

Released courtesy of Cameco Corporation, the following document pertains to a transient AMT (TAMT) survey conducted in June, 2004 in north-western Saskatchewan, Canada (Figure's 1, 2) near Stewardson Lake.

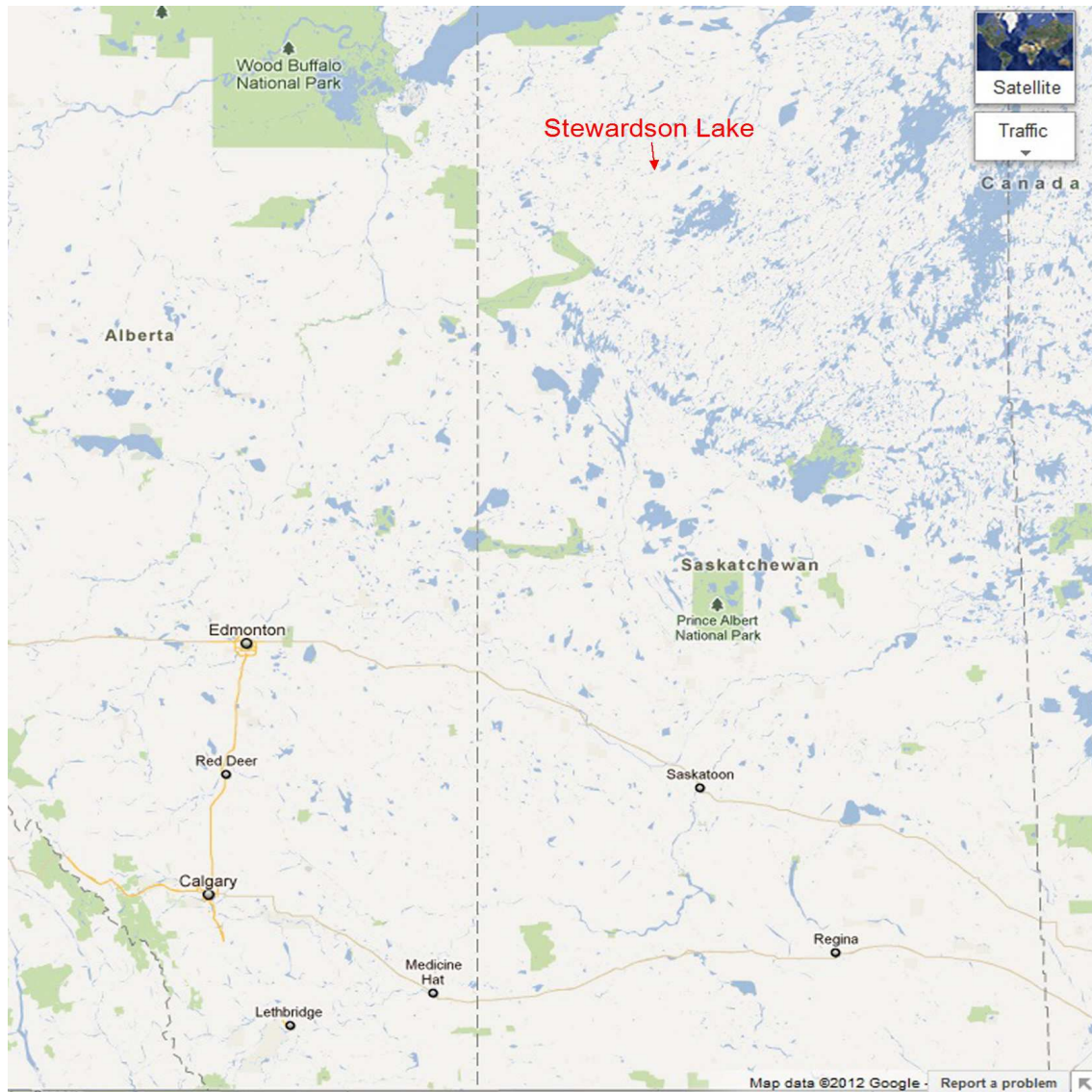


Figure 1: Regional Area Map

Stewardson Lake TAMT Survey (WGS84, Zone 13N)

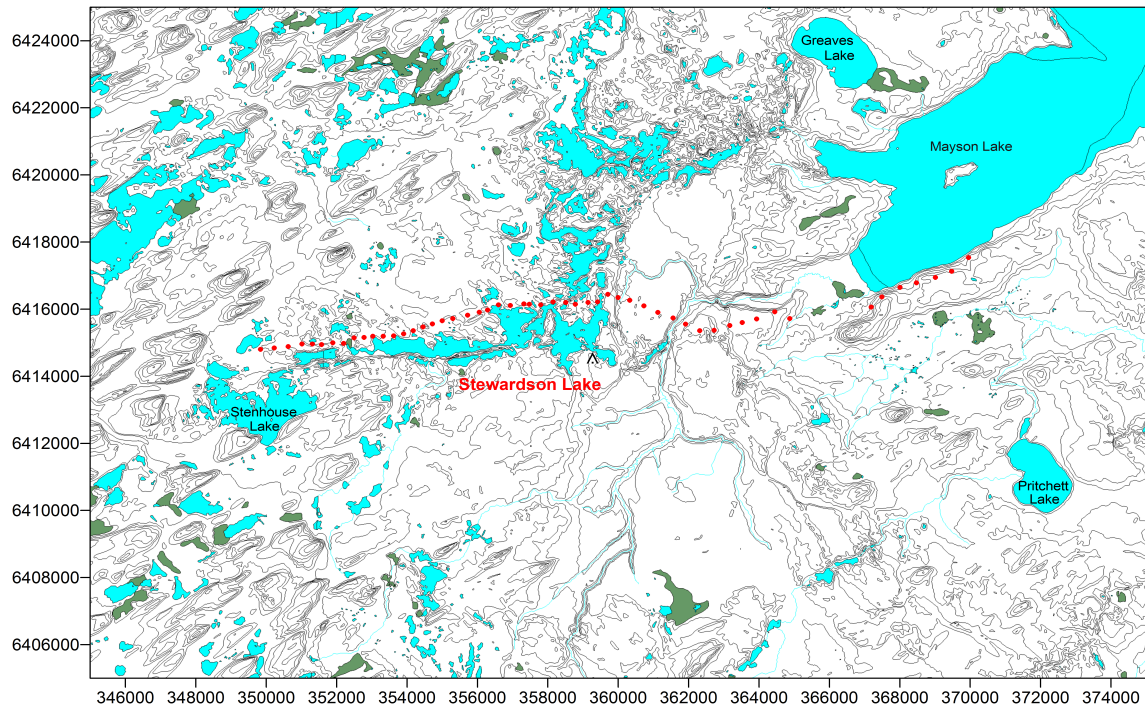


Figure 2: Local Area Map

Boulder sampling and airborne time-domain-electromagnetic surveys (GEOTEM) were conducted in 1995. Illite, boron and chlorite anomalies were found near Stewardson Lake as a result of the boulder sampling and the GEOTEM survey mapped a spatially extensive conductivity anomaly in the vicinity of Stewardson Lake (Figure 3).

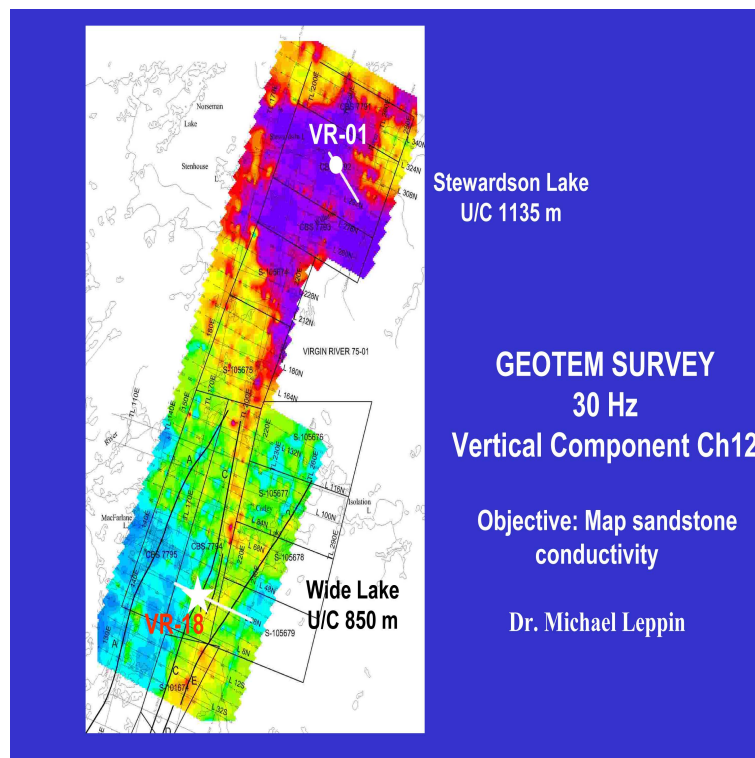


Figure 3: GEOTEM Channel 30 Anomaly

A moving loop UTEMIII survey was subsequently performed in 1995 to the south of Stewardson Lake and defined two conductors, interpreted by Cameco to be the "C" and "E" conductor trends which are well defined at Wide Lake (Figure 3). Although, fixed loop UTEMIII surveying in 1996 at Stewardson Lake did not verify the moving loop conductors.

Drill hole Virgin River number one (VR-01) was located approximately 2 km to the south of Stewardson Lake and was drilled to a depth of just over 1150 m. Most notable was the intersection of a 450 m thick layer of clay altered sandstone (illitic) immediately above the unconformity at 1135 m depth (Figure 4). This conductive layer was of course the source of the GEOTEM anomaly, indicative of large scale hydrothermal fluid flow.

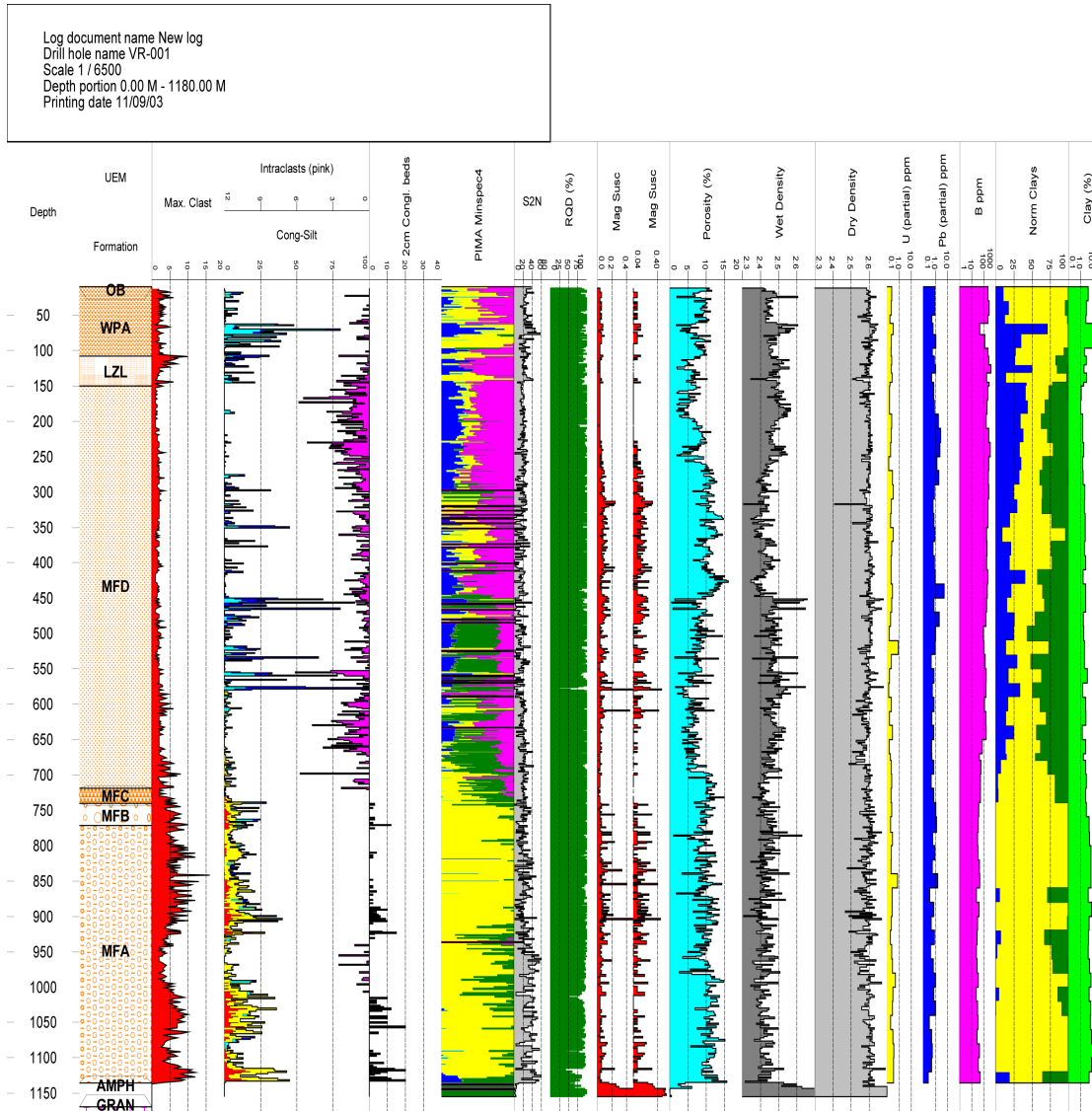


Figure 4: Virgin River 01 Drill Log

In 2004, EMPulse Geophysics Ltd. conducted a TAMT survey just north of Stewardson Lake (Figure 2) to confirm or deny the presence of any basement conductors, to map the spatial extent of the illite anomaly in the lower sandstone and to map the location of the Dufferin Lake fault.

The main emphasis of the Stewardson TAMT survey was the tipper which was collected at 300 m station intervals while the impedance was collected at every fourth station, or at 1.2 km intervals. The wide station spacing on the impedance reflects the large depth to unconformity in the Stewardson Lake area. Stations labeled with a "Z" in Figure 5 indicates those stations where impedance (and tipper) were collected, otherwise, only the tipper was collected.

A high frequency tipper cross-over between stations 48E and 51E (Figure 6), at the west end of Stewardson Lake, produces a resistivity low in the sandstone at 48E (Figure 5). The anomaly at 48E is consistent with the response to fractured and disturbed sandstone above a deeper fault, most likely the Dufferin Lake fault. Tipper data collected at Wide Lake, 30 km to the south, over the known location of the Dufferin Lake fault shows a very similar pattern as the 48E/51E anomaly at Stewardson Lake.

However, a conductive layer is noted at 63E which dramatically doubles in thickness at 75E (Figure 5), perhaps indicative of fault structure. This location is in better alignment with the western-most UTEMIII conductor (Figure 7) but would leave the 48E/51E tipper anomaly open for explanation.

Interpreting the western-most UTEMIII moving loop conductor as the "C" conductor is significant as the "C" conductor occurs in the footwall of the Dufferin Lake fault, ≈ 200 m to the east of the fault itself (pers. comm., Mr. Dan Jiricka). Therefore, locating the "C" conductor also locates the Dufferin Lake fault, at least in a general sense. However, the TAMT tipper data indicates that the Dufferin Lake fault may be almost 3 km west of the western-most UTEMIII conductor pick.

Furthermore, a TAMT survey conducted in 2006, less than 5 km north of Stewardson Lake revealed absolutely no basement conductor response as would be expected if the "C" conductor were present. A disturbed sandstone response was seen once again though (Figure 7), but no basement conductor response.

Note that the western-most UTEMIII moving loop conductor pick (Figure 7) is very near the western edge of the illite layer, it's possible that this conductor pick is actually an edge effect at the western termination of the conductive sandstone layer and that the "C" conductor is completely absent at Stewardson Lake.

Between stations 75E and 134E (Figure 5), the conductive illite layer is over 500 m thick and corresponds to that intersected in VR-01. Note the "Norm Clays" column in Figure 4, illite content is indicated by yellow which is very prominent just above and over the entire depth extent of the Manitou Falls A formation (MFA). Total clay content is indicated in green at far right and is generally near or above ten percent for this depth interval. Sandstone porosity increases simultaneously with increased illite content in the lower MFD at 680 m depth. However, the dominant cause of lowered sandstone resistivity would appear to be due to the clays themselves, mainly illite. Assuming a square relation, doubling sandstone porosity would reduce sandstone resistivity from $3000 \Omega - m$ to $750 \Omega - m$, a clearly measureable effect but not enough to reduce sandstone resistivity to the $\approx 200 \Omega - m$ levels seen at Stewardson Lake in the lower sandstone.

Although not labeled in Figure 6, a high frequency tipper anomaly is present at 91E/94E. Reconsideration of the data with the VR-01 drill log indicate that the "TAMT SST Conductor" (Figure 7) at 91E is most likely related to clay rich Wolverine Point formation (WPA) seen in the upper 100 m of VR-01. Note that to the west of 91E, the upper 100 m in Figure 5 is much more resistive while to the east of 91E much more conductive. The 91E/94E tipper anomaly appears to be due to current channeling along a resistive/conductive contact, i.e., along the edge of the shallow WPA layer which appears to be at 91E.

The eastern edge of the illite layer is terminated more abruptly and may be fault controlled (Figure 5). The existence of an "Eastern Boundary Fault" has been hypothesized within Cameco, although as of yet, not confirmed to the author's knowledge. Approximately 3 km to the east of the illite boundary, a basement conductor is seen at station 166E at over 1 km depth, this conductor is on trend with the eastern most UTEMIII moving loop conductor and the "E" conductor trend from Wide Lake (Figure's 5, 7).

Basement conductors and possible faults are highlighted with target areas in Figure 8.

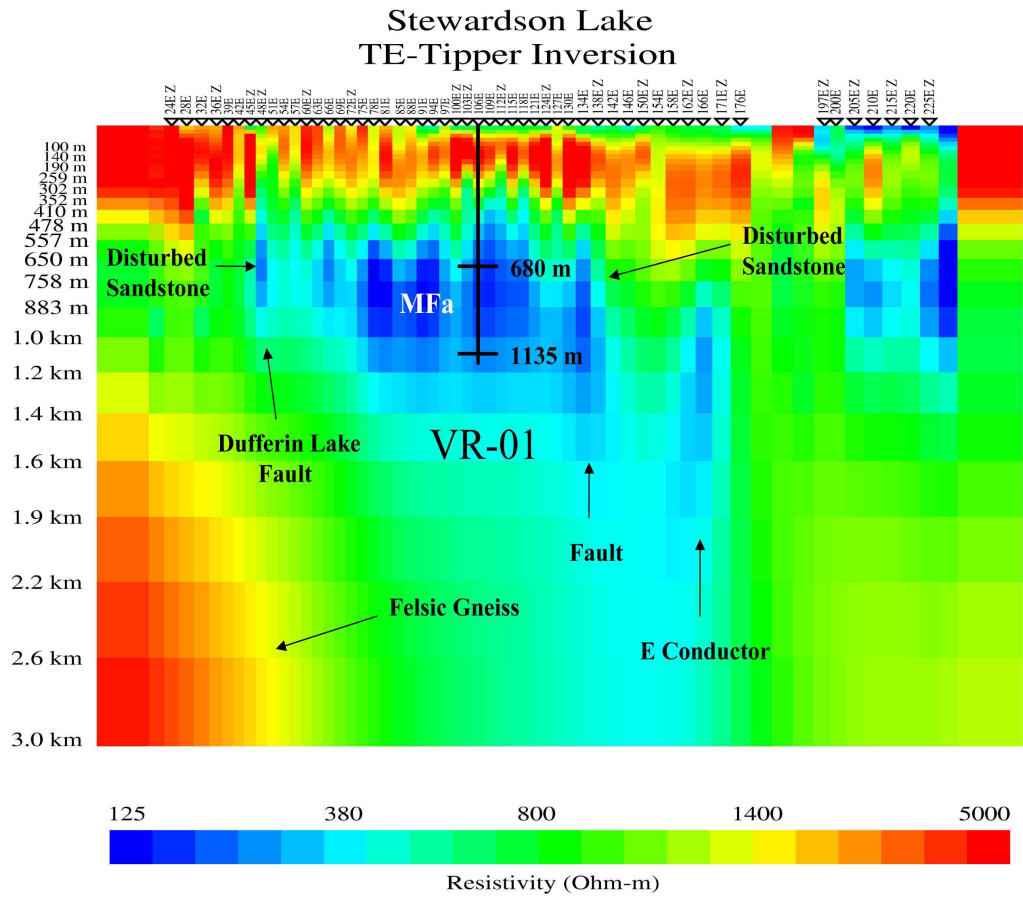


Figure 5: 2D Inverted results

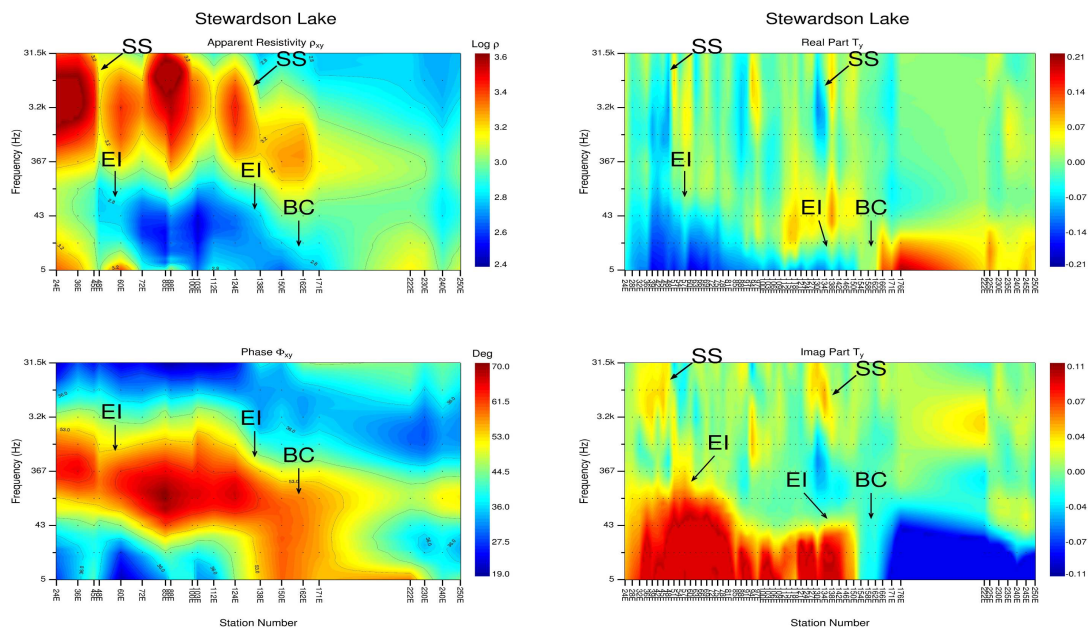


Figure 6: TE Mode measured data, SS - Sandstone Structure. EI - Edge Illite. BC - Basement Conductor

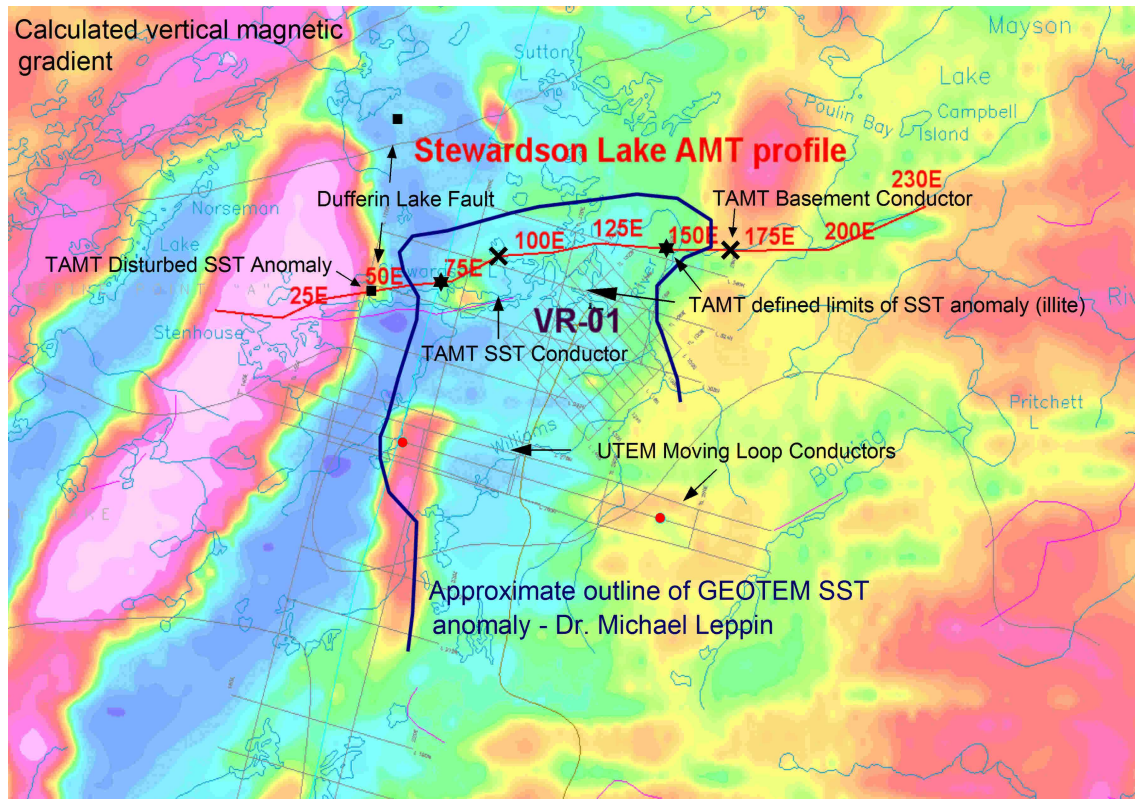


Figure 7: Interpretation Overview

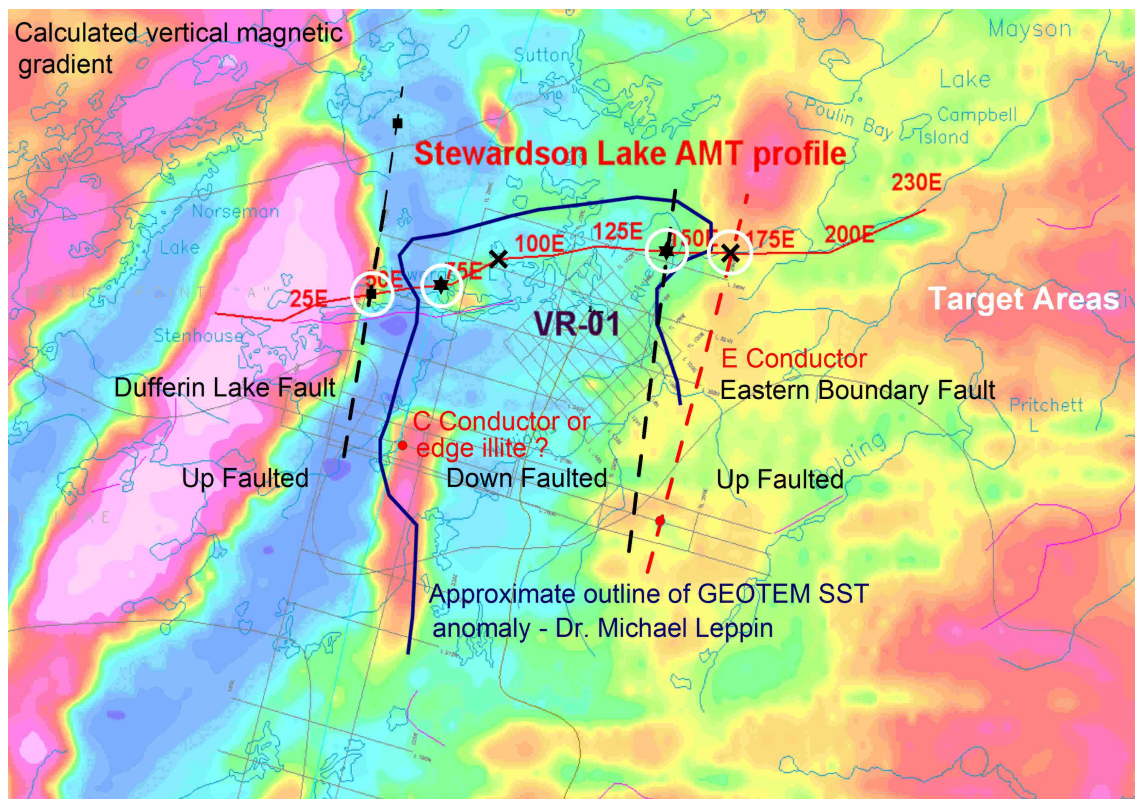


Figure 8: Target Areas

The Stewardson survey was also unique from a logistical standpoint, the EMPulse crew of 3 men were dropped off via turbo otter at Stewardson Lake and set up their own independent, self sufficient camp in a remote and deep part of the Athabasca basin, employing solar panels to power the camp (Figure 9) with a Zodiac inflatable to navigate Stewardson Lake and thus access most of the TAMT survey line (Figure 10).



Figure 9: Stewardson Lake camp



Figure 10: Traveling to the West end of Stewardson Lake