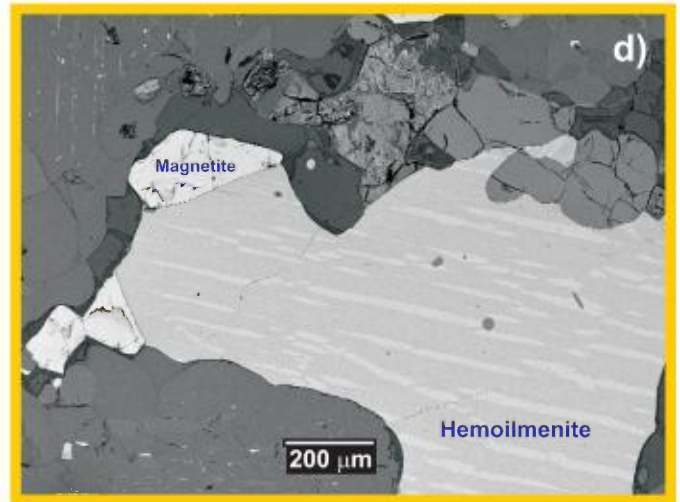
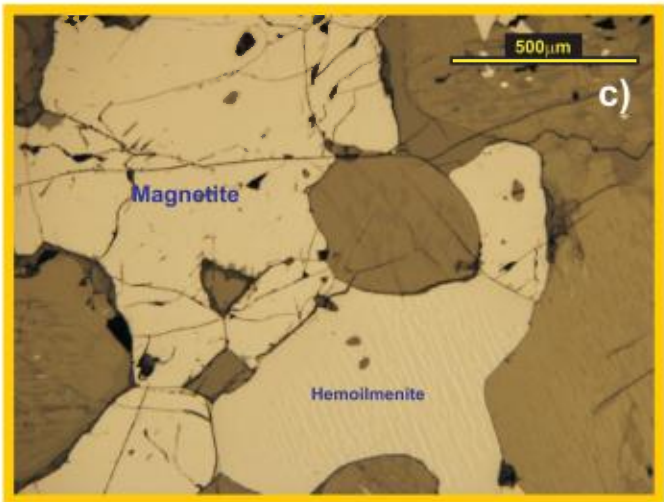
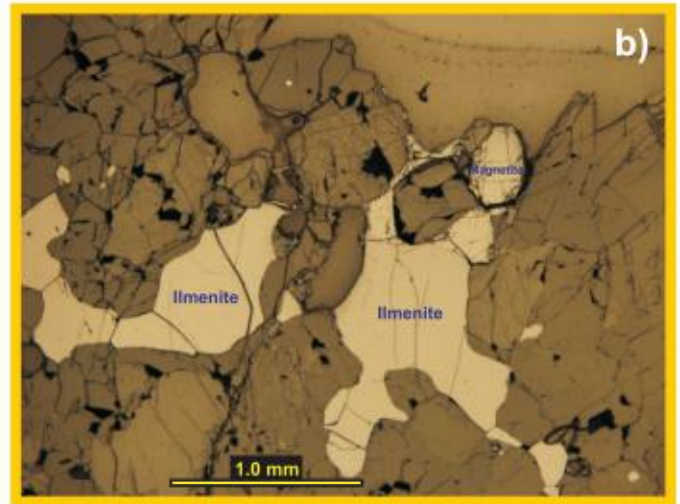
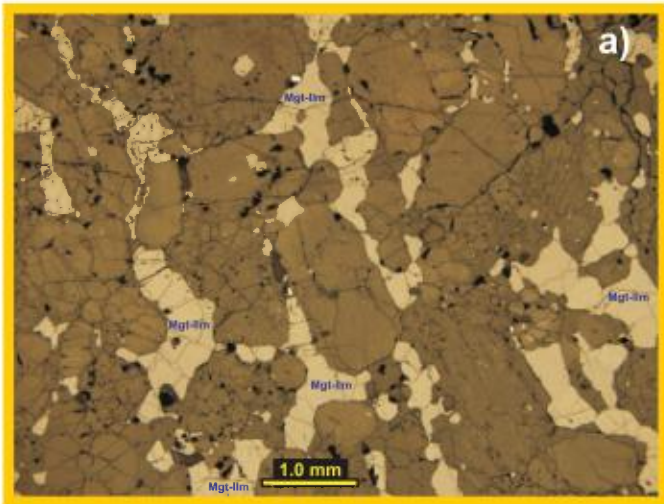


Figure 13. a) Plane Polarized Light (PPL) picture illustrating the granular texture, size (1-2 mm) and abundance of Fe-Ti-bearing oxides, mainly ilmenite and magnetite (sample LT-08-09); b) PPL photo showing pure ilmenite with magnetite grains (sample LT-08-09); c) Coarse-grained anhedral ilmenite with hematite exsolution (sample LT-08-02A/b); d) Individual crystals of magnetite and ilmenite with hematite exsolution are more abundant in sample LT-08-02A/B than in sample LT-08-09; e) and f) Alteration around silicate-oxyde boundaries is manifested by mineral phases such as goethite, rutile and gahnite

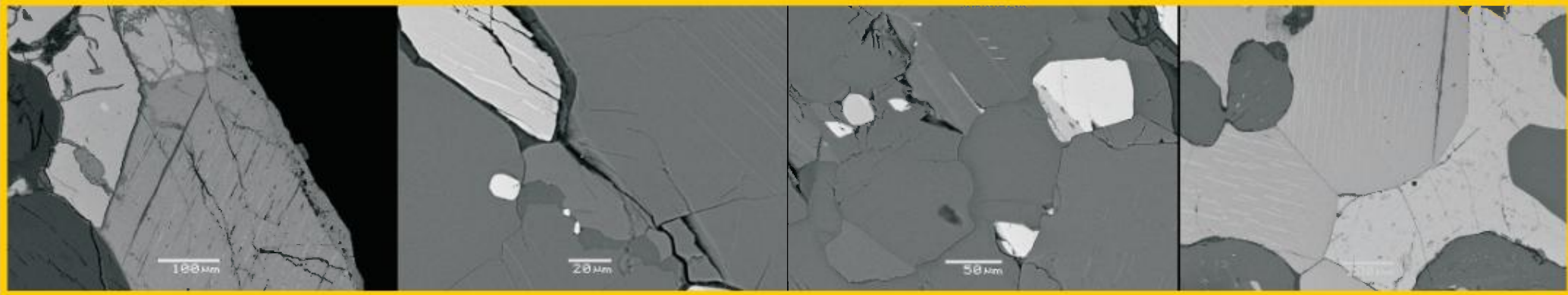
pentlandite. Other Fe-Ti bearing such as goethite, rutile, gahnite occur as alteration around silicate-oxide boundaries indicated by circles (Figure 13e, f). Sample LT08-09 differs from LT08-02A/B in that it contains more grains of pure ilmenite and magnetite with Ti-exsolution (striations) of pure ilmenite. Sample LT08-02A/B exhibits pure magnetite followed by minor titanomagnetite. The majority of ilmenite phases show Ti-bearing magnetite or hematite (Figure 13b, e, and f).

### *12.3.3-Mineral chemistry of ilmenite and titanomagnetite*

BSE photographs of typical Fe-Ti oxide mineral assemblages submitted to quantitative SEM analyses are shown in Figure 14. The chemical composition of ilmenite, titanomagnetite, Ti-rich hematite (ilmeno-hematite) and magnetite are presented in tables 4 and 5. The ilmenite oxide analyses produce a total close to 100%. Considering the fact that pure ilmenite contains iron in the form of  $\text{Fe}^{++}$  (FeO) with virtually no  $\text{Fe}^{+++}$  ( $\text{Fe}_2\text{O}_3$ ), the total indicates there is an abundance of pure ilmenite in both samples representing the Lake Touladi Fe-Ti mineralization. This is further illustrated in Figure 15a, in which the Fe (wt. %) and Ti (wt. %) concentrations of the Lake Touladi ilmenite are very close to the theoretical ilmenite composition of Dana. Other ilmenite compositions associated with diverse world Fe-Ti mineralized bodies are richer in Fe and poorer in Ti indicating a hemoilmenite rather than pure ilmenite compositions. The chemical analyses of Lake Touladi magnetite, titanomagnetite and Ti-rich hematite are given in Table 5. The oxide total varying from 89 to 94 wt. % implies that a substantial amount of iron is in the form of  $\text{Fe}^{+++}$  ( $\text{Fe}_2\text{O}_3$ ). Considering that pure magnetite has a ratio of  $\text{FeO}/\text{Fe}_2\text{O}_3$  of 1 and pure hematite contains only  $\text{Fe}_2\text{O}_3$ , we could extrapolate theoretical  $\text{Fe}_2\text{O}_3$  and FeO concentrations of all minerals and would obtain oxide totals varying between 96 to 100%.

Magnetite in both rock samples contain very little  $\text{TiO}_2$  (0.00-0.86 wt. %), whilst titanomagnetite and Ti-rich hematite display concentrations of 7.40-8.25 and 12.34-20.21 wt. % respectively (Figure 15b). The average  $\text{TiO}_2$  values for ilmenite are 50.16 wt. % (n=6) for sample LT08-02A/B and 50.47 wt. % (n=9) for sample LT08-09, very close to the theoretical composition of pure ilmenite from Dana (52.75 wt. %) (Figure 15a). The Lake Touladi magnetite, titanomagnetite and Ti-rich hematite display relatively low  $\text{SiO}_2$

## LT08-02A/B



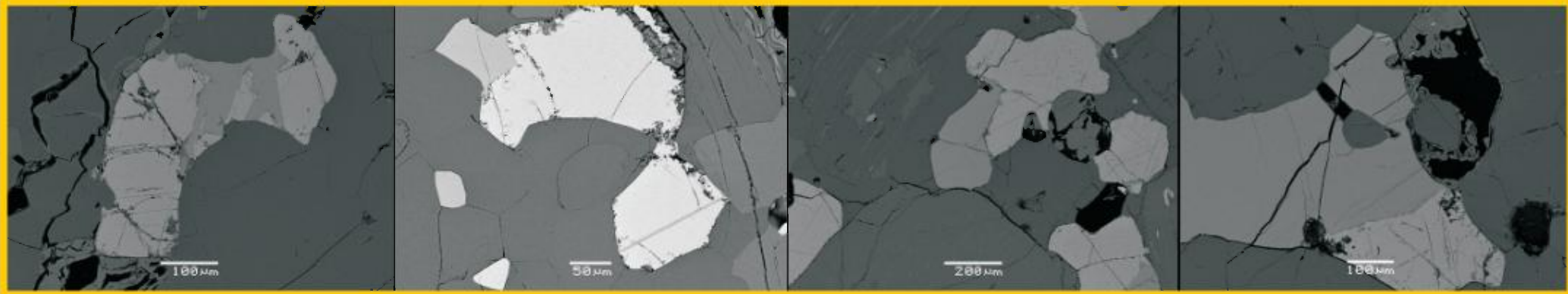
Ilmenite with titanomagnetite

Ilmenite with titanomagnetite

Ilmenite with titanomagnetite

Ilmenite with titanomagnetite

## LT08-09



Ilmenite-magnetite with ilmenite

Ilmenite-magnetite with ilmenite

Ilmenite-magnetite pair

Ilmenite paired with magnetite

Figure 14. Typical Fe-Ti oxide mineral assemblages submitted to quantitative SEM analyses at the LUMINX laboratory.



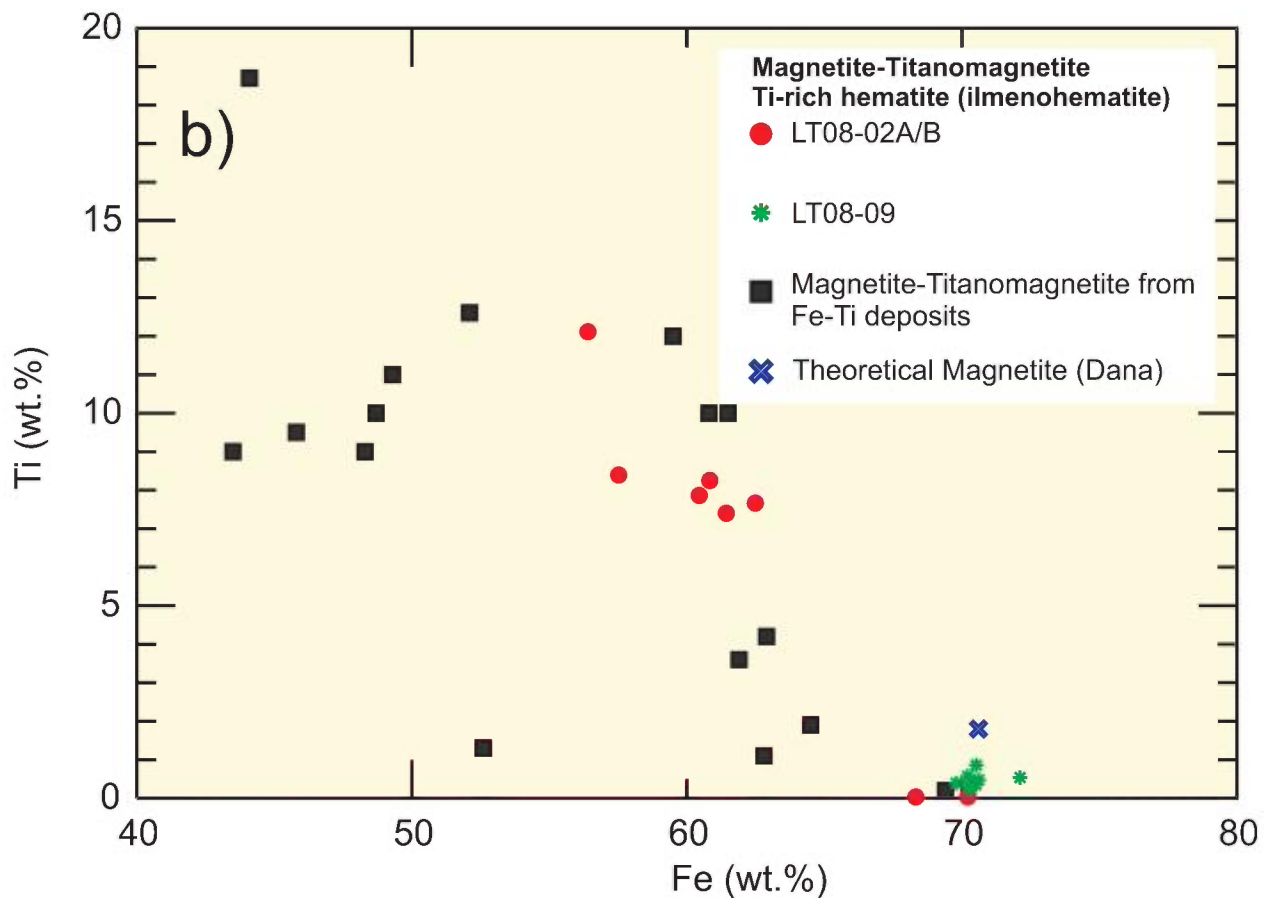
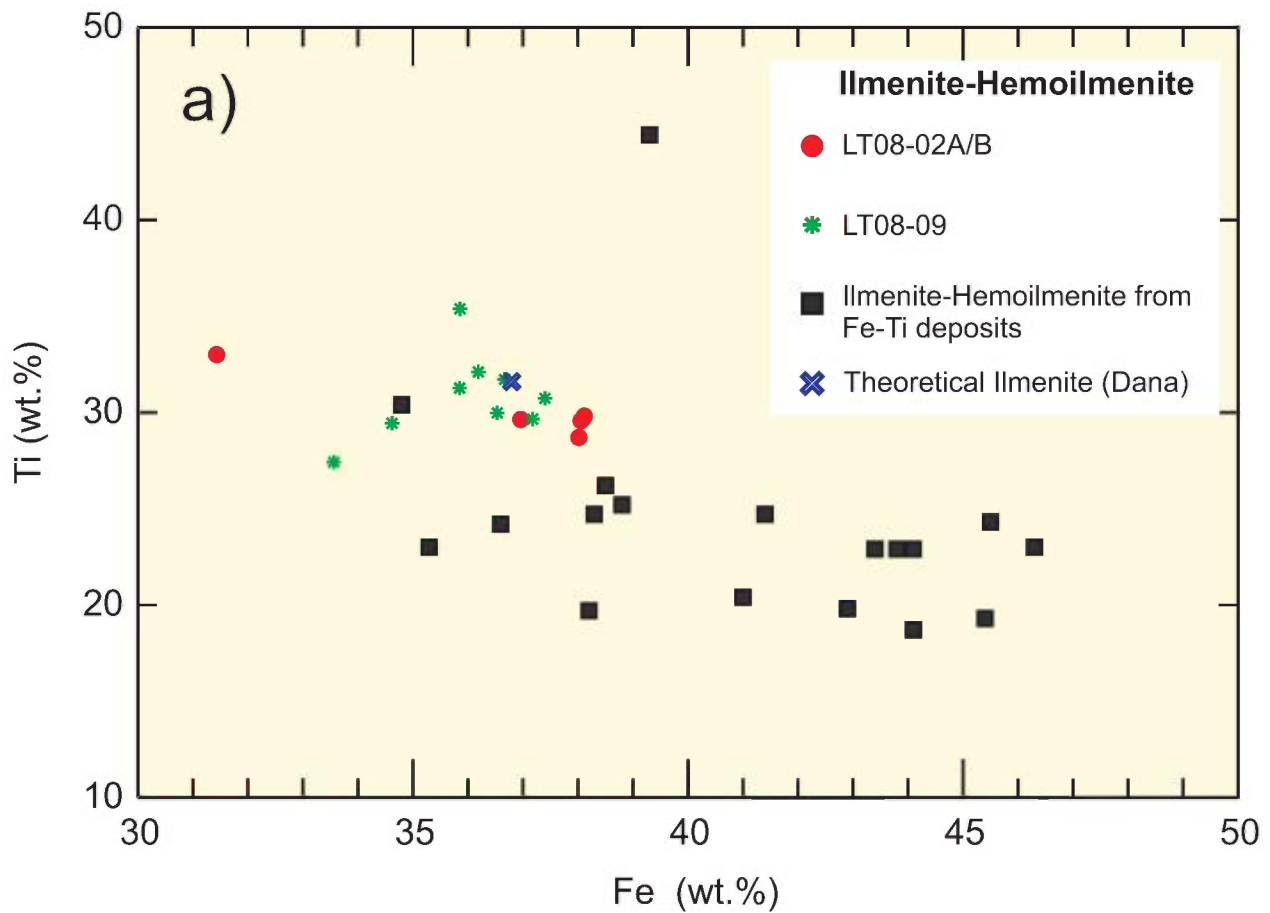


Figure 15. a) Fe (wt.%) vs. Ti (wt.%) of the Lake Touladi ilmenite and b), Fe (wt.%) vs. Ti (wt.%) of the Lake Touladi magnetite, titanomagnetite and Ti-rich hematite (ilmeneohematite). The composition of ilmenite, hemoilmenite and titanomagnetite from other Fe-Ti orebodies are plotted for comparison. Note that the composition of the Lake Touladi ilmenites is comparable to that of the theoretical ilmenite composition of Dana.

**Table 4.** Chemical analyses of the Lake Touladi ilmenites.

Sample	Mineral	SiO <sub>2</sub> (wt.%)	TiO <sub>2</sub>	Ti	Al <sub>2</sub> O <sub>3</sub>	FeO <sub>T</sub>	Fe <sub>T</sub>	MnO	MgO	Total
					<b>LT08-02A/B</b>					
ILM1a	Ilmenite	0.42	49.34	29.57		48.96	38.06	0.42		99.14
ILM2a	Ilmenite		49.43	29.62		47.55	36.96	0.81	1.87	99.66
ILM3a	Ilmenite		47.88	28.70		48.91	38.02	0.83	1.65	99.27
ILM4a	Ilmenite		49.74	29.81		49.04	38.12	0.73	1.97	101.48
ILM5a	Ilmenite		55.06	33.00		40.44	31.43	2.36	2.29	100.15
ILM6a	Ilmenite		49.50	29.67		49.00	38.09			98.50
<b>Avg (n=6)</b>		<b>0.42</b>	<b>50.16</b>	<b>30.06</b>		<b>47.32</b>	<b>36.78</b>	<b>1.03</b>	<b>1.95</b>	<b>99.70</b>
					<b>LT08-09</b>					
ILM8a1	Ilmenite		49.47	29.65		47.83	37.18	0.57	0.75	98.62
ILM8a2	Ilmenite in magnetite		52.17	31.27		46.12	35.85		0.70	98.99
ILM9a	Ilmenite		51.27	30.73		48.12	37.40	0.40		99.79
ILM10a	Ilmenite		52.91	31.71		47.17	36.67		0.31	100.39
ILM11a	Ilmenite	0.57	49.11	29.43	5.99	44.54	34.62		1.11	101.32
ILM12a	Ilmenite	0.32	53.55	32.09		46.56	36.19	0.85	0.90	102.18
ILM13a	Ilmenite		50.00	29.97		47.00	36.53		1.09	98.09
ILM14a	Ilmenite in magnetite		50.03	29.98	1.98	46.13	35.86	0.60		98.74
ILM15a	Ilmenite		45.73	27.41	1.99	43.18	33.56			90.90
<b>Avg (n=9)</b>		<b>0.45</b>	<b>50.47</b>	<b>30.25</b>	<b>3.32</b>	<b>46.29</b>	<b>35.98</b>	<b>0.61</b>	<b>0.81</b>	<b>98.78</b>

Table 5. Chemical analyses of the Lake Touladi magnetites, titanomagnetites and T-rich hematites (Ilmenohematite).

Sample	Minerals	SiO <sub>2</sub> (wt.%)	TiO <sub>2</sub>	Ti	Al <sub>2</sub> O <sub>3</sub>	Fe <sub>3</sub> O <sub>4T</sub>	Fe <sub>T</sub>	MnO	MgO	Cr <sub>2</sub> O <sub>3</sub>	Total
					<b>LT08-02A/B</b>						
TIMT1b	Titanomagnetite		13.11	7.86	0.41	83.42	60.45			0.26	97.20
TIMT2b	Ti-rich hematite*		12.34	7.40		87.84	61.44				100.18
TIMT3b	Ti-rich hematite*		20.21	12.11		80.64	56.40				100.85
TIMT4b1	Titanomagnetite		12.78	7.66		86.24	62.49		0.53		99.55
TIMT4b2	Magnetite			0.00		94.26	68.30				94.26
TIMT4b3	Titanomagnetite	0.67	13.76	8.25		83.96	60.84				98.39
TIMT5b	Magnetite			0.00		96.86	70.19				96.86
TIMT6b	Ti-rich hematite*	0.68	14.00	8.39		82.24	57.52		0.52		97.44
<b>Avg (n=8)</b>		<b>0.68</b>	<b>14.37</b>	<b>6.46</b>	<b>0.41</b>	<b>86.93</b>	<b>62.20</b>		<b>0.53</b>	<b>0.26</b>	<b>98.09</b>
					<b>LT08-09</b>						
TIMT7b2	Magnetite with ilmenite		0.75	0.45	0.72	97.25	70.47		0.43		99.15
TIMT8b	Magnetite		0.79	0.47	0.58	97.44	70.61		0.42		99.23
TIMT9b	Magnetite		0.95	0.57	0.99	96.89	70.21		0.42		99.25
TIMT10b	Magnetite	0.37	0.64	0.38	2.95	96.32	69.79		0.42	0.47	101.17
TIMT11b	Magnetite	0.40	1.43	0.86	1.04	97.32	70.52				100.19
TIMT12b	Magnetite		0.89	0.53	0.59	99.52	72.12				101.00
TIMT13b	Magnetite		0.59	0.35	0.81	97.31	70.52				98.71
TIMT14b	Magnetite		0.38	0.23	0.82	97.04	70.32				98.24
TIMT15b	Magnetite	0.39	0.47	0.28	0.95	96.96	70.26			0.39	99.16
<b>Avg (n=8)</b>		<b>0.39</b>	<b>0.77</b>	<b>0.46</b>	<b>1.05</b>	<b>97.34</b>	<b>70.54</b>		<b>0.42</b>	<b>0.43</b>	<b>99.57</b>

\* Fe<sub>T</sub> calculated as Fe<sub>2</sub>O<sub>3T</sub>

(0.37-0.68 wt. %),  $\text{Al}_2\text{O}_3$  (0.41-2.95),  $\text{MgO}$  (0.42-0.532 wt. %) and  $\text{Cr}_2\text{O}_3$  (0.26-0.47), with the total amount of these oxides usually below 2 wt. %. The ilmenite also contains less than 3 wt. % of  $\text{SiO}_2$  (0.32-0.57 wt. %),  $\text{Al}_2\text{O}_3$  (0.00-1.99 wt. %; one sample with 5.99 wt. %),  $\text{MnO}$  (0.40-2.36 wt. %) and  $\text{MgO}$  (0.70-2.29 wt. %). The ilmenite, hemoilmenite and Ti-magnetite composition were reported in the Rutile-Hematite-Wustite triangular plot (Figure 16). Sample LT08-02A/B contains nearly pure ilmenite and the accompanied magnetite contains virtually no titanium. On the other hand, sample LT08-09 comprises hemoilmenite which is invariably accompanied by coeval Ti-magnetite.

#### *12.3.4-Conclusions*

The petrographic examination and quantitative SEM analyses suggest that the Lake Touladi mineralization is amenable to current standard separation and beneficiation processes to extract iron and titanium. Favorable conditions are: a) the gabbroic rocks present a granular, coarse-grained texture with the Fe-Ti-bearing crystals ranging from 1 to 2 mm size; b) while ilmenite with hematite exsolution is abundant in both analyzed samples, pure ilmenite with the chemical composition reaching that of the theoretical ilmenite may form more than 65 % of the mineralization, c) Ti-rich hematite (ilmenoematite) may also constitute a titanium ore mineral with  $\text{TiO}_2$  concentrations between 7.40-12.11 wt. %; d) total amounts of oxides other than  $\text{FeO}$ ,  $\text{Fe}_2\text{O}_3$  and  $\text{TiO}_2$  (i.e.  $\text{MgO}$ ,  $\text{Cr}_2\text{O}_3$ ,  $\text{MnO}$ ,  $\text{Al}_2\text{O}_3$  and  $\text{SiO}_2$ ) in ilmenite and magnetite are usually below 3 wt.% and e), sulfides (chalcopyrite, pyrite and pentlandite) constitute rare accessory minerals. As for mineralization processing, iron would be extracted principally from Ti-poor magnetite and titanium, from pure ilmenite and perhaps titanomagnetite and ilmnohematite.

#### **ITEM 13 DRILLING**

No drilling was carried out during the course of this study.

#### **ITEM 14 SAMPLING METHOD AND APPROACH**

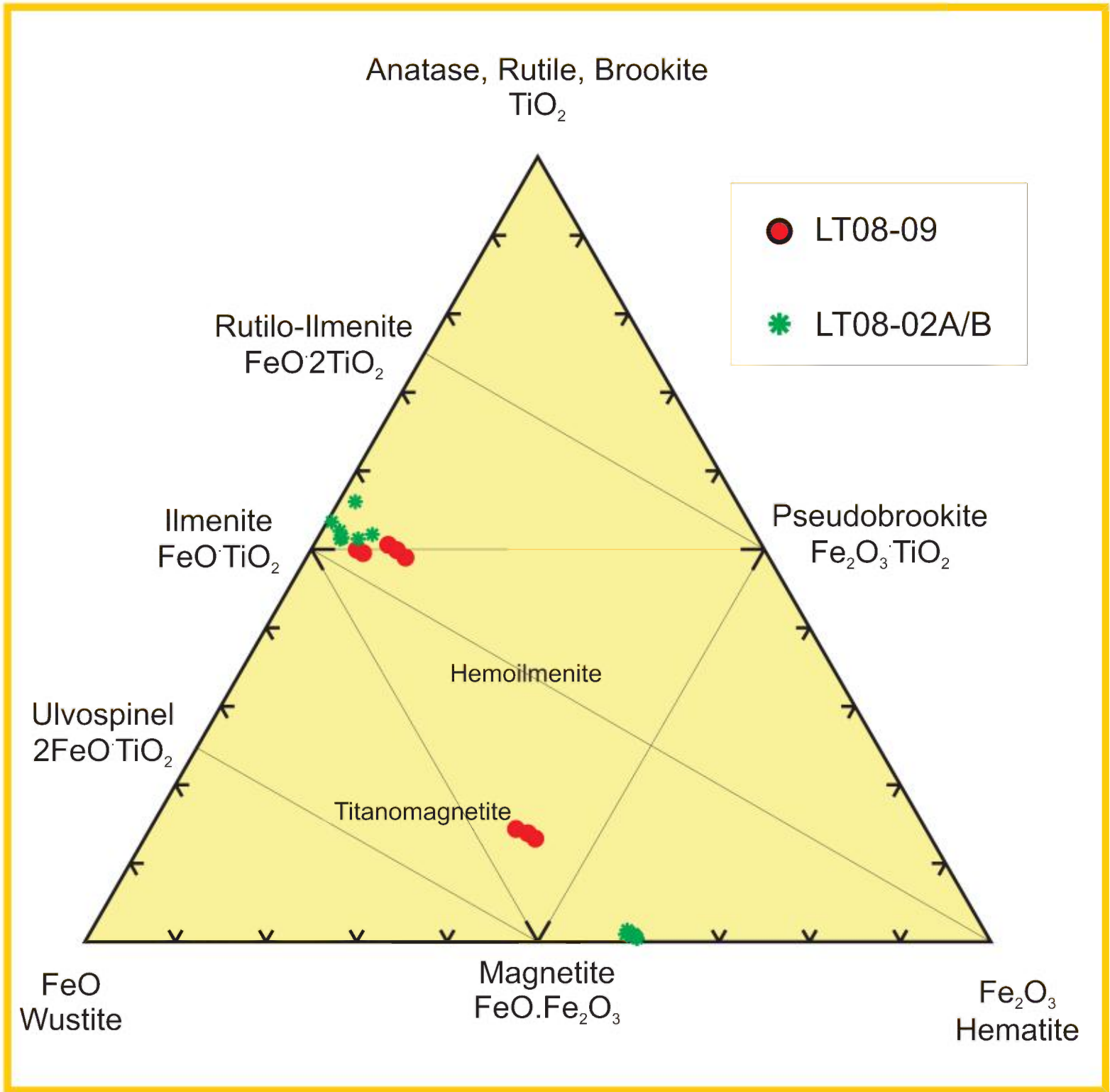


Figure 16. Rutile-Hematite-Wustite triangular plot of the Lake Touladi Fe-Ti-rich oxide minerals

Each sample was carefully collected by the author, bagged and sealed in a clean plastic bag. The samples were securely handled at each stage from the field to the laboratory and their integrity is unquestioned. The author was careful to extract specimen representative of the exposed rock and/or mineralization types. The location of the samples often depended on the availability of rock exposures which is poor.

#### **ITEM 15 SAMPLE PREPARATION, ANALYSES AND SECURITY**

The samples were transported to the ALS Chemex Analytical Laboratories located in Val d'Or, Quebec and shipped to Vancouver, BC, Canada and then transferred to Perth, Australia where the analyses took place. Splits of 250g to 1kg samples were pulverized to better than 85% passing through a 75 microns sieve. Each rock powder sample was mixed with lithium-tetraborate and fused to be analyzed by the XRF method for the following elements: Fe, SiO<sub>2</sub>, CaO, K<sub>2</sub>O, Na<sub>2</sub>O, MgO, MnO, TiO<sub>2</sub>, LOI, As, Ba, Cl, Co, Cr, Cu, Ni, P, Pb, S, Sn, Sr, V, Zn and Zr. The full results are presented in Appendix 2 with the certificate of analyses (VO08091182). Laboratory personnel who were wholly unrelated to the client company and who were unaware of the source and content of the samples prepared the samples for analysis.

#### **ITEM 16 DATA VERIFICATION, DATA CONTROL AND QUALITY ASSURANCE POLICIES AND PROCEDURES**

The author has not verified the historical Fe and Ti assay values provided from old core sections (see section 8.3) since they have long disappeared nor has he verified the previously published assays from grab rock samples. The old assessment reports cited in this document did not give the method of analyses nor any analyses of duplicates or standards.

The author has collected all samples from the Touladi Lake property (see Table 3) on behalf of Canamara Energy Corp. The sampling was carried out to verify the validity of

some pre-43-101 geochemical data coming from a few good exposures of Fe-Ti-mineralized rocks (see ITEM 14). All samples were then assembled under the care of the author who expedited them to the analytical laboratory (see ITEM 15).

No in house reference sample or blank was submitted to the ALS Chemex laboratories. Iron and titanium are abundant elements in nature and are easily analyzed with precision and accuracy by several analytical methods (i.e. XRF, ICP-MS). However one has to be careful when submitting samples with high contents of Fe-Ti oxides since standard dissolution method may not completely dissolve the sample. Hence, the analytical method which proceeds with lithium-tetraborate fusion of Fe-Ti-rich samples was specially chosen to ensure reliable analyses of oxide-rich rocks.

The ALS Chemex Vancouver laboratory is accredited to ISO 17025 by Standards Council of Canada for a number of specific test procedures including fire assay Au by AA, ICP and gravimetric finish, multielement ICP and AA Assays for Ag, Cu, Pb, and Zn. The ALS Chemex laboratories participate in a number of international proficiency tests, such as those managed by CANMET (Proficiency Testing Program-Mineral Analysis Laboratories) and Geostats. ALS Chemex standard operating procedures require the analysis of quality control samples (reference materials, duplicates and blanks) with all sample batches. As part of the assessment of every data set, results from the control samples are evaluated to ensure they meet set standards determined by the precision and accuracy requirements of the method. ALS Chemex uses barren wash material between sample preparation batches. This cleaning material is tested before use to ensure no contaminants are present and results are retained for reference. The data from the quality control checks did not indicate any significant bias or quality control issues. The author has not visited the ALS Chemex Laboratory to see the operation firsthand, nor is he familiar with the general historical performance of the facility.

The author has verified the results of the geochemical analyses provided by ALS Chemex and is satisfied by their precision and accuracy. The author is in the opinion that ALS Chemex followed adequate procedures during the sample preparation, that the security of

the samples was unquestionable throughout the manipulation and the analytical procedures, and that analytical methods used are conform to the standard practices of the industry.

#### **ITEM 17 ADJACENT PROPERTIES**

There are no Fe-Ti properties adjacent to the Lake Touladi property

#### **ITEM 18 MINERAL PROCESSING AND METALLURGICAL TESTING**

No mineral processing or metallurgical testing was conducted during the completion of this report. Historical metallurgical testing is described in section 8.5 of this report.

#### **ITEM 19 MINERAL RESOURCE AND MINERAL RESERVE ESTIMATE**

There are no mineral resource and mineral estimates produced during the course of this study. Historical mineral resources and mineral reserve estimates are presented in section 8.4 of this report.

#### **ITEM 20 OTHER RELEVANT DATA AND INFORMATION**

There are no other relevant data and information.

#### **ITEM 21 CONCLUSIONS**

The principal objectives of the exploration work undertaken by Canamara Energy Corp. were: 1) to provide a geological overview and an evaluation of past exploration history of the Lake Touladi property; 2) carry out airborne magnetic survey to unearth or redefine new shallow bodies of Fe-Ti mineralized rocks, 3) explore, describe the geology and collect samples from the property and 4), recommend a drilling campaign to confirm the



results of past campaigns and investigate new targets. It is the opinion of the author that all these objectives were met.

The author believes that the Lake Touladi Fe-Ti property represents a high potential asset since the new airborne magnetic survey has unearthed important anomalous zones, both showing very high and low readings relative to background values. These highs and lows may correspond to undiscovered bodies of magnetite±ilmenite and ilmenite±magnetite-rich mineralization. The tonnage ascribed to magnetite±ilmenite-rich mineralized bodies, previously identified through drilling, can be increased substantially by drilling the expanded anomalous high reading magnetic zones. The presence of ilmenite±magnetite-rich bodies is more contentious and is inferred by a large NS-oriented structure (3 x 0.5 km) underlined by very low magnetic readings that can reach -6,000 nT relative to background values. As mentioned in this report, the interpretation of low reading magnetic zones over Fe-Ti-mineralized anorthosite and/or gabbroic plutons can be interpreted in various ways. However, if we consider most North American Fe-Ti deposits associated with anorthosites, low magnetic signatures are the results of strong reverse remanent magnetism of ilmenite or hemoilmenite which predominates over magnetite (Rose, 1969). The possible Lake Touladi ilmenite zone is covered by overburden and needs to be tested by drilling. Canamara Energy Corp. advocates a cautious approach to the future exploration campaign. Phase I of the campaign will focus on stripping, clearing and mapping a strategic 200 x 200 m area of land to unearth part of the ilmenite-rich and magnetite-rich zones. A thorough sampling program will be conducted. The prospection and mapping of the southern area of the property is proposed as well as a new airborne magnetic survey to complete the previously accomplished one. Phase I will cost \$228, 231. Contingent on result of Phase I, an important drilling program can be put in place involving 56 DDH distributed in a fence pattern over the ilmenite±magnetite and magnetite±ilmenite-rich zones. The amount devoted to the second phase is \$1, 892, 261.

The Lake Touladi Fe-Ti deposit possesses the geological characteristics necessary to become a world-class open pit mine. New exploration work at the Lake Touladi Fe-Ti

deposit, including an airborne magnetic survey, suggests important undiscovered mineralized zones associated with strong negative signatures covering a large area (3 X 0.5 km) and probably related to ilmenite-rich or reversely polarized Ti-magnetite-rich mineralized bodies at shallow depth. A new 1.6 km access road via the north end of the Property is viewed as an important development in improving the value of the deposit. Just a few years ago, the access to the showing sites was considered extremely difficult. The construction of this new road will cut down the travelling time and permit access to larger and heavier equipment.

The Lake Touladi Fe-Ti Property is located in the province of Quebec 30 km from the town of Roberval. The Fe-Ti deposit forms a large north-trending elongated body of metagabbro, which is locally anorthositic, and forms part of an ortho- and paragneissic assemblage of Precambrian rocks that belong to the Grenville Province. The mineralized rock consists of concentrations of medium-grained magnetite and ilmenite forming dense layers or lenses several cm thick in width, separated by narrow bands of silicate-rich material. There are currently four major mineralized zones, identified by earlier ground based exploration, magnetic surveys and drilling.

The new helicopter-borne magnetic geophysical survey highlighted two NS-oriented zones of magnetic highs juxtaposed on their western side by parallel zones of strong magnetic lows. Most of the magnetite-rich zones submitted to earlier drilling are associated with positive highs but were only partially explored. The areas defined by strong negative anomalies, one of these covering 3 X 0.5 km, are probably associated with the presence of hemoilmenite or Ti-magnetite mineralization at depth and were not previously investigated by drilling. New chemical analyses on collected grab samples reveal average Fe and TiO<sub>2</sub> contents of 25.66 and 7.59 wt. % respectively which are comparable to published values for Zone A and B.

Petrographic examination and quantitative SEM analyses suggest that the Lake Touladi mineralization is amenable to current standard separation and beneficiation processes to extract iron and titanium. Favorable conditions are: a) a granular, coarse-grained texture

with the Fe-Ti-bearing crystals ranging from 1 to 2 mm size; b) the presence of pure ilmenite with the chemical composition reaching that of the theoretical ilmenite that could make up more than 65 % of the mineralization and c), total amounts of oxides other than FeO, Fe<sub>2</sub>O<sub>3</sub> and TiO<sub>2</sub> usually below 3 wt. %.

Canamara Energy Corp. will initiate a systematic drilling campaign to test the new targets identified by the airborne geophysical survey and further investigate the extension of the previously discovered Fe-Ti mineralized zones. The company will also pursue a vigorous exploration program that will include overburden stripping, geological mapping and grab/channel sampling.

The author is satisfied by the quality of all rock samples collected from the Lake Touladi property and is fully confident that the specimen are representative of the exposed rock and/or mineralization. The quality of the geochemical data is excellent in view of lithium-tetraborate fusion XRF analytical method that allowed full melting of oxide minerals.

## **ITEM 22 RECOMMENDATIONS**

Phase I of the recommended exploration work should focus on the mapping and sampling of the principal Fe-Ti showings including the probable ilmenite±Ti-magnetite zones. The completion of 1.6 km bush road suitable for heavy equipment transport must be a priority. The proposed path of the road starting from the Abitibi Bowwater logging road and ending on the main showing site is illustrated in Figure 17. The bush road construction is necessary for the use and passage of heavy equipment through very dense wood. This will be the most efficient way to get access to the principal mineralized zones. This road will also be used by ATV's to carry large rock samples. If Canamara Energy Corp. does not construct this road, the Company will have to find other means of access either by floatplane or by helicopter. The cost of airborne operation is prohibitive and will not resolve the problem of bringing a bulldozer to the Touladi Lake showing. The \$40,000 cost estimate for building the bush road was provided by various entrepreneurs doing business in the Lac St-Jean area.

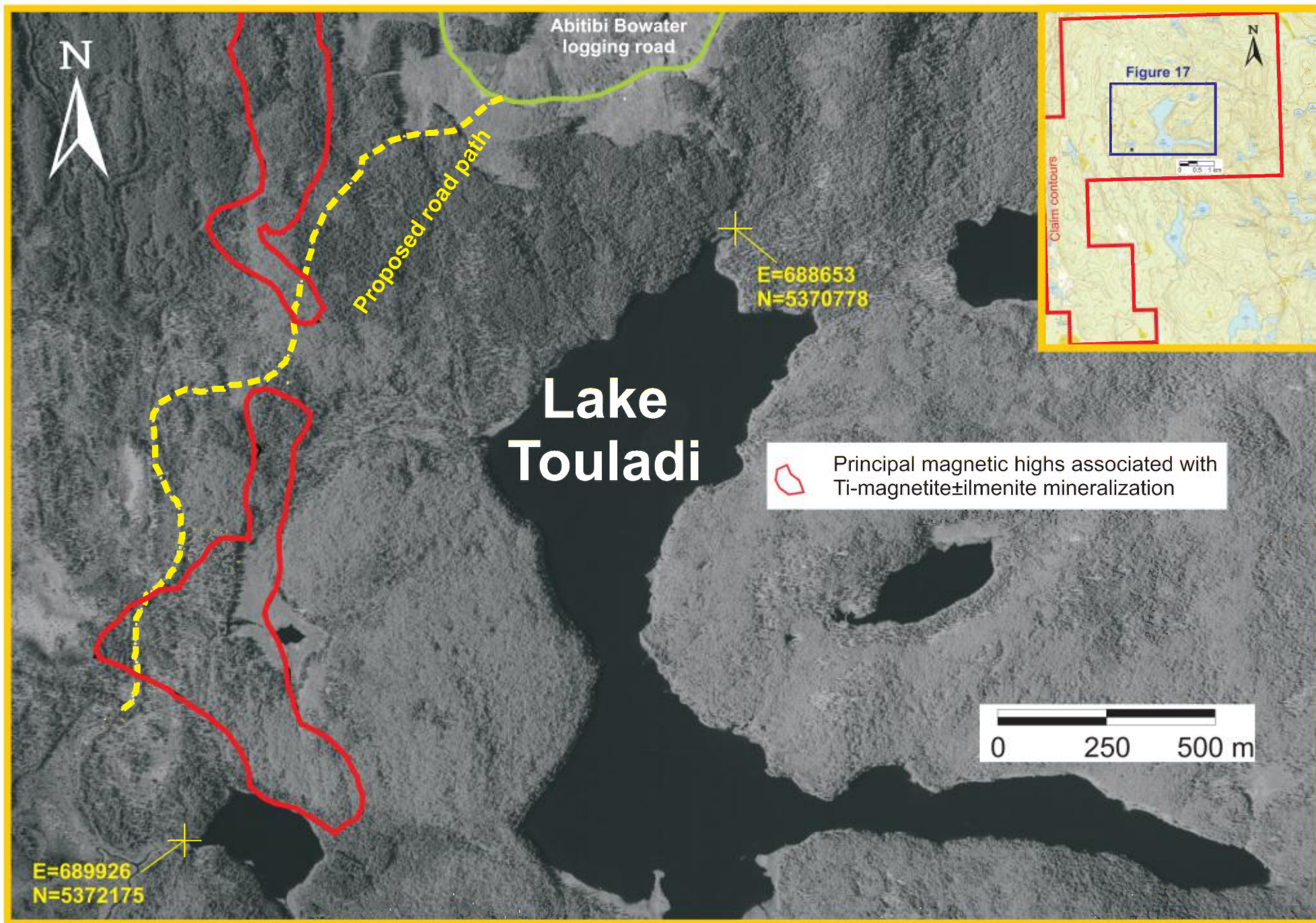


Figure 17. Proposed path for the 1.6 km bush road joining the Abitibi Bowater logging road to the main showing where the grab samples were collected. UTM Coord.; NAD83; Zone 18N; E=Easting; N=Northing.

Because of the paucity of exposed rocks revealing the Fe-Ti mineralization, it is difficult to comprehend the geology, structure and metallogeny of the deposit. It is thus imperative to widen the area of outcrop to map the lithologies and acquire new samples. Therefore, we recommend stripping an area of 200 X 200 m centered on the region where we collected the mineralized samples during this project (Figure 12). After stripping and washing the outcrops, a careful geological mapping at a scale of 1:100 must be carried out accompanied by grab and channel sampling.

Since new claims were added to south of the Lake Touladi to encompass possible Fe-Ti mineralization, a geologist accompanied by a prospector should roam this new ground to identify potential targets that will be submitted to rock sampling (grab and channel). The opportunity should be also taken to visit, map and sample other areas of the northern section of the property where the mineralized zones were determined in the 1950's. Particular attention should be given to mineralized zones A, B and C. Furthermore, an airborne magnetic survey should be completed over the southern part of the property where the new claims were acquired.

Canamara Energy Corp. should contemplate submitting four or five Fe-Ti-mineralized rocks to identify the nature and chemical composition of ore and gangue minerals. This study would be important for any future work, which would consider the beneficiation of the mineralization. Phase I of the exploration program will cost \$228, 231.

Contingent on the results obtained during the mapping and sampling campaign detailed in Phase I, Phase II should be exclusively devoted to a comprehensive drilling campaign and is expected to cost \$1, 892, 261. The first priority is to redefine and extend zones A, B and C which contain the known mineralized bodies that are associated with strong magnetic highs. However, the proposed boreholes will also investigate the large zones of magnetic lows that could represent ilmenite±Ti-magnetite mineralized zones. The drilling will be conducted in a fence pattern; i.e. each hole along the same roughly E-W-oriented line covering in part the region investigated by the precedent. The E-W-oriented fence will be separated by a 400 m interval. This seemingly large interval is necessary in view

of unearthing a large world-class Fe-Ti deposit. Each hole will carry a 270° azimuth and maintain a -45° plunge allowing for a true vertical depth of 100 m (Figures 18 and 19). The UTM coordinates, plunge, depth and azimuth of each proposed DDH hole are given below: Finally some exploratory holes should be drilled on the western area of the property that shows a similar parallel N-S alignment of magnetic lows and highs to that of the principal mineral zone. A total of eight DDH should be considered. Each hole will carry a 270° azimuth and maintain a -45° plunge allowing for a true vertical depth of 100 m (Figures 18 and 19). The UTM coordinates, plunge, depth and azimuth of each proposed DDH hole are given below:

<b>Fence</b>	<b>Hole</b>	<b>Easting*</b>	<b>Northing</b>	<b>Azimuth (°)</b>	<b>Plunge (°)</b>	<b>Depth (m)</b>
1	LT-01	669097	5370888	270	-45	141
	LT-02	668997	5370888	270	-45	141
	LT-03	668897	5370888	270	-45	141
	LT-04	668797	5370888	270	-45	141
	LT-05	668697	5370888	270	-45	141
	LT-06	668597	5370888	270	-45	141
	LT-07	668497	5370888	270	-45	141
2	LT-08	669049	5371288	270	-45	141
	LT-09	668949	5371288	270	-45	141
	LT-10	668849	5371288	270	-45	141
	LT-11	668749	5371288	270	-45	141
	LT-12	668649	5371288	270	-45	141
	LT-13	668549	5371288	270	-45	141
3	LT-14	669473	5371288	270	-45	141
	LT-15	669373	5371288	270	-45	141
	LT-16	669273	5371288	270	-45	141
	LT-17	669173	5371288	270	-45	141
	LT-18	669073	5371288	270	-45	141
	LT-19	668973	5371288	270	-45	141
	LT-20	668873	5371288	270	-45	141
	LT-21	668773	5371288	270	-45	141

<b>Fence</b>	<b>Hole</b>	<b>Easting*</b>	<b>Northing</b>	<b>Azimuth (°)</b>	<b>Plunge (°)</b>	<b>Depth (m)</b>
	LT-22	668673	5371288	270	-45	141
	LT-23	668573	5371288	270	-45	141
	LT-24	668473	5371288	270	-45	141
	LT-25	668373	5371288	270	-45	141
4	LT-26	669050	5371688	270	-45	141
	LT-27	668950	5371688	270	-45	141
	LT-28	668850	5371688	270	-45	141
	LT-29	668750	5371688	270	-45	141
	LT-30	668650	5371688	270	-45	141
5	LT-31	669048	5372088	270	-45	141
	LT-32	668948	5372088	270	-45	141
	LT-33	668848	5372088	270	-45	141
	LT-34	668748	5372088	270	-45	141
6	LT-35	669174	5372288	270	-45	141
	LT-36	669074	5372288	270	-45	141
	LT-37	668974	5372288	270	-45	141
	LT-38	668874	5372288	270	-45	141
	LT-39	668774	5372288	270	-45	141
	LT-40	668674	5372288	270	-45	141
7	LT-41	669174	5372488	270	-45	141
	LT-42	669074	5372488	270	-45	141
	LT-43	668974	5372488	270	-45	141
	LT-44	668874	5372488	270	-45	141
	LT-45	668774	5372488	270	-45	141
	LT-46	668674	5372488	270	-45	141
8	LT-47	669176	5372888	270	-45	141
	LT-48	669076	5372888	270	-45	141
	LT-49	668976	5372888	270	-45	141
	LT-50	668876	5372888	270	-45	141
	LT-51	668776	5372888	270	-45	141

<b>Fence</b>	<b>Hole</b>	<b>Easting*</b>	<b>Northing</b>	<b>Azimuth (°)</b>	<b>Plunge (°)</b>	<b>Depth (m)</b>
9	LT-52	668748	5373636	270	-45	141
	LT-53	668648	5373636	270	-45	141
	LT-54	668548	5373636	270	-45	141
10	LT-55	668662	5373236	270	-45	141
	LT-56	668562	5373236	270	-45	141

\*UTM Coord; NAD83; Zone 18N

Finally some exploratory holes should be drilled on the western area of the property that shows a similar parallel N-S alignment of magnetic lows and highs to that of the principal mineral zone. A total of eight DDH should be considered. Each hole will carry a 270° azimuth and maintain a -45° plunge allowing for a true vertical depth of 100 m (Figures 18 and 19). The UTM coordinates, plunge, depth and azimuth of each proposed DDH hole are given below:

<b>Fence</b>	<b>Hole</b>	<b>Easting*</b>	<b>Northing</b>	<b>Azimuth (°)</b>	<b>Plunge (°)</b>	<b>Depth (m)</b>
11	LT-57	668318	5373056	270	-45	141
	LT-58	668218	5373056	270	-45	141
	LT-59	668118	5373056	270	-45	141
12	LT-60	668115	5372500	270	-45	141
	LT-61	668015	5372500	270	-45	141
	LT-62	667915	5372500	270	-45	141
	LT-60	668274	5371826	270	-45	141
	LT-61	667857	5371085	270	-45	141

\*UTM Coord; NAD83; Zone 18N



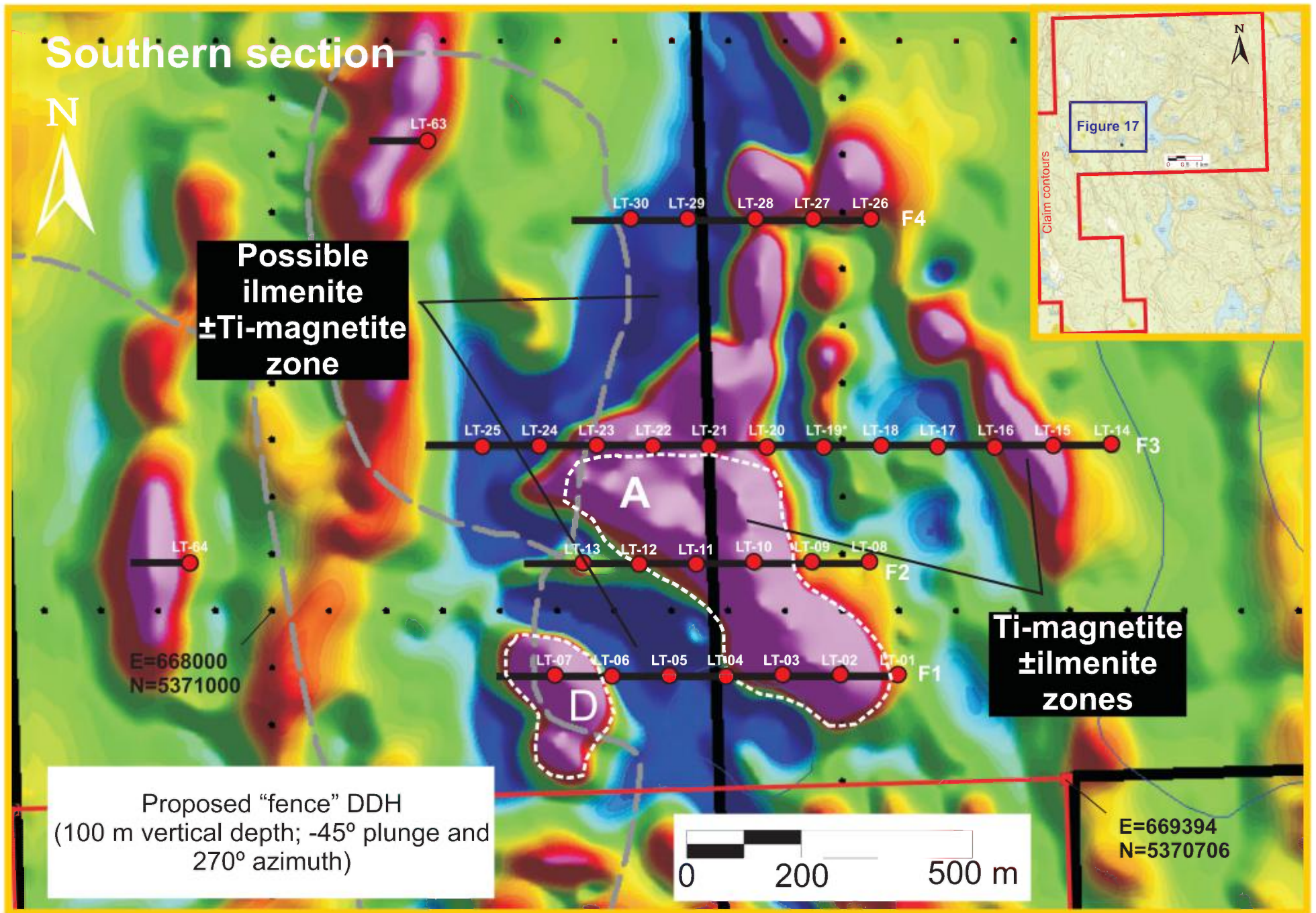


Figure 18. Localization of the proposed diamond drill holes and "fences" related to the 2008-2009 Lake Touladi campaign on the southern section of the property covering Zones A and D. See table in text for the UTM coordinates of each hole. UTM Coord.; NAD83; Zone 18N; E=Easting; N=Northing.

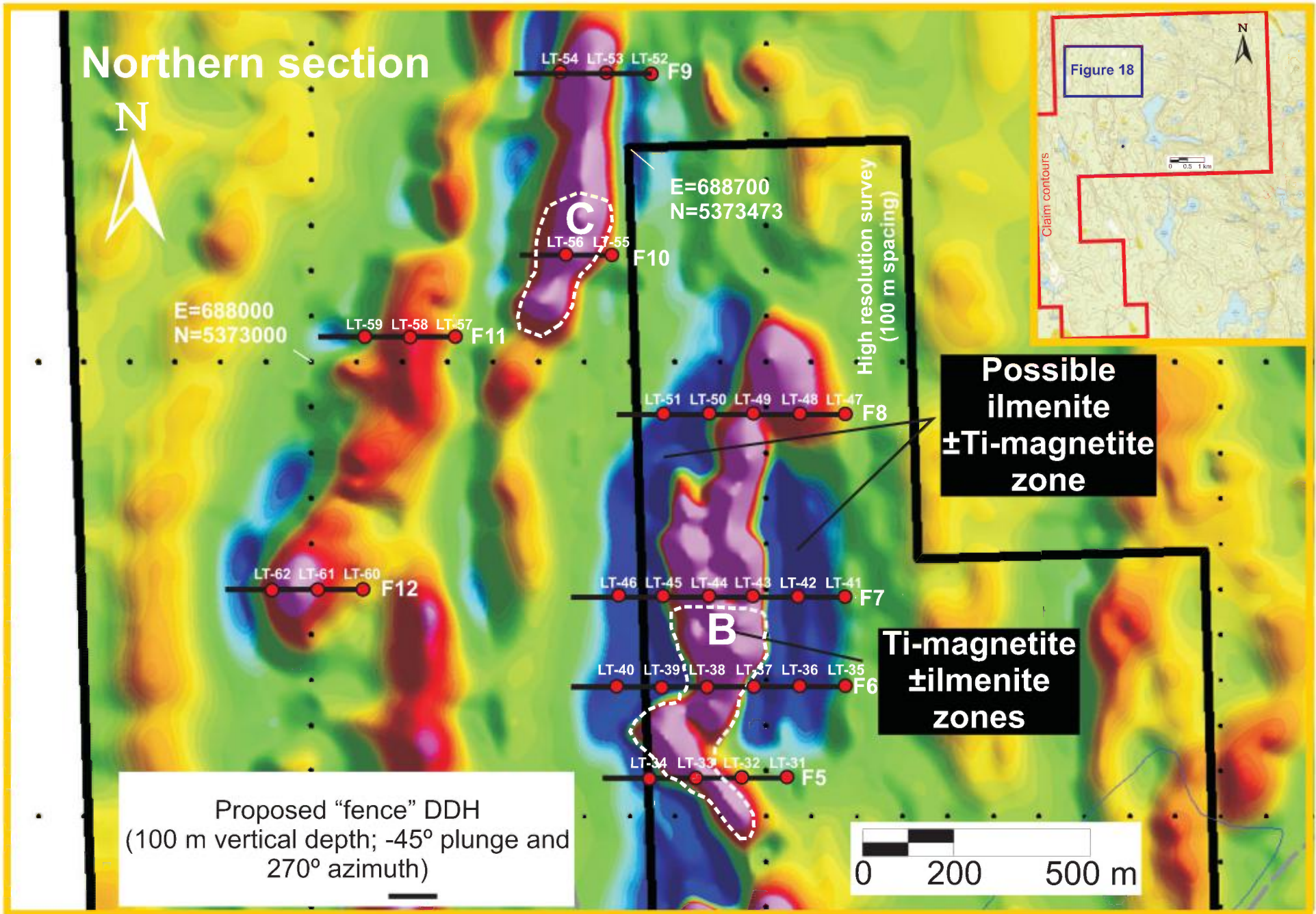


Figure 19. Localization of the proposed diamond drill holes and "fences" related to the 2008-2009 Lake Touladi campaign on the northern section of the property covering Zones B and C. See table in text for the UTM coordinates of each hole. UTM Coord.; NAD83; Zone 18N; E=Easting; N=Northing.

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Irrelevant page(s) have been withdrawn

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## ITEM 24 DATE AND SIGNATURE

### CERTIFICATE OF QUALIFICATIONS

I, Michel Boily, Ph.D., P. Geo. HEREBY CERTIFY THAT:

I am a Canadian citizen residing at 2121 de Romagne, Laval, Québec, Canada.

I obtained a PhD. in geology from the Université de Montréal in 1988.

I am a registered Professional Geologist in good standing with l'Ordre des Géologues du Québec (OGQ; permit # 1097).

I am a consultant geologist for the company **GÉON Ltée**.

I had the following work experience:

From 1986 to 1987: Research Associate in Cosmochemistry at the **University of Chicago**, Chicago, Illinois, USA.

From 1988 to 1992: Researcher at **IREM-MERI/McGill University**, Montréal, Québec as a coordinator and scientific investigator in the high technology metals project undertaken in the Abitibi greenstone belt and Labrador.

From 1992 to present: Geology consultant with **Geon Ltée**, Montréal, Québec. Consultant for several mining companies. I participated, as a geochemist, in two of the most important geological and metallogenic studies accomplished by the Ministère des Richesses naturelles du Québec (MRNQ) in the James Bay area and the Far North of Québec (1998-2005). I am a specialist of granitoid-hosted precious and rare metal deposits and of the stratigraphy and geochemistry of Archean greenstone belts.

I have gathered field experience in the following regions : James Bay, Quebec; Strange Lake, Labrador/Quebec; Val d'Or, Quebec; Grenville (Saguenay and Gatineau area); Cadillac, Quebec; Otish Mountains, Quebec, Sinaloa Province, Mexico.

I am the author of the preliminary geological report entitled : "Technical Report and Recommendations. The Lake Touladi Fe-Ti property, Lyonne and Chabanel Townships, Lac St-Jean area, Quebec, Canada" written in May 10, 2010 for CANAMARA ENERGY CORP.

As of the date of the certificate, to the best of my knowledge, information and belief, this Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

I read the National Instrument 43-101 Standards of Disclosure for Mineral Projects (the "Instrument") and the report fully complies with the Instrument.

The Qualified Person, Michel Boily, has written this report in its entirety and is responsible for its content.

I am an independent qualified person, QP, according to NI 43-101. I have a good experience and knowledge of Fe-Ti deposits associated with anorthosite in the Grenville Province having worked on three of such deposits. I have no relation to Canamara Energy Corp. according to section 1.4 of NI 43-101. I am not aware of any relevant fact which would interfere with my judgment regarding the preparation of this technical report.

I have visited the Lake Touladi Property on July 2nd 2008.

I have not had prior involvement with the Lake Touladi Property that is the subject of this report.

The historical estimates are treated as historic information and have not been verified or relied upon for economic evaluation by Canamara Energy Corp. or the writer.

I consent to the filing of this Technical Report with any stock exchange and any other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.



Michel Boily, PhD., P. Geo.  
Dated at Montréal, Qc  
May 10, 2010





**Appendix 1. Claim titles of the Lake Touladi Property**

<b>TITLE #</b>	<b>SURFACE AREA (Hec)</b>	<b>Expiry date</b>
CDC2025122	57.09	2010/09/18
CDC2025123	57.09	2010/09/18
CDC2030140	57.10	2010/10/18
CDC2030141	57.09	2010/10/18
CDC2030142	57.08	2010/10/18
CDC2030143	57.08	2010/10/18
CDC2035082	57.09	2010/11/26
CDC2035081	57.10	2010/11/26
CDC2037033	57.10	2010/12/03
CDC2037034	57.10	2010/12/03
CDC2042787	57.10	2010/12/14
CDC2042793	57.08	2010/12/14
CDC2042797	57.08	2010/12/14
CDC2025120	57.09	2010/09/18
CDC2025119	57.09	2010/09/18
CDC2035083	57.08	2010/11/26
CDC2037037	57.08	2010/12/03
CDC2037038	57.08	2010/12/03
CDC2042795	57.08	2010/12/14
CDC2025124	57.09	2010/09/18
CDC2025117	57.10	2010/09/18
CDC2025118	57.09	2010/09/18
CDC2025121	57.09	2010/09/18
CDC2035085	57.07	2010/09/18
CDC2035086	57.07	2010/09/18
CDC2035087	57.07	2010/09/18
CDC2035088	57.07	2010/09/18
CDC2035089	57.07	2010/11/26
CDC2035090	57.07	2010/11/26
CDC2035091	57.07	2010/11/26
CDC2035092	57.07	2010/11/26
CDC2035093	57.07	2010/11/26
CDC2035094	57.07	2010/11/26
CDC2035075	57.11	2010/11/26
CDC2035076	57.11	2010/11/26
CDC2035077	57.11	2010/11/26
CDC2035078	57.11	2010/11/26
CDC2035079	57.11	2010/11/26
CDC2035080	57.10	2010/11/26
CDC2035084	57.08	2010/11/26
CDC2037035	57.09	2010/12/03
CDC2037036	57.09	2010/12/03
CDC2037039	57.09	2010/12/03
CDC2042782	57.10	2010/12/14
CDC2042785	57.10	2010/12/14

<b>TITLE #</b>	<b>SURFACE AREA (Hec)</b>	<b>Expiry date</b>
CDC2042789	57.09	2010/12/14
CDC2042791	57.09	2010/12/14
CDC2166063	57.11	2010/07/14
CDC2162005	57.11	2010/06/19
CDC2166062	57.12	2010/07/14
CDC2162004	57.12	2010/06/19
CDC2166061	57.13	2010/07/14
CDC2162001	57.13	2010/06/19
CDC2162002	57.13	2010/06/19
CDC2162003	57.13	2010/06/19
CDC2166060	57.14	2010/07/14
CDC2162248	57.14	2010/06/22
CDC2162249	57.14	2010/06/22
CDC2162250	57.14	2010/06/22
CDC2164062	57.15	2010/07/06
CDC2164063	57.15	2010/07/06
CDC2164064	57.15	2010/07/06
CDC2164065	57.15	2010/07/06
CDC2166064	57.1	2010/07/14
CDC2166065	57.09	2010/07/14
CDC2171865	57,10	2010/09/16
CDC2171866	57,10	2010/09/16
CDC2171867	57,10	2010/09/16

## **Appendix 2**



# ALS Chemex

**EXCELLENCE EN ANALYSE CHIMIQUE**

ALS Canada Ltd.

212 Brooksbank Avenue  
North Vancouver BC V7J 2C1

Téléphone: 604 984 0221 Télécopieur: 604 984 0218 www.alschemex.com

À: CANAMARA ENERGY CORP.  
# 1750-1177 WEST HASTING ST  
VANCOUVER BC V6E 2K3

Page: 1  
Finalisée date: 21-AOUT-2008  
Cette copie a fait un rapport sur  
28-AOUT-2008  
Compte: CANENE

## CERTIFICAT VO08091182

Projet: LAKE TOULADI

Bon de commande #:

Ce rapport s'applique aux 9 échantillons de roche soumis à notre laboratoire de Val d'Or, QC, Canada le 7-JUIL-2008.

Les résultats sont transmis à:

MICHEL BOILY

CANAMERA ENERGY CORP.

## PRÉPARATION ÉCHANTILLONS

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

## PROCÉDURES ANALYTIQUES

CODE ALS	DESCRIPTION	INSTRUMENT
ME-XRF11		XRF
OA-GRA05t	LOI de multi-température	TGA

À: CANAMARA ENERGY CORP.  
ATTN: MICHEL BOILY  
GÉON  
10785 RUE ST-URBAIN  
MONTRÉAL QC H3L 2V4

Ce rapport est final et remplace tout autre rapport préliminaire portant ce numéro de certificat. Les résultats s'appliquent aux échantillons soumis. Toutes les pages de ce rapport ont été vérifiées et approuvées avant publication.

Signature: 

Wayne Abbott, Operations Manager, Western Australia



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Page: 2 - A  
Nombre total de pages: 2 (A - B)  
Finalisée date: 21-AOUT-2008  
Compte: CANENE

Projet: LAKE TOULADI

## CERTIFICAT D'ANALYSE VO08091182

Description échantillon	Méthode élément unités L.D.	WEI-21	ME-XRF11	ME-XRF11	ME-XRF11	ME-XRF11	ME-XRF11	ME-XRF11	ME-XRF11	ME-XRF11	ME-XRF11	ME-XRF11	ME-XRF11	ME-XRF11	ME-XRF11	
		Poids reçu kg	SiO2 %	Al2O3 %	As %	Ba %	CaO %	Cl %	Co %	Cr %	Cu %	Fe %	K2O %	MgO %	Mn %	Na2O %
		0.02	0.01	0.01	0.001	0.001	0.01	0.001	0.001	0.001	0.001	0.01	0.001	0.01	0.001	
LT08-02		1.67	38.7	6.80	<0.001	0.039	6.55	0.018	0.002	0.021	0.003	19.95	0.374	>10.0	0.250	1.30
LT08-03		1.19	27.3	4.29	<0.001	0.039	8.13	0.033	<0.001	<0.001	0.003	28.1	0.185	9.16	0.237	0.69
LT08-04		0.87	49.5	14.80	<0.001	0.067	8.81	0.017	<0.001	0.014	0.002	8.77	0.751	8.63	0.152	3.01
LT08-05		1.28	31.7	5.00	<0.001	0.021	7.22	0.025	0.005	0.016	0.001	26.1	0.208	>10.0	0.250	0.88
LT08-06		1.94	29.8	5.52	<0.001	0.048	8.90	0.018	0.001	<0.001	<0.001	24.4	0.290	9.26	0.281	1.20
LT08-07		2.57	25.5	3.99	<0.001	0.039	7.98	0.014	<0.001	<0.001	<0.001	29.4	0.160	9.40	0.277	0.56
LT08-08		1.52	27.6	4.51	<0.001	0.030	8.57	0.013	0.002	0.003	<0.001	27.1	0.203	9.76	0.274	0.70
LT08-09		1.60	20.8	4.72	<0.001	0.031	8.16	0.015	0.003	<0.001	0.002	31.3	0.192	7.25	0.220	0.67
LT08-10		2.04	35.1	8.17	<0.001	0.046	9.02	0.017	0.004	0.021	0.005	18.90	0.314	8.84	0.208	1.55



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VANCOUVER BC V6E 2K3

Page: 2 - B

Nombre total de pages: 2 (A - B)

Finalisée date: 21-AOUT-2008

Compte: CANENE

Projet: LAKE TOULADI

## CERTIFICAT D'ANALYSE VO08091182

Description échantillon	Méthode élément unités L.D.	ME-XRF11	ME-XRF11	ME-XRF11	ME-XRF11	ME-XRF11	ME-XRF11	ME-XRF11	ME-XRF11	ME-XRF11	ME-XRF11
		Ni %	P %	Pb %	S %	Sn %	Sr %	TiO2 %	V %	Zn %	Zr %
		0.001	0.001	0.001	0.001	0.001	0.001	0.01	0.001	0.001	0.001
LT08-02		0.006	0.263	0.003	0.072	<0.001	0.039	5.48	0.040	0.027	0.014
LT08-03		<0.001	0.959	0.001	0.319	0.002	0.025	7.95	0.062	0.032	0.017
LT08-04		0.001	0.193	0.003	0.071	0.004	0.088	1.36	0.012	0.015	0.007
LT08-05		0.001	0.162	0.002	0.126	<0.001	0.024	7.30	0.066	0.032	0.018
LT08-06		<0.001	1.175	0.002	0.041	0.002	0.043	7.87	0.058	0.027	0.014
LT08-07		<0.001	1.015	0.003	0.035	0.002	0.022	8.66	0.069	0.035	0.012
LT08-08		0.004	1.065	0.003	0.041	0.009	0.026	7.98	0.063	0.032	0.012
LT08-09		<0.001	1.520	0.003	0.233	0.005	0.034	10.25	0.080	0.035	0.010
LT08-10		0.005	0.756	0.003	0.749	<0.001	0.051	5.20	0.042	0.025	0.012