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ASSESSMENT REPORT

February 27, 2023

Crystal Lake Project – 2021-2022 Borehole and Fixed Loop TEM Survey

Pardee and Crooks Twp.
NTS#052A04

For:
Duffey Lake Holdings Inc.
666 Burrard Street, 25 Floor
Vancouver, BC
V6C 2X8

Prepared By:
Brad Parkinson, BSc.
Steven Flank, P.Geo, MSc.

Bayside Geoscience Inc.
1179 Carrick St. Unit C
Thunder Bay, ON
P7B 6M3

Contents

Assessment Report

CRYSTAL LAKE PROJECT – 2021-2022 BOREHOLE AND FIXED LOOP TEM SURVEY PROGRAM

SUMMARY

Duffey Lake Holdings engaged Discovery International Geophysics to complete a Borehole Transient Electromagnetic (BHTEM) survey on four historical boreholes and an 80.5-line km Fixed Loop Transient Electromagnetic Survey (FLTEM) on the Crystal Lake Project, located 40km south of Thunder Bay, Ontario. Duffey Lake is completing the work under an earn-in agreement with Rio Tinto Exploration Canada, who has owned the property since 2007.

Historic airborne EM methods (VTEM, HeliTEM, AeroTEM), some of which were followed up with drilling, were considered to have only generated responses over conductive sections of the non-prospective, graphite- and sulfide-bearing Rove formation sedimentary country rock. A high power, low frequency EM survey was designed in an attempt to identify only the most conductive material "through" the background conductivity of the Rove. It was designed to be a ground survey illuminated over three loops spanning the middle and eastern mapped extents of the Crystal Lake gabbro to detect anomalies at >1000 m depth along the keel, believed to be the most favorable geologic setting in the district. The FLTEM survey was completed over 43 lines with 75-150 m station intervals. Three loop configurations were used and a total of 80.55-line kms were surveyed.

A BHTEM survey on four historic holes was envisioned to complement the FLTEM survey while the loops and crews were deployed on site. Prior to the BHTEM survey, Duffey Lake deployed Discovery Geophysics field crews to locate historic borehole collars, dummy survey them to test hole integrity, and to collect accurate GPS coordinates. Following this work, Duffey Lake selected four boreholes to survey based on hole integrity, access, and distribution across the geologic model. A total of 6,375 metres were surveyed in total utilizing three loop configurations.

The FLTEM survey produced seven targets (three around loop 2, two around loop 1, and two around loop 3). Models of two of these targets were then refined by the results from the BHEM surveys. Models were generated using proprietary stochastic inversion methods in lieu of plate modeling and other standard methods.

INTRODUCTION

Between November 15th 2021 and February 15th, 2022, Duffey Lake Holdings Inc. completed a BHTEM and FLTEM survey on the joint venture Crystal Lake Project which is 100% owned by Rio Tinto Exploration Canada Inc., located in the Thunder Bay Mining Division, Ontario, Canada. Duffey Lake Holdings contracted Discovery International Geophysics of Saskatoon, SK to complete the program.

Exploration PR-21-000171 was attained prior to the commencement of this work and permitted the exploration activities documented herein. The coordinate system used throughout this report is in UTM NAD 83 Zone 16N.

1. LOCATION AND ACCESS

The Crystal Lake Property is located within the Thunder Bay Mining Division in Crooks and Pardee Township approximately 40 km south of the city of Thunder Bay (Figure 1).

The Crystal Lake Property is accessible by road indirectly from Highway 61 approximately 40 km south of Thunder Bay, continuing west for several kilometres along the Great Lakes Nickel gravel road. The Great Lakes Nickel Road is gated in 2 locations and crosses private property, therefore permission of landowners is required to access the property (Figure 2). Various grown-in drill roads and trails are accessible from the Great Lake Nickel Road via UTV/ATV.

During the 2021-2022 program, the geophysicists worked between the period of November 15th 2021 and February 15th 2022. A daily commute was completed by truck from Thunder Bay to access the property, occasionally using an ATV/UTV to access areas with unfavourable road conditions.

2. PROPERTY OWNERSHIP AND CLAIMS

The Crystal Lake Property is located in the Thunder Bay Mining Division and is comprised of 226 mining claims, 27 leased claims, and 34 mine land patents totaling 7,345 ha. All claims are 100% owned by Rio Tinto Exploration Canada Inc. with operations being carried out by Duffey Lake Holding Inc. Claim locations are shown in Figure 2.

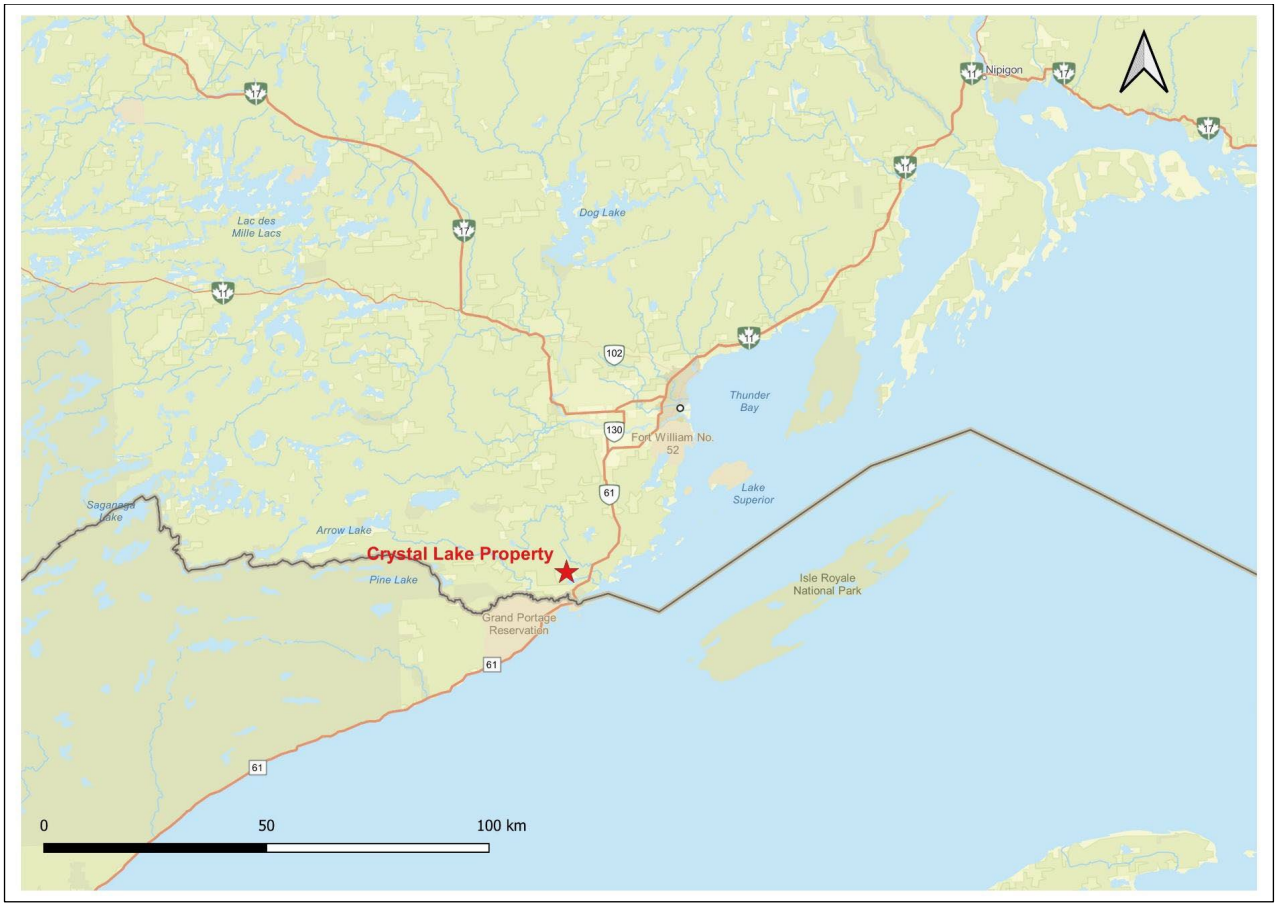

Figure 1: Crystal Lake Property Location.

3. EXPLORATION HISTORY

Extensive mineral exploration has occurred in the Crystal Lake area since the discovery of copper-nickel mineralized float in the area in 1936. A summary of exploration is presented below in Table 1.

Table 1: Exploration history of the Crystal Lake Project

Company	**Year**	**Activity**	**Target Area**
United States Smelting, Refining and Mining Co.	1936	Conducted exploration looking for the source of copper-nickel mineralized float boulders.	Crystal Lake Area
Mattawin Gold Mines Ltd.	1952	Staked property and optioned to Falconbridge Nickel Mines	Crystal Lake Area
Falconbridge Nickel Mines	1952-1953	Surface work including trenching	Crystal Lake Area
Mattawin Gold Mines Ltd.	1954	6 DDH totalling 3471 ft	Crystal Lake Area
Mogul Mining Corp. Ltd.	1957	Optioned property and drilled 7 DDH totalling 5556 ft and undertook mill testing	Crystal Lake Area
Great Lakes Nickel Corp. Ltd.	1964-1970	Acquired option for property and conducted surface exploration including 47803m of drilling and started 37m adit. 19 underground DDH were completed totalling 392 m.	Crystal Lake Area

Great Lakes Nickel Corp. Ltd.	1972	Drove 522 m development portal and drift. Conducted over 12000 m of surface and underground diamond drilling. Plant-site surveys, bulk sampling, metallurgical and feasibility tests were conducted, largely financed by a Swedish company, Boliden Aktiebolag. A reserve was defined on the tip of the northern CLG arm containing proven and indicated reserves of 41.4 MT grading 0.334% Cu, 0.183% Ni, 0.69 g/t Pd. 0.21 g/t Pt, 0.01 g/t Rh, 0.04 g/t Au, and 2.06 g/t Ag.	Crystal Lake Area
Great Lakes Nickel Corp. Ltd.	1974	Mine development suspended in October due to escalating costs, high interest rates and uncertain metal prices.	Crystal Lake Area
Fleck Resources Ltd.	1986-87	Completed geological mapping and sampling, relogged and assayed more than 9144 m of historic drill core and drilled 6 DDH.	Crystal Lake Area
Great Lakes Nickel Corp. Ltd.	2000	Sampling of historical drill core and block modelling to develop a resource estimate.	Crystal Lake Area
Kennecott Canada Exploration Inc.	2007	Staked, airborne electromagnetic survey, airborne magnetic survey.	Crystal Lake Area
Rio Tinto Exploration Canada Inc.	2011	Optioned the property from Great Lakes Nickel in November	Crystal Lake Area

Rio Tinto Exploration Canada Inc.	2013-2014	Re-assayed historic drill holes, drilled 5 DDH totalling 3170.03 m and conducted downhole geophysics.	Crystal Lake Area
Rio Tinto Exploration Canada Inc.	2015	Completed 2 of 3 reported holes along the Great Lakes Nickel plunge trend.	Crystal Lake Area
Sean O'Brien	2018	Lakehead University Master's thesis on the petrology of the Crystal Lake Gabbro and the Mount Mollie Dyke, Midcontinent Rift, Northwest Ontario	Crystal Lake and Mount Mollie Area

Crystal Lake Property
Land Tenure

Legend

- Mining Leases
- Mining Patents

Mining Claims

- (100) RIO TINTO EXPLORATION CANADA INC.
- Lakes
- Rivers/Streams
- Secondary Road
- Highway
- Border
- Township Boundaries

Pardee

Devon

Crooks

CANADA

USA

Pine River

Bell Lake

Matson Lake

Crystal Creek

Crystal Lake

Lenore Lake

Bearpad Lake

Arrow River

Pigeon River

Little Pine River

Lake Superior (lac Supérieur)

Pardee Rd (north)

Pardee Rd (south)

Larsen Rd

Lenore Lake Rd

593 / Devon Rd

Hwy 61

0 1 2 km

1:35,000
UTM NAD83 Zone 16N

BAYSIDE Geoscience

Figure 2: Crystal Lake Land Tenure

OPERATIONAL CLAIM DETAILS

MINING CLAIMS

TENURE_NUM	AREA_HECTARES	TITLE_TY_1	ISSUE_DATE	CLAIM_DUE_	HOLDER
639535	21.59	Single Cell Mining Claim	2/25/2021	2/25/2023	(100) RIO TINTO EXPLORATION CANADA INC.
104607	21.58	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
104608	21.58	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
104609	21.58	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
108756	21.58	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
118559	21.59	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
122961	21.59	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
125472	21.59	Boundary Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
125473	21.59	Boundary Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
128099	21.59	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
127694	21.59	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
131292	21.58	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
137462	21.59	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
142961	21.59	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
142962	21.59	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
156493	21.58	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
157720	21.58	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
163807	21.58	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
161399	21.58	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
167767	21.58	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
172290	21.58	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
172291	21.59	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
174536	21.59	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
177209	21.58	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
178919	21.59	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
181619	21.59	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
190566	21.59	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
198516	21.59	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
205837	21.58	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
208449	21.58	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
209056	21.58	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
209057	21.59	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
215577	21.58	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
218833	21.59	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
220485	21.58	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
223095	21.58	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
228474	21.58	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
232744	21.58	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
243263	21.58	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
243264	21.58	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
245608	21.58	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
253674	21.58	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
253675	21.59	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
269465	21.58	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
274461	21.59	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
275699	21.58	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
278308	21.58	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
279075	21.58	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
279076	21.58	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
279077	21.58	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
282850	21.59	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
290608	21.58	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
292774	21.59	Boundary Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
305445	21.59	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
312196	21.59	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
319662	21.59	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
319663	21.59	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
324277	21.58	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
324278	21.59	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
326337	21.59	Boundary Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
335735	21.59	Boundary Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
338725	21.58	Single Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
338726	21.59	Boundary Cell Mining Claim	4/10/2018	3/6/2023	(100) RIO TINTO EXPLORATION CANADA INC.
109190	21.59	Single Cell Mining Claim	4/10/2018	3/28/2023	(100) RIO TINTO EXPLORATION CANADA INC.
109074	21.59	Single Cell Mining Claim	4/10/2018	3/28/2023	(100) RIO TINTO EXPLORATION CANADA INC.
114018	21.59	Single Cell Mining Claim	4/10/2018	3/28/2023	(100) RIO TINTO EXPLORATION CANADA INC.
133926	21.59	Single Cell Mining Claim	4/10/2018	3/28/2023	(100) RIO TINTO EXPLORATION CANADA INC.
140641	21.59	Single Cell Mining Claim	4/10/2018	3/28/2023	(100) RIO TINTO EXPLORATION CANADA INC.
146595	21.59	Single Cell Mining Claim	4/10/2018	3/28/2023	(100) RIO TINTO EXPLORATION CANADA INC.
165465	21.59	Single Cell Mining Claim	4/10/2018	3/28/2023	(100) RIO TINTO EXPLORATION CANADA INC.
165466	21.59	Single Cell Mining Claim	4/10/2018	3/28/2023	(100) RIO TINTO EXPLORATION CANADA INC.
167469	21.6	Single Cell Mining Claim	4/10/2018	3/28/2023	(100) RIO TINTO EXPLORATION CANADA INC.
194742	21.59	Single Cell Mining Claim	4/10/2018	3/28/2023	(100) RIO TINTO EXPLORATION CANADA INC.
197004	21.58	Single Cell Mining Claim	4/10/2018	3/28/2023	(100) RIO TINTO EXPLORATION CANADA INC.

TENURE_NUM	AREA_HECTARES	TITLE_TY_1	ISSUE_DATE	CLAIM_DUE_	HOLDER
204745	21.59	Single Cell Mining Claim	4/10/2018	3/28/2023	(100) RIO TINTO EXPLORATION CANADA INC.
205482	21.59	Single Cell Mining Claim	4/10/2018	3/28/2023	(100) RIO TINTO EXPLORATION CANADA INC.
213289	21.59	Single Cell Mining Claim	4/10/2018	3/28/2023	(100) RIO TINTO EXPLORATION CANADA INC.
214353	21.59	Single Cell Mining Claim	4/10/2018	3/28/2023	(100) RIO TINTO EXPLORATION CANADA INC.
224839	21.59	Single Cell Mining Claim	4/10/2018	3/28/2023	(100) RIO TINTO EXPLORATION CANADA INC.
234743	21.59	Single Cell Mining Claim	4/10/2018	3/28/2023	(100) RIO TINTO EXPLORATION CANADA INC.
234744	21.59	Single Cell Mining Claim	4/10/2018	3/28/2023	(100) RIO TINTO EXPLORATION CANADA INC.
250033	21.59	Single Cell Mining Claim	4/10/2018	3/28/2023	(100) RIO TINTO EXPLORATION CANADA INC.
252260	21.59	Single Cell Mining Claim	4/10/2018	3/28/2023	(100) RIO TINTO EXPLORATION CANADA INC.
252261	21.59	Single Cell Mining Claim	4/10/2018	3/28/2023	(100) RIO TINTO EXPLORATION CANADA INC.
264022	21.58	Single Cell Mining Claim	4/10/2018	3/28/2023	(100) RIO TINTO EXPLORATION CANADA INC.
263765	21.59	Single Cell Mining Claim	4/10/2018	3/28/2023	(100) RIO TINTO EXPLORATION CANADA INC.
263766	21.59	Single Cell Mining Claim	4/10/2018	3/28/2023	(100) RIO TINTO EXPLORATION CANADA INC.
268712	21.59	Single Cell Mining Claim	4/10/2018	3/28/2023	(100) RIO TINTO EXPLORATION CANADA INC.
271478	21.59	Single Cell Mining Claim	4/10/2018	3/28/2023	(100) RIO TINTO EXPLORATION CANADA INC.
270744	21.6	Single Cell Mining Claim	4/10/2018	3/28/2023	(100) RIO TINTO EXPLORATION CANADA INC.
280745	21.59	Single Cell Mining Claim	4/10/2018	3/28/2023	(100) RIO TINTO EXPLORATION CANADA INC.
299690	21.59	Single Cell Mining Claim	4/10/2018	3/28/2023	(100) RIO TINTO EXPLORATION CANADA INC.
299368	21.59	Single Cell Mining Claim	4/10/2018	3/28/2023	(100) RIO TINTO EXPLORATION CANADA INC.
300577	21.6	Single Cell Mining Claim	4/10/2018	3/28/2023	(100) RIO TINTO EXPLORATION CANADA INC.
309135	21.59	Single Cell Mining Claim	4/10/2018	3/28/2023	(100) RIO TINTO EXPLORATION CANADA INC.
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315869	21.59	Single Cell Mining Claim	4/10/2018	3/28/2023	(100) RIO TINTO EXPLORATION CANADA INC.
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318564	21.58	Single Cell Mining Claim	4/10/2018	3/28/2023	(100) RIO TINTO EXPLORATION CANADA INC.
328635	21.59	Single Cell Mining Claim	4/10/2018	3/28/2023	(100) RIO TINTO EXPLORATION CANADA INC.
328636	21.59	Single Cell Mining Claim	4/10/2018	3/28/2023	(100) RIO TINTO EXPLORATION CANADA INC.
331454	21.59	Single Cell Mining Claim	4/10/2018	3/28/2023	(100) RIO TINTO EXPLORATION CANADA INC.
332141	21.59	Single Cell Mining Claim	4/10/2018	3/28/2023	(100) RIO TINTO EXPLORATION CANADA INC.
333210	21.59	Single Cell Mining Claim	4/10/2018	3/28/2023	(100) RIO TINTO EXPLORATION CANADA INC.
330684	21.6	Single Cell Mining Claim	4/10/2018	3/28/2023	(100) RIO TINTO EXPLORATION CANADA INC.
503170	21.57	Single Cell Mining Claim	4/10/2018	4/10/2023	(100) RIO TINTO EXPLORATION CANADA INC.
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503172	21.57	Single Cell Mining Claim	4/10/2018	4/10/2023	(100) RIO TINTO EXPLORATION CANADA INC.
503173	21.57	Single Cell Mining Claim	4/10/2018	4/10/2023	(100) RIO TINTO EXPLORATION CANADA INC.
503174	21.57	Single Cell Mining Claim	4/10/2018	4/10/2023	(100) RIO TINTO EXPLORATION CANADA INC.
503175	21.57	Single Cell Mining Claim	4/10/2018	4/10/2023	(100) RIO TINTO EXPLORATION CANADA INC.
503176	21.57	Single Cell Mining Claim	4/10/2018	4/10/2023	(100) RIO TINTO EXPLORATION CANADA INC.
503177	21.57	Single Cell Mining Claim	4/10/2018	4/10/2023	(100) RIO TINTO EXPLORATION CANADA INC.
503178	21.57	Single Cell Mining Claim	4/10/2018	4/10/2023	(100) RIO TINTO EXPLORATION CANADA INC.
503179	21.57	Single Cell Mining Claim	4/10/2018	4/10/2023	(100) RIO TINTO EXPLORATION CANADA INC.
503180	21.57	Single Cell Mining Claim	4/10/2018	4/10/2023	(100) RIO TINTO EXPLORATION CANADA INC.
503181	21.57	Single Cell Mining Claim	4/10/2018	4/10/2023	(100) RIO TINTO EXPLORATION CANADA INC.
503182	21.57	Single Cell Mining Claim	4/10/2018	4/10/2023	(100) RIO TINTO EXPLORATION CANADA INC.
503183	21.57	Single Cell Mining Claim	4/10/2018	4/10/2023	(100) RIO TINTO EXPLORATION CANADA INC.
503184	21.57	Single Cell Mining Claim	4/10/2018	4/10/2023	(100) RIO TINTO EXPLORATION CANADA INC.
503185	21.57	Single Cell Mining Claim	4/10/2018	4/10/2023	(100) RIO TINTO EXPLORATION CANADA INC.
503186	21.57	Single Cell Mining Claim	4/10/2018	4/10/2023	(100) RIO TINTO EXPLORATION CANADA INC.
503187	21.57	Single Cell Mining Claim	4/10/2018	4/10/2023	(100) RIO TINTO EXPLORATION CANADA INC.
176272	21.59	Boundary Cell Mining Claim	4/10/2018	6/4/2023	(100) RIO TINTO EXPLORATION CANADA INC.
199792	21.59	Single Cell Mining Claim	4/10/2018	6/4/2023	(100) RIO TINTO EXPLORATION CANADA INC.
249845	21.59	Boundary Cell Mining Claim	4/10/2018	6/4/2023	(100) RIO TINTO EXPLORATION CANADA INC.
254413	21.59	Single Cell Mining Claim	4/10/2018	6/4/2023	(100) RIO TINTO EXPLORATION CANADA INC.
268588	21.59	Boundary Cell Mining Claim	4/10/2018	6/4/2023	(100) RIO TINTO EXPLORATION CANADA INC.
309103	21.59	Single Cell Mining Claim	4/10/2018	6/4/2023	(100) RIO TINTO EXPLORATION CANADA INC.
310307	21.59	Single Cell Mining Claim	4/10/2018	6/4/2023	(100) RIO TINTO EXPLORATION CANADA INC.
310308	21.59	Single Cell Mining Claim	4/10/2018	6/4/2023	(100) RIO TINTO EXPLORATION CANADA INC.
107491	21.59	Single Cell Mining Claim	4/10/2018	6/24/2023	(100) RIO TINTO EXPLORATION CANADA INC.
192161	21.59	Boundary Cell Mining Claim	4/10/2018	6/24/2023	(100) RIO TINTO EXPLORATION CANADA INC.
314869	21.59	Boundary Cell Mining Claim	4/10/2018	6/24/2023	(100) RIO TINTO EXPLORATION CANADA INC.
335736	21.59	Single Cell Mining Claim	4/10/2018	6/24/2023	(100) RIO TINTO EXPLORATION CANADA INC.
122207	21.59	Boundary Cell Mining Claim	4/10/2018	7/14/2023	(100) RIO TINTO EXPLORATION CANADA INC.
104972	21.58	Single Cell Mining Claim	4/10/2018	9/18/2023	(100) RIO TINTO EXPLORATION CANADA INC.
110051	21.57	Single Cell Mining Claim	4/10/2018	9/18/2023	(100) RIO TINTO EXPLORATION CANADA INC.
119253	21.57	Single Cell Mining Claim	4/10/2018	9/18/2023	(100) RIO TINTO EXPLORATION CANADA INC.
124539	21.58	Single Cell Mining Claim	4/10/2018	9/18/2023	(100) RIO TINTO EXPLORATION CANADA INC.
124540	21.58	Single Cell Mining Claim	4/10/2018	9/18/2023	(100) RIO TINTO EXPLORATION CANADA INC.
124541	21.58	Single Cell Mining Claim	4/10/2018	9/18/2023	(100) RIO TINTO EXPLORATION CANADA INC.
124542	21.58	Single Cell Mining Claim	4/10/2018	9/18/2023	(100) RIO TINTO EXPLORATION CANADA INC.
128615	21.58	Single Cell Mining Claim	4/10/2018	9/18/2023	(100) RIO TINTO EXPLORATION CANADA INC.
136010	21.58	Single Cell Mining Claim	4/10/2018	9/18/2023	(100) RIO TINTO EXPLORATION CANADA INC.
139023	21.57	Single Cell Mining Claim	4/10/2018	9/18/2023	(100) RIO TINTO EXPLORATION CANADA INC.
139024	21.57	Single Cell Mining Claim	4/10/2018	9/18/2023	(100) RIO TINTO EXPLORATION CANADA INC.
145021	21.58	Single Cell Mining Claim	4/10/2018	9/18/2023	(100) RIO TINTO EXPLORATION CANADA INC.

TENURE_NUM	AREA_HECTARES	TITLE_TY_1	ISSUE_DATE	CLAIM_DUE_	HOLDER
152427	21.58	Single Cell Mining Claim	4/10/2018	9/18/2023	(100) RIO TINTO EXPLORATION CANADA INC.
159615	21.57	Single Cell Mining Claim	4/10/2018	9/18/2023	(100) RIO TINTO EXPLORATION CANADA INC.
181979	21.58	Single Cell Mining Claim	4/10/2018	9/18/2023	(100) RIO TINTO EXPLORATION CANADA INC.
181980	21.58	Single Cell Mining Claim	4/10/2018	9/18/2023	(100) RIO TINTO EXPLORATION CANADA INC.
191640	21.57	Single Cell Mining Claim	4/10/2018	9/18/2023	(100) RIO TINTO EXPLORATION CANADA INC.
192101	21.58	Single Cell Mining Claim	4/10/2018	9/18/2023	(100) RIO TINTO EXPLORATION CANADA INC.
211119	21.58	Single Cell Mining Claim	4/10/2018	9/18/2023	(100) RIO TINTO EXPLORATION CANADA INC.
211120	21.58	Single Cell Mining Claim	4/10/2018	9/18/2023	(100) RIO TINTO EXPLORATION CANADA INC.
224503	21.57	Single Cell Mining Claim	4/10/2018	9/18/2023	(100) RIO TINTO EXPLORATION CANADA INC.
229329	21.58	Single Cell Mining Claim	4/10/2018	9/18/2023	(100) RIO TINTO EXPLORATION CANADA INC.
235869	21.58	Single Cell Mining Claim	4/10/2018	9/18/2023	(100) RIO TINTO EXPLORATION CANADA INC.
239765	21.57	Single Cell Mining Claim	4/10/2018	9/18/2023	(100) RIO TINTO EXPLORATION CANADA INC.
242016	21.58	Single Cell Mining Claim	4/10/2018	9/18/2023	(100) RIO TINTO EXPLORATION CANADA INC.
248840	21.58	Single Cell Mining Claim	4/10/2018	9/18/2023	(100) RIO TINTO EXPLORATION CANADA INC.
260509	21.58	Single Cell Mining Claim	4/10/2018	9/18/2023	(100) RIO TINTO EXPLORATION CANADA INC.
280458	21.57	Single Cell Mining Claim	4/10/2018	9/18/2023	(100) RIO TINTO EXPLORATION CANADA INC.
280459	21.57	Single Cell Mining Claim	4/10/2018	9/18/2023	(100) RIO TINTO EXPLORATION CANADA INC.
291891	21.58	Single Cell Mining Claim	4/10/2018	9/18/2023	(100) RIO TINTO EXPLORATION CANADA INC.
299132	21.57	Single Cell Mining Claim	4/10/2018	9/18/2023	(100) RIO TINTO EXPLORATION CANADA INC.
299133	21.57	Single Cell Mining Claim	4/10/2018	9/18/2023	(100) RIO TINTO EXPLORATION CANADA INC.
304579	21.58	Single Cell Mining Claim	4/10/2018	9/18/2023	(100) RIO TINTO EXPLORATION CANADA INC.
307079	21.58	Single Cell Mining Claim	4/10/2018	9/18/2023	(100) RIO TINTO EXPLORATION CANADA INC.
307078	21.58	Single Cell Mining Claim	4/10/2018	9/18/2023	(100) RIO TINTO EXPLORATION CANADA INC.
308689	21.58	Single Cell Mining Claim	4/10/2018	9/18/2023	(100) RIO TINTO EXPLORATION CANADA INC.
308690	21.58	Single Cell Mining Claim	4/10/2018	9/18/2023	(100) RIO TINTO EXPLORATION CANADA INC.
323833	21.58	Single Cell Mining Claim	4/10/2018	9/18/2023	(100) RIO TINTO EXPLORATION CANADA INC.
327715	21.57	Single Cell Mining Claim	4/10/2018	9/18/2023	(100) RIO TINTO EXPLORATION CANADA INC.
327716	21.57	Single Cell Mining Claim	4/10/2018	9/18/2023	(100) RIO TINTO EXPLORATION CANADA INC.
335223	21.57	Single Cell Mining Claim	4/10/2018	9/18/2023	(100) RIO TINTO EXPLORATION CANADA INC.
335224	21.58	Single Cell Mining Claim	4/10/2018	9/18/2023	(100) RIO TINTO EXPLORATION CANADA INC.
343456	21.58	Single Cell Mining Claim	4/10/2018	9/18/2023	(100) RIO TINTO EXPLORATION CANADA INC.
126646	21.59	Single Cell Mining Claim	4/10/2018	3/21/2024	(100) RIO TINTO EXPLORATION CANADA INC.
132227	21.59	Single Cell Mining Claim	4/10/2018	9/18/2024	(100) RIO TINTO EXPLORATION CANADA INC.
213752	21.59	Single Cell Mining Claim	4/10/2018	9/18/2024	(100) RIO TINTO EXPLORATION CANADA INC.
251665	21.59	Single Cell Mining Claim	4/10/2018	9/18/2024	(100) RIO TINTO EXPLORATION CANADA INC.
263663	21.58	Single Cell Mining Claim	4/10/2018	9/18/2024	(100) RIO TINTO EXPLORATION CANADA INC.
263678	21.59	Single Cell Mining Claim	4/10/2018	9/18/2024	(100) RIO TINTO EXPLORATION CANADA INC.
344349	21.6	Single Cell Mining Claim	4/10/2018	3/21/2025	(100) RIO TINTO EXPLORATION CANADA INC.
126647	21.59	Single Cell Mining Claim	4/10/2018	3/21/2025	(100) RIO TINTO EXPLORATION CANADA INC.
135111	21.6	Single Cell Mining Claim	4/10/2018	3/21/2025	(100) RIO TINTO EXPLORATION CANADA INC.
138105	21.59	Single Cell Mining Claim	4/10/2018	3/21/2025	(100) RIO TINTO EXPLORATION CANADA INC.
138106	21.59	Single Cell Mining Claim	4/10/2018	3/21/2025	(100) RIO TINTO EXPLORATION CANADA INC.
138126	21.59	Single Cell Mining Claim	4/10/2018	3/21/2025	(100) RIO TINTO EXPLORATION CANADA INC.
143621	21.59	Single Cell Mining Claim	4/10/2018	3/21/2025	(100) RIO TINTO EXPLORATION CANADA INC.
155185	21.59	Boundary Cell Mining Claim	4/10/2018	3/21/2025	(100) RIO TINTO EXPLORATION CANADA INC.
173319	21.59	Single Cell Mining Claim	4/10/2018	3/21/2025	(100) RIO TINTO EXPLORATION CANADA INC.
171173	21.59	Single Cell Mining Claim	4/10/2018	3/21/2025	(100) RIO TINTO EXPLORATION CANADA INC.
187788	21.6	Single Cell Mining Claim	4/10/2018	3/21/2025	(100) RIO TINTO EXPLORATION CANADA INC.
187789	21.6	Single Cell Mining Claim	4/10/2018	3/21/2025	(100) RIO TINTO EXPLORATION CANADA INC.
190635	21.59	Boundary Cell Mining Claim	4/10/2018	3/21/2025	(100) RIO TINTO EXPLORATION CANADA INC.
190636	21.59	Single Cell Mining Claim	4/10/2018	3/21/2025	(100) RIO TINTO EXPLORATION CANADA INC.
190118	21.6	Single Cell Mining Claim	4/10/2018	3/21/2025	(100) RIO TINTO EXPLORATION CANADA INC.
207313	21.6	Single Cell Mining Claim	4/10/2018	3/21/2025	(100) RIO TINTO EXPLORATION CANADA INC.
227913	21.59	Single Cell Mining Claim	4/10/2018	3/21/2025	(100) RIO TINTO EXPLORATION CANADA INC.
254480	21.6	Single Cell Mining Claim	4/10/2018	3/21/2025	(100) RIO TINTO EXPLORATION CANADA INC.
266544	21.6	Single Cell Mining Claim	4/10/2018	3/21/2025	(100) RIO TINTO EXPLORATION CANADA INC.
273298	21.6	Single Cell Mining Claim	4/10/2018	3/21/2025	(100) RIO TINTO EXPLORATION CANADA INC.
294564	21.59	Boundary Cell Mining Claim	4/10/2018	3/21/2025	(100) RIO TINTO EXPLORATION CANADA INC.
303150	21.6	Single Cell Mining Claim	4/10/2018	3/21/2025	(100) RIO TINTO EXPLORATION CANADA INC.
303151	21.6	Single Cell Mining Claim	4/10/2018	3/21/2025	(100) RIO TINTO EXPLORATION CANADA INC.
306672	21.59	Single Cell Mining Claim	4/10/2018	3/21/2025	(100) RIO TINTO EXPLORATION CANADA INC.
320499	21.6	Single Cell Mining Claim	4/10/2018	3/21/2025	(100) RIO TINTO EXPLORATION CANADA INC.
322672	21.6	Single Cell Mining Claim	4/10/2018	3/21/2025	(100) RIO TINTO EXPLORATION CANADA INC.
333731	21.6	Single Cell Mining Claim	4/10/2018	3/21/2025	(100) RIO TINTO EXPLORATION CANADA INC.
333732	21.6	Single Cell Mining Claim	4/10/2018	3/21/2025	(100) RIO TINTO EXPLORATION CANADA INC.
340181	21.59	Single Cell Mining Claim	4/10/2018	4/27/2025	(100) RIO TINTO EXPLORATION CANADA INC.
128672	21.59	Single Cell Mining Claim	4/10/2018	4/27/2025	(100) RIO TINTO EXPLORATION CANADA INC.
128673	21.6	Single Cell Mining Claim	4/10/2018	4/27/2025	(100) RIO TINTO EXPLORATION CANADA INC.
159685	21.6	Single Cell Mining Claim	4/10/2018	4/27/2025	(100) RIO TINTO EXPLORATION CANADA INC.
162626	21.6	Single Cell Mining Claim	4/10/2018	4/27/2025	(100) RIO TINTO EXPLORATION CANADA INC.
225063	21.6	Single Cell Mining Claim	4/10/2018	4/27/2025	(100) RIO TINTO EXPLORATION CANADA INC.
245228	21.6	Single Cell Mining Claim	4/10/2018	4/27/2025	(100) RIO TINTO EXPLORATION CANADA INC.
260422	21.6	Single Cell Mining Claim	4/10/2018	4/27/2025	(100) RIO TINTO EXPLORATION CANADA INC.
269736	21.59	Single Cell Mining Claim	4/10/2018	4/27/2025	(100) RIO TINTO EXPLORATION CANADA INC.
308743	21.6	Single Cell Mining Claim	4/10/2018	4/27/2025	(100) RIO TINTO EXPLORATION CANADA INC.
320486	21.6	Single Cell Mining Claim	4/10/2018	4/27/2025	(100) RIO TINTO EXPLORATION CANADA INC.
267876	21.59	Single Cell Mining Claim	4/10/2018	9/18/2025	(100) RIO TINTO EXPLORATION CANADA INC.

MINING LEASES

CLAIM_NUM	AREA_HECTARES	OWNER	EXPIRY_DATE
109045	15.02	Rio Tinto Exploration Canada Inc.	2033-Feb-28
108872	15.6	Rio Tinto Exploration Canada Inc.	2032-Jul-31
109049	16.11	Rio Tinto Exploration Canada Inc.	2033-Feb-28
108866	13.97	Rio Tinto Exploration Canada Inc.	2031-Mar-31
108870	7.24	Rio Tinto Exploration Canada Inc.	2032-Sep-30
108871	7.01	Rio Tinto Exploration Canada Inc.	2032-Sep-30
108298	14.72	Rio Tinto Exploration Canada Inc.	2029-Nov-30
108874	18.96	Rio Tinto Exploration Canada Inc.	2031-Mar-31
108867	14.01	Rio Tinto Exploration Canada Inc.	2031-Mar-31
108297	16.33	Rio Tinto Exploration Canada Inc.	2029-Nov-30
109044	14.88	Rio Tinto Exploration Canada Inc.	2033-Feb-28
109048	16.53	Rio Tinto Exploration Canada Inc.	2033-Feb-28
108300	17.64	Rio Tinto Exploration Canada Inc.	2029-Nov-30
108873	23.35	Rio Tinto Exploration Canada Inc.	2032-Jul-31
109046	10.68	Rio Tinto Exploration Canada Inc.	2033-Feb-28
108868	16.83	Rio Tinto Exploration Canada Inc.	2032-Sep-30
108875	12.66	Rio Tinto Exploration Canada Inc.	2031-Mar-31
109047	11.15	Rio Tinto Exploration Canada Inc.	2033-Feb-28
108869	4.79	Rio Tinto Exploration Canada Inc.	2032-Sep-30
108294	66.24	Rio Tinto Exploration Canada Inc.	Unknown
108301	63.76	Rio Tinto Exploration Canada Inc.	2029-Nov-30
108293	64.2	Rio Tinto Exploration Canada Inc.	2029-Nov-30
108295	60.35	Rio Tinto Exploration Canada Inc.	2029-Nov-30
108296	32.1	Rio Tinto Exploration Canada Inc.	2029-Nov-30
107289	272.81	Rio Tinto Exploration Canada Inc.	Unknown
107331	94.42	Rio Tinto Exploration Canada Inc.	Unknown
108299	33.18	Rio Tinto Exploration Canada Inc.	Unknown

MINING LAND PATENTS

Tenure_Num	Area_Hectares	Owner
PAT-16406	32.38	Rio Tinto Exploration Canada Inc.
PAT-17417	64.75	Rio Tinto Exploration Canada Inc.
PAT-17418	64.75	Rio Tinto Exploration Canada Inc.
PAT-17420	64.75	Rio Tinto Exploration Canada Inc.
PAT-17421	64.75	Rio Tinto Exploration Canada Inc.
PAT-17422	64.75	Rio Tinto Exploration Canada Inc.
PAT-17423	64.75	Rio Tinto Exploration Canada Inc.
PAT-17424	127.07	Rio Tinto Exploration Canada Inc.
PAT-17425	32.38	Rio Tinto Exploration Canada Inc.
PAT-17426	32.38	Rio Tinto Exploration Canada Inc.
PAT-17427	64.75	Rio Tinto Exploration Canada Inc.
PAT-17428	32.78	Rio Tinto Exploration Canada Inc.
PAT-17429	64.75	Rio Tinto Exploration Canada Inc.
PAT-17430	64.75	Rio Tinto Exploration Canada Inc.
PAT-17431	64.75	Rio Tinto Exploration Canada Inc.
PAT-17432	32.38	Rio Tinto Exploration Canada Inc.
PAT-17433	64.75	Rio Tinto Exploration Canada Inc.
PAT-29081	16.19	Rio Tinto Exploration Canada Inc.
PAT-29082	16.19	Rio Tinto Exploration Canada Inc.
PAT-29083	16.19	Rio Tinto Exploration Canada Inc.
PAT-29084	16.19	Rio Tinto Exploration Canada Inc.
PAT-29085	16.19	Rio Tinto Exploration Canada Inc.
PAT-50924	64.75	Rio Tinto Exploration Canada Inc.
PAT-50925	1.92	Rio Tinto Exploration Canada Inc.

4. REGIONAL GEOLOGY

The following is a summary of the Regional Geology of the Midcontinent Rift from O'Brien, 2018.

The western Lake Superior region has had a long geological history recorded in a variety of rock types. These include Archean granites, greenstones, and gneisses of the Superior Province, Paleoproterozoic sedimentary rocks of the Animikie Basin, Mesoproterozoic red-bed sedimentary rocks of the Sibley Group, younger Mesoproterozoic sedimentary, volcanic, and intrusive rocks of the Midcontinent Rift (MCR), and Quaternary glacial deposits. The key geologic terranes specifically related to the Crystal Lake Gabbro (CLG) are the Superior Province, the Animikie Basin, and the MCR. The main geological attributes of these terranes in the western Lake Superior area are described below.

Superior Province

The underlying crust of the MCR is largely the Archean basement of the Superior Province. The Superior Province was developed by the amalgamation of distinct protocontinental and oceanic terranes, that ranged in age between 3.7 and 2.65 Ga, during the accretionary Kenoran Orogeny occurring between 2.72 to 2.68 Ga (Card and Ciesielski, 1986; Percival et al., 2006). The Superior Province is comprised of a series of east-trending belts that are composed of granite-greenstone, metasedimentary, plutonic, and high-grade gneisses and that have been metamorphosed to greenschist-granulite facies (Card and Ciesielski, 1986; Card, 1990). The belts have been subdivided into multiple subprovinces or terranes based on their lithologic, metamorphic, geochemical, isotopic, geochronologic and geophysical characteristics (Card and Ciesielski, 1986; Stott et al., 2010) (Figure 3).

The Wawa subprovince underlies the section of the MCR that hosts the CLG. The Wawa subprovince is the western portion of the Wawa-Abitibi terrane with the Abitibi subprovince comprising the eastern portion, separated by the Kapuskasing structural zone (Stott et al., 2010). The Wawa subprovince is dominantly comprised of large masses of granitoid plutons with isolated arcuate to linear greenstone belts comprising 20 to 30% of the subprovince (Williams et al., 1990).

Animikie Basin

Paleoproterozoic sedimentary rocks of the Animikie Group, which extends through Ontario, Minnesota, Wisconsin, and Michigan, were deposited on Archean crust in a continental shelf/back arc basin about 1.85 Ga (Johnston et al., 2006) (Figure 4). The area of the Animikie Basin intruded by the CLG and Mount Mollie Dyke (MMD) is termed the Logan Basin. The Animikie Group contains three conformable sedimentary formations: a basal conglomerate/quartzite unit, a chemically precipitated iron formation, and a shale/greywacke formation (Hemming et al., 1995; Fralick et al.,

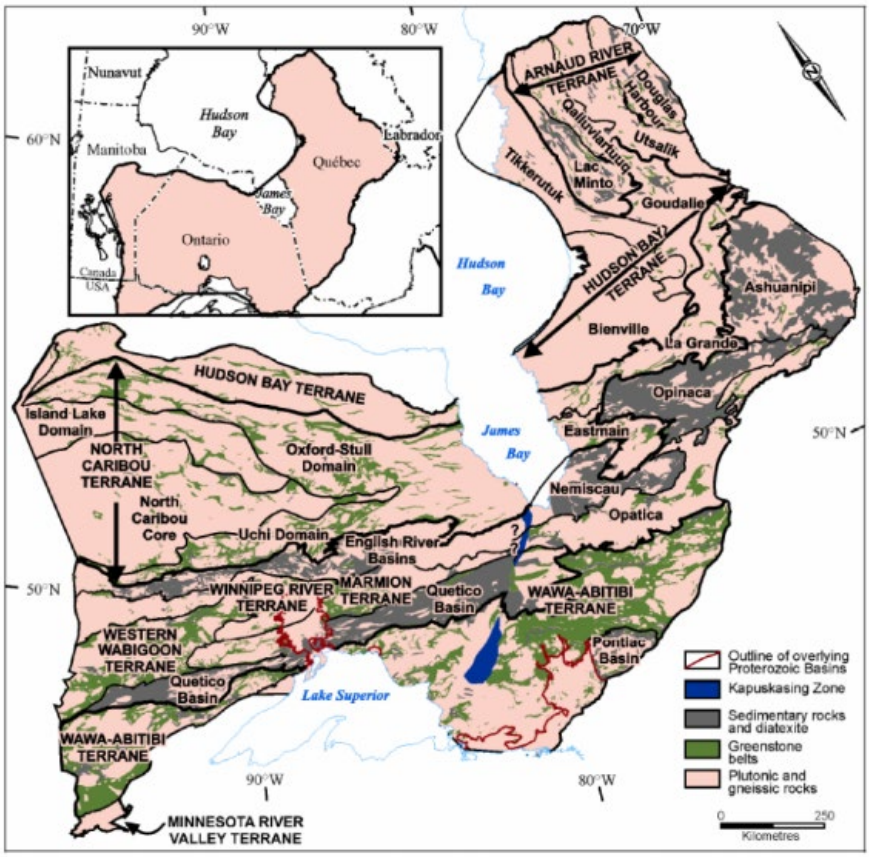

Figure 3: Map of the Archean Superior Province from Stott et al. (2010).

2002; Johnston et al., 2006). The MCR separated the basin into two segments located in Ontario-Minnesota and Wisconsin-Michigan. Local naming of the stratigraphy has occurred over a century of research, although each segment shares similar characteristics and can be correlated with each other; the basal conglomerate/quartzite is known as the Mahnomen, Pokegama, and Kakabeka Formations, the iron formation is known as Trommald, Biwabik and Gunflint Formations, and the shale/grainstone is known as Thompson, Virginia, and Rove Formation (Hemming et al., 1995: Ojakangas et al., 2001). For simplicity Kakabeka, Gunflint, and Rove will be used for the remainder of this document as these are the names most widely used in the study area.

Development of a passive margin between two land masses on the present southern edge of the Superior Province, was associated with rift development at ~2450 Ma (Johnston et al., 2006). The formation of the passive margin is thought to have occurred in three stages, an intrarift stage, a rift stage, and a post breakup stage (Southwick and Morey, 1991; Ojakangas et al., 2001). Two models have been proposed to explain how the Animikie Basin was formed. One model, outlined in Hoffman (1987), Morey and Southwick (1995), and Ojakangas et al. (2001) suggested that, after initial continental rifting, further development led to the creation of a sea-floor which eventually

closed as a result of northward subduction and creation of an island arc. This was followed by southward subduction and creation of a volcanic arc, known as the Wisconsin Magmatic Terrane. Eventually complete closure of the ocean occurred with an arc-continent collision.

Due to the collision, a foredeep was created in response to the loading during the Penokean Orogeny, in which the Animikie Group was deposited (Ojakangas et al., 2001). During the evolution of the foredeep there were changes in water depth creating the three formations of the Animikie group; a tidal flat environment where quartzite of the Kakabeka group formed, a shallow water environment where the Gunflint iron formation precipitated and finally to deep-water environment where the turbidites of the Rove Formation formed. The second model, outlined in Bond et al. (1988) for the Cenozoic Aleutian Basin formation and later expanded upon by Pufahl and Fralick (1995), Hemming et al. (1995) and Pufahl et al. (2000), suggests that the Animikie Basin evolved in a back-arc basin which formed as a result of extension created by a northward subduction zone during the sea-floor closure. The back-arc basin was subsequently destroyed by initiation of a fold and thrust belt being formed due to a change in the direction of plate convergence.

Animikie Group in the Logan Basin

Gunflint Formation

The Gunflint Formation hosts one of the most diverse Precambrian fossil communities in the world, including stromatolites with cellular level preservation (Fralick et al., 2002). This formation is 120 to 185 m thick and dips 5 degrees to the south (Goodwin, 1956). Fining and coarsening upward successions found in the formation suggests that there were transgressive and regressive events during deposition (Fralick and Barrett, 1995). The environment during formation was an open and wave dominated shelf where water depth did not exceed 10 m (Pufahl and Fralick, 2004). The chemically precipitated rocks are thought to have formed by the introduction of iron-rich anoxic bottoms to the oxygenated shelf waters (Pufahl and Fralick, 2004). The Gunflint Formation has been divided into a lower member comprised of stromatolite bioherms, chert-carbonate, grainstones and chemical mud layers and a similar upper member that also contains shales and volcanic ash layers (Fralick et al., 2002). One of the ash layers has an age determined to be 1878 ±1.3 Ma, which is believed to be the age of deposition (Fralick et al., 2002). The upper most portion of the Gunflint Formation contains agate and pyrite veins and vugs, which suggests that after deposition, during the Penokean Orogen (1860 to 1835 Ma) it was subaerially exposed and altered (Johnston et al., 2006). Also, during this hiatus in deposition, an ejecta layer was deposited from the Sudbury Impact which took place 1850 ±1 Ma (Krogh et al., 1984).

Rove Formation

Overlying the Gunflint, a sharp contact defines the bottom of the Rove Formation. The basal section of the Rove Formation consists of black carbonaceous shale with interbedded siltstone and very fine-grained sandstone, with friable tuffaceous layers (Maric and Fralick, 2005). Starting at around 5 m above the basal contact the siltstone and sandstone interlayers become less abundant and are

followed by 100 to 150 m of black fissile shale (Maric and Fralick, 2005). This is overlain by a gradational contact to a sequence of over 100 stacked coarsening upward parasequences of a sandstone-shale unit of up to 350 m thickness (Maric and Fralick, 2005). The water depth for these successions is estimated to have been 100 to 200 m (Johnston et al., 2006). The uppermost unit consists of a black shale with wave and current rippled sandstones (Maric and Fralick, 2005). This unit also contains fine-grained and finely dispersed pyrite, suggesting formation in anoxic bottom waters with persistent sulphidic conditions and unrestricted access to open ocean waters (Poulton et al., 2004). The age of deposition was determined by zircons found in the basal and upper units of the Rove Formation that yielded ages of 1835 Ma and 1780 Ma (Heaman, 2005; Addison et al., 2005).

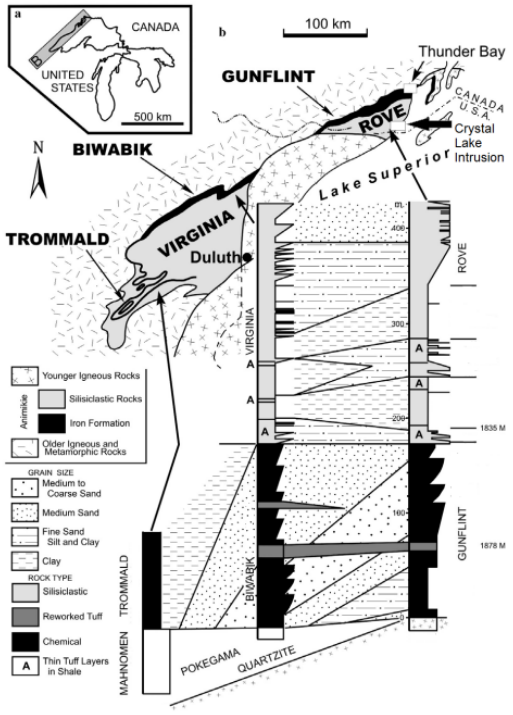

Figure 4: Location, geology and generalized stratigraphy of the Animikie Group. From O'Brien, 2018. Modified from Johnston et al. (2006).

<u>Midcontinent Rift</u>

The Midcontinent Rift (MCR) extends approximately 2500 km from the Grenville front through northwestern Ontario to Kansas (Davis and Green, 1997). It is estimated to contain 1,300,000 km^3 of volcanic and intrusive rocks, although it is difficult to determine an accurate estimate due to loss to erosion, sills, dykes, intrusions still at depth, and magma that has been underplated (Hutchinson et al., 1990; Heaman et al., 2007). The evolution of the MCR started with a broad depression that has a correlated fluvial sequence ~100 m thick at the base of the supracrustal sequence (Ojakangas and Dickas, 2002). Extensive volcanism began around 1100 Ma over a broad area but was ultimately

focused into a central graben with approximately 25 km of basalt and lesser rhyolite fill (Cannon, 1992). Around 1086 Ma, extension and volcanism waned and the rift transitioned into a protracted period of subsidence and creation of a sedimentary basin, which was filled by ~8 km of post-rift sediments (Heaman et al., 2007).

The MCR formed from ~1115 to 1084 Ma, with the majority of the igneous activity occurring in two pulses from ~1115 to 1105 Ma and ~1100 to 1094 Ma (Heaman et al., 2007; Vervoort et al., 2007). A plume model has been suggested and is generally regarded as the most likely scenario for causing the rift, due to the amount and volume of magmatic activity, as well as the isotopic and chemical character of the associated rocks (Hutchinson et al., 1990; Nicholson and Shirey, 1990; Shirey et al.,1994; Nicholson et al., 1997; Shirey, 1997). There are also suggestions that there are some inconsistencies when comparing the MCR to other large igneous provinces (LIPs), largely due to the longer than normal time span of magmatism and lack of an associated radiating dyke swarm (Hollings and Heggie, 2014).

Along the length of the MCR there are a variety of pre-rift rocks into which the intrusions were emplaced. These crustal rocks range in age from 3.6 to 1.5 Ga, with the most voluminous intrusions in Ontario emplaced in the 2.7 Ga crust of the late Archean (Van Schmus, 1992). Hypabyssal rocks dominate the Ontario portion of the MCR related intrusions (Hollings et al., 2010). These intrusions, dykes, and sills are found from the Lake Nipigon area to the Ontario-Minnesota border (Figure 5). These rocks are part of the proposed Logan Igneous Suite and subdivided into two informal groups; the Logan sills south of Thunder Bay and Nipigon sills north of Thunder Bay (Hollings et al., 2007a). Logan sills and Nipigon sills have a uniform paleomagnetic signature but are geochemically distinct from each other (Hollings et al., 2010 and references therein).

MCR Intrusions in the Logan Basin

Logan Sills

The 70 km x 30 km area of the rugged terrane of mesas and ridges towering above flat lying valleys, between Thunder Bay and the Ontario-Minnesota border, was termed the Logan Basin by North (2000). The first published geological map and rock descriptions of the area is that of T. L. Tanton (1931, 1935, and 1936). Further mapping and descriptions of the area was undertaken by Pye and Fenwick (1965), Geul (1970, 1973), and Smith and Sutcliffe (1987, 1989). Whereas the Nipigon sills and intrusions are underlain by the English River, Wabigoon, and Quetico subprovinces of the Superior Province, the Logan Basin is underlain by the Wawa subprovince.

Logan sills were originally classified with the Nipigon Sills based on a similar paleomagnetic signature, but more recently a geochemical difference between the sills north and south of Thunder Bay, has resulted in them being subdivided into two populations (Hollings et al., 2010 and references therein). Sills in the Logan Basin area have higher TiO_2 and more depleted heavy rare

earth elements (HREE) than the Nipigon Sills (Hollings et al., 2007a). The sills are mainly composed of equigranular tholeiitic diabase with chill zones at the contact with the sedimentary rocks of the Animikie Group. From the contact the sills grade upward to fine-grained ophitic diabase, medium-grained megacrystic plagioclase phyric diabase, and an iron-rich diabase which is usually found at surface (Smith and Sutcliffe, 1987). Bulk compositions of the sills are equivalent to an iron-rich quartz tholeiite basalt (Hollings et al., 2010). Thicker sills in the area may contain coarse grained gabbro with granophyre in the interior of the sills (Hollings et al., 2010). The flat lying Rove Formation, into which most of the sills are emplaced, is the main control on the thickness and morphology, often capping mesas and cuestas in the area (Cundari, 2012). Heaman et al. (2007) determined a U-Pb baddeleyite age of 1114.7 ±1.1 Ma for a Logan Sill within the basin.

Logan Basin Dykes

Three dyke suites have been recognized in the Logan basin; the Pigeon River dykes, Cloud River dykes, and the Mount Mollie Dyke (MMD), they are classified mainly by their orientation and age (Cundari, 2012).

Pigeon River dykes trend east-northeast to northeast, dip steeply to the southeast, and are the most abundant in the area. These dykes are thought to have followed preexisting normal faults, as suggested by warping of the Rove Formation on the southern sides of the dykes and slickensides on some contacts that suggests further reactivation of the faults (Smith and Sutcliffe, 1989). The observed contacts of the dykes and Rove Formation are either < 5 cm aphanitic to fine-grained diabase chill zones or 0.5 m to 1 m thick gradational contacts of fine- to medium-grained diorite containing xenoliths of Rove Formation (Smith and Sutcliffe, 1989). Most commonly the rocks are fine- to medium-grained ophitic diabase with oikocrystic clinopyroxene and glomeroporphyritic plagioclase, with a typical mineral assemblage of 60% plagioclase, 20% augite ±hypersthene, up to 15% olivine and up to 5% magnetite, and trace ilmeno-magnetite and sulphides (Geul 1973; Smith and Sutcliffe, 1989). The Pigeon River dykes range in thickness from an average of 50 m to 70 m and up to 150 m, and extend for up to 15 km. Two U-Pb baddeleyite ages have been determined for the Pigeon River dykes 1141 ±20 Ma and 1078 ±4 Ma (Heaman et al., 2007).

Cloud River dykes trend northwest and consist mainly of plagioclase-phyric quartz diabase with a U-Pb baddeleyite age of 1109.3 ±4.2 Ma (Hollings et al., 2010). Inconsistent and contradicting paleomagnetic signatures have also been reported for the Cloud River dykes with Piispa et al. (2011) reporting a N polarity and Hollings et al. (2010) reporting a R polarity, where the N polarity is more likely due to a higher sample size.

Extending east from the Crystal Lake Gabbro (CLG) lies the 35 km long 60 to 350 m wide MMD which dips between near vertically to 35° North (Geul, 1973). The MMD extends into a series of islands in Lake Superior where it shows a northeast trend compared to the east trend on the mainland. The MMD is a composite dyke with a variety of rock types and textures. Variations in

modal mineralogy result in rock types ranging from olivine gabbro to gabbro to hornblende diorite to granophyre. Grain size within the dyke varies from fine to coarse-grained to locally pegmatitic patches. Though typically massive, locally the gabbros display foliation and modal layering (Smith and Sutcliffe, 1989). With increasing quartz and hornblende in the core of the dyke, the gabbro grades into a fine- to coarse-grained diorite with either gradational or sharp contacts with a fine- to medium-grained granophyre (Smith and Sutcliffe, 1989). Smith and Sutcliffe (1989) also note textural evidence for magma mixing of mafic and felsic magmas as noted by apophyses and net veining of granophyre within the diorite and gabbro.

Geul (1970, 1973) and Cundari (2012) have mapped this area to determine relationships between the dyke sets. Based on the cross-cutting relationships as well as textural similarities found in outcrop, Cundari (2012) proposed that the emplacement sequence of the dykes was likely Pigeon River followed by Cloud River and lastly Mount Mollie. Recent geochronological, geochemical, and paleomagnetic studies have attempted to understand the evolution of the dyke sets (Hollings et al., 2007a, 2010, 2012; Heaman et al., 2007; Piispa et al., 2011), though contradictions in geochronology and paleomagnetism still exist.

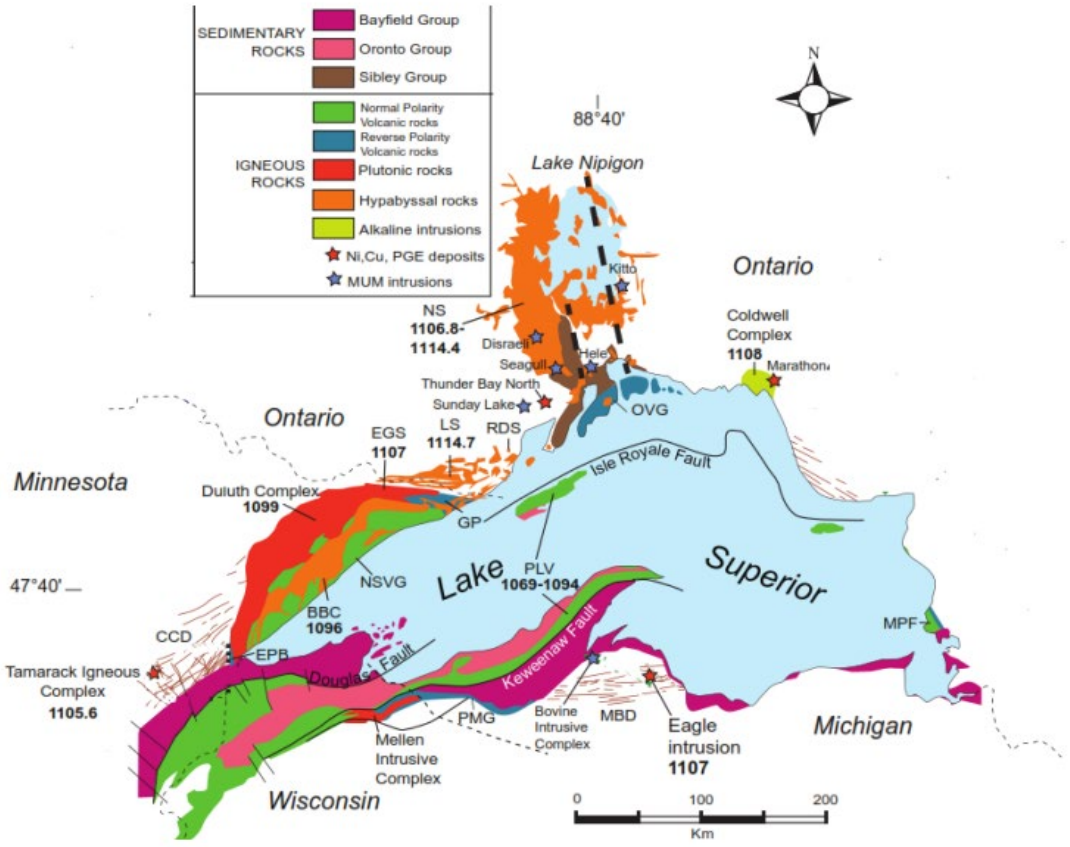

Figure 5: Generalized map of MCR related rocks from O'Brien, 2018. Modified from Paces and Miller (1993) and Miller (pers. comm.) Abbreviations: EGS- Early Gabbro Series; BBC-Beaver Bay Complex; NSVG-North Shore Volcanic Group; GP-Grand Portage volcanics; EPB- Ely's Peak Basalts

Crystal Lake Gabbro

The CLG is Y-shaped in plan view with a 5 km long northern limb trending east and a 2.75 km long southern arm trending east northeast (Figure 6). Based upon layering, foliation, and surface geometry it is thought to be a tilted canoe shaped body which plunges 15 to 20°, opening to the western end of the intrusion (Smith and Sutcliffe, 1989; Cogulu, 1993a).

Based on field observations of the western portion of the northern limb of the CLG, the intrusion has been subdivided into four zones: Basal, Lower, Middle, and Upper. The base of the intrusion consists of a <7 m thick chilled zone of aphanitic to fine-grained gabbro, with partial assimilated xenoliths of the Rove Formation and oval inclusions of Pigeon River Dyke (Smith and Sutcliffe, 1989). The Lower Zone reaches a maximum thickness of 50 m. The lower part of the zone consists of medium- to coarse-grained gabbro with patches and blocks of pegmatitic gabbro and leucotrocolite as well as disseminated sulphides (Smith and Sutcliffe, 1989). The upper portion of the Lower Zone consists of coarse-grained to pegmatitic leucogabbro and leucotroctolite with elliptical-shaped segregations rich in disseminated chromite that elongate parallel to layering (Smith and Sutcliffe, 1989). The Middle Zone is 30 m thick and defined by distinct phase layering of anorthosite, olivine leucogabbro, chromite rich anorthosite and melanocratic olivine gabbro. The Upper Zone is 80 m thick, defined by the disappearance of chromite rich layers and consists of coarse-grained olivine gabbro with an overlying medium-grained troctolite (Smith and Sutcliffe, 1989).

Cogulu (1993a) reported a great diversity in the chrome spinels regarding composition, reflecting a complex history of crystallization and reequilibration during post cumulus reactions. Observed textures suggest that the chrome spinels were the first mineral to crystallize, as a result of magma mixing during influxes of new magma (Cogulu, 1993a). Cogulu (1993b) describes two sulphide populations, both consisting of pyrrhotite, chalcopyrite, cubanite, and pentlandite. The first sulphide population forms massive and disseminated ore and is found in the Basal and Lower Zones and the second population is found in the Middle Zone and forms low grade disseminated sulphides (Cogulu, 1993b). The Se/S ratios and sulphur isotopes suggest that assimilation and devolatilization of the sulphidic Rove Formation was the principal source of Cu-Ni mineralization, which was generated from a segregation of a Fe-Ni rich monosulphide solid solution (mss) and later, through fractional crystallization, a Cu rich intermediate solid solution (iss; Cogulu, 1993b; Thomas, 2015).

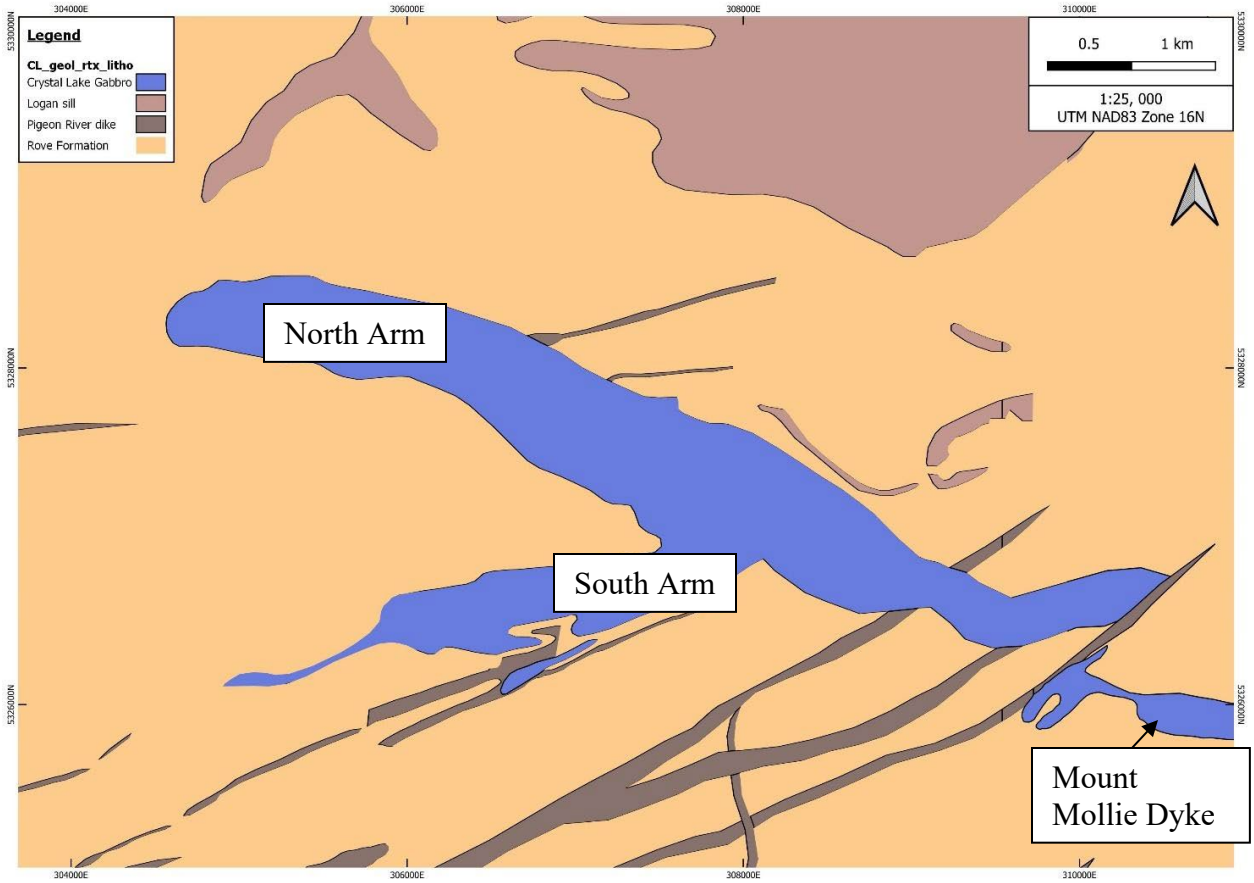

Figure 6: Illustration of the Crystal Lake Gabbro and surrounding geology.

5. 2021-2022 BOREHOLE AND FIXED LOOP EM SURVEY PROGRAM

Sampling Procedures & QA/QC

Refer to Appendix B for the Discovery International Geophysics logistics report which outlines the sampling procedures and QA/QC undertaken on the Crystal Lake Project.

Results: BHTEM Survey

Duffy Lake Holdings completed a diligent review of existing borehole data prior to deploying the BHTEM survey crew. The company had compiled a historic drill hole database with data from over 400 historic boreholes completed on the property. Between June 24th and July 7th Discovery International Geophysics located and dummy surveyed holes of interest on the property. This information allowed Duffy Lake to choose four holes that underwent BHTEM surveying. Hole information is presented in Table 2 below. Cross sections and a plan map for the surveyed holes are presented in Appendix A.

Holes were surveyed using three loop configurations as described in Appendix B. Hole surveying took place between December 2nd, 2021 and January 10th, 2022

Table 2: Borehole information for surveyed holes

BHID	Easting	Northing	Elevation	Depth
CRLK-141	306191.4	5328283.7	444.02m	730m
CRLK-TB-06	307415.6	5326999	476.16m	897.4m
CRLK-TB-14	306707.1	5327839.7	420.06m	1158.85m
CRLK-TB-19	307342.3	5326673.4	458.70m	788.52m

The BHTEM survey detected multiple late-time conductive responses. The most significant conductors were observed in CRLK-141 at 700m depth, and in CRLK-TB-06 at 790m. Both of these responses are visible in surveys with transmitter loops located around and off-axis from each borehole, and persist well into the late time, with signal in the on-axis component persisting after 800ms. The other two boreholes, CRLK-TB-14 and CRLK-TB-19 exhibit broad early-mid responses consistent moderately conductive sedimentary formations found in the area.

Results: FLTEM Survey

The FLTEM survey was carried out between November 15th, 2021 and February 15th, 2022. A total of 487 survey stations were collected across 39 lines (Figure 7). Lines were oriented at 200 degrees and spaced at 150m. Station spacings were at 75m.

The FLTEM survey identified seven discrete late-time conductors, with significant signal present even in the latest time gate (>880ms second after turn-off). Two of these conductors appear to be co-located with the south arm of the intrusion while the remaining five appear to be located outboard of the Crystal Lake Gabbro. The most mundane explanation for these anomalies is local thickening of moderately-conductive sulfidic and carbonaceous Rove Formation sediments. The two conductors coincident with the Crystal Lake Gabbro are more consistent with a model of magmatic sulfide ore formation and could correspond to lenses of massive or semi-massive sulfide at the base of the intrusion. 3D inversion and modeling will be conducted to further develop these hypotheses, which will need to be confirmed or falsified with further drilling.

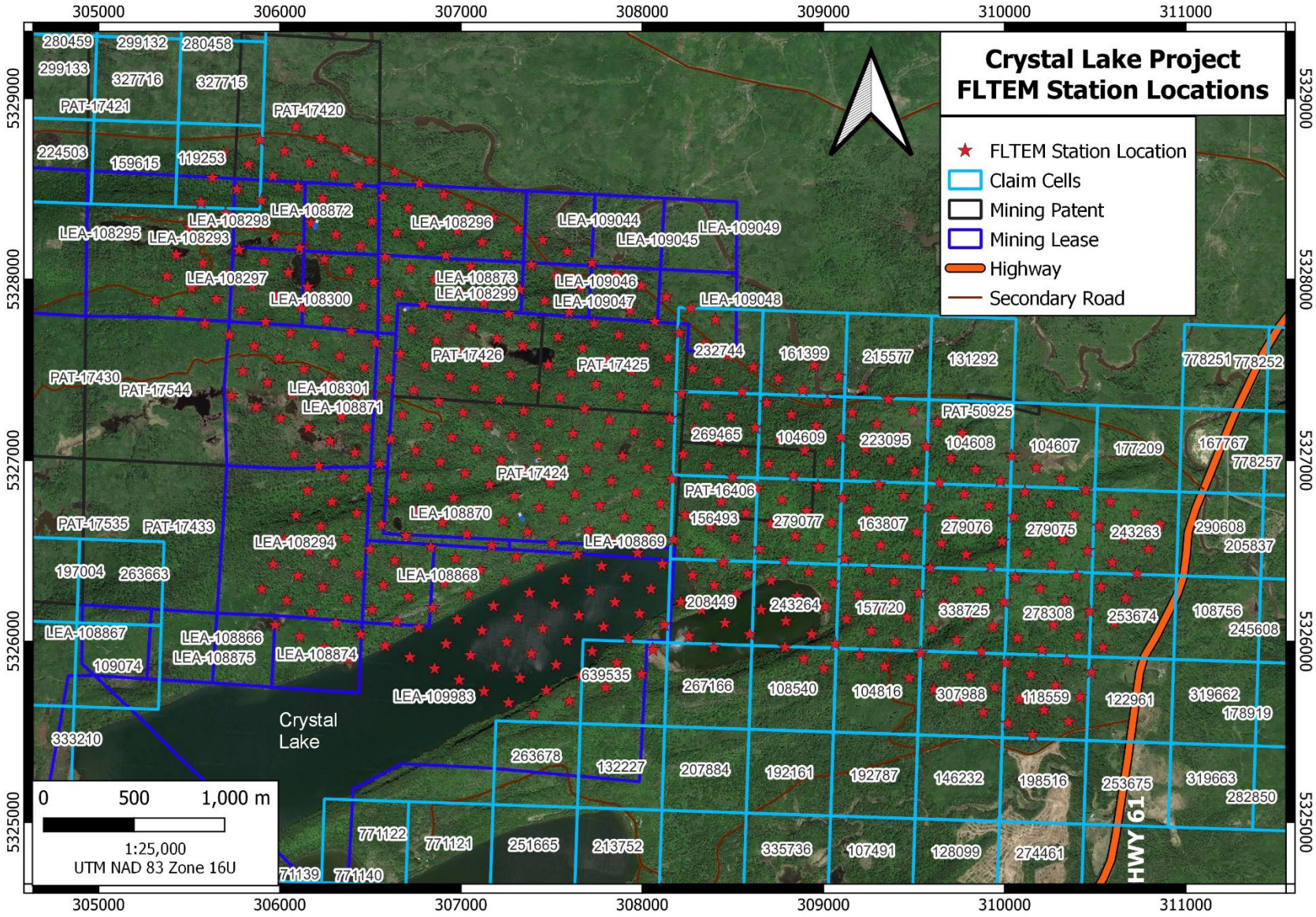

Figure 7:FLTEM Station locations

6. CONCLUSIONS

Both the FTEM and BHEM surveys completed at Crystal Lake produced EM responses warranting further investigation. Duffy Lake will complete 3D inversion modelling on these responses using their proprietary stochastic inversion methods to glean any responses that could be related to magmatic sulfide mineralization. Any targets that fall into this category will be considered for drill targeting in future programs.

7. STATEMENT OF EXPENDITURES

Item	Invoice Number	Unit	Cost
Borehole search Mob-Demob	2021046	Flat Rate	$8,300.00
DDH Search	2021090	3250/day	$35,750.00
FLTEM Mob-Demob	2021093	Flat Rate	$14,050.00
BHTEM Mob-Demob	2021093	Flat Rate	$14,050.00
FLTEM Surveying	2021097	995/Station	$148,255.00
Loop Deployment FLTEM	2021097	4500/day	$5,850.00
Processing FLTEM	2021097	250/day	$2,750.00
Helicopter Loop Deployment BHTEM	2021097	Flat Rate	$9,676.00
Helicopter Loop Deployment FLTEM	2021097	Flat Rate	$9,676.00
FLTEM Surveying	2021100	995/Station	$120,395.00
BHTEM Surveying	2021100	4750/day	$40,375.00
Processing FLTEM	2021100	250/day	$1,625.00
Processing BHTEM	2021100	250/day	$1,625.00
Loop Retrieval FLTEM	2021100	4500/day	$2,250.00
Loop Retrieval BHTEM	2021100	4500/day	$2,250.00
FLTEM Surveying	2022002	995/Station	$21,890.00
BHTEM Surveying	2022002	4750/day	$90,250.00
Processing FLTEM	2022002	250/day	$2,750.00
Processing BHTEM	2022002	250/day	$2,750.00
Loop FLTEM	2022002	4500/day	$4,500.00
Loop BHTEM	2022002	4500/day	$4,500.00
FLTEM Surveying	2022018	995/station	$242,780.00
BHTEM Surveying	2022018	4750/day	$19,000.00
Processing FLTEM	2022018	250/day	$3,000.00
Processing BHTEM	2022018	250/day	$3,000.00
Snowplowing	12423	Flat Rate	$2,500.00
Snowplowing	12502	Flat Rate	$2,500.00
Snowplowing	12522	Flat Rate	$2,500.00
Snowplowing	12638	Flat Rate	$2,500.00
Gyro	78277	Flat Rate	$9,925.00
		Total	**$831,222.00**

	BHTEM Total Costs	FLTEM Total Costs	Split Costs
Subtotal	$241,451.00	$579,771.00	$10,000.00
Total	**$246,451.00**	**$584,771.00**	

Table 8:Expenditure Summary for the Crystal Lake BHEM and FLTEM geophysical program

Hole ID	ClaimID	Depth	Proportion	Proportion of Costs
CRLK-141	LEA-108872	730	20.42%	$50,324
CRLK-TB-06	PAT-17424	898	25.12%	$61,906
CRLK-TB-14	PAT-17426	1159	32.42%	$79,898
CRLK-TB-19	PAT-17424	788	22.04%	$54,323
	Total	**3575**	**100.00%**	**$246,451**

Figure 9: Assessment credit allocation for the BHEM survey

Cell ID	FLTEM Stations	Proportion	Cost Proportion
PAT-17424	54	11.11%	$64,974.56
PAT-17426	18	3.70%	$21,658.19
PAT-17425	17	3.50%	$20,454.95
PAT-16406	13	2.67%	$15,642.02
PAT-17420	11	2.26%	$13,235.56
LEA-109983	51	10.49%	$61,364.86
LEA-108301	26	5.35%	$31,284.05
LEA-108294	19	3.91%	$22,861.42
LEA-108293	13	2.67%	$15,642.02
LEA-108296	13	2.67%	$15,642.02
LEA-108873	11	2.26%	$13,235.56
LEA-108868	8	1.65%	$9,625.86
LEA-108297	8	1.65%	$9,625.86
LEA-108298	7	1.44%	$8,422.63
LEA-108300	7	1.44%	$8,422.63
LEA-108872	6	1.23%	$7,219.40
LEA-108874	6	1.23%	$7,219.40
LEA-109047	5	1.03%	$6,016.16
LEA-109046	5	1.03%	$6,016.16
LEA-109048	4	0.82%	$4,812.93
LEA-108871	3	0.62%	$3,609.70
LEA-108870	3	0.62%	$3,609.70
LEA-109044	2	0.41%	$2,406.47
LEA-108869	2	0.41%	$2,406.47
LEA-109045	1	0.21%	$1,203.23
104607	3	0.62%	$3,609.70
104608	7	1.44%	$8,422.63
104609	7	1.44%	$8,422.63
118559	10	2.06%	$12,032.33
119253	1	0.21%	$1,203.23
122207	3	0.62%	$3,609.70
122961	1	0.21%	$1,203.23
156493	4	0.82%	$4,812.93
157720	9	1.85%	$10,829.09
161399	4	0.82%	$4,812.93
163807	10	2.06%	$12,032.33
208449	11	2.26%	$13,235.56
215577	1	0.21%	$1,203.23
223095	10	2.06%	$12,032.33
232744	5	1.03%	$6,016.16
243263	8	1.65%	$9,625.86
243264	9	1.85%	$10,829.09
253674	4	0.82%	$4,812.93
269465	5	1.03%	$6,016.16
278308	10	2.06%	$12,032.33
279075	10	2.06%	$12,032.33
279076	9	1.85%	$10,829.09
279077	7	1.44%	$8,422.63
326337	6	1.23%	$7,219.40
338725	10	2.06%	$12,032.33
338726	4	0.82%	$4,812.93
639535	5	1.03%	$6,016.16
Total	**486**	**100.00%**	**$584,771.00**

Figure 10: Assessment credit allocation for the FLTEM survey

8. SIGNATURES

I, Steven D. Flank, of the City of Thunder Bay, in the Province of Ontario, do hereby certify that:

1. I am the President and Principal Geoscientist of Bayside Geoscience Inc., a geological consulting company based in Thunder Bay, Ontario.
2. I am a member in good standing with the Association of Professional Geoscientists of Ontario (#2695), residing at 124 Sherwood Drive, Thunder Bay, Ontario, P7B 6L1.
3. I attained an H.BSc. in Geology from Lakehead University in Thunder Bay, Ontario (2011) and an M.Sc. in Mineral Exploration from Laurentian University in Sudbury, Ontario (2017).
4. I have worked as an exploration geologist for over 11 years focusing on project generation and early-stage gold projects including shear zone hosted lode gold and intrusion related disseminated gold deposits and intrusion related Ni-Cu-PGE deposits.
5. I have personally reviewed all technical elements of the 2021-2022 Borehole and Fixed Loop TEM Survey and am the signing author of this report.

Dated

February 27, 2023

Thunder Bay, Ontario, Canada

Steven D. Flank, M.Sc., P.Geo.

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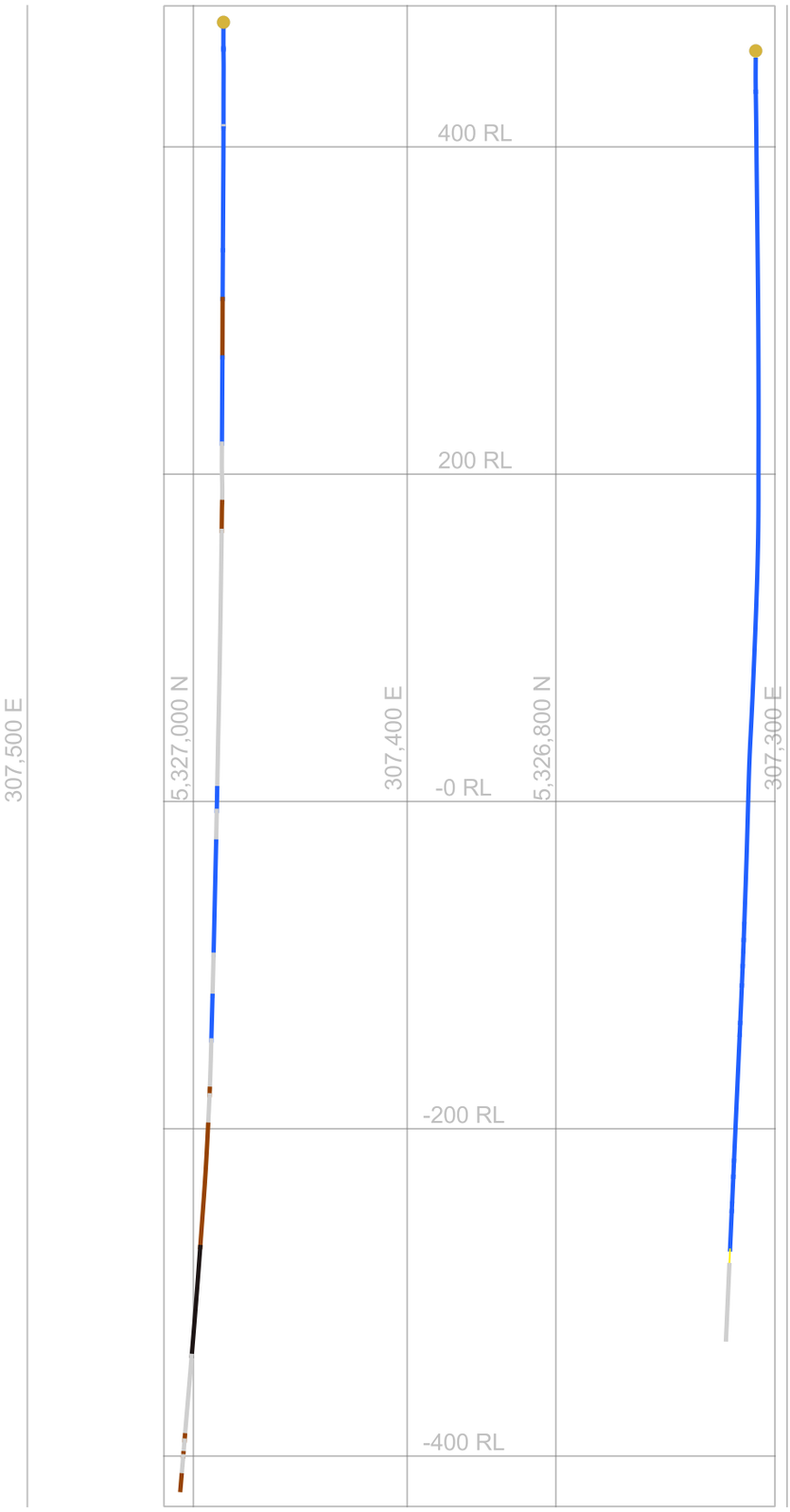
APPENDIX A: MAP AND SECTIONS OF SURVEYED HOLES

BAYSIDE Geoscience

CRLK-TB-06
CRLK-TB-19

Lithology

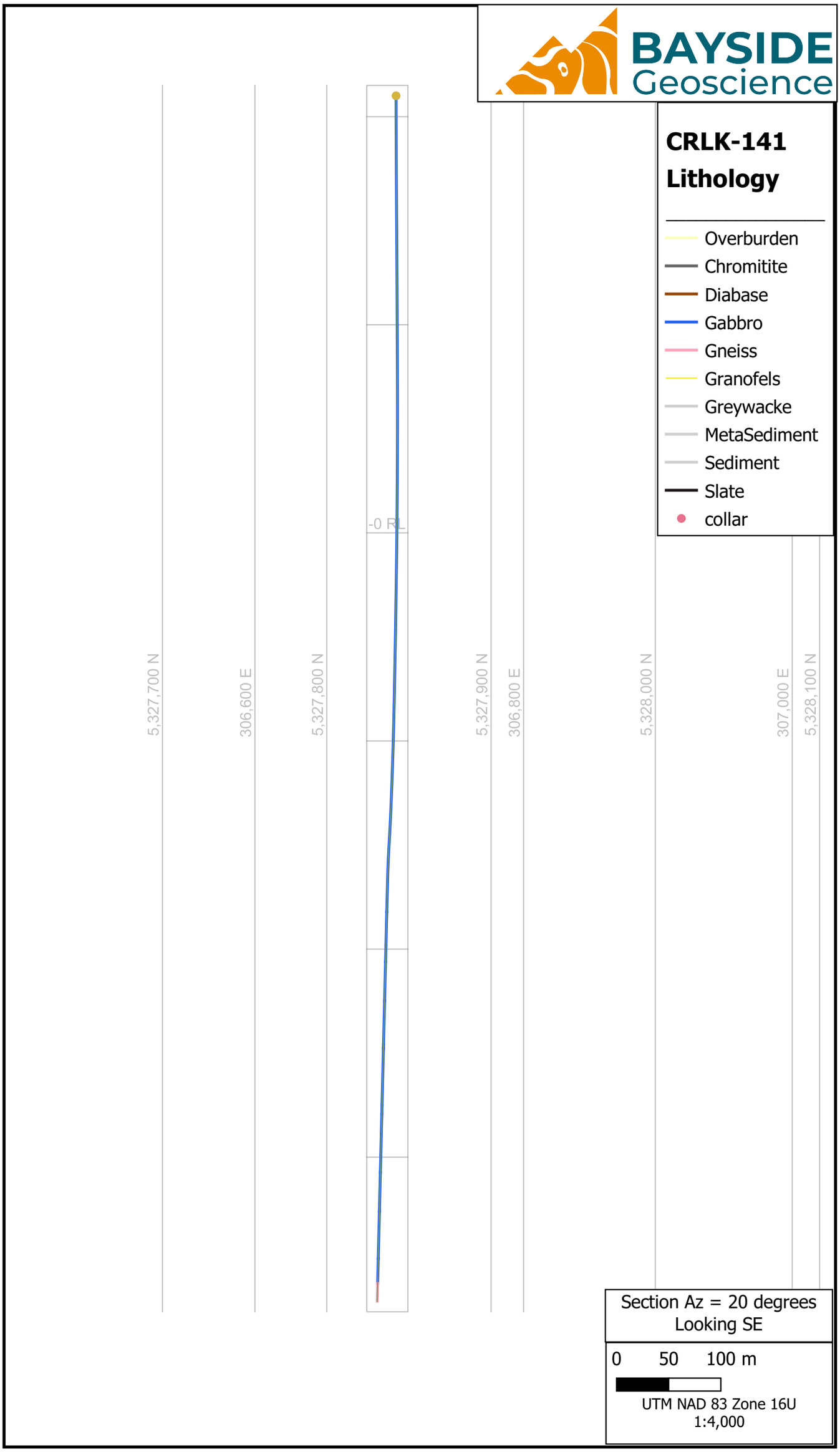
- Overburden
- Chromitite
- Diabase
- Gabbro
- Gneiss
- Granofels
- Greywacke
- MetaSediment
- Sediment
- Slate
- collar

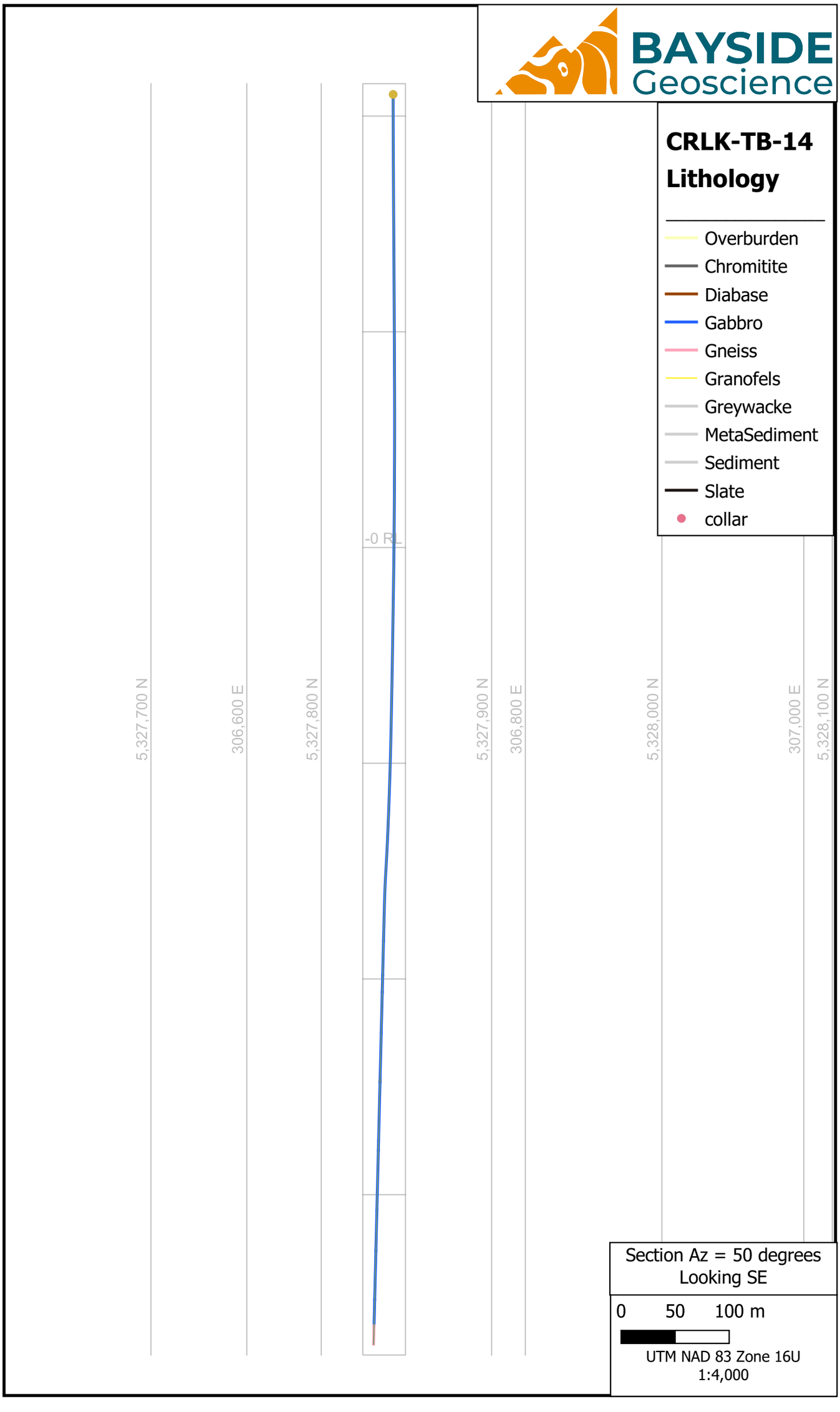


Section Az = 25 degrees
Looking SE

0 50 100 m

UTM NAD 83 Zone 16U
1:4,000


BAYSIDE
Geoscience
CRLK-141
Lithology
Overburden
Chromitite
Diabase
Gabbro
Gneiss
Granofels
Greywacke
MetaSediment
Sediment
Slate
collar
-0 RL
5,327,700 N
306,600 E
5,327,800 N
5,327,900 N
306,800 E
5,328,000 N
307,000 E
5,328,100 N
Section Az = 20 degrees
Looking SE
0
50
100 m
UTM NAD 83 Zone 16U
1:4,000


BAYSIDE
Geoscience
CRLK-TB-14
Lithology
Overburden
Chromitite
Diabase
Gabbro
Gneiss
Granofels
Greywacke
MetaSediment
Sediment
Slate
collar
-0 RL
5,327,700 N
306,600 E
5,327,800 N
5,327,900 N
306,800 E
5,328,000 N
307,000 E
5,328,100 N
Section Az = 50 degrees
Looking SE
0
50
100 m
UTM NAD 83 Zone 16U
1:4,000

APPENDIX B: DISCOVERY INTERNATIONAL GEOPHYSICS REPORT

Discovery
International Geophysics

LOGISTICS REPORT

KOBOLD METALS CO

CRYSTAL LAKE BH&FLTEM PROJECT

ONTARIO, CANADA

BOREHOLE & FIXED LOOP TEM SURVEYS

NOVEMBER 15TH, 2021 TO FEBRUARY 15TH, 2022

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INTRODUCTION

Between November 15th, 2021 and February 15th, 2022, Discovery Geophysics Inc. carried out a Borehole Transient Electromagnetic survey (BHTEM) and Fixed Loop Transient Electromagnetic survey (FLTEM) on the Crystal Lake project for Kobold Metals. The geophysical program carried out by Discovery was designed to detect and characterize discrete conductors within the survey area. This was achieved employing a EMIT DigiAtlantis Borehole system, and Supracon Jessy-Deep Low Temperature SQUID B-field surface sensor in combination with a three subsequent single-turn transmitter loops. This report provides a summary of the survey procedures, logistics, and personnel; it also describes the equipment specifications, data acquisition and processing procedures, and deliverables.

PROJECT ID	Crystal Lake BH&FLTEM Project
GENERAL LOCATION	Crystal Lake, Ontario, Canada (See Figure 1)
SURVEY DESCRIPTION	**Borehole and Fixed Loop Transient Electromagnetics (BH & FLTEM)**
OBJECTIVES	To detect and characterize the geometry and electromagnetic properties of conductors in the project area utilizing EMIT (B-field) sensor and Supracon SQUID technology in both borhole and surface configurations.
CLIENT	**KOBOLD METALS CO.** Suite 210 - 64 Shattuck Square Berkeley, CA 94704 USA
CLIENT REPRESENTATIVE	**Jeff Jurinak** COO jeff.jurinak@koboldmetals.com

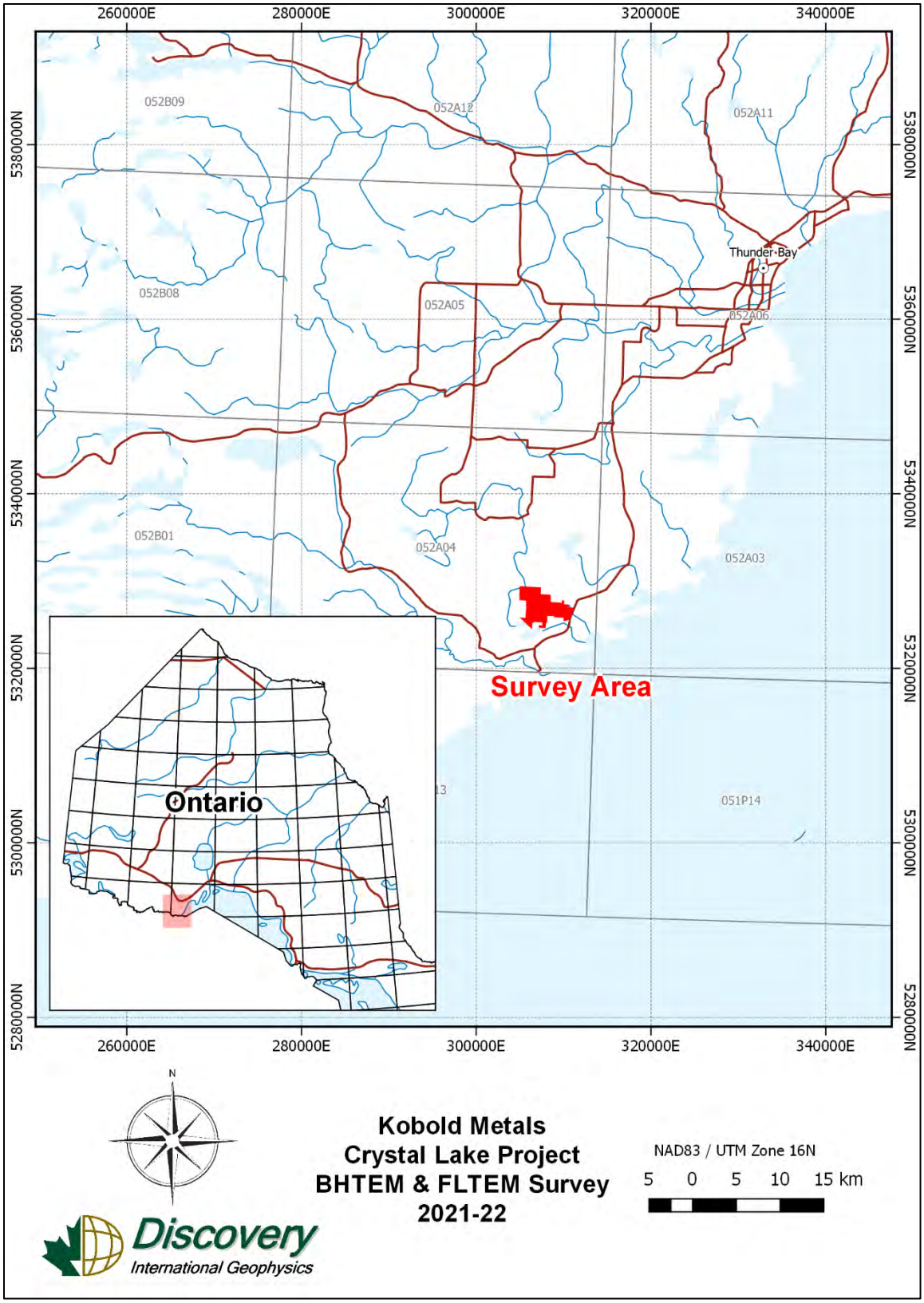


Figure 1: Location Map – Crystal Lake BH&FLTEM Project

PROJECT LOCATION, ACCESS, AND PHYSIOGRAPHY

Location	Crystal Lake, Thunder Bay, Ontario, Canada, on NTS map sheet 052A/04; at approximately 48.0674° N and 89.5773° W (UTM Zone 16 NAD83 308000E 5327000N). The property was accessed by 4x4 truck, UTV, and snomobile.
Access	The crew used a 4x4 trucks to access the survey area from lodging in Thunder Bay, daily and traversed the grids on foot, UTV, and snowmobile.
Accommodations	Accommodations, meals, and other amenities were provided by Discovery at various B&B's within the Thunder Bay area.
Physiography	The terrain was dominated by hills/ridges trending northeast. Coniferous forest comprised the dominate vegetation across the survey grid. A portion of the survey area was covered by lakes, namely Crystal Lake, and Bearpad Lake. Elevation varied from 205m – 425m above ellipsoid. There were no prepared cut lines.
Survey Grid(s)	Loop1, Loop2, Loop3
Coordinate system	Datum: NAD83, UTM Zone 16

SURVEY INFORMATION

3.1 HSEC

Discovery Int'l Geophysics moved over to paperless HSEC documentation in 2014 by employing the use of our online software, eCompliance. The eCompliance system allows full transparency between Discovery and our clients, with employee training records, safety meetings, inspections, incidents and more available to all involved parties at the click of a mouse.

Crews are expected to complete their documentation on a daily basis and then upload it to eCompliance where it is automatically organized into the project site and document type, and it is then instantly available for the senior management and clientele for review.

Crystal Lake Project Health and Safety

Prior to the crew departing their base of operations in Saskatoon, SK, the crew cheif took on the assignment of HSE Coordinator. This meant that he took on the role of ensuring all safety meetings and inspections were documented.

Primary Health and Safety Concerns for this Project

- COVID-19 spread and infection. The crew took preventative measures to reduce the chances of contracting the virus. There were no reported cases of anyone associated with the project contracting Covid 19 over the duration of the program.
- Remote working conditions. The crew made sure they had adequate avenues of communication to get a hold of emergency services in the event of an emergency, this included Iridium Satellite Phones, Cellular Phones and VHF Handheld Radios.

Project Incident and Near-Miss Review

There were no reported incidents or near-miss reports for this project.

3.2 BOREHOLE TEM SURVEY INFORMATION

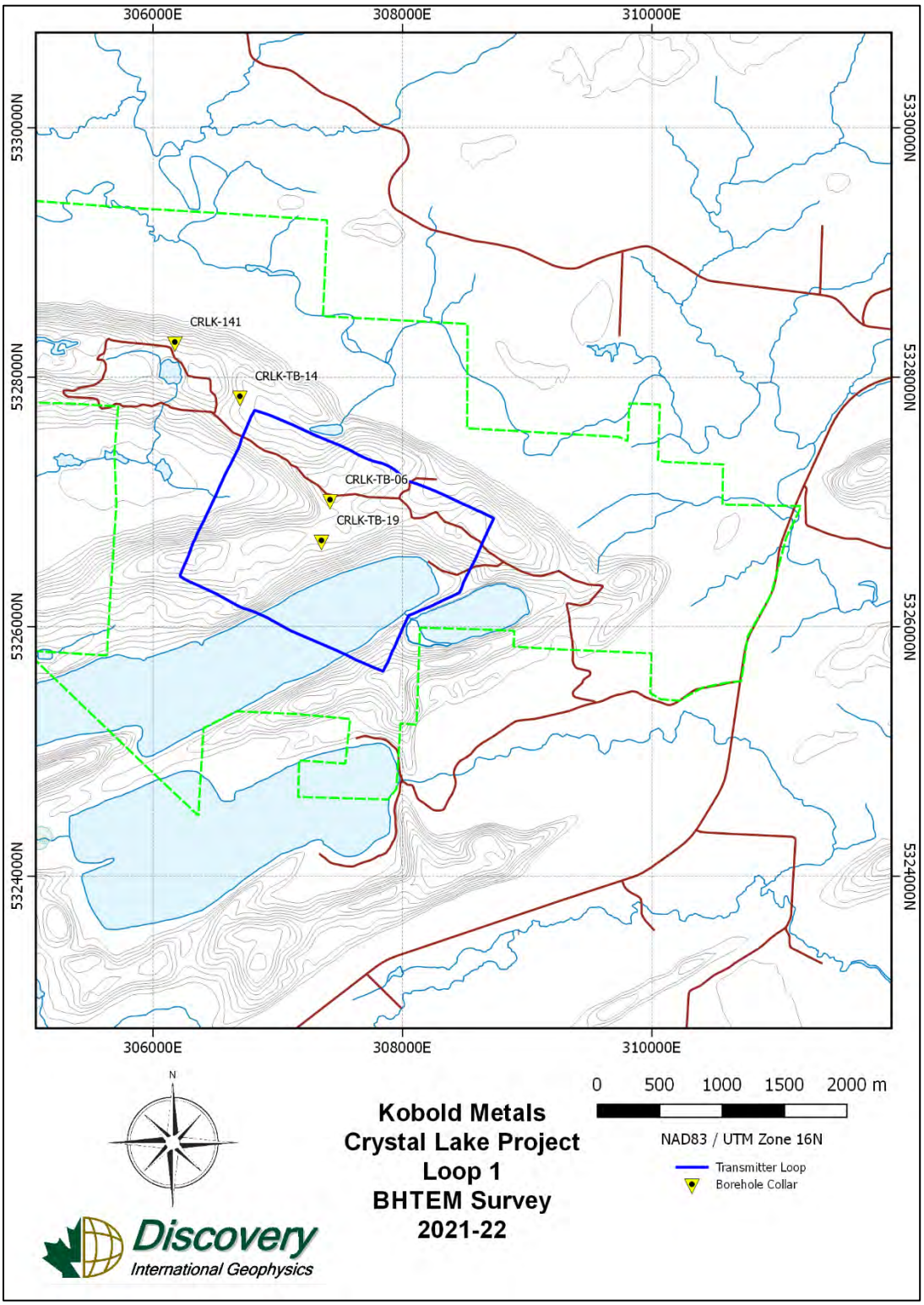


Figure 2: Crystal Lake Loop 1 BHTEM Coverage Map

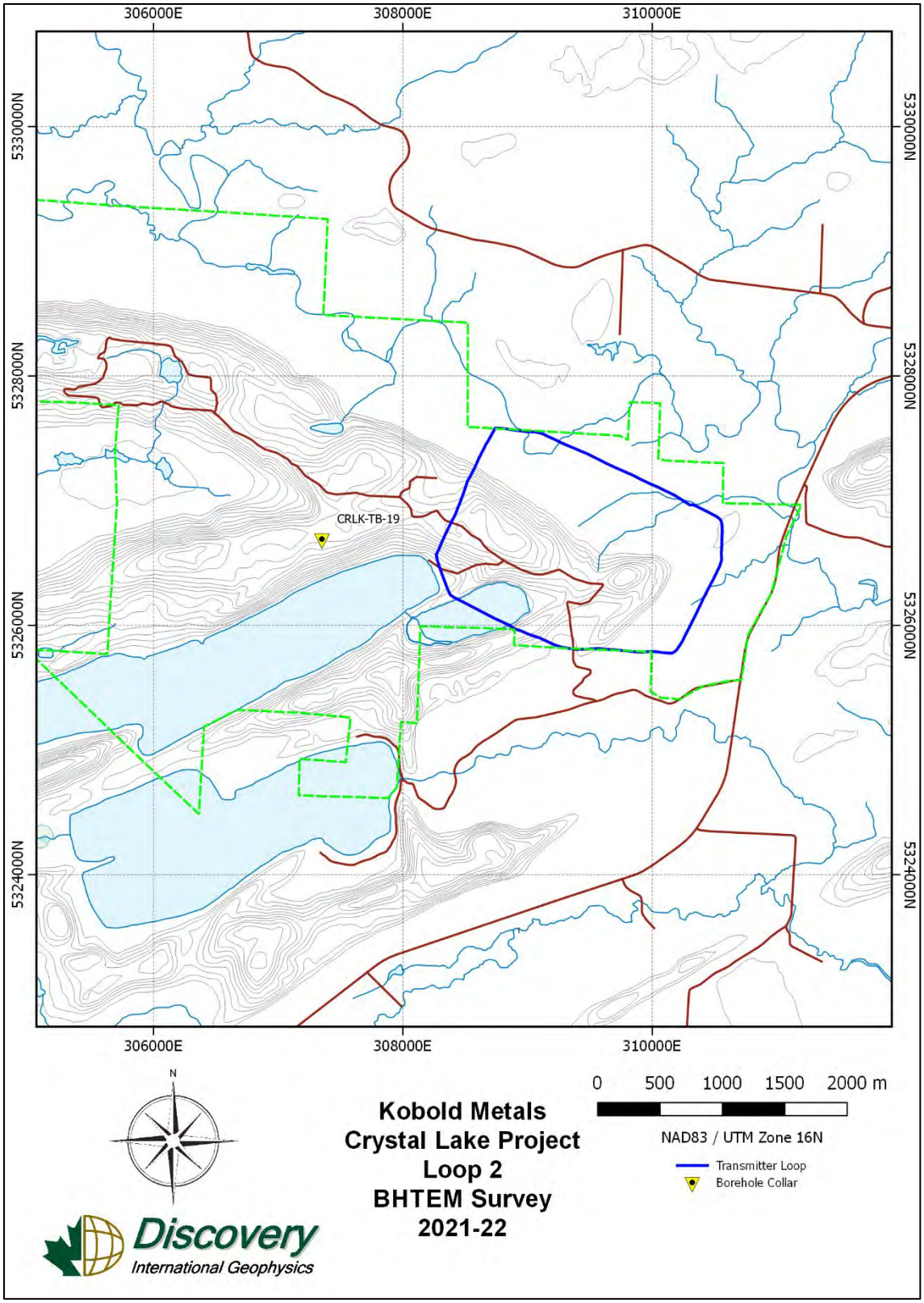


Figure 3: Crystal Lake Loop 2 BHTEM Coverage Map

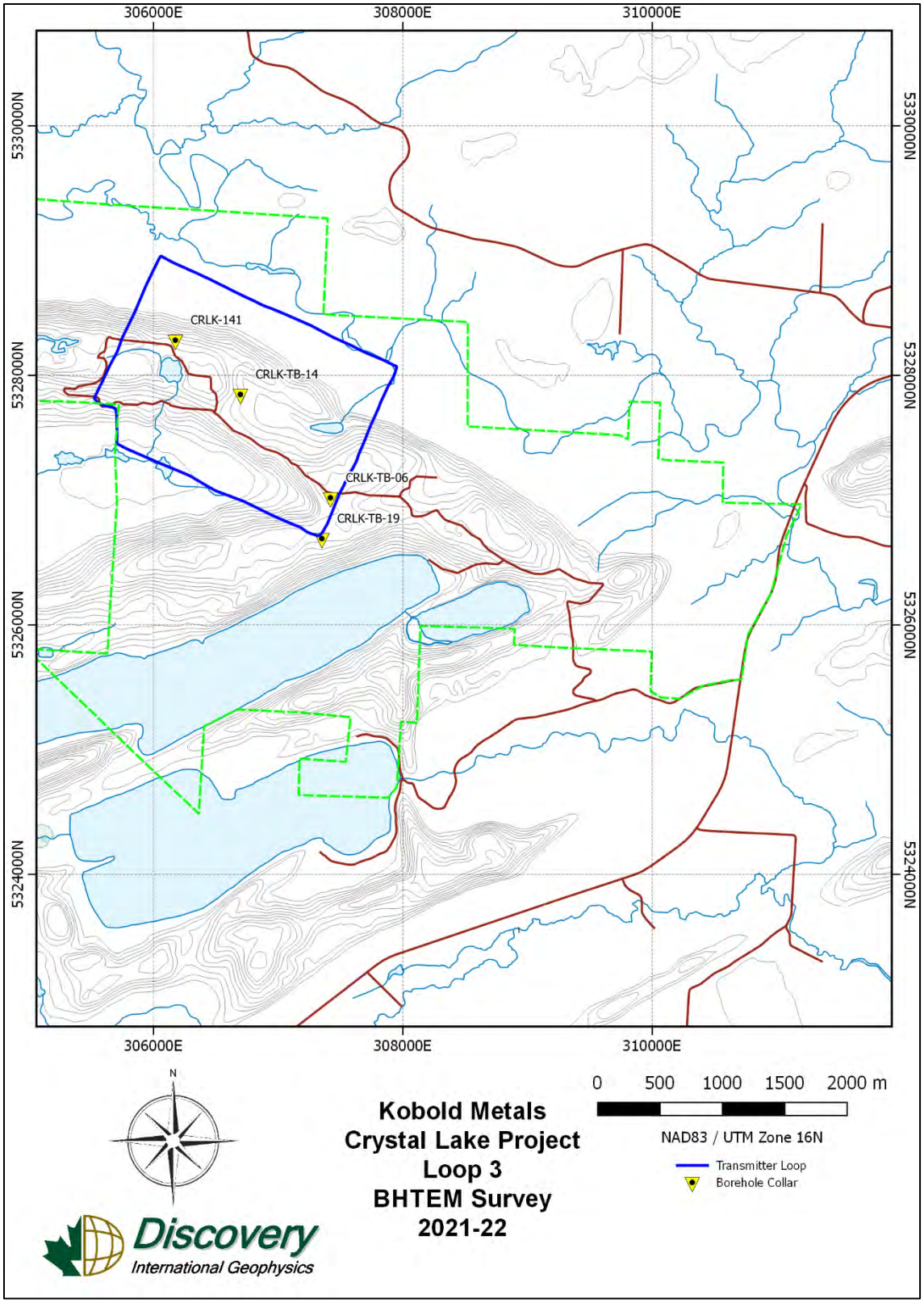


Figure 4: Crystal Lake Loop 3 BHTEM Coverage Map

SURVEY DESCRIPTION

Borehole TEM Profiling, data acquisition at 10 to 40 m intervals. One profile off of one loop for each borehole was measured using an EMIT DigiAtlantis B-field system. A total of 4 Holes were surveyed: CRLK-141, CRLK-TB-06, CRLK-TB-14, CRLK-TB-19. All holes were surveyed with loop 1 & 3. Though CRLK-TB-19 was completed with the additional loop 2.

MEASUREMENTS

U, **V,** and **A** components of the Primary and Secondary EM B-field.

PERSONNEL

Connor Harrsion	Crew Chief
Mohamed Haiba	Project Geophysicist, Operator
Kristopher Rae	Field Assistant
Cole Smytaniuk	Field Assistant
Ryan Olson	Geophysicist, QC, Processing, Report

SURVEY COVERAGE

Total coverage: 6375 meters off of 4 boreholes, and 3 loops. Details of the survey coverage and location maps can be found in **Table 1** and **Figure 2, 3, 4**, respectively.

Table 1: BHTEM Survey Coverage

Hole ID	UTM (NAD83/ Zone 13N)	Azimuth/Dip	Sensor	Data	Surveyed Depth (m)		Total Surveyed (m)
CRLK-141	306174E 5328282N Height 407m	Azimuth 003° Dip 90°	DigiAtlantis 3-Component B-field	U,V,A	Loop 1	25 - 720	695
					Loop 3	20 - 720	700
CRLK-TB-06	307418E 5327019N Height 438m	Azimuth 003° Dip 90°	DigiAtlantis 3-Component B-field	U,V,A	Loop 1	20 - 880	860
					Loop 3	20 - 880	860
CRLK-TB-14	306696E 5327847N Height 386m	Azimuth 183° Dip 90°	DigiAtlantis 3-Component B-field	U,V,A	Loop 1	20 – 780	760
					Loop 3	20 - 780	760
CRLK-TB-19	307349E 5326692N Height 420m	Azimuth 003° Dip 90°	DigiAtlantis 3-Component B-field	U,V,A	Loop 1	20 - 600	580
					Loop 2	20 - 600	580
					Loop 3	20 - 600	580

SURVEY PARAMETERS

Table 2: BHTEM Survey Parameters

Receiver Parameters	
Survey Mode	Borehole TEM
Polarity convention	**A:** along drill hole axis, positive upward. **U:** orthogonal to **A** and in azimuthal direction of the drillhole, positive upward. **V:** orthogonal to **A** and **U**, positive counter-clockwise to **U.** The direction of current flow in the Tx loop is such that the total primary field is oriented upward in the centre of the loop.
Synchronization	GPS time sync & backup crystal sync
Station Intervals	10 – 40 m
Stacking	128 stacks/reading, ~8 readings/station
Number of Gates	43-time gates, 0.087 to 992.06 ms after shut-off See **Appendix A** for a complete list of gates.
Transmitter Parameters	
Frequency	0.25 Hz
Effective Current	28 A
Signal	Bipolar square wave, 50% duty cycle
Synchronization	GPS time sync & backup crystal sync
Loop(s)	2000 x 1500 m
Turn-off	0.800 (ms)
Composition	Single turn 10Ga

EQUIPMENT

Table 3: BHTEM Primary Equipment List

		#	Description
Acquisition			
	Sensor	1	EMIT DigiAtlantis 3-Component B-Field Probe and Controller
	Receiver	1	Acquisition Tough Book
Transmission			
	Generator	1	Honda EG6500 6.5kW peak output
	Transmitter	1	Phoenix TXU-30
	Tx Controller	1	EMIT SMARTem24 Tx controller

See **Appendix A** for more details.

SOFTWARE

EMIT SMARTem24: Acquisition, quality control
EMIT Maxwell: Data processing, plotting, and modelling

PROFILE PLOTS

Profile plots can be found in **APPENDIX C.**

3.3 FIXED LOOP TEM SURVEY INFORMATION

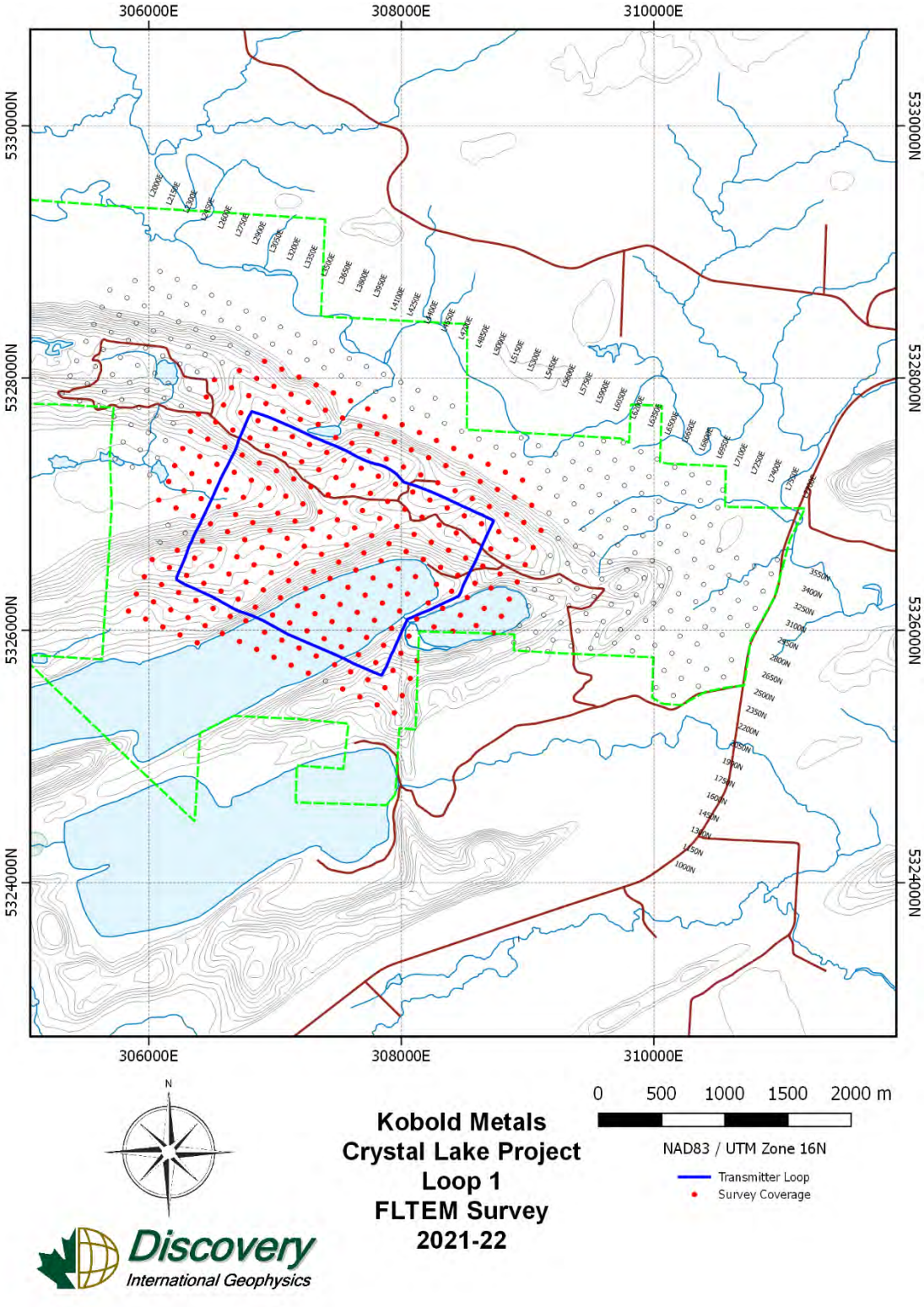


Figure 5: Crystal Lake Loop 1 FLTEM Coverage Map

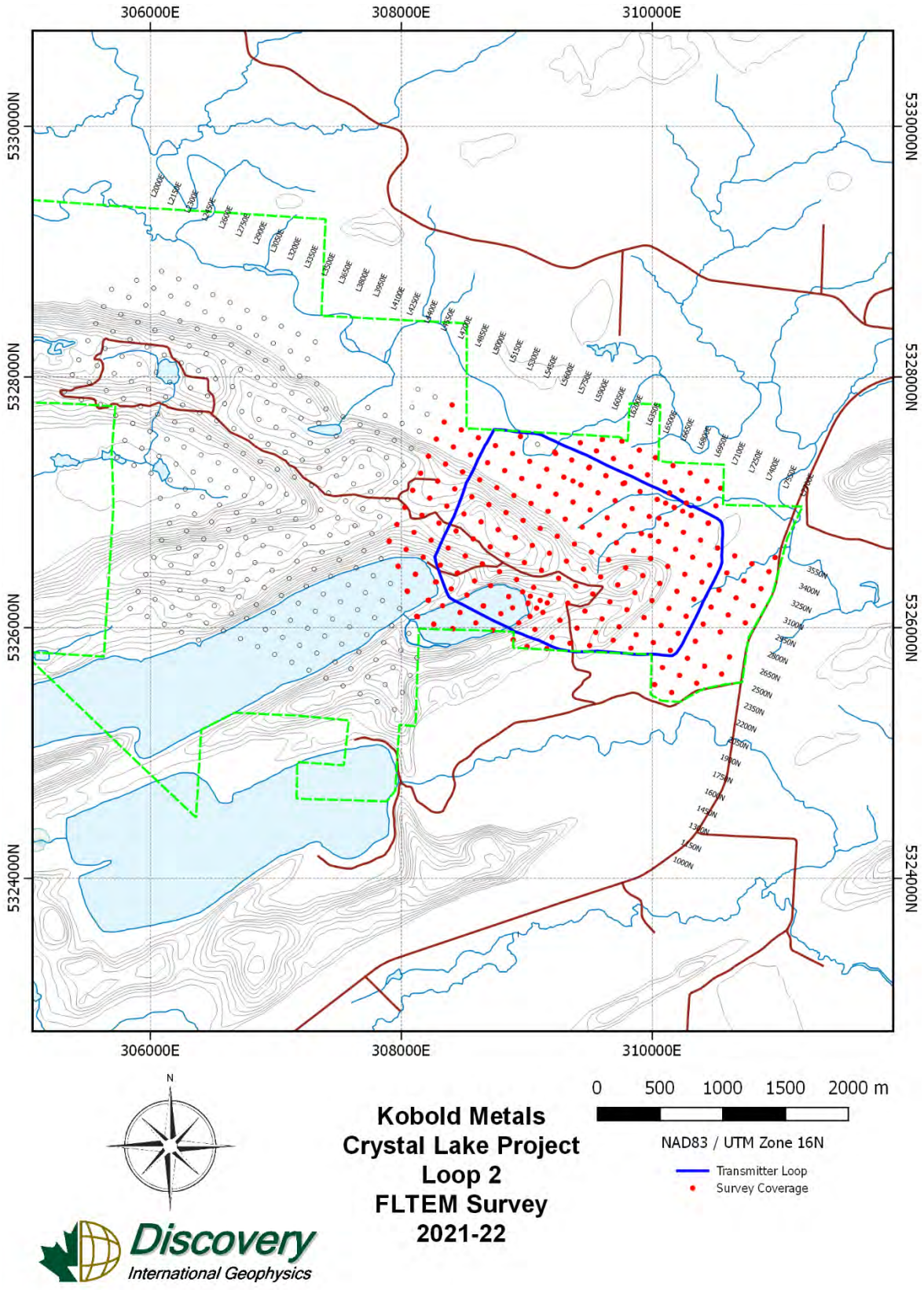


Figure 6: Crystal Lake Loop 2 FLTEM Coverage Map

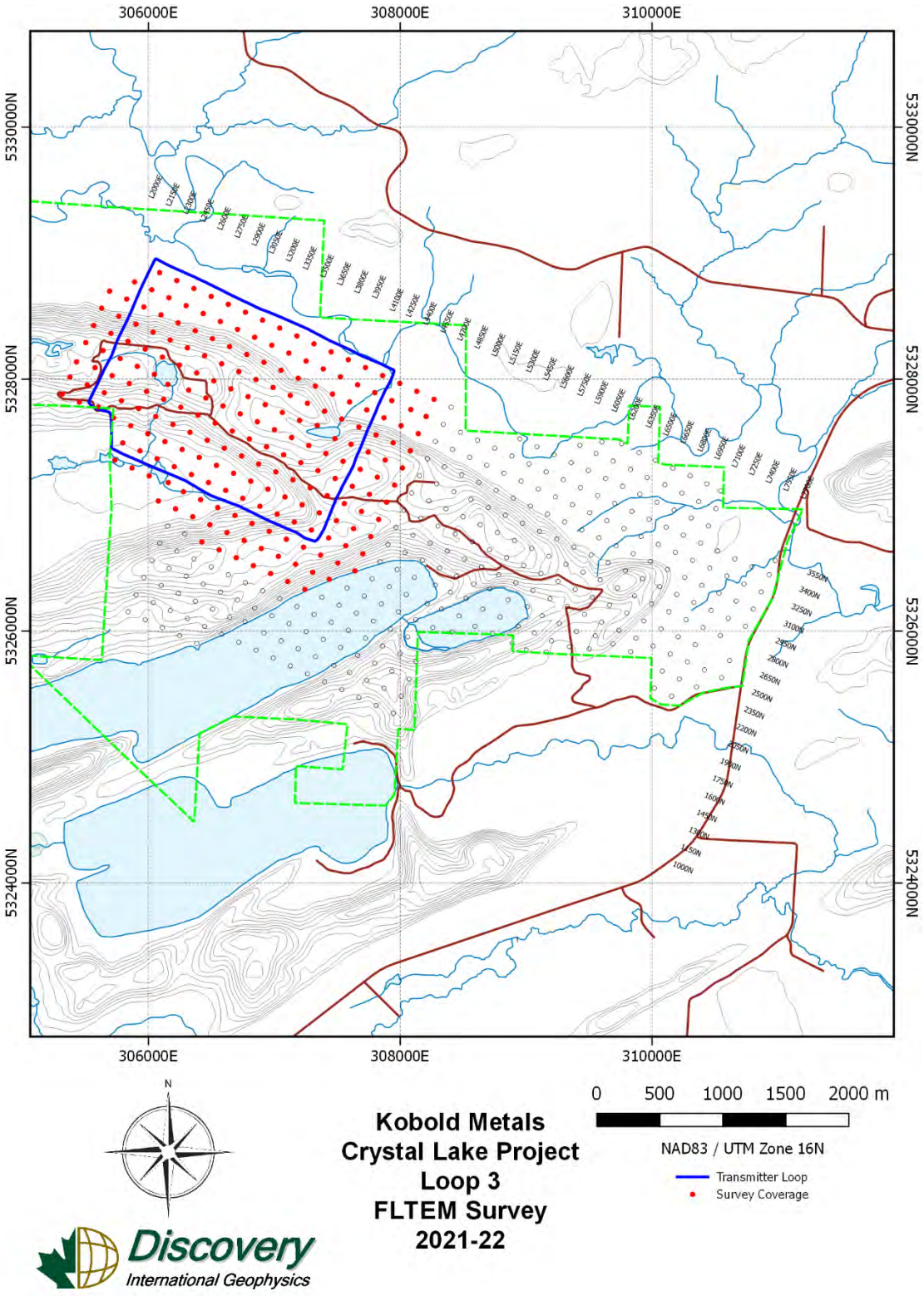


Figure 7: Crystal Lake Loop 3 FLTEM Coverage Map

SURVEY DESCRIPTION

Ground TEM Profiling, data acquisition at 75m - 150m station intervals. Three transmitter loops were laid out over 43 lines. An LTS SQUID sensor was used to measure 3-components of the induced B-Field. The transmitter loop was laid out by air with the Discovery's helicopter attachment, HeliWinder, using preset GPS for navigation. Survey lines were cut and station placement was by virtual gridding with a handheld GPS and compass.

MEASUREMENTS

X, **Y** and **Z** components of the Primary and Secondary EM B-field.

PERSONNEL

Connor Harrison	Crew Chief, Senior Technician
Mohamed Haiba	Project Geophysicist, Operator
Ben Ballantyne	Senior Field Assistant
Donald Lariviere	Field Assistant
Jonathan McKenzie	Field Assistant
James Ballantyne	Field Assistant
Kristopher Rae	Field Assistant
Mackenzie Knowles	RPAS Pilot / Field Assistant
Cole Smytaniuk	Field Assistant
Gerry Corriveau	Technician
Mutombo Kanda	Field Geophysicist, Operator
Mario Corti	Field Technician
Kolten Moberly	Field Technician
Ryan Olson	Geophysicist, QC, Processing, Report

SURVEY COVERAGE

Total coverage covered was 80,550 m off 43 lines. Details of the survey coverage and location maps can be found in **Table 4** and **Figure 5,6,7**, respectively.

Table 4: FLTEM Survey Coverage

Line	Current (A)	Surveyed Stations	Coverage (m)	Date
L2000E	28	2350N - 3250N	900	Feb 05, 06, 08
L2150E	28	2350N - 3400N	1050	Feb 05, 06, 07, 08
L2300E	28	2350N – 3550N	1200	Feb 05, 06, 07, 08
L2450E	28	2350N – 3550N	1200	Dec 17, Feb 05, 06, 07, 08
L2600E	28	2050N – 3550N	1500	Feb 04, 07, 08
L2750E	28	2050N – 3550N	1500	Dec 17, Feb 04, 05, 06, 07, 08
L2900E	28	2050N – 3550N	1500	Dec 17, Jan 21, Feb 04, 05, 06, 07, 08
L3050E	28	1900N – 3550N	1650	Dec 17, Jan 21, Feb 03, 04, 05, 06, 07, 08
L3200E	28	1000N – 3550N	2550	Dec 05, 16, 17, Jan 18, 20, 21, Feb 04, 06, 07, 09
L3350E	28	1000N – 3550N	2550	Dec 05, 16, 17, Jan 18, 20, 21, Feb 03, 05, 06, 07, 09
L3500E	28	1000N – 3550N	2550	Dec 05, 06, 16, Jan 18, 20, 21, Feb 03, 04, 05, 06, 07,

				08, 09, 23, 24
L3650E	28	1000N – 3550N	2550	Dec 05, 06, 16, 18, Jan 16, 18, 19, 20, Feb 03, 05, 07, 09, 13
L3800E	28	1000N – 3550N	2550	Dec 05, 06, 16, 18, Jan 16, 18, 19, 20, Feb03, 05, 07, 08, 13
L3950E	28	1300N – 3550N	2250	Dec 05, 18, Jan 16, 18, 19, 20, 22, Feb 03, 04, 05, 08, 09, 12, 14
L4100E	28	1450N – 3550N	2100	Dec 05, 18, Jan 15, 16, 18, 19, 22, Feb 03, 04, 08, 12, 14
L4250E	28	1450N – 3550N	2100	Dec 15, 18, Jan 15, 16, 17, 18, 19, 22, Feb 03, 04, 08, 12
L4400E	28	1600N – 3550N	1950	Dec 15, 18, Jan 15, 16, 17, 18, 22, Feb 03, 04, 08 11, 14
L4550E	28	1600N – 3550N	1950	Dec 15, 18, Jan 15, 17, 22, Feb

				03, 04, 11, 14
L4700E	28	1600N – 3550N	1950	Dec 15, 18, Jan 15, 17, Feb 04, 08, 11
L4850E	28	1600N – 3550N	1950	Nov20, 30, Dec 02, 03, 14, Feb 11, 14
L5000E	28	1150N – 3400N	2250	Nov 20, 30, Dec 02, 03, 04, 12, 15, Feb 09, 14
L5150E	28	1150N – 3400N	2250	Nov 21, 30, Dec 02, 03, 04, 12, Feb 09, 14
L5300E	28	1150N – 3400N	2250	Nov 21, 29, Dec 01, 02, 03, 11, 14, Feb 09, 10
L5450E	28	1150N – 3550N	2400	Nov 21, 29, Dec 01, 03, 04, 08, 11, Feb 09, 10
L5600E	28	1900N – 3400N	1500	Nov 21, 29, Dec 01, 03, 04, 08, 11
L5750E	28	2050N – 3550N	1500	Nov 23, 29, 30, Dec 01, 03, 08, 13
L5900E	28	2050N – 3700N	1650	Nov 21, 23, 29, 30, Dec 04, 08, 09
L5975E	28	2275N – 3400N	1125	Dec 11, 12, 14
L6050E	28	2050N – 3850N	1800	Nov 21, 23, 27,

				28, 29, Dec 09, 12, 13
L6125E	28	2275N – 2425N	150	Dec 11, 12
L6200E	28	2050N – 3850N	1800	Nov 21, 23, 26, 27, 28, 29, Dec 09, 12, 13
L6350E	28	2050N – 3850N	1800	Nov 21, 23, 26, 27, 28, 29, Dec 09, 12
L6500E	28	2200N – 3850N	1650	Nov 23, 26, 27, 28, 29, Dec 09
L6650E	28	2200N – 3850N	1650	Nov 21, 23, 26, 27, 28, 29, Dec 09, 10
L6725E	28	3250N – 3625N	375	Dec 13, 14
L6800E	28	2350N – 3850N	1500	Nov 21, 23, 26, 27, 28, Dec 09, 10
L6875E	28	3550N – 3625N	75	Dec 14
L6950E	28	2350N – 3850N	1500	Nov 22, 23, 24, 26, 28, Dec 09, 14
L7100E	28	2500N – 3850N	1350	Nov 22, 23, 24, 25, Dec 09
L7250E	28	2200N – 3400N	1200	Nov 22, 24, 25, 26
L7400E	28	2200N – 3400N	1200	Nov 22, 24, 25, 26
L7550E	28	2350N – 3400N	1050	Nov 22, 24, 25, 26
L7700E	28	2500N – 3550N	1050	Nov 22, 24, 25
		Total (m)	**80550**	

SURVEY PARAMETERS

Table 5: FLTEM Survey Parameters

Receiver Parameters	
Survey Mode	Fixed Loop ground survey, 2 sensors
Polarity convention	**X:** grid East or grid North **Y:** orthogonal to **X** along grid North, or grid West **Z:** orthogonal to **X** and **Y**, positive upward. The direction of current flow in the Tx loop is such that the total primary field is oriented upward in the centre of the loop.
Synchronization	GPS time sync & backup crystal sync
Station Spacing	75m - 150m
Line Spacing	75m – 150m
Stacking	~1024 stacks/reading, ~7 readings/station
Number of Gates	43-time gates, 0.087 to 992.06 ms after shut-off See **Appendix A** for a complete list of gates.
Transmitter Parameters	
Frequency	0.25 Hz
Effective Current	28 A
Signal	Bipolar square wave, 50% duty cycle
Synchronization	GPS time sync & backup crystal sync
Loop(s)	2000 x 1500 m
Turn-off	0.80 (ms)
Composition	Single turn 10Ga

EQUIPMENT

Table 6: FLTEM Primary Equipment List

		#	Description
Acquisition			
	Sensor	2	LTS SQUID sensor. 3-Component B-Field
	Receiver	2	EMIT SMARTem24
Transmission			
	Generator	1	Honda EG6500 6.5kW peak output
	Transmitter	1	Phoenix TXU-30
	Tx Controller	1	EMIT SMARTem24 Tx controller

See **Appendix A** for more details.

SOFTWARE

EMIT SMARTem24: Acquisition, quality control
EMIT Maxwell: Data processing, plotting, and modelling

PROFILE PLOTS

Profile plots can be found in **APPENDIX D**.

1.0 TEM PROCESSING AND PRESENTATION

QA/QC

At the conclusion of each survey day, the TEM data were copied from the SMARTem24 receiver to another computer using a USB memory stick. The full TEM waveform is recorded at a high sample rate for each individual stack, therefore extremely large data files are produced each day. Full waveform recording allows post-survey processing such as stacking and windowing of the secondary TEM data. For example, post-survey processing of full waveform data may include a selective stacking procedure to help eliminate noise or extract the secondary response for an entirely different set of gate times than used during the original survey, or to obtain on-time or primary field data. This post survey processing is carried out using the EMIT SMARTem24 software.

The SMARTem24 software is also used to QC the readings at each station by examining the secondary decay plots for each component. Readings with decays that are not smoothly varying with time (e.g. due to rapid sensor movements and vibrations caused by wind) or lie significantly outside the range of a majority of decays at that station (i.e. outliers caused by rapid geomagnetic variations and pulsations) are deleted from the stack. The final edited data are then written to a final EMIT format TEM data files for each line surveyed.

Normalization

The data are automatically collected in pT/A. The conversion factors are set on the receiver prior to surveying based on the calibration values provided by the sensor manufacturer.

Derotation/Alignment	**BHTEM:** Sensor uses onboard tilt meters, accelerometers, and absolute magnetometer field readings to calculate and record probe attitude. **FLTEM:** Sensor is aligned using Compass and bubble level. The sensor automatically measures and compensates for tilt error.
Profiles	The TEM data files are imported into EMIT's Maxwell, which is used to plot and model all types of EM data. Maxwell automatically reads header information from the TEM data files upon import, thus reducing human input, time and errors. **FLTEM:**Surface contours for each line are created at an appropriate scale, limited by the page size. For each loop four plots are created. Each plot displays contour plot at time gates 10, 20, 30 and 40 (SMARTem24 standard gate times) for all three components, early-, mid, mid-late and late-time panels. Additionally, extra contour maps are created showing the primary field strength for each component. **BHTEM:** Profile plots for each loop and each hole are created at an appropriate scale, limited by page size. Each hole and loop consists of 6 profile plots for a set of time gates: Total magnetic Intensity, component magnetic intensity, component primary field and the three components for a given a range of time gates (SMARTem24 standard gate times). In this case early-, mid, mid-late and late-time panels. All pertinent survey specifications are also displayed on the profile plots, transmitter loop size, transmitted current, turn-off ramp time, Slingram offset, etc. for each line. The gate times are referenced from the end of the turn-off ramp to the center of each window. The gate times are also listed in the header information of every TEM data file. The profile plots are shown in **Appendix C** and **D**.

Deliverables	A copy of this report, and all the data associated with the survey. Including:

- *SMARTem24 project files*
- *SMARTem24 .tem file for import into MAXWELL*
- *Handheld GPS data in GPX and txt file formats*
- *Borehole trace file*
- *Profile plots of each line*

DISCUSSION

Both the ground FLTEM and borehole BHTEM surveys were successful at the detection of targets over the Crystal Lake coverage. The FLTEM provided significant response from late time conductors, particularly in the Z component, from all three loops. The BHTEM measured potential targets across the entire set of time gate responses. Though, some loop-borehole pairs were less coupled resulting in a bit noisier late-time data. But given the multiple coupling pairs target detection was satisfied.

No incidents or near misses were reported resulting in a safetly executed survey. Some down time was encountered due to instrumentation issues. Two of the LTS SQUID sensors required maintenance before continued use and were sent back to the manufacturer. The turn around was quick and the crew was able to continue on with the ground FLTEM survey.

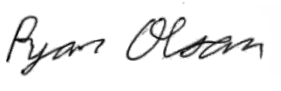
CERTIFICATE OF QUALIFICATIONS

Ryan Olson

I, Ryan W. Olson of the municipality of Saskatoon, in the province of Saskatchewan, hereby certify as follows:

1. I am a Geophysicist with Discovery International Geophysics with head office at 3275 Miners Ave. Saskatoon, Saskatchewan, S7K 7Z1.
2. I hold the following university degree: Bachelor of Science Honours, Geophysics, University of Saskatchewan, 2012.
3. I am a registered Geoscientist with The Association of Professional Engineers and Geoscientists of the Province of Saskatchewan. (Reg. # 26160)
4. I have no direct interest in or the above described property and projects that are the subject of this report, nor do I intend to have any direct interest.

Dated at Saskatoon, in the Province of Saskatchewan, this 31st day of March 2022.



Ryan Olson, B.Sc. (Hons), P.Geo.

APPENDIX A – INSTRUMENT SPECIFICATIONS

IPHT/SUPRACON LOW TEMPERATURE "JESSY DEEP" SQUID SENSOR	
SPECIFICATIONS	
Measuring channels	1-channel vertical B-field, optional: horizontal B-fields (3-channels)
Bandwidth	dc ... 200 kHz flat frequency response
Field sensitivity	< 20 fT/SQRT (Hz)
Power supply	2 internal 6 V sealed lead-acid battery, 12 Ah; 12 hours discharging/ 12 hours charging
Cryogenics	liquid helium, refilling interval
Accessories	cable tester, analogue display, battery status indicator, filling level indicator, safety equipment
Operating conditions	-40 °C … 50 °C, max. 90 % moisture
Storage conditions	-50 °C … 80 °C, max. 90 % moisture

EMIT DIGIATLANTIS BOREHOLE SYSTEM	
DIGIATLANTIS PROBE	
Sensor:	3 orthogonal fluxgate magnetometers (x,y,z)
Depth Rating:	3km
Max signal level:	+/-70uT
Calibration accuracy:	+/-0.1%
Orthogonal accuracy:	0.1 degree
Sensor noise level:	max. 6_T/√Hz @ 1Hz on all components
Noise level:	Approx. 3pT on late time window A/D, 24-bit delta-sigma
Available gain settings:	1, 10 or 100
Sample rate:	12.5 - 25kHz per ADC, simultaneously
Bandwidth:	0-4kHz
Battery:	Li-Ion
Battery life:	8hrs, extended with power feeding
Dimensions:	2280mm x 33mm (Ø)
Weight:	7kg
DIGIATLANTIS RECEIVER	

The DigiAtlantis receiver is a Panasonic Toughbook 30:

- Rugged, small (300mm x 285mm x 70mm) and lightweight (3.7kg)
- 13” Touch screen colour LCD (daylight readable, 1024x768)
- Running Microsoft Windows XP
- 80Gb hard disk (upgradable to 160Gb)
- QWERTY keypad, touchpad, USB
- Single Ethernet connection to DigiAtlantis probe controller
- Operating temperatures from -20°C to +65°C
- Powered by Li-Ion battery for 8hrs (or external 12VDC or 240VAC power)

DIGIATLANTIS CONTROLLER

- **Synchronization**: GPS, crystal.
- **Transmitter Compatibility**: Geonics, Zonge, Phoenix, Crone and others.
- **Duty cycle**: 25%, 50%, 100%.
- **Base frequency**: 50 Hz and 60 Hz selections.
- **Transmitter current recording rate (optional)**: 12.5 – 120 ksps
- **Battery**: Li Ion (or external 12 V power supply)
- **Battery life**: > 12 hrs (constant operation)
- **Dimensions**: 310 mm x 260 mm x 135 mm.
- **Weight**: 5 kg.

ELECTROMAGNETIC IMAGING TECHNOLOGY (EMIT)

SMARTem24 ADVANCED GEOPHYSICAL RECEIVER SYSTEM

- 24-bit ADCs.
- Up to 16 input channels, each with ADC and amplifier.
- Up to 120,000 samples per second on each channel.
- Light-weight and rugged environmentally sealed operating temperature range -35°C to +50°C.
- +/-20V input range.
- Separate transmitter controller with GPS and crystal synchronization.
- Powerful signal processing.
- Full 24-bit time-series recording and playback.
- Tablet touch-screen and keyboard entry.
- Download data via USB or memory cards.
- Hot-swap internal batteries.
- EM, IP and other survey types.
- Controls a range of transmitters.
- Interface to any sensor, can provide power to sensor if required.
- Powerful GUI to display signals and data.
- Surveys can be planned in the office or in the field.
- Import and display base maps.
- Add notes and comments as you go.
- Monitor survey progress in plan-view.
- Display scope, decays, spectra, profiles, pseudo-sections and plan.
- Standard ASCII data file formats.
- Transmitter controller has optional recording of current waveform.

SPECIFICATIONS

- **Dimensions**: 310 mm x 290 mm x 120 mm
- **Weight**: 8 kg.
- **Input channels**: Up to 16.
- **Max input level**: +/- 20 V on gain 1; +/- 2 V on gain 10; +/- 0.2 V on gain 100.
- **Input impedance**: 10 MΩ.
- **Bandwidth**: Up to 60 kHz.
- **Sample rate**: 12.5 – 120 ksps per ADC.
- **Synchronization**: GPS, crystal, asynchronous.
- **Battery**: Dual 14.4 V Li Ion (hot swappable), external 12-28 V.
- **Battery life**: > 10 hrs (constant operation).
- **Operating system**: Windows 7.
- **Display**: 10.4” XGA 1000 nit daylight-readable colour LCD.
- **Interface inputs**: Touch, digitizer and active stylus screen, backlit QWERTY keypad, touchpad.
- **Data storage**: 160 GB HDD (or optional SSD), USB, SD and CF cards.
- **Transmitter control**: As per SMARTem24 Transmitter Controller.
- **Network**: Wireless

SMARTem24 Software

- One program for data acquisition and post-survey processing / analysis on the instrument itself or on other PCs.

- Display of scope, spectrum analyzer, plan profile, decay and pseudo-sections.
- Preference profiles saved for each user.
- Create custom displays with multiple panels, e.g. plan, profile and decay.
- Extensive online help.
- Survey planning utilities and functions.
- Powerful stacking, filtering, windowing and signal processing.
- Library of sensor types and appropriate data units to select.
- Raw, stacked and processed data files generated.
- Software and firmware updates can be easily performed by the user.
- Specialized functions written on request.

SMARTem24 Transmitter Controller

- **Synchronization**: GPS, crystal.
- **Transmitter Compatibility**: Geonics, Zonge, Phoenix, Crone and others.
- **Duty cycle**: 25%, 50%, 100%.
- **Base frequency**: 50 Hz and 60 Hz selections.
- **Transmitter current recording rate (optional)**: 12.5 – 120 ksps
- **Battery**: Li Ion (or external 12 V power supply)
- **Battery life**: > 12 hrs (constant operation)
- **Dimensions**: 310 mm x 260 mm x 135 mm.
- **Weight**: 5 kg.

PHOENIX TXU-30 MULTI-FUNCTION GEOPHYSICAL CURRENT SOURCE

The most advanced controlled current source available for electrical methods exploration, the TXU-30 is compact and portable, combining power output (20kW) with great reliability, flexibility, and user-friendly operation.

Simplified MG Requirements: The new design eliminates dependence on specialized motor generators. Now, you can buy or rent a suitable MG from any convenient local supplier.

Advanced Controls: Advanced microprocessor control provides superior performance across the board. Large, bright LEDs display instrument status and critical values. Simple, straightforward controls make it easy to adjust all operating parameters within allowable limits.

Climate-Controlled Exploration: Use the cable-linked remote control panel to operate the TXU-30 from up to 30 m away. Manage your EM transmissions in the comfort of a heated or air-conditioned field truck cab.

High S/N Ratios – Precision Synchronization: In highly resistive areas in the past, users have relied on dangerously high voltages in an attempt to achieve an adequate signal-to-noise ratio at the receiver. The TXU-30's built-in GPS satellite-synchronized timing control, coupled with companion GPS-synchronized receivers, solves this problem. Because the entire system is synchronized, receivers can maintain proper registration while stacking even extremely week signals. The signals can be stacked as long as necessary until the S/N ratio is acceptable.

Wire or Wireless Data Links: The TXU-30 continuously saves time series records of its output current and voltage on a removable 512 MB flash memory card. This information, required for deconvolution calculations in Spectral IP, can be transmitted to a companion receiver system over either a wireless or an optional cable link. Alternatively, the data on the flash memory card can be uploaded to the post-processing computer via high-speed, low-cost interface.

SPECIFICATIONS

- **Dimensions & Weight, Transmitter**: 52cm W x 44.5 cm H x 60 cm D; 52.5 kg
- **Dimensions & Weight, Controller**: 47cm W x 15 cm H x 36.5 cm D; 6.5 kg
- **Environmental**: Operating: -20°C to 45°C; Storage: -35°C to 50°C
- **Maximum Power Output**: 30kW at 25°C, sea level
- **Duty Cycle**: 100%, 50%, 33%, 25%
- **Efficiency**: 90% at full power
- **Current Range**: 1-60A, 0.5-30A
- **Voltage Range**: 25-1000V
- **Input Voltage**: 200-240V at 50/60/400 Hz
- **Frequency Range**: 256 s to 9600Hz (Frequency Domain); 128 s to 30 Hz (Time Domain)
- **Timing Control**: GPS synchronized +/- 0.5 µs
- **User Interface**: Cable-connected control panel
- **Fault Protection**: Input voltage out of range; Output voltage out of range; Output current out of range; Power stack temperature high.

Gate	Standard SMARTem Gates			Maximum Frequency	
	Start	Centre	End		
1	0.087	0.100	0.112		
2	0.109	0.124	0.140		
3	0.135	0.154	0.173		
4	0.167	0.191	0.215	1000	Hz
5	0.208	0.238	0.267		
6	0.258	0.295	0.332	625	Hz
7	0.320	0.366	0.412		
8	0.398	0.455	0.511		
9	0.494	0.564	0.635		
10	0.613	0.701	0.788	277	Hz
11	0.761	0.870	0.978		
12	0.945	1.080	1.215		
13	1.173	1.340	1.508	150	Hz
14	1.456	1.664	1.872		
15	1.808	2.066	2.324	90	Hz
16	2.244	2.565	2.885		
17	2.786	3.184	3.582		
18	3.459	3.953	4.447		
19	4.294	4.908	5.521		
20	5.331	6.093	6.854	30	Hz
21	6.618	7.564	8.509		
22	8.217	9.391	10.564		
23	10.201	11.658	13.115	15	Hz
24	12.664	14.473	16.282		
25	15.722	17.968	20.214	10	Hz
26	19.519	22.307	25.095		
27	24.232	27.694	31.155	7.5	Hz
28	30.083	34.381	38.678	6	Hz
29	37.348	42.683	48.018	5	Hz
30	46.366	52.99	59.614	3.75	Hz
31	57.562	65.786	74.009	3	Hz
32	71.462	81.671	91.880	2.5	Hz
33	88.719	101.393	114.067	2	Hz
34	110.142	125.876	141.611	1.5	Hz
35	136.738	156.272	175.806		
36	169.757	194.008	218.259	1	Hz
37	210.749	240.856	270.963	0.8333	Hz
38	261.640	299.017	336.394	0.625	Hz
39	324.819	371.222	417.625	0.5	Hz
40	403.255	460.863	518.471		
41	500.631	572.149	643.668	0.3333	Hz
42	621.520	710.309	799.098		
43	771.602	881.831	992.060	0.25	Hz
44	957.924	1094.771	1231.617	0.2083	Hz
45	1189.239	1359.130	1529.021	0.1667	Hz
46	1476.410	1687.326	1898.241	0.125	Hz
47	1832.926	2094.773	2356.619		
48	2275.531	2600.607	2925.682	0.0833	Hz
49	2825.014	3228.588	3632.161		
50	3507.184	4008.210	4509.236	0.04	Hz

APPENDIX B – PRODUCTION NOTES

KoBold Metals Company

Crystal Lake FLTEM Project 2021

Daily Production Notes

Crew List

Connor Harrison	Crew Chief / Senior Technician	15th November 2021 31st January 2022	19th December 2021 17th February 2022
Mohamed Haiba	Project Geophysicist	15th November 2021	05th February 2022
Ben Ballantyne	Senior Field Assistant	15th November 2021	20th December 2021
Donald Lariviere	Field Assistant	15th November 2021	20th December 2021
Jonathan McKenzie	Field Assistant	15th November 2021	20th December 2021
James Ballantyne	Field Assistant	15th November 2021	20th December 2021
Kristopher Rae	Field Assistant	15th November 2021	11th January 2022
Mackenzie Knowles	RPAS Pilot / Field Assistant	20th November 2021 06th January 2022	19th December 2021 10th February 2022
Cole Smytaniuk	Field Assistant	03rd December 2021	17th February 2022
Mutombo Kanda	Field Geophysicist	03rd December 2021	13th December 2021
Gerry Corriveau	Technician	06th January 2022	10th February 2022
Mario Corti	Field Assistant	31st January 2022	15th February 2022
Kolten Moberly	Field Assistant	31st January 2022	17th February 2022

Date: Monday, 15th November 2021		**Start Time:**	12:00 pm
Daily Production Notes		**End Time:**	10:00 pm
The crew departed from Discovery's Base of Operations in Saskatoon, SK and made their way to Winnipeg, MB		**Daily Field Conditions**	Weather and roads were favorable for the drive.
Rate: Mobilization / Demobilization	**Coverage:** N/A		

Date: Tuesday, 16th November 2021		**Start Time:**	08:00 am
Daily Production Notes		**End Time:**	06:00 pm
		Daily Field Conditions	

The crew departed from Winnipeg, MB and made their way to their accommodations in Thunder Bay, ON.			The latter half of the journey was much slower with deteriorating road conditions, snow and freezing rain.
Rate: Mobilization / Demobilization		**Coverage:** N/A	

Date: Wednesday, 17th November 2021			**Start Time:** 08:30 am
Daily Production Notes			**End Time:** 05:00 pm
In the morning, the crew worked on picking up final supplies, including the rental radio system and rental 50kVA generator, and meeting with the Helicopter company to go over the plans and locations. In the afternoon, they made their way out to the field to drop off the generator, begin set up of the staging area and deploy the VHF repeater on top of the intrusion.			**Daily Field Conditions** Field conditions were good
Rate: Mobilization / Demobilization		**Coverage:** N/A	

Date: Thursday, 18th November 2021			**Start Time:** 08:00 am
Daily Production Notes			**End Time:** 04:30 pm
The crew made their way to the Lake Lenore Road staging area to pick up the side x side but almost as soon as they arrived, they received a call from the Helicopter provider saying it was too windy/poor visibility and that they weren't comfortable flying today. Without the helicopter to lay the loops, the crew was delayed and therefore had to go on standby, however they took the opportunity to get better set up in the field, by moving the staging area to the west end of the intrusion and setting up the transmitter site, which is now roughly 130m west along the GLN road from where it was proposed to be. At the end of the day, the crew chief was informed by the helicopter company that they helicopter would not be available now until Monday. They made several calls to various suppliers but eventually got lucky arranging an AS350 B3e from Forest Helicopters out of Kenora, ON.			**Daily Field Conditions** Poor visibility around Thunder Bay and very windy on site.
Rate: Full Day Standby Rate		**Coverage:** N/A	

Date: Friday, 19th November 2021			**Start Time:** 09:00 am

Daily Production Notes

The crew reached out to the local helicopter company to purchase fuel for the helicopter that would be showing up around 10:30am. They were able to pick up the fuel shortly after 9:00am and they made their way to the field. They met up with the pilot and spent some time going over the map files for the pilot to follow, programming and testing the VHF communications in the helicopter, orientating the pilot with the HeliWinder and orientating the crew with the Helicopter. Once that was all covered and the HeliWinder was fully set up and loaded, the pilot and the crew chief got into the helicopter to go for a test flight of the Loop 2 route while the rest of the crew got into position. The test flight was roughly 30 minutes and then the helicopter returned to the staging area to be hooked up to the HeliWinder. Loop 2 was deployed in just over 40 minutes before the helicopter returned to the staging area to refuel and the HeliWinder was reloaded. The helicopter the proceed to lay out Loop 1 and the lead wires from Loop 1 down to the Tx site. Two of the crew also spent the majority of the day begin the trail preparations from station to station for Loop 2 coverage, starting around the Tx site and making their way east.

Rate:	Full Day Loop Deployment Rate AS350 B3e 4 X 203L drum of Jet A1 fuel	**Coverage:**	Loop 1 and 2 deployed

End Time: 04:45 pm

Daily Field Conditions

Field conditions were ideal.

Date: Saturday, 20th November 2021

Start Time: 08:00 am

Daily Production Notes

The majority of the crew made their way out to the field to continue grid preparation, lay out the lead wires for loop 2 and deploy the high voltage signage on all the loop / road crossings. Two crew members went to pick up the LiHe dewar from Air Liquide and then transported the dewar to the staging area. There, they purged and filled the SQUID before loading the dewar on the 5-ton to be stored away. They then proceeded to the Tx site to test all of the equipment and instrumentation and erect a taller radio antenna to ensure communication to the repeater. With everything in working order, and the Tx site fully operational, the crew used the remaining time in there day to survey their first three stations.

Rate:	3 Hours Loop Deployment Rate 3 Stations Survey Rate	**Coverage:**	3 Stations

End Time: 05:05 pm

Daily Field Conditions

Field conditions were good, there was a slight wind moving the trees.

Stations Surveyed:

4850E3550N	4850E3400N	5000E3400N			

Date: Sunday, 21st November 2021		**Start Time:**	08:00 am
Daily Production Notes		**End Time:**	05:20 pm
The crew met out at the Tx site around 8:00am for their morning toolbox meeting. They then split up into their teams and made their way out to their starting positions. The survey crew started at station 5150E3400N and surveyed in an eastern direction. Wind picked up to 60-70kmh in the late morning, early afternoon which caused a lot more movement noise one the SQUID, require more readings, slowing down production. The crew finished at station 6800E3550N.		**Daily Field Conditions**	Field conditions were reasonable, it started to snow pretty early this morning and the wind picked up to ~60-70kmh gusts by midday.
Rate: 14 Stations Survey Rate On-Time Processing Rate	**Coverage:** 14 Stations		

Stations Surveyed:

5150E3400N	5300E3400N	5450E3400N	5450E3550N	5600E3400N	5750E3400N
5750E3550N	5900E3550N	6050E3550N	6200E3550N	6350E3550N	6500E3550N
6650E3550N	6800E3550N				

Date: Sunday, 22nd November 2021		**Start Time:**	07:50 am
Daily Production Notes		**End Time:**	05:15 pm
The crew had their morning safety meeting at the Tx site before going to power on the transmitter. The transmitter wouldn't power on the loop and gave an error consistent with an open loop. The loop was checked with a multimeter and confirmed to be broken. The line-cutters were called back and all 7 crew members spread out to different areas of the loop. The break was found in a beaver pond on the north side, and appeared to have been chewed. They loop was repaired and moved ~10m to be out of the way. Roughly 2-2.5 hours were lost due to the loop break. Once repaired, the loop was powered on and the survey continued. The crew was able to survey 12 stations before then end of the day. Readings towards the highway took a little long to read at due to powerline noise and winds were moderate today also.		**Daily Field Conditions**	Winds were moderately strong and it was -15 degrees Celsius with the wind chill this morning.

Rate:	12 Stations Survey Rate On-Time Processing Rate	**Coverage:**	12 Stations

Stations Surveyed:

6950E3550N	7100E3550N	7100E3400N	7250E3400N	7400E3400N	7550E3400N
7700E3400N	7700E3550N	7700E3250N	7550E3250N	7400E3250N	7250E3250N

Date:	Tuesday, 23rd November 2021	**Start Time:**	08:00 am
		End Time:	05:50 pm

Daily Production Notes

The crew met out at the Tx site around 8:00am for their morning toolbox meeting. The survey crew was then dropped off on the side of Highway 61 to hike in to where they finished up yesterday. The Grid crew size was increased to 4 and they split into two teams to be more productive. The crew pushed a little later than usual and were able to survey 19 stations.

Daily Field Conditions

Field conditions were reasonable, it started to snow pretty early this morning and the wind picked up to ~60-70kmh gusts by midday.

Rate:	19 Stations Survey Rate On-Time Processing Rate	**Coverage:**	19 Stations

Stations Surveyed:

7100E3250N	6950E3250N	6950E3400N	6800E3100N	6800E3250N	6800E3400N
6650E3250N	6650E3400N	6500E3250N	6500E3400N	6350E3250N	6350E3400N
6200E3250N	6200E3400N	6050E3250N	6050E3400N	5900E3250N	5900E3400N
5750E3250N					

Date:	Wednesday, 24th November 2021	**Start Time:**	08:00 am
		End Time:	05:00 pm

Daily Production Notes

The survey crew decided to go up on top of the intrusion and move the VHF repeater which was in an inadequate location providing poor coverage. This also gave the grid preparation crew a little more of a head start. The crew was also able to get the photogrammetry survey of the loop wire started and were able to cover roughly 75% of Loop 2 before the wind picked up too much mid – late afternoon. The survey crew eventually started their survey around 11:00am and they were able to survey 11 stations before the end of the day.

Daily Field Conditions

Field conditions were favorable.

Rate:	11 Stations Survey Rate On-Time Processing Rate Photogrammetry Rate	**Coverage:**	11 Stations

Stations Surveyed:

6950E3100N	7100E3100N	7250E3100N	7400E3100N	7550E3100N	7700E3100N
7700E2950N	7550E2950N	7400E2950N	7250E2950N	7100E2950N	

Date: Thursday, 25th November 2021

Start Time: 08:00 am

End Time: 05:10 pm

Daily Production Notes

The gird preparation crew got started immediately after the morning toolbox meeting while the survey crew went to refill the SQUID first thing this morning. Once the SQUID was full, the crew made their way around to the highway to follow in where the grid prep crew started. The survey crew was able to cover 13 stations before the end of the day. LiHe was measured at roughly 202L remaining in the dewar.

Daily Field Conditions

Field conditions were favorable but slightly colder.

Rate: 13 Stations Survey Rate
On-Time Processing Rate

Coverage: 13 Stations

Stations Surveyed:

7550E2800N	7400E2800N	7250E2800N	7100E2800N	7100E2650N	7250E2650N
7400E2650N	7700E2650N	7700E2500N	7550E2500N	7400E2500N	7250E2500N
7100E2500N					

Date: Friday, 26th November 2021

Start Time: 08:00 am

End Time: 05:00 pm

Daily Production Notes

The drone operations were postponed today as the temperature was too cold to fly. So, a full team of 4 continued grid preparations while three continued surveying. They finished surveying the cluster of stations in the SE corner before heading up the Lake Lenore Road to access the Wronowski trail to continue surveying. They were able to complete 15 stations by the end of the day.

Daily Field Conditions

Field conditions were favorable but slightly colder.

Rate: 15 Stations Survey Rate
On-Time Processing Rate

Coverage: 15 Stations

Stations Surveyed:

6200E2200N	6350E2200N	6500E2200N	6500E2350N	6650E2200N	6650E2350N
6800E2350N	6950E2350N	6950E2500N	6950E2650N	7250E2200N	7250E2350N
7400E2200N	7400E2350N	7550E2350N			

Date:	Saturday, 27th November 2021	**Start Time:**	08:05 am
Daily Production Notes		**End Time:**	05:15 pm
The crew met at the transmitter site today to split into their appropriate teams. The drone was brought out today for the UAV pilot to attempt continuation of the photogrammetry survey. The survey crew was taken up in the Side X Side first, followed by the grid preparation crew, and then the UAV crew kept the Side X Side with them. There was intermittent snow throughout the day which kept stall the UAV flight but they were able to cover ~40% of Loop 1 and ~20% of Loop 2. The survey crew continued surveying a cluster of stations moving grid north and managed to cover 17 stations by the end of the day.		**Daily Field Conditions**	Field conditions were favorable with light to moderate snowfall and minimal wind
Rate:	17 Stations Survey Rate On-Time Processing Rate Photogrammetry Rate	**Coverage:**	17 Stations

Stations Surveyed:

6050E2200N	6050E2350N	6050E2500N	6050E2650N	6050E2800N	6200E2350N
6200E2500N	6200E2650N	6350E2350N	6350E2500N	6350E2650N	6500E2500N
6500E2650N	6650E2500N	6650E2650N	6800E2500N	6800E2650N	

Date:	Sunday, 28th November 2021	**Start Time:**	07:55 am
Daily Production Notes		**End Time:**	05:35 pm
The UAV was brought out to the field today but it was too windy for safe flight. So, the crew split in half with four guys on grid preparation and four on the survey crew. They continued surveying from where they left off yesterday and were slowed down by some severe topography but they were able to complete horizontal lines 2800N and 2950N.		**Daily Field Conditions**	Field conditions were favorable with moderately strong winds which required extra readings per station
Rate:	14 Stations Survey Rate On-Time Processing Rate	**Coverage:**	14 Stations

Stations Surveyed:

6050E2950N	6200E2800N	6200E2950N	6350E2050N	6350E2800N	6350E2950N
6500E2800N	6500E2950N	6650E2800N	6650E2950N	6800E2800N	6800E2950N
6950E2800N	6950E2950N				

Date: Monday, 29th November 2021			**Start Time:** 07:50 am
Daily Production Notes The survey crew and grid preparation crew made their way around to the Lake Lenore Road to take the Side x Side up the hill to start from where they left off yesterday. The Photogrammetry crew started off on the GLN road and recovered a portion of Loop 2 before driving around to the south to take the Side x Side. The survey crew finished the last of the Loop 2 coverage in the early afternoon and began the Loop 1 & 2 coverage. All crews finished up around 4:50pm and began making their way out to the main roads.			**End Time:** 05:25 pm **Daily Field Conditions** Field conditions were favorable with snow towards the end of the day
Rate: 13 Stations Survey Rate On-Time Processing Rate Photogrammetry Rate		**Coverage:** 13 Stations	

Stations Surveyed:

6050E2050N	6200E2050N	6650E3100N	6500E3100N	6350E3100N	6200E3100N
6050E3100N	5900E3100N	5750E3100N	5600E3100N	5600E3250N	5450E3250N
5300E3250N					

Date: Tuesday, 30th November 2021			**Start Time:** 08:10 am
Daily Production Notes The crew made their way out to the field and went to the staging area to refill the LT SQUID. Once they finished, they made their way to the transmitter and hiked in to survey the three stations remaining near the GLN road. The then hiked back out and drove around to the south and up on the intrusion to continue surveying. Terrain was fairly steep and there was a lot of wind noise slowing down the survey crew which gave the grid prep crew more of a head start.			**End Time:** 05:25 pm **Daily Field Conditions** Field conditions were favorable with moderately strong winds
Rate: 8 Stations Survey Rate On-Time Processing Rate		**Coverage:** 8 Stations	

Stations Surveyed:

4850E3250N	5000E3250N	5150E3250N	5900E2650N	5900E2800N	5900E2950N
5750E2950N	5750E2800N				

Date: Wednesday, 01st December 2021			**Start Time:** 08:00 am
Daily Production Notes The crew spent a little time this morning tightening the suspension on the UTV so that it wasn't bottoming out in the trails with a full load. They then proceeded up the hill and continued with grid preparations and surveying of the Loop 1 and 2 coverage north of the Wronowski trail. The crew were working in some pretty steep terrain which slowed them down but they were able to achieve 10 stations surveyed.			**End Time:** 05:05 pm **Daily Field Conditions** Field conditions were favorable with snowfall most of the morning and minimal wind
Rate: 10 Stations Survey Rate On-Time Processing Rate	**Coverage:** 10 Stations		

Daily High (°C)	Daily Low (°C)	Wind (km/h)
3	-11	9

Stations Surveyed:

5750E2650N	5600E2650N	5600E2800N	5600E2950N	5450E3100N	5450E2950N
5450E2800N	5450E2650N	5300E2650N	5300E2800N		

Date: Thursday, 02nd December 2021			**Start Time:** 08:00 am
Daily Production Notes The crew made their way up onto the intrusion via the Wronowski trail from Lake Lenore Road. The receiver crew continue to survey on the north side of the trail while the grid preparation crew worked south of the trail towards the Crystal and Bearpad Lake. The survey went relatively smoothly allowing the crew to survey 12 stations.			**End Time:** 05:30 pm **Daily Field Conditions** Field conditions were favorable with snowfall in the morning and moderate wind
Rate: 12 Stations Survey Rate On-Time Processing Rate	**Coverage:** 12 Stations		

Daily High (°C)	Daily Low (°C)	Wind (km/h)
0	-12	Gust 34

Stations Surveyed:

5300E2950N	5300E3100N	5150E3100N	5150E2950N	5150E2800N	5150E2650N
5000E2650N	5000E2800N	5000E2950N	5000E3100N	4850E3100N	4850E2950N

Date: Friday, 03rd December 2021		**Start Time:**	08:00 am
Daily Production Notes The survey crew were taken up on the intrusion first while the grid preparation crew split into two teams, one to finish up the last of the Loop 1 & 2 coverage while the other began working on the Loop 2 extensions to the North East. The survey went fairly well and the survey crew was able to get 11 stations surveyed, the one grid preparation crew made their way down to both lakes and conducted ice thickness tests (5-6 inches on Crystal, 8-9 inches on Bearpad) and the other grid crew finished up the NE extensions.		**End Time:**	04:50 pm
		Daily Field Conditions Field conditions were favorable with snowfall in the afternoon and minimal wind	

Rate:	**Coverage:**	**Daily High (°C)**	**Daily Low (°C)**	**Wind (km/h)**
11 Stations Survey Rate On-Time Processing Rate	11 Stations	-6	-13	5

Stations Surveyed:

4850E2800N	4850E2650N	4850E2500N	5000E2500N	5150E2500N	5300E2500N
5450E2500N	5600E2500N	5750E2500N	5450E2350N	5300E2350N	

Date: Saturday, 04th December 2021		**Start Time:**	08:10 am
Daily Production Notes The grid preparation crew were taken up on the intrusion to the SW Loop 1 coverage on the west side of Crystal Lake while the survey crew refilled the SQUID. Once the SQUID was full, the receiver crew made their way up and around to Bearpad Lake. They made their way onto the ice and set up for their first readings. Unfortunately, the wind was gusting fairly strong and there was minimal snow on the ice, meaning that excess noise was being induced into data either due to SQUID movement, Ice / Water movement, Wind Vibrations or a mixture of the above. With the impending blizzard, the call was made to get off the ice and go back around to resurvey the one questionable station from yesterday and then continue with the last few land-based Loop 1 and 2 stations north of Crystal Lake. ~105L LiHe remaining.		**End Time:**	05:45 pm
		Daily Field Conditions Field conditions were reasonable with fairly strong wind gusts for most of the day	

Rate:	**Coverage:**	**Daily High (°C)**	**Daily Low (°C)**	**Wind (km/h)**
5 Stations Survey Rate On-Time Processing Rate	5 Stations	-2	-10	Gust 49

Stations Surveyed:

5900E2500N	5600E2350N	5450E2200N	5150E2350N	5000E2350N	

Date: Sunday, 05th December 2021	**Start Time:** 08:00 am
Daily Production Notes The crew made their way out to the western staging area and unloaded the new Side x Side that the HeliSAM crew picked up in Manitoba en route to Thunder Bay. The BHTEM crew then ran the SQUID crew up to their starting position in the SW Loop 1 coverage area before returning to the staging area to load up all of the BHTEM equipment. It was a very full and heavy load and they had to take their time driving up to CRLK-TB-19. When they got there, they found the collar to be full of ice and so they began thawing out the hole which took ~30-45 minutes while they set up the equipment. They then took the time to dummy the hole again and reached a similar depth to the summer recon crew of ~614m, which turned out to be 604m when measured with the more accurate survey cable. They then pulled the dummy probe and switched over to the survey drum / Digi-Atlantis instruments. They were able to survey for a few hours at the end of the day before retrieving the probe. Blizzard conditions came in around 11:00am this morning bring in large amounts of snow.	**End Time:** 06:10 pm **Daily Field Conditions** Field conditions were good until blizzard conditions began around 11:00am and continued for the rest of the day. ~10 inches of snowfall.

Rate:	16 Stations Survey Rate Full Day BHTEM Survey Rate On-Time Processing Rate	**Coverage:**	16 Stations	**Daily High (°C)**	**Daily Low (°C)**	**Wind (km/h)**
				-1	-15	Gust 67

Stations Surveyed:

3200E1300N	3350E1300N	3500E1300N	3650E1300N	3200E1450N	3350E1450N
3500E1450N	3650E1450N	3800E1450N	3950E1450N	3350E1600N	3500E1600N
3650E1600N	3800E1600N	3950E1600N	4100E1600N		

Date: Monday, 06th December 2021	**Start Time:** 08:10 am
Daily Production Notes The crew showed up to a lot more snow than forecast, somewhere between 12-18 inches. The majority of the day was spent trying to make trail up onto the intrusions with the various steep hills to climb and fresh snow. The crews got to their respective starting points in the early afternoon at which point they were able to achieve minimal coverage before having to hike back out again.	**End Time:** 06:20 pm **Daily Field Conditions** The weather was reasonable with strong winds. 12 – 18 inches of fresh snow on the ground from yesterday's blizzard

Rate:	3 Stations Survey Rate	**Coverage:**	**Daily High (°C)**	**Daily Low (°C)**	**Wind (km/h)**

Full Day BHTEM Survey Rate On-Time Processing Rate	3 Stations	-4	-22	Gust 50	

Stations Surveyed:

3800E1300N	3650E1150N	3500E1150N			

Date: Tuesday, 07th December 2021

Start Time:

End Time:

Daily Production Notes

The crew made their way out to the field to continue the FLTEM and BHTEM surveys. The UTV wouldn't start this morning so the grid preparation and SQUID crews made their way up onto the hill while the BHTEM crew waited to boosted the UTV. Once they finaly got it started, they warmed it up for 15-20 minutes while they loaded all the gear. They then proceeded to make their way to the DDH but they barely made it to the base of the hill before the UTV broke down. They inspected the machine but it was soon realized that it would not be a quick fix. They decided to go back to town for supplies rather than call for another team to come get them. Before leaving the field, the crew chief received a radio call that the SQUID was being problematic. A brief time was spent trying to diagnose this issue over the radio before realizing that the SQUID would need to come back for testing / more in-depth diagnosis. The grid preparation team continued on without the survey crews.

Daily Field Conditions

Very cold weather as low as -28 in this morning

Rate: No Charge

Coverage:

Daily High (°C)	Daily Low (°C)	Wind (km/h)
-18	-28	Calm

Stations Surveyed:

Date: Wednesday, 08th December 2021

Start Time: 08:10 am

End Time: 06:20 pm

Daily Production Notes

The SQUID crew purged and filled the backup LT SQUID today while the remainder of the team made their way out to the field. The BHTEM crew went up to CRLK-TB-19 to continue surveying the hole and they were able to survey up to 380m depth on each loop. The survey crew made their way to Bearpad Lake once the second SQUID was filled and they were able to survey 9 stations before the end of the day.

Daily Field Conditions

Very cold weather this morning but calm winds for most of the day, a little gusty in the early afternoon

Rate: 9 Stations Survey Rate
Full Day BHTEM Survey Rate
On-Time Processing Rate

Coverage: 9 Stations

Daily High (°C)	Daily Low (°C)	Wind (km/h)
-11	-25	Gust 30

Stations Surveyed:

5450E2050N	5600E2050N	5600E2200N	5750E2050N	5750E2200N	5750E2350N
5900E2050N	5900E2200N	5900E2350N			

Date: Thursday, 09th December 2021

Start Time: 08:00 am

End Time: 05:35 pm

Daily Production Notes

The crew met at the transmitter site for their morning toolbox meeting before the grid preparation crew and BHTEM crew went up the hill while the SQUID crew went east along the GLN road to conduct the NE extension survey. The crews spent the entire day surveying of Loop 2 only. 15 stations were surveyed by the SQUID crew and the BHTEM crew surveyed roughly 200m.

Daily Field Conditions

Another fairly heavy snow fall day with moderately warm temperatures and moderate winds

Rate: 15 Stations Survey Rate
Full Day BHTEM Survey Rate
On-Time Processing Rate

Coverage: 15 Stations

Daily High (°C)	Daily Low (°C)	Wind (km/h)
0	-14	36

Stations Surveyed:

5900E3700N	6050E3700N	6200E3700N	6350E3700N	6500E3700N	6650E3700N
6800E3700N	6950E3700N	7100E3700N	6050E3850N	6200E3850N	6350E3850N
6500E3850N	6950E3850N	7100E3850N			

Date: Friday, 10th December 2021

Start Time: 07:50 am

End Time: 06:05 pm

Daily Production Notes

The crew made their way out to the field, setting up the Base Magnetometers on their way for the HeliSAM survey. The transmitter was powered on at the specifications for the HeliSAM survey and the SQUID crew took the BHTEM crew to the staging area before returning to the transmitter to wait for the HeliSAM survey. The Helicopter showed up but the navigation system had failed on route from Thunder Bay. While grounded, the transmitter was switched back to 0.25Hz and the other survey crews were instructed to continue their surveys. The SQUID crew were able to complete the two remaining stations of the NE extension. The Tx operator was then advised that the issue had been fixed and so they switched back to 3.33Hz. Unfortunately, problems persisted on and off, affecting the production of the other two surveys and they were only able to complete a brief flight towards the end of the day.

Daily Field Conditions

Field conditions were favorable with minimal wind

Rate: 2 Stations Survey Rate

Coverage:

Daily High (°C)	Daily Low (°C)	Wind (km/h)

Half Day BHTEM Survey Rate On-Time Processing Rate	2 Stations	-1	-15	~20	

Stations Surveyed:

6650E3850N	6800E3850N				

Date: Saturday, 11th December 2021		**Start Time:**	08:15 am
Daily Production Notes		**End Time:**	06:15 pm
The crew proceeded to the field today to continue their surveys until the Helicopter showed up to conduct the HeliSAM survey. The SQUID crew continue on with Bearpad lake coverage and the BHTEM crew continued on CRLK-TB-19. The Helicopter showed up around midday and the Tx switched over to 3.33HZ and the other survey crews went on standby. The survey flew for almost an hour before the pilot radioed in claiming issues with the altimeter. The HeliSAM operator then called in and confirmed that the HeliSAM bird had collided with a tree and no more surveying would be conducted. The transmitter was switched back 0.25Hz and the SQUID and BHTEM surveys continued.		**Daily Field Conditions** Field conditions were favorable	

Rate:	7 Stations Survey Rate Full Day BHTEM Survey Rate On-Time Processing Rate	**Coverage:**	7 Stations	**Daily High (°C)**	**Daily Low (°C)**	**Wind (km/h)**
				-1	-7	21

Stations Surveyed:

5300E1900N	5450E1900N	5600E1900N	5750E2200N @ 0.125Hz		5975E2275N
6125E2275N	6125E2350N				

Date: Sunday, 12th December 2021		**Start Time:**	08:00 am
Daily Production Notes		**End Time:**	05:30 pm
		Daily Field Conditions	

The HeliSAM operator departed site this morning and the grid preparation crew escorted them to the highway to ensure they didn't get stuck with the UTV trailer. The BHTEM crew continued the survey of CRLK-TB-19 from Loop 1 and the SQUID crew continued the spatial in-fills of the BPL anomaly and Loop 1 & 2 coverage of the north end of Crystal Lake.				Field conditions were favorable	
Rate: 8 Stations Survey Rate Full Day BHTEM Survey Rate On-Time Processing Rate		**Coverage:**	8 Stations	**Daily High (°C)**	**Daily Low (°C)**	**Wind (km/h)**
				4	-14	20

Stations Surveyed:

5975E2425N	6050E2425N	6125E2425N	6200E2425N	6050E2350N @ 0.125Hz	
5000E2200N	5150E2200N	5150E2050N			

Date: Monday, 13th December 2021				**Start Time:**	08:00 am
Daily Production Notes				**End Time:**	05:40 pm
Steve Ward Construction sent a Front End Loaded with a plow blade and side blade to plow the GLN roads so the crew chief liaised with the operator as they passed by the Tx Site. The BHTEM crew went straight up on the hill this morning while the SQUID crew refilled the SQUID. A few difficulties were experienced on the SQUID fill delaying the process. Once the sensor was filled, they proceeded to the NE sector to conduct the repeats and infills. They were able to complete both 0.125Hz repeats, 4 of 5 noise repeats and 3 of 6 spatial infills. The BHTEM crew completed CRLK-TB-19 Loop 1 coverage today.				**Daily Field Conditions** Field conditions were favorable	
Rate: 9 Stations Survey Rate Full Day BHTEM Survey Rate On-Time Processing Rate		**Coverage:**	9 Stations	**Daily High (°C)**	**Daily Low (°C)**	**Wind (km/h)**
				3	-7	Gust 49

Stations Surveyed:

5750E3550N	6050E3550N	6200E3550N	6350E3550N	6800E3550N @ 0.125Hz	
7100E3550N @ 0.125Hz		6725E3400N	6725E3550N	6725E3625N	

Date: Tuesday, 14th December 2021		**Start Time:**	07:55 am
Daily Production Notes		**End Time:**	05:45 pm

The crew made their way out to the staging area where the BHTEM crew loaded up and made their way up onto the intrusion. They spent the majority of the day moving everything over and getting set up on CRLK-TB-06 as well as re-dummying the hole. The SQUID crew continued the repeats and in-fills in the NE sector before making their way around to Crystal Lake where the completed the last three stations on Loop 1 & 2 coverage.

Daily Field Conditions

Field conditions were reasonable with wind picking up a little in the afternoon.

Rate:	**Coverage:**	**Daily High (°C)**	**Daily Low (°C)**	**Wind (km/h)**
8 Stations Survey Rate Full Day BHTEM Survey Rate On-Time Processing Rate	8 Stations	3	-12	Gust 46

Stations Surveyed:

4850E2350N	5300E2050N	5300E2200N	5975E3400N	6725E3250N	6875E3550N
6875E3625N	6950E3550N				

Date: Wednesday, 15th December 2021

Start Time: 08:00 am

End Time: 05:55 pm

Daily Production Notes

The crew met at the transmitter site for their morning safety meeting. There were four crew members on grid preparations today, two on the SQUID crew and two on the Loop 2 Retrieval crew. The SQUID crew worked entirely on Crystal Lake and were able to survey a total of 16 stations. The Loop 2 Retrieval crew had some difficulties pulling the wire down through the trees given it was so tight but they were able to wrap up ~70% of the loop and confirm a helicopter for deploying Loop 3 on Friday.

Daily Field Conditions

Field conditions were reasonable with wind picking up a little in the afternoon.

Rate:	**Coverage:**	**Daily High (°C)**	**Daily Low (°C)**	**Wind (km/h)**
16 Stations Survey Rate Full Day Loop Retrieval Rate On-Time Processing Rate	16 Stations	4	2	13

Stations Surveyed:

4250E1450N	4400E1600N	4550E1600N	4550E1750N	4700E1600N	4700E1750N
4700E1900N	4850E1600N	4850E1750N	4850E1900N	4850E2050N	5000E1600N
5000E1750N	5000E1900N	5000E2050N	5150E1900N		

Date: Thursday, 16th December 2021

Start Time: 08:00 am

Daily Production Notes

The crew made their way to the staging area to fire up the snowmobiles and head up onto the intrusion. The SQUID crew went to Crystal Lake but the rains from last night had serious detrimental effects on the lake so they decided to go back around and hike in to complete the Loop 1 coverage to the SW. The Loop crew worked on the remainder of the Loop 2 wire but had serious difficulties, including get the Skandic snowmobile seriously stuck, losing a significant amount of time. All but 400m was wrapped up on Loop 2.

End Time: 06:20 pm

Daily Field Conditions

Ice conditions on Crystal Lake were poor due to heavy rains last night. Weather has begun to cool again and snow fell also. Fairly windy today

Rate:	**Coverage:**	**Daily High (°C)**	**Daily Low (°C)**	**Wind (km/h)**
8 Stations Survey Rate Full Day Loop Retrieval Rate On-Time Processing Rate	8 Stations	9	-9	Gust 63

Stations Surveyed:

3200E1000N	3200E1150N	3350E1000N	3350E1150N	3500E1000N	3650E1000N
3800E1000N	3800E1150N				

Date: Friday, 17th December 2021

Start Time: 08:00 am

End Time: 05:15 pm

Daily Production Notes

The crew measured the LiHe level in the SQUID this morning and it showed just enough believed to last the day. Unfortunately, they got to their starting station on the south side of Bearpad Lake and found the level dropped to below operational levels, so they returned to staging to attempt a refill from the old dewar. Meanwhile, the loop crew loaded the HeliWinder spool with ~7.5km of wire and fine-tuned the HeliWinder. The Bell 407 showed up shortly before midday and a test flight was performed prior to the HeliWinder operation while the SQUID was refilled. The HeliWinder operations went smoothly and the crew was able to fill the SQUID halfway before running out of LiHe. Loop 3 was hooked up to the transmitter and the SQUID crew surveyed along the road to maximize production for the remainder of the day.

Daily Field Conditions

Field conditions were favorable with slight to moderate winds

Rate:	**Coverage:**	**Daily High (°C)**	**Daily Low (°C)**	**Wind (km/h)**
6 Stations Survey Rate Full Day Loop Deployment Rate On-Time Processing Rate	6 Stations Loop 3	-8	-13	Gust 41

Stations Surveyed:

2450E3550N	2600E3550N	2750E3550N	2900E3550N	3050E3550N	3200E3550N

3350E3550N					

Date: Saturday, 18th December 2021		**Start Time:**	08:10 am
Daily Production Notes		**End Time:**	04:05 pm
The SQUID crew began surveying the Loop 3 stations start close to the transmitter site. Meanwhile, two crew members worked on flying the photogrammetry survey of Loop 3, starting off along the Great Lakes Nickel Road before proceeding on top of the intrusion to survey the south of the Loop. The SQUID crew was able to survey 8 stations before they report experiencing similar issues to the last SQUID fault. Over an hour was spent troubleshooting and trying to make the SQUID operational but they were unsuccessful.		**Daily Field Conditions** Field conditions were favorable with slight to moderate winds	

Rate:	**Coverage:**	**Daily High (°C)**	**Daily Low (°C)**	**Wind (km/h)**
8 Stations Survey Rate Full Day Photogrammetry rate On-Time Processing Rate	8 Stations	-8	-12	Gust 27

Stations Surveyed:

4700E3550N	4550E3550N	4400E3550N	4250E3550N	4100E3550N	3950E3550N
3800E3550N	3650E3550N				

Date: Sunday, 19th December 2021		**Start Time:**	07:55 am
Daily Production Notes		**End Time:**	05:30 pm
Without any working SQUID sensors, the two SQUID systems were dropped off to be shipped back to Germany and two crew members departed Thunder Bay. The grid preparation crew finalized the last of the trails for the SQUID survey. The borehole crew had some difficulties achieving communications with the probe at first due to probe being exposed to the cold a little longer than normal. Once they had the system running, they began their survey of CRLK-TB-06 from Loop 3. Some noisier data and odd behavior were seen at the bottom of the hole and so the crew took the time to confirm everything was functioning correctly before they continued the survey.		**Daily Field Conditions** Field conditions were favorable	

Rate:	**Coverage:**	**Daily High (°C)**	**Daily Low (°C)**	**Wind (km/h)**
Full Day BHTEM Survey rate On-Time Processing Rate		-2	-13	Gust 37

Date: Monday, 20th December 2021		**Start Time:**	08:00 am
Daily Production Notes		**End Time:**	05:30 pm

The grid preparation crew departed from Thunder Bay, ON around 4:30pm. The BHTEM crew continued their survey of CRLK-TB-06 from Loop 3 and were able to survey up to 580m depth before the end of the day.			**Daily Field Conditions** Field conditions were favorable		
Rate:	Full Day BHTEM Survey rate On-Time Processing Rate	**Coverage:**	**Daily High (°C)**	**Daily Low (°C)**	**Wind (km/h)**
			-8	-15	17

Date:	Tuesday, 21st December 2021		**Start Time:**	08:00 am	
Daily Production Notes			**End Time:**	05:00 pm	
The crew made their way to the field and continued the survey of CRLK-TB-06 from Loop 3. The started off by going down to conduct spatial infill over the peak "A" component response before continuing back up the hole. They were able to survey up to 440m depth.			**Daily Field Conditions** Windy and snowing for most of the day		
Rate:	Full Day BHTEM Survey rate On-Time Processing Rate	**Coverage:**	**Daily High (°C)**	**Daily Low (°C)**	**Wind (km/h)**
			-9	-14	18

Date:	Wednesday, 22nd December 2021		**Start Time:**	08:00 am	
Daily Production Notes			**End Time:**	05:00 pm	
The crew continued the survey of CRLK-TB-06 from Loop 3 today starting off with an overlap from the previous days data acquisition and continuing up to a depth of 260m before pulling the probe out of the hole and packing up for the day.			**Daily Field Conditions** Field conditions were favorable		
Rate:	Full Day BHTEM Survey rate On-Time Processing Rate	**Coverage:**	**Daily High (°C)**	**Daily Low (°C)**	**Wind (km/h)**
			-12	-26	13

Date:	Thursday, 23rd December 2021	**Start Time:**	08:00 am
Daily Production Notes		**End Time:**	05:15 pm
		Daily Field Conditions	

The BHTEM crew continued the survey of CRLK-TB-06 from where they left off yesterday on Loop 3. They had some minor technical difficulties throughout the day but were able to complete the Loop 3 coverage of this hole before packing up.			Field conditions were favorable		
Rate:	Full Day BHTEM Survey rate On-Time Processing Rate	**Coverage:**	**Daily High (°C)**	**Daily Low (°C)**	**Wind (km/h)**
			-4	-11	16

Date:	Friday, 24th December 2021	**Start Time:**	08:00 am
Daily Production Notes		**End Time:**	05:30 pm
The BHTEM crew restarted the survey of CRLK-TB-06 from the bottom of the hole, starting at 890m depth, surveying on Loop 1, they were able to survey up to 520m before the end of the day.		**Daily Field Conditions** Field conditions were favorable	

Rate:	Full Day BHTEM Survey rate On-Time Processing Rate	**Coverage:**	**Daily High (°C)**	**Daily Low (°C)**	**Wind (km/h)**
			1	-4	5

Date:	Saturday, 25th December 2021	**Start Time:**	08:00 am
Daily Production Notes		**End Time:**	05:00 pm
The crew continued the survey of CRLK-TB-06 from where they left off yesterday, starting with repeats around 520m depth, surveying on Loop 1, and they were able to survey up to 120m before the end of the day.		**Daily Field Conditions** Field conditions were favorable. Cloudy for most of the day	

Rate:	Full Day BHTEM Survey rate On-Time Processing Rate	**Coverage:**	**Daily High (°C)**	**Daily Low (°C)**	**Wind (km/h)**
			-9	-14	21

Date:	Sunday, 26th December 2021	**Start Time:**	08:00 am
Daily Production Notes		**End Time:**	04:45 pm
		Daily Field Conditions	

There crew continued the survey of CRLK-TB-06 from Loop 1. They had some minor technical difficulties which delayed them but they were able to solve the issues and complete the hole. The crew then packed up the BHTEM set up and moved back to CRLK-TB-19. By the end of the day, they were completely set up on CRLK-TB-19 ready to survey first thing in the morning from Loop 3.		Field conditions were favorable.			
Rate:	Full Day BHTEM Survey rate On-Time Processing Rate	**Coverage:**	**Daily High (°C)**	**Daily Low (°C)**	**Wind (km/h)**
			-10	-16	22

Date:	Monday, 27th December 2021	**Start Time:**	08:00 am
Daily Production Notes		**End Time:**	05:30 pm
The crew started there survey today from the bottom of CRLK-TB-19 on Loop 3 and they were able to survey from 600m depth to 320m depth by the end of the day.		**Daily Field Conditions** Snowfall all day.	

Rate:	Full Day BHTEM Survey rate On-Time Processing Rate	**Coverage:**	**Daily High (°C)**	**Daily Low (°C)**	**Wind (km/h)**
			-4	-9	23

Date:	Tuesday, 28th December 2021	**Start Time:**	
Daily Production Notes		**End Time:**	
The crew took a Fatigue Management Day today. No surveying or work was performed.		**Daily Field Conditions**	

Rate:	No Charge to Client	**Coverage:**	**Daily High (°C)**	**Daily Low (°C)**	**Wind (km/h)**

Date:	Wednesday, 29th December 2021	**Start Time:**	08:00 am
Daily Production Notes		**End Time:**	05:15 pm

The grid trail conditions were very difficult due to the heavy snowfall yesterday. The BHTEM crew started their first attempt to skidoo the trails uphill. The previous trails were all covered with fresh snow, and it was very challenging. The crew regrouped and started moving as a unit making new trails up hills. The BHTEM crew were able to reach CRLK-TB-19 by 12:30 PM. The crew had to restore the survey tent after finding it down because of the amount of snow on it. They also had some issue with the generator they use in the survey tent, but they were able to find a solution. The TX operator went back to his position after helping the BHTEM crew. There was an open loop error when the TX operator tried to start the transmitter. Fortunately, he was able to find the open loop and fixed it in a fairly fast time. On his way back to the TX his truck got stuck in the snow and needed to be pulled out with another truck later in the day. The BHTEM crew continued surveying CRLK-TB-19 and they stopped at 220m depth by the end of the day

Daily Field Conditions

Field conditions were favorable.

Rate:	Full Day BHTEM Survey Rate On-Time Processing Rate	**Coverage:**	**Daily High (°C)**	**Daily Low (°C)**	**Wind (km/h)**
			-12	-20	Gust 25

Date: Thursday, 30th December 2021

Start Time: 08:00 am

End Time: 05:30 pm

Daily Production Notes

With the trails up onto the hill in much better condition, the crew was able to get up to the DDH without delay. The crew continued and completed the survey of CRLK-TB-19 from Loop 3.

Daily Field Conditions

Field conditions were favorable.

Rate:	Full Day BHTEM Survey Rate On-Time Processing Rate	**Coverage:**	**Daily High (°C)**	**Daily Low (°C)**	**Wind (km/h)**
			-12	-25	11

Date: Friday, 31st December 2021

Start Time: 08:00 am

Daily Production Notes

End Time: 05:00 pm

The crew began their day by packing up all of their BHTEM gear at CRLK-TB-19 and moving it over to CRLK-TB-14. Once they had everything set back up over the new hole, they dummied the hole successfully to make sure that it was still open before they dropped the Digi-probe down to begin surveying at a depth of 790m. They were able to survey up to 700m before the end of the day.

Daily Field Conditions

Field conditions were favorable.

Rate:	Full Day BHTEM Survey Rate On-Time Processing Rate	**Coverage:**	**Daily High (°C)**	**Daily Low (°C)**	**Wind (km/h)**
			-12	-25	11

Date:	Saturday, 01st January 2022	**Start Time:**	08:00 am
Daily Production Notes		**End Time:**	05:30 pm

The BHTEM crew continued the survey of CRLK-TB-14 from where they left off yesterday, starting with repeats around 720m depth, surveying off of Loop 3, and they were able to survey up to 260m depth before the end of the day.

Daily Field Conditions

Field conditions were favorable.

Rate:	Full Day BHTEM Survey Rate On-Time Processing Rate	**Coverage:**	**Daily High (°C)**	**Daily Low (°C)**	**Wind (km/h)**
			-17	-27	19

Date:	Sunday, 02nd January 2022	**Start Time:**	08:00 am
Daily Production Notes		**End Time:**	05:30 pm

The crew made their way out to the field to continue the survey of CRLK-TB-14. It was very cold this morning and the crew was delayed in starting their survey as they had to warm up equipment and instrumentation. They continued from were they left off yesterday and completed Loop 3 coverage before switching over to Loop 1. They were able to survey up to 720m depth by the end of the day.

Daily Field Conditions

Field conditions were favorable.

Rate:	Full Day BHTEM Survey Rate On-Time Processing Rate	**Coverage:**	**Daily High (°C)**	**Daily Low (°C)**	**Wind (km/h)**
			-17	-31	15

Date:	Monday, 03rd January 2022	**Start Time:**	08:00 am
Daily Production Notes		**End Time:**	05:15 pm

The crew made their way out to the field and continued the survey of CRLK-TB-14. They started off their repeats at 740m depth and they were able to survey up to 300m by the end of the day.

Daily Field Conditions

Field conditions were favorable.

Rate:	Full Day BHTEM Survey Rate On-Time Processing Rate	**Coverage:**	**Daily High (°C)**	**Daily Low (°C)**	**Wind (km/h)**
			-10	-27	24

Date: Tuesday, 04th January 2022

Start Time: 08:00 am

End Time: 05:30 pm

Daily Production Notes

The crew continued the survey of CRLK-TB-14 on Loop 1 from where they left off yesterday and they completed surveying the hole by the end of the day. The LT SQUID arrived in Thunder Bay and the crew picked it up on their way back to their accommodations.

Daily Field Conditions

Field conditions were favorable.

Rate:	Full Day BHTEM Survey Rate On-Time Processing Rate	**Coverage:**	**Daily High (°C)**	**Daily Low (°C)**	**Wind (km/h)**
			-10	-23	28

Date: Wednesday, 05th January 2022

Start Time: 08:00 am

End Time: 05:30 pm

Daily Production Notes

The crew made their way out to pack up the survey equipment from CRLK-TB-14 and move it over to CRLK-141. The trails were not in great condition to the final hole due to the recent and continuing snowfall which caused some difficulties in moving the equipment to the new hole. The crew was able to finally get set up on the hole and complete the dummy procedure ensuring no blockage.

Daily Field Conditions

Fairly windy and falling snow.

Rate:	Full Day BHTEM Survey Rate On-Time Processing Rate	**Coverage:**	**Daily High (°C)**	**Daily Low (°C)**	**Wind (km/h)**
			-13	-19	Gust 33

Date: Thursday, 06th January 2022

Start Time: 08:00 am

Daily Production Notes

End Time: 05:00 pm

The crew got started on the final hole today, surveying CRLK-141 off of Loop 1. They started at a depth of 720m and were able to reach a depth of 340m by the end of the day. The additional crew members to restart the FLTEM survey arrived in the early hours of the Friday morning.

Daily Field Conditions

Field conditions were favorable.

Rate:	Full Day BHTEM Survey Rate On-Time Processing Rate	**Coverage:**	**Daily High (°C)**	**Daily Low (°C)**	**Wind (km/h)**
			-22	-25	13

Date:	Friday, 07th January 2022	**Start Time:**	08:15 am
Daily Production Notes		**End Time:**	06:30 pm
Two crew members arrived at Thunder Bay at 12:30 AM. The BHTEM crew continued the survey of CRLK-141 off of Loop 1. By the end of the day, they were able to complete the hole plus acquiring multiple recommend infills. Other workers started prepping for demobilization of borehole and acquiring supplies to resume the SQUID survey.		**Daily Field Conditions** Field conditions were favorable.	

Rate:	Full Day BHTEM Survey Rate On-Time Processing Rate	**Coverage:**	**Daily High (°C)**	**Daily Low (°C)**	**Wind (km/h)**
			-18	-26	13

Date:	Saturday, 08th January 2022	**Start Time:**	08:00 am
Daily Production Notes		**End Time:**	05:00 pm
The BHTEM crew started the survey of CRLK-141 off of Loop 3. They started at 720m depth. By end of the day, they were able to reach 460m depth. Additional infills were acquired as well. Demobilization of borehole was fully prepared as well as organizing any objects buried beneath the snow. All machines and equipment were thoroughly inspected.		**Daily Field Conditions** Fairly windy and falling snow.	

Rate:	Full Day BHTEM Survey Rate On-Time Processing Rate	**Coverage:**	**Daily High (°C)**	**Daily Low (°C)**	**Wind (km/h)**
			-4	-17	28

Date:	Sunday, 09th January 2022	**Start Time:**	08:00 am
Daily Production Notes		**End Time:**	06:00 pm
		Daily Field Conditions	

The BHTEM crew made their way out to the field and continued the survey of CRLK-141. They started off their repeats at 480m depth and, they were able to complete surveying the hole off of loop 3 by the end of the day. Two members of the crew also went to inspect the lines that will be surveyed next with the Low Temp. SQUID.	Fairly windy.

Rate:	Full Day BHTEM Survey Rate On-Time Processing Rate	**Coverage:**	**Daily High (°C)**	**Daily Low (°C)**	**Wind (km/h)**
			-8	-23	48 Gust

Date:	Monday, 10th January 2022	**Start Time:**	08:30 am
Daily Production Notes		**End Time:**	05:00 pm
The crew made their way out to the field and started packing up the borehole equipment since the boreholes survey is fully completed. One crew member has left Thunder Bay heading back to Saskatoon with a load of the equipment and tools which are not needed any more.		**Daily Field Conditions** Fairly windy.	

Rate:	Full Day BHTEM Survey Rate On-Time Processing Rate	**Coverage:**	**Daily High (°C)**	**Daily Low (°C)**	**Wind (km/h)**
			-8	-23	48 Gust

Date:	Saturday, 15th January 2022	**Start Time:**	08:00 am
Daily Production Notes		**End Time:**	06:30 pm
The crew made their way out to the field and went to the staging area to refill the LT SQUID. Once they finished, they made their way to the transmitter and hiked in and started surveying northeast of the prioritize area.		**Daily Field Conditions** Field conditions were favorable	

Rate:	7 Stations Survey Rate On-Time Processing Rate	**Coverage:**	7 Stations	**Daily High (°C)**	**Daily Low (°C)**	**Wind (km/h)**
				-8	-31	13

Stations Surveyed:

4100E3100N	4100E3250N	4250E3250N	4400E3250N	4550E23250N	4550E3400N
4700E3400N					

Date:	Sunday, 16th January 2022	**Start Time:**	08:15 am

Daily Production Notes

The survey crew made their way to STN 3800E3550N start surveying at the south-east end of the priority stations. The trails had broken in caused a slower travel time. As they arrived at their station, minor technical difficulties occurred causing a later start to acquisition. Breaking trail on foot restricted the speed of moving between stations ending with STN 4400E2350N

End Time: 05:30 pm

Daily Field Conditions

Field conditions were manageable.

Rate:	8 Stations Survey Rate On-Time Processing Rate	**Coverage:**	8 Stations	**Daily High (°C)**	**Daily Low (°C)**	**Wind (km/h)**
				-5	-14	Gust 6

Stations Surveyed:

3650E1750N	3800E1750N	3800E1900N	3950E1900N	4100E1900N	4100E2050N
4250E2200N	4400E2350N				

Date: Monday, 17th January 2022

Start Time: 08:15 am

Daily Production Notes

The survey crew made their way to STN 4250N2050E to continue surveying at the south-east end of the priority stations. Every 2 stations they had to bush crash from the current cut line up to the adjacent line to maximise production and minimise backtracking. Breaking trail on foot overall reduced movement speed between stations. They ended at STN 4700E2350N

End Time: 06:00 pm

Daily Field Conditions

Field conditions were manageable.

Rate:	8 Stations Survey Rate On-Time Processing Rate	**Coverage:**	8 Stations	**Daily High (°C)**	**Daily Low (°C)**	**Wind (km/h)**
				-4	-22	Gust 7

Stations Surveyed:

4250N2050E	4400N2050E	4400E2200N	4550E2200N	4550E2350N	4550E2550N
4700E2350N	4700E2500N				

Date: Tuesday, 18th January 2022

Start Time: 08:15 am

Daily Production Notes

The survey crew made their way to STN 4400E2500N to continue surveying at the middle of the priority stations to the west side. Approximately 8" of snow fell throughout the day. They ended at STN 3200E2650N

End Time: 07:45 pm

Daily Field Conditions

Very deep snow. Field conditions were manageable.

Rate:	9 Stations Survey Rate On-Time Processing Rate	**Coverage:**	9 Stations	**Daily High (°C)**	**Daily Low (°C)**	**Wind (km/h)**
				-3	-19	Gust 12

Stations Surveyed:

4400E2500N	42500E2500N	4100E2500N	3950E2500N	3800E2500N	3650E2500N
3500E2500N	3350E2500N	3200E2650N			

Date: Wednesday, 19th January 2022

Start Time: 08:30 am

End Time: 07:30 pm

Daily Production Notes

The survey crew made their way to the laydown to fill the SQUID with LiHe. After filling the SQUID, they snowmobiled up near STN 4250E2350N to continue surveying. While one worker got the equipment to the first station, the other two dropped off a snowmobile near the end of the line to be used as a ride out at the end of the day. They ended at STN 3650E2350N

Daily Field Conditions

Very deep snow. Field conditions were acceptable.

Rate:	5 Stations Survey Rate On-Time Processing Rate	**Coverage:**	5 Stations	**Daily High (°C)**	**Daily Low (°C)**	**Wind (km/h)**
				-15	-26	Gust 6

Stations Surveyed:

4250E2350N	4100E2350N	3950E2350N	3800E2350N	3650E2350N	

Date: Thursday, 20th January 2022

Start Time: 08:30 am

Daily Production Notes

The crew snowmobiled up near STN 4400E2350N to drop people off at the top so they could work downhill continuing the survey at STN 3950E2200N. Next, the other surveyor made his way to the bottom of the line to meet up with the others. They ended at STN 3200E2200N

End Time: 05:30 pm

Daily Field Conditions

Field conditions were manageable.

Rate:	6 Stations Survey Rate On-Time Processing Rate	**Coverage:**	6 Stations	Daily High (°C)	Daily Low (°C)	Wind (km/h)
				-15	-28	Gust 3

Stations Surveyed:

3950E2200N	3800E2200N	3650E2200N	3500E2200N	3350E2200N	3200E2200N

Date: Friday, 21st January 2022

Start Time: 08:30 am

End Time: 07:30 pm

Daily Production Notes

Around 10AM the snow plow came and did an exceptional job clearing Great Lakes Nickel Road. Due to the fact that there have been difficulties breaking trail on snowmobiles in this area, it was decided that finishing the last section of stations between L2650N and L2950N on the west side was in our best interests. The crew snowmobiled up near STN 3200E2350N. Two workers walked to the station they ended on the previous day to get the SQUID and move to start surveying at STN 3050E2200N. The other snowmobiled to the end of L2800N to start packing the trail on foot. Two passes are normally required in this amount of snow to properly pack the trail in a time efficient manner. They ended on STN 3500E2050N.

Daily Field Conditions

Field conditions were manageable.

Rate:	11 Stations Survey Rate On-Time Processing Rate	**Coverage:**	11 Stations	Daily High (°C)	Daily Low (°C)	Wind (km/h)
				-6	-30	Gust 33

Stations Surveyed:

2900E1900N	2900E2200N	2900E2350N	3050E1900N	3050E2050N	3050E2200N
3200E1900N	3200E2050N	3350E1900N	3350E2050N	3500E2050N	

Date:	Saturday, 22nd January 2022	**Start Time:**	08:30 am
Daily Production Notes		**End Time:**	05:30 pm
The crew snowmobiled up near STN 4550E2650N to continue surveying on the north side of the intrusion. Two workers surveyed while the other walked ahead packing trail. They ended on STN 3950E2650N.		**Daily Field Conditions**	Field conditions were manageable.

Rate:	6 Stations Survey Rate On-Time Processing Rate	**Coverage:**	6 Stations	**Daily High (ºC)**	**Daily Low (ºC)**	**Wind (km/h)**
				-7	-19	Gust 40

Stations Surveyed:

3950E2650N	4100E2650N	4250E2650N	4400E2650N	4550E2650N	4550E2800N

Date:	Thursday, 03rd February 2022	**Start Time:**	07:45 am
Daily Production Notes		**End Time:**	06:30 pm
The 2 crews met at the laydown to have a toolbox meeting and fill the 2 SQUIDs with LiHe. After filling the squids, one crew snowmobiled to resume the survey starting with STN 4550E2800N (RPT) and ending on STN 3650E2800N. The other crew started on STN 3650E2800N and ended on STN 3800E2650N.		**Daily Field Conditions**	Field conditions were favourable.

Rate:	19 Stations Survey Rate On-Time Processing Rate	**Coverage:**	20 Stations	**Daily High (ºC)**	**Daily Low (ºC)**	**Wind (km/h)**
				-15	-29	Gust 15

Stations Surveyed:

4550E2800N	4550E2950N	4400E2950N	4250E2950N	4400E2800N	4250E2800N
4100E2800N	3950E2800N	3800E2800N	3650E2800N	3050E2650N	3050E2800N
3050E2950N	3200E2950N	3350E2650N	3350E2800N	3350E2950N	3500E2650N
3650E2650N	3800E2650N				

Date: Friday, 04th February 2022			**Start Time:** 07:45 am
Daily Production Notes The crew met at the laydown for a toolbox meeting around 8:00am. Then they snowmobiled up towards the priority stations and split into their designated teams to continue surveying. One team had to walk 450m in to finish surveying the area they were in, walk back out to the snowmobiles and mobilize to the east side of the priority stations. Both teams followed routes that had been packed on foot the previous week.			**End Time:** 05:30 pm **Daily Field Conditions** Field conditions were favourable.
Rate: 22 Stations Survey Rate On-Time Processing Rate	**Coverage:** 22 Stations	**Daily High (°C)**	**Daily Low (°C)**	**Wind (km/h)**
		-10	-25	Gust 19

Stations Surveyed:

3500E2800N	3950E2950N	4100E2950N	4250E3100N	4400E3100N	4550E3100N
4700E2650N	4700E2800N	4700E2950N	4700E3100N	2600E2500N	2600E2650N
2600E2800N	2600E2950N	2600E3100N	2750E2650N	2750E3100N	2900E2950N
2900E3100N	3050E3100N	3200E2800N	3200E3100N		

Date: Saturday, 05th February 2022			**Start Time:** 07:45 am
Daily Production Notes The crew met at the laydown for a toolbox meeting around 8:00am. Next, they snowmobiled up to the intrusion and split into 2 teams. One team surveyed the majority of the remaining priority stations while the other surveyed west of Loop 3. Approximately 10” of snow fell throughout the day.			**End Time:** 05:30 pm **Daily Field Conditions** Snow fell throughout the day covering the majority of our packed trails.
Rate: 24 Stations Survey Rate On-Time Processing Rate	**Coverage:** 24 Stations	**Daily High (°C)**	**Daily Low (°C)**	**Wind (km/h)**
		-8	-29	Gust 26

Stations Surveyed:

2300E2350N	2450E2500N	3350E3100N	3500E2950N	3500E3100N	3650E2950N
3650E3100N	3800E2950N	3800E3100N	3950E3100N	2000E2350N	2000E2650N
2000E2800N	2000E2950N	2150E2500N	2150E2650N	2150E2800N	2150E2950N
2300E2950N	2450E2950N	2750E2800N	2750E2950N	2900E2650N	2900E2800N

Date: Sunday, 06th February 2022					**Start Time:**	07:45 am
Daily Production Notes The 2 survey crews met at the laydown for a toolbox meeting at 8:00am. From there they snowmobiled up towards the intrusion where they split up. One crew finished surveying any leftover stations on the west side of Loop 3 south of the intrusion. The other team started off of the trail starting with STN 2750E2500N and surveyed their way to STN 3500E2350N. By this time, the crew near the intrusion finished their area and needed to snowmobile back to the laydown and take the other trail towards the other crew to move them east to continue surveying. While they continued surveying, snowmobiles were re-positioned to ensure all workers had a ride out at the end of the day.					**End Time:**	05:30 pm
					Daily Field Conditions Mild snow fell early in the morning. Packed trails have been somewhat covered but still visible.	
Rate: 17 Stations Survey Rate On-Time Processing Rate		**Coverage:**	17 Stations	**Daily High (°C)**	**Daily Low (°C)**	**Wind (km/h)**
				-8	-29	11

Stations Surveyed:

2750E2500N	2900E2500N	3050E2500N	3200E2500N	3050E2350N	3200E2350N
3350E2350N	3500E2350N	2750E2350N	2750E2200N	2300E2800N	2300E2650N
2300E2500N	2450E2800N	2450E2650N	2150E2350N	2000E2500N	

Date: Monday, 07th February 2022					**Start Time:**	07:45 am
Daily Production Notes Workers met at the laydown for a toolbox meeting at 8:00am. From there one crew went to finish surveying stations in the south-west corner of Loop 1 and continuing on the stations alongside Great Lakes Nickel Road. The other crew attempted to access as many stations as possible in areas previously deemed inaccessible.					**End Time:**	06:00 pm
					Daily Field Conditions Field conditions were good	
Rate: 17 Stations Survey Rate On-Time Processing Rate		**Coverage:**	17 Stations	**Daily High (°C)**	**Daily Low (°C)**	**Wind (km/h)**
				-10	-27	15

Stations Surveyed:

2150E3400N	2300E3400N	2450E3400N	2600E3400N	2750E3400N	2900E3400N
3050E3400N	3200E3400N	3350E3400N	3500E3400N	3650E3400N	3800E3400N

2450E2350N	2600E2350N	2600E2200N	2600E2350N	2750E2050N	

Date: Tuesday, 08th February 2022

Start Time: 07:45 am

End Time: 06:00 pm

Daily Production Notes

The 2 survey teams arrived at the laydown around 8:00am to fill both of the SQUIDs. After filling the first SQUID, one crew went up the trail to the intrusion to continue surveying downhill on the north side. The other crew finished filling their SQUID, surveyed a few missing/repeat stations alongside Great Lakes Nickel Road, and continued surveying the long lines south of the road from the TX towards the laydown. STN 2600E3550N was a repeat station.

Daily Field Conditions

Field conditions were good

Rate: 20 Stations Survey Rate
On-Time Processing Rate

Coverage: 21 Stations

Daily High (°C)	Daily Low (°C)	Wind (km/h)
-2	-16	20

Stations Surveyed:

2000E3100N	2150E3100N	2300E3100N	2450E3100N	2000E3250N	2150E3250N
2300E3250N	2450E3250N	2600E3250N	2750E3250N	2900E3250N	3050E3250N
2300E3550N	2600E3550N	3500E3550N	3800E3250N	3950E3250N	4100E3400N
4250E3400N	4400E3400N	4700E3250N			

Date: Wednesday, 09th February 2022

Start Time: 08:00 am

End Time: 06:30 pm

Daily Production Notes

Survey teams met at the laydown for a toolbox meeting at 8:00am and mobilized to Crystal Lake and Bearpad Lake to continue surveying. Due to slush, the crew that had planned to survey on the lake left to finish the stations near Great Lakes Nickel Road.

Daily Field Conditions

The lake had approx. 1' of slush. Stations on land were steep. Trails were filled with snow.

Rate: 15 Stations Survey Rate
On-Time Processing Rate

Coverage: 15 Stations

Daily High (°C)	Daily Low (°C)	Wind (km/h)
-2	-6	Gust 44

Stations Surveyed:

5000E1150N	5000E1300N	5150E1150N	5150E1300N	5300E1150N	5300E1300N
5300E1600N	5300E1750N	5450E1600N	3200E3250N	3350E3250N	3500E3250N

3650E3250N	3650E3400N	5150E1750N			

Date: Thursday, 10th February 2022

Start Time: 08:00 am

End Time: 05:10 pm

Daily Production Notes

The crew had a break in the windy forecast and therefore split up today, with one crew member snowmobiled mounted and surveying on the lake while the others continued the survey SouthEast of Crystal Lake. The one lake station from yesterday was repeated with much better results. The lake receiver was able to complete 19 stations, including the repeat while the others completed the remaining 6 stations south of Bearpad Lake. Two crew members departed the project with the 5-Ton truck.

Daily Field Conditions

Field conditions were favorable with the wind picking up later in the day

Rate: 24 Stations Survey Rate
On-Time Processing Rate

Coverage: 25 Stations

Daily High (°C)	Daily Low (°C)	Wind (km/h)
-5	-21	Gust 38

Date: Friday, 11th February 2022

Start Time: 08:00 am

End Time: 05:20 pm

Daily Production Notes

The crew made their way to the staging area this morning to load the snowmobiles. Down to a single receiver crew again, they made their way to Crystal Lake where one crew member survey the last four stations on the lake while the other two tried to pack trails into stations on the hillside. The snow was waist deep or higher and packing trails in uphill took a very long time. The crew was only able to get 6 stations surveyed.

Daily Field Conditions

Fairly strong winds from the north today with more fresh snowfall

Rate: 6 Stations Survey Rate
On-Time Processing Rate

Coverage: 6 Stations

Daily High (°C)	Daily Low (°C)	Wind (km/h)
-3	-23	Gust 55

Date: Saturday, 12th February 2022

Start Time: 08:00 am

End Time: 06:15 pm

Daily Production Notes

The crew started on the lake hiking up to get the stations on the western hillside. They then proceeded around to the top of the hill and hiked in to survey four of the stations east of the trail. The crew moved very slowly today through the deep snow, steep terrain and cold weather.

Daily Field Conditions

Extreme cold warning with the ambient temperature in the minus thirties and fairly windy

Rate:	6 Stations Survey Rate On-Time Processing Rate	**Coverage:**	6 Stations	Daily High (°C)	Daily Low (°C)	Wind (km/h)
				-18	-33	

Date:	Sunday, 13th February 2022	**Start Time:**	08:05 am
Daily Production Notes		**End Time:**	05:35 pm

The crew refill the SQUID cryostat with LiHe this morning which took longer than usual due to the extreme cold temperatures. They were able to fill the SQUID halfway before running out of LiHe. They then proceeded into the SW corner of the grid and began hiking into get some of the more challenging stations. The crew was only able to achieve four stations by the end of the day.

Daily Field Conditions

Extreme cold warning with -43 wind chill

Rate:	4 Stations Survey Rate On-Time Processing Rate	**Coverage:**	4 Stations	Daily High (°C)	Daily Low (°C)	Wind (km/h)
				-16	-37	13

Date:	Monday, 14th February 2022	**Start Time:**	07:55 am
Daily Production Notes		**End Time:**	06:25 pm

The crew made their way out to the field to complete the last four attainable survey stations and the 6 repeat stations on Crystal Lake. The survey went fairly smoothly although the wind was a little gustier than expected. Regardless, the survey coverage was completed and the crew made their way back to the staging area.

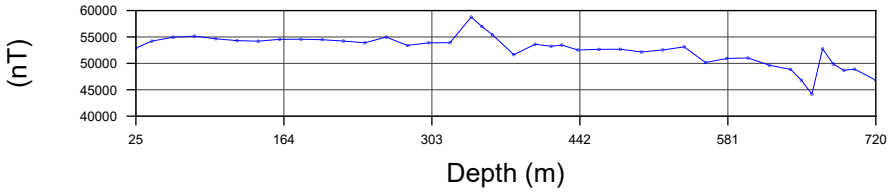
Daily Field Conditions

Field conditions were favorable aside from the waist deep snow

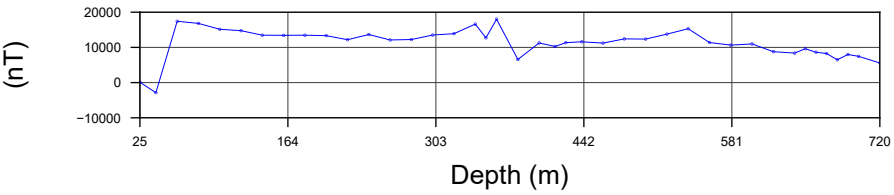
Rate:	10 Stations Survey Rate On-Time Processing Rate	**Coverage:**	10 Stations	Daily High (°C)	Daily Low (°C)	Wind (km/h)
				-11	-18	Gust 30

APPENDIX C – BOREHOLE TEM PROFILE PLOTS

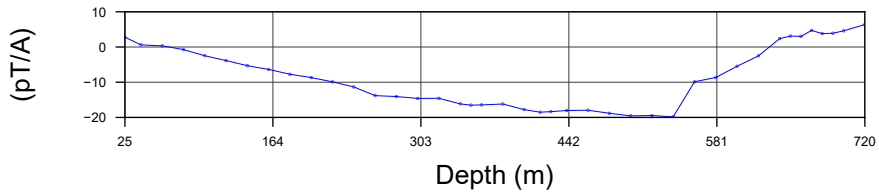
Total Magnetic Intensity



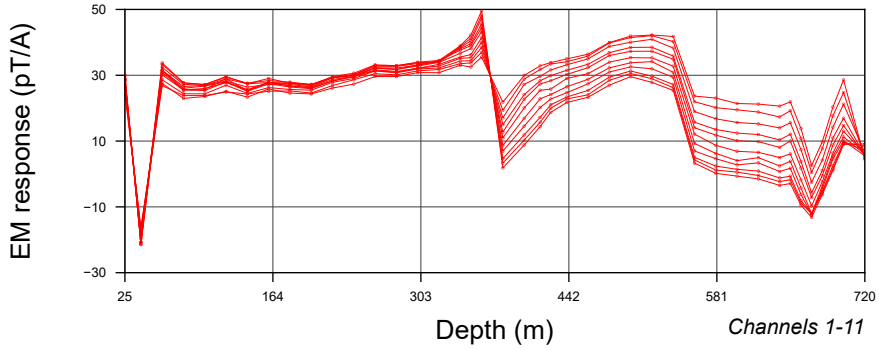
U Component Magnetic Intensity



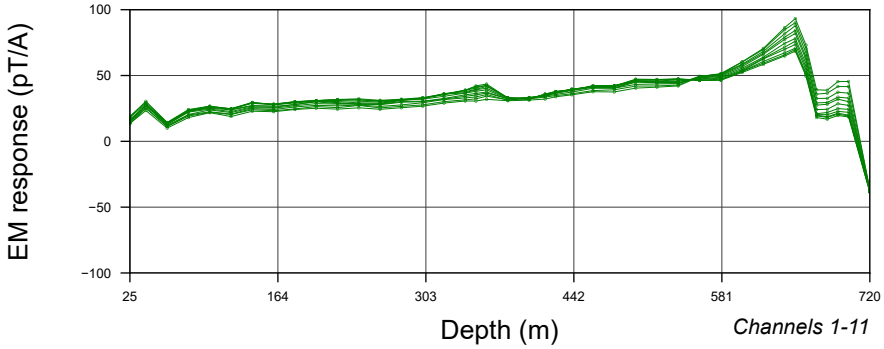
U Component - Primary Field



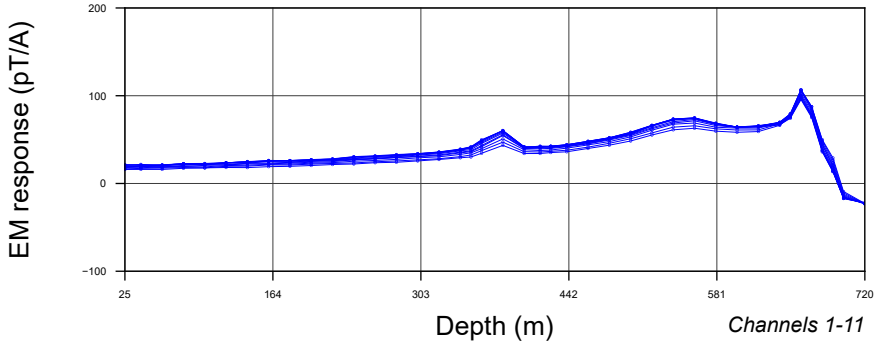
U Component - 0.10 ms to 0.87 ms



V Component - 0.10 ms to 0.87 ms



A Component - 0.10 ms to 0.87 ms



SURVEY PARAMETERS

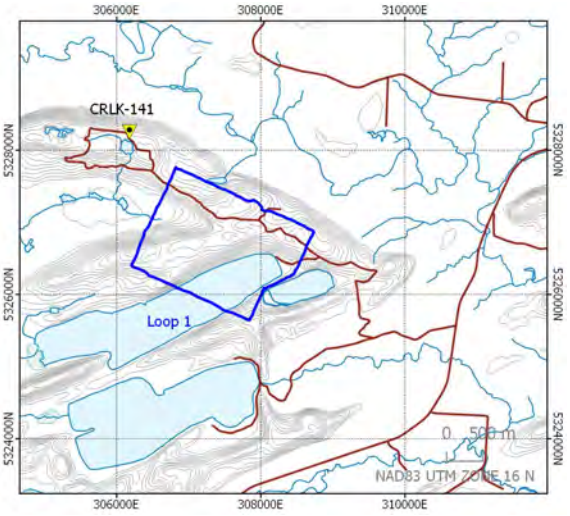
Configuration : Borehole TEM
Station Spacing : 10-20 m

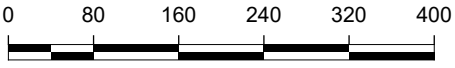
RECEIVER

Receiver : SMARTem24
Frequency : 0.25 Hz
Component : A,U,V
Rx Sensor : Digi-Atlantis B-Field
Gate Times : SMARTem24 Standard

TRANSMITTER

Transmitter : Phoenix TXU-30
Loop : Loop_1
Tx Turns : 1
Tx Current : 27.824-28.007 A
Turn Off : 0.8 ms





Scale 1:7100

Kobold Metals
Crystal Lake Project
Loop 1 Grid

Borehole TEM Survey

CRLK-141

Surveyed By: Connor Harrison
Survey Date: December 2021

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Saskatoon, SK, S7K 7Z1
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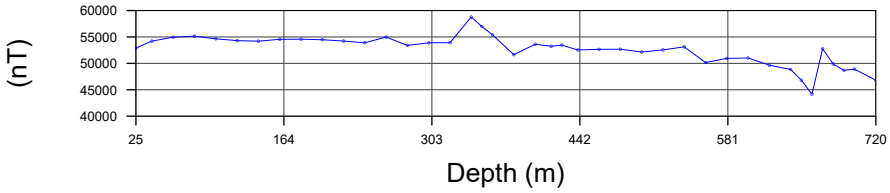
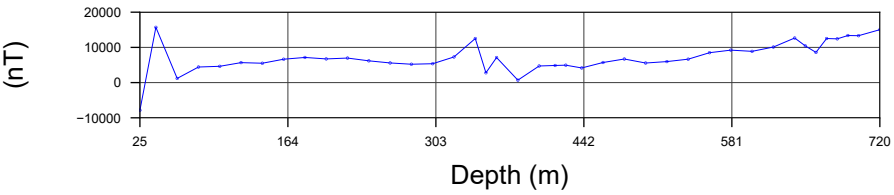
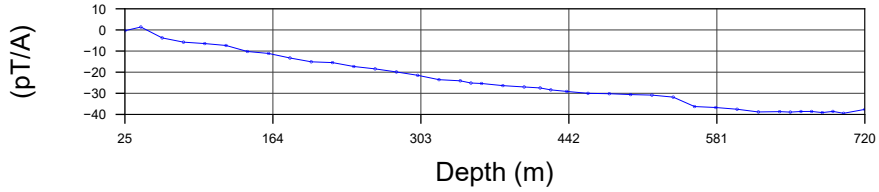
Total Magnetic Intensity



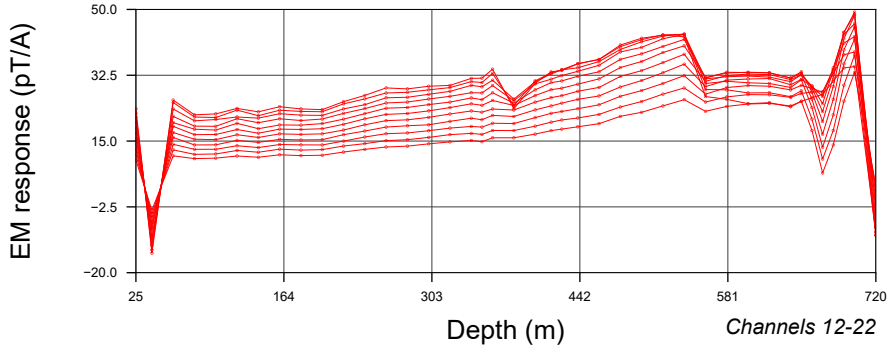
V Component Magnetic Intensity



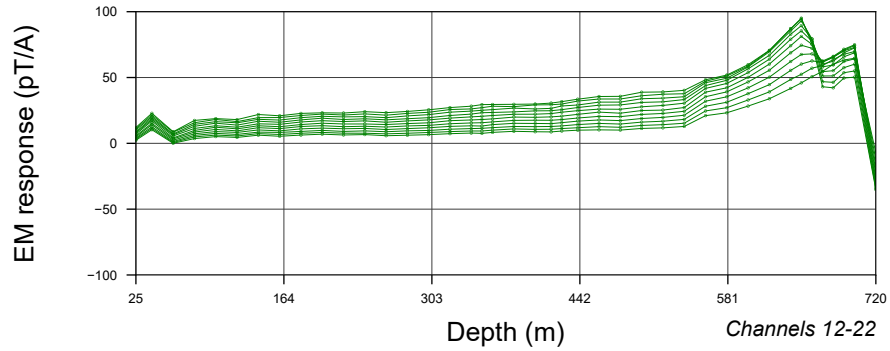
V Component - Primary Field



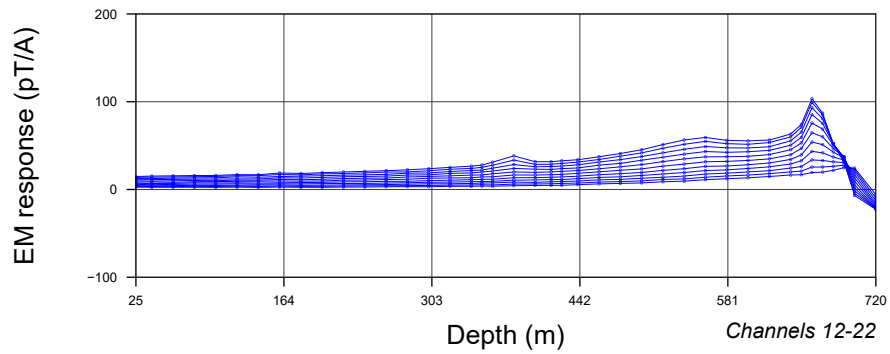
U Component - 1.08 ms to 9.39 ms



V Component - 1.08 ms to 9.39 ms



A Component - 1.08 ms to 9.39 ms



SURVEY PARAMETERS

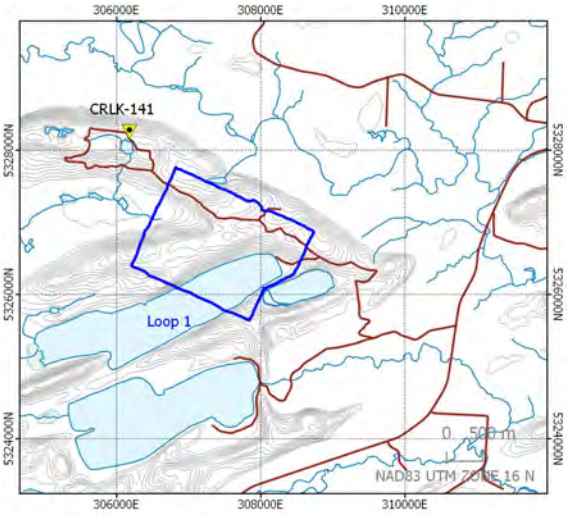
Configuration : Borehole TEM
Station Spacing : 10-20 m

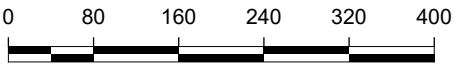
RECEIVER

Receiver : SMARTem24
Frequency : 0.25 Hz
Component : A,U,V
Rx Sensor : Digi-Atlantis B-Field
Gate Times : SMARTem24 Standard

TRANSMITTER

Transmitter : Phoenix TXU-30
Loop : Loop_1
Tx Turns : 1
Tx Current : 27.824-28.007 A
Turn Off : 0.8 ms





Scale 1:7100

Kobold Metals
Crystal Lake Project
Loop 1 Grid

Borehole TEM Survey

CRLK-141

Surveyed By: Connor Harrison
Survey Date: December 2021

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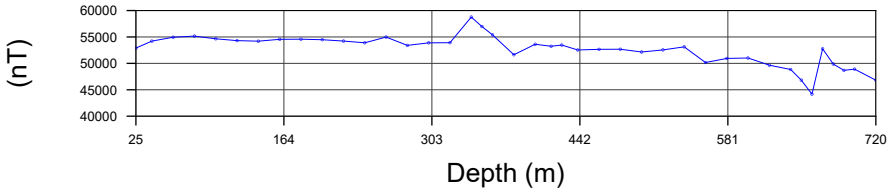
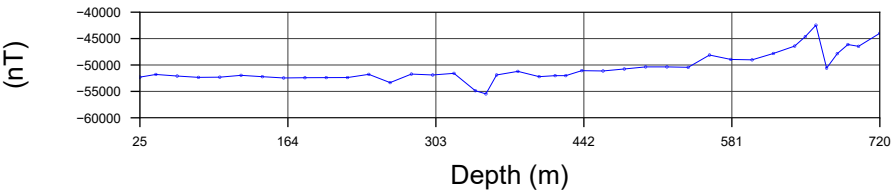
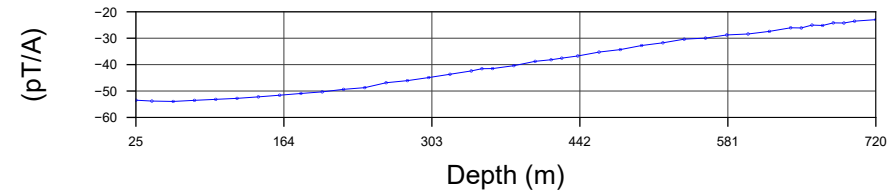
Total Magnetic Intensity



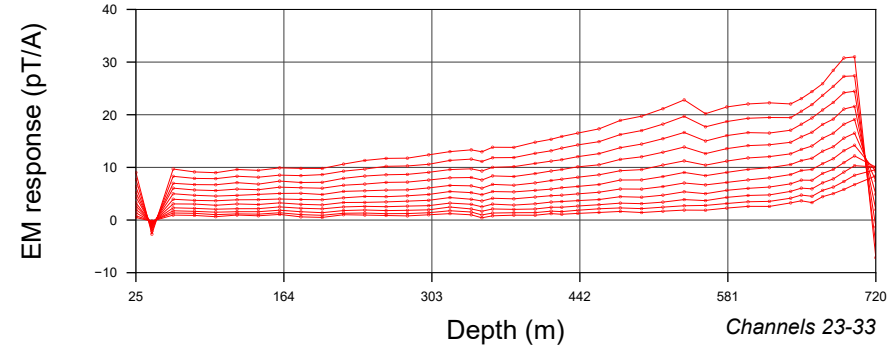
A Component Magnetic Intensity



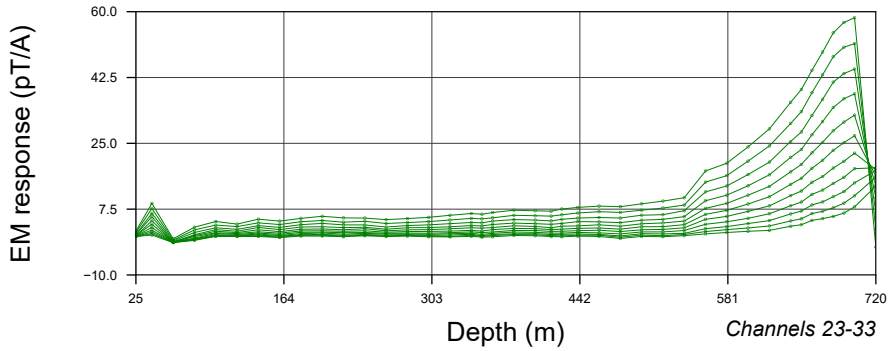
A Component - Primary Field



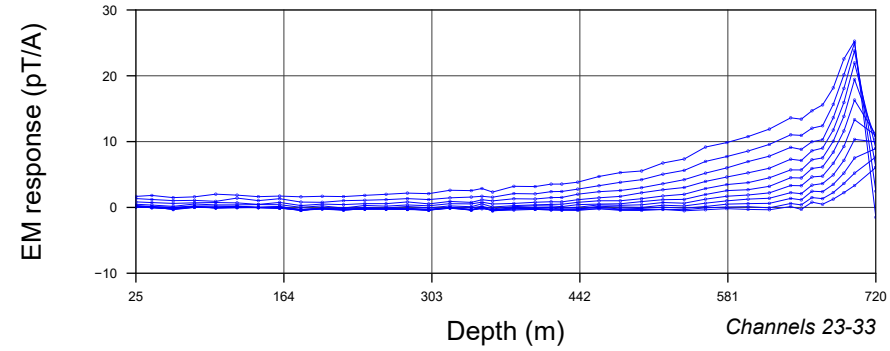
U Component - 11.66 ms to 101.39 ms



V Component - 11.66 ms to 101.39 ms



A Component - 11.66 ms to 101.39 ms



SURVEY PARAMETERS

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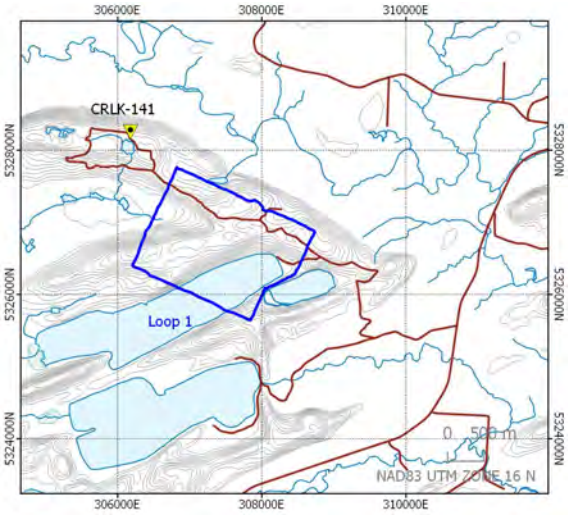
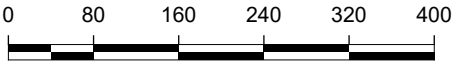
RECEIVER

Receiver : SMARTem24
Frequency : 0.25 Hz
Component : A,U,V
Rx Sensor : Digi-Atlantis B-Field
Gate Times : SMARTem24 Standard

TRANSMITTER

Transmitter : Phoenix TXU-30
Loop : Loop_1
Tx Turns : 1
Tx Current : 27.824-28.007 A
Turn Off : 0.8 ms





Scale 1:7100

Kobold Metals
Crystal Lake Project
Loop 1 Grid

Borehole TEM Survey

CRLK-141

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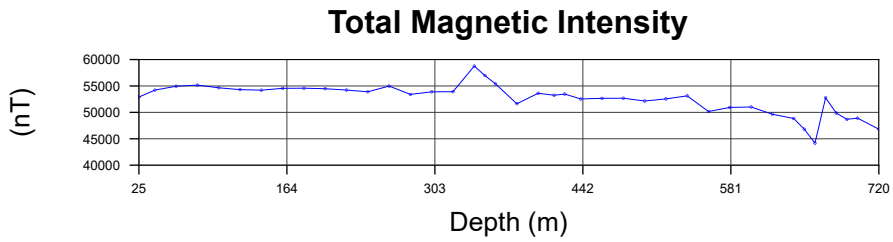

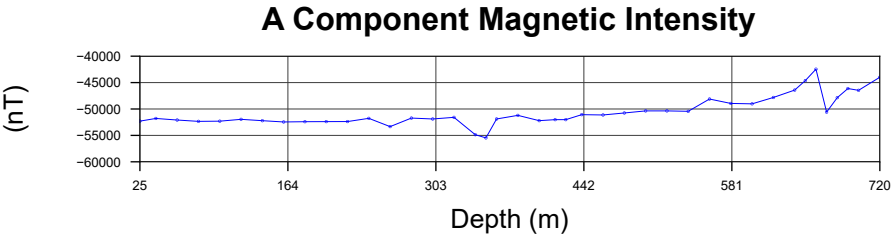

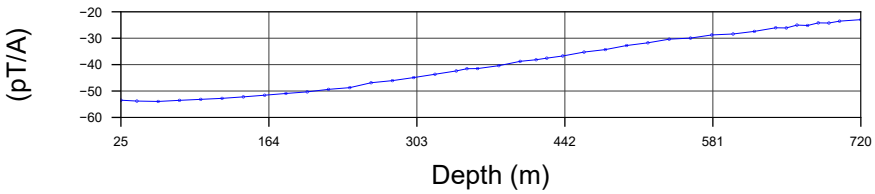

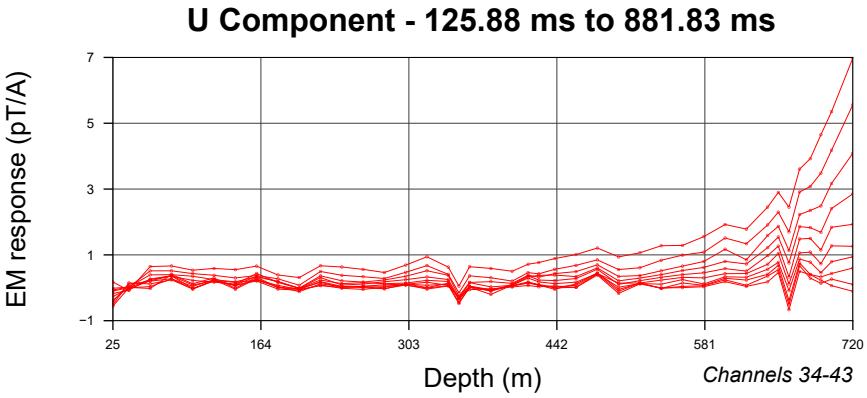

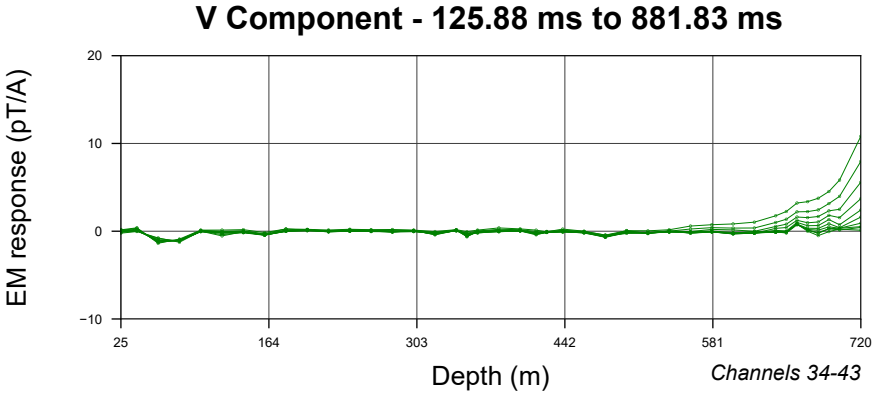

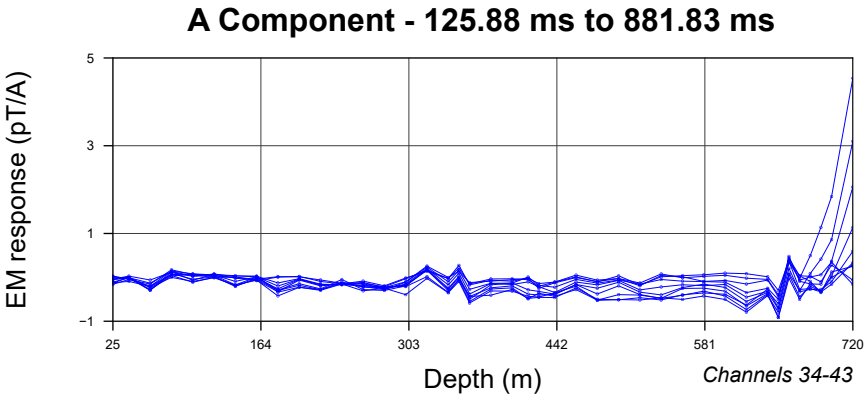

SURVEY PARAMETERS

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RECEIVER

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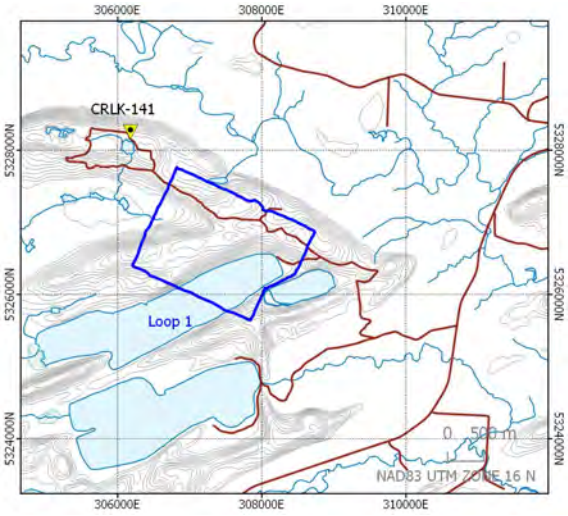
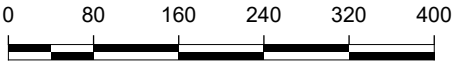
Rx Sensor : Digi-Atlantis B-Field
Gate Times : SMARTem24 Standard

TRANSMITTER

Transmitter : Phoenix TXU-30
Loop : Loop_1
Tx Turns : 1
Tx Current : 27.824-28.007 A
Turn Off : 0.8 ms





Scale 1:7100

Kobold Metals
Crystal Lake Project
Loop 1 Grid

Borehole TEM Survey

CRLK-141

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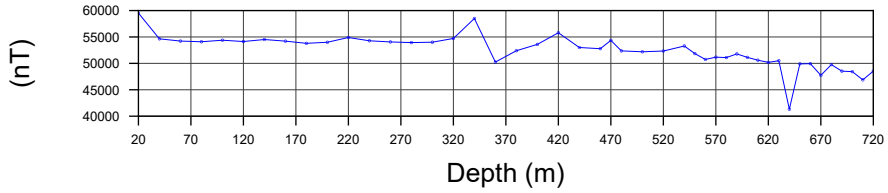
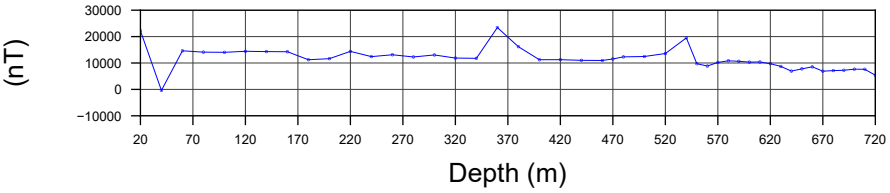
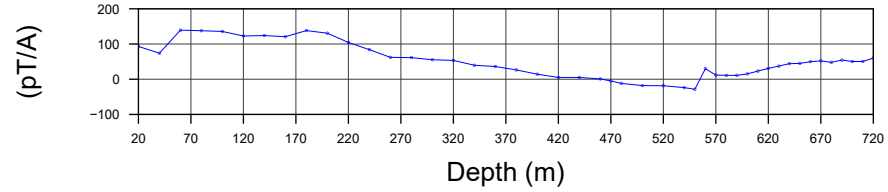
Total Magnetic Intensity



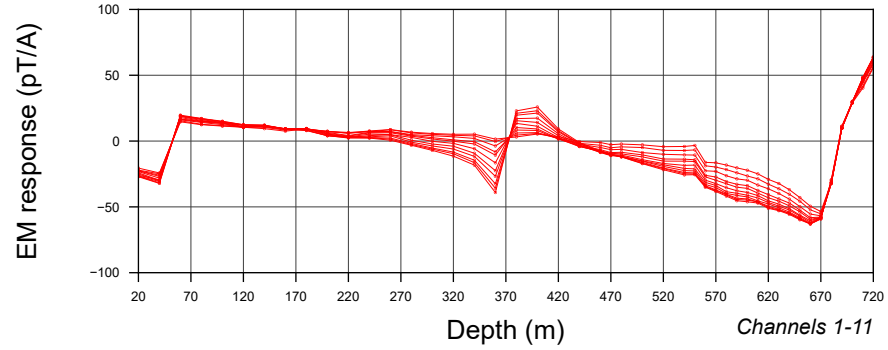
U Component Magnetic Intensity



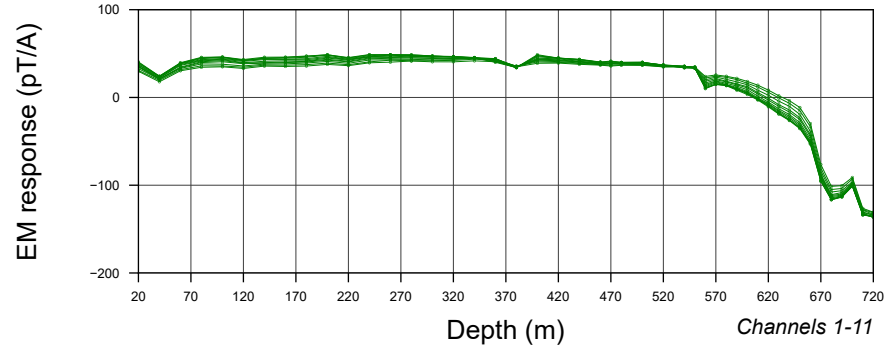
U Component - Primary Field



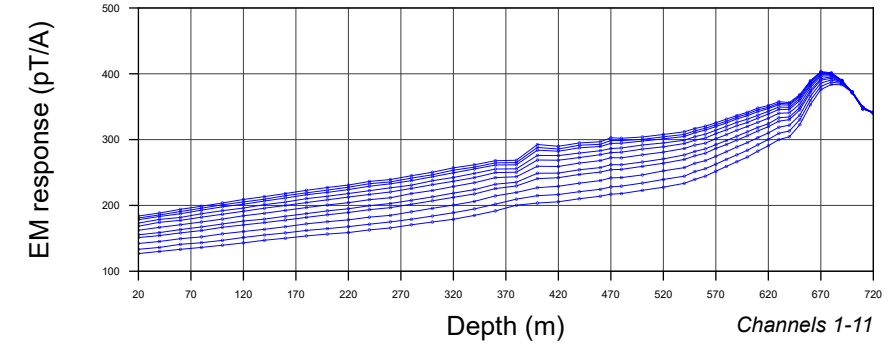
U Component - 0.10 ms to 0.87 ms



V Component - 0.10 ms to 0.87 ms



A Component - 0.10 ms to 0.87 ms



SURVEY PARAMETERS

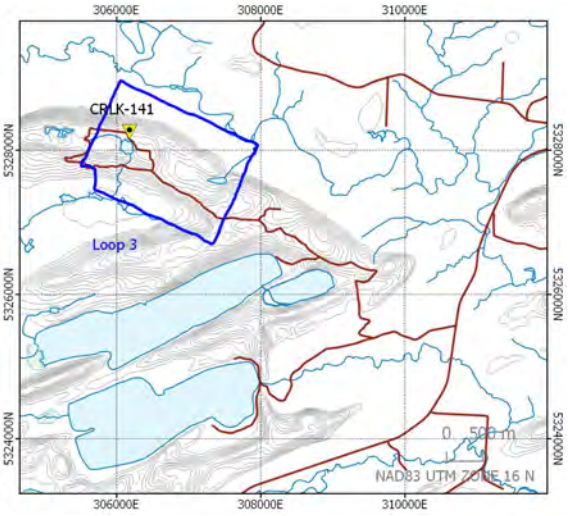
Configuration : Borehole TEM
Station Spacing : 10-20 m

RECEIVER

Receiver : SMARTem24
Frequency : 0.25 Hz
Component : A,U,V
Rx Sensor : Digi-Atlantis B-Field
Gate Times : SMARTem24 Standard

TRANSMITTER

Transmitter : Phoenix TXU-30
Loop : Loop_3
Tx Turns : 1
Tx Current : 27.797-27.961 A
Turn Off : 0.8 ms



0 80 160 240 320 400

Scale 1:7200

Kobold Metals
Crystal Lake Project
Loop 3 Grid

Borehole TEM Survey

CRLK-141

Surveyed By: Connor Harrison
Survey Date: December 2021

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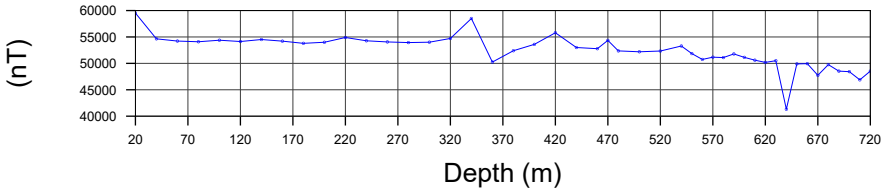
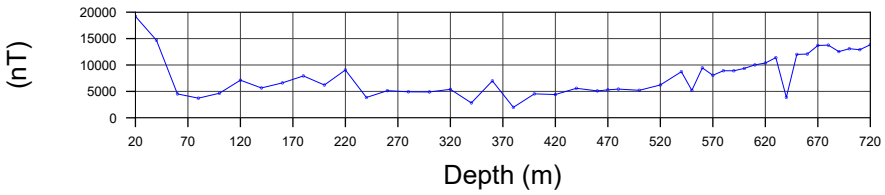
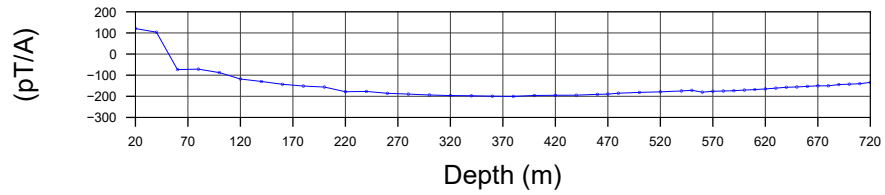
Total Magnetic Intensity



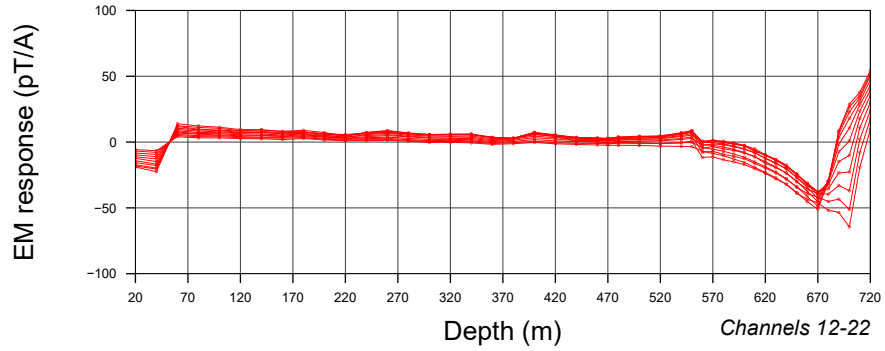
V Component Magnetic Intensity



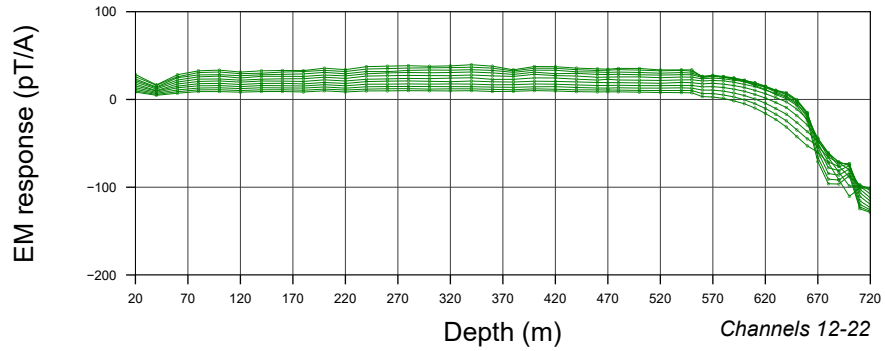
V Component - Primary Field



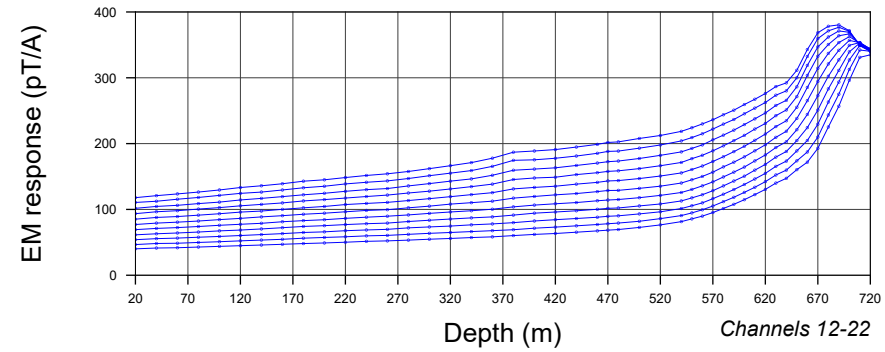
U Component - 1.08 ms to 9.39 ms



V Component - 1.08 ms to 9.39 ms



A Component - 1.08 ms to 9.39 ms



SURVEY PARAMETERS

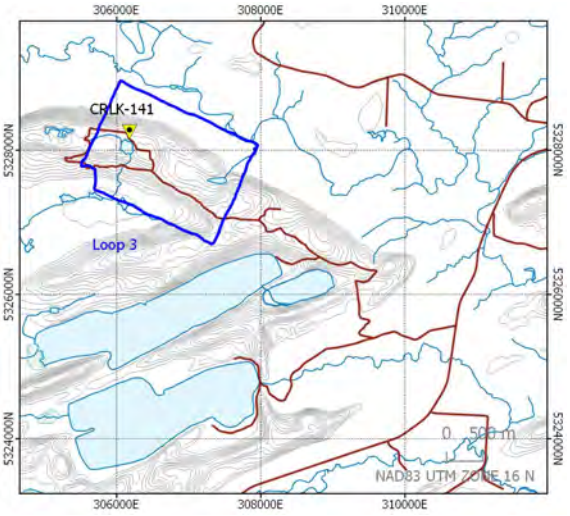
Configuration : Borehole TEM
Station Spacing : 10-20 m

RECEIVER

Receiver : SMARTem24
Frequency : 0.25 Hz
Component : A,U,V
Rx Sensor : Digi-Atlantis B-Field
Gate Times : SMARTem24 Standard

TRANSMITTER

Transmitter : Phoenix TXU-30
Loop : Loop_3
Tx Turns : 1
Tx Current : 27.797-27.961 A
Turn Off : 0.8 ms



0 80 160 240 320 400

Scale 1:7200

Kobold Metals
Crystal Lake Project
Loop 3 Grid

Borehole TEM Survey

CRLK-141

Surveyed By: Connor Harrison
Survey Date: December 2021

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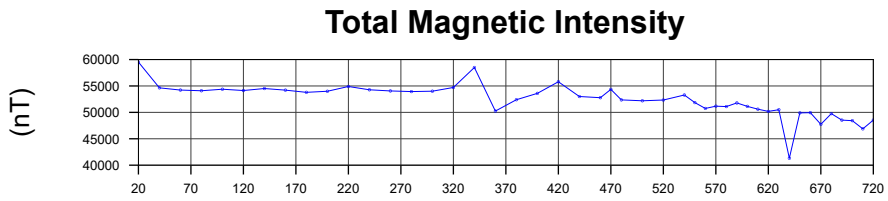
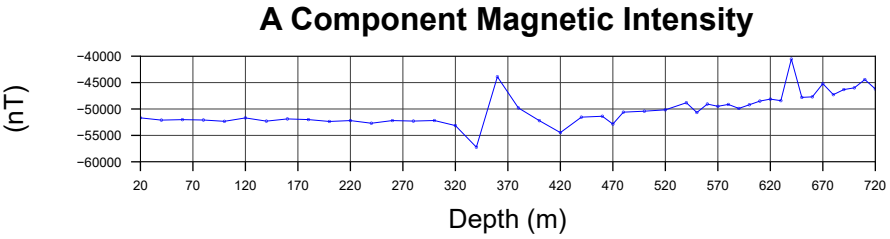
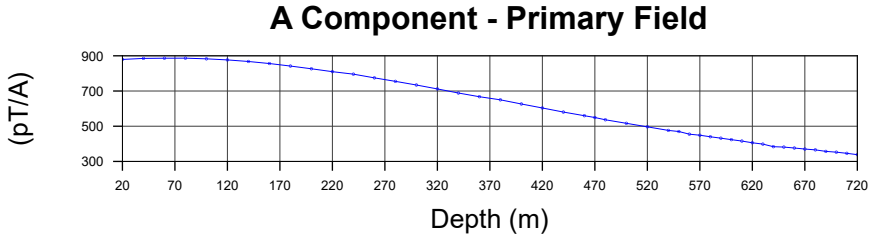
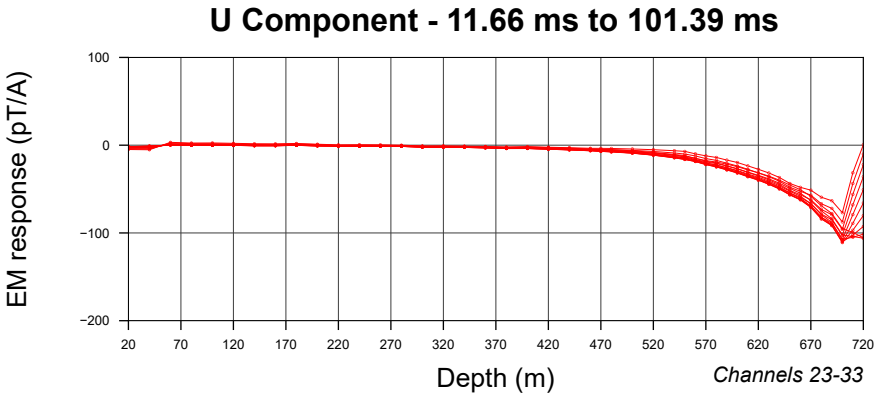
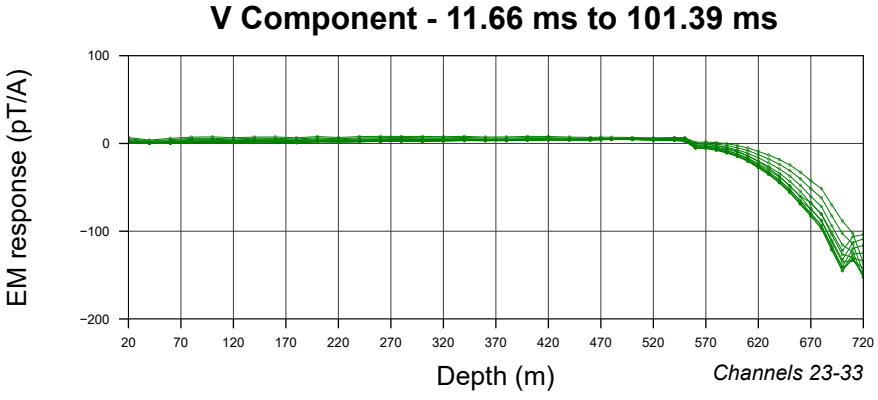
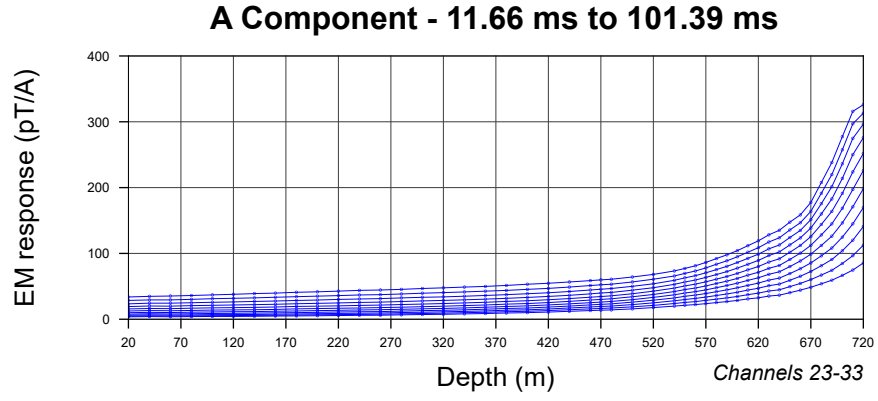












SURVEY PARAMETERS

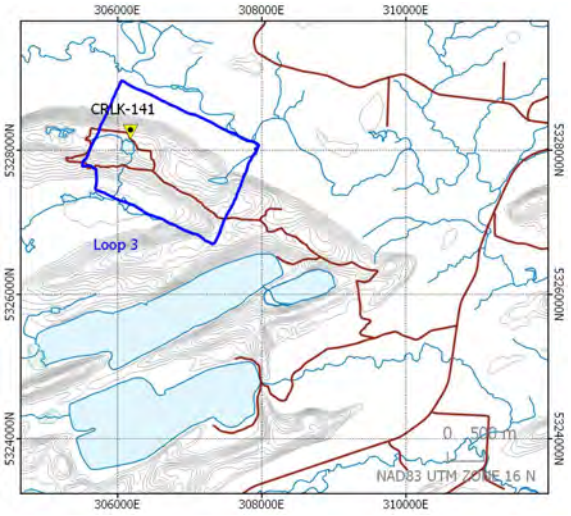
Configuration : Borehole TEM
Station Spacing : 10-20 m

RECEIVER

Receiver : SMARTem24
Frequency : 0.25 Hz
Component : A,U,V
Rx Sensor : Digi-Atlantis B-Field
Gate Times : SMARTem24 Standard

TRANSMITTER

Transmitter : Phoenix TXU-30
Loop : Loop_3
Tx Turns : 1
Tx Current : 27.797-27.961 A
Turn Off : 0.8 ms



0 80 160 240 320 400

Scale 1:7200

Kobold Metals
Crystal Lake Project
Loop 3 Grid

Borehole TEM Survey

CRLK-141

Surveyed By: Connor Harrison
Survey Date: December 2021

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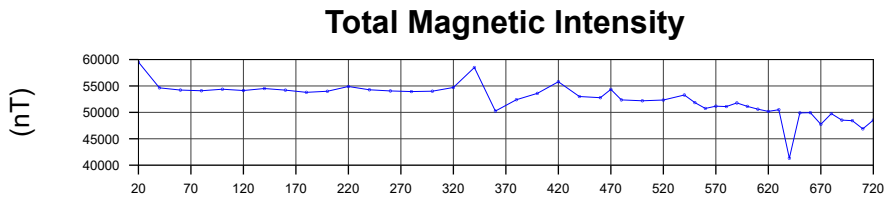
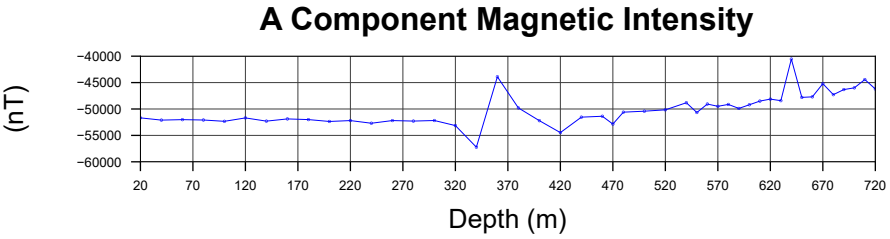
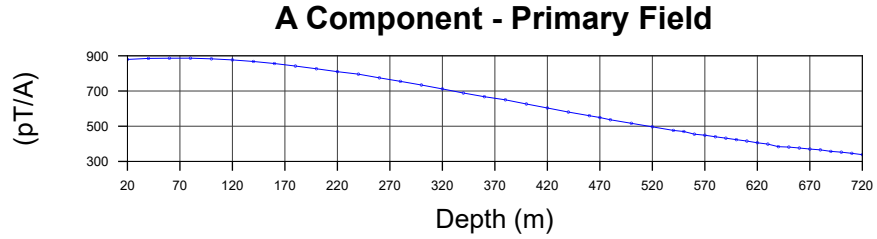
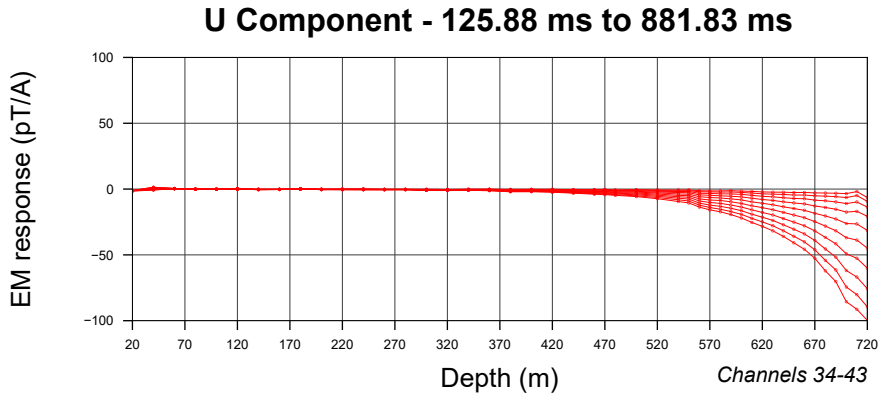
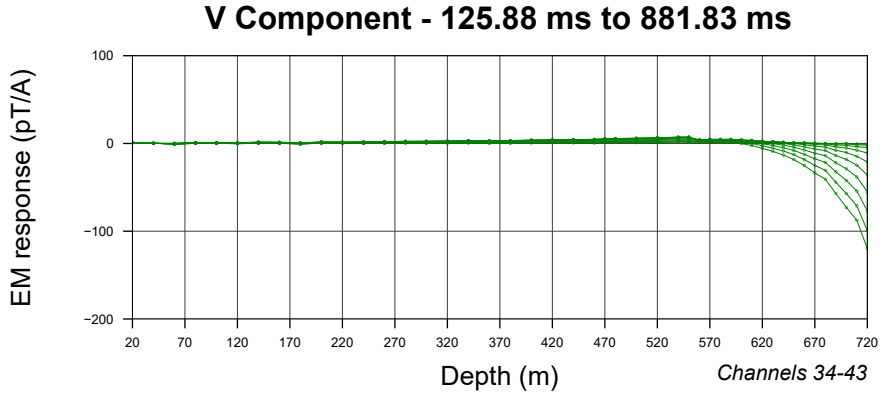
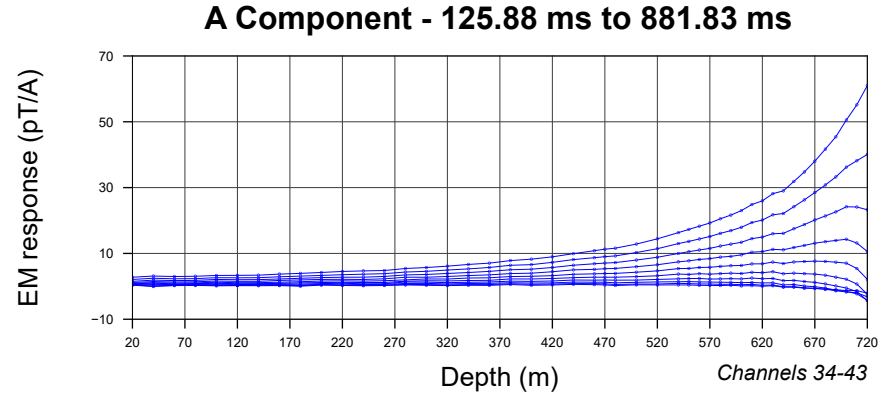












SURVEY PARAMETERS

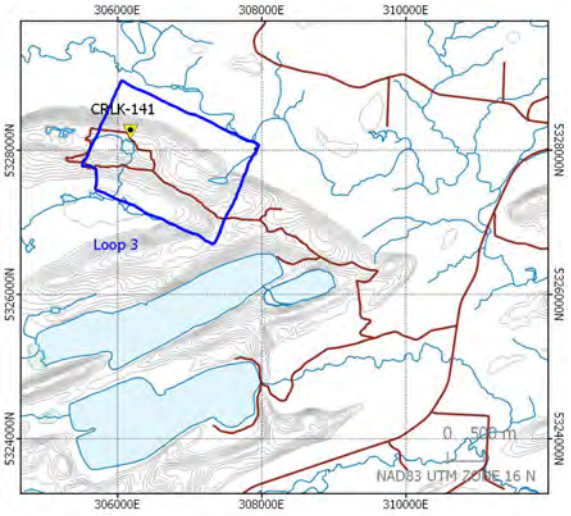
Configuration : Borehole TEM
Station Spacing : 10-20 m

RECEIVER

Receiver : SMARTem24
Frequency : 0.25 Hz
Component : A,U,V
Rx Sensor : Digi-Atlantis B-Field
Gate Times : SMARTem24 Standard

TRANSMITTER

Transmitter : Phoenix TXU-30
Loop : Loop_3
Tx Turns : 1
Tx Current : 27.797-27.961 A
Turn Off : 0.8 ms



0 80 160 240 320 400

Scale 1:7200

Kobold Metals
Crystal Lake Project
Loop 3 Grid

Borehole TEM Survey

CRLK-141

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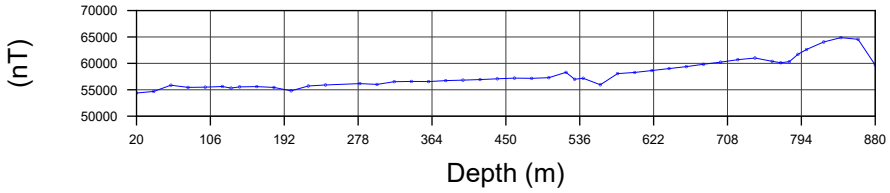
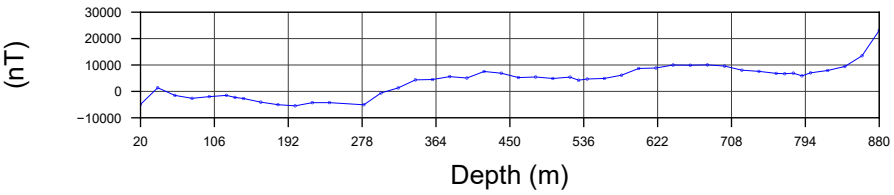
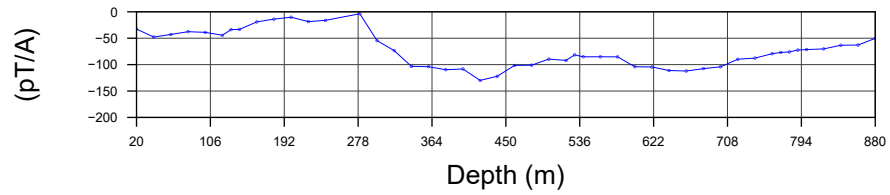
Total Magnetic Intensity



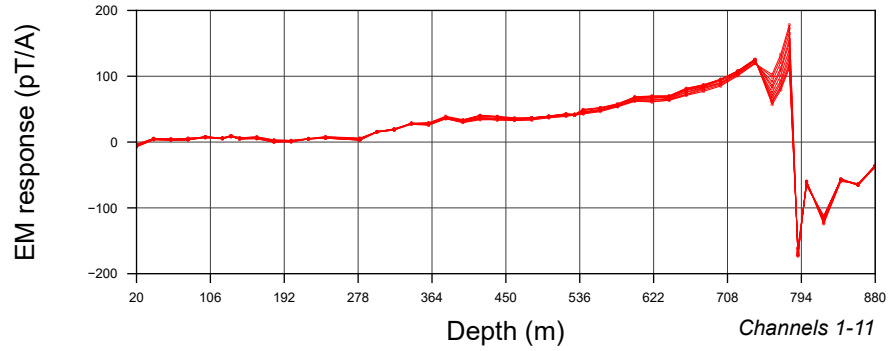
U Component Magnetic Intensity



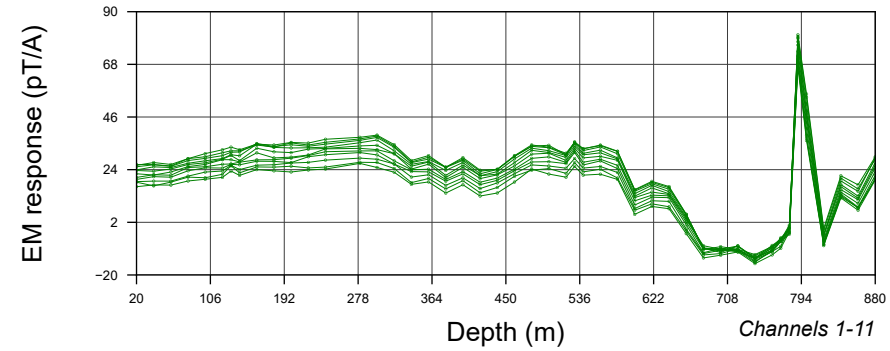
U Component - Primary Field



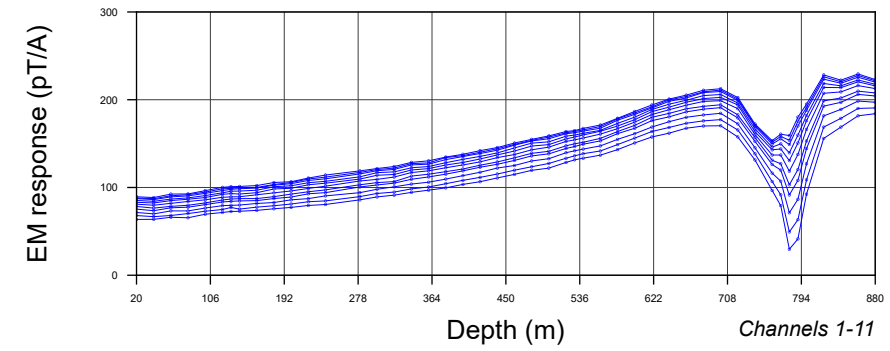
U Component - 0.10 ms to 0.87 ms



V Component - 0.10 ms to 0.87 ms



A Component - 0.10 ms to 0.87 ms



SURVEY PARAMETERS

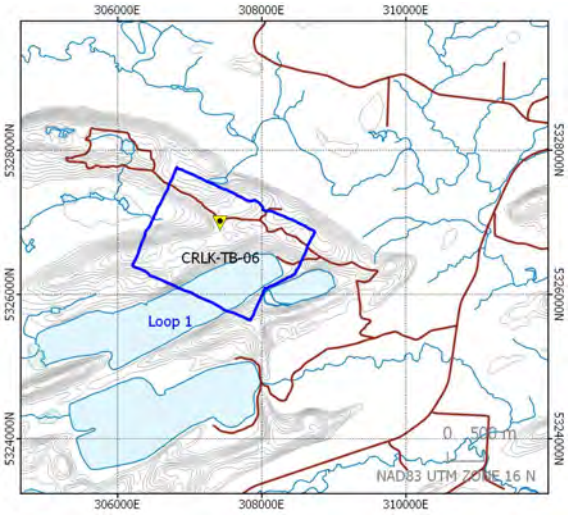
Configuration : Borehole TEM
Station Spacing : 10-40 m

RECEIVER

Receiver : SMARTem24
Frequency : 0.25 Hz
Component : A,U,V
Rx Sensor : Digi-Atlantis B-Field
Gate Times : SMARTem24 Standard

TRANSMITTER

Transmitter : Phoenix TXU-30
Loop : Loop_1
Tx Turns : 1
Tx Current : 27.731-27.81 A
Turn Off : 0.8 ms



0 100 200 300 400 500

Scale 1:8800

Kobold Metals
Crystal Lake Project
Loop 1 Grid

Borehole TEM Survey

CRLK-TB-06

Surveyed By: Connor Harrison
Survey Date: December 2021

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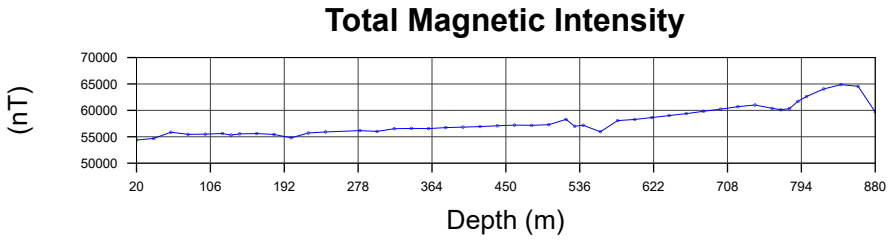
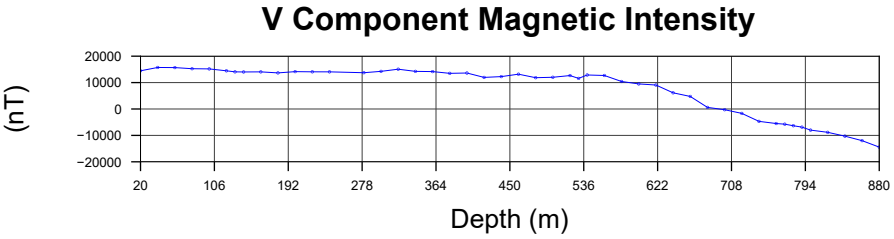
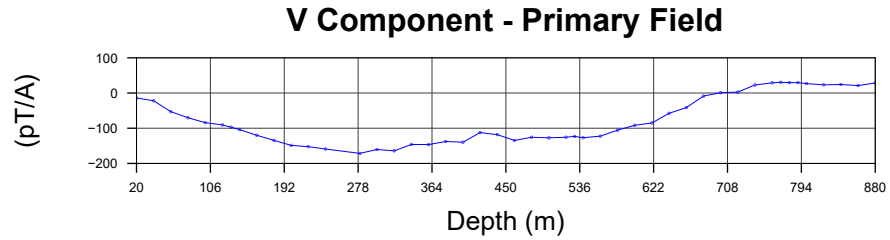
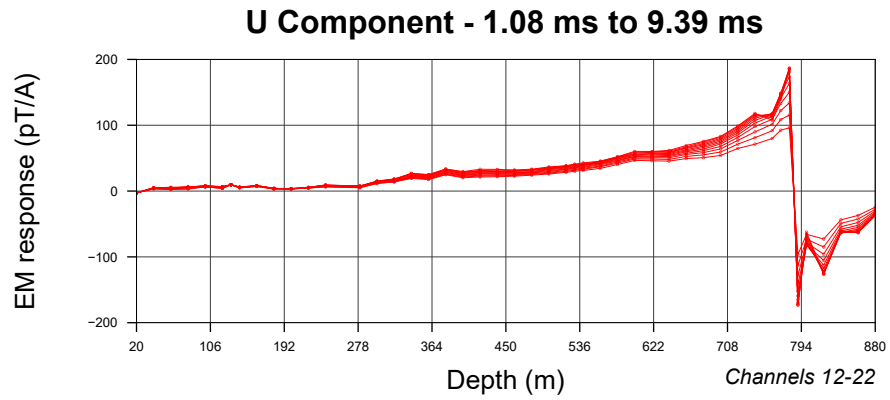
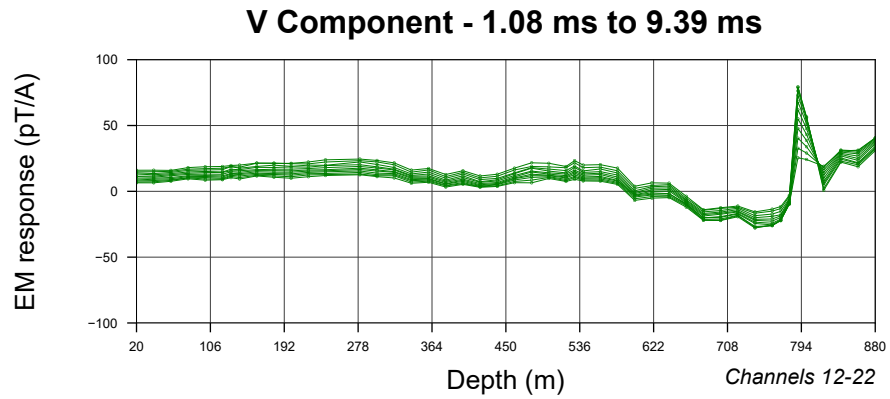
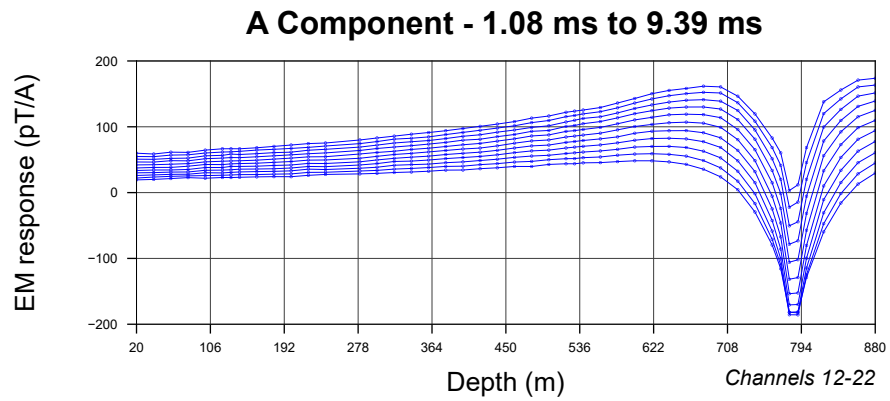












SURVEY PARAMETERS

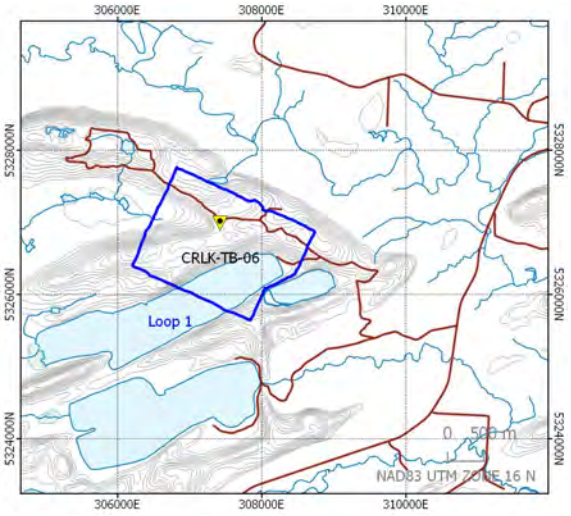
Configuration : Borehole TEM
Station Spacing : 10-40 m

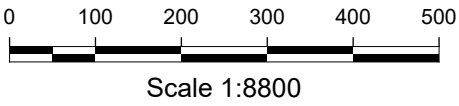
RECEIVER

Receiver : SMARTem24
Frequency : 0.25 Hz
Component : A,U,V
Rx Sensor : Digi-Atlantis B-Field
Gate Times : SMARTem24 Standard

TRANSMITTER

Transmitter : Phoenix TXU-30
Loop : Loop_1
Tx Turns : 1
Tx Current : 27.731-27.81 A
Turn Off : 0.8 ms





Scale 1:8800

Kobold Metals
Crystal Lake Project
Loop 1 Grid

Borehole TEM Survey

CRLK-TB-06

Surveyed By: Connor Harrison
Survey Date: December 2021

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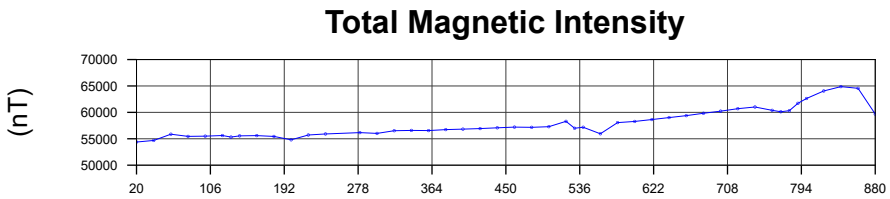
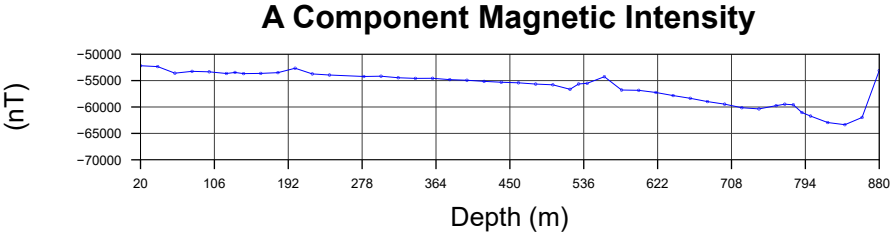
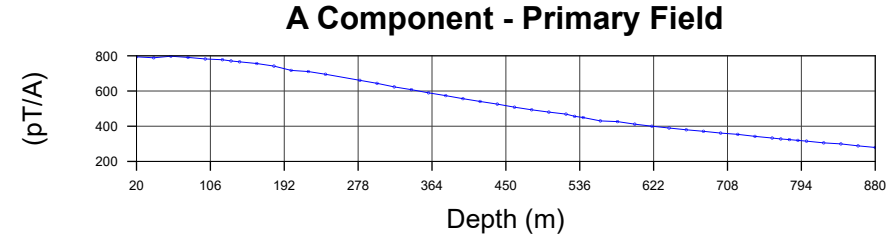
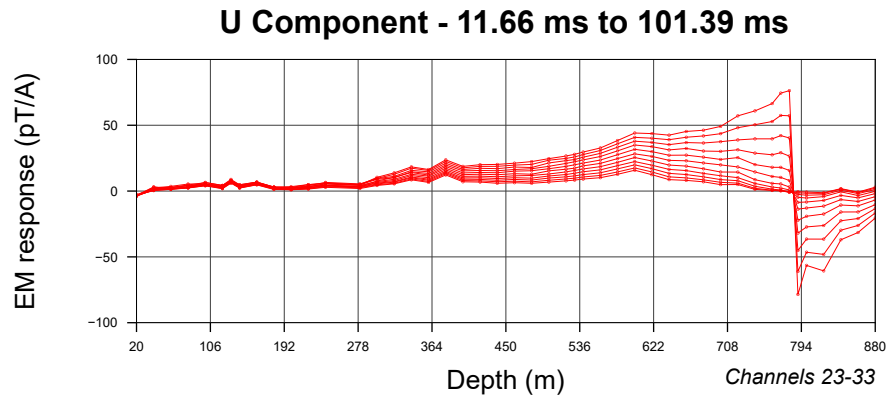
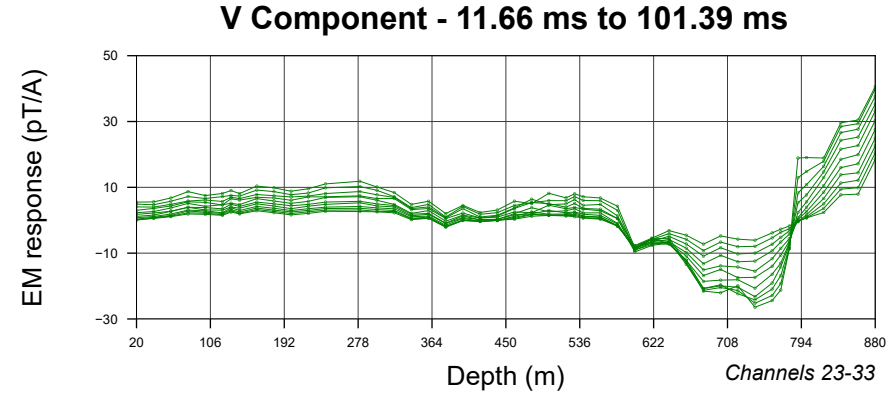
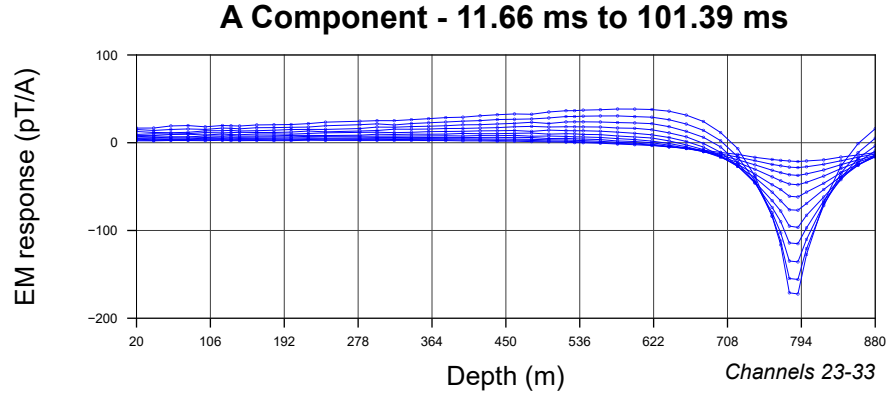












SURVEY PARAMETERS

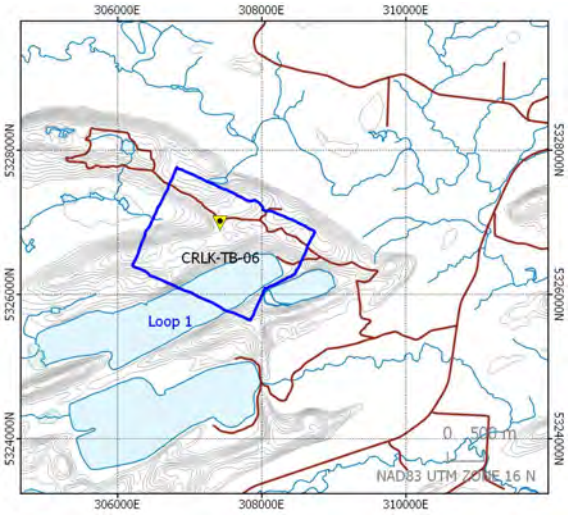
Configuration : Borehole TEM
Station Spacing : 10-40 m

RECEIVER

Receiver : SMARTem24
Frequency : 0.25 Hz
Component : A,U,V
Rx Sensor : Digi-Atlantis B-Field
Gate Times : SMARTem24 Standard

TRANSMITTER

Transmitter : Phoenix TXU-30
Loop : Loop_1
Tx Turns : 1
Tx Current : 27.731-27.81 A
Turn Off : 0.8 ms



0 100 200 300 400 500

Scale 1:8800

Kobold Metals
Crystal Lake Project
Loop 1 Grid

Borehole TEM Survey

CRLK-TB-06

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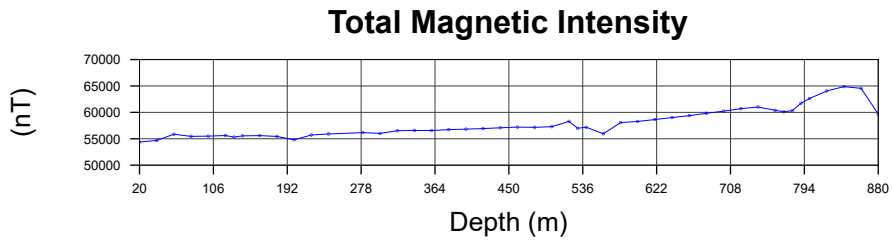
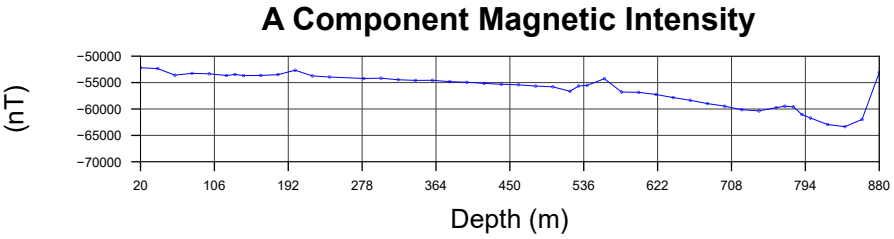
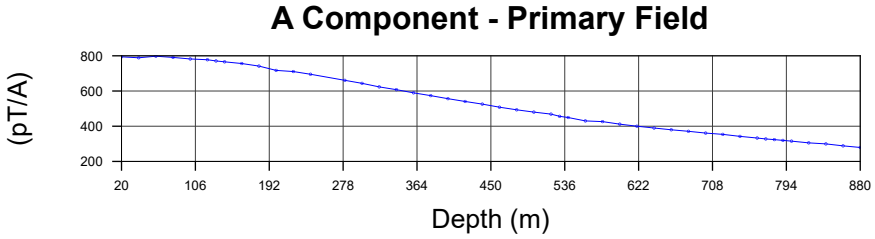
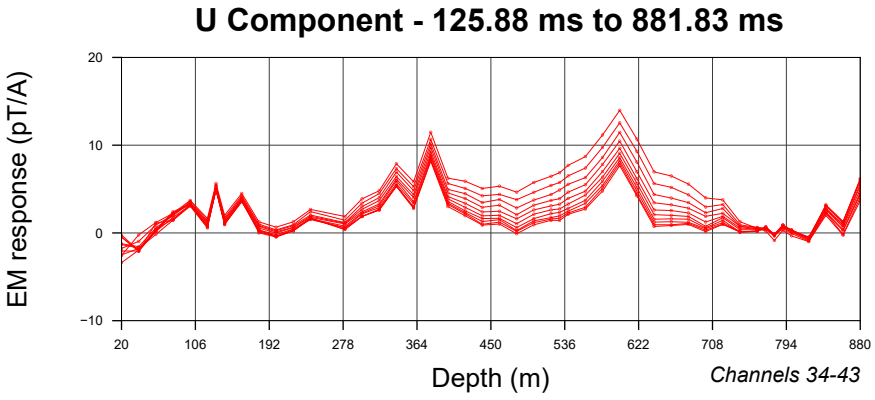
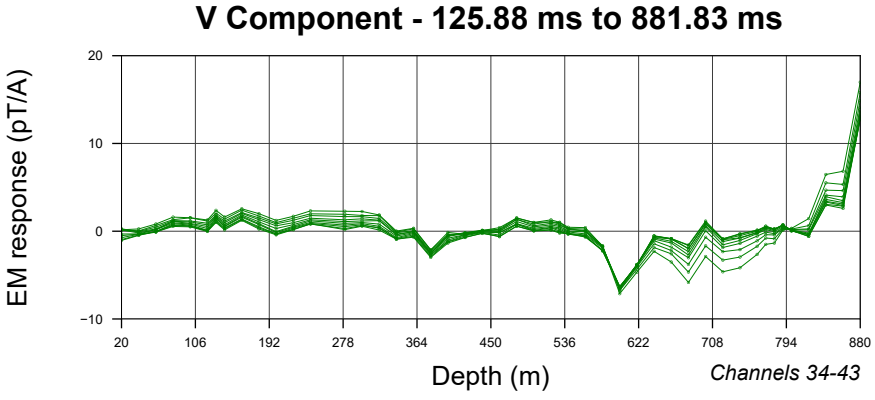
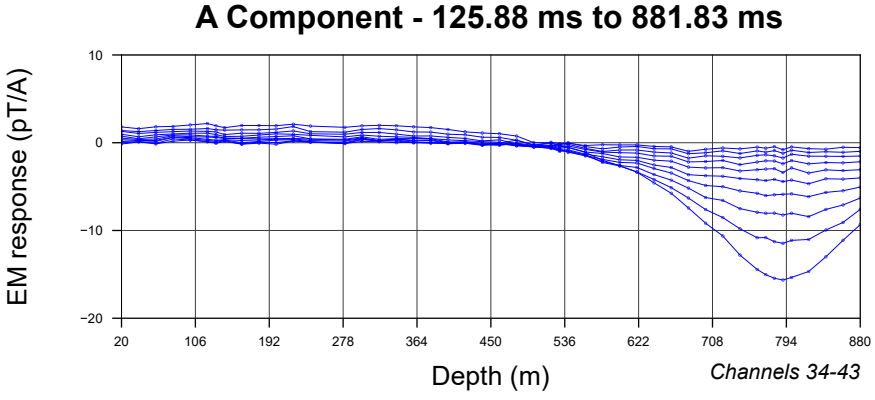












SURVEY PARAMETERS

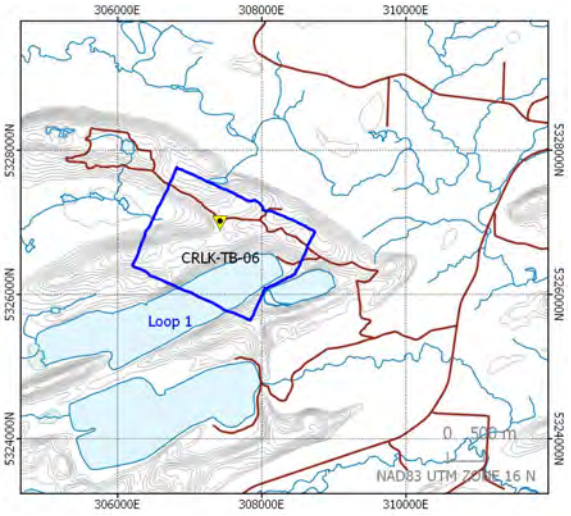
Configuration : Borehole TEM
Station Spacing : 10-40 m

RECEIVER

Receiver : SMARTem24
Frequency : 0.25 Hz
Component : A,U,V
Rx Sensor : Digi-Atlantis B-Field
Gate Times : SMARTem24 Standard

TRANSMITTER

Transmitter : Phoenix TXU-30
Loop : Loop_1
Tx Turns : 1
Tx Current : 27.731-27.81 A
Turn Off : 0.8 ms



0 100 200 300 400 500

Scale 1:8800

Kobold Metals
Crystal Lake Project
Loop 1 Grid

Borehole TEM Survey

CRLK-TB-06

Surveyed By: Connor Harrison
Survey Date: December 2021

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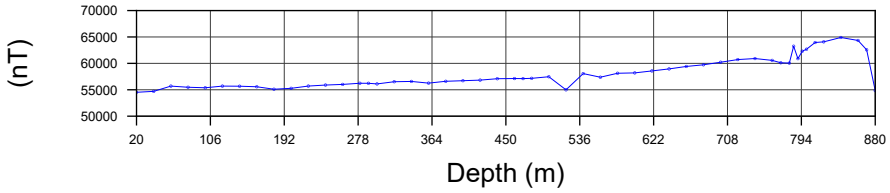
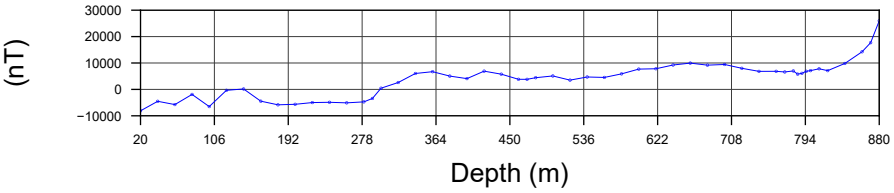
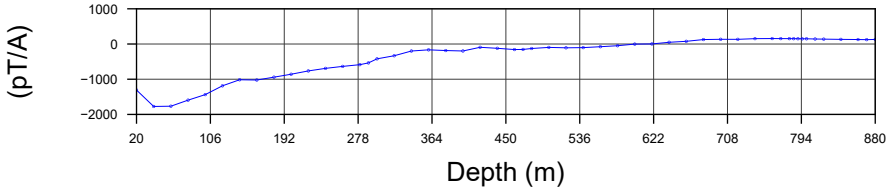
Total Magnetic Intensity



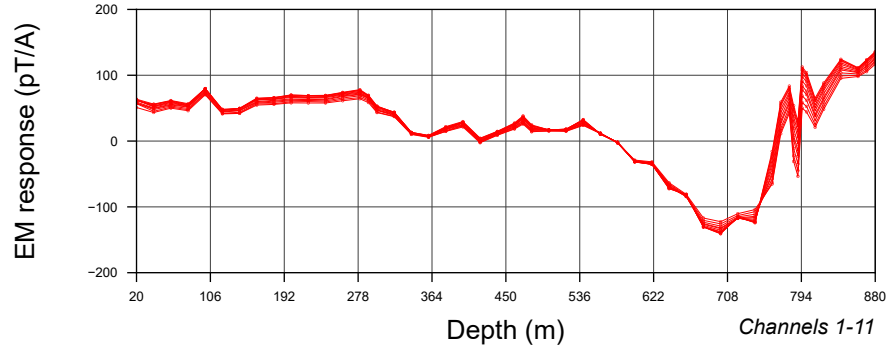
U Component Magnetic Intensity



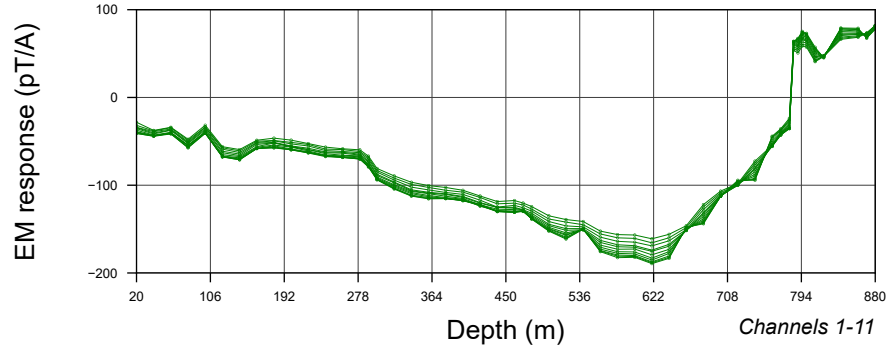
U Component - Primary Field



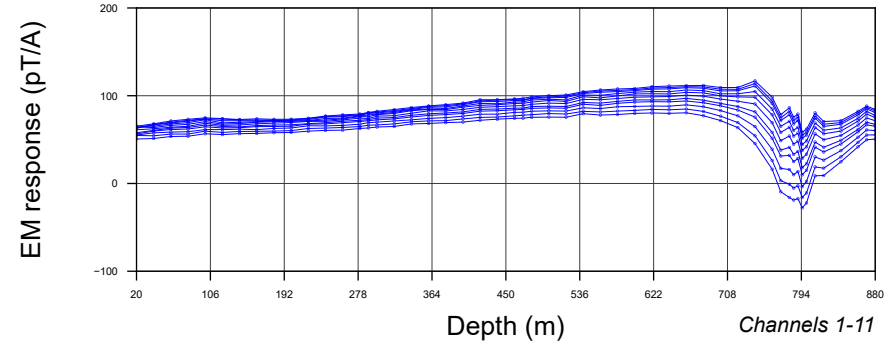
U Component - 0.10 ms to 0.87 ms



V Component - 0.10 ms to 0.87 ms



A Component - 0.10 ms to 0.87 ms



SURVEY PARAMETERS

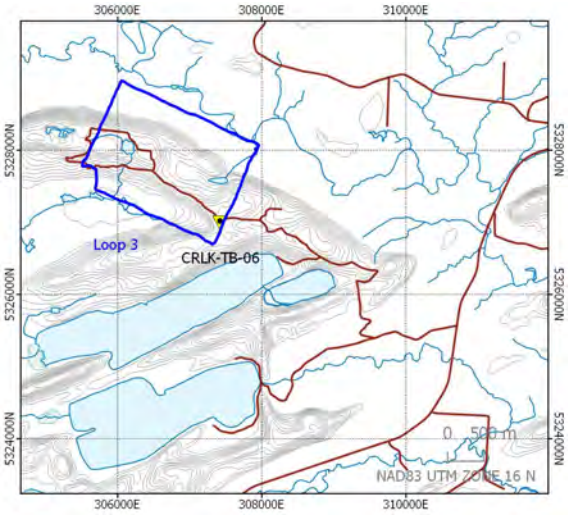
Configuration : Borehole TEM
Station Spacing : 5-20 m

RECEIVER

Receiver : SMARTem24
Frequency : 0.25 Hz
Component : A,U,V
Rx Sensor : Digi-Atlantis B-Field
Gate Times : SMARTem24 Standard

TRANSMITTER

Transmitter : Phoenix TXU-30
Loop : Loop_3
Tx Turns : 1
Tx Current : 27.715-27.787 A
Turn Off : 0.8 ms



0 100 200 300 400 500

Scale 1:8800

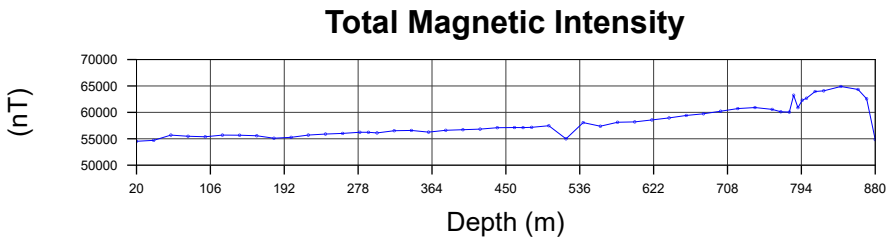
Kobold Metals
Crystal Lake Project
Loop 3 Grid

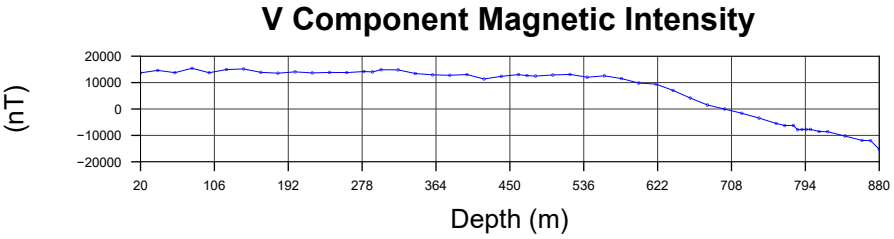
Borehole TEM Survey

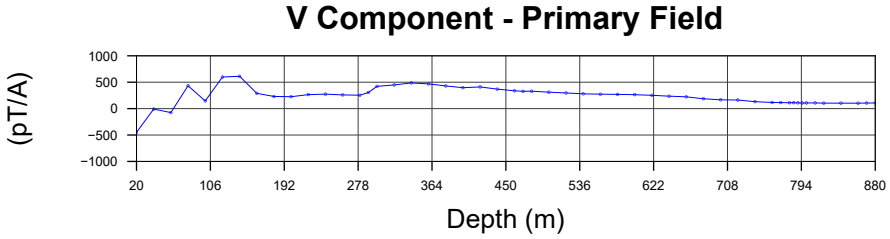
CRLK-TB-06

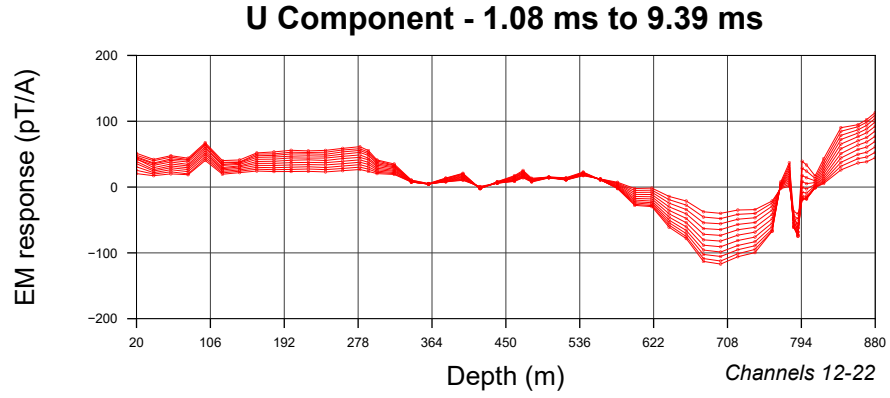
Surveyed By: Connor Harrison
Survey Date: December 2021

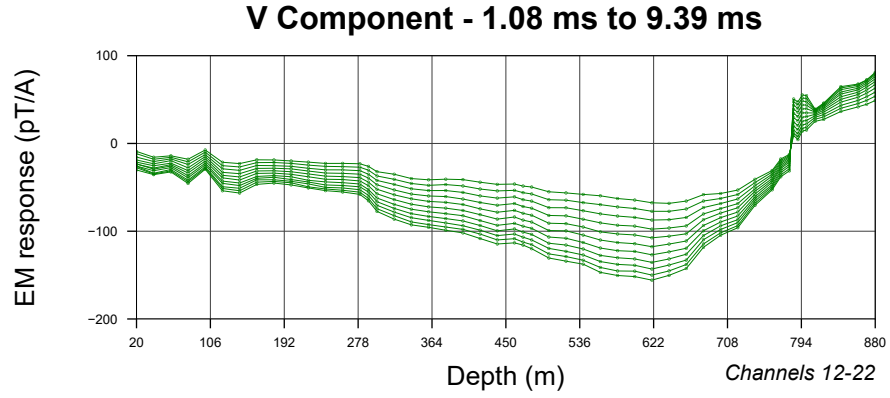
Discovery International Geophysics
3275 Miners Ave.
Saskatoon, SK, S7K 7Z1
www.discogeo.com

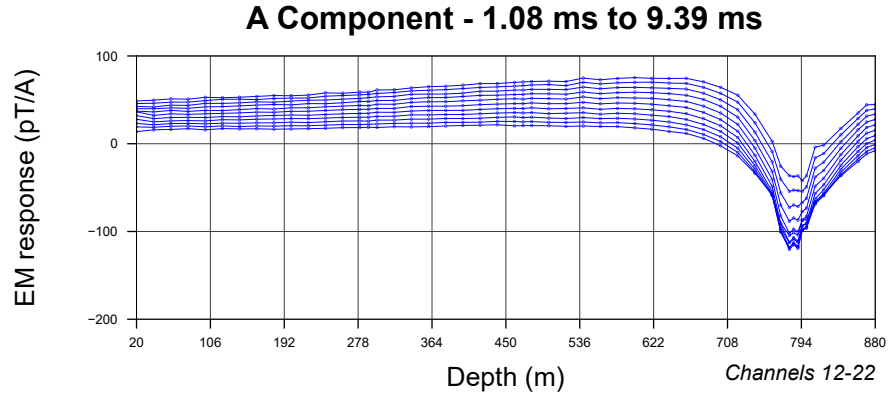












SURVEY PARAMETERS

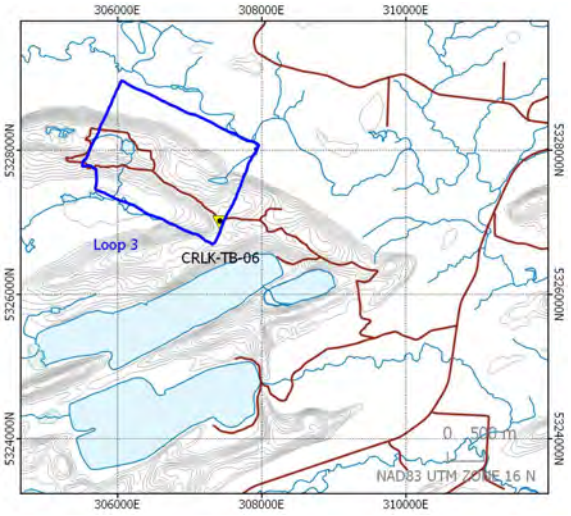
Configuration	: Borehole TEM
Station Spacing	: 5-20 m

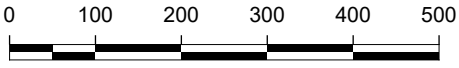
RECEIVER

Receiver	: SMARTem24
Frequency	: 0.25 Hz
Component	: A,U,V
Rx Sensor	: Digi-Atlantis B-Field
Gate Times	: SMARTem24 Standard

TRANSMITTER

Transmitter	: Phoenix TXU-30
Loop	: Loop_3
Tx Turns	: 1
Tx Current	: 27.715-27.787 A
Turn Off	: 0.8 ms





Scale 1:8800

Kobold Metals
Crystal Lake Project
Loop 3 Grid

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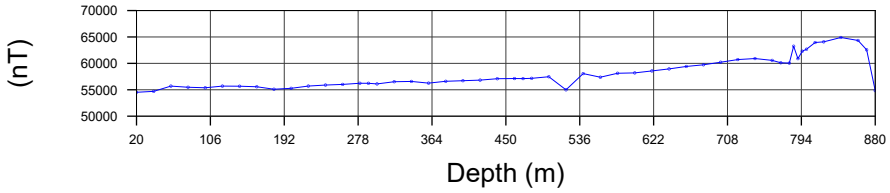
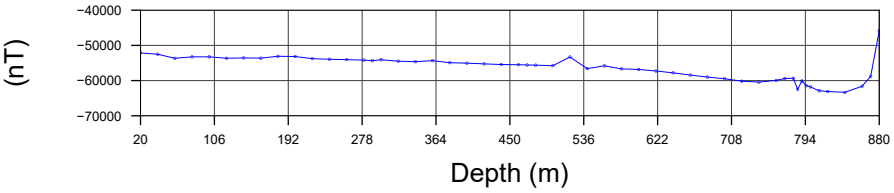
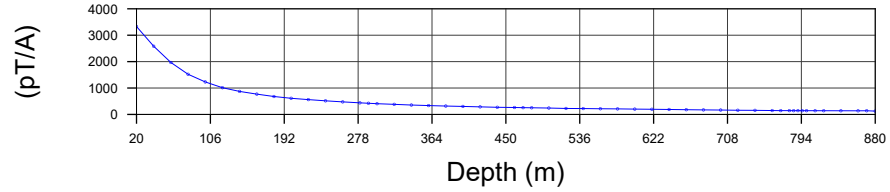
Total Magnetic Intensity



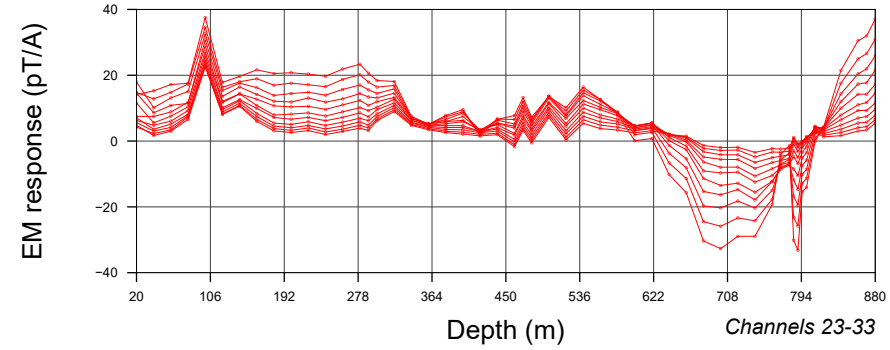
A Component Magnetic Intensity



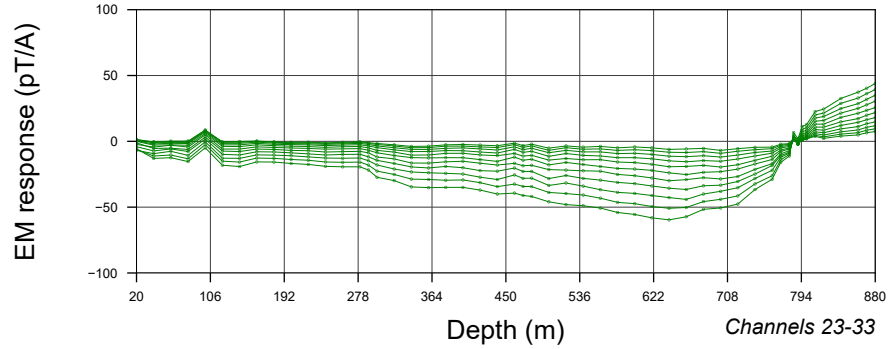
A Component - Primary Field



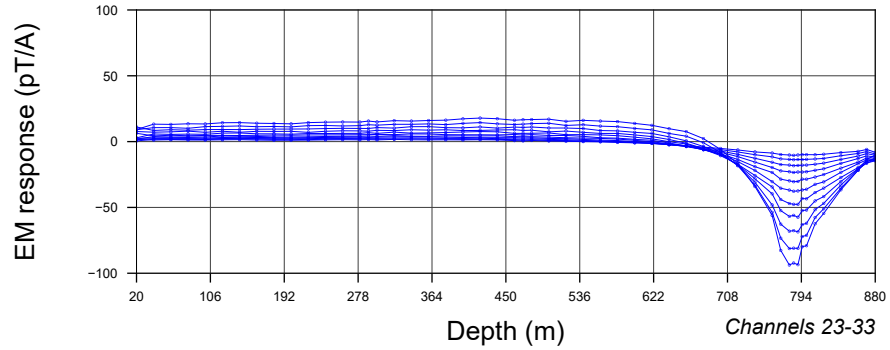
U Component - 11.66 ms to 101.39 ms



V Component - 11.66 ms to 101.39 ms



A Component - 11.66 ms to 101.39 ms



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Gate Times : SMARTem24 Standard

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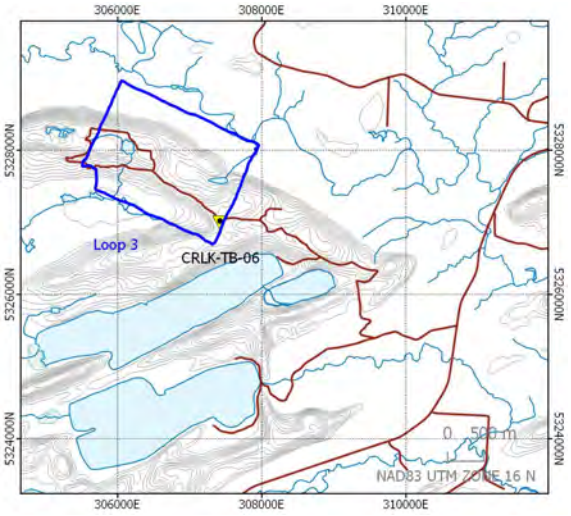
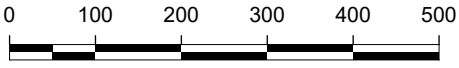
Loop : Loop_3
Tx Turns : 1
Tx Current : 27.715-27.787 A
Turn Off : 0.8 ms





Scale 1:8800

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Crystal Lake Project
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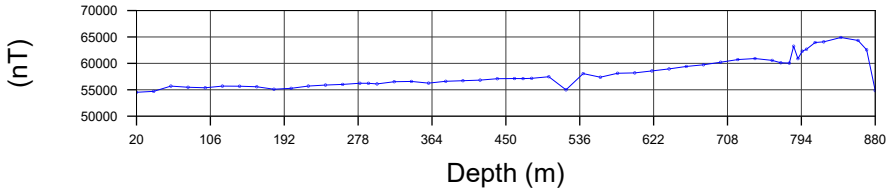
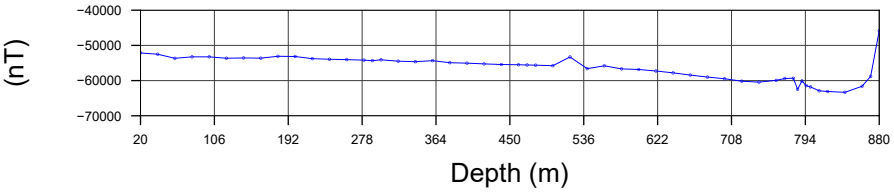
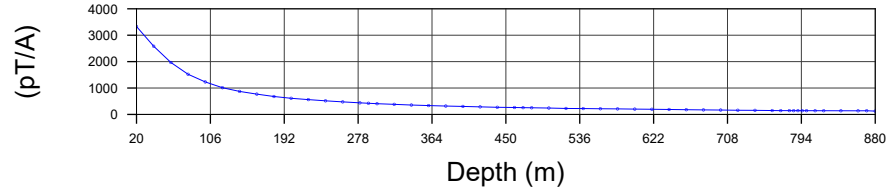
Total Magnetic Intensity



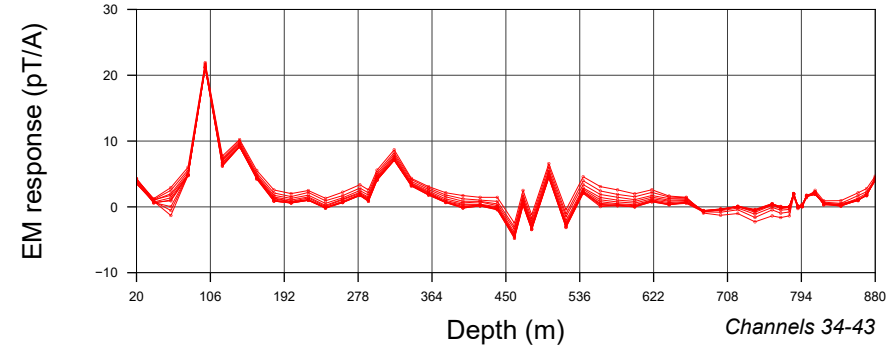
A Component Magnetic Intensity



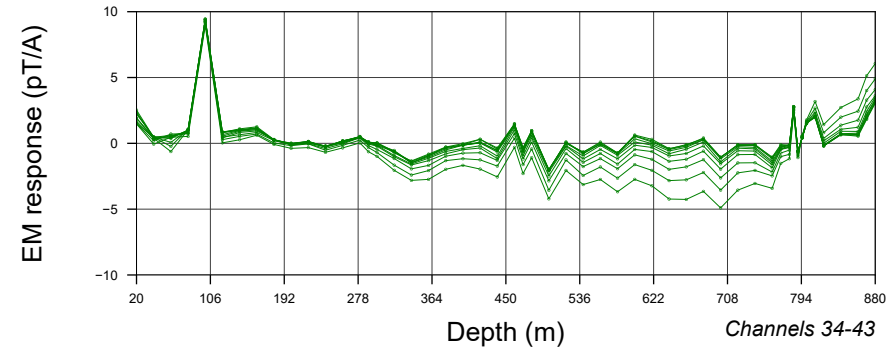
A Component - Primary Field



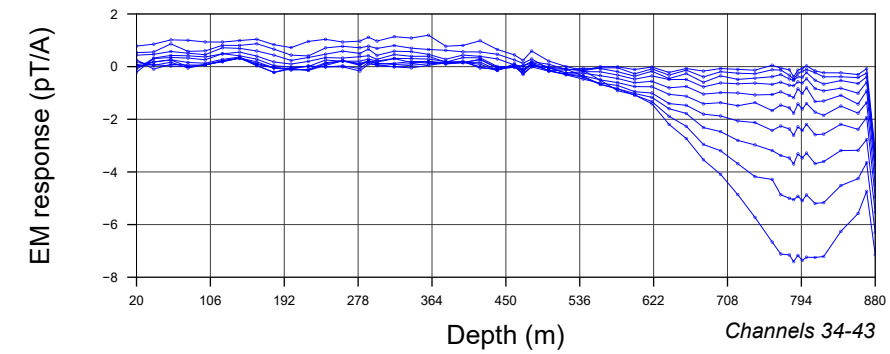
U Component - 125.88 ms to 881.83 ms



V Component - 125.88 ms to 881.83 ms



A Component - 125.88 ms to 881.83 ms



SURVEY PARAMETERS

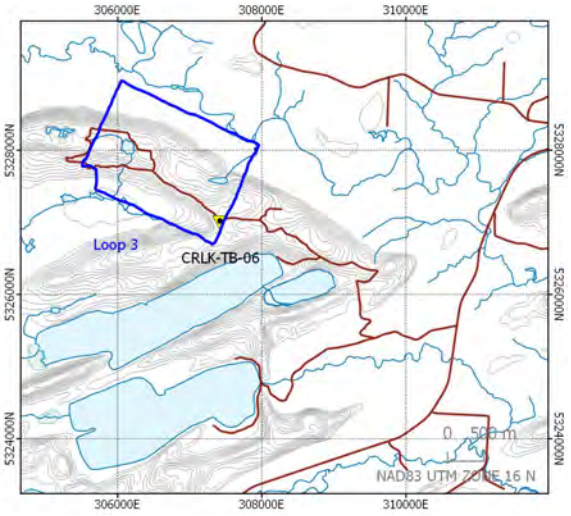
Configuration : Borehole TEM
Station Spacing : 5-20 m

RECEIVER

Receiver : SMARTem24
Frequency : 0.25 Hz
Component : A,U,V
Rx Sensor : Digi-Atlantis B-Field
Gate Times : SMARTem24 Standard

TRANSMITTER

Transmitter : Phoenix TXU-30
Loop : Loop_3
Tx Turns : 1
Tx Current : 27.715-27.787 A
Turn Off : 0.8 ms



0 100 200 300 400 500

Scale 1:8800

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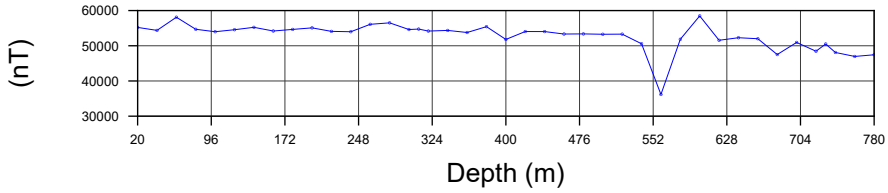
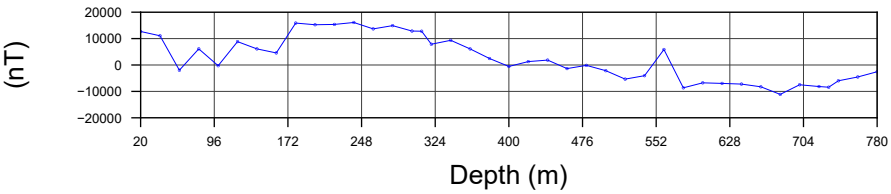
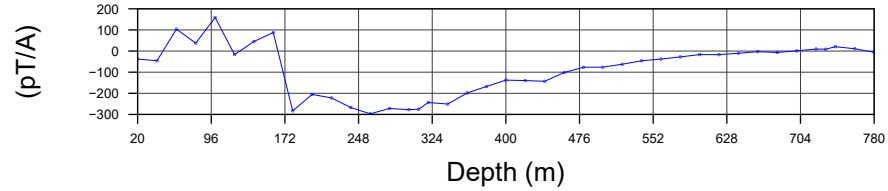
Total Magnetic Intensity



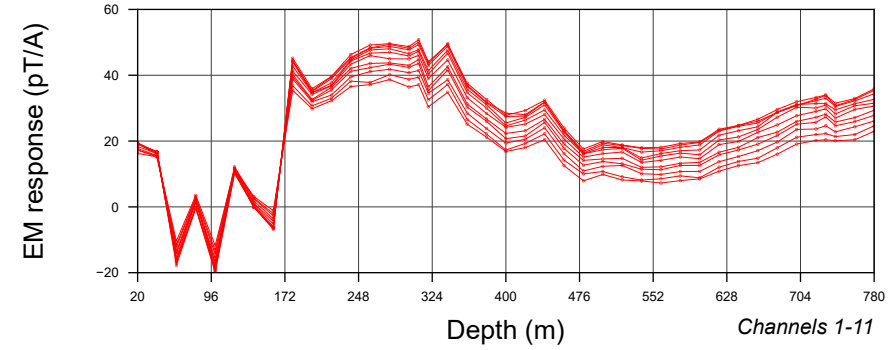
U Component Magnetic Intensity



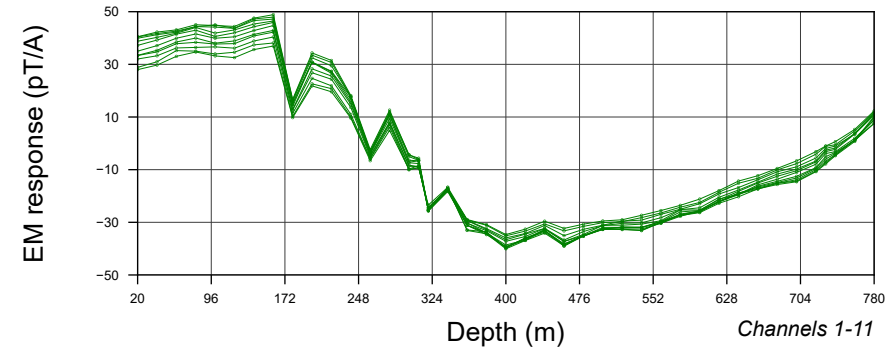
U Component - Primary Field



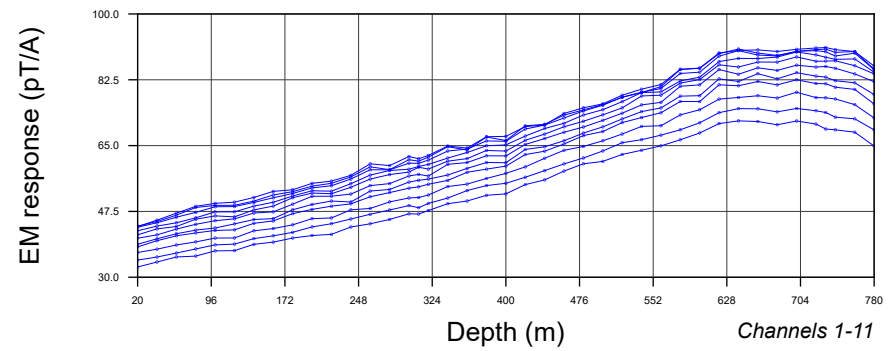
U Component - 0.10 ms to 0.87 ms



V Component - 0.10 ms to 0.87 ms



A Component - 0.10 ms to 0.87 ms



SURVEY PARAMETERS

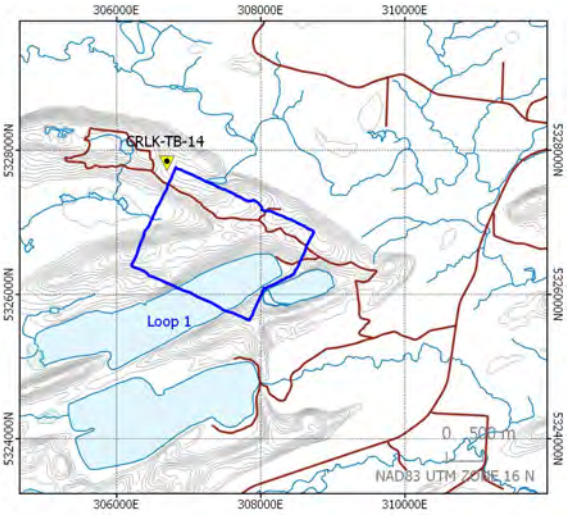
Configuration : Borehole TEM
Station Spacing : 10-20 m

RECEIVER

Receiver : SMARTem24
Frequency : 0.25 Hz
Component : A,U,V
Rx Sensor : Digi-Atlantis B-Field
Gate Times : SMARTem24 Standard

TRANSMITTER

Transmitter : Phoenix TXU-30
Loop : Loop_1
Tx Turns : 1
Tx Current : 27.735-28.019 A
Turn Off : 0.8 ms



Scale 1:7800

Kobold Metals
Crystal Lake Project
Loop 1 Grid

Borehole TEM Survey

CRLK-TB-14

Surveyed By: Connor Harrison
Survey Date: December 2021

Discovery International Geophysics

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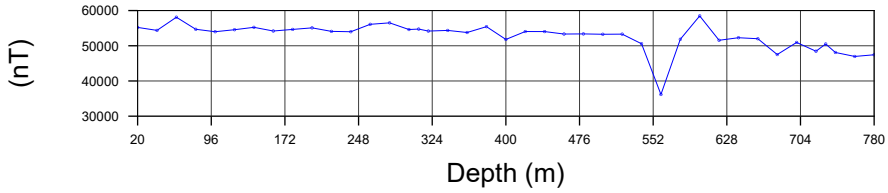
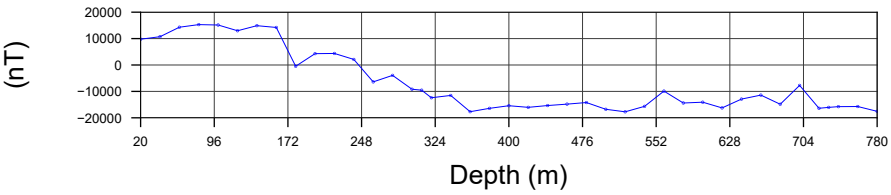
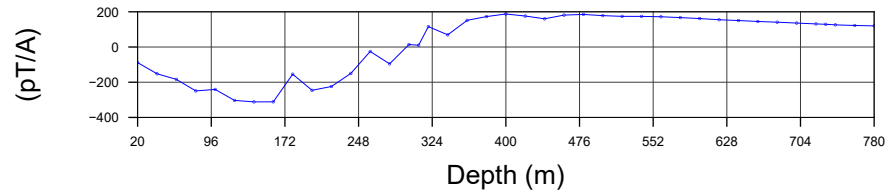
Total Magnetic Intensity



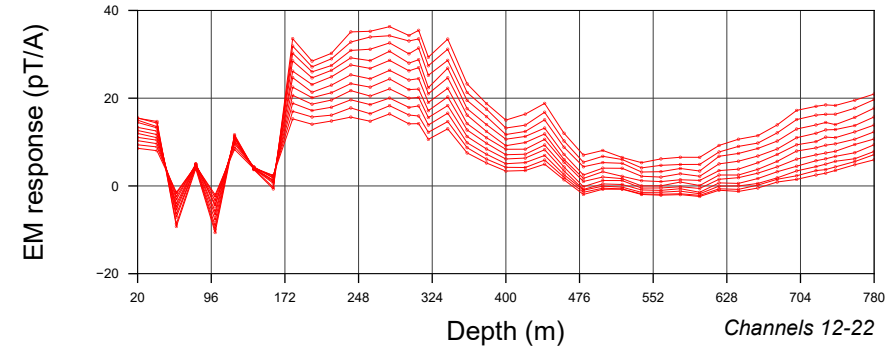
V Component Magnetic Intensity



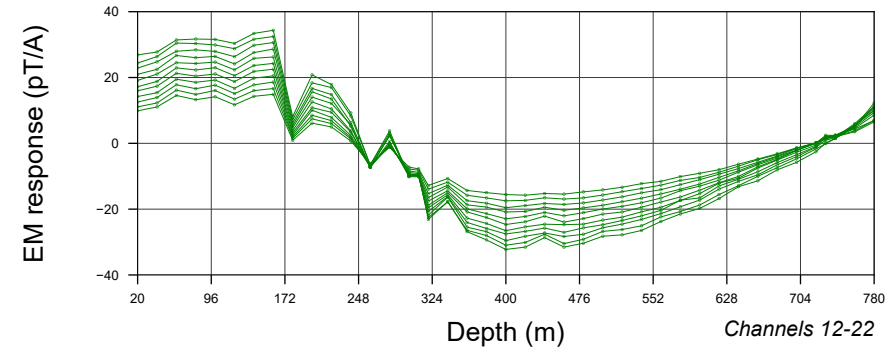
V Component - Primary Field



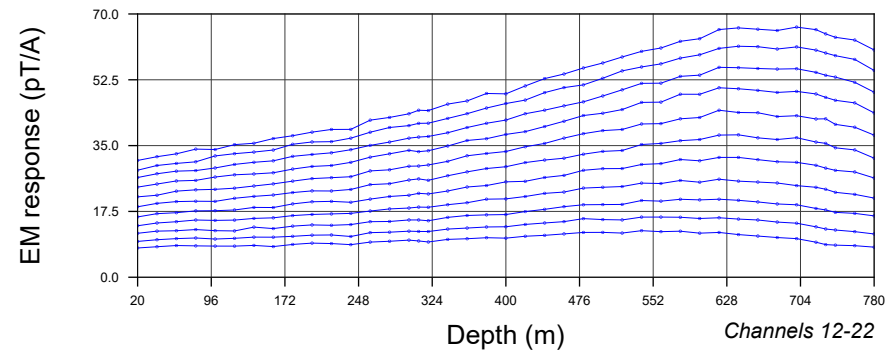
U Component - 1.08 ms to 9.39 ms



V Component - 1.08 ms to 9.39 ms



A Component - 1.08 ms to 9.39 ms



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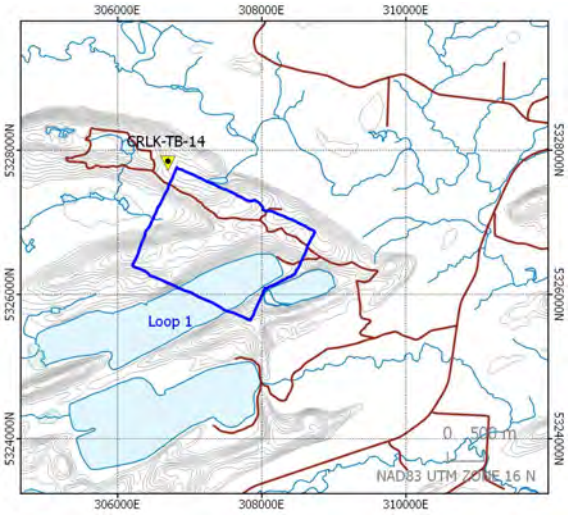

0 100 200 300 400

Scale 1:7800

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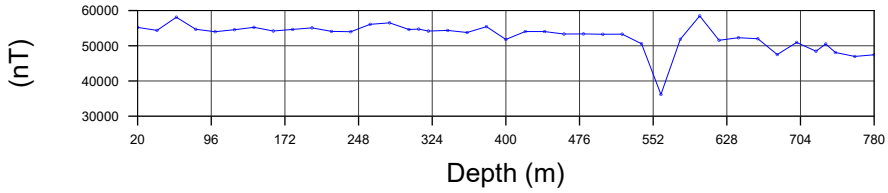
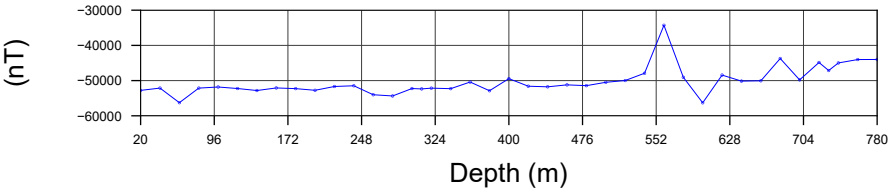
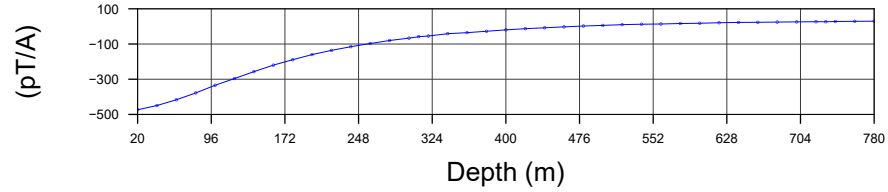


A Component Magnetic Intensity



A Component - Primary Field



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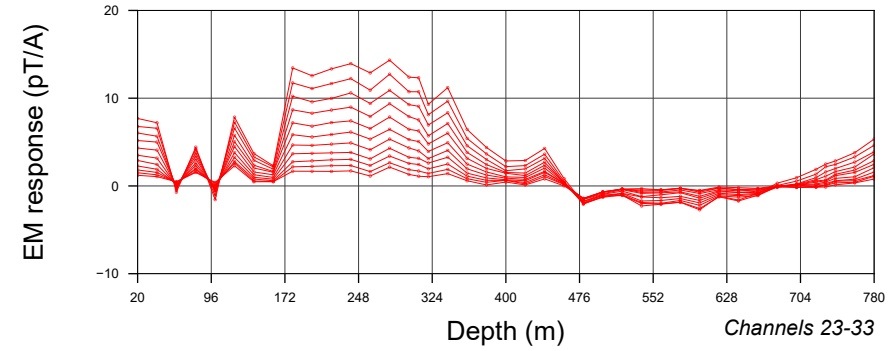

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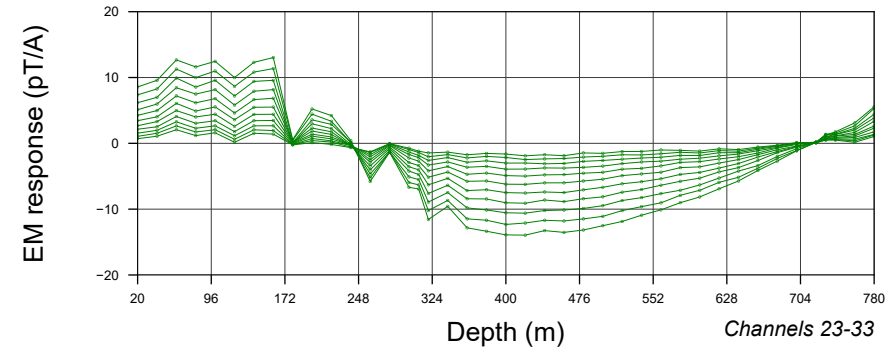

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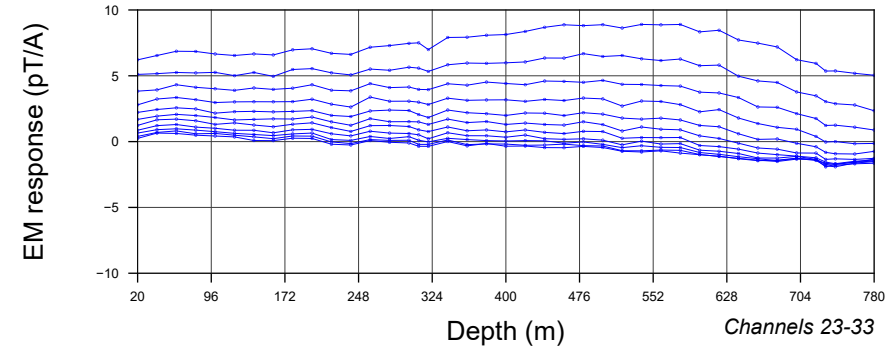

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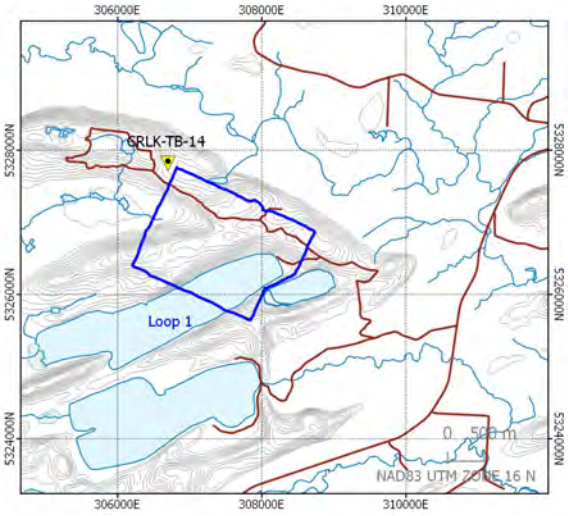

Scale 1:7800

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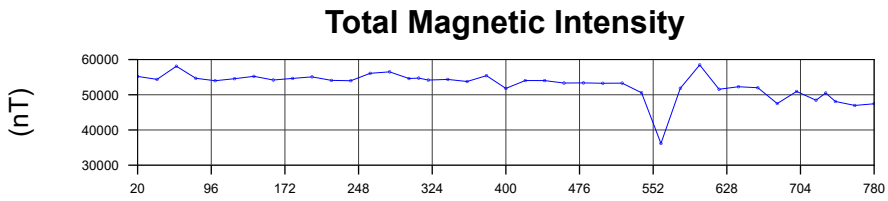
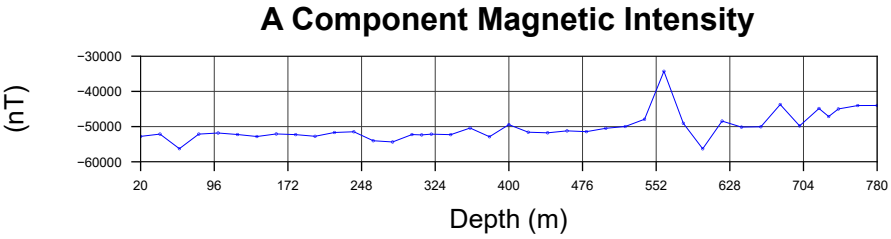
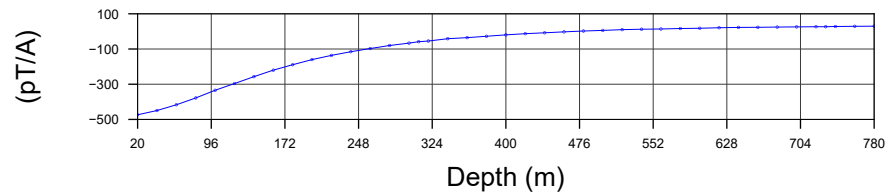
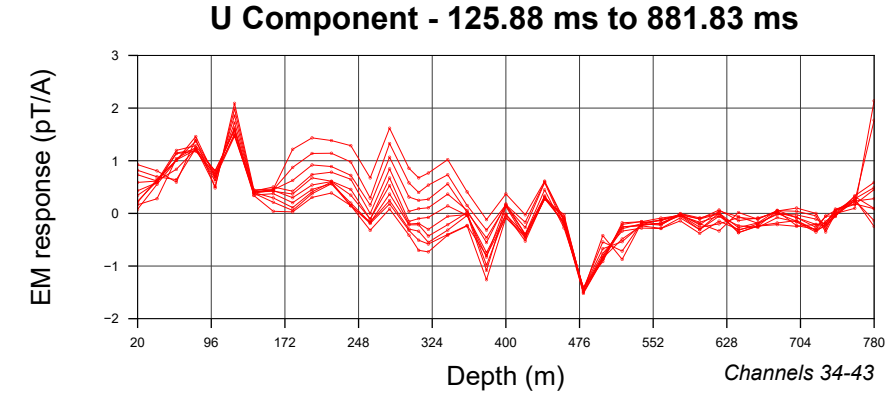
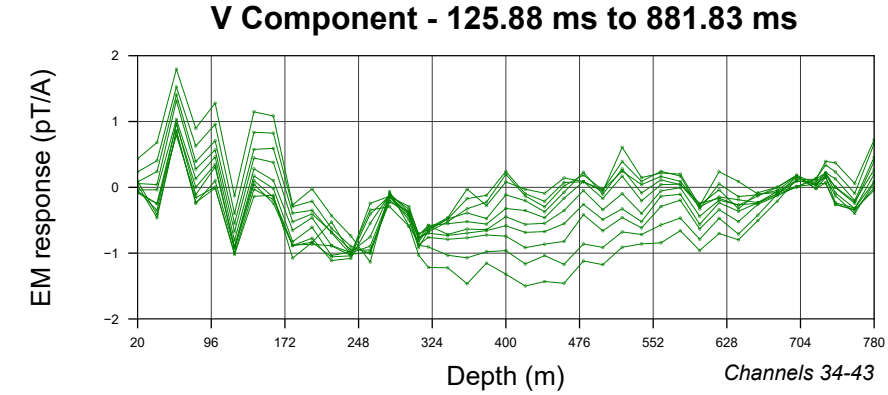
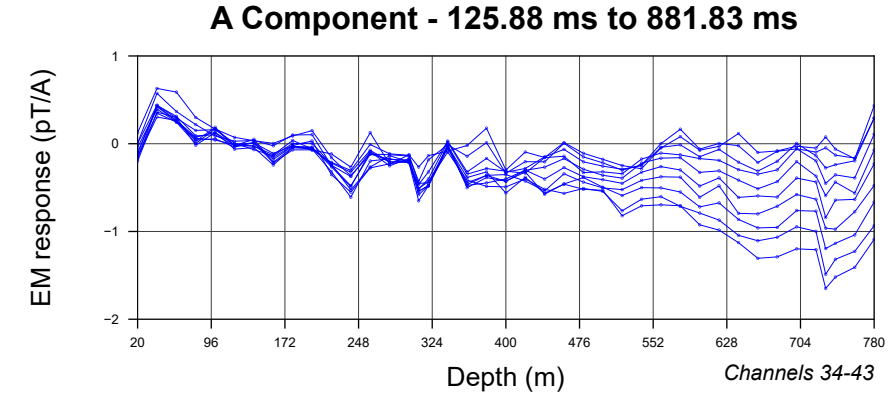












SURVEY PARAMETERS

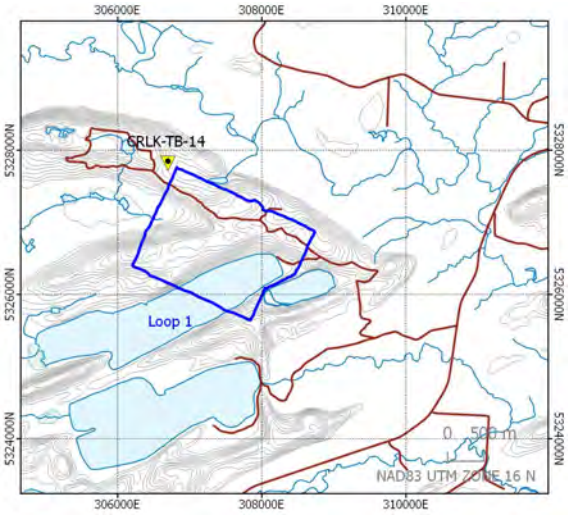
Configuration : Borehole TEM
Station Spacing : 10-20 m

RECEIVER

Receiver : SMARTem24
Frequency : 0.25 Hz
Component : A,U,V
Rx Sensor : Digi-Atlantis B-Field
Gate Times : SMARTem24 Standard

TRANSMITTER

Transmitter : Phoenix TXU-30
Loop : Loop_1
Tx Turns : 1
Tx Current : 27.735-28.019 A
Turn Off : 0.8 ms



Scale 1:7800

Kobold Metals
Crystal Lake Project
Loop 1 Grid

Borehole TEM Survey

CRLK-TB-14

Surveyed By: Connor Harrison
Survey Date: December 2021

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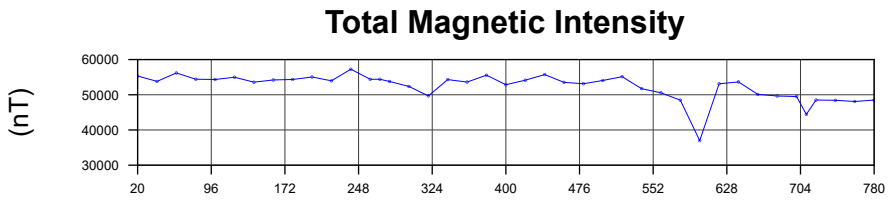
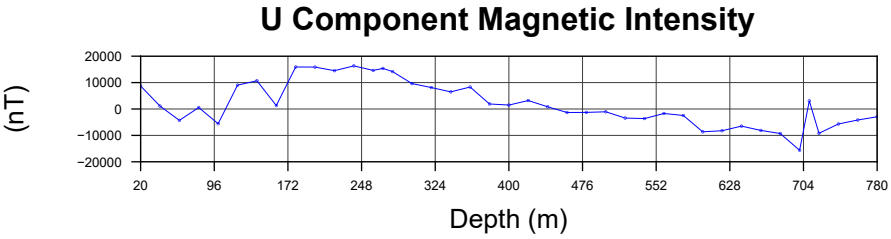
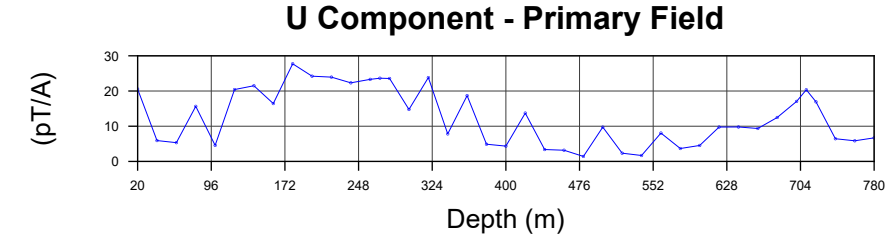
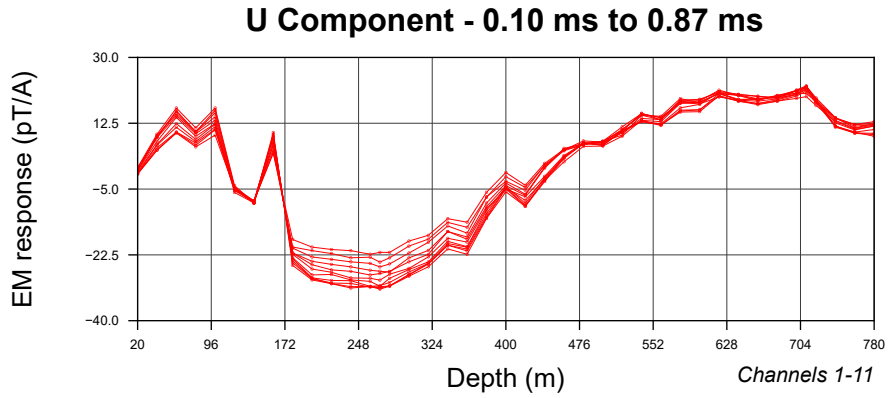
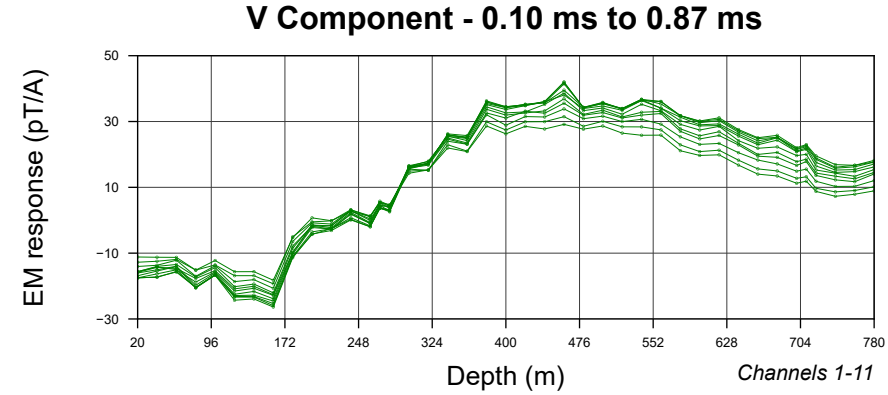
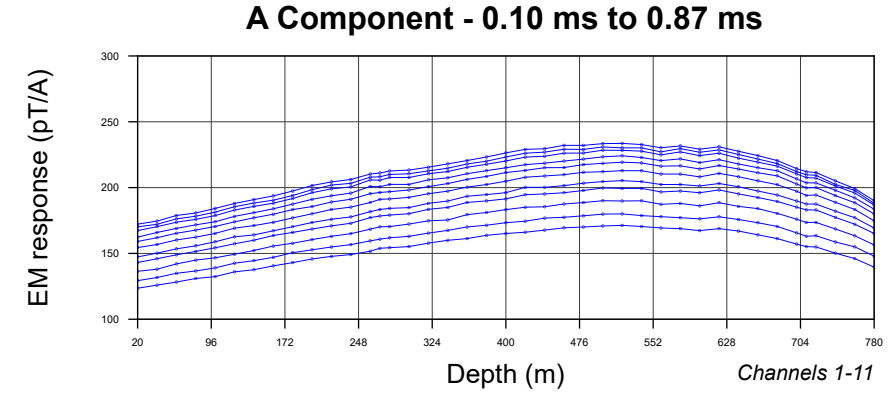












SURVEY PARAMETERS

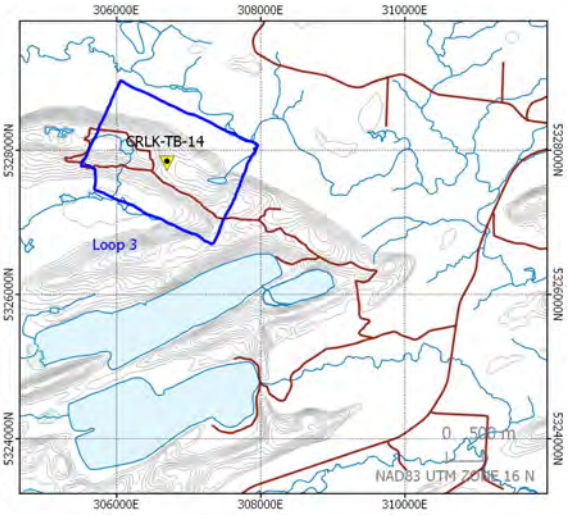
Configuration : Borehole TEM
Station Spacing : 10-20 m

RECEIVER

Receiver : SMARTem24
Frequency : 0.25 Hz
Component : A,U,V
Rx Sensor : Digi-Atlantis B-Field
Gate Times : SMARTem24 Standard

TRANSMITTER

Transmitter : Phoenix TXU-30
Loop : Loop_3
Tx Turns : 1
Tx Current : 27.73-27.879 A
Turn Off : 0.8 ms



0 100 200 300 400

Scale 1:7800

Kobold Metals
Crystal Lake Project
Loop 3 Grid

Borehole TEM Survey

CRLK-TB-14

Surveyed By: Connor Harrison
Survey Date: December 2021

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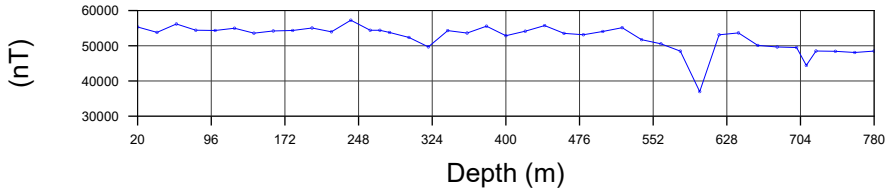
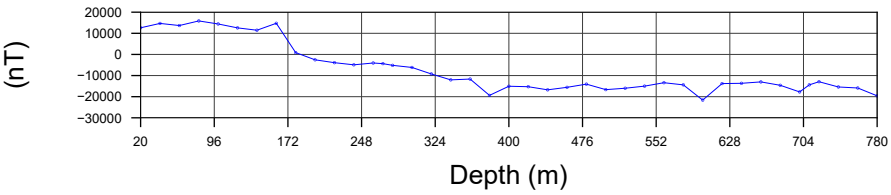
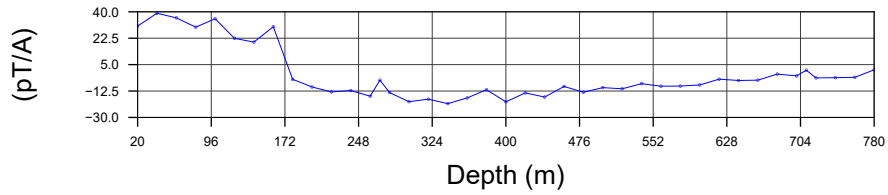
Total Magnetic Intensity



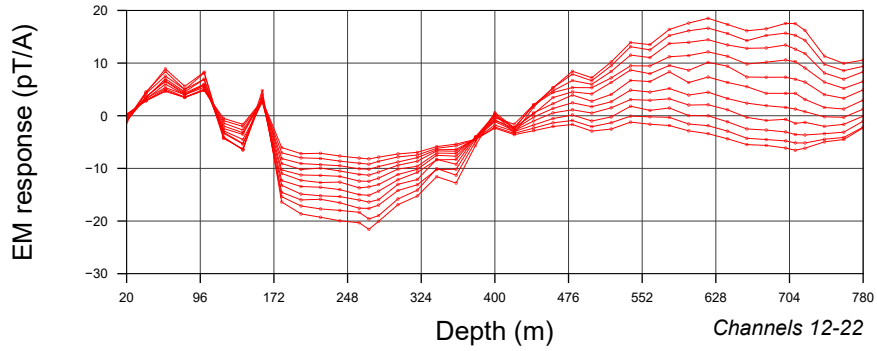
V Component Magnetic Intensity



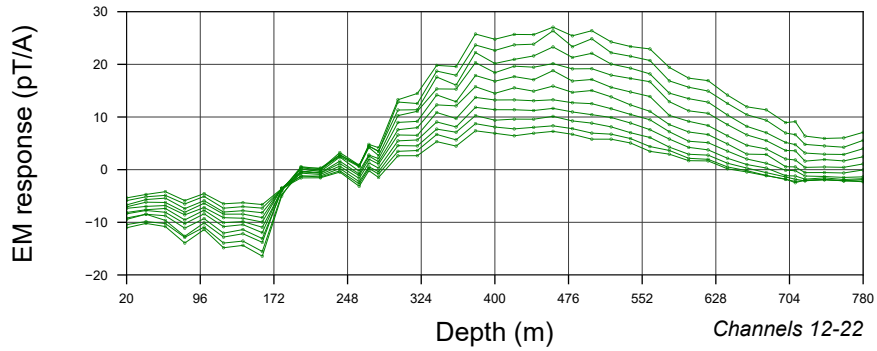
V Component - Primary Field



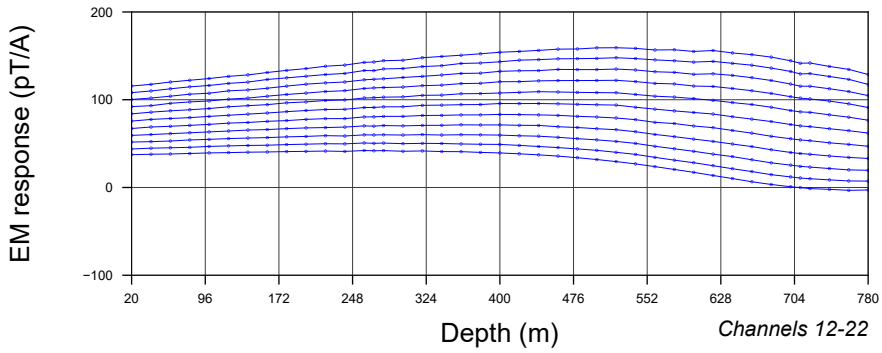
U Component - 1.08 ms to 9.39 ms



V Component - 1.08 ms to 9.39 ms



A Component - 1.08 ms to 9.39 ms



SURVEY PARAMETERS

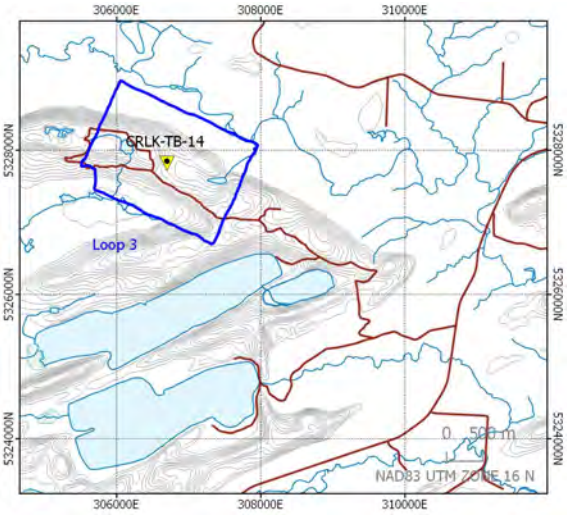
Configuration : Borehole TEM
Station Spacing : 10-20 m

RECEIVER

Receiver : SMARTem24
Frequency : 0.25 Hz
Component : A,U,V
Rx Sensor : Digi-Atlantis B-Field
Gate Times : SMARTem24 Standard

TRANSMITTER

Transmitter : Phoenix TXU-30
Loop : Loop_3
Tx Turns : 1
Tx Current : 27.73-27.879 A
Turn Off : 0.8 ms



Scale 1:7800

Kobold Metals
Crystal Lake Project
Loop 3 Grid

Borehole TEM Survey

CRLK-TB-14

Surveyed By: Connor Harrison
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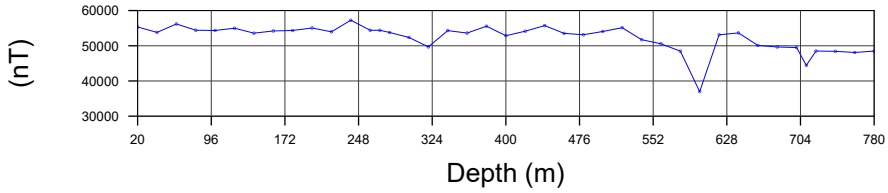
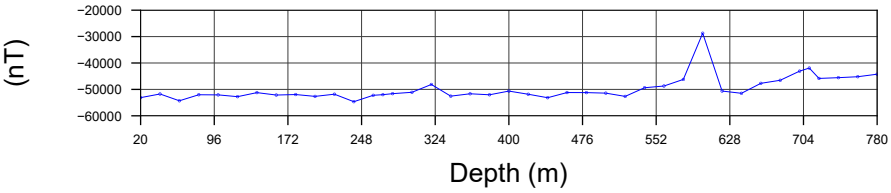
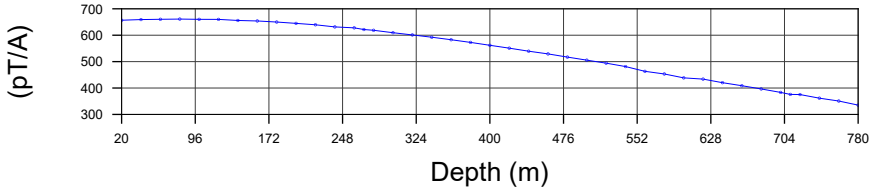
Total Magnetic Intensity



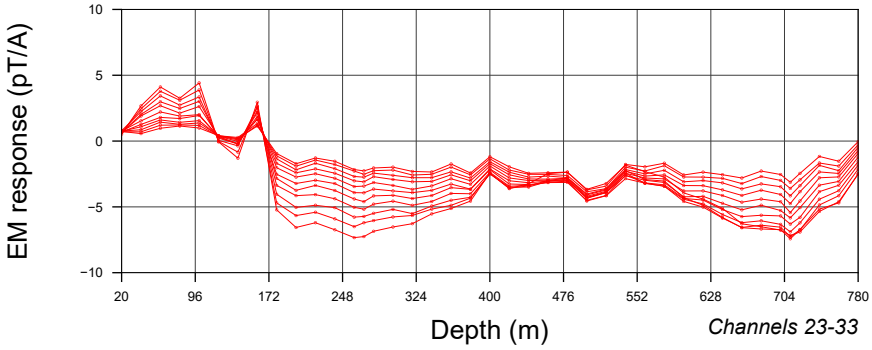
A Component Magnetic Intensity



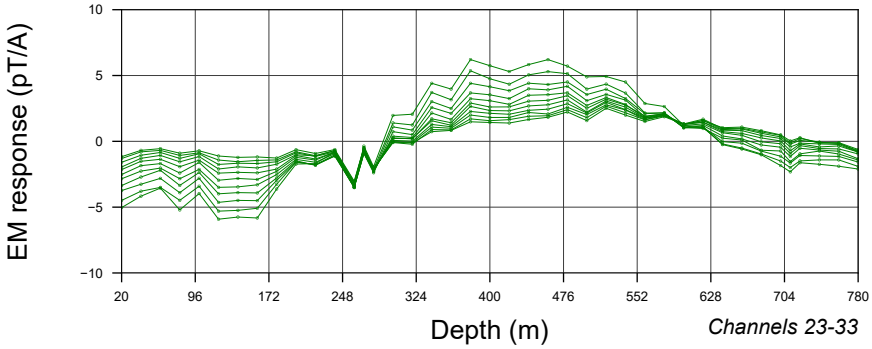
A Component - Primary Field



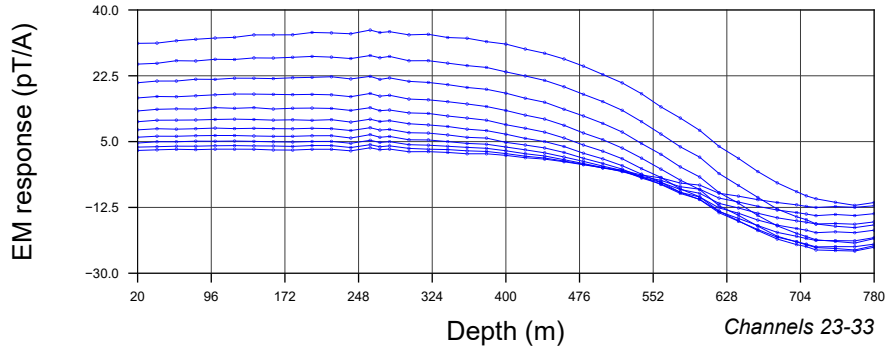
U Component - 11.66 ms to 101.39 ms



V Component - 11.66 ms to 101.39 ms



A Component - 11.66 ms to 101.39 ms



SURVEY PARAMETERS

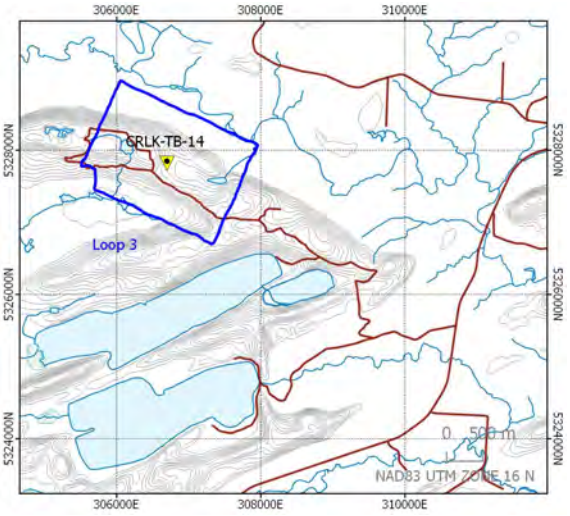
Configuration : Borehole TEM
Station Spacing : 10-20 m

RECEIVER

Receiver : SMARTem24
Frequency : 0.25 Hz
Component : A,U,V
Rx Sensor : Digi-Atlantis B-Field
Gate Times : SMARTem24 Standard

TRANSMITTER

Transmitter : Phoenix TXU-30
Loop : Loop_3
Tx Turns : 1
Tx Current : 27.73-27.879 A
Turn Off : 0.8 ms



0 100 200 300 400

Scale 1:7800

Kobold Metals
Crystal Lake Project
Loop 3 Grid

Borehole TEM Survey

CRLK-TB-14

Surveyed By: Connor Harrison
Survey Date: December 2021

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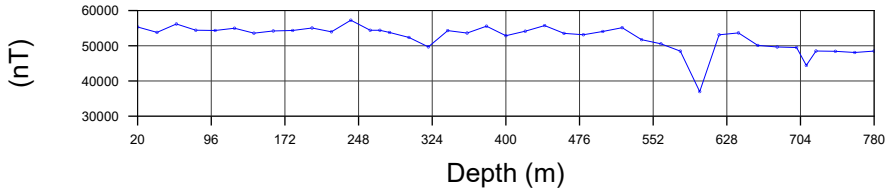
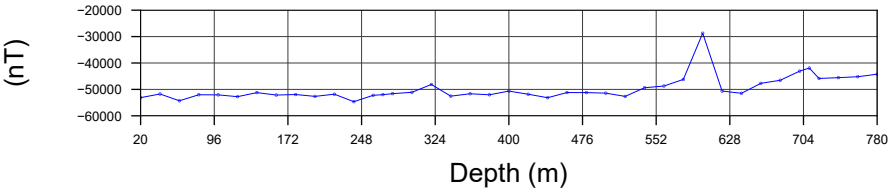
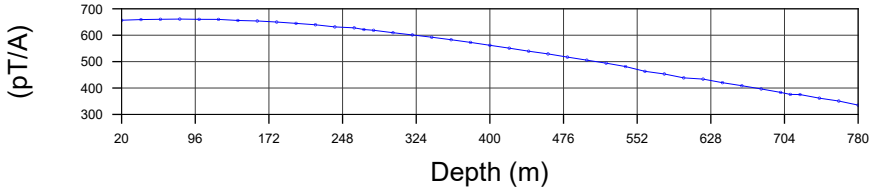
Total Magnetic Intensity



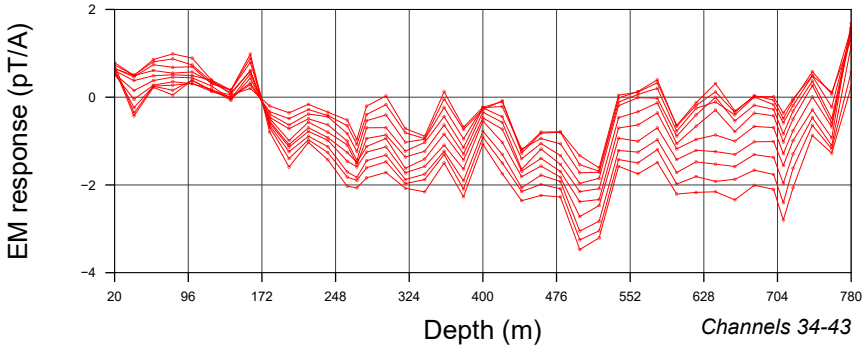
A Component Magnetic Intensity



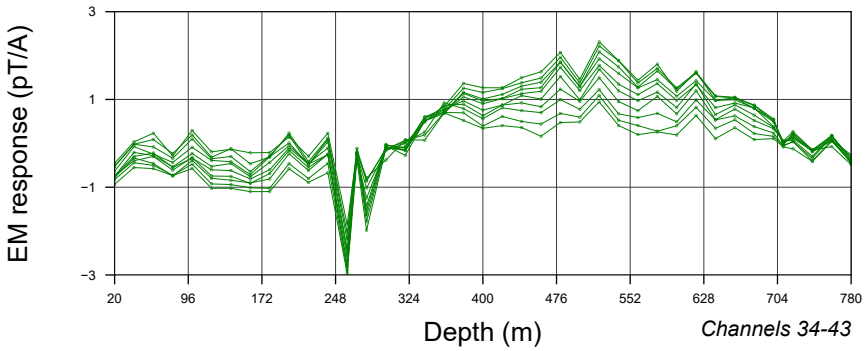
A Component - Primary Field



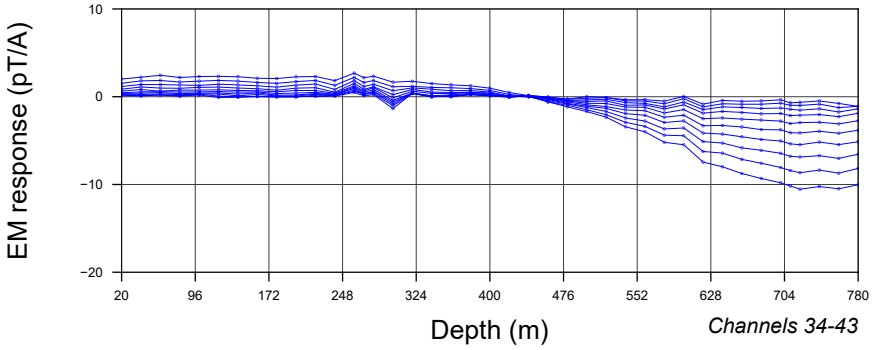
U Component - 125.88 ms to 881.83 ms



V Component - 125.88 ms to 881.83 ms



A Component - 125.88 ms to 881.83 ms



SURVEY PARAMETERS

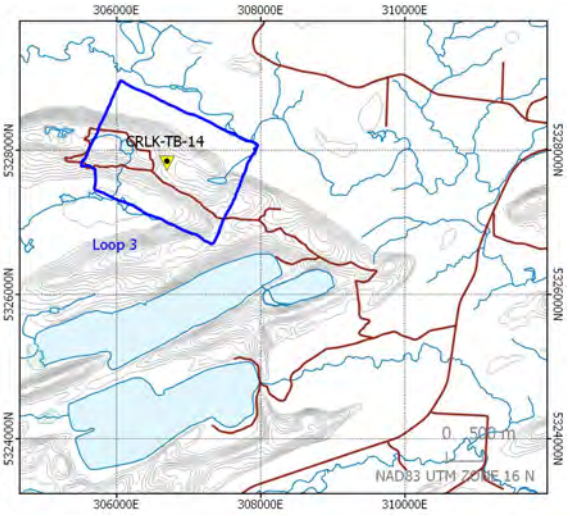
Configuration : Borehole TEM
Station Spacing : 10-20 m

RECEIVER

Receiver : SMARTem24
Frequency : 0.25 Hz
Component : A,U,V
Rx Sensor : Digi-Atlantis B-Field
Gate Times : SMARTem24 Standard

TRANSMITTER

Transmitter : Phoenix TXU-30
Loop : Loop_3
Tx Turns : 1
Tx Current : 27.73-27.879 A
Turn Off : 0.8 ms



Scale 1:7800

Kobold Metals
Crystal Lake Project
Loop 3 Grid

Borehole TEM Survey

CRLK-TB-14

Surveyed By: Connor Harrison
Survey Date: December 2021

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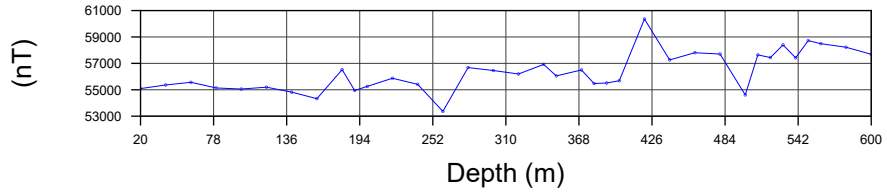
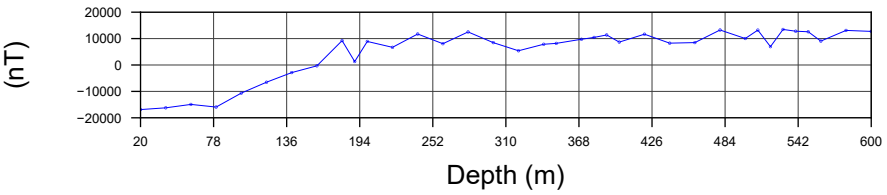
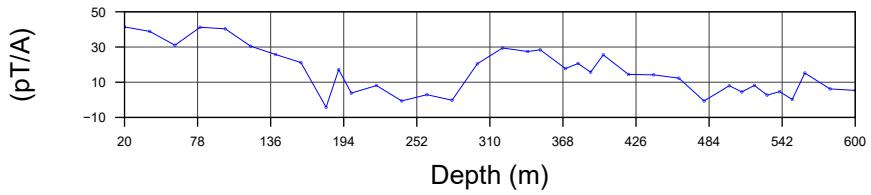
Total Magnetic Intensity



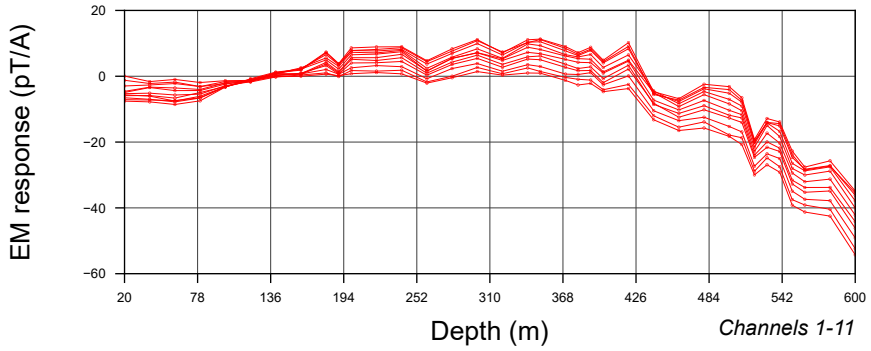
U Component Magnetic Intensity



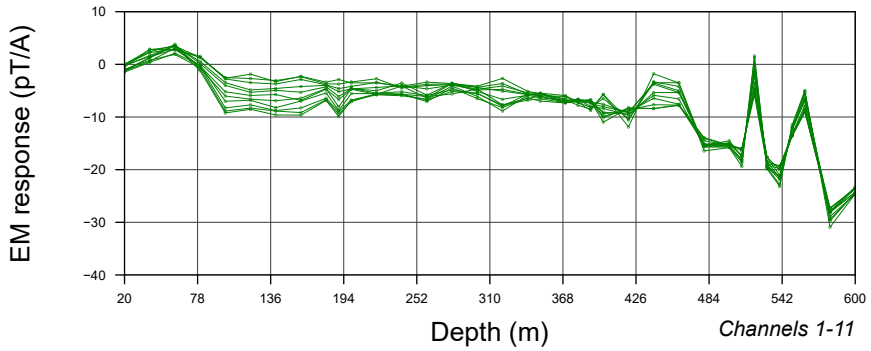
U Component - Primary Field



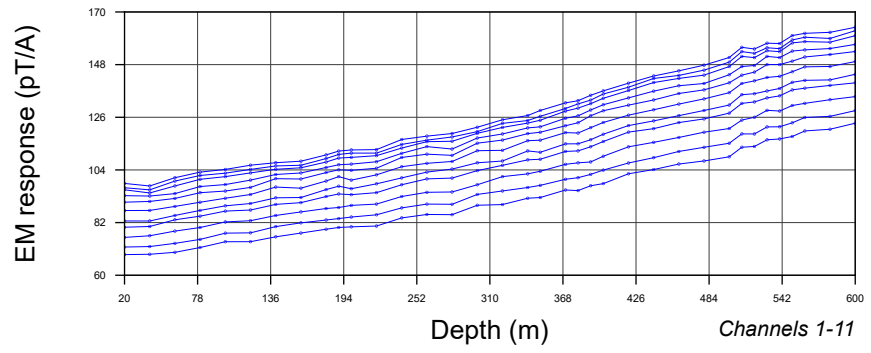
U Component - 0.10 ms to 0.87 ms



V Component - 0.10 ms to 0.87 ms



A Component - 0.10 ms to 0.87 ms



SURVEY PARAMETERS

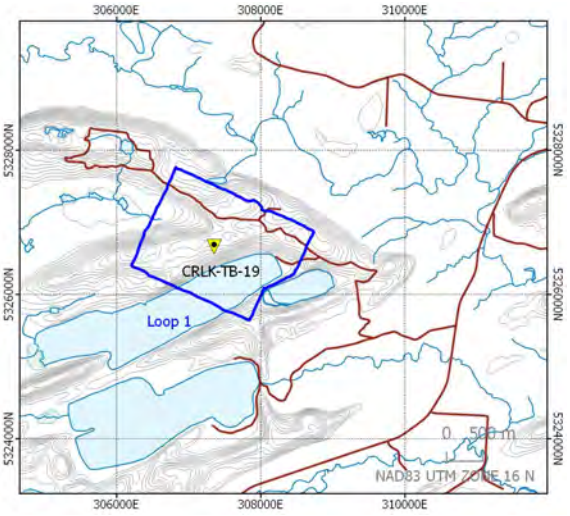
Configuration : Borehole TEM
Station Spacing : 10-20 m

RECEIVER

Receiver : SMARTem24
Frequency : 0.25 Hz
Component : A,U,V
Rx Sensor : Digi-Atlantis B-Field
Gate Times : SMARTem24 Standard

TRANSMITTER

Transmitter : Phoenix TXU-30
Loop : Loop_1
Tx Turns : 1
Tx Current : 27.721-27.922 A
Turn Off : 0.8 ms



Scale 1:6000

Kobold Metals
Crystal Lake Project
Loop 1 Grid

Borehole TEM Survey

CRLK-TB-19

Surveyed By: Connor Harrison
Survey Date: December 2021

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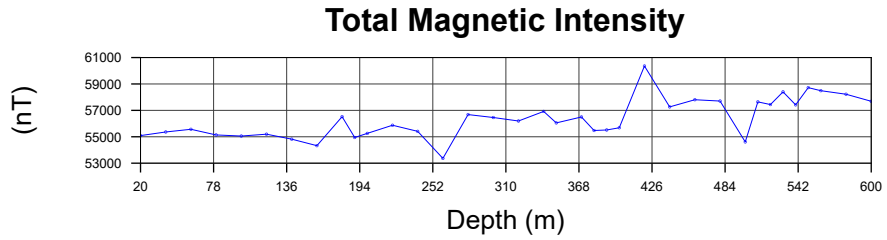
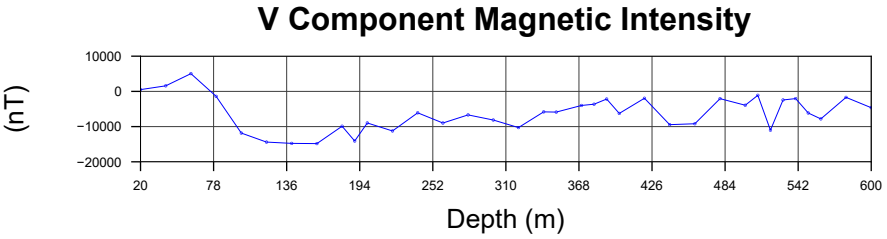
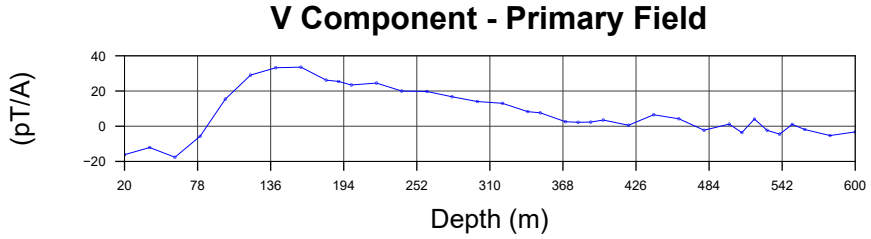
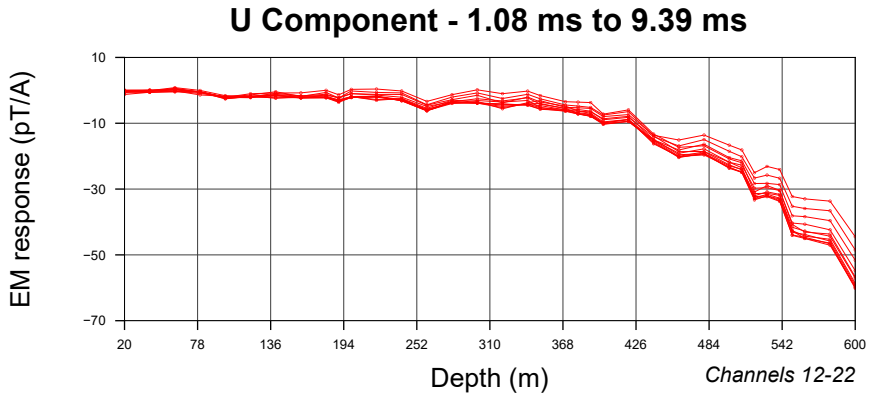
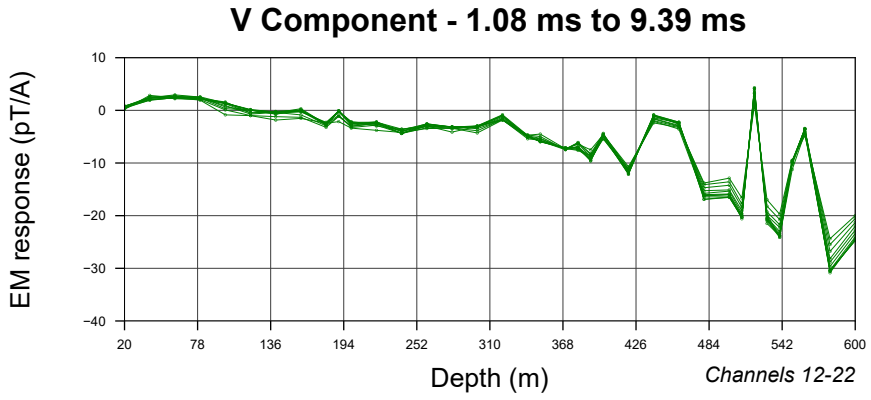
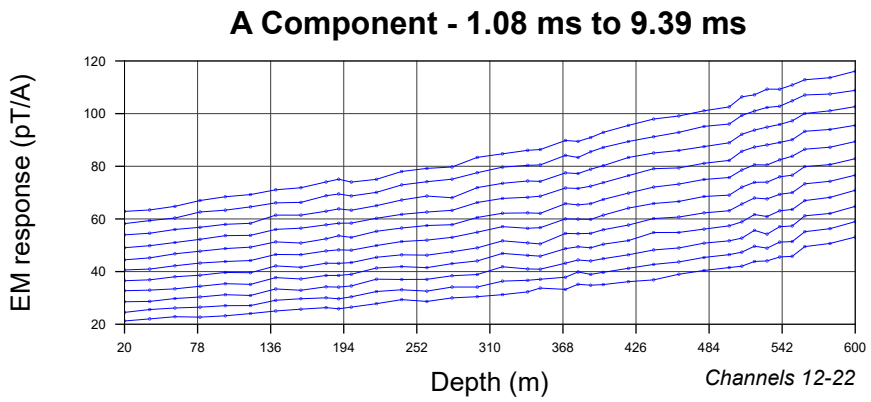












SURVEY PARAMETERS

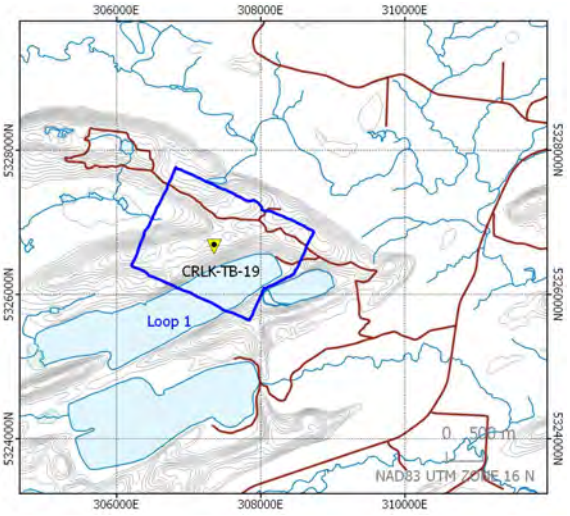
Configuration : Borehole TEM
Station Spacing : 10-20 m

RECEIVER

Receiver : SMARTem24
Frequency : 0.25 Hz
Component : A,U,V
Rx Sensor : Digi-Atlantis B-Field
Gate Times : SMARTem24 Standard

TRANSMITTER

Transmitter : Phoenix TXU-30
Loop : Loop_1
Tx Turns : 1
Tx Current : 27.721-27.922 A
Turn Off : 0.8 ms



0 100 200 300

Scale 1:6000

Kobold Metals
Crystal Lake Project
Loop 1 Grid

Borehole TEM Survey

CRLK-TB-19

Surveyed By: Connor Harrison
Survey Date: December 2021

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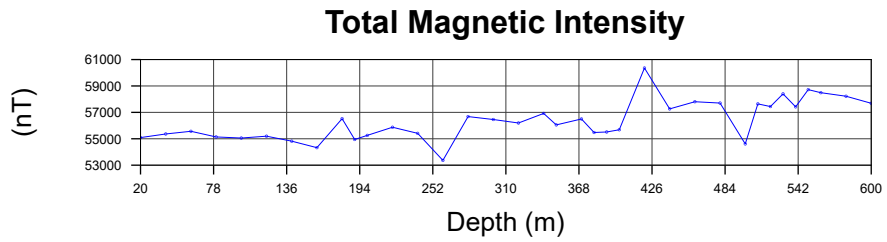
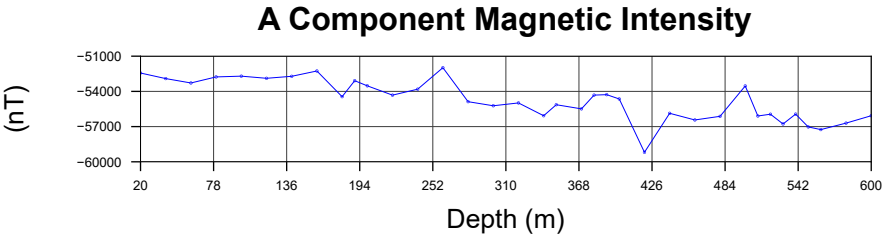
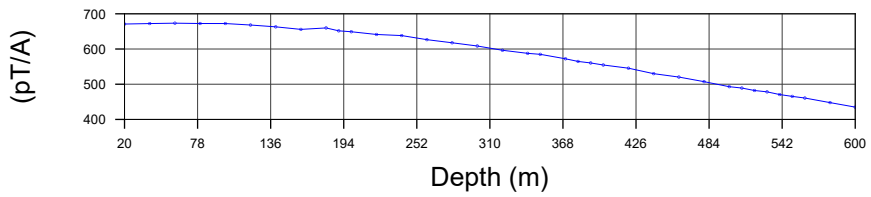
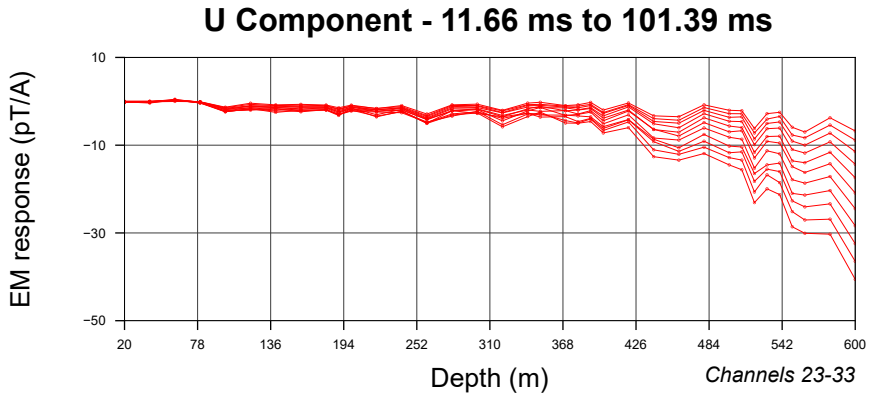
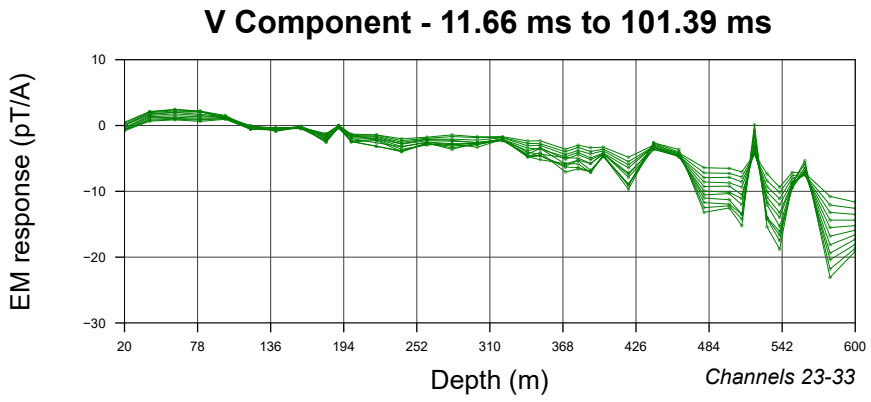
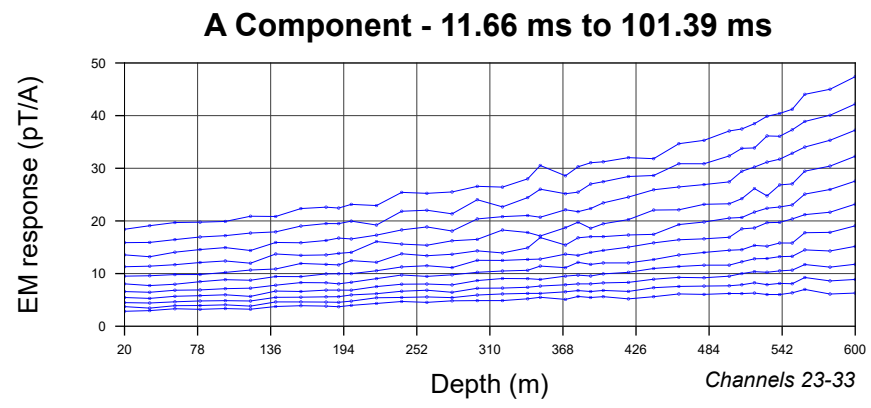












SURVEY PARAMETERS

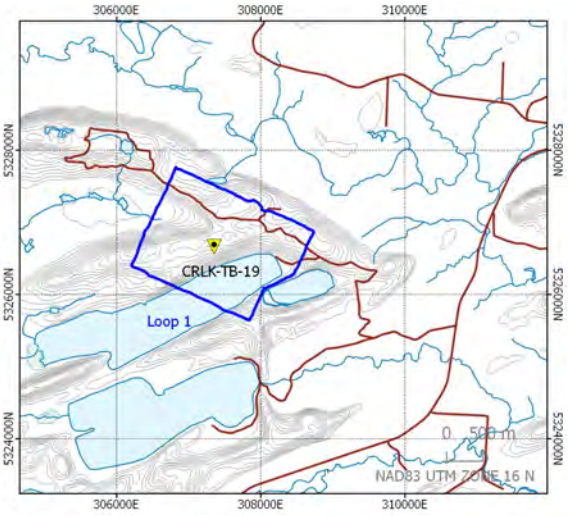
Configuration : Borehole TEM
Station Spacing : 10-20 m

RECEIVER

Receiver : SMARTem24
Frequency : 0.25 Hz
Component : A,U,V
Rx Sensor : Digi-Atlantis B-Field
Gate Times : SMARTem24 Standard

TRANSMITTER

Transmitter : Phoenix TXU-30
Loop : Loop_1
Tx Turns : 1
Tx Current : 27.721-27.922 A
Turn Off : 0.8 ms



Scale 1:6000

Kobold Metals
Crystal Lake Project
Loop 1 Grid

Borehole TEM Survey

CRLK-TB-19

Surveyed By: Connor Harrison
Survey Date: December 2021

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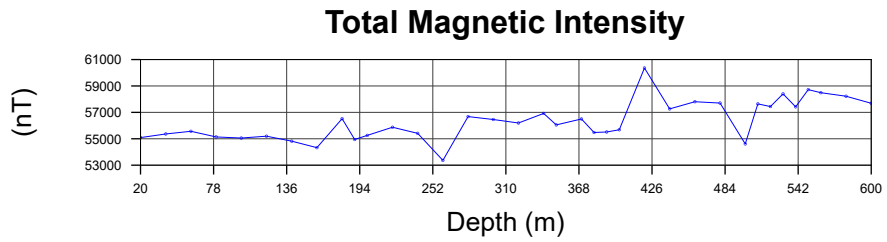
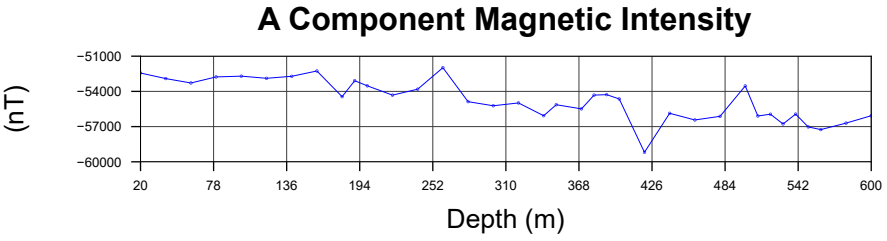
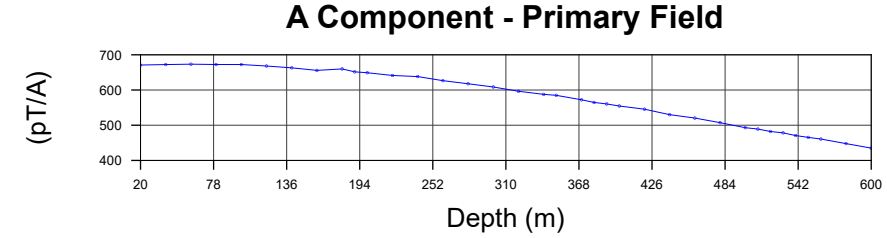
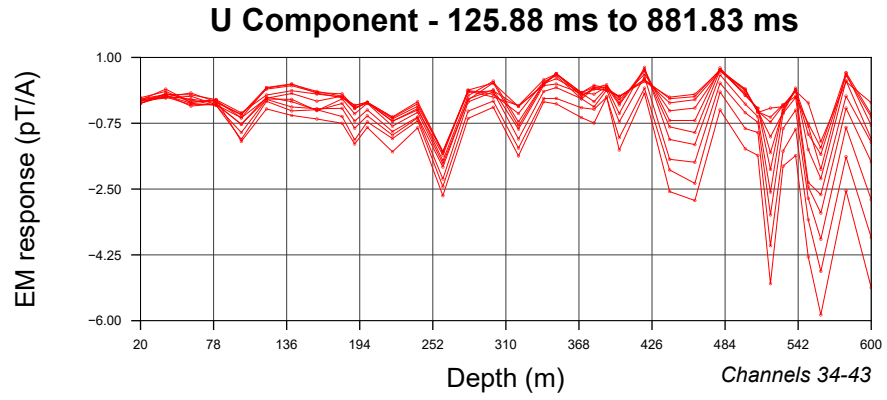
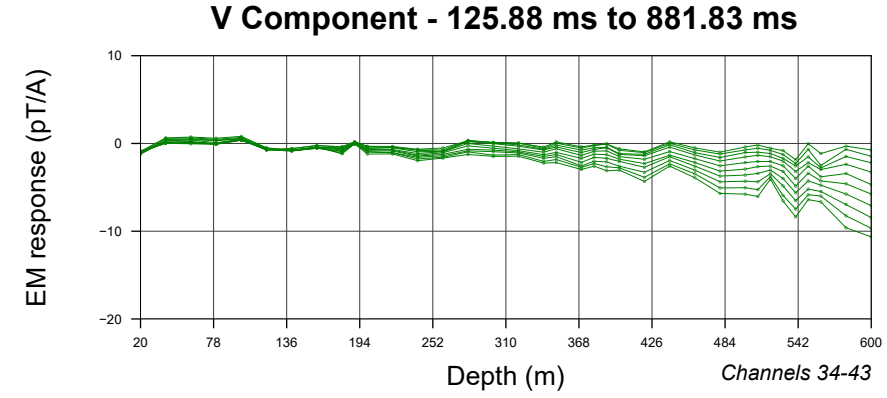
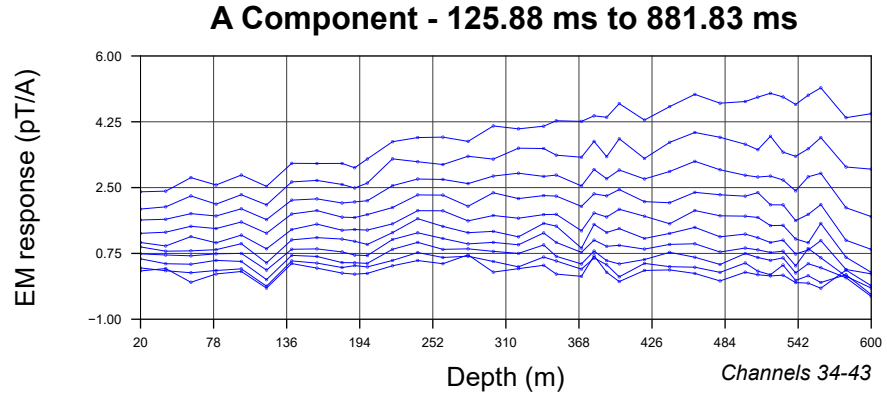












SURVEY PARAMETERS

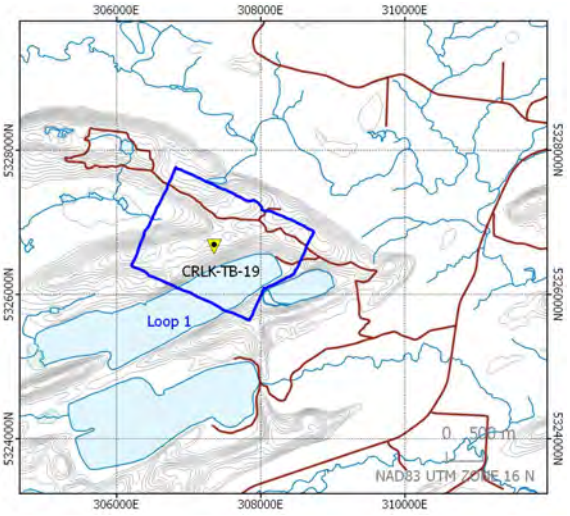
Configuration : Borehole TEM
Station Spacing : 10-20 m

RECEIVER

Receiver : SMARTem24
Frequency : 0.25 Hz
Component : A,U,V
Rx Sensor : Digi-Atlantis B-Field
Gate Times : SMARTem24 Standard

TRANSMITTER

Transmitter : Phoenix TXU-30
Loop : Loop_1
Tx Turns : 1
Tx Current : 27.721-27.922 A
Turn Off : 0.8 ms



Scale 1:6000

Kobold Metals
Crystal Lake Project
Loop 1 Grid

Borehole TEM Survey

CRLK-TB-19

Surveyed By: Connor Harrison
Survey Date: December 2021

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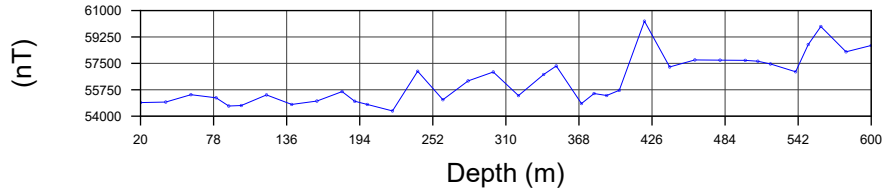
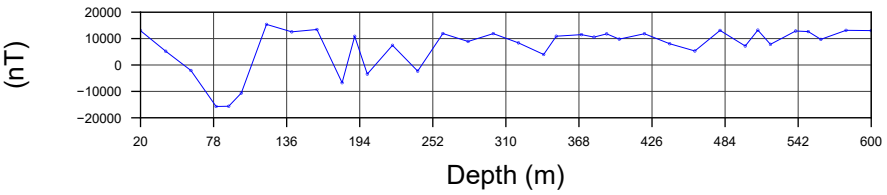
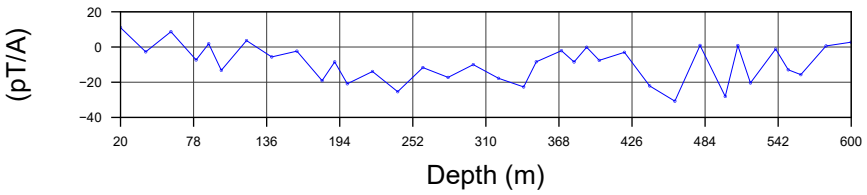
Total Magnetic Intensity



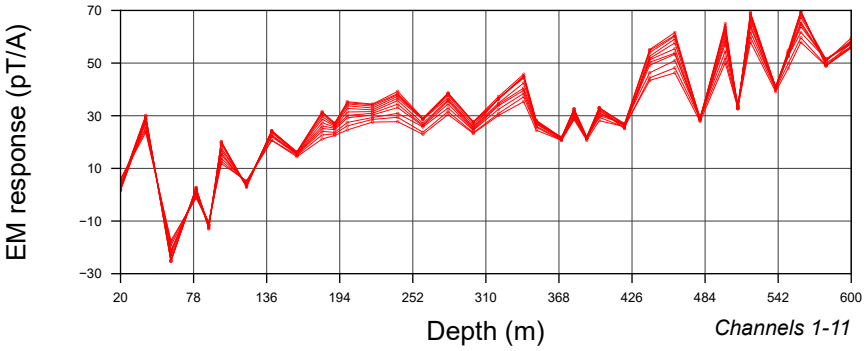
U Component Magnetic Intensity



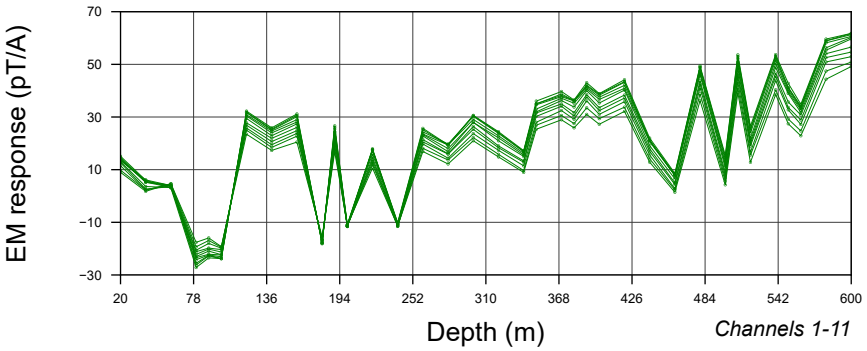
U Component - Primary Field



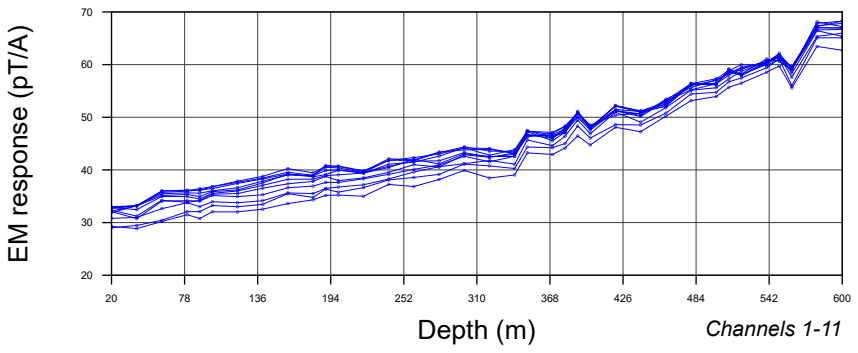
U Component - 0.10 ms to 0.87 ms



V Component - 0.10 ms to 0.87 ms



A Component - 0.10 ms to 0.87 ms



SURVEY PARAMETERS

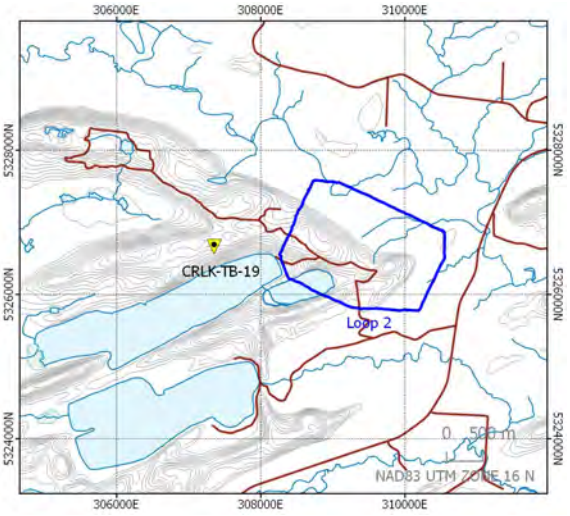
Configuration : Borehole TEM
Station Spacing : 10-20 m

RECEIVER

Receiver : SMARTem24
Frequency : 0.25 Hz
Component : A,U,V
Rx Sensor : Digi-Atlantis B-Field
Gate Times : SMARTem24 Standard

TRANSMITTER

Transmitter : Phoenix TXU-30
Loop : Loop_2
Tx Turns : 1
Tx Current : 27.736-27.854 A
Turn Off : 0.8 ms



0 100 200 300

Scale 1:6000

Kobold Metals
Crystal Lake Project
Loop 2 Grid

Borehole TEM Survey

CRLK-TB-19

Surveyed By: Connor Harrison
Survey Date: December 2021

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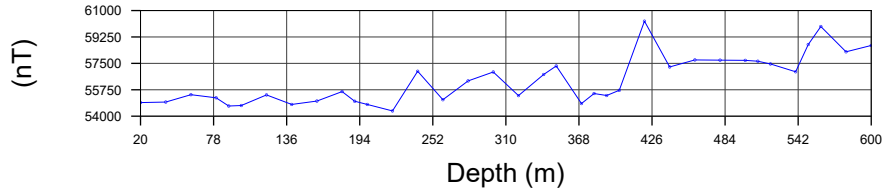
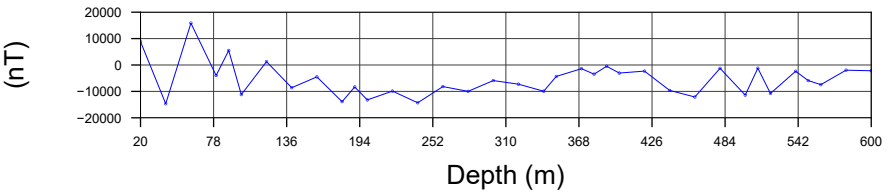
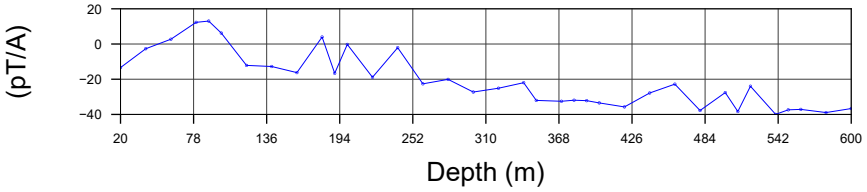
Total Magnetic Intensity



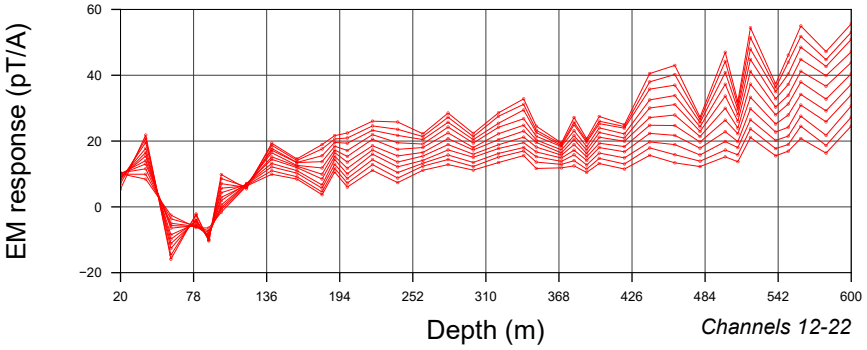
V Component Magnetic Intensity



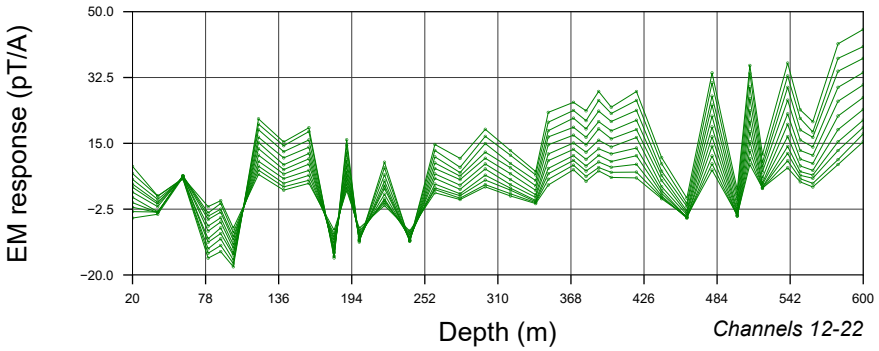
V Component - Primary Field



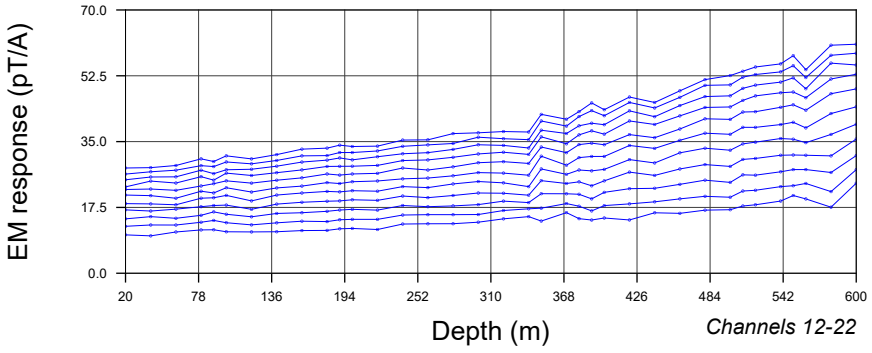
U Component - 1.08 ms to 9.39 ms



V Component - 1.08 ms to 9.39 ms



A Component - 1.08 ms to 9.39 ms



SURVEY PARAMETERS

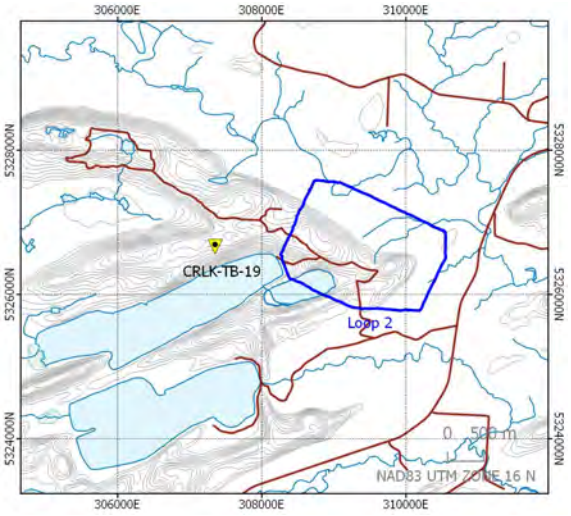
Configuration : Borehole TEM
Station Spacing : 10-20 m

RECEIVER

Receiver : SMARTem24
Frequency : 0.25 Hz
Component : A,U,V
Rx Sensor : Digi-Atlantis B-Field
Gate Times : SMARTem24 Standard

TRANSMITTER

Transmitter : Phoenix TXU-30
Loop : Loop_2
Tx Turns : 1
Tx Current : 27.736-27.854 A
Turn Off : 0.8 ms



0 100 200 300

Scale 1:6000

Kobold Metals
Crystal Lake Project
Loop 2 Grid

Borehole TEM Survey

CRLK-TB-19

Surveyed By: Connor Harrison
Survey Date: December 2021

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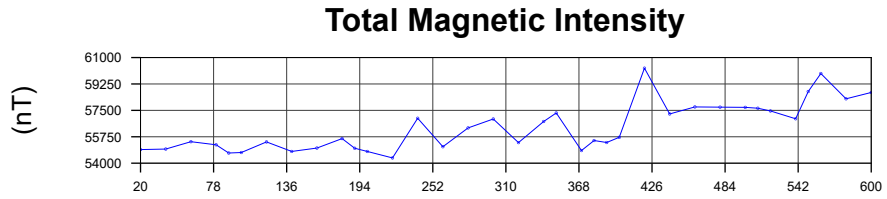
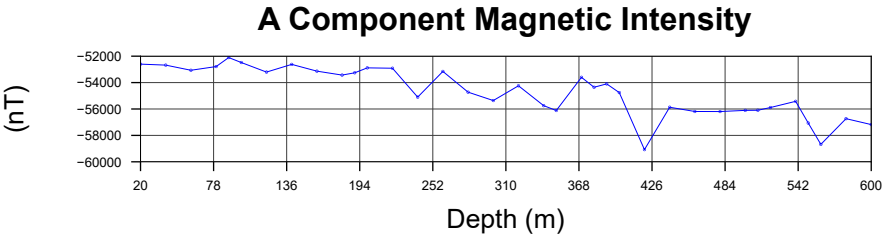
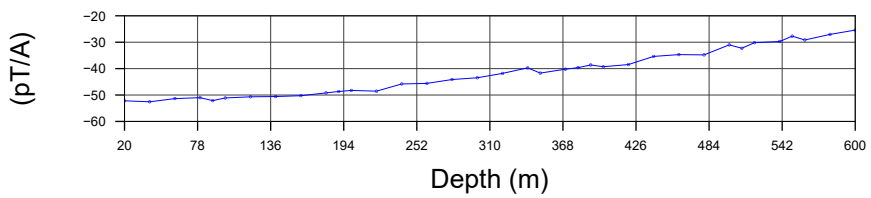
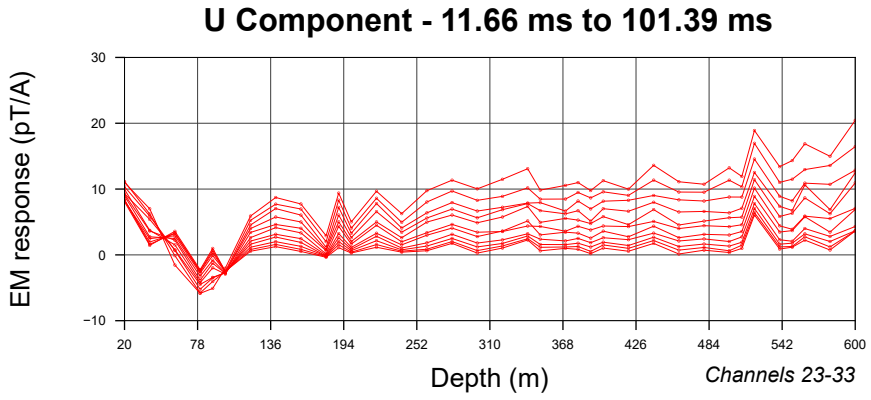
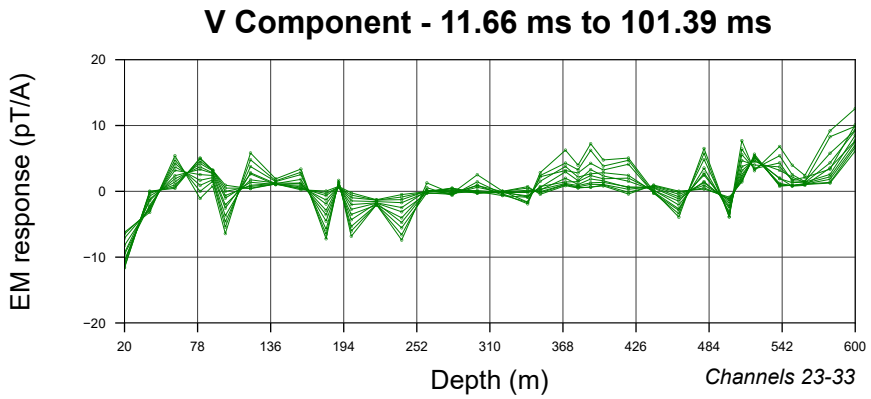
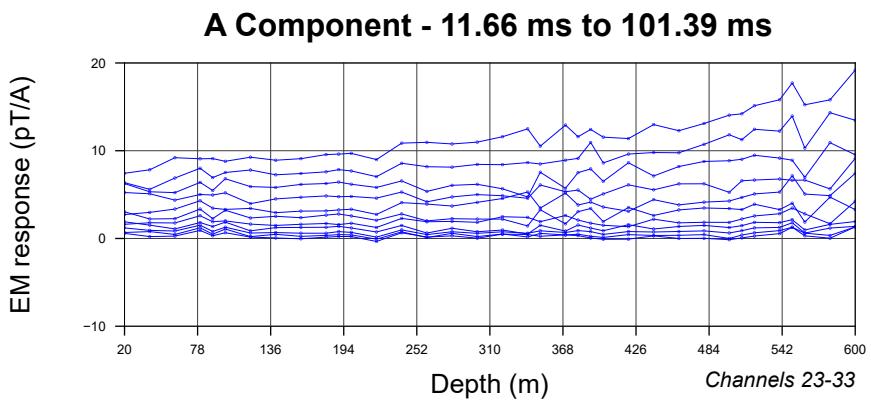












SURVEY PARAMETERS

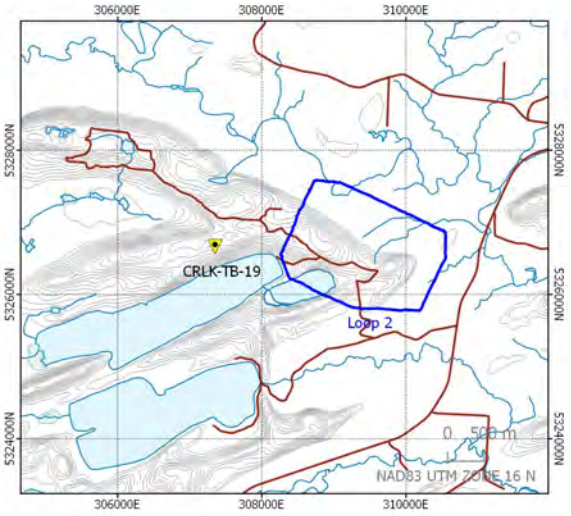
Configuration : Borehole TEM
Station Spacing : 10-20 m

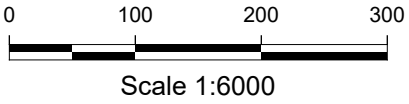
RECEIVER

Receiver : SMARTem24
Frequency : 0.25 Hz
Component : A,U,V
Rx Sensor : Digi-Atlantis B-Field
Gate Times : SMARTem24 Standard

TRANSMITTER

Transmitter : Phoenix TXU-30
Loop : Loop_2
Tx Turns : 1
Tx Current : 27.736-27.854 A
Turn Off : 0.8 ms





Scale 1:6000

Kobold Metals
Crystal Lake Project
Loop 2 Grid

Borehole TEM Survey

CRLK-TB-19

Surveyed By: Connor Harrison
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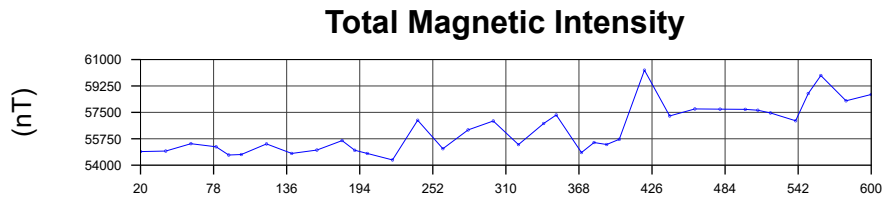
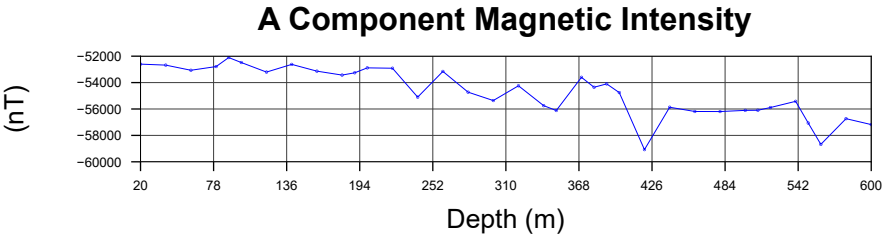
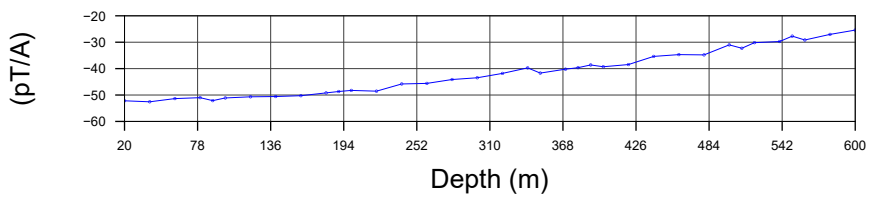
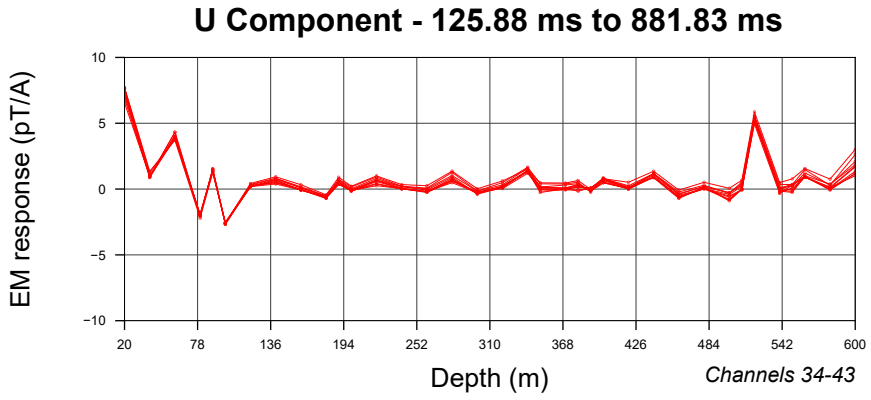
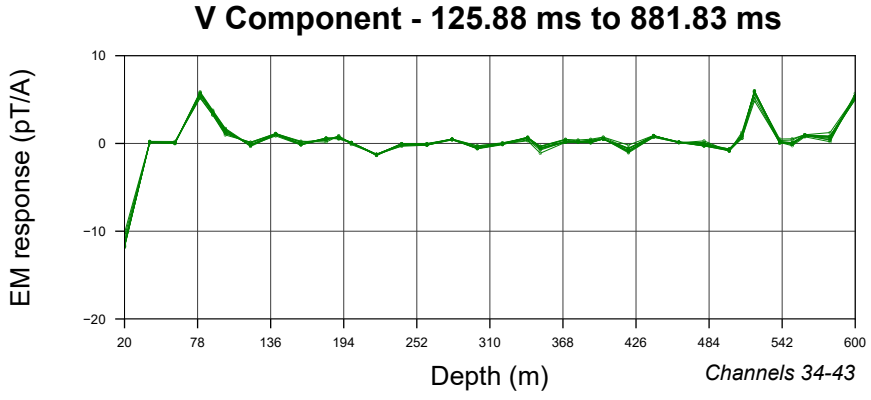
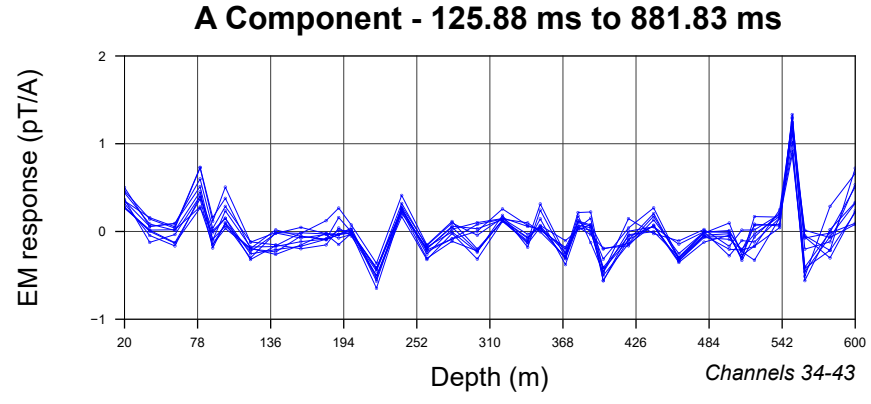












SURVEY PARAMETERS

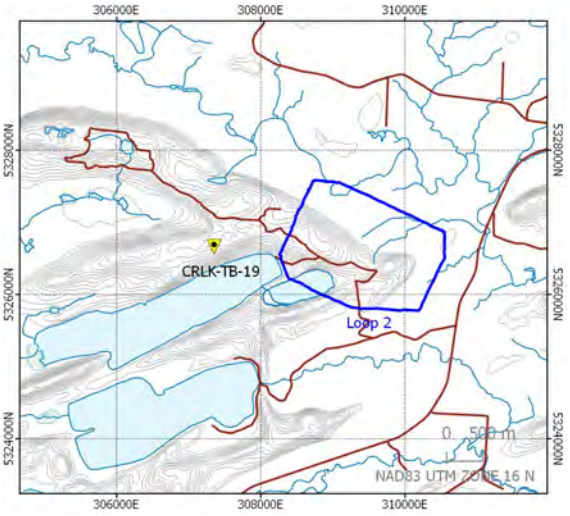
Configuration : Borehole TEM
Station Spacing : 10-20 m

RECEIVER

Receiver : SMARTem24
Frequency : 0.25 Hz
Component : A,U,V
Rx Sensor : Digi-Atlantis B-Field
Gate Times : SMARTem24 Standard

TRANSMITTER

Transmitter : Phoenix TXU-30
Loop : Loop_2
Tx Turns : 1
Tx Current : 27.736-27.854 A
Turn Off : 0.8 ms



Scale 1:6000

Kobold Metals
Crystal Lake Project
Loop 2 Grid

Borehole TEM Survey

CRLK-TB-19

Surveyed By: Connor Harrison
Survey Date: December 2021

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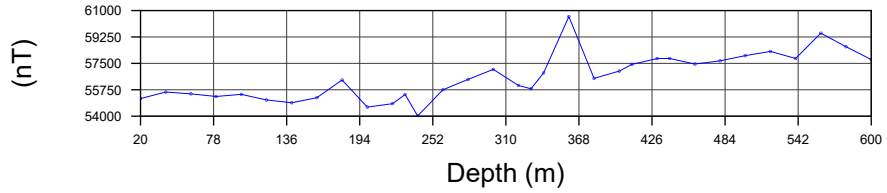
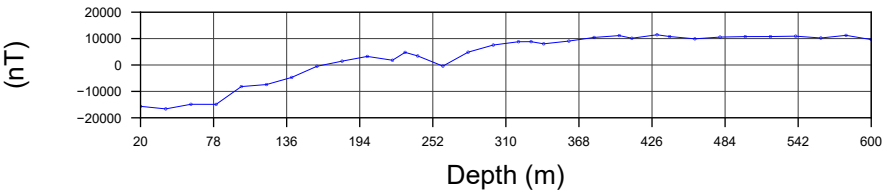
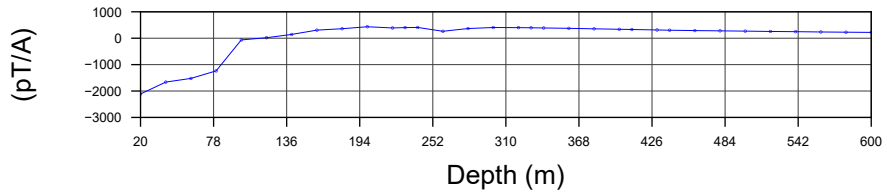
Total Magnetic Intensity



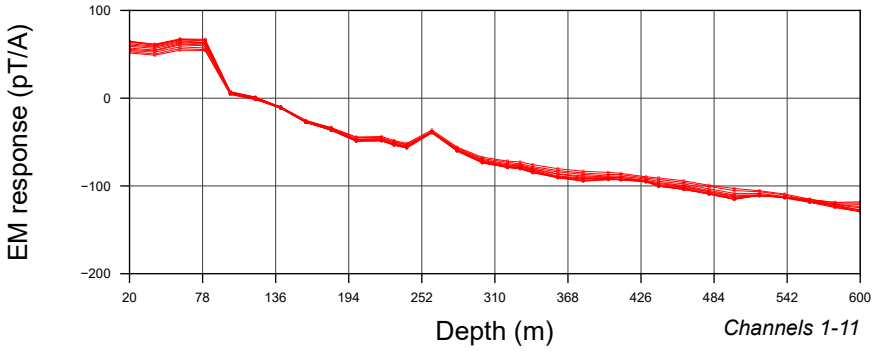
U Component Magnetic Intensity



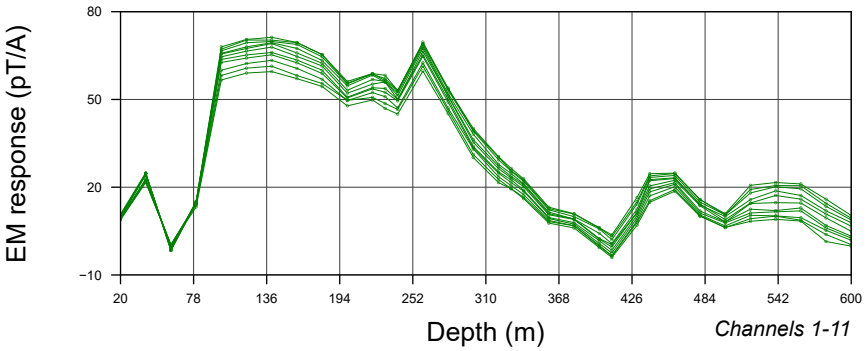
U Component - Primary Field



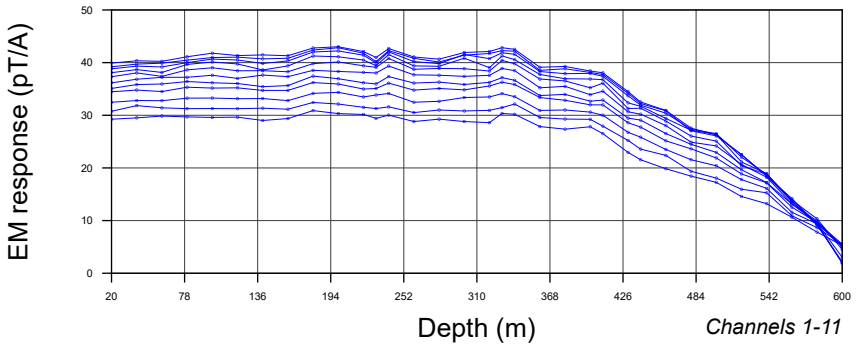
U Component - 0.10 ms to 0.87 ms



V Component - 0.10 ms to 0.87 ms



A Component - 0.10 ms to 0.87 ms



SURVEY PARAMETERS

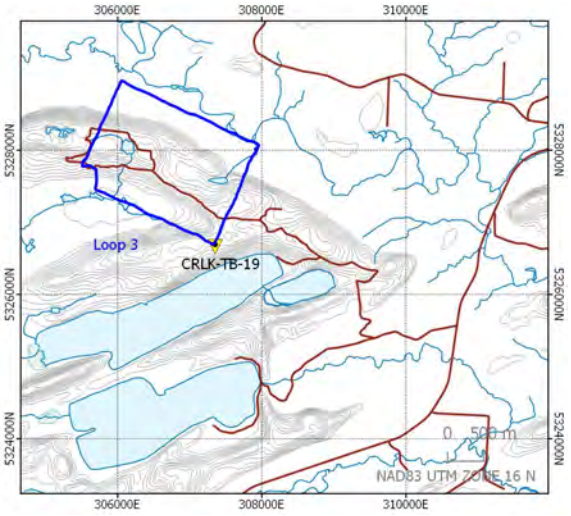
Configuration : Borehole TEM
Station Spacing : 10-20 m

RECEIVER

Receiver : SMARTem24
Frequency : 0.25 Hz
Component : A,U,V
Rx Sensor : Digi-Atlantis B-Field
Gate Times : SMARTem24 Standard

TRANSMITTER

Transmitter : Phoenix TXU-30
Loop : Loop_3
Tx Turns : 1
Tx Current : 27.73-27.883 A
Turn Off : 0.8 ms



0 100 200 300

Scale 1:6000

Kobold Metals
Crystal Lake Project
Loop 3 Grid

Borehole TEM Survey

CRLK-TB-19

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Survey Date: December 2021

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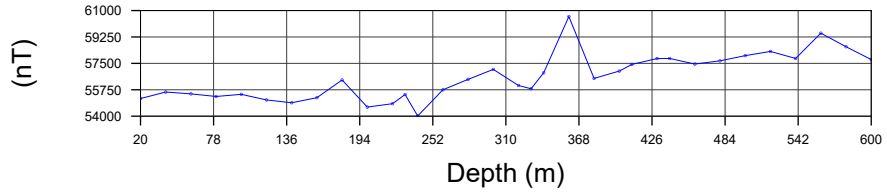
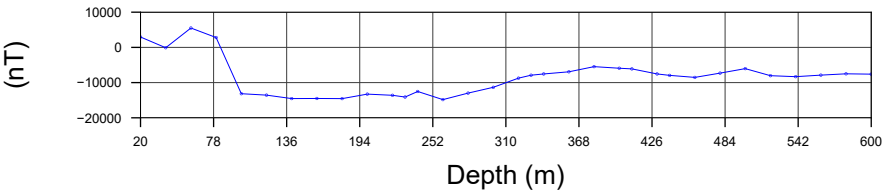
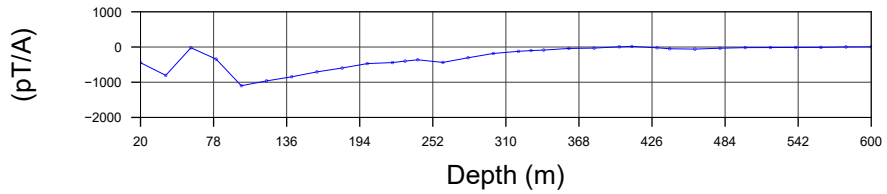
Total Magnetic Intensity



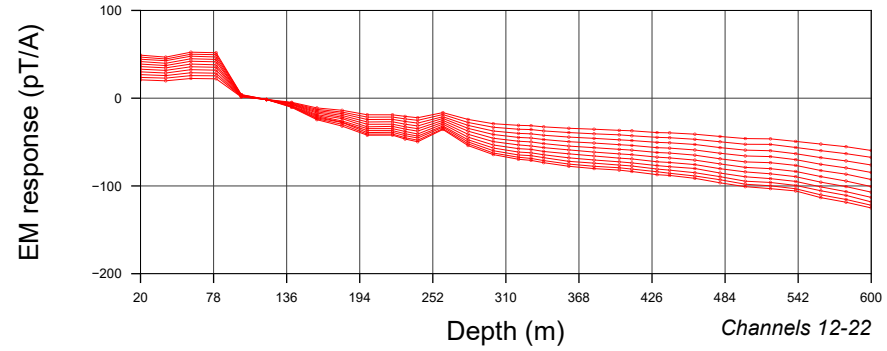
V Component Magnetic Intensity



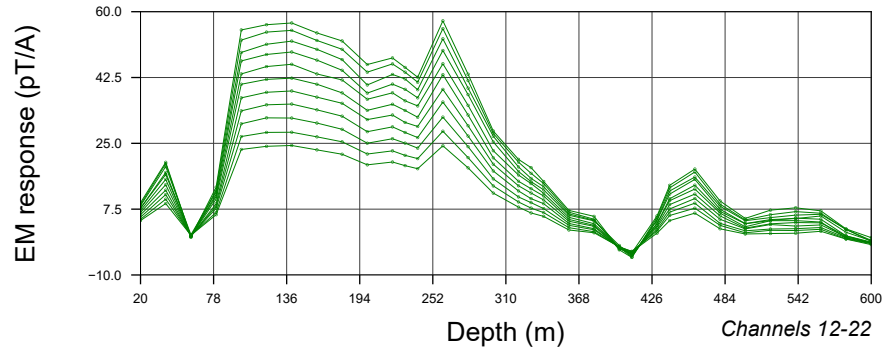
V Component - Primary Field



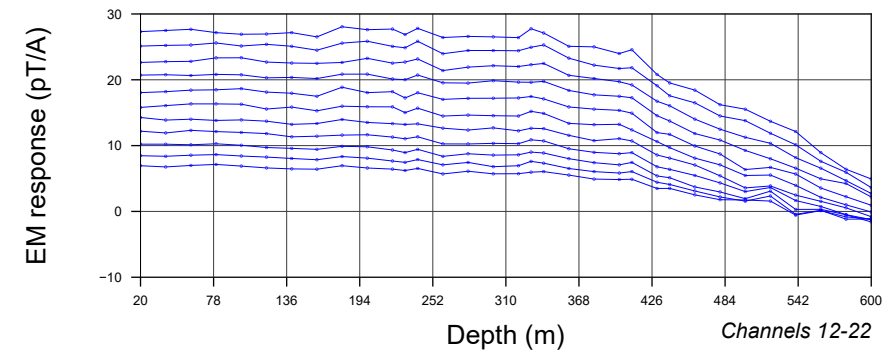
U Component - 1.08 ms to 9.39 ms



V Component - 1.08 ms to 9.39 ms



A Component - 1.08 ms to 9.39 ms



SURVEY PARAMETERS

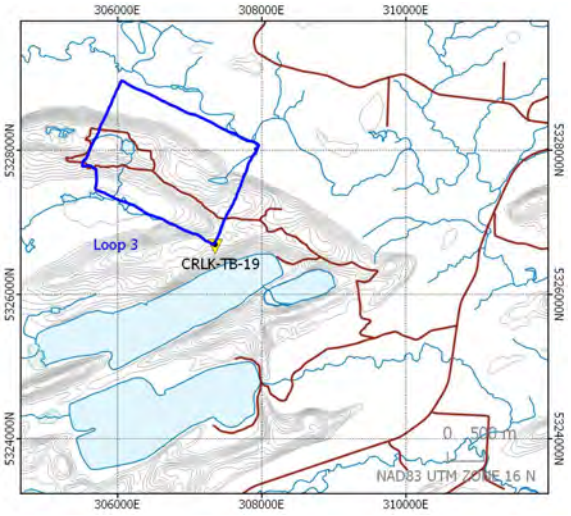
Configuration : Borehole TEM
Station Spacing : 10-20 m

RECEIVER

Receiver : SMARTem24
Frequency : 0.25 Hz
Component : A,U,V
Rx Sensor : Digi-Atlantis B-Field
Gate Times : SMARTem24 Standard

TRANSMITTER

Transmitter : Phoenix TXU-30
Loop : Loop_3
Tx Turns : 1
Tx Current : 27.73-27.883 A
Turn Off : 0.8 ms



0 100 200 300

Scale 1:6000

Kobold Metals
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Loop 3 Grid

Borehole TEM Survey

CRLK-TB-19

Surveyed By: Connor Harrison
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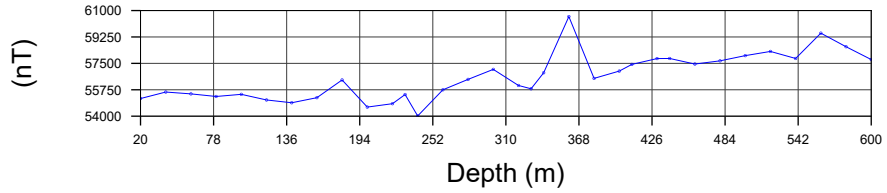
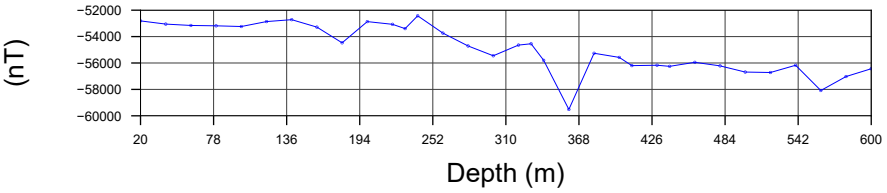
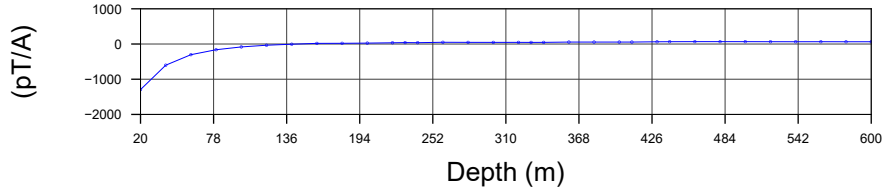
Total Magnetic Intensity



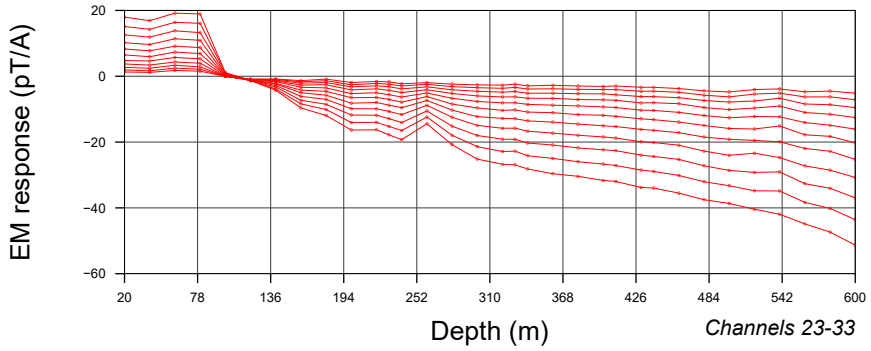
A Component Magnetic Intensity



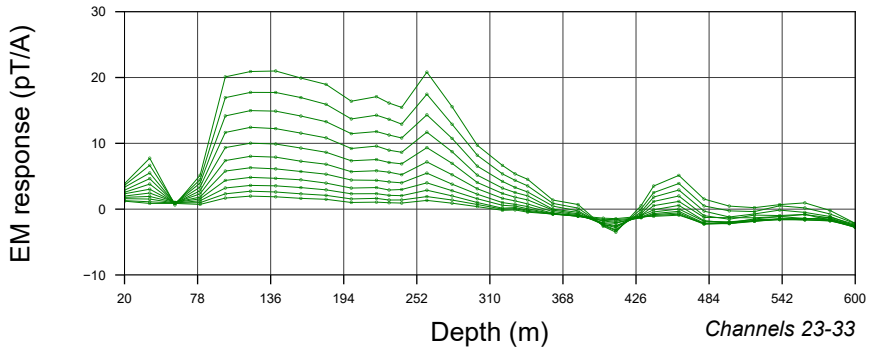
A Component - Primary Field



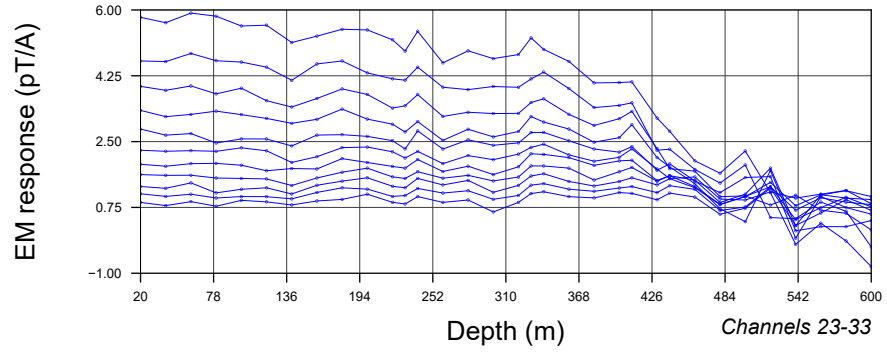
U Component - 11.66 ms to 101.39 ms



V Component - 11.66 ms to 101.39 ms



A Component - 11.66 ms to 101.39 ms



SURVEY PARAMETERS

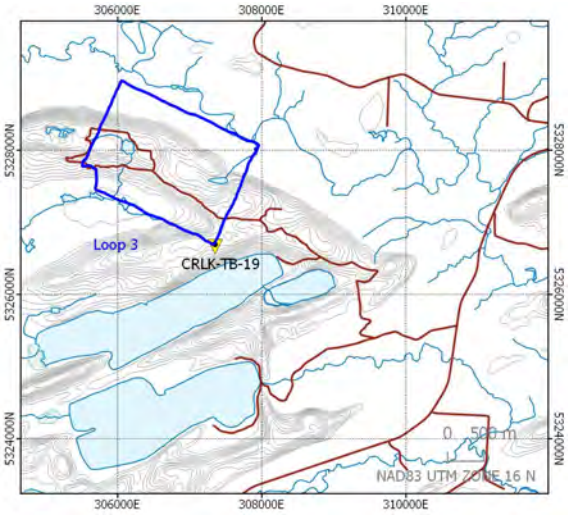
Configuration : Borehole TEM
Station Spacing : 10-20 m

RECEIVER

Receiver : SMARTem24
Frequency : 0.25 Hz
Component : A,U,V
Rx Sensor : Digi-Atlantis B-Field
Gate Times : SMARTem24 Standard

TRANSMITTER

Transmitter : Phoenix TXU-30
Loop : Loop_3
Tx Turns : 1
Tx Current : 27.73-27.883 A
Turn Off : 0.8 ms



Scale 1:6000

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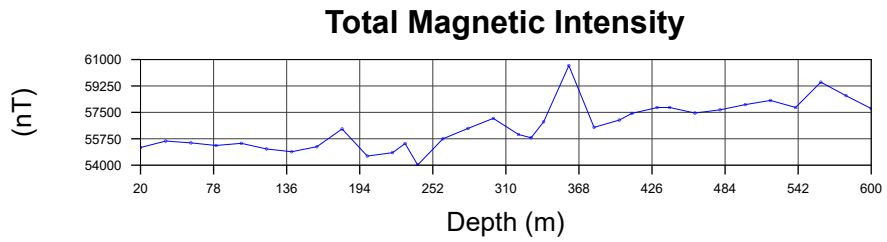
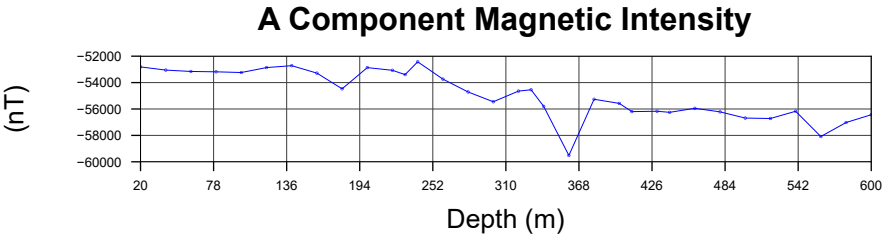
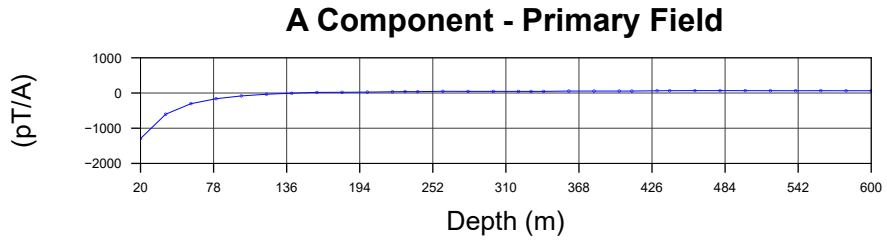
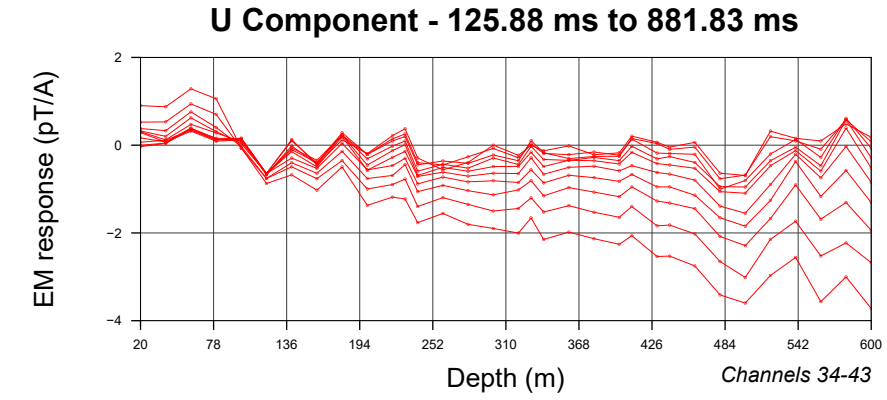
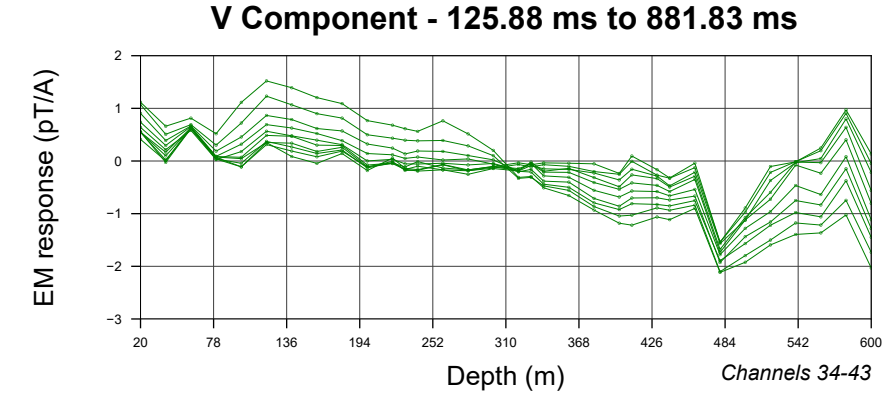
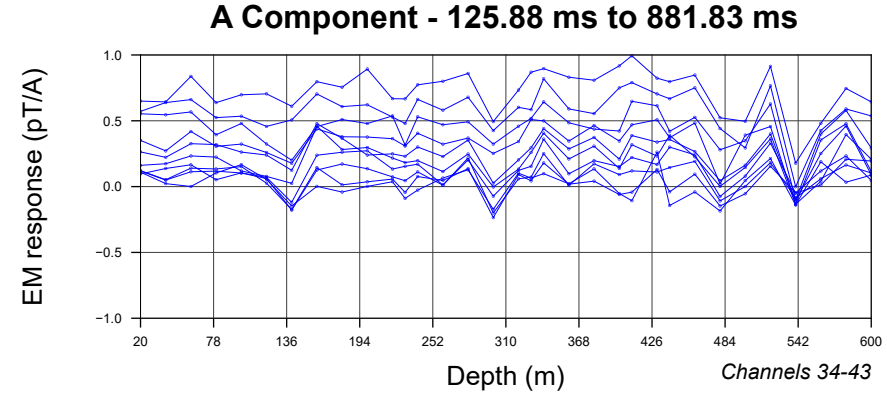












SURVEY PARAMETERS

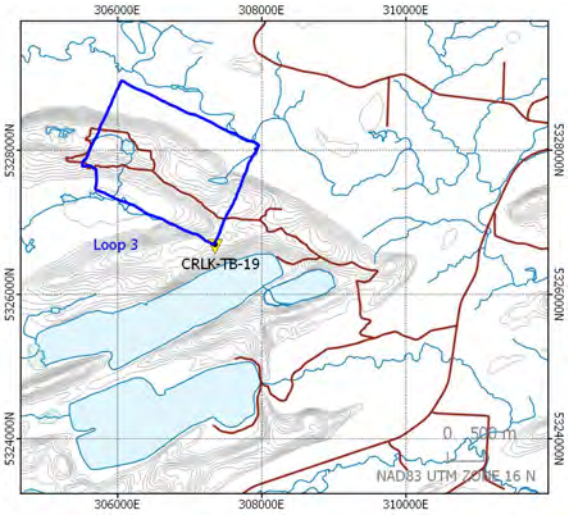
Configuration : Borehole TEM
Station Spacing : 10-20 m

RECEIVER

Receiver : SMARTem24
Frequency : 0.25 Hz
Component : A,U,V
Rx Sensor : Digi-Atlantis B-Field
Gate Times : SMARTem24 Standard

TRANSMITTER

Transmitter : Phoenix TXU-30
Loop : Loop_3
Tx Turns : 1
Tx Current : 27.73-27.883 A
Turn Off : 0.8 ms



0 100 200 300

Scale 1:6000

Kobold Metals
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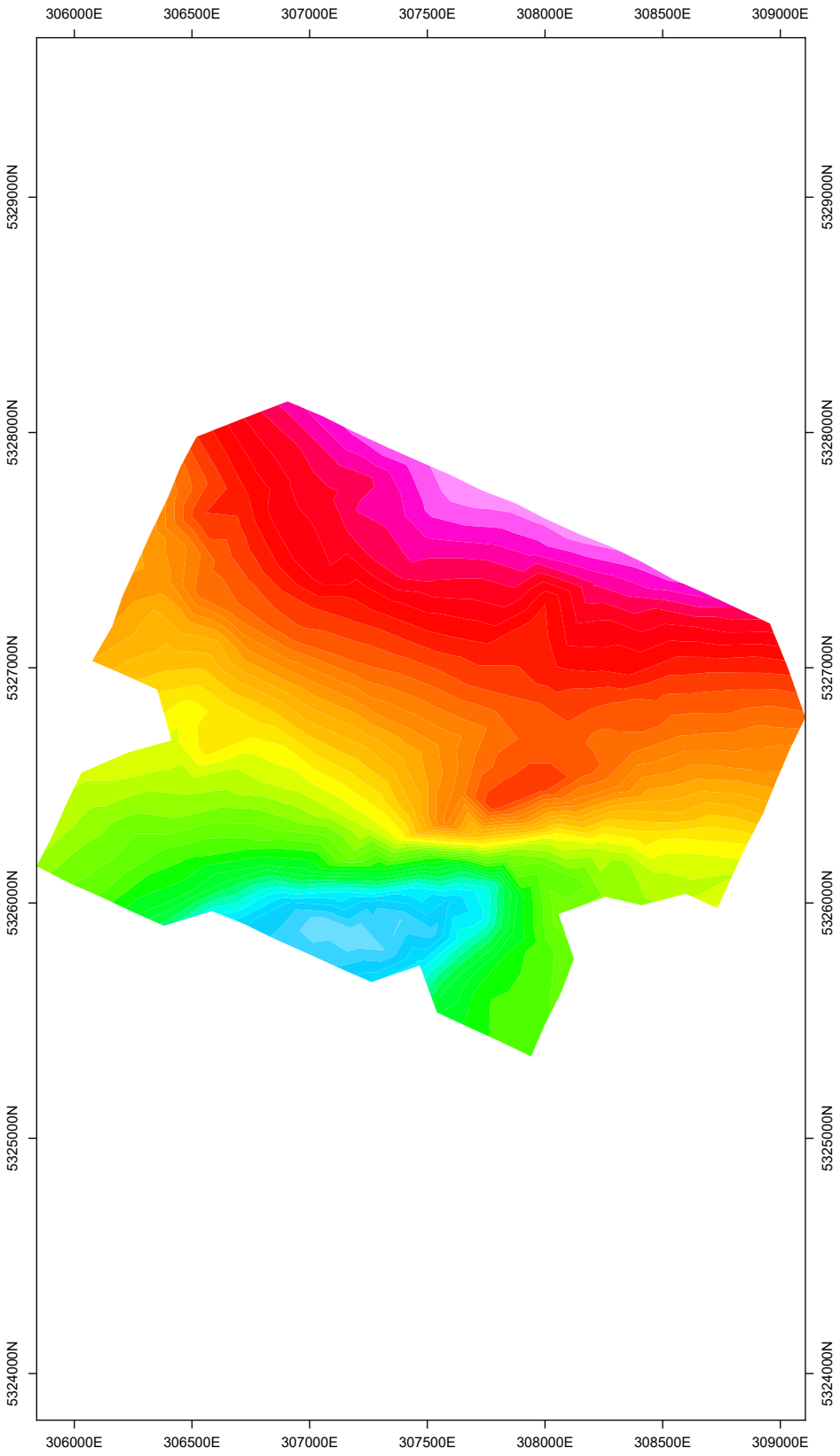
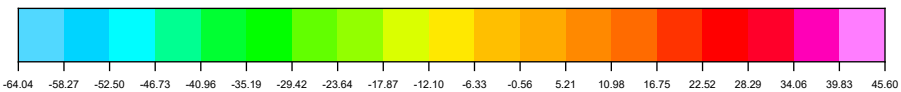
APPENDIX D – FIXED LOOP TEM PROFILE PLOTS



CH10 : X Component



pT/A

SURVEY PARAMETERS

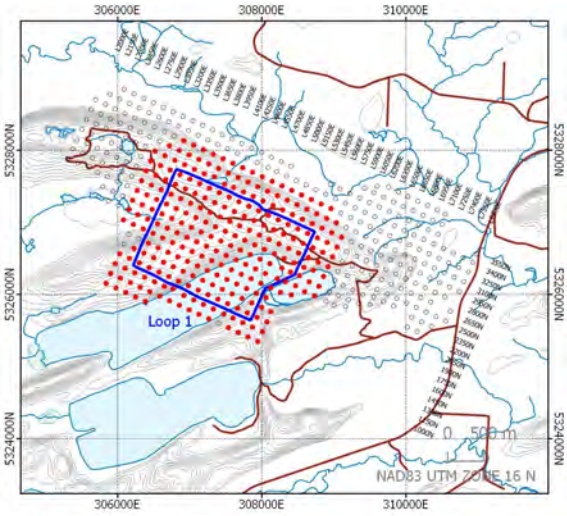
Configuration	: Fixed Loop TEM
Station Spacing	: 150 m
Loop	: Loop 1

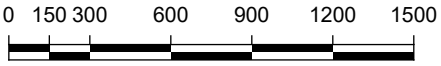
RECEIVER

Receiver	: SMARTem24
Frequency	: 0.25 Hz Hz
Component	: X,Y,Z
Rx Sensor	: Supracon JD LT SQUID
Gate Times	: SMARTem24 Standard

TRANSMITTER

Transmitter	: Phoenix TXU-30
Tx Turns	: 1
Tx Current	: ~28 A
Turn Off	: 0.800 ms





Scale 1:28000

Kobold Metals
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Loop 1 Grid

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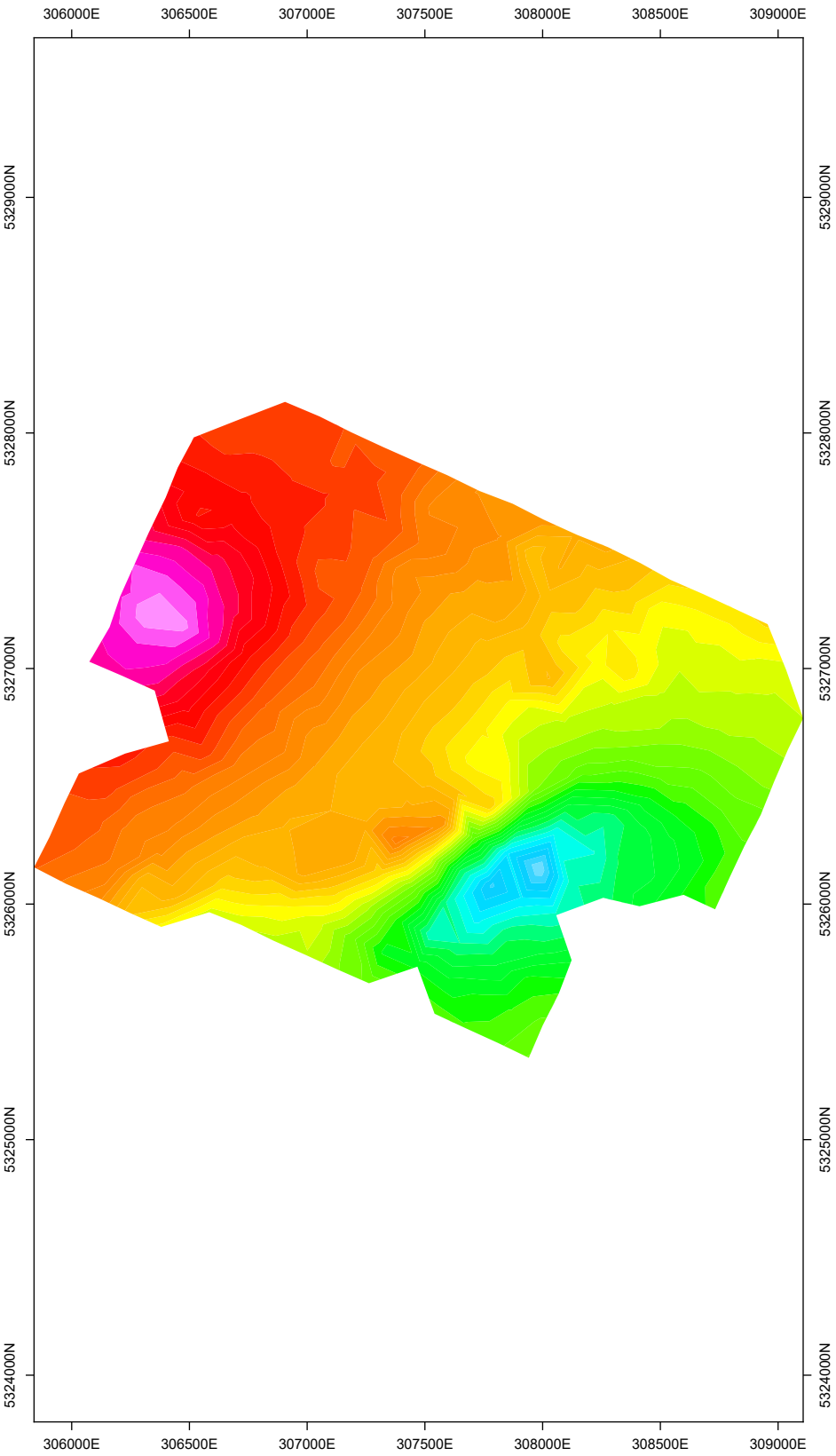
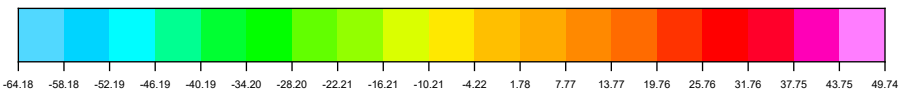


CH10 : Y Component



pT/A

SURVEY PARAMETERS

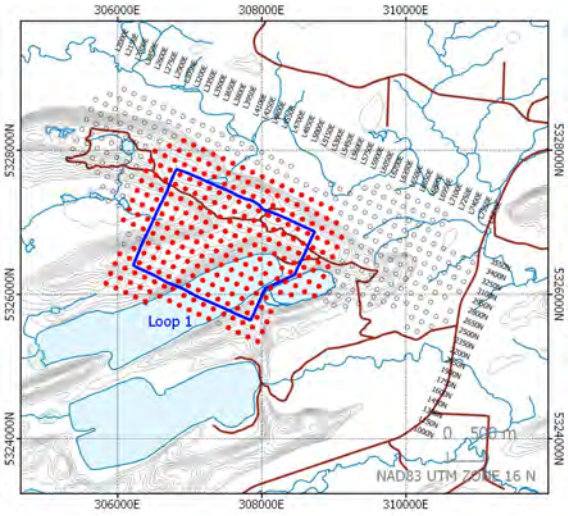
Configuration	: Fixed Loop TEM
Station Spacing	: 150 m
Loop	: Loop 1

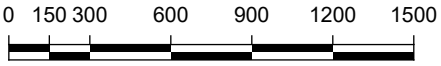
RECEIVER

Receiver	: SMARTem24
Frequency	: 0.25 Hz Hz
Component	: X,Y,Z
Rx Sensor	: Supracon JD LT SQUID
Gate Times	: SMARTem24 Standard

TRANSMITTER

Transmitter	: Phoenix TXU-30
Tx Turns	: 1
Tx Current	: ~28 A
Turn Off	: 0.800 ms





Scale 1:28000

Kobold Metals
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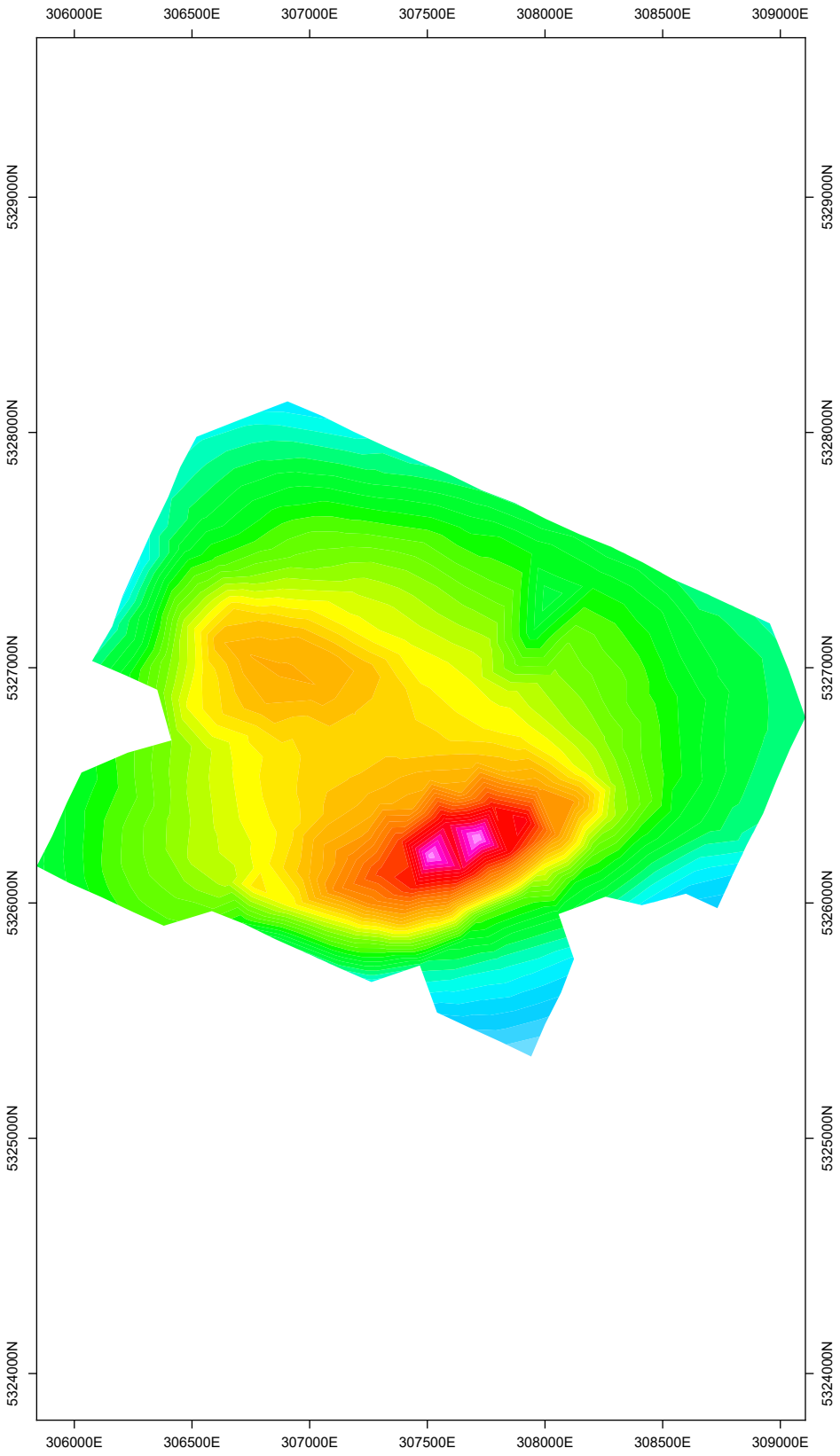
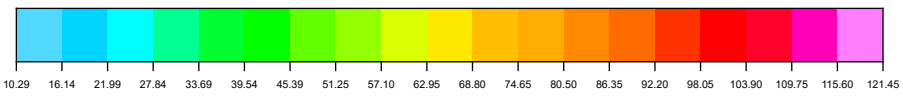


CH10 : Z Component



pT/A

SURVEY PARAMETERS

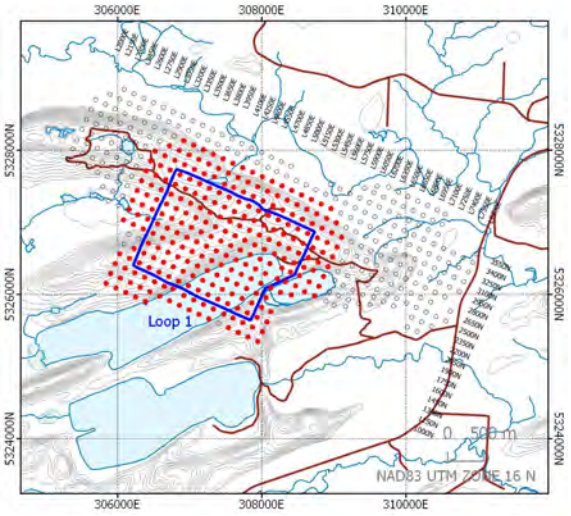
Configuration	: Fixed Loop TEM
Station Spacing	: 150 m
Loop	: Loop 1

RECEIVER

Receiver	: SMARTem24
Frequency	: 0.25 Hz Hz
Component	: X,Y,Z
Rx Sensor	: Supracon JD LT SQUID
Gate Times	: SMARTem24 Standard

TRANSMITTER

Transmitter	: Phoenix TXU-30
Tx Turns	: 1
Tx Current	: ~28 A
Turn Off	: 0.800 ms



0 150 300 600 900 1200 1500

Scale 1:28000

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Crystal Lake Project
Loop 1 Grid

Fixed Loop TEM Survey

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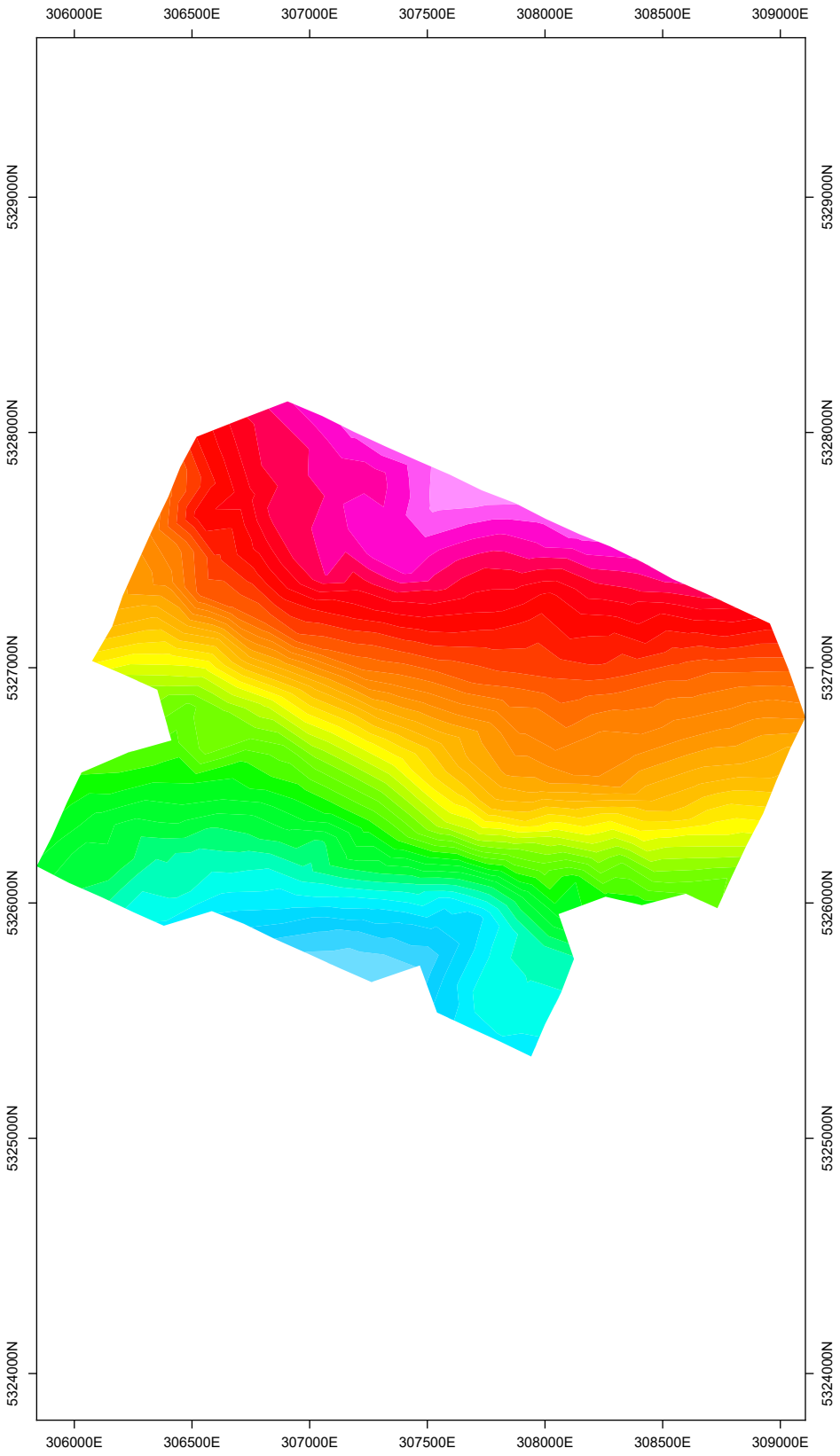
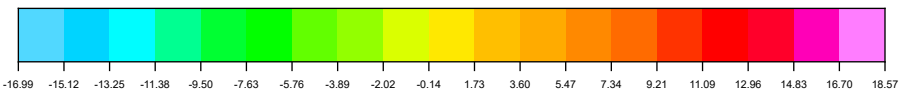


CH20 : X Component



pT/A

SURVEY PARAMETERS

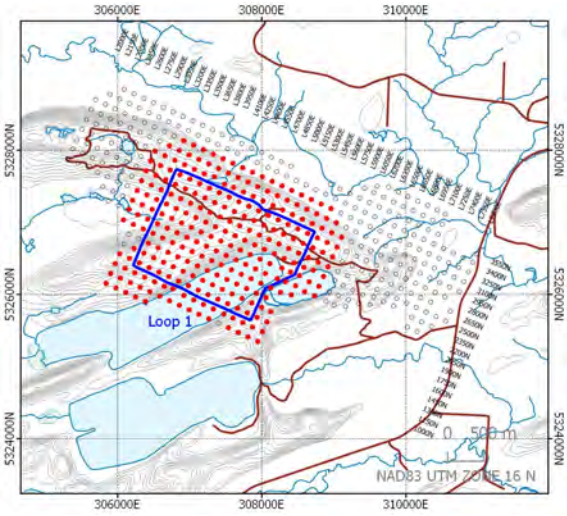
Configuration	: Fixed Loop TEM
Station Spacing	: 150 m
Loop	: Loop 1

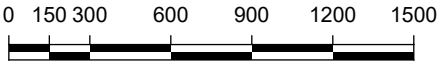
RECEIVER

Receiver	: SMARTem24
Frequency	: 0.25 Hz Hz
Component	: X,Y,Z
Rx Sensor	: Supracon JD LT SQUID
Gate Times	: SMARTem24 Standard

TRANSMITTER

Transmitter	: Phoenix TXU-30
Tx Turns	: 1
Tx Current	: ~28 A
Turn Off	: 0.800 ms





Scale 1:28000

Kobold Metals
Crystal Lake Project
Loop 1 Grid

Fixed Loop TEM Survey

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Survey Date: February 2022

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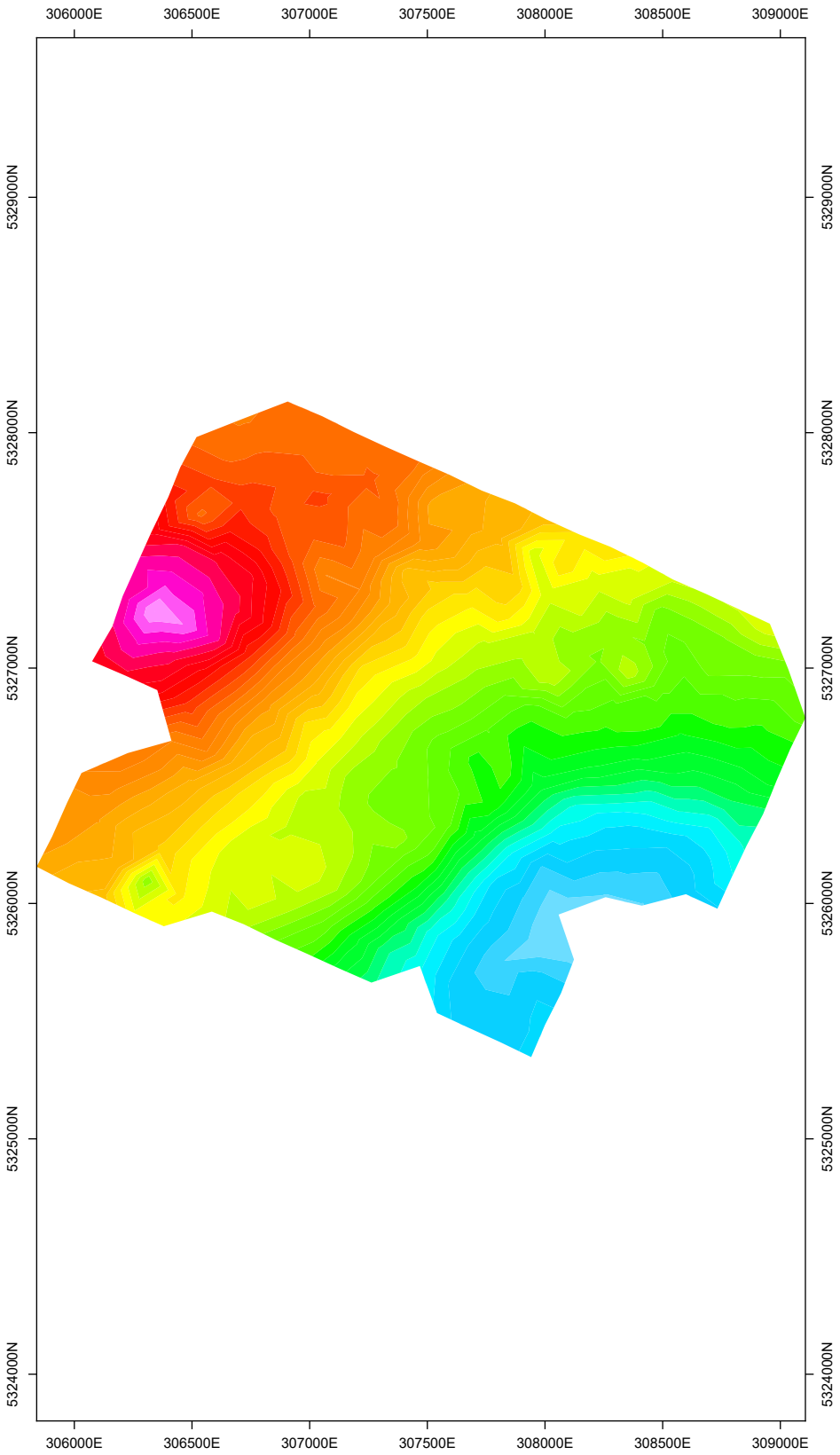
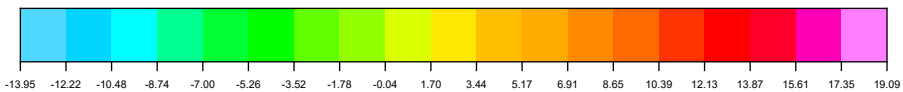


CH20 : Y Component



pT/A

SURVEY PARAMETERS

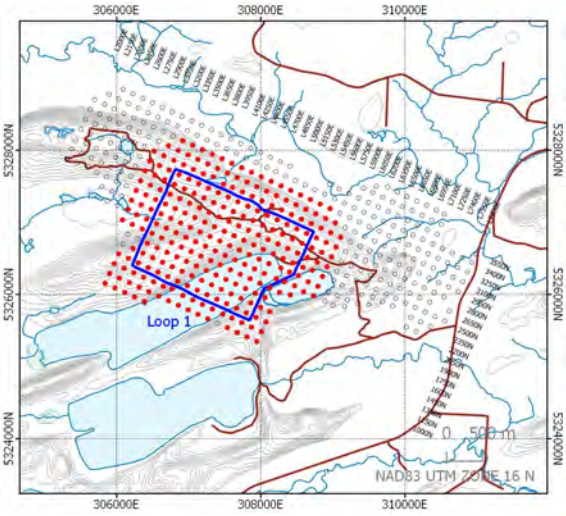
Configuration	: Fixed Loop TEM
Station Spacing	: 150 m
Loop	: Loop 1

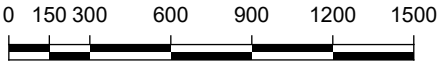
RECEIVER

Receiver	: SMARTem24
Frequency	: 0.25 Hz Hz
Component	: X,Y,Z
Rx Sensor	: Supracon JD LT SQUID
Gate Times	: SMARTem24 Standard

TRANSMITTER

Transmitter	: Phoenix TXU-30
Tx Turns	: 1
Tx Current	: ~28 A
Turn Off	: 0.800 ms





Scale 1:28000

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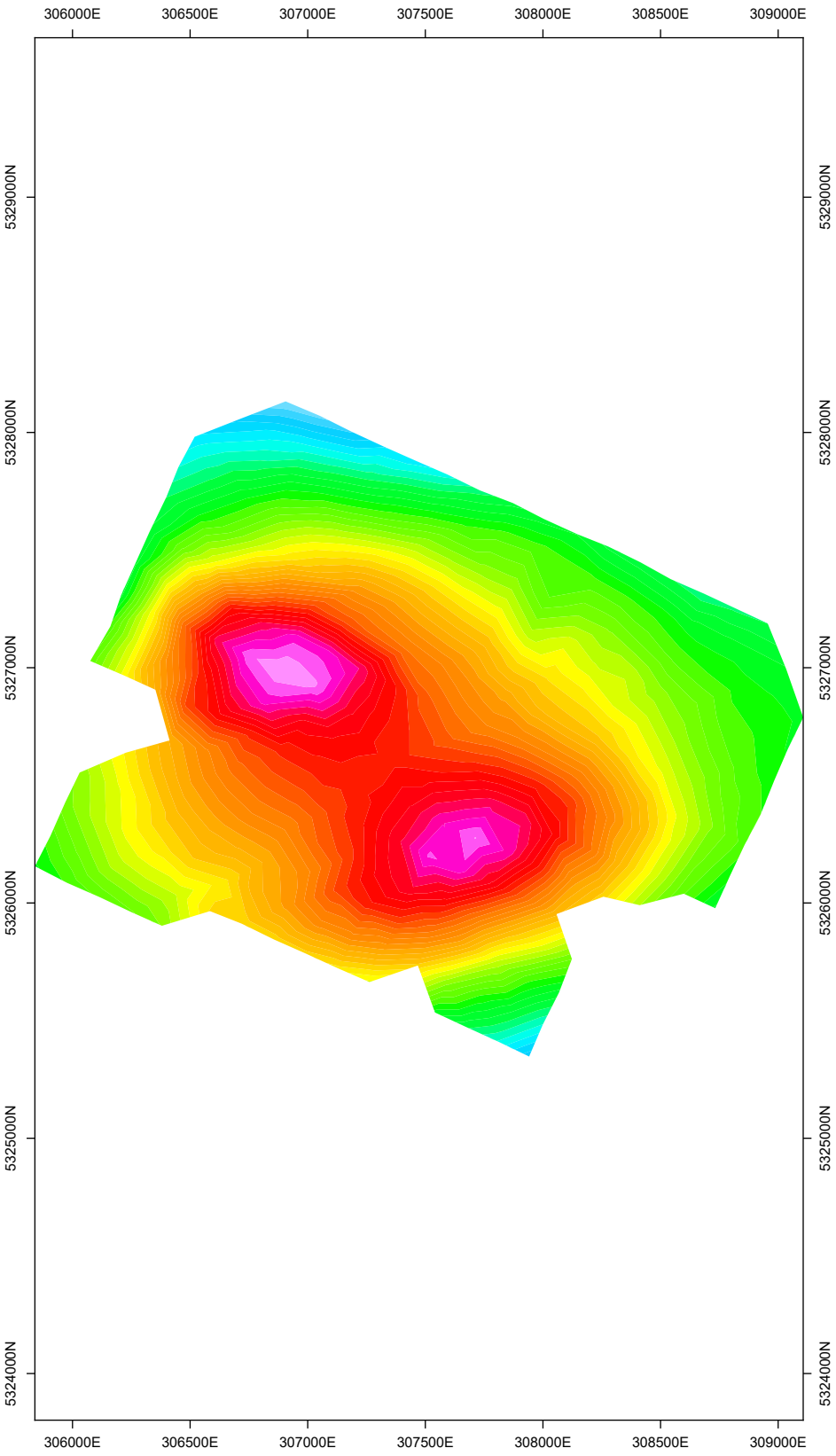
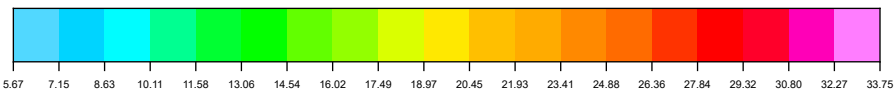


CH20 : Z Component



pT/A

SURVEY PARAMETERS

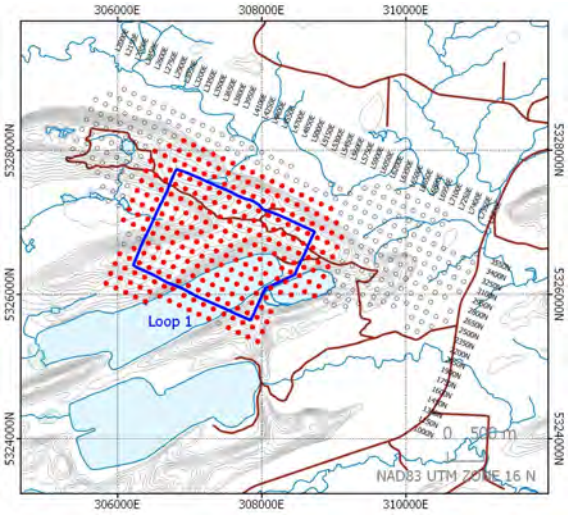
Configuration	: Fixed Loop TEM
Station Spacing	: 150 m
Loop	: Loop 1

RECEIVER

Receiver	: SMARTem24
Frequency	: 0.25 Hz Hz
Component	: X,Y,Z
Rx Sensor	: Supracon JD LT SQUID
Gate Times	: SMARTem24 Standard

TRANSMITTER

Transmitter	: Phoenix TXU-30
Tx Turns	: 1
Tx Current	: ~28 A
Turn Off	: 0.800 ms



0 150 300 600 900 1200 1500

Scale 1:28000

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Crystal Lake Project
Loop 1 Grid

Fixed Loop TEM Survey

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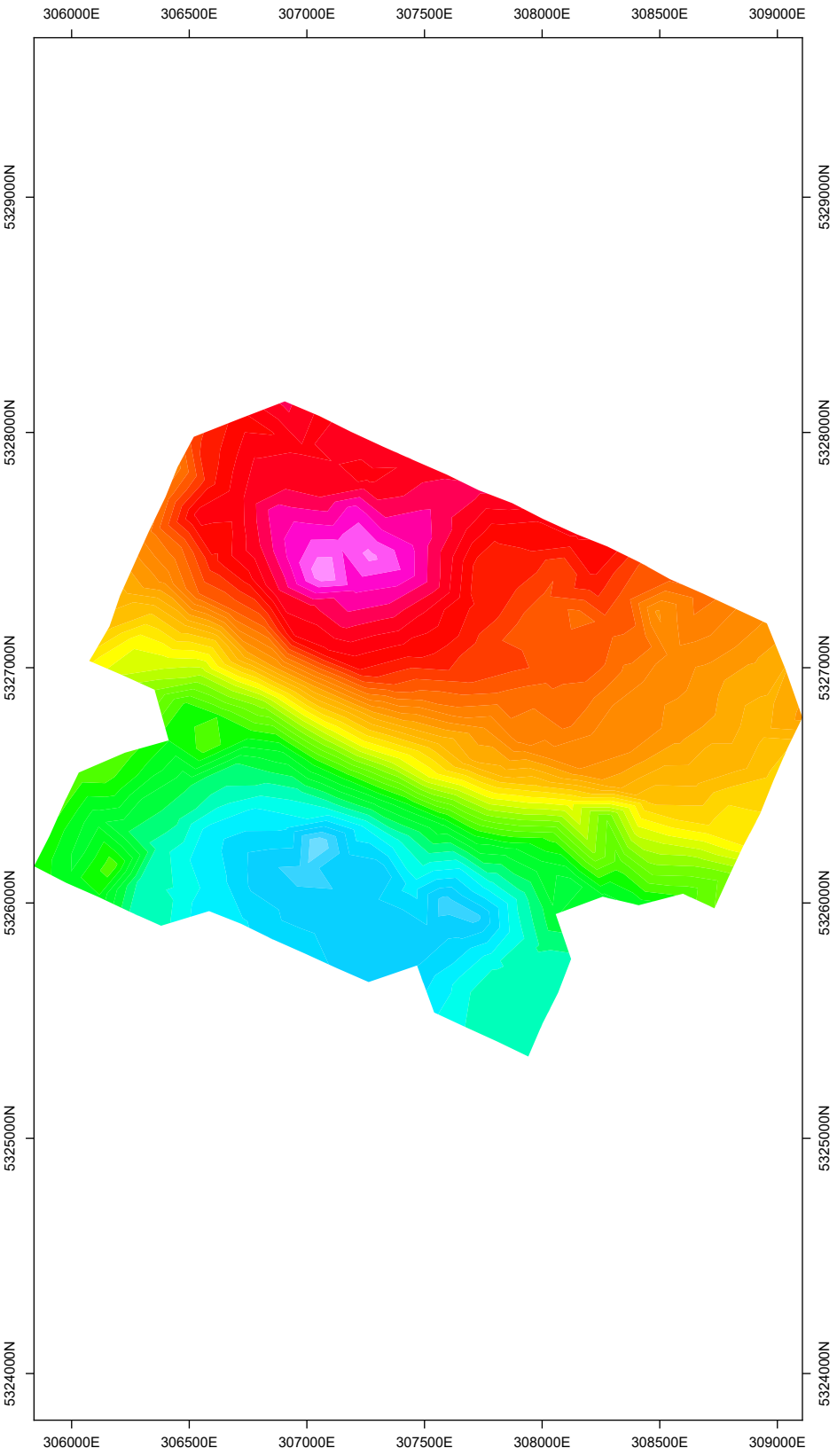
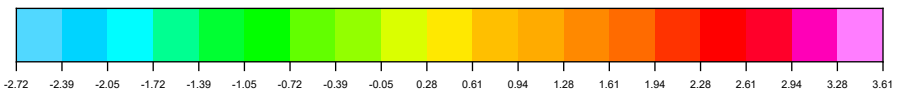


CH30 : X Component



pT/A

SURVEY PARAMETERS

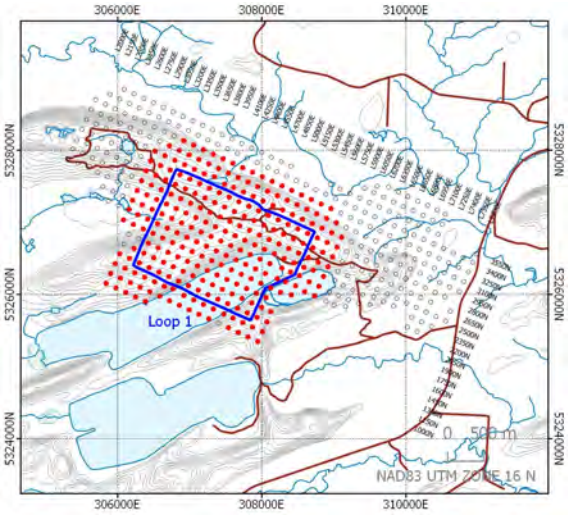
Configuration	: Fixed Loop TEM
Station Spacing	: 150 m
Loop	: Loop 1

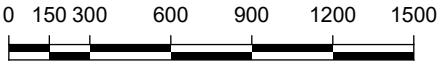
RECEIVER

Receiver	: SMARTem24
Frequency	: 0.25 Hz Hz
Component	: X,Y,Z
Rx Sensor	: Supracon JD LT SQUID
Gate Times	: SMARTem24 Standard

TRANSMITTER

Transmitter	: Phoenix TXU-30
Tx Turns	: 1
Tx Current	: ~28 A
Turn Off	: 0.800 ms





Scale 1:28000

Kobold Metals
Crystal Lake Project
Loop 1 Grid

Fixed Loop TEM Survey

Surveyed By: Connor Harrison
Survey Date: February 2022

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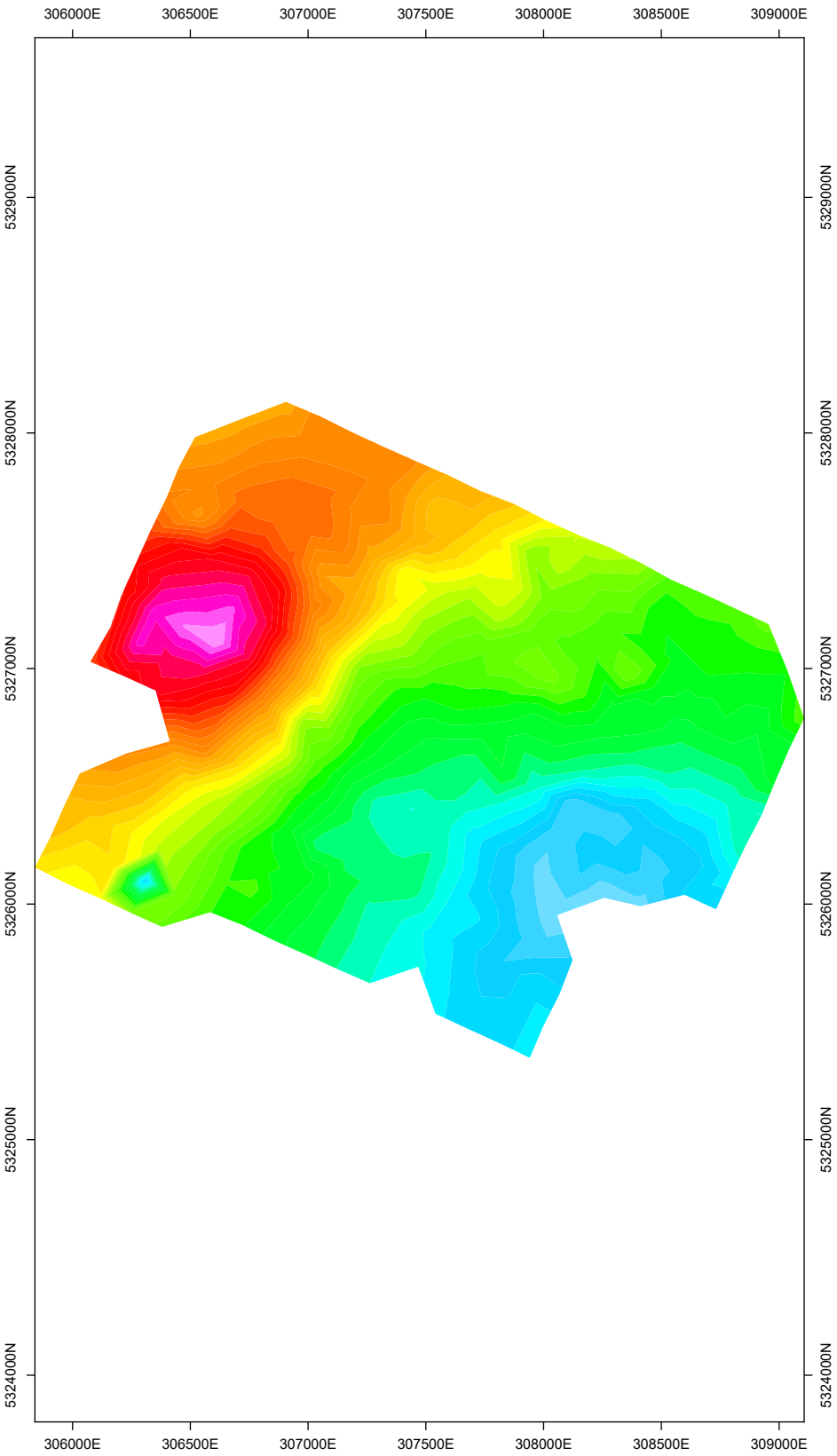
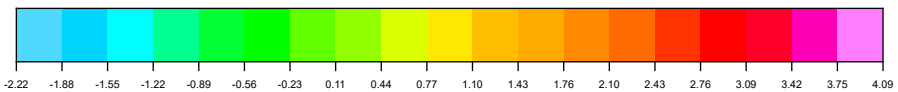


CH30 : Y Component



pT/A

SURVEY PARAMETERS

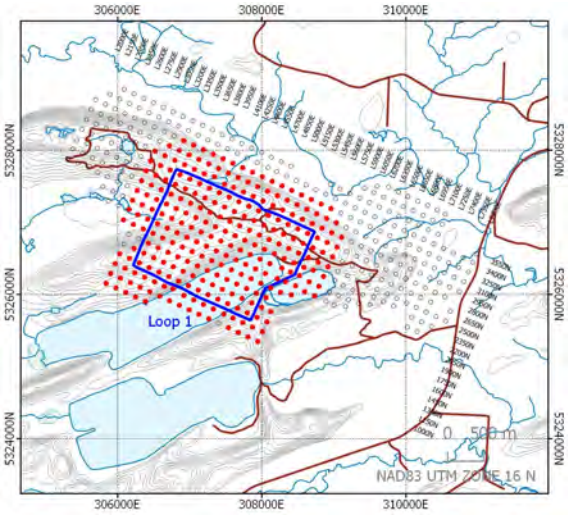
Configuration	: Fixed Loop TEM
Station Spacing	: 150 m
Loop	: Loop 1

RECEIVER

Receiver	: SMARTem24
Frequency	: 0.25 Hz Hz
Component	: X,Y,Z
Rx Sensor	: Supracon JD LT SQUID
Gate Times	: SMARTem24 Standard

TRANSMITTER

Transmitter	: Phoenix TXU-30
Tx Turns	: 1
Tx Current	: ~28 A
Turn Off	: 0.800 ms



0 150 300 600 900 1200 1500

Scale 1:28000

Kobold Metals
Crystal Lake Project
Loop 1 Grid

Fixed Loop TEM Survey

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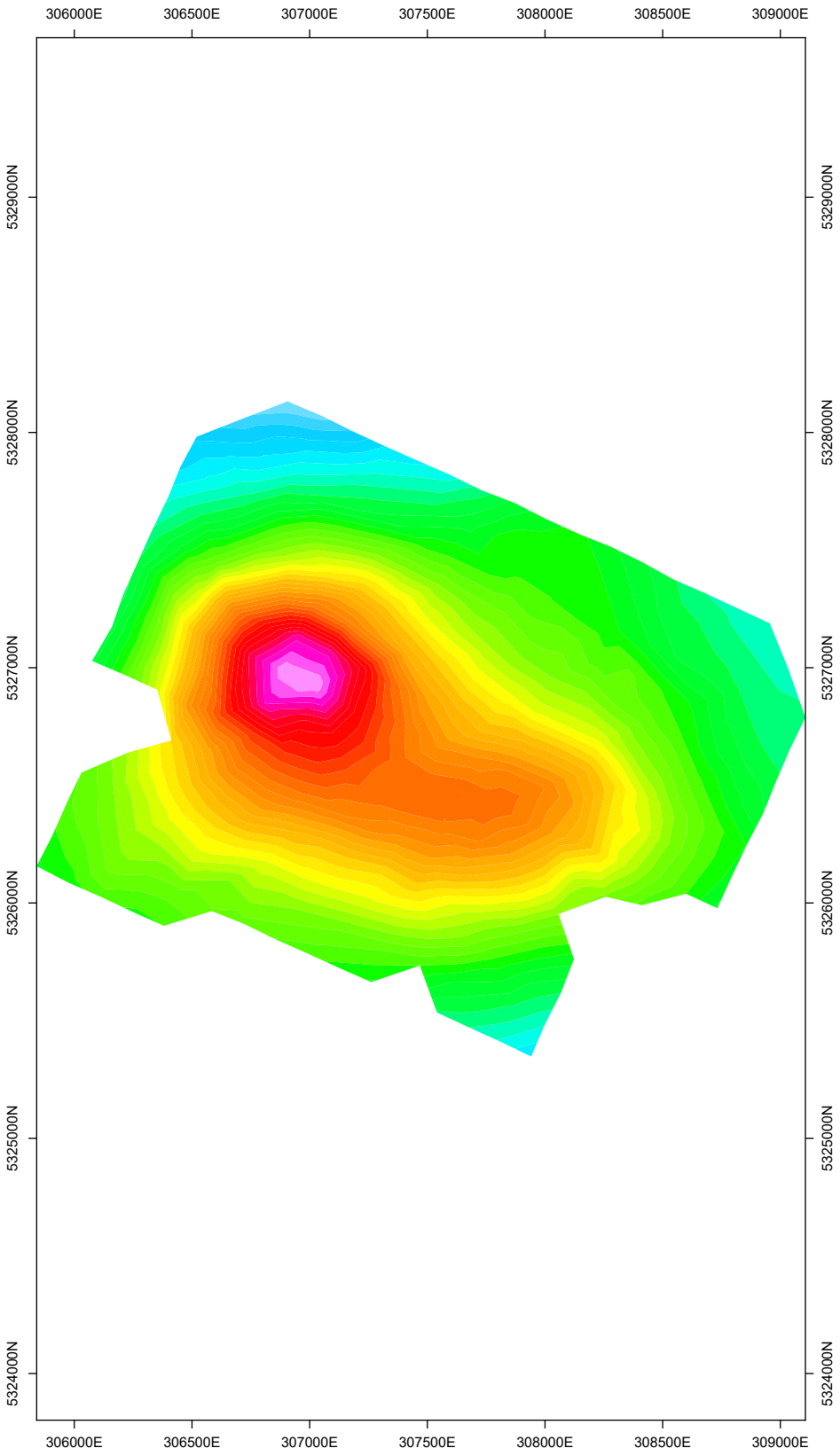
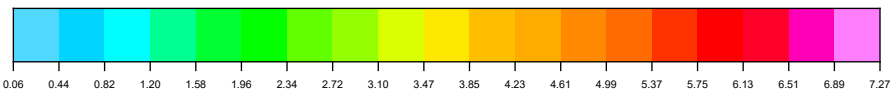


CH30 : Z Component



pT/A

SURVEY PARAMETERS

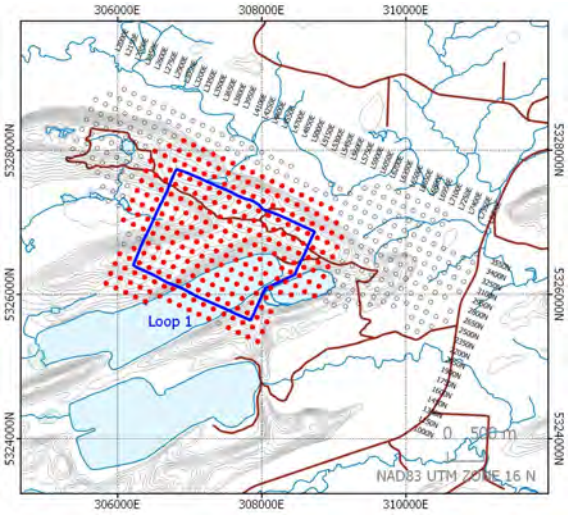
Configuration	: Fixed Loop TEM
Station Spacing	: 150 m
Loop	: Loop 1

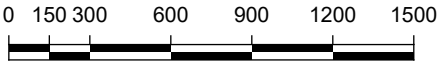
RECEIVER

Receiver	: SMARTem24
Frequency	: 0.25 Hz Hz
Component	: X,Y,Z
Rx Sensor	: Supracon JD LT SQUID
Gate Times	: SMARTem24 Standard

TRANSMITTER

Transmitter	: Phoenix TXU-30
Tx Turns	: 1
Tx Current	: ~28 A
Turn Off	: 0.800 ms





Scale 1:28000

Kobold Metals
Crystal Lake Project
Loop 1 Grid

Fixed Loop TEM Survey

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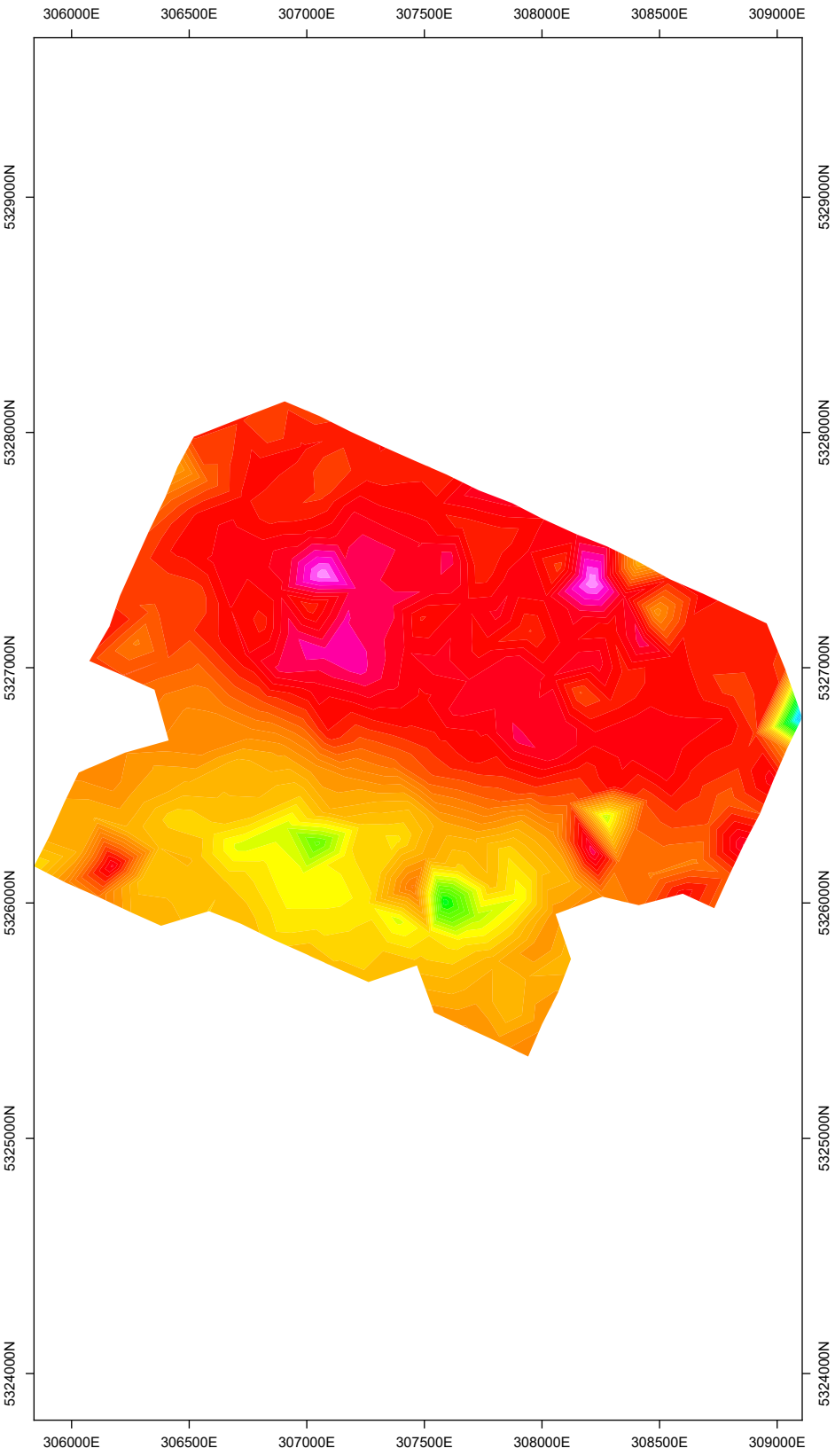
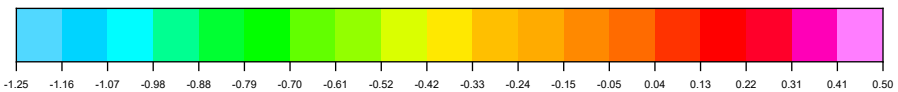


CH40 : X Component



pT/A

SURVEY PARAMETERS

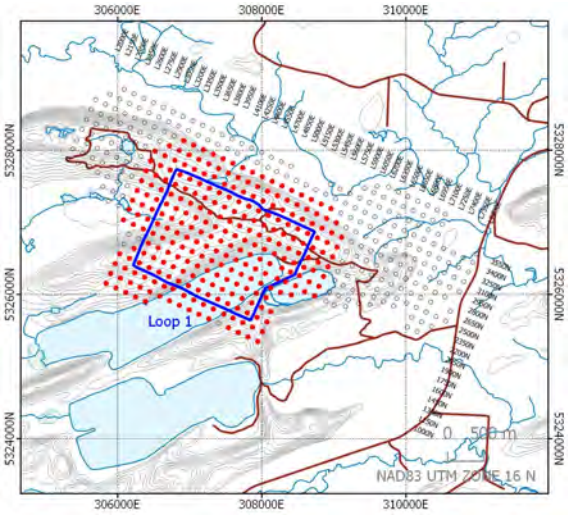
Configuration	: Fixed Loop TEM
Station Spacing	: 150 m
Loop	: Loop 1

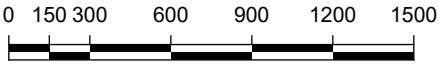
RECEIVER

Receiver	: SMARTem24
Frequency	: 0.25 Hz Hz
Component	: X,Y,Z
Rx Sensor	: Supracon JD LT SQUID
Gate Times	: SMARTem24 Standard

TRANSMITTER

Transmitter	: Phoenix TXU-30
Tx Turns	: 1
Tx Current	: ~28 A
Turn Off	: 0.800 ms





Scale 1:28000

Kobold Metals
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Loop 1 Grid

Fixed Loop TEM Survey

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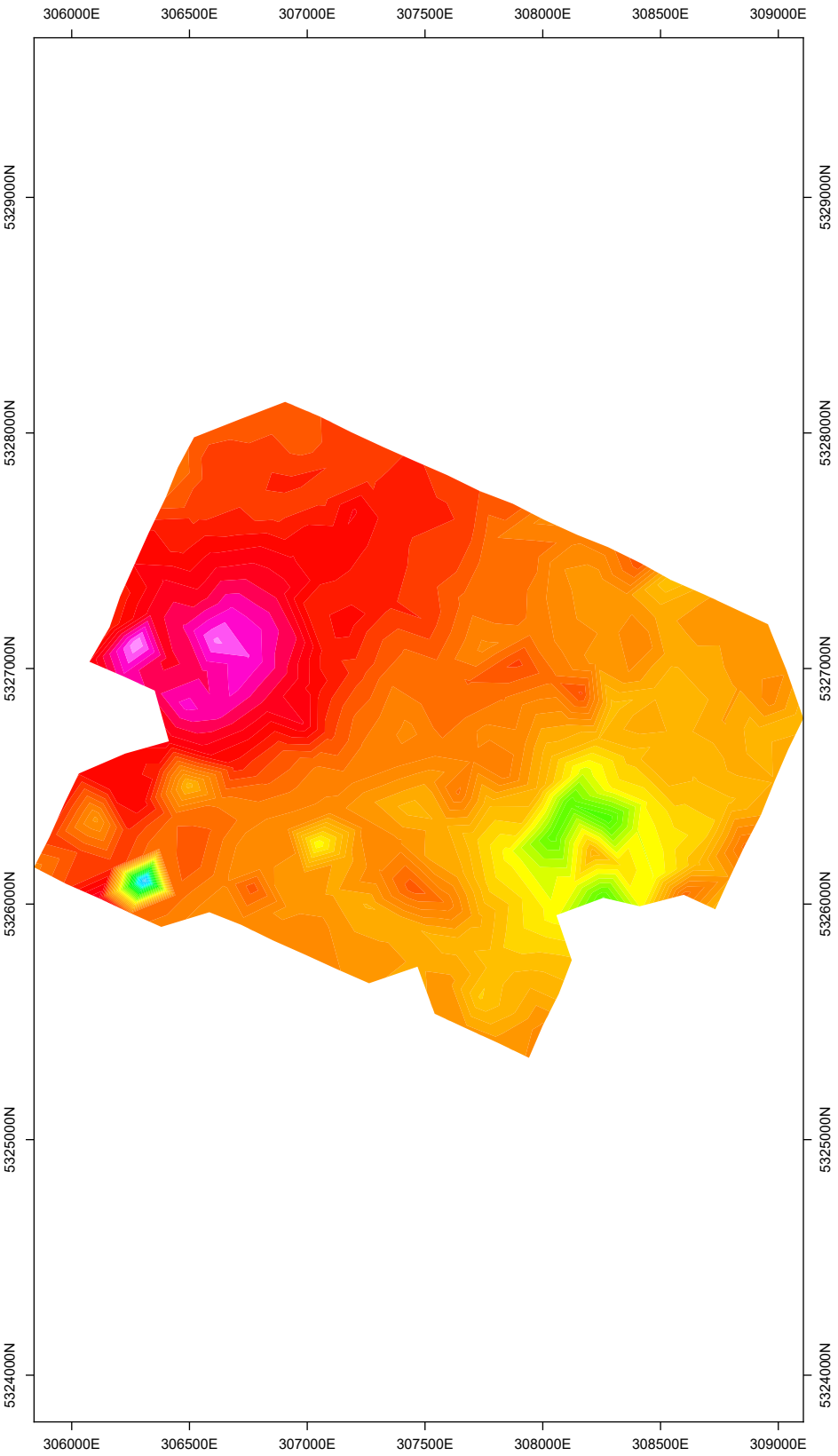
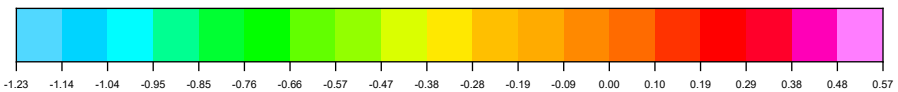


CH40 : Y Component



pT/A

SURVEY PARAMETERS

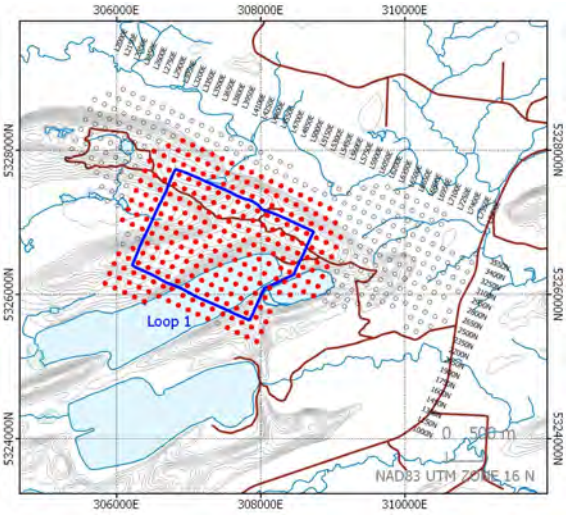
Configuration	: Fixed Loop TEM
Station Spacing	: 150 m
Loop	: Loop 1

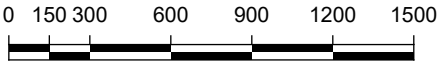
RECEIVER

Receiver	: SMARTem24
Frequency	: 0.25 Hz Hz
Component	: X,Y,Z
Rx Sensor	: Supracon JD LT SQUID
Gate Times	: SMARTem24 Standard

TRANSMITTER

Transmitter	: Phoenix TXU-30
Tx Turns	: 1
Tx Current	: ~28 A
Turn Off	: 0.800 ms





Scale 1:28000

Kobold Metals
Crystal Lake Project
Loop 1 Grid

Fixed Loop TEM Survey

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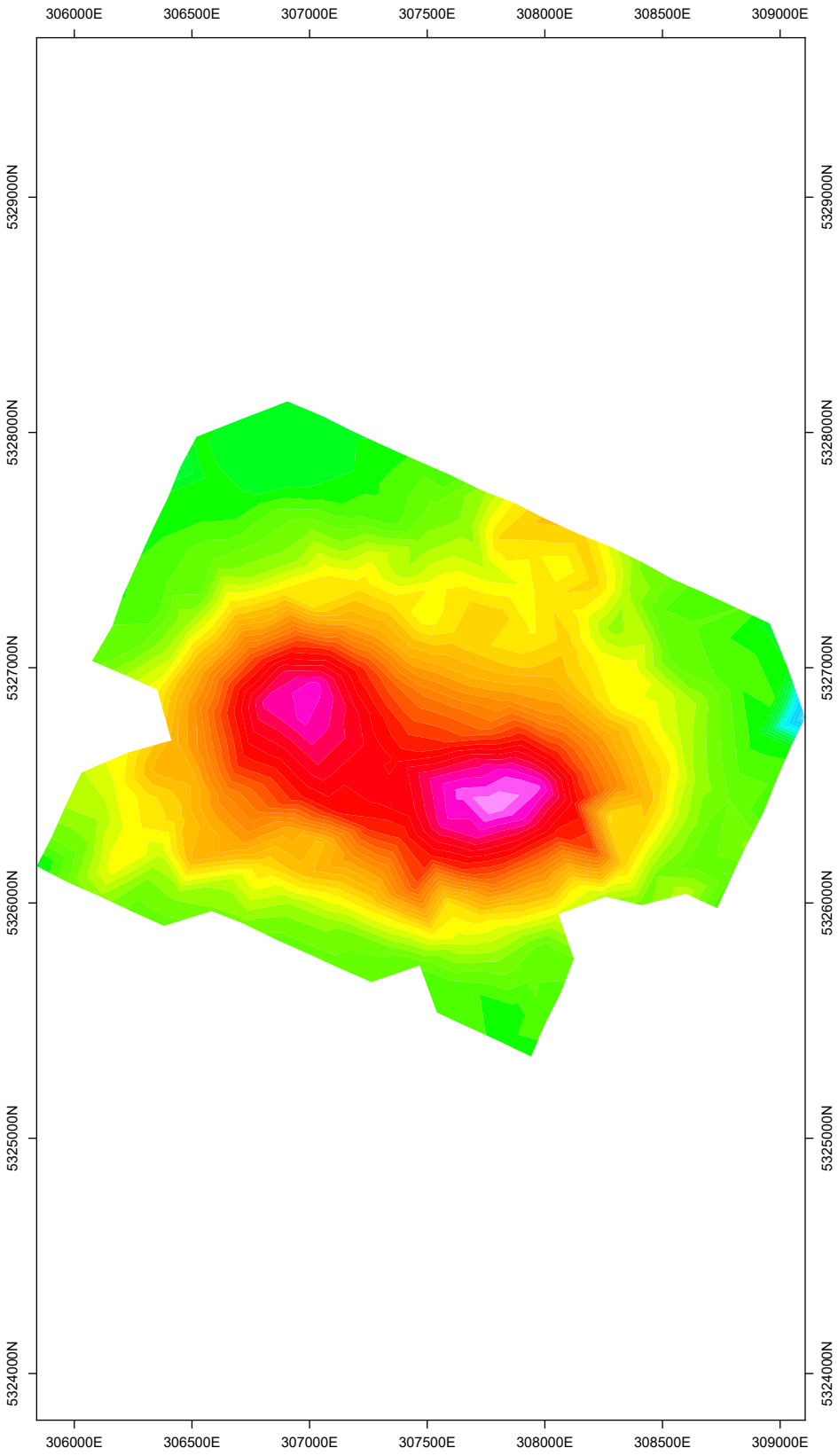
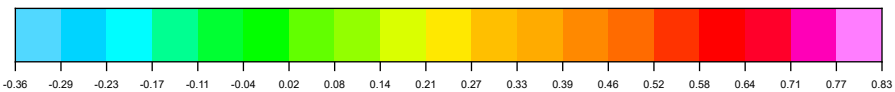


CH40 : Z Component



pT/A

SURVEY PARAMETERS

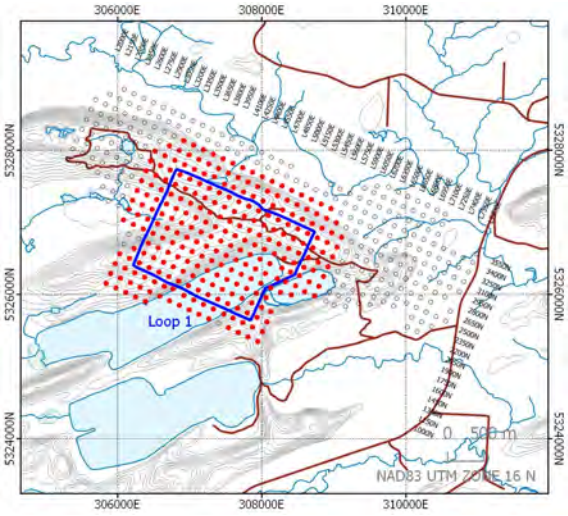
Configuration	: Fixed Loop TEM
Station Spacing	: 150 m
Loop	: Loop 1

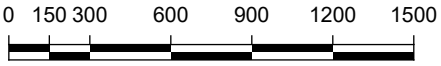
RECEIVER

Receiver	: SMARTem24
Frequency	: 0.25 Hz Hz
Component	: X,Y,Z
Rx Sensor	: Supracon JD LT SQUID
Gate Times	: SMARTem24 Standard

TRANSMITTER

Transmitter	: Phoenix TXU-30
Tx Turns	: 1
Tx Current	: ~28 A
Turn Off	: 0.800 ms





Scale 1:28000

Kobold Metals
Crystal Lake Project
Loop 1 Grid

Fixed Loop TEM Survey

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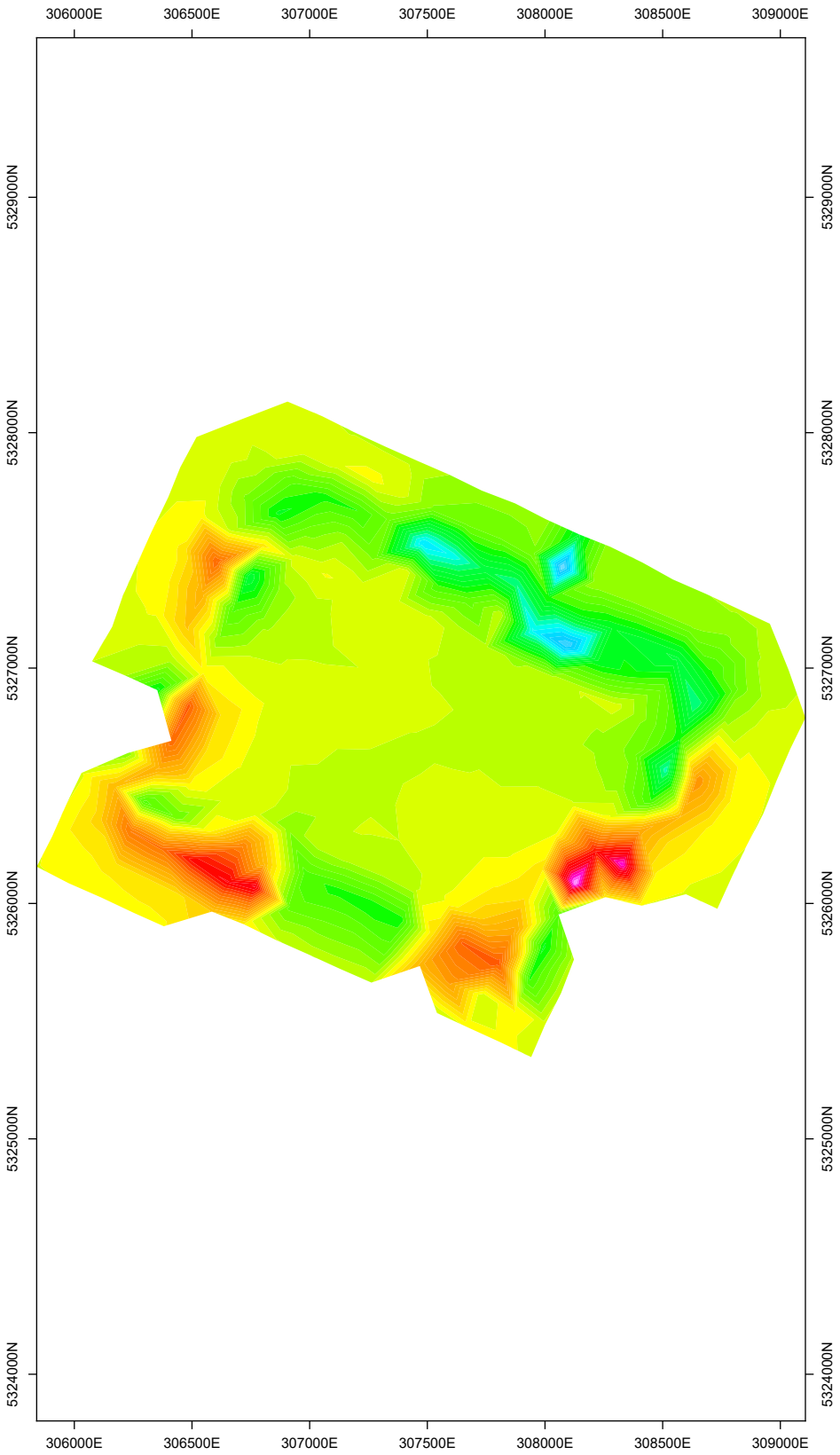
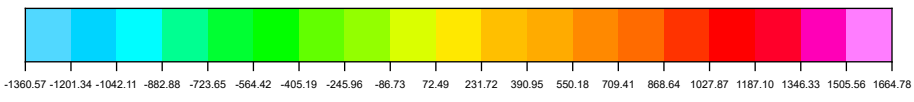


VPRI : X Component



pT/A

SURVEY PARAMETERS

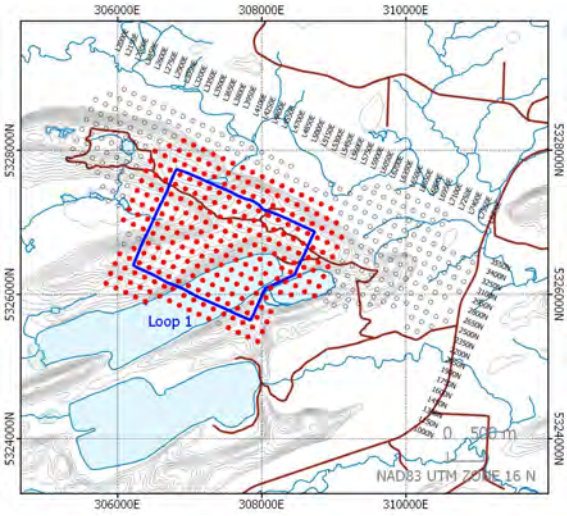
Configuration	: Fixed Loop TEM
Station Spacing	: 150 m
Loop	: Loop 1

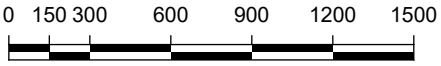
RECEIVER

Receiver	: SMARTem24
Frequency	: 0.25 Hz Hz
Component	: X,Y,Z
Rx Sensor	: Supracon JD LT SQUID
Gate Times	: SMARTem24 Standard

TRANSMITTER

Transmitter	: Phoenix TXU-30
Tx Turns	: 1
Tx Current	: ~28 A
Turn Off	: 0.800 ms





Scale 1:28000

Kobold Metals
Crystal Lake Project
Loop 1 Grid

Fixed Loop TEM Survey

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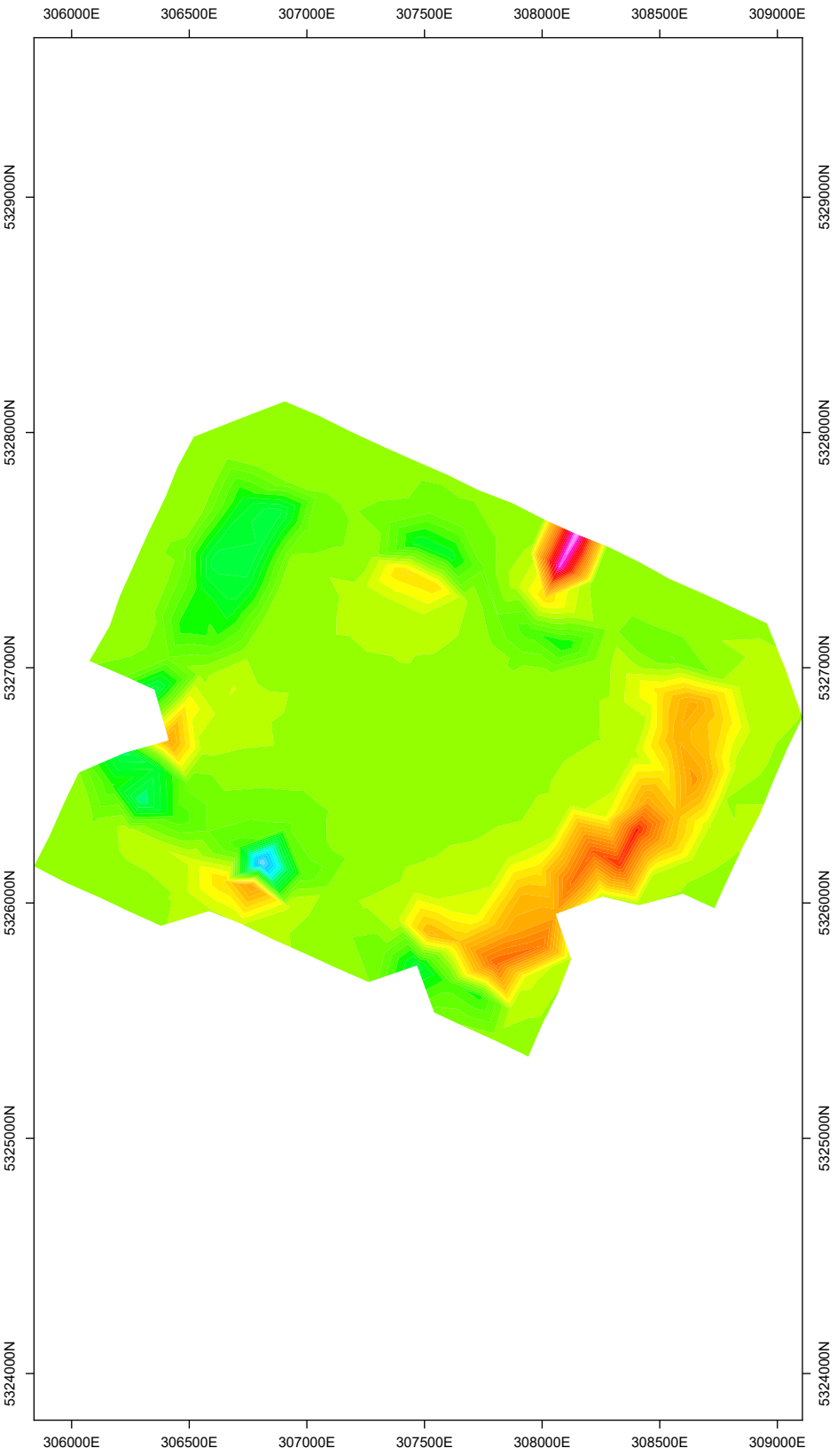
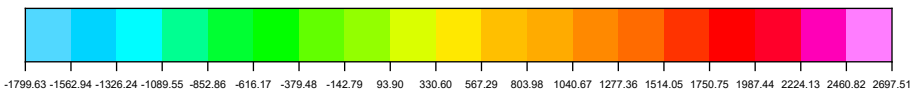


VPRI : Y Component



pT/A

SURVEY PARAMETERS

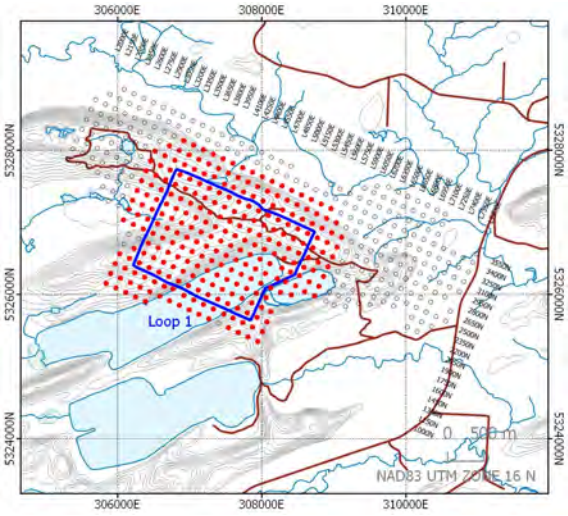
Configuration	: Fixed Loop TEM
Station Spacing	: 150 m
Loop	: Loop 1

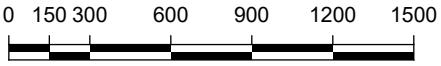
RECEIVER

Receiver	: SMARTem24
Frequency	: 0.25 Hz Hz
Component	: X,Y,Z
Rx Sensor	: Supracon JD LT SQUID
Gate Times	: SMARTem24 Standard

TRANSMITTER

Transmitter	: Phoenix TXU-30
Tx Turns	: 1
Tx Current	: ~28 A
Turn Off	: 0.800 ms





Scale 1:28000

Kobold Metals
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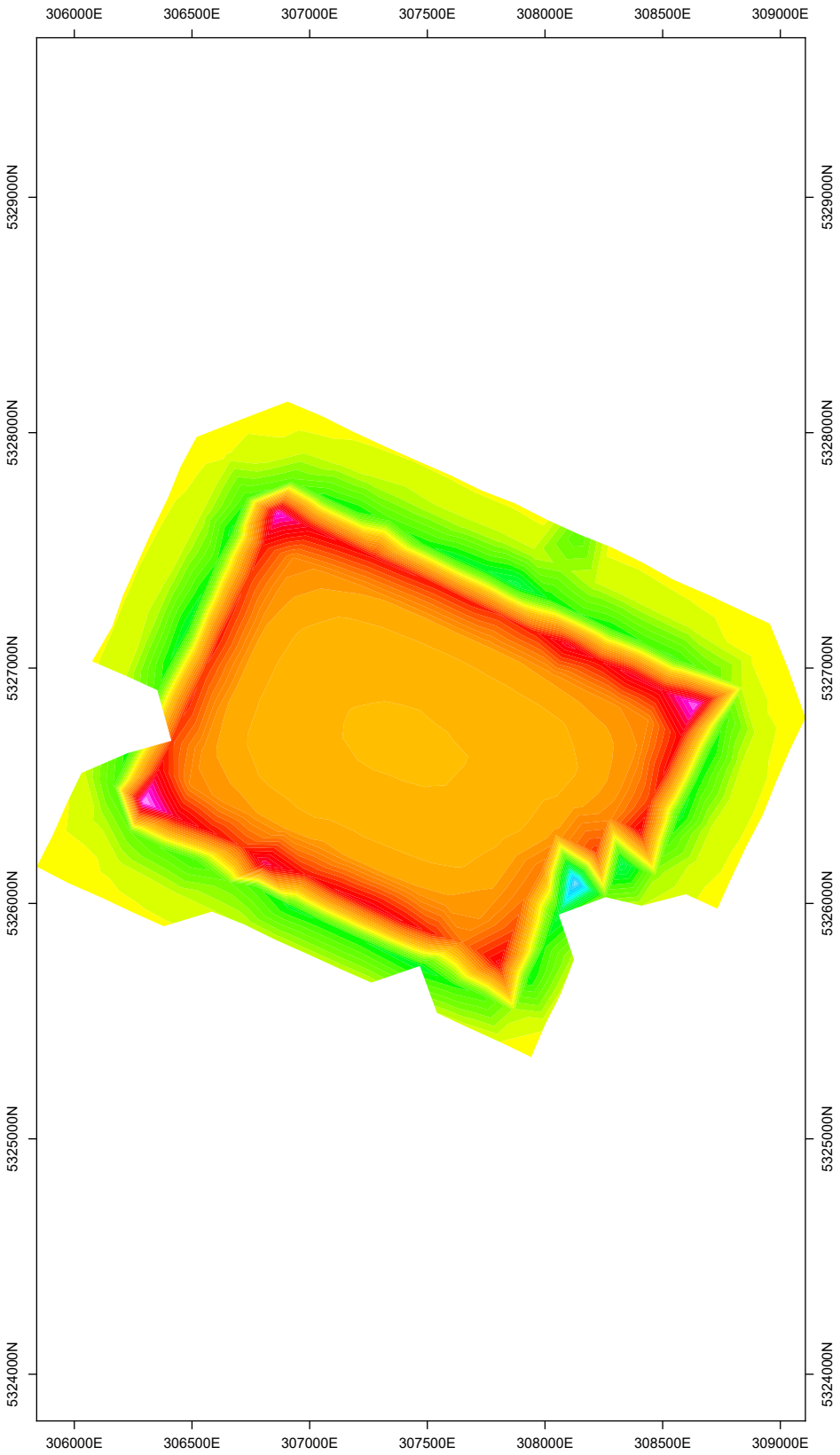
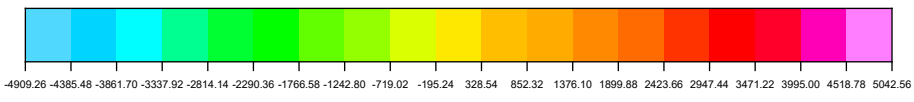


VPRI : Z Component



pT/A

SURVEY PARAMETERS

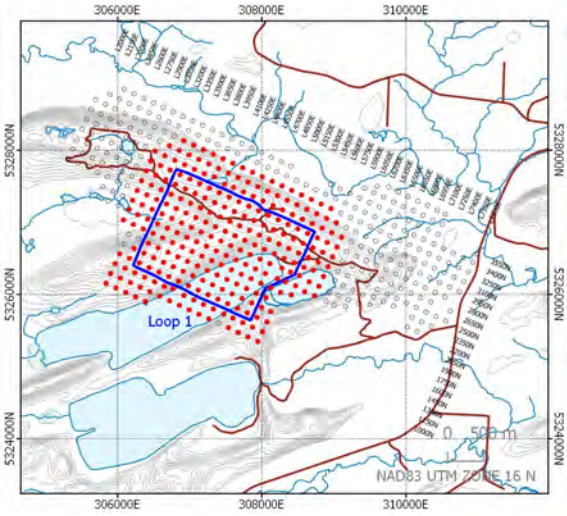
Configuration	: Fixed Loop TEM
Station Spacing	: 150 m
Loop	: Loop 1

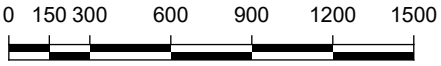
RECEIVER

Receiver	: SMARTem24
Frequency	: 0.25 Hz Hz
Component	: X,Y,Z
Rx Sensor	: Supracon JD LT SQUID
Gate Times	: SMARTem24 Standard

TRANSMITTER

Transmitter	: Phoenix TXU-30
Tx Turns	: 1
Tx Current	: ~28 A
Turn Off	: 0.800 ms





Scale 1:28000

Kobold Metals
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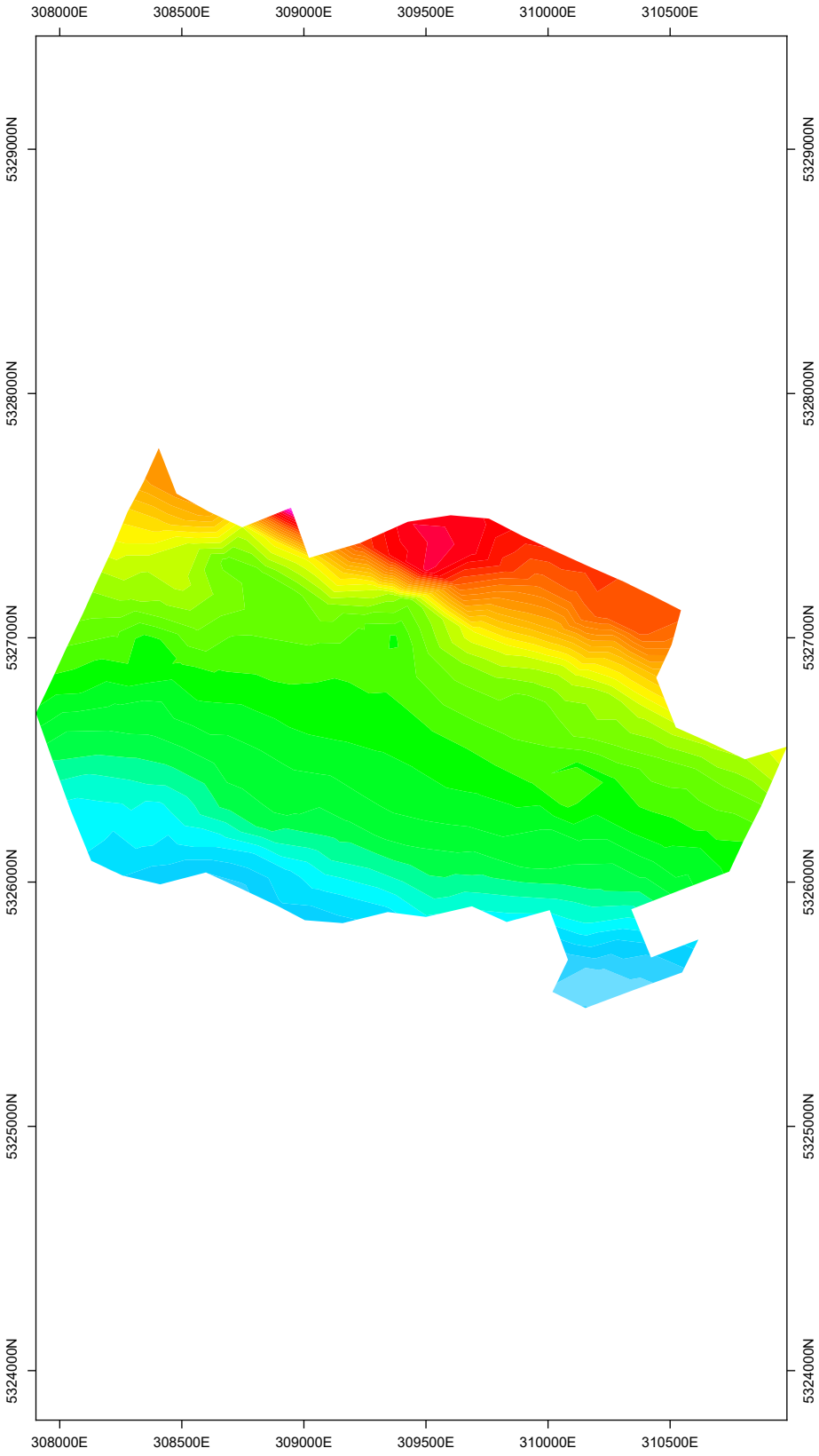
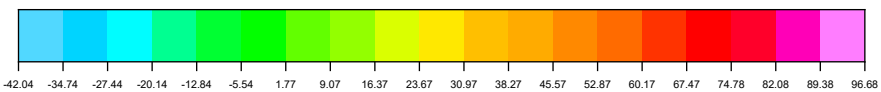


CH10 : X Component



pT/A

SURVEY PARAMETERS

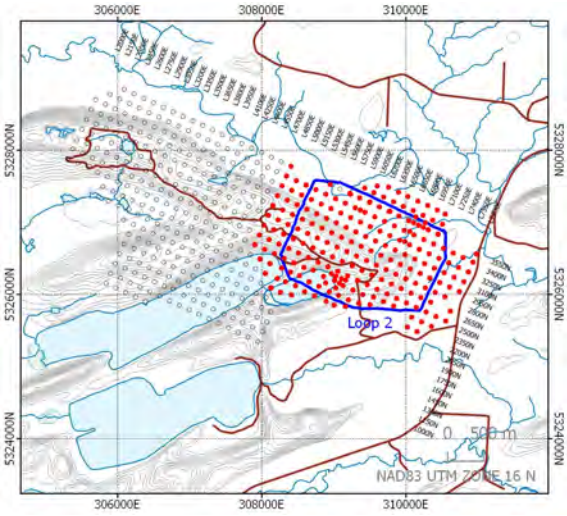
Configuration	: Fixed Loop TEM
Station Spacing	: 150 m
Loop	: Loop 2

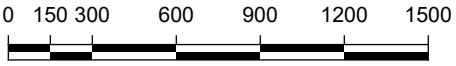
RECEIVER

Receiver	: SMARTem24
Frequency	: 0.25 Hz Hz
Component	: X,Y,Z
Rx Sensor	: Supracon JD LT SQUID
Gate Times	: SMARTem24 Standard

TRANSMITTER

Transmitter	: Phoenix TXU-30
Tx Turns	: 1
Tx Current	: ~28 A
Turn Off	: 0.800 ms





Scale 1:27000

Kobold Metals
Crystal Lake Project
Loop 2 Grid

Fixed Loop TEM Survey

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Survey Date: December 2021

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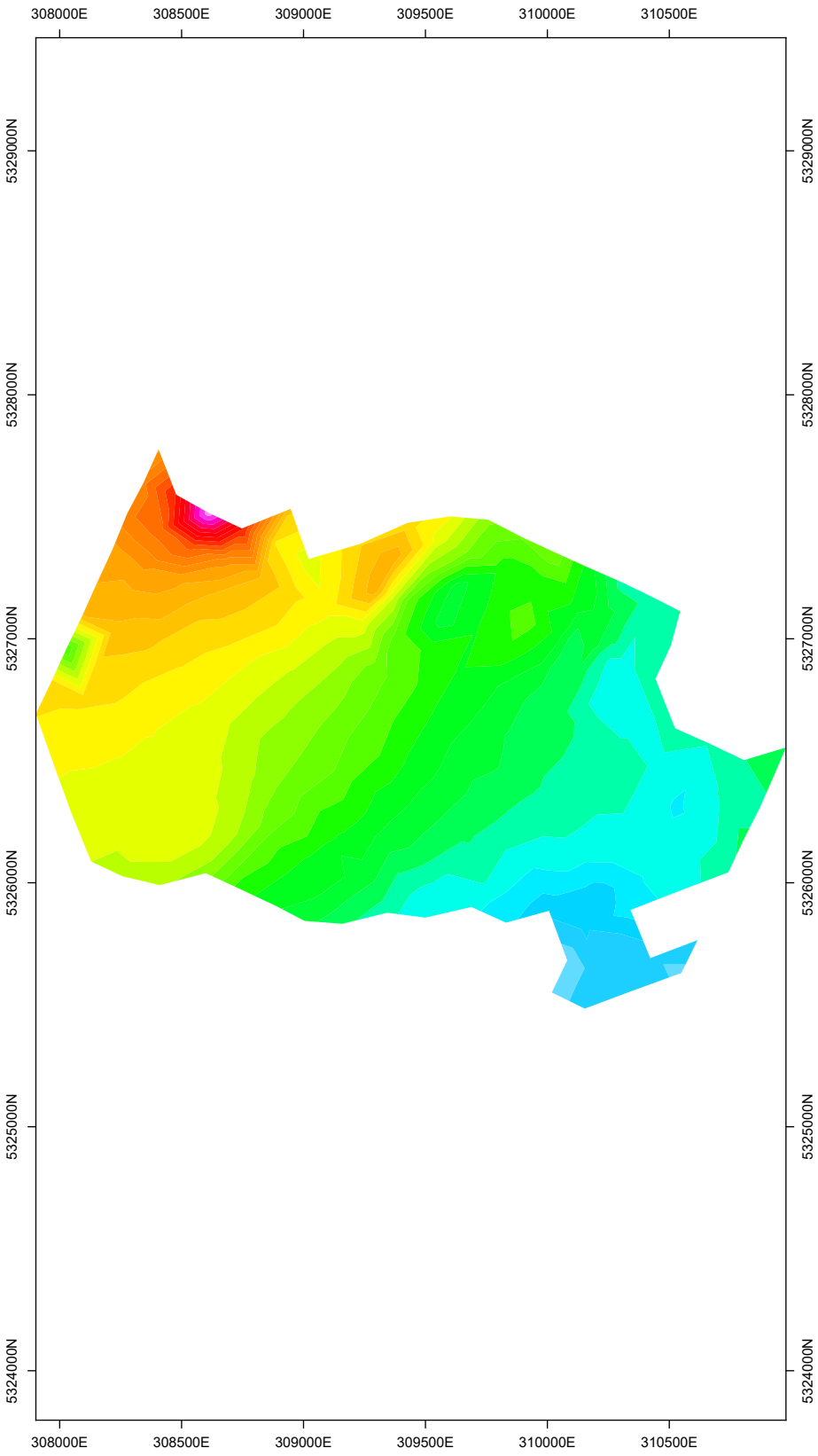
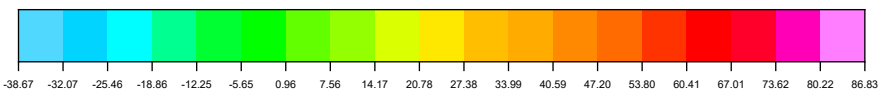


CH10 : Y Component



pT/A

SURVEY PARAMETERS

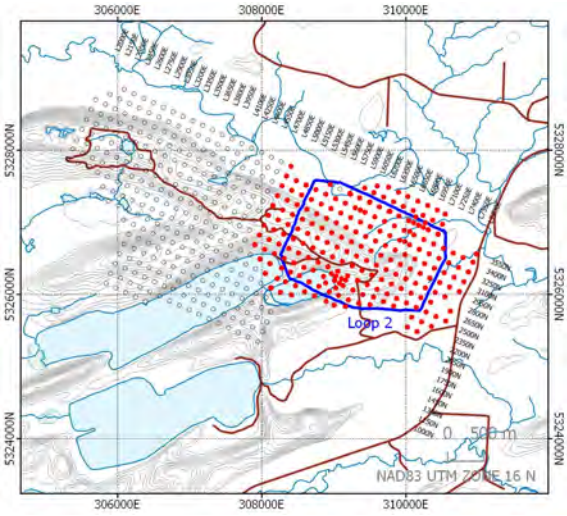
Configuration	: Fixed Loop TEM
Station Spacing	: 150 m
Loop	: Loop 2

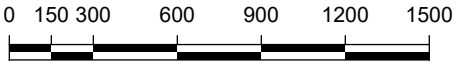
RECEIVER

Receiver	: SMARTem24
Frequency	: 0.25 Hz Hz
Component	: X,Y,Z
Rx Sensor	: Supracon JD LT SQUID
Gate Times	: SMARTem24 Standard

TRANSMITTER

Transmitter	: Phoenix TXU-30
Tx Turns	: 1
Tx Current	: ~28 A
Turn Off	: 0.800 ms





Scale 1:27000

Kobold Metals
Crystal Lake Project
Loop 2 Grid

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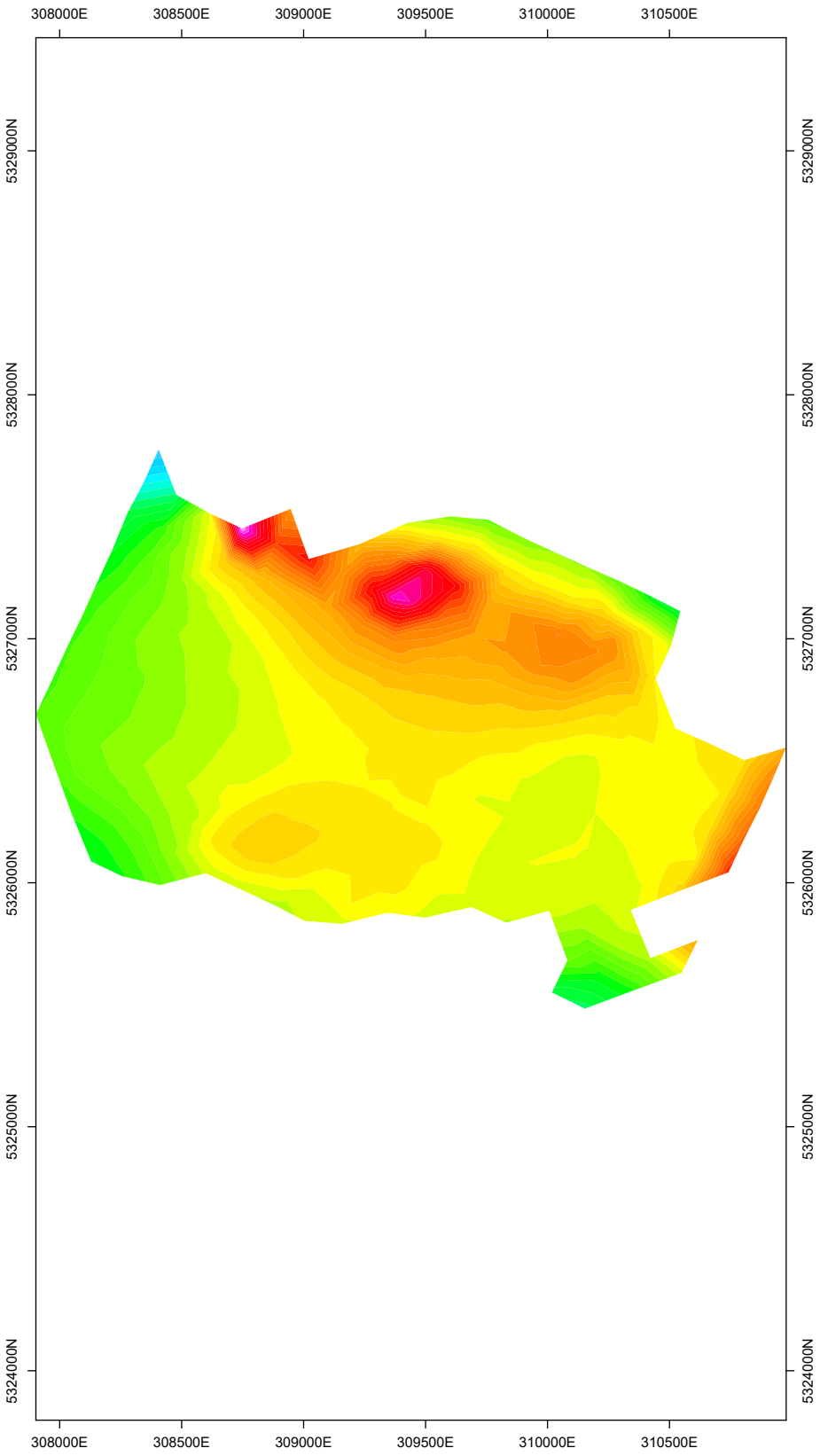
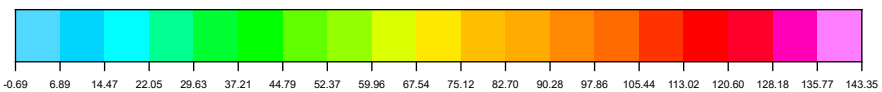


CH10 : Z Component



pT/A

SURVEY PARAMETERS

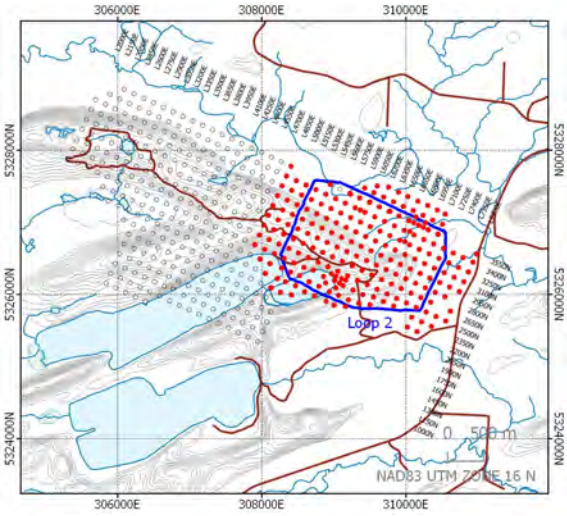
Configuration	: Fixed Loop TEM
Station Spacing	: 150 m
Loop	: Loop 2

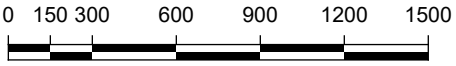
RECEIVER

Receiver	: SMARTem24
Frequency	: 0.25 Hz Hz
Component	: X,Y,Z
Rx Sensor	: Supracon JD LT SQUID
Gate Times	: SMARTem24 Standard

TRANSMITTER

Transmitter	: Phoenix TXU-30
Tx Turns	: 1
Tx Current	: ~28 A
Turn Off	: 0.800 ms





Scale 1:27000

Kobold Metals
Crystal Lake Project
Loop 2 Grid

Fixed Loop TEM Survey

Surveyed By: Connor Harrison
Survey Date: December 2021

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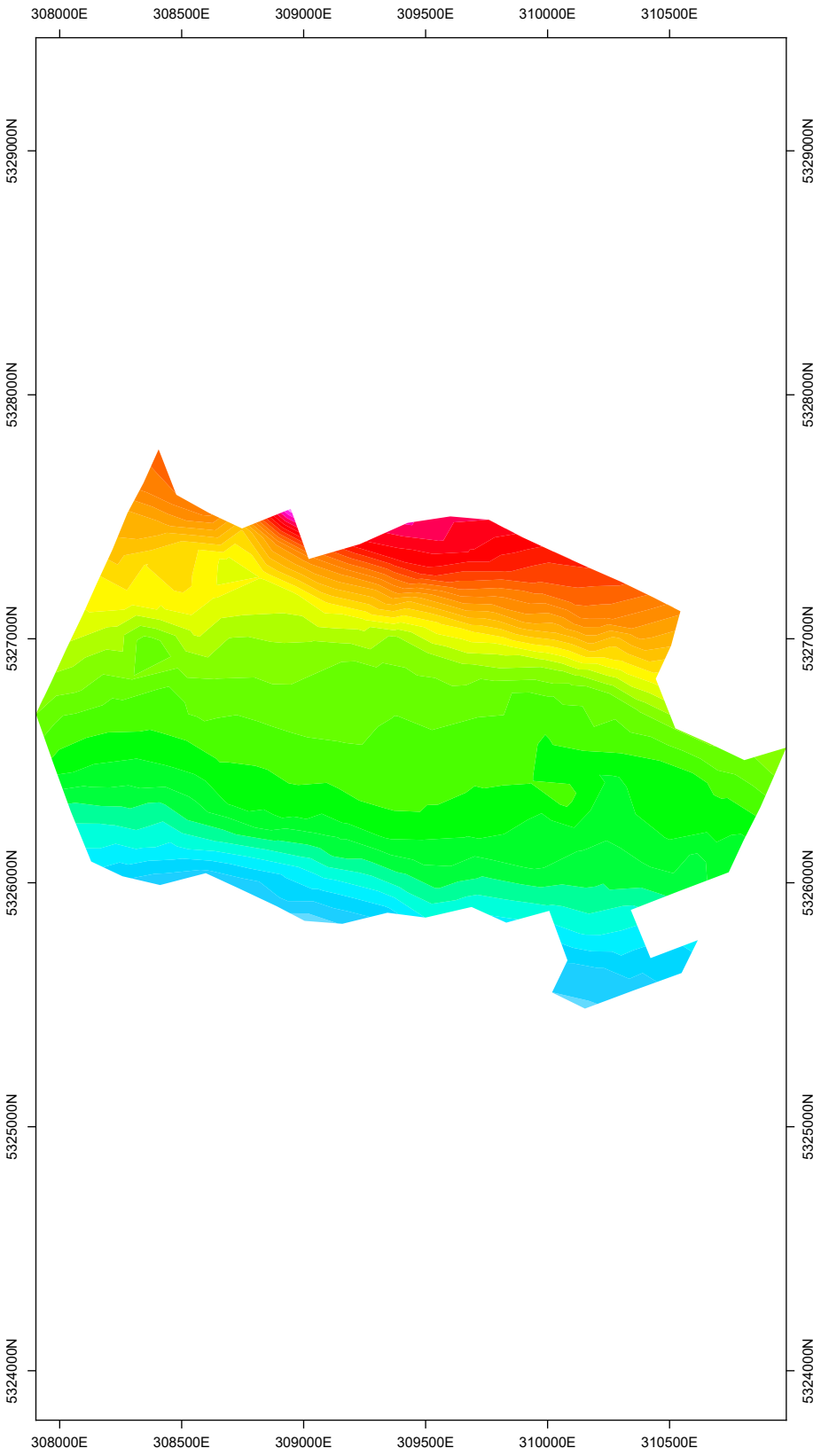
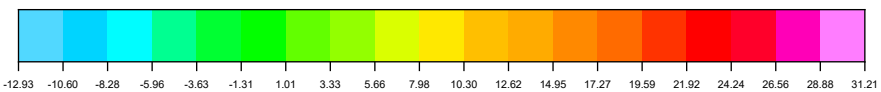


CH20 : X Component



pT/A

SURVEY PARAMETERS

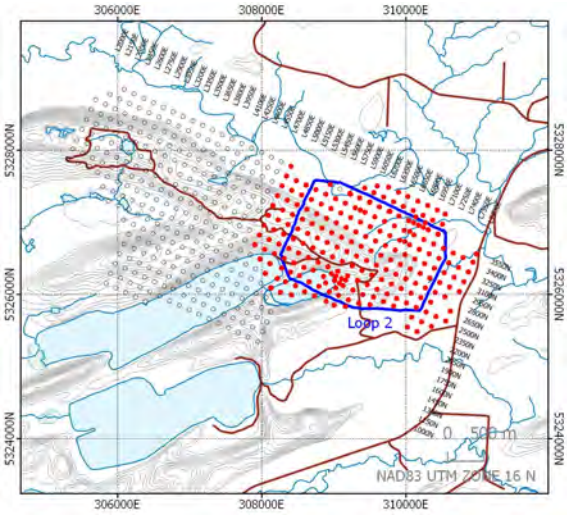
Configuration	: Fixed Loop TEM
Station Spacing	: 150 m
Loop	: Loop 2

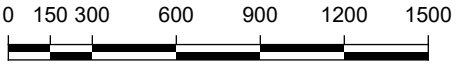
RECEIVER

Receiver	: SMARTem24
Frequency	: 0.25 Hz Hz
Component	: X,Y,Z
Rx Sensor	: Supracon JD LT SQUID
Gate Times	: SMARTem24 Standard

TRANSMITTER

Transmitter	: Phoenix TXU-30
Tx Turns	: 1
Tx Current	: ~28 A
Turn Off	: 0.800 ms





Scale 1:27000

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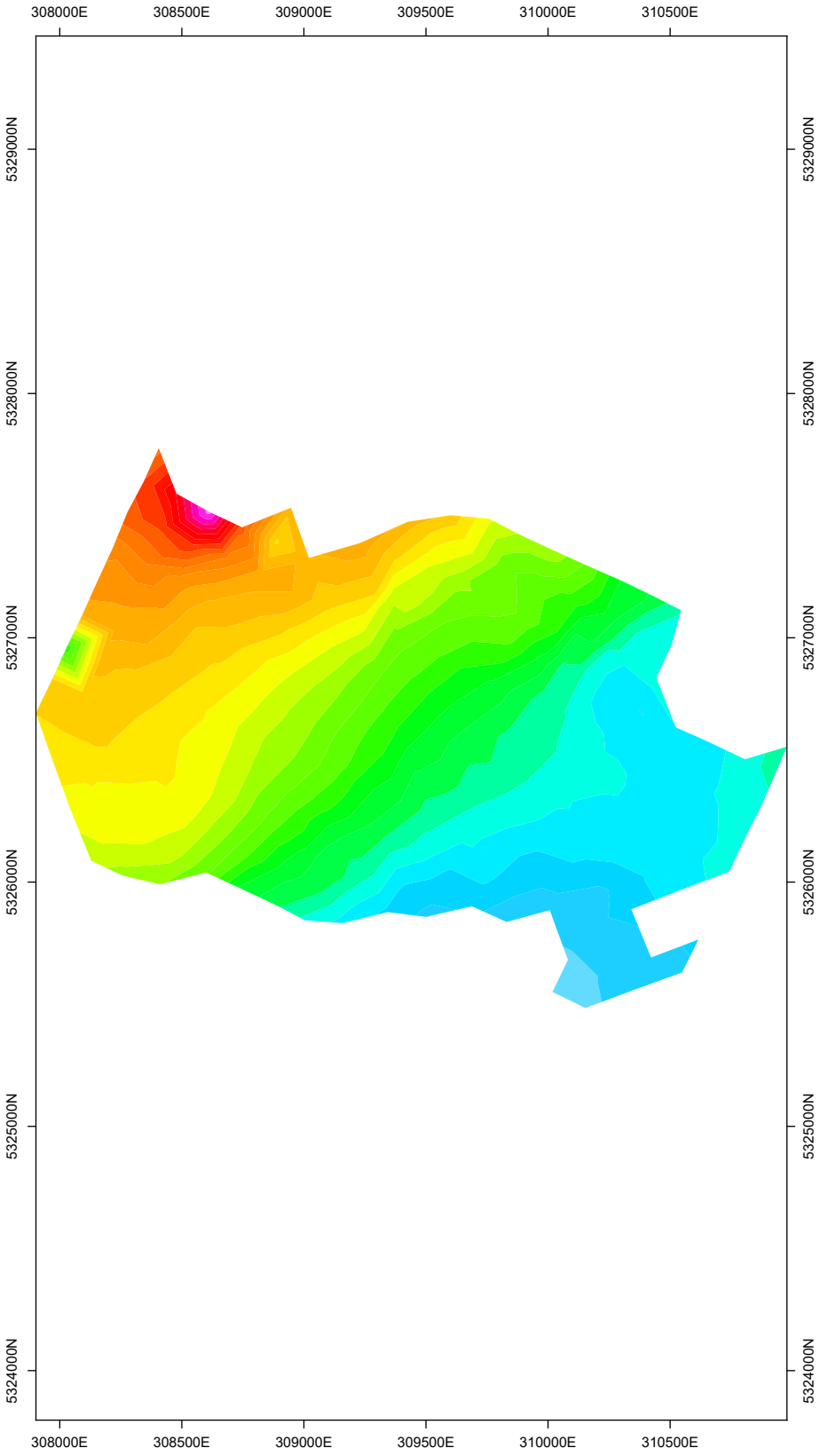
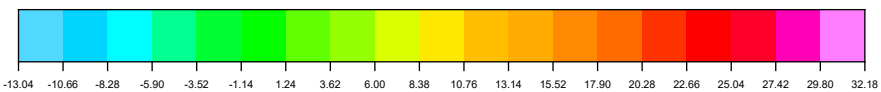


CH20 : Y Component



pT/A

SURVEY PARAMETERS

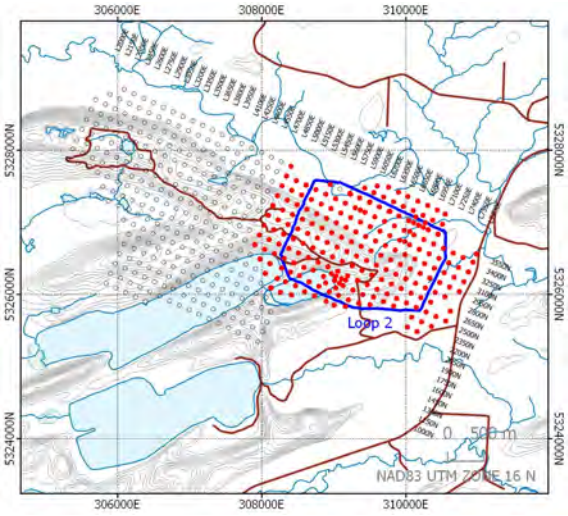
Configuration	: Fixed Loop TEM
Station Spacing	: 150 m
Loop	: Loop 2

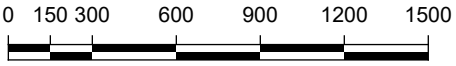
RECEIVER

Receiver	: SMARTem24
Frequency	: 0.25 Hz Hz
Component	: X,Y,Z
Rx Sensor	: Supracon JD LT SQUID
Gate Times	: SMARTem24 Standard

TRANSMITTER

Transmitter	: Phoenix TXU-30
Tx Turns	: 1
Tx Current	: ~28 A
Turn Off	: 0.800 ms





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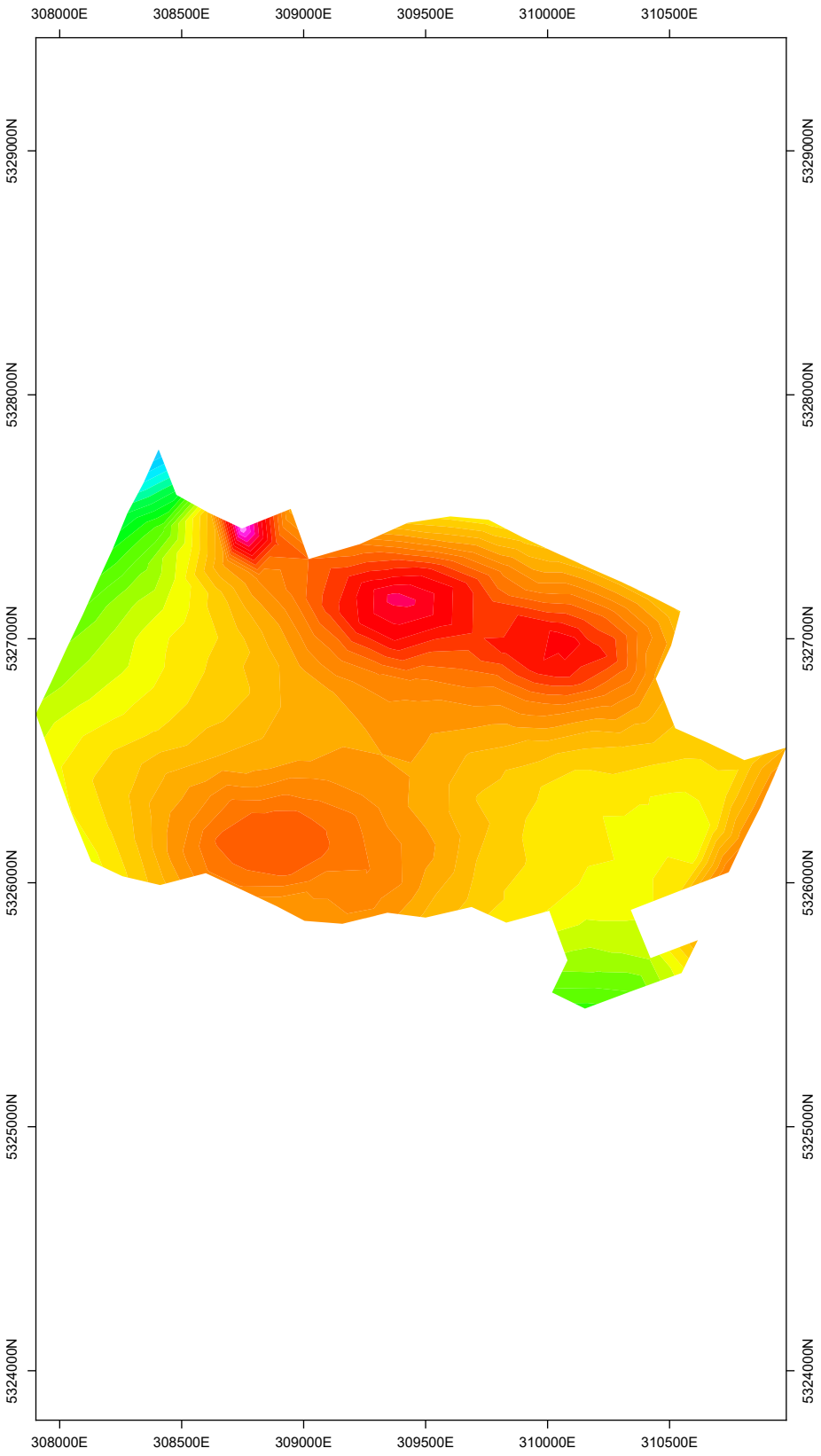
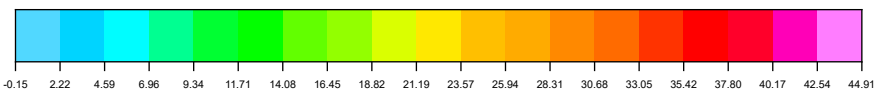


CH20 : Z Component



pT/A

SURVEY PARAMETERS

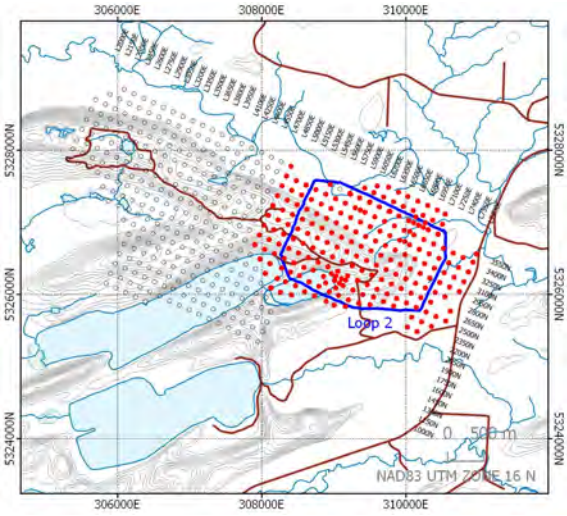
Configuration	: Fixed Loop TEM
Station Spacing	: 150 m
Loop	: Loop 2

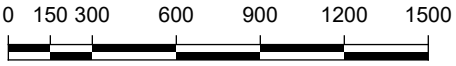
RECEIVER

Receiver	: SMARTem24
Frequency	: 0.25 Hz Hz
Component	: X,Y,Z
Rx Sensor	: Supracon JD LT SQUID
Gate Times	: SMARTem24 Standard

TRANSMITTER

Transmitter	: Phoenix TXU-30
Tx Turns	: 1
Tx Current	: ~28 A
Turn Off	: 0.800 ms





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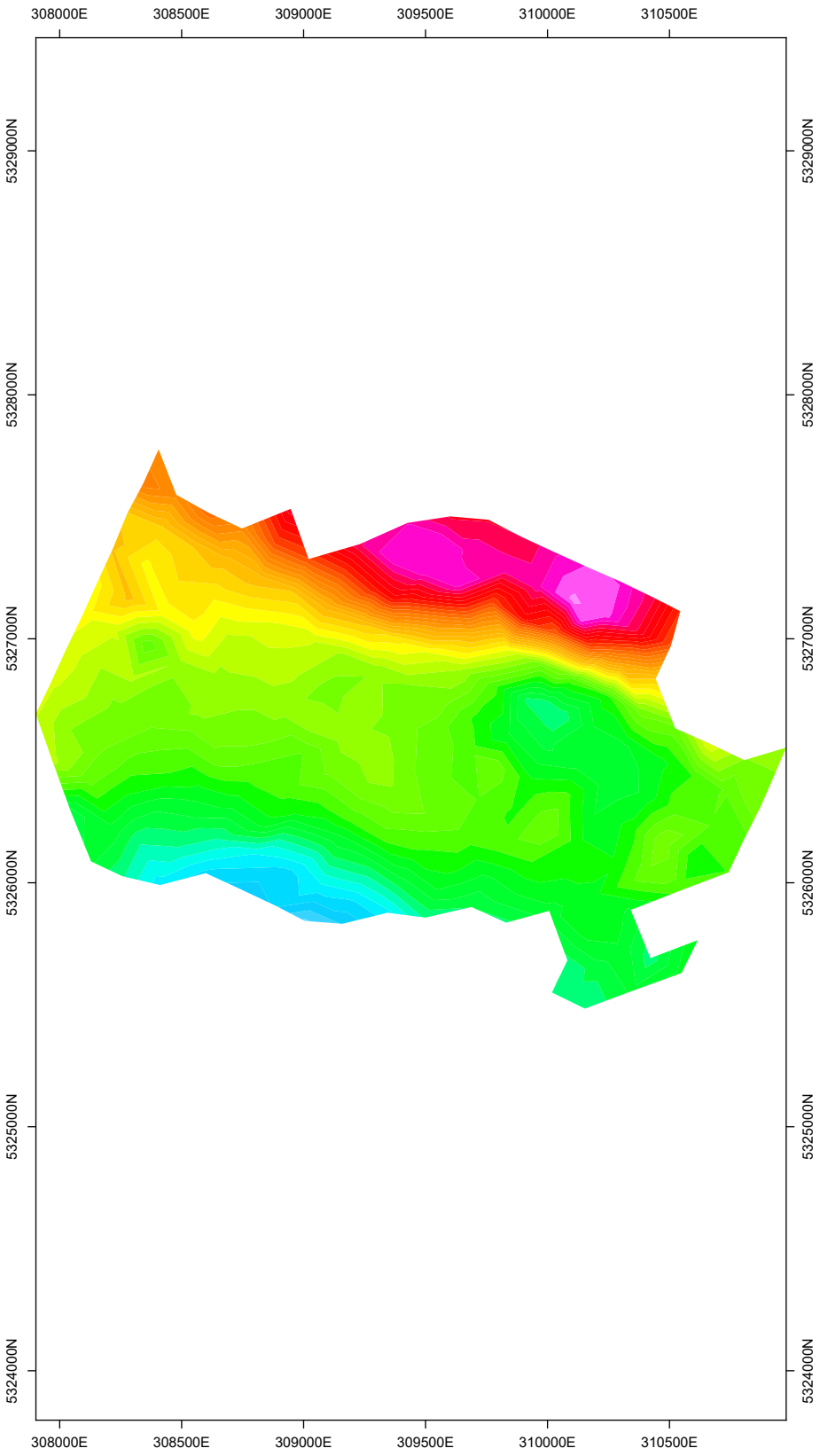
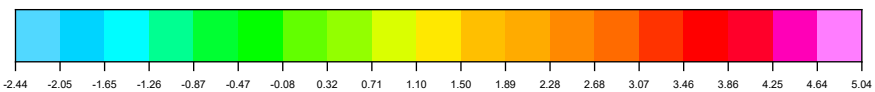


CH30 : X Component



pT/A

SURVEY PARAMETERS

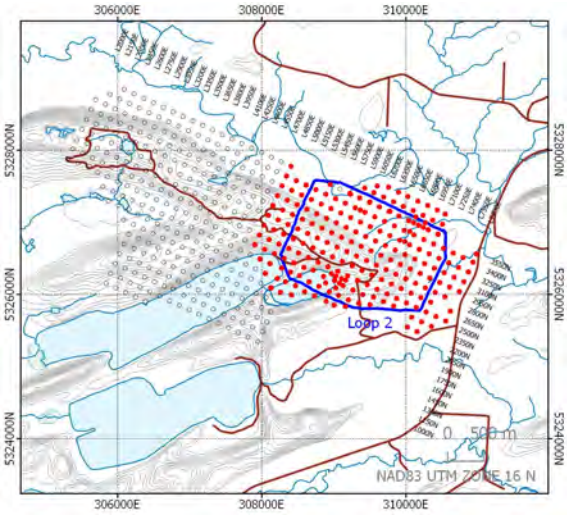
Configuration	: Fixed Loop TEM
Station Spacing	: 150 m
Loop	: Loop 2

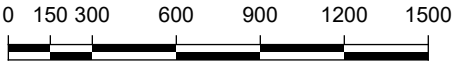
RECEIVER

Receiver	: SMARTem24
Frequency	: 0.25 Hz Hz
Component	: X,Y,Z
Rx Sensor	: Supracon JD LT SQUID
Gate Times	: SMARTem24 Standard

TRANSMITTER

Transmitter	: Phoenix TXU-30
Tx Turns	: 1
Tx Current	: ~28 A
Turn Off	: 0.800 ms





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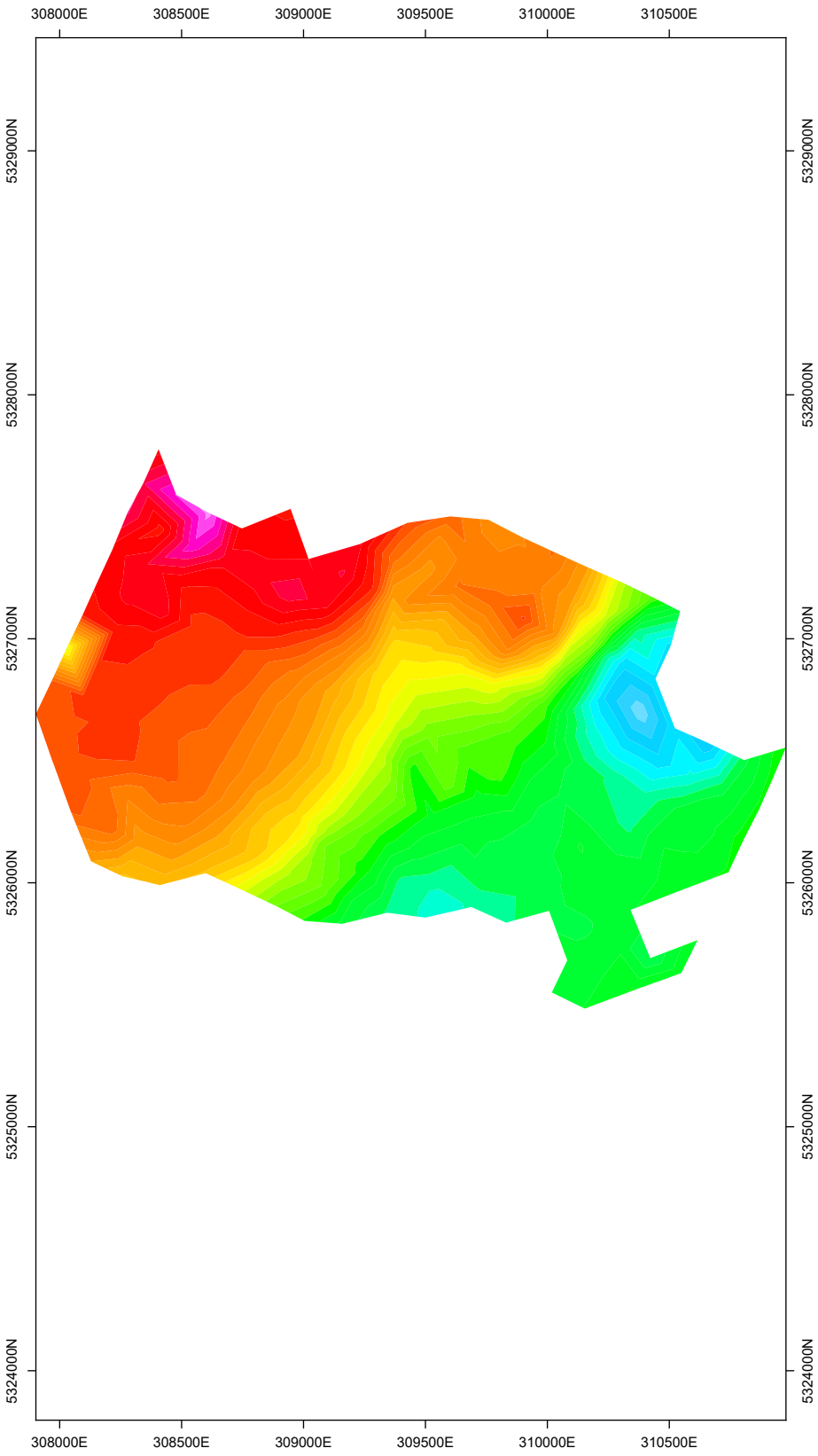
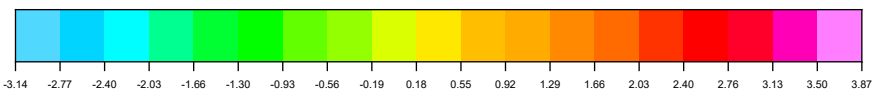


CH30 : Y Component



pT/A

SURVEY PARAMETERS

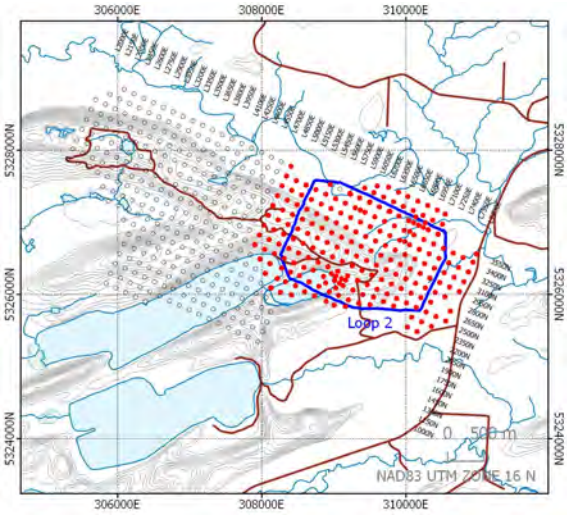
Configuration	: Fixed Loop TEM
Station Spacing	: 150 m
Loop	: Loop 2

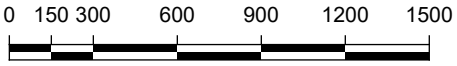
RECEIVER

Receiver	: SMARTem24
Frequency	: 0.25 Hz Hz
Component	: X,Y,Z
Rx Sensor	: Supracon JD LT SQUID
Gate Times	: SMARTem24 Standard

TRANSMITTER

Transmitter	: Phoenix TXU-30
Tx Turns	: 1
Tx Current	: ~28 A
Turn Off	: 0.800 ms





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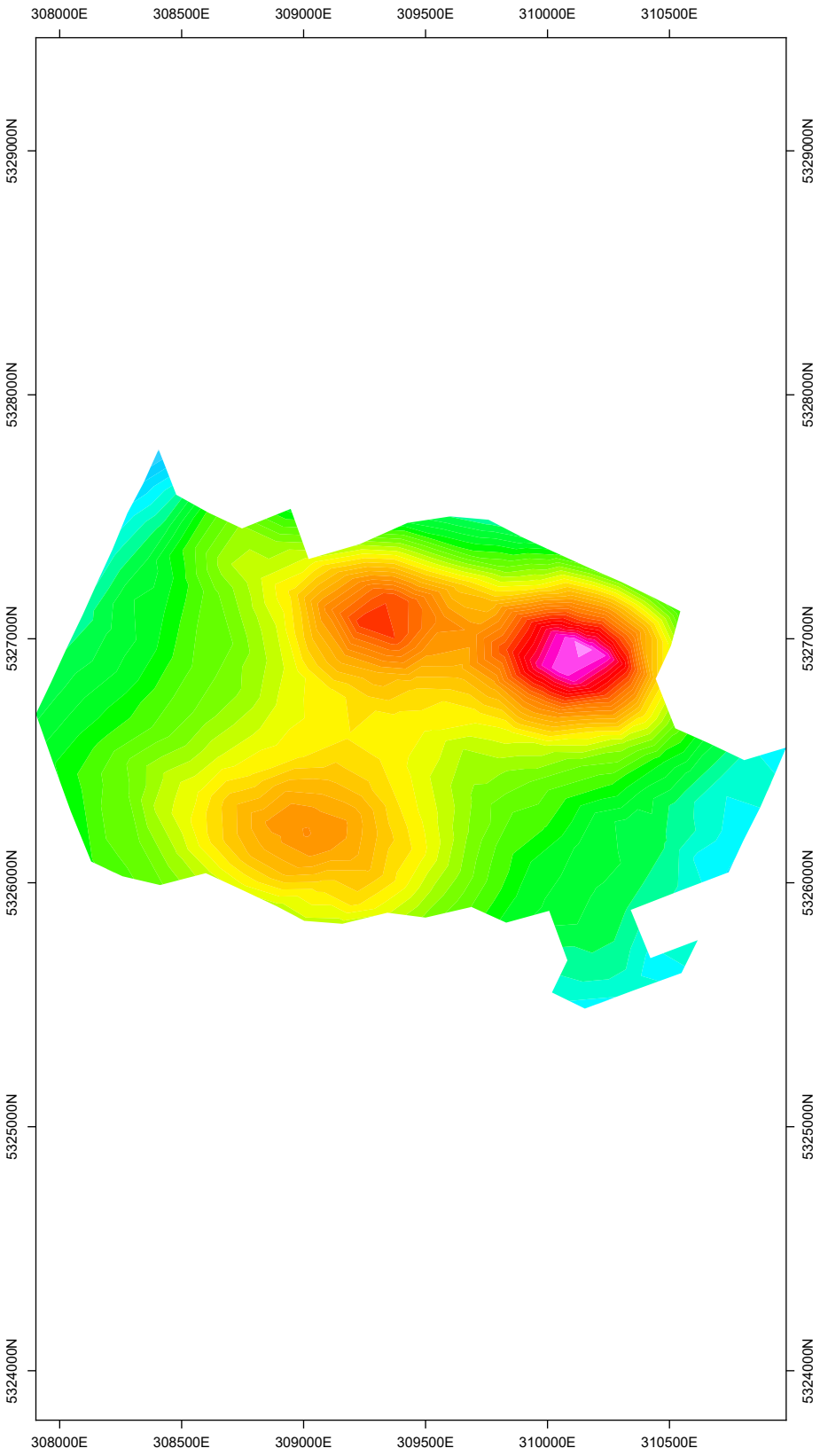
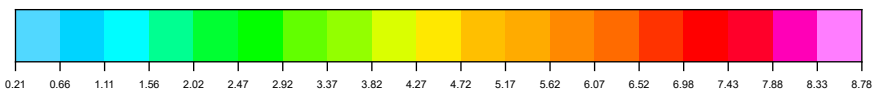


CH30 : Z Component



pT/A

SURVEY PARAMETERS

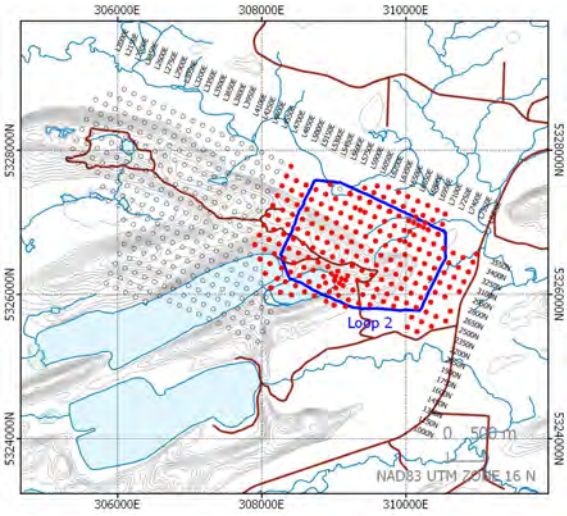
Configuration	: Fixed Loop TEM
Station Spacing	: 150 m
Loop	: Loop 2

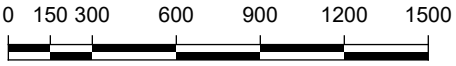
RECEIVER

Receiver	: SMARTem24
Frequency	: 0.25 Hz Hz
Component	: X,Y,Z
Rx Sensor	: Supracon JD LT SQUID
Gate Times	: SMARTem24 Standard

TRANSMITTER

Transmitter	: Phoenix TXU-30
Tx Turns	: 1
Tx Current	: ~28 A
Turn Off	: 0.800 ms





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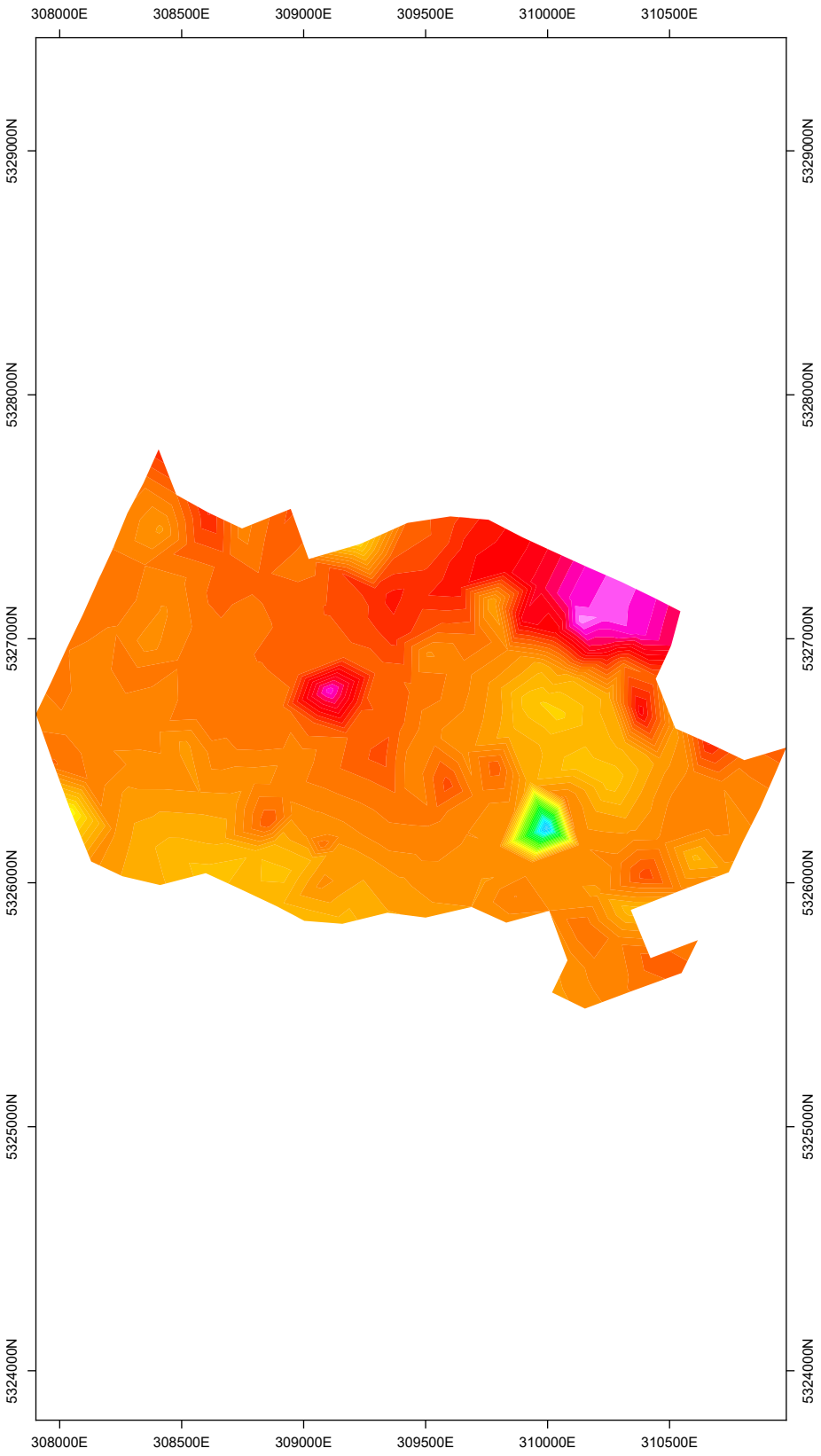
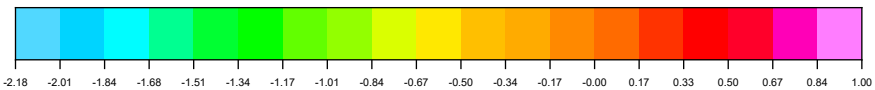


CH40 : X Component



pT/A

SURVEY PARAMETERS

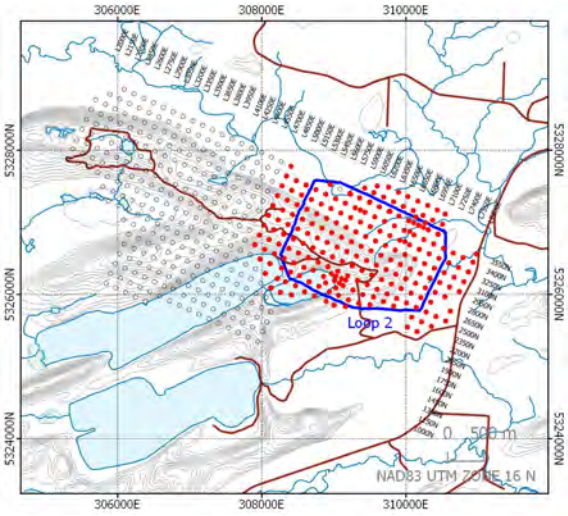
Configuration	: Fixed Loop TEM
Station Spacing	: 150 m
Loop	: Loop 2

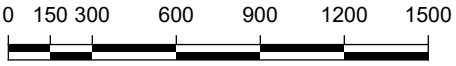
RECEIVER

Receiver	: SMARTem24
Frequency	: 0.25 Hz Hz
Component	: X,Y,Z
Rx Sensor	: Supracon JD LT SQUID
Gate Times	: SMARTem24 Standard

TRANSMITTER

Transmitter	: Phoenix TXU-30
Tx Turns	: 1
Tx Current	: ~28 A
Turn Off	: 0.800 ms





Scale 1:27000

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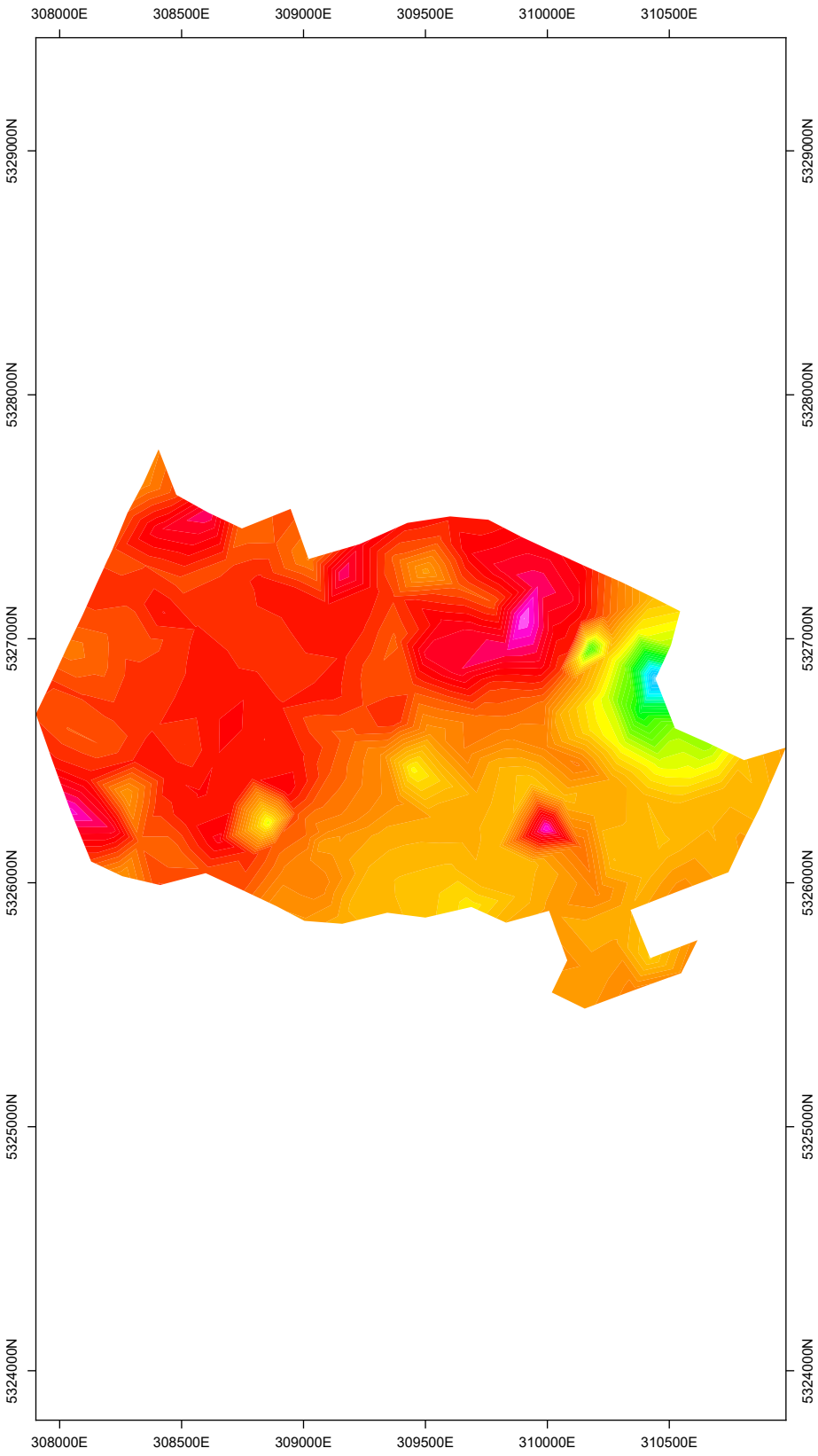
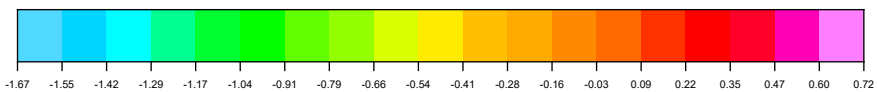


CH40 : Y Component



pT/A

SURVEY PARAMETERS

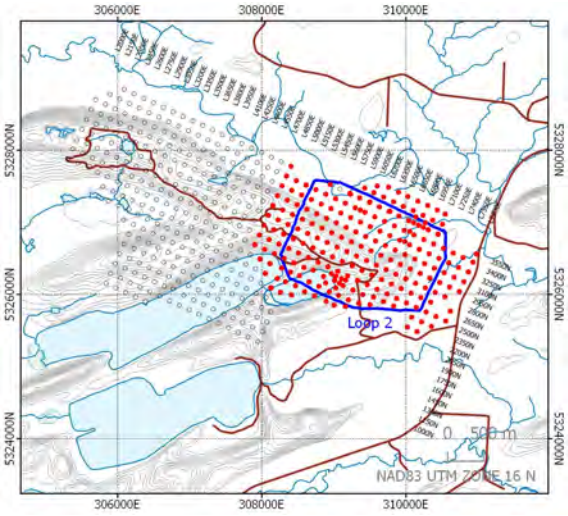
Configuration	: Fixed Loop TEM
Station Spacing	: 150 m
Loop	: Loop 2

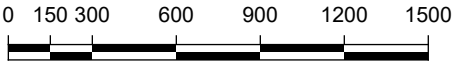
RECEIVER

Receiver	: SMARTem24
Frequency	: 0.25 Hz Hz
Component	: X,Y,Z
Rx Sensor	: Supracon JD LT SQUID
Gate Times	: SMARTem24 Standard

TRANSMITTER

Transmitter	: Phoenix TXU-30
Tx Turns	: 1
Tx Current	: ~28 A
Turn Off	: 0.800 ms





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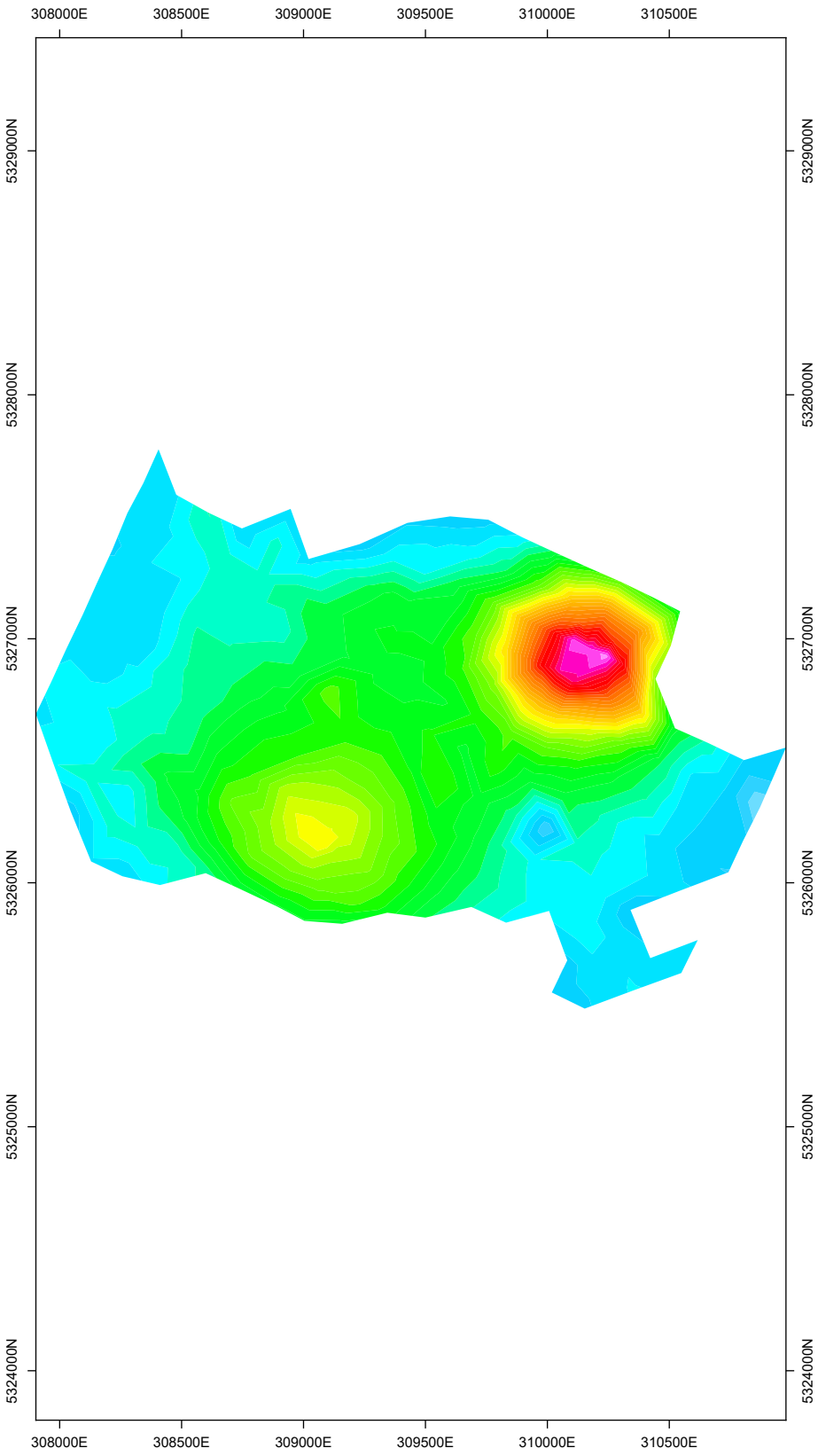
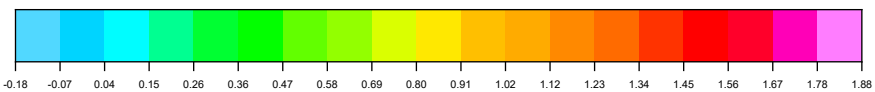


CH40 : Z Component



pT/A

SURVEY PARAMETERS

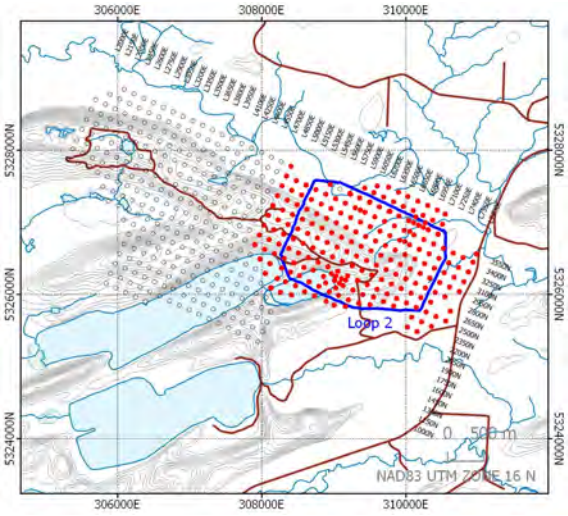
Configuration	: Fixed Loop TEM
Station Spacing	: 150 m
Loop	: Loop 2

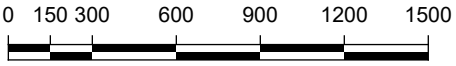
RECEIVER

Receiver	: SMARTem24
Frequency	: 0.25 Hz Hz
Component	: X,Y,Z
Rx Sensor	: Supracon JD LT SQUID
Gate Times	: SMARTem24 Standard

TRANSMITTER

Transmitter	: Phoenix TXU-30
Tx Turns	: 1
Tx Current	: ~28 A
Turn Off	: 0.800 ms





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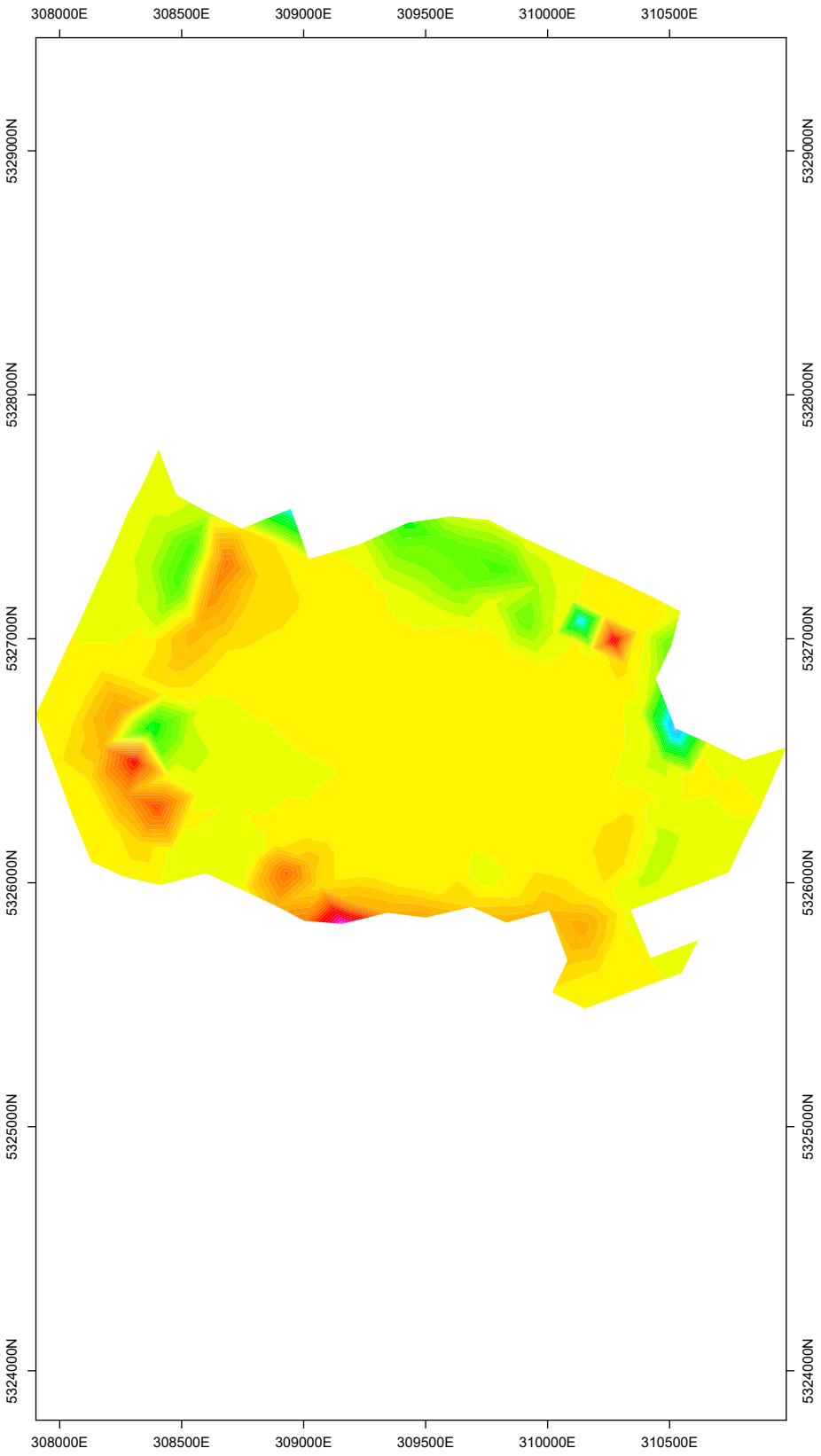
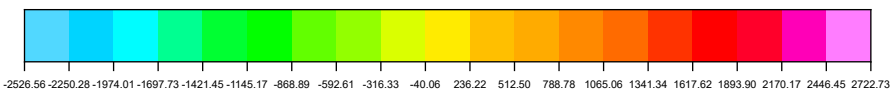


VPRI : X Component



pT/A

SURVEY PARAMETERS

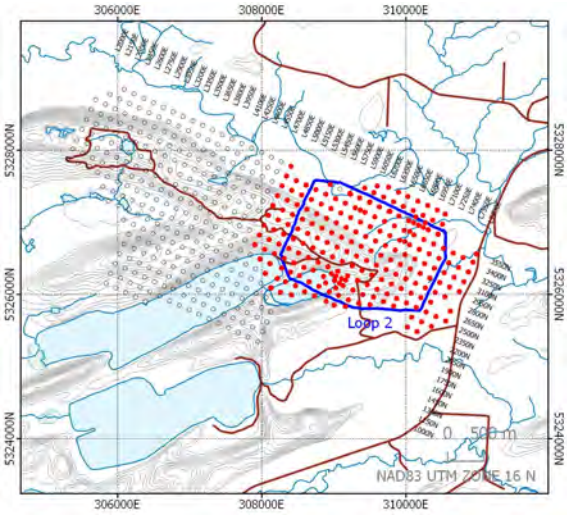
Configuration	: Fixed Loop TEM
Station Spacing	: 150 m
Loop	: Loop 2

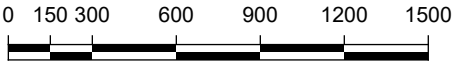
RECEIVER

Receiver	: SMARTem24
Frequency	: 0.25 Hz Hz
Component	: X,Y,Z
Rx Sensor	: Supracon JD LT SQUID
Gate Times	: SMARTem24 Standard

TRANSMITTER

Transmitter	: Phoenix TXU-30
Tx Turns	: 1
Tx Current	: ~28 A
Turn Off	: 0.800 ms





Scale 1:27000

Kobold Metals
Crystal Lake Project
Loop 2 Grid

Fixed Loop TEM Survey

Surveyed By: Connor Harrison
Survey Date: December 2021

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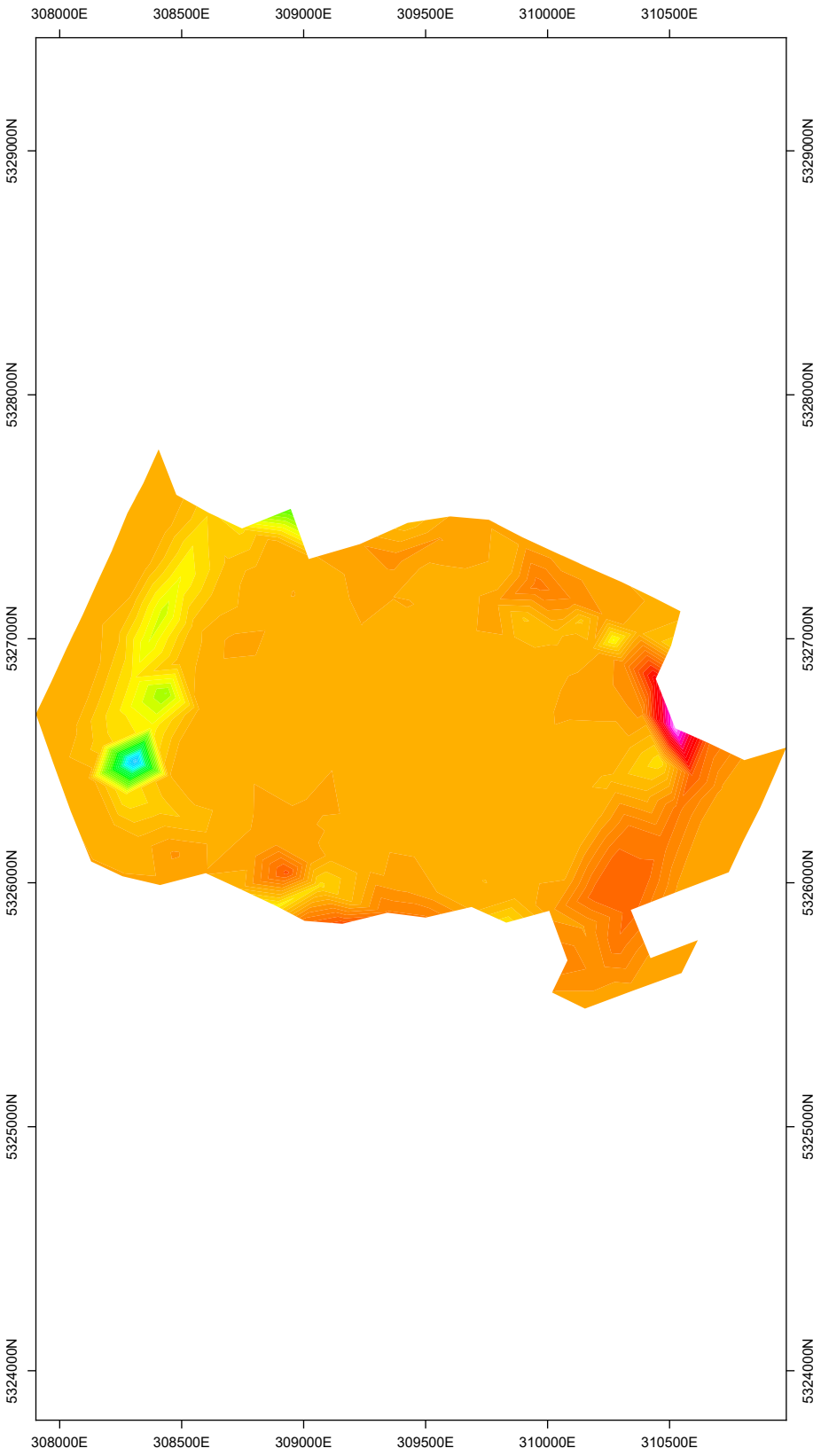
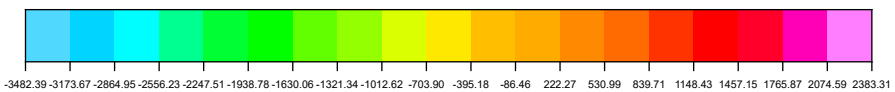


VPRI : Y Component



pT/A

SURVEY PARAMETERS

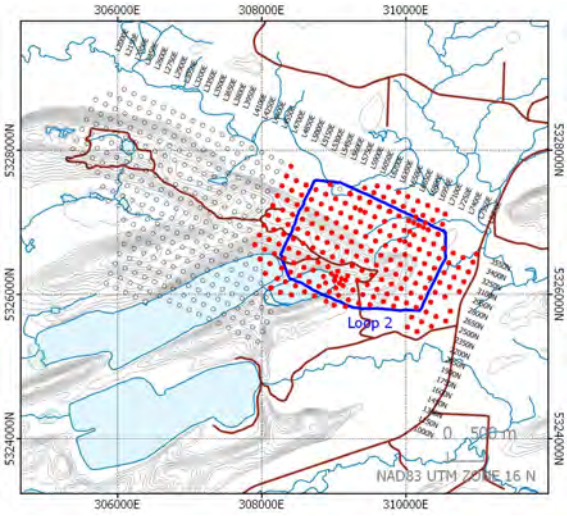
Configuration	: Fixed Loop TEM
Station Spacing	: 150 m
Loop	: Loop 2

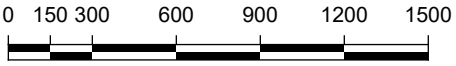
RECEIVER

Receiver	: SMARTem24
Frequency	: 0.25 Hz Hz
Component	: X,Y,Z
Rx Sensor	: Supracon JD LT SQUID
Gate Times	: SMARTem24 Standard

TRANSMITTER

Transmitter	: Phoenix TXU-30
Tx Turns	: 1
Tx Current	: ~28 A
Turn Off	: 0.800 ms





Scale 1:27000

Kobold Metals
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Loop 2 Grid

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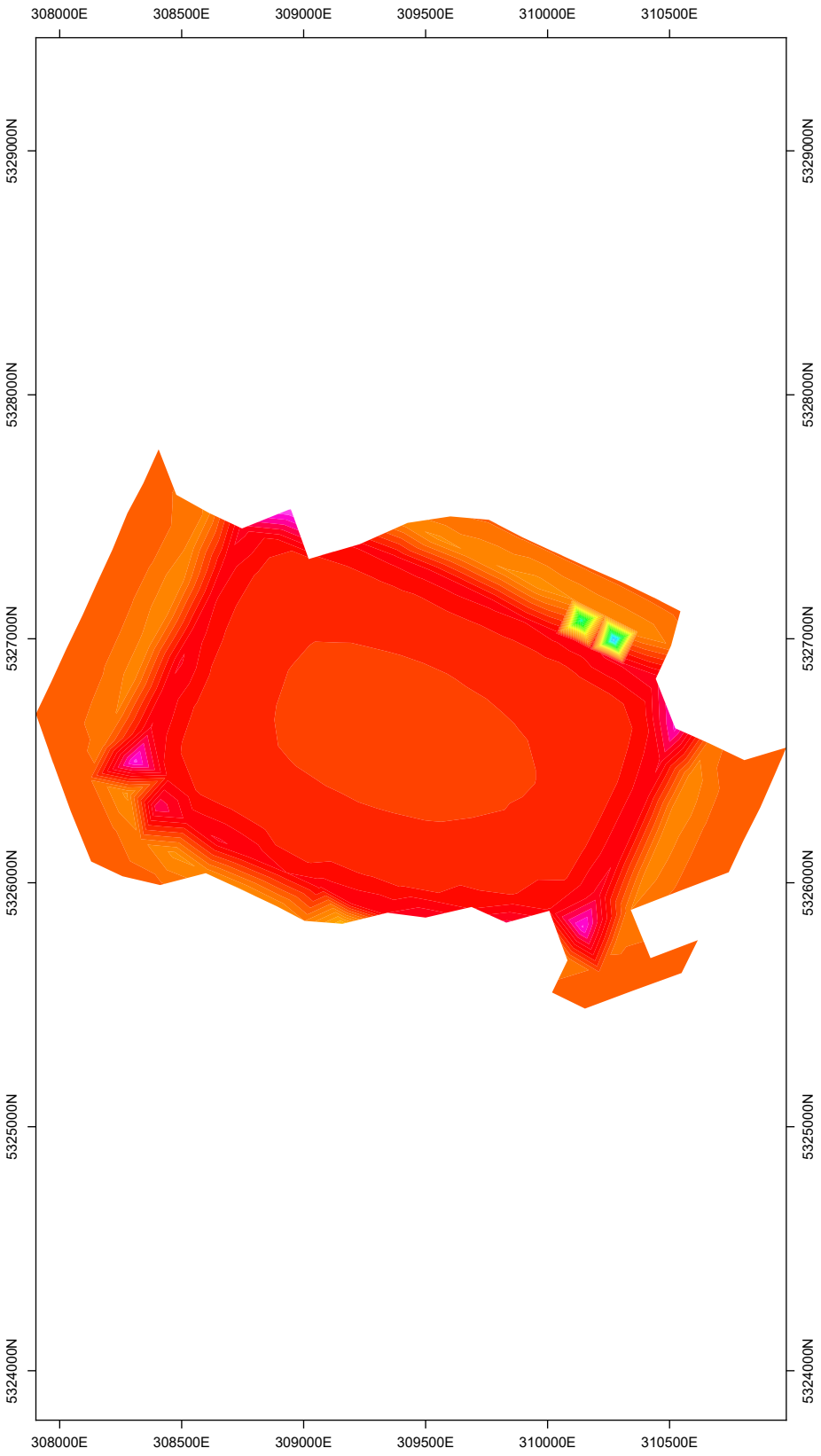
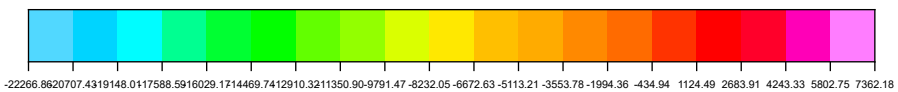


VPRI : Z Component



pT/A

SURVEY PARAMETERS

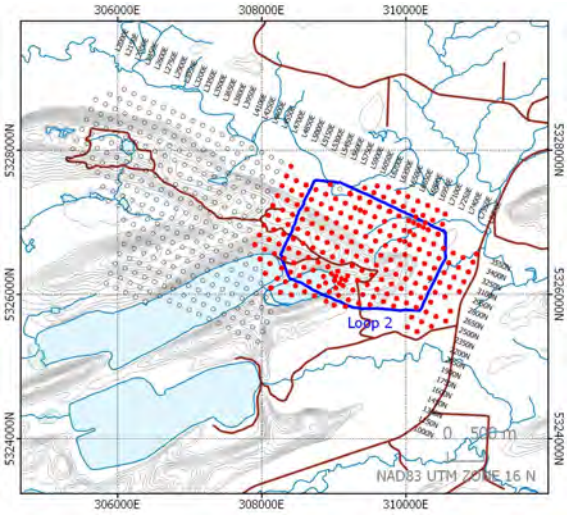
Configuration	: Fixed Loop TEM
Station Spacing	: 150 m
Loop	: Loop 2

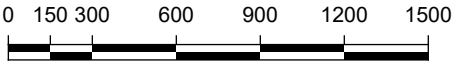
RECEIVER

Receiver	: SMARTem24
Frequency	: 0.25 Hz Hz
Component	: X,Y,Z
Rx Sensor	: Supracon JD LT SQUID
Gate Times	: SMARTem24 Standard

TRANSMITTER

Transmitter	: Phoenix TXU-30
Tx Turns	: 1
Tx Current	: ~28 A
Turn Off	: 0.800 ms





Scale 1:27000

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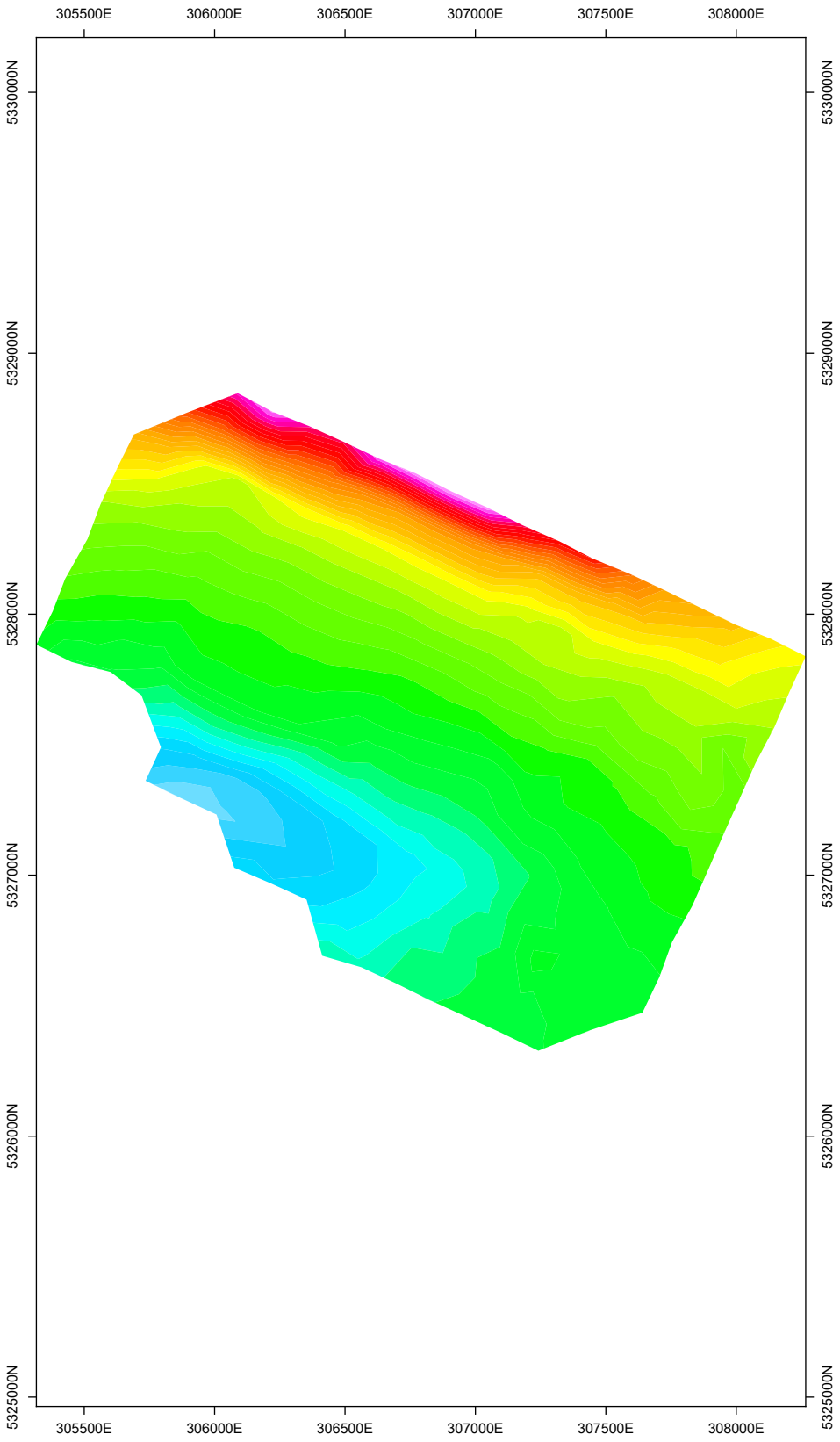
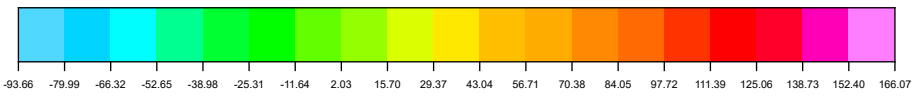


CH10 : X Component



pT/A

SURVEY PARAMETERS

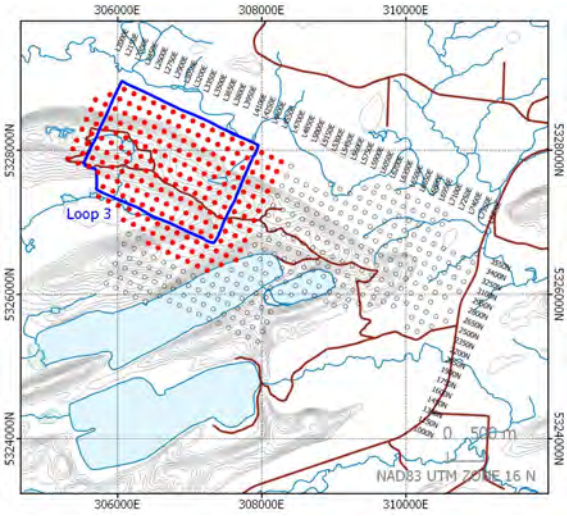
Configuration	: Fixed Loop TEM
Station Spacing	: 150 m
Loop	: Loop 3

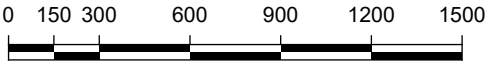
RECEIVER

Receiver	: SMARTem24
Frequency	: 0.25 Hz Hz
Component	: X,Y,Z
Rx Sensor	: Supracon JD LT SQUID
Gate Times	: SMARTem24 Standard

TRANSMITTER

Transmitter	: Phoenix TXU-30
Tx Turns	: 1
Tx Current	: ~28 A
Turn Off	: 0.800 ms





Scale 1:25000

Kobold Metals
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Loop 3 Grid

Fixed Loop TEM Survey

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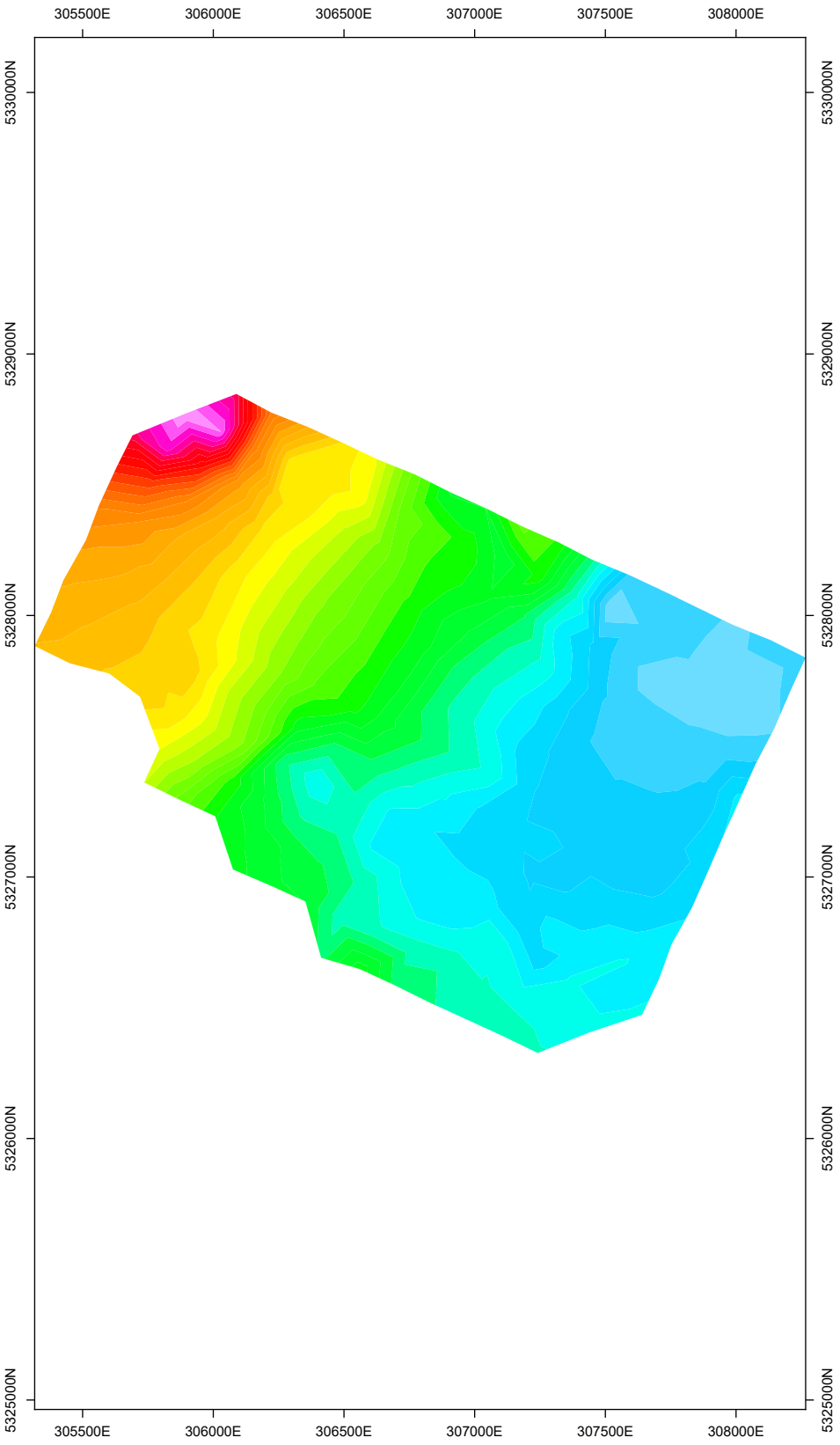
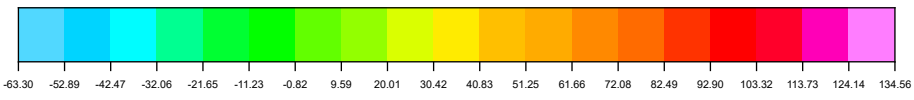


CH10 : Y Component



pT/A

SURVEY PARAMETERS

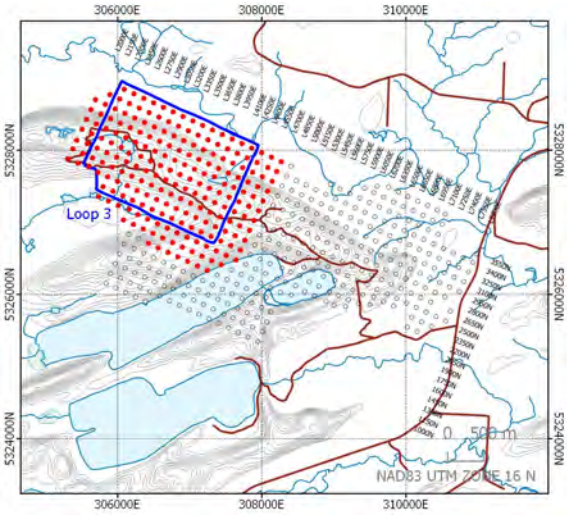
Configuration	: Fixed Loop TEM
Station Spacing	: 150 m
Loop	: Loop 3

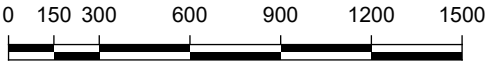
RECEIVER

Receiver	: SMARTem24
Frequency	: 0.25 Hz Hz
Component	: X,Y,Z
Rx Sensor	: Supracon JD LT SQUID
Gate Times	: SMARTem24 Standard

TRANSMITTER

Transmitter	: Phoenix TXU-30
Tx Turns	: 1
Tx Current	: ~28 A
Turn Off	: 0.800 ms





Scale 1:25000

Kobold Metals
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Loop 3 Grid

Fixed Loop TEM Survey

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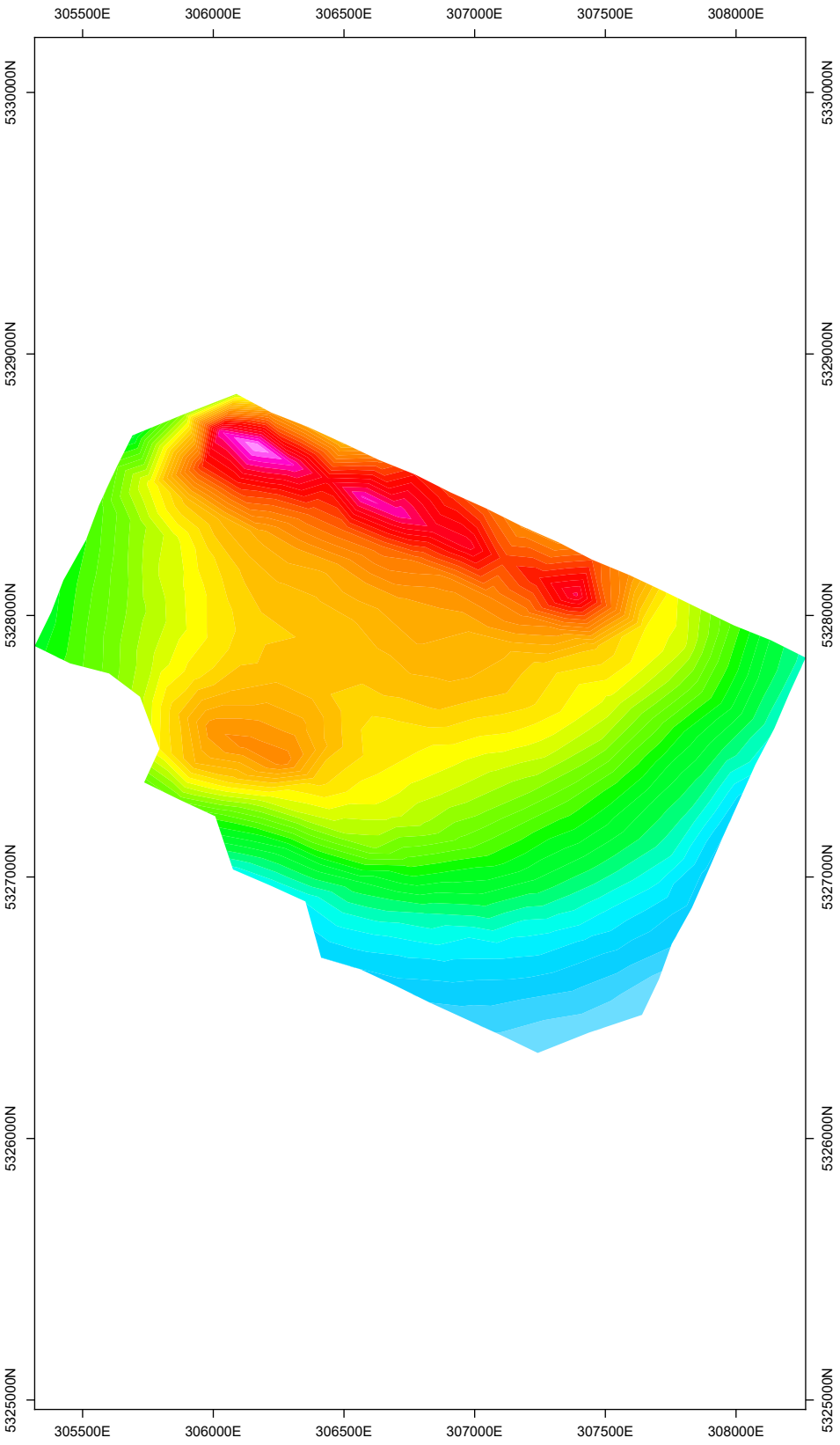
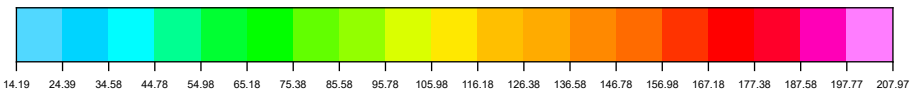


CH10 : Z Component



pT/A

SURVEY PARAMETERS

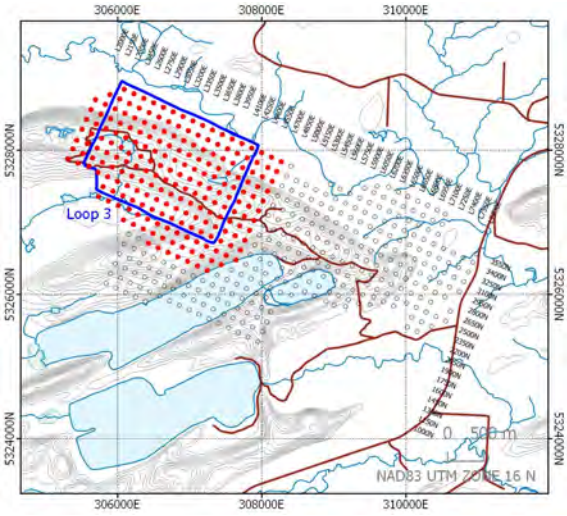
Configuration	: Fixed Loop TEM
Station Spacing	: 150 m
Loop	: Loop 3

RECEIVER

Receiver	: SMARTem24
Frequency	: 0.25 Hz Hz
Component	: X,Y,Z
Rx Sensor	: Supracon JD LT SQUID
Gate Times	: SMARTem24 Standard

TRANSMITTER

Transmitter	: Phoenix TXU-30
Tx Turns	: 1
Tx Current	: ~28 A
Turn Off	: 0.800 ms



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Scale 1:25000

Kobold Metals
Crystal Lake Project
Loop 3 Grid

Fixed Loop TEM Survey

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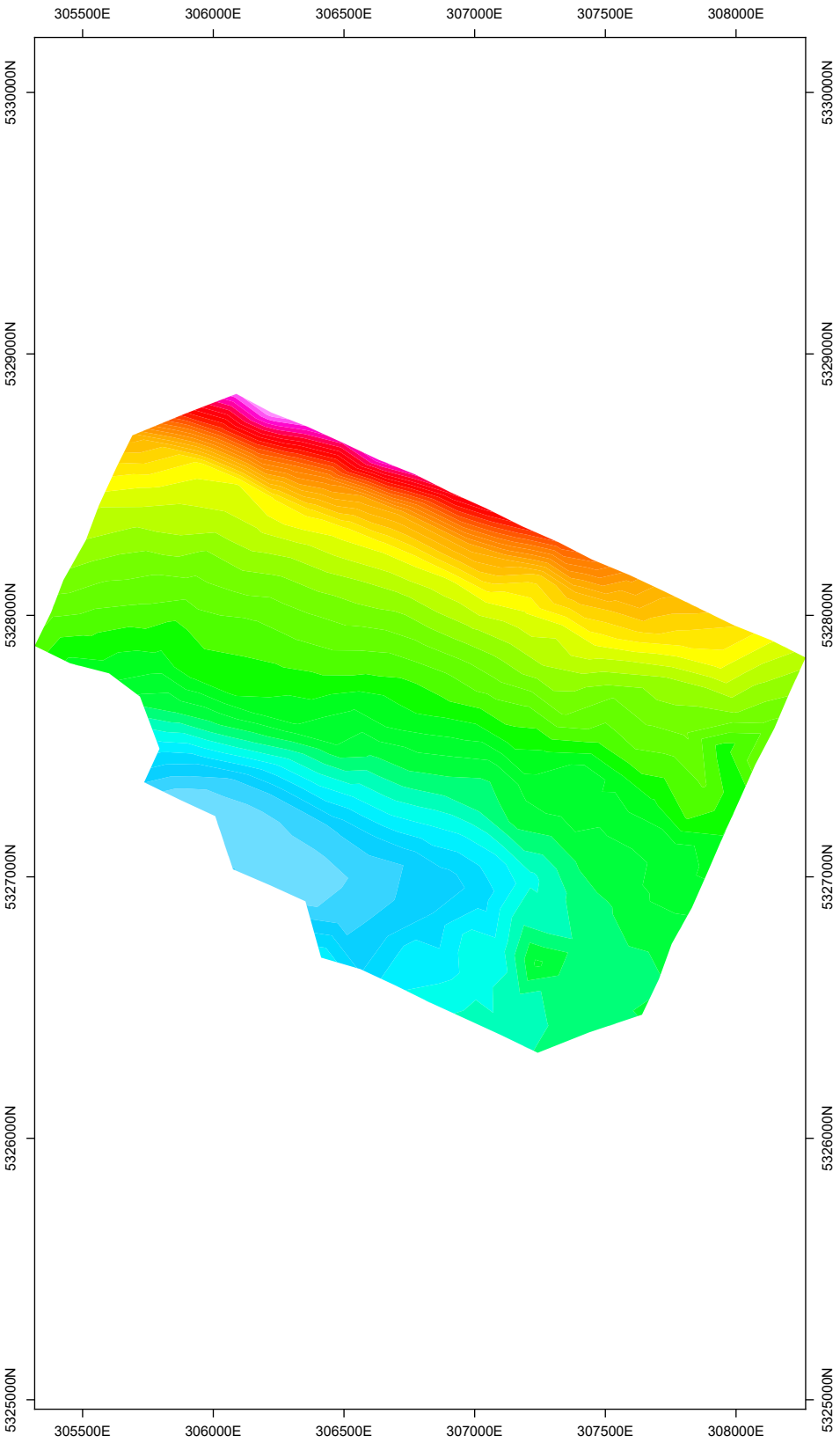
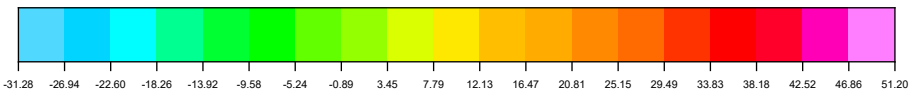


CH20 : X Component



pT/A

SURVEY PARAMETERS

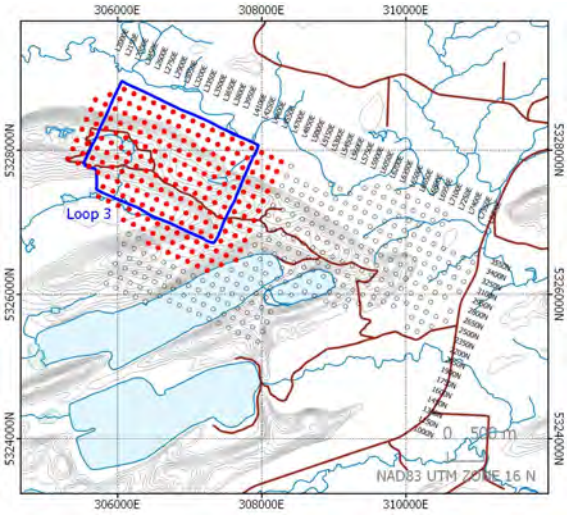
Configuration	: Fixed Loop TEM
Station Spacing	: 150 m
Loop	: Loop 3

RECEIVER

Receiver	: SMARTem24
Frequency	: 0.25 Hz Hz
Component	: X,Y,Z
Rx Sensor	: Supracon JD LT SQUID
Gate Times	: SMARTem24 Standard

TRANSMITTER

Transmitter	: Phoenix TXU-30
Tx Turns	: 1
Tx Current	: ~28 A
Turn Off	: 0.800 ms



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Scale 1:25000

Kobold Metals
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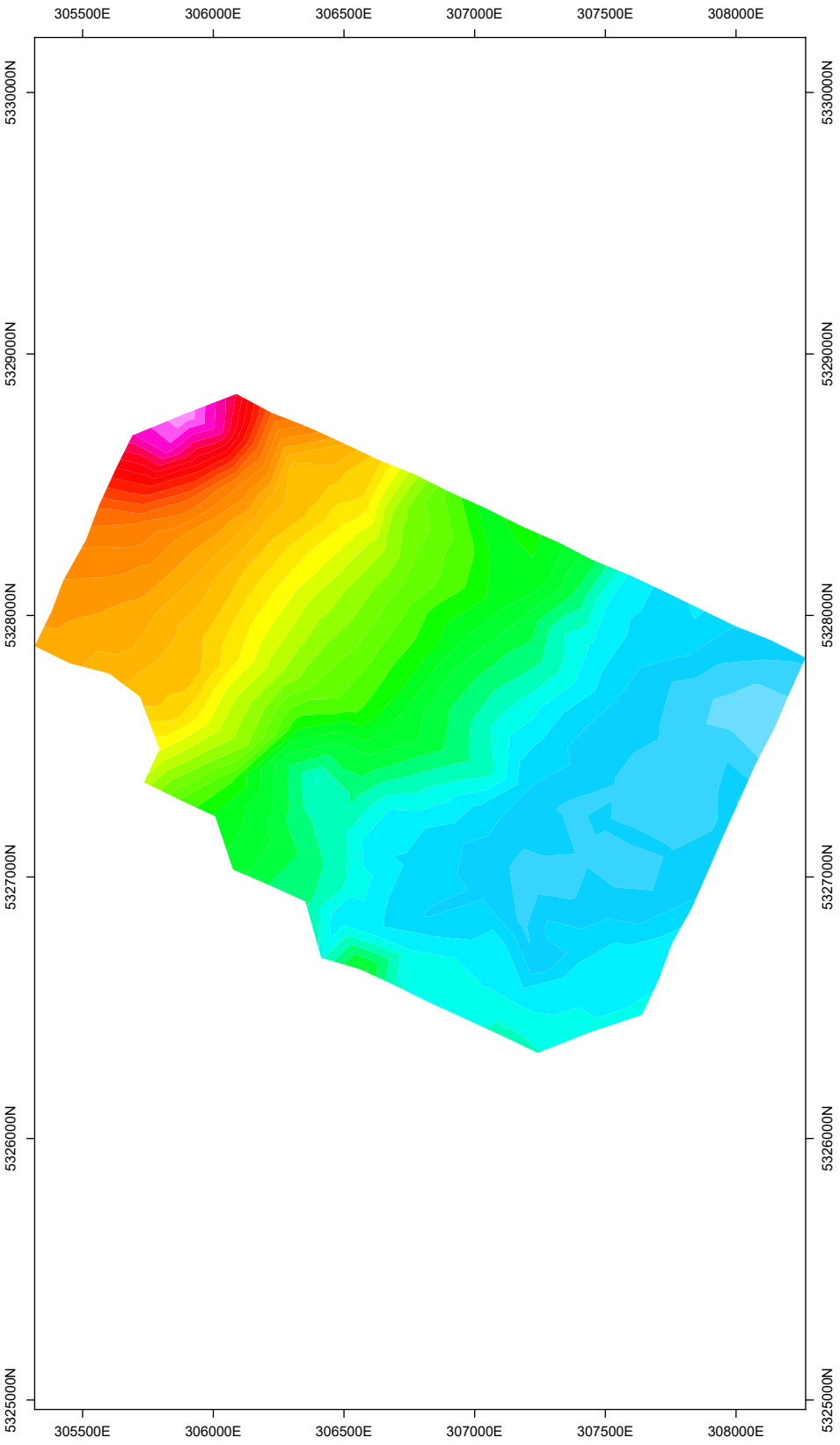
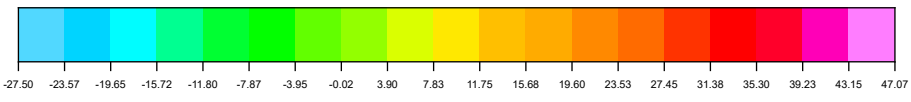


CH20 : Y Component



pT/A

SURVEY PARAMETERS

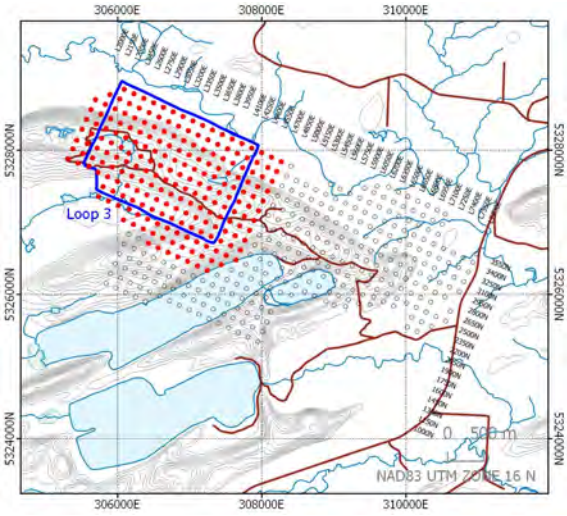
Configuration	: Fixed Loop TEM
Station Spacing	: 150 m
Loop	: Loop 3

RECEIVER

Receiver	: SMARTem24
Frequency	: 0.25 Hz Hz
Component	: X,Y,Z
Rx Sensor	: Supracon JD LT SQUID
Gate Times	: SMARTem24 Standard

TRANSMITTER

Transmitter	: Phoenix TXU-30
Tx Turns	: 1
Tx Current	: ~28 A
Turn Off	: 0.800 ms



0 150 300 600 900 1200 1500

Scale 1:25000

Kobold Metals
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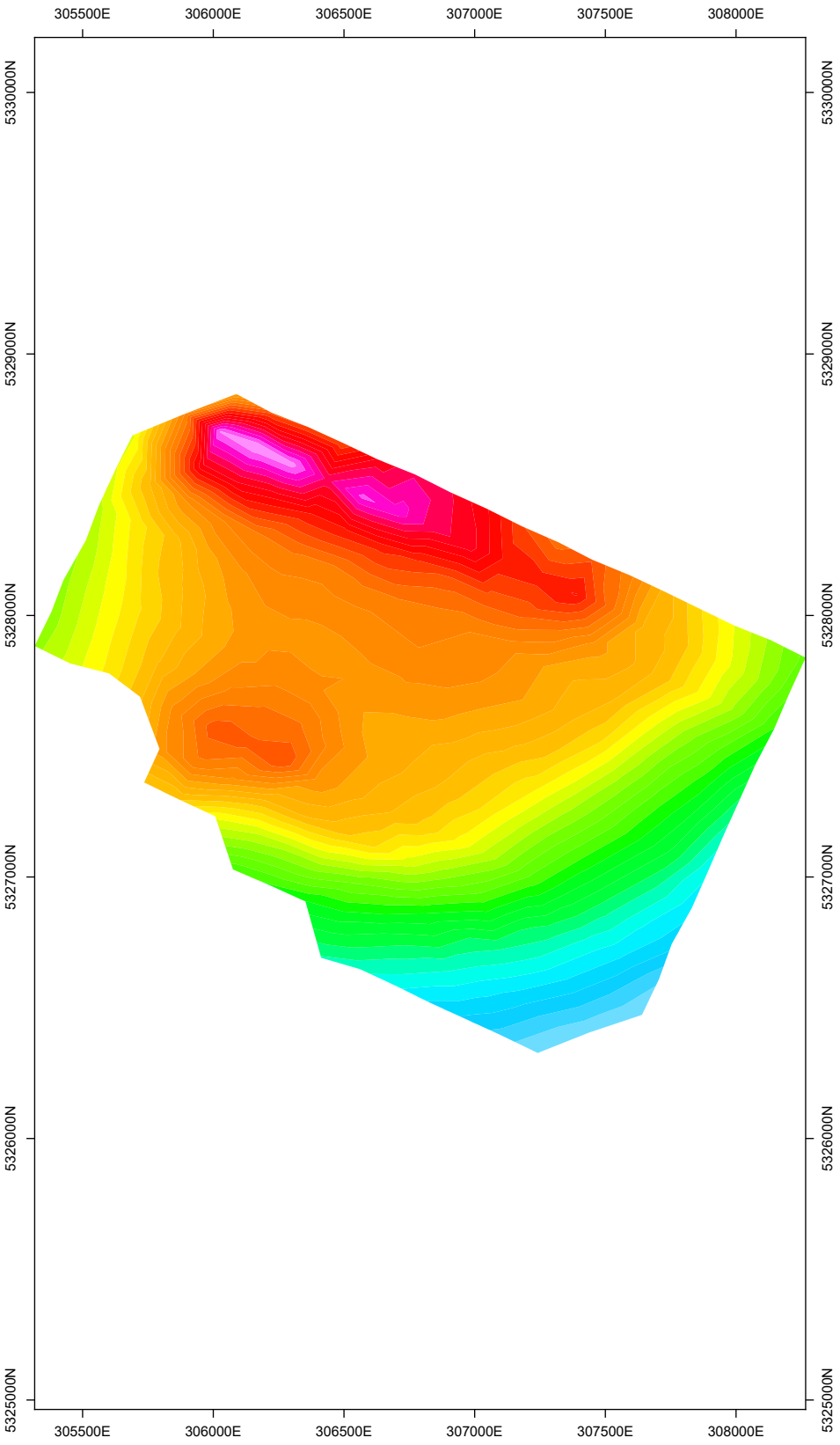
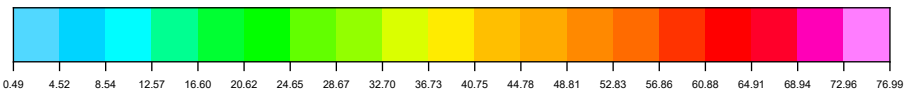


CH20 : Z Component



pT/A

SURVEY PARAMETERS

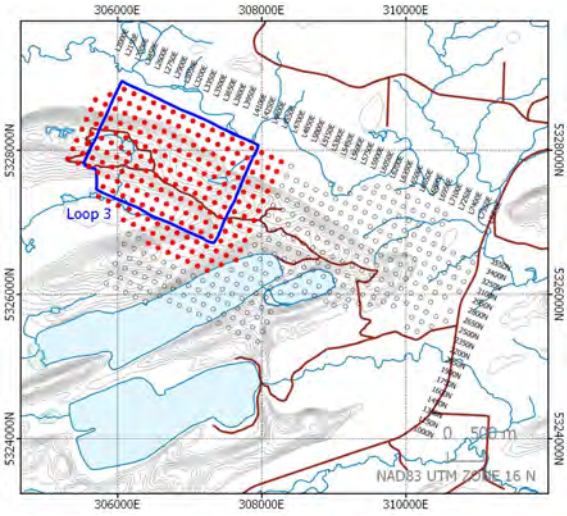
Configuration	: Fixed Loop TEM
Station Spacing	: 150 m
Loop	: Loop 3

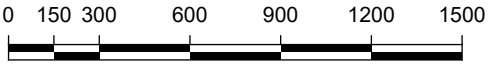
RECEIVER

Receiver	: SMARTem24
Frequency	: 0.25 Hz Hz
Component	: X,Y,Z
Rx Sensor	: Supracon JD LT SQUID
Gate Times	: SMARTem24 Standard

TRANSMITTER

Transmitter	: Phoenix TXU-30
Tx Turns	: 1
Tx Current	: ~28 A
Turn Off	: 0.800 ms





Scale 1:25000

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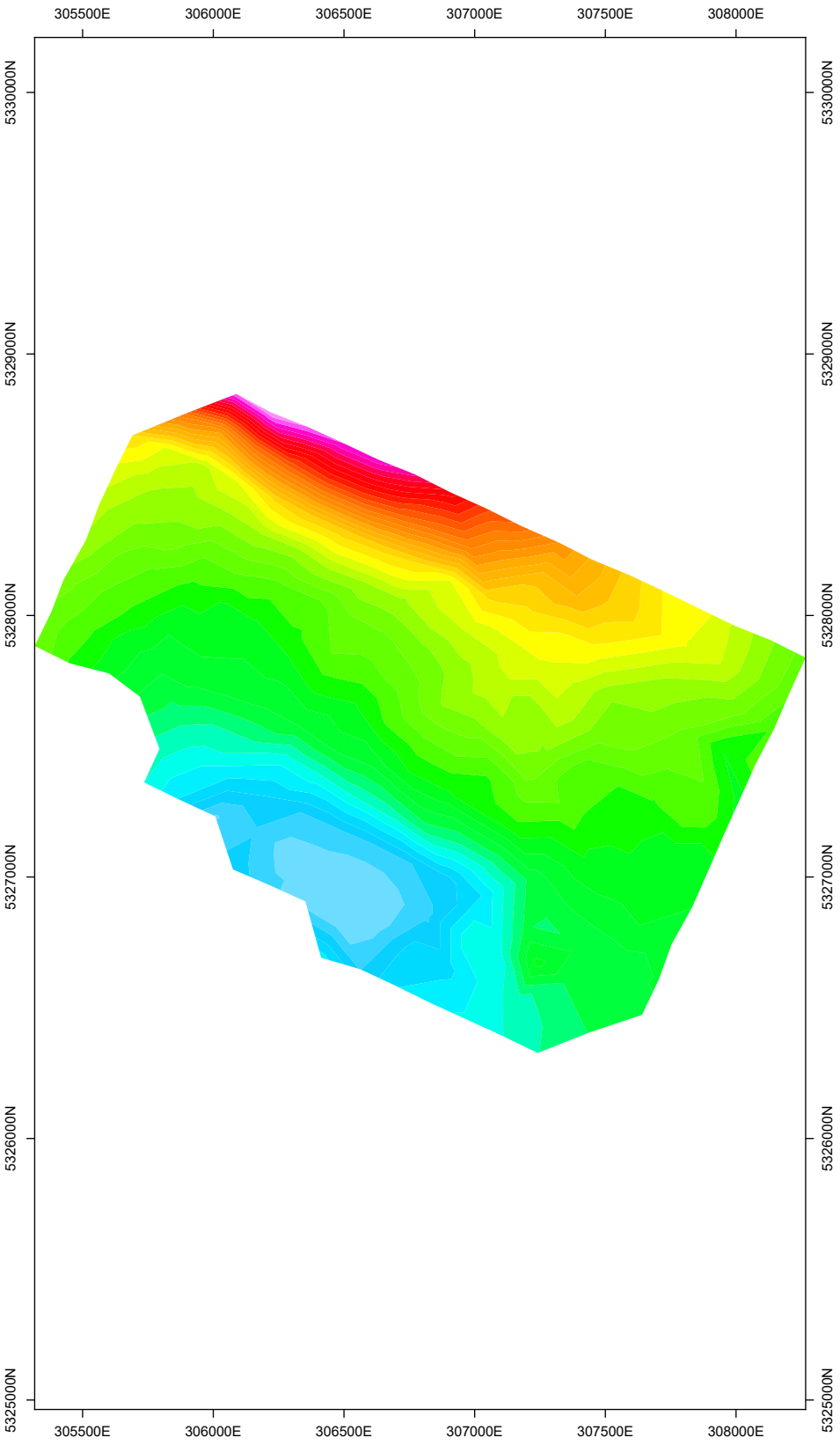
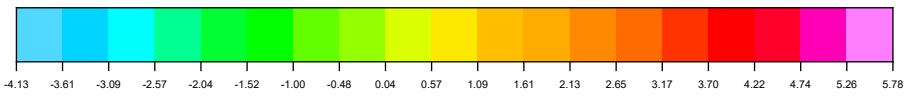


CH30 : X Component



pT/A

SURVEY PARAMETERS

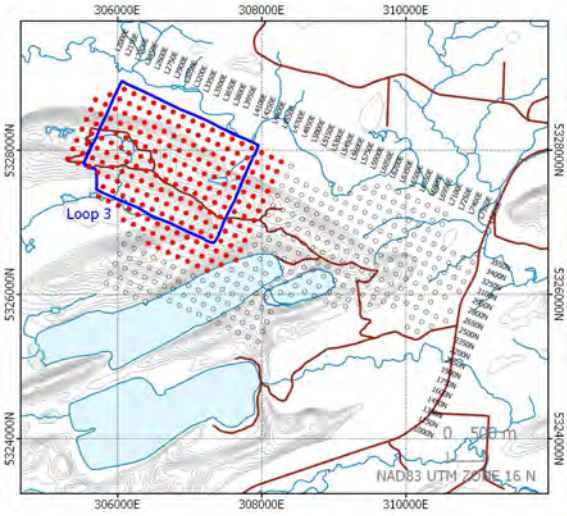
Configuration	: Fixed Loop TEM
Station Spacing	: 150 m
Loop	: Loop 3

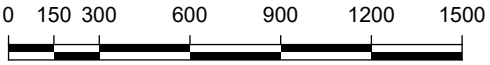
RECEIVER

Receiver	: SMARTem24
Frequency	: 0.25 Hz Hz
Component	: X,Y,Z
Rx Sensor	: Supracon JD LT SQUID
Gate Times	: SMARTem24 Standard

TRANSMITTER

Transmitter	: Phoenix TXU-30
Tx Turns	: 1
Tx Current	: ~28 A
Turn Off	: 0.800 ms





Scale 1:25000

Kobold Metals
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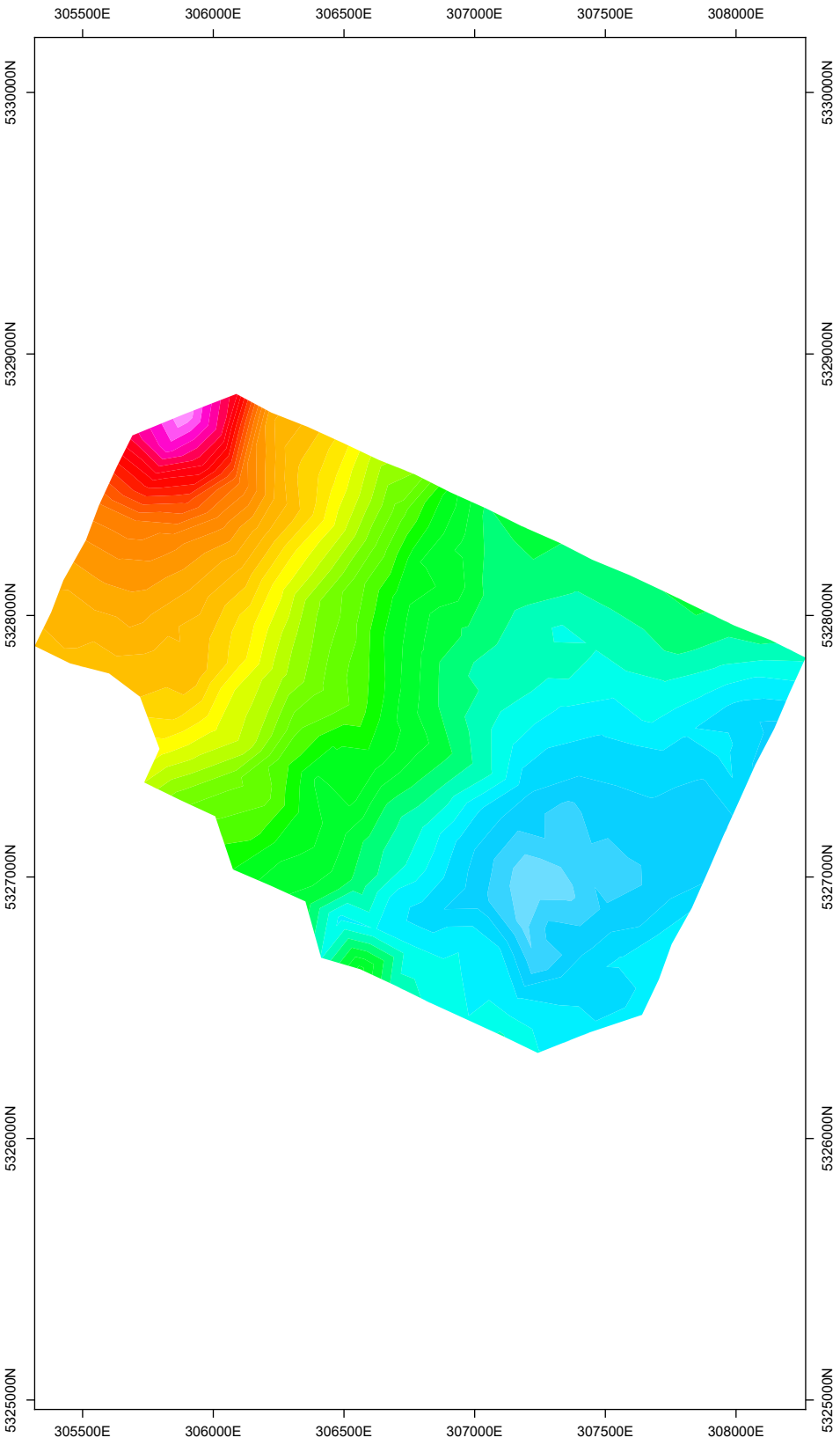
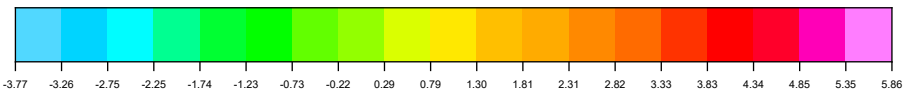


CH30 : Y Component



pT/A

SURVEY PARAMETERS

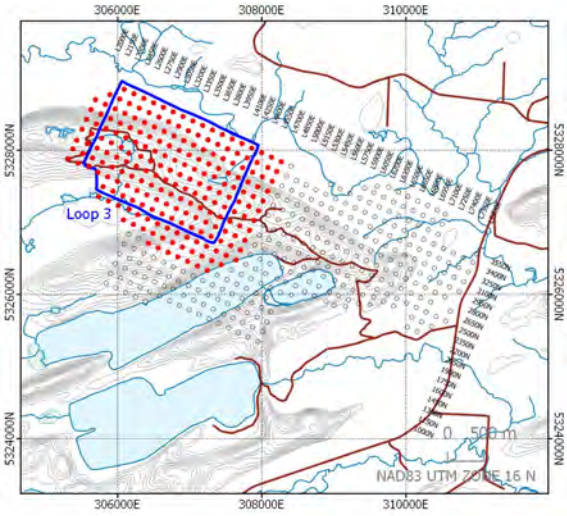
Configuration	: Fixed Loop TEM
Station Spacing	: 150 m
Loop	: Loop 3

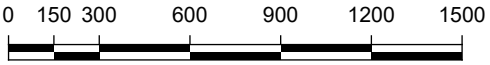
RECEIVER

Receiver	: SMARTem24
Frequency	: 0.25 Hz Hz
Component	: X,Y,Z
Rx Sensor	: Supracon JD LT SQUID
Gate Times	: SMARTem24 Standard

TRANSMITTER

Transmitter	: Phoenix TXU-30
Tx Turns	: 1
Tx Current	: ~28 A
Turn Off	: 0.800 ms





Scale 1:25000

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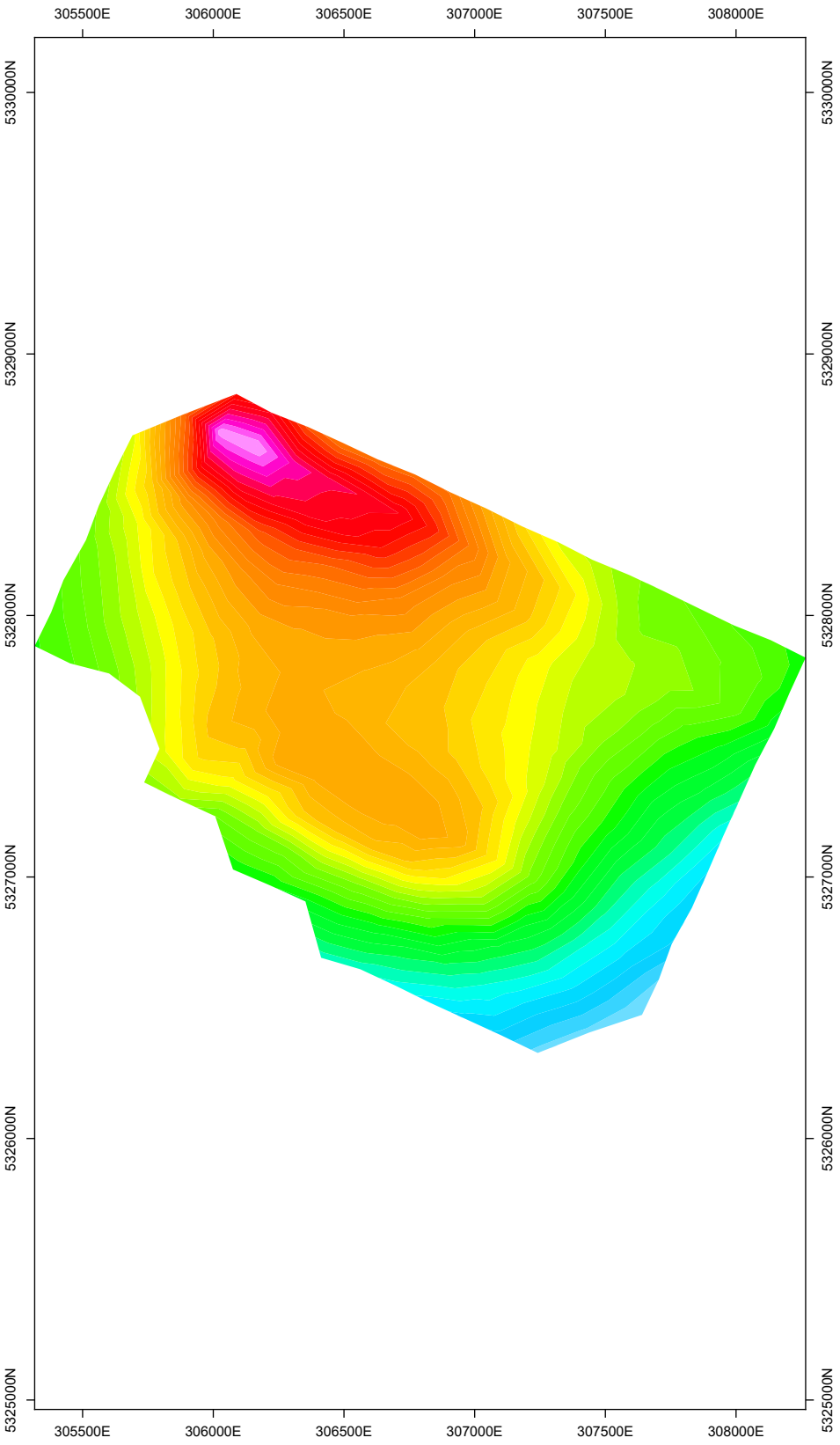
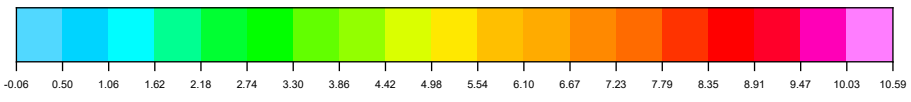


CH30 : Z Component



pT/A

SURVEY PARAMETERS

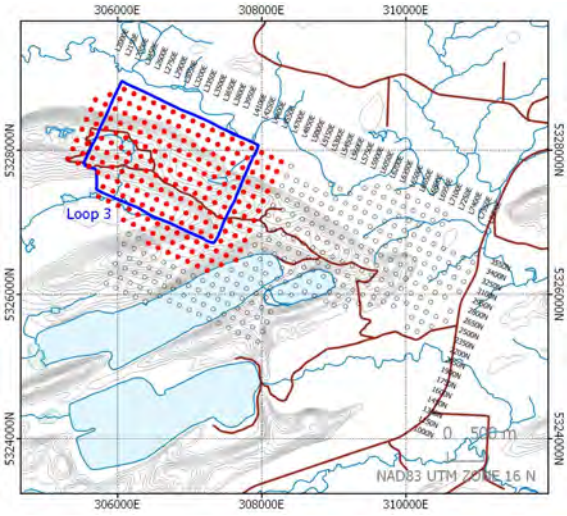
Configuration	: Fixed Loop TEM
Station Spacing	: 150 m
Loop	: Loop 3

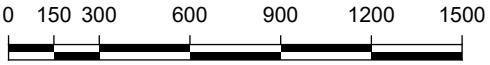
RECEIVER

Receiver	: SMARTem24
Frequency	: 0.25 Hz Hz
Component	: X,Y,Z
Rx Sensor	: Supracon JD LT SQUID
Gate Times	: SMARTem24 Standard

TRANSMITTER

Transmitter	: Phoenix TXU-30
Tx Turns	: 1
Tx Current	: ~28 A
Turn Off	: 0.800 ms





Scale 1:25000

Kobold Metals
Crystal Lake Project
Loop 3 Grid

Fixed Loop TEM Survey

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Survey Date: February 2022

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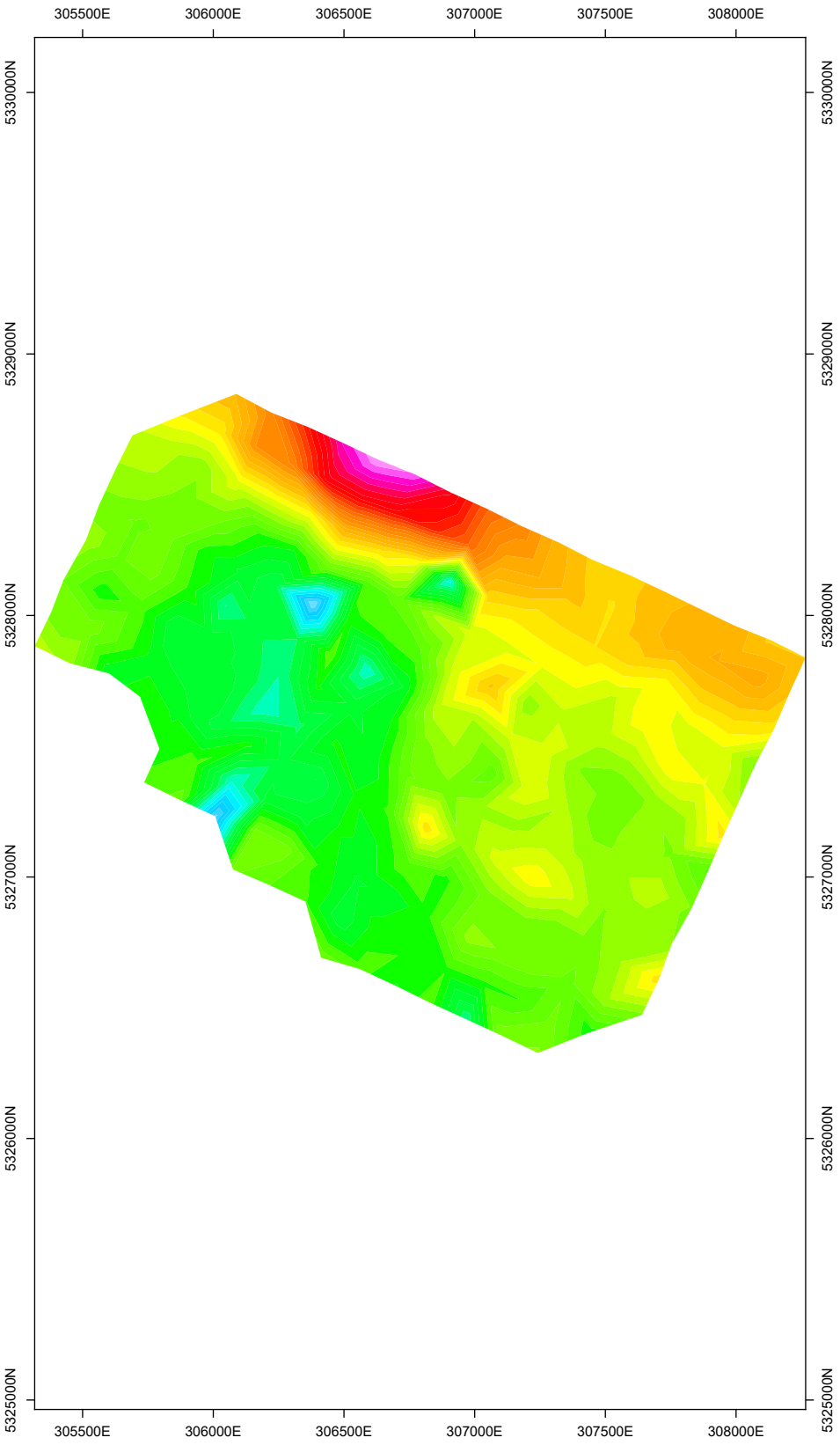
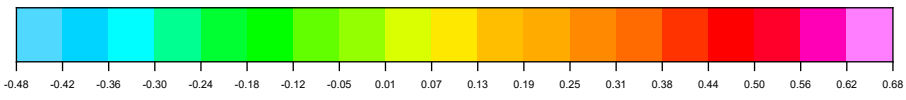


CH40 : X Component



pT/A

SURVEY PARAMETERS

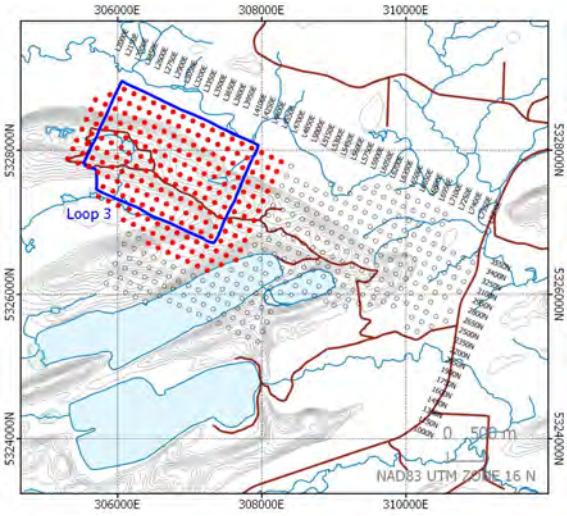
Configuration	: Fixed Loop TEM
Station Spacing	: 150 m
Loop	: Loop 3

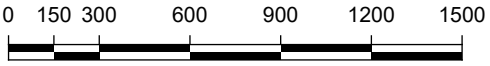
RECEIVER

Receiver	: SMARTem24
Frequency	: 0.25 Hz Hz
Component	: X,Y,Z
Rx Sensor	: Supracon JD LT SQUID
Gate Times	: SMARTem24 Standard

TRANSMITTER

Transmitter	: Phoenix TXU-30
Tx Turns	: 1
Tx Current	: ~28 A
Turn Off	: 0.800 ms





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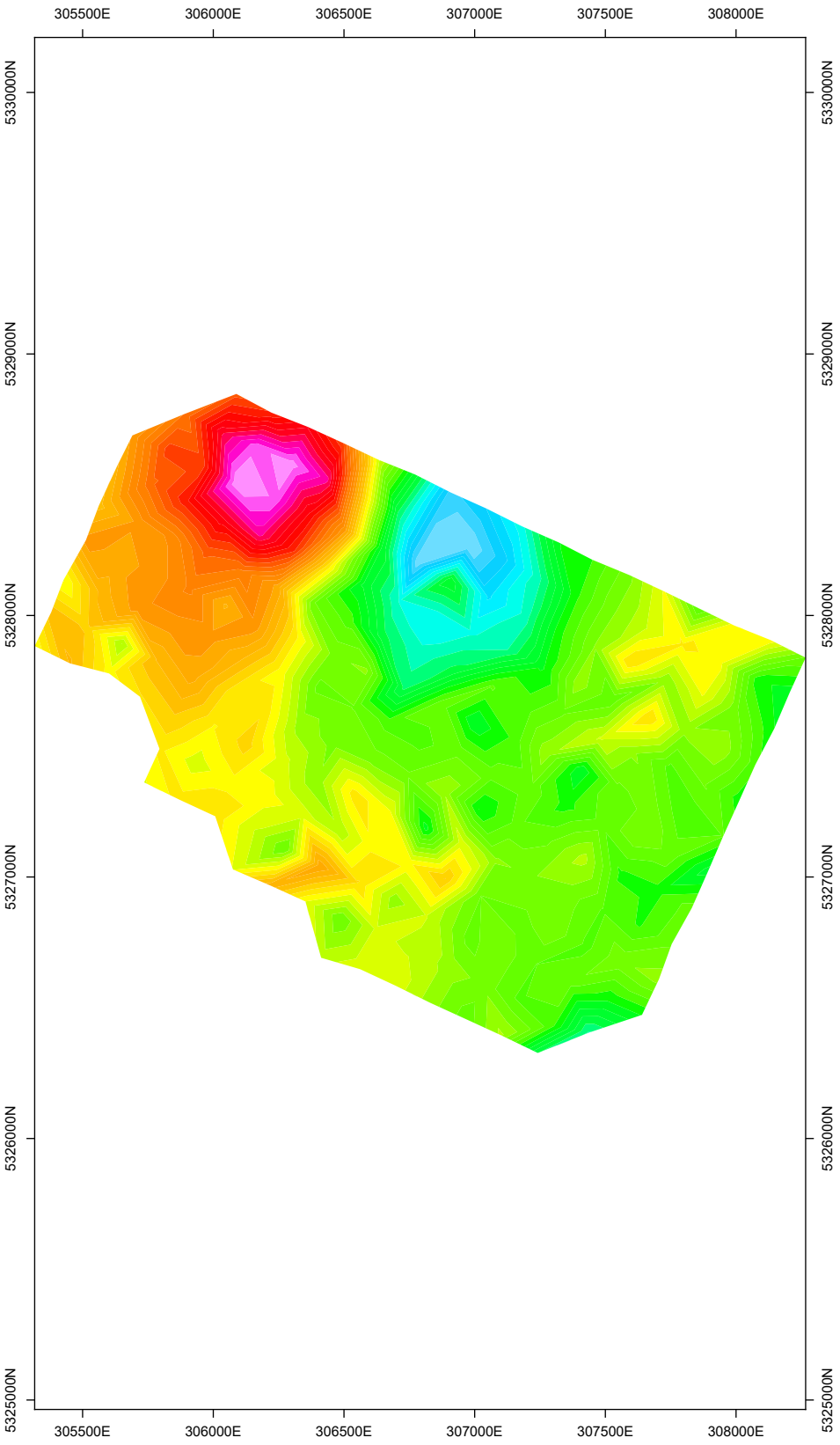
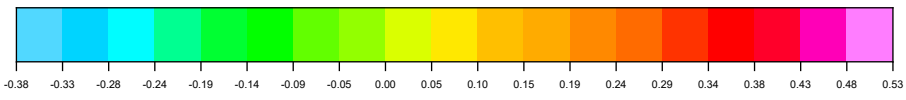


CH40 : Y Component



pT/A

SURVEY PARAMETERS

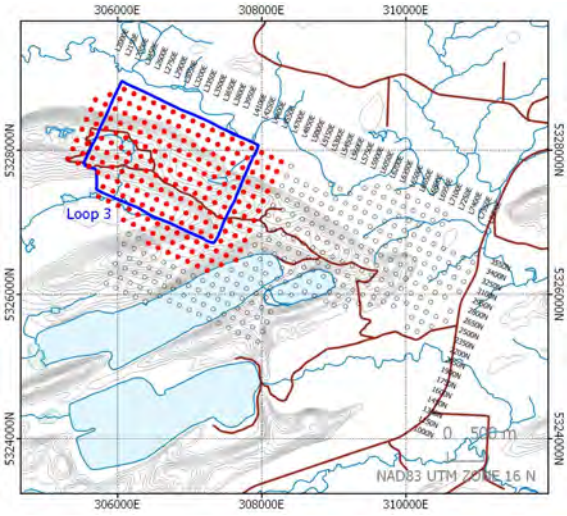
Configuration	: Fixed Loop TEM
Station Spacing	: 150 m
Loop	: Loop 3

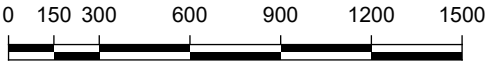
RECEIVER

Receiver	: SMARTem24
Frequency	: 0.25 Hz Hz
Component	: X,Y,Z
Rx Sensor	: Supracon JD LT SQUID
Gate Times	: SMARTem24 Standard

TRANSMITTER

Transmitter	: Phoenix TXU-30
Tx Turns	: 1
Tx Current	: ~28 A
Turn Off	: 0.800 ms





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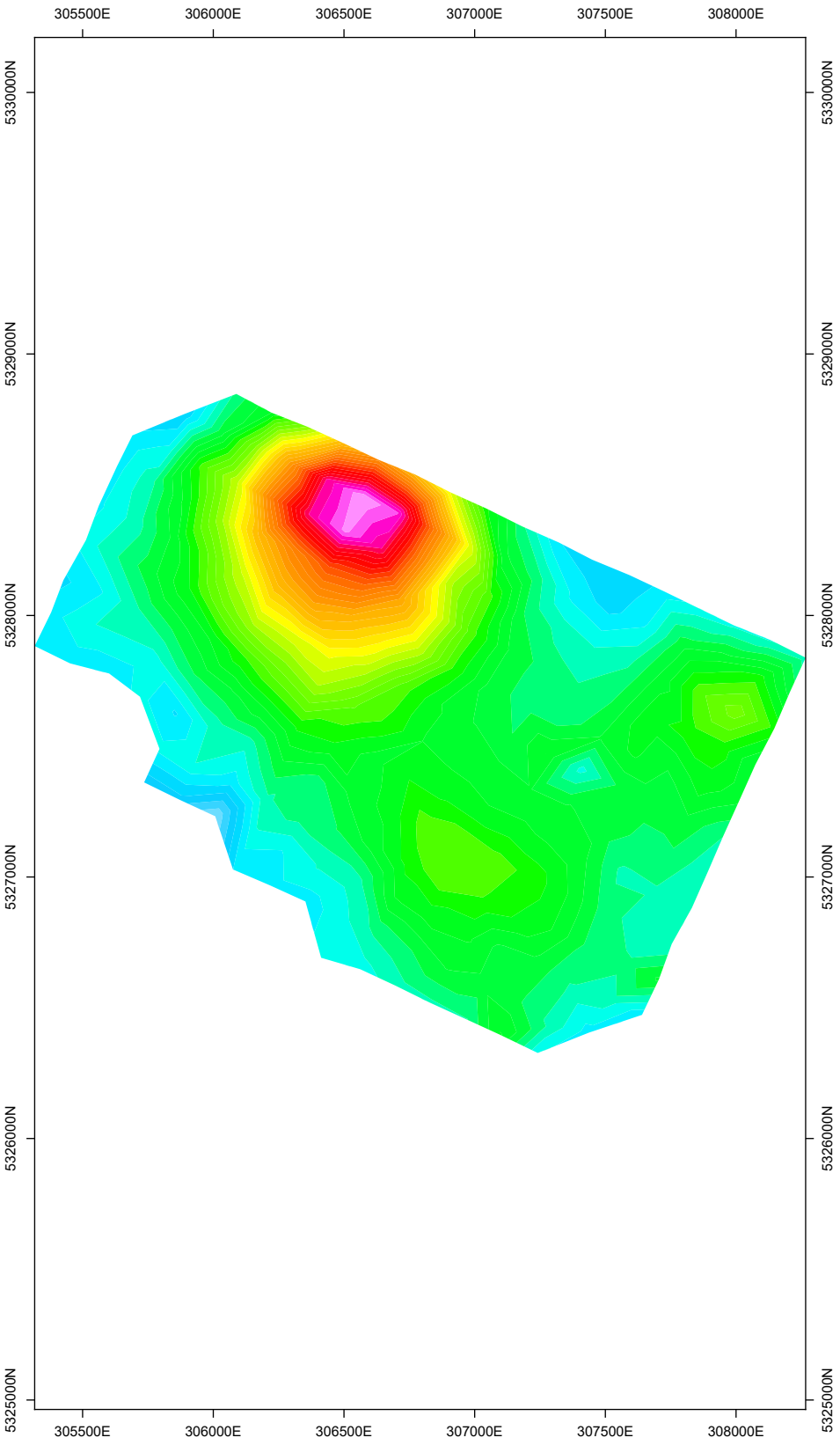


CH40 : Z Component

pT/A

SURVEY PARAMETERS

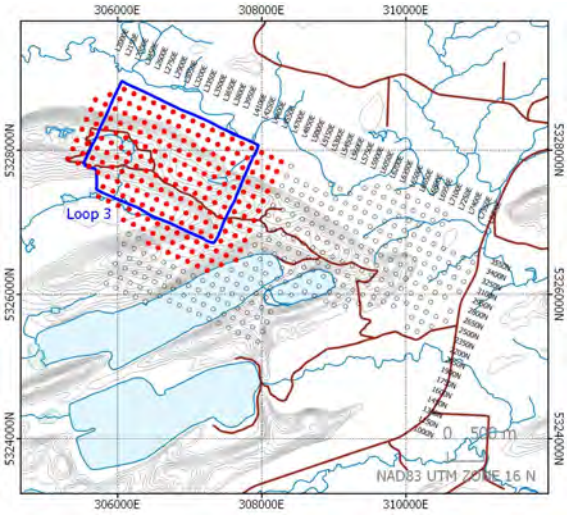
Configuration	: Fixed Loop TEM
Station Spacing	: 150 m
Loop	: Loop 3

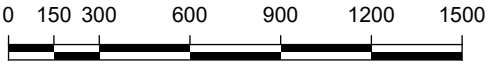
RECEIVER

Receiver	: SMARTem24
Frequency	: 0.25 Hz Hz
Component	: X,Y,Z
Rx Sensor	: Supracon JD LT SQUID
Gate Times	: SMARTem24 Standard

TRANSMITTER

Transmitter	: Phoenix TXU-30
Tx Turns	: 1
Tx Current	: ~28 A
Turn Off	: 0.800 ms





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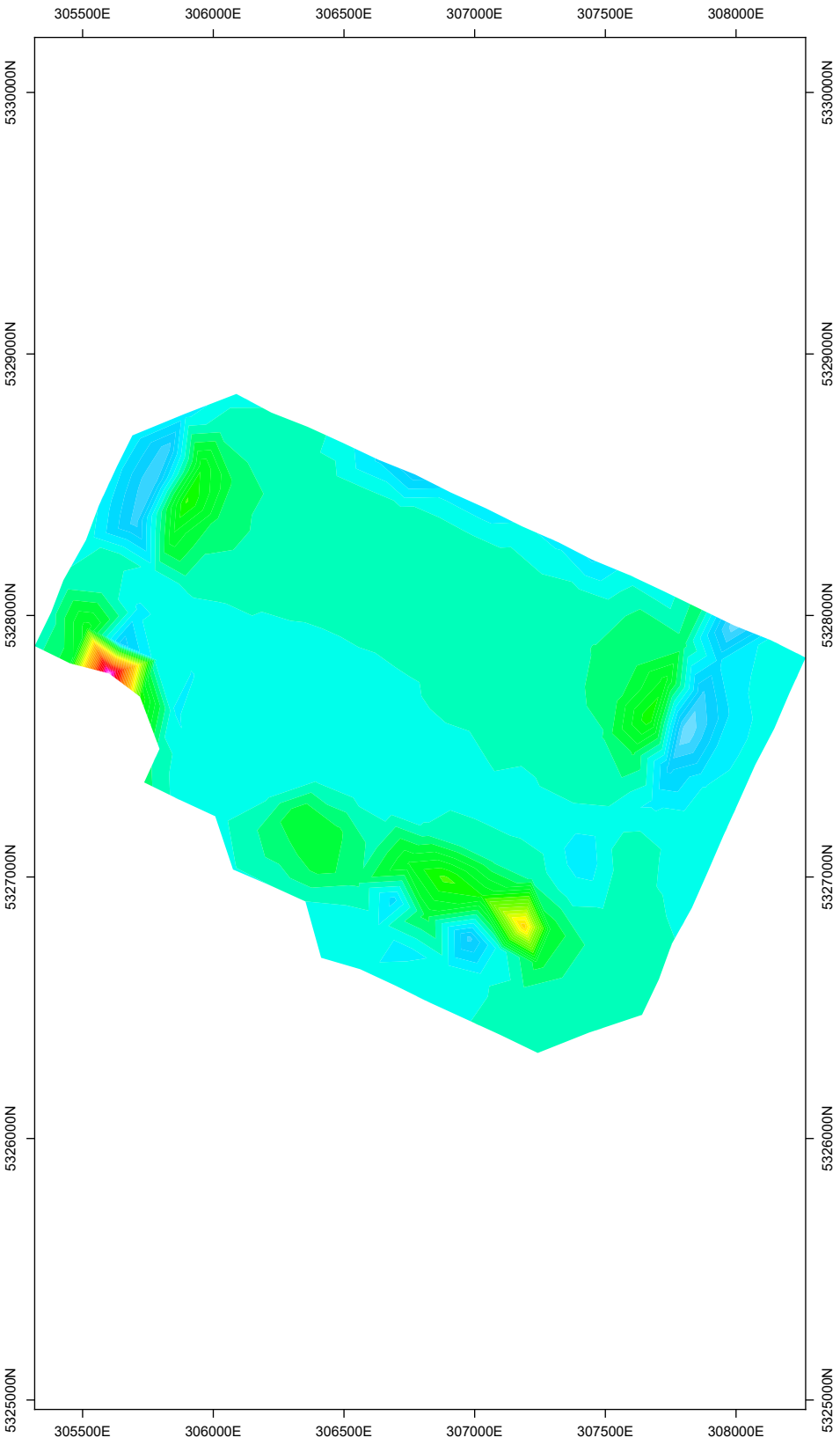
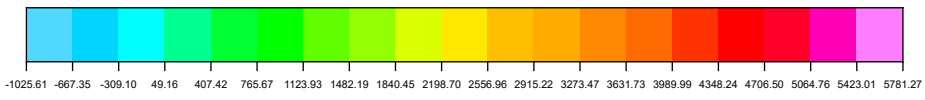


VPRI : X Component



pT/A

SURVEY PARAMETERS

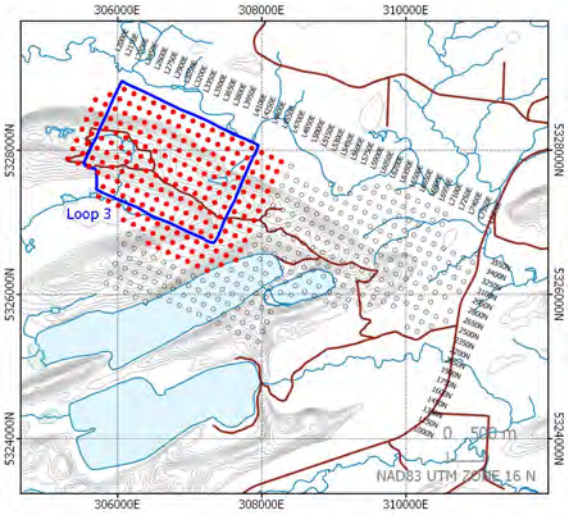
Configuration	: Fixed Loop TEM
Station Spacing	: 150 m
Loop	: Loop 3

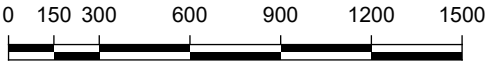
RECEIVER

Receiver	: SMARTem24
Frequency	: 0.25 Hz Hz
Component	: X,Y,Z
Rx Sensor	: Supracon JD LT SQUID
Gate Times	: SMARTem24 Standard

TRANSMITTER

Transmitter	: Phoenix TXU-30
Tx Turns	: 1
Tx Current	: ~28 A
Turn Off	: 0.800 ms





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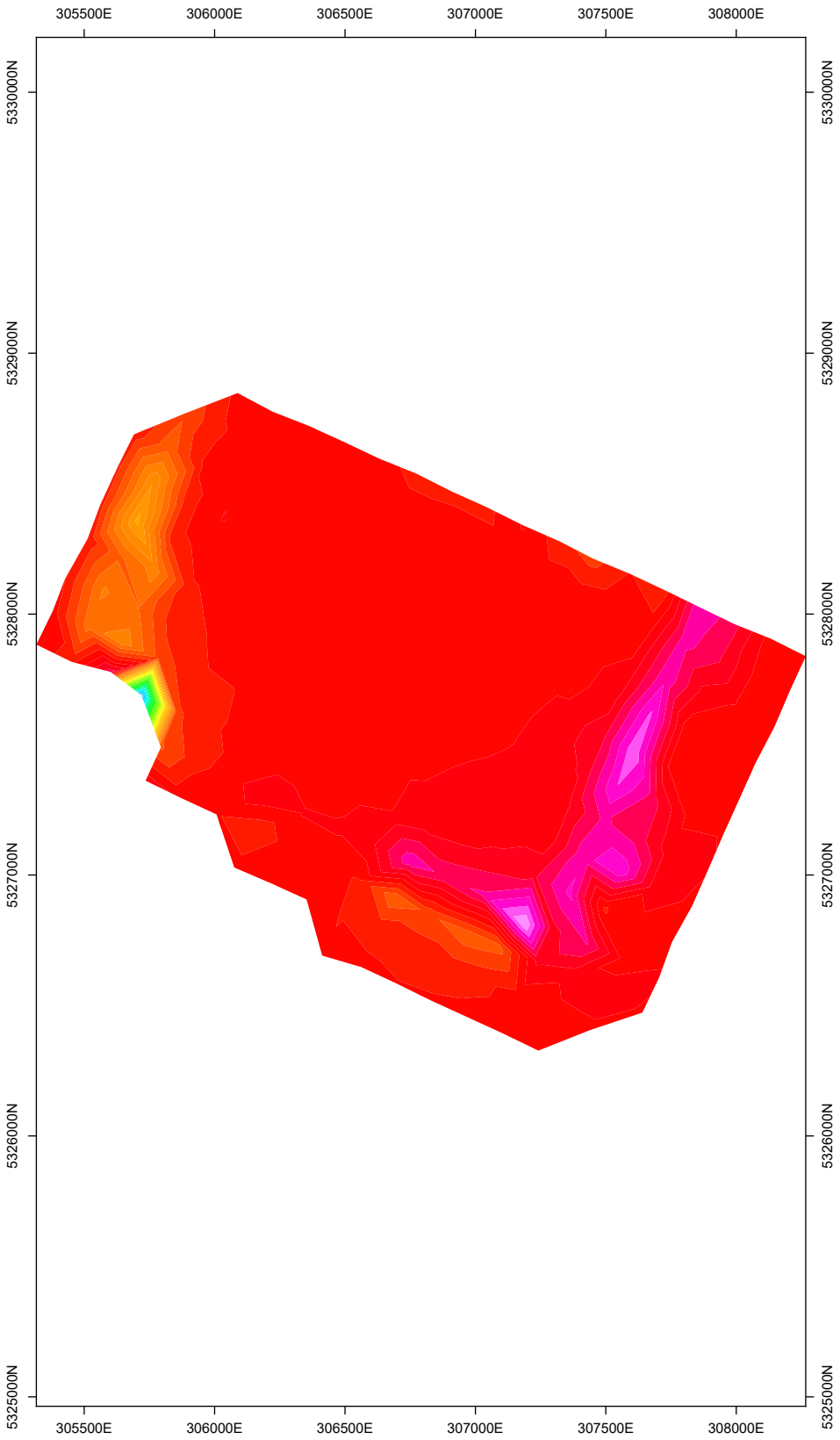
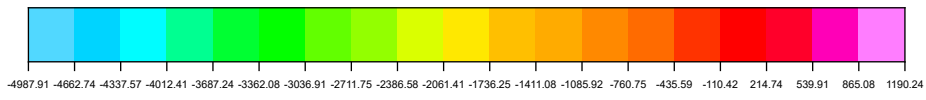


VPRI : Y Component



pT/A

SURVEY PARAMETERS

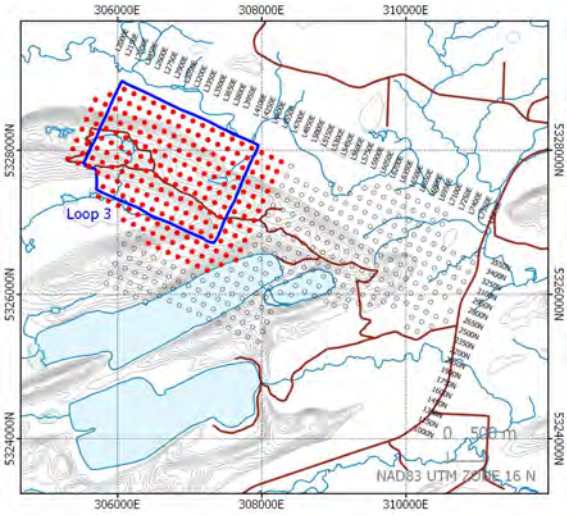
Configuration	: Fixed Loop TEM
Station Spacing	: 150 m
Loop	: Loop 3

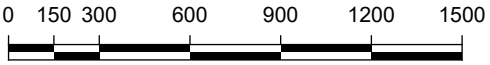
RECEIVER

Receiver	: SMARTem24
Frequency	: 0.25 Hz Hz
Component	: X,Y,Z
Rx Sensor	: Supracon JD LT SQUID
Gate Times	: SMARTem24 Standard

TRANSMITTER

Transmitter	: Phoenix TXU-30
Tx Turns	: 1
Tx Current	: ~28 A
Turn Off	: 0.800 ms





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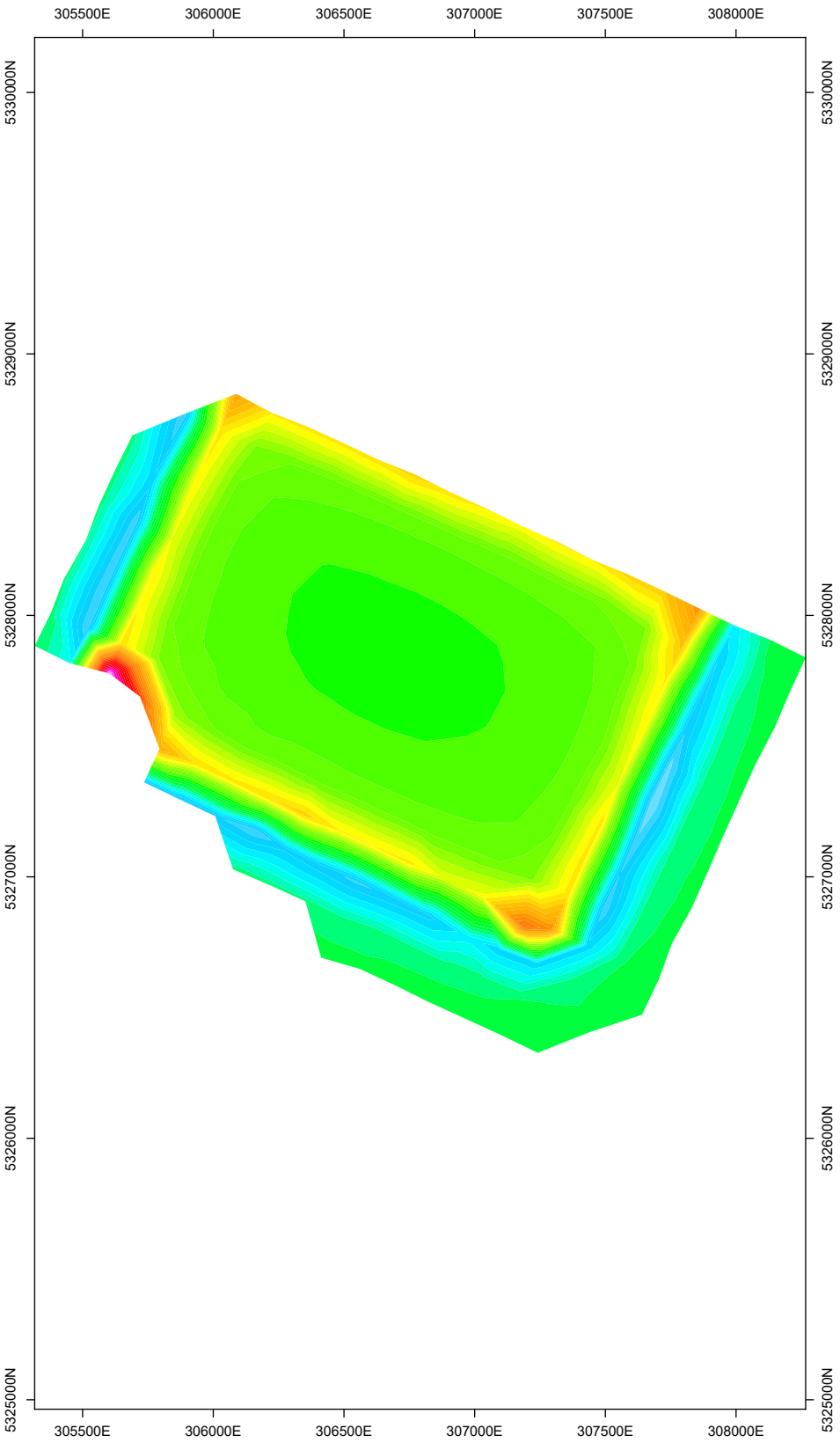
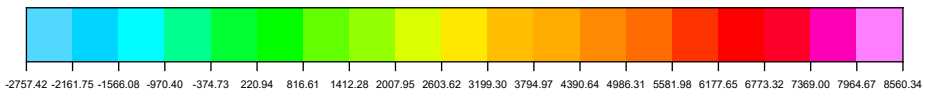


VPRI : Z Component



pT/A

SURVEY PARAMETERS

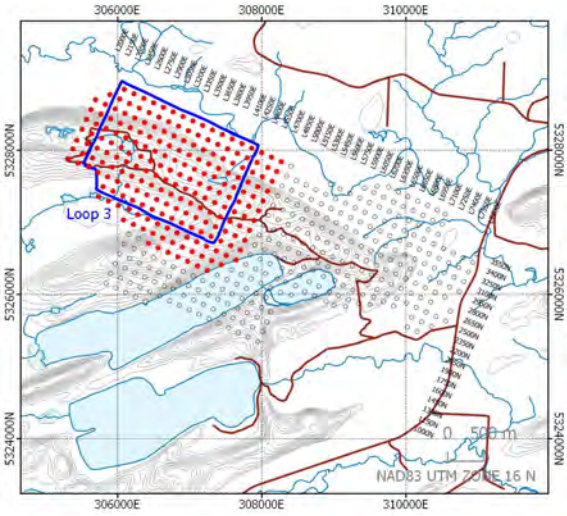
Configuration	: Fixed Loop TEM
Station Spacing	: 150 m
Loop	: Loop 3

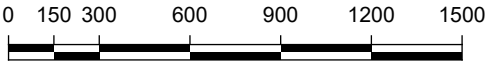
RECEIVER

Receiver	: SMARTem24
Frequency	: 0.25 Hz Hz
Component	: X,Y,Z
Rx Sensor	: Supracon JD LT SQUID
Gate Times	: SMARTem24 Standard

TRANSMITTER

Transmitter	: Phoenix TXU-30
Tx Turns	: 1
Tx Current	: ~28 A
Turn Off	: 0.800 ms





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