We are committed to providing accessible customer service.
If you need accessible formats or communications supports, please contact us.

Nous tenons à améliorer l'accessibilité des services à la clientèle.
Si vous avez besoin de formats accessibles ou d'aide à la communication, veuillez nous contacter.

Ontario

2.57712

Stuarton Resources Ltd.

Mobile Metal Ion Survey on Grid #3

Assessment Report for Work done in 2013
and
Submitted June 2, 2016

by Lionel C. Kilburn, BSc, MSc, PhD
President & Chief Executive Officer

June 2, 2016

Table of Contents

LCK/June 2, 2016

Stuarton Resources Ltd.
178 Shanley Terrace, Oakville
Ontario, Canada
Teleph: 905-845-3650
e-mail: lionel.kilburn@sympatico.ca

May 12, 2016

Geochemical Survey using the Mobile Metal Ion Method

Introduction

The property is located about 27km north of Dryden, and is accessible by good secondary roads as shown on Appendix I. Reconnaissance prospecting using EM16 and Mobile Metal Ion geochemistry detected anomalous amounts of copper and nickel in the area of a small EM16 electrically conductive zone. Subsequently, a grid was cut (Grid#3) and covered with magnetometer and EM16 surveys. The purpose of this work is to follow up on the geophysical surveys to determine if the geochemical pattern for copper and nickel can be confirmed on a controlled grid.

Claims 1238194 and 1238195 are recorded in northwest corner of claim Map 2888, Webb Twp., and cover the area under consideration by this report. Appendix II shows the location of Grid#3 and its extension with respect to the two claims, the north boundary of Grid#1, Needle Lake, and parts of Dryden Area airborne survey sheets 80955 and 80956.

Previous Work

The Ontario Geological Survey mapped the area of Grid #3, and published the results on OGS maps Lateral Lake East and West P2371 and P2372. This mapping discovered an exposure of copper mineralization 660 feet northwest of the target on grid #3. There is not a description of the mineralization either in the report or on the map. The OGS advises that the field note books are not available. Location of this mineralization has not been found by the present work.

Present Work

The ground work covered by this report was carried out on geophysical Grid #3, the location of which is shown in Appendix II. Thirty-two (32) geochemical soil samples were collected by auger from lines 2, 4 and 6 and analyzed for 8 elements each.

Stuarton Resources Ltd.
178 Shanley Terrace, Oakville
Ontario, Canada
Teleph: 905-845-3650
e-mail: lionel.kilburn@sympatico.ca

Appendix III of this report shows the list of Mobile Metal Ion (MMI) analyses produced by SGS from these 32 soil samples. Eight elements that were selected for analysis are: ***arsenic, cadmium, copper, gold, nickel, lead, palladium, and silver***

This project started with reconnaissance prospecting, followed by ground surveys controlled by grid#3. The next phase was split into two parts:

Part 1. Travel to the site of Grid#3 to collect soil samples for analysis.
Part 2. Travel to Lakefield, Ontario, during August 11-12, 2013 to deliver the samples to SGS for analysis.

Discussion of Results

Copper results for MMI correlate quite well with the conductive zone, as shown on diagrams Appendix IV-a&b.

Nickel in soil correlates with the position of the conductive zone, though not as cleanly as copper. Results from the grid#3 show the same choppy-spikey profiles (Appendix IVc) as the reconnaissance survey did.

Cadmium (Appendix IVd) shows small peaks over the conductive zone on all three lines. Lines 2 and 6 indicate higher values to the south, downhill.

Silver (Appendix IVe) shows distinctive peaks just downhill from the conductive zone on lines 2 and 4, and weak high result directly over the conductive zone.

Gold (Appendix IVf) does not show any interesting patterns, except that the only sample with gold content greater than one part per billion lies over the conductive zone on Line 2.

Lead (Appendix IVg) surprisingly, lead shows high values uphill from the conductive zone.

Stuarton Resources Ltd.
178 Shanley Terrace, Oakville
Ontario, Canada
Teleph: 905-845-3650
e-mail: lionel.kilburn@sympatico.ca

Arsenic - all results except three contained amounts below the detection limit of the method, which is 10ppb. Twenty ppb were reported for 9+75 on Line 2. On the same line 10ppb were detected at the north end of the line, up against rock outcrop of rhyolite breccia.

Palladium - all samples contain less than 1 ppb, which is the lower detection limit of the method.

Conclusions

The MMI pattern for copper on a controlled grid confirmed the pace and compass correlation with the conductive zone detected by geophysical survey.

The nickel pattern shows a correlation with the conductive zone only on Line 6. However like the reconnaissance survey, significantly larger amounts of nickel are found in the area of the conductive zone, and much larger amounts are indicated south of the grid.

The patterns for cobalt, palladium, silver and gold show scattered high readings with no interesting trends. One exception is cadmium, which may be interpreted as supporting the copper pattern.

Recommendations

Three diamond drill holes are recommended to test the ground surveys as shown in Appendix V.

DDH-16-1 - this strong EM16 response lies on the south side of Grid #3. Copper, nickel and cadmium indicate higher values to the south.
DDH-16-2 - tests the strong conductive main zone, which runs parallel to the grid base line on the north side of a distinct magnetic zone, and is confirmed by the MMI pattern for copper.
DDH-16-3 - tests the eastern end of the main conductive zone, where the EM16 profile indicates the possibility of a wide zone of conductivity. This part of the conductive zone is also confirmed by positive MMI results for copper, nickel, cadmium and silver.

Stuarton Resources Ltd.
178 Shanley Terrace, Oakville
Ontario, Canada
Teleph: 905-845-3650
e-mail: lionel.kilburn@sympatico.ca

Conclusion

Three drill holes are sufficient to test the results of ground survey. Any further work will depend upon the results of the drilling.

Respectfully submitted,

Lionel C. Kilburn, BSc, MSc, PhD
President & CEO, Stuarton Resources Ltd.

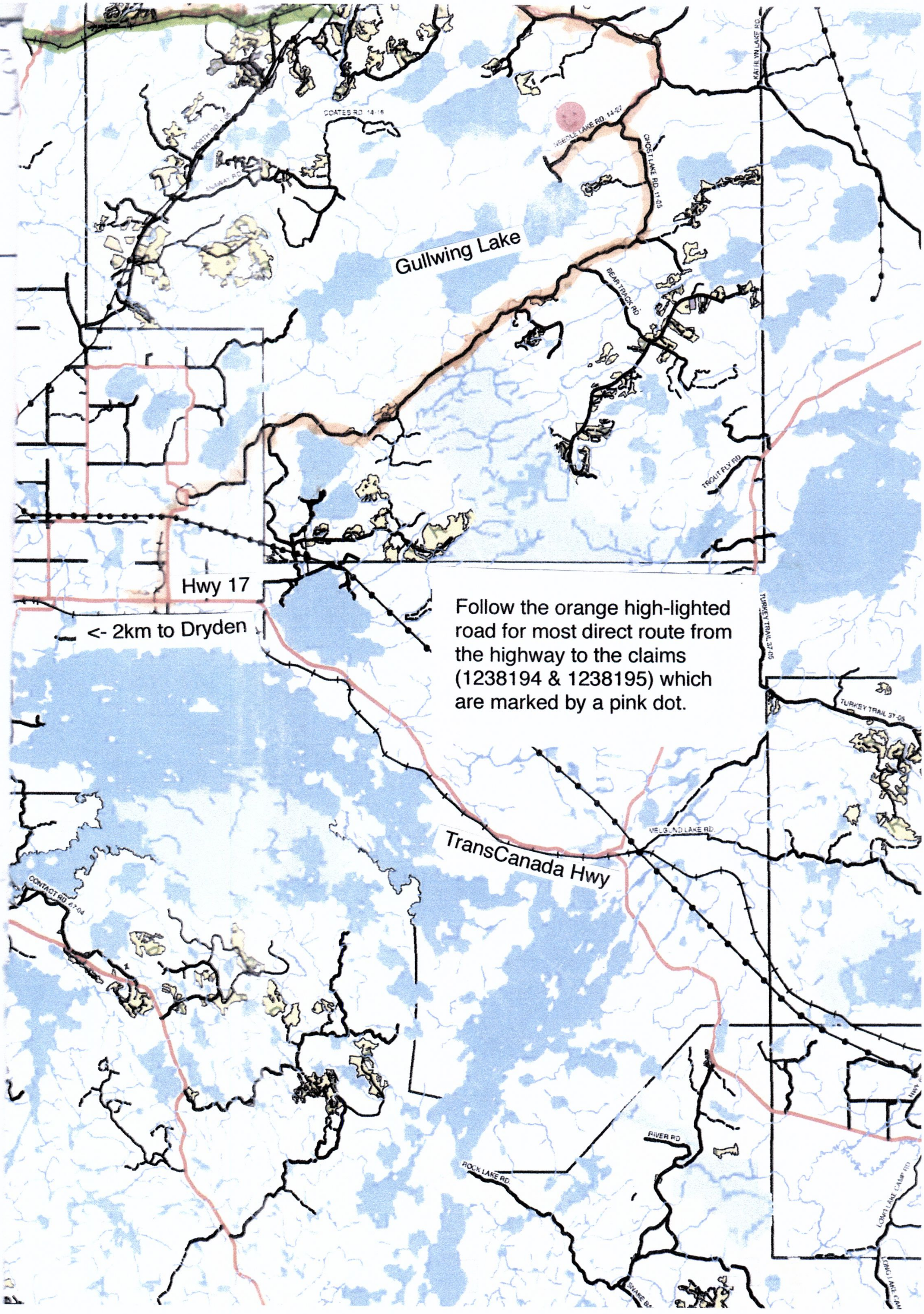
cc file
LCK/May 12, 2016

List of Appendices

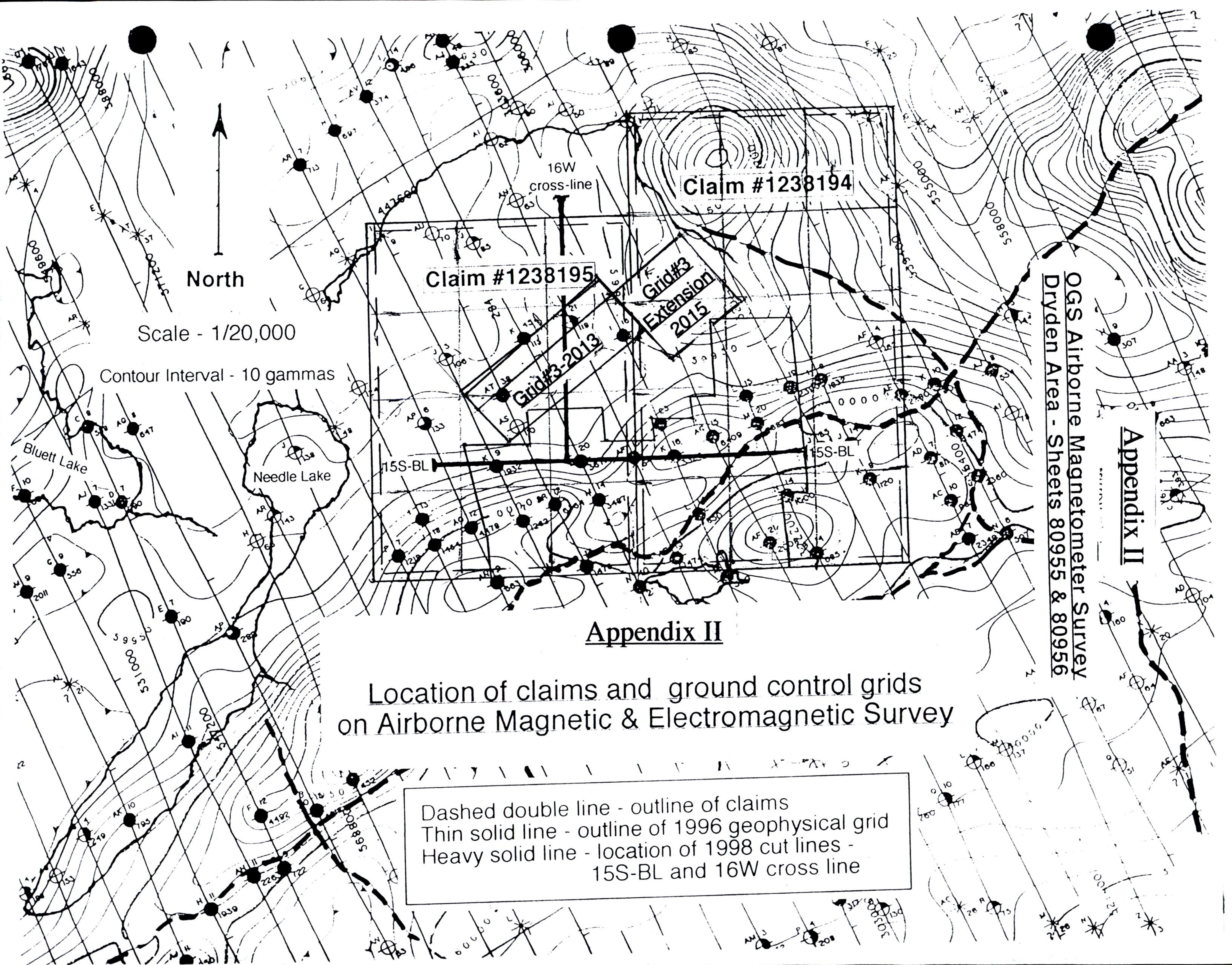
Geochemical Survey Needle Lake Claims
Webb Township - Claim Map - G2888
Claim 1238195

LCK/June 2, 2016

Appendix I
Access Road and Location


Gullwing Lake
Hwy 17
<- 2km to Dryden
Follow the orange high-lighted road for most direct route from the highway to the claims (1238194 & 1238195) which are marked by a pink dot.
TransCanada Hwy
COATES RD. 14-16
GHOST LAKE RD. 11-05
BEAR TRACK RD
TROUT FLY RD
TURKEY TRAIL 37-05
MELGUND LAKE RD.
CONTACT RD. 67-04
RIVER RD
ROCK LAKE RD.

Appendix II
Location of Grid #3
and
Claims 1238194 & 238195


North
Scale - 1/20,000
Contour Interval - 10 gammas
16W cross-line
Claim #1238194
Claim #1238195
Grid#3 Extension 2015
Grid#3-2013
15S-BL
15S-BL
Bluett Lake
Needle Lake
OGS Airborne Magnetometer Survey
Dryden Area - Sheets 80955 & 80956
Appendix II
Appendix II
Location of claims and ground control grids
on Airborne Magnetic & Electromagnetic Survey
Dashed double line - outline of claims
Thin solid line - outline of 1996 geophysical grid
Heavy solid line - location of 1998 cut lines -
15S-BL and 16W cross line

Appendix III
SGS Analysis Sheet
for Thirty-two Soil Samples

SGS-MMI results Grid #3
August 1, 2013 - all results are parts per billion (ppb)
Method - MMI-M5

Sample Coordinates	Ag	As	Au	Cd	Cu	Ni	Pb	Pd
Detection limit (ppb)	1	10	0.1	1	10	5	10	1
2E - 9+00N	9	<10	0.1	34	660	792	290	<1
2E - 9+25N	13	<10	0.4	18	980	886	130	<1
2E - 9+50N	9	<10	0.3	20	710	617	80	<1
2E - 9+75N	4	20	0.1	3	260	161	160	<1
2E - 10+00N	57	<10	0.4	14	630	276	20	<1
2E - 10+25N	67	<10	0.3	7	1810	573	50	<1
2E - 10+50N	20	<10	0.4	18	720	734	50	<1
2E - 10+75N	27	<10	1.4	6	940	198	40	<1
2E - 11+00N	37	<10	0.4	6	860	442	40	<1
2E - 11+25N	11	<10	0.1	4	360	154	230	<1
2E - 11+50N	<1	10	0.1	1	380	60	130	<1
2E - 11+65N	3	10	0.2	2	880	85	130	<1
12 samples								
4E - 9+00N	12	<10	0.6	8	880	423	70	<1
4E - 9+25N	13	<10	0.3	9	1090	404	50	<1
4E - 9+50N	2	<10	0.4	2	340	116	50	<1
4E - 9+75N	63	<10	0.6	10	830	370	30	<1
4E - 10+00N	32	<10	0.5	7	1390	301	40	<1
4E - 10+25N	31	<10	0.2	24	1370	851	50	<1
4E - 10+50N	42	<10	0.2	13	1940	120	120	<1
4E - 10+75N	29	<10	0.3	9	950	457	60	<1
4E - 11+00N	10	<10	0.3	5	800	517	200	<1
4E - 11+25N	12	<10	0.2	2	700	330	340	<1
4E - 11+50N	2	<10	0.3	1	600	146	400	<1
4E - 11+65N	4	<10	0.2	4	610	44	140	<1
12 samples								
6E - 10+00N	16	<10	0.1	55	790	1170	200	<1
6E - 10+25N	1	<10	<0.1	36	390	251	300	<1
6E - 10+50N	23	<10	0.3	30	1130	918	100	<1
6E - 10+75N	10	<10	0.1	7	930	386	120	<1
6E - 11+00N	7	<10	0.2	3	430	164	200	<1
6E - 11+25N	10	<10	0.2	1	400	149	220	<1
6E - 11+50N	5	<10	0.2	3	210	104	310	<1
6E - 11+57N	11	<10	0.4	8	360	114	540	<1
8 samples								

Total- 32 samples
LCK/May 24, 2016

Appendix IVa
MMI Copper Distribution
with respect to EM16 Survey

Key

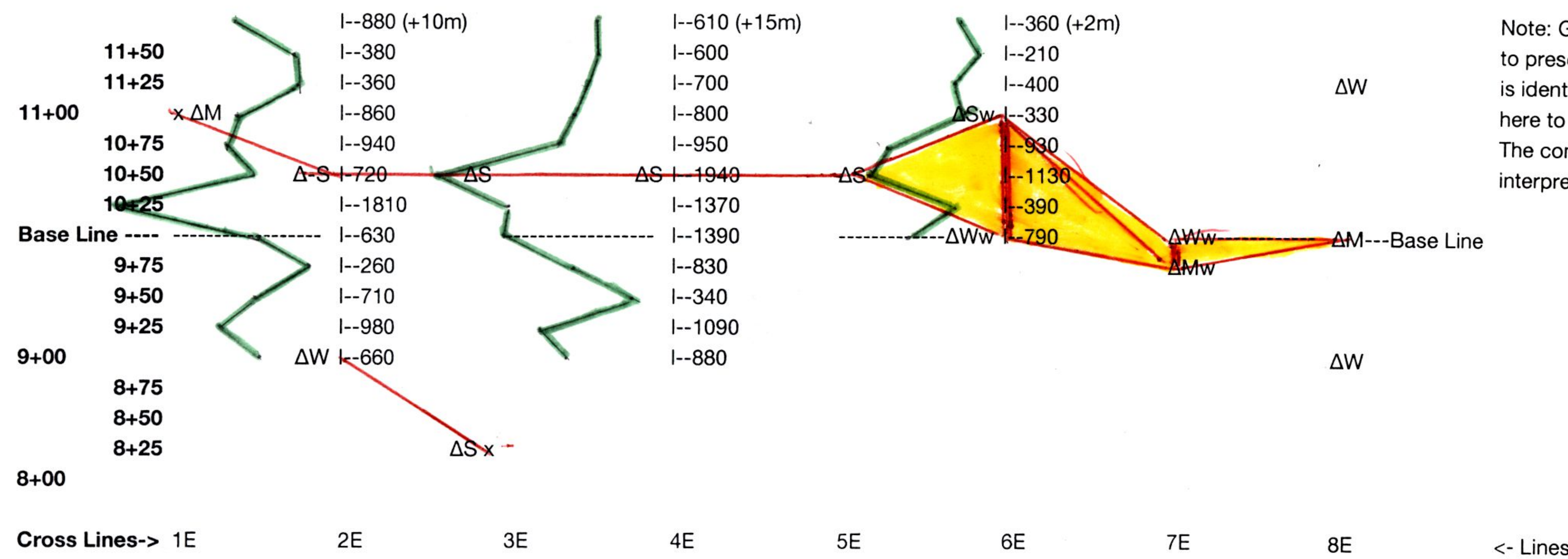
These symbols apply to all MMI distribution diagrams

Δ S - strong conductive axis
Δ M - moderate conductive axis
Δ W - weak conductive axis

Δ Sw - wide, strong conductive axis
Δ Mw - wide, moderate conductive axis
Δ Ww - wide, weak conductive axis

MMI profiles are colored green
EM16 conductive axes are colored red
(area of wide conductive zones are colored yellow)

Needle Lake Area - Grid #3
MMI-Copper



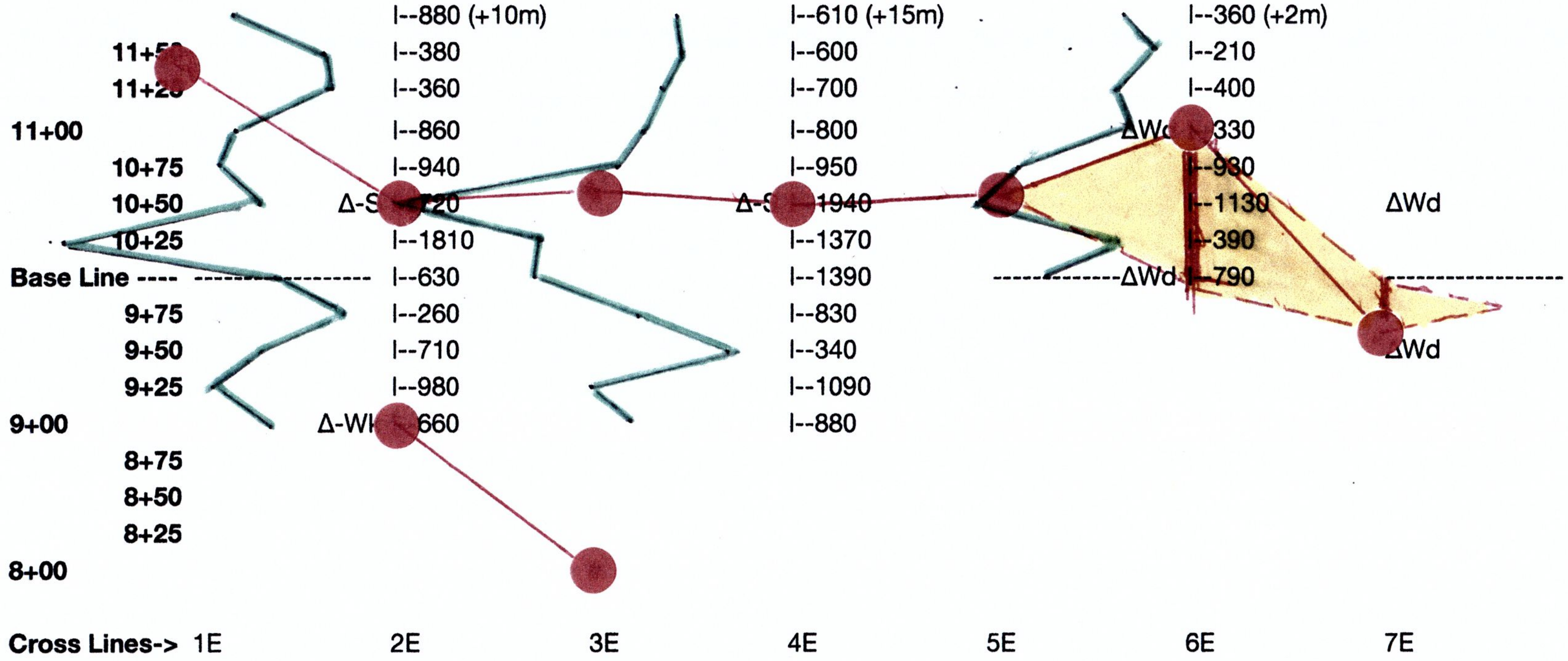
Note: Grid #3 is extended on this diagram in order to present the complete conductive pattern, which is identical for all MMI elements, and is included here to show how it was extended to Line-8E. The complete EM16 survey is not needed to interpret the MMI patterns correctly.

Schematic Drawing of Grid #3
Copper (ppb) in Soil Samples from MMI Analysis
(not to scale)

Green - Cu Profiles
Red - Conductive Axis

Appendix IVb
MMI Copper Distribution
with respect to EM16 Survey

Needle Lake Area - Grid #3
MMI-Copper



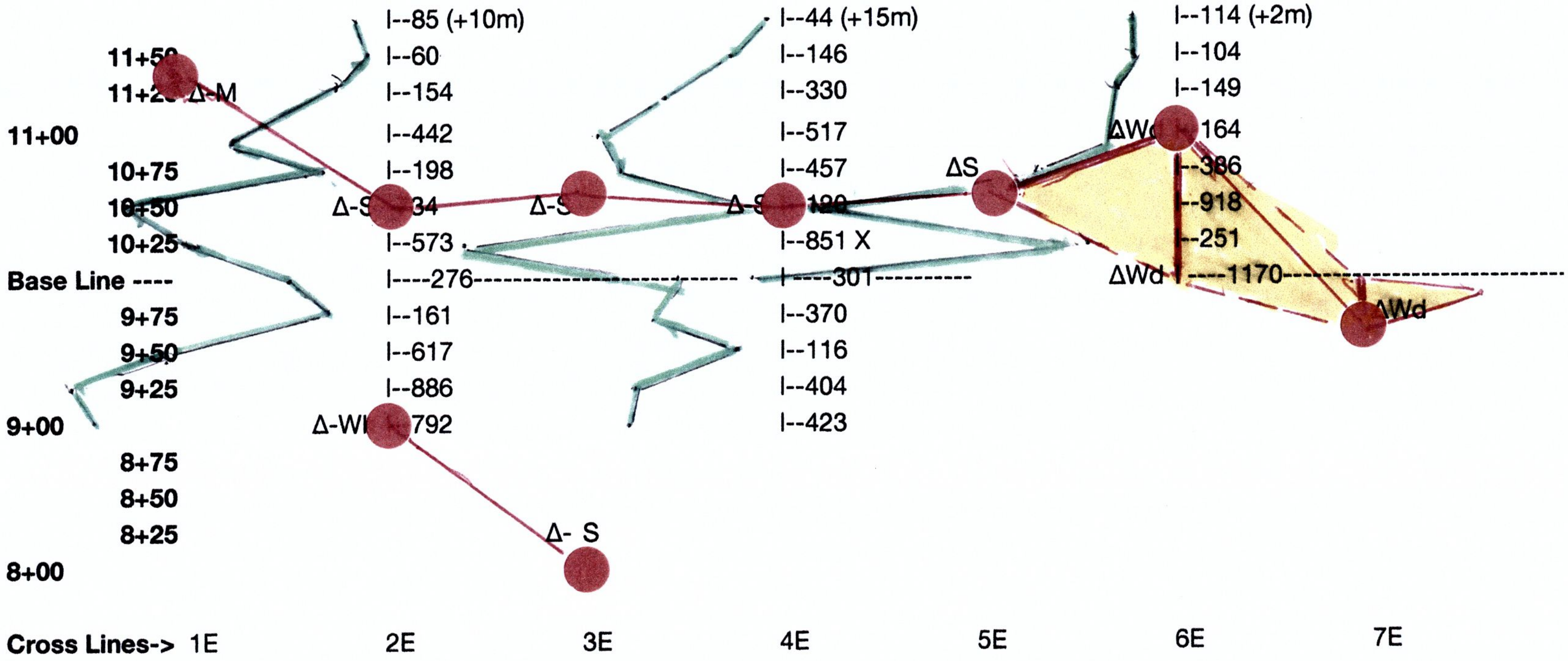
Schematic Drawing of Grid #3
Copper (ppb) in Soil Samples from MMI Analysis
(not to scale)

Green - Cu Profiles
Red - Conductive Axis

Appendix IVc
MMI Nickel Distribution
with respect to EM16 Survey

Needle Lake Area - Grid #3

MMI - Nickel



Schematic Drawing of Grid #3

Nickel (ppb) in Soil Samples from MMI Analysis

(not to scale)

Green - Ni Profiles

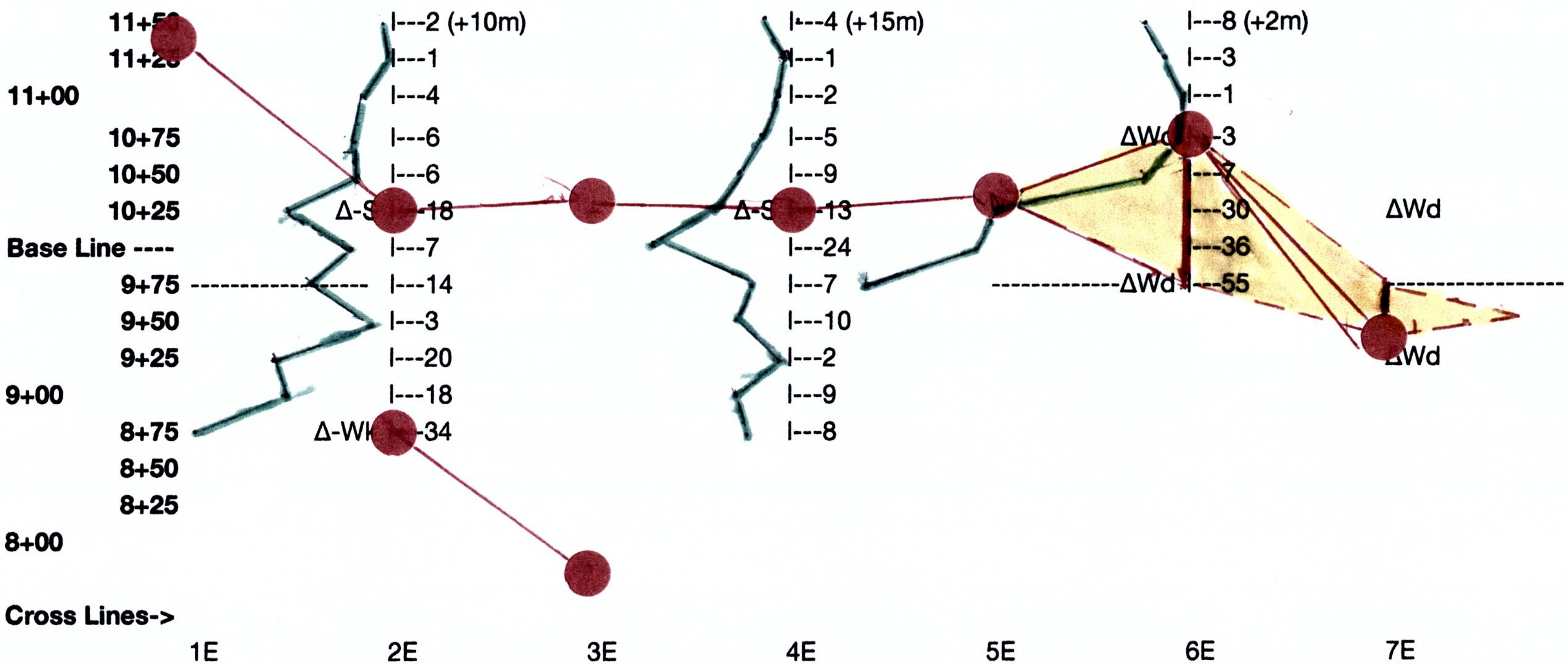
Red - Conductive Axis

Needle Lake Area - Grid #3

Appendix IVd
MMI Cadmium Distribution
with respect to EM16 Survey

Needle Lake Area - Grid #3

MMI - Cadmium



Schematic Drawing of Grid #3

Cadmium (ppb) in Soil Samples from MMI Analysis

(not to scale)

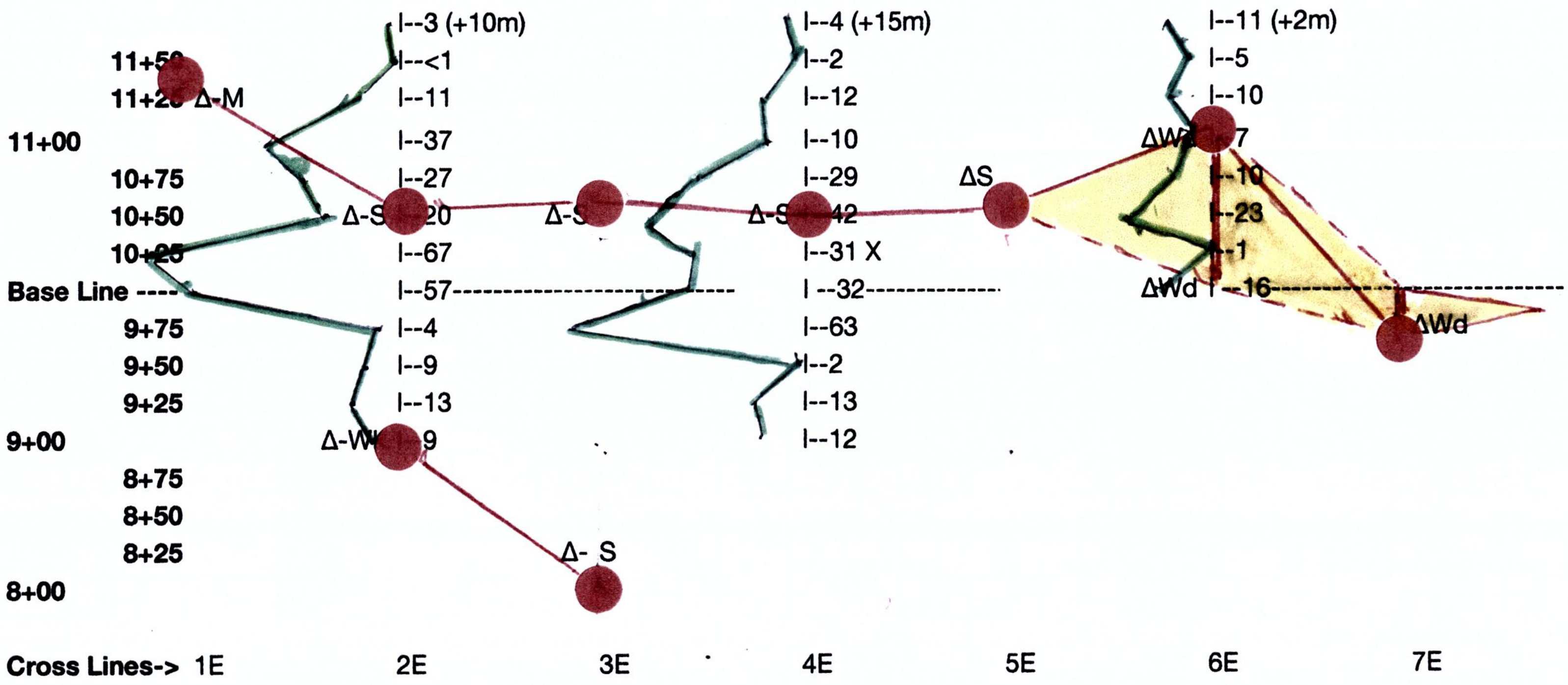
Green - Cd Profiles

Red - Conductive Axis

Appendix IVe
MMI Silver Distribution
with respect to EM16 Survey

Needle Lake Area - Grid #3

MMI -Silver



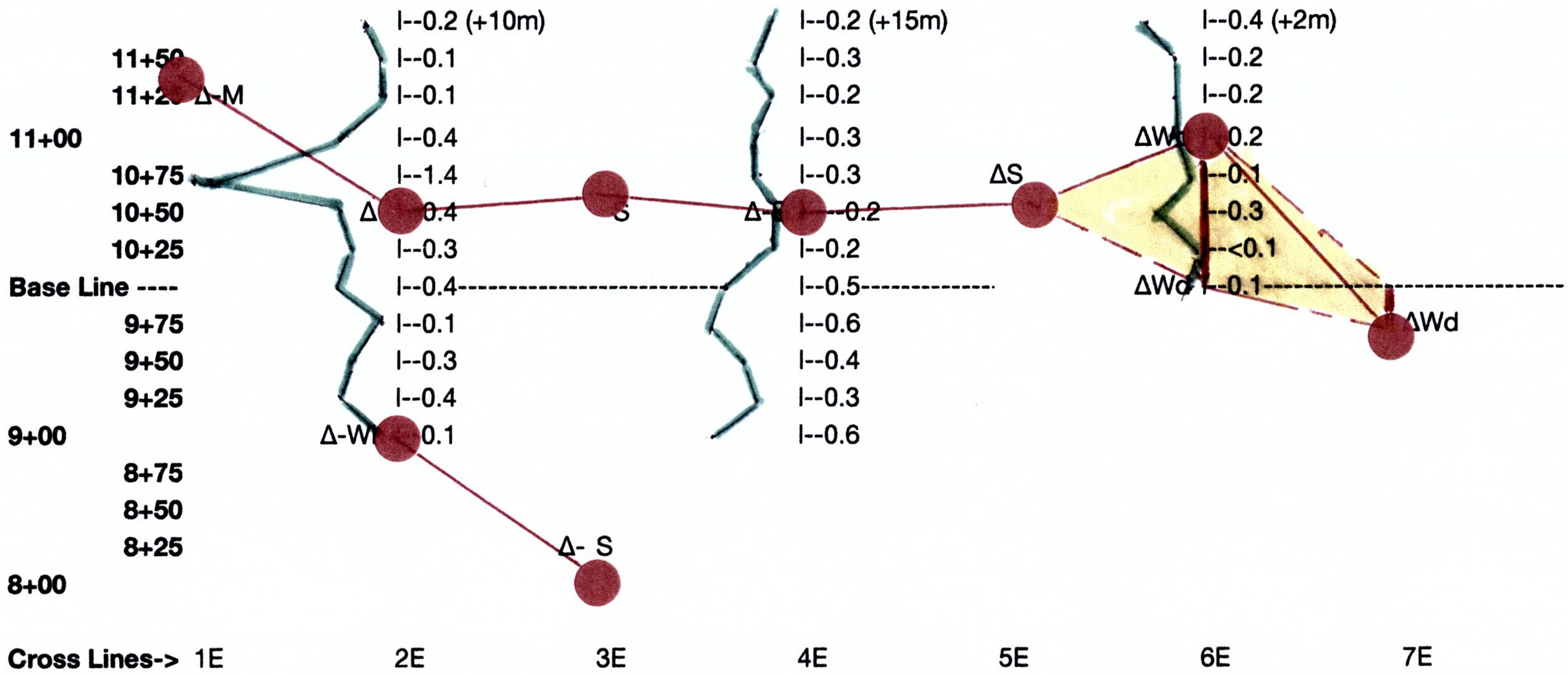
Schematic Drawing of Grid #3
Silver (ppb) in Soil Samples from MMI Analysis
(not to scale)

Green - Ag Profiles
Red - Conductive Axis
Needle Lake Area - Grid #3

Appendix IVf
MMI Gold Distribution
with respect to EM16 Survey

Needle Lake Area - Grid #3

MMI - Gold



Schematic Drawing of Grid #3

Gold (ppb) in Soil Samples from MMI Analysis

(not to scale)

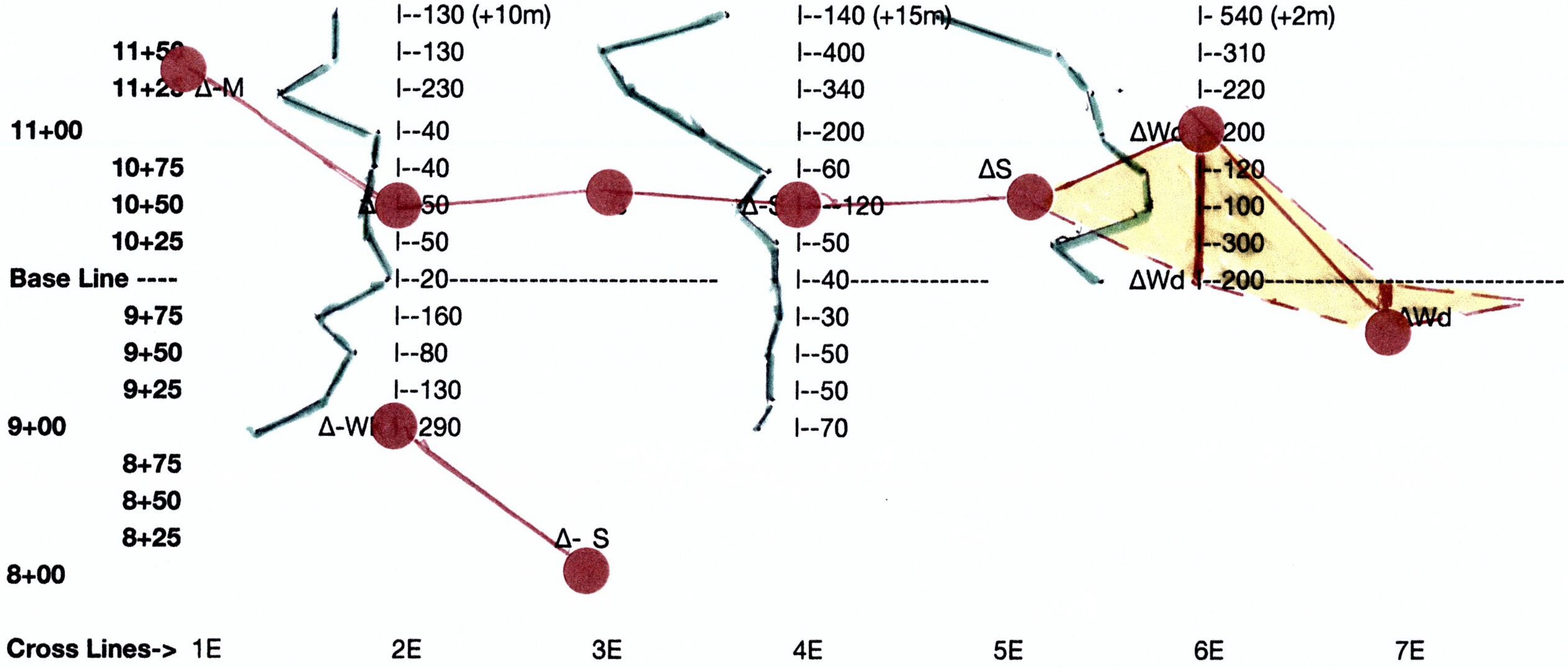
Green Au Profiles

Red - Conductive Axis

Needle Lake Area - Grid #3

Appendix IVg
MMI Lead Distribution
with respect to EM16 Survey

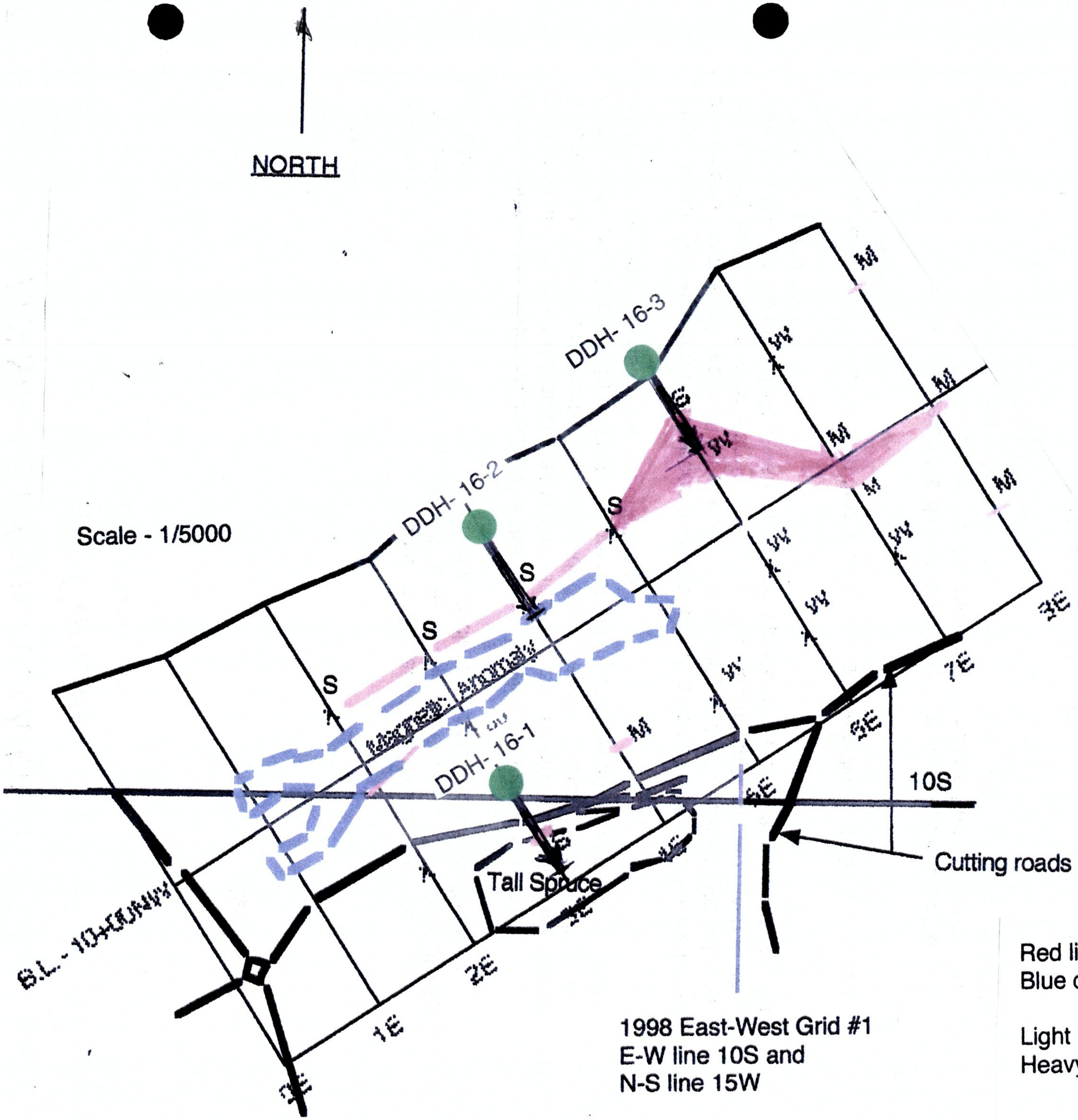
Needle Lake Area - Grid #3
Lead



Schematic Drawing of Grid #3
Lead (ppb) in Soil Samples from MMI Analysis
(not to scale)

Green - Pb Profiles
Red - Conductive Axis
Needle Lake Area - Grid #3

Appendix V
Location of Diamond Drill Holes
based on
Interpretation of Geophysical and Geochemical Surveys



Key to EM16 Responses

S - strong response
M - moderate response
W - weak response

Red line - axis of EM16 conductive zone
Blue dashed line - outline of magnetic anomaly

Light black lines - cut lines Grid #3
Heavy black lines - old cutting roads

Appendix VI
Description of the Mobile Metal Ion (MMI) Method and Modified Interpretation for Canada

Mobile Metal Ions
A New Mineral Exploration Tool

by A.W. Mann, R.D. Birrell, L.M. Gay, A.T. Mann, J.I. Perdrix & K.R. Gardner
Geochemistry Research Centre, W Australia and Wamtech Pty., Ltd., W Australia

Partial extractions have a long history in geochemistry. Their use probably reached an hiatus in the 1970s when the transition to full sample digestion with rapid turn-around through large laboratories became the standard method for exploration analysis. At that time, detection limits stood at the low ppm level for most elements. Since then, the lower detection limits for most elements, particularly those of economic interest, have decreased by three orders of magnitude, to the ppb level. This almost imperceptible 'revolution by stealth', while readily welcomed by most explorationists, has not been fully exploited. In addition to being able to carry out 'routine' geochemistry at lower levels, the new instrumentation has opened up new avenues in the methods of selecting sample material for analysis which will maximize the opportunity for detection of ore bodies. Partial extraction is one technique which has, and will continue to benefit from this revolution.

The aim of a partial digestion is to release some of the metal contained in a soil to solution. Mobile metal ions are those which are released to solution from the use of very weak extractants - extractants which deliberately do not attack the substrate or matrix. A large percentage of mobile metal ions appears to be derived from metal-containing ore-bodies,

Table 1. Summary of Case Histories Investigated by the MMI Process

Style	Cases	Range of Settings	MMI Geochemistry
Base Metals Pb, Zn, Cu (± Ag, Pd)	24	VMS, Miss Valley, massive and disseminated. Very high to low rainfall. Some deeply buried.	Very sharp ore element anomalies directly above and/or up-dip
			3 failures
Ni (±Cu, Pt, Pd)	9	Massive to disseminated komatitic Ni in ultramafics. All arid zone, some in partly transported material.	Two levels, one distinguishes U/m units, the other Ni within U/m units.
			2 failures on disseminated Ni
Au (± Ag)	37	Mainly Archean qz vein style, some porphyry. Most in arid zones, but several in high rainfall areas. Most on deeply weathered profiles, some with extensive sheerwash or dune cover.	Many with >30 times background anomalies, sharper than conventional geochemistry - sharp enough to provide direct drilling targets (50% holes with >1g/t Au at this level).
			5 failures on trasported overburden
Sub-economic	4	Various settings & depths	No failures, i.e., no false anomalies

and careful use of weak extractants and very low level chemical pre-concentration and analysis techniques can be used to obtain significant and reliable element signals to enable the anomaly patterns to be enhanced, resolved, and interpreted for the detection of blind ore-bodies. While the exact mechanisms for release, transport, and 'fixation' of the metals are, in our case, the subject of sponsored research and confidential, the technique is of considerable importance to the exploration industry, because of its apparent ability to operate in deeply-weathered terrain, and in some cases through considerable thicknesses of overburden. Some 7000 samples, involving over 50 000 analyses have now been subjected to the Mobile Metal Ion Process.

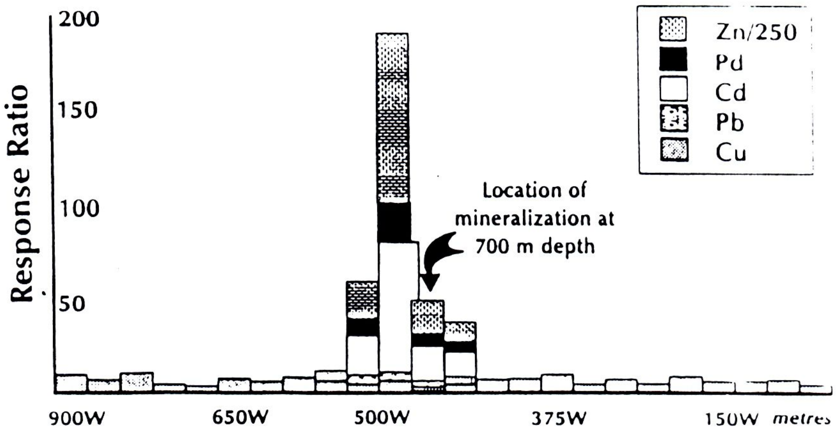
The Mobile Metal Ion Process (MMI)®

The following are the major steps in the process:

- evaluation of background information, including existing geochemical data;
- field inspection, program design and sampling;
- digestion and extraction of metals;
- analysis and QC (Cu, Pb, Zn, Ni, Cd, Au, Ag, Pt & Pd); and,
- interpretation, recommendations and report.

A number of separate digestions is required, because no one digestant is capable of providing optimum extraction of all nine metals. Digestants, details of which must remain proprietary, have been screened and selected for their ability to extract only the very weakly-attached (mobile) metals. Extractants used are multi-componet mixtures of water soluble organic and inorganic chemicals. Following digestion and analysis, 'background' for each element is calculated to provide a 'Response Ratio' at each sample point for each element. All subsequent interpretation of data is based upon application of the appropriate thresholds to the Response Ratios.

MMI Response Ratios Over a Base Metals Deposit at 700 m Depth



Footnote to description of MMI

The MMI method was developed in Australia where weather is favorable for upward migration of metal ions from mineral deposits. This upward migration of ions is enhanced by high levels of evaporation and low levels of precipitation. Unfortunately, in Canada weather is the opposite and precipitation (rain & snow) is high and evaporation is low.
Also, glacial overburden through which water may flow easily, would serve to decapitate any upward migration of ions. However, decapitated anomalies would be dispersed locally.
Therefore, lesser concentrations of metal than those found in Australia may indicate the presences of mineral deposits, due to the dispersion of metal in the vicinity.

This is the basis for usage of MMI in Canada.