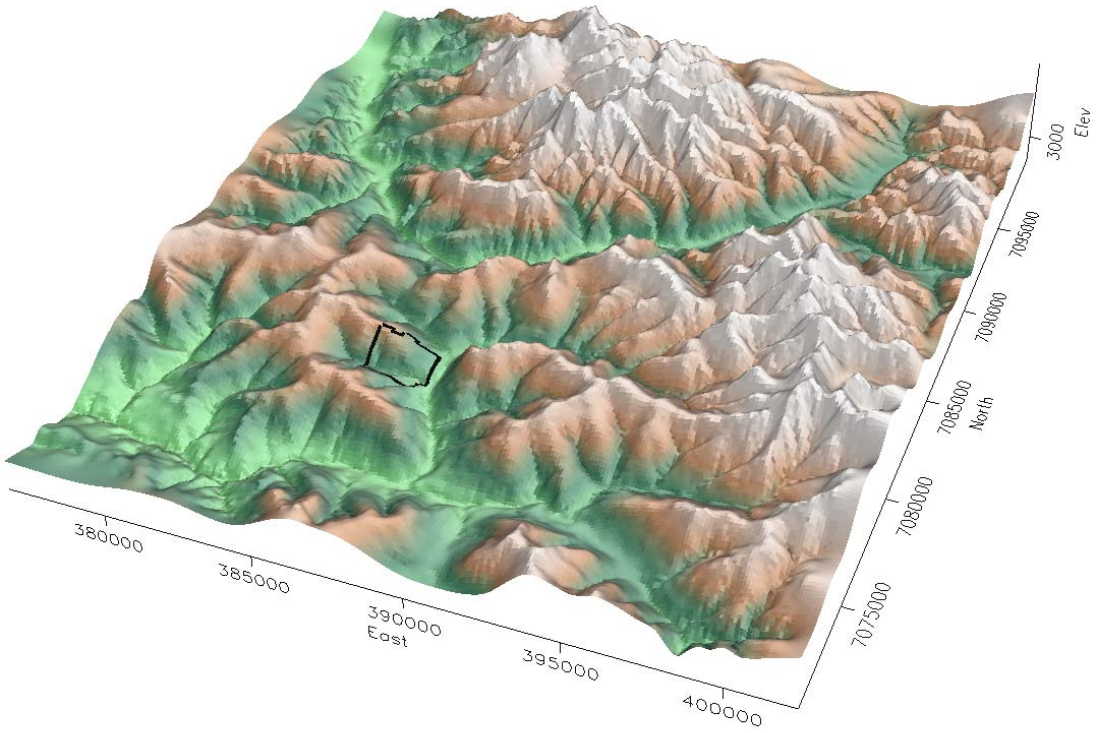
Geophysics Report
Typhoon Project, Yukon
Regional and Ground Magnetic Data

Prepared For

Select Resources Corporation
5555 Business Park South
Bakersfield, California 93309



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INTRODUCTION

This report documents the processing and interpretation of regional airborne and detailed ground magnetic data collected over the Typhoon project, located in the Yukon Territory of Canada (Figure 1). Regional geology, regional steam-sediment and detailed soil geochemical data, and an interpretation of Landsat data are also presented in this report. The detailed soil geochemical data products are provided by Jeffrey A. Jaacks, exploration geochemistry consultant, and the Landsat interpretation is provided by Sandra L. Perry of Perry Remote Sensing, L.L.C. Regional data cover the 115P14 quadrangle, which is part of the 1:250,000 McQuesten 115 quadrangle.

Magnetic data are useful for geologic mapping because, with only a few exceptions (e.g., pyrrhotite), magnetic surveys measure variation in magnetite content. Thus, variations in rock type and alteration can be identified through the interpretation of magnetic data. Structure, such as faults and folds, can also be identified in magnetic data. Processing of the ground magnetic data includes the computation of a 3-D magnetic susceptibility model. The computed 3-D magnetic susceptibility volume is useful for lithological, mineralogical and structural mapping.

The exploration target at the Typhoon project, located within the Clear Creek district, is an intrusive-related gold system. Surface geology of the Clear Creek district is dominated by the deformed and metamorphosed siliciclastic rocks of the late Proterozoic to early Cambrian Hyland Assemblage. Mid-Cretaceous stocks of the Tombstone Suite and their associated contact hornfels aureoles underlie the Clear Creek area. These stocks, located 2 to 14 kilometers to the east of the Typhoon project, have classic intrusion-related gold systems associated with them. These gold occurrences consist of auriferous, sheeted quartz veins that cut the Cretaceous stocks and their hornfels aureoles.

The goal of the project described in this report is to provide insight into the geology of the Typhoon project area via analyses of the regional and detailed geoscientific data. When possible, geologic units are identified, as are inferred target areas. Recommendations based upon these analyses are made regarding future exploration targeting.

DATA SPECIFICATIONS

Data Projection

All data, image, and map products utilize the Universal Transverse Mercator (UTM) Zone 8 North projection and the NAD83 datum. Specifications of this projection are provided in Figure 2.

Digital Terrain Model Data

Digital terrain model (DTM) data are available from numerous sources for the McQuesten 115P14 quadrangle. These data are shown in Figure 3 and Plate 1. These DTM data are useful for performing structural analyses and for aiding in the interpretation of magnetic data.

Regional Magnetic Data

Regional aeromagnetic data for the McQuesten 115P14 quadrangle are available from the Geological Society of Canada web site (http://gsc.nrcan.gc.ca/index_e.php). These are total magnetic intensity (TMI) data available in grid format with a 200-meter cell size. Because of the dipolar nature of TMI magnetic data due to the oblique angle of incidence of the earth's inducing magnetic field, it is advantageous to work with reduced-to-pole (RTP) magnetic data. Reduction-to-pole is a mathematical operation that transforms TMI magnetic data to RTP magnetic data. The computed RTP magnetic data exhibit responses as if the data are collected at the magnetic pole with a vertical inducing magnetic field, thus removing the latitude-induced dipolar signature evident in the measured TMI magnetic data. The resultant RTP magnetic data exhibit high magnetic amplitudes over high susceptibility bodies, and low magnetic amplitudes over low susceptibility bodies. RTP magnetic data for the McQuesten 115P14 quadrangle are shown in Figure 4 and Plate 2.

The RTP magnetic data exhibit both long and short-wavelength features resulting from geologic bodies of varying magnetic susceptibilities occurring at various depths. To help discriminate distinct magnetic responses, it is useful to compute a residual data set that removes long-wavelength responses from deep magnetic sources. Figure 5 and Plate 3 show residual RTP magnetic data computed by applying a Butterworth high-pass filter with a 25-km wavelength.

Regional Geologic Data

The Clear Creek district is located within the larger Tombstone Gold Belt and is contained within the 1:250,000 McQuesten 115 quadrangle. Regional geologic data for the McQuesten 115 quadrangle are available on CD-ROM (Geological Society of Canada, 1999). These data, masked to the McQuesten 115P14 quadrangle are shown in Figure 6 and Plate 4. Surface geology of the Clear Creek district is dominated by the deformed and metamorphosed siliciclastic rocks of the late Proterozoic to early Cambrian Hyland Assemblage (PCH). This unit is comprised of shale, quartz-rich sandstone, quartz pebble conglomerate, argillaceous limestone and phyllite rocks (Geological Society of Canada, 1999). Mid-Cretaceous stocks of the Tombstone Suite (mKqT) and their associated contact hornfels aureoles underlie the Clear Creek area. These stocks, which include medium to coarse-grained porphyritic biotite-hornblende, clinopyroxene granite, quartz monzonite and granodiorite compositions (Geological Society of Canada, 1999), have surface exposures varying from 0.2 to 5.0 square kilometers in area. These intrusives, located 2 to 14 kilometers to the east of the Typhoon project, have classic intrusion-related gold systems associated with them. These gold occurrences consist of auriferous, sheeted quartz veins that cut the Cretaceous stocks and their hornfels aureoles. Further description of the regional geology surrounding the Typhoon project is provided in Noyes et al. (2005).

Regional Landsat Data

Landsat ETM data encompassing the McQuesten 115P14 quadrangle have been processed and interpreted by Sandra L. Perry of Perry Remote Sensing, L.L.C. This interpretation identifies intrusive complexes, zones of silicification, zones of significant FeOx exposure and fault zones (Figure 6 and Plate 4). This interpretation is integrated with the

interpretation of the regional aeromagnetic data as described in the discussion section below. Further description of the processing and interpretation of the Landsat ETM data surrounding the Typhoon project is provided in Noyes et al. (2005).

Regional Stream-Sediment Geochemical Data

Regional stream-sediment geochemical data for the Yukon Territory are available from the Government of Yukon Geomatics web site (http://www.geomaticsyukon.ca). Data for gold, masked to the McQuesten 115P14 quadrangle are shown in Figure 6 and Plate 4. These data, in their entirety as provided, are plotted according to a population distribution based upon a visual histogram analysis. Although widely spaced, additional multi-element analyses of the data would be beneficial to the regional exploration efforts surrounding the Typhoon project.

Typhoon Ground Magnetic Data

In 2005, Aurora Geosciences conducted a ground magnetic survey over a portion of the Typhoon project area. This survey is encompassed in its entirety with claims held by Select Resources or their partners (Noyes et al., 2005). This survey consists of 11 lines, with a nominal line spacing of 200 meters and a station spacing of 12.5 meters. This survey is located in an area of steep topography as indicated by the DTM data (Figure 7 and Plate 5). RTP magnetic data for this survey are shown in Figure 8 and Plate 6. Figure 9 and Plate 7 show residual RTP magnetic data computed by applying a Butterworth high-pass filter with a 1-km wavelength. Despite the very low data range for this survey (68 nTesla), these data produce coherent responses that can be used to map geology.

Typhoon Ground Magnetic Data – MAG3D Model

To facilitate the interpretation of the ground magnetic data, a 3-D magnetic susceptibility model has been computed using MAG3D, a 3-D modeling program developed at the University of British Columbia (UBC-GIF, 1998). MAG3D computes a 3-D magnetic susceptibility volume that produces synthetic data matching provided measured data. Although 3-D models computed by MAG3D are inherently non-unique given the nature of potential-field (magnetic) data, the resulting models are useful for lithological, mineralogical and structural mapping.

MAG3D uses DTM and TMI magnetic data to compute a 3-D magnetic susceptibility model. The MAG3D model for this project is generated from TMI magnetic data shifted so that the data mean equals zero. Shifting the data in this manner produces an amplitude-balanced data set that is well suited to MAG3D modeling. The MAG3D model specifications, including the final computed parameter ranges, are presented in Table 1. The relationship between amplitudes of magnetic susceptibility values and rock types is not intuitive, so it is convenient to convert susceptibilities to an equivalent-percent magnetite value (0.0377 S.I. susceptibility ~ 1% equivalent-percent magnetite).

Model	Voxel Size X x Y x Z (meters)	Core Mesh			Susceptibility Ranges	
		# Cells X	# Cells Y	# Cells Z	S.I. Units	Equivalent % MT
Typhoon	25 x 25 x 25	81	73	77	0 to 0.0035	0 to 0.093

Table 1. MAG3D model specifications.

In response to the very low data range of the ground magnetic data, the computed susceptibility values are very low. Nonetheless, the results provide geological insight into the geology encompassed by the ground magnetic survey. Figure 10 shows magnetic susceptibility sections at 200-meter intervals through the MAG3D model. Although not presented in Figure 10, magnetic susceptibility sections or elevation slices can be generated at 25-meter intervals in any of the 3 Cartesian directions (east, north, and elevation).

Typhoon Soil Geochemical Data

In 2004, Aurora Geosciences conducted a soil geochemical survey over a portion of the Typhoon project area. Data from additional soil samples collected in 2005 have been integrated with the 2004 data to produce a unified data set. Analyses by Jeffrey A. Jaacks, exploration geochemistry consultant, indicate that an association of As+W+Sb+Au+U+Bi is indicative of intrusive-related gold systems. Figure 11 shows the Factor 5 (As+W+Sb+Au+U+Bi) association data over the Typhoon project. Details of the soil geochemical data and processing are provided in Noyes et al. (2005). It is importance to note the circular nature of the elevated Factor 5 association data and the relationship of this feature to the ground magnetic data and the MAG3D model. Figure 12 shows the magnetic susceptibility sections of Figure 10 in conjunction with the Factor 5 association data. In general, elevated Factor 5 association data correspond to elevated magnetic susceptibility in the MAG3D model.

DISCUSSION

Figure 13 shows a schematic representation of the intrusive-related gold target at the Typhoon project. In these types of gold systems, mineralization is present as steeply dipping, sheeted gold-bearing quartz veins within the Cretaceous intrusive bodies or their hornfels aureoles. Other recognized mineralization styles include disseminated, skarn, replacement, and discrete quartz veins.

A cluster of felsic intrusives of the Tombstone Suite (mKqT) within the central Clear Creek district, two to 14 kilometers to the east of the Typhoon project, have classic intrusion-related gold systems associated with them. These gold occurrences consist of auriferous, sheeted quartz veins containing 1-2% combined pyrite and arsenopyrite, with lesser pyrrhotite, bismuthinite, and scheelite that cut the Cretaceous stocks and their hornfels aureoles. Gold mineralization occurred during a Cretaceous period of extension as the Tombstone Suite plutons intruded along older thrust planes. The spatial relationship between mapped mKqT intrusives and thrust faults is evident in the geologic map for the McQuesten 115P14 quadrangle (Figure 6 and Plate 4). The resolution of the aeromagnetic data is insufficient to identify any elevated response from hornfels zones associated with the mineralized Tombstone Suite plutons.

In addition to the publicly available geologic map for the McQuesten 115P14 quadrangle (Geological Society of Canada, 1999), Figure 6 and Plate 4 contain interpreted geology based upon the aeromagnetic and Landsat data. Broad zones of low magnetic amplitude in the residual RTP magnetic data (Figure 5 and Plate 3) are interpreted as large mKqT intrusives that underlie and source the outcropping mKqT intrusives. The locations and lateral extents of these inferred buried intrusives coincide in general with equivalent intrusives identified in the interpretation of the Landsat data. As indicated in the interpretation of the Landsat data, it is likely that the westernmost buried mKqT body inferred from the magnetic data could be extended under the Typhoon project. Variation in magnetic susceptibility and thickness of the overlying PCH rocks produce a slightly elevated magnetic response that masks the buried non-magnetic mKqT pluton. The presence of buried mKqT intrusive below the Typhoon project area is further supported by the MAG3D modeling and interpretation of the ground magnetic data as discussed below. Elevated gold values in the regional stream-sediment geochemical data correlate closely to the inferred buried mKqT intrusives, adding to the exploration potential of these intrusive complexes.

A large northeast-trending zone of moderately high magnetic amplitude north of the Typhoon project (Figure 5 and Plate 3) is not reconcilable with mapped PCH rocks. A review of the regional aeromagnetic data for the entire McQuesten 115 quadrangle indicates that the PCH rocks are only weakly magnetic, but locally variable. It is unlikely PCH rocks account for this northeast-trending magnetic feature. This somewhat disconnected feature trends eastward across the McQuesten 115P15 and 115P16 quadrangles and can roughly be correlated with exposed DME3, a subunit of the larger DME Assemblage that contains primarily felsic volcanic flows and tuffs with minor amounts of basalt. Because of this correlation, the northeast-trending magnetic feature within the McQuesten 115P14 quadrangle is interpreted as buried DME(3). However, the spatial correlation between this feature and inferred silica from the interpretation of the Landsat data may suggest a different, possibly intrusive source of the moderate magnetic response. From the available data, it is not possible to positively identify the causative rock type for this dominant magnetic feature.

Another prominent feature in the regional aeromagnetic data is associated with a large, mapped Tombstone Suite intrusive of syenitic composition (mKyT) in the northern portion of the McQuesten 115P14 quadrangle. In general, the mKyT intrusives are more magnetic than the mKqT intrusives. This higher susceptibility pluton intruding into the reactive DME host rock produced a large magnetic contact aureole as interpreted in Figure 6 and Plate 4. The combination of mKyT intrusive and the DME assemblage, which hosts numerous stratabound base-metal occurrences (Geological Society of Canada, 1999), including the Zeta silver-lead deposit within the interpreted mKyT contact aureole, is less likely to host an intrusive-related gold system than the combination of mKqT intrusive and the PCH assemblage as occurs in the Clear Creek district. This assessment is supported by the absence of gold in stream-sediment geochemical data in the northern portion of the McQuesten 115P14 quadrangle, where DME and mKyT are the prominent rock types.

Figures 10 and 12 illustrate the spatial relationships between the measured ground magnetic data, computed 3-D magnetic susceptibilities and soil geochemical data for the

Typhoon project. Figure 14 shows a geologic interpretation of the 3-D magnetic susceptibility model. This geologic interpretation closely resembles the schematic of the intrusive-related gold target presented in Figure 13. The core of the 3-D model is dominated by non-magnetic material interpreted as mKqT intrusive. In places, the margin of this inferred mKqT intrusive is flanked by steeply dipping zones of elevated magnetic susceptibility interpreted as zones of hornfels. These inferred zones of hornfels appear to be structurally controlled, correlate closely with significant Factor 5 association data in the soil geochemical data and are the primary target areas for steeply dipping, sheeted gold-bearing quartz veins. Significant Factor 5 association data along the southern and western margins of the inferred mKqT intrusive and within inferred PCH rocks may constitute priority targets as well.

RECOMMENDATIONS

Regional targeting for intrusive-related gold systems within the McQuesten 115P14 quadrangle should concentrate on the areas of interpreted buried mKqT intrusive (Figure 6 and Plate 4). These areas are known to contain occurrences of intrusive-related gold systems in proximity to exposed mKqT intrusive and are likely to host as of yet undiscovered systems.

Within the Typhoon project, priority targets consist of coincident inferred zones of hornfels and significant Factor 5 association data. A drill program based upon the 3-D magnetic susceptibility model, the corresponding interpretation and the soil geochemical data (Figure 14) should be designed to test these priority targets. Additional drill holes to test the southern and western margins of the inferred mKqT/PCH contact should be included in the proposed drill program. Pending results of the proposed drill program, additional ground magnetic and soil geochemical surveys may be warranted to expand detailed exploration efforts within the Typhoon project area.

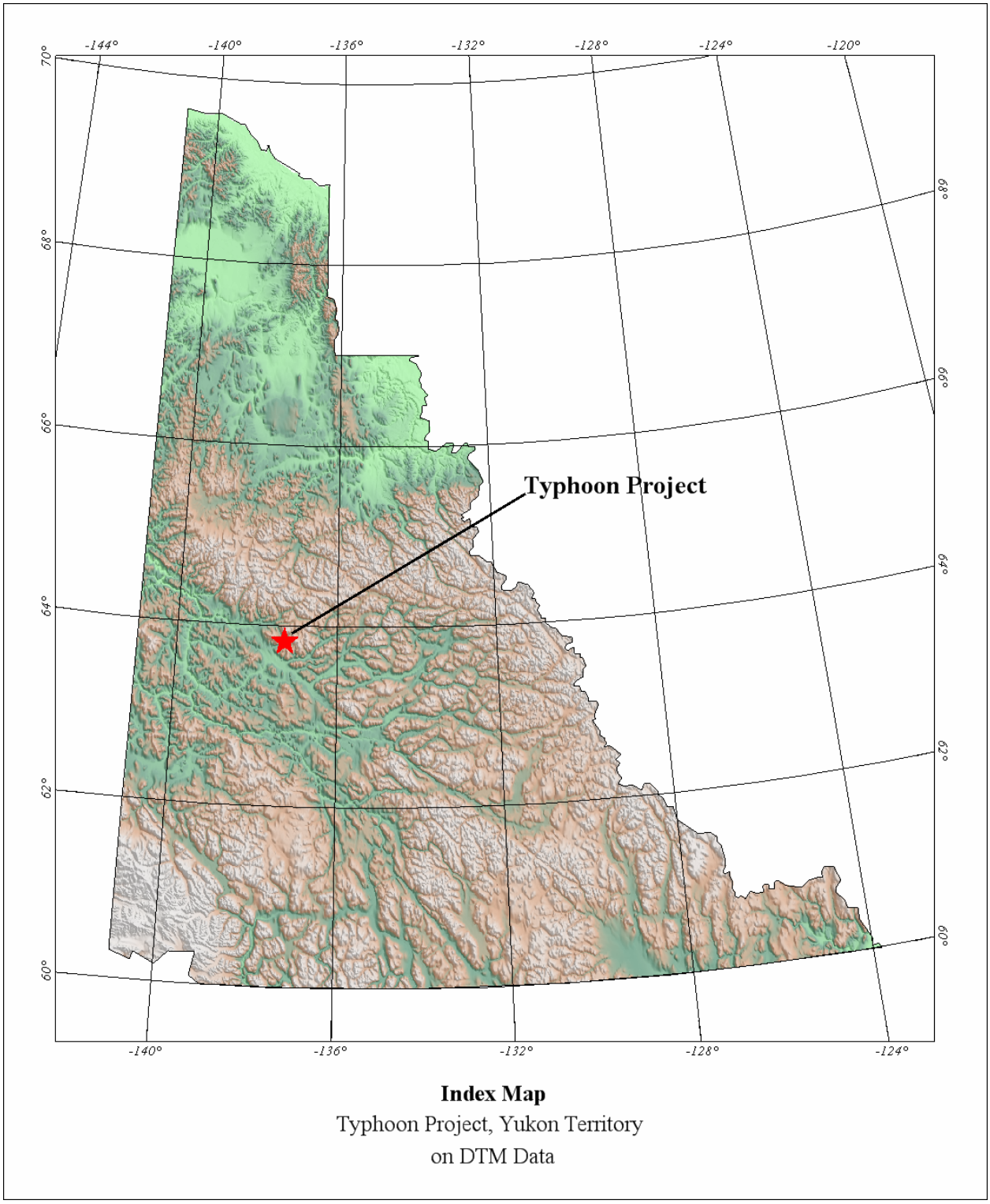

Figure 1. Index map showing the location of the Typhoon project.

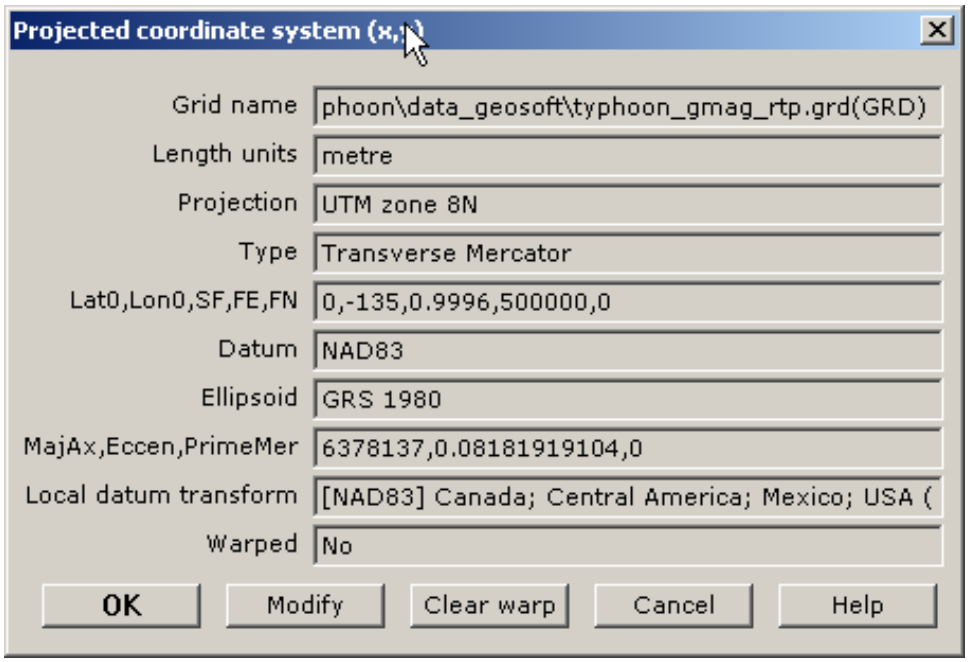

Figure 2. Data projection information for the Typhoon project.

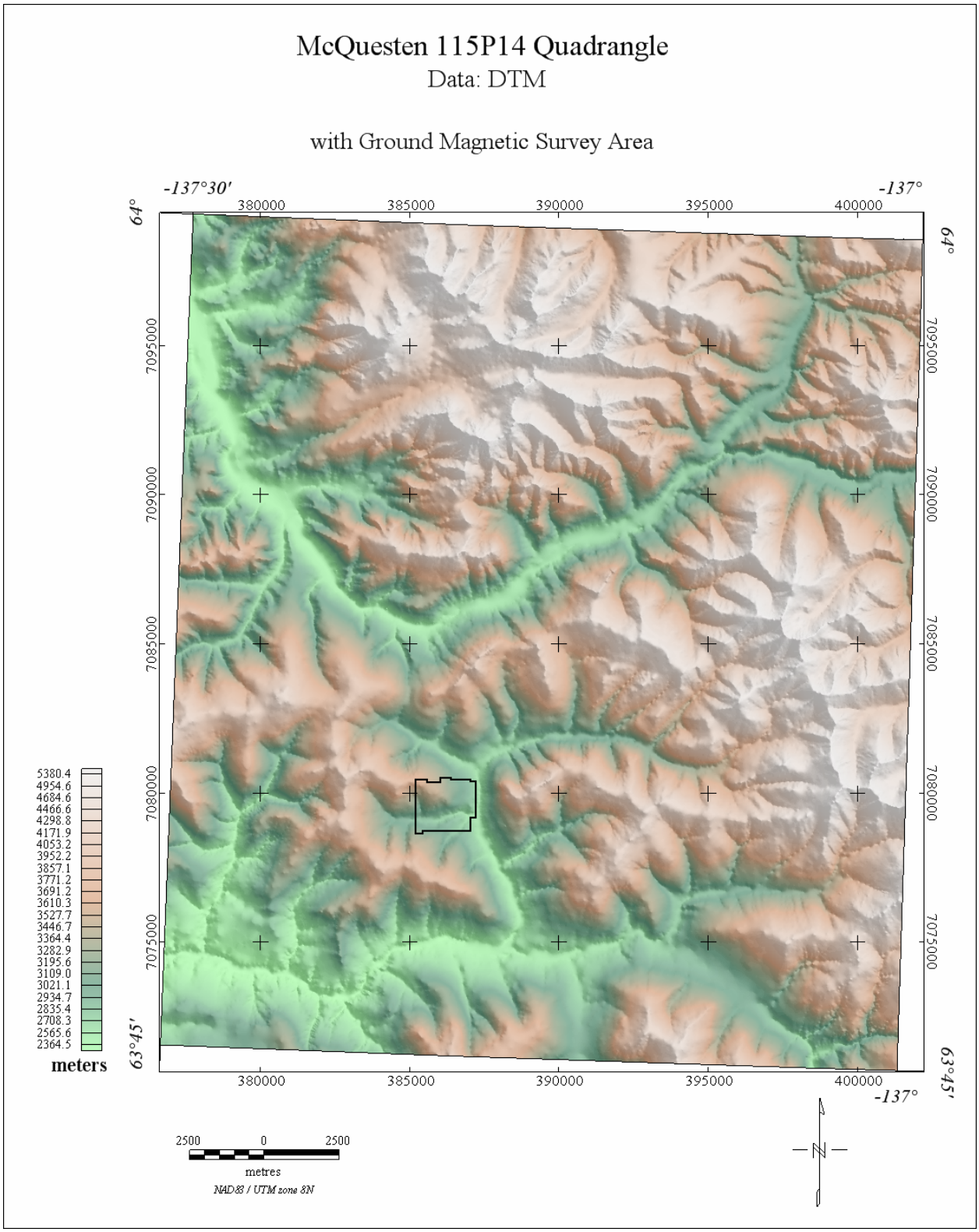

Figure 3. DTM data for the McQuesten 115P14 quadrangle.

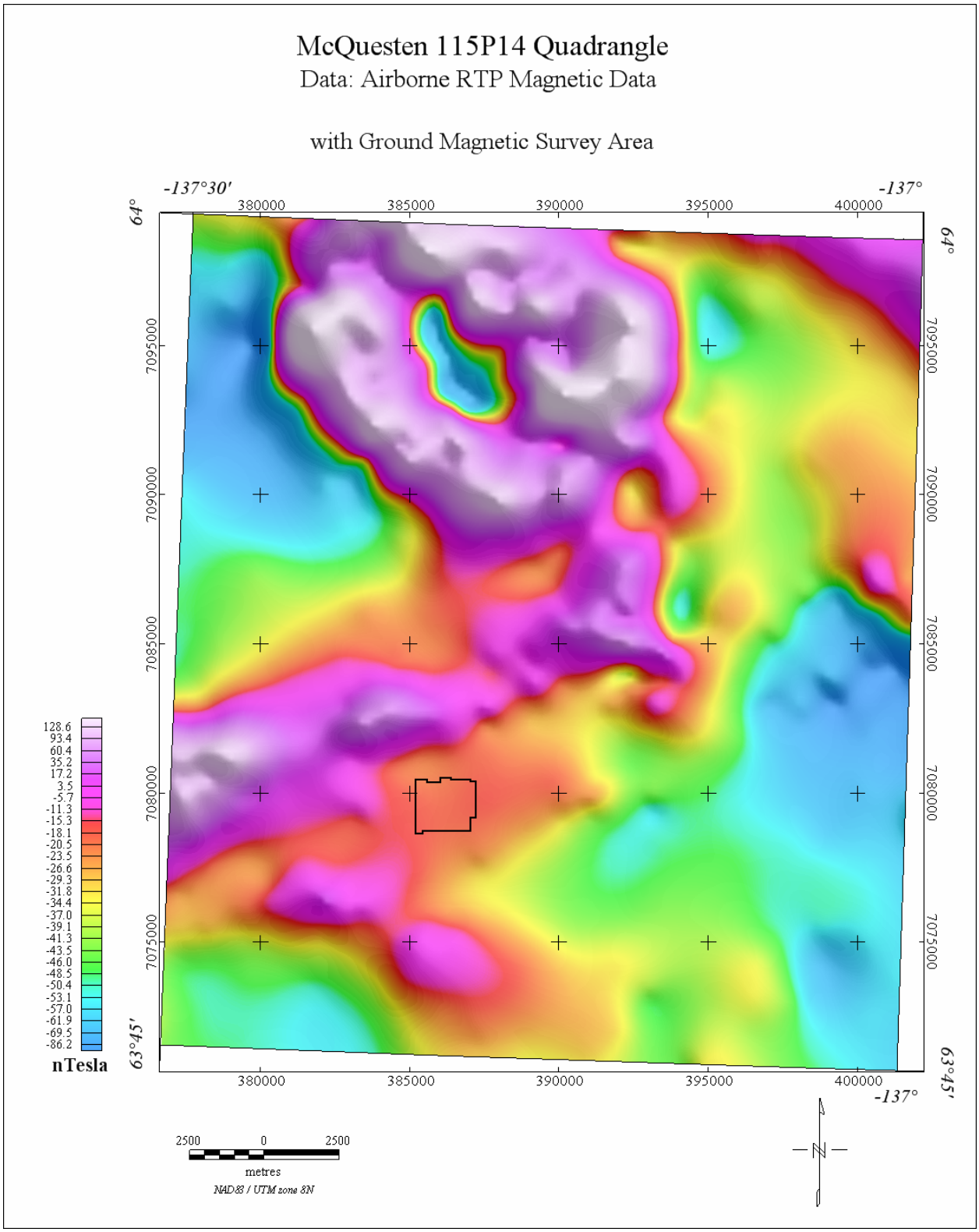

Figure 4. Reduced-to-pole magnetic data for the McQuesten 115P14 quadrangle.

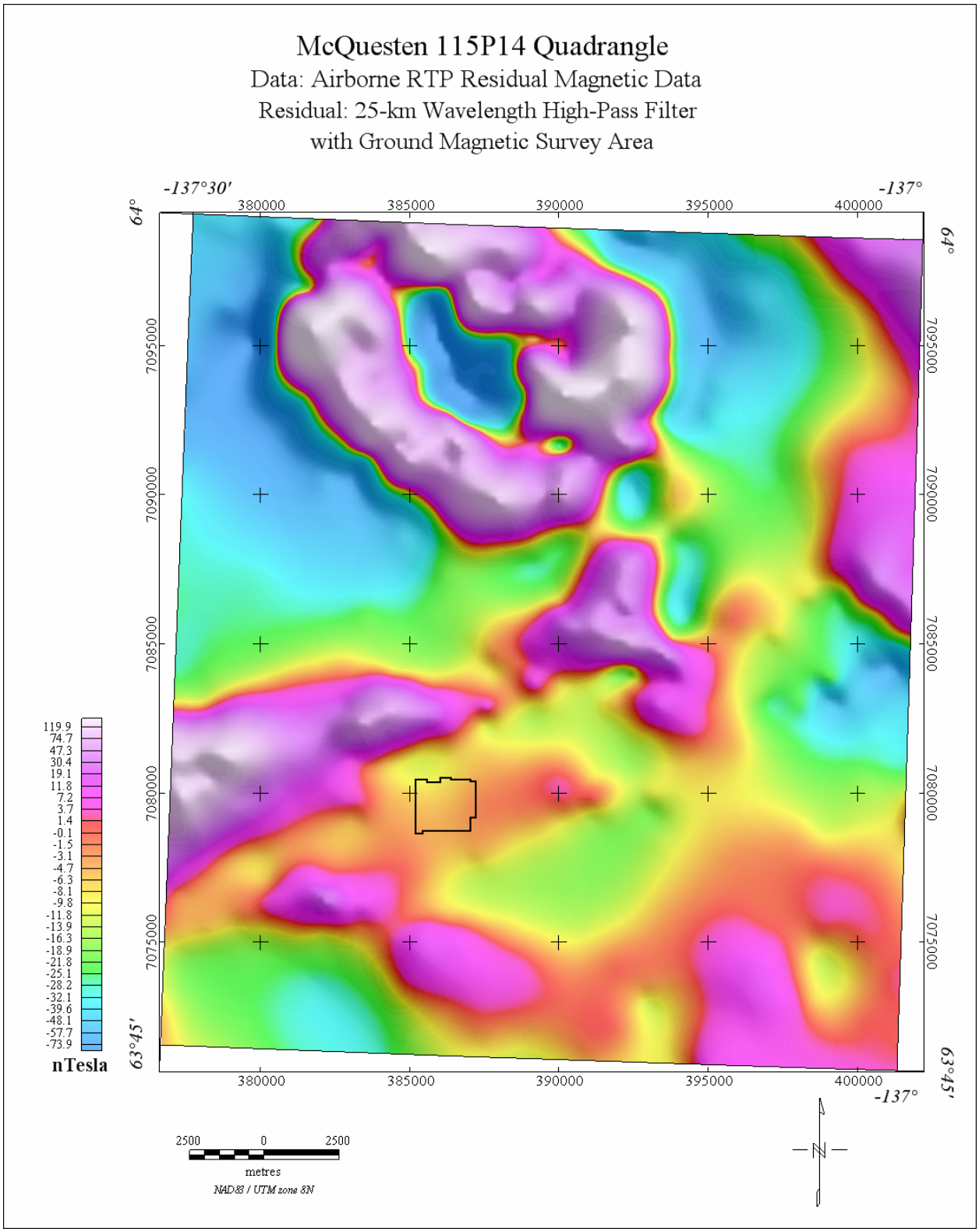

Figure 5. Reduced-to-pole residual (25-km wavelength high-pass filter) magnetic data for the McQuesten 115P14 quadrangle.

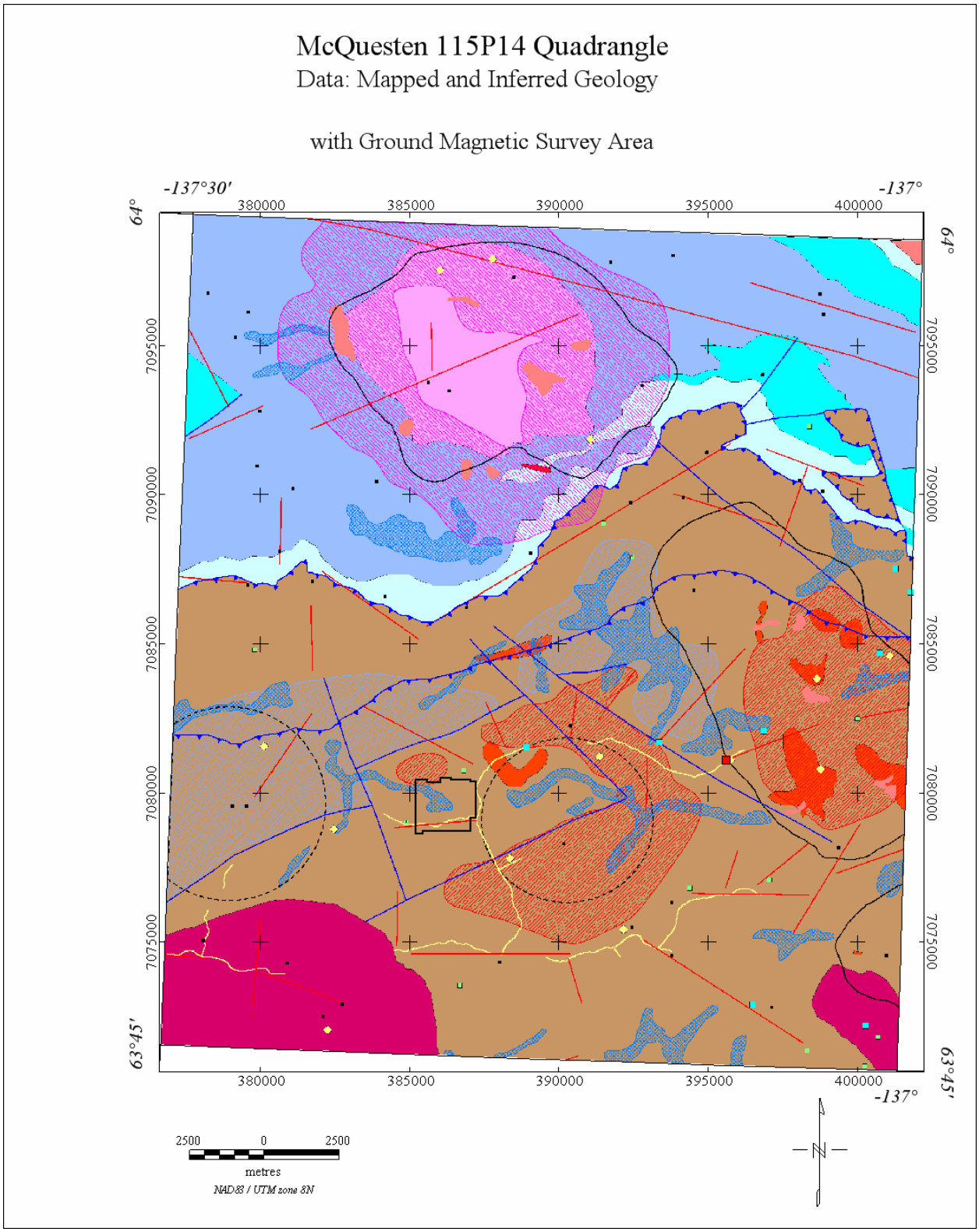

Figure 6a. Regional mapped and inferred geology for the McQuesten 115P14 quadrangle.

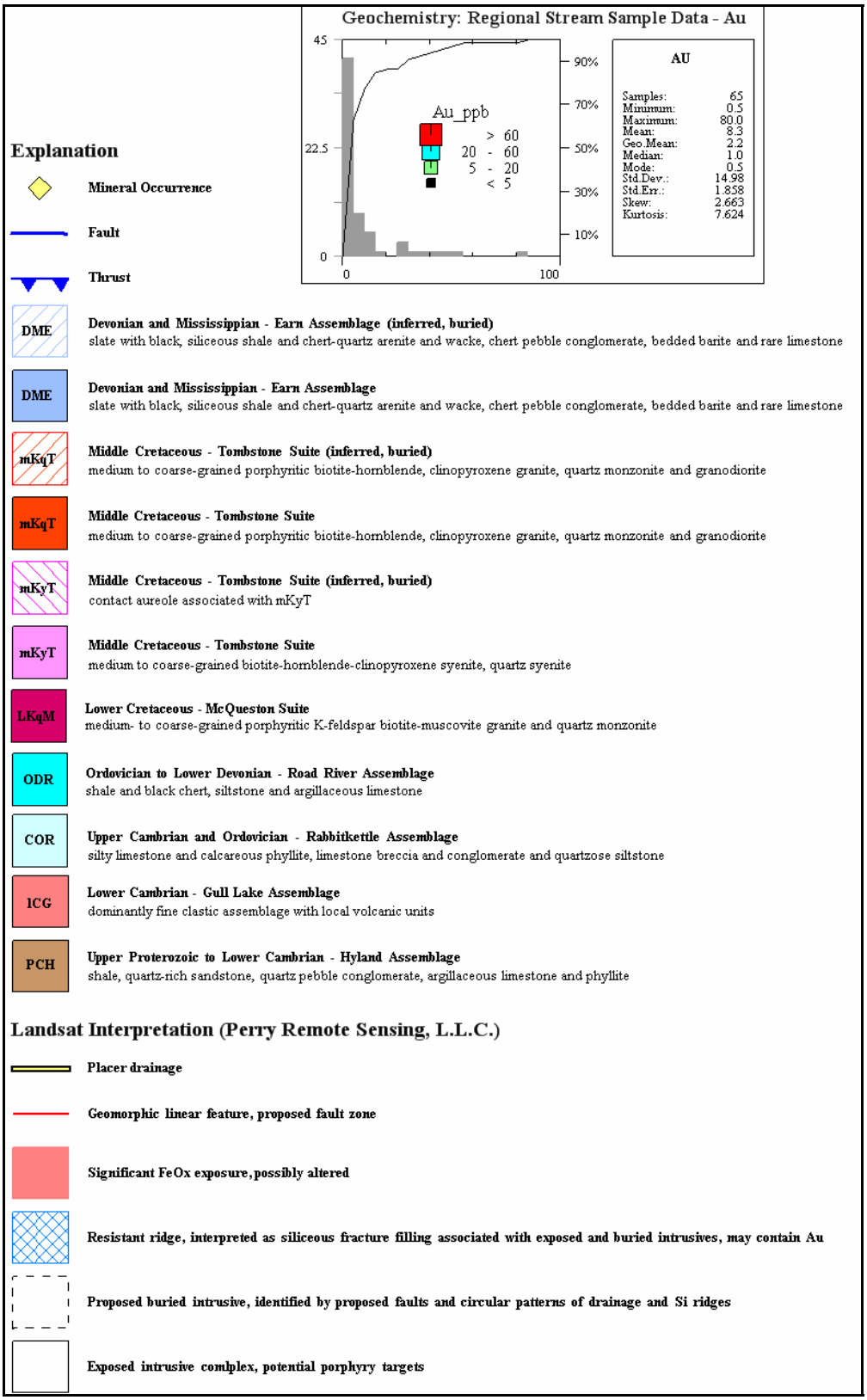

Figure 6b. Explanation of regional mapped and inferred geology for the McQuesten 115P14 quadrangle.

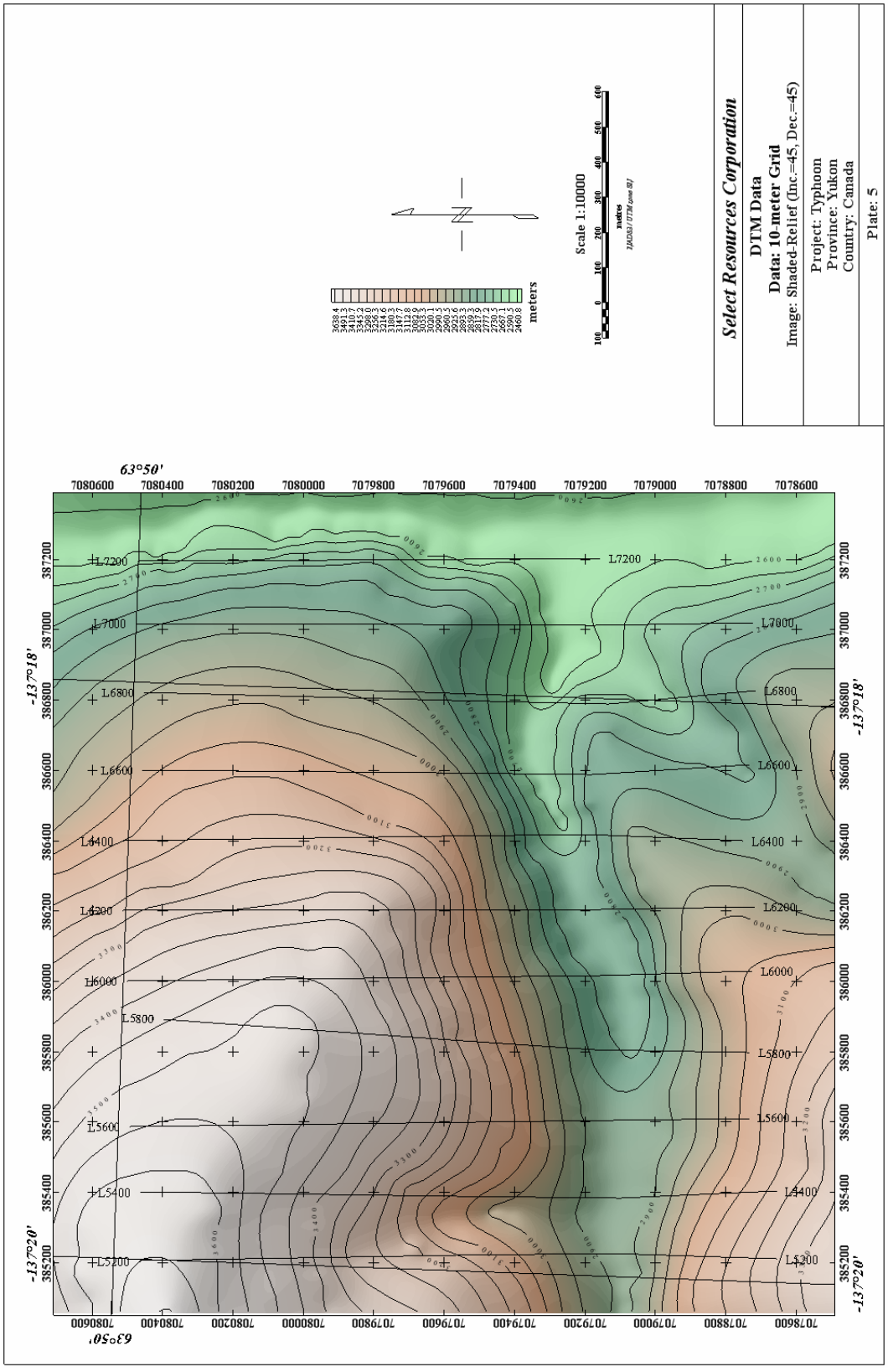

Figure 7. DTM data for the Typhoon project.

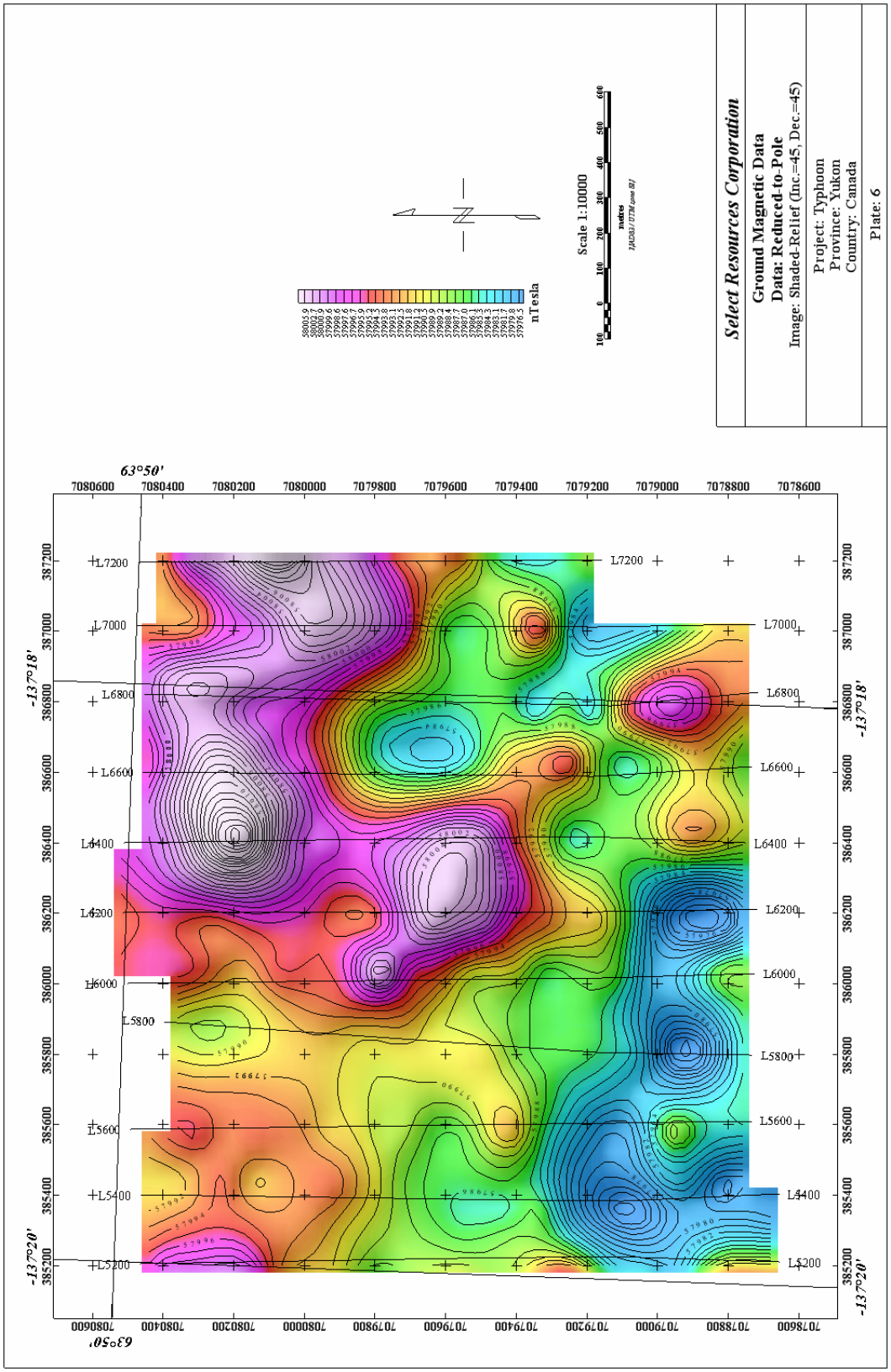

Figure 8. Reduced-to-pole magnetic data for the Typhoon project.

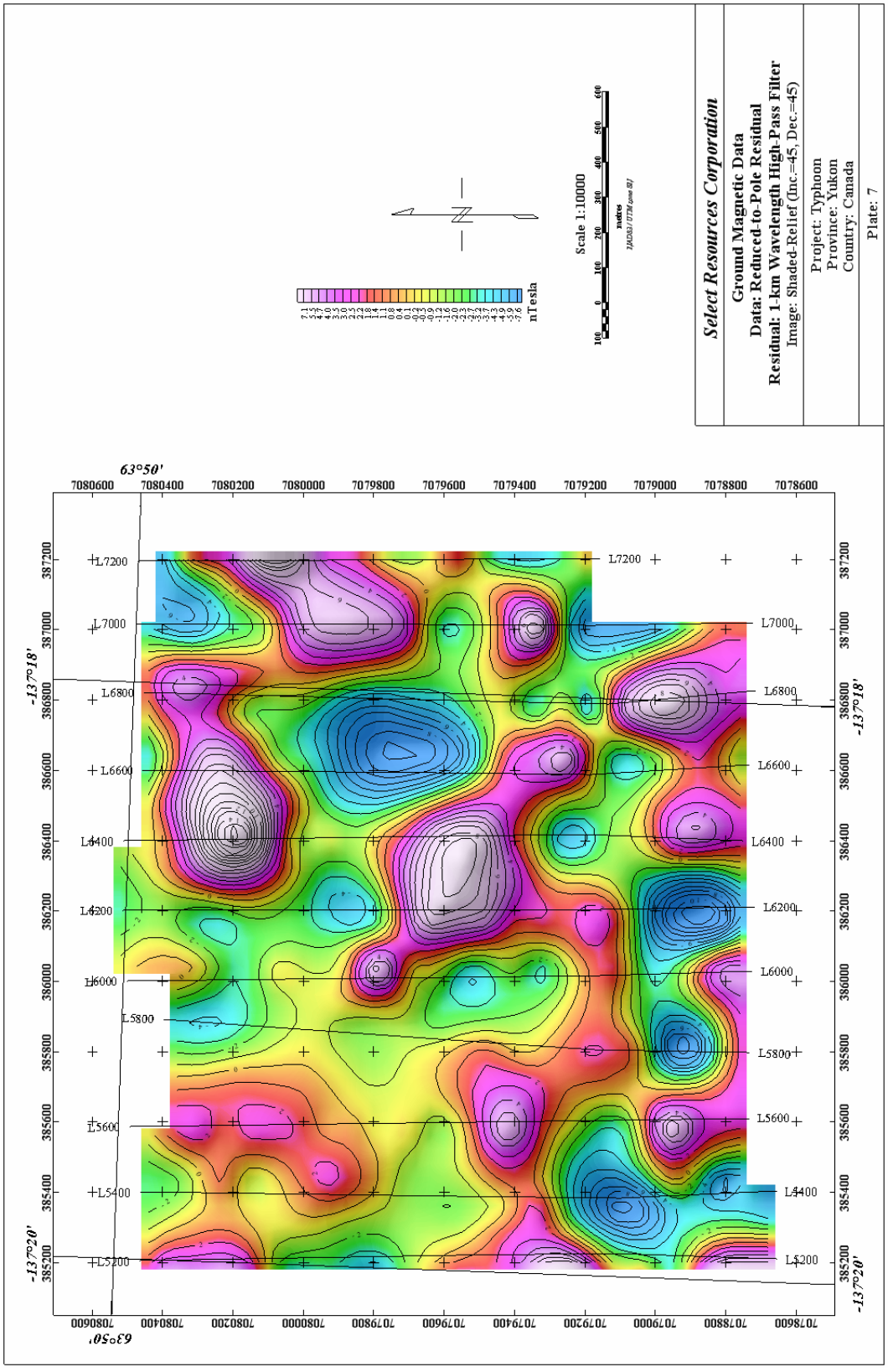

Figure 9. Reduced-to-pole residual (1-km wavelength high-pass filter) magnetic data for the Typhoon project.

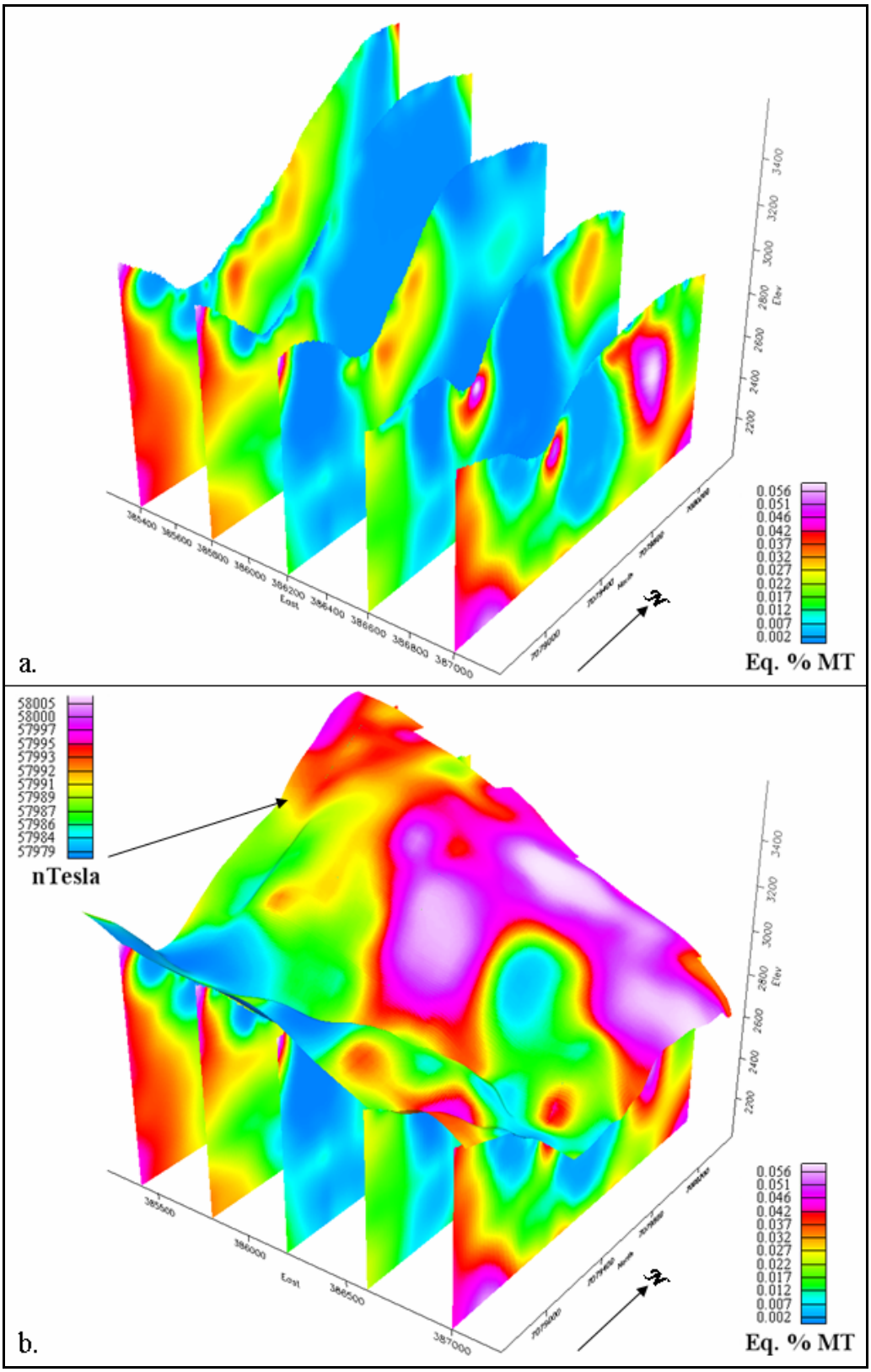

Figure 10. View looking northwest at (a) magnetic susceptibility sections through the MAG3D model and (b) with RTP magnetic data draped on topography.

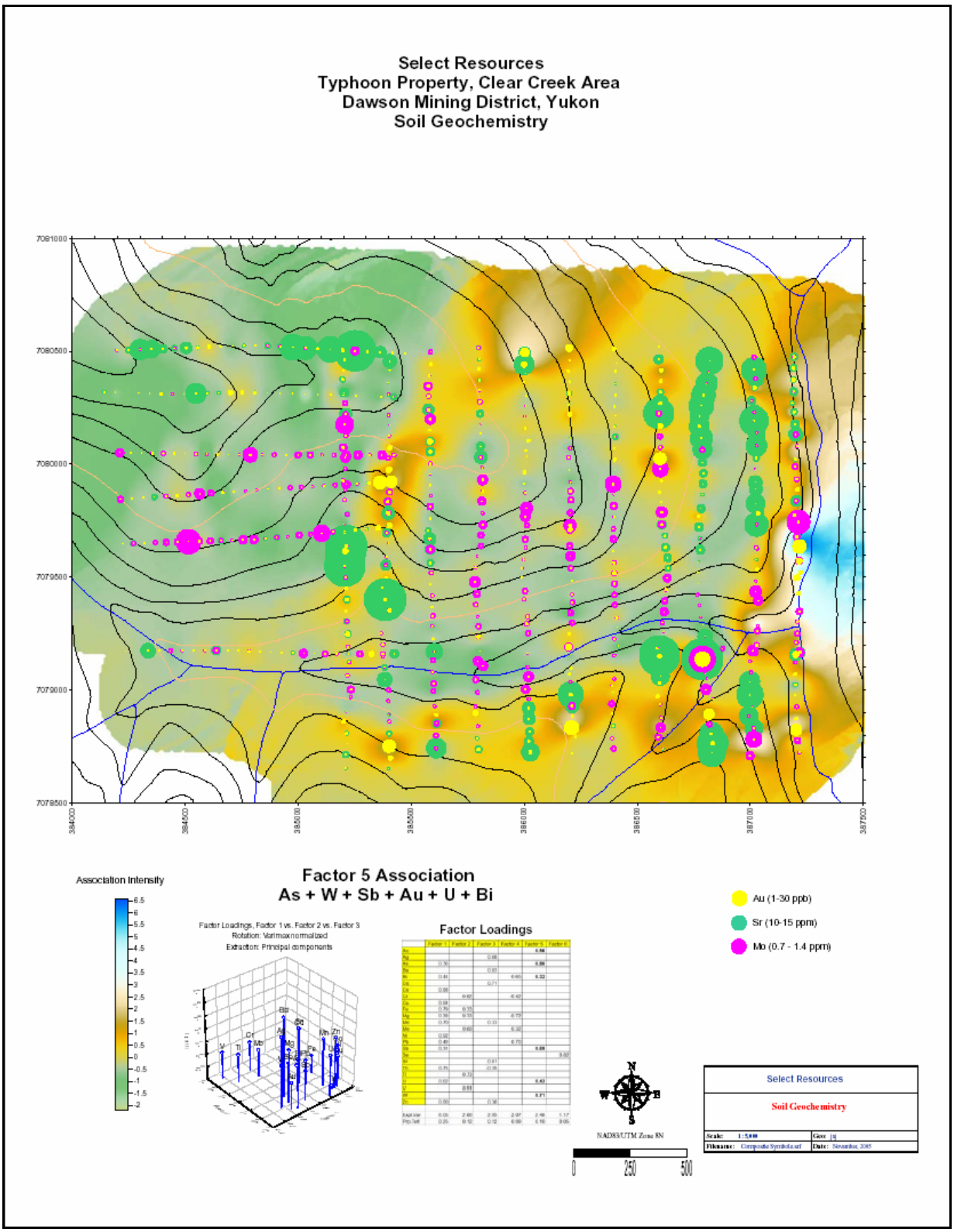

Figure 11. Soil geochemical Factor 5 (As+W+Sb+Au+U+Bi) association data for the Typhoon project.

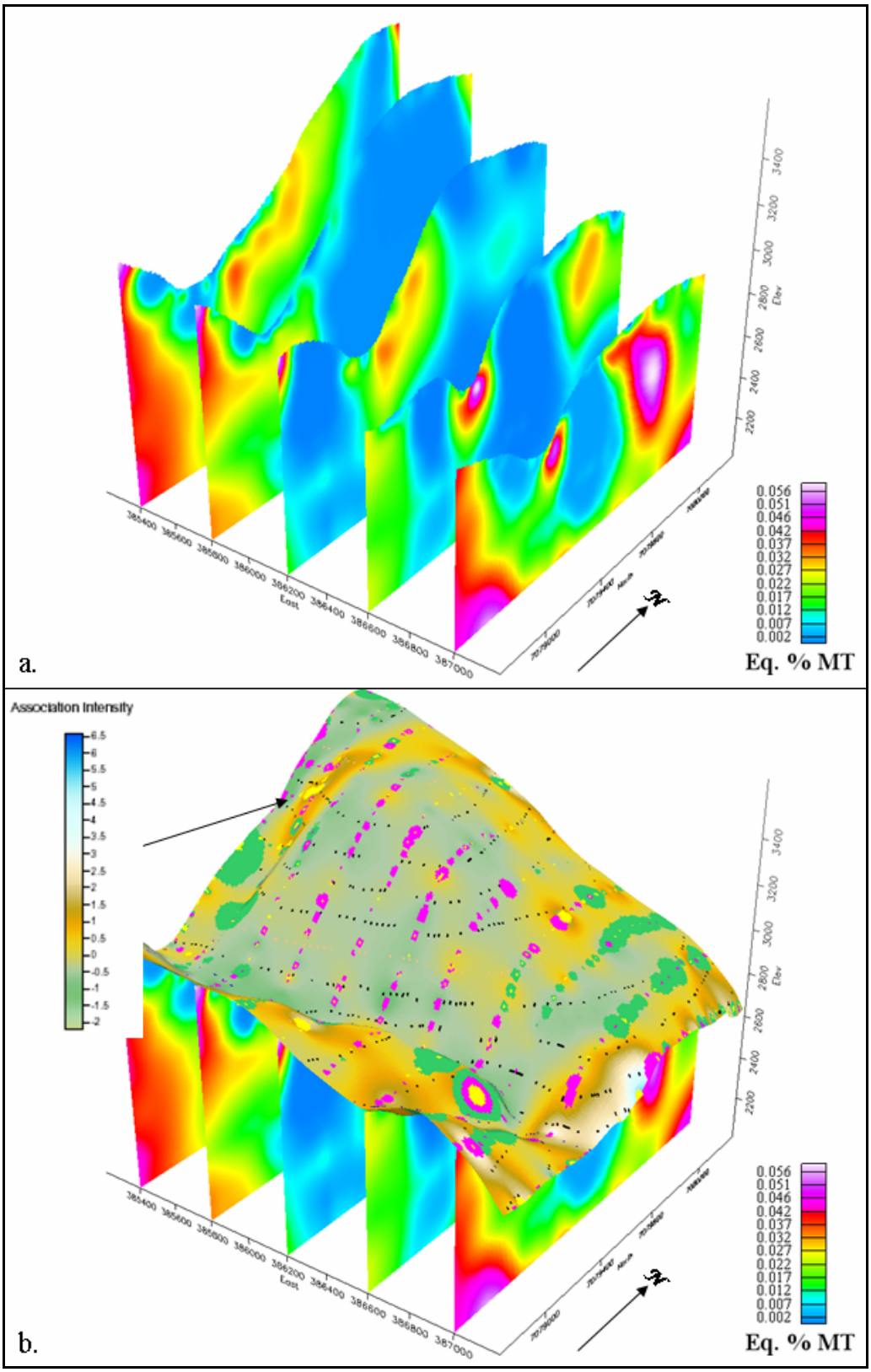

Figure 12. View looking northwest at (a) magnetic susceptibility sections through the MAG3D model and (b) with Factor 5 association data draped on topography.

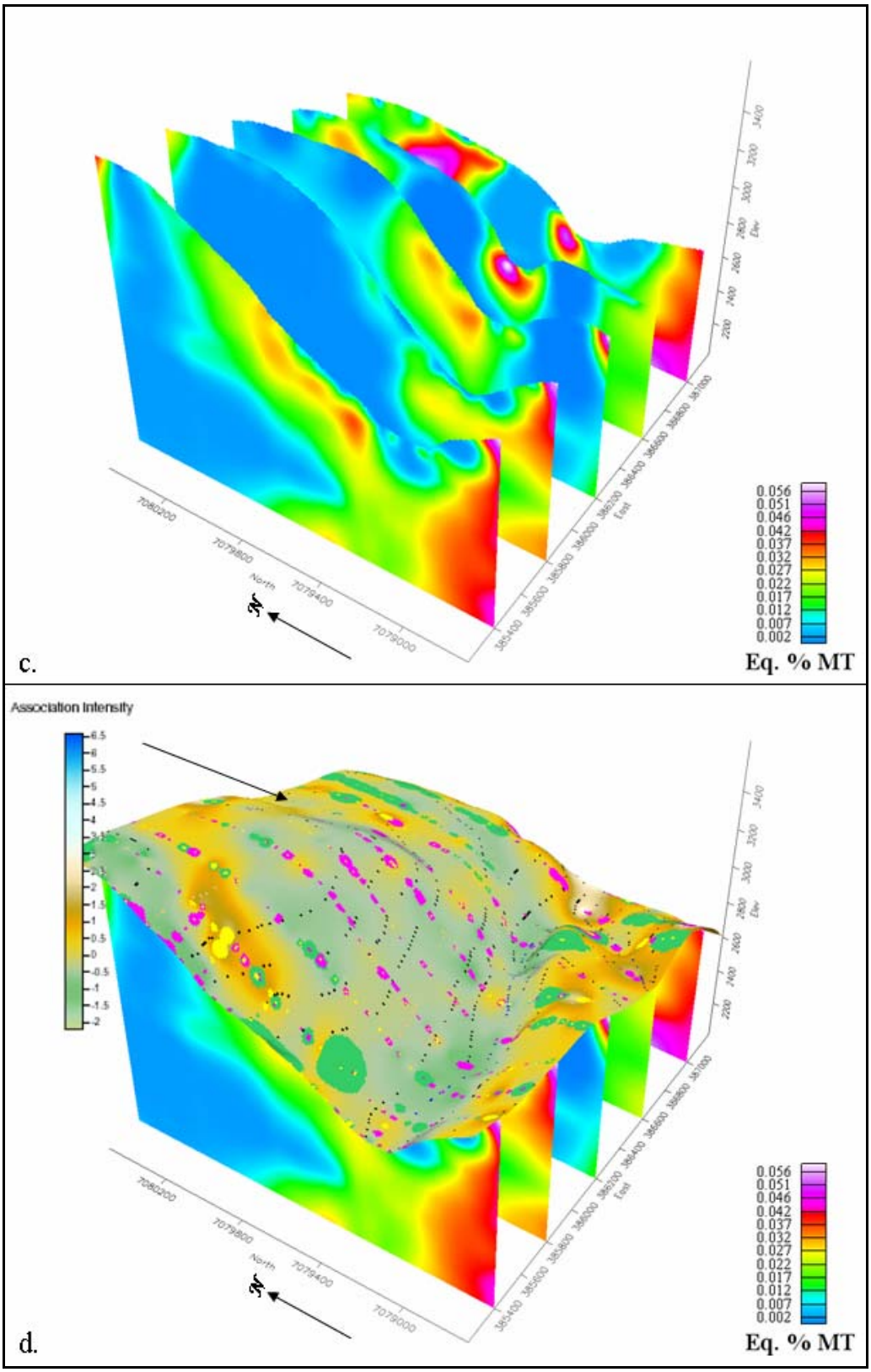

Figure 12 (continued). View looking northeast at (c) magnetic susceptibility sections through the MAG3D model and (d) with Factor 5 association data draped on topography.

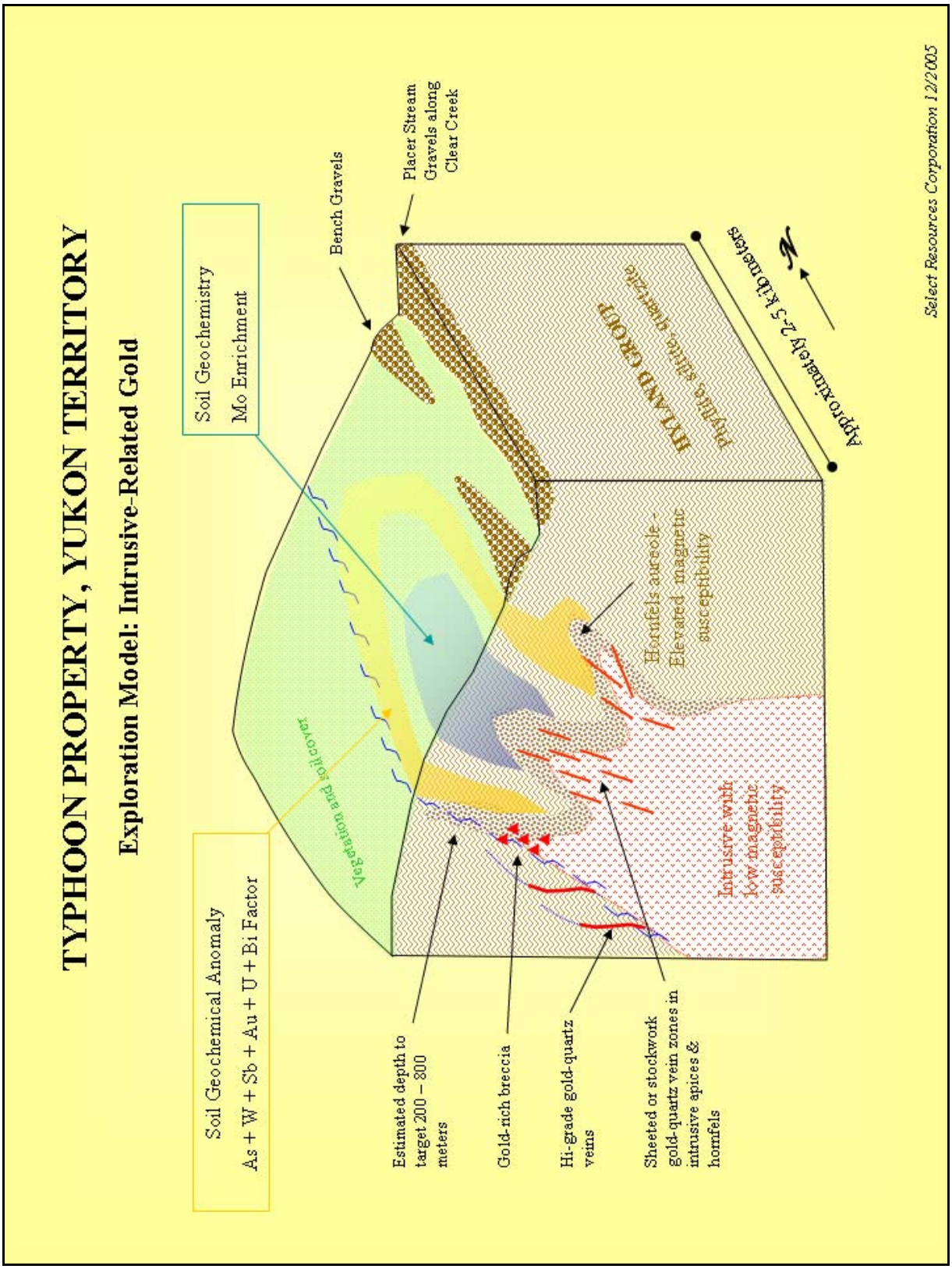

Figure 13. Schematic exploration geologic model for the Typhoon project (after Noyes et al., 2005).

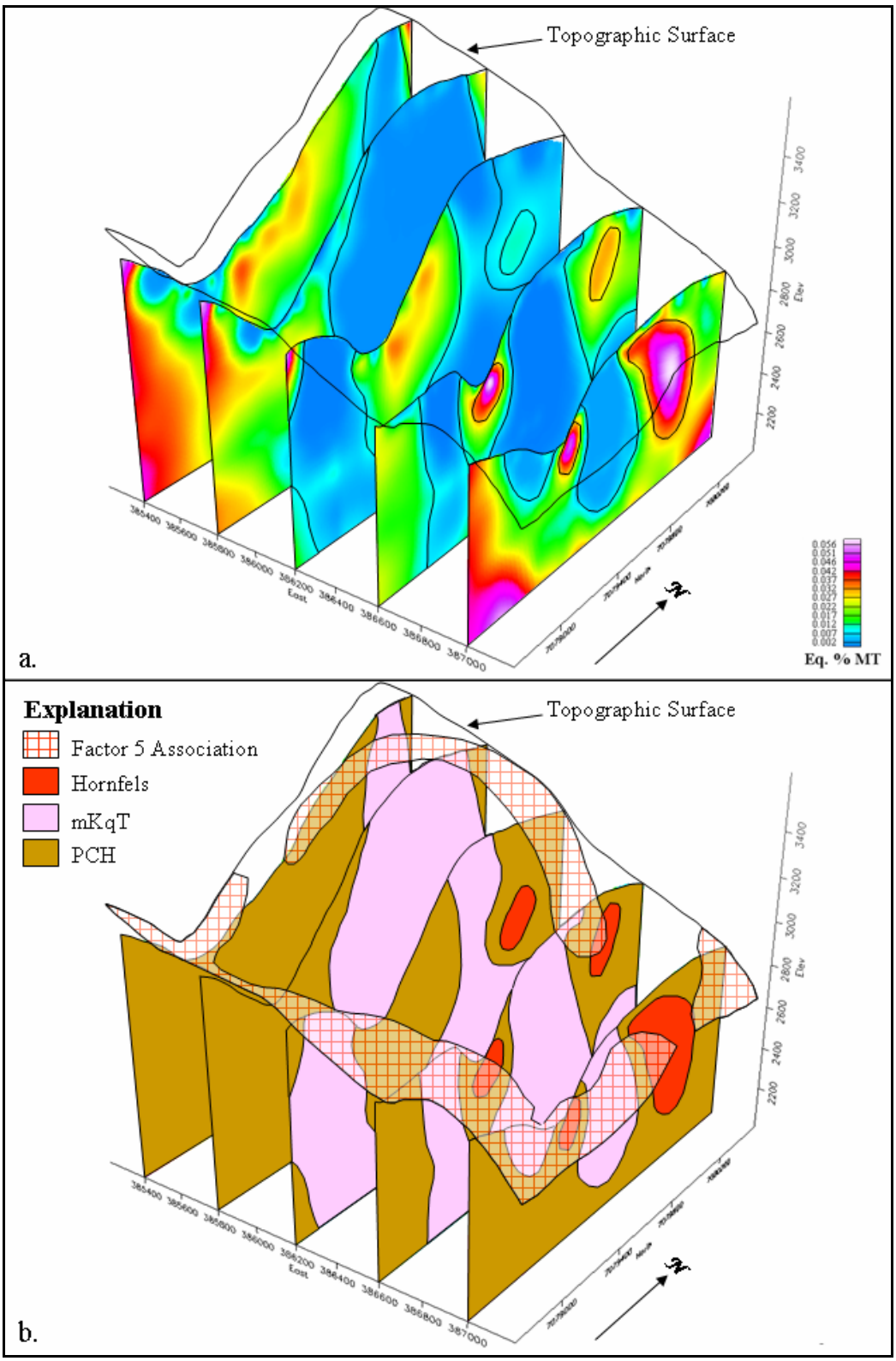

Figure 14. View looking northwest at interpreted geology from the MAG3D model (a) overlain on magnetic susceptibility sections and (b) as solid polygons for the Typhoon project.

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UBC-GIF, 1998, MAG3D – A program library for forward modelling and inversion of magnetic data over 3D structures – Version 3.0; Developed under the consortium research project Joint/Cooperative Inversion of Geophysical and Geological Data, 39 p.