



**Whitehorse Office**  
34A Laberge Rd.  
Whitehorse, YT Y1A 5Y9  
Phone (867) 668-7672  
Fax: (867) 393-3577  
[www.aurorageosciences.com](http://www.aurorageosciences.com)

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## MEMORANDUM

**To:** Roger Hulstein **Date:** Sept 13, 2011  
**From:** Jay Watt  
**Re:** Miller Creek HLEM Survey (Round 2)

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This memorandum is a field report describing HLEM survey conducted on the 60 mile property in the Dawson mining district. Aurora Geosciences personnel worked on the property for a total of 3 days between August 31 and September 2 2011. A full survey log describing daily operations is attached to this report.

The Miller Creek grid was surveyed using an I-9 Apex MaxMin using the frequencies of 220, 1760, 3520, 7040, 14080 Hz. A total of 4.850 km was surveyed. A location plot containing the relative locations of these lines is attached to this report.

The Northern 125m of Line 750E was not completed due to the reference cable breaking. The crew was accommodated at the Radius 60 mile camp.

### **a. Crew and equipment.**

The following personnel conducted the surveys:

Jay Watt	Crew Chief	August 31, 2011 to September 2, 2011
Graeme Chan	Tech	September 1, 2011 to September 2, 2011

The HLEM crew was equipped with the following instruments and equipment:

HLEM instrument	1	APEX Parametrics I-9 Maxmin
	2	VHF Handheld radios
Other	1	Laptop with Geosoft

#### **b. Survey specifications.**

The HLEM survey was conducted according to the following specifications:

Coil Separation	100 m
Frequencies	220, 1760, 3520, 7040, 14080 Hz
Station Separation	25 m
Terrain Slopes	Recorded in percent
Terrain Corrections	Coils held at the indicated slope for coplanar coils. Short chaining errors caused by rough topography (such as steep slopes) were corrected for using the slope chaining method with Apex parametrics software MMCPIX1.
Grid registration	Handheld GPS points at line ends averaged 60 s or until estimated accuracy < 10 m, whichever was longer. All coordinates in NAD83 UTM Zone 7N.

### **c. Data Processing.**

The HLEM data was dumped in its raw form from the instrument using Apex software MMC.COM. Short coil spacing errors were corrected using the Apex software MMCFIX1. Data was exported to an ASCII format using Apex software MMCPRO87, and plotted using Geosoft Oasis software.

GPS points were dumped from the non-differential handheld units and the coordinates for the stations determined by linear interpolation between stations.

### **d. Products.**

The following files are included in the digital version of this report:

\\Final Data\\Miller Creek Channels Hlem.XYZ	Brief Description of database Channel
\\Final Data\\Miller Creek HLEM. Geosoft.gdb & .XYZ	Final Database in geosoft gdb and ASCII .XYZ format
\\Final Data\\Raw\\com .dat .ref & .xyz	Raw data dump files
\\Final Data\\Survey Log RDU-11534-YT Miller Creek HLEM. pdf	Daily operations report in pdf format.
\\FinalData\\Figures\\220hz,1760hz,3520hz,7040hz,14080hz all frequency & grid geosoft .map & pdf	Maps of Hlem Channels
\\Final Data\\gps.txt	Gps points

Respectfully submitted,  
AURORA GEOSCIENCES LTD.

Jay Watt