Data Compilation and Review

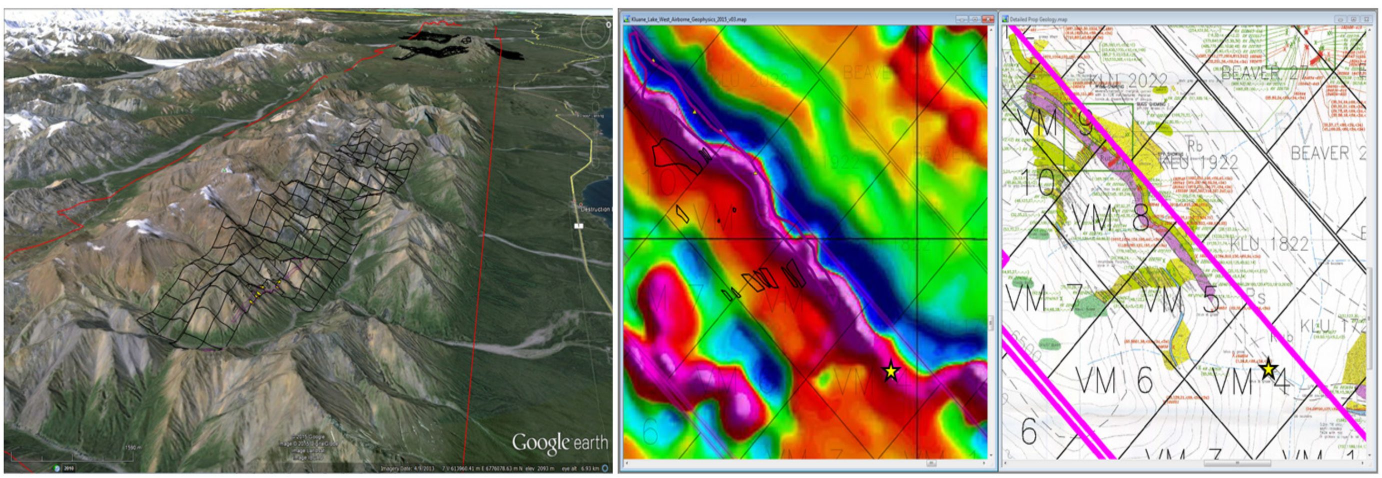
of the

Kluane Lake West Airborne Survey 2015

Spy Property, Yukon

on behalf of

Group Ten Metals Inc.



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in3D Geoscience Inc.

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1. Introduction

This report has been prepared at the request of Group Ten Metals Inc. and documents the compilation of airborne geophysical data and a first-pass data review for the Spy property. The helicopter magnetic survey was conducted by CGG between March 6 to April 15, 2015. The survey was flown with a line spacing of 250 m along an azimuth of 45° and a nominal terrain clearance of 100 m.

The Kluane Lake West aeromagnetic survey was jointly conceived and funded by the Yukon Geological Survey (YGS) and Kluane First Nation (KFN). YGS and KFN gratefully acknowledge the Strategic Initiatives in Northern Economic Development Program of Northern Economic Development Canada as the source of its funding contribution. Natural Resources Canada generously provided survey oversight and data processing and produced the maps as part of the Geo-mapping for Energy and Minerals (GEM) Program of the Earth Sciences Sector, Natural Resources Canada, efforts for which YGS and KFN are both sincerely appreciative. Data acquisition and data compilation by CGG, Mississauga, Ontario. Project management and map production by the Geological Survey of Canada, Ottawa, Ontario.[1]

2. Location and Access

The Spy property is located approximately 13 km south of Destruction Bay and roughly 7 km west of gravel road access. The property is 205 km direct distance or 260 km driving distance from Whitehorse, Yukon Territory. The driving from Whitehorse takes approximately three hours. The project area is located on NTS map sheet 115 G/02. The Spy project area is located in the Whitehorse Mining District. A location map is presented in Figure 1.

3. Scope of work

Geophysical data compilation, grid filtering and interpretation were performed using both the 2015 Kluane West airborne magnetic survey and data images from the 1996 MAG/EM Survey. Data compilation was performed using Geosoft Oasis Montaj, WinDisp and PB Encom Profile Analyst (PA). The data review consisted of a first pass look at the Spy sill magnetic characteristics and documentation of magnetic regional lineaments and trends as they may relate to the Spy sill. Lineaments and trends were interpreted manually as well as through automated routines using CET lineament analysis and USGS curvature analysis. Manual lineament interpretation is a work in progress and does not represent a final interpretation. A PowerPoint presentation was prepared for discussion purposes and represents a summary of data images for data filtering, presentation and observations. The use of PowerPoint allows for larger images that are more readily useful for discussion and interpretation. The slide images are included in Appendix 3.

[1] Text was taken directly from PDF documents OF2015-18.PDF and OF2015-21.PDF.

4. Data Delivery

The geophysical data were provided by the Yukon Geological Survey in Geosoft format consisting of a database and gridded data files. Data were downloaded from GSC and Yukon Geologic Survey servers.

The geophysical data are referenced by the GSC open file number 7914 and Yukon Geologic Survey open file number 2015-18. Figure 2 shows the area referenced by open file number 7914.

Geophysical publications can be found at http://ygsftp.gov.yk.ca/publications/openfile/2015/. Digital versions of the maps are available through GEOSCAN at http://geoscan.nrcan.gc.ca/.

in3D Geoscience has prepared this report based upon information and data provided by Group Ten Metals and CGG Airborne Surveys, which is believed to be accurate and of good quality, though it was not within the control of in3D Geoscience. This report has been undertaken in accordance with professional industry standards. The opinions and recommendations presented reflect the author's skill and judgment at the time of report preparation.

5. Datum and Projection

The data were received and compiled in NAD83 UTM zone 7 N coordinates.

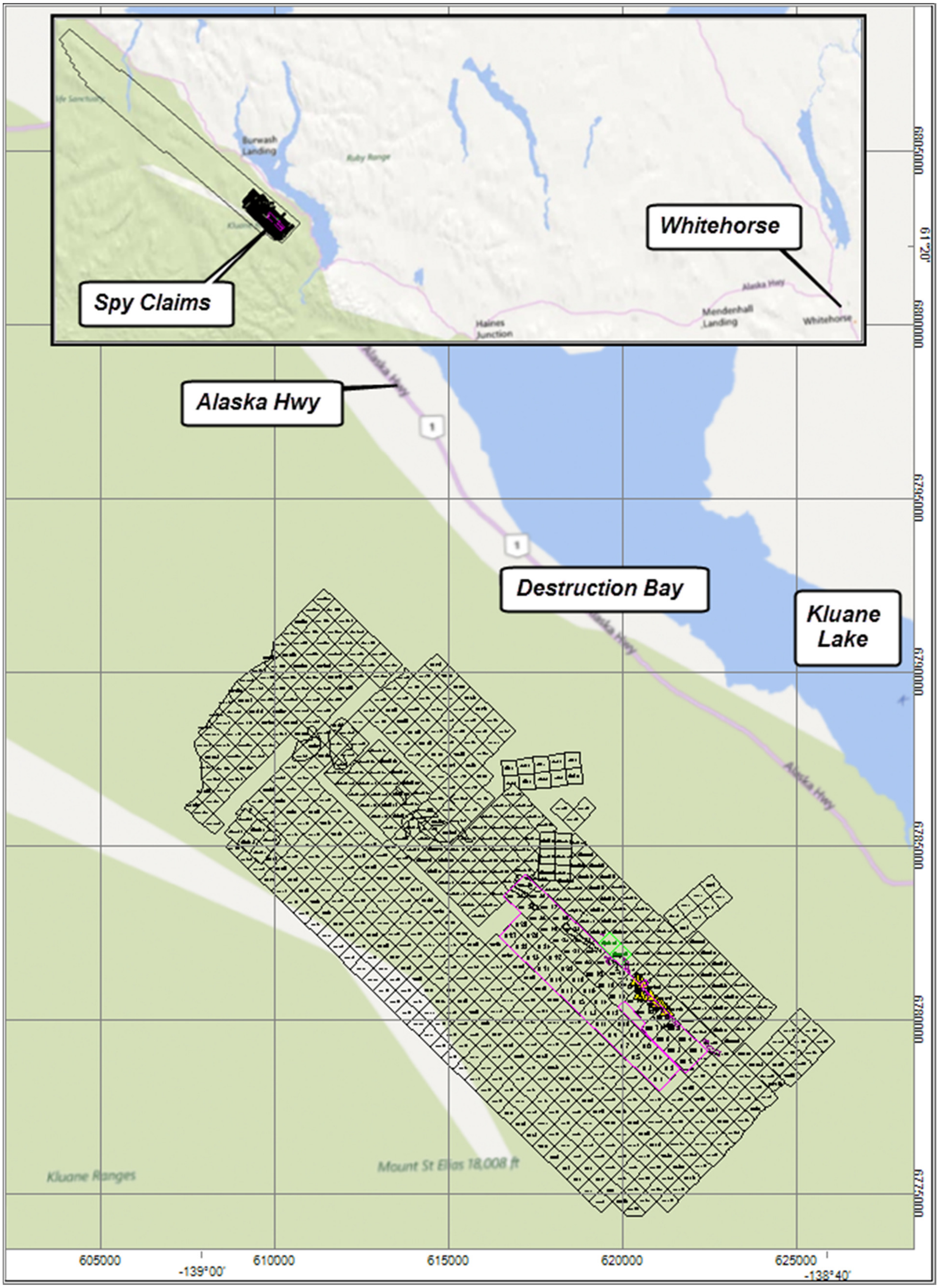

Figure 1: Location map Spy property claims.

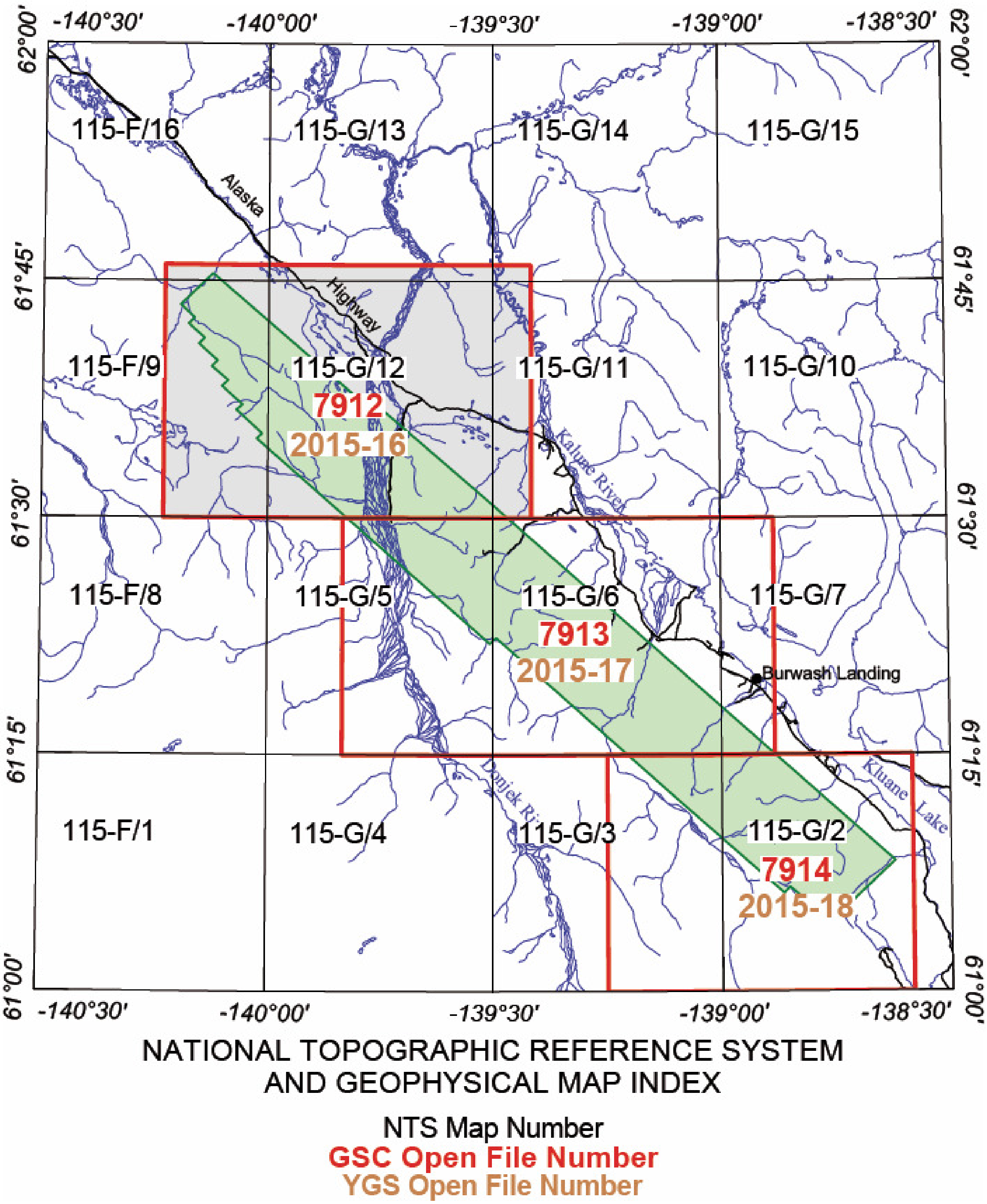

Figure 2: Reference to Open File information for the Kluane West Magnetic survey (from Open File PDF map).

6. Nomenclature and Units

A summary of common abbreviations used in the text of this report are presented in Table 1. See appendix 4 for a more detailed description of data compilation products and example images.

Table 1: Summary of abbreviations used in the text as well as data file names.

General Geophysics Abbreviations	**Description**
SRTM	Shuttle Radar Topography Mission
DEM	Digital Elevation Model (equivalent to DTM)
DTM	Digital Terrain Model (equivalent to DEM)
TMI	Total Magnetic Field Intensity
UTM	Universal Transverse Mercator grid coordinate system
General Filter Abbreviations	**Description**
AGC	Automatic Gain Correction
FVD or CVG	First Vertical Derivative (usually product of an FFT filter applied to gridded data). See 1VG below.
pGRAV	Pseudogravity calculated from magnetic data
RTP	Reduced to Magnetic Pole
TGA (or AS, ASIG)	Total Gradient (a.k.a. Analytic signal)
Plateau, Block, Area	Profile Analyst ZS filters similar to TDX
THDR	Total horizontal derivative
Theta, TDX	Theta derivative, TDX derivative
Tilt	Tilt angle/derivative
1VG, 1VD, dZ	Vertical derivative
VIAS	Vertical Integral Analytic Signal
VRMI	Vector Residual Magnetic Intensity
in3D Specific Filter Abbreviations	**Description**
Upcon_[metres]	Upward continuation (used in a regional/residual separation) with number of metres indicated
ntr, tr, ml,	No trend removed, trend removed, multilayer
MLE	Magnetic level of extraction
RSD	Residual via subtraction of multiple grids (i.e. upcon 50m minus upcon 500m)
Smth_[filter_length]_RSD	Residual via filtering (subtraction of 3, 7, 11 point smoothing filters)
VG0p5	Vertical gradient fractional (0.5 used to sharpen features)
Worming	Used for the study of changes in magnetic gradients

A brief summary of abbreviations for grid filtering nomenclature is listed in Table 2. Data naming convention used for filtering is such that the name should contain a summary of data processing performed. Names typically show a left to right progression of processing. The data were gridded using a cell size of 60 m.

Table 2: Data naming convention examples.

Kluane Lake West Block 1 Main 60m MAG RMI SE RTP 2	Project name, data cell size, magnetic data is reduced to pole.
Kluane Lake West Block 1 Main 60m MAG RMI SE RTP 1VG	Magnetic data reduced to pole and the vertical gradient calculated.
Kluane Lake West Block 1 Main 60m MAG RMI SE TGA	TMI magnetic data, total gradient (analytic signal) applied.

7. Data Processing & Compilation

Standard data processing of the survey data was performed by CGG. Data filtering, manipulation and compilation was performed by in3D Geoscience using Geosoft Oasis Montaj, Profile Analyst and WinDisp. All data were compiled in Geosoft. The compilation map organizes common data layers (referred to as groups in Geosoft) into folders as seen in Figure 3. A full listing of all compilation layers is presented in Appendix 4. Data layers prefixed with AGG represent gridded data and the majority of which have been prepared for this data compilation. A PowerPoint presentation was prepared as a summary of data images for the data filtering and presentation and observations. The PowerPoint images are included in Appendix 3.

The magnetic field parameters utilized for reduction to the pole transformation (RTP) were obtained using the Geologic Survey of Canada website. The magnetic declination is 20.211° and the magnetic inclination is 75.934°. The ambient field is 56,663 nT. These results are based on a latitude of 61.1417° North and a longitude of 138.7500° West. The date for the calculation is March 31, 2015.

Geophysical software utilized for this project is listed in Table 3. These software packages are the latest versions.

Table 3: Geophysical software utilized for this project.

Software	Purpose	Latest Version
Geosoft	Data processing, presentation and interpretation.	2015 July, 8.4.2
Profile Analyst	Data processing, presentation and interpretation.	2015 February, ver. 15
WinDisp	Data processing, presentation and interpretation.	2015 September 1

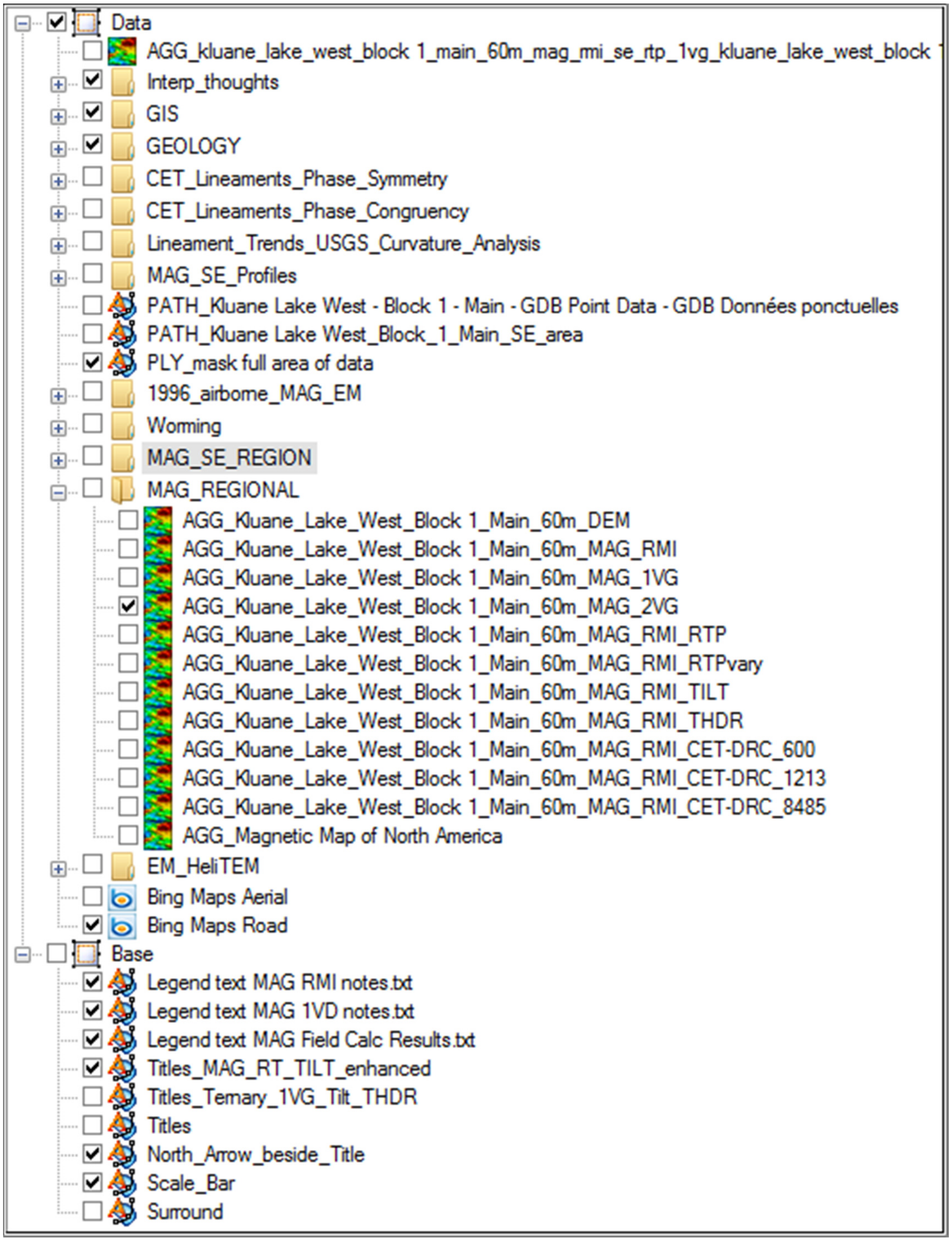

Figure 3: Example of compilation map listing of various layers.

Data products produced are summarized in Table 4. Appendix 5 contains a glossary of geophysical terms with more detailed descriptions of geophysical products. Table 5 shows an example of the geophysical glossary.

Table 4: Summary of data filtering products.

RTP (reduced to pole) 1VG (CVG) vertical gradient/derivative TILT (tilt derivative) THDR (total horizontal derivative) TDX (similar to plateau, block & area) MLE (magnetic layer extraction) RSD_Upcon (essentially MLE) Upcon (upward continued) PLATEAU (edge detection) Block (edge detection) Area (edge detection) Edge & Edge zone (edge detection)	AGC (automatic gain filter) VRMI VRMI_tr (trend removed) VRMI_ml (multilayer method) VRMI_1VG (vertical gradient of) VRMI_TILT VRMI_TDX VI (vertical integral) VIAS (vertical integral then analytic signal) VIAS_TILT WORMING (studying changes in gradient from near surface to deep-seated features)
CET lineament analysis	
USGS curvature analysis (essentially lineament analysis of magnetic highs and lows)	
CET-DRC (dynamic range compression can be useful on magnetic data for enhancing visual aspects using a linear colour distribution)	

Table 5: Example of geophysical glossary located in the appendices.

Reduced to Pole	RTP	The TMI data is processed/transformed as though the data were acquired at a magnetic field inclination is 90°. The process simplifies interpretation by removing anomaly asymmetry related to magnetic inclination/declination at the survey location. Anomalies are then located above causative sources (in theory, when excluding effects of remanent magnetization). RTP transformation becomes less stable below 20° latitude. The left image represents TMI and the right image the RTP. RTP will be the left image in the remainder of the glossary.
Tilt Angle	TILT	Tilt angle is the arc tan of the ratio of the vertical derivative to the total horizontal derivative (1VG/THDR). The location of the vertical contact would be at 0°. Typically performed on the RTP data. Useful product for structural or form line mapping. Is helpful for location source edges. It also has the tendency to bring out weaker features similar to AGC.

Typically TMI magnetic data are converted to RTP (reduced to the pole) as this presents the data in a manner that is often easier to visually interpret, especially when interpreting data from lower latitudes. Two specific grid products have been created to help with interpretation of regional features and structure: VRMI (vector residual magnetic intensity) and VIAS (the analytic signal applied to the vertical integral of the TMI data). In areas of complex magnetic responses where magnetic remanence might be suspected, a comparison of the RTP, VRMI and VIAS can be helpful in making a case for it. Figure 4 compares the magnetic data for RTP, VRMI, VIAS and a ternary image of three grids (1VD, TILT and THDR). The responses of the VRMI and VIAS are similar to that of the Total Gradient (TGA or analytic signal). The Total Gradient simplifies the magnetic picture by converting all data responses to positive values. In areas of complex magnetic responses the TGA can be very helpful in presenting simplified view of the data. In areas of magnetic remanence the TGA as well as VRMI and VIAS can be helpful products. Since the TGA is a gradient product long wavelength, deep source responses can be attenuated. The VIAS overcomes this and can be used as a good complement to the TGA.

The key data processing and presentation elements are discussed in the next few pages. A more complete illustration of the products is found in Appendix 3 or the separate PowerPoint presentation compiled for this review.

Note that data transforms can carry with them side effects to the data. For example, the RTP calculation has a tendency to elongate features in a north-south direction (the effect becomes more noticeable towards the equator), VRMI has a tendency to lose sensitivity to dip information and may be more blob like and the VIAS can be a little more blob like than the VRMI and exhibit a reduction in finer details. For interpretation of regional structural features many filtered data products or ternary image combinations are utilized. For magnetic data at this northern latitude the RTP transformation does not pose much of a concern. It is very important that data processing does not introduce negative artifacts. Ideally, there should be supporting evidence in the original data to confirm filtered or processed results.

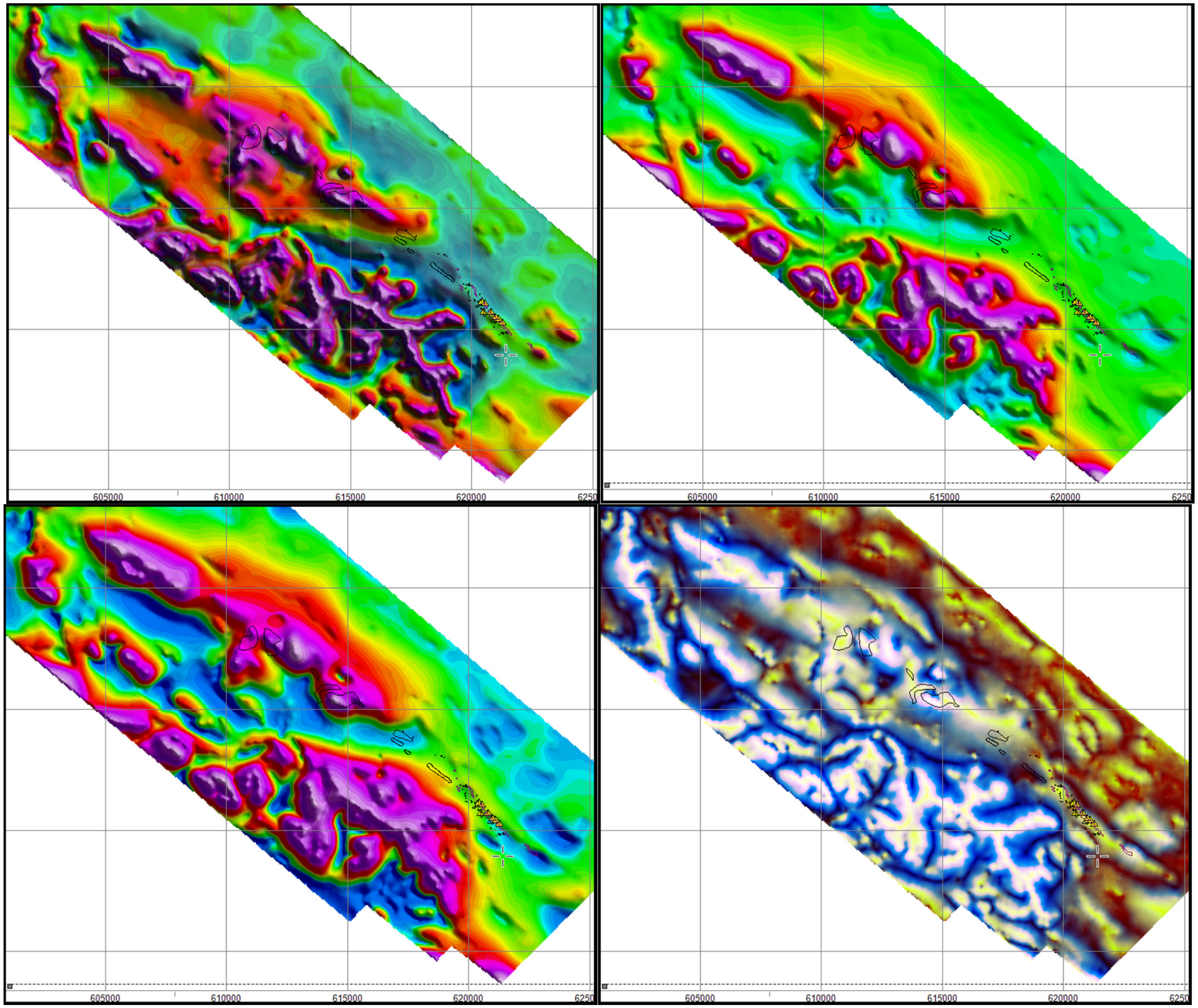

Figure 4: Comparison of magnetic data: RTP (upper left), VRMI (upper right), VIAS (lower left) and ternary image of RTP 1VD, TILT and THDR (lower right).

A method of highlighting near surface structural features and response patterns/zones is depicted in Figure 5. In this example the high-frequency content shown on the right side image is produced by overlying a semi-transparent RTP grid over the TILT derivative data. This allows for the presentation of fine detail as well as the longer wavelength responses shown through as the RTP colours. This type of visualization can be performed with many different combinations of grid products. Any high-frequency content created, such as tilt derivative (TILT), total horizontal derivative (THDR) or vertical derivative (dZ/VD), can be used as the bottom layer.

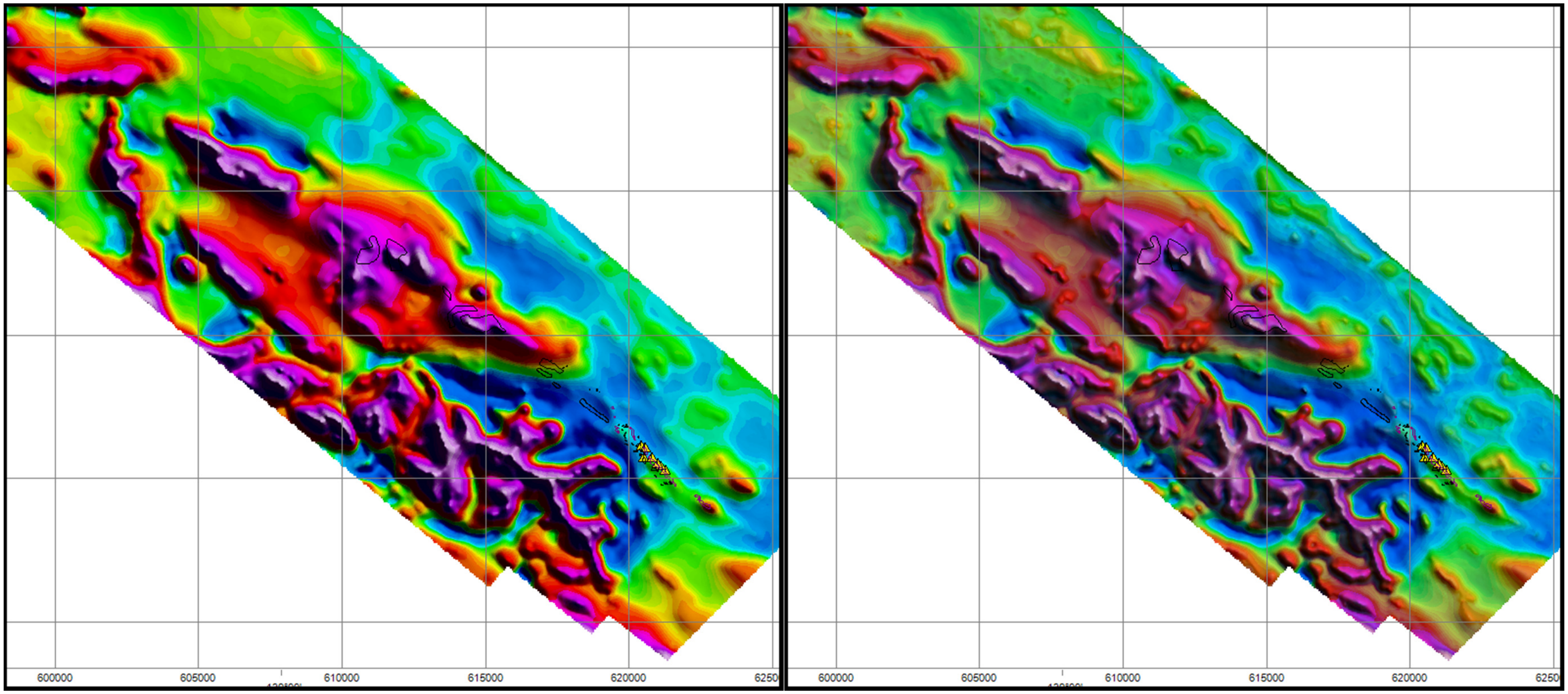

Figure 5: Enhancing data visualization using two grids displayed at the same time with transparency enabled to allow both to be seen.

Ternary Images

Ternary images can be created for virtually any data. Figure 6 shows an example of a ternary image created for magnetic data using RTP 1VD, TILT and THDR. Ternary images are helpful for identifying anomalous regions and features that may not be as readily apparent in other data presentations. Ternary images can be helpful in identifying textural domains and structure. They allow three data products to be compared simultaneously. Ternary images are often presented as either RGB or CMY in order to maximize textural responses which can seem more prominent in one versus the other.

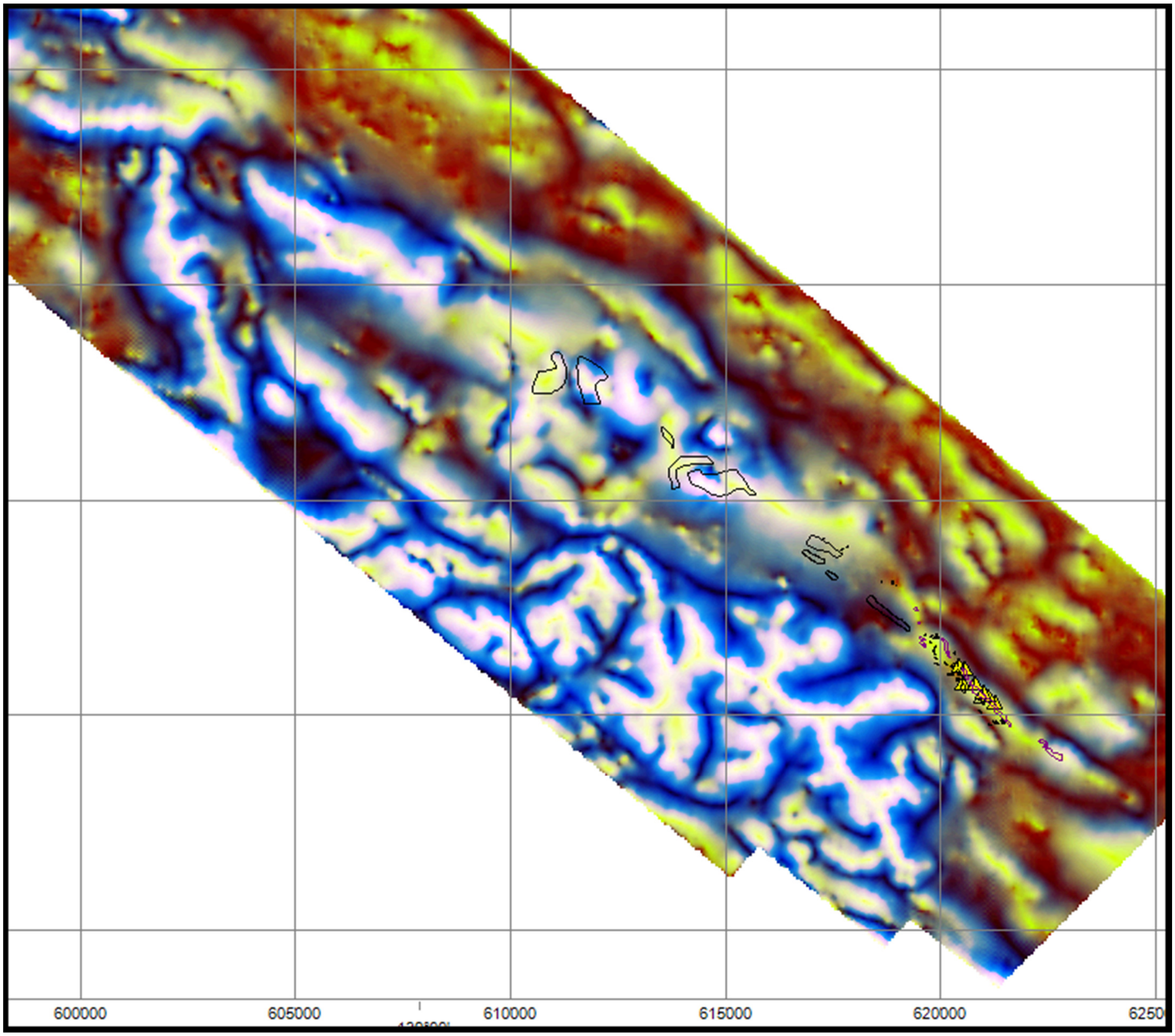

Figure 6: An example of magnetic ternary plots using RTP (1VD, TILT, THDR).

A group of edge detection filters were run on the magnetic data using a software package called Profile Analyst. The purpose was to define regions of responses in order to simplify the magnetic picture. The ZS_Block filter was a useful presentation of the data and used in the targeting (see Figure 7 right side image). Excerpts from the Profile Analyst help documentation is presented as background information.

> *"The Encom GeoFilter filters are a specialist group of filters provided with Encom PA. The Geofilters are only provided with the Utility Option of Encom PA and require licensing of this module to be enabled before access is provided. A complete reference for these filters is provided in Zhi and Butt (2004)1. The GeoFilters comprise two types of filters that have been developed for the purpose of enhancing weak magnetic anomalies from near-surface sources while simultaneously enhancing low-amplitude, long-wavelength magnetic anomalies from deep-seated or regional sources. The Edge filter group highlights edges surrounding both shallow and deeper magnetic sources. The results are used to infer the location of the boundaries of magnetized lithologies. The Block filter group has the effect of transforming the data into zones which, similar to image classification systems, segregate anomalous zones into apparent lithological categories. Both filter groups change the textural character of a dataset and thereby facilitate interpretation of geological structures. The effect of each filter is demonstrated using theoretical model studies in the paper by Zhi and Butt. The models include both shallow and deep sources with a range of magnetizations. Comparative studies are made with traditional filters using the same theoretical models."* [1] *Zhi, S. and Butt, G.R. 2004. "New Enhancement Filters for Geological Mapping", ASEG 17th Annual Conference Edition, Preview, Sydney 2004*

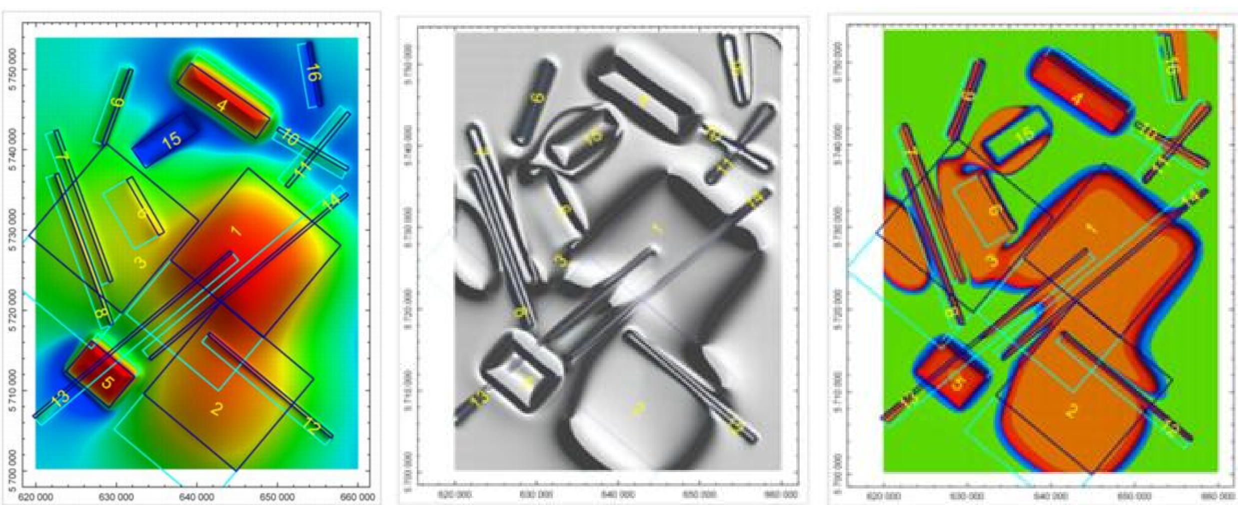

Figure 7: GeoFilter example for Block filters. Left is the RTP image derived from multiple 3D theoretical sources. The middle image represents edge enhancement and the right-hand image shows a block enhancement.

Feature Analysis, Form Lines and Lineament Detection

Data analysis for linear trends/textural patterns/form lines, prominent magnetic domains, and contacts or faults in data sets was performed in two ways: automated routines using CET lineament analysis and USGS curvature analysis (United States Geological Survey).

CET Lineament Analysis

CET lineament analysis was performed on the MAG RTP data. CET grid analysis plug-ins for Geosoft strives to estimate data trends using data ridges and edge detection. Figure 8 provides a simple analogy of the two objectives for mapping. The CET grid analysis software was developed at the Center for Exploration Targeting at the University of Western Australia.

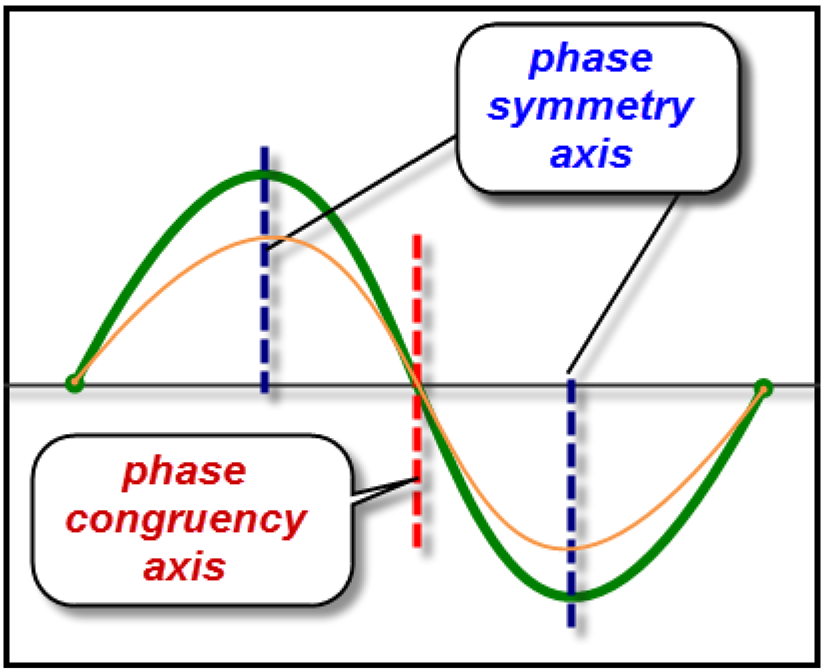

Figure 8: CET lineament analysis basics of phase symmetry versus phase congruency detection.

The software uses two approaches to estimating data trends via texture ridges (phase symmetry) and data edges (phase congruency). Phase symmetry occurs when all the frequency components of a signal are at their amplitude extrema. Phase congruency for edge detection occurs at points where frequency components are maximally in phase.

Figure 9 and Figure 10 show examples of phase symmetry used for feature detection.

Figure 9 illustrates how the CET structural/textural mapping software can be fine-tuned depending on the size of structures of interest. The left-hand image is magnetic data and highlighted in the center is a region that shows subtle, but clear linear features. Depending on the choice of wavelengths to be studied, the outcome will either demonstrate more or less detail as shown in the middle and right-hand images. The coarse resolution may show continuity of regional features better than the detailed result. It is up to the user/interpreter to determine which result fits best with the data for the purpose at hand. In practical terms it is most likely that at least two resolutions would be beneficial to use. The middle image represents a smallest filter wavelength of 3 (120 m) and 4 filter scales (meaning that data wavelengths of 120, 240, 48 and 960 m are used in the process). With respect to the data file names/grids this would be written as PS-3-4-5 where the last term “5” represents a noise level. The right image represents a smallest filter wavelength of 5 (200 m) and 5 filter scales (data wavelengths of 200, 400, 800, 1600 and 3200 m). These images are for illustration purposes and are not the Kluane data.

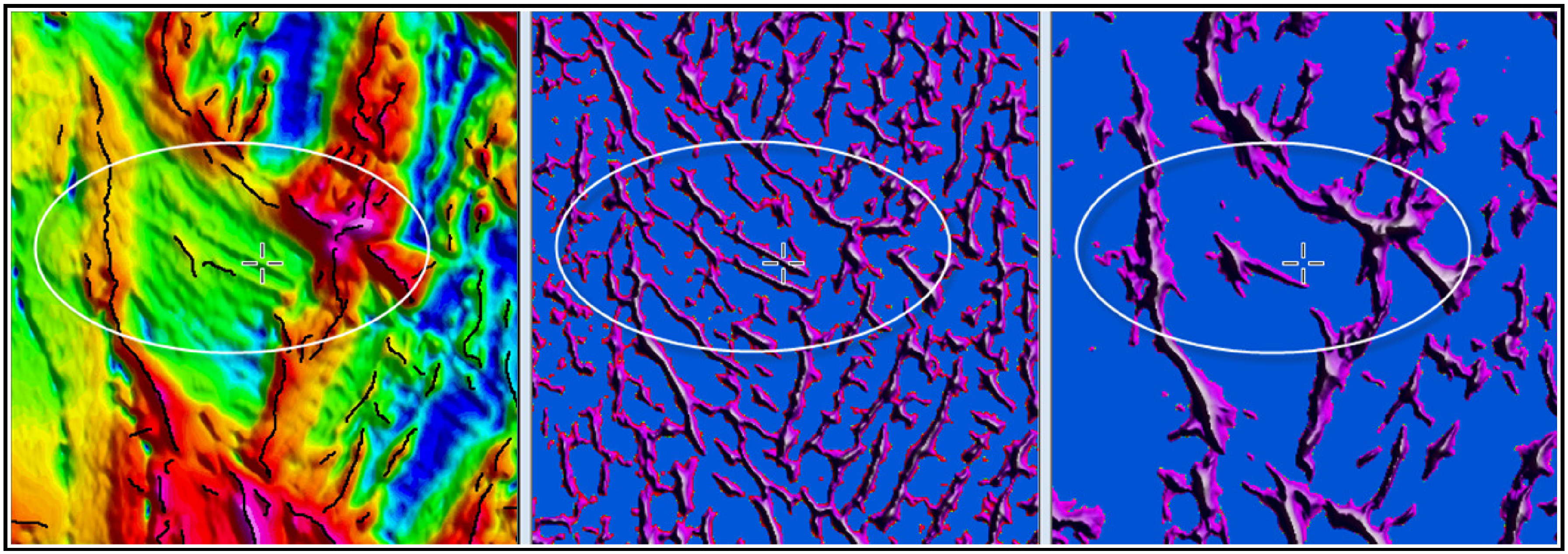

Figure 9: Illustration of the fine tuning the can be performed in the CET phase symmetry and congruency software to define local vs regional scale features.

Figure 10 compares levels of detail that can be achieved in the CET Phase Symmetry data processing. Increasing detail can result in increasing noise. Therefore one must find a balance or plan to use the results from different scales for specific applications. In this specific image the resolutions (or fineness of detail) have been labelled from low to high. These labels are relative to this image only because if one was studying regional versus local structures the results would be notably different than this image. These images are for illustration purposes and are not the Kluane data.

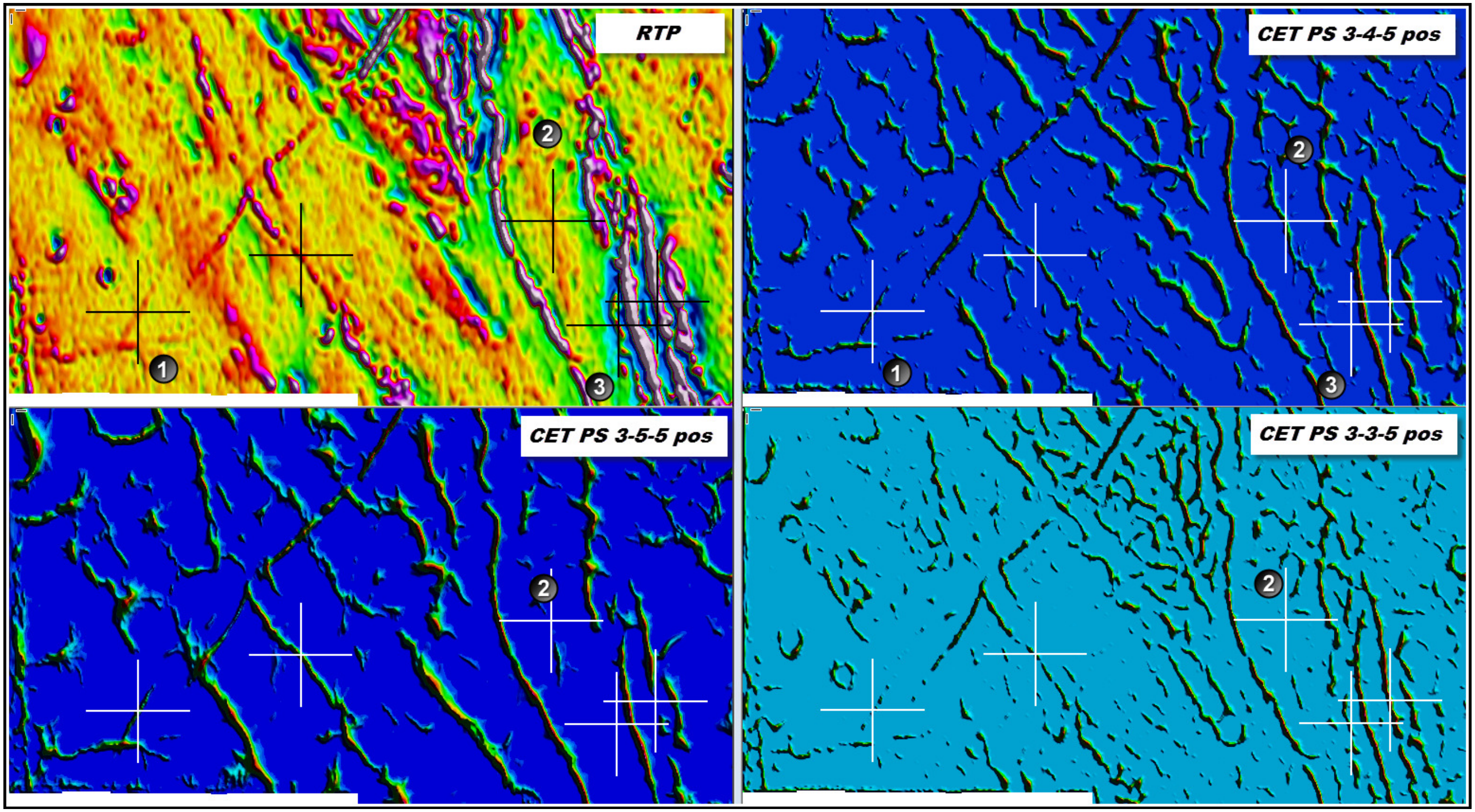

Figure 10: Illustration of how CET can resolve data responses of different resolutions. Resolutions for this image are low (lower left image), medium (upper right) and high (lower right).

USGS Lineament Analysis

Lineament analysis using curvature analysis was performed using software written by the USGS that has been made available to run in Geosoft. USGS code scans an input data grid searching for local extrema using curvature analysis to detect ridges, troughs, data highs, data lows or saddles. Figure 11 illustrates the magnetic ridge (red) and trough (blue) analysis performed on the RTP data.

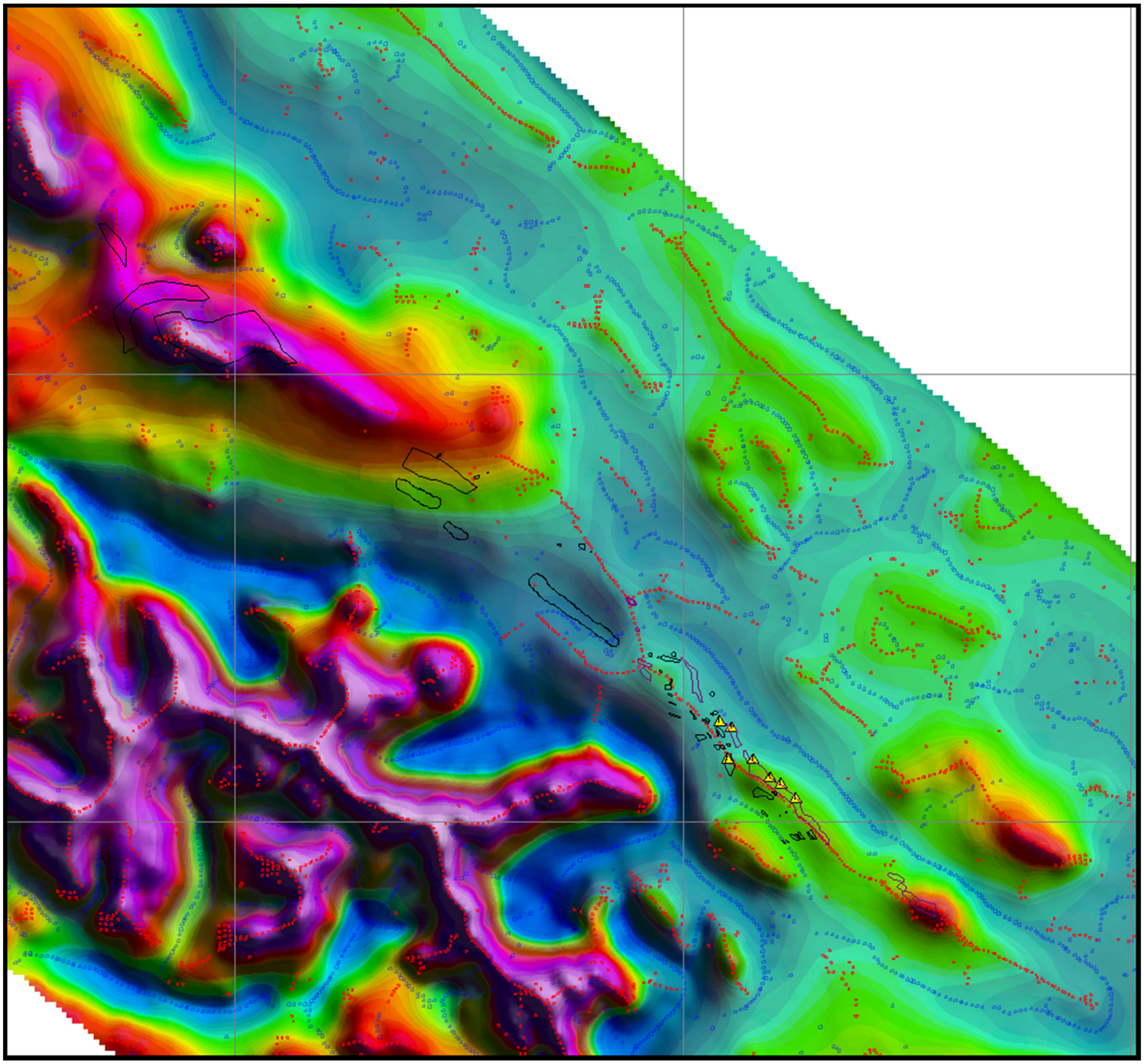

Figure 11: Example of USGS curvature analysis for ridges and troughs applied to the RTP magnetic data.

For additional information on curvature analysis see: Phillips, J.D., Hansen, R.O., and Blakely, R.J., 2007, The use of curvature in potential-field interpretation: Exploration Geophysics, v.38, p.111-119.

CET Phase Symmetry Analysis

The RTP magnetic data were processed to highlight prominent textural features. The data were processed for phase symmetry and phase congruency using the magnetic data. The phase symmetry data appeared to be the most useful. The phase congruency results may require further fine tuning. Figure 12 shows a sample of CET phase symmetry data processing on RTP the magnetic data. The form lines represent phase symmetry for magnetic highs (red lines) and magnetic lows (blue lines) results. There are multiple layers of each colour run using parameters sensitive to shorter (thin lines) and longer (thick lines) wavelengths. Figure 13 has the magnetic data removed to better illustrate the various scales of the lineaments which were not as easily seen in Figure 12.

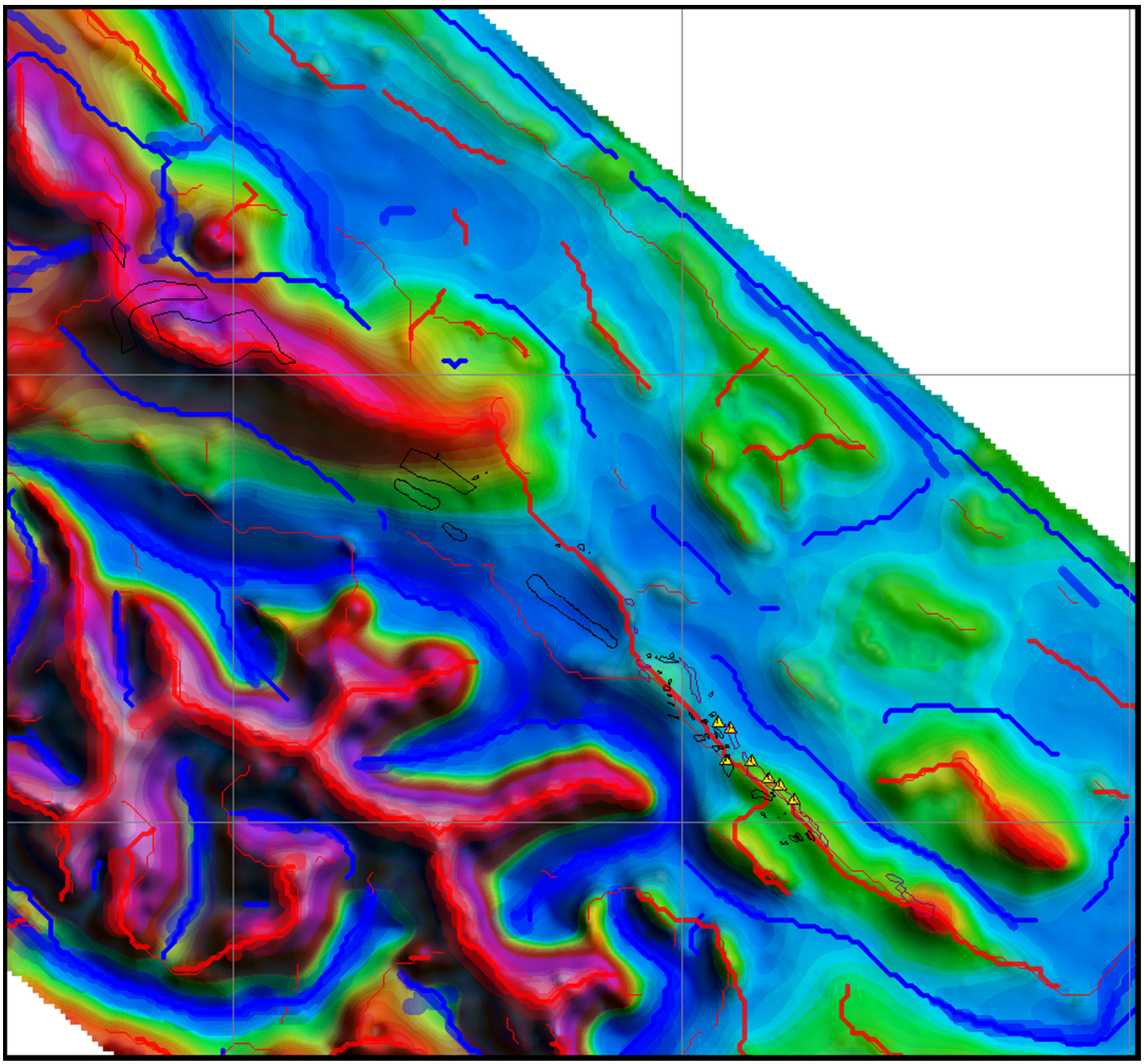

Figure 12: Example of CET phase symmetry analysis performed on RTP magnetic data.

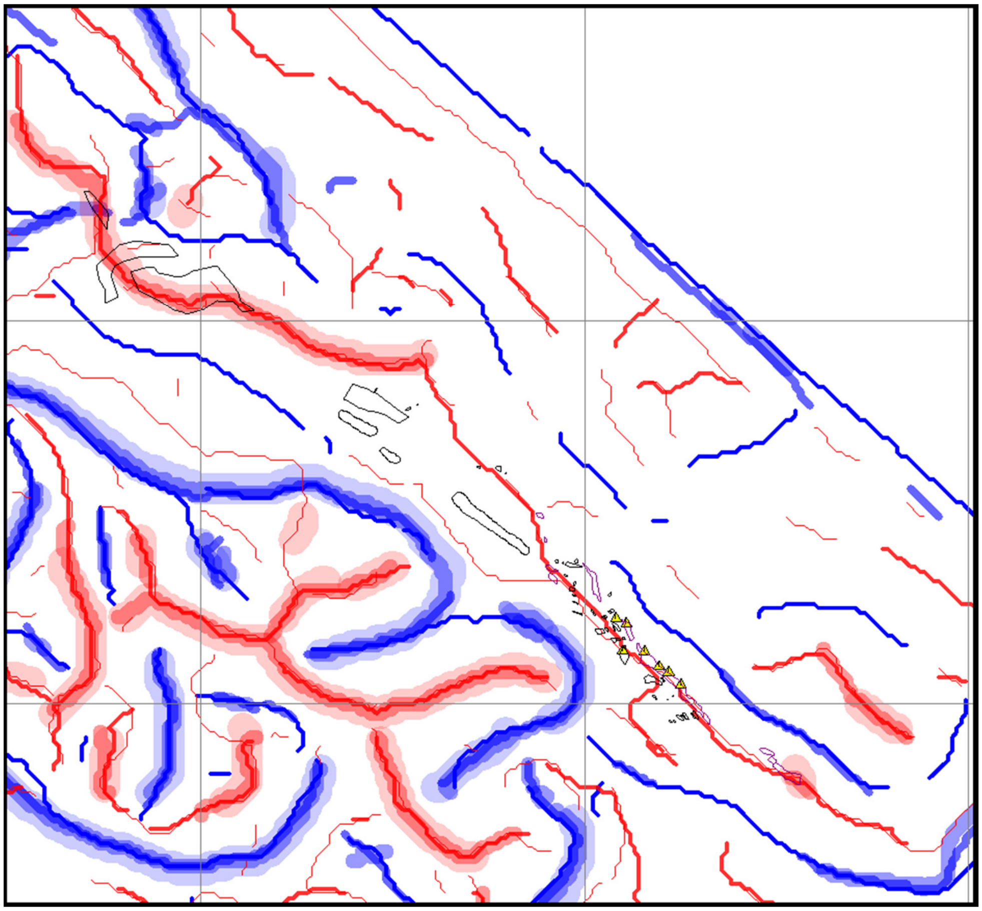

Figure 13: example of CET phase symmetry analysis with RTP magnetic data turned off.

The CET lineament analysis algorithm may not always display the same sensitivity to subtle features as we see in the USGS curvature analysis. The CET method offers significant variability for searching out particular wavelengths in the data set. The CET results presented could be tweaked further with respect to mapping near surface, weaker responses.

Lineament and Trend Review

Interpretation of magnetic domains, trends and discontinuities have been done manually as well as using automated routines. Automated routines lack knowledge and experience of the data interpreter and will not be able to identify all features in a data set. For this review the magnetic data was studied for trend and form lines analysis using the 2015 Kluane magnetic data RTP, VRMI, AGC, ternary image, CET lineament results, upward continuation (or MLE magnetic layer extraction) and the 1996 magnetic data images. The manual lineament review is a work in progress and does not constitute a final product. The upper image in Figure 14 illustrates mapping of potential magnetic domains using a ternary image of 3 magnetic grids (vertical gradient, tilt angle and total horizontal derivative). The resulting colour of the three grid combination can help identifying different rock units or the possibility of alteration. The sharpness or high-frequency content can suggest source depth or different domains. The different areas highlighted with markers 1-6 would then be discussed with a geologist to assess and refine their association with the known geology or help with mapping geology.

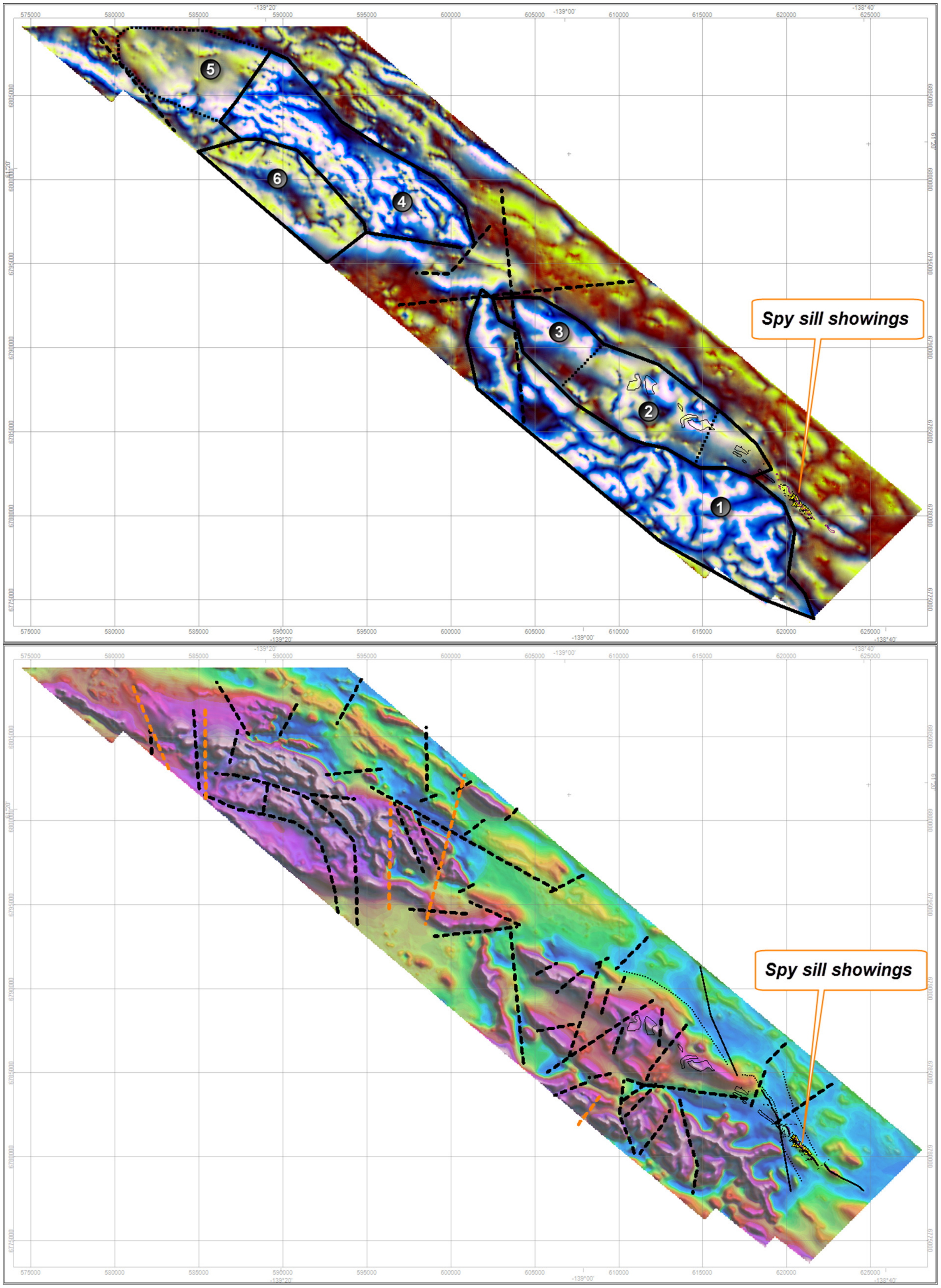

Figure 14: Example of mapping out magnetic domains using the ternary image from RTP (1VG, Tilt and THDR) upper and lower image showing trends or discontinuities over the RTP data.

The lower image of Figure 14 shows a work in progress for trends picked from the RTP magnetic data. The process of picking trends is done through a variety of data sets which allow different aspects of the geology to be interpreted. For example, reviewing vertical gradient data will certainly show us near surface trends and discontinuities, but may not as easily identify deep-seated sources or faults. Upward continued data allows us to suppress the responses of near surface sources and focus on the deeper magnetic responses. Data upward continuation is often done at multiple levels. In Figure 15 we have the same lineaments as shown in Figure 14 overlying the RTP_MLE_500-1000 product which is an upward continuation residual filter result. The RTP data were upward continued 1000 m and this was subtracted from the RTP data upward continued 500 m. This result is intended to suppress near surface responses and represent a “depth slice” or depth of investigation between 250 and 500 m depth. These depths should not be taken as absolutes but used in a relative sense. These products are referred to as magnetic layer extraction or MLE in the Geosoft compilation. Features interpreted from the MLE data in Figure 15 may not always agree with those mapped in the original data because these sources are deeper seated. Trends and domains documented so far should be verified with another pass through the data. Ideally, it should be done together with a geologist in order to help with identifying features and the possibility of considering timing of events so that we are not left with a series of cross-cutting features that might be geologically unrealistic.

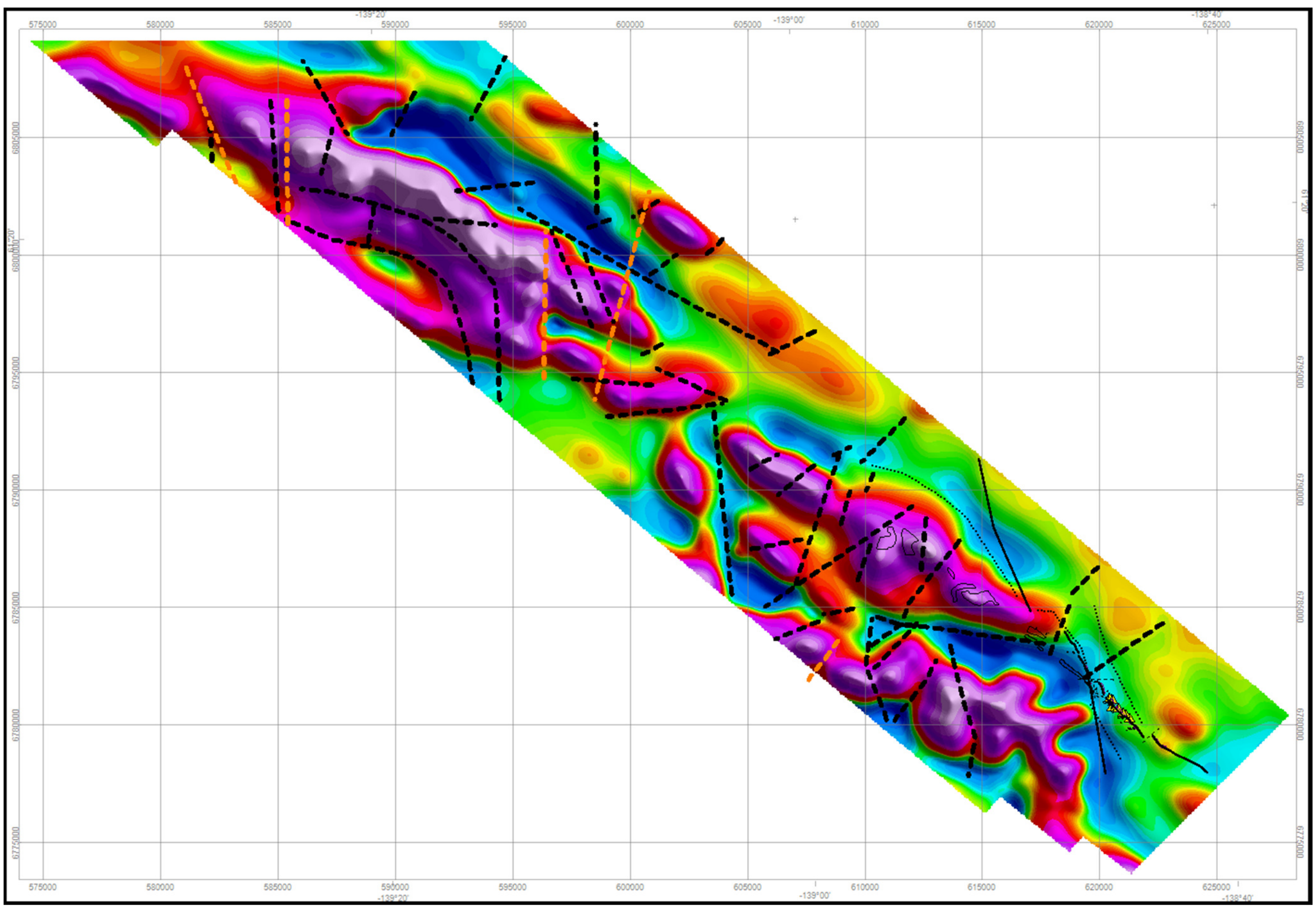

Figure 15: Magnetic trends overlying upward continuation residual filter for 500 to 1000 m (RTP_MLE_500-1000).

Worming (Experimentation)

A test was run on the magnetic data performing Worming or multiscale edge detection. It is an automatic process that determines the maximum gradient of the data at a series of upward continuation heights. The data were upward continued to 1000 m at 50 m intervals. Figure 16 is an example of levels 0 and 500 m. Worming can be used to study source edge detection/dip and geologic domains (based on magnetic susceptibility domains or response patterns). This is a work in progress to determine the viability of using this method for targeting and geologic mapping in addition to the standard 2D grid filtering.

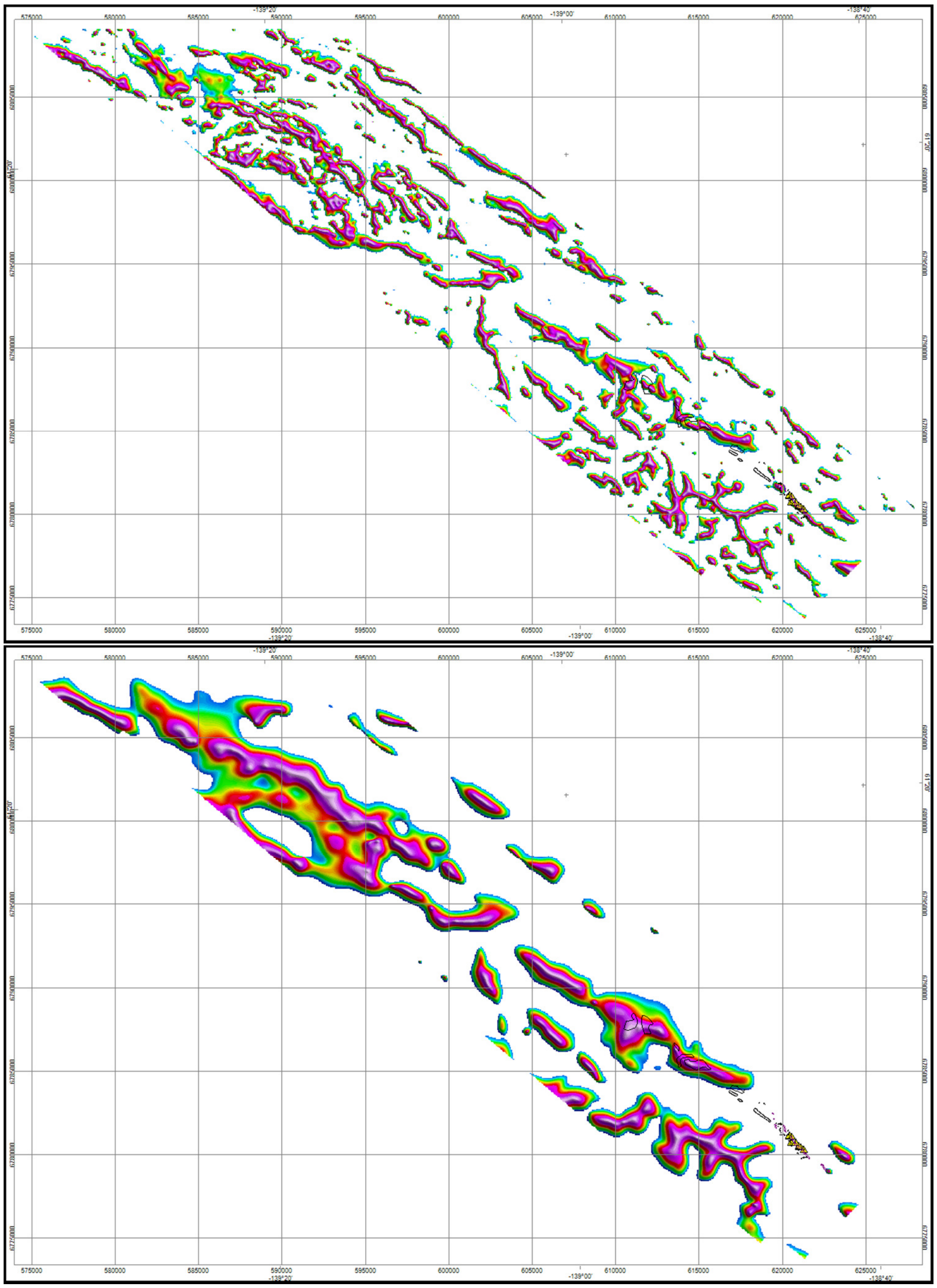

Figure 16: A plan view of Worm results showing Theta filtered 3D voxel slice at 0 and 500 m levels.

Studying magnetic gradients can be helpful in identifying trends, offsets and discontinuities. It is another way of looking at the original data that may be more illuminating for particular tasks then we would see in the RTP data. A full review of the Worming results has not been completed.

The Worming results can be viewed in 3D. 3D visualization of Worm results do not represent true depths. Figure 17 is a generic example of worming over a dyke swarm. Historical presentations of Worming results were done with the extrema rising vertically corresponding with the upward continuation levels. In this presentation the results have been presented in a downward fashion. For example, historical presentations would have plotted the data such that an upward continuation of 200 m would have the result is plotted at 200 m above ground whereas in these images the data were plotted at -200 m.

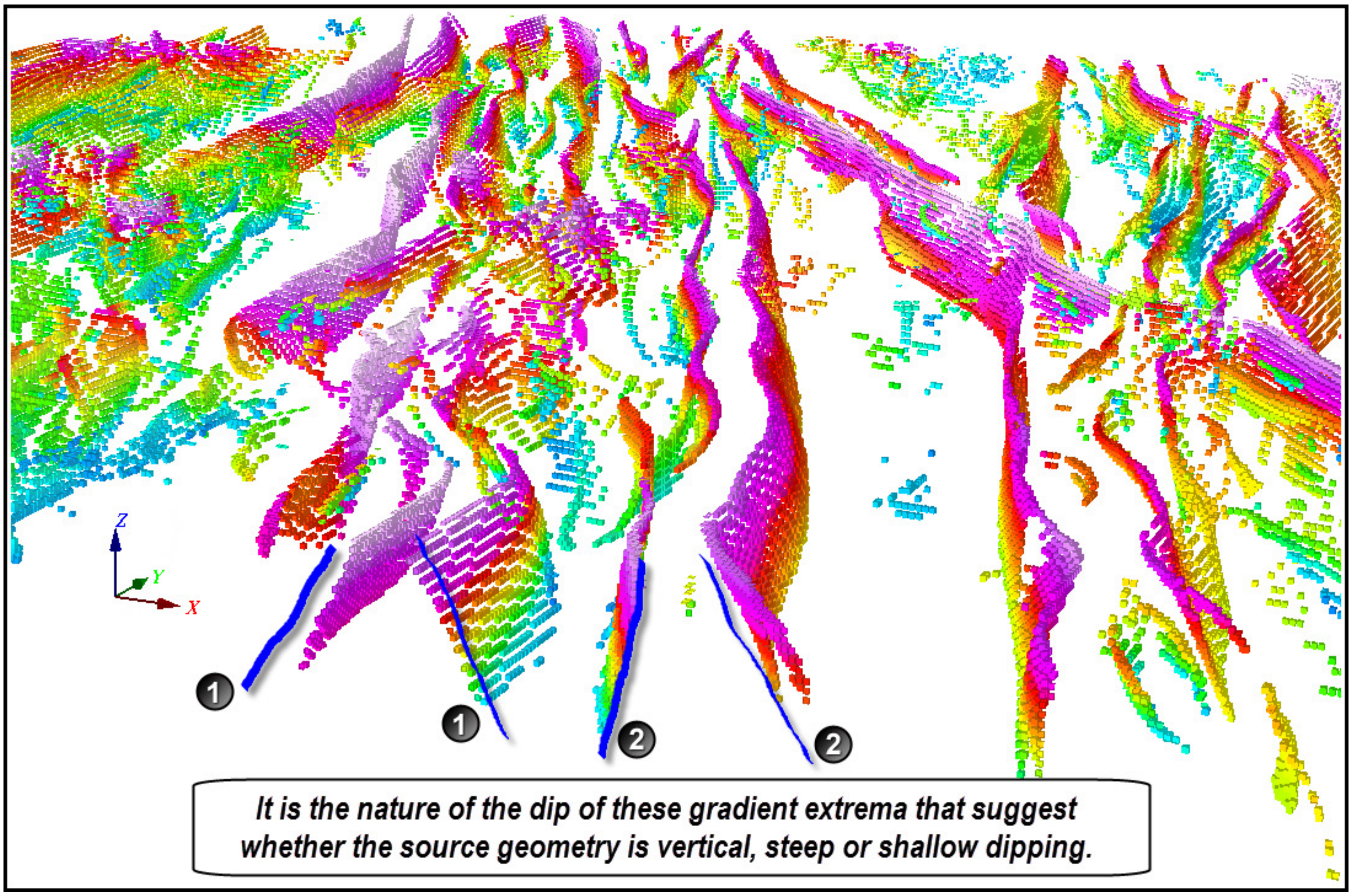

Figure 17: 3D view of gradient extrema points showing variations in slope of extrema relating to differences in source dip.

The voxel representation of the gradient data can used for 3D visualization, but it is important not confuse these presentations with 3D magnetic inversion models. The 3D magnetic inversions represent magnetic susceptibility distributions with depth that when forward modelled yield a response comparable with the original magnetic data. The Worming presentations are more of a plotting convention though the data results do reflect physical calculations at specific distances above the ground. 3D presentation of the Worming results has not been performed, but is mentioned here in case there is interest to do so in the future.

Figure 18 shows an example slice through Worming results with gradient extrema points and a Theta filtered 3D voxel. The standard Worming result is comprised of a gradient plane on either side of the source or in the case of an isolated 3D body a gradient surface surrounding it. The 3D voxel will show the same result. The Theta data filtering is an attempt to simplify this and produce a single feature to look at.

The gradient data are sensitive to the size, geometry, amplitude and depth of the magnetic sources. In this image one can readily see differences between some of the dyke responses. Markers 1 and 4 suggests that either the size of the dykes or their magnetite content is much larger than suspected at markers 2 and 3. At marker 3 there is insufficient magnetic response from the source rock to produce gradients that can be clearly measured at successive upward continuations. This could be due to both size and magnetite content.

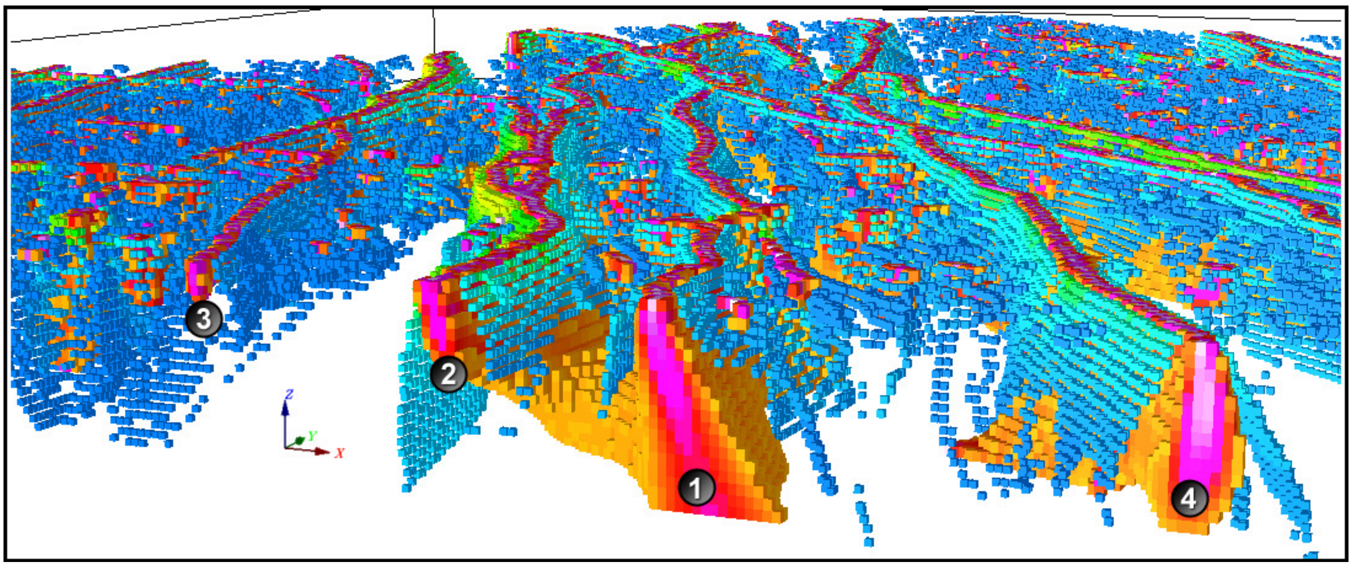

Figure 18: 3D view of gradient extrema points and Theta filtered 3D gradient voxel.

Aerial Imagery from Bing Maps

Geosoft Oasis Montaj comes with a feature that allows for the downloading of aerial images from Microsoft ("Bing" service) based on the project location (Bing maps is located under the menu "Seek Data" then choose "Add Bing Maps Imagery"). The feature produces images in the project location which are more or less equivalent to the commonly used Google Earth imagery. Figure 19 shows an example of the satellite image. The image resolution is good for this area. Depending on the area of interest these images can often contain very high or poor resolution. A Geosoft license is required to use this feature.

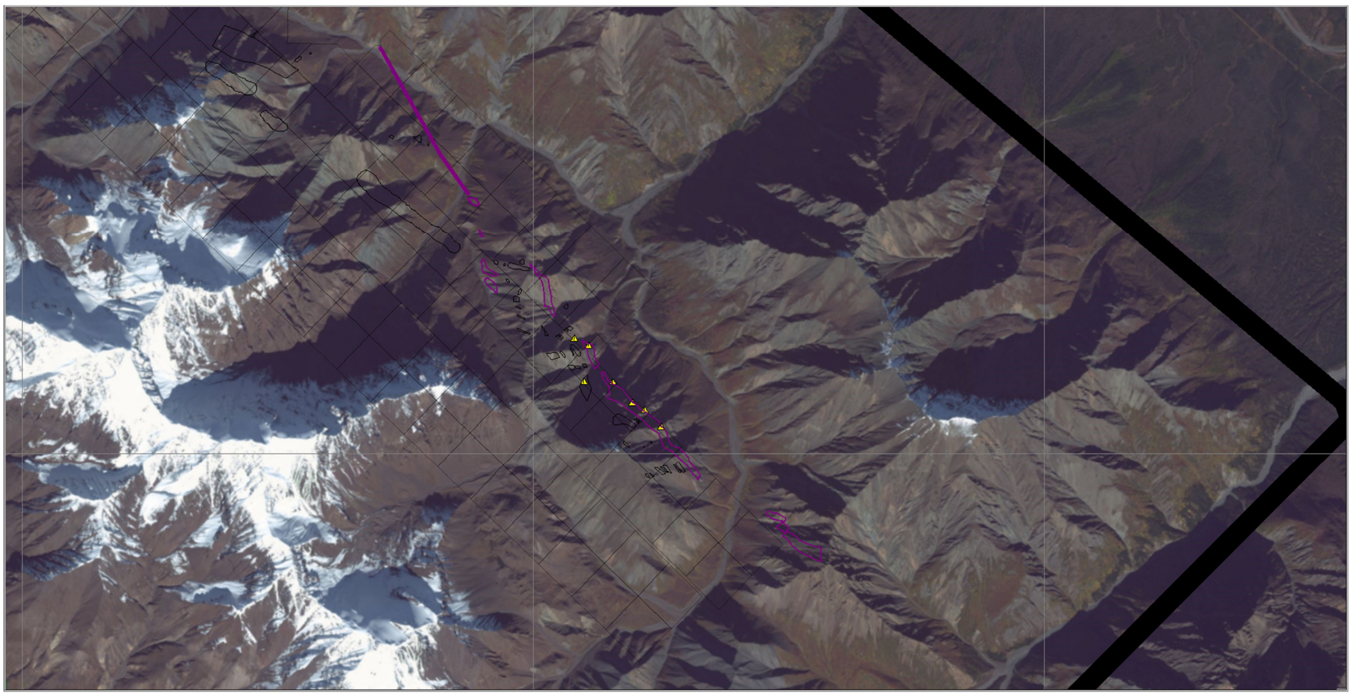

Figure 19: Bing maps imagery available for the survey area with gold occurrences/prospects.

8. Data Discussion & Observation

Magnetic data considerations

The magnetic survey for the Spy project is at geographic latitude of 61.14° where the inclination of the earth's magnetic field is approximately 75.9° relative to the surface. Interpretation can be performed directly on TMI data as the transformation from TMI to RTP (reduction to the pole) does not change the magnetic data significantly. However, for this data compilation the majority of the work has been performed on the RTP data. Figure 20 illustrates the difference in magnetic responses for a magnetic dipole an 76° inclination appropriate to this project area and at the Earth's magnetic north pole (90° magnetic inclination). For magnetic data acquired at lower latitudes the complexity of interpreting TMI data is overcome by transforming the data via reduction to the pole (RTP) in order to simplify the magnetic response. Reduction to the pole transforms the data as if the earth's magnetic field had been vertical at the survey location. The RTP transformations are very helpful, but can have a side effect by which features can be elongated in the north-south direction. This effect becomes more prominent as one moves towards magnetic equatorial regions (Figure 21) where the magnetic inclination ultimately becomes horizontal. Side effects of RTP are of much less concern for this data set compared with equatorial magnetic data.

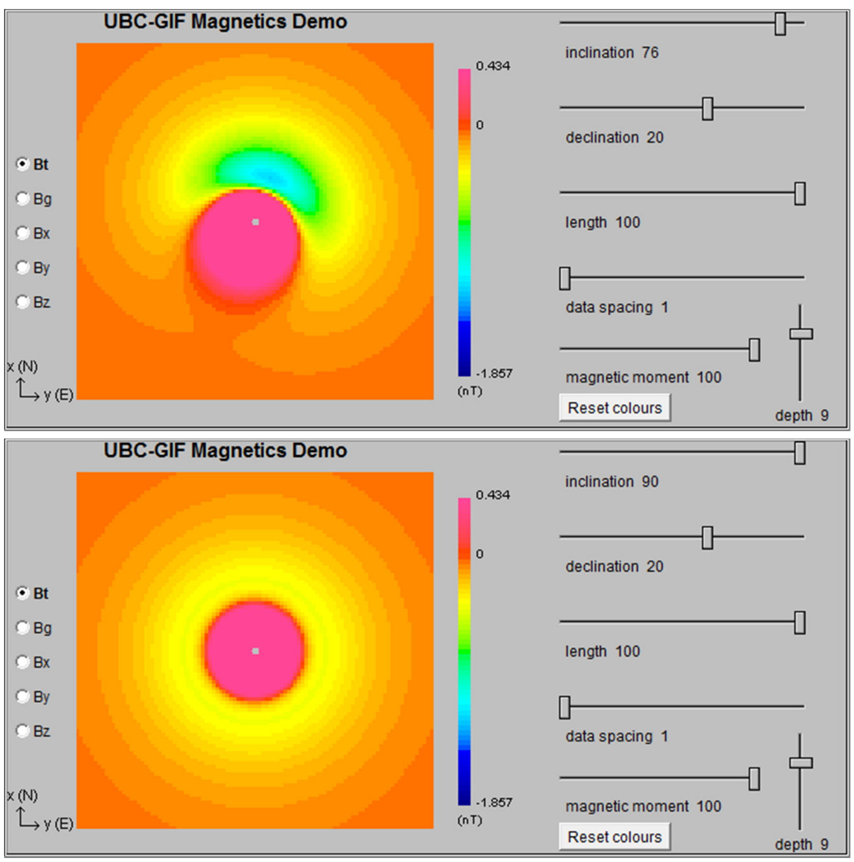

Figure 20: Comparisons of magnetic dipole response varying with latitude/inclination of the Earth's magnetic field. The top image is the response when the magnetic inclination is 76° for the survey area and the bottom image is for a magnetic inclination is 90° (images from the UBC-GIF geophysical inversion facility website).

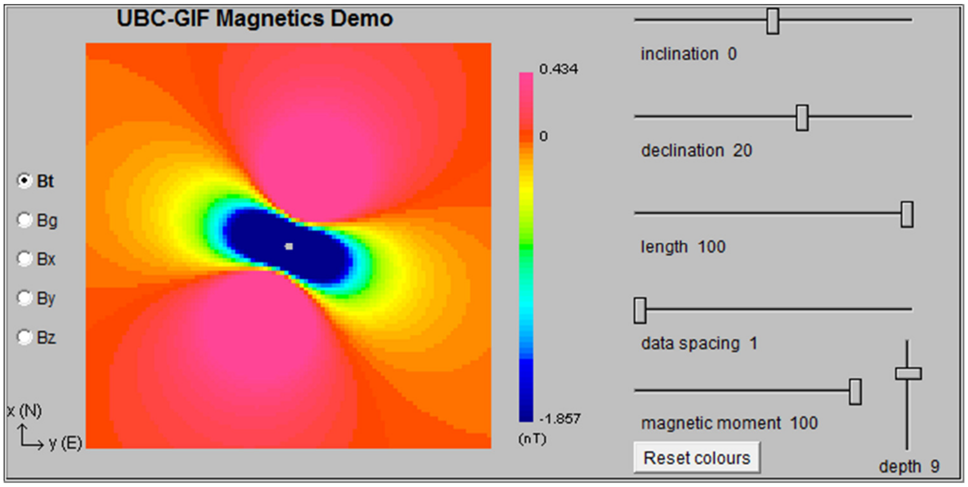

Figure 21: Magnetic dipole response for a magnetic inclination of 0°.

Figure 21 illustrates the type of high-low-high magnetic response that would be seen for magnetic surveys in low magnetic inclinations. Transformation of the TMI data to RTP, as in Figure 20 bottom image, simplifies the visual recognition of responses and interpretation.

Data Limitations

The ability of the airborne geophysical data to resolve features is limited by several factors. Data acquisition height, line spacing and measurement density will limit the size and sensitivity to features in the subsurface. A physical property contrast, such as magnetic susceptibility or resistivity, must exist that can be measured with in the limitations of whatever geophysical system is being used. To be measurable it must be a sufficient amplitude and source size in order to be detectable by instrumentation operating at some remote distance. For example, if there is no magnetic susceptibility contrast between lithologies A and B then no difference can be measured with a magnetic survey. The airborne geophysical data because of its height above ground and instrument sensitivity will have limitations compared with ground geophysics where instrumentation is stationary and instrument sensitivity to noise ratio is better.

For any geophysical survey it is important to formulate conceptual target models and a mapping objective. Is direct detection of targets or delineation of geology the primary method by which targets are determined? Delineation versus detection is an economic balance when planning geophysical surveys. Survey design is an important aspect of exploration planning and preparation. For example, it can be difficult to choose a flight line direction that is optimal to all geologic strike the survey area. Line spacing needs to be taken into consideration to ensure that targets of interest will be represented with sufficient data to allow confident interpretation.

Often it is advantageous to utilize profile data and observe the actual data responses and compare them line to line for interpretation. The profile data contain the original data resolution (approximately 3 m samples) and will more clearly define a response compared with the gridded data which is sampled at 60 m intervals.

The 2015 magnetic data are not of sufficient resolution to confidently explore the Spy sill, but we are able to map it in some capacity using enhanced filter products. On the contrary the 1996 magnetic data do a good job of delineating the sill. Figure 22 is a look at the total magnetic field in the vicinity of the Spy sill. This is the standard magnetic product. On its own it may not look promising, but filtering such as vertical gradient, second vertical gradient, tilt derivative and other filtering techniques can enhance the data. Figure 23 offers some encouragement for trying to extract as much information as possible out of a data set.

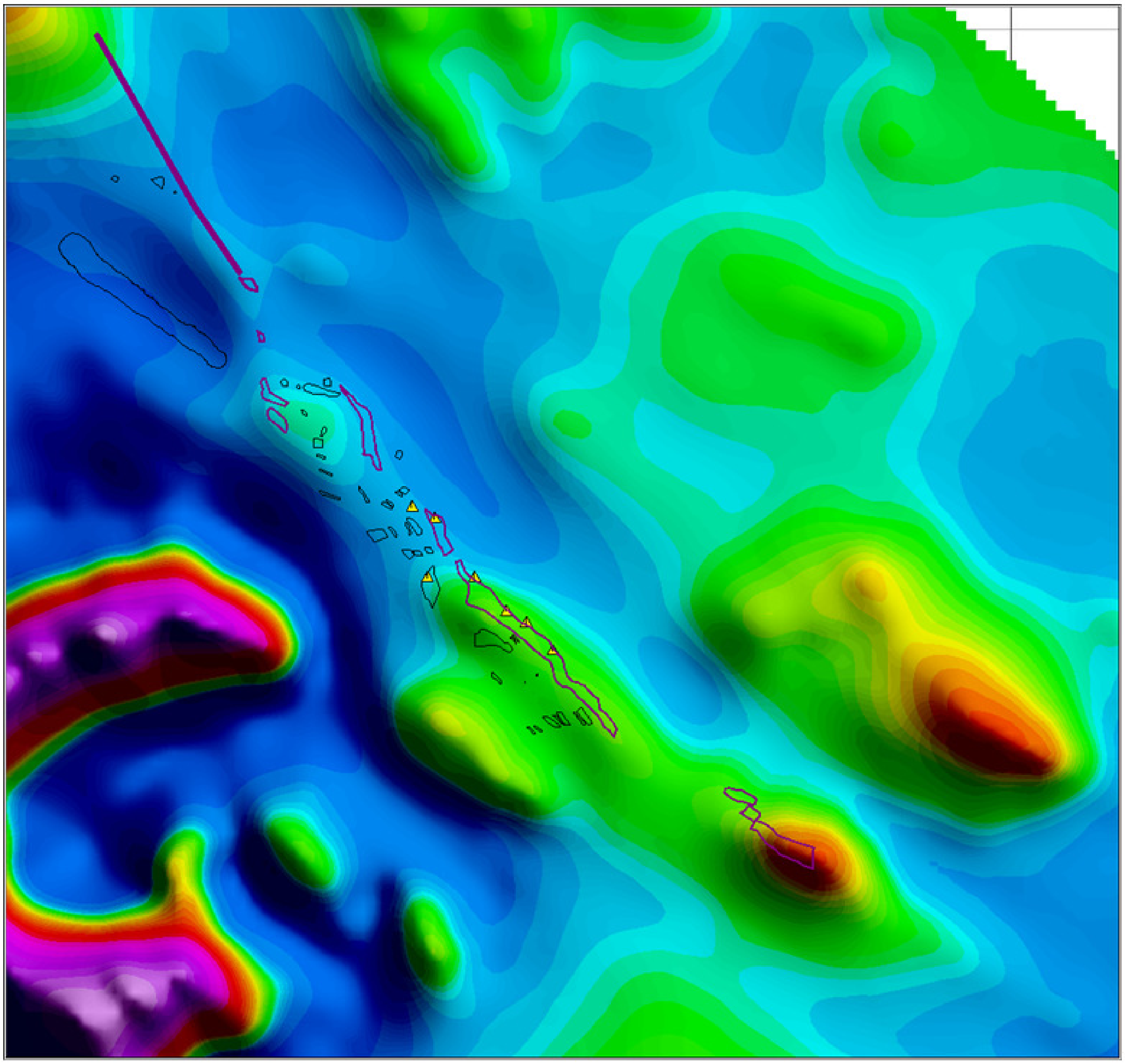

Figure 22: The 2015 magnetic data showing the total magnetic field data in the vicinity of the Spy sill.

A comparison of enhancing magnetic linear trends is shown in Figure 23. The tilt derivative (also known as tilt angle) of the RTP data is shown on the left and the tilt derivative of the VRMI filter is shown on the right. Both images are displayed using a linear colour bar. The data amplitudes are not what we would expect from normal magnetic data as the tilt derivative represents angles between -90 and 90°. On first glance it would appear that the VRMI_TILT grid may be doing a better job of delineating the sill and suggesting where it might trend. However, the applicability and accuracy of the VRMI should be confirmed before relying on this product. VRMI stands for vector residual magnetic intensity. The product shown here is not the original definition by Mark Dransfield 2003 where he describes the product as being actually measured during a magnetic survey as vector components. In our case the "VRMI" is a transformation from the TMI data. The white arrows in the bottom right corner of the images identifies the Spy sill. The white arrows near the upper edge of the images could be identifying an area for follow-up.

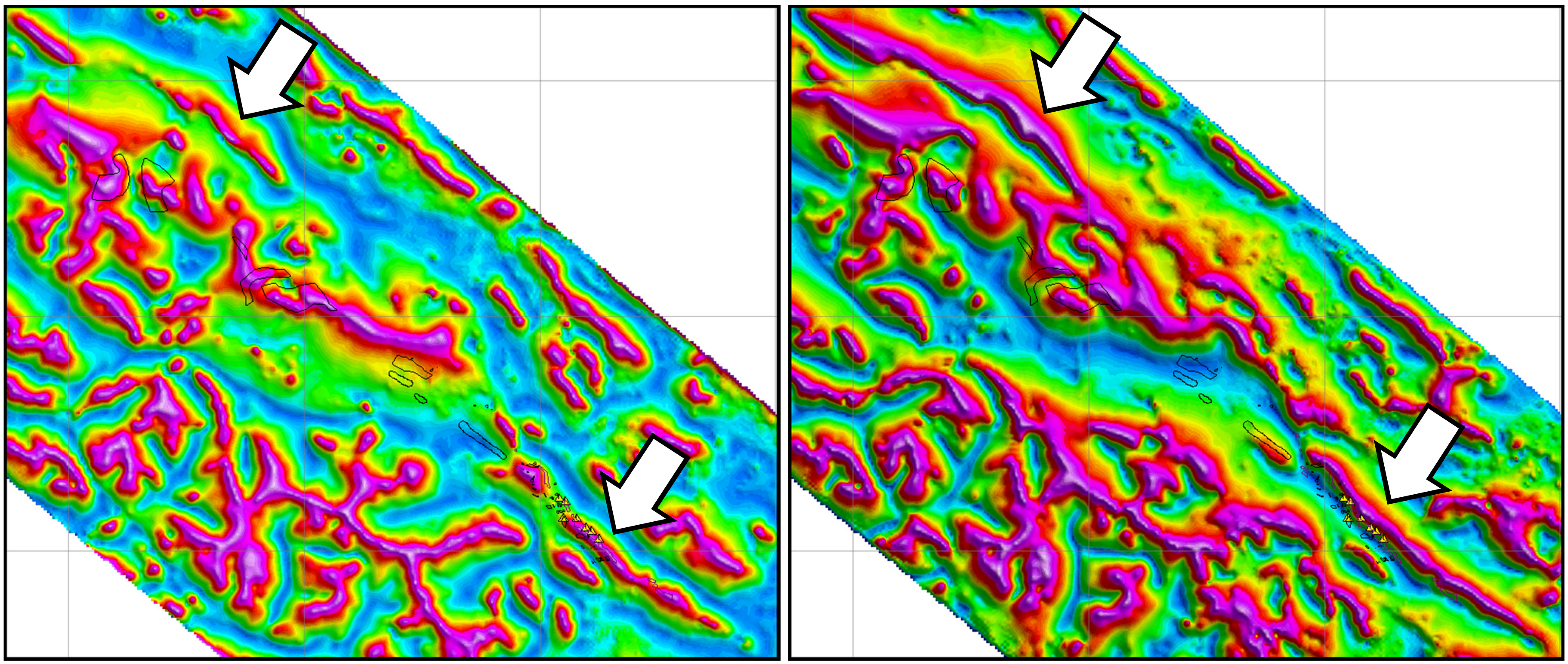

Figure 23: 2015 magnetic data comparing RTP tilt derivative (left) versus VRMI tilt derivative.

Comments

Interpretation may not the best word to describe the work performed on the airborne magnetic data. Interpretation can either represent a firm set of answers or opinions or one's best opinion at the time of the work. Further work with the data set could change or improve those opinions. As this is a first pass through the data it would be better to think of this review as a starting point for work going forward. Data and data products have been compiled and are now ready for interpretive efforts which should follow an integrated approach where geophysics, geology and geochemistry are interpreted together. The regional 2015 Kluane West Magnetic data have been reviewed using various data layers and lineaments and trends have been interpreted. These results are not considered nor should they be considered final interpretation at this point. The scope of this review was not to perform an exhaustive interpretation resulting in a geologic interpretation of the geophysics. Further interpretation work is recommended to take full advantage of the geophysical data.

The PowerPoint presentation should be reviewed alongside this report. Images from the presentation have been included in appendix 3 for completeness. However, those images are smaller than what is available in the PowerPoint presentation and also do not have quite the same resolution.

Manual interpretation of geophysical lineaments and form lines is a multi-pass process that requires viewing several geophysical grid products and reviews of results. The scope of this review should be considered a starting point for interpretation of the geophysics going forward. The 2015 regional magnetic data is limited in its ability to confidently target and explore for the Spy sill. Perhaps then the focal point of the 2015 data and might be more of a regional overview. Fortunately, in the vicinity of the sill we have images of the 1996 magnetic and frequency domain EM survey. Unfortunately we do not have access to the original data. Access to this data would be very advantageous for this project and much cheaper than acquiring new data. However there could be value in new airborne geophysics and specifically higher resolution multi-sensor magnetic data would be helpful. Future airborne magnetic surveying should consider the use of a helicopter based horizontal gradiometer or triaxial system in order to better map subtle features. A magnetic survey is the cheapest option. Radiometric data acquisition should be considered as the cost per line kilometre would be a modest addition. Electromagnetic data would benefit exploration as it would offer additional physical rock properties from which we could map lithology, alteration, mineralization and structure. Lithology that may have insufficient magnetic susceptibility contrasts could have resistivity contrasts that would contribute to geologic mapping.

There are a series of slides in the PowerPoint presentation that summarize the magnetic response of the Spy sill from the 1996 data. Two examples are shown in Figure 24 alongside the local geology. Overall the resolution of the 1996 data is quite good. If there was access to the digital data it is very likely that improvements could be made in the visualization of the data.

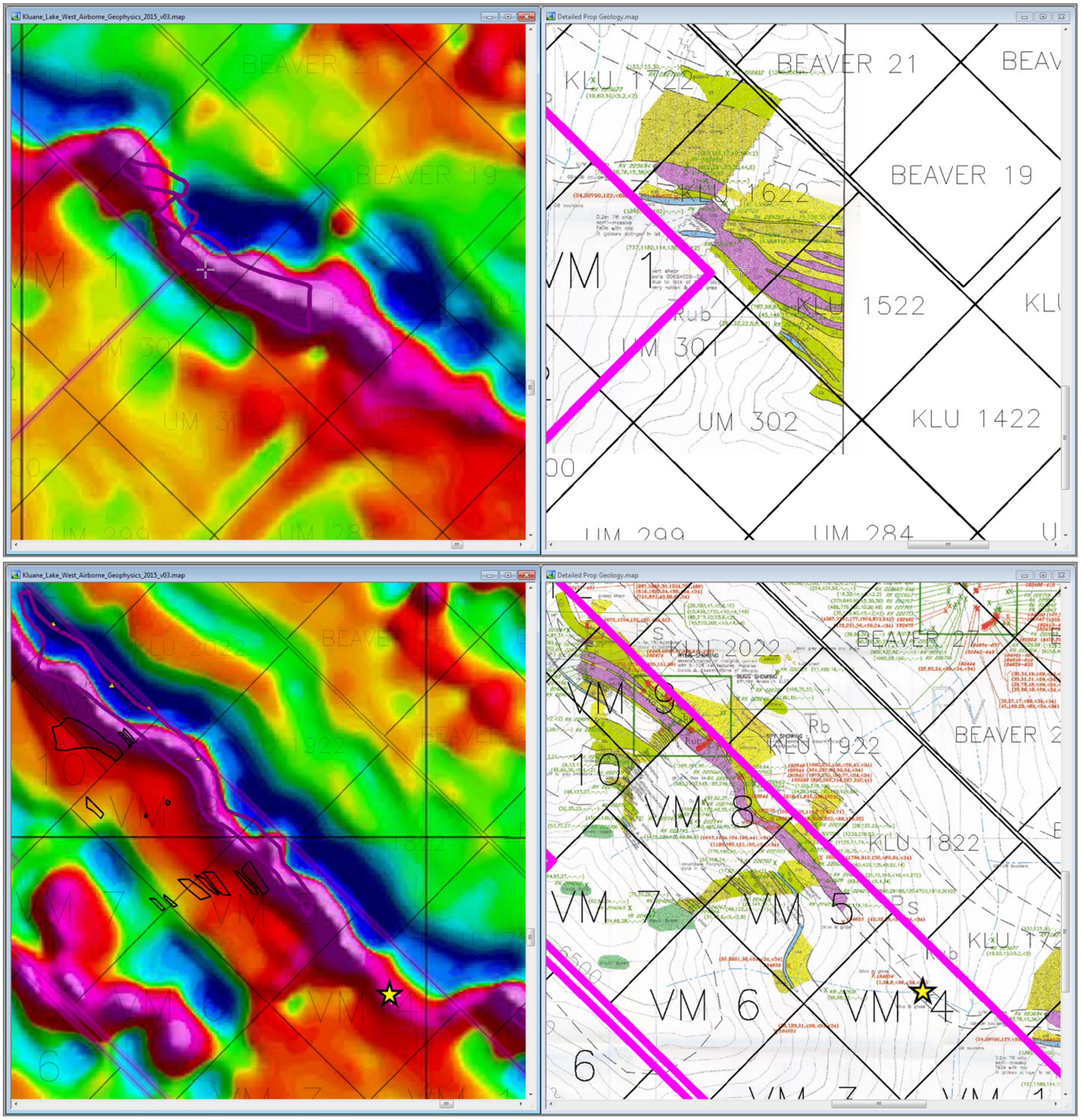

Figure 24: Examples of the 1996 magnetic data responses of the Spy sill as compared to local geology.

9. Recommendations

This review of the 2015 Kluane West airborne magnetic data is a first pass in what should be an on-going process of interpretation. The resolution of this data set is not ideal for delineating the Spy sill. The 1996 DIGHEM MAG/EM Survey would be a useful data set if access to it can be arranged. Otherwise, detailed helicopter based surveying would be an asset. Ground-based magnetic surveys could also be helpful in delineating the sill. Geophysical targeting is an iterative process whereby each pass through the data can bring out additional targets as the overall knowledge of a project advances and the exploration cycle of follow up work and drill testing improves the knowledge base. These data can be used for direct targeting as well as improving the geologic mapping in the area.

Key Recommendations

- Further interpretation work is recommended to take full advantage of the geophysical data.
- Detailed compilation and definition of geophysical and petrophysical responses from Spy sill is recommended. This should be reviewed with respect to the known geology.
- A compilation of geophysical responses from known targets or prospects could be compiled in order to formulate a geophysical or physical rock property template for future targeting.
- Confirmation of the applicability of the VRMI and VIAS grid products for further exploration.
- Ground magnetic survey follow up work.
- Consideration for IP/Resistivity survey based on petrophysical comments from the 2014 assessment report. A detailed review of the report and petrophysical results should be undertaken first.
- Consideration of the viability for using EM methods. Could it be used for direct detection of mineralization or geologic mapping?
- Consider 2D magnetic profile modelling of the conceptual Spy sill model in order to better understand the anticipated magnetic response. This would require better resolution data then the 2015 survey. Ideally, acquisition of new ground or airborne magnetic data or access to the 1996 digital data.
- Consider 3D magnetic inversions in prospective areas. This type of modelling would be more useful on higher resolution data such as the 1996 survey or new acquisition. 3D magnetic inversion takes the height above ground into account when constructing a subsurface magnetic susceptibility distribution.
- Future airborne magnetic surveying should consider the use of a helicopter based horizontal gradiometer or triaxial system in order to better map subtle features. The addition of radiometric or EM data is also recommended.

Further work is warranted and recommended on this data set. The priority of this initial phase of work was assessment of the magnetic signature of the Spy sill and compilation of data products that can be used as the project advances. It is recommended that interpretation of geophysical trends, domains, lineaments and form lines be further interpreted in areas of interest.

Data products such as VRMI and VIAS would benefit from a deeper review respect to the known geology in order to confirm their usefulness. In areas where the RTP and VRMI or VIAS differ there could exist the possibility of magnetic remanence.

Future airborne magnetic surveying should consider the use of a helicopter based horizontal gradiometer or triaxial system in order to better map subtle features. Gradient based systems have better sensitivity to measure responses from sources that are off-line and thus the accuracy of locating responses will be improved. Radiometric surveying is a low cost add on to any magnetic survey that could work well in this environment given the amount of exposed bedrock. Electromagnetic surveying would also be recommended to map additional physical rock properties for resistivity and mineralization.

It is recommended that the geophysical targets be reviewed with respect to the known geology, mineralization occurrences, and geochemical anomalies; as well as how well they fit with the anticipated geophysical responses from conceptual target models. If conceptual geophysical response templates have not been prepared it is recommended that time be allocated to this exercise.

The physical rock property data from the 2014 assessment report has not been incorporated in this review. The petrophysical analysis conducted in the 2014 report included magnetic susceptibility, remanent MAG, specific gravity, DC resistivity, chargeability and water conductivity measurements. Petrophysical samples from the 2014 assessment work noted that certain samples did demonstrate the presence of magnetic remanence. This information should be considered as it could impact interpretation of the airborne magnetic surveys. Of note was that there were samples of the Kluane Ultramafics (peridotite) that indicated the presence of magnetic remanence while the majority did not.

Geology and geophysical data are dynamically linked to one another through rock physical properties. Though there is no guarantee that sufficient and measurable physical property contrasts will be present in all cases. For example, adjoining geologic units with virtually the same magnetic susceptibility may not yield an observable magnetic response in airborne data. This does not represent a failure of the magnetic method, but accurately represents the variation in magnetic susceptibility between the geologic units.

An interpreters natural tendency is to look for targets in regions of known mineral showings. This is not a bad thing as “closology” often works very well. However, it is important to understand and be aware this bias (keeping in check that it is possible to see what we want or hope to see) as well as being willing to think outside the near-mine scale. Exploration targeting generally takes multiple passes through integrated data sets. The more data are integrated, the better they can illuminate conceptual models and minimize the inherent risk in exploration. It is important to root one's thinking in the mechanics of mineral systems. How did they get there? By what processes? What are the by-products and how do they affect rock physical properties such as susceptibility (i.e. magnetic mineral destruction due to chemical and thermal alteration effects), resistivity/chargeability and density.

Explorationists need to consider that all traditional components of generalized deposit models may not be present in all instances. How will this affect targeting? Geoscience data integration promotes a collaborative working environment. Geologists help guide geophysicists efforts by helping to constrain and promote interpretations within the realms "geologic" reality and by providing straightforward geologic models that can be attributed to rock property contrasts. Geophysicists support geologists and geochemists with the ability to help map geology and alteration by connecting the dots within their data sets and allow them to target at depth and undercover.

Respectfully submitted,

in3D Geoscience Inc.

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Todd A. Ballantyne, P. Geo.
Principal Geophysicist

November 5, 2015

Appendix 1 – Disclaimer

in3D Geoscience has prepared this report based upon information and data provided by Group Ten Metals, Yukon Geological Survey, Geological Survey of Canada and Fugro Airborne Surveys. It is believed to be accurate and of good quality. This data was not within the control of in3D Geoscience. This report has been undertaken in accordance with professional industry standards. The opinions and recommendations presented reflect the author's skill and judgment at the time of report preparation.

Under no circumstances does in3D Geoscience make any warranties either expressed or implied relating to the personal opinions, interpretations or completeness of the information comprising this report. Group Ten Metals is solely responsible for the use, further interpretation, and application of the contents and for any costs incurred and expenditures made in relation thereto. Group Ten Metals acknowledges that any use or modification to the information or recommendations contained within this report is at Group Ten Metals sole risk and without liability to in3D Geoscience. This report is intended for those who have the appropriate degree of experience to understand and apply its contents. In3D Geoscience will not accept any liability for errors or omissions, for losses or damages, or expenses (including court costs and attorney's fees) arising out of or relating to any use of the contents of this report.

Appendix 2 –Statement of Qualifications

I, Todd A. Ballantyne, of the City of Vancouver, in the Province of British Columbia, hereby certify that:

I am a Consulting Geophysicist of in3D Geoscience Inc., with offices at 3435 W. 19th Ave., Vancouver, British Columbia.

I further certify that:

1. I am a graduate of the University of British Columbia (1988) and hold a B.Sc. degree in Geophysics.
2. I am registered as a Professional Geoscientist with the Association of Professional Engineers and Geoscientists of the Province of British Columbia (#20264).
3. I have been practicing my profession and have been active in mineral exploration since 1987.
4. This report is compiled from data provided by Group Ten Metals Inc. and downloaded from public geoscience servers.

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Todd A. Ballantyne, P. Geo.
Principal Geophysicist

November 5, 2015

Appendix 3 – PowerPoint presentation images

Spy Project – Airborne Geophysics – **Review of 2015 Kluane West Magnetic Survey**

Data Compilation and Review

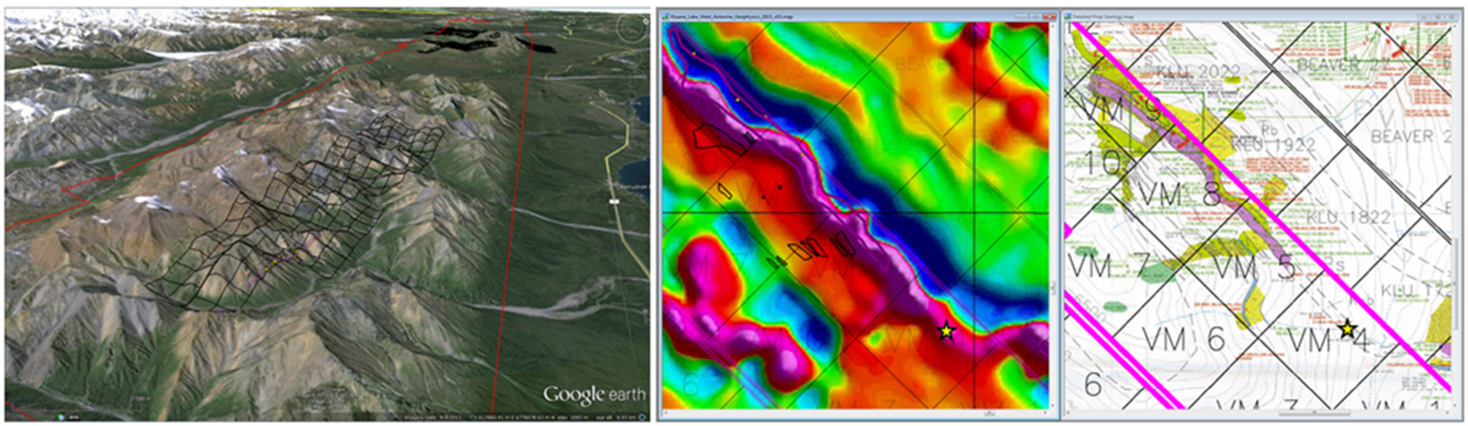
of the

Kluane Lake West Airborne Survey 2015

Spy Property, Yukon

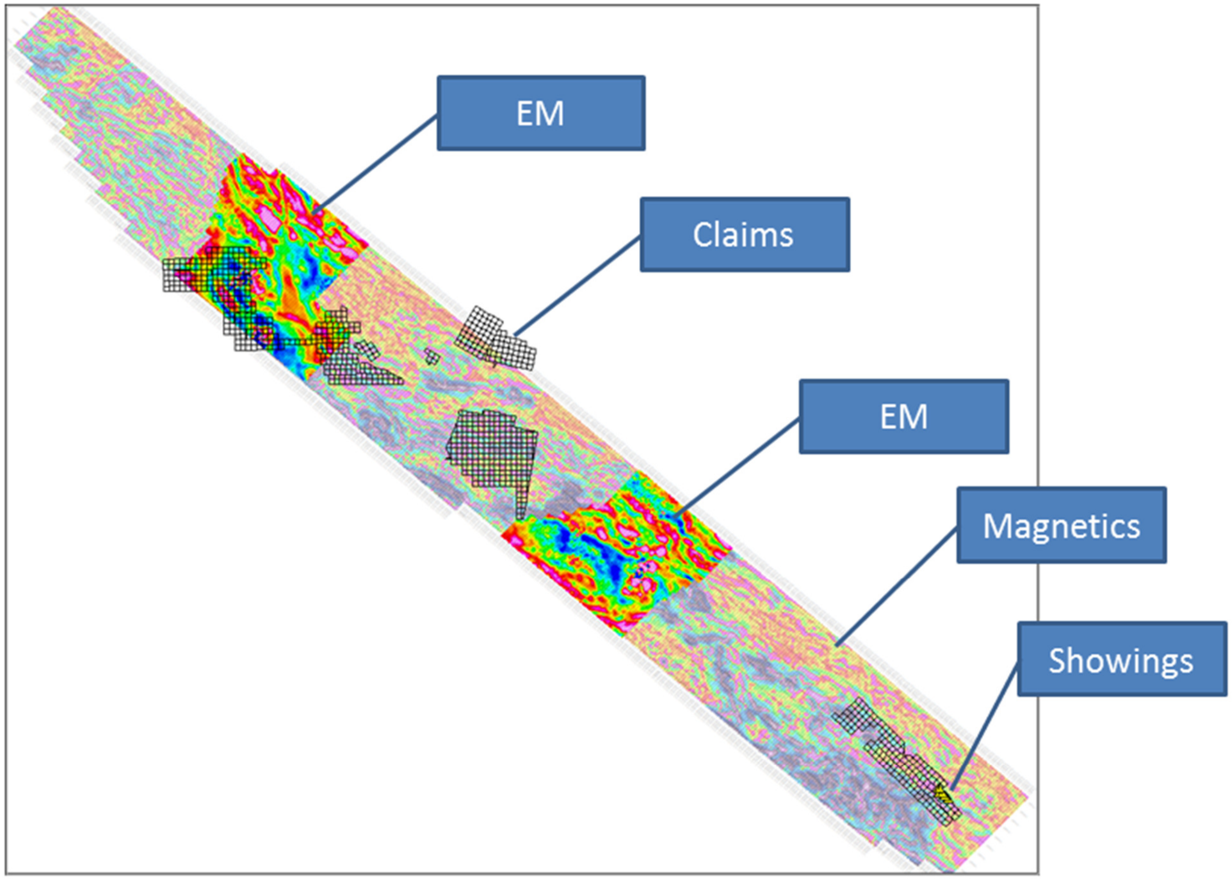
on behalf of

Group Ten Metals Inc.



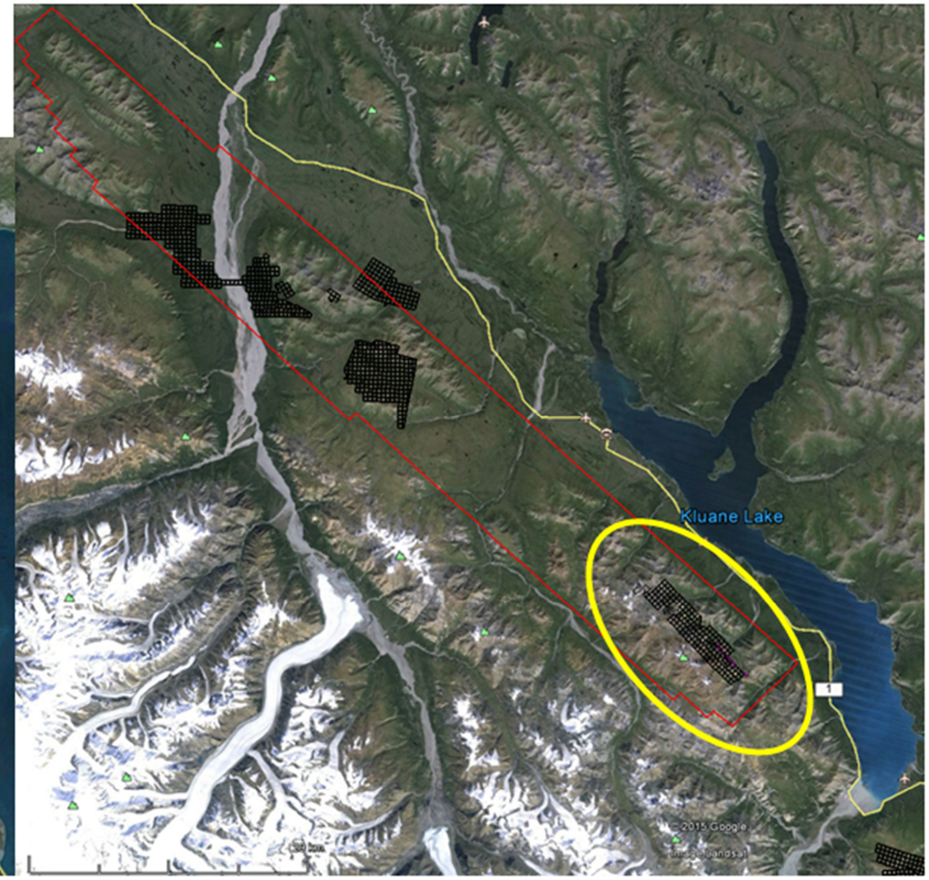
Spy Project – Airborne Geophysics – **Geophysics…**

Airborne EM 2015 CGG HeliTEM TDEM Survey blocks 2 and 3 are shown overlying the regional MAG data 2nd VG. Claims are also shown.



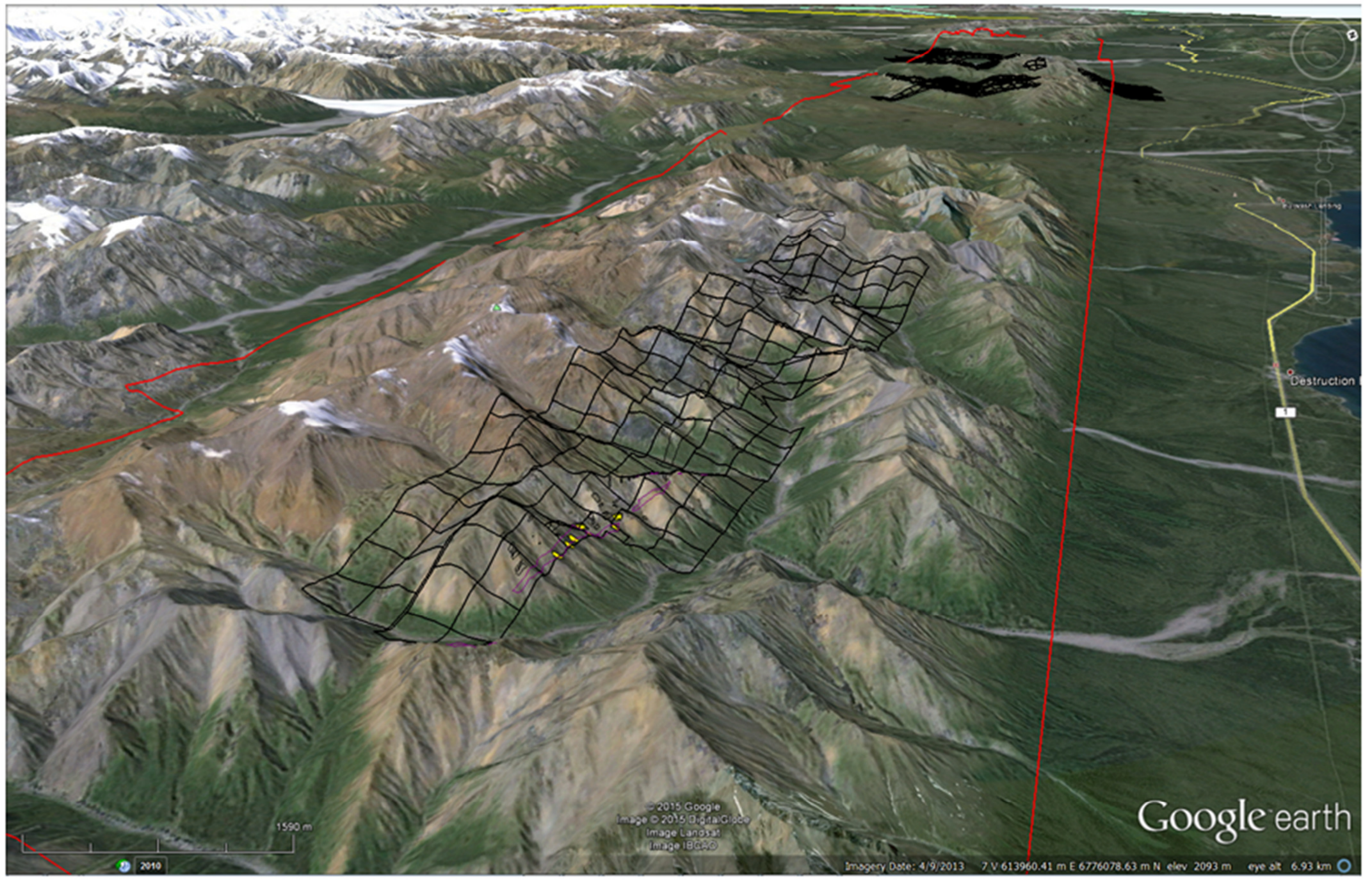
Spy Project – Airborne Geophysics – **Location**

Location of Spy sill area of interest showing southeastern claims draped over topography from Google Earth. Spy sill related geology is coloured black and purple. The purple polygons represents the Spy sill.



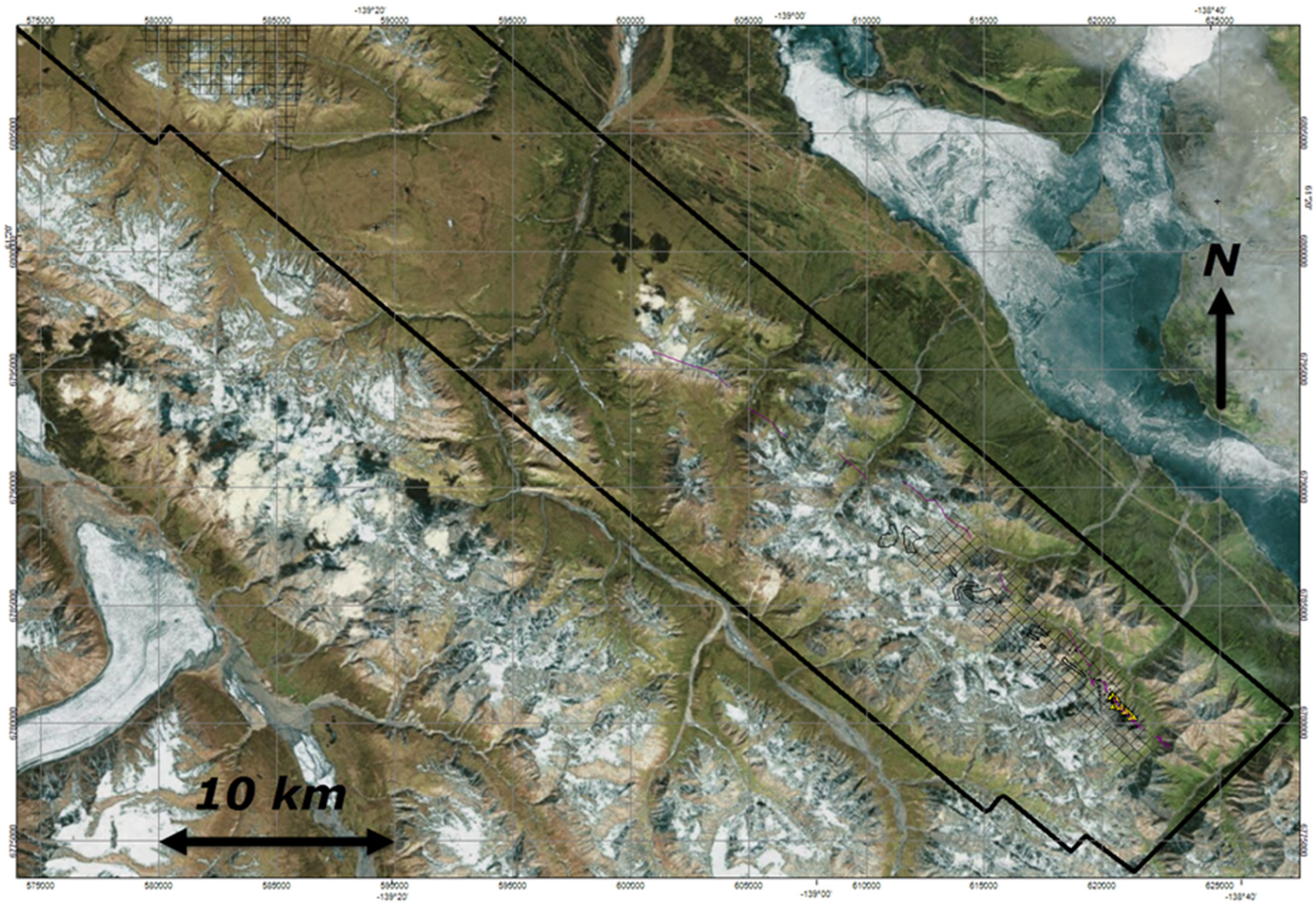
Spy Project – Airborne Geophysics – **Location**

Location of Spy sill area of interest showing southeastern claims draped over topography from Google Earth. Showings are denoted by yellow circles and Spy sill related geology is coloured black and purple. The purple polygons represents the Spy sill.



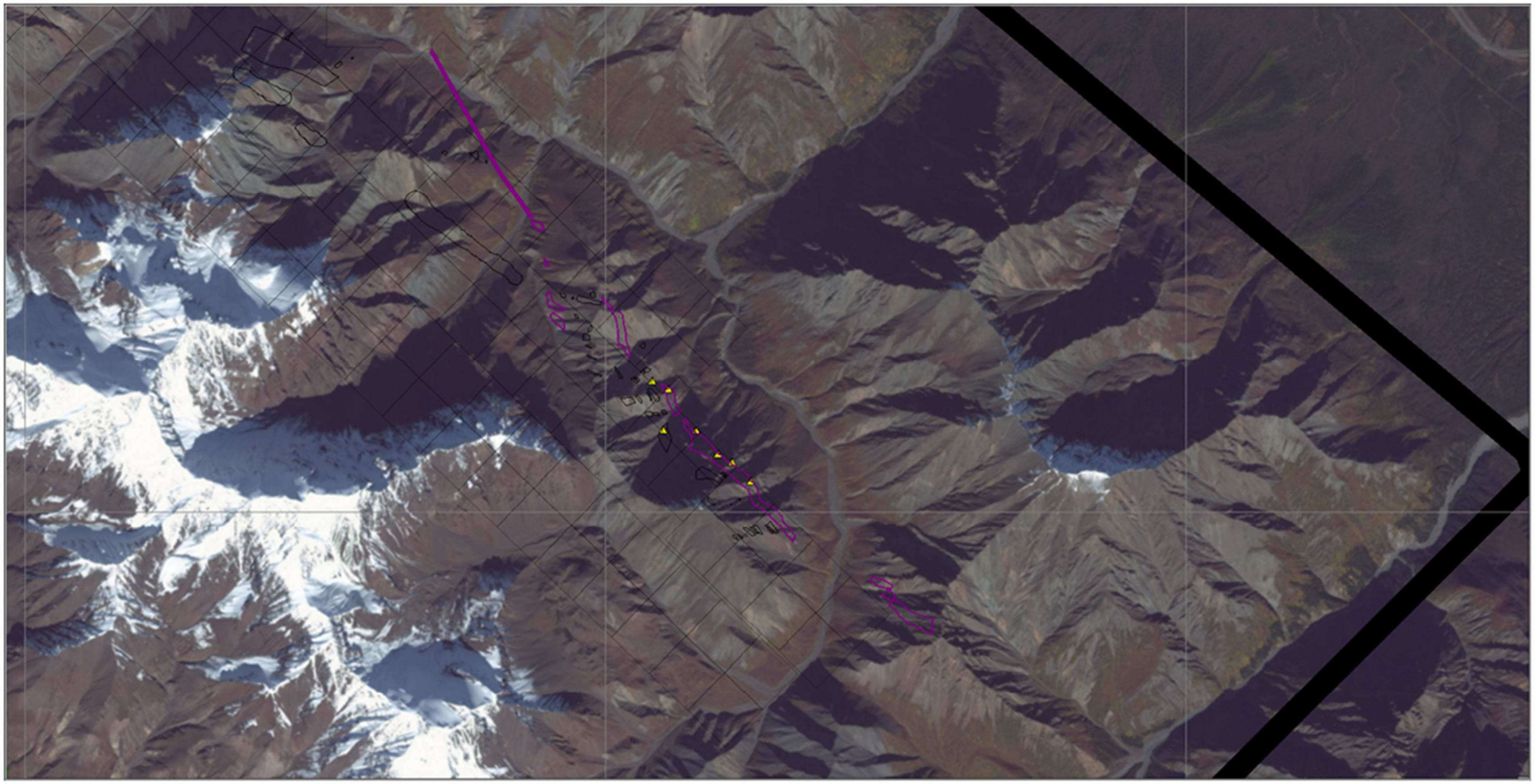
Spy Project – Airborne Geophysics – **Location**

Location map showing the area in the vicinity of the Spy sill and southeastern claims. Aerial image is from Bing maps. UTM grid spacing is 5 km.



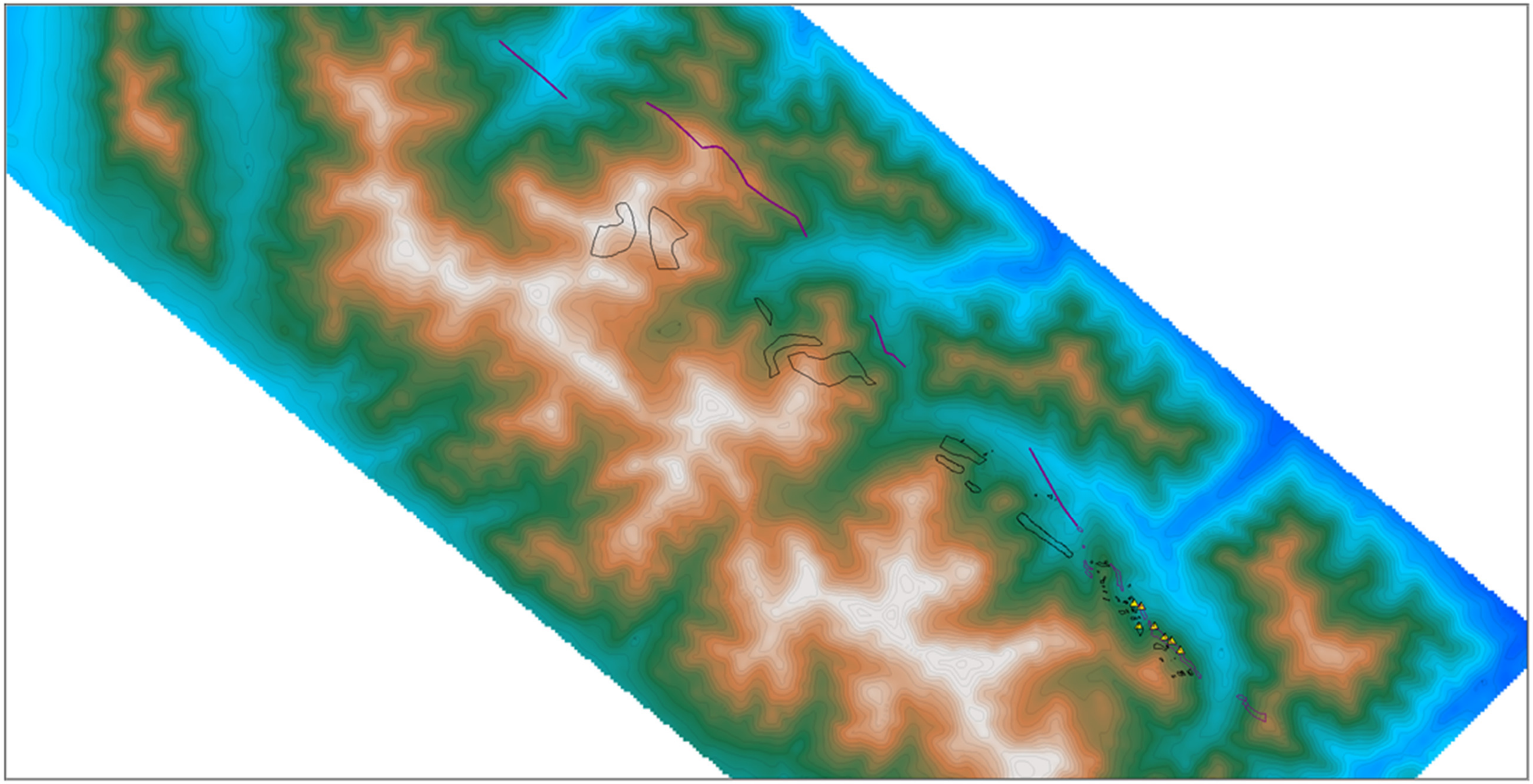
Spy Project – Airborne Geophysics – **Location**

Aerial imagery from Bing maps in the vicinity of the Spy sill. The sill is coloured purple. There is a straight purple line extending from the most northwestern occurrence of the sill along a linear magnetic trend.



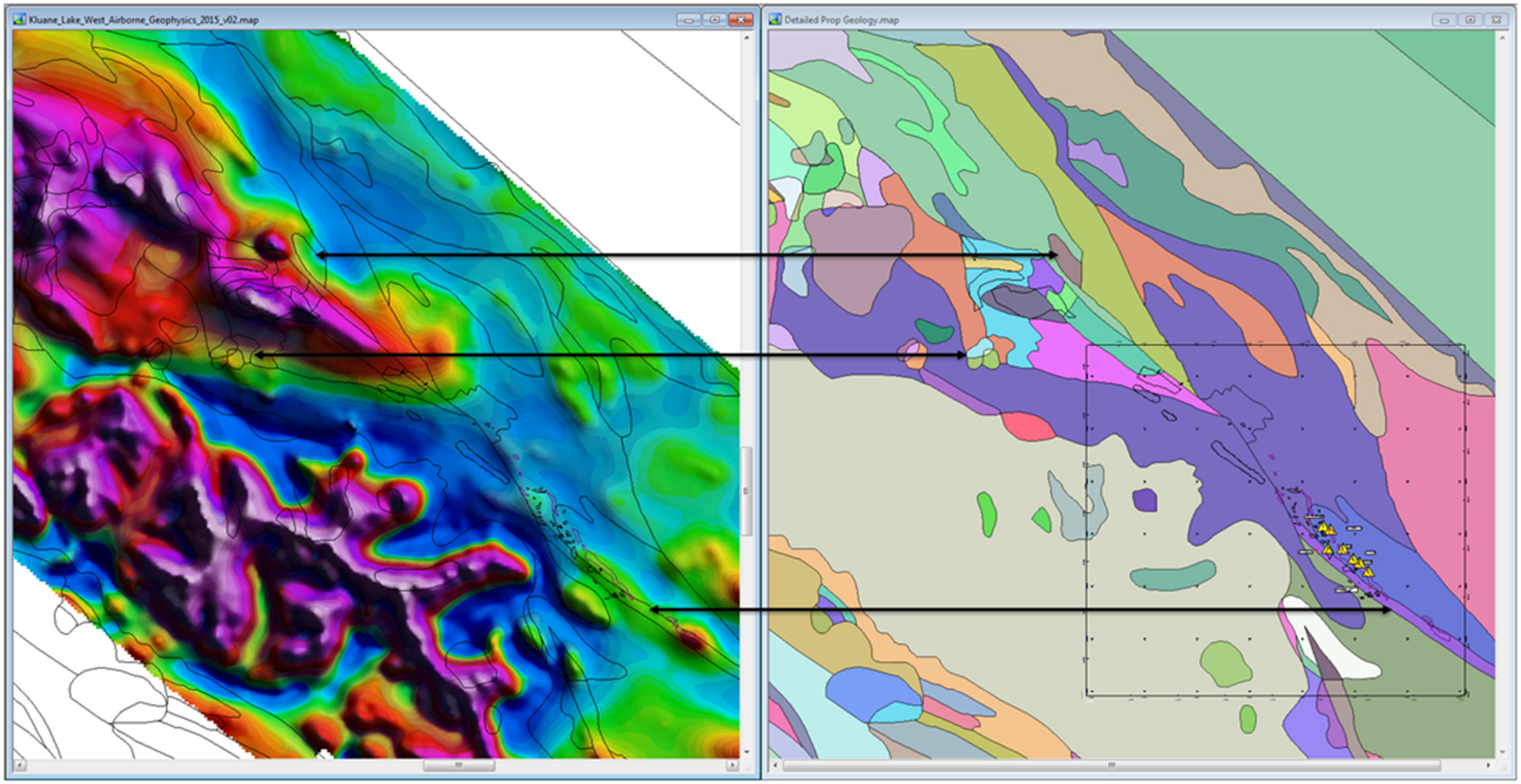
Spy Project – Airborne Geophysics – **Geophysics… Where's the Sill?**

Where's the SILL? The sill is denoted as purple polygons overlying the airborne survey DEM. The purple lines are [potentially] similar magnetic linear trends to what we see at the Spy sill. Additional data would be required to the confidence level of such targets. It is beyond the scope of this review to be asserting that the Spy sill continues as suggested by the purple lines.



Spy Project – Airborne Geophysics – **Geophysics…**

Regional airborne magnetics (250 m line spacing) is shown on the left and compared with regional geology map. The resolution of the airborne magnetics is generally insufficient for detailed mapping*. Magnetics alone would not be expected to be able to resolve all lithology contrasts. It would be a worthwhile exercise to confirm the positional accuracy of the geophysics and geologic data layers.



Spy Project – Airborne Geophysics – **Data Processing**

Data Processing

Numerous additional grid products were produced from the RTP magnetic data in order to help visualize different aspects of the regional geology. The ability for magnetic data to differentiate lithology or alteration is limited to magnetic susceptibility contrasts. The sensitivity or ability to resolve differences is dependent upon survey height above ground, survey line spacing, susceptibility contrast, source size and geometry. **Not all of the grid products are shown in this presentation.*

RTP (reduced to pole)
1VG (CVG) vertical gradient/derivative
TILT (tilt derivative)
THDR (total horizontal derivative)
TDX (similar to plateau, block & area)
MLE (magnetic layer extraction)
RSD_Upcon (essentially MLE)
Upcon (upward continued)
PLATEAU
Block
Area
Edge & Edge zone

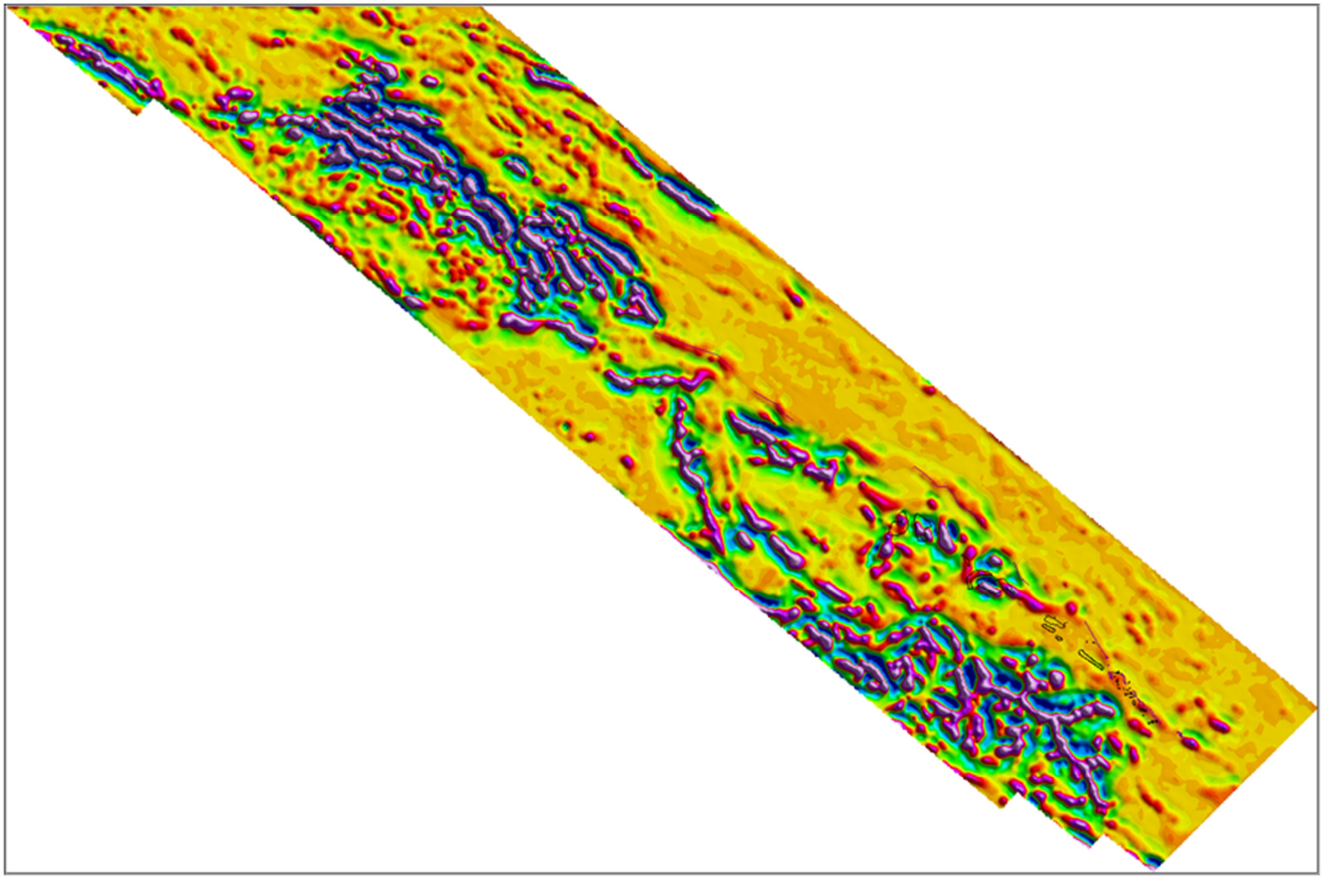
AGC (automatic gain filter)
VRMI
VRMI_tr (trend removed)
VRMI_ml (multilayer method)
VRMI_1VG (vertical gradient of)
VRMI_TILT
VRMI_TDX
VI (vertical integral)
VIAS (vertical integral then analytic signal)
VIAS_TILT
WORMING (studying changes in gradient from near surface to deep-seated features)

CET lineament analysis
USGS curvature analysis (essentially lineament analysis of magnetic highs and lows)
CET-DRC (dynamic range compression can be useful on magnetic data for enhancing visual aspects using a linear colour distribution)

Spy Project – Airborne Geophysics – **Geophysics…**

High-frequency (short wavelength) near surface features highlighted using a residual filter. Higher resolution magnetic data would be very helpful in delineating the Spy sill.

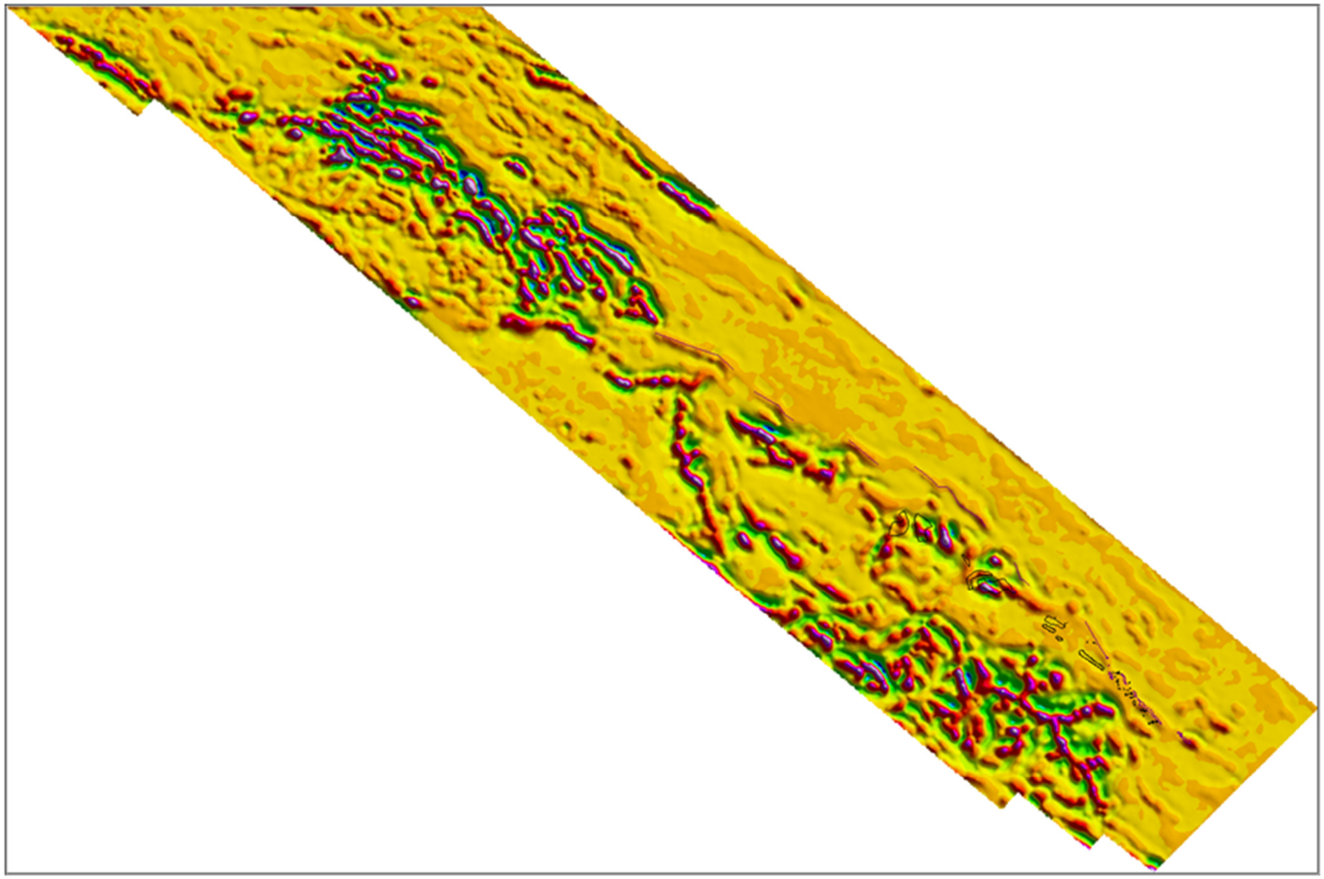
A normal distribution colour bar is used. This magnetic data set was flown at a ground clearance of 100 m using 250 m spaced lines. This will limit the sensitivity of the data to subtle magnetic contrasts.



Spy Project – Airborne Geophysics – **Geophysics…**

High-frequency (short wavelength) near surface features highlighted using a residual filter. Higher resolution magnetic data would be very helpful in delineating the Spy sill.

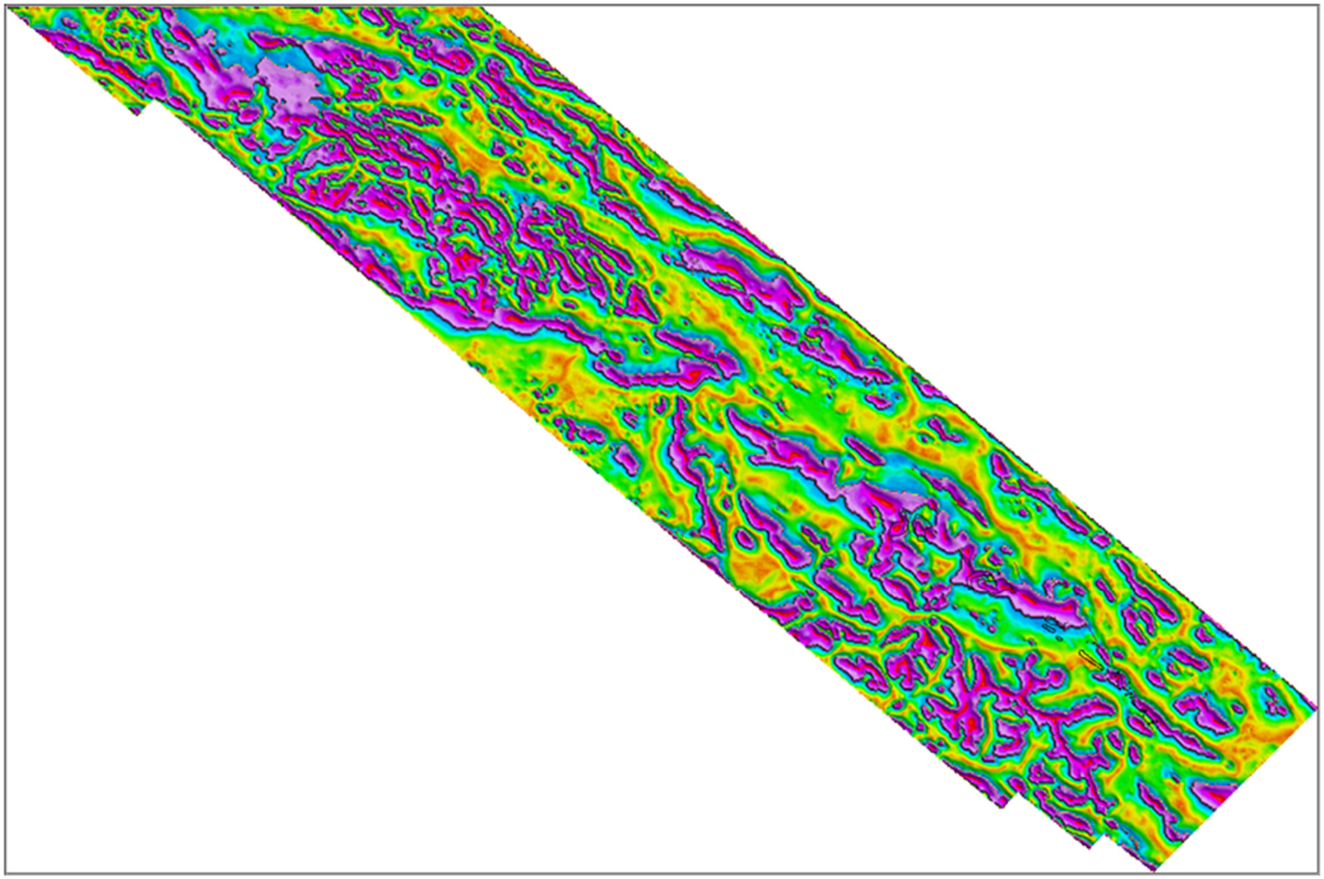
A *linear* distribution colour bar is used in order to differentiate between the very subtle Spy sill response and stronger linear magnetic features. Data is RMI (residual TMI) and not RTP so there could be a slight shift in magnetic axes.



Spy Project – Airborne Geophysics – **Geophysics…**

RMI RTP TDX

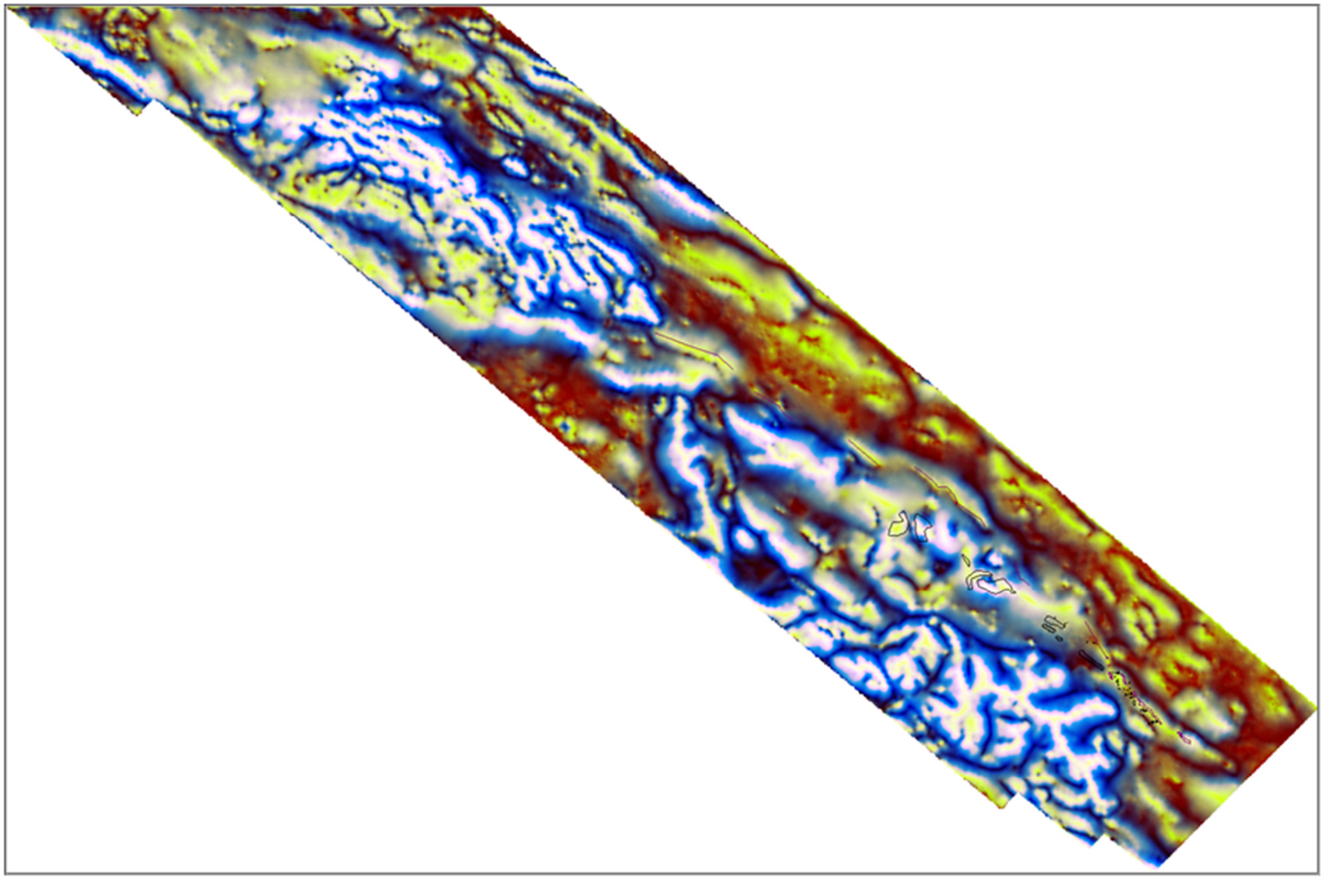
Useful for outlining magnetic domains/zones, texture, trends and discontinuities.



Spy Project – Airborne Geophysics – **Geophysics…**

Ternary image using three magnetic data sets: MAG RTP 1VD (red), Tilt (green) and THDR (blue).

This style of presentation can be useful for delineating magnetic domains and structural features based on textural differences, lineaments and offsets.

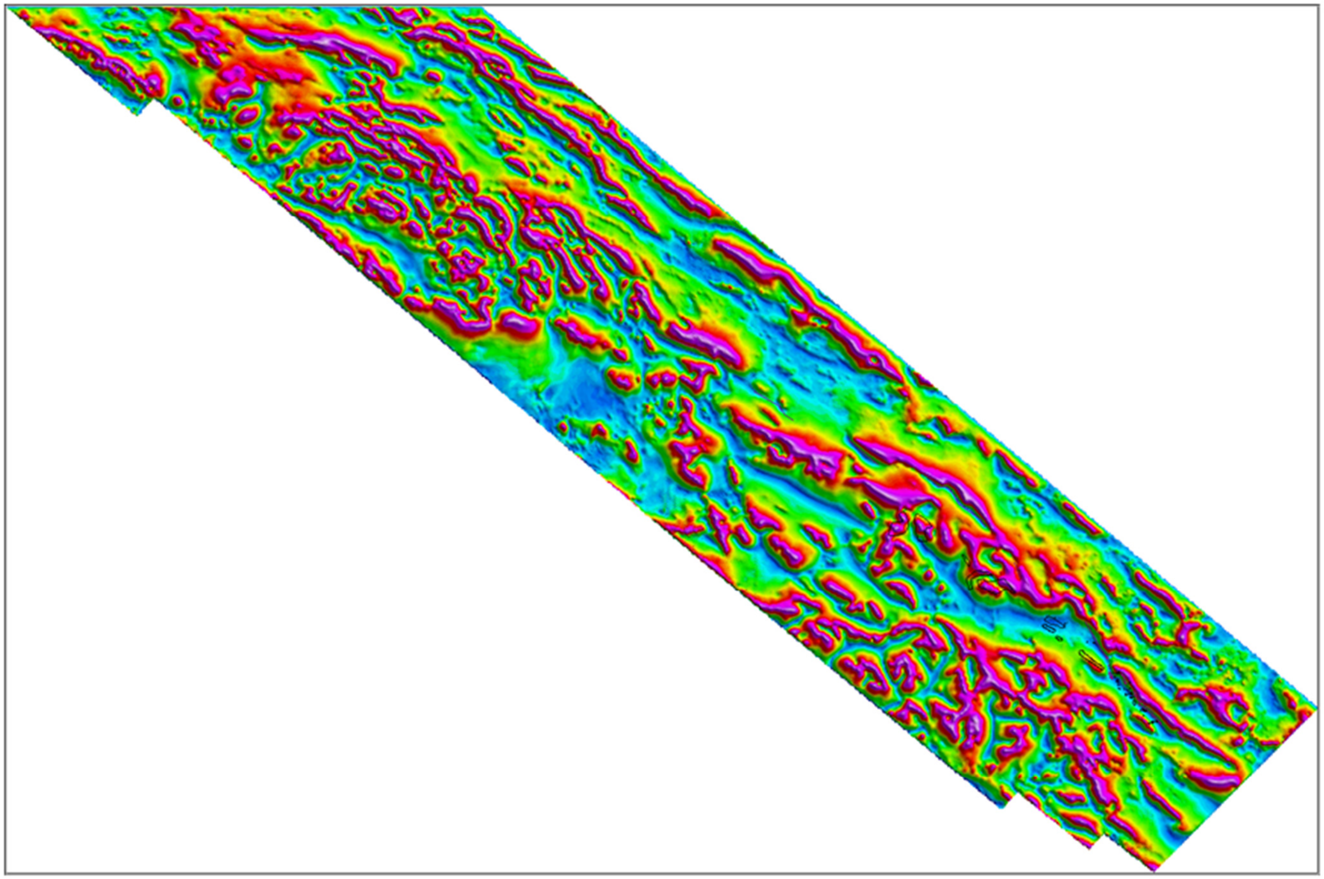


Spy Project – Airborne Geophysics – **Geophysics…**

VRMI Tilt

Tilt derivative of the VRMI.

VRMI is a transform of the RMI and is similar to VIAS. VRMI stands for vector residual magnetic intensity.) RMI is residual magnetic intensity is essentially the original TMI data.

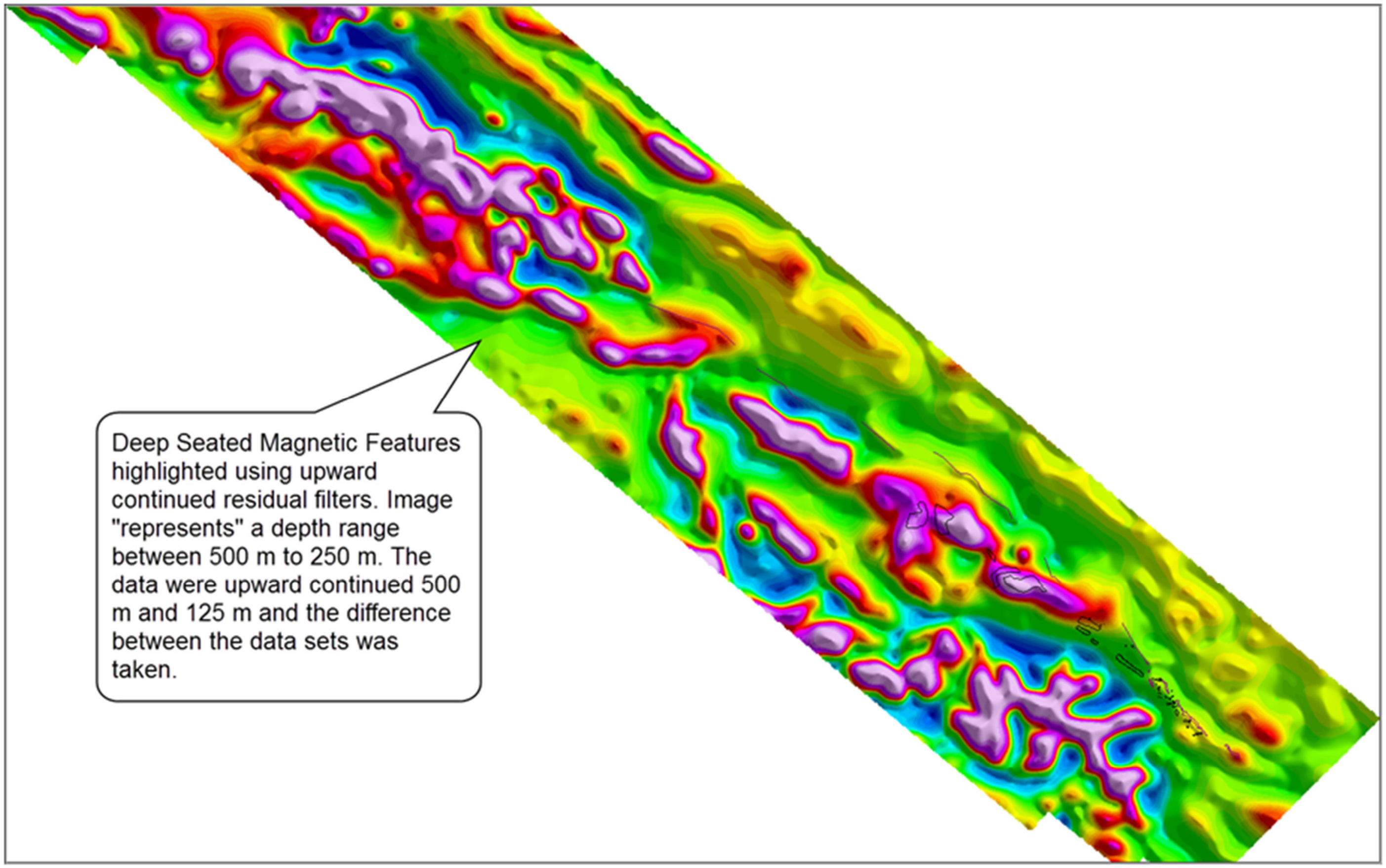


Spy Project – Airborne Geophysics – **Geophysics…**

MAG RTP MLE 250-500 (magnetic layer extraction aka residual or RSD)

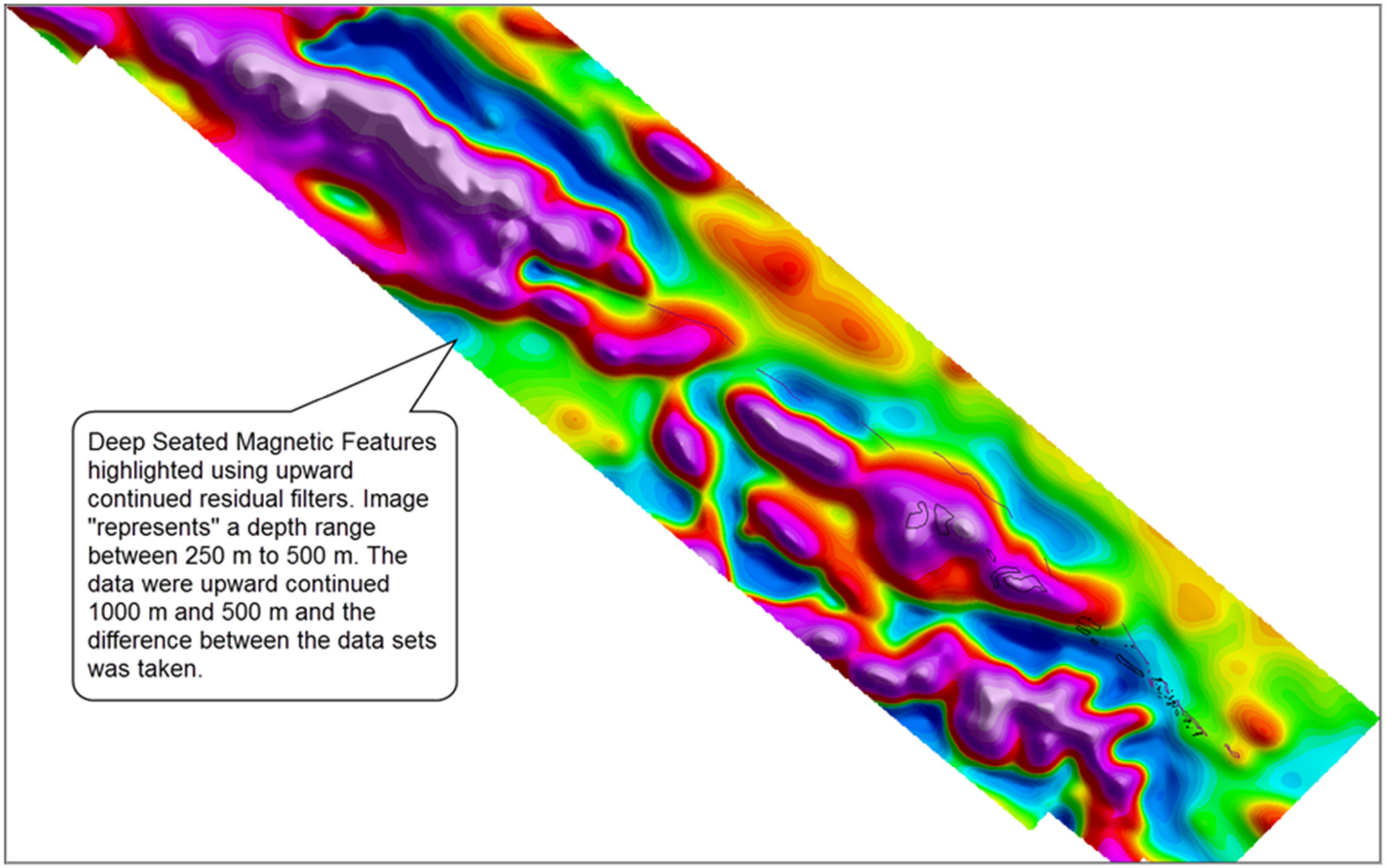
MLE 250-500 is essentially the difference between data that has been upward continued 250 and 500 m. The purpose is to highlight magnetic sources at depths between 250 and 500 m. It filters out near surface responses and very deep seated features.

RSD stands for residual.



Spy Project – Airborne Geophysics – **Geophysics…**

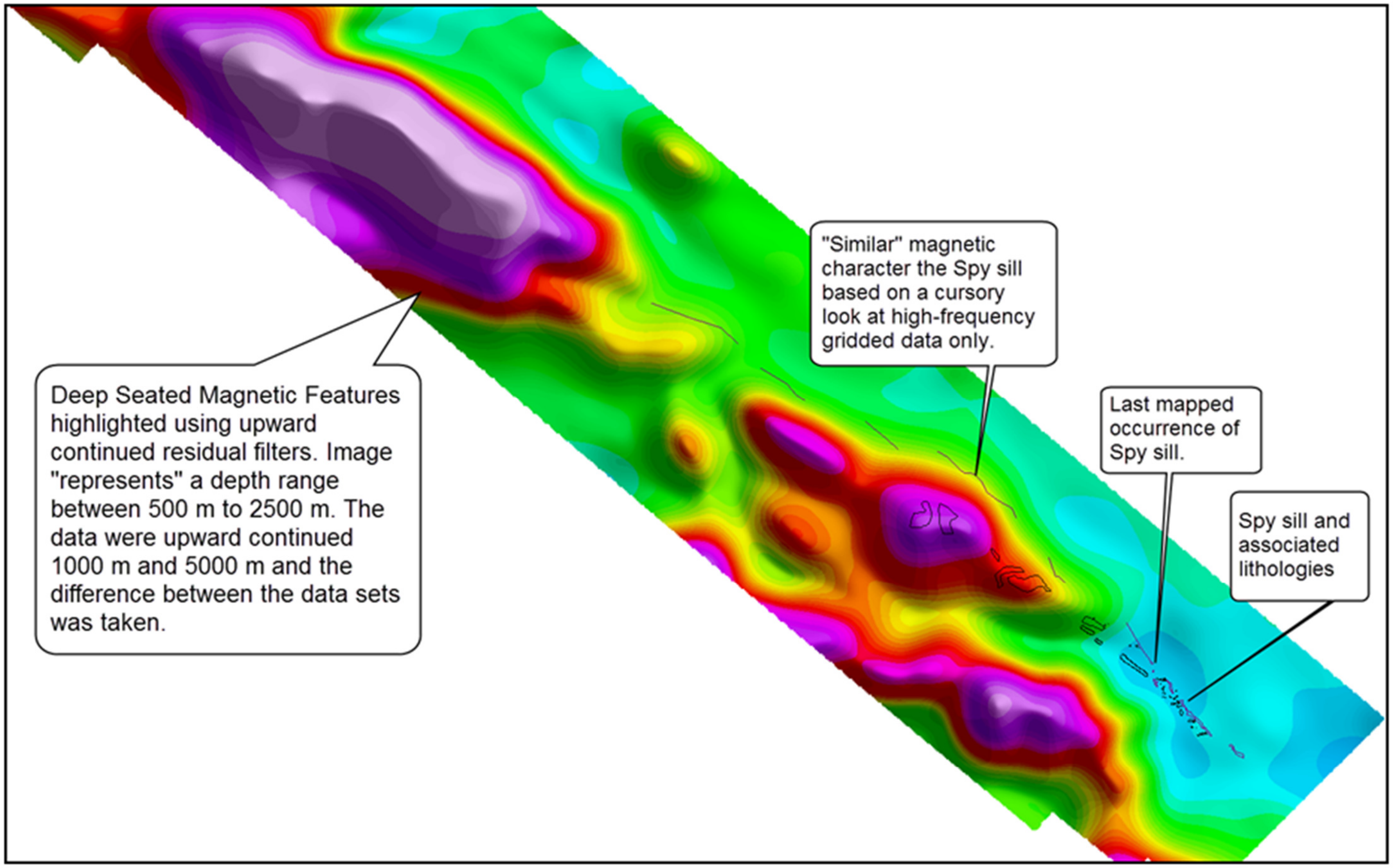
MAG RTP MLE 500-1000 (magnetic layer extraction aka residual or RSD)



Spy Project – Airborne Geophysics – **Geophysics...**

MAG RTP MLE 1000-5000 (magnetic layer extraction aka residual or RSD) response to deep or depth extensive regional features.

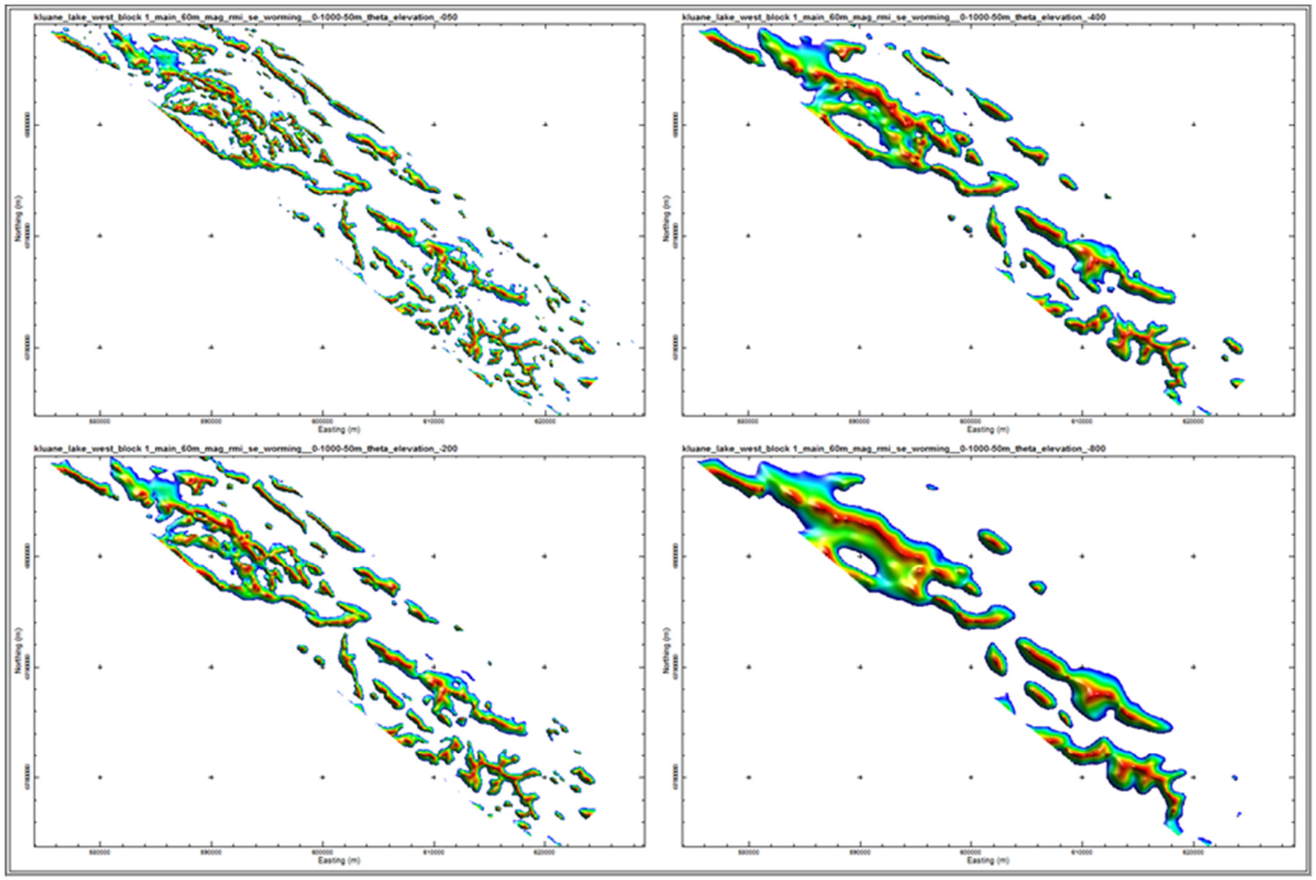
In this image is noted a simplistic attempt at outlining the possibility of a continuation of the Spy sill to the northwest. This is not a firm more robust interpretive opinion and is based on very coarse regional magnetic data.



Spy Project – Airborne Geophysics – **Geophysics…**

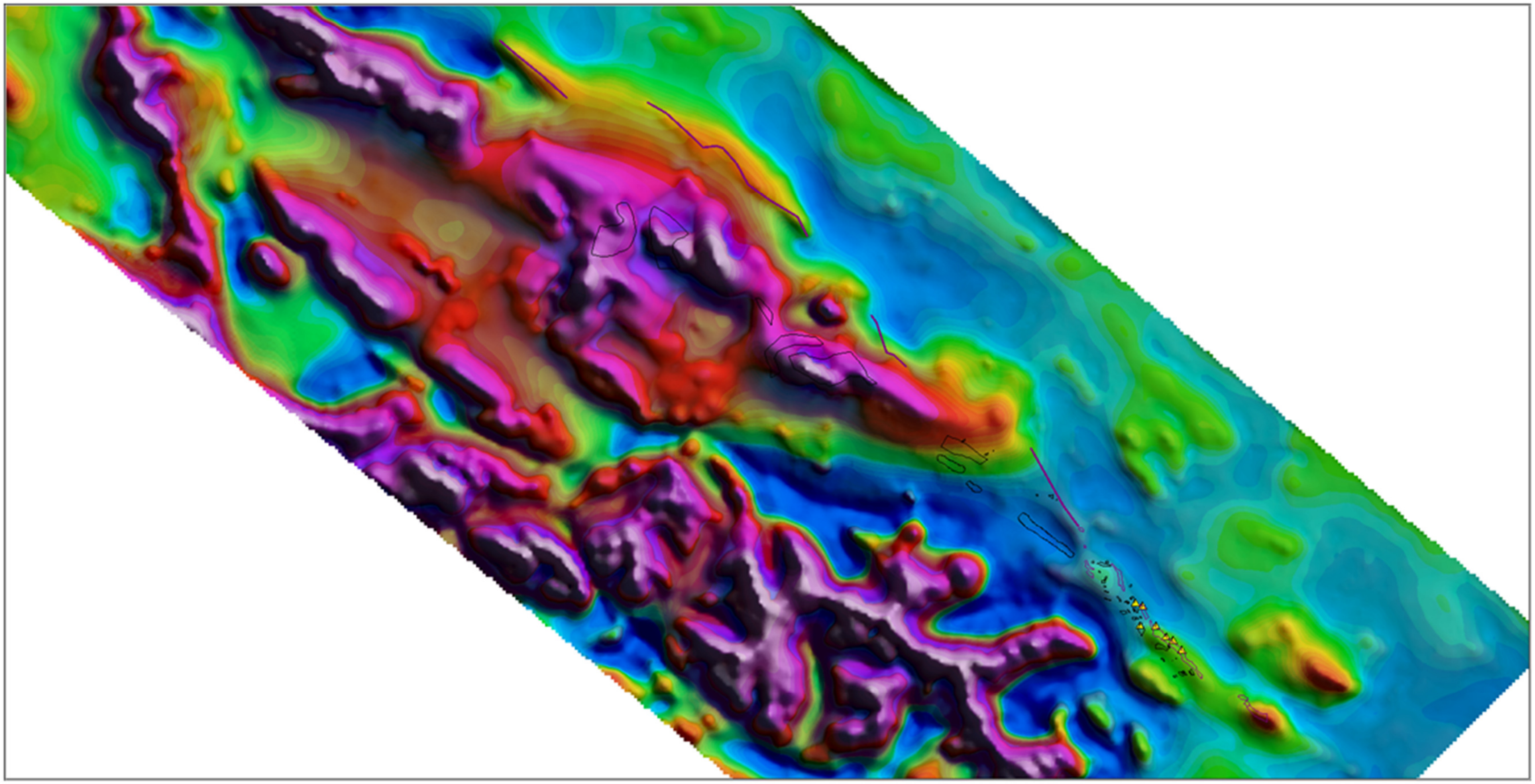
Worming Study of gradient responses to highlight lineament trends and breaks. MAG RTP data is upward continued at 50 meter intervals up to 1000 m. A Theta filter is then applied to the resulting 3D volume from which slices are produced.

Studying the behaviour of magnetic gradient responses can highlight both trends and disruptions or breaks. It also helps to define magnetic domains by studying texture.



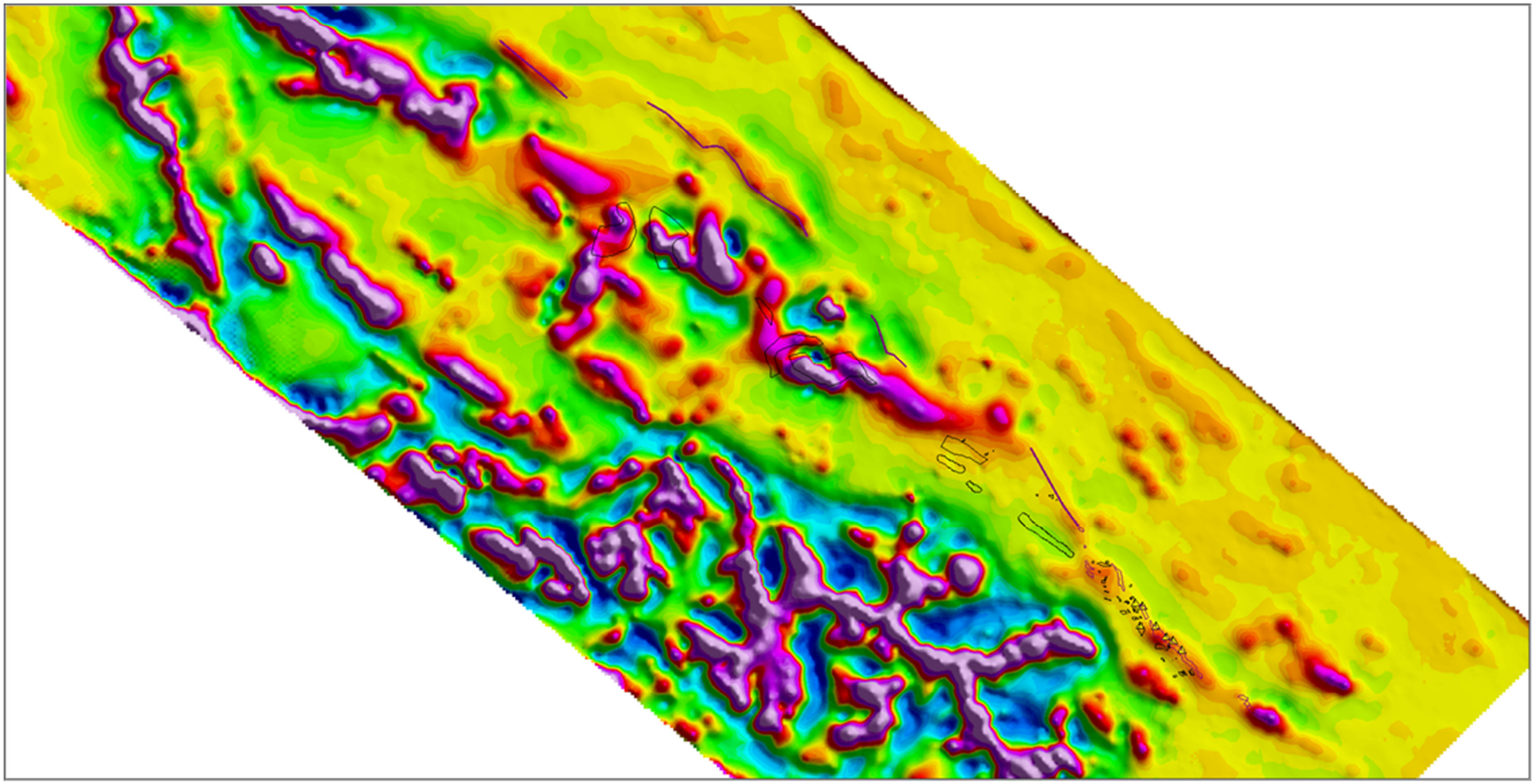
Spy Project – Airborne Geophysics – **Geophysics…**

MAG RTP enhanced with vertical gradient.



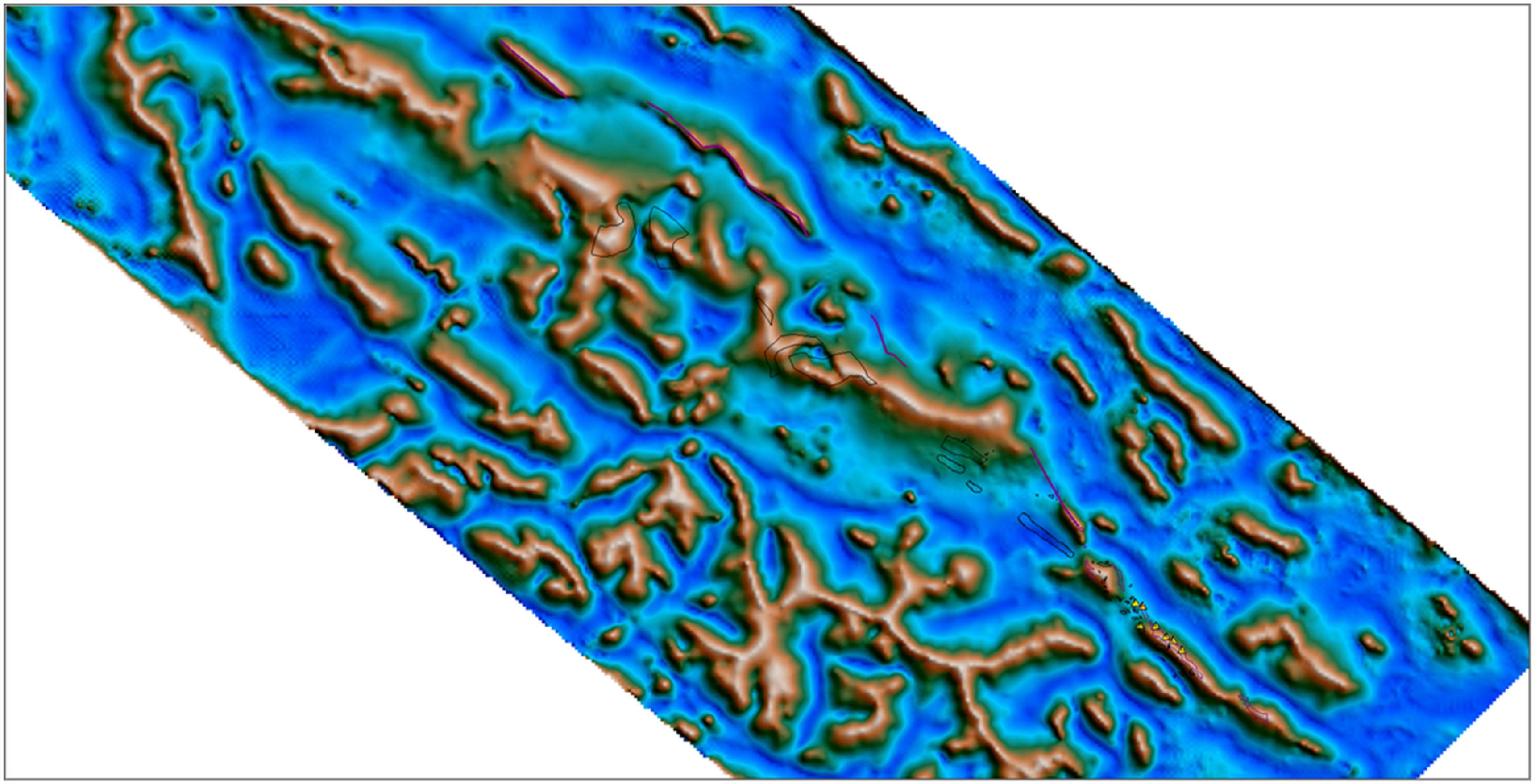
Spy Project – Airborne Geophysics – **Geophysics…**

MAG vertical gradient (1VG or often CVG (calculated vertical gradient)). 1VG/CVG is a calculated product from a single magnetic sensor where as on some airborne geophysics platforms vertical gradient is physically measured between two magnetic sensors.



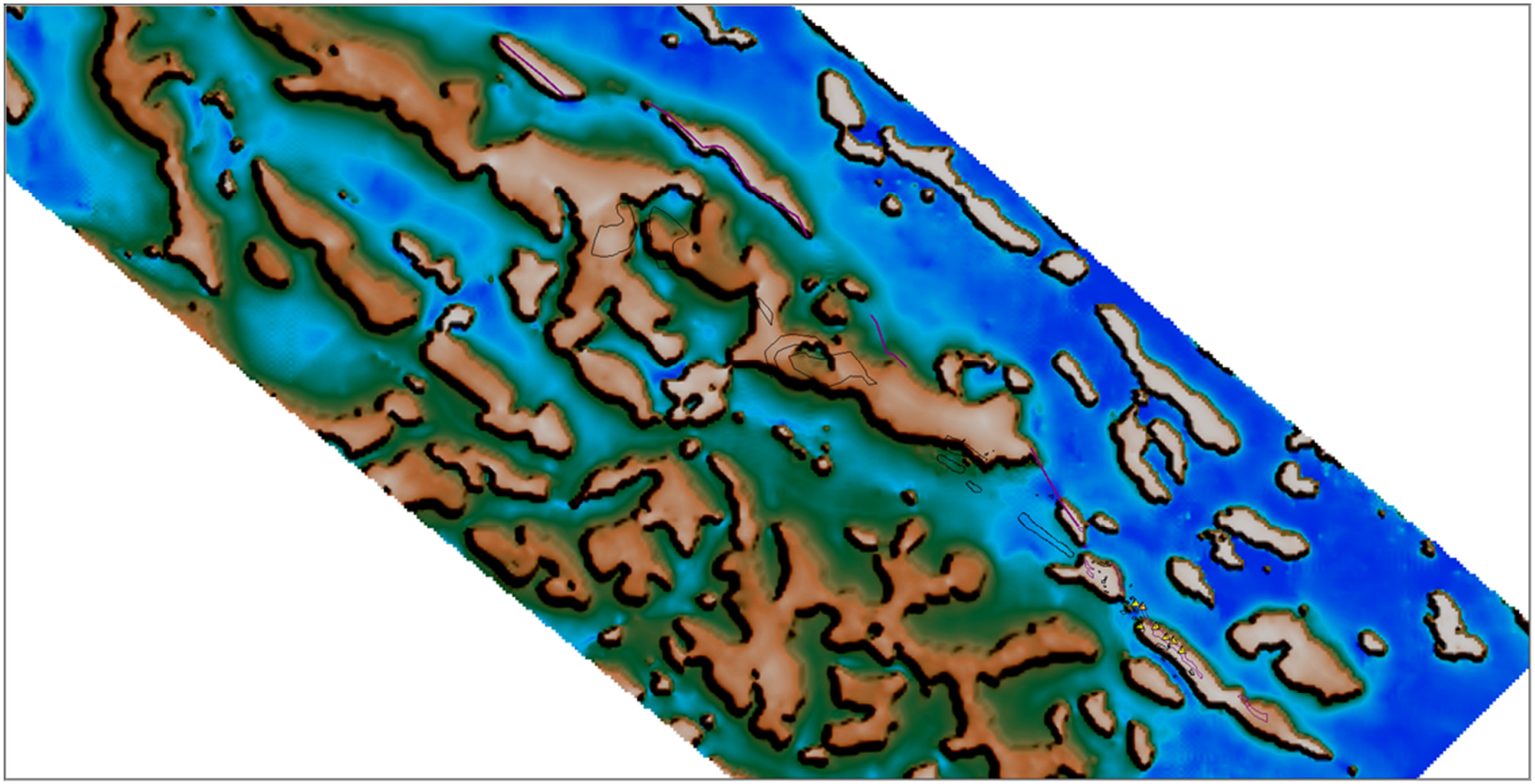
Spy Project – Airborne Geophysics – **Geophysics…**

MAG TILT derivative will delineate features in a similar fashion to the vertical gradient, but sometimes slightly better. However, response amplitude information is generally lost as compared with the vertical gradient which retains it.



Spy Project – Airborne Geophysics – **Geophysics…**

MAG Plateau filter (Profile Analyst ZS suite of filters). Enhances weaker responses and simplifies the overall look of the magnetics.



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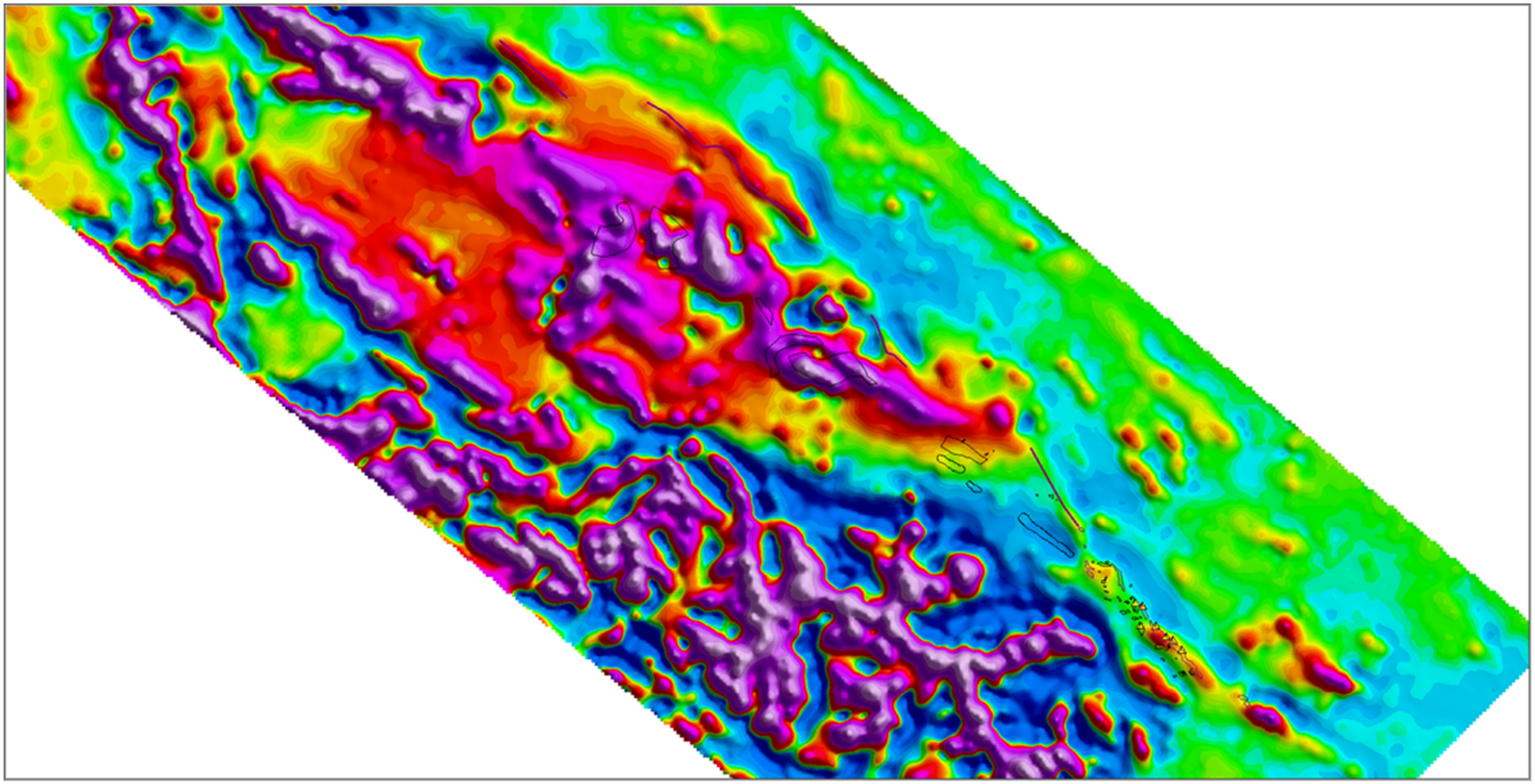
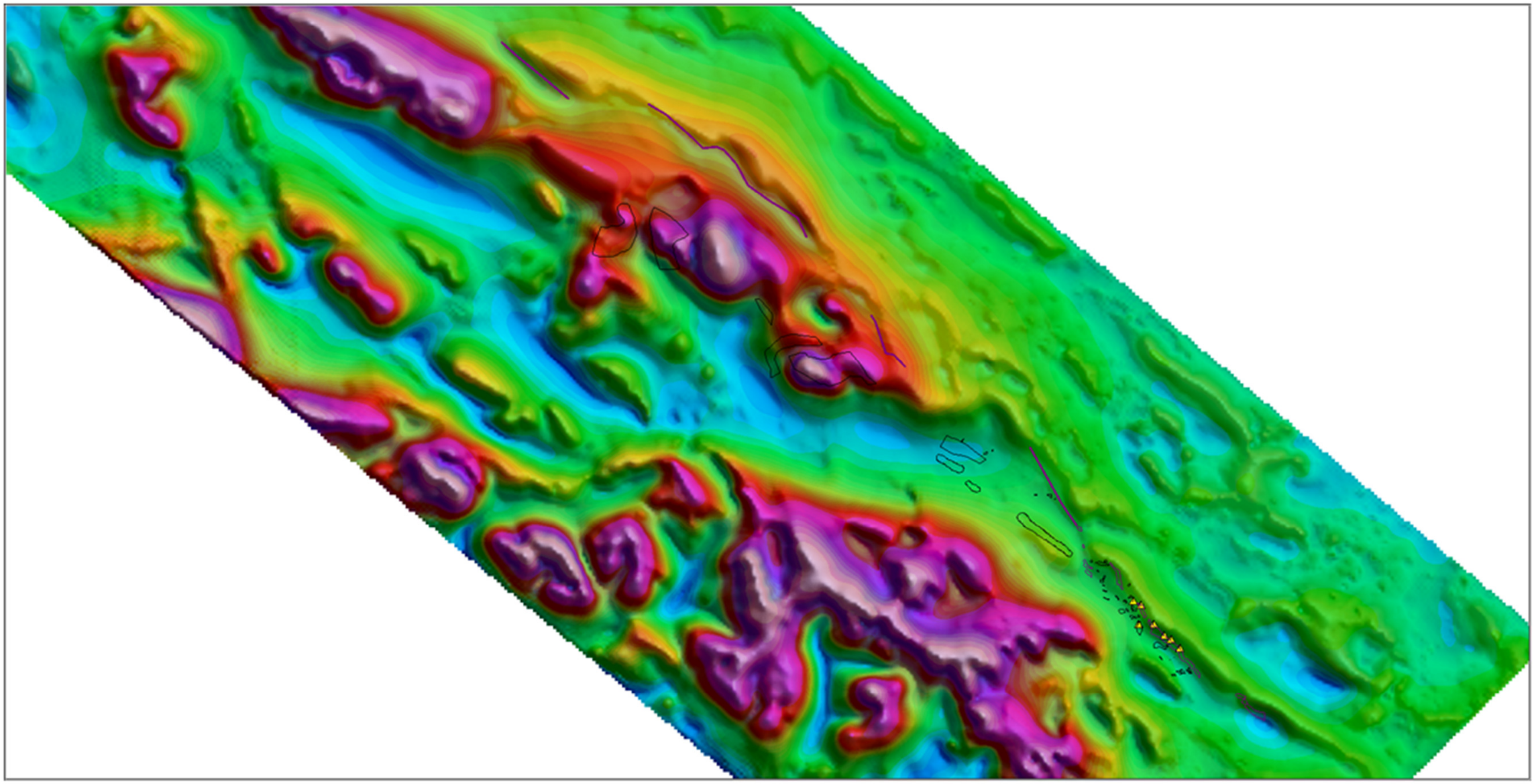
Spy Project – Airborne Geophysics – **Geophysics…**

MAG AGC 7-10 local – Automatic Gain Control filter – enhances weaker responses.



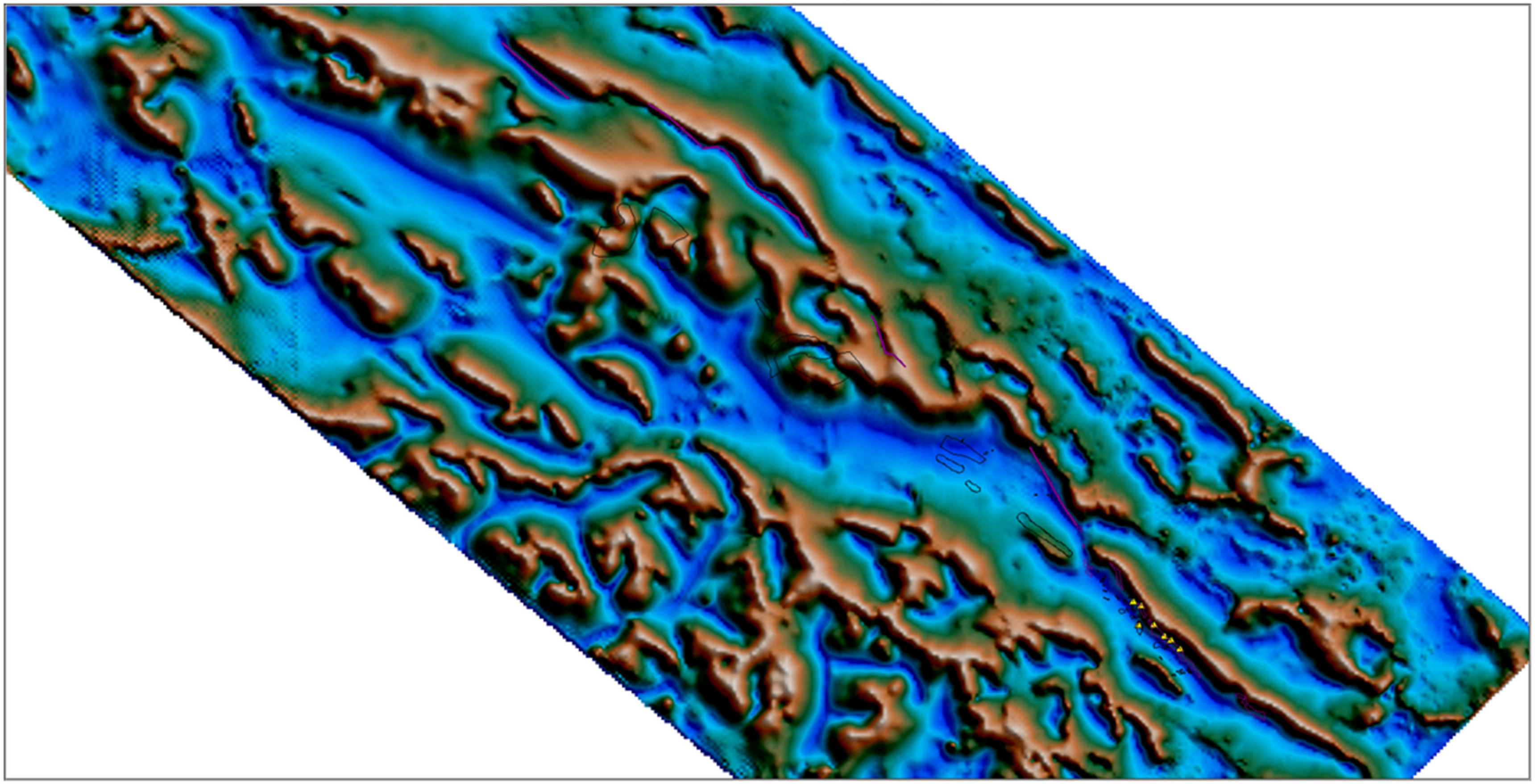
Spy Project – Airborne Geophysics – **Geophysics…**

MAG VRMI enhanced with Tilt filter of VRMI (vector residual magnetic intensity). *VRMI to be used with more caution than the RTP data until it is confirmed how well it correlates with known geology.



Spy Project – Airborne Geophysics – **Geophysics…**

MAG VRMI Tilt filter highlights a linear trends and enhances a weak responses. *VRMI to be used with more caution than the RTP data until it is confirmed how well it correlates with known geology.



Spy Project – Airborne Geophysics – **Geophysics…**

Interpretation

Interpretation is a process that ideally involves a coincident interpretation of geophysics and geology that can be expected to require multiple passes. In this review the 2015 airborne magnetic data has been reviewed, but the depth of the review is limited by the scope of work and budget available. A first pass review of the magnetic data products has been conducted with the goal of delineating geologic features related to magnetic high and low lineaments, discontinuities or offsets in the data and magnetic domains. The interpretation is subjective and open to change from discussion about local and regional geology and further time spent with the data set. This geophysical review is meant as a starting point for further discussion and direction with respect to geophysics how it may contribute to this project.

Spy Project – Airborne Geophysics – **Geophysics…**

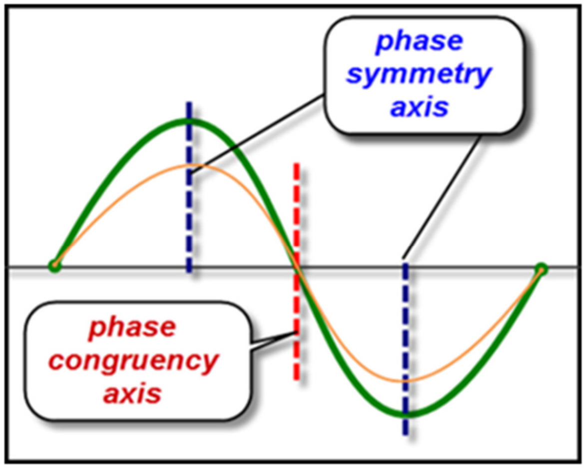
Lineament analysis: CET & USGS Curvature

- Automatic lineament analysis is a useful compliment to visual methods. Automated analysis removes interpreter bias (though one still needs to set appropriate filter scales) and can lead to insight during manual interpretation.

The CET Grid Analysis plugins contain tools for Texture Analysis, Lineation Detection, Lineation Vectorization, and Structural Complexity. These are versatile algorithms useful for grid texture analysis, lineament detection, edge detection, thresholding, and identifying areas of structural complexity.

Specific to the detection of discontinuities within magnetic and gravity data is the Step-by-Step trend detection menu. This menu contains two different approaches to trend estimation (Texture Ridges and Edges) via the sequential application of the Texture Analysis, Lineation Detection, and Lineation Vectorization tools mentioned above.

- input data (RTP to study mag high or low lineaments)
- Phase Symmetry using 5 cell (start) and 5 ranges (5, 10, 20, 40, 80 cells)
- Thresholding the result MAG highs "CET_PS-5-5-5_pos" (ridges only)
- Thresholding the result MAG lows "CET_PS-5-5-5_neg" (troughs only)
- Vectorization of thresholded grid into vectors.
- This process is repeated at different anomaly widths. For example, CET_PS-7-5-5_pos and CET_PS-11-5-5_pos



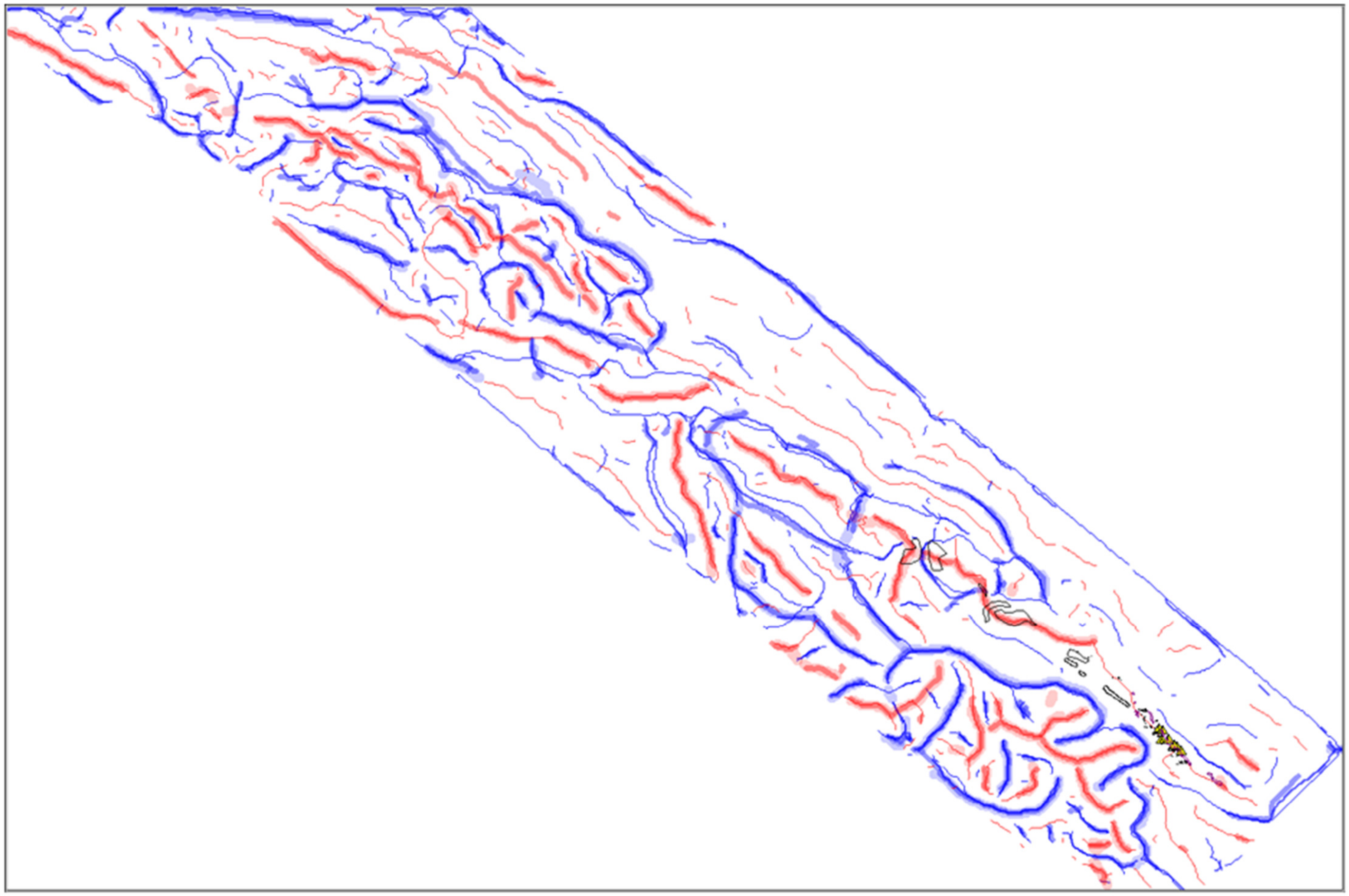
Spy Project – Airborne Geophysics – **Geophysics…**

Lineament analysis - CET

Analysis was performed at different scales: thin lines represent near surface, high-frequency responses and thicker lines represent deeper and broader magnetic responses.

MAG highs denoted by red lines.

MAG lows are denoted by a blue lines. Line style is as mentioned above.



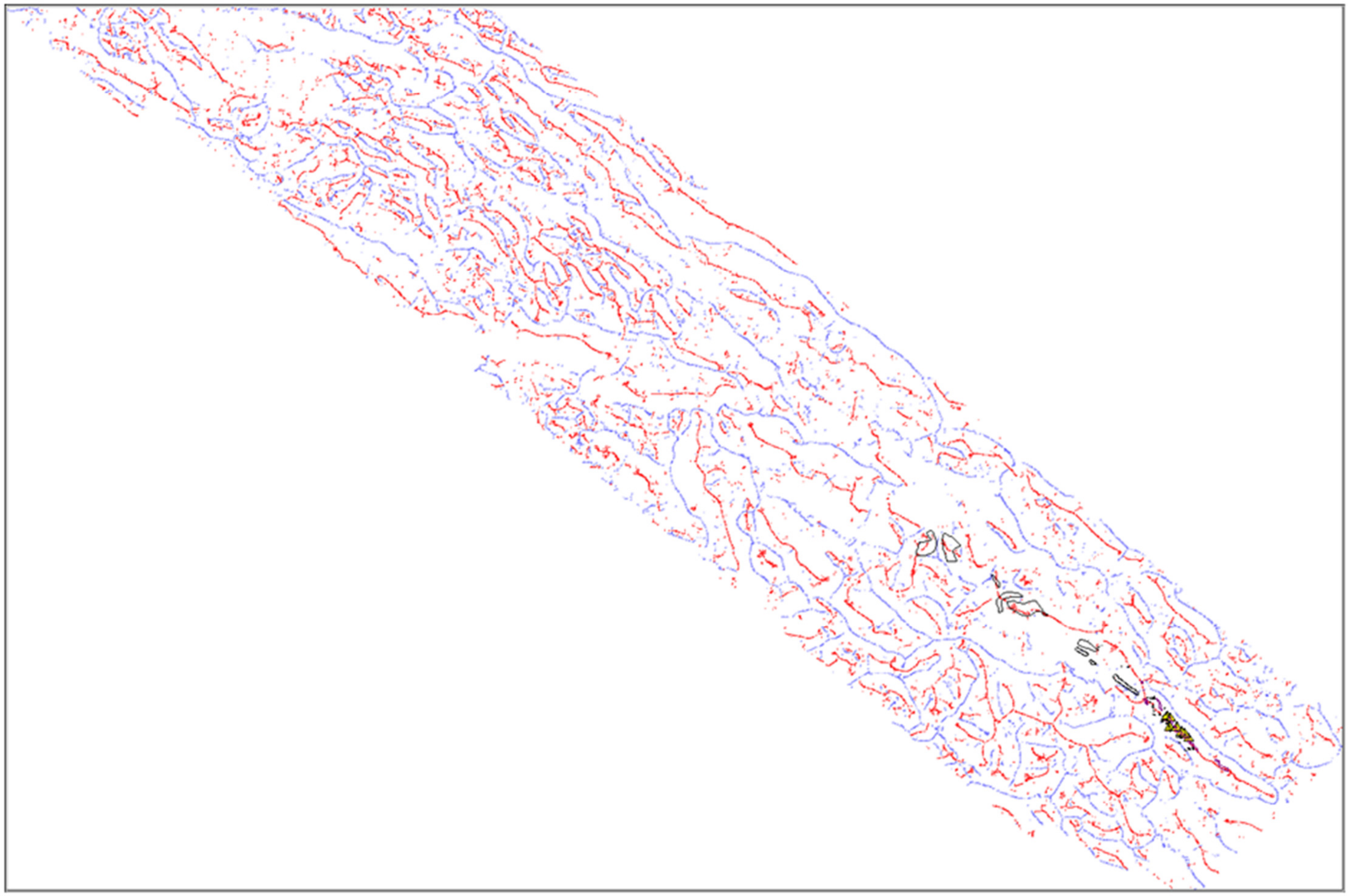
Spy Project – Airborne Geophysics – **Geophysics…**

Lineament analysis – USGS Curvature Analysis

This product is in Geosoft using an executable created by the United States Geological Survey. It locates data extrema (highs & lows) in a gridded file using curvature analysis.

MAG highs denoted by red dots.

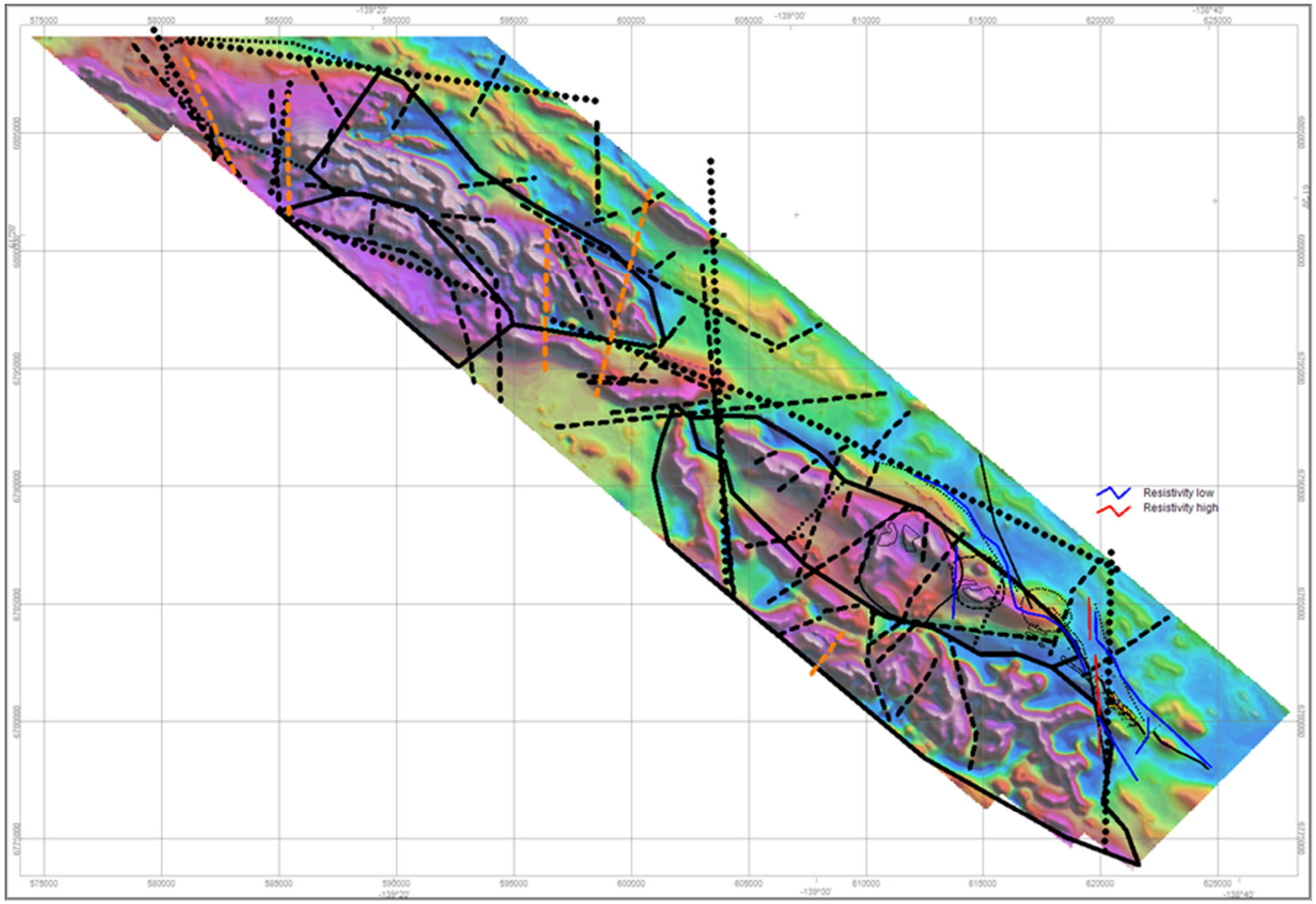
MAG lows are denoted by a blue squares.



Spy Project – Airborne Geophysics – **Geophysics…**

Lineament analysis –

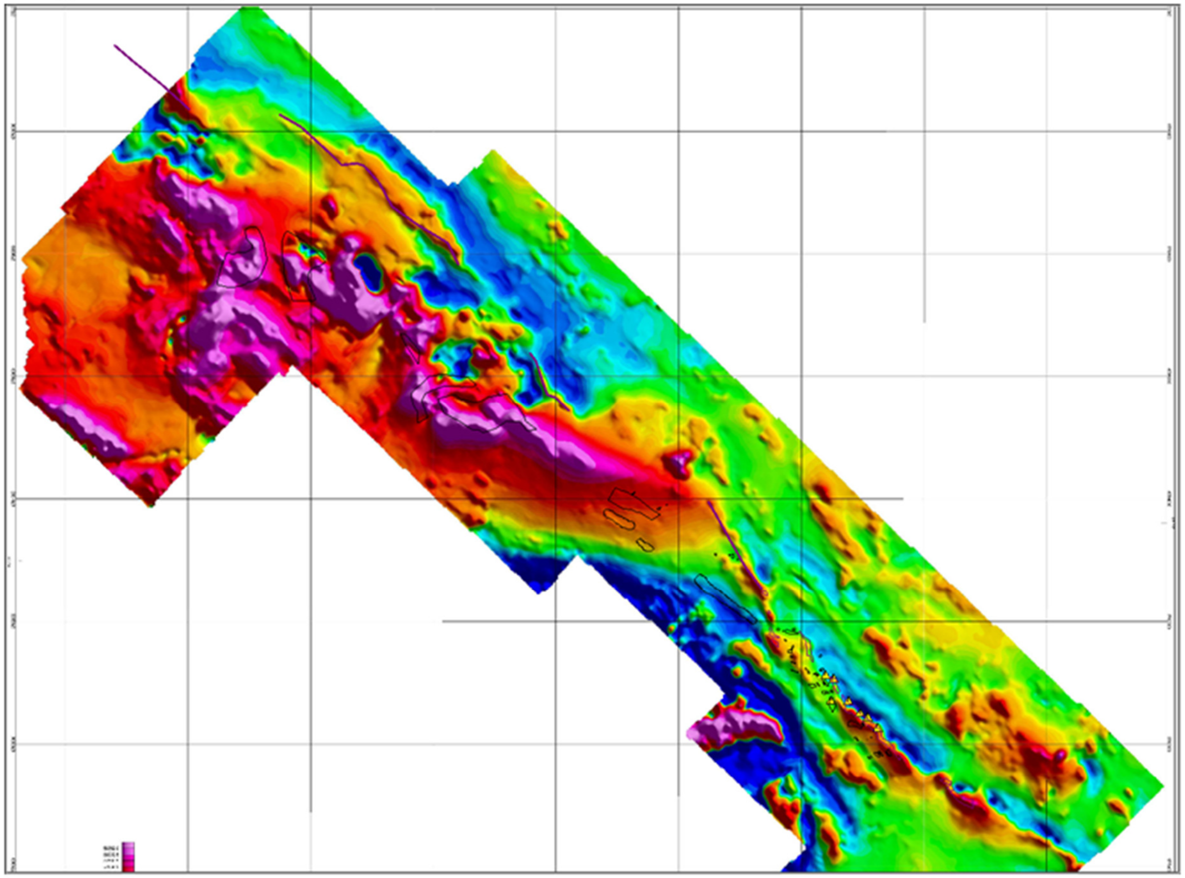
Manual mapping of trends from a first pass review of multiple geophysical layers. It is useful to compare lineaments and form lines interpreted from various grid products in order to help with confirmation and confidence of mapped features. The status of this work is that it is ready for further discussion towards finalizing it and ensuring that it is geologically realistic and that features are corroborated with other data.



Spy Project – Airborne Geophysics – **Geophysics…**

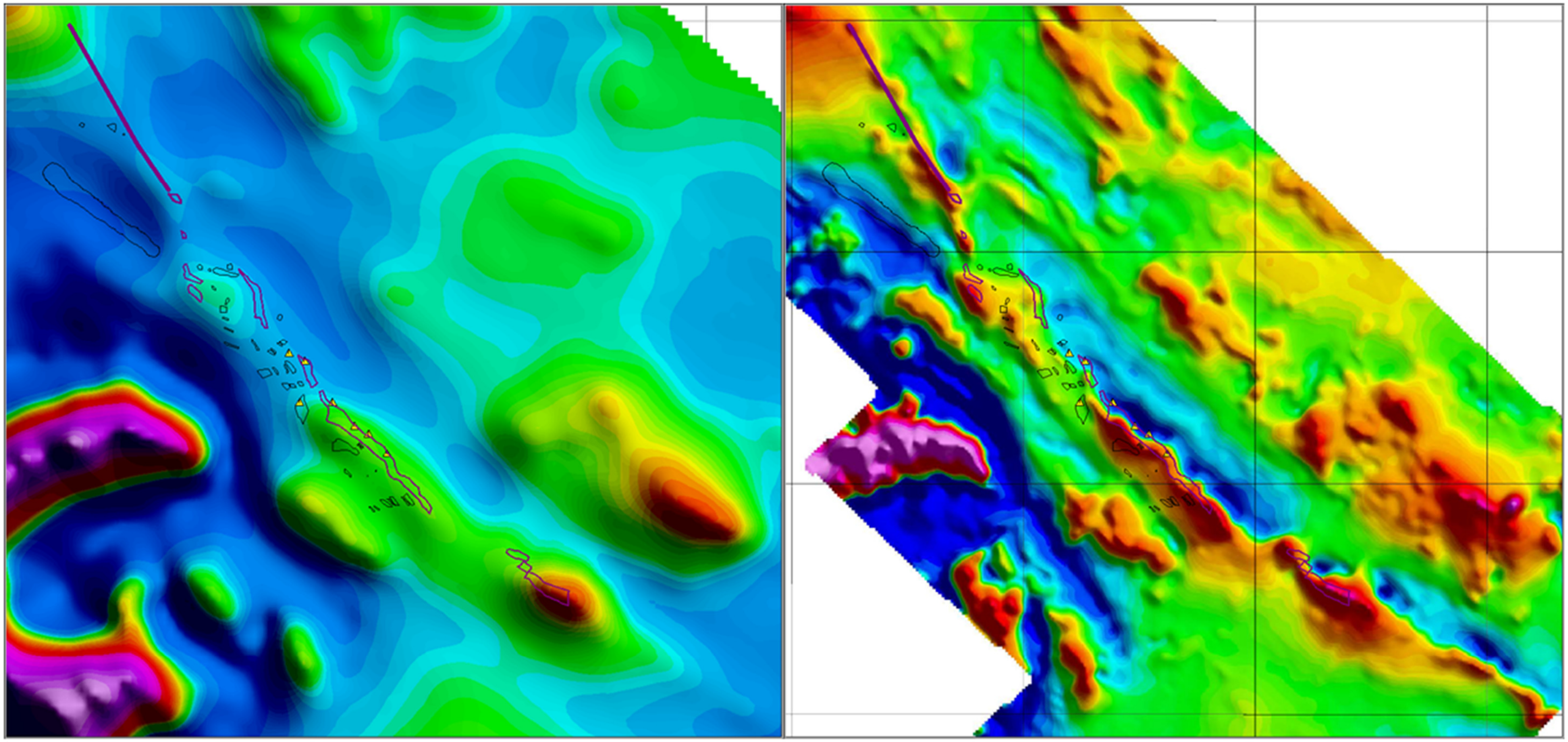
MAG 1996 total magnetic intensity (TMI). This magnetic image cannot be filtered. We do not have access to proper grid files which could be filtered or the original survey data.

This data is presumed to be flown in at 100 m spaced lines based on the significant improvement in data resolution compared with the 2015 magnetic data.



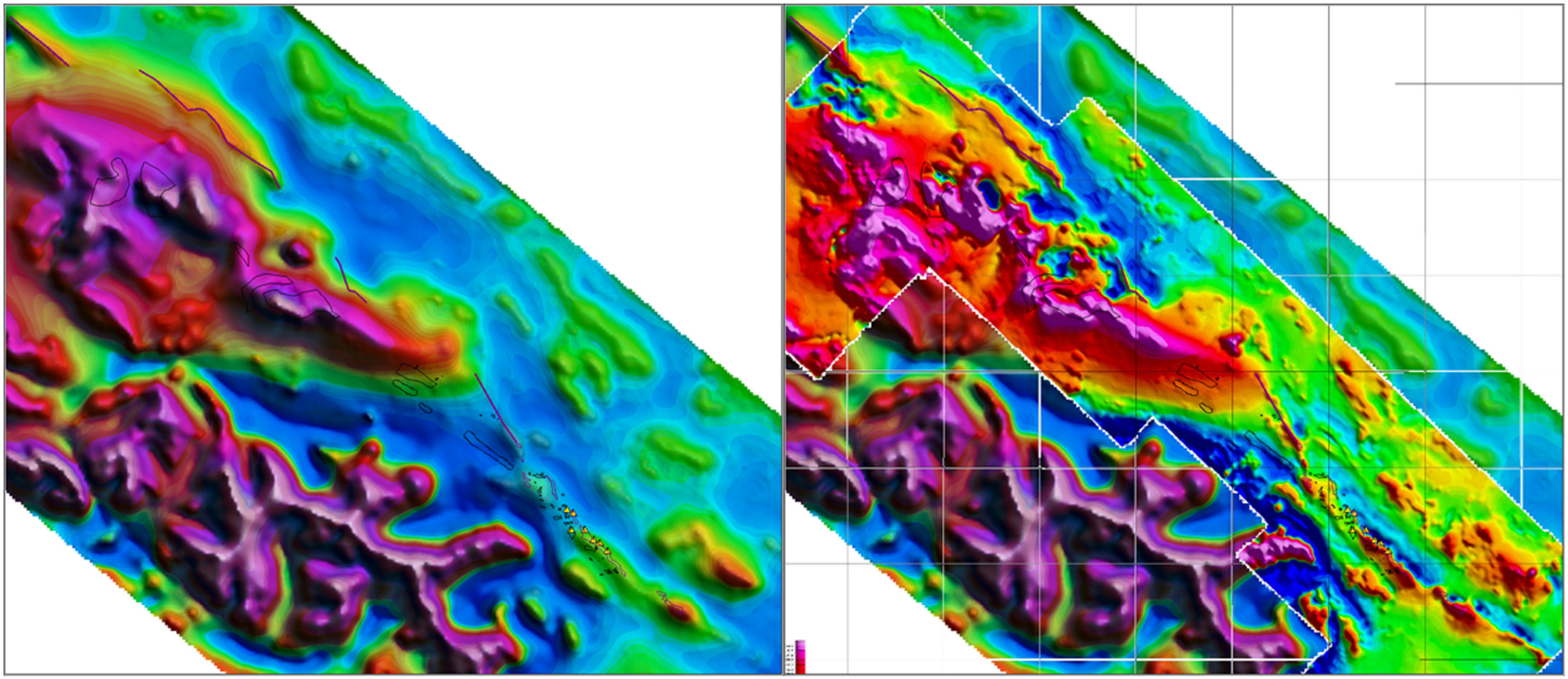
Spy Project – Airborne Geophysics – **Geophysics…**

Comparison of 2015 MAG RTP at 250 m line spacing (left) versus 1996 MAG TMI (right).



Spy Project – Airborne Geophysics – **Geophysics…**

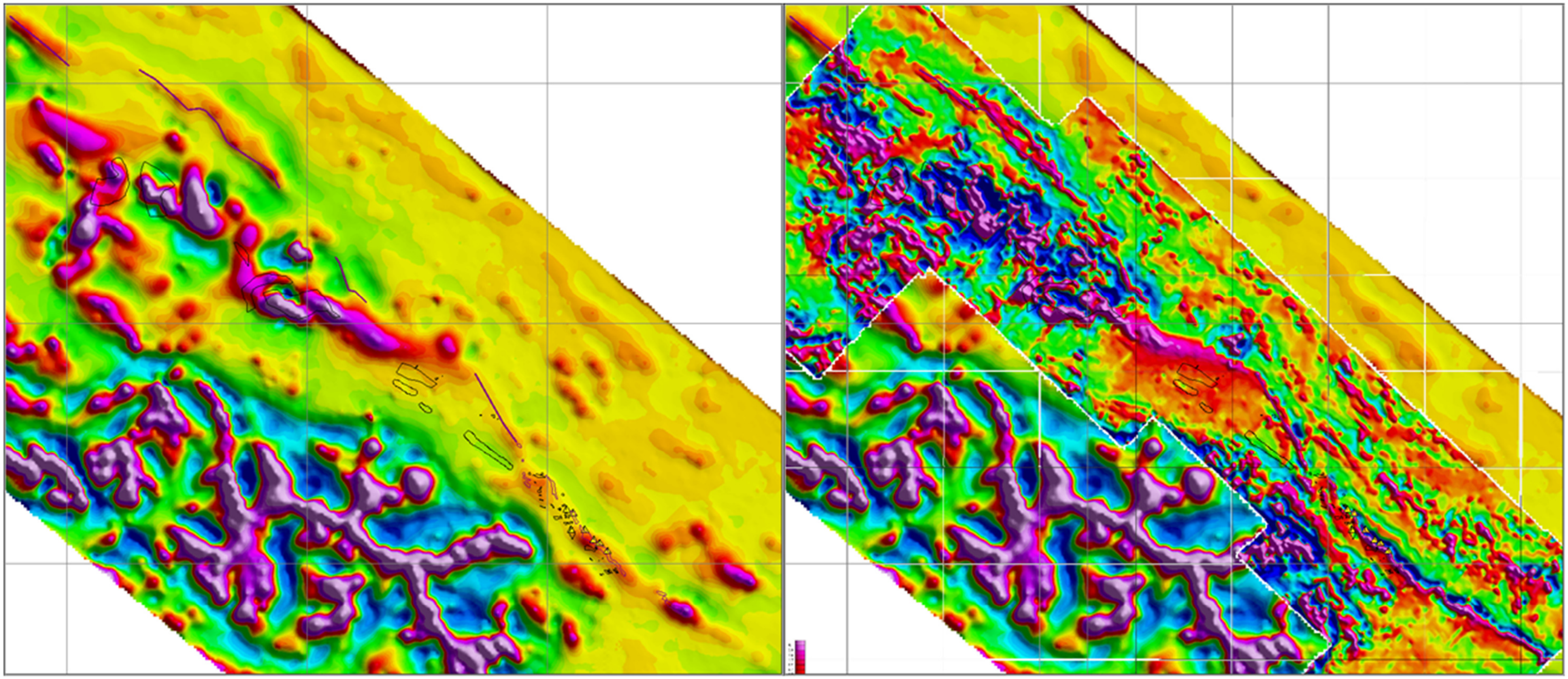
Comparison of 2015 MAG RTP at 250 m line spacing (left) versus 1996 MAG TMI (right).



Spy Project – Airborne Geophysics – **Geophysics…**

Comparison of 2015 MAG RTP 1VG (left) versus 1996 MAG TMI CVG (right).

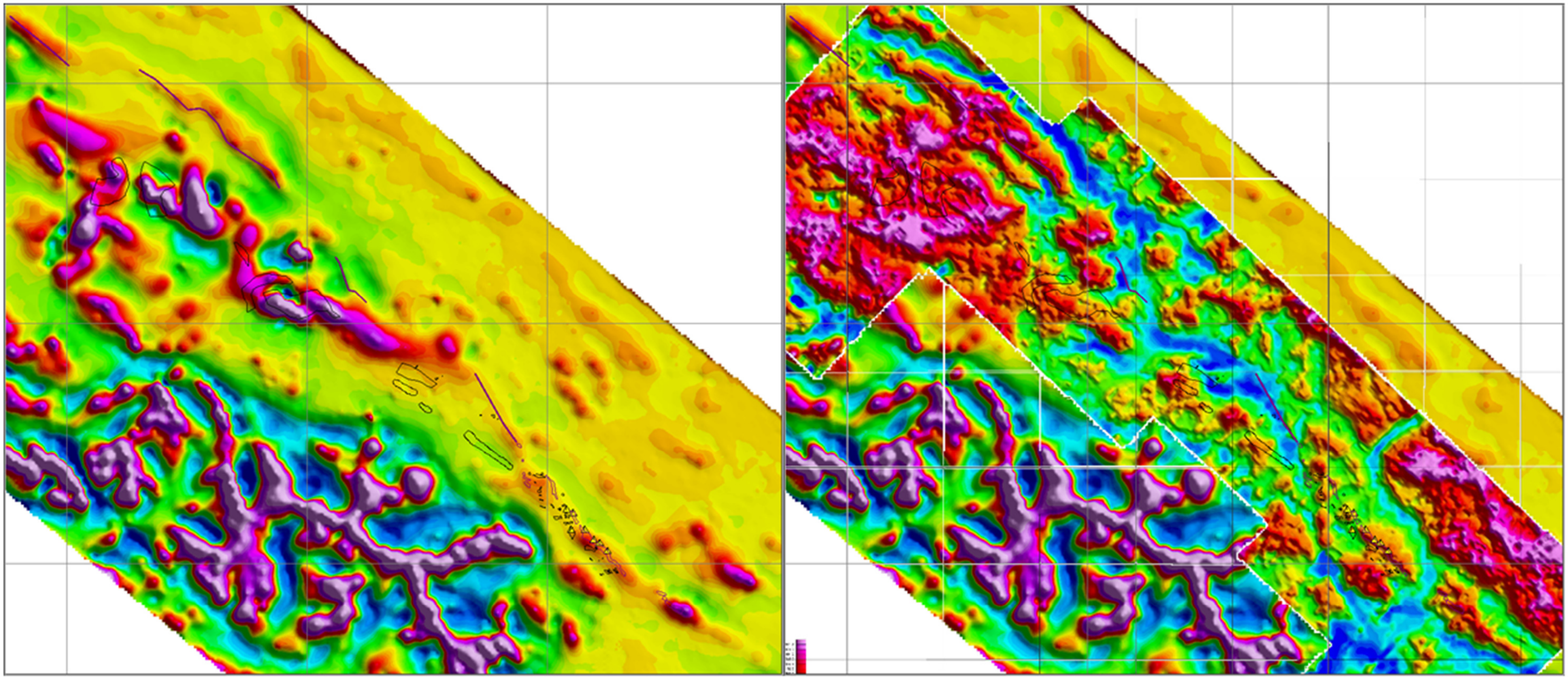
CVG (calculated vertical gradient) is the same as first vertical gradient (1VG).



Spy Project – Airborne Geophysics – **Geophysics…**

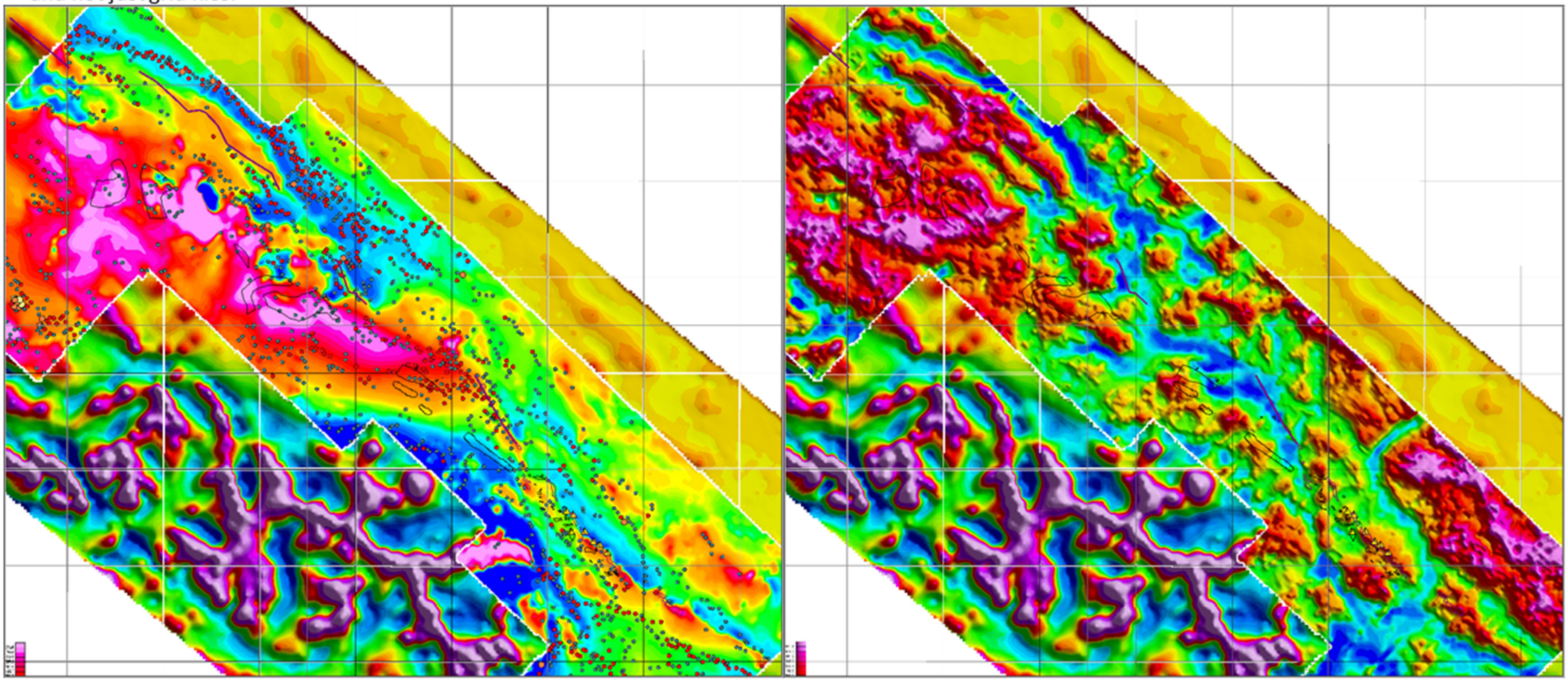
Comparison of 2015 MAG RTP 1VG (left) versus 1996 EM RES 7200 Hz (right). RES = Resistivity

Resistivity colour bar: blue is low and red is high.



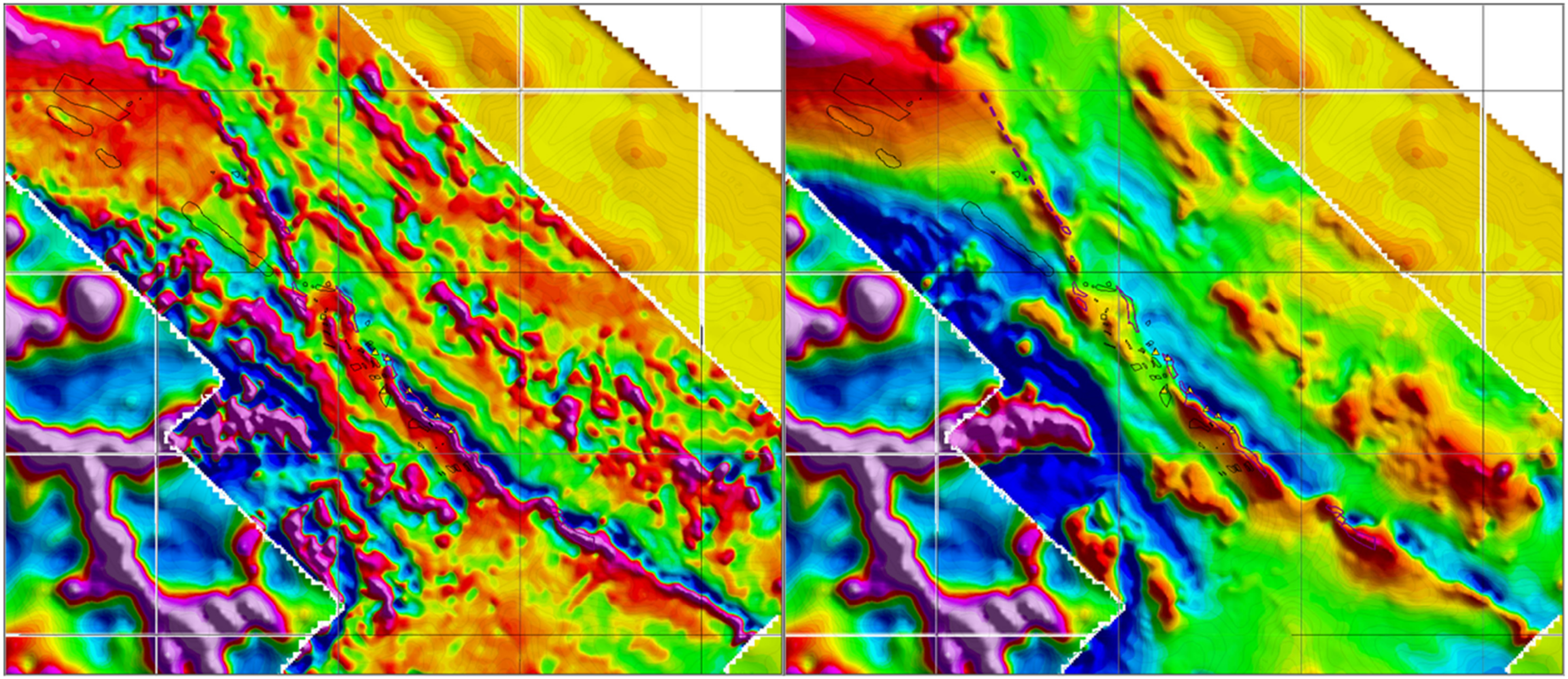
Spy Project – Airborne Geophysics – **Geophysics…**

Comparison of 1996 EM auto-pick conductors over TMI (left) vs. 1996 EM RES 7200 Hz (right). Resistivity colour bar: blue is low and red is high. The Spy sill (or an associated lithology) appeared to have a resistive nature to it as seen in the right image. The automated bedrock conductors (left) are not conclusive about the conductive nature of the sill. There would be greater ability for interpretation if the original data were available. Ideally this would be the survey database and not just grid files.



Spy Project – Airborne Geophysics – **Geophysics…**

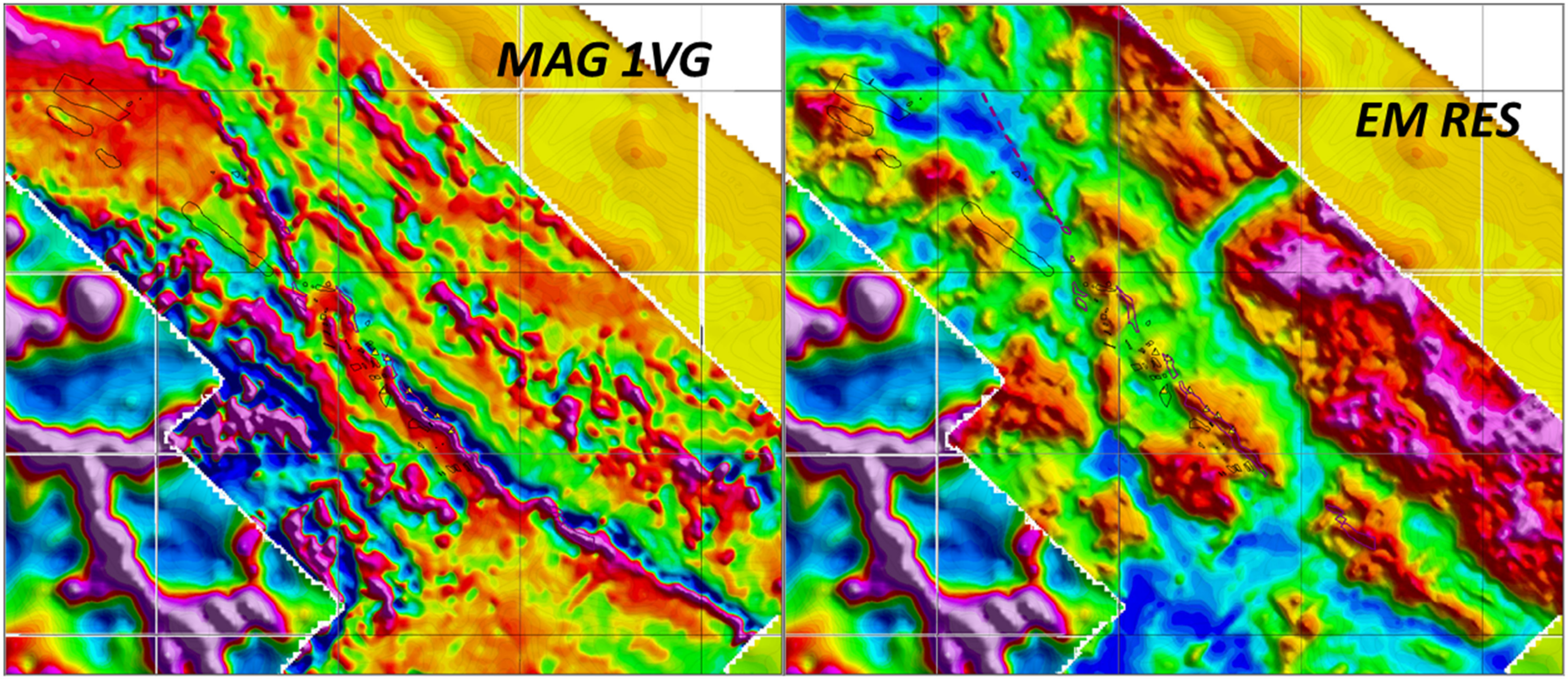
Comparison of 1996 MAG TMI 1VG (left) versus 1996 MAG TMI (right).



Spy Project – Airborne Geophysics – **Geophysics…**

Comparison of 1996 MAG TMI 1VG (left) versus 1996 EM RES 7200 Hz (right).

DIGHEM surveys like this typically provide 3 resistivity products at frequencies 900 Hz, 7200 Hz and 56 kHz. Lower frequencies penetrate deeper than higher frequencies.



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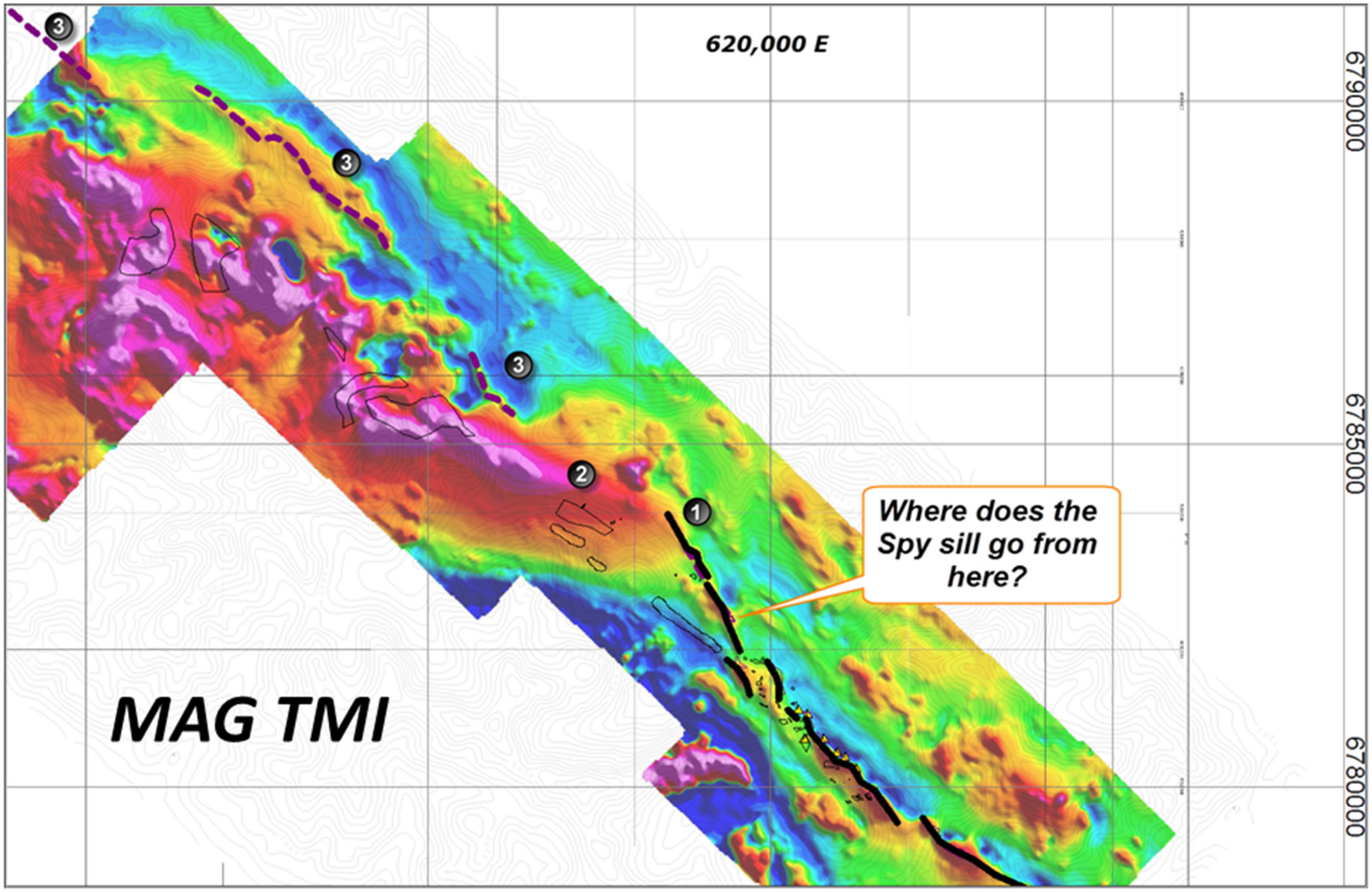
Spy Project – Airborne Geophysics – **Geophysics…**

Where does the Spy sill go?

The 1996 magnetic data would suggest that the sill continues to the northwest from the last mapped location. At marker 1 the continuation of the sill is not clear. When viewing the MAG vertical gradient data it is tempting to follow a westward magnetic trend, but when viewing the total magnetic intensity (TMI) it does not appear to be the case. The character of the Spy sill response on the TMI data is quite different than what we see at marker 2. This regional magnetic feature (marker 2) could be masking the sill, but with the existing data images (we don't have the actual 1996 data to study in detail) we cannot really tell. Markers 3 highlight a magnetic response that may be similar to the sill. The colour bar used on the MAG vertical gradient data makes it difficult to see differences in amplitude. *Location of the Spy sill is approximate as RTP data it would be preferable to the TMI data for locating it.



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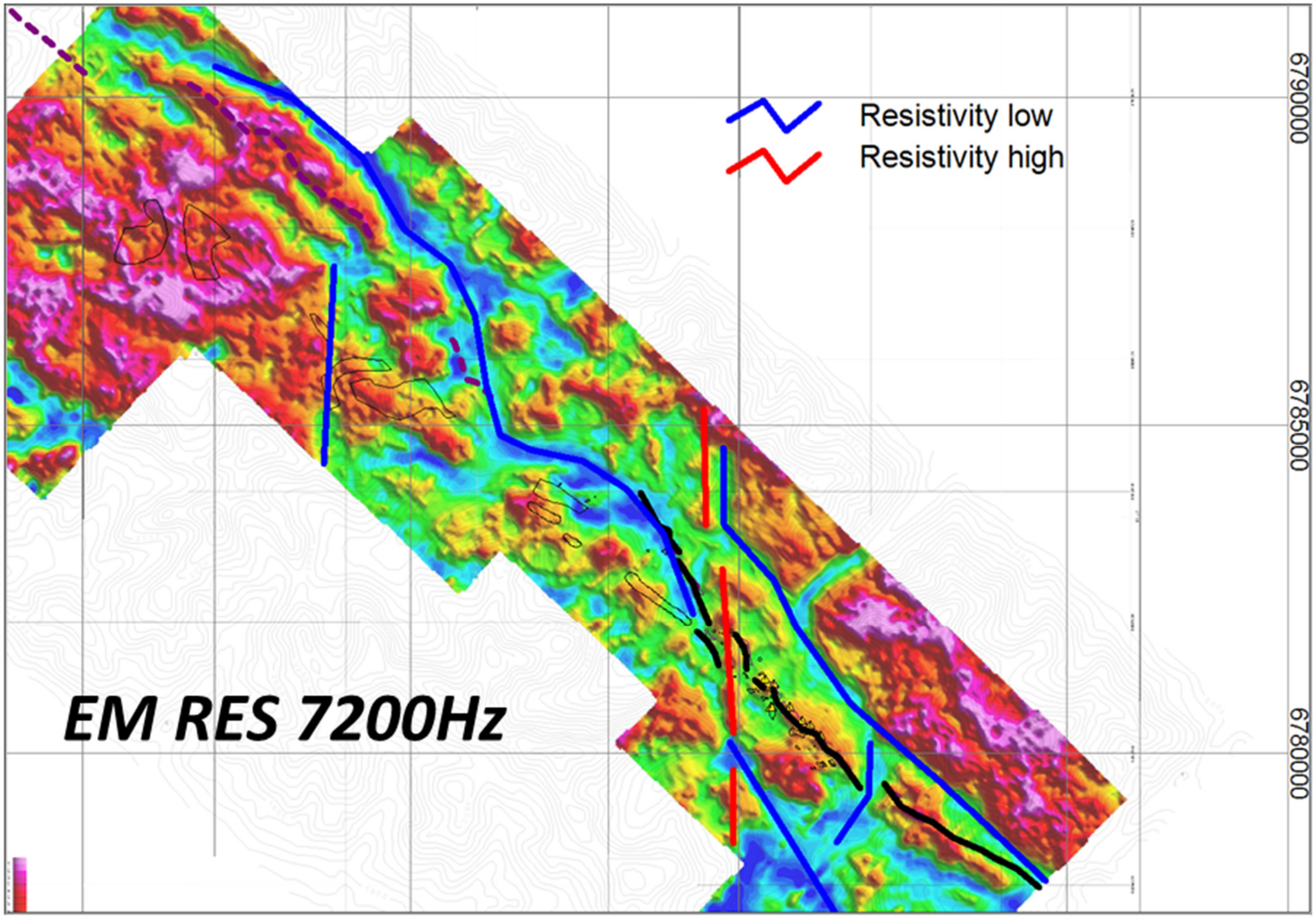
Spy Project – Airborne Geophysics – **Geophysics…**

Where does the Spy sill go?

The EM 7200 Hz resistivity data responds to contrasts in rock resistivity (inverse of conductivity). A resistivity low could be referred to as a conductive response. The "Spy sill" does have an overall conductive nature to it. At this point, it has not been determined whether the sill itself or neighbouring lithology is responsible for the conductive response. Either way the EM data are potentially useful in mapping the sill.

It would be ideal to have the original survey data which would allow for greater flexibility of mapping conductive features. The data available is 7200 Hz resistivity. Typically, there will be both lower and higher frequency data that can tell us characteristics of the local geology. For example, it could be that the higher frequency (56 kHz) is more useful for delineating the sill or for that matter one of the lower frequencies at 900 or 1000 Hz.



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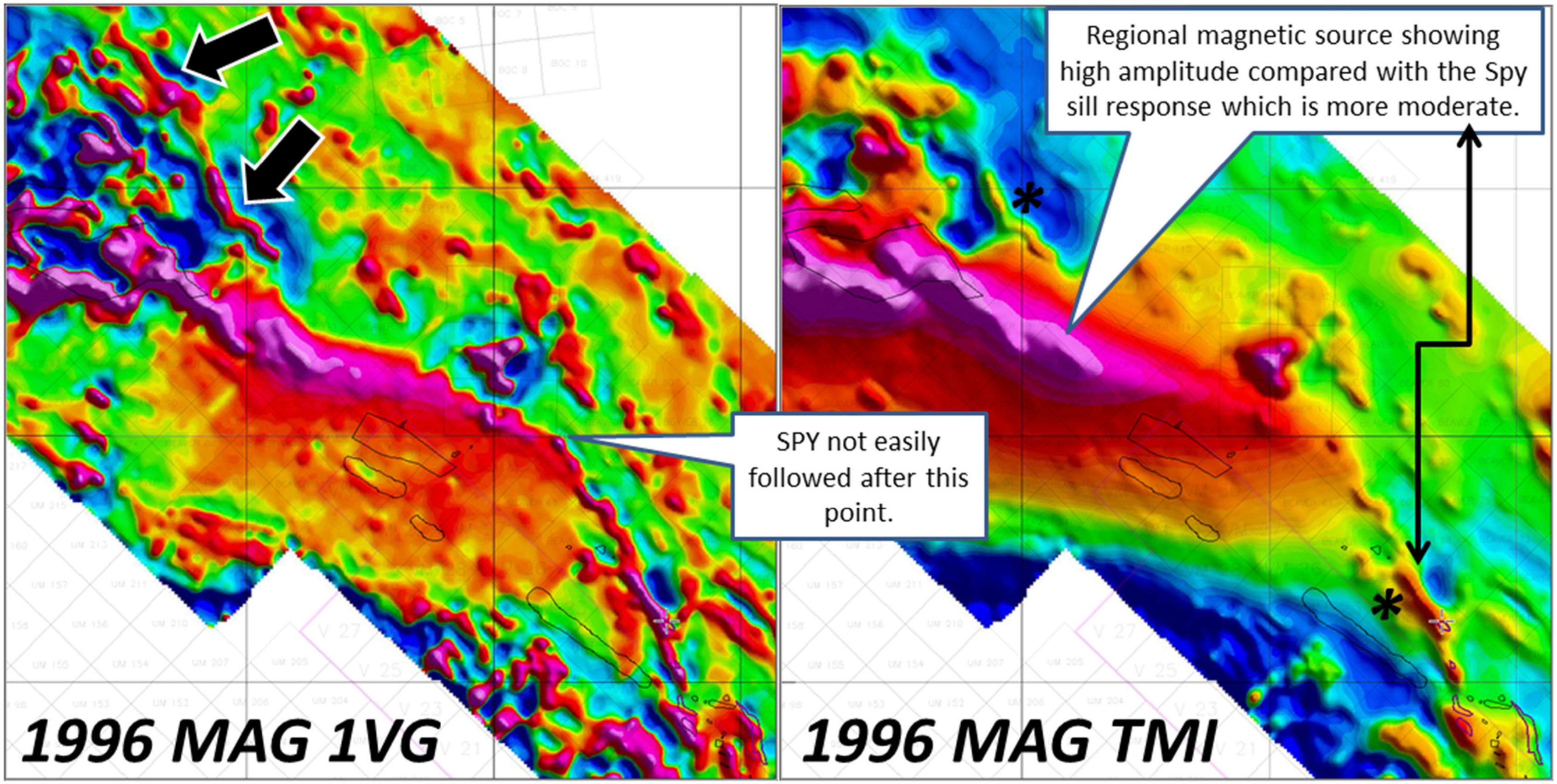
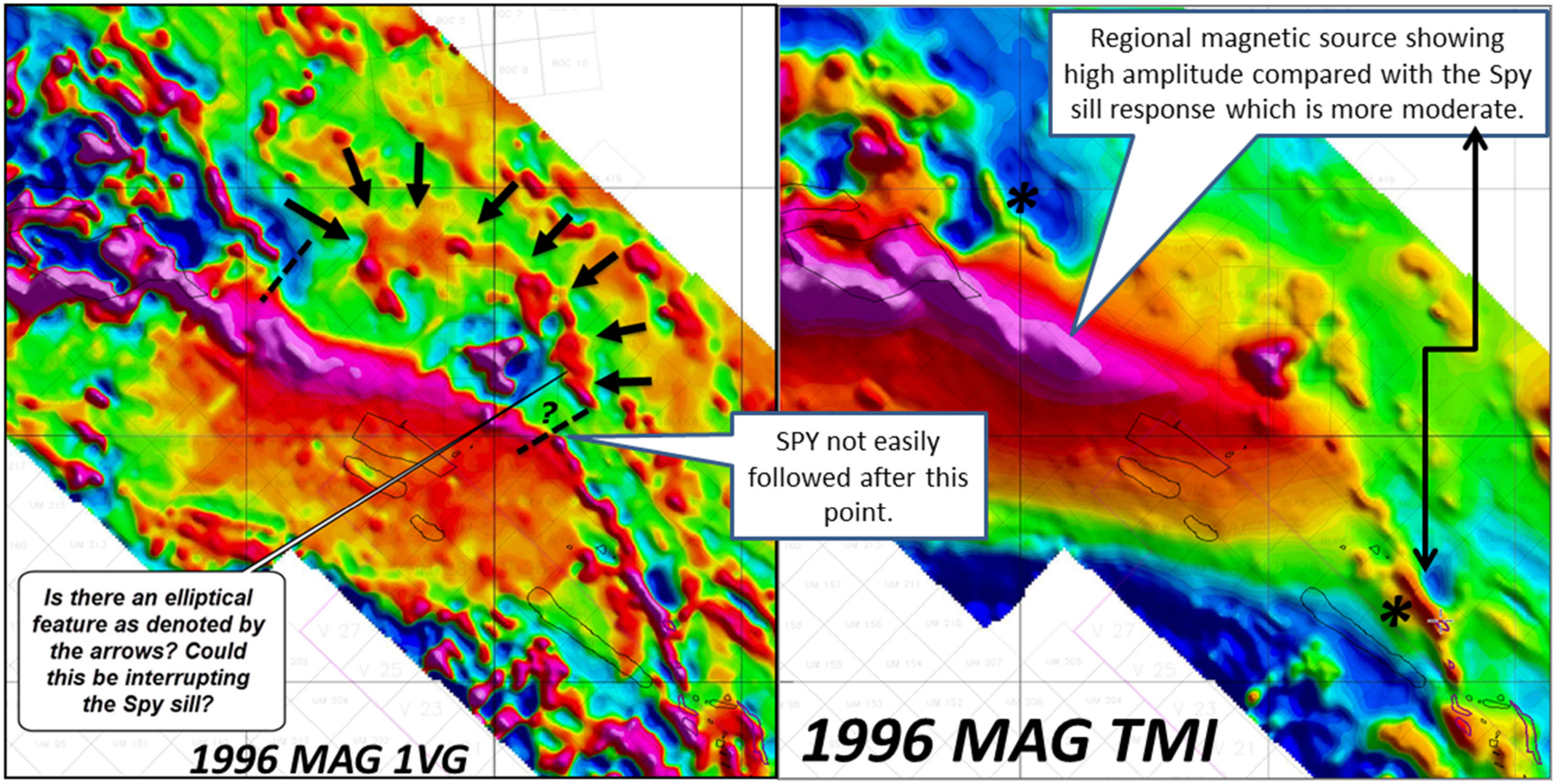
Spy Project – Airborne Geophysics – **Geophysics...**

Does the Spy sill (*) continue North West of the fault at claims Beaver 51/53? Yes, but we can only follow it so far before the response is not discernible within a regional magnetic feature. It would seem that the sill "could" continue WNW as seen in the vertical gradient data (left). However, when we view the TMI data (right) this possibility would appear weaker..



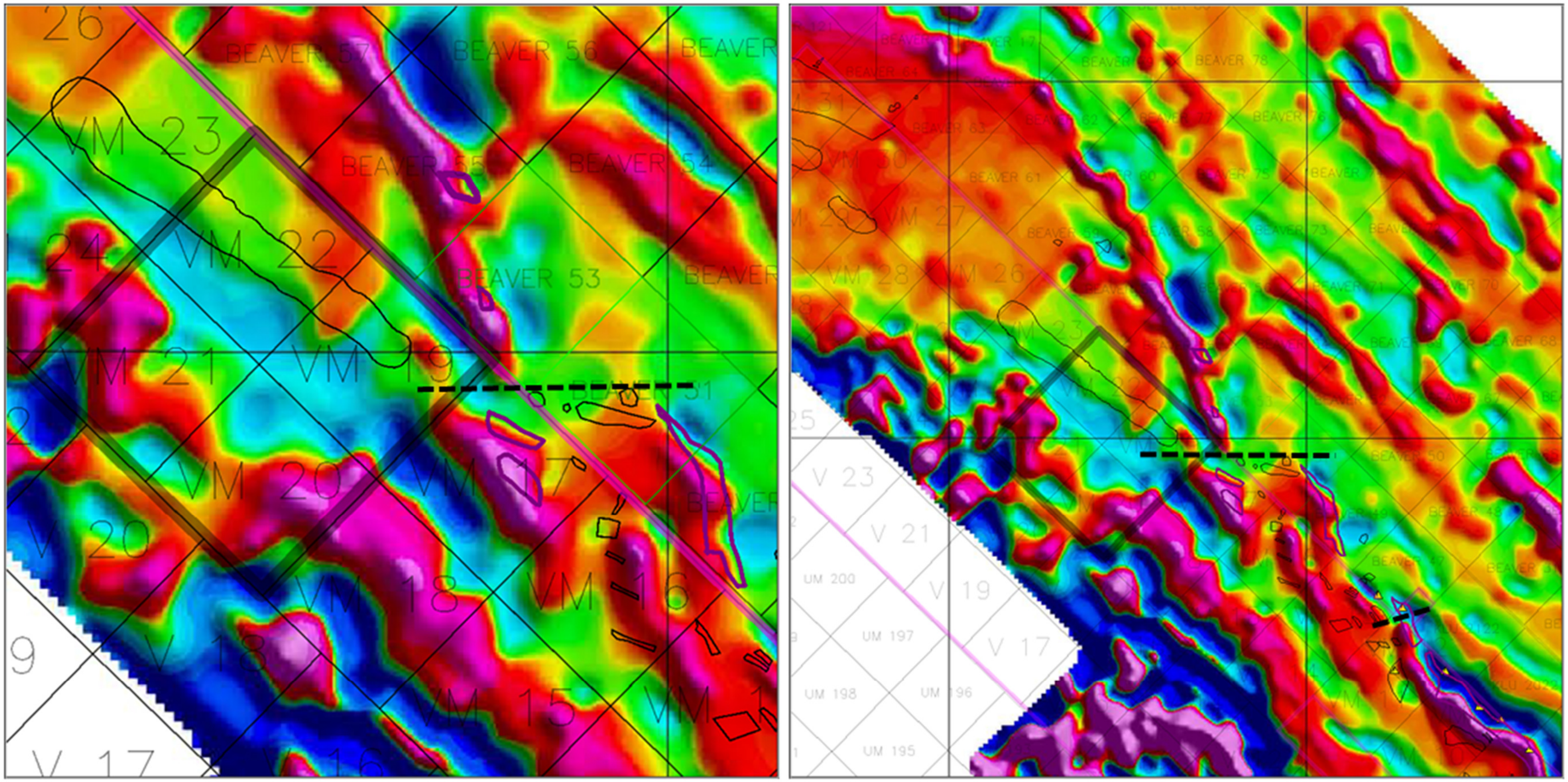
Spy Project – Airborne Geophysics – **Geophysics…**

Hand waving The left side image shows a very nebulous ovoid-like response highlighted by the black arrows. Is it possible that something here has interrupted the sill?



Spy Project – Airborne Geophysics – **Geophysics…**

SPY sill in the vicinity of claims VM 15-20. There is a clear disruption in the magnetic signature of the Spy sill. The resolution of the data is not sufficient to really get a clear understanding of what is happening to the sill, but there are several clear breaks.



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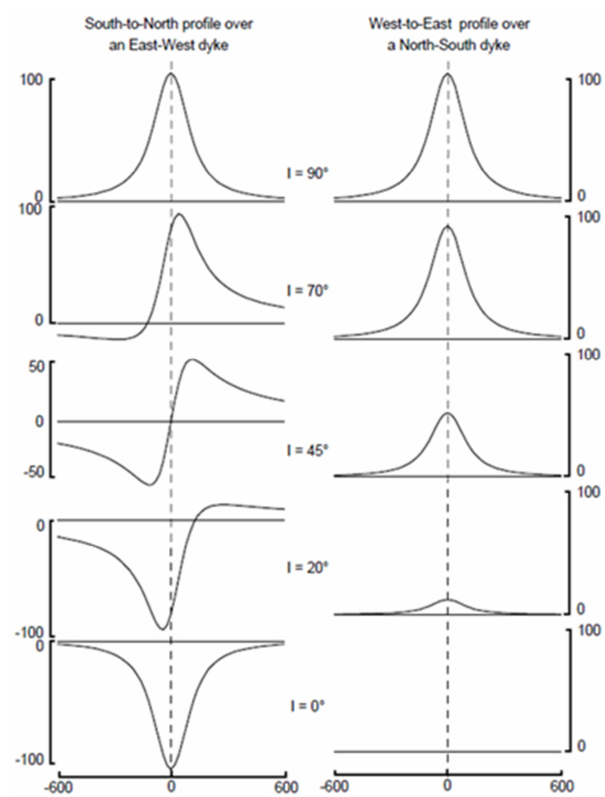
Spy Project – Airborne Geophysics – **Geophysics…**

Accuracy of delineating the sill can be effected by the airborne survey line spacing and survey height. Surveying in mountainous terrain means that ideal survey heights may not be attainable and that there will be variations in height above ground that will affect a particular survey line direction or areas. When a survey aircraft flies up slope its ability to drape is generally much better than when flying downslope. Because of this there is often a line to line pattern in the data are due to varying survey heights. This is generally accounted for in the contractor's data processing and levelling. Survey height above ground, in mountainous terrain, can diminish the ability to map weaker magnetic susceptibility contrasts. It is presumed that the data was acquired on 100 m lines, but this is not confirmed.

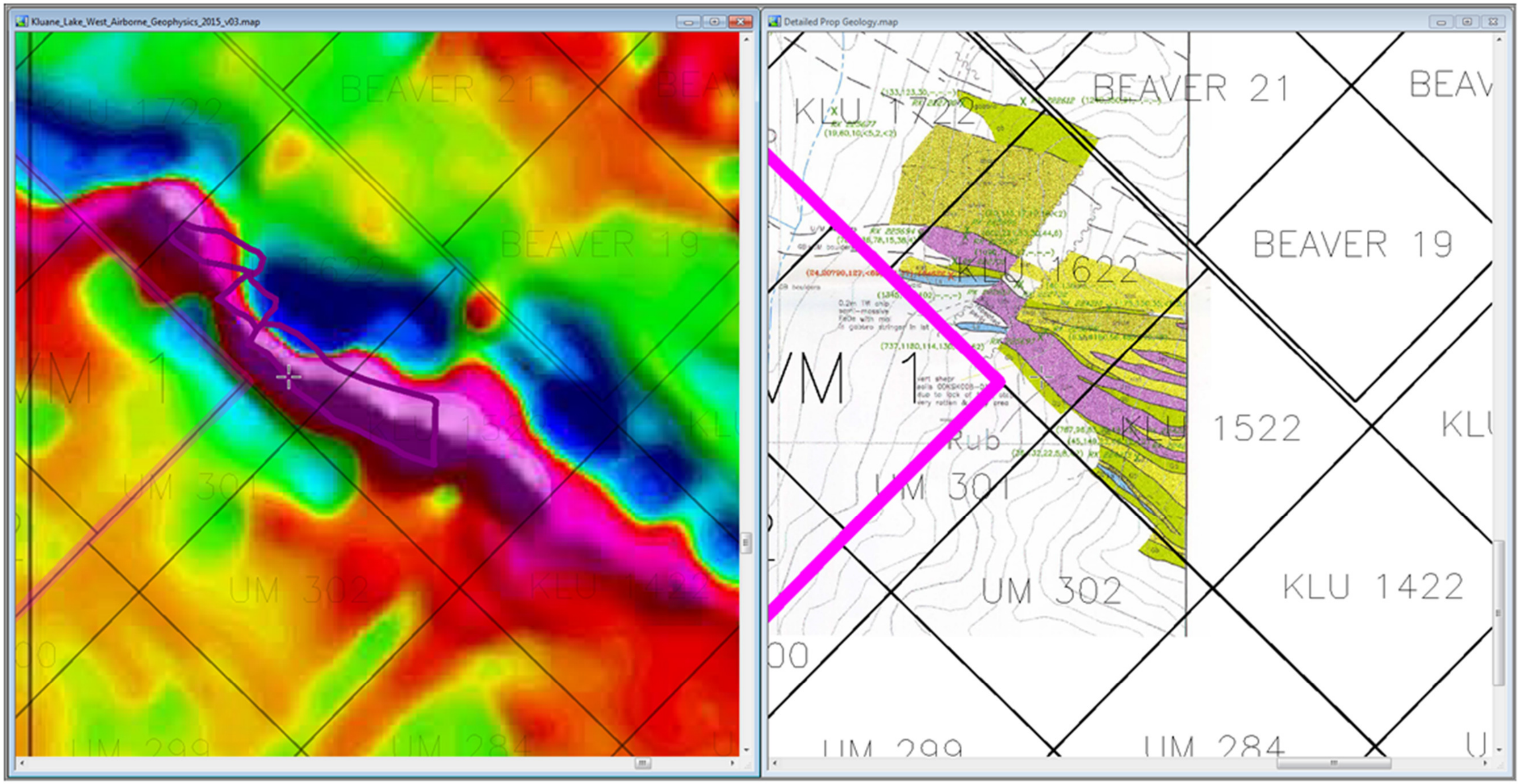
The 1996 data are images of TMI and CVG and not grid files that represent data values. This limits our ability to refine the data through additional filtering or even adjust colour distributions. If we had access to the original point data we could do more with respect to visualization and interpretation. The next few slides summarize the ability of the 1996 magnetic data to delineate the Spy sill. It is reasonable to expect some slight offsets between the data and the geologic mapping as the data we are using is the original total magnetic intensity (TMI) which has not been reduced to pole (RTP). RTP data more often give better accuracy with respect to location of the source. As surveys are conducted at increasing latitudes the earth's magnetic field inclination steepens. As the field inclination increases the differences in anomaly response shape between TMI and RTP become more similar. Interpretation of source location can be made more easily from TMI data at higher magnetic latitudes and the necessity to transform the TMI data to RTP becomes less. Magnetic responses over a dyke at various magnetic inclination's are illustrated in the right-hand figure. RTP data often enables a quicker visual interpretation of source location. However, in the presence of magnetic remanence in the RTP transform will not be correct and therefore interpretation of potential sources could be in error. RTP transforms TMI data from what ever inclination, at the source location, to an inclination of 90°. At low magnetic latitudes the RTP transformation becomes less stable.

TMI Profiles (RTP means I=90°)



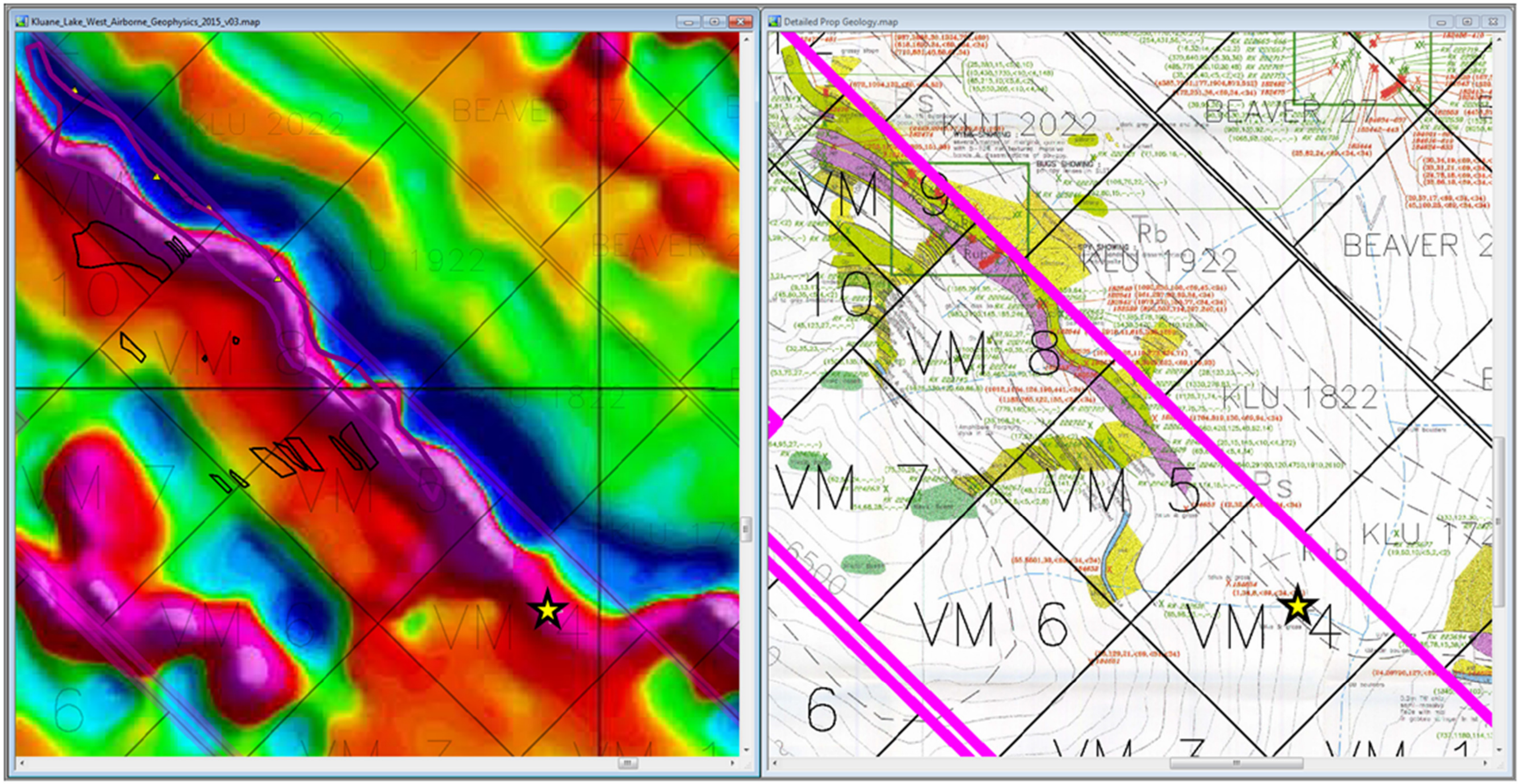
Spy Project – Airborne Geophysics – **Geophysics…**

Magnetic response of the Spy sill from the 1996 survey. The sill is clearly seen in the magnetic data and corresponds very well with the geologic mapping. Fine detail such as 50-75 m offsets are difficult to see in this data set.



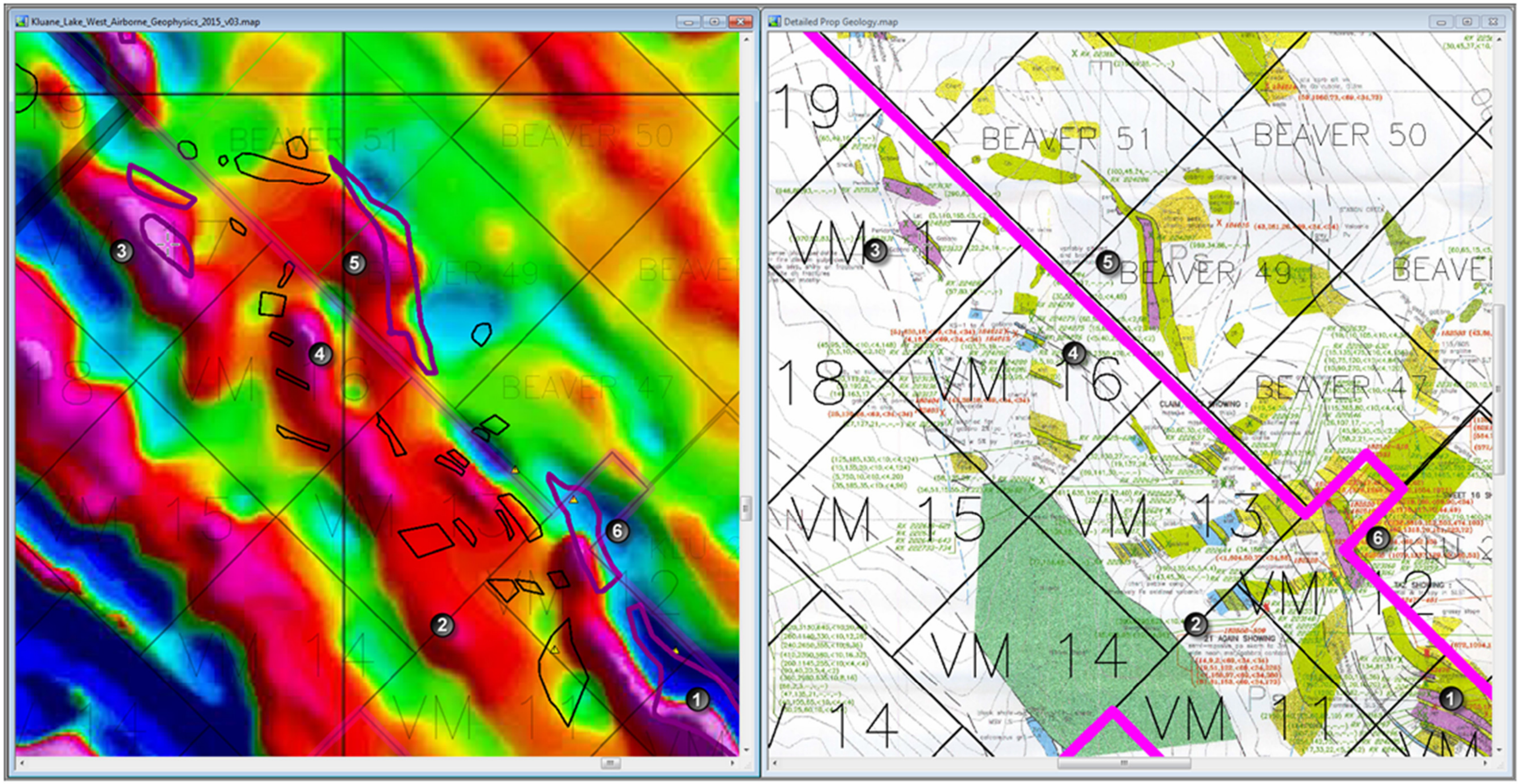
Spy Project – Airborne Geophysics – **Geophysics...**

The original digitizing of the Spy sill often includes a unit that is not directly uTu (?). Hence there will be some discrepancies between purple sill outline and the magnetic data. The Spy sill is delineated very well and correlates with subtle changes in strike as well as being mapped through the gap at claim VM 4. It looks as though the magnetic response in the gap (yellow star) is weaker, which is not too surprising given the topography and an expected loss of sill material. The survey aircraft may also be higher above ground and hence lower amplitude readings.



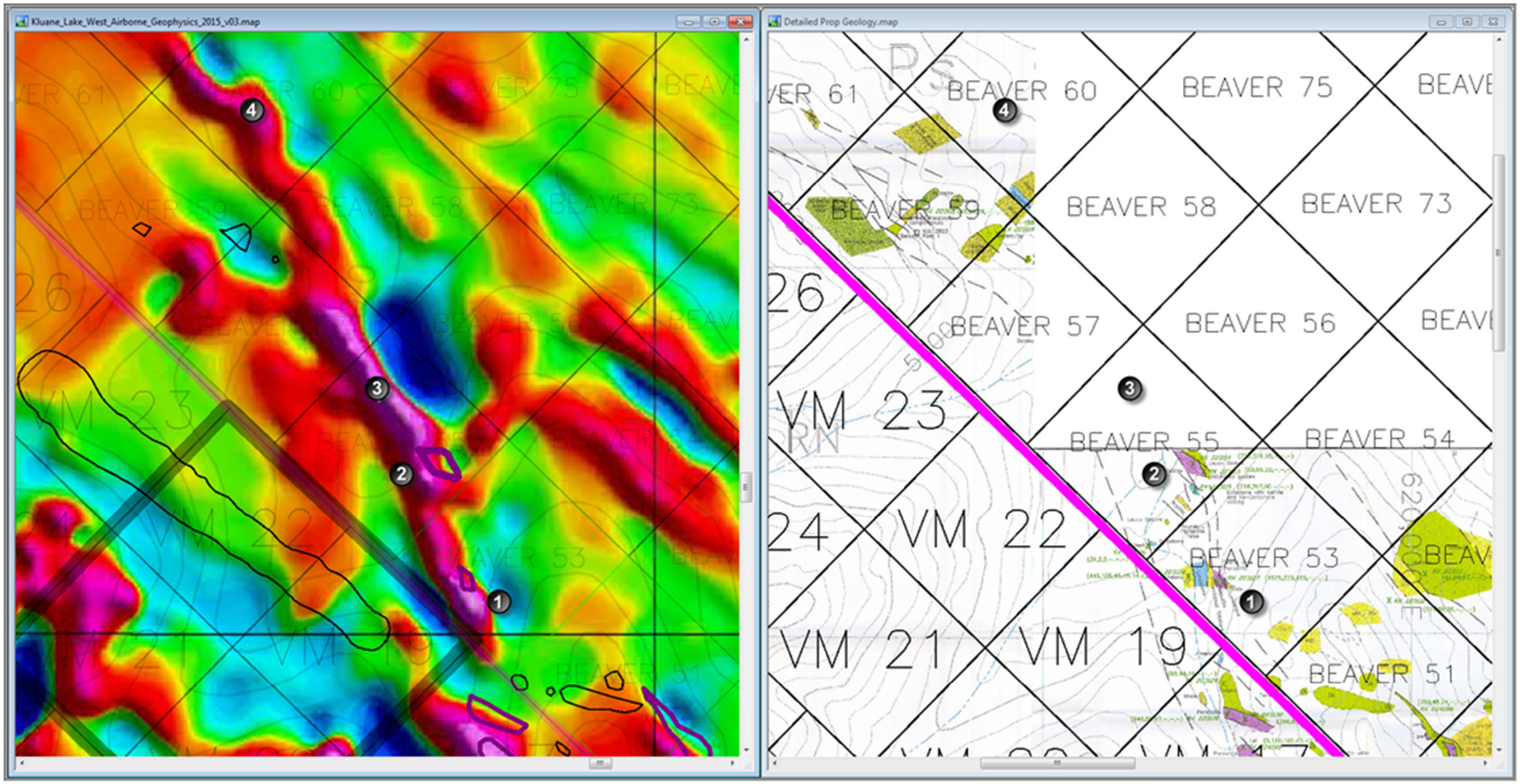
Spy Project – Airborne Geophysics – **Geophysics…**

Mapping a sill in this region is more difficult. There are instances where the correlation is reasonable (markers 1, 6, 5 and 3), but not as good as the two previous example slides. This image would indicate that there are multiple lithologies that are magnetic. Offsets in the location of the mapped Spy sill versus the magnetic data could be the result of survey data positioning, topographic effects and the amount of magnetic material present. Note that the mapped sill is not limited to uTu or Trub? only.



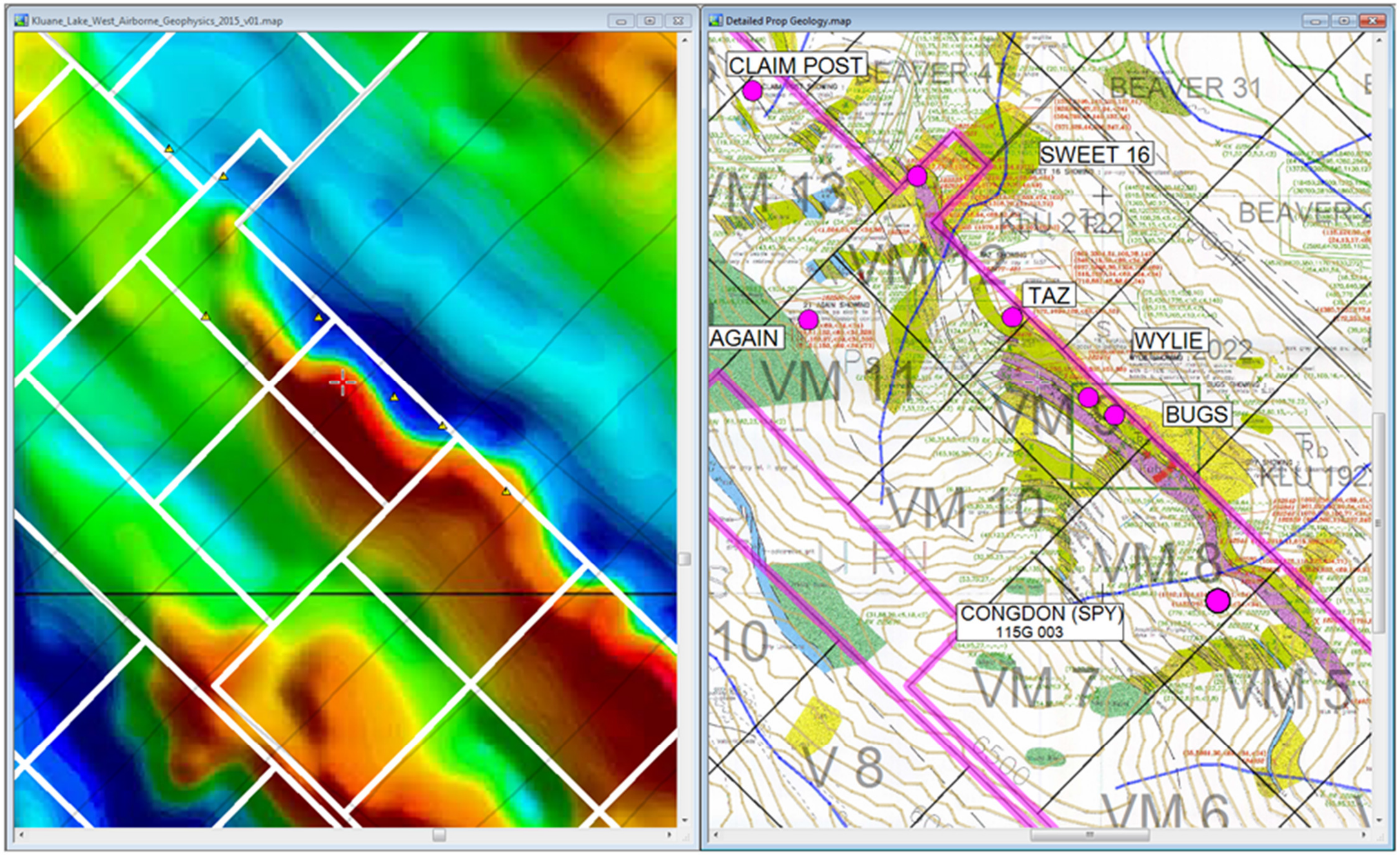
Spy Project – Airborne Geophysics – **Geophysics…**

The most northwestern mapped occurrence of the Spy sill is located at marker 2. The magnetic response is not coincident, but we don't firmly know how much we can trust the positioning of the magnetic data. The overall correlation between markers 1-3 along a clear magnetic trend is encouraging. Prospecting along the magnetic trend towards marker 4 and beyond is recommended.



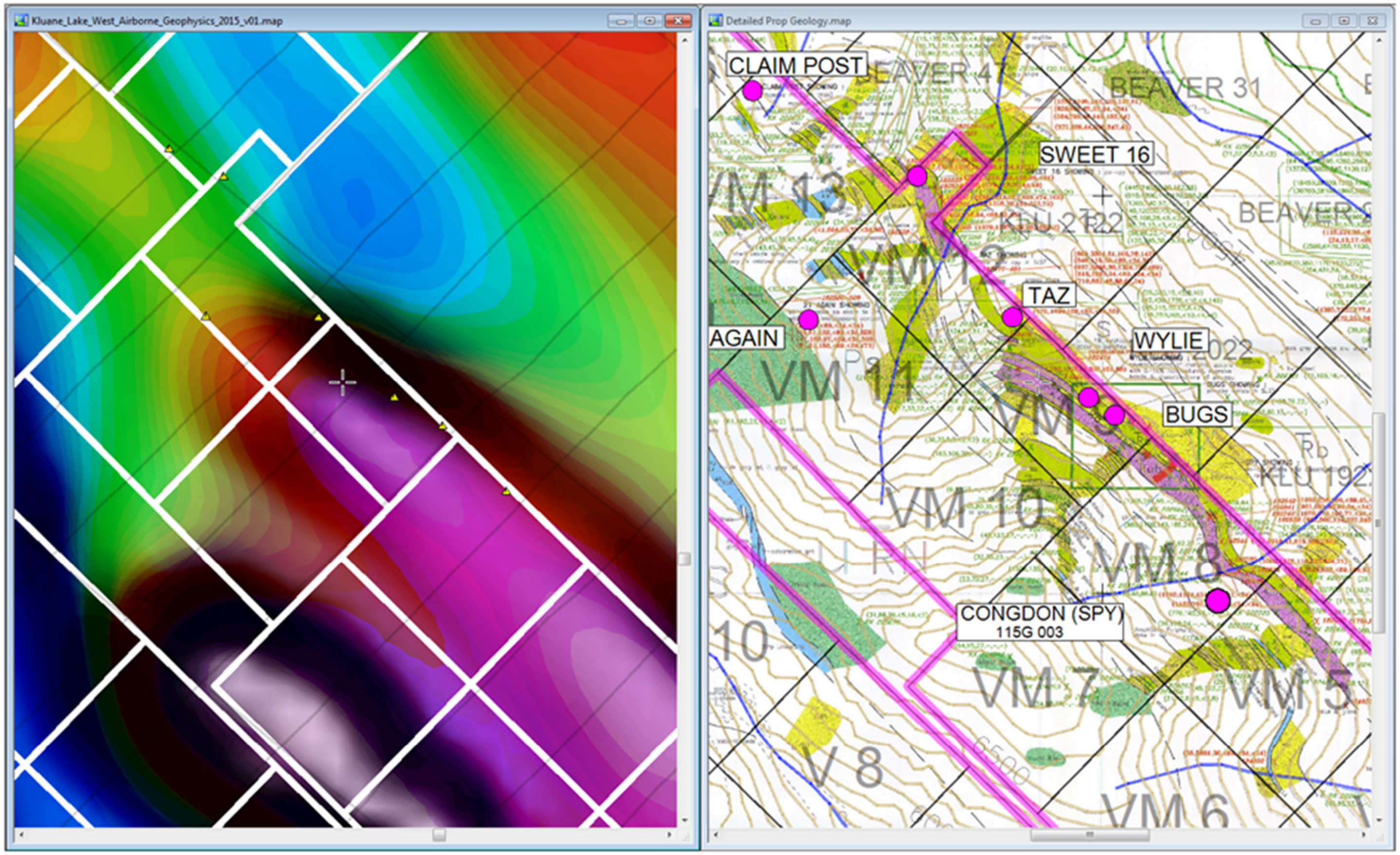
Spy Project – Airborne Geophysics – **Geophysics…**

MAG **1996** TMI data is compared with the 2015 MAG vertical gradient data in the next slide.



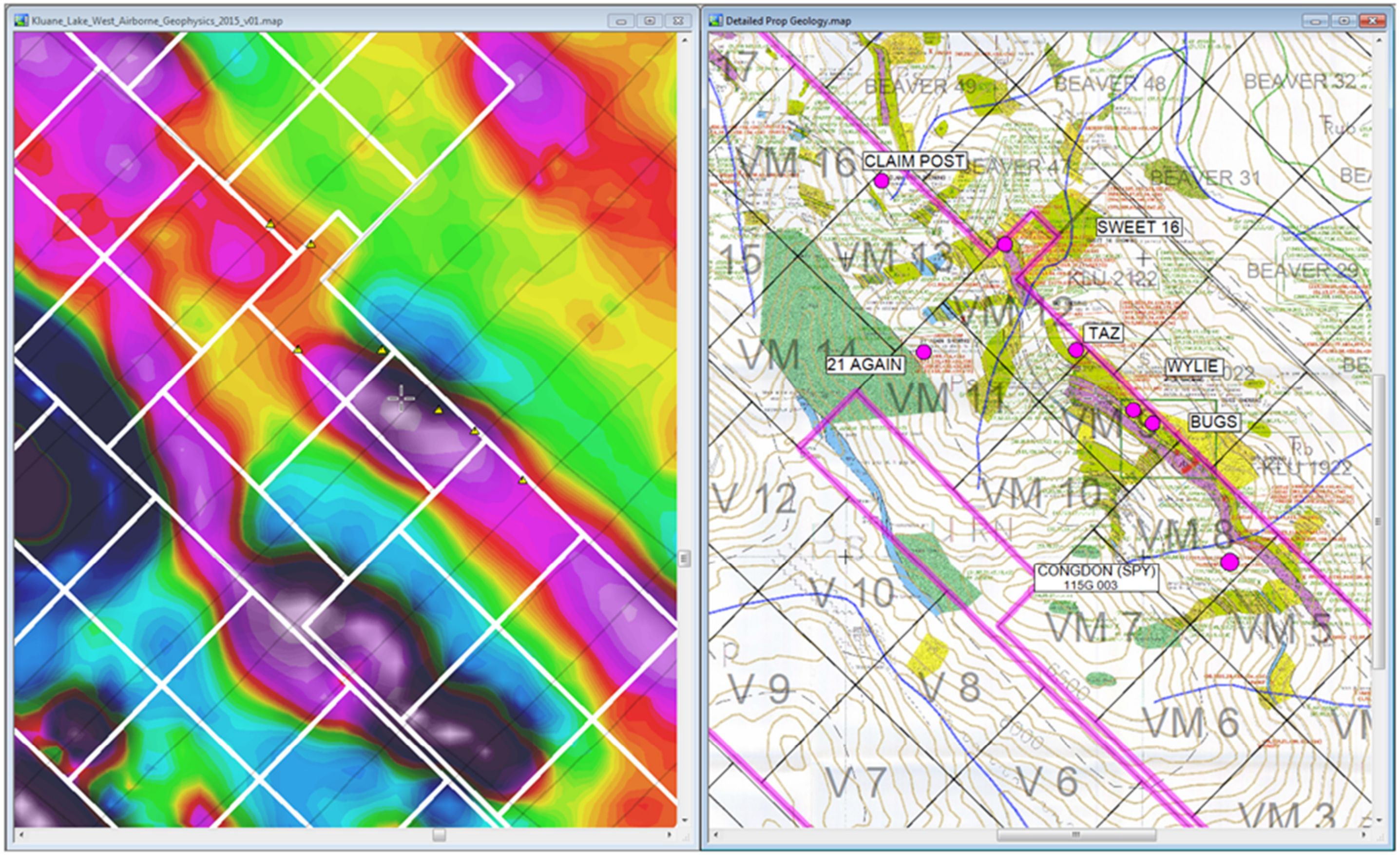
Spy Project – Airborne Geophysics – **Geophysics…**

The resolution of the MAG **2015** 1st Vertical Gradient response is significantly less detailed for delineating the sill and promoting future exploration.



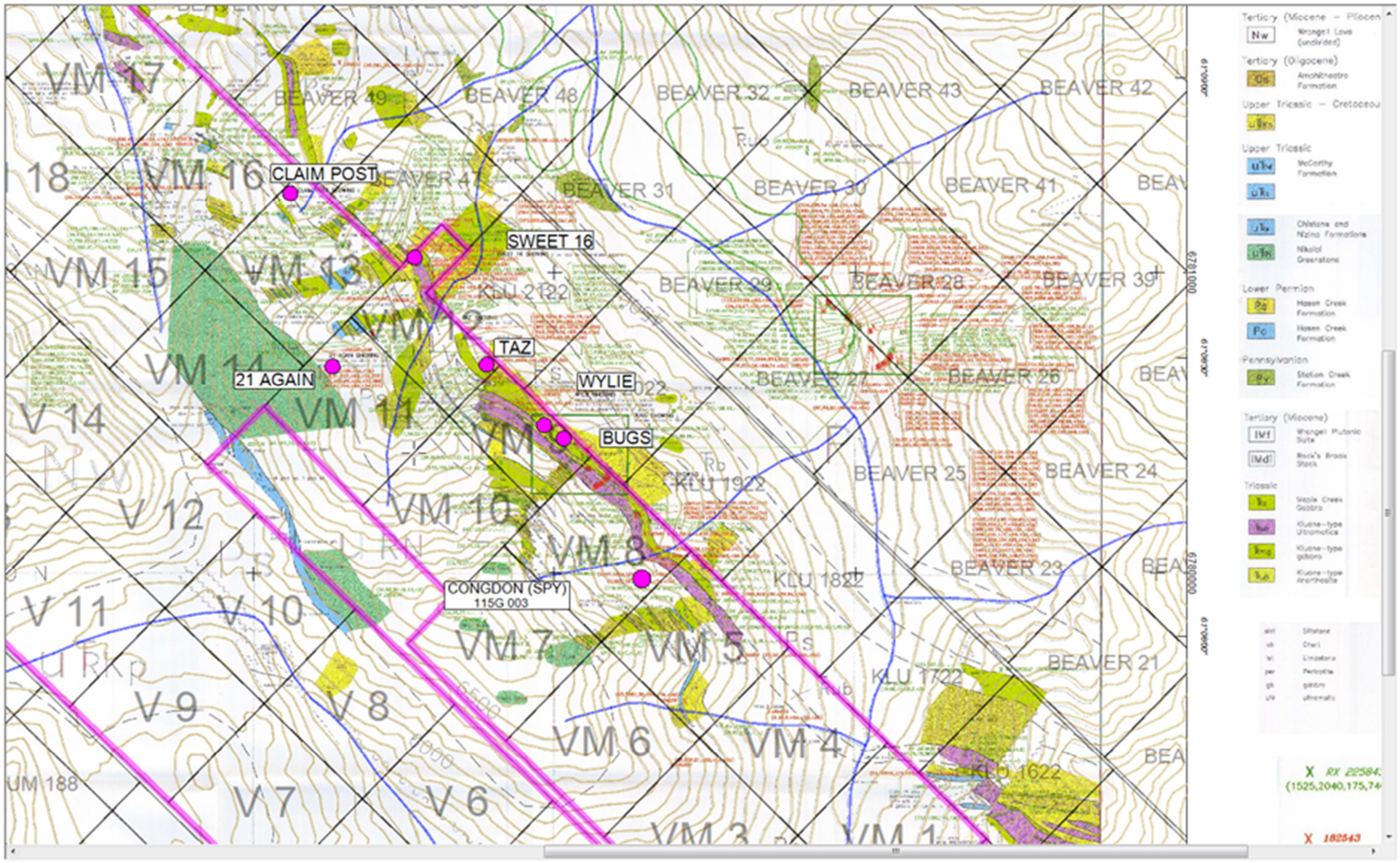
Spy Project – Airborne Geophysics – **Geophysics…**

The MAG 2015 2nd Vertical Gradient of TMI is clearly more helpful than the first vertical gradient, but still lacks the fine resolution of the 1996 data.



Spy Project – Airborne Geophysics – **Geophysics…**

Is there an issue with some positioning of the "showings"? To be investigated further.



Spy Project – Airborne Geophysics – **Geophysics...**

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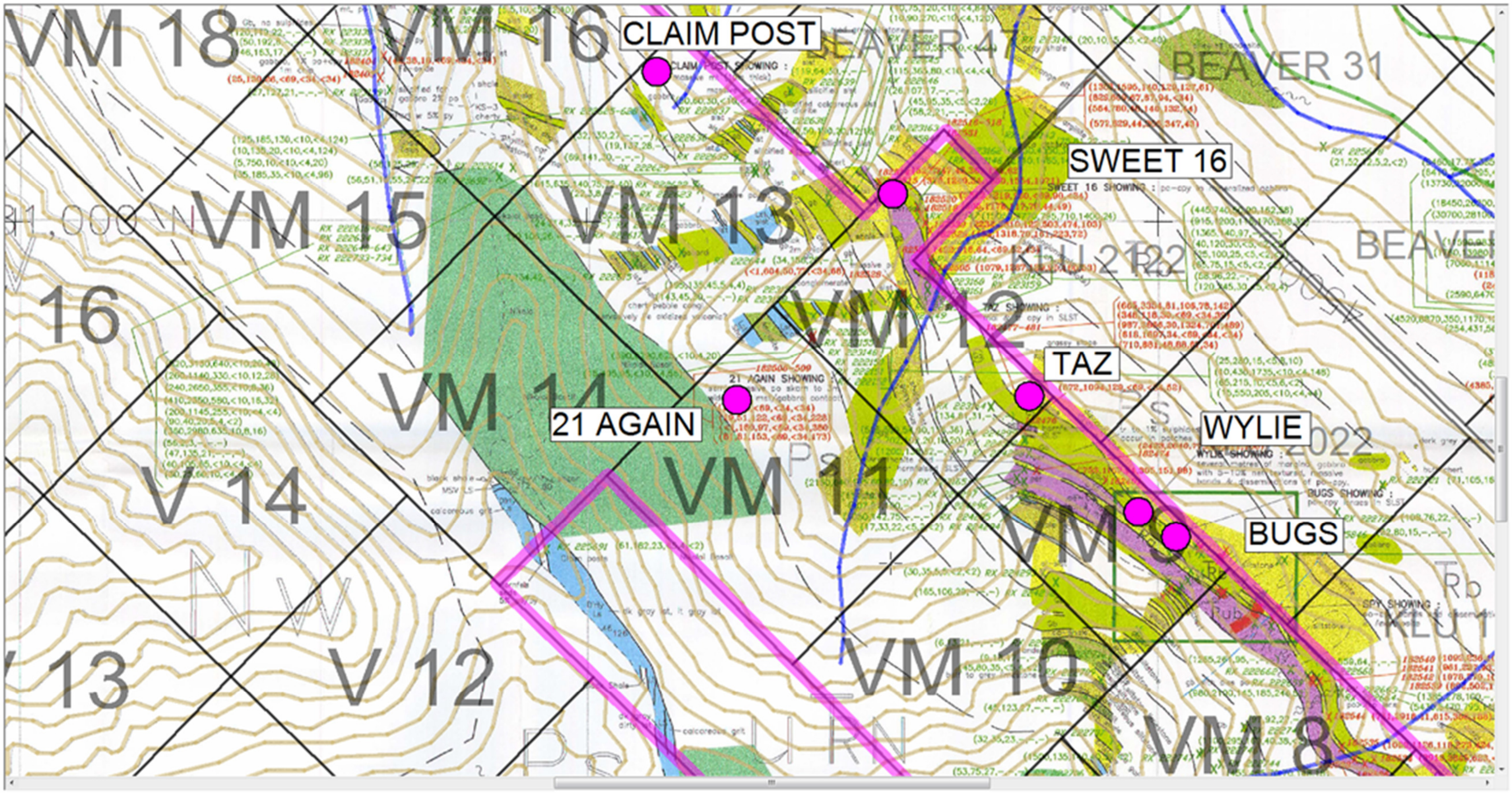


Spy Project – Airborne Geophysics – **Geophysics…**

Showings: there is some confusion with respect to symbol locations of symbols that appear to differ from the geology map

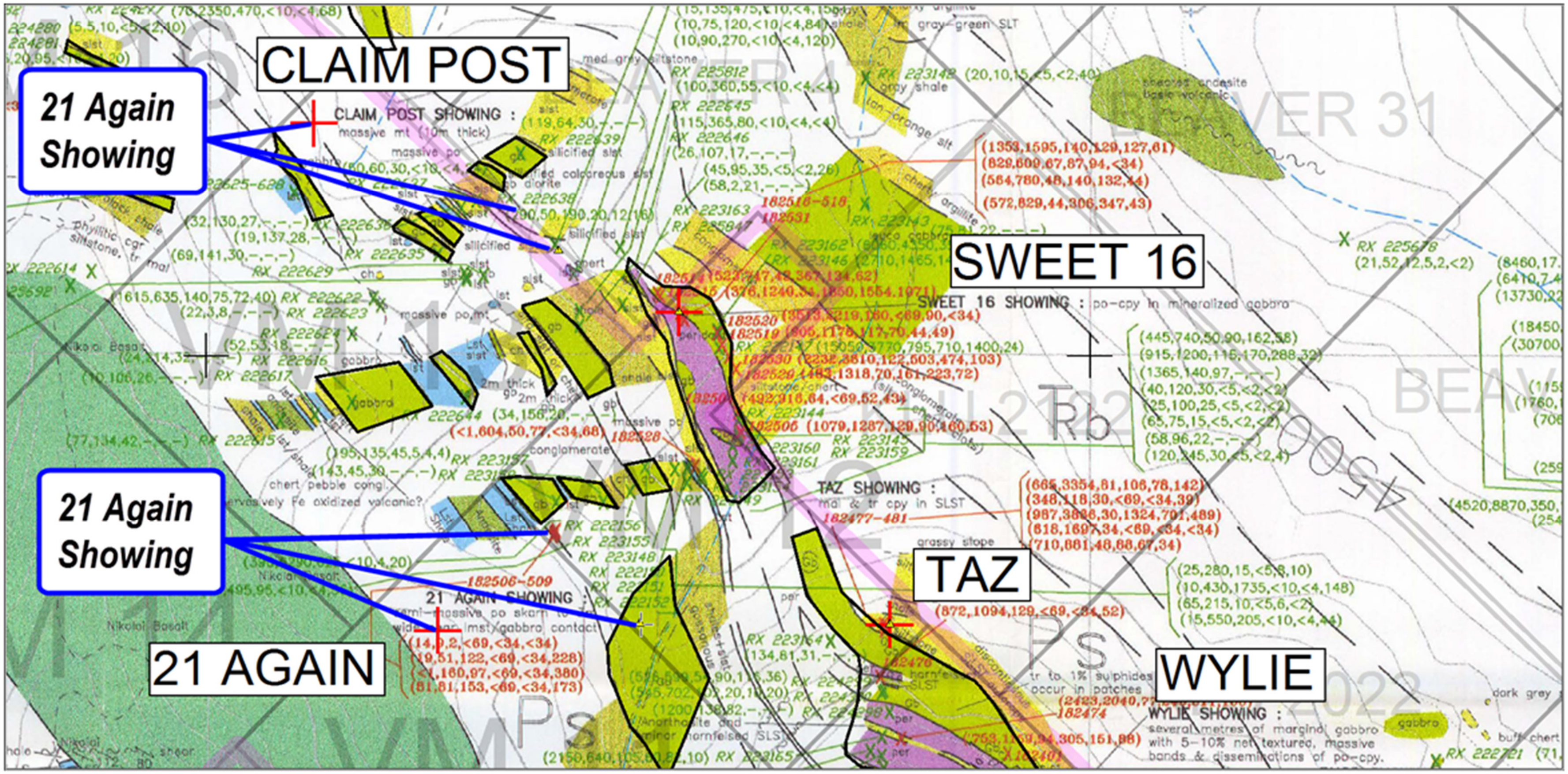
"Showing" layer from [Detailed Prop Geology.map (Geosoft format)] is slightly different from "Showings_pt.shp" in the GIS folder.

Claims and Spy Sill layers appear in the same locations between two different Geosoft maps: Kluane_lake_West_airborne_Geophysics_2015_V01 and Detailed Prop Geology.

The next two slides illustrate examples of showings that are in agreement and others that should have some input as to confirming their locations.

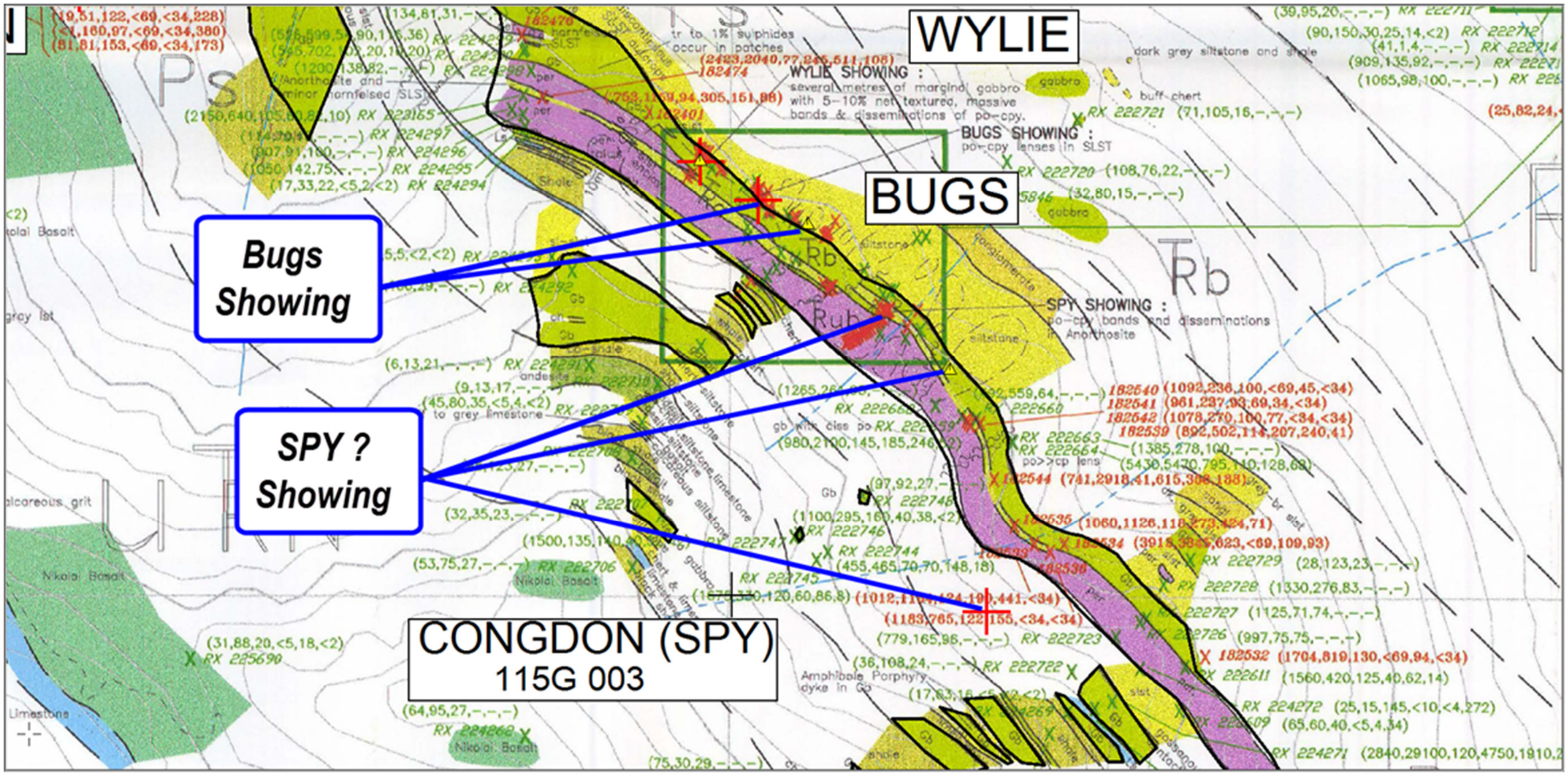
Spy Project – Airborne Geophysics – **Geophysics…**

Claim Post and **21 Again** need confirmation as to their correct locations. Sweet 16 and Taz agree well with symbol locations and showing markings on the geology map.



Spy Project – Airborne Geophysics – **Geophysics…**

Wylie seems okay. **Bugs** shows an offset between the two symbol sources. **Spy** also shows some confusion.

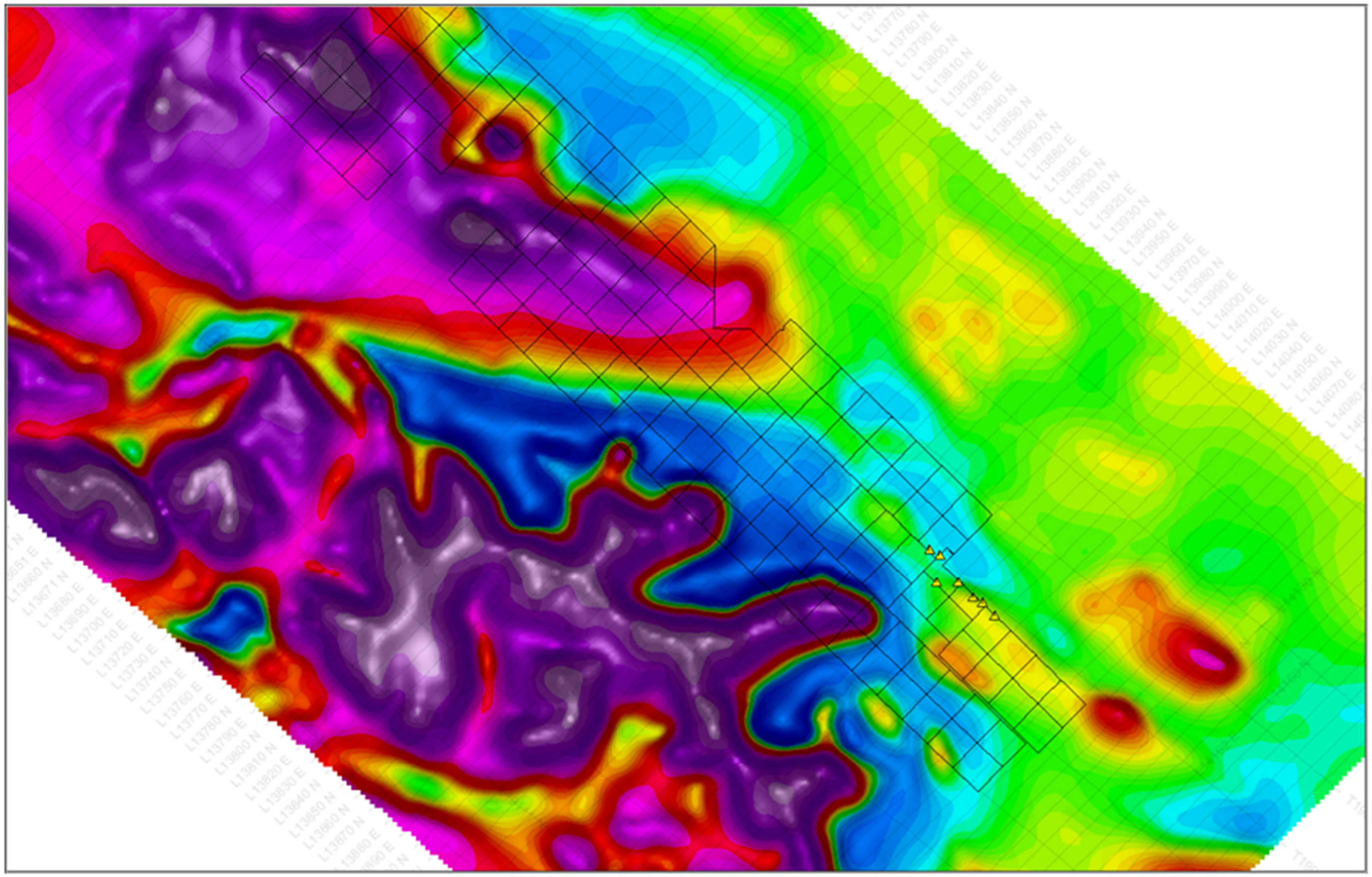


Spy Project – Airborne Geophysics – **Geophysics…**

The following images were provided to Tom McCandless during the initial discussions. They are referenced here for completeness of correspondence.

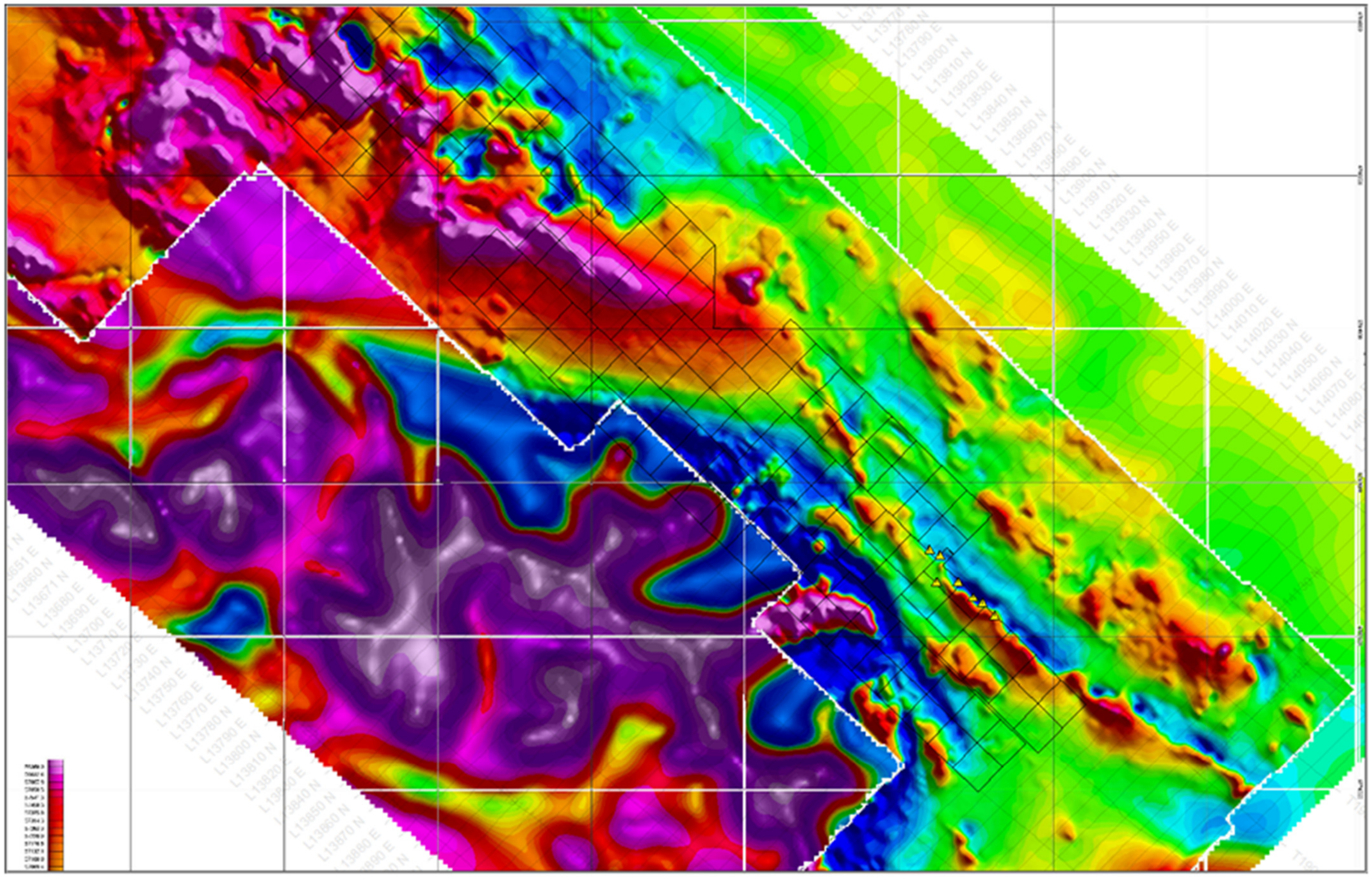
Spy Project – Airborne Geophysics – **Geophysics…**

Airborne Magnetic Survey 2015 - Kluane Lake West Aeromagnetic Survey – total magnetic intensity (TMI)



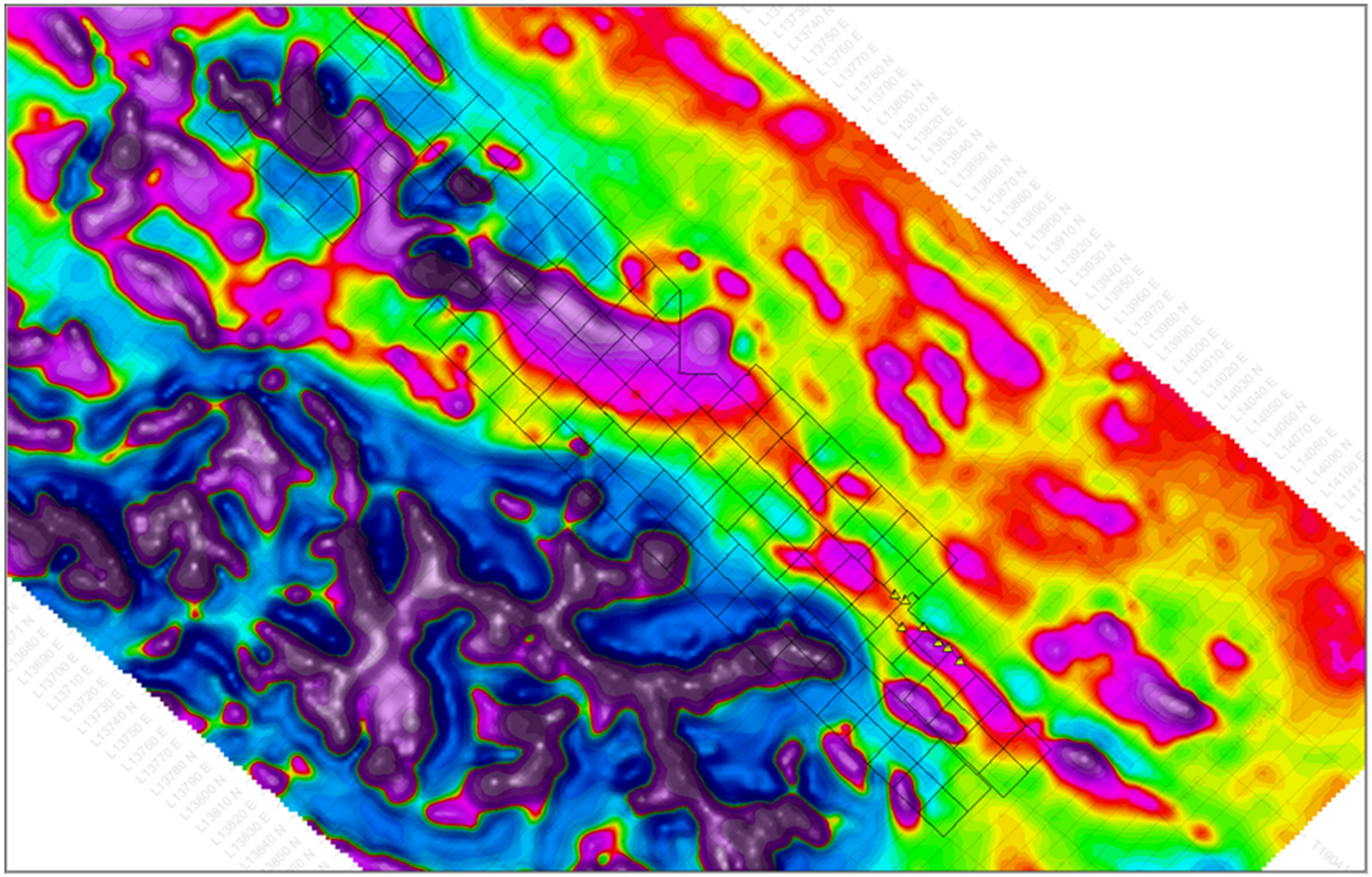
Spy Project – Airborne Geophysics – **Geophysics…**

Airborne Magnetic **Survey 1996** (re-processed 2006 by Resolve Ventures) from Aurora Geosciences 2014 report (Ashburton)



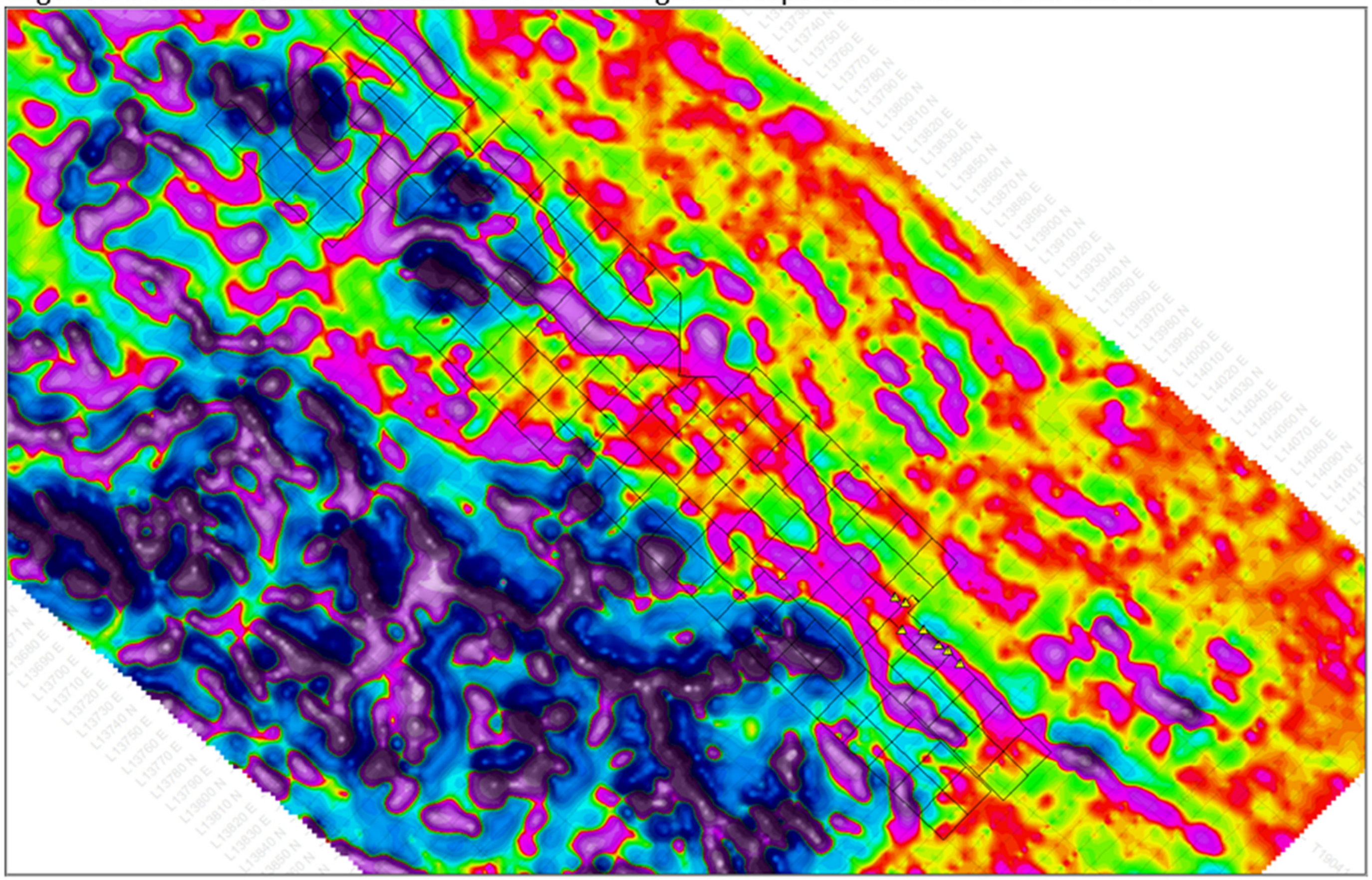
Spy Project – Airborne Geophysics – **Geophysics…**

2015 MAG vertical gradient



Spy Project – Airborne Geophysics – **Geophysics…**

2015 MAG 2nd vertical gradient. The use of a histogram colour bar makes it difficult to directly compare response amplitudes. The Spy sill response in this image looks similar to a continuation of a linear magnetic response to the NW and WNW.



Appendix 4 – Listing of map groups in the compilation map.

- Data
  - AGG_kluane_lake_west_block 1_main_60m_mag_rmi_se_rtp_1vg_kluane_lake_west_block 1_main_60m_mag_rmi_se_rtp_tilt_kl
  - Interp_thoughts
    - EM_RES7200Hz_1996_data
    - MAG_1996_data
    - MAG_SPY_Sill_1996_TMI_data
    - MAG_noodling_AGC
    - SPY_noodling
    - MAG_noodling_RTP
    - MAG_noodling_VRMI
    - MAG_thoughts_Ternary
    - MAG_CET_noodling
  - GIS
    - Coordinates_5000m
    - EDGE_Kluane_Lake_West_Block 1_Main_60m_MAG_RMI
    - PLY_mask SE area of interest for report 2015
    - SPF_claims_july2015_black
    - SPF_claims_july2015_white
    - Claims_VM_19-22
    - DXF_Quartz Claims property scale_Data_Quartz_Claims
  - GEOLOGY
    - SPF_Spy_sill_pg_pg_colour
    - SPF_Spy_sill_pg_pg
    - SPF_Showings_pt
    - SPF_Yukon_Bedrock_Contacts_and_Faults_cropped_SPY_ln
    - SPF_Yukon_Bedrock_Geology_cropped_SPY_pg
    - SPF_Yukon_Bedrock_Geology_cropped_SPY_coloured_polygon
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    - CET_Kluane_Lake_West_Block 1_Main_60m_MAG_RMI_SE_RTP_PS-3-3-5_pos_THRESH_SKEL
    - CET_Kluane_Lake_West_Block 1_Main_60m_MAG_RMI_SE_RTP_PS-3-4-5_pos_THRESH_SKEL
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    - CET_Kluane_Lake_West_Block 1_Main_60m_MAG_RMI_SE_RTP_PS-11-4-5_neg_THRESH_SKEL
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    - CET_Kluane_Lake_West_Block 1_Main_60m_MAG_RMI_SE_RTP_PC-21-4-5_THRESH_SKEL
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    - SYMB_Kluane_Lake_West_60m_MAG_RMI_SE_RTP_CurvatureAnalysis_TROUGHS
  - MAG_SE_Profiles
    - PROFILE_Kluane Lake West_Block_1_Main_SRVMGRES_1VG
    - PROFILE_Kluane Lake West_Block_1_Main_SRVMGRES_1VG_0.1_0
    - PROFILE_Kluane Lake West_Block_1_Main_SRVMGRES_ASIG
    - PROFILE_Kluane Lake West - Block 1 - Main - GDB Point Data - GDB Données ponctuelles_SRVMGRES_100mm_-300nT
  - PATH_Kluane Lake West - Block 1 - Main - GDB Point Data - GDB Données ponctuelles
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  - PLY_mask full area of data
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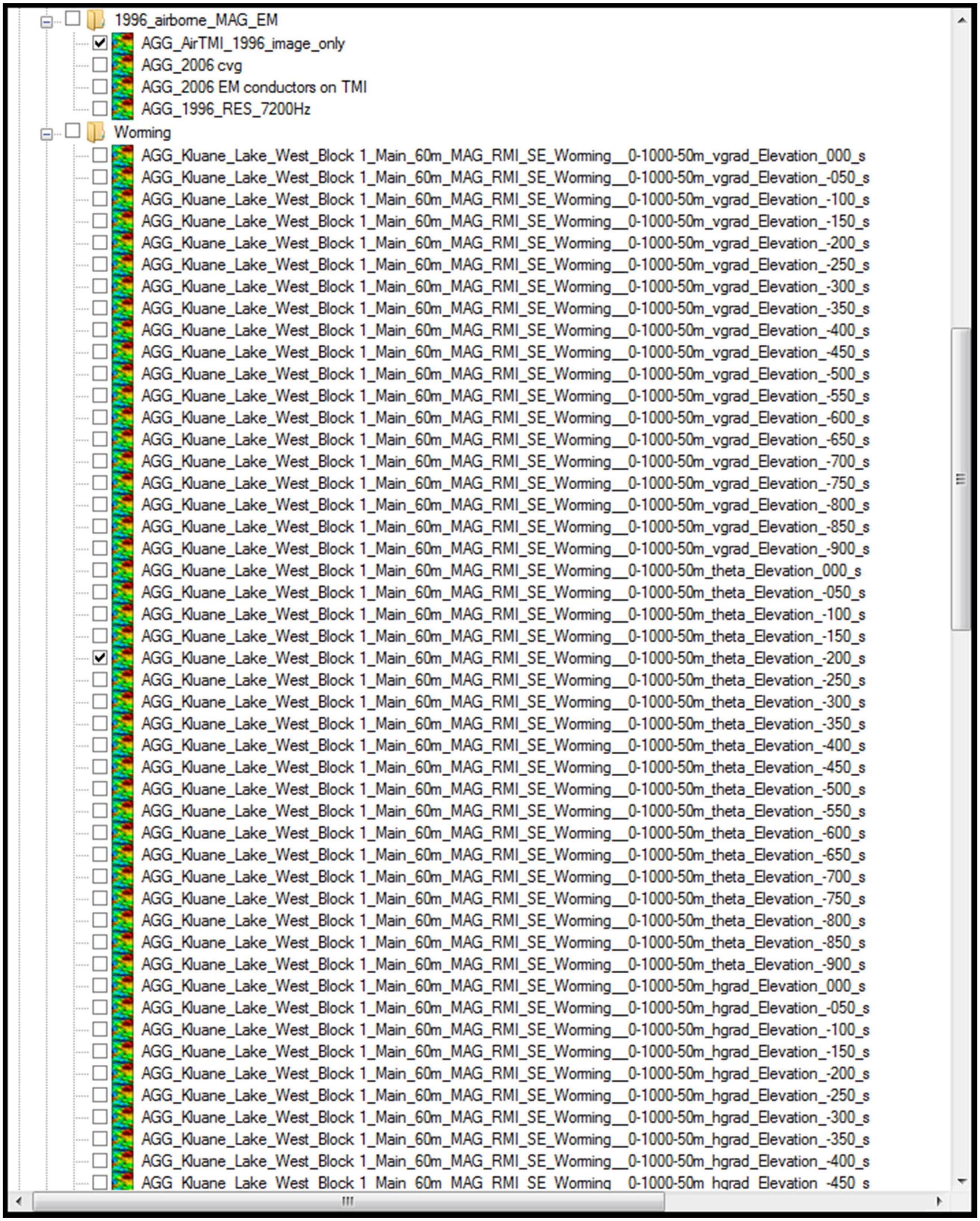
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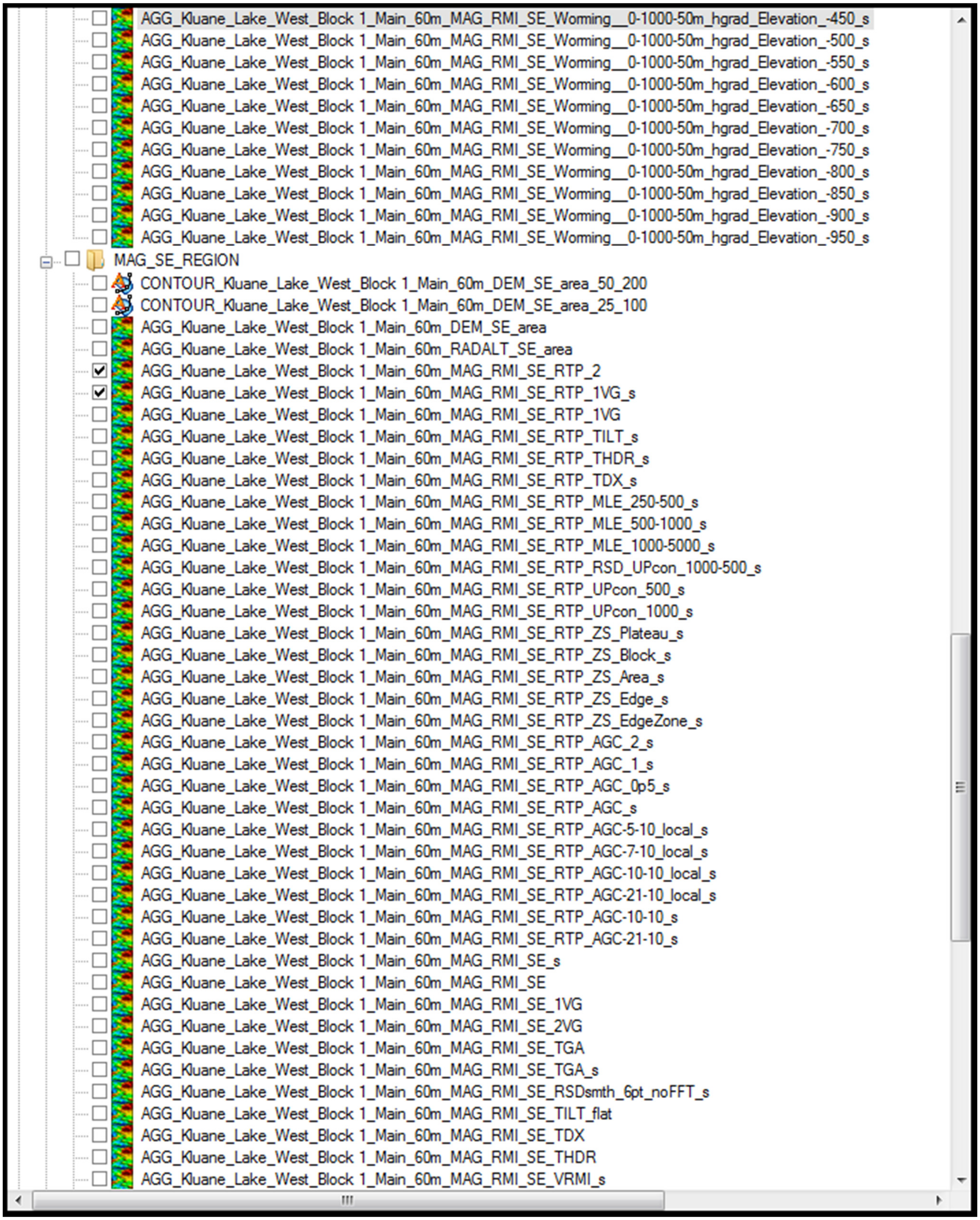
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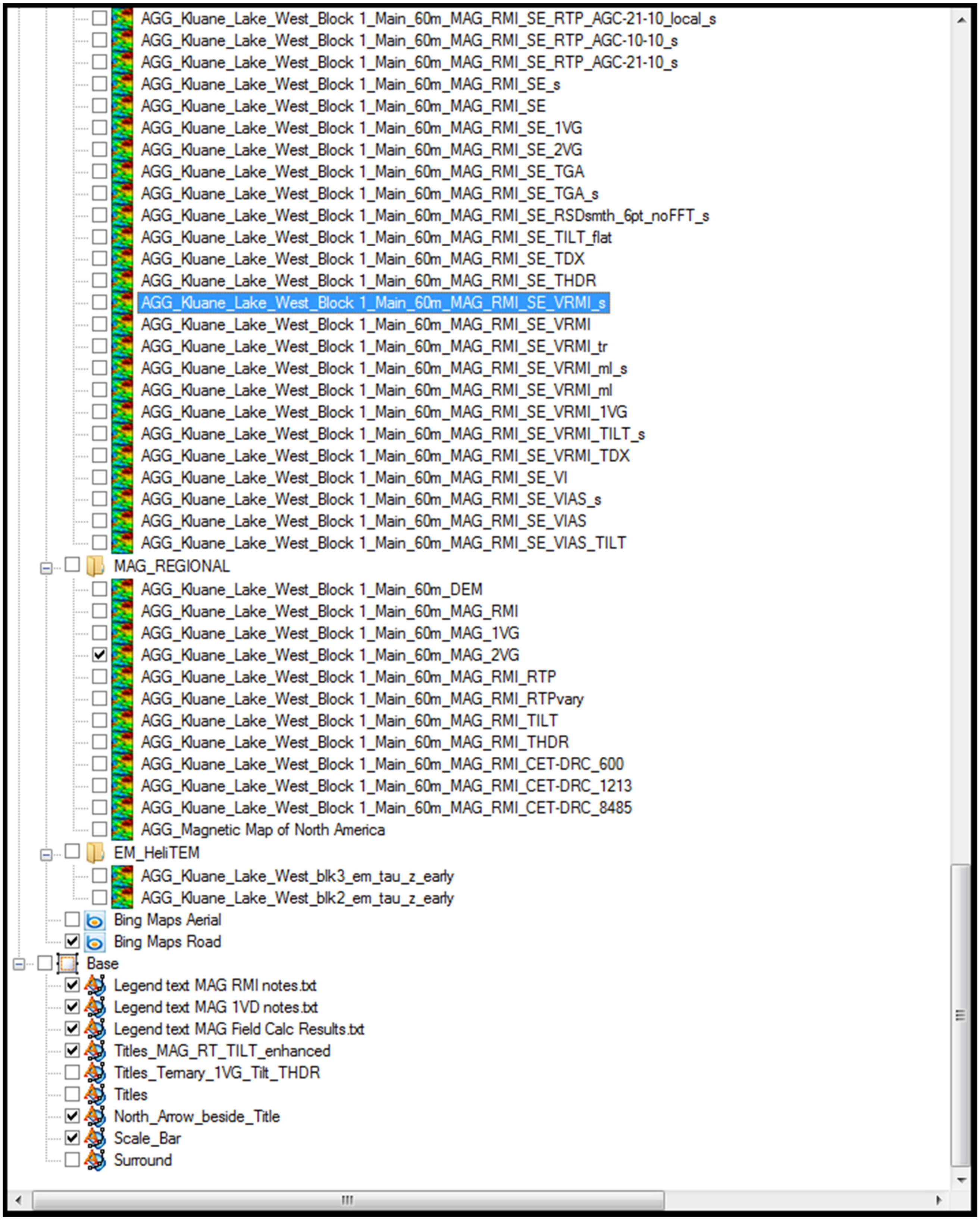
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Bing Maps Road
Base
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Legend text MAG 1VD notes.txt
Legend text MAG Field Calc Results.txt
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Titles_Ternary_1VG_Tilt_THDR
Titles
North_Arrow_beside_Title
Scale_Bar
Surround

Appendix 5 – Glossary of geophysical data terms.

Automatic Gain Filter	AGC	The purpose is to apply automatic gain compensation to a grid. After isolating signal and background components in the input grid for a given window size, a correction is applied to the signal component in order to equalize its amplitude over the grid. (source Geosoft Help document) AGC: 10, 10, full amplitude.
Bing Maps Aerial		Being maps service is available in Geosoft Oasis Montaj 7.5. It is an online service that is available to a licensed version of Oasis montaj. Aerial views available include aerial, road or a hybrid image. Without a Geosoft license this map group will not function unless the imagery has been exported as a GeoTIFF and then included in the map compilation.
CanVec		CanVec is a digital cartographic reference product produced by Natural Resources Canada: http://geogratis.cgdi.gc.ca/geogratis/en/product/search.do?id=5460AA9D-54CD-8349-C95E-1A4D03172FDF
CDED		Canadian digital elevation data: http://www.geobase.ca/geobase/en/data/cded/index.html
CET entropy	CET_Entropy_PS_...	"The Entropy plugin provides a measure of the textural information within localized windows (or neighbourhoods) in a dataset. It measures the statistical randomness of a neighbourhood data values by first quantizing the data into discrete bins and then analyzing the total number of distinct values resultant from that quantization. The output grid comprises real values indicating the amount of randomness exhibited by the texture in the neighbourhood centered about each cell. Regions exhibiting high statistical randomness are considered high in entropy whereas regions of little randomness have low entropy." This data input is used for the phase symmetry calculation.
CET phase congruency	CET_Phase_Con or CET_PC_	Enhances discontinuities or edges. "Phase congruency locates probable edge features by identifying points were local spatial frequencies are in phase."

CET phase symmetry	CET_Phase_SYM or CET_PS_	Enhances the appearance of linear features. "Phase symmetry highlights zones that are likely to contain axes of symmetry. A line like feature will produce strong symmetry responses. For example, CET_Phase_SYM_RTP_3-4-5 represents phase symmetry applied to the RTP data using a starting wavelength of three cells (60 m), 4 scales of wavelengths (60 m, 120 m, 240 m, 480 m) and a noise setting of 5.
CET standard deviation	CET_STD_PS_...	"Standard deviation provides an estimate of the local variation in the data. At each location in the grid, it calculates the standard deviation of the data values within the local neighbourhood. Features of significance often exhibit high variability with respect to the background signal." This data input is used for the phase symmetry calculation.
DEM		Digital elevation model otherwise known as DTM or a calculated topography surface.
Pseudo Gravity	pGRAV	The gravity field calculated from magnetic-field measurements by means of Poisson's relation (q.v.). Calculation involves conversion of susceptibility to density and vertical integration of reduced-to-the-pole magnetic data. The original definition of this term (Baranov, 1957) referred purely to pole reduction (from SEG Encyclopedia Dictionary of Applied Geophysics 4th Edition). This transform enhances responses associated with deep magnetic sources and mutes shallow magnetic sources. The pseudogravity data can be modelled using gravity modelling tools. The pseudogravity transform assumes that the magnetization direction is the same as the earth's main magnetic field. Therefore, if remanent responses are present in the data the transform will not be correct. This is similar to the RTP transform which is also susceptible to magnetic remanence.

Reduced to Pole	RTP	The TMI data is processed/transformed as though the data were acquired at a magnetic field inclination is 90°. The process simplifies interpretation by removing anomaly asymmetry related to magnetic inclination/declination at the survey location. Anomalies are then located above causative sources (in theory, when excluding effects of remanent magnetization). RTP transformation becomes less stable below 20° latitude. The left image represents TMI and the right image the RTP. RTP will be the left image in the remainder of the glossary.
Residual Magnetic data – (by smoothing)	RSD_smth_7pt_noFFT	Input data is smoothed using a 7 point filter, but in this case the smoothed result is deleted and only the difference is kept for the purpose of defining near surface responses (short wavelength). This grid is then set semi-transparent as an overlay over the original data to create a hybrid image that shows both near surface complexity along with deeper/longer wavelength responses from the original TMI or RTP grids. (Also done as 3 & 11 point filters) Shown with RTP semi-transparent overlay.
Residual Magnetic data variants	RSD	This can be accomplished by removal of simple planes or levels, IGRF values or the input data upward continued to various levels.
RMI (residual magnetic intensity)	TMI_RSD or RMI	Residual magnetic intensity is often in reference to TMI data that has had the IGRF removed.
TDX & Theta	TDX/Theta	TDX is arc Tan(THDR/1VG) and has a much sharper gradient over a contact. TILT (left) and TDX (right image). TDX is a robust edge detection technique. The sharper edge responses can speed up recognition of trend changes or discontinuities. It complements CET phase congruency lineament analysis.
Ternary Image: 1VG, TILT, THDR	_1VG_TILT_THDR	A ternary image generated using either RGB or CMY colour distributions (typically using a histogram colour bar) from three grids: vertical gradient, tilt derivative and total horizontal derivative. A useful product for highlighting a response domains, data trends and structural features/form lines. (RGB in this example)

Tilt Angle	TILT	Tilt angle is the arc tan of the ratio of the vertical derivative to the total horizontal derivative (1VG/THDR). The location of the vertical contact would be at 0°. Typically performed on the RTP data. Useful product for structural or form line mapping. Is helpful for location source edges. It also has the tendency to bring out weaker features similar to AGC.
Total Gradient (a.k.a. Analytic Signal)	TGA (ASIG, AS)	Generally produced on gridded data it is the square root of the sum of X, Y and Z gradients squared. This process converts all data responses to positive values. ASIG is performed on the TMI data to avoid any RTP transformation artifacts that may be hidden in the RTP data. As well, if there is magnetic remanence effecting the magnetic data then the RTP grid will not truly represent the TMI in the affected areas and thus an RTP_ASIG may have artifacts as well. TMI analytic signal reduces the magnetic data to responses where the maxima mark the edges of magnetized bodies (highest gradient locations though this does depend on depth of burial, geometry and size relative to the data sampling). Current thinking is proposing that we call this product total gradient or total gradient anomaly (TGA). Analytic signal was originally defined for profile data and the theory gets a little bumpy when applying it to XYZ components.
Total Horizontal Derivative	THDR	Total horizontal derivative or gradient (square root of the sum of X and Y gradients are squared) is calculated on gridded data. A useful product for mapping edges of responses and texture within regions/domains.
TMI or TF (Total Magnetic Intensity)	TMI	The basic magnetic data collected.
Upward Continued	Upcon_200m	Magnetic data is calculated or transformed from the original observation height to a new height above ground (thus simulating what the data could look like had the survey been flown at a higher altitude). Upcon 200m would indicate data were upward continued by 200 m. This can be used for reducing near surface high-frequency responses (that can be real geologic noise) or studying magnetic sources at different depths. As well it is used in Worming where data are upward continued at numerous levels and their gradient responses studied.

Upward Continued Difference Grids	RSD_Upcon_200-500m	This is used to produce residual or regional removed data images (eg UPcon of 200m minus UPcon of 500m). It can be used as a method of looking at shallow versus medium versus a deep responding features. For example, upward continued data 1000 m minus upward continued 3000 m will not be showing any nearer surface features.
Vector Residual Magnetic Intensity	VRMI	The Earth's magnetic field is a vector, but typically we only measured magnitude called the TMI. The advantage of the TMI is that it is insensitive to the angular orientation of the sensor. However, when remanent magnetization is present and in a direction that is different to the main Earth field then the TMI will not truly represent the strength of magnetization which leads to difficulties and interpretation. In the presence of strong remanent magnetization it is possible that a source will generate no significant TMI anomaly (for example if the magnetization direction is opposite to the inducing field and of twice the magnitude, Mark Dransfield, 2003). The VRMI is vector residual magnetic intensity and is the result of subtracting the vector components of the magnetic field from the TMI data (VRMI as described in Dransfield's paper is based on a magnetic survey where actual vector magnetic data was acquired). The VRMI presented here is calculated from gridded TMI data as a filter product. When the TMI and the VRMI are not in agreement is potentially due to the fact that remanent magnetization exists. In the example given by Mark Dransfield, 2003 he notes that a particular target was expressed by a negative response in the TMI, but the VRMI maps this target as positive. He comments that "the availability of both the TMI and VRMI allows rapid, unequivocal identification of regions of strong remanence in directions different to the main field". Presumably then if remanent magnetization existed in the same direction as the main field then this VRMI product may not highlight this. VRMI may also be filtered further or used in 3D inversion with a magnetic inclination of 90°.
Vertical Gradient 1st – MEASURED	1VGm	Some airborne/ground surveys physically measure the vertical gradient between two sensors.

Vertical Gradient 1st (or Derivative)	1VG (dZ)	A standard data processing product used to suppress long wavelength deep responses and accentuate or sharpen near surface responses. This is calculated on 2D gridded data. If calculated on line data then name it “1VG1d”. Also noted as: VD, VG, CVG, FVD, VDR (as opposed to HDR) and likely more abbreviations.
Vertical Gradient 2nd (or Derivative)	2VG	The second vertical derivative of the original TMI data. Can be calculated on grids or original line data.
Vertical Gradient Calculated (or CVG)	1VG	CVG is a commonly used abbreviation
Vertical Gradient Measured (or MVG)	1VGm	As mentioned previously
Vertical Integral	iZ	The vertical integral of the input data. Other variants are iZdX, iZdy which are horizontal gradients of iZ. Integration is the inverse of differentiation. Derivative filters sharpen and integrals amplify low frequency content.
Vertical Integral then Analytic Signal	VIAS_	TMI data is vertically integrated and then the analytic signal is taken. This process can help to identify magnetic structure in areas where remnant magnetism overpowers the ambient field. VIAS may also be filtered as noted in this glossary. This data can be used for 3D magnetic inversion assuming a field inclination of 90°. This can be useful for obtaining a workaround solution when suspected magnetic remanence is causing a problem with an inversion result.
ZS AREA Filter (Profile Analyst GeoFilters)	_ZS_Area	Anomaly edge and block enhancement filter.
ZS BLOCK Filter (Profile Analyst GeoFilters)	_ZS_Plateau	Anomaly edge and block enhancement filter.
ZS EDGE Filter (Profile Analyst GeoFilters)	_ZS_Edge	Anomaly edge and block enhancement filter.
ZS EDGE zone Filter (Profile Analyst GeoFilters)	_ZS_EdgeZone	Anomaly edge and block enhancement filter.
ZS PLATEAU Filter (Profile Analyst GeoFilters)	_ZS_Block	Anomaly edge and block enhancement filter.