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To: Russell Fulton

From: Kate Hine

Date: 10/07/2012

Re: Anomaly 370 magnetic modelling

Anomaly 370 – Background Information

Anomaly 370 was identified by RGC Exploration nearly two decades ago. It is an isolated magnetic anomaly, just west of the Tenth Legion Fault in a favourable structural setting and uncertain but potentially favourable Crimson Creek or Upper Oonah Formation rocks.

The ground magnetic survey over anomaly 370 was acquired on the pre-existing RGC grid i.e. 200m spaced east-west lines. This data marginally improves the existing aeromagnetic data, but significantly better results could be expected if the lines were infilled to 100m or even 50m spacing. The data is in GDA94 MGAZn55 coordinates. The regional WTRMP data is commonly available in both AGD66 AMG Zn55 and GDA94 MGAZn55. Please ensure that all datasets are used with their correct coordinate systems in order

Anomaly 370 – Ground magnetic data

The ground magnetic data is on 6 east west lines spaced 200m apart. The data is periodically heavily affected by poor GPS satellite lock, thus some care must be taken with modelling, particularly if using the elevation readings.

The strongest response by far is found on line 3000. This anomaly is a narrow (<100m wide), 120nT peak. Strong responses are also observed on line 4000 and 5000, respectively 200m and 400m north of line 3000. The area is otherwise quite magnetically quiet. Figure XX shows the profiles of the magnetic data superimposed on the gridded ground TMI response. The strong peak on line 3000 is clear.

Anomaly 370 – modelling approach

The wide line spacing means we are limited to 2.5D modelling. 2D and 2.5D modelling are well suited to strike-extensive targets, but can fall apart when the geology is 3D. Some evidence that the 2D assumption is at least roughly valid for this project can be gained from the aeromagnetic data: The responses appear to extend over several lines to the north, and at least one line to the south of line 3000. Hopefully this means that our models will be close enough to the truth that we will not drill just off the end of the magnetic source.

The main uncertainty in the modelling (other than the 2D vs 3D problems) is the source magnetic susceptibility. We chose 0.01SI somewhat arbitrarily based on petrophysical information on skarns recorded by D. Emerson as well as conference with some of the geophysicists responsible for the Renison work. In reality, the spatial distribution of magnetic minerals in skarns is variable and so erratic that it cannot be represented simply and any attempt at a bulk characterisation of what is

'normal' skarn magnetic susceptibility is laughable. Magnetic susceptibility can range over several orders of magnitude, and 0.01SI represents something close to the median value for a rock containing 5-10% magnetite.

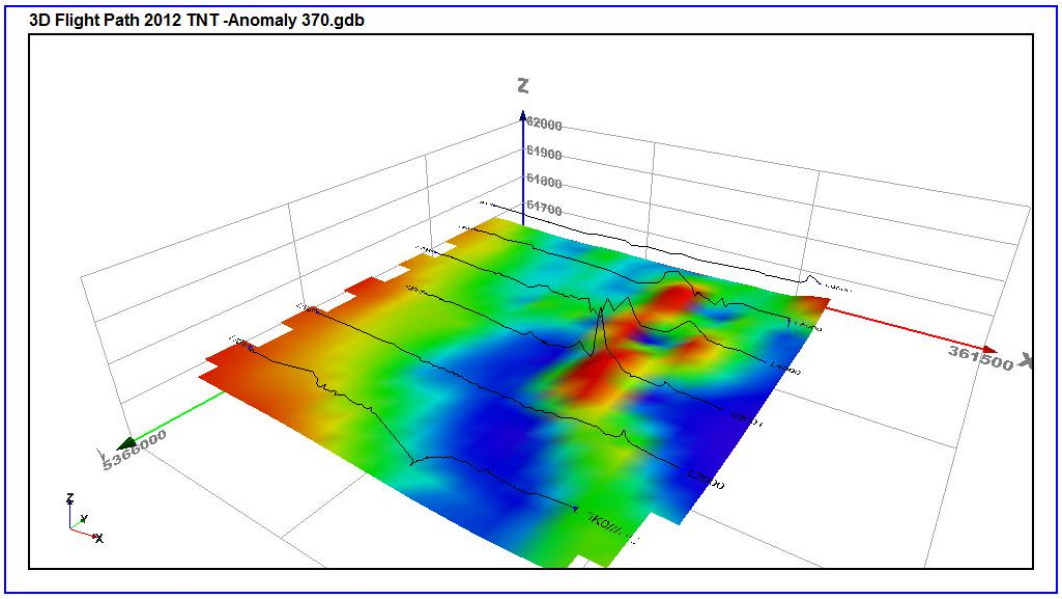

Figure 1: 3D perspective of the magnetic data profiles and gridded results for the Anomaly 370 prospect.

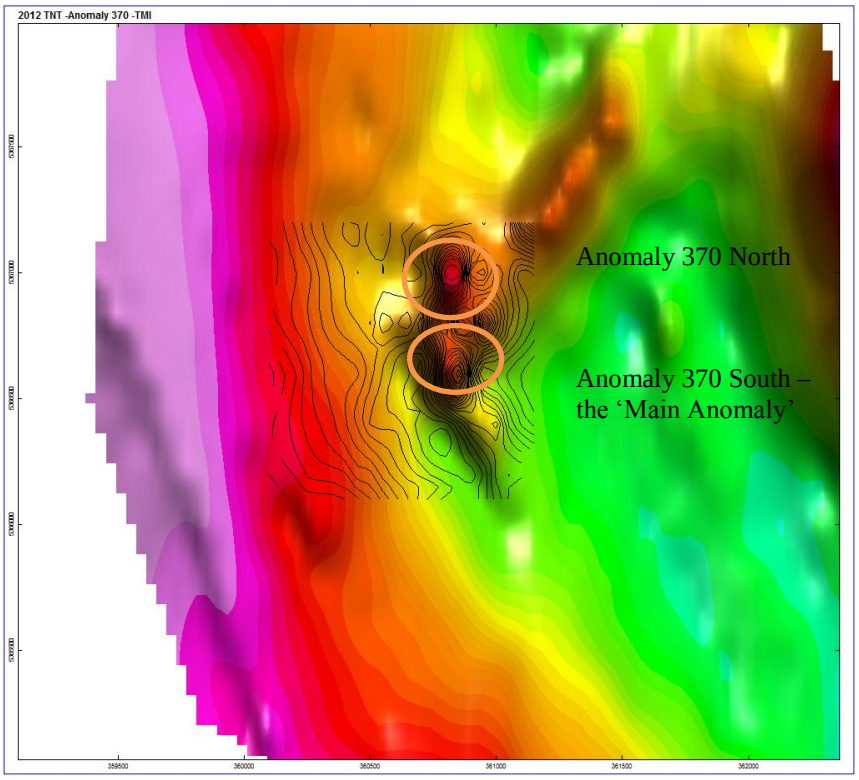

Figure 2: Contours of the gridded ground magnetics superimposed on the regional aeromagnetics. The correlation is quite close. Projection is MGA55.

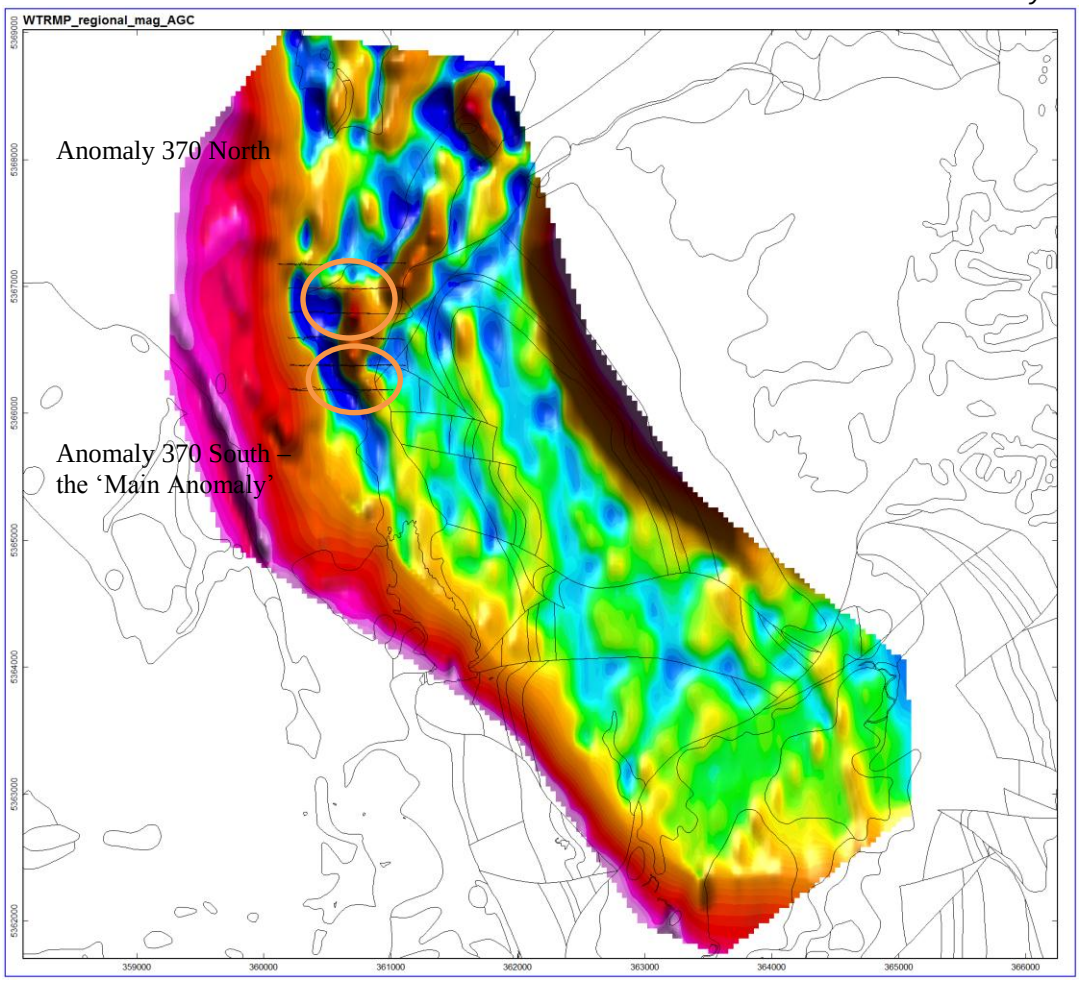

Figure 3: Regional aeromagnetic data, filtered with an automatic gain control method to highlight subtle structures in the magnetics.

Anomaly 370 – modelling results

As you can see from the figures on the next page, I have only developed a fairly simple model to match the responses on line 3000. Anything more complicated and the model would not be honouring the data.

I have estimated the strike of the magnetic sources to be about 355degrees true (the wide line spacing means in it hard to accurately correlate anomalies from line to line), and I have given the models a strike length of 500m, similar to the actual strike length of anomaly 370. The model cross section is presented in Figure 4, and the following discussion is designed with reference to this cross section:

The model requires at least three separate magnetic bodies to match the three clear responses: The red outlined polygon, **body 4** (k=0.01SI), causes the main magnetic anomaly. This body appears to have significant depth extent and dip towards the east and centre of the main syncline (concordant with the geology and required by the long 'tail' in the magnetic data). Immediately west of body 4 is a smaller magnetic peak, which the modelling indicates is caused by a smaller, less magnetic structure dipping eastward **body 3**. Body 3 is quite similar to body 4, but is smaller and less magnetic with k=0.005SI. In addition, there is a weaker and/or deeper source, represented by body2 k=0.0001SI. This is very poorly constrained by the modelling and will be better judged from the inversion results. I have also matched a small inflection the profile on the eastern end of the line with body1. The data indicate that this feature could have significant strike length and increase in size towards the north.

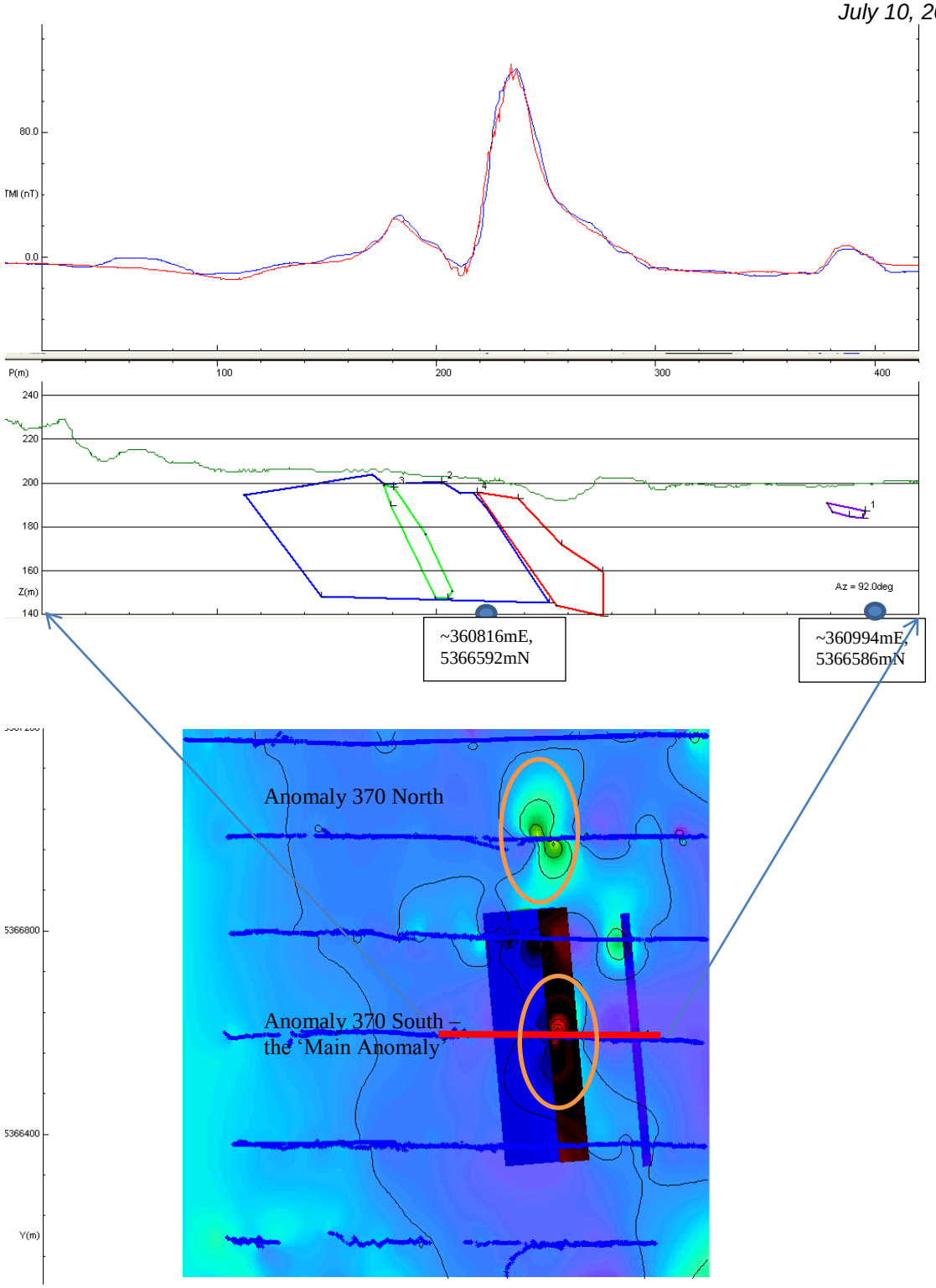

Figure 4: {TOP} Model section showing the four polygonal bodies used to match the observed magnetic response on line 3000. Two coordinate points are nominated for registration, however it would be easier and more accurate to simply import the body corner coordinates listed in next section. {BOTTOM} Location of the modelled section (red line) and body polygons extended along strike 500m. The image is the magnetic field, linear colour scale.

Anomaly 370 – drill hole design

The best drill hole to target body 4 would be at 360834mE, 5366592mN, dipping steeply west, total depth about 30-40m. The drill hole may need to be extended if you need to pass through the magnetic unit.

Below are the corner coordinates for the models depicted in Figure 4. Body 2 is omitted as it too poorly constrained and probably much different from that imaged.

BodyID,X, Y, Z

1 360992.47 5366586.50 187.05
1 360975.21 5366585.00 190.89
1 360977.33 5366585.18 186.67
1 360985.23 5366585.87 184.69
1 360991.30 5366586.40 183.74
3 360777.24 5366594.10 197.93
3 360772.80 5366593.71 198.88
3 360776.08 5366594.00 189.42
3 360796.17 5366595.75 148.04
3 360801.77 5366596.24 147.57
3 360803.64 5366596.41 150.88
3 360791.73 5366595.37 176.41
4 360872.26 5366597.71 139.11
4 360871.85 5366597.68 159.62
4 360853.94 5366596.11 171.78
4 360834.47 5366594.41 192.89
4 360816.17 5366592.81 195.78
4 360851.48 5366595.90 144.26

Anomaly 370 – miscellaneous comments

1. The 2002-03 WTRMP helicopter hummingbird FEM data *probably* covers anomaly 370 and the nearby tenements. To my knowledge the data post-dates all the RGC exploration, and has been almost completely under-utilised by exploration companies in Tasmania. While there is no guarantee that the skarn mineralisation is conductive, the magnetic anomaly may mean pyrrhotite, and pyrrhotite is of course very conductive. It would a simple matter to obtain this data and look at the profiles. Additionally it may yield anomalies beyond that which we already have as well

2. Magnetic suscepbility readings of any fresh outcrop of drill core will be important to determine if the drill hole intersects the magnetic sources

3. If the drill holes **does not** intersect magnetic rocks, then it will probably be because the source rock is located immediately adjacent to the survey line. In this case infill magnetics will be required to pinpoint the location.

Anomaly 370 – Aeromagnetics inversion results

I conducted a round inversion of the aeromagnetic data on a (probably bit fine) 20x20x5m mesh. The inversion uses the real topography and gives and feel for what the 3D shape of the causative magnetic bodies are. Please remember that the data is on 200m spaced lines. Figure 5 and Figure 6 so a presentation of the inversion results in various perspectives. The anomaly of interest under line 3000 is labelled.

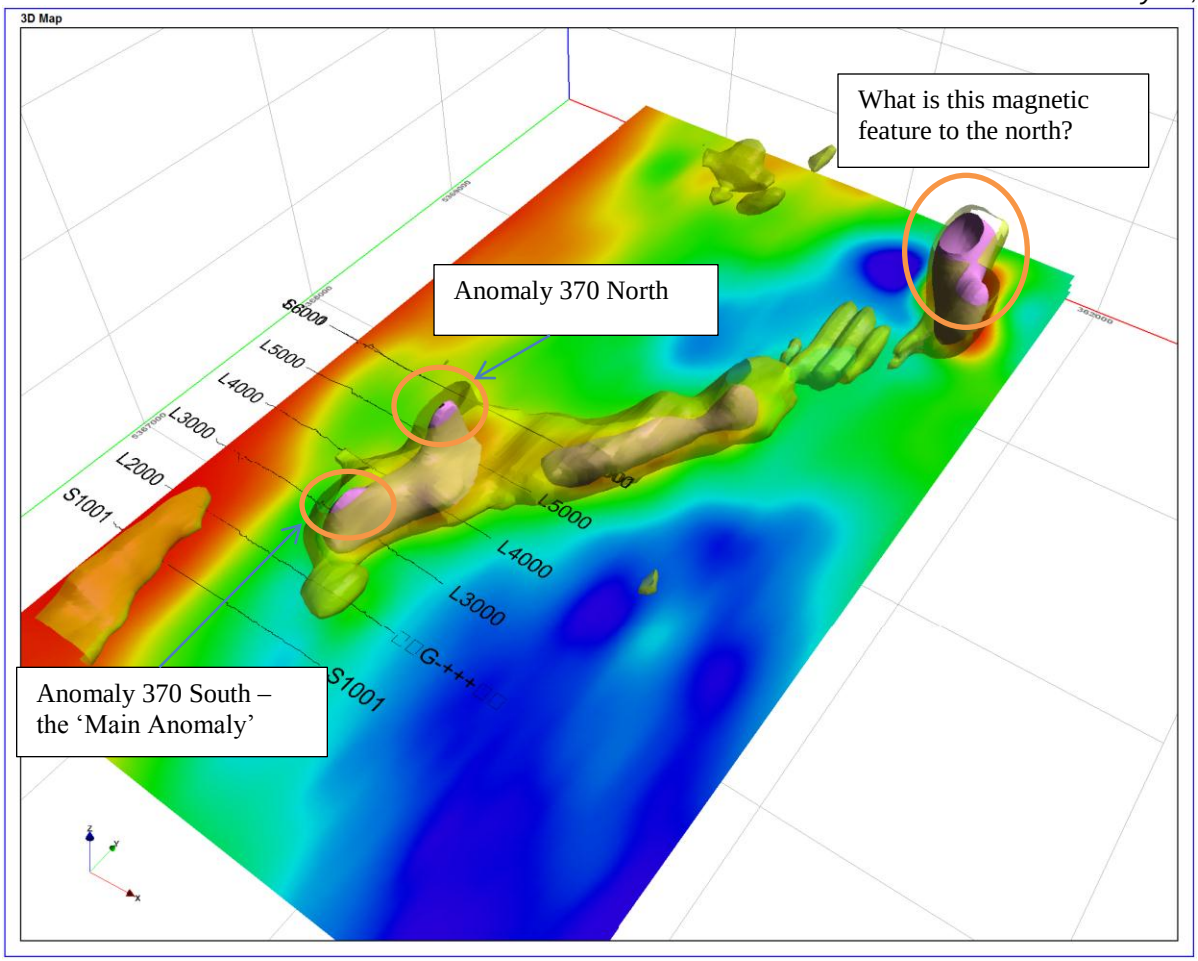

Figure 5: Perspective looking northwest of the aeromagnetic inversion results.

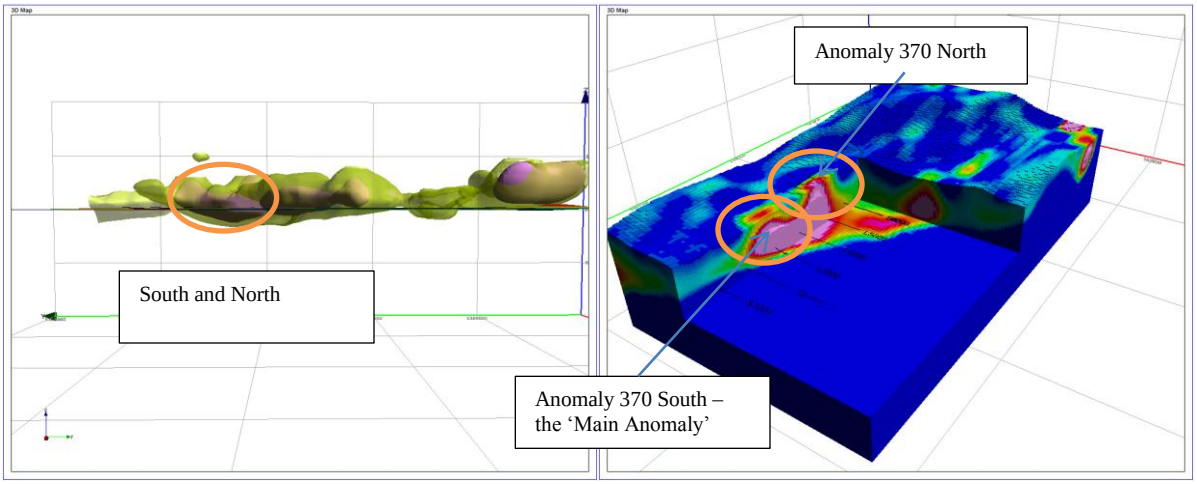

Figure 6: {LEFT} Perspective looking west (long section). {RIGHT} Perspective looking northwest of the inversion results clipped through anomaly 370.