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PRELIMINARY REPORT, LAC OTELNUK IRON MINE PROJECT

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ENVIRONMENTAL FOCUSSED SCOPING STUDY

▶ LAC OTELNUK

IRON MINE PROJECT
QUÉBEC

Ressources naturelles et Faune, Québec

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REÇU AU MRNF

27 AVR. 2009

DIRECTION DES TITRES MINIERS

PRELIMINARY REPORT



▶ Presented to :



08-1222-3008
April 2009



801572



April 17, 2009

08-1222-3008

CONFIDENTIAL

Adriana Resources Inc.
701, West Georgia Street
Suite 1818
Vancouver (BC) V7Y 1C6


Attention: M. Frank Condon, P.Eng., Director


**RE: ENVIRONMENTAL FOCUSED SCOPING STUDY DRAFT ITERIM REPORT
- LAC OTELNUK IRON MINE PROJECT, QUEBEC**

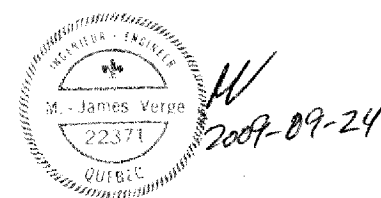
Dear Mr. Condon,

Golder Associés Ltée (Golder) is pleased to submit this early-stage environmental scoping study draft interim report for the development of a new iron mine project located within its Lac Otelnuk mining claims, in the territory of Rivière-Koksoak, in the Nunavik area.

GOLDER ASSOCIÉS LTÉE


Stéphanie Besner, Biol., M.Sc.
Project Manager


Murray-J. Verge, Eng., Ph.D.
Principal and Project Director



c.c. Mr. Clément Tremblay

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CERTIFICAT

Je, Gilles A. Tremblay, certifie que:

1. Je demeure au 30, rue Forget, Saint-Sauveur, Québec J0R 1R0.
2. J'ai obtenu un baccalauréat en génie géologique en 1968 de l'École Polytechnique à Montréal.
3. Je suis membre de l'Ordre des ingénieurs du Québec (19791), de l'Ordre des géologues du Québec (195) et de Professional Engineers Ontario (46933016).
4. J'ai supervisé les travaux effectués par Golder Associés Ltée (Golder) de Montréal et du Groupe Cadoret, arpenteurs-géomètres de Baie-Comeau sur la propriété minière Lac Otelnuq de Adriana Resources Inc., située dans la Fosse du Labrador à environ 160 kilomètres au nord-ouest de Schefferville.
5. Je n'ai pas, directement ou indirectement, reçu ou espère recevoir un intérêt direct ou indirect dans la propriété.

Signé à Saint-Sauveur, le 23 septembre 2009.

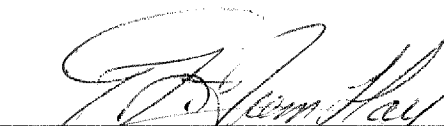

Gilles A Tremblay, ing.

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1.0 INTRODUCTION

An early-stage environmental focussed scoping study has been undertaken by Golder Associés Ltée (Golder) in order to advance the Lac Otelnuuk Iron Mine Project being developed by Adriana Resources Inc. (Adriana). The objectives of this study were to provide Adriana with limited baseline data, a scoping of pre-selected issues related to the mine development and a definition of the baseline studies required for the purpose of an anticipated Environmental and Social Impact Assessment (ESIA). Golder's general approach included a kick-off meeting with key Golder personnel and Adriana managers, as well as a basic information collection from Adriana; a site reconnaissance visit with Golder key-personnel and engineers from Adriana; limited field work by Golder personnel related to surface water, sediments and groundwater; selection of a location for a meteorological station and assembling the meteorological equipment needed for the station; desktop studies on selected components, such as climate and meteorological conditions, geology, hydrology and watersheds, vegetation and habitat types, wildlife, and fish and fish habitat. Basic fieldworks conducted also included preliminary observations on vegetation and wildlife habitats.

The actual scoping report presents the results of the site reconnaissance, the limited desktop studies and fieldwork campaigns, as well as recommendations for further baseline studies that would be required for the purpose of an eventual *Provincial Environmental and Social Impact Assessment and Review* expected under Section 23 (*Environment and Future Development North of the 55th Parallel*) of the *James Bay and Northern Québec Agreement and Complementary Agreements* (JBNQA).

Because of the actual economical context, Golder has been requested by Adriana to release this interim report before the finalisation of Golder's initial mandate (as per Golder's approved proposal number P81-7268). Thus, in order to promptly provide Adriana with recommendations for the 2009 environmental baseline monitoring program, results and recommendations presented in this interim report are based on the information gathered to date.

2.0 PROJECT LOCATION

The Lac Otnuk Iron Mine Project is located some 170 km north of the town of Schefferville, Quebec, on a 192 km² mining claims area located on Category III lands in the territory contemplated by the JBNQA. The Lac Otnuk Project Site (Project Site) is located between lakes Baie Gignard and Otnuk and is under the jurisdiction of the Kativik Regional Government. The location of the site is shown on Figure 1.

The study area of concern is the one targeted for the South zone 2007-2008 drill holes program, (as shown on Figure 1, for an area of approximately 45 km²). It is located in a 45 km long iron formation belt contained within the claims area, which lies within the Labrador Trough. In order to gather a better understanding of the regional environmental conditions, this study area has been extended to cover the anticipated footprint of the infrastructure foundations, as well as to include the entire main watersheds of the area concerned.

3.0 METHODOLOGY

Relevant available project information consulted for this early-stage environmental focussed scoping study were provided by Adriana's managers and engineers during the kick-off meeting with Golder and during the site reconnaissance visit. Some additional preliminary project information has also been collected from Adriana's Internet site.

This includes the following documents:

- Tremblay G.A & Black E.D., 1976. *Exploration Progress Report. 1976. Otehluk Iron Deposits*. King Resources Company. Toronto, Canada. December 31, 1976. 24 p.+ Appendices;
- Lahondès D., Block M. & Girard R., 2007. *Resources definition drilling campaign: Summer 2007 Campaign. Lake Otehluk Iron Project*. Services Géoscientifiques Inc. -- Volume 1: Report and maps. -- Volume 2: Appendix 1 and profiles. -- Volume 3: Appendices 2 to 6;
- Cadoret M., 2008. *Rapport d'arpentage. Localisation de points de contrôle photogrammétrique et de puits de forage 2008. Projet minier du Lac Otehluk*. For: Ressources Adriana Inc. Groupe Cadoret Arpenteurs-géomètres. Novembre 2008. 8 p.+ Appendices; and
- Basic maps and aerial photographs or imagery:
 - o National Topographic Data Base. 2008. National Topographic System of Canada sheets 23N16 & 24C01. Natural Resources Canada. <http://geogratis.cgdi.gc.ca> ;
 - o ESRI Data & Maps. 2007. Imagery and Shaded Relief;
 - o Adriana Resources Inc. April 2008. *Drill Hole Plan Map: Lac Otehluk Property*. Map Code: LO-DHBASE-02. Lac Otehluk project; and

- Cadoret M., 2008. *Localisation des puits de forage. Projet Lac Otelnuik.*
For: Ressources Adriana Inc. Groupe Cadoret Arpenteurs-géomètres.
7 novembre 2008.

In addition to the information gathered during the kick-off meeting and the site reconnaissance visit, the characteristics of the selected components of the project's receiving environment (climate and meteorological conditions, geology, hydrology and watersheds, vegetation and habitat types, wildlife, and fish and fish habitat) were studied by reviewing other available documentation, including published reports and government databases, discussions with Adriana's staff, local people and regulators, and site investigations. These are described in further details in the followings sections.

3.1 Site Reconnaissance

The site reconnaissance visit involving Golder's key team members Stéphanie Besner, Normand D'Anjou and Murray Verge took place from August 19 to August 21, 2008. The site reconnaissance allowed gathering some baseline data and gaining a better understanding of the project area. During the site reconnaissance visit, information was gathered for the preparation of the field investigations to come and some baseline data were collected. Methods used to carry out the reconnaissance involved flying over the project area by helicopter and a site walk-over on selected traverses to look at topographical, geological, geomorphic, and natural environment features of interest such as watersheds, stream configuration, stream flows, vegetation communities, and incidental wildlife observations. Potential suitable locations for the installation of the meteorological station were identified, as well as specific locations for future flow gauging and sampling locations for surface water, groundwater and sediments.

Also during this site reconnaissance, an interview was conducted with two Naskapi who worked at Adriana's exploration camp at Baie Gignard Lake. The objective of the meeting was to share their knowledge of the land and resources use of the area surrounding Adriana's exploration site.

3.2 Desktop Review of the Physical Environment

3.2.1 Climate and Meteorological Data

Information on existing government meteorological stations has been sourced for the Project Site area. The closest existing meteorological stations of Quebec's *Ministère du Développement durable, de l'Environnement et des Parcs* (MDDEP) and *Environment Canada* have been identified and types of data available from these stations have been identified.

Information related to the permafrost distribution has been obtained through:

- Allard, M. and Seguin, M., 1987, *Le pergélisol au Québec nordique : bilan et perspectives*, Géographie physique et Quaternaire, vol. 41, no.1.

3.2.2 Geology and Topography

For the purpose of the desktop review of available geological data, Golder relied on reports and information supplied by Adriana and geological publications of the *Ministère des Ressources Naturelles et de la Faune* (MRNF) of Quebec. Basic information about superficial and bedrock geology, and topography conditions, has been collected in order to get a better understanding of the project area. Government topographic maps at 1:50,000 and 1:250,000 scales are available. The list of available information relative to geology and terrain includes the following sources:

- Sullivan, J.R., Neal H.E. 2005. *A Technical Review of the Lac Otelnuuk Iron Property, Labrador Trough Northeastern Québec*. 84 pages;
- Clark, T. and Wares, R. 2005. *Lithotectonic and Metallogenic Synthesis of the New Québec Orogen (Labrador Trough)*. Géologie Québec Publication: MM 2005-01; and
- MRNF website – bedrock geological information : www.mrnf.gouv.qc.ca .

3.2.3 Hydrology, Sediment and Surface Water Quality

This sub-component included desktop review of available maps, identification of water bodies and delineation of the watershed boundaries within and immediately adjacent to the Project Site based on existing topographic maps. Documents from the MDDEP identify Quebec's regional watershed delineation. For the purpose of the project, local watersheds were delineated by Golder waters engineers based on existing topographic maps. A desktop review was performed to obtain information on hydrology for the study area. No hydrometric station from *Water Survey Canada* (Environment Canada) was found within the vicinity of the study area. Stations found were not considered representative of the Project Site because they are located too far from the Project Site and are in different hydrological regime and climate conditions

No available government owned water and sediment quality monitoring stations were found in close proximity to the project. It should be noted that the available information on sediment and surface water quality is relatively limited in Northern Quebec.

Golder performed a water and sediment sampling program to complement the available information.

3.2.4 Groundwater Quality and Groundwater Levels

The objective of this preliminary hydrogeology assessment was to gain a basic understanding of hydrogeology and groundwater quality to have a baseline record of pre-existing conditions such as groundwater levels and groundwater chemical characteristic of the shallow aquifer at the Project Site. A compilation of existing geological information has been made from geological reports and geological maps. Exploration drillhole logs from Adriana have been reviewed. This information collection has been completed by results obtained from Golder's fieldwork program presented hereafter.

3.3 Desktop Reviews of the Biological Environment

3.3.1 Vegetation and Habitat Types

In order to gather preliminary information on biological features of existing conditions on site, literature and governmental (federal and provincial) databases have been reviewed to identify the potential presence of endangered species, threatened species or other species of concern, as well as protected areas and habitats of interest in the surroundings. Hence, information requests relating to floristic and fauna species, habitats and territories presents in a radius of 10 km of the Project Site, were addressed to the regional respondents of the MDDEP, MRNF, Canadian Wildlife Service (CWS), and other non-government agencies.

At present time, aerial photographs have still not been provided for Golder to achieve the initially planned vegetation/habitat classification of the study area and the identification of potential fauna and flora habitats of interest.

3.3.2. Wildlife, fish and fish habitat

The desktop review performed for wildlife and fish comprised the determination of the potential presence of endangered species or species of special interest in the area based on the provincial and federal authorities' databases, and during the site reconnaissance, on discussions with local people, and other publicly available documents. Protected areas, habitats of interest and wildlife and fish uses of the area have been identified through the same sources and were supposed to be completed in relation to the vegetation communities maps interpreted from aerial photographs.

Although no specific field program was conducted for fish, fish habitat and wildlife in 2008, incidental observations of species have been recorded during site reconnaissance and other fieldwork and any occurrences of species of special concern and/or any known fish or wildlife habitats present in the study area have been reported. There again, the objective of these actions would be to address the protection of sensitive species and/or habitat if present.

3.4 Desktop Reviews of the Social Environment

During the Site Reconnaissance an interview was conducted by Stéphanie Besner, Normand D'Anjou and Murray Verge with two Naskapis who worked at Adriana's exploration camp at Baie Gignard Lake, MM. Sandy Swappey and « Joey » Joseph Paw Guanish. The objective of the meeting with these local people was to share their knowledge of the land and resources use of the area surrounding Adriana's exploration site. The meeting was organized by the chief geologist, Gilles Tremblay. The meeting took place in the geologist's camp and lasted about one and a half hour. After a short description of the present status of the project, the Naskapis were asked to describe the present and historical use of the land and resources and any site of special interest on or in the vicinity of the exploration site (birth or burial sites or historical sites).

3.5 Fieldwork

3.5.1 Surface Water and Sediment Sampling

Preliminary characterization of surface water quality of the streams and lakes has been performed during the site reconnaissance visit in August 2008 in order to determine natural background chemistry. Location of the sampling stations for the October 2008 field program was determined during the site reconnaissance while considering existing exploration areas, observed stream flows and distribution of the stations within the watersheds present in the study area. Locations that would likely be located downstream of the potential mine area were targeted along with locations that would likely remain outside the potential mine area.

Surface water samples have been collected for chemical analyses over two distinct periods from August 20th to 22nd and October 1st to 2nd, 2008 whereas sediments were collected only on October 1st and 2nd. All sampling stations are shown on Figure 2. These fieldwork programs allowed collecting:

- surface water samples at eleven (11) stations, identify as STA-1 to STA-11;
- sediment samples on four (4) stations, identify as SED-3 to SED-6.

Surface water samples were collected approximately 15 cm to 30 cm below the water surface at all sampled stations. A surface water duplicate sample (numbered DUP#1) was taken. Water samples were poured into the appropriate bottles supplied by an MDDEP certified laboratory (Maxxam Analytics Inc.) and applicable preservatives were added when required. All water sample bottles were stored in coolers until they were delivered to the laboratory. Surface water samples were submitted for analysis of the following parameters:

- metals (Al, As, Ag, B, Ba, Be, Ca, Cd, Cr, Cu, Co, Fe, Hg, K, Li, Mg, Mn, Mo, Na, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, U, V, Zn);
- major ions / nutrients (NH₃, NO₂, NO₃, NH₄, SO₄, fluoride, chloride, cyanide, Kjeldahl Nitrogen, CO₃, HCO₃, total phosphorus);

- acidity, alkalinity, true color, total dissolved solid (TDS), total suspended solids (TSS), biological oxygen demand 5 days (BOD₅), chemical oxygen demand (COD), pH, dissolved inorganic carbon, dissolved organic carbon.

All surface water quality results were compared to the following applicable MDDEP guidelines:

- *Surface water quality for the protection of aquatic life* (critical toxicity and chronic effect);
- *Final Critical Value in the Effluent*;
- *Prevention of contamination* (water and aquatic organisms or aquatic organisms only).

The federal guidelines, *Canadian Council of Ministers for the Environment (CCME) Canadian Water Quality Guidelines (CWQG) for the Protection of Freshwater Aquatic Life* (CWQG; CCME 1999; 2007), are included in the analytical results table.

Four (4) sediment samples were collected. A sediment duplicate sample (numbered DUP#2) was taken with the sample SED-5-02-10-2008. Samples were collected using a hand shovel. All samples were properly labeled and poured into the appropriate bottles (chemical analyses) and sample bags (grain size analyses) supplied by Maxxam Analytics. The samples were shipped for chemical analysis to Maxxam Analytics Montreal's laboratory. Sediment samples were submitted for analysis of the following parameters:

- metals (Al, As, Ag, B, Ba, Bi, Be, Ca, Cd, Cr, Cu, Co, Fe, Hg, K, Li, Mg, Mn, Mo, Na, Ni, Pb, Sb, Se, Sn, Sr, Te, Ti, Tl, U, V, Zn, Zr);
- sulfur;
- petroleum hydrocarbons;
- volatile matters at 550 °C; and
- grain size analysis.

Sediment chemistry results were compared to the applicable *Interim Sediment Quality Guidelines* (ISQG) and the *Probable Effect Levels* (PEL) (CCME 1999; 2003) and *Quebec Sediment Quality Guideline* (QSQG) (MDDEP 2007, 2008).

3.5.2 Hydrology

Between October 1st and 3rd, 2008, manual stream flow measurements were performed at three locations. The following criteria were used as guidelines to select the location of each station:

- straight reach of channel;
- uniform channel shape, bed profile and flow characteristics;
- free from any debris, large boulders or other obstructions;
- no undercut banks or backwater effects;
- suitable depth (greater than 0.2 m) and velocity (less than 2 m/s); and
- flow contained within channel section with little opportunity for overbank flow – even during extreme events.

The location of the stations (STA-6, STA-10 and STA-11) that were selected for stream flow measurements is shown on Figure 2. The estimated catchment areas for the three locations are estimated at 21 km², 52 km² and 88 km², respectively.

A *Price 1205 mini* probe and a *Price 1210 AA* probe were used to record velocity at different depth in the stream channel. The flow estimation equation was taken from the *National Service of Calibration* (Environment Canada) as found below, which provides adequate flow estimates within the measurable ranges.

- Velocity in meters / seconds = ((0,6709 * revolutions number) / seconds) + 0,0084 (for the *Price 1210 AA*)
- Velocity in meters / seconds = ((0,2924 * revolutions number) / seconds) + 0,0125 (for the *Price 1205 mini*)

3.5.3 Groundwater Sampling and Piezometry

Groundwater and piezometry components have been addressed during two fieldwork programs on August 21 and October 3, 2008. A total of four (4) groundwater samples were collected and submitted for chemical analysis. Groundwater levels were measured in three (3) selected accessible exploration drillholes (1035, 1044 and 50S/1250E). Their locations are also presented on Figure 2. One field duplicate (numbered DUP-3) was collected from exploration hole 50S/1250E. Standard parameters such as metals and major ions were analysed at the Maxxam Analytics laboratory in Montreal.

Samples were collected with a dedicated Waterra foot valve pump and samples to be analysed for metals were filtered in the field using 0.45 µm filters and acidified in the field. Purging of the sampled drill holes was carried out until purge water physico-chemical parameters stabilised. Groundwater levels were measured using a water level probe. For exploration holes that displayed artesian conditions (i.e. flowing groundwater), flowing water was sampled directly without additional purging of the exploration hole.

The testing program for this groundwater quality sampling campaign comprised:

- metals (Al, As, Ag, B, Ba, Be, Ca, Cd, Cr, Cu, Co, Fe, Hg, K, Li, Mg, Mn, Mo, Na, Ni, Pb, Sb, Se, Sn, Sr, Ti, Tl, U, V, and Zn);
- major ions / nutrients (NH₃, NO₂, NO₃, NH₄, SO₄, pH, chloride, sulfite, cyanide Kjeldahl N, CO₃, and HCO₃);
- hardness (CaCO₃), alkalinity;
- phenols; and
- petroleum hydrocarbons (C₁₀-C₅₀).

3.5.4 Meteorological Station

Based on expected field conditions, access conditions to the station and Adriana's field staff availability for data download, a Campbell Scientific UT30 10 m tower with guy wires, solar panel and associated meteorological station equipment (relative humidity and air temperature probe, precipitation gauge, wind monitor, radiation sensor and barometer)

were selected and ordered by Golder. The equipment could not be installed during the 2008 field season but it is planned to proceed with the installation in 2009.

Following the purchase of appropriate meteorological equipments for this project, potential suitable locations for the installation of the recommended private and site-specific meteorological station were identified during the site reconnaissance visit, considering any obstacles, restrictions or unsuitable locations for this surface installation. Following the site reconnaissance visit, three potential suitable locations for the installation of the future meteorological station were proposed to Adriana for location selection (progress report PowerPoint presentation, dated 2008-11-26). In consultation with Adriana's representatives, one of the proposed locations has been selected taking into consideration the following criteria: location outside the future pit perimeter and elevation similar to that of the future mine and mine facilities. Other preliminary criteria relative to foundation conditions were no more considered since drilling of anchors through bedrock appeared to be the best option (rather than the installation of a concrete base below the frost level line). Subsequently, Golder provided Adriana with foundations preparation and station anchoring specifications (technical memorandum dated 2009-03-20).

4.0 PHYSICAL ENVIRONMENT – RESULTS

4.1 Climate and Meteorological Conditions

A sub-arctic forest climate characterizes the project's area. According to the Köppen-Geiger system of climate classification, the project lies within the *Dfc* region, a snowy-forest (microthermal) climate having sufficient precipitation in all months and fewer than three months with mean temperatures over 10°C. The annual precipitation for the region ranges around 800 mm, including several meters of snow cover.

According to Allard & Deguin 1987, Lac Otelnuik is located over discontinuous and scattered permafrost. These patches of permanently frozen ground or relict permafrost areas are present sporadically across this northern range of Quebec, as illustrated on Figure 3.

The review of existing weather stations within the surroundings revealed that the Quebec MDDEP operates or has archived public records of five climatic stations in a radius of 225 km from the study area. Data types obtainable from those stations are temperature, precipitation and wind parameters.

- *À la Baleine* station (#7110072) is located 220 km to the north of study area;
- *Caniapiscau* station (#71110A7) is located 175 km to the north of study area;
- *Aux Mélézes* station (#711039K) is located 205 km to the north of study area;
- *Duplanter* station (#7112249) is located 165 km to the south-east of study area; and
- *Idian-House-Lake* station (#7113280) is located 225 km to the east of study area.

Environment Canada also operates one climate monitoring station in a radius of 225 km from the Project Site. The types of data that can be obtained online from Environment Canada's *National Climate and Information Archive* are temperature, precipitation, dew point temperature, relative humidity, wind direction, visibility, and atmospheric pressure.

- *Shefferville A* station is located 160 km to the south-east of study area.

The locations of the listed meteorological stations are represented on Figure 4. The closest climate stations appear to be located too far from the Project Site to document local meteorological conditions adequately. Therefore, the implementation of a weather station, designed to monitor the daily conditions on site has been proposed. The onsite installation is planned for 2009.

Table 1 below shows the monthly precipitation and temperature averages over a thirty year period for the existing weather station located closest to the Project Site. The average temperature of the warmest summer month is 12.4°C and the coldest winter month has an average temperature of -24.1°C. The annual total of precipitation is around 823 mm with a lowest average of 38.7 mm in February and a highest average of 107.2 mm in July.

Table 1. Precipitation and Temperature averages over a thirty year period for *Scherfferville A Station*.

	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Tot
Temperature (°C)	-24,1	-22,6	-16,0	-7,3	1,2	8,5	12,4	11,2	5,4	-1,7	-9,8	-20,6	-
Precipitation (mm)	53,2	38,7	53,3	61,4	52,1	73,7	107,2	84,5	98,4	80,5	69,4	50,7	822,9

4.2 Geology

Regional Geology

The Paleoproterozoic New Québec Orogen (~2.17-1.87 Ga), known as the Labrador Trough, extends for over 850 km from the Grenville Front in the south, as far as Ungava Bay to the north. Part of the Archean-Proterozoic Southeastern Churchill Province, the orogen, is located east of the Archean Superior Province. The orogen is also part of the Circum-Ungava Geosyncline, an extension of the Trans-Hudson Orogen.

The supracrustal rocks of the Labrador Trough constitute the foreland of the New Quebec Orogen. These rocks form a thrust and fold belt on the margin of the Superior Province.

Farther east, the orogen includes an internal metamorphic-plutonic zone, made up in large part of Archean rocks.

Work by Dimroth led to the first stratigraphic structural syntheses of the central part of the orogen. The Labrador Trough (Figure 5) was subdivided into three supracrustal belts. A western belt is composed mainly of platform sedimentary rocks, the central belt is composed mainly of greenschist facies, deep-water, volcano sedimentary rocks intruded by numerous gabbro sills, and an eastern belt composed of amphibolite facies rocks. Lac Otelnuik is located between the Maraude Fault and Ferrum River Fault.

The Knob Lake Range occupies an area 100 km long by 8 km wide. The sedimentary rocks including the cherty iron formation in this area are weakly metamorphosed to greenschist facies.

In structurally complex areas, such as in the immediate Schefferville area, leaching and secondary enrichment has produced earthy textured iron deposits. Unaltered banded magnetite iron formation, often referred to as taconite, is a potential source of iron ore concentrate. It occurs as gently dipping beds northwest of Schefferville in the Howells River deposit, and in the Caniapiscou River area in the Lac Otelnuik and December Lake deposits.

Property Geology

All of the consolidated rocks outcropping in the Lac Otelnuik iron property are of Proterozoic age. Locally, the sedimentary member which immediately underlies the iron formation is a siliceous argillite and underlying it is a pink to red arkose. The iron formation, a true taconite, can be divided into four principal units as follows:

- a) Upper cherty carbonate formation;
- b) Upper oxide iron formation;
- c) Lower cherty carbonate formation; and
- d) Lower oxide iron formation.

For the most part, the iron is present as magnetite, hematite and siderite or ferro-dolomite minerals. The iron formation is generally northwest-southeast trending, very flat lying to gently inclined and rolling, with an average easterly dip of 5°.

The iron formation forms the top of the column in the eastern part of the property and is mainly covered by glacial drift. The far northern portion of the property is more structurally complex as the iron formation and other units were affected by a northeast trending fault and folded to trend more in an east-west direction.

Metamorphism within the property appears to be of low to moderate grade. Changes in grain size mineralogy and rock texture related to regional metamorphism are not visually detectable.

4.3 Watersheds and Hydrology

Watershed

The local Project Site watersheds are located within the Caniapiscou and Swampy Bay regional watersheds which flow north to the Ungava Bay. Figure 6 presents the regional water divides in north-eastern Québec and the Project site.

The study area comprises two (2) local watersheds and four (4) local sub-watersheds. The western local watershed is found along the western edge of Adriana Resource's claim boundary and is included in the Caniapiscou watershed. This watershed (shown in purple on Figure 2) flows towards the Baie Gignard Lake and Lac de la Concession before it eventually flows into the Caniapiscou River.

To the east, four (4) local sub-watersheds (shown in green on Figure 2) are included within the eastern local watershed (shown in purple on Figure 2), all of which are included within Adriana Resource's claim outline. The eastern local watershed flows to the Swampy Bay River, downstream of the *Hautes Chutes* falls. The Swampy Bay watershed flows into the Caniapiscou watershed approximately 100 km north of the Project site, as shown on Figure 6.

The study area is located at an elevation of approximately 800 m. The terrain is generally covered by areas of boreal forest typical of northern Quebec and by boulders. The boulders and rocks are sometimes covered by moss. A significant number of marsh areas are present due to the relatively flat topography. Higher elevations are observed in the areas surrounding the Project Site with elevations that vary from approximately 1500 m in the northwest to roughly 1000 m in the southeast with the highest topographic point reaching 2150 m.

The structural shapes and forms of the area's topography have resulted in the presence of many wetlands and small shallow lakes within the site. These small lakes are typical of the northern part of Quebec with shallow depths and shorelines constituted of boulders and cobbles. The lakes are interconnected by small creeks that are generally shallow. The creek substrate is dominated by large rocks and boulders. The creek can be characterized as a series of steeper sections or rapids.

Larger lakes, such as Lake Otehluk, are likely deep (however no data was collected on the larger lakes) and are connected to larger river systems. These larger water bodies are located outside the study area and no data has been collected as part of this study.

Hydrology

The results of the stream flow gauging are presented in Table 2 below for each of the three surveyed locations (STA-6, STA-10 and STA-11 shown on Figure 2).

Table 2. Estimated Stream Flows at STA-6, 10 and 11 on October 2, 2008

	Watershed Area (km ²)	Estimated Average Flows (m ³ /s)
STA-6	21	0.07
STA-10	52	1.01
STA-11	88	0.82

4.4 Surface Water and Sediment Quality

Surface Water Chemistry

Tables 1A to 1F summarize the surface water analytical results and the certificates of analysis are presented in Appendix A.

The concentration of most parameters were below or equal to the MDDEP and CCME criteria, with the exception of barium (Ba), copper (Cu), selenium (Se), manganese (Mn), and zinc (Zn). Barium is exceeded MDDEP guidelines for surface water quality for the protection of aquatic life (chronic effect) (0.046 mg/L) for only one sampling station (STA-2-20-08-2008) at 0.05 mg/L. Copper concentrations of 0.003 mg/L are observed for samples STA-5-21-08-2008 and STA-7-01-10-2008 and a copper concentration of 0.004 mg/L is observed for samples STA-3-20-08-2208. These copper concentrations exceeded the MDDEP guidelines for surface water quality for the protection of aquatic life (chronic effect) and surface water quality for the protection of aquatic life (chronic toxicity). Zinc exceeded the MDDEP protection of aquatic life, chronic effect and critical toxicity value (0.02 mg/L) for sampling station STA-11-02-10-2008 at 0.024 mg/L.

Manganese exceeded the MDDEP prevention of the contamination, water and aquatic organism value (0.05 mg/L) for sampling station STA-11-02-10-2008 (0.06 mg/L). Selenium exceeded the CCME value (0.001 mg/L) for one station (STA-8-02-10-2008) at 0.002 mg/L.

It appears that the background levels of some parameters in the surface water marginally exceed the MDDEP and CCME criteria. These concentrations and exceedances seem to be natural since, to our current knowledge, no industrial activity that could have contaminated the water has occurred in this area.

Sediment Quality

Tables 2A to 2G summarize the sediment analytical results and the certificates of analysis are presented in Appendix A.

The concentrations of all parameters were below or equal to the ISQG, PEL and the QSQG with the exception of chromium (Cr). Chromium concentrations in samples SED-4-02-10-2008 (32 mg/kg) and SED-6-02-10-2008 (32 mg/kg) exceeded the QSQG value of 25 mg/kg.

It appears that the natural background level of one parameter in the sediments exceed the MDDEP, QSQG criteria. These concentrations and exceedances seem to be natural since, to our current knowledge, no industrial activity that could have contaminated the water has occurred in this area.

4.5 Groundwater Quality and Piezometry

Groundwater Quality

Table 3 summarizes the groundwater analytical results and the certificates of analysis are presented in Appendix A.

Groundwater samples exhibit relatively low concentrations of major ions: bicarbonates (77-170 mg/L), carbonates (<2 mg/L), sulphates (3-4.8 mg/L), calcium (10-31 mg/L), magnesium (5.5-15 mg/L), sodium (4.1-7.7 mg/L), and potassium (<0.001 mg/L).

Although project specific discharge criteria will most likely be developed for the Lac Otelnuuk Iron Mine Project as part of the permitting process, water quality discharge limits of Québec's Mining Industry Directive 019 have been used for comparison purposes with the analytical results of the four groundwater samples collected during these field programs. None of the analysed parameters exceeded these water quality discharge limits.

Groundwater Elevation

Table 3 below present the groundwater level measurements for October 3, 2008. The recorded water levels indicate that the water table was artesian for exploration holes 1035 and 50S/1250E and 1.5 meters below ground surface for exploration hole 1044. Groundwater elevations in the specific watershed where the samples were taken suggest that groundwater flow may be towards the north-east, however, the data is too scarce to draw any strong conclusion at this point.

Table 3. Groundwater Depth in Exploration Holes - October 3, 2008.

Hole ID	Date	*Eastern coordinates (m)	*Northern coordinates (m)	Groundwater Depth(m)
1035	03-10-2008	545662.00	6201103.00	artesian
1044	03-10-2008	542731.00	6203463.00	1.50
50S/1250E	03-10-2008	542015.00	6206598.00	artesian

**Projection : UTM, Nad 83 (Zone 19)*

4.6 QA/QC of Analytical Program

To be completed.

5.0 BIOLOGICAL ENVIRONMENT - RESULTS

5.1 Vegetation and habitat types

Desktop review indicated that no detailed forest maps are available for the area. Also, the regional conservation plan for wetlands located within the Northern Quebec Region has not yet been established by Ducks Unlimited Canada (Ducks Unlimited Canada, September 29, 2008). This regional plan will be an amalgamation of existing data relating to wetlands, including data from the *Base de données topographique du Québec* (BDTQ) and the *Conservation Atlas of Wetlands* from Environment Canada.

At present time, aerial photographs have not been provided for Golder to achieve the initially planned vegetation communities delineation and classification of the study area, and identification of potential habitats of interest. Nevertheless, basic information on the study area's vegetation communities has been gathered during the site reconnaissance visit.

The open boreal forest covers the area. Typical vegetation community found on xeric sites is the open conifer forest mostly represented by Black spruce (*Picea mariana*) stands on moss and/or lichen land cover. Fens (patterned or not) are also widespread over humid sites of the study area. Their prevalence in the study area among the other existing types of wetlands is supported by the fresh climatic conditions which restrict the growth of the sphagnum and which support a more marked flow of surface, in particular in spring period, at the time of the snow melt. Other main vegetation communities encountered include open and forested bogs, submerged and immersed marshes, riparian communities (prairies, shrubs and forests), mixed forest, and burns. Pictures of some of these vegetation communities are presented in Appendix B

Three major burns are found in surrounding area of the project's site. On the south-west shores of the Baie Gignard Lake (south-west from the camp), there is a burned area from the 1970's years. Another one, approximately 30 years old, covers the north part of the actual drilling zone. Finally, there is another burn in the south-east zone which occurred in the last few years.

Floristic species with particular status

An information request was addressed to the regional respondent of the Northern Quebec Regional department of the MDDEP in order to obtain the documented occurrences of plant species with particular status indexed within the *Centre de données sur le patrimoine naturel du Québec* (CDPNQ) data bank likely to be found within the study region. These plant species would be listed as “threatened”, “vulnerable” or “likely to be designated” under the provincial law *Loi sur les espèces menacées ou vulnérables* (L.R.Q., c. E-12.01) and listed as “endangered”, “threatened” or of “special concern” under the federal *Species at Risk Act* (L.C. 2002, c. 29). The response from the MDDEP, obtained on October 3, 2008, indicated that there are no known occurrences of listed plant species with particular status within the study area, nor within a radius of 10 km from the actual drilling zone. However, this data bank does not make any distinction between territories within which the absence of such species is recognized and those that have not been surveyed. Considering the study area’s remoteness, the absence of such occurrences would, with a high certainty, rather reflect a lack of data for this specific northern Quebec area.

Exceptional forest ecosystems

The MRNF mentioned on October 17, 2008 that no *Exceptional forest ecosystems* (EFEs) are listed beyond the 52nd parallel. The EFES refer to three categories of forests, including rare forests, old forests and forest refuges for threatened or vulnerable species.

5.2 Wildlife, fish and fish habitat

Wildlife species with particular status

Information requests were addressed to the CWS in order to obtain the occurrences of wildlife species with particular status within the study region, and to the MRNF’s Northern Quebec regional respondent for the species indexed within the CDPNQ data bank. Species of particular federal or provincial conservation concerns were identified. The responses from the CWS and MRNF were obtained on September 25th and October

21nd 2008 respectively and indicated that there are no occurrences of listed species with particular status inside the study area, nor within a radius of 10 km from the site.

Avifauna

Requests were sent to the CWS in order to identify bird species at risk observed within the study region, and *Regroupement Québec Oiseaux* to obtain relevant information from the *Quebec Breeding Bird Atlas* data bank. On September 26, 2008, the CWS and the Quebec Breeding Bird Atlas responded that they had no survey data for the study region.

Amongst birds, local people and MRNF's officers confirmed that geese, loons, owls, eagles, waterfowls, Osprey (*Pandion haliaetus*), Willow Ptarmigan (*Lagopus lagopus*), Rock Ptarmigan (*L. mutus*), and Gray Jack (*Perisoreus canadensis*) are found in the neighbourhood. Notably, some Osprey, Red-breasted Merganser (*Mergus serrator*), a couple of Spruce Grouse (*Dendragapus Canadensis*), ducks, geese and loons have been seen in the surrounding area during the site reconnaissance visit. The presence of a nesting site of Bald Eagle (*Haliaetus leucocephalus*) is also suspected around falls located up north of the projects' site, notably north of the Lake Chaudillon and around "Les Hautes Chutes" of the Swampy River.

Herpetofauna

A request was sent to the *St. Lawrence Valley Natural History Society* (SLVNHS) in order to obtain the occurrences of amphibian and reptile species with a precarious status within and surrounding the study area. In response, on September 24, 2008, the SLVNHS stated that the *Atlas of Amphibians and Reptiles of Quebec* (AARQ) data bank did not have any recorded observations for the study area and 10 km buffer zone around the site. The absence of recorded observations however, does not mean that no herpetofauna is found within the study region, but rather that there is a lack of surveys carried out at these northern latitudes (SLVNHS, September 24, 2008). In order to provide results that were representative, the SLVNHS needed to expand the 10 km radius by forming an 800 km by 425 km area centered around the project site with a north west corner sitting at 75°25'45"W, 57°35'22"N, and south west corner sitting at 62°33'37"W, 53°55'12"N. The common species listed by the SHNVSL for this newly enlarged area,

include the American Toad (*Anaxyrus (Bufo) americanus*), the Spring Peeper (*Pseudacris crucifer*) and the Wood Frog (*Lithobates (Rana) sylvaticus*), which could potentially be found within the study region if the appropriate habitats are present (AARQ, 2008). Also, based on our literature review of the Quebec amphibian and reptile species historic distribution ranges over the northern Quebec, and in addition to these last three common species, the Mink Frog (*Rana septentrionalis*) is the only other species that reaches this northern area. Two adults specimen of Mink Frog have been observed during the site reconnaissance visit, in a stream at the discharge of a lake located within the study area. The location of this emplacement is illustrated on Figure 7.

Ichthyofauna

All watercourses and lakes present within and surrounding the study region can be regarded as fish habitat. In accordance with the provincial law *Loi sur la conservation et la mise en valeur de la faune* (Chapter IV.1 on wildlife habitats) applicable on Crown land, fish habitat is defined as “a lake, a swamp, a marsh, a floodplain delimited by the mean high-water level for a 2-year period, or a watercourse, frequented by fish”. Clause 35 of the federally legislated *Fisheries Act* states that “No person shall carry on any work or undertaking that results in the harmful alteration, disruption or destruction of fish habitat”. According to the Northern Quebec’s regional department of the MRNF, no fish species with particular status have been documented within the study region or 10 km buffer zone surrounding the site (MRNF, October 21, 2008). However, the Lake Charr (*Salvelinus namaycush*), the Arctic Charr (*S. salvelinus*), the Brook Charr (*S. fontinalis*), and the Northern Pike (*Exos lucius*) are fished in the area. Some fish observations have also been noted for some water courses of the study area during the site reconnaissance visit. Such locations, even if not exhaustive, are presented on Figure 7 for indicative purposes of already confirmed fish habitats.

Wildlife habitats and territories

With the exception of fish habitats, there is no designated wildlife habitats listed within a 10 km radius of the project site and within the area suspected of being influenced by the project (MRNF, October 30, 2008). In regards to wildlife territories, several outfitting camps are present within the study region. Of these camps and affiliated operation

grounds, one is permanent and five are mobile, with one of these mobile camps being established and operational (10579-02), and four being inactive but authorized for outfitting operations (MRNF, October 30, 2008).

Nevertheless, some wildlife species are known to be found in the area of the project. Given the information obtained during a discussion with two officers of the Wildlife Protection Service of the MRNF, met at Lac Squaw in Schefferville on August 19, the caribou (*Rangifer tarandus*) and the black bear (*Ursus americanus*) are frequently seen in the region. The presence of black bears, as well as the otter (*Lutra canadensis*), beaver (*Castor canadensis*), marten (*Martes americana*), wolf (*Canis lupus*), foxes, and rabbits within the study area has also been confirmed by workers of the Baie Gignard Camp. Active beaver dams have also been observed within the study area during the site visit. Few individuals of caribou have also been observed around the project site, i.e. on the west shore of the Baie Gignard Lake, but no small herds are seen in the neighbourhood and no known main migratory ways are found in the vicinity of the site. However, the migrations of the George River herd occur in the greater region. A caribou migration monitoring program by satellite telemetry has been undertaken by the MRNF – Secteur Faune Québec and the Wildlife Division of the Newfoundland and Labrador Department of Environment and Conservation, which share the management of the George River herd (MRNF, 2009). A satellite map showing the migrations of the two main caribou herds of the Nunavik, i.e. the George River and Aux Feuilles River herds, is produced on a weekly basis. Figure 1 of Appendix C summarize the 1999-2001 seasonal movement patterns of migratory caribou of Québec-Labrador (Couturier et al., 2004).

Protected areas

The CWS mentions that there are no *national wildlife areas* (NWAs), no *migratory bird sanctuary* (MBSs) and no “*no-hunting*” areas (NHAs) located within or surrounding the study region (MRNF, September 29, 2008). On September 29, 2008, the MRNF mentioned that one region located near the limits of the 10 km radius has been earmarked for a national park called *Canyon-Eaton National Park*.

6.0 SOCIAL ENVIRONMENT – RESULTS

6.1 Category I and II lands

A request was sent to the MRNF to find out if Native category I and/or II territories were located within or surrounding the study region. An answer was received on September 25, 2008 mentioning that the project site is located between 60 and 80 km from lands listed as category II and inhabited by the Naskapi nation of Kawawachikamach. As for category I lands, they are located further south close to Schefferville (MRNF, September 25, 2008).

6.2 Traditional land and resources uses

The information on traditional land and resources uses gathered from the interview conducted during the Site Reconnaissance with two Naskapis who worked at Adriana's exploration camp at Baie Gignard, revealed that from their personal recollection, they were not aware of any birth or burial site in the surroundings of the projects' area, however, Lake Otelnuuk has significant meaning for their nation, as reflected by its translation in English as the « Heart lake ». They also recalled that the Naskapis had their summer groupings in Fort McKensye, which was the central location for the Naskapis; in 1953 the Naskapis moved from Fort McKensye to Schefferville. Their prevalent religion is Anglican.

The Naskapis traditionally did and still do fishing in Lake Otelnuuk; the Speckled and Lake trout and the Northern Pike can be found in the lake. The hunting and trapping around the lake concerned caribou, beaver, marten, and other small mammals. Bears, wolves, foxes, and rabbits can also be found in the area. Amongst the birds, geese are hunted and loons, osprey, ptarmigan, and Whisky Jack (Canada jay) can be viewed in the area.

Asked about specific families using the land, they answered that the Elders such as Ann or Joseph Emish would inform us better about these specific uses and that we could find these people through Lucien McKensye in Schefferville.

Concerning traditional uses of plants, they brought us outside to show us the Labrador tea (*Ledum groenlandicum*), the black spruce, and the larch (*Larix laricina*). Labrador tea is used for drinking as a tea; the boiled heart of the black spruce can be drunk for cleansing and for use after starvation; and the slightly boiled larch sapwood is used to sooth cuts and bruises. Finally, they are used to drink fresh running water from flowing rivers or streams, like from clear streams where fishes can be found, instead of drinking stagnant water from any swamps (fen and bogs).

7.0 RECOMMENDATIONS FOR FURTHER BASELINE STUDIES

Still to be documented at this stage is the potential layout of the anticipated site infrastructure and extent of the mine pit. This information would be useful in establishing detailed and accurate work plans for the further baseline studies to be conducted with regards to an anticipated Environmental and Social Impact Assessment:

- Ore zone center of gravity (potential extent of open pit);
- Site infrastructure (plant, camp);
- Pipeline;
- Roads;
- Waste rock and tailings storage;
- Water supply; and
- Mine effluent location.

As a first step ahead, Golder strongly recommends that the remaining tasks initially planned within Golder's 2008 scope of work be finalized. Thus the meteorological station installation, as well as the aerial photo interpretation, should be maintained as a priority with regards to the 2009 activities planned for the Lac Otehluk iron mine project. The meteorological station installation should be performed in spring or early-summer 2009. Once in place and functional, site-specific meteorological data acquisition would then be underway. In order to allow sufficient baseline data acquisition before the beginning of an iron mine project, and to allow further proper correlations of data with the closest existing Environment Canada weather stations, two years of monitoring are recommended. The purchased met-station includes sensors to measure the following parameters: wind speed and direction, temperature, relative humidity, net radiation, precipitations, and barometric pressure. The usual frequency of data recording is every hours. For more security regarding the met data acquisition, Golder recommends that the station would be set to record data every half hour. The frequency of the data downloads should be discussed with Adriana based on site activities and potential access conditions.

The tower will be mounted on a bedrock base. Enclosed are Golder's specifications regarding the met tower foundation, provided to Adriana on March 19, 2009 (Appendix D).

The second priority would concern performing the aerial photo interpretation. Delineation and characterisation of the vegetation communities within the study area will allow us defining sensitive vegetation communities, floristic or wildlife habitats, and proper related field investigation.

A complete hydrological characterization of the study watershed will require more information and data collection. A study covering at least one hydrologic year is suggested to implement this preliminary hydrology assessment. Some of the existing stations where stream flow gauging has been carried out in 2008 should be included in the future program and at least one location at the exit point of the east and west local watersheds (in purple on Figure 2) should be added along with one monitoring location in a reference watershed, possibly south of the mine area in the Lac Maraude watershed.

Surface water and sediment sampling, potentially at locations consistent with the stream flow gauging program, over a one year period is also recommended in order to assess both spatial and temporal variability.

Geotechnical investigations of ground conditions, including potential presence of permafrost, are also recommended since these conditions will not only have an impact on the design of mine infrastructures but may also influence the environmental performance of mine waste and mine tailings storage facilities.

The desktop review provided very modest information on the climate monitoring aspect. Indeed, a weather station will be installed on site so specific climate information will be obtained. Also, five climatic stations identified in vicinity of the study area and operated by the MDDEP could be consulted.

A work program for hydrogeology and groundwater quality should be developed to obtain specific hydrogeological conditions in the Project Site area, such as the depth of groundwater, permeability of the rock mass, groundwater flow directions as well as

chemical characteristics of the groundwater. This information will provide the conceptual basis for studies to be carried out at later stages of the project, such as mine water seepage estimates, treatment requirements for mine water and, potentially, water supply for the ore processing plant.

For cost effectiveness purposes vegetation field surveys are generally conducted after that preliminary vegetation community map (by photo interpretation) has been completed. These surveys would include vegetation communities' characterisation sampling stations to validate and specify the desktop work, and research for flora species of particular conservation concern. They will have to be performed following flora species' phenologies, in spring and summer periods. No field spring survey is currently planned for the vegetation in 2009. They will have to be scheduled for 2010. Summer surveys can still be performed in 2009 depending on the availability of the aerial photographs.

Concerning wildlife, a work program should be started in 2009 to document the presence of raptor nesting sites, waterfowl concentration areas, and bird spring and fall migration corridors, in the study area. Breeding bird surveys (diurnal and nocturnal), as well as resident bird surveys (in the winter) would also be recommended, but could be postponed in the following seasonal window frames.

Aerial ungulate surveys are recommended for the winter period of 2009-2010 to determine the density, distribution and habitat use of Caribous. It is proposed that the surveys should be completed over a 1-day period during the early winter and again in late winter. This survey should coincide with a winter Track Counts program. In complement, aquatic mammal surveys could be realised at the same time as the vegetation community survey.

Also, a field investigation program should be conducted to document the presence and the quality of fish habitat. In addition to water and sediment sampling, benthic and plankton samples would be collected to determine the range of variability within the study area. The objective of the fish survey would be to collect information on the small and large-bodied fish species inhabiting the study area, assess fish spawning activities and collect baseline information on health and tissue chemistry.

All flora and wildlife surveys would also attempt to identify the presence of wildlife species listed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) protected under the Species at Risk Act (SARA) and under the provincial act entitled *Loi sur les espèces menacées ou vulnérables*. As small mammal surveys usually involve trapping methods and could be expensive for a too large study area, it is suggested to wait until the potential layout of the anticipated site infrastructures and extent of the mine pit will be known. It is also the same for amphibian populations' surveys. No reptile surveys are deemed necessary for this project.

The development of Lac Otelnuuk Iron mining project may potentially have impacts of different nature on the local communities, including Schefferville's inhabitants and natives. Adriana will need to perform social desktop studies related to the local communities involved as well as specific studies related to economical or archaeological aspects.

Golder recognizes that consultation and agreement with local communities could be a crucial aspect of the Lac Otelnuuk project, as their implication will facilitate several steps of its development. Among others, First Nation implication and participation could be particularly useful during the field work. Nevertheless, Golder understands from the kick-off meeting that a steering committee is in place and will take care of the social aspects of this project for the moment.

8.0 REFERENCES

- AARQ 2008. Atlas des amphibiens et reptiles du Québec : banque de données active depuis 1988 alimentée par des bénévoles et professionnels de la faune. Société d'histoire naturelle de la vallée du Saint-Laurent et ministère des Ressources naturelles et de la Faune du Québec. Communication from Sébastien Rouleau, St. Lawrence Valley Natural History Society, September 24, 2008.
- CDPNQ, 2008. Centre de données sur le patrimoine naturel du Québec. Communication from Benoît Larouche, Direction régionale de l'analyse et de l'expertise de l'Abitibi-Témiscamingue et du Nord-du-Québec, Ministère du Développement Durable de l'Environnement et des Parcs du Québec. Rouyn-Noranda, Octobre 1, 2008.
- CDPNQ, 2008. Centre de données sur le patrimoine naturel du Québec. Communication from Mathieu Morin, Direction régionale de l'aménagement de la faune du Nord-du-Québec, Ministère des Ressources naturelles et de la Faune du Québec. Chibougamau, Octobre 20, 2008.
- Couturic, S., D. Jean, R. Otto and S. Rivard, 2004. Demography of the migratory tundra caribou (*Rangifer tarandus*) of the Nord-du-Québec region and Labrador. Ministère des Ressources naturelles, de la Faune et des Parcs, Direction de l'aménagement de la faune du Nord-du-Québec and Direction de la recherche sur la faune. Québec. 68 p.
- Environment Canada, 2008. Personal communication with Daniel Bergeron, Canadian Wildlife Service. Quebec City. October 17, 2008.
- Environment Canada, 2008. National Climate Data and Information Archive;
- Tremblay G.A & Black E.D., 1976. Exploration Progress Report. 1976. Otefnuk Iron Deposits. King Resources Company. Toronto, Canada. December 31, 1976. 24 p.+ Appendices.

Lahondès D., Block M. & Girard R., 2007. Resources definition drilling campaign: Summer 2007 Campaign. Lake Otnuk Iron Project. Services Géoscientifiques Inc. -- Volume 1: Report and maps. -- Volume 2: Appendix 1 and profiles. -- Volume 3: Appendix 2 to 6.

Cadoret M., 2008. Rapport d'arpentage. Localisation de points de contrôle photogrammétrique et de puits de forage 2008. Projet minier du Lac Otnuk. Pour : Ressources Adriana Inc. Groupe Cadoret Arpenteurs-géomètres. Novembre 2008. 8 p.+ Appendices.

TABLE 1A
SURFACE WATER ANALYTICAL RESULTS

Parameters	Detection Limit	MDDEP Criteria Protection of the Aquatic Life (critical toxicity)	Sample Identification - Date / Concentration												
			STA-1-20-08-2008	STA-2-20-08-2008	STA-3-20-08-2008	STA-4-20-08-2008	STA-5-21-08-2008	STA-6-21-08-2008	STA-6-02-10-2008	STA-7-22-08-2008	STA-7-01-10-2008	STA-8-02-10-2008	STA-9-02-10-2008	STA-10-02-10-2008	STA-11-02-10-2008
			2008-08-20	2008-08-20	2008-08-20	2008-08-20	2008-08-21	2008-08-21	2008-10-02	2008-08-22	2008-10-01	2008-10-02	2008-10-02	2008-10-02	2008-10-02
Metals (mg/L)															
Aluminum (Al)	0.03	0.75	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.04	< 0.03	< 0.03	< 0.03	0.06
Antimony (Sb)	0.006	1.1	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
Arsenic (As)	0.002	0.34	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Barium (Ba)	0.03	0.131	< 0.03	0.05	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.03
Beryllium (Be)	0.002	0.0001	-	-	-	-	-	-	< 0.002	-	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Boron (B)	0.05	16	-	-	-	-	-	-	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Cadmium (Cd)	0.001	0.00025	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Calcium (Ca)	0.1	-	9.2	14	9.4	6.8	13	15	15	3.4	3.5	15	14	6.5	3.9
Chromium (Cr)	0.03	-	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Cobalt (Co)	0.03	0.37	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Copper (Cu)	0.003	0.0019	< 0.003	< 0.003	0.004	< 0.003	0.003	< 0.003	< 0.003	< 0.003	0.004	< 0.003	< 0.003	< 0.003	< 0.003
Iron (Fe)	0.1	3.4	-	-	-	-	-	-	< 0.1	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Lead (Pb)	0.001	0.0055	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Lithium (Li)	0.1	-	-	-	-	-	-	-	< 0.1	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Magnesium (Mg)	0.1	-	-	-	-	-	-	-	7.7	-	0.9	8.3	7.9	2.9	1.1
Manganese (Mn)	0.003	0.647	0.006	0.012	0.014	0.018	0.023	0.038	0.008	< 0.003	< 0.003	0.004	0.004	0.004	0.06
Molybdenum (Mo)	0.03	29	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Nickel (Ni)	0.01	0.078	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Potassium (K)	0.1	-	0.4	0.6	0.4	0.5	0.5	0.4	0.3	0.2	0.3	0.4	< 0.1	0.3	< 0.1
Selenium (Se)	0.001	-	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.002	< 0.001	< 0.001	< 0.001	< 0.001
Silver (Ag)	0.0003	0.000053	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003
Sodium (Na)	0.03	-	1.4	1.8	1.3	1.5	1.4	0.76	0.64	0.75	0.66	0.77	0.96	0.74	0.74
Strontium (Sr)	0.05	75	-	-	-	-	-	-	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Thallium (Tl)	0.01	0.047	-	-	-	-	-	-	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Tin (Sn)	0.05	-	-	-	-	-	-	-	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Titanium (Ti)	0.05	-	-	-	-	-	-	-	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Uranium	0.02	0.32	-	-	-	-	-	-	< 0.02	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Vanadium (V)	0.01	0.11	-	-	-	-	-	-	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Zinc (Zn)	0.003	0.02	< 0.003	0.009	< 0.003	< 0.003	0.006	0.004	0.006	< 0.003	0.006	< 0.003	0.01	0.013	0.014
Inorganic Compounds (mg/L)															
Acidity (as CaCO3)	10	-	-	-	-	-	-	-	< 10	-	< 10	< 10	< 10	< 10	< 10
Alkalinity	2	-	-	-	-	-	-	-	71	-	73	69	32	11	11
Ammonia (N-NH3)	2	-	-	-	-	-	-	-	0.02	-	0.02	0.02	0.02	0.02	0.02
Bicarbonates (HCO3 as CaCO3)	2	-	40	58	43	32	56	67	71	< 2	10	73	69	32	11
Biological Oxygen Demand 5 days	2	-	-	-	-	-	-	-	< 4	-	< 5	< 4	< 4	< 4	< 4
Carbonate (CO3 as CaCO3)	2	-	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Chloride (Cl)	0.05	860	0.25	0.35	0.24	0.25	0.25	0.18	0.11	0.28	1.2	0.14	0.17	0.24	0.15
Dissolved Inorganic Carbon	0.2	-	-	-	-	-	-	-	16	-	3.2	16	15	7	3.3
Chemical Oxygen Demand	0.2	-	-	-	-	-	-	-	1.8	-	2.4	1.7	1.8	3.2	2.7
Dissolved Organic Carbon	10	-	-	-	-	-	-	-	10	-	12	11	14	13	< 10
Fluoride (F)	0.1	-	-	-	-	-	-	-	< 0.1	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Nitrate and Nitrite	0.02	200	0.09	0.12	0.06	0.05	< 0.02	1.7	0.03	0.06	0.09	0.04	0.02	< 0.02	0.05
NTK Kjeldahl Nitrogen	0.4	-	< 0.4	0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
Phosphorus Total (P)	0.01	-	-	-	-	-	-	-	< 0.01	-	< 0.01	0.01	0.01	0.02	< 0.01
Sulfates (SO4)	0.1	300	0.5	2.4	0.9	0.7	2.8	2.1	2.1	12	1.2	2.5	3.3	1.3	1.1
Sulfite	0.02	-	-	-	-	-	-	-	< 0.02	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Total dissolved solids	10	-	-	-	-	-	-	-	72	-	22	78	75	40	24
Total suspended solids (TSS)	2	-	-	-	-	-	-	-	2	-	< 2	< 2	< 2	< 2	7
Other Compounds															
pH	-	-	-	-	-	-	-	-	7.6	-	7.7	7.7	7.9	7.9	7.7
True color (UCV)	2	-	-	-	-	-	-	-	4	-	13	5	3	12	14

Notes:
 - : Concentration exceeding the Protection of the Aquatic Life (critical toxicity).
 - : Not Analyzed / Not Specified

TABLE 1B
SURFACE WATER ANALYTICAL RESULTS

Parameters	Detection Limit	MDDEP Criteria Protection of the Aquatic Life (chronic effect)	Sample Identification - Date / Concentration												
			STA-1-20-08- 2008	STA-2-20-08- 2008	STA-3-20-08- 2008	STA-4-20-08- 2008	STA-5-21-08- 2008	STA-6-21-08- 2008	STA-6-02-10- 2008	STA-7-22-08- 2008	STA-7-01-10- 2008	STA-8-02-10- 2008	STA-9-02-10- 2008	STA-10-02-10- 2008	STA-11-02-10- 2008
			2008-08-20	2008-08-20	2008-08-20	2008-08-20	2008-08-21	2008-08-21	2008-10-02	2008-08-22	2008-10-01	2008-10-02	2008-10-02	2008-10-02	2008-10-02
Metals (mg/L)															
Aluminum (Al)	0.03	0.087	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.06
Antimony (Sb)	0.006	0.24	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
Arsenic (As)	0.002	0.15	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Barium (Ba)	0.03	0.046	< 0.03	0.05	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.03
Beryllium (Be)	0.002	0.000011	-	-	-	-	-	-	-	< 0.002	-	< 0.002	< 0.002	< 0.002	< 0.002
Boron (B)	0.05	1.9	-	-	-	-	-	-	-	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05
Cadmium (Cd)	0.001	0.000056	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Calcium (Ca)	0.1	-	9.2	14	9.4	6.8	13	15	13	3.4	3.5	15	14	6.5	3.9
Chromium (Cr)	0.03	-	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Cobalt (Co)	0.03	0.1	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Copper (Cu)	0.003	0.0015	< 0.003	< 0.003	0.004	< 0.003	0.003	< 0.003	< 0.003	< 0.003	0.003	< 0.003	< 0.003	< 0.003	< 0.003
Iron (Fe)	0.1	1.3	-	-	-	-	-	-	-	< 0.1	-	< 0.1	< 0.1	< 0.1	< 0.1
Lead (Pb)	0.001	0.00021	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Lithium (Li)	0.1	-	-	-	-	-	-	-	-	< 0.1	-	< 0.1	< 0.1	< 0.1	< 0.1
Magnesium (Mg)	0.1	-	-	-	-	-	-	-	-	7.7	-	0.9	8.5	7.9	2.9
Manganese (Mn)	0.003	0.3	0.006	0.012	0.014	0.018	0.023	0.038	0.008	< 0.003	< 0.003	0.004	0.044	0.004	0.06
Molybdenum (Mo)	0.03	3.2	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Nickel (Ni)	0.01	0.0087	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Potassium (K)	0.1	-	0.6	0.4	0.4	0.5	0.5	0.4	0.3	0.2	0.3	0.4	0.4	0.3	< 0.1
Selenium (Se)	0.001	0.005	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.002	< 0.001	< 0.001	< 0.001
Silver (Ag)	0.0003	0.0001	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003
Sodium (Na)	0.03	-	1.4	1.8	1.3	1.5	1.4	0.76	0.64	0.75	0.66	0.69	0.77	0.96	0.74
Strontium (Sr)	0.05	8.3	-	-	-	-	-	-	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Thallium (Tl)	0.01	0.0072	-	-	-	-	-	-	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Tin (Sn)	0.05	-	-	-	-	-	-	-	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Titanium (Ti)	0.05	-	-	-	-	-	-	-	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Uranium	0.02	0.014	-	-	-	-	-	-	< 0.02	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Vanadium (V)	0.01	0.012	-	-	-	-	-	-	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Zinc (Zn)	0.003	0.02	< 0.003	0.009	< 0.003	< 0.003	0.006	0.004	0.006	< 0.003	0.006	< 0.003	0.01	0.013	0.024
Inorganic Compounds (mg/L)															
Acidity(as CaCO3)	10	-	-	-	-	-	-	-	< 10	-	< 10	< 10	< 10	< 10	< 10
Alkalinity	2	-	-	-	-	-	-	-	71	-	10	73	69	32	11
Ammonia (N-NH3)	2	-	-	-	-	-	-	-	0.02	-	0.02	0.02	0.02	0.02	0.02
Bicarbonates (HCO3 as CaCO3)	2	-	40	58	43	32	56	67	71	< 2	10	73	69	32	11
Biological Oxygen Demand 5 days	4	3	-	-	-	-	-	-	< 4	-	< 5	< 4	< 4	< 4	< 4
Carbonate (CO3 as CaCO3)	2	-	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Chloride (Cl)	0.05	230	0.25	0.35	0.24	0.25	0.25	0.18	0.11	0.28	1.2	0.14	0.17	0.24	0.15
Dissolved Inorganic Carbon	0.2	-	-	-	-	-	-	-	16	-	3.2	16	15	7	3.3
Chemical Oxygen Demand	0.2	-	-	-	-	-	-	-	1.8	-	2.4	1.7	1.8	3.2	2.7
Dissolved Organic Carbon	10	-	-	-	-	-	-	-	10	-	12	11	14	13	< 10
Fluoride (F)	0.1	-	-	-	-	-	-	-	< 0.1	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Nitrate and Nitrite	0.02	40	0.09	0.12	0.06	0.05	< 0.02	1.7	0.03	0.06	0.09	0.04	0.02	< 0.02	0.05
NTK Kjeldahl Nitrogen	0.4	-	< 0.4	0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
Phosphorus Total (P)	0.01	0.03	-	-	-	-	-	-	< 0.01	-	< 0.01	0.01	0.01	0.02	< 0.01
Sulfates (SO4)	0.1	-	0.5	2.4	0.9	0.7	2.8	2.1	2.1	12	1.2	2.3	3.3	1.3	1.1
Sulfite	0.02	-	-	-	-	-	-	-	< 0.02	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Total dissolved solids	10	-	-	-	-	-	-	-	72	-	22	78	75	40	24
Total suspended solids (TSS)	2	-	-	-	-	-	-	-	2	-	< 2	< 2	< 2	< 2	7
Other Compounds															
pH	-	-	-	-	-	-	-	-	7.6	-	7.7	7.7	7.9	7.9	7.7
True color (UCV)	2	-	-	-	-	-	-	-	4	-	13	5	5	12	14

Notes:
 - Concentration exceeding the Protection of the Aquatic Life (chronic effect).
 - Not Analysed / Not Specified

TABLE 1C
SURFACE WATER ANALYTICAL RESULTS

Parameters	Detection Limit	MDDEP Criteria Prevention of the Contamination (water and aquatic organism)	Sample Identification - Date / Concentration												
			STA-1-20-08-2008	STA-2-20-08-2008	STA-3-20-08-2008	STA-4-20-08-2008	STA-5-21-08-2008	STA-6-21-08-2008	STA-6-02-10-2008	STA-7-22-08-2008	STA-7-01-10-2008	STA-8-02-10-2008	STA-9-02-10-2008	STA-10-02-10-2008	STA-11-02-10-2008
			2008-08-20	2008-08-20	2008-08-20	2008-08-20	2008-08-21	2008-08-21	2008-10-02	2008-08-22	2008-10-01	2008-10-02	2008-10-02	2008-10-02	2008-10-02
Metals (mg/L)															
Aluminum (Al)	0.03	0.2	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.04	< 0.03	< 0.03	< 0.03	0.06
Antimony (Sb)	0.006	0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
Arsenic (As)	0.002	0.01	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Barium (Ba)	0.03	1	< 0.03	0.05	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.03
Beryllium (Be)	0.002	0.004	-	-	-	-	-	-	-	< 0.002	-	< 0.002	< 0.002	< 0.002	< 0.002
Boron (B)	0.05	5	-	-	-	-	-	-	-	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05
Cadmium (Cd)	0.001	0.005	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Calcium (Ca)	0.1	-	9.2	14	9.4	6.8	13	15	13	3.4	3.5	15	14	6.5	3.9
Chromium (Cr)	0.03	0.05	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Cobalt (Co)	0.03	-	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Copper (Cu)	0.003	1	< 0.003	< 0.003	0.004	< 0.003	0.003	< 0.003	< 0.003	< 0.003	0.003	< 0.003	< 0.003	< 0.003	< 0.003
Iron (Fe)	0.1	0.3	-	-	-	-	-	-	-	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.01
Lead (Pb)	0.001	0.01	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Lithium (Li)	0.1	-	-	-	-	-	-	-	-	7.7	-	8.9	7.9	2.9	< 0.1
Magnesium (Mg)	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	1.1
Manganese (Mn)	0.003	0.05	0.006	0.012	0.014	0.018	0.023	0.038	0.008	< 0.003	< 0.003	0.004	0.044	0.004	0.06
Molybdenum (Mo)	0.03	0.07	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Nickel (Ni)	0.01	0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Potassium (K)	0.1	-	0.4	0.6	0.4	0.5	0.5	0.4	0.3	0.2	0.3	0.4	< 0.1	0.3	< 0.1
Selenium (Se)	0.001	0.01	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.002	< 0.001	< 0.001	< 0.001
Silver (Ag)	0.0003	0.1	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003
Sodium (Na)	0.03	200	1.4	1.8	1.3	1.5	1.4	0.76	0.64	0.75	0.66	0.69	0.77	0.96	0.74
Strontium (Sr)	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Thallium (Tl)	0.01	0.0017	-	-	-	-	-	-	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Tin (Sn)	0.05	-	-	-	-	-	-	-	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Titanium (Ti)	0.05	-	-	-	-	-	-	-	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Uranium	0.02	0.02	-	-	-	-	-	-	< 0.02	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Vanadium (V)	0.01	0.1	-	-	-	-	-	-	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Zinc (Zn)	0.003	5	< 0.003	0.009	< 0.003	< 0.003	0.006	0.004	0.006	< 0.003	0.006	< 0.003	0.01	0.013	0.024
Inorganic Compounds (mg/L)															
Acidity(as CaCO3)	10	-	-	-	-	-	-	-	< 10	-	< 10	< 10	< 10	< 10	< 10
Alkalinity	2	-	-	-	-	-	-	-	71	-	10	73	69	32	11
Ammonia (N-NH3)	2	-	-	-	-	-	-	-	0.02	-	0.02	0.02	0.02	0.02	0.02
Bicarbonates (HCO3 as CaCO3)	2	-	40	58	43	32	56	67	71	< 2	10	73	69	32	11
Biological Oxygen Demand 5 days	4	-	-	-	-	-	-	-	< 4	-	< 5	< 4	< 4	< 4	< 4
Carbonate (CO3 as CaCO3)	2	-	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Chloride (Cl)	0.05	250	0.25	0.35	0.24	0.25	0.25	0.18	0.11	0.28	1.2	0.14	0.17	0.24	0.15
Dissolved Inorganic Carbon	0.2	-	-	-	-	-	-	-	16	-	3.2	16	15	7	3.3
Chemical Oxygen Demand	0.2	-	-	-	-	-	-	-	1.8	-	2.4	1.7	1.8	3.2	2.7
Dissolved Organic Carbon	10	-	-	-	-	-	-	-	10	-	12	11	14	13	< 10
Fluoride (F)	0.1	-	-	-	-	-	-	-	< 0.1	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Nitrate and Nitrite	0.02	10	0.09	0.12	0.06	0.05	< 0.02	1.7	0.03	0.06	0.09	0.04	0.02	< 0.02	0.05
NTK Kjeldahl Nitrogen	0.4	-	< 0.4	0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
Phosphorus Total (P)	0.01	-	-	-	-	-	-	-	< 0.01	-	< 0.01	0.01	0.01	0.02	< 0.01
Sulfates (SO4)	0.1	500	0.5	2.4	0.9	0.7	2.8	2.1	2.1	12	1.2	2.5	3.3	1.3	1.1
Sulfite	0.02	-	-	-	-	-	-	-	< 0.02	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Total dissolved solids	10	-	-	-	-	-	-	-	72	-	22	78	75	40	24
Total suspended solids (TSS)	2	-	-	-	-	-	-	-	2	-	< 2	< 2	< 2	< 2	7
Other Compounds															
pH	-	-	-	-	-	-	-	-	7.6	-	7.7	7.7	7.9	7.9	7.7
True color (UCV)	2	-	-	-	-	-	-	-	4	-	13	5	3	12	14

Notes:
 200 : Concentration exceeding the Prevention of the Contamination (water and aquatic organism).
 - : Not Analysed / Not Specified

TABLE ID
SURFACE WATER ANALYTICAL RESULTS

Parameters	Detection Limit	MDDEP Criteria Prevention of the Contamination (aquatic organism only)	Sample Identification - Date / Concentration												
			STA-1-20-08-2008	STA-2-20-08-2008	STA-3-20-08-2008	STA-4-20-08-2008	STA-5-21-08-2008	STA-6-21-08-2008	STA-6-02-10-2008	STA-7-22-08-2008	STA-7-01-10-2008	STA-8-02-10-2008	STA-9-02-10-2008	STA-10-02-10-2008	STA-11-02-10-2008
			2008-08-20	2008-08-20	2008-08-20	2008-08-20	2008-08-21	2008-08-21	2008-10-02	2008-08-22	2008-10-01	2008-10-02	2008-10-02	2008-10-02	2008-10-02
Metals (mg/L)															
Aluminum (Al)	0.03	-	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.04	<0.03	<0.03	0.06
Antimony (Sb)	0.006	4.3	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Arsenic (As)	0.002	0.021	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Barium (Ba)	0.03	-	<0.03	0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.03
Beryllium (Be)	0.002	-	-	-	-	-	-	-	-	<0.002	-	<0.002	<0.002	<0.002	<0.002
Boron (B)	0.05	-	-	-	-	-	-	-	-	<0.05	-	<0.05	<0.05	<0.05	<0.05
Cadmium (Cd)	0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Calcium (Ca)	0.1	-	9.2	14	9.4	6.8	13	15	13	3.4	3.5	15	14	6.5	3.9
Chromium (Cr)	0.03	-	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Cobalt (Co)	0.03	-	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Copper (Cu)	0.003	-	<0.003	<0.003	0.004	<0.003	0.003	<0.003	<0.003	<0.003	<0.003	0.003	<0.003	<0.003	<0.003
Iron (Fe)	0.1	-	-	-	-	-	-	-	-	<0.1	-	<0.1	<0.1	<0.1	<0.1
Lead (Pb)	0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Lithium (Li)	0.1	-	-	-	-	-	-	-	-	<0.1	-	<0.1	<0.1	<0.1	<0.1
Magnesium (Mg)	0.1	-	-	-	-	-	-	-	-	7.7	-	0.9	8.5	7.9	2.9
Manganese (Mn)	0.003	-	0.006	0.012	0.014	0.018	0.023	0.038	0.008	<0.003	<0.003	0.004	0.044	0.004	0.06
Molybdenum (Mo)	0.03	-	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Nickel (Ni)	0.01	4.6	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Potassium (K)	0.1	-	0.4	0.6	0.4	0.5	0.5	0.4	0.3	0.2	0.3	0.4	<0.1	0.3	<0.1
Selenium (Se)	0.001	11	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.002	<0.001	<0.001	<0.001
Silver (Ag)	0.0003	-	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Sodium (Na)	0.03	-	1.4	1.8	1.3	1.5	1.4	0.76	0.64	0.75	0.66	0.69	0.77	0.96	0.74
Strontium (Sr)	0.05	-	-	-	-	-	-	-	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05
Thallium (Tl)	0.01	0.0063	-	-	-	-	-	-	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01
Tin (Sn)	0.05	-	-	-	-	-	-	-	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05
Titanium (Ti)	0.05	-	-	-	-	-	-	-	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05
Uranium	0.02	-	-	-	-	-	-	-	<0.02	-	<0.02	<0.02	<0.02	<0.02	<0.02
Vanadium (V)	0.01	-	-	-	-	-	-	-	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc (Zn)	0.003	69	<0.003	0.009	<0.003	<0.003	0.006	0.004	0.006	<0.003	0.006	<0.003	0.01	0.013	0.024
Inorganic Compounds (mg/L)															
Acidity(as CaCO3)	10	-	-	-	-	-	-	-	<10	-	<10	<10	<10	<10	<10
Alkalinity	2	-	-	-	-	-	-	-	71	-	10	73	69	32	11
Ammonia (N-NH3)	2	-	-	-	-	-	-	-	0.02	-	0.02	0.02	0.02	0.02	0.02
Bicarbonates (HCO3 as CaCO3)	2	-	40	58	43	32	56	67	71	<2	10	73	69	32	11
Biological Oxygen Demand 5 days	4	-	-	-	-	-	-	-	<4	-	<5	<4	<4	<4	<4
Carbonate (CO3 as CaCO3)	2	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Chloride (Cl)	0.05	-	0.25	0.35	0.24	0.25	0.25	0.18	0.11	0.28	1.2	0.14	0.17	0.24	0.15
Dissolved Inorganic Carbon	0.2	-	-	-	-	-	-	-	16	-	3.2	16	15	7	3.3
Chemical Oxygen Demand	0.2	-	-	-	-	-	-	-	1.8	-	2.4	1.7	1.8	3.2	2.7
Dissolved Organic Carbon	10	-	-	-	-	-	-	-	10	-	12	11	14	13	<10
Fluoride (F)	0.1	-	-	-	-	-	-	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1
Nitrate and Nitrite	0.02	-	0.09	0.12	0.06	0.05	<0.02	1.7	0.03	0.06	0.09	0.04	0.02	<0.02	0.05
NTK Kjeldahl Nitrogen	0.4	-	<0.4	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Phosphorus Total (P)	0.01	-	-	-	-	-	-	-	<0.01	-	<0.01	0.01	0.01	0.02	<0.01
Sulfates (SO4)	0.1	-	0.5	2.4	0.9	0.7	2.8	2.1	2.1	12	1.2	2.5	3.3	1.3	1.1
Sulfite	0.02	-	-	-	-	-	-	-	<0.02	-	<0.02	<0.02	<0.02	<0.02	<0.02
Total dissolved solids	10	-	-	-	-	-	-	-	72	-	22	78	75	40	24
Total suspended solids (TSS)	2	-	-	-	-	-	-	-	2	-	<2	<2	<2	<2	7
Other Compounds															
pH	-	-	-	-	-	-	-	-	7.6	-	7.7	7.7	7.9	7.9	7.7
True color (UCV)	2	-	-	-	-	-	-	-	4	-	13	5	3	12	14

Notes:
 50 : Concentration exceeding the Prevention of the Contamination (aquatic organism only).
 - : Not Analysed / Not Specified

TABLE 1E
SURFACE WATER ANALYTICAL RESULTS

Parameters	Detection Limit	MDDEP Criteria Final Critical Value in the Effluent	Sample Identification - Date / Concentration												
			STA-1-20-08-2008	STA-2-20-08-2008	STA-3-20-08-2008	STA-4-20-08-2008	STA-5-21-08-2008	STA-6-21-08-2008	STA-6-02-10-2008	STA-7-22-08-2008	STA-7-01-10-2008	STA-8-02-10-2008	STA-9-02-10-2008	STA-10-02-10-2008	STA-11-02-10-2008
			2008-08-20	2008-08-20	2008-08-20	2008-08-20	2008-08-21	2008-08-21	2008-10-02	2008-08-22	2008-10-01	2008-10-02	2008-10-02	2008-10-02	2008-10-02
Metals (mg/L)															
Aluminum (Al)	0.03	1.5	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.04	< 0.03	< 0.03	< 0.03	0.06
Antimony (Sb)	0.006	2.3	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
Arsenic (As)	0.002	0.68	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Barium (Ba)	0.03	0.262	< 0.03	0.05	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.03
Beryllium (Be)	0.002	0.0002	-	-	-	-	-	-	< 0.002	-	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Boron (B)	0.05	31	-	-	-	-	-	-	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Cadmium (Cd)	0.001	0.00049	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Calcium (Ca)	0.1	-	9.2	14	9.4	6.8	13	15	13	3.4	3.5	15	14	6.5	3.9
Chromium (Cr)	0.03	-	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Cobalt (Co)	0.03	0.74	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Copper (Cu)	0.003	0.0038	< 0.003	< 0.003	0.004	< 0.003	0.003	< 0.003	< 0.003	< 0.003	0.003	< 0.003	< 0.003	< 0.003	< 0.003
Iron (Fe)	0.1	6.9	-	-	-	-	-	-	< 0.1	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Lead (Pb)	0.001	0.011	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Lithium (Li)	0.1	-	-	-	-	-	-	-	< 0.1	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Magnesium (Mg)	0.1	-	-	-	-	-	-	-	7.7	-	0.9	8.5	7.9	2.9	1.1
Manganese (Mn)	0.003	1.293	0.006	0.012	0.014	0.018	0.023	0.038	0.008	< 0.003	< 0.003	0.004	0.044	0.004	0.06
Molybdenum (Mo)	0.03	58	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Nickel (Ni)	0.01	0.156	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Potassium (K)	0.1	-	0.4	0.6	0.4	0.5	0.5	0.4	0.3	0.2	0.3	0.4	< 0.1	0.3	< 0.1
Selenium (Se)	0.001	-	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.002	< 0.001	< 0.001	< 0.001
Silver (Ag)	0.0003	0.00011	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003
Sodium (Na)	0.03	-	1.4	1.8	1.3	1.5	1.4	0.76	0.64	0.75	0.66	0.69	0.77	0.96	0.74
Strontium (Sr)	0.05	150	-	-	-	-	-	-	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Thallium (Tl)	0.01	0.094	-	-	-	-	-	-	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Tin (Sn)	0.05	-	-	-	-	-	-	-	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Titanium (Ti)	0.05	-	-	-	-	-	-	-	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Uranium	0.02	0.64	-	-	-	-	-	-	< 0.02	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Vanadium (V)	0.01	0.22	-	-	-	-	-	-	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Zinc (Zn)	0.003	0.04	< 0.003	0.009	< 0.003	< 0.003	0.006	0.004	0.006	< 0.003	0.006	< 0.003	0.01	0.013	0.024
Inorganic Compounds (mg/L)															
Acidity(as CaCO3)	10	-	-	-	-	-	-	-	< 10	-	< 10	< 10	< 10	< 10	< 10
Alkalinity	2	-	-	-	-	-	-	-	71	-	10	73	69	32	11
Ammonia (N-NH3)	2	-	-	-	-	-	-	-	0.02	-	0.02	0.02	0.02	0.02	0.02
Bicarbonates (HCO3 as CaCO3)	2	-	40	58	43	32	56	67	71	< 2	10	73	69	32	11
Biological Oxygen Demand 5 days	4	-	-	-	-	-	-	-	< 4	-	< 5	< 4	< 4	< 4	< 4
Carbonate (CO3 as CaCO3)	2	-	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Chloride (Cl)	0.05	1720	0.25	0.35	0.24	0.25	0.25	0.18	0.11	0.28	1.2	0.14	0.17	0.24	0.15
Dissolved Inorganic Carbon	0.2	-	-	-	-	-	-	-	16	-	3.2	16	15	7	3.3
Chemical Oxygen Demand	0.2	-	-	-	-	-	-	-	1.8	-	2.4	1.7	1.8	3.2	2.7
Dissolved Organic Carbon	10	-	-	-	-	-	-	-	10	-	12	11	14	13	< 10
Fluoride (F)	0.1	-	-	-	-	-	-	-	< 0.1	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Nitrate and Nitrite	0.02	-	0.09	0.12	0.06	0.05	< 0.02	1.7	0.03	0.06	0.09	0.04	0.02	< 0.02	0.05
NTK Kjeldahl Nitrogen	0.4	-	< 0.4	0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
Phosphorus Total (P)	0.01	-	-	-	-	-	-	-	< 0.01	-	< 0.01	0.01	0.01	0.02	< 0.01
Sulfates (SO4)	0.1	600	0.5	2.4	0.9	0.7	2.8	2.1	12	12	1.2	2.5	3.3	1.3	1.1
Sulfite	0.02	-	-	-	-	-	-	-	< 0.02	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Total dissolved solids	10	-	-	-	-	-	-	-	72	-	22	78	75	40	24
Total suspended solids (TSS)	2	-	-	-	-	-	-	-	2	-	< 2	< 2	< 2	< 2	7
Other Compounds															
pH	-	-	-	-	-	-	-	-	7.6	-	7.7	7.7	7.9	7.9	7.7
True color (UCV)	2	-	-	-	-	-	-	-	4	-	13	5	3	12	14

Notes:
 200 : Concentration exceeding the Final Critical Value in the Effluent.
 - : Not Analysed / Not Specified

TABLE 1F
SURFACE WATER ANALYTICAL RESULTS

Parameters	Detection Limit	CCME Criteria Protection of Aquatic Life	Sample Identification - Date / Concentration												
			STA-1-20-08- 2008	STA-2-20-08- 2008	STA-3-20-08- 2008	STA-4-20-08- 2008	STA-5-21-08- 2008	STA-6-21-08- 2008	STA-6-02-10- 2008	STA-7-22-08- 2008	STA-7-01-10- 2008	STA-8-02-10- 2008	STA-9-02-10- 2008	STA-10-02-10- 2008	STA-11-02-10- 2008
			2008-08-20	2008-08-20	2008-08-20	2008-08-20	2008-08-21	2008-08-21	2008-08-21	2008-10-02	2008-08-22	2008-10-01	2008-10-02	2008-10-02	2008-10-02
Metals (mg/L)															
Aluminum (Al)	0.03	0.1	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.04	< 0.03	< 0.03	< 0.03
Antimony (Sb)	0.006	-	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
Arsenic (As)	0.002	0.005	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Barium (Ba)	0.03	-	< 0.03	0.05	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.03
Beryllium (Be)	0.002	-	-	-	-	-	-	-	-	< 0.002	-	< 0.002	< 0.002	< 0.002	< 0.002
Boron (B)	0.05	-	-	-	-	-	-	-	-	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05
Cadmium (Cd)	0.001	0.000017	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Calcium (Ca)	0.1	-	9.2	14	9.4	6.8	13	15	13	3.4	3.5	15	14	6.5	3.9
Chromium (Cr)	0.03	-	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Cobalt (Co)	0.03	-	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Copper (Cu)	0.003	0.004	< 0.003	< 0.003	0.004	< 0.003	0.003	< 0.003	< 0.003	< 0.003	0.003	< 0.003	< 0.003	< 0.003	< 0.003
Iron (Fe)	0.1	0.3	-	-	-	-	-	-	< 0.1	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Lead (Pb)	0.001	0.007	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Lithium (Li)	0.1	-	-	-	-	-	-	-	< 0.1	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Magnesium (Mg)	0.1	-	-	-	-	-	-	-	7.7	-	0.9	8.5	7.9	2.9	1.1
Manganese (Mn)	0.003	-	0.006	0.012	0.014	0.018	0.023	0.038	0.008	< 0.003	< 0.003	0.004	0.044	0.004	0.06
Molybdenum (Mo)	0.03	0.073	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Nickel (Ni)	0.01	0.15	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Potassium (K)	0.1	-	0.4	0.6	0.4	0.5	0.5	0.4	0.3	0.2	0.3	0.4	< 0.1	0.3	< 0.1
Selenium (Se)	0.001	0.001	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.002	< 0.001	< 0.001	< 0.001
Silver (Ag)	0.0003	0.0001	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003
Sodium (Na)	0.03	-	1.4	1.8	1.3	1.5	1.4	0.76	0.64	0.75	0.66	0.69	0.77	0.96	0.74
Strontium (Sr)	0.05	-	-	-	-	-	-	-	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Thallium (Tl)	0.01	0.0008	-	-	-	-	-	-	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Tin (Sn)	0.05	-	-	-	-	-	-	-	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Titanium (Ti)	0.05	-	-	-	-	-	-	-	< 0.05	-	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Uranium	0.02	-	-	-	-	-	-	-	< 0.02	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Vanadium (V)	0.01	-	-	-	-	-	-	-	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Zinc (Zn)	0.003	0.03	< 0.003	0.009	< 0.003	< 0.003	0.006	0.004	0.006	< 0.003	0.006	< 0.003	0.01	0.013	0.024
Inorganic Compounds (mg/L)															
Acidity (as CaCO3)	10	-	-	-	-	-	-	-	< 10	-	< 10	< 10	< 10	< 10	< 10
Alkalinity	2	-	-	-	-	-	-	-	71	-	10	73	69	32	11
Ammonia (N-NH3)	2	-	-	-	-	-	-	-	0.02	-	0.02	0.02	0.02	0.02	0.02
Bicarbonates (HCO3 as CaCO3)	2	-	40	58	43	32	56	67	71	< 2	10	73	69	32	11
Biological Oxygen Demand 5 days	4	-	-	-	-	-	-	-	< 4	-	< 5	< 4	< 4	< 4	< 4
Carbonate (CO3 as CaCO3)	2	-	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Chloride (Cl)	0.05	-	0.25	0.35	0.24	0.25	0.25	0.18	0.11	0.28	1.2	0.14	0.17	0.24	0.15
Dissolved Inorganic Carbon	0.2	-	-	-	-	-	-	-	16	-	3.2	16	15	7	3.3
Chemical Oxygen Demand	0.2	-	-	-	-	-	-	-	1.8	-	2.4	1.7	1.8	3.2	2.7
Dissolved Organic Carbon	10	-	-	-	-	-	-	-	10	-	12	11	14	13	< 10
Fluoride (F)	0.1	-	-	-	-	-	-	-	< 0.1	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Nitrate and Nitrite	0.02	-	0.09	0.12	0.06	0.05	< 0.02	1.7	0.03	0.06	0.09	0.04	0.02	< 0.02	0.05
NTK Kjeldahl Nitrogen	0.4	-	< 0.4	0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
Phosphorus Total (P)	0.01	-	-	-	-	-	-	-	< 0.01	-	< 0.01	0.01	0.01	0.02	< 0.01
Sulfates (SO4)	0.1	-	0.5	2.4	0.9	0.7	2.8	2.1	2.1	12	1.2	2.5	3.3	1.3	1.1
Sulfite	0.02	-	-	-	-	-	-	-	< 0.02	-	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Total dissolved solids	10	-	-	-	-	-	-	-	72	-	22	78	75	40	24
Total suspended solids (TSS)	2	-	-	-	-	-	-	-	2	-	< 2	< 2	< 2	< 2	7
Other Compounds															
pH	-	-	-	-	-	-	-	-	7.6	-	7.7	7.7	7.9	7.9	7.7
True color (UCV)	2	-	-	-	-	-	-	-	4	-	13	5	3	12	14

Notes:
 - : Concentration exceeding the Protection of Aquatic Life.
 - : Not Analysed / Not Specified

TABLE 2A
SEDIMENT ANALYTICAL RESULTS

Parameter	Detection Limit	CCME Criteria Interim Freshwater Sediment Quality Guidelines	Sample Identification - Date / Concentration			
			SED-3-02-10-2008	SED-4-02-10-2008	SED-5-02-10-2008	SED-6-02-10-2008
			2008-10-02	2008-10-02	2008-10-02	2008-10-02
Petroleum Hydrocarbons (C10-C50) (mg/kg)	100	-	< 100	< 100	130	130
Metals (mg/kg)						
Aluminum (Al)	20	-	2900	5900	2400	8600
Antimony (Sb)	2	-	< 2	< 2	< 2	< 2
Silver (Ag)	2	-	< 2	< 2	< 2	< 2
Arsenic (As)	3	5,9	3	3	< 3	< 3
Barium (Ba)	5	-	39	110	12	100
Beryllium (Be)	0,5	-	< 0,5	< 0,5	< 0,5	< 0,5
Bismuth (Bi)	5	-	< 5	< 5	< 5	< 5
Boron (B)	5	-	< 5	< 5	< 5	< 5
Cadmium (Cd)	0,2	0,6	< 0,2	< 0,2	< 0,2	< 0,2
Calcium (Ca)	30	-	1300	46000	1500	3500
Chromium (Cr)	2	37,3	14	32	9	32
Cobalt (Co)	2	-	4	6	< 2	3
Copper (Cu)	2	35,7	6	18	3	12
Lead (Pb)	5	35	< 5	6	< 5	6
Iron (Fe)	10	-	12000	16000	4700	6500
Lithium (Li)	10	-	< 10	< 10	< 10	< 10
Magnesium (Mg)	10	-	1700	5900	1400	2900
Manganese (Mn)	1	-	610	640	47	92
Mercury (Hg)	0,05	0,17	< 0,05	< 0,05	< 0,05	< 0,05
Molybdenum (Mo)	2	-	< 2	4	< 2	3
Nickel (Ni)	1	-	6	16	5	12
Potassium (K)	20	-	200	1200	150	500
Selenium (Se)	10	-	< 10	< 10	< 10	< 10
Sodium (Na)	10	-	27	110	26	77
Strontium (Sr)	10	-	< 10	55	< 10	19
Tellurium (Te)	20	-	< 20	< 20	< 20	< 20
Thallium (Tl)	2	-	< 2	< 2	< 2	< 2
Tin (Sn)	5	-	< 5	< 5	< 5	< 5
Titanium (Ti)	1	-	210	530	180	470
Vanadium (V)	1	-	13	23	6	20
Zinc (Zn)	10	123	11	38	48	40
Zirconium (Zr)	5	-	< 5	9	< 5	< 5
Inorganic Compounds						
Volatile Matters at 550 C (% g/g)	-	-	1,6	2,4	2,2	28
Sulfur (S) (%)	0,03	-	0,05	0,71	0,03	0,17

Notes:

50 : Concentration exceeding the Interim Freshwater Sediment Quality Guidelines.

- : Not Analysed / Not Specified

**TABLE 2B
SEDIMENT ANALYTICAL RESULTS**

Parameter	Detection Limit	CCME Criteria Probable Effect Levels	Sample Identification - Date / Concentration			
			SED-3-02-10-2008	SED-4-02-10-2008	SED-5-02-10-2008	SED-6-02-10-2008
			2008-10-02	2008-10-02	2008-10-02	2008-10-02
Petroleum Hydrocarbons (C10-C50) (mg/kg)	100	-	< 100	< 100	130	130
Metals (mg/kg)						
Aluminum (Al)	20	-	2900	5900	2400	8600
Antimony (Sb)	2	-	<2	<2	<2	<2
Silver (Ag)	2	-	<2	<2	<2	<2
Arsenic (As)	3	17	3	3	<3	<3
Barium (Ba)	5	-	39	110	12	100
Beryllium (Be)	0,5	-	<0,5	<0,5	<0,5	<0,5
Bismuth (Bi)	5	-	<5	<5	<5	<5
Boron (B)	5	-	<5	<5	<5	<5
Cadmium (Cd)	0,2	3,5	<0,2	<0,2	<0,2	<0,2
Calcium (Ca)	30	-	1300	46000	1500	3500
Chromium (Cr)	2	90	14	32	9	32
Cobalt (Co)	2	-	4	6	<2	3
Copper (Cu)	2	197	6	18	3	12
Lead (Pb)	5	91,3	<5	6	<5	6
Iron (Fe)	10	-	12000	16000	4700	6500
Lithium (Li)	10	-	<10	<10	<10	<10
Magnesium (Mg)	10	-	1700	5900	1400	2900
Manganese (Mn)	1	-	610	640	47	92
Mercury (Hg)	0,05	0,486	<0,05	<0,05	<0,05	<0,05
Molybdenum (Mo)	2	-	<2	4	<2	3
Nickel (Ni)	1	-	6	16	5	12
Potassium (K)	20	-	200	1200	150	500
Selenium (Se)	10	-	<10	<10	<10	<10
Sodium (Na)	10	-	27	110	26	77
Strontium (Sr)	10	-	<10	55	<10	19
Tellurium (Te)	20	-	<20	<20	<20	<20
Thallium (Tl)	2	-	<2	<2	<2	<2
Tin (Sn)	5	-	<5	<5	<5	<5
Titanium (Ti)	1	-	210	530	180	470
Vanadium (V)	1	-	13	23	6	20
Zinc (Zn)	10	315	11	38	48	40
Zirconium (Zr)	5	-	<5	9	<5	<5
Inorganic Compounds						
Volatiles at 550 C (% g/g)	-	-	1,6	2,4	2,2	28
Sulfur (S) (%)	0,03	-	0,05	0,71	0,03	0,17

Notes:
200 : Concentration exceeding the Probable Effect Levels.
 - : Not Analysed / Not Specified

TABLE 2C
SEDIMENT ANALYTICAL RESULTS

Parameter	Detection Limit	Quebec Sediment Quality Guideline		Sample Identification - Date / Concentration			
		Concentration of Frequent Effects	SED-3-02-10-2008	SED-4-02-10-2008	SED-5-02-10-2008	SED-6-02-10-2008	
			2008-10-02	2008-10-02	2008-10-02	2008-10-02	
Petroleum Hydrocarbons (C10-C50) (mg/kg)	100	-	< 100	< 100	130	130	
Metals (mg/kg)							
Aluminum (Al)	20	-	2900	5900	2400	8600	
Antimony (Sb)	2	-	<2	<2	<2	<2	
Silver (Ag)	2	-	<2	<2	<2	<2	
Arsenic (As)	3	17	3	3	<3	<3	
Barium (Ba)	5	-	39	110	12	100	
Beryllium (Be)	0,5	-	<0,5	<0,5	<0,5	<0,5	
Bismuth (Bi)	5	-	<5	<5	<5	<5	
Boron (B)	5	-	<5	<5	<5	<5	
Cadmium (Cd)	0,2	3,5	<0,2	<0,2	<0,2	<0,2	
Calcium (Ca)	30	-	1300	46000	1500	3500	
Chromium (Cr)	2	90	14	32	9	32	
Cobalt (Co)	2	-	4	6	<2	3	
Copper (Cu)	2	200	6	18	3	12	
Lead (Pb)	5	91	<5	6	<5	6	
Iron (Fe)	10	-	12000	16000	4700	6500	
Lithium (Li)	10	-	<10	<10	<10	<10	
Magnesium (Mg)	10	-	1700	5900	1400	2900	
Manganese (Mn)	1	-	610	640	47	92	
Mercury (Hg)	0,05	0,49	<0,05	<0,05	<0,05	<0,05	
Molybdenum (Mo)	2	-	-	4	<2	3	
Nickel (Ni)	1	-	6	16	5	12	
Potassium (K)	20	-	200	1200	150	500	
Selenium (Se)	10	-	<10	<10	<10	<10	
Sodium (Na)	10	-	27	110	26	77	
Strontium (Sr)	10	-	<10	55	<10	19	
Tellurium (Te)	20	-	<20	<20	<20	<20	
Thallium (Tl)	2	-	<2	<2	<2	<2	
Tin (Sn)	5	-	<5	<5	<5	<5	
Titanium (Ti)	1	-	210	530	180	470	
Vanadium (V)	1	-	13	23	6	20	
Zinc (Zn)	10	310	11	38	48	40	
Zirconium (Zr)	5	-	<5	9	<5	<5	
Inorganic Compounds							
Volatile Matters at 550 C (% g/g)	-	-	1,6	2,4	2,2	28	
Sulfur (S) (%)	0,03	-	0,05	0,71	0,03	0,17	

Notes:

200

: Concentration exceeding the Concentration of Frequent Effects.

- : Not Analysed / Not Specified

TABLE 2D
SEDIMENT ANALYTICAL RESULTS

Parameter	Detection Limit	Quebec Sediment Quality Guideline		Sample Identification - Date / Concentration			
		Concentration Producing a Likely Effect	SED-3-02-10-2008	SED-4-02-10-2008	SED-5-02-10-2008	SED-6-02-10-2008	
			2008-10-02	2008-10-02	2008-10-02	2008-10-02	
Petroleum Hydrocarbons (C10-C50) (mg/kg)	100	-	< 100	< 100	130	130	
Metals (mg/kg)							
Aluminum (Al)	20	-	2900	5900	2400	8600	
Antimony (Sb)	2	-	<2	<2	<2	<2	
Silver (Ag)	2	-	<2	<2	<2	<2	
Arsenic (As)	3	23	3	3	<3	<3	
Barium (Ba)	5	-	39	110	12	100	
Beryllium (Be)	0,5	-	<0,5	<0,5	<0,5	<0,5	
Bismuth (Bi)	5	-	<5	<5	<5	<5	
Boron (B)	5	-	<5	<5	<5	<5	
Cadmium (Cd)	0,2	12	<0,2	<0,2	<0,2	<0,2	
Calcium (Ca)	30	-	1300	46000	1500	3500	
Chromium (Cr)	2	120	14	32	9	32	
Cobalt (Co)	2	-	4	6	<2	3	
Copper (Cu)	2	700	6	18	3	12	
Lead (Pb)	5	150	<5	6	<5	6	
Iron (Fe)	10	-	12000	16000	4700	6500	
Lithium (Li)	10	-	<10	<10	<10	<10	
Magnesium (Mg)	10	-	1700	5900	1400	2900	
Manganese (Mn)	1	-	610	640	47	92	
Mercury (Hg)	0,05	87	<0,05	<0,05	<0,05	<0,05	
Molybdenum (Mo)	2	-	-	4	<2	3	
Nickel (Ni)	1	-	6	16	5	12	
Potassium (K)	20	-	200	1200	150	500	
Selenium (Se)	10	-	<10	<10	<10	<10	
Sodium (Na)	10	-	27	110	26	77	
Strontium (Sr)	10	-	<10	55	<10	19	
Tellurium (Te)	20	-	<20	<20	<20	<20	
Thallium (Tl)	2	-	<2	<2	<2	<2	
Tin (Sn)	5	-	<5	<5	<5	<5	
Titanium (Ti)	1	-	210	530	180	470	
Vanadium (V)	1	-	13	23	6	20	
Zinc (Zn)	10	770	11	38	48	40	
Zirconium (Zr)	5	-	<5	9	<5	<5	
Inorganic Compounds							
Volatile Matters at 550 C (% g/g)	-	-	1,6	2,4	2,2	28	
Sulfur (S) (%)	0,03	-	0,05	0,71	0,03	0,17	

Notes:

200

-

: Concentration exceeding the Concentration Producing a Likely Effect.

: Not Analysed / Not Specified

TABLE 2E
SEDIMENT ANALYTICAL RESULTS

Parameter	Detection Limit	Quebec Sediment Quality Guideline		Sample Identification - Date / Concentration			
		Concentration of Rare Effects	SED-3-02-10-2008	SED-4-02-10-2008	SED-5-02-10-2008	SED-6-02-10-2008	
			2008-10-02	2008-10-02	2008-10-02	2008-10-02	
Petroleum Hydrocarbons (C10-C50) (mg/kg)	100	-	< 100	< 100	130	130	
Metals (mg/kg)							
Aluminum (Al)	20	-	2900	5900	2400	8600	
Antimony (Sb)	2	-	< 2	< 2	< 2	< 2	
Silver (Ag)	2	-	< 2	< 2	< 2	< 2	
Arsenic (As)	3	4,1	3	3	< 3	< 3	
Barium (Ba)	5	-	39	110	12	100	
Beryllium (Be)	0,5	-	< 0,5	< 0,5	< 0,5	< 0,5	
Bismuth (Bi)	5	-	< 5	< 5	< 5	< 5	
Boron (B)	5	-	< 5	< 5	< 5	< 5	
Cadmium (Cd)	0,2	0,33	< 0,2	< 0,2	< 0,2	< 0,2	
Calcium (Ca)	30	-	1300	46000	1500	3500	
Chromium (Cr)	2	25	14	32	9	12	
Cobalt (Co)	2	-	4	6	< 2	3	
Copper (Cu)	2	22	6	18	3	12	
Lead (Pb)	5	25	< 5	6	< 5	6	
Iron (Fe)	10	-	12000	16000	4700	6500	
Lithium (Li)	10	-	< 10	< 10	< 10	< 10	
Magnesium (Mg)	10	-	1700	5900	1400	2900	
Manganese (Mn)	1	-	610	640	47	92	
Mercury (Hg)	0,05	0,0094	< 0,05	< 0,05	< 0,05	< 0,05	
Molybdenum (Mo)	2	-	< 2	4	< 2	3	
Nickel (Ni)	1	-	6	16	5	12	
Potassium (K)	20	-	200	1200	150	500	
Selenium (Se)	10	-	< 10	< 10	< 10	< 10	
Sodium (Na)	10	-	27	110	26	77	
Strontium (Sr)	10	-	< 10	55	< 10	19	
Tellurium (Te)	20	-	< 20	< 20	< 20	< 20	
Thallium (Tl)	2	-	< 2	< 2	< 2	< 2	
Tin (Sn)	5	-	< 5	< 5	< 5	< 5	
Titanium (Ti)	1	-	210	530	180	470	
Vanadium (V)	1	-	13	23	6	20	
Zinc (Zn)	10	80	11	38	48	40	
Zirconium (Zr)	5	-	< 5	9	< 5	< 5	
Inorganic Compounds							
Volatile Matters at 550 C (% g/g)	-	-	1,6	2,4	2,2	28	
Sulfur (S) (%)	0,03	-	0,05	0,71	0,03	0,17	

Notes:

200

-

: Concentration exceeding the Concentration of Rare Effects.

: Not Analysed / Not Specified

TABLE 2F
SEDIMENT ANALYTICAL RESULTS

Parameter	Detection Limit	Quebec Sediment Quality Guideline		Sample Identification - Date / Concentration			
		Concentration Threshold Producing an Effect	SED-3-02-10-2008	SED-4-02-10-2008	SED-5-02-10-2008	SED-6-02-10-2008	
			2008-10-02	2008-10-02	2008-10-02	2008-10-02	
Petroleum Hydrocarbons (C10-C50) (mg/kg)	100	-	< 100	< 100	130	130	
Metals (mg/kg)							
Aluminum (Al)	20	-	2900	5900	2400	8600	
Antimony (Sb)	2	-	<2	<2	<2	<2	
Silver (Ag)	2	-	<2	<2	<2	<2	
Arsenic (As)	3	5,9	3	3	<3	<3	
Barium (Ba)	5	-	39	110		100	
Beryllium (Be)	0,5	-	<0,5	<0,5	<0,5	<0,5	
Bismuth (Bi)	5	-	<5	<5	<5	<5	
Boron (B)	5	-	<5	<5	<5	<5	
Cadmium (Cd)	0,2	0,6	<0,2	<0,2	<0,2	<0,2	
Calcium (Ca)	30	-	1300	46000	1500	3500	
Chromium (Cr)	2	37	14	32	9	32	
Cobalt (Co)	2	-	4	6	<2	3	
Copper (Cu)	2	36	6	18	3	12	
Lead (Pb)	5	35	<5	6	<5	6	
Iron (Fe)	10	-	12000	16000	4700	6500	
Lithium (Li)	10	-	<10	<10	<10	<10	
Magnesium (Mg)	10	-	1700	5900	1400	2900	
Manganese (Mn)	1	-	610	640	47	92	
Mercury (Hg)	0,05	0,17	<0,05	<0,05	<0,05	<0,05	
Molybdenum (Mo)	2	-	<2	4	<2	3	
Nickel (Ni)	1	-	6	16	5	12	
Potassium (K)	20	-	200	1200	150	500	
Selenium (Se)	10	-	<10	<10	<10	<10	
Sodium (Na)	10	-	27	110	26	77	
Strontium (Sr)	10	-	<10	55	<10	19	
Tellurium (Te)	20	-	<20	<20	<20	<20	
Thallium (Tl)	2	-	<2	<2	<2	<2	
Tin (Sn)	5	-	<5	<5	<5	<5	
Titanium (Ti)	1	-	210	530	180	470	
Vanadium (V)	1	-	13	23	6	20	
Zinc (Zn)	10	120	11	38	48	40	
Zirconium (Zr)	5	-	<5	9	<5	<5	
Inorganic Compounds							
Volatile Matters at 550 C (% g/g)	-	-	1,6	2,4	2,2	28	
Sulfur (S) (%)	0,03	-	0,05	0,71	0,03	0,17	

Notes:

200

-

: Concentration exceeding the Concentration Threshold Producing an Effect.

: Not Analysed / Not Specified

TABLE 2G
SEDIMENT ANALYTICAL RESULTS

Parameter	Detection Limit	Quebec Sediment Quality Guideline	Sample Identification - Date / Concentration			
		Concentration of Occasional Effects	SED-3-02-10-2008	SED-4-02-10-2008	SED-5-02-10-2008	SED-6-02-10-2008
			2008-10-02	2008-10-02	2008-10-02	2008-10-02
Petroleum Hydrocarbons (C10-C50) (mg/kg)	100	-	< 100	< 100	130	130
Metals (mg/kg)						
Aluminum (Al)	20	-	2900	5900	2400	8600
Antimony (Sb)	2	-	< 2	< 2	< 2	< 2
Silver (Ag)	2	-	< 2	< 2	< 2	< 2
Arsenic (As)	3	7,6	3	3	< 3	< 3
Barium (Ba)	5	-	39	110	12	100
Beryllium (Be)	0,5	-	< 0,5	< 0,5	< 0,5	< 0,5
Bismuth (Bi)	5	-	< 5	< 5	< 5	< 5
Boron (B)	5	-	< 5	< 5	< 5	< 5
Cadmium (Cd)	0,2	1,7	< 0,2	< 0,2	< 0,2	< 0,2
Calcium (Ca)	30	-	1300	46000	1500	3500
Chromium (Cr)	2	57	14	32	9	32
Cobalt (Co)	2	-	4	6	< 2	3
Copper (Cu)	2	63	6	18	3	12
Lead (Pb)	5	52	< 5	6	< 5	6
Iron (Fe)	10	-	12000	16000	4700	6500
Lithium (Li)	10	-	< 10	< 10	< 10	< 10
Magnesium (Mg)	10	-	1700	5900	1400	2900
Manganese (Mn)	1	-	610	640	47	92
Mercury (Hg)	0,05	0,25	< 0,05	< 0,05	< 0,05	< 0,05
Molybdenum (Mo)	2	-	< 2	4	< 2	3
Nickel (Ni)	1	47	6	16	5	12
Potassium (K)	20	-	200	1200	150	500
Selenium (Se)	10	-	< 10	< 10	< 10	< 10
Sodium (Na)	10	-	27	110	26	77
Strontium (Sr)	10	-	< 10	55	< 10	19
Tellurium (Te)	20	-	< 20	< 20	< 20	< 20
Thallium (Tl)	2	-	< 2	< 2	< 2	< 2
Tin (Sn)	5	-	< 5	< 5	< 5	< 5
Titanium (Ti)	1	-	210	530	180	470
Vanadium (V)	1	-	13	23	6	20
Zinc (Zn)	10	170	11	38	48	40
Zirconium (Zr)	5	-	< 5	9	< 5	< 5
Inorganic Compounds						
Volatile Matters at 550 C (% g/g)	-	-	1,6	2,4	2,2	28
Sulfur (S) (%)	0,03	-	0,05	0,71	0,03	0,17

Notes:

200

-

: Concentration exceeding the Concentration of Occasional Effects.

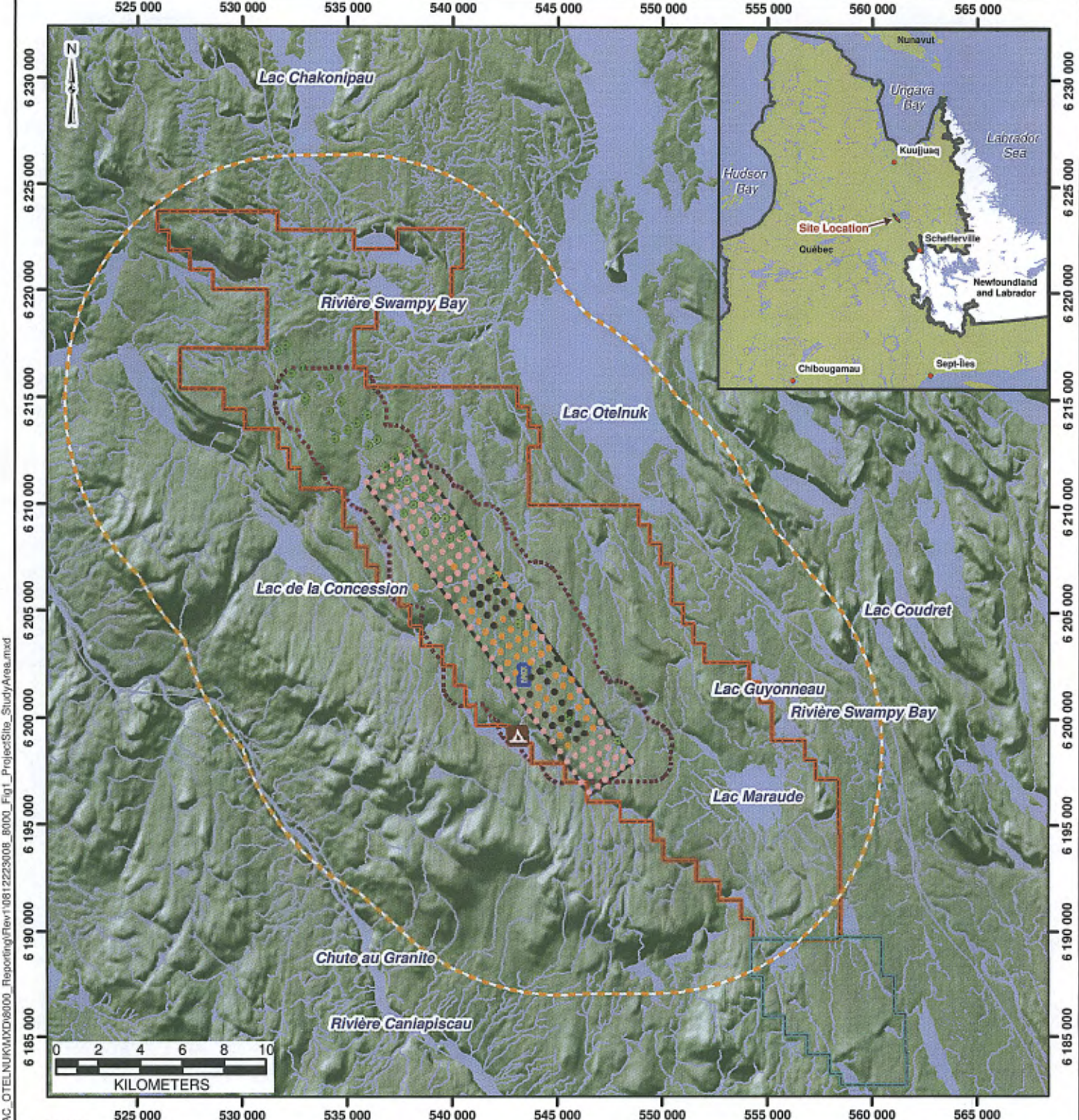
: Not Analysed / Not Specified

**TABLE 3
GROUNDWATER ANALYTICAL RESULTS**

Parameter	Detection Limit	MDDEP Criteria		Sample Identification - Date - Depth (m) / Concentration			
		Mining Industry Directive 019					
			1035-03-10-2008	1035-21-08-2008	1044-03-10-2008	50S/1250E-03-10-2008	
(mg/L)	(mg/L)	2008-10-03	2008-08-21	2008-10-03	2008-10-03		
Metals (mg/L)							
Aluminum (Al)	0,03	-	< 0,03	< 0,03	< 0,03	< 0,03	
Antimony (Sb)	0,006	-	< 0,006	< 0,006	< 0,006	< 0,006	
Arsenic (As)	0,002	0,2	0,003	0,003	< 0,002	< 0,002	
Barium (Ba)	0,03	-	< 0,03	< 0,03	0,05	< 0,03	
Beryllium (Be)	0,002	-	< 0,002	-	< 0,002	< 0,002	
Boron (B)	0,05	-	< 0,05	-	0,06	< 0,05	
Cadmium (Cd)	0,001	-	< 0,001	< 0,001	< 0,001	< 0,001	
Calcium (Ca)	0,1	-	29	31	10	27	
Chromium (Cr)	0,03	-	< 0,03	< 0,03	< 0,03	< 0,03	
Cobalt (Co)	0,03	-	< 0,03	< 0,03	< 0,03	< 0,03	
Copper (Cu)	0,003	0,3	< 0,003	< 0,003	< 0,003	< 0,003	
Iron (Fe)	0,1	3	0,5	-	0,2	0,5	
Lead (Pb)	0,001	0,2	< 0,001	< 0,001	< 0,001	< 0,001	
Lithium (Li)	0,1	-	< 0,1	-	< 0,1	< 0,1	
Magnesium (Mg)	0,1	-	8,4	-	5,5	15	
Manganese (Mn)	0,003	-	0,41	0,38	0,22	0,22	
Mercury (Hg)	0,0001	-	< 0,0001	-	< 0,0001	< 0,0001	
Molybdenum (Mo)	0,03	-	< 0,03	< 0,03	< 0,03	< 0,03	
Nickel (Ni)	0,01	0,5	< 0,01	< 0,01	< 0,01	< 0,01	
Potassium (K)	0,1	-	1	1,2	0,3	0,9	
Selenium (Se)	0,001	-	< 0,001	0,001	< 0,001	0,001	
Silver (Ag)	0,0003	-	< 0,0003	< 0,0003	< 0,0003	< 0,0003	
Sodium (Na)	0,03	-	4,1	4,7	6,6	7,7	
Strontium (Sr)	0,05	-	0,06	-	< 0,05	0,15	
Thallium (Tl)	0,01	-	< 0,01	-	< 0,01	< 0,01	
Tin (Sn)	0,05	-	< 0,05	-	< 0,05	< 0,05	
Titanium (Ti)	0,05	-	< 0,05	-	< 0,05	< 0,05	
Uranium	0,02	-	< 0,02	-	< 0,02	< 0,02	
Vanadium (V)	0,01	-	< 0,01	-	< 0,01	< 0,01	
Zinc (Zn)	0,003	0,5	0,012	< 0,003	0,005	0,017	
Inorganic Compounds (mg/L)							
Acidity(as CaCO3)	10	-	< 10	-	< 10	< 10	
Alkalinity	2	-	120	-	77	170	
Bicarbonates (HCO3 as CaCO3)	2	-	120	120	77	170	
Carbonate (CO3 as CaCO3)	2	-	< 2	< 2	< 2	< 2	
Total Cyanide	0,01	1	0,03	-	< 0,01	< 0,01	
Hardness (CaCO3)	1	-	110	-	49	130	
Nitrate and Nitrite	0,02	-	1,8	< 0,02	< 0,02	0,03	
Kjeldahl Nitrogen	0,4	-	-	< 0,4	-	-	
Chloride (Cl)	0,03	-	0,19	0,3	0,35	0,43	
Sulfides (S)	0,02	-	< 0,02	-	0,04	< 0,02	
Sulfite	0,02	-	< 0,02	-	< 0,02	< 0,02	
Other Compounds							
pH	-	-	7,6	-	7,7	7,7	

Notes:

- 200 : Concentration exceeding the Mining Industry Directive 019.
- : Not Analysed / Not Specified



LEGEND

- | | |
|--------------------------------------|-----------------------------|
| Adriana Resources Inc. Claim Outline | Completed Drill Hole (2008) |
| New Millenium Claim Outline | Completed Drill Hole (2007) |
| Third-party - A Better Search | Historic Drill Hole |
| Approximate Area of Interest | Possible Drill Hole |
| Study Area | |
| Drilling Zone | |
| | Topography |
| | Camp Site |
| | Watercourse |
| | Waterbody |

REFERENCE

Projection: NAD 83 UTM Zone 19.
 Source: National Topographic Data Base 2008 (NTDB: 23N16 and 24C01);
 Adriana Resources Inc. Website: <http://adrianaresources.com/maps/Lac-Otelnuik-Claim-Map-0608.gif> (June 2008);
 ESRI Data & Maps 2007 (Imagery and Shaded Relief).

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PROJECT ENVIRONMENTAL FOCUSED SCOPING STUDY
 LAC OTELNUK IRON MINE PROJECT

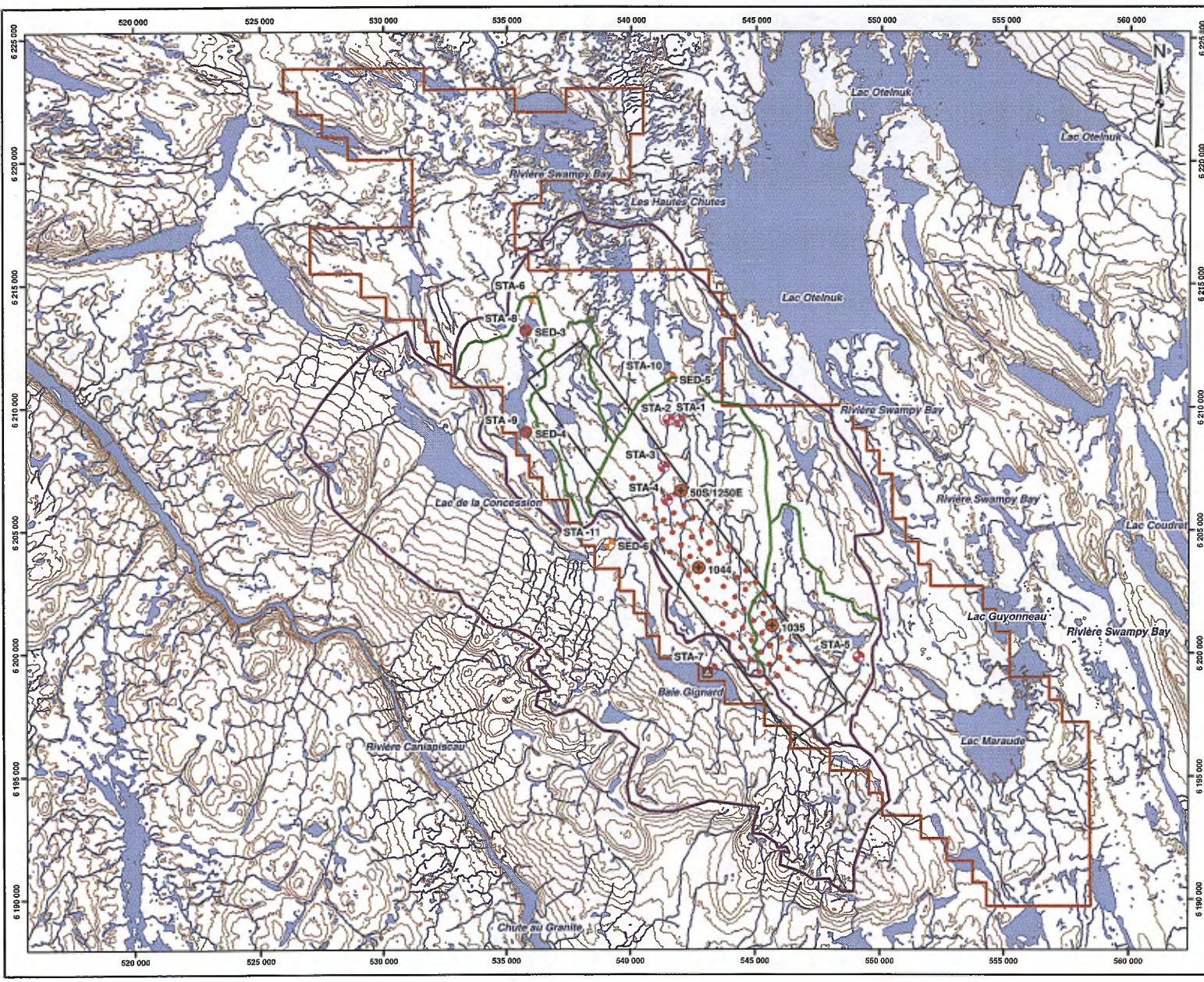
TITLE
Project Site and Study Area

Date: April 2009	Project Number: 08-1222-3008	GIS: C.Gates
Scale: 1:250 000		Planned by: S.Besner
File Name: 0812223008_8000_Fig1_ProjectSite_StudyArea.mxd		Checked by: S.Besner
		Approved by: M.Verge

Golder Associates Montréal, Québec	ADRIANA RESOURCES INC.	FIGURE 1
---------------------------------------	------------------------	--------------------

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H:\Projects\2008\12223008_0800_ADRIANA_RESOURCES_LAC_OTELNUK\080000_Reporting\env\12223008_0800_Fig2_Water_Sediments_2008_Sampling_Stations.mxd



- LEGEND**
- Project**
- Adriana Resources Inc. Claim Outline
 - Completed Drill Hole
 - Drill Zone
- Sampling Stations - August 2008**
- Waterflow and Surface Water Sampling Station
 - Surface Water Sampling Station
- Sampling Stations - October 2008**
- Surface Water and Sediment Sampling Station
 - Piezometric and Groundwater Sampling Station
- Topography**
- Camp Site
 - Contour Line
 - Watercourse
 - Waterbody
 - Local Watershed
 - Local Sub-Watershed

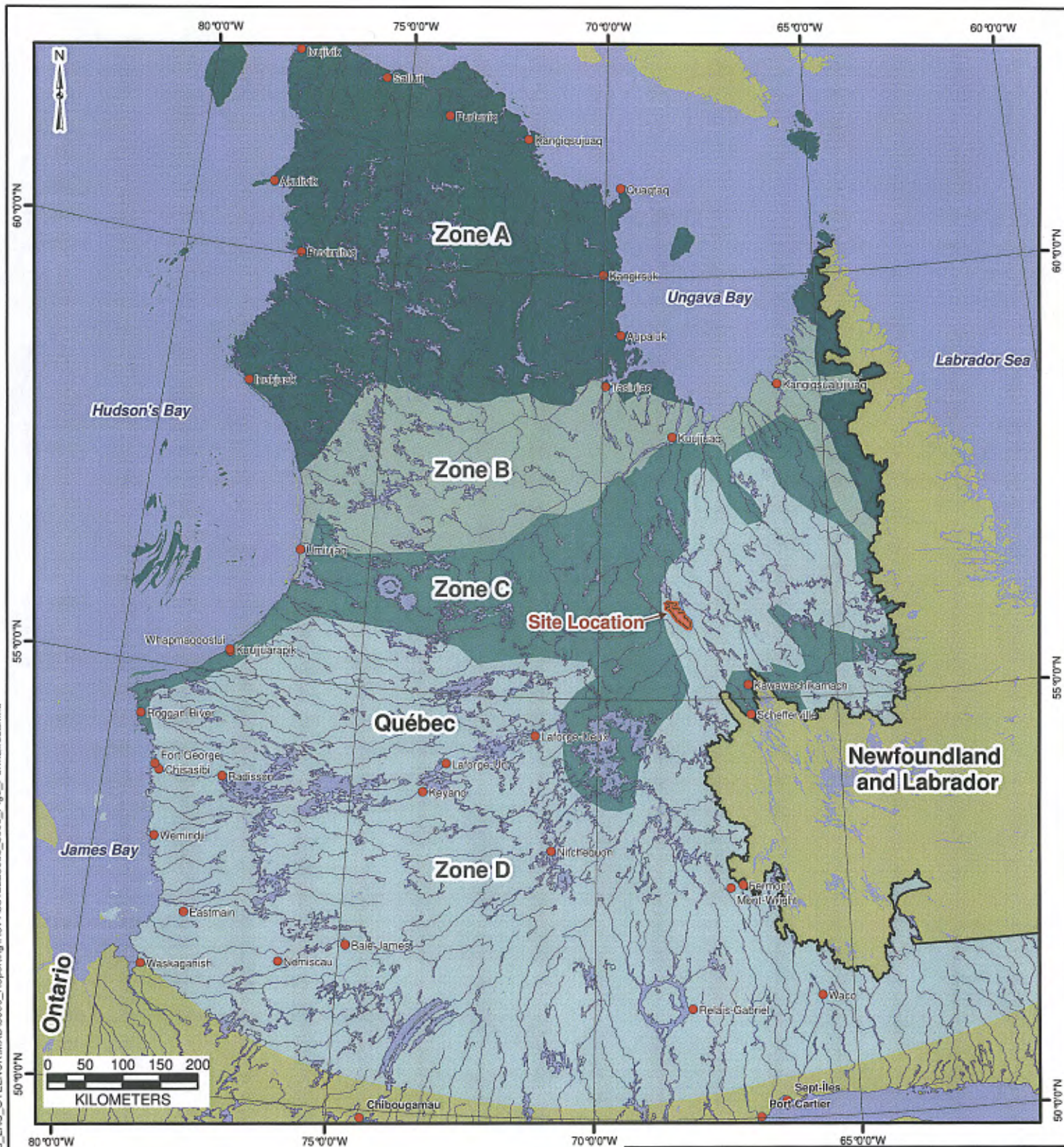


REFERENCE

Projection: NAD 83 UTM Zone 19
 Source: National Topographic Data Base 2006 (NTDB: 23N16 and 24C01);
 Adriana Resources Inc. Website: <http://adrianaresources.com/imap/>
 Lac-Otehluk-Claim-Map-0608.gif (June 2008).

CONFIDENTIAL

PROJECT		
ENVIRONMENTAL FOCUSED SCOPING STUDY LAC OTEHLUK IRON MINE PROJECT		
TITLE		
Local Watersheds and 2008 Water & Sediment Sampling Stations		
Date: April 2009	Project Number: 08-1222-3008	GIS: C.Gates
Scale: 1:150 000		Planned by: N.D'Anjou
File Name: 0812223008_8000_Fig2_Water_Sediments_2008_Sampling_Stations.mxd		Checked by: S.Bosner
		Approved by: M.Verga
		FIGURE
		2



LEGEND

Project

Adriana Resources Inc. Claim Outline

Zones of Permafrost

- Zone A: Continuous Permafrost
- Zone B: Discontinuous but Widespread Permafrost
- Zone C: Discontinuous and Scattered Permafrost
- Zone D: Sporadic Permafrost

Topography

- City
- Watercourse
- Waterbody

REFERENCE

Projection: NAD 83 UTM Zone 19.
 Source: National Topographic Data Base 2008 (NTDB: 23N16 and 24C01). Allard, M. and Seguin, M (1987)
Le pergélisol au Québec nordique: bilan et perspectives, Géographie physique et Quaternaire, vol 41, no. 1.
 Adriana Resources Inc. Website: <http://adrianaresources.com/m/aps/Lac-Otelnuk-Claim-Map-0608.gif> (June 2008).

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PROJECT ENVIRONMENTAL FOCUSED SCOPING STUDY
 LAC OTELUK IRON MINE PROJECT

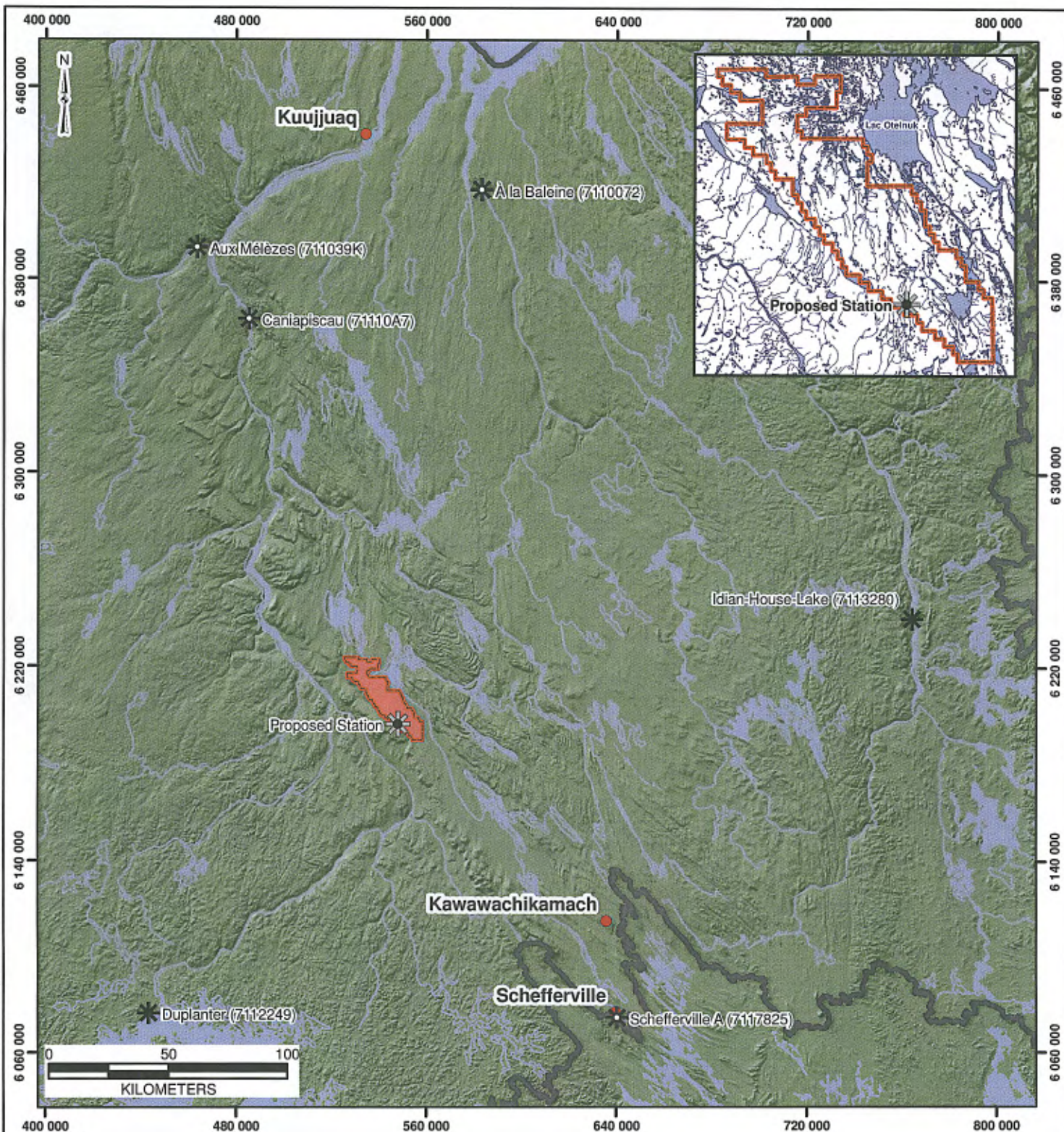
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File Name: 0812223008_8000_Fig3_Permafrost.mxd		Checked by: S.Besner
		Approved by: M.Veige



FIGURE
3

H:\Projets\2008\1222\3008_ADRIANA_RESOURCES_LAC_OTELNUK\MXD\08000_Reporting\0812223008_8000_Fig4_Location_Weather_Stations.mxd



LEGEND

- | | |
|--------------------------------------|-------------------|
| Project | Topography |
| Adriana Resources Inc. Claim Outline | City |
| Weather Stations | Watercourse |
| Environment Canada | Waterbody |
| MDDEP | Provincial Border |
| Proposed | |

REFERENCE

Projection: NAD 83 UTM Zone 19.
 Source: National Topographic Data Base 2008 (NTDB: 23N16 and 24C01); Adriana Resources Inc. Website: <http://adrianaresources.com/vi/maps/Lac-Otelnuq-Claim-Map-0608.gif> (June 2008); ESRI Data & Maps 2007 (Imagery and Shaded Relief); Ministère du Développement Durable, de l'Environnement et des Parcs (MDDEP); and Environment Canada Weather Stations.

CONFIDENTIAL

PROJECT ENVIRONMENTAL FOCUSED SCOPING STUDY
 LAC OTELNUK IRON MINE PROJECT

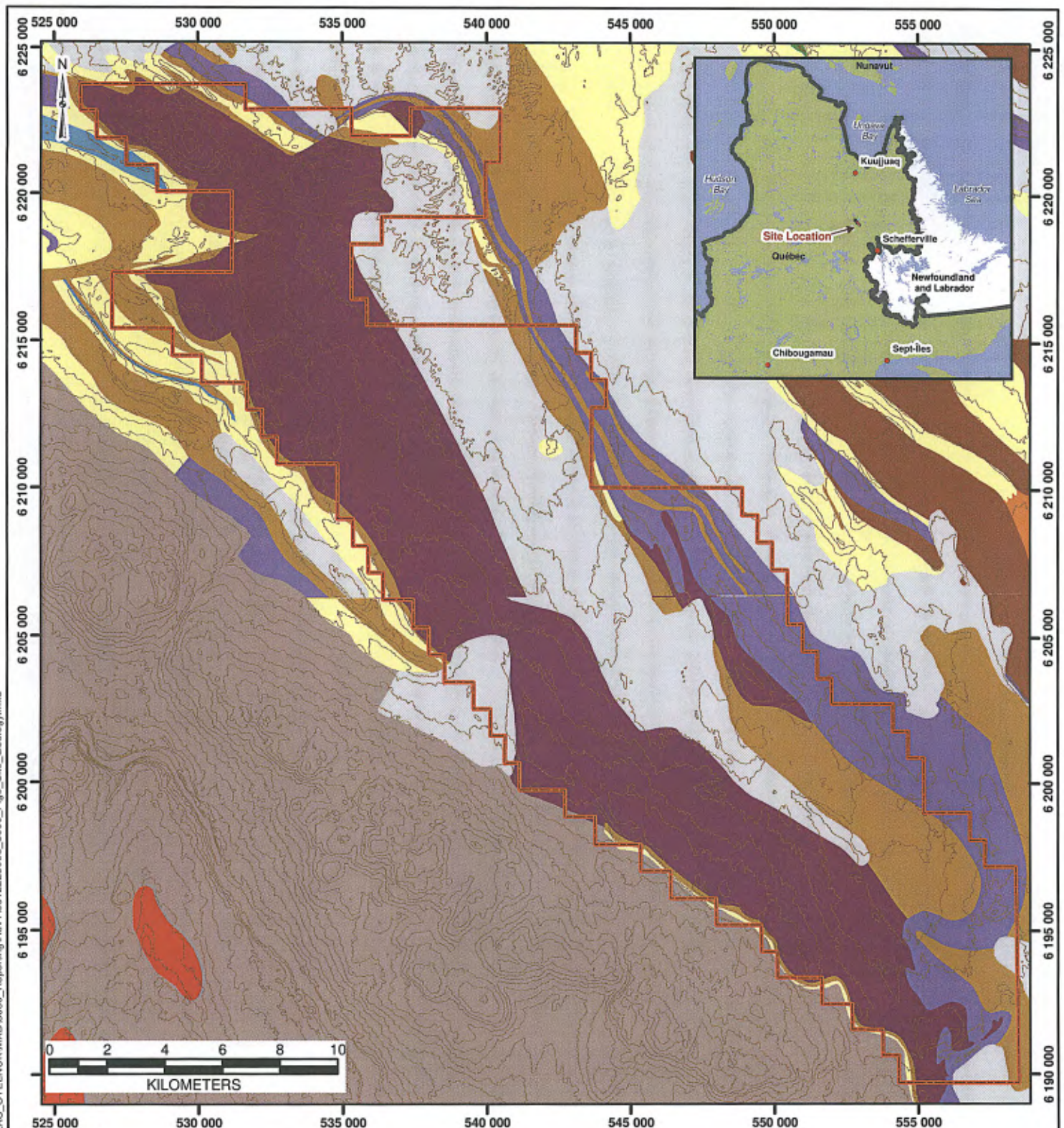
TITLE
Location of Weather Stations

Date: April 2008	Project Number: 08-1222-3008	GIS: C.Gohes
Scale: 1:2 200 000		Planned by: N.D'Anjou
File Name: 0812223008_8000_Fig4_Location_Weather_Stations.mxd		Checked by: S.Besner
		Approved by: M.Verge



FIGURE
4

H:\Projets\2008\1222\3008_ADRIANA_RESOURCES_LAC_OTELNUK\MXD\8000_Reporting\Rev1\081222\3008_8000_Fig5_Site_Geology.mxd



LEGEND		
Project	Proterozoic	Archean
Adriana Resources Inc. Claim Outline	Conglomerate, Arkose	Gneiss
Topography	Dolomite	Granodiorite
Contour line	Mudrock	
Geological Zone	Grauwacke	
Pleistocene	Iron Formation	
Sand	Gabro	
Till		

CONFIDENTIAL

REFERENCE
 Projection: NAD 83 UTM Zone 18.
 Source: National Topographic Data Base 2008 (NTDB: 23N16 and 24C01); Adriana Resources Inc. Website: <http://adrianaresource.com/Maps/Lac-Otehluk-Claim-Map-0808.gif> (June 2008); SIGÉOM, Atlas géoscientifique du Québec 2008 (MB 96-28: 23N et 24C).

PROJECT ENVIRONMENTAL FOCUSED SCOPING STUDY
 LAC OTELNUK IRON MINE PROJECT

TITLE

Site Geology

Date: April 2009	Project Number: 08-1222-3008	GIS: C.Gates
Scale: 1:180 000		Planned by: N.D'Anjou
File Name: 0812223008_8000_Fig5_Site_Geology.mxd		Checked by: B.Besner
		Approved by: M.Vergs

Golder Associates Montréal, Québec	ADRIANA RESOURCES INC.	FIGURE 5
--	-------------------------------	-------------------------------



LEGEND

- | | |
|--------------------------------------|-------------------|
| Project | Topography |
| Adriana Resources Inc. Claim Outline | Watercourse |
| Ocean Watersheds | Waterbody |
| Atlantic Ocean | |
| Hudson Bay | |
| Watershed Boundary | |

REFERENCE

Projection: NAD 83 UTM Zone 19.
 Source: National Topographic Data Base 2008 (NTDB: 23N16 and 24C01); Natural Resources Canada's Atlas of Canada: <http://atlas.nrcan.gc.ca> (January 2009); Adriana Resources Inc. Website: <http://adrianaresource.com/vmaps/Lac-Otelnuik-Claim-Map-0608.gif> (June 2008).

CONFIDENTIAL

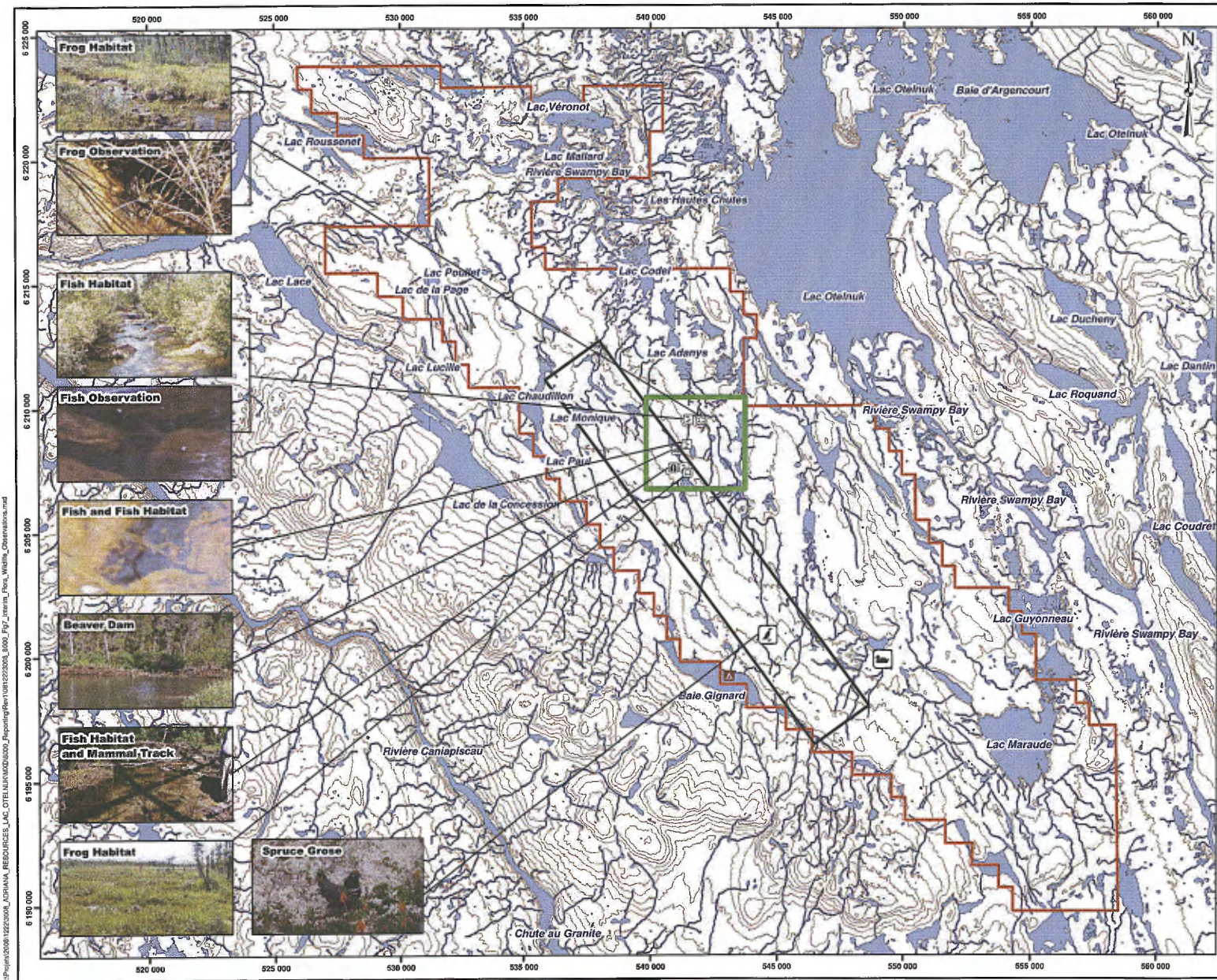
PROJECT ENVIRONMENTAL FOCUSED SCOPING STUDY
 LAC OTELNUK IRON MINE PROJECT

TITLE
Regional Watersheds

Date: April 2009	Project Number: 08-1222-3008	GIS: C. Gales
Scale: 1:3 500 000		Planned by: N.D'Arjoux
File Name: 0812223008_8000_Fig6_Regional_Watersheds.mxd		Checked by: S. Besner
		Approved by: M. Verge



FIGURE
6



LEGEND

Project

- Adriana Resources Inc. Claim Outline
- Drill Zone

Flora & Wildlife Observation Points

- Beaver Dam
- Fish Habitat
- Frog Habitat
- Mammal Track
- Potential Bird Nesting Site
- Waterfowl Entree

Topography

- Camp Site
- Contour Line
- Watercourse
- Waterbody
- Wetland

0 2 4 6 8 10
KILOMETERS

REFERENCE **CONFIDENTIAL**

Projection: NAD 83 UTM Zone 18.
 Source: National Topographic Data Base 2008 (NTDB: 23N16 and 24C01);
 Adriana Resources Inc. Website: <http://adrianaresources.com/fmaps/>
 Lac-Otehluk-Claim-Map-0608.gif (June 2008).

PROJECT			
ENVIRONMENTAL FOCUSED SCOPING STUDY LAC OTEHLUK IRON MINE PROJECT			
TITLE			
Interim Flora & Wildlife Observations			
Date: April 2009	Project Number: 08-1222-3008	GIS:	C. Gates
Scale: 1:150 000		Planned by:	S. Besner
File Name:	0812223008_0600_Fig7_Interim_Flora_Wildlife_Observations.mxd	Checked by:	S. Besner
		Approved by:	M. Vergo
		FIGURE	7

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APPENDIX A
CERTIFICATES OF ANALYSES

Your Project #: A845175
Your C.O.C. #: N/A

Attention: Leila Sabouri
Maxxam Analytique Inc
from Quebec to Bedford
889 Montee de Liesse
Saint Laurent, PQ
H4T 1P5

Report Date: 2008/10/17

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A8B7458
Received: 2008/10/09, 10:43

Sample Matrix: Soil
Samples Received: 5

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Particle size in solids (pipette&sieve)	5	N/A	2008/10/17	ATL SOP 00012 R2	based on MSAMS-1978
Particle size retained (Calculated)	5	N/A	2008/10/17		

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

HEATHER WEST, Bedford
Email: heather.west.reports@maxxamanalytics.com
Phone# (902) 420-0203

=====
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CAEAL have approved this reporting process and electronic report format.

For Service Group specific validation please refer to the Validation Signature Page

Total cover pages: 1

Page 1 of 12

This document is in electronic format, hard copy is available on request.

Maxxam Job #: A8B7458
 Report Date: 2008/10/17

Maxxam Analytique Inc
 Client Project #: A845175

RESULTS OF ANALYSES OF SOIL

Maxxam ID		AS5752	AS5764		
Sampling Date		2008/10/02	2008/10/02		
COC Number		N/A	N/A		
Registration #					
	Units	F85246-02RISED-3-02-10-2008	F85275-02RISED-4-02-10-20	RDL	QC Batch

< -4 Phi (16 mm)	%	100	100	0.1	1644409
< -3 Phi (8 mm)	%	100	100	0.1	1644409
< -2 Phi (4 mm)	%	100	100	0.1	1644409
< -1 Phi (2 mm)	%	80	85	0.1	1644409
< 0 Phi (1 mm)	%	74	76	0.1	1644409
< +1 Phi (0.5 mm)	%	65	65	0.1	1644409
< +2 Phi (0.25 mm)	%	46	52	0.1	1644409
< +3 Phi (0.12 mm)	%	23	42	0.1	1644409
< +4 Phi (0.062 mm)	%	9.2	34	0.1	1644409
< +5 Phi (0.031 mm)	%	6.6	30	0.1	1644409
< +6 Phi (0.016 mm)	%	4.4	24	0.1	1644409
< +7 Phi (0.0078 mm)	%	3.1	14	0.1	1644409
< +8 Phi (0.0039 mm)	%	2.8	12	0.1	1644409
< +9 Phi (0.0020 mm)	%	2.1	6.5	0.1	1644409
Gravel	%	20	15	0.1	1644409
Sand	%	71	51	0.1	1644409
Silt	%	6.4	22	0.1	1644409
Clay	%	2.8	12	0.1	1644409

N/A = Not Applicable
 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: A8B7458
 Report Date: 2008/10/17

Maxxam Analytique Inc
 Client Project #: A845175

RESULTS OF ANALYSES OF SOIL

Maxxam ID		AS5765	AS5766		
Sampling Date		2008/10/02	2008/10/02		
COC Number		N/A	N/A		
Registration #					
	Units	F85276-02RISED-5-02-10-20	F85277-02RISED-6-02-10-20	RDL	QC Batch

< -4 Phi (16 mm)	%	100	100	0.1	1644409
< -3 Phi (8 mm)	%	100	100	0.1	1644409
< -2 Phi (4 mm)	%	100	100	0.1	1644409
< -1 Phi (2 mm)	%	100	100	0.1	1644409
< 0 Phi (1 mm)	%	99	97	0.1	1644409
< +1 Phi (0.5 mm)	%	94	92	0.1	1644409
< +2 Phi (0.25 mm)	%	57	87	0.1	1644409
< +3 Phi (0.12 mm)	%	14	82	0.1	1644409
< +4 Phi (0.062 mm)	%	4.2	74	0.1	1644409
< +5 Phi (0.031 mm)	%	3.4	70	0.1	1644409
< +6 Phi (0.016 mm)	%	2.9	52	0.1	1644409
< +7 Phi (0.0078 mm)	%	2.4	37	0.1	1644409
< +8 Phi (0.0039 mm)	%	2.2	33	0.1	1644409
< +9 Phi (0.0020 mm)	%	1.7	23	0.1	1644409
Gravel	%	0.1	0.4	0.1	1644409
Sand	%	96	26	0.1	1644409
Silt	%	2.0	41	0.1	1644409
Clay	%	2.2	33	0.1	1644409

N/A = Not Applicable
 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: A8B7458
 Report Date: 2008/10/17

Maxxam Analytique Inc
 Client Project #: A845175

RESULTS OF ANALYSES OF SOIL

Maxxam ID		AS5767		
Sampling Date		2008/10/02		
COC Number		N/A		
Registration #				
	Units	F85278-02R1DUP#1	RDL	QC Batch

< -4 Phi (16 mm)	%	100	0.1	1644409
< -3 Phi (8 mm)	%	100	0.1	1644409
< -2 Phi (4 mm)	%	100	0.1	1644409
< -1 Phi (2 mm)	%	83	0.1	1644409
< 0 Phi (1 mm)	%	78	0.1	1644409
< +1 Phi (0.5 mm)	%	70	0.1	1644409
< +2 Phi (0.25 mm)	%	51	0.1	1644409
< +3 Phi (0.12 mm)	%	26	0.1	1644409
< +4 Phi (0.062 mm)	%	11	0.1	1644409
< +5 Phi (0.031 mm)	%	7.8	0.1	1644409
< +6 Phi (0.016 mm)	%	5.6	0.1	1644409
< +7 Phi (0.0078 mm)	%	4.0	0.1	1644409
< +8 Phi (0.0039 mm)	%	3.4	0.1	1644409
< +9 Phi (0.0020 mm)	%	2.7	0.1	1644409
Gravel	%	17	0.1	1644409
Sand	%	72	0.1	1644409
Silt	%	7.8	0.1	1644409
Clay	%	3.4	0.1	1644409

N/A = Not Applicable
 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: A8B7458
 Report Date: 2008/10/17

Maxxam Analytique Inc
 Client Project #: A845175

CALCULATED PARAMETERS (SOIL)

Maxxam ID		AS5752	AS5764		
Sampling Date		2008/10/02	2008/10/02		
COC Number		N/A	N/A		
Registration #					
	Units	F85246-02R\SED-3-02-10-2008	F85275-02R\SED-4-02-10-20	RDL	QC Batch

>16 mm	%	<0.1	<0.1	0.1	1639154
8-16 mm	%	<0.1	<0.1	0.1	1639154
4-8 mm	%	<0.1	<0.1	0.1	1639154
2-4 mm	%	20	15	0.1	1639154
1-2 mm	%	6.1	9.0	0.1	1639154
0.5-1 mm	%	8.6	11	0.1	1639154
0.25-0.5 mm	%	19	12	0.1	1639154
0.125-0.25 mm	%	23	11	0.1	1639154
0.0625-0.125 mm	%	14	7.7	0.1	1639154
0.031-0.062 mm	%	2.6	3.5	0.1	1639154
0.016-0.031 mm	%	2.2	6.6	0.1	1639154
0.0078-0.016 mm	%	1.3	10	0.1	1639154
0.0039-0.0078 mm	%	0.3	2.3	0.1	1639154
0.0020-0.0039 mm	%	0.7	5.1	0.1	1639154

N/A = Not Applicable
 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: A8B7458
 Report Date: 2008/10/17

Maxxam Analytique Inc
 Client Project #: A845175

CALCULATED PARAMETERS (SOIL)

Maxxam ID		AS5765	AS5766		
Sampling Date		2008/10/02	2008/10/02		
COC Number		N/A	N/A		
Registration #					
	Units	F85276-02RISED-5-02-10-20	F85277-02RISED-6-02-10-20	RDL	QC Batch

>16 mm	%	<0.1	<0.1	0.1	1639154
8-16 mm	%	<0.1	<0.1	0.1	1639154
4-8 mm	%	<0.1	<0.1	0.1	1639154
2-4 mm	%	0.1	0.4	0.1	1639154
1-2 mm	%	0.5	3.1	0.1	1639154
0.5-1 mm	%	5.1	4.8	0.1	1639154
0.25-0.5 mm	%	38	4.9	0.1	1639154
0.125-0.25 mm	%	42	4.9	0.1	1639154
0.0625-0.125 mm	%	10	8.3	0.1	1639154
0.031-0.062 mm	%	0.8	3.7	0.1	1639154
0.016-0.031 mm	%	0.5	18	0.1	1639154
0.0078-0.016 mm	%	0.5	15	0.1	1639154
0.0039-0.0078 mm	%	0.2	4.5	0.1	1639154
0.0020-0.0039 mm	%	0.4	9.9	0.1	1639154

N/A = Not Applicable
 RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch

Maxxam Job #: A8B7458
Report Date: 2008/10/17

Maxxam Analytique Inc
Client Project #: A845175

CALCULATED PARAMETERS (SOIL)

Maxxam ID		AS5767		
Sampling Date		2008/10/02		
COC Number		N/A		
Registration #				
	Units	F85278-02R\DUP#1	RDL	QC Batch

>16 mm	%	<0.1	0.1	1639154
8-16 mm	%	<0.1	0.1	1639154
4-8 mm	%	<0.1	0.1	1639154
2-4 mm	%	17	0.1	1639154
1-2 mm	%	4.9	0.1	1639154
0.5-1 mm	%	8.1	0.1	1639154
0.25-0.5 mm	%	19	0.1	1639154
0.125-0.25 mm	%	24	0.1	1639154
0.0625-0.125 mm	%	15	0.1	1639154
0.031-0.062 mm	%	3.4	0.1	1639154
0.016-0.031 mm	%	2.2	0.1	1639154
0.0078-0.016 mm	%	1.6	0.1	1639154
0.0039-0.0078 mm	%	0.5	0.1	1639154
0.0020-0.0039 mm	%	0.7	0.1	1639154

N/A = Not Applicable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: A8B7458
Report Date: 2008/10/17

Maxxam Analytique Inc
Client Project #: A845175

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytique Inc
 Attention: Leila Sabouri
 Client Project #: A845175
 P.O. #:
 Project name:

Quality Assurance Report
 Maxxam Job Number: DA8B7458


QA/QC Batch			Date Analyzed					
Num Init	QC Type	Parameter	yyyy/mm/dd	Value	Recovery	Units	QC Limits	
1644409 SBK	RPD	< -4 Phi (16 mm)	2008/10/17	0		%	25	
		< -3 Phi (8 mm)	2008/10/17	0		%	25	
		< -2 Phi (4 mm)	2008/10/17	0		%	25	
		< -1 Phi (2 mm)	2008/10/17	0.7		%	25	
		< 0 Phi (1 mm)	2008/10/17	0.1		%	25	
		< +1 Phi (0.5 mm)	2008/10/17	0.6		%	25	
		< +2 Phi (0.25 mm)	2008/10/17	0.1		%	25	
		< +3 Phi (0.12 mm)	2008/10/17	0.4		%	25	
		< +4 Phi (0.062 mm)	2008/10/17	0.08		%	25	
		< +5 Phi (0.031 mm)	2008/10/17	0.1		%	25	
		< +6 Phi (0.016 mm)	2008/10/17	3.9		%	25	
		< +7 Phi (0.0078 mm)	2008/10/17	5.3		%	25	
		< +8 Phi (0.0039 mm)	2008/10/17	2.4		%	25	
		< +9 Phi (0.0020 mm)	2008/10/17	2.6		%	25	
		Gravel	2008/10/17	5.3		%	25	
		Sand	2008/10/17	2.5		%	25	
		Silt	2008/10/17	2.8		%	25	
		Clay	2008/10/17	2.4		%	25	

RPD = Relative Percent Difference

Validation Signature Page

Maxxam Job #: A8B7458

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



ERIC DEARMAN, Scientific Specialist

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CAEAL have approved this reporting process and electronic report format.

Jerry okay'd for 17th. JDCw.

WIP 470,47

MAXXAM ANALYTIQUE
889, montée de Liesse
Saint-Laurent, Quebec, H4T 1P5
Phone: (514) 448-9001
Fax: (514) 448-9199

Maxxam Analytique

SUBCONTRACTING REQUEST FORM

Page # 1
GOLDER ASSOCIÉS LTÉE - SEPT-ÎLES
Maxxam PM Leila Sabouri

To: Maxxam Analytics - Bedford RUSH Job# A845175

Yes No International Sample/Biohazard (if yes, add copy of Movement Cert., heat treat is required prior to disposal)
 Yes No Special Protocol (if yes, Protocol _____)

Please Report in French

Received @ Subcontract Lab by (sign) Jess Dawson (print) Jess Dawson

Received @ Subcontract Lab (Date) Sept. 9/08 (Time) 10:43 am

Received Lab's Job # ASB 7458 Inspected by (print) Jm SIF Yes No

Upon receipt, record 3 temperatures for each package/cooler. If required by contract or legal sample, indicate if custody sealed.

Temp1 8.6 Temp2 9.8 Temp3 11.2 Custody sealed

Sample ID	MATRIX	Test(s) Required	Container	Date Sampled	Date Required
<u>470</u> 85246-02R \ SED-3-02-10-2008	SED	Particle size (pipettes & sieves)	<u>AS5752</u> 1(BAG)	2008/10/02	2008/10/15
<u>471</u> 85275-02R \ SED-4-02-10-2008	SED	Particle size (pipettes & sieves)	<u>64</u> 1(BAG)	2008/10/02	2008/10/15
<u>471</u> 85276-02R \ SED-5-02-10-2008	SED	Particle size (pipettes & sieves)	<u>65</u> 1(BAG)	2008/10/02	2008/10/15
<u>471</u> 85277-02R \ SED-6-02-10-2008	SED	Particle size (pipettes & sieves)	<u>66</u> 1(BAG)	2008/10/02	2008/10/15
<u>471</u> 85278-02R \ DUP#1	SED	Particle size (pipettes & sieves)	<u>67</u> 1(BAG)	2008/10/02	2008/10/15

NOTES:
1) Please call us if due date cannot be met. Please reference Sample ID on your report.
2) Include copy of this completed form, Client COC & signed final report to leila.sabouri@maxxamanalytics.com, and to soustraitanceque@maxxamanalytics.com

08/10/08 a' 16h10 he

SHIPPING INSTRUCTIONS

Ship Immediately (highlight Yellow) Ship Cold
 Requires 9am Ship Room Temp
 Requires Sat. Delivery Ship Frozen
 Regular Ship next available day COC Must be Attached

Sender (Print) _____ Initial _____

SHIPPING DEPARTMENT CHECKLIST

Correct Shipping location
 Correct Sample Ids (Paperwork vs Bottles)
 Yes No Special-Cooler, Ice, Tape-custody seal, Date&Sign

Date Shipped _____
 Shipper (Print) _____ Initial _____

Temp 21 + 2R

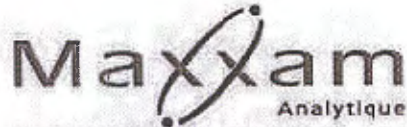
ANALYTIQUE

ntée de Liesse

-Laurent, Quebec, H4T 1P5

me: (514) 448-9001

ax: (514) 448-9199



SUBCONTRACTING REQUEST FORM

Page #: 2

GOLDER ASSOCIÉS LTÉE - SEPT-ÎLES

Maxxam PM Leila Sabouri

To: Maxxam Analytics - Bedford

RUSH

Job# A845175

Yes No International Sample/BioHazard (if yes, add copy of Movement Cert., heat treat is required prior to disposal)

Yes No Special Protocol (if yes, Protocol _____)

Please Report in French

Received @ Subcontract Lab by (sign) _____ (print) _____

Received @ Subcontract Lab (Date) _____ (Time) _____

Received Lab's Job # _____ Inspected by (print) _____ SIF Yes No

Upon receipt, record 3 temperatures for each package/cooler. If required by contract or legal sample, indicate if custody sealed.

Temp1 _____ Temp2 _____ Temp3 _____ Custody sealed _____

Sample ID MATRIX Test(s) Required Container Date Sampled Date Required

Test Code

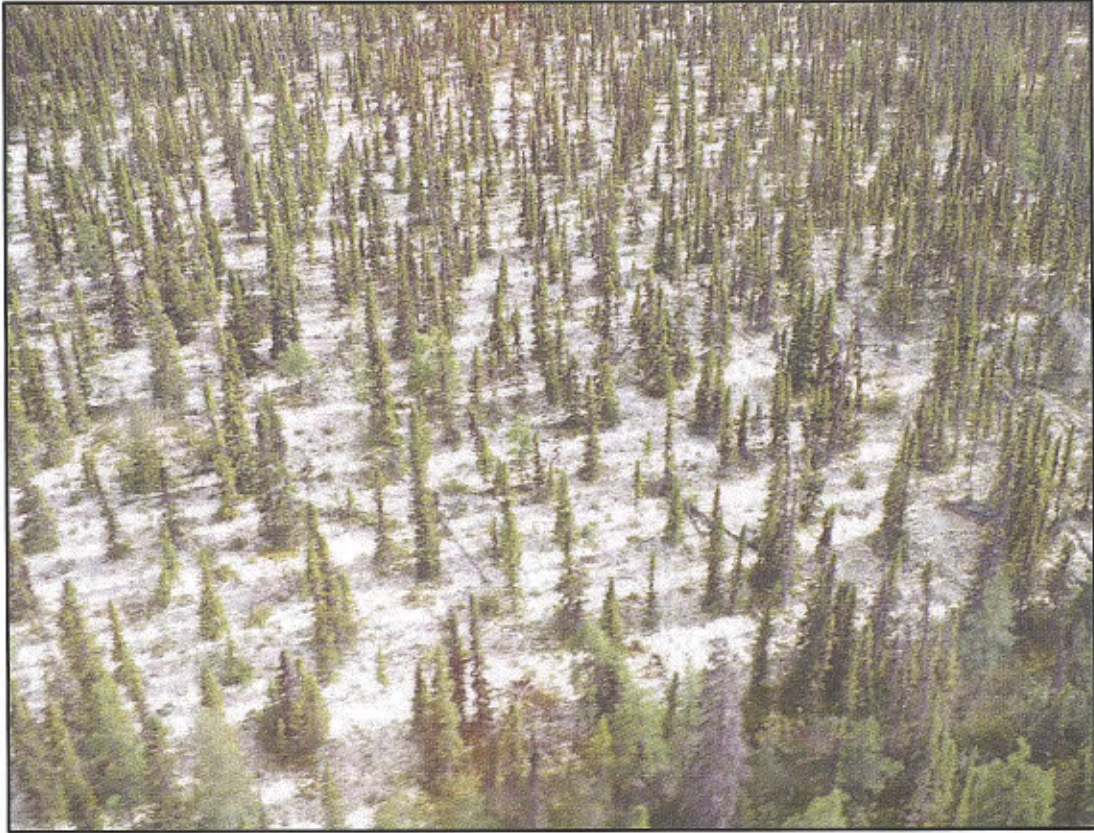
Parameter

Particle size (pipettes & sleeves)

- < +1 Phi (0.5 mm)
- < +2 Phi (0.25 mm)
- < +3 Phi (0.12 mm)
- < +4 Phi (0.062 mm)
- < +5 Phi (0.031 mm)
- < +6 Phi (0.016 mm)
- < +7 Phi (0.0078 mm)
- < +8 Phi (0.0039 mm)
- < +9 Phi (0.0020 mm)
- < 0 Phi (1 mm)
- < -1 Phi (2 mm)
- < -2 Phi (4 mm)
- < -3 Phi (8 mm)
- < -4 Phi (16 mm)

Page 12 of 12

APPENDIX B
VEGETATION COMMUNITY PICTURES



Picture 1- Open boreal forest – Black Spruce stands on lichen ground cover.



Picture 2- Burn in the northern area.



Picture 3- Patterned Fen



Picture 4 – Riparian Fens



Picture 5- Emergent Marsh



Picture 6- Herbaceous Pond

APPENDIX C

SEASONAL MOVEMENT PATTERNS OF MIGRATORY CARIBOU

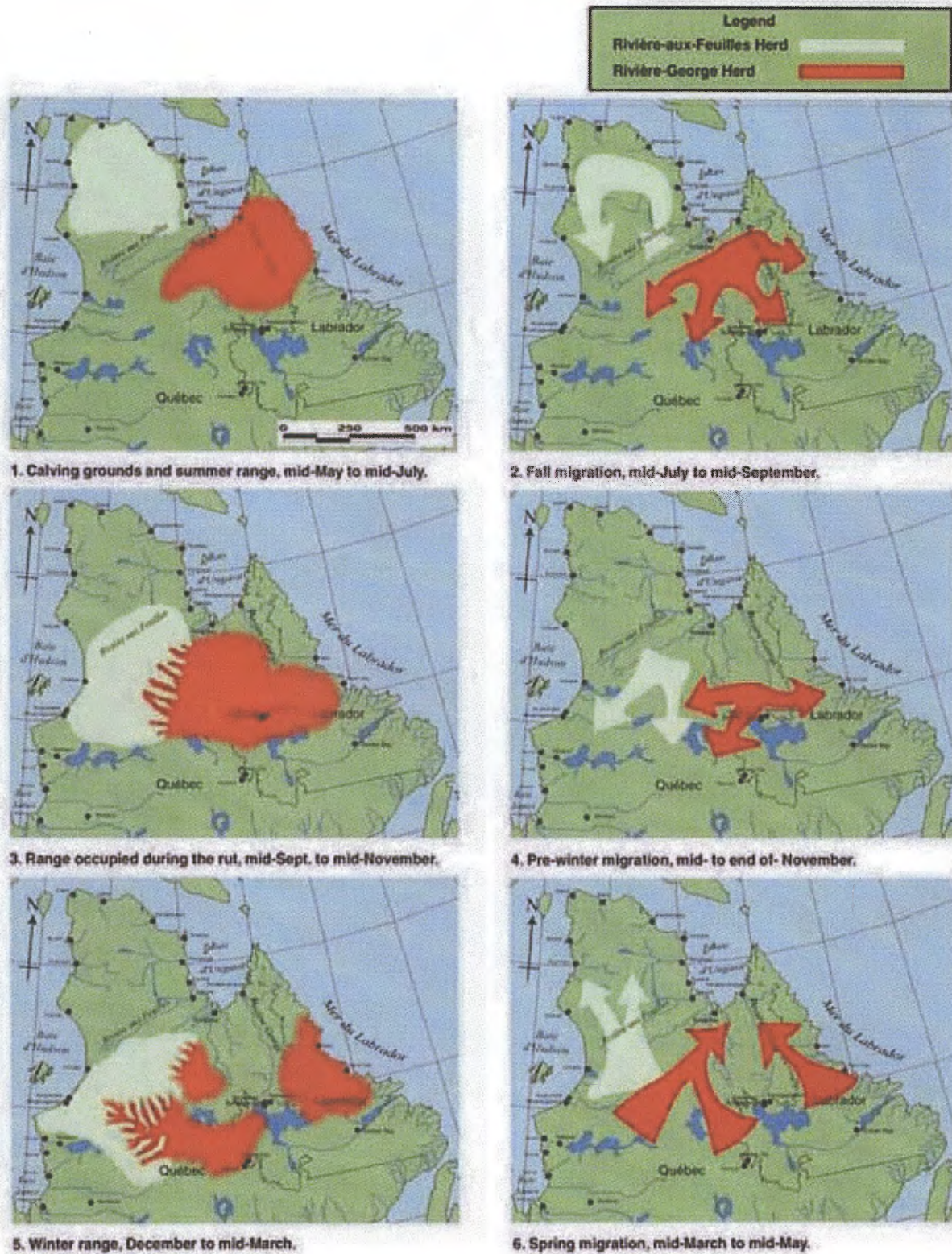


Figure 1. Seasonal movement patterns of migratory tundra caribou of Québec-Labrador, 1999-2001

(Couturier et al., 2004).

APPENDIX D

MET TOWER FOUNDATIONS SPECIFICATIONS

1.1 Localisation de la station météo

L'emplacement retenu pour l'installation de la station météo est présenté à la carte de l'annexe A. Elle se situe aux coordonnées UTM suivantes : 548 314 de longitude est et de 6 196 419 de latitude nord. Cette localisation a été déterminée en concertation avec le personnel d'Adriana, suite à la proposition de trois sites potentiels précédemment identifiés, en fonction des critères suivants :

- Possibilité de maintenir la station au même emplacement pour la durée du projet sans empiéter sur les activités d'exploration ou d'extraction
- Altitude similaire à celle de la mine proposée;
- Proximité par rapport au campement actuel;
- Nature du sol (profondeur d'excavation éventuelle des dépôts glaciaires en place).

Ainsi, le site proposé est localisé à environ 7 km du campement minier existant, en dehors de la zone envisagée à ce jour pour les activités minières au site du Lac Otelnuk, sur une surface relativement plane et à une altitude semblable à celle attendue pour le site industriel minier éventuel. Étant donné que la station météo procurée ne nécessitera pas un entretien continu (la fréquence des visites devrait être de l'ordre d'une fois par mois en saison estivale et à tous les trois mois le reste de l'année), il n'a pas été jugé approprié de retenir le site du camp actuel pour son emplacement. Ce dernier étant par ailleurs situé dans une vallée, les conditions météorologiques qui y prévalent sont vraisemblablement différentes de celles rencontrées sur la crête située à l'est du camp, altitude à laquelle les installations industrielles pourraient être construites si le projet allait de l'avant.

1.2 Installation de la tour météo

L'installation de la tour météo nécessite une surface d'environ 10 m (34 pieds) de diamètre tel qu'indiqué sur les figures 1.2.1 et 1.2.3. La station devrait être située à une distance horizontale des arbres (et bâtiments, si applicables) équivalente à 10 fois la hauteur de ces objets (figure 1.2.2). La mise en place de la tour météo implique

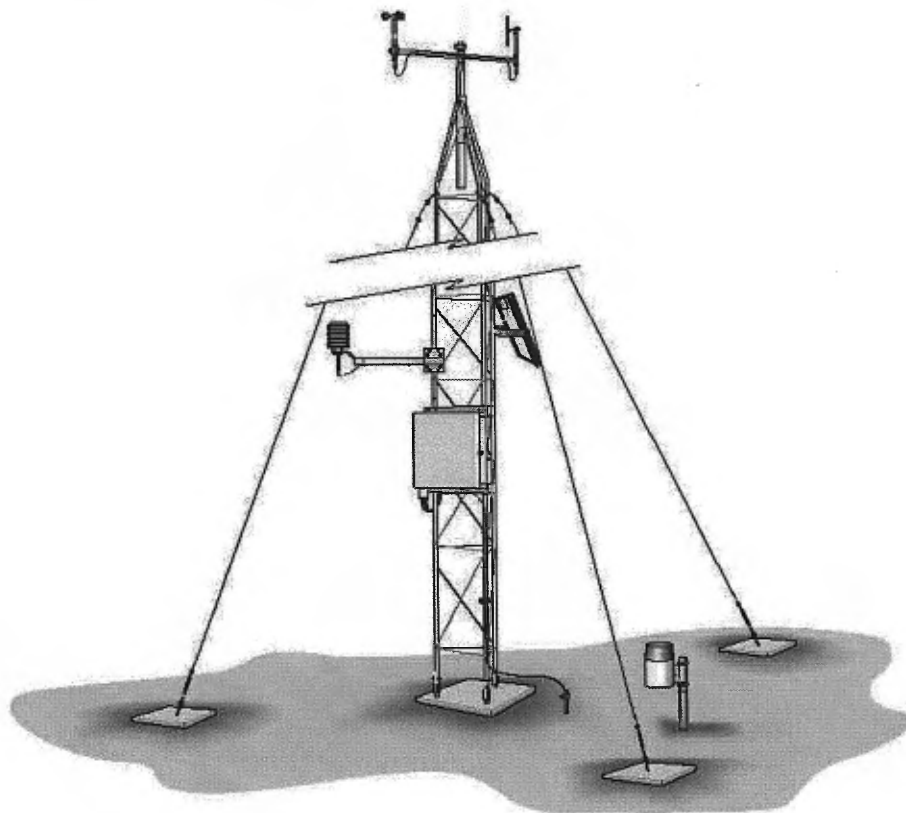
d'installer cinq (5) bases de béton sur le site sélectionné, selon les plans des sous-sections suivantes.

Les points d'ancrage nécessaires sont les suivants :

- Une (1) base en béton avec trois (3) ancrages pour la tour;
- Trois (3) ancrages pour les haubans;
- Une (1) base en béton pour la jauge à précipitation.

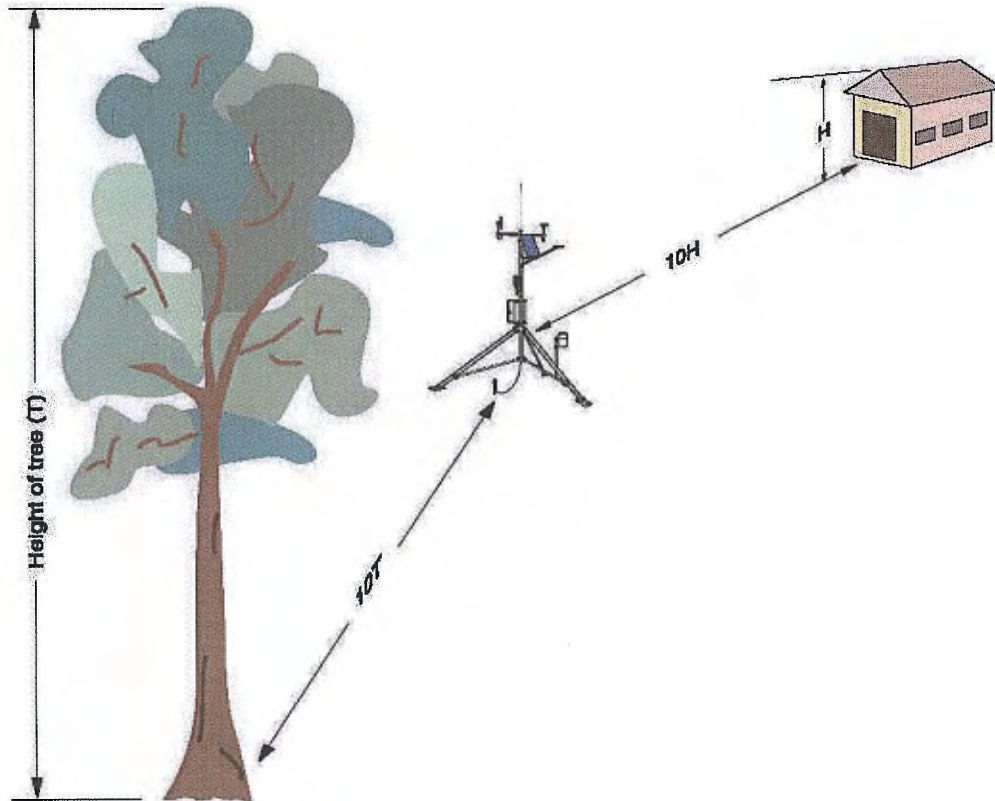
À titre indicatif pour illustrer la position des bases de béton et ancrages, la Figure 1.2.1 illustre l'aspect final de la tour météo une fois installée.

Figure 1.2.1 Vue d'ensemble de la tour météo



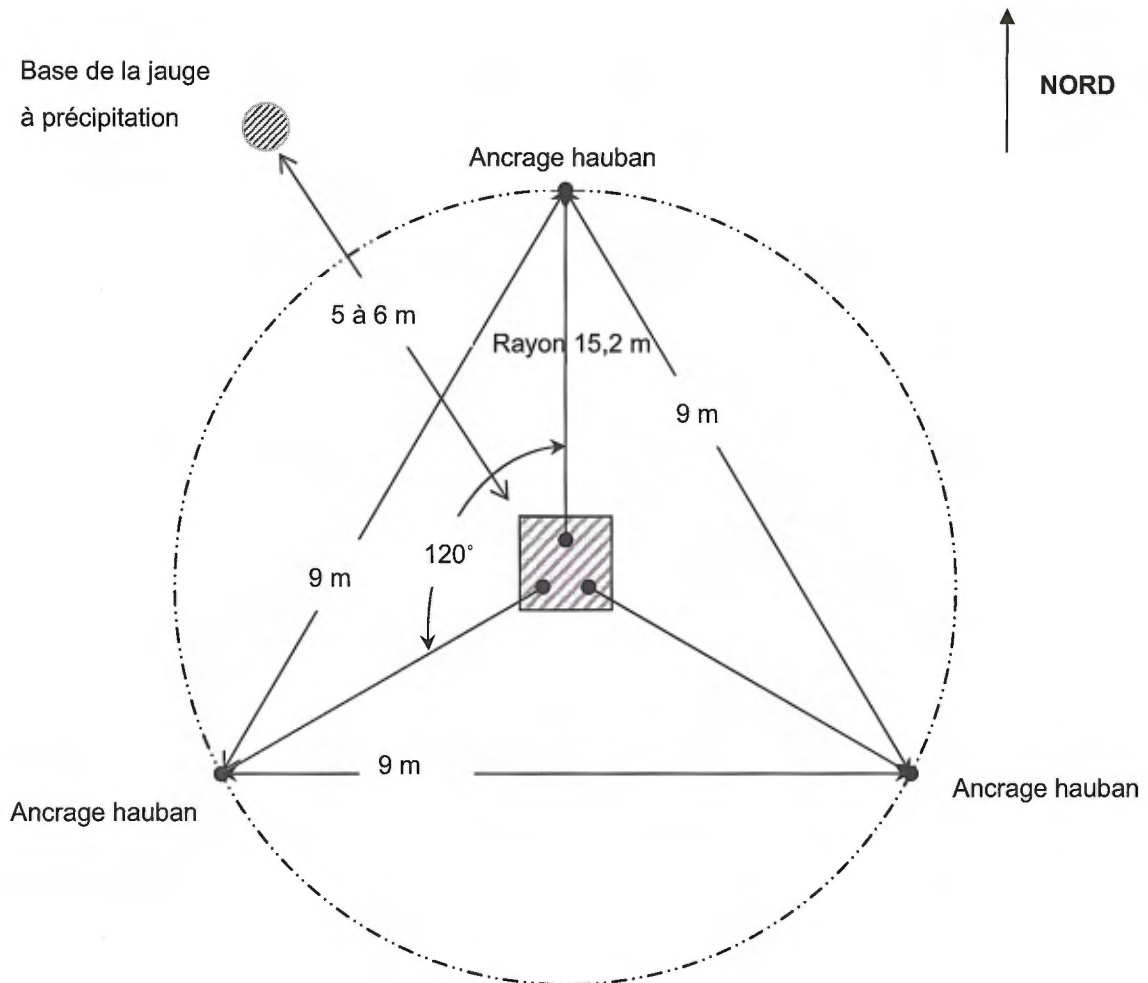
Source : Campbell Scientific Inc. 2008

Figure 1.2.2 Vue schématique des distances horizontales entre la station et les objets environnants



Source : Campbell Scientific Inc. 2008

Figure 1.2.3 Vue de dessus de la base et des points d'ancrage de la tour météo



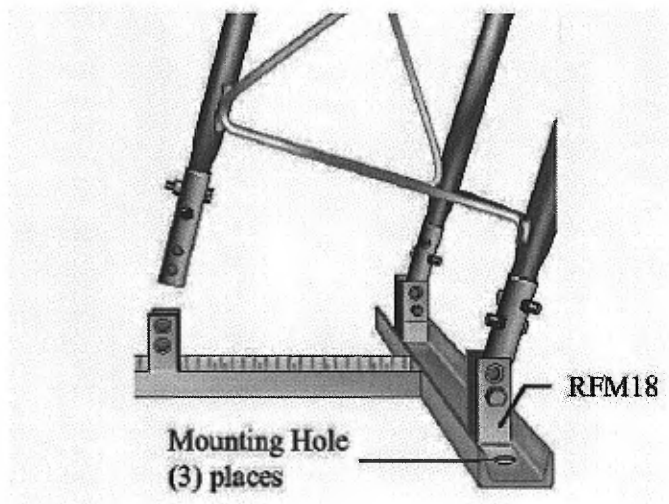
Source : Campbell Scientific Inc. 2008

La jauge à précipitation devra être installée à une distance comprise entre 5 et 6 m de la base de la tour météo. Elle devra être installée en direction nord-ouest par rapport au centre de la tour.

1.3 Fondation de la tour

Dans un contexte où la nature exacte du roc place est méconnue à ce jour, la fondation de la tour pourra être conçue sur la base d'une pression nette maximale de 350 kPa, de façon à limiter les tassements au niveau de potentiels joints ouverts. La semelle de fondation carrée, établie sur le rocher, devra être d'au moins un mètre (1,0 m) de côté et 150 mm d'épaisseur. La résistance en compression minimale pour le béton devrait être de 30 MPa. Les pattes de la tour pourront ainsi reposer sur une base de type « RFM18 Flat Roof Mounting Base », tel que montré à la figure 1.3.4.

Figure 1.3.4 Vue montrant la base de type « RFM18 Flat Roof Mounting Base »



Source : Campbell Scientific Inc. 2008

Avant la construction de la semelle, les parties les plus lâches (fracturées) ou altérées du rocher devront être excavées. La stabilité de la fondation contre des mouvements latéraux et d'arrachement devra être obtenue par des ancrages au rocher, tel que décrit à la section 1.5, à raison de trois ancrages mécaniques répartis selon les emplacements des trous d'Ancrage (Mounting Hole) prévus sur la base « RFM18 Flat Roof Mounting Base », voir figure 1.3.4. La base RFM18 pourra donc être vissée sur la dalle de béton par les tiges d'ancrage y sortant.

1.4 Fondation pour la jauge à précipitation

Selon les informations qui nous ont été transmises, nous comprenons que la jauge de précipitation est très sensible aux vibrations et soulèvement potentiel dû au gel. Ainsi, la jauge pourra reposer sur une base de béton établie et ancrée sur le rocher ayant au moins 500 mm de côté et 150 mm d'épaisseur. La base de béton pourra être vissée au roc par la tige d'un ancrage mécanique passant par le centre de la base. L'installation de l'ancrage mécanique devra être réalisée tel que décrit à la section 1.5. La résistance en compression minimale pour le béton devrait être de 30 MPa. Avant la construction de la semelle, les parties les plus lâches (fracturées) ou altérées du rocher devront être excavées.

1.5 Ancrages au roc des fondations de la tour météo

Il est important de mentionner que les spécifications de la station météo qui nous ont été transmises du fabricant ne donnaient pas les forces de réaction auxquelles seront soumis les ancrages gravitaires de la station météo « UT30 Weather Station » fabriquée par Campbell Scientific inc. Nous avons donc estimé une force d'arrachement équivalente à environ 1,5 fois un bloc de béton conventionnel ayant une masse volumique de 2 500 kg/m³ et dont les côtés sont de 600 mm. Le manque de données sur le roc au lieu même de la station météo nous a incités à utiliser des paramètres conservateurs pour la conception de ces ancrages. Ainsi, pour fin de conception des ancrages, les paramètres suivants ont été utilisés :

- masse volumique du roc de 18 kN/m³,
- angle du cône d'arrachement développé dans le massif rocheux de 30° par rapport à la verticale et cela à partir de la base de l'ancrage,
- profondeur de pénétration du gel de 3,0 m,
- profondeur du niveau d'eau souterraine inférieur au niveau d'installation des ancrages,
- mauvaise qualité du massif rocheux,
- résistance du roc en compression uniaxiale de 20 MPa, et
- facteur de sécurité de 3, puisqu'il s'agit d'un calcul théorique.

Les calculs ont été réalisés selon la méthode suggérée au chapitre 9 « Tension Foundation » du manuel « *Foundation on rock, second edition*¹ ».

Les ancrages des haubans pourront être construits au moyen d'ancrages mécaniques de type Williams ou équivalent, scellés au moyen d'un coulis de ciment et ayant un diamètre nominal de 25 mm. La partie hors sol de la barre devra être munie d'un œillet vissable dans lequel un hauban pourra facilement s'y relier. Le diamètre des trous de forage au sein du roc devra être tout juste assez grand pour laisser entrer le cône de l'ancrage mécanique sans avoir à marteller la tige pour l'installer à la profondeur désirée. Les cônes mécaniques au bout des tiges devront être installés à l'intérieur de forage vertical jusqu'à une profondeur d'au moins 3,5 m sous la surface du rocher. La résistance en compression minimale pour le coulis de ciment devrait être de 30 MPa et le trou de forage devrait en être rempli jusqu'à la surface.

Il sera nécessaire d'attendre trois jours avant la mise en tension des haubans pour laisser le temps au coulis de prendre adéquatement.

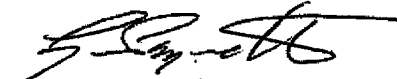
Il est important de noter que si les conditions du roc sont différentes que celles énoncées ci-dessus, Golder devra en être avisée immédiatement afin de valider les hypothèses de calcul des paramètres de fondation.

¹ Duncan, C.W., 1999. *Foundations on rock, second edition*, 401 p.

GOLDER ASSOCIÉS LTÉE



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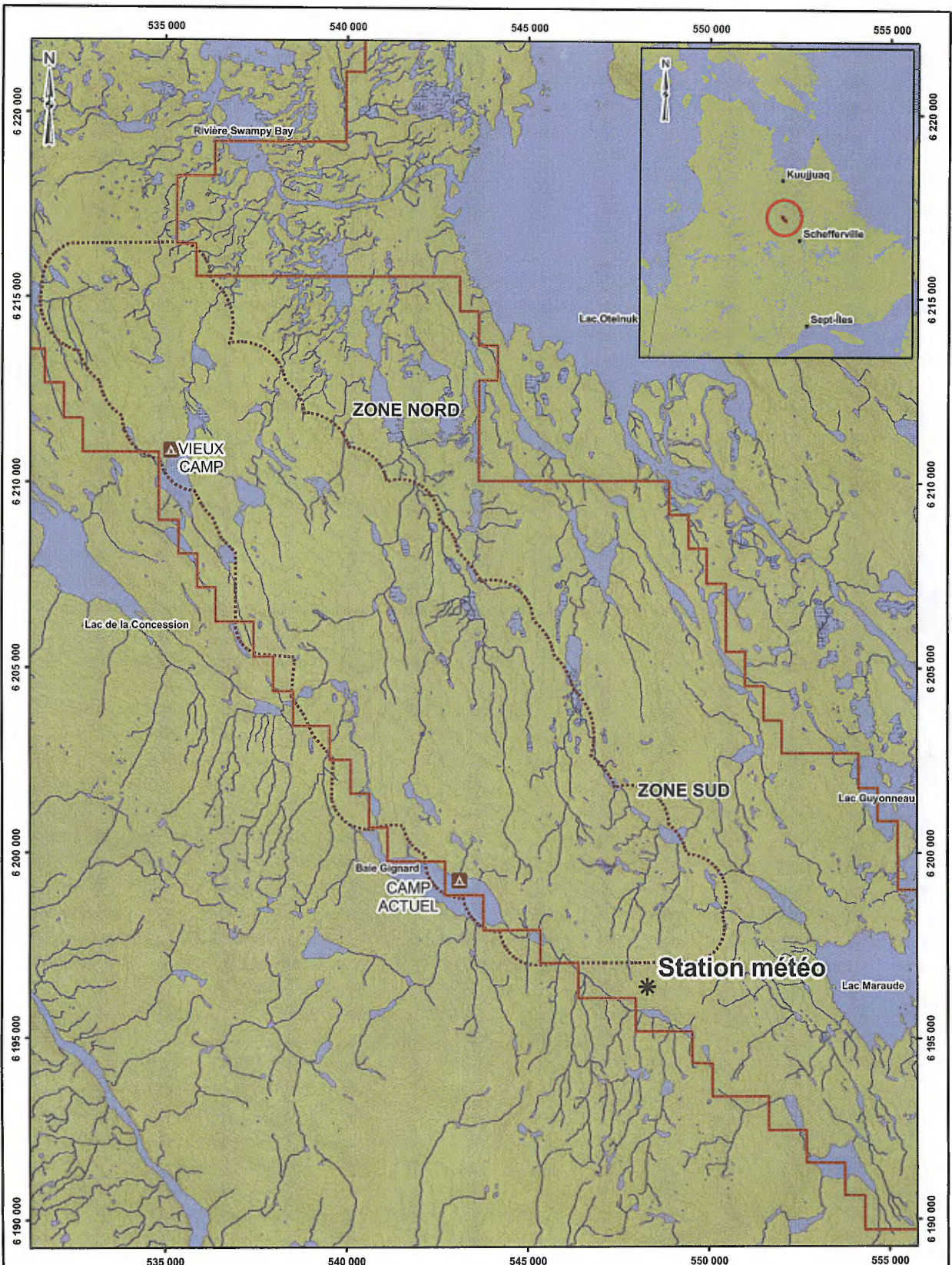
YB/LP/ND/SB/mf

cc. Mr Frank Condon, Project Consultant & Director

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BASE\SECRÉTARIAT\MTPF08-1222-3008-7100.DOC

ANNEXE A

EMPLACEMENT PROPOSÉ POUR LA STATION MÉTÉO

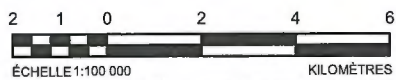


LÉGENDE

- * Station météo (emplacement proposé)
- A Camp
- Zone d'intérêt approximative
- Limite de la concession d'Adriana Resources Inc.
- Courbe de niveau
- Cours d'eau
- Rivière, lac ou réservoir
- Milieu humide

RÉFÉRENCE

Data: Base nationale de données topographiques (BNDT 1:50 000; 23N09, 23N10, 23N16, 23N15, 24C01, 24C02),
 Site web d'Adriana Resources Inc. <http://www.adrianaresources.com/l/maps/Lac-Otehluk-Claim-Map-0608.gif> (Juin 2008)
 Datum: NAD 83 Projection: Transverse Mercator UTM Zone 19N



PROJET STATION MÉTÉO PROPOSÉE - ADRIANA RESOURCES LAC OTEHLUK			
TITRE Emplacement proposé de la station météo			
		Echelle respective REV. 2	FIGURE 1
Proj: 08-1222-3008-7100 SIG CG 2009-03-18 Vérificateur SB 2009-03-18 Révision ND 2008-03-19			

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