



**GÉRARD LAMBERT**  
**GÉOSCIENCES**

*Consultation et génie-conseil en géophysique.*

**Dentonia Resources Ltd.**



**Atkinson Project**

**Lipton Claims**

**Cochrane District, Ontario**

N.T.S. 32E/13

**Report on ground Magnetometer and  
MaxMin II H.L.E.M. surveys**

St-André-Avellin, Québec

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Gérard Lambert, P.Eng.

Consulting Geophysicist

*1182 Ste-Madeleine, St-André-Avellin (Québec) Canada J0V 1W0  
Téléphone / Fax : (819) 983-4828 E-mail : [geophysics@tlb.sympatico.ca](mailto:geophysics@tlb.sympatico.ca)*

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**Appended:**

<u>Atkinson Project, Lipton claims, Mag-MaxMin II surveys:</u>	<b>Scale</b>
Magnetic survey contours map	1:5,000
Magnetic survey readings and profiles	1:5,000
Horizontal Loop E.M. profiles: 444Hz	1:5,000
Horizontal Loop E.M. profiles: 1777Hz	1:5,000

## **Introduction**

In March 2007, ground geophysical investigations consisting namely in Total Field magnetic and Horizontal Loop Electromagnetic (MaxMin II, H.L.E.M.) surveys were carried out over the **Atkinson Project, Lipton Grid** in northeastern Ontario, by Services Exploration Reg'd, for **Dentonia Resources Ltd.**

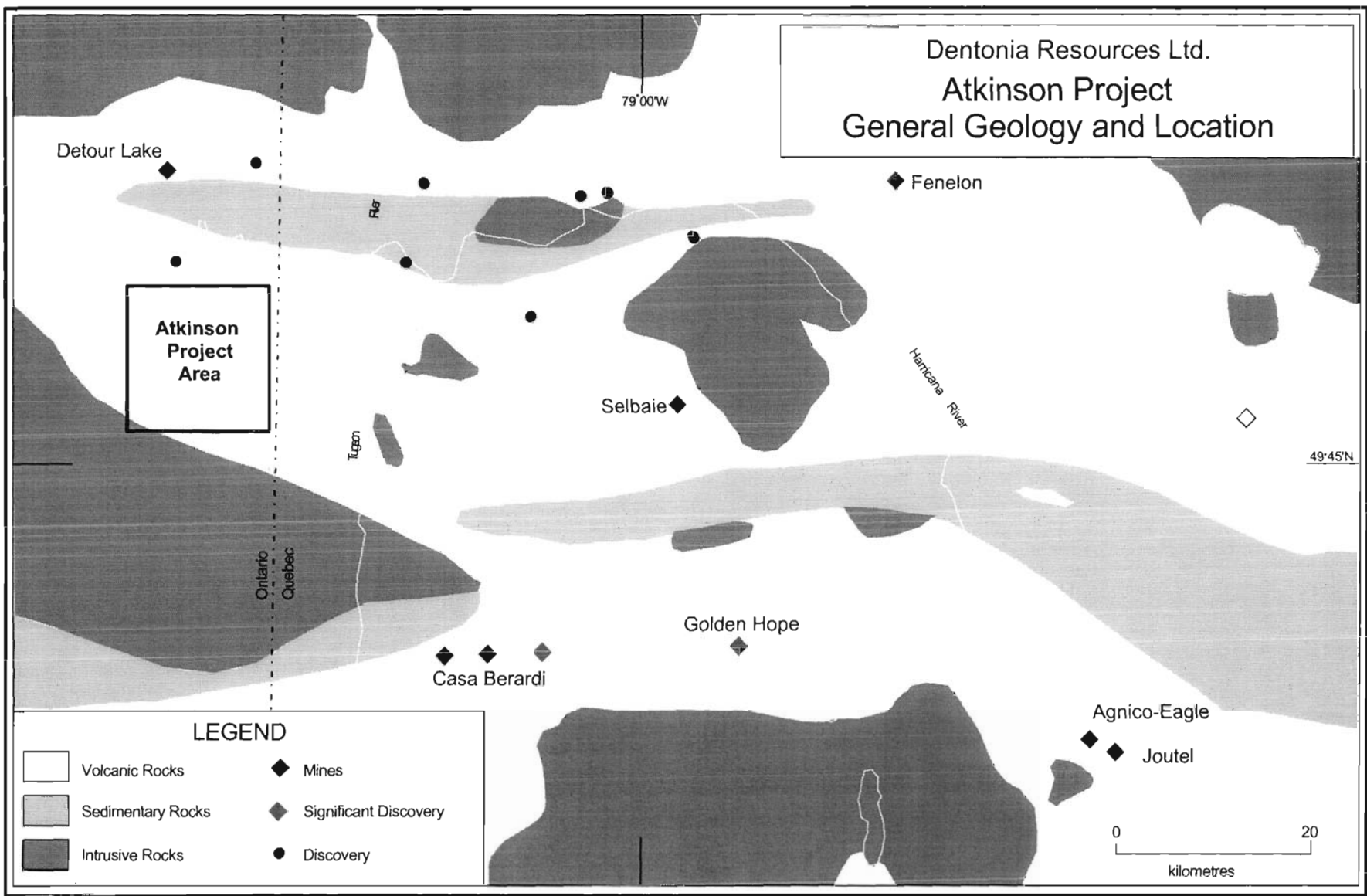
The purpose of these surveys was to map the underlying lithological units and to locate metallic conductors such as massive, semi-massive or stringer sulfides in the bedrock, in the search for base/precious metals mineralization particularly zinc, copper or gold/silver, within the property and thus assist in the mapping of altered and unaltered mafic volcanic units or structures hosting a number of significant gold occurrences in the immediate area of the property.

This report describes the geophysical work performed and discusses the results and the interpretation of the data. Recommendations for any future work are presented in the conclusion.

## **Property description, location and access**

The Atkinson Project (Lipton claims) is located in northeastern Ontario (Cochrane District), at about 200 kilometers (as the crow flies) to the north of Kirkland Lake, around Lat 49° 54' N, Long 79° 40' W. The survey area is readily accessible by logging and forestry roads leading south from the Detour Lake mine area, traveling a distance of about 25 km from the mine site. Please refer to Figures 1., 2.(1:250,000 in NTS 32E) and 3. (1:50,000 in NTS 32E/13) on the next pages, showing location maps of the project and the survey area.

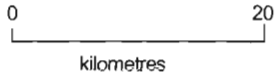
Dentonia Resources Ltd.  
**Atkinson Project**  
 General Geology and Location

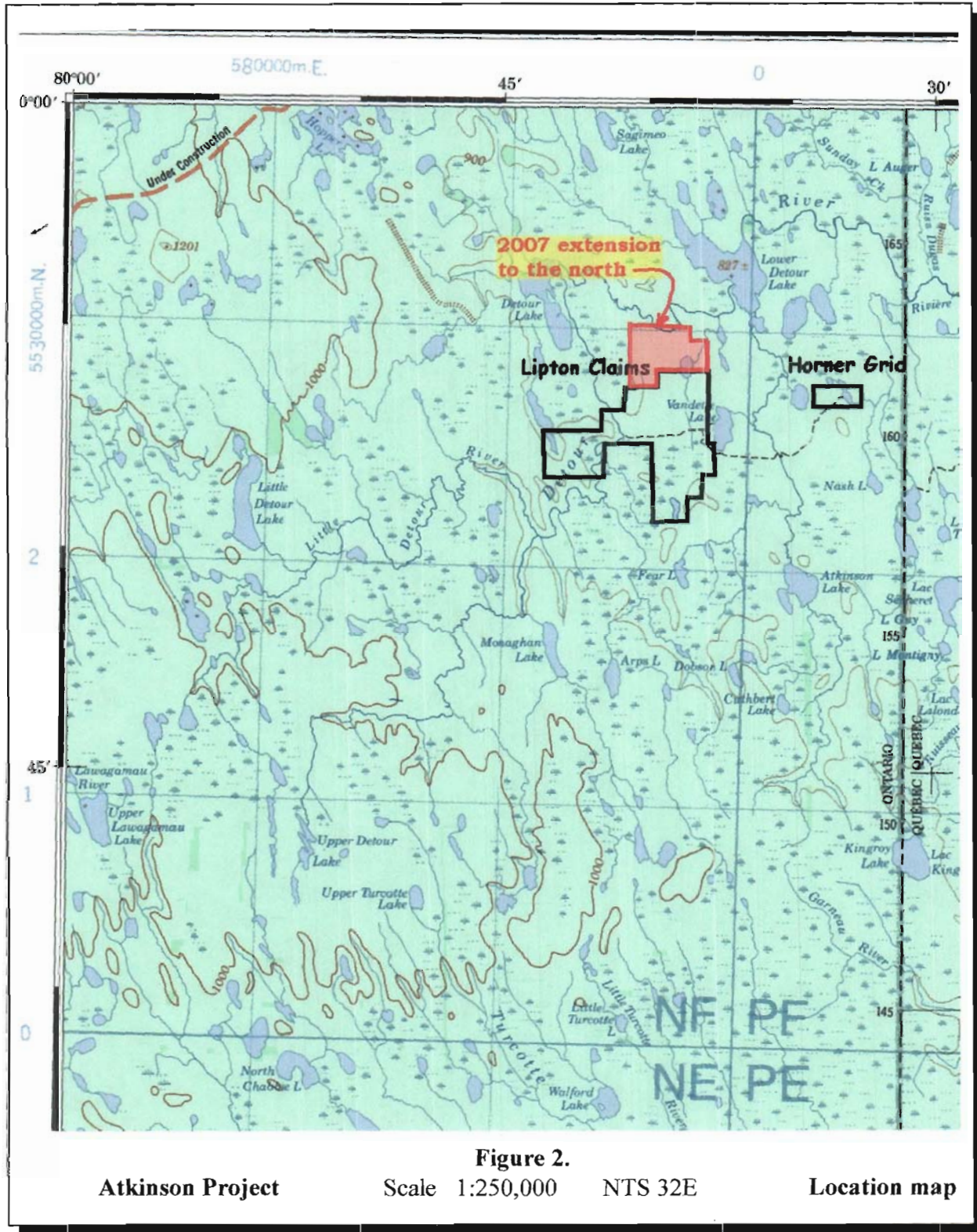


**Atkinson  
 Project  
 Area**

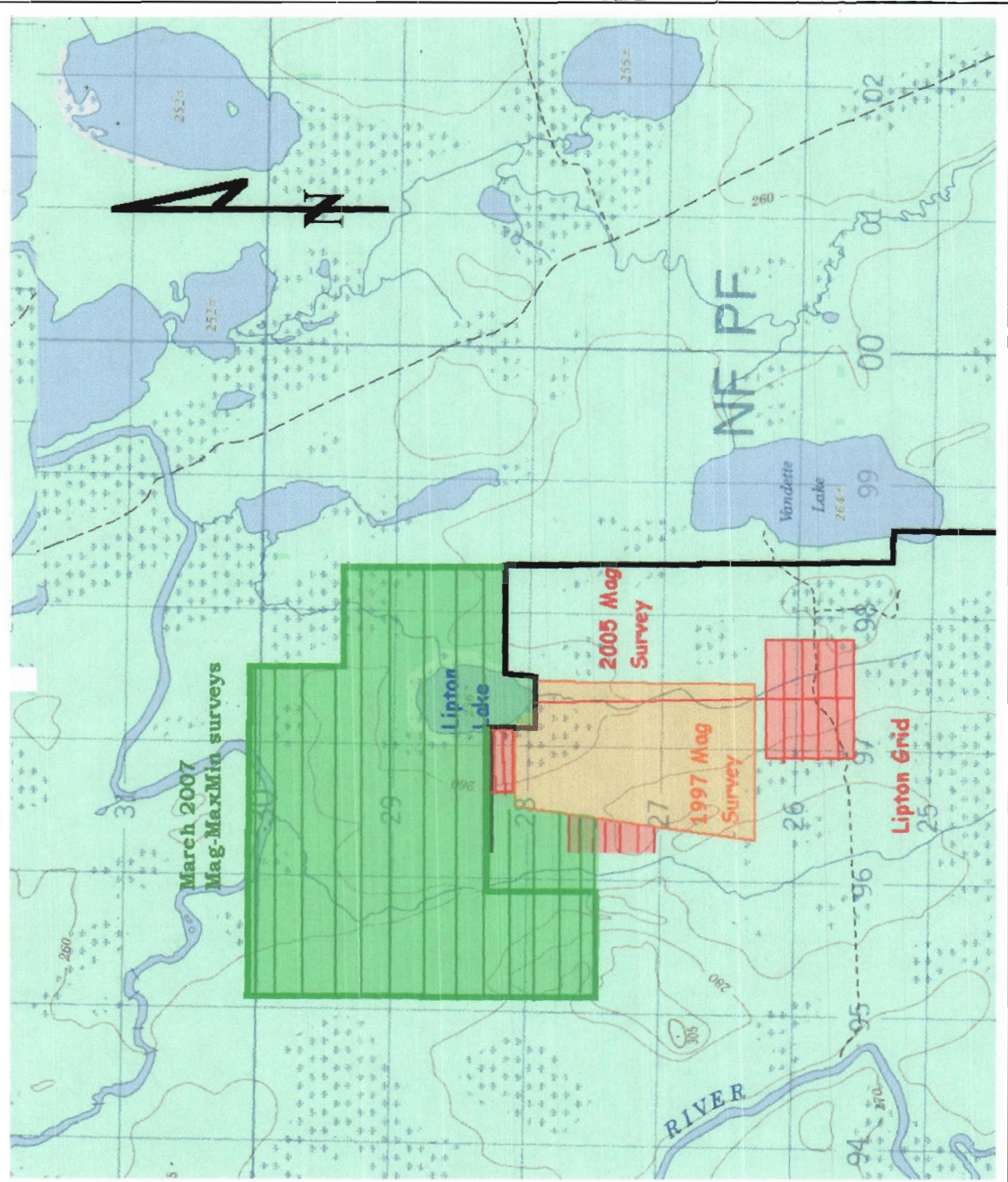
**LEGEND**

- |   |   |
|---|---|
|  Volcanic Rocks    |  Mines                 |
|  Sedimentary Rocks |  Significant Discovery |
|  Intrusive Rocks   |  Discovery             |









**Figure 3.**  
Atkinson Project (Lipton claims)      Scale 1:50,000      NTS 32E/13      Location map

The new 2007 Lipton Claim group of the Atkinson Project consists of four mining claims totaling 35 units: claim # 4202775 (12 units), claim # 4202776 (16 units), claim # 4202777 (6 units) and claim # 4202778 (1 unit). A claim map for the property is shown on the next page. Also, the geophysical maps appended to this report show the property claim lines and license number for the recently-added extension to the north of the 2005 grid (see report by Gerard Lambert concerning Mag surveys on Lipton claims for Dentonia, dated June 25, 2005).

### **Description of the Geophysical surveys**

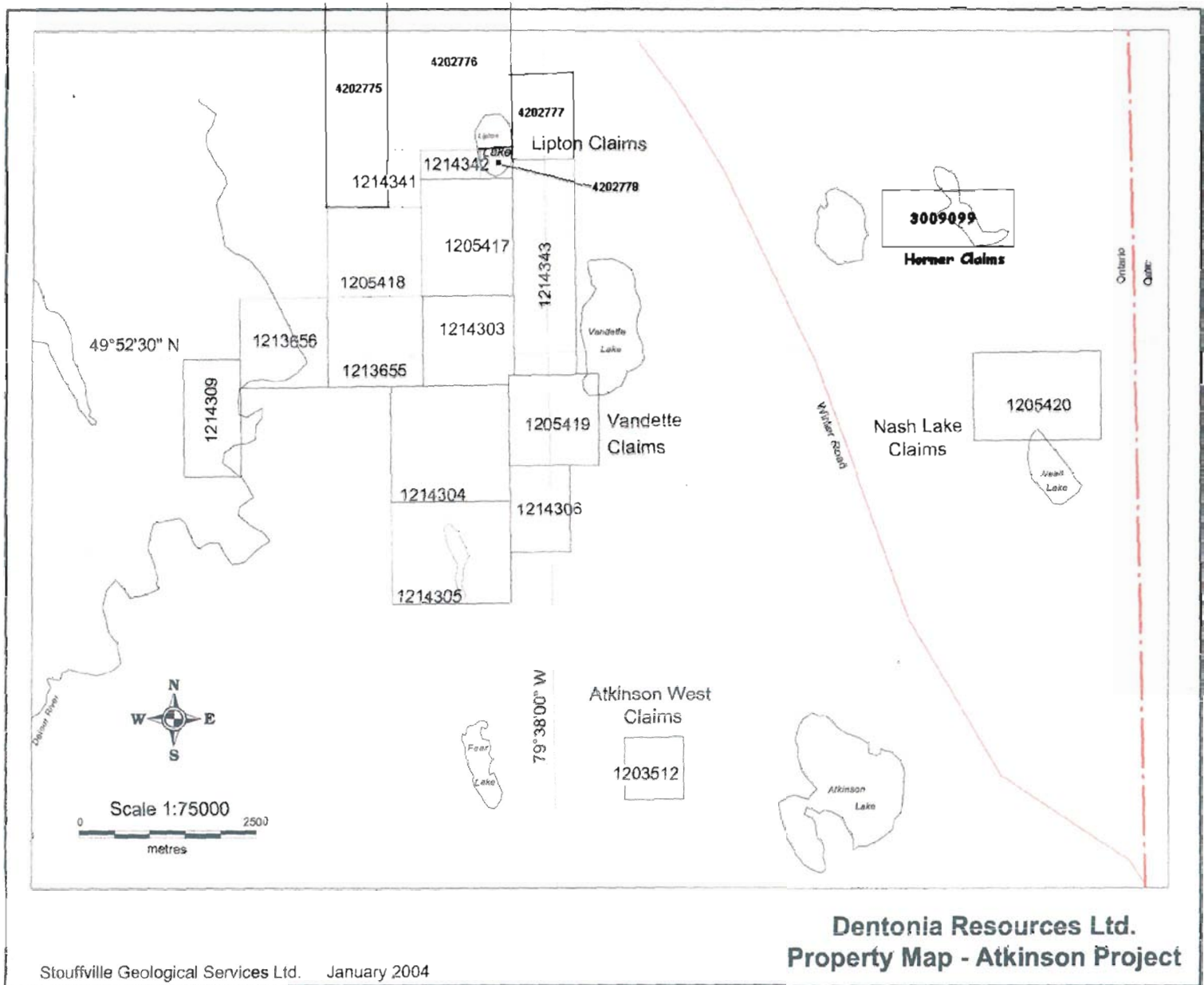
#### **• *Linecutting***

The magnetic and H.L.E.M. surveys were carried out on a grid consisting of cut lines oriented east-west, spaced every 100 meters and chained-picketed every 25 meters. The 2007 grid lines were the logical continuation toward the north of the previously-established grid (1997 and 2005) and spread from L-1000N to L-3300N and from station 2300W to station 1000E. Tie lines 2300W, 800W, 200E and 1000E were also cut and chained. A total of approximately 73 line-km of lines were cut and chained.

#### **• *Magnetics***

The magnetic survey was conducted along the base line, tie lines and survey lines, using GEM-systems GSM-19 proton-precession magnetometers, capable of reading the earth's magnetic field with a precision of 0.01 gamma.

Readings of the earth's magnetic field intensity were taken every 12.5 meters along all the survey lines. The total magnetic field measurements were corrected for diurnal drift by using the data from an automatic base station, monitoring and recording the earth's magnetic field variations every 10 seconds. Within the survey area, the earth's magnetic inclination is about 78° and its declination is about 13°W.



Stouffville Geological Services Ltd. January 2004

**Dentonia Resources Ltd.  
Property Map - Atkinson Project**

**Dentonia Resources Ltd.**

**Atkinson Project (Lipton Claims). Mag-MaxMin surveys**



The results of the magnetic surveys are presented on the maps appended to this report, at the scale 1:5,000. Posted readings, profiles and colour contours of the total magnetic field data are presented on these maps. A total of approximately **73 line-km** of magnetic data was gathered over this grid, during the course of this survey which was carried out between March 16 and March 26, 2007 by crews of Services Exploration from Rouyn-Noranda, Québec.

• ***Horizontal loop E.M.***

The Horizontal loop E.M. survey was conducted along all the survey lines, using an Apex Parametrics MaxMin-II E.M. system, operated in the maximum coupled (horizontal coplanar loops) mode at frequencies 444Hz and 1777Hz. The nominal separation between the transmitter and the receiver was 150 meters. This coil separation should allow the detection of bedrock conductors to a depth of approximately 60 to 80 meters.

Readings of the In-phase and Quadrature components of the secondary field were taken at 25 meter intervals along the survey lines.

A total of approximately **60 line-km** of H.L.E.M. surveys were carried out on the new portion of the property between March 16 and March 26, 2007 by crews of Services Exploration from Rouyn-Noranda, Québec.

The results of the MaxMin H.L.E.M. survey are presented in the form of profiles of the In-phase and Quadrature components, on plan maps (one for each frequency) at the scale 1:5,000, which can be found appended to this report.

**Results and interpretation**

The combination of the magnetic and H.L.E.M. techniques is probably the most cost-effective approach for base-metals and gold prospecting when the target is presumed to be electrically conductive, that is, contains massive to semi-massive metallic sulphide material electrically connected over distances of tens of meters or more. Significant zones of

pyrite/pyrrhotite (and graphitic material) in the stratigraphy can be effectively mapped with this technique, commonly causing "good" or "strong" conductors. Sphalerite mineralization, if not accompanied by accessory pyrite or pyrrhotite, may not be detected by MaxMin because this sulphide variety is very seldom conductive. This mineral commonly occurs, however, with pyrite-enriched sulphide accumulations.

Other materials in the nature which might be electrically conductive include water-saturated bedrock fractures and porous shear zones, as well as water-soaked overburden material. This family of conductors is usually called "electrolytic" and typically will be interpreted in the "poor" or "weak" conductor category.

"Good" conductors are conductors which will be detected at low frequencies (below 1,000Hz) on an E.M. survey, causing anomalies on both the In-Phase and Quadrature (Out-of-phase) components. "Poor" conductors, on the other hand, will come out only at higher frequencies (>3,000Hz) and then possibly on the quadrature component only. So by using a multi-frequency E.M. prospecting instrument, one can differentiate between various types of conductors ("good" and "poor") and therefore determine if a given conductor stands a chance of containing semi-massive or massive sulphides of high conductance.

• *Magnetism*

For the sake of clarity and completeness, the new 2007 magnetic results have been plotted on the colour contour map together with the 2005 magnetic relief. A 83-gamma leveling adjustment was made to the 2005 data to make it join with the 2007 data.

The magnetic relief is characterized by a background level of about  $57,175 \pm 50$  gammas. This background level and everything below it probably reflects lithologies of intermediate to felsic composition, or of sedimentary origin.

As can be observed on the magnetic colour contour map and magnetic profiles map, the main magnetic activity is concentrated mostly in the central portion of the new 2007 survey area,

between L-1700N and L-2200N at about 400W. This magnetic feature appears to be the extension to the north of the existing magnetic body mapped earlier in 2005. Further to the north and to the northeast of Lipton Lake, this magnetic body becomes more complex and possibly broken up into several smaller chunks, the possible result of structural deformations or, if the body is a gabbroic intrusion, the result of several smaller mafic intrusions. This mafic intrusive appears to be rather deep-seated and is unlikely to outcrop, although some of the more short-wavelength and spikier responses on the magnetic profiles probably originate from depths of 5 to 15 meters.

The most likely explanation for the magnetic signatures would be the occurrence of a mafic to ultramafic (gabbro-pyroxenite) plug and smaller satellite intrusives.

• *Horizontal Loop E.M.*

Referring to the MaxMin profiles plotted on the two maps in the appendix, it can be readily observed that, within the new survey area, no strongly-conductive bedrock horizon were detected. Indeed, most of the significant E.M. activity occurs on the high frequency (1777 Hz) quadrature component and although we have interpreted more than 10 possible “conductive” trends or axes (identified by orange dotted strips on the maps), it is quite difficult at this stage to establish their exact causes with confidence. They could be related with “poorly” conductive sulphide material (stringers, heavily disseminated grains) or (more likely) to electrolytic phenomena such as overburden-filled bedrock troughs and valleys. Some may be caused by shear zones or other tectonic lineaments.

Of course, poorly conductive stringers or disseminated sulphides would be positively detectable only with the **Induced Polarization** method and it would definitely be preferable to use this technique over the weak conductors located on the property before attempting any drilling.

**Conclusion and recommendations**

The magnetic and Horizontal Loop E.M. surveys which were recently completed on the Lipton Grid, part of the Atkinson Project for **Dentonia Resources Ltd.** have indicated the presence of a moderately-magnetic feature in the central portion of the new 2007 survey area.


The magnetic relief is most likely caused by a series of gabbro plugs whose interpreted depths to top are in the range 15 to 50 meters or more, making outcrop stripping unlikely as a way of explaining the anomalies.

About ten weakly-conductive units possibly attributable to stringer sulphides, heavily disseminated sulphide grains or to electrolytic phenomena such as overburden-filled bedrock troughs or by shear zones were mapped, as a result of the MaxMin H.L.E.M. survey. These “conductive” features are oriented along North-South trends.

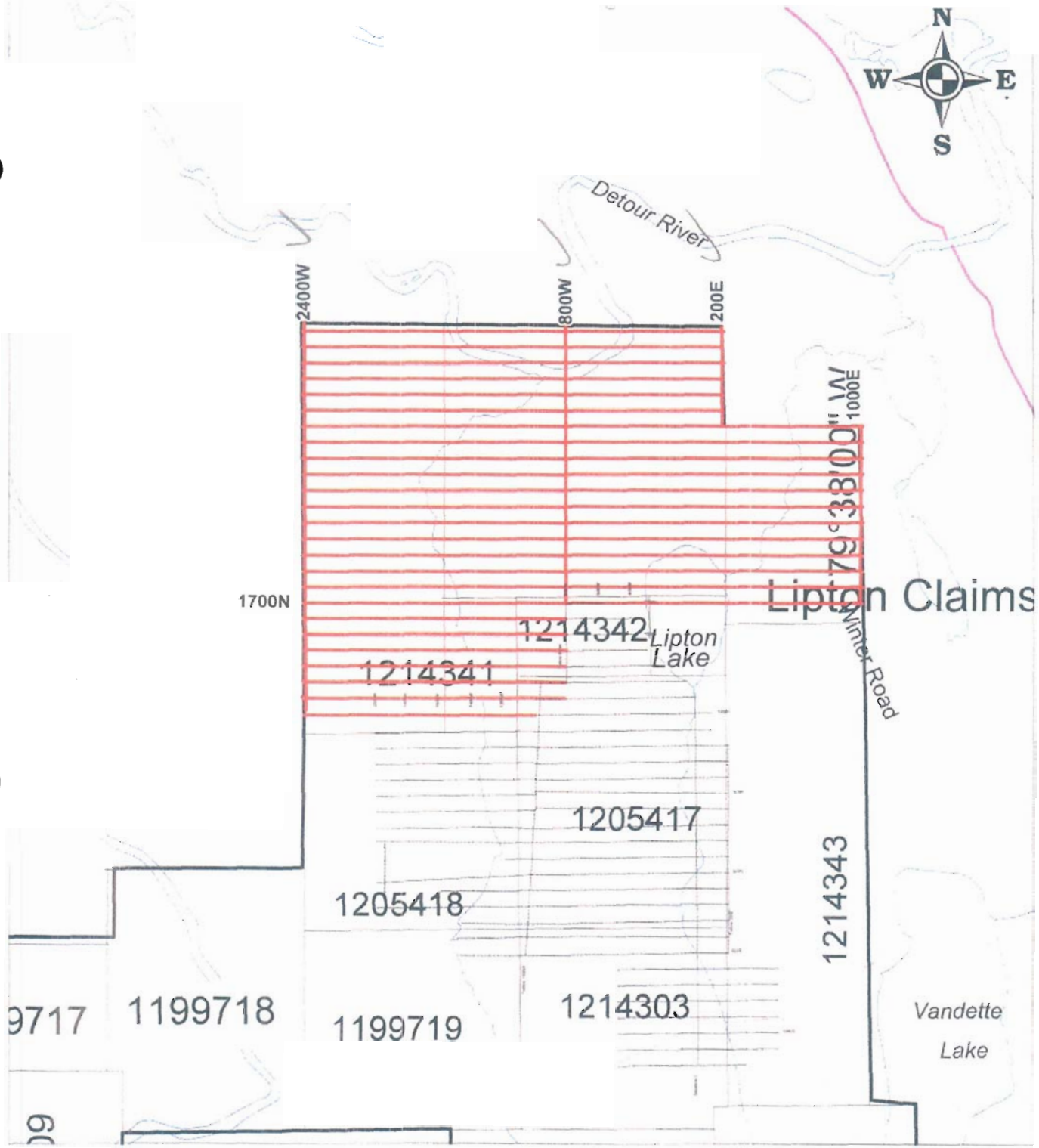
Poorly conductive stringers or disseminated sulphides would be easily detectable with the **Induced Polarization (I.P.)** method and it would definitely be preferable to use this technique over the weak conductors located on the property before attempting any drilling. Dipole-dipole I.P. lines, run every second line, is therefore recommended. The dipole dimension should be 50 meters, with N=1 to N=6 expanders.

The present geophysical results should of course be examined in the light of any other possible source of geoscientific information, particularly geological mapping, a drill hole compilation map and geochemical data if available, in order to better evaluate their economic and metallogenic significance.

St-André-Avellin, Québec  
April 6, 2007

  
*Gérard Lambert*  
Gérard Lambert, P.Eng.  
Consulting Geophysicist





*Proposed Geophysical Grid  
Dentonia Resources Ltd.*

December 2006