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SOUTHERN GEOSCIENCE
CONSULTANTS

MEMORANDUM

TO	Finn Barrett
FROM	Paul Mutton
DATE	26/3/2012
RE	Smithton Magnetic Modelling - Preliminary

Finn,

Below are some notes on the magnetic anomalies adjacent and coincident with the drill holes planned at Smithton.

1 MONTAGU – BUCKBYS RD/GUNNS – SMM347

1. Magnetic Anomaly description: Broad 1km x 400m anomaly with some N/S fabric crossing a broad E/W conductor axis (Figure 1). At least some (all?) of the N/S fabric is due to flying height variations over gullies. The east west lines poorly characterise the East/West striking anomaly.
2. Signs of Remanence: nil
3. Model (potent): Not completed
4. Strike & strike direction: E-W
5. Dip & Dip Direction: Very ambiguous as anomaly is quite symmetrical and has responses from flying height artefacts and magnetic high to south
6. Analytic Signal Image Check:
7. Any adjustment from currently planned hole required: The anomaly has a slightly lower gradient on the N side rather than on the S indicating a N dip. Hole should therefore be drilled to the south

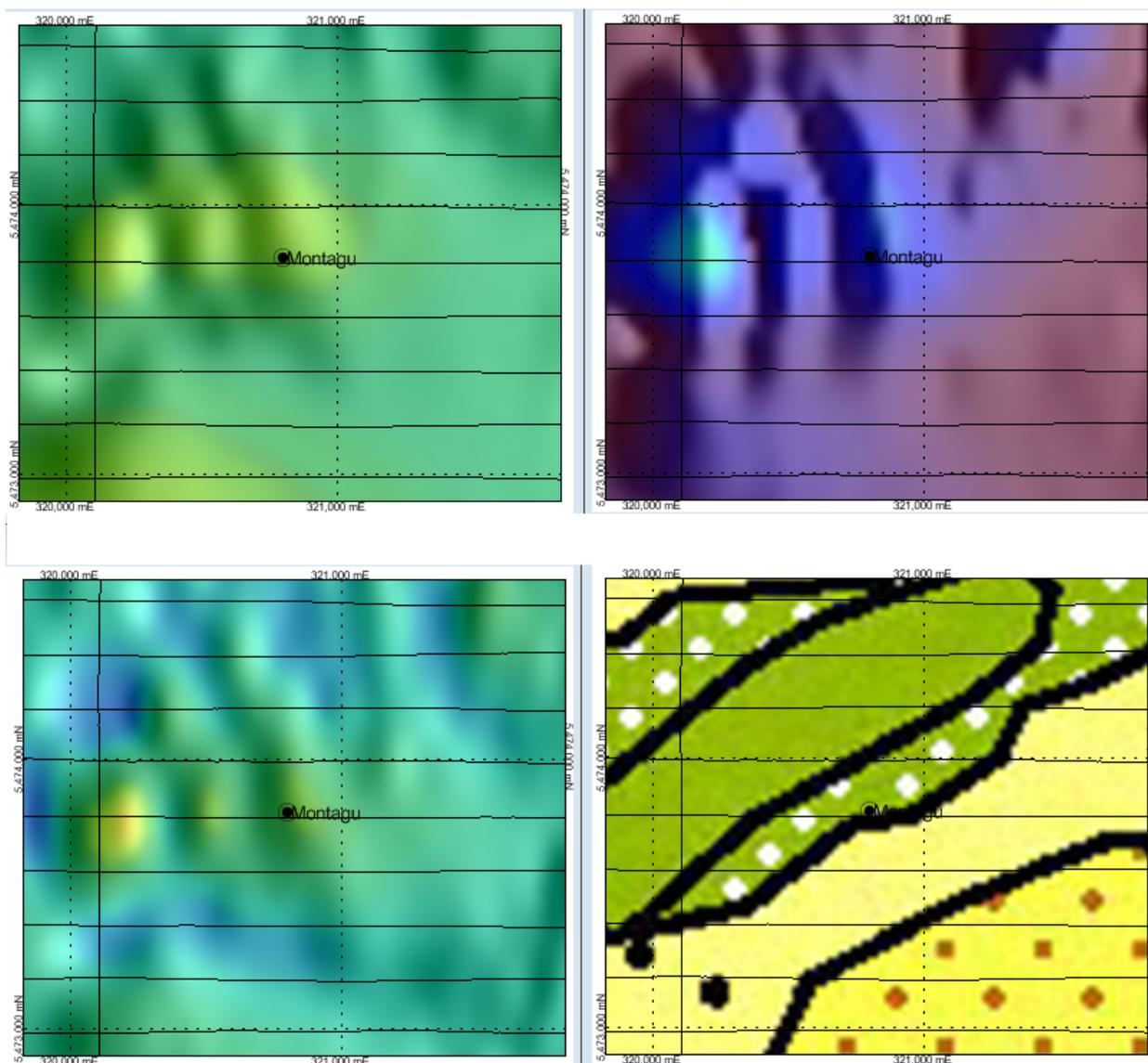


Figure 1 TMI image on upper left and Analytic Signal on upper Right, RTP1VD on lower left and 1:250K geology on lower right

2 MONTAGU – BUCKBYS RD/GUNNS – SMM280

1. Magnetic Anomaly description: Complex N/S anomaly comprising of responses from several shallow magnetic sources (Figure 2). They appear to dip to the east as indicated by a strong anomaly asymmetry.
2. Signs of Remanence: nil
3. Model (potent): Not completed
4. Strike & strike direction: N/S
5. Dip & Dip Direction: Strong indications of an easterly dip
6. Analytic Signal Image Check:
7. Any adjustment from currently planned hole required: None of the holes appear to target a magnetic source (see Analytic signal image in Figure 2). The magnetic sources appears to dip to the east which is supported by field observations recorded on the 1:250K geological map, so a west dipping hole is recommended. If the holes should target the magnetic source then modelling will provide good drill targets.

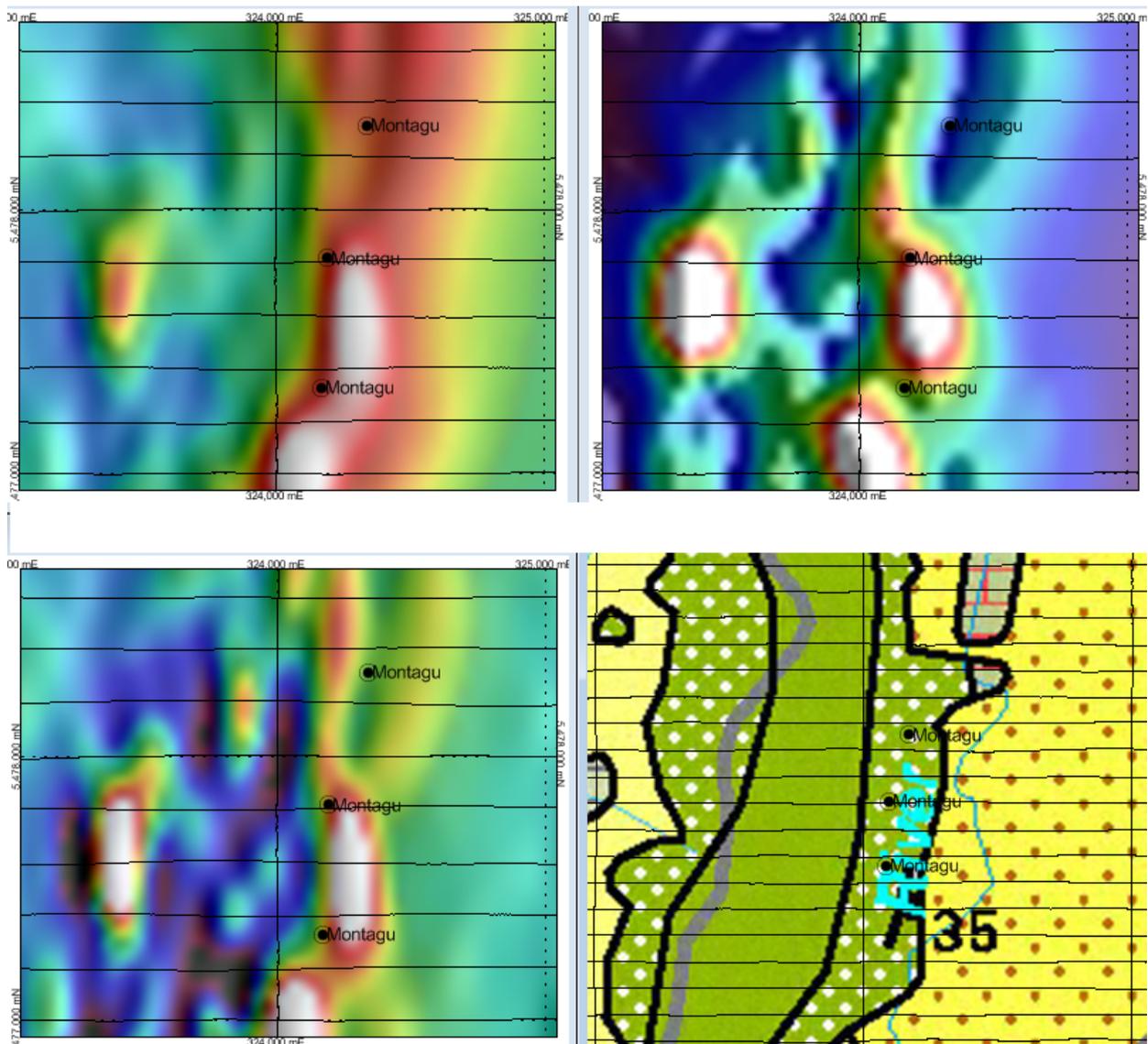


Figure 2 TMI image on upper left and Analytic Signal on upper Right, RTP1VD on lower left and 1:250K geology on lower right

3 DUNNS – WARRA RD SPUR 1A – SMM628

1. Magnetic Anomaly description: On flexure and/or small fault offset on narrow anomaly that extends for many kilometres (Figure 3). Response effected by second magnetic body in close (<250m) proximity to the west. This westerly body response creates ambiguities where present. Where the response is absent 4km to the south the anomaly is symmetrical (ie vertical source)
2. Signs of Remanence: nil
3. Model (potent): Modelling completed however dip is ambiguous as is very dependent on influence of adjacent magnetic body.
4. Strike & strike direction: 150-330
5. Dip & Dip Direction: Ambiguous. Signs of a SE dip in the area but difficult to judge influence of second body to W.
6. Analytic Signal Image Check: Coincident with RTP (no remanence).
7. Any adjustment from currently planned hole required:

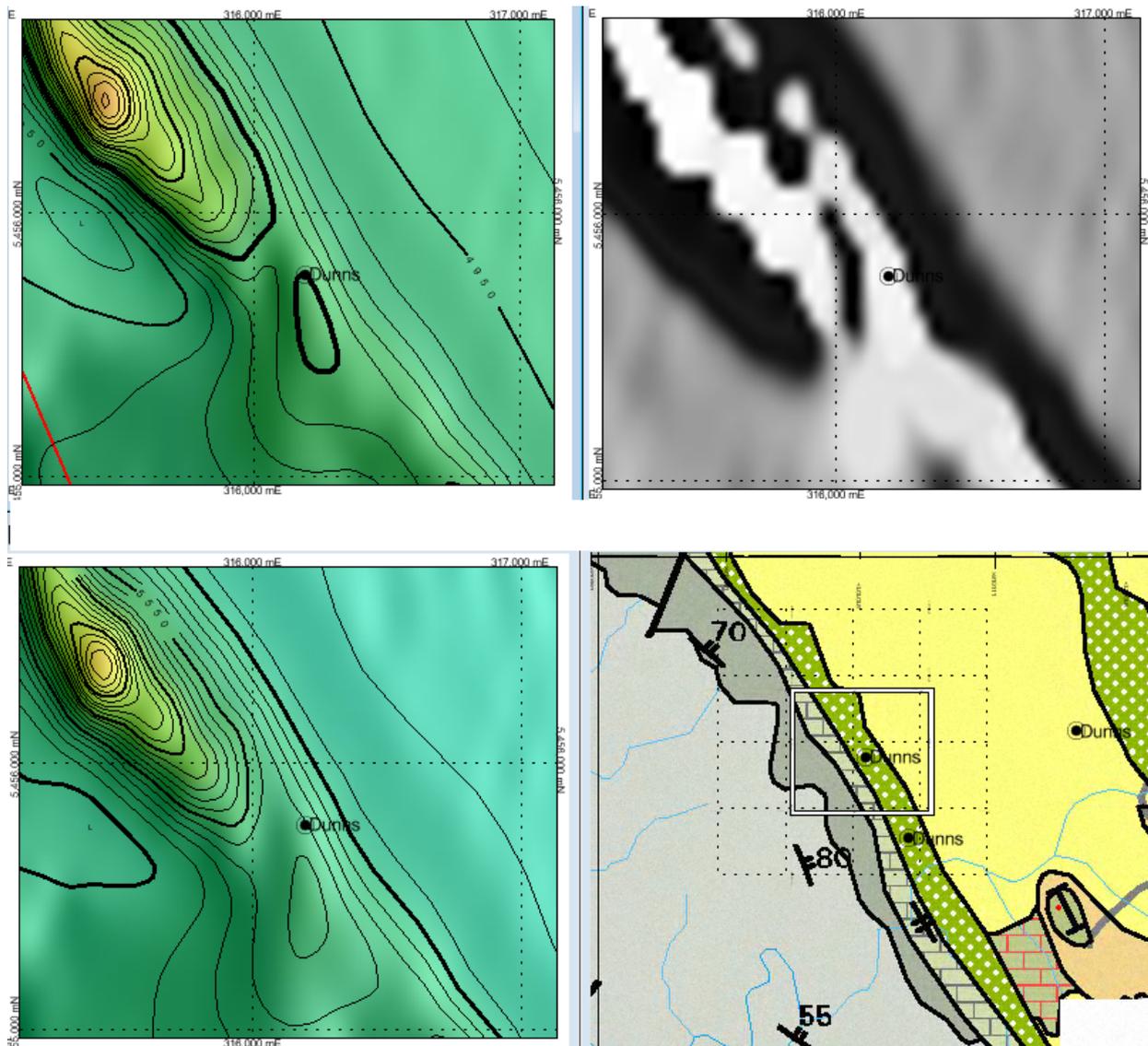


Figure 3 TMI image on upper left and TMI2VD on upper right, RTP on lower left and 1:250K geology on lower right

4 MT FRANKLAND – MONTAGUE RIVER

1. Magnetic Anomaly description : Location appears to be a fault disrupting a long magnetic unit (Figure 4)
2. Signs of Remanence: Yes. Significant low to NW of magnetic anomaly indicates strong remanence present
3. Model (potent): Not completed. Remanence is too strong.
4. Strike & strike direction: NE-SW
5. Dip & Dip Direction: Unknown
6. Depth to source:
7. Analytic Signal Image Check:
8. Any adjustment from currently planned hole required: An adjustment is required if the target is the magnetic unit. It is unclear as to what is being targeted here. Figure 5 shows the google earth photography with the overlain Analytic Signal image

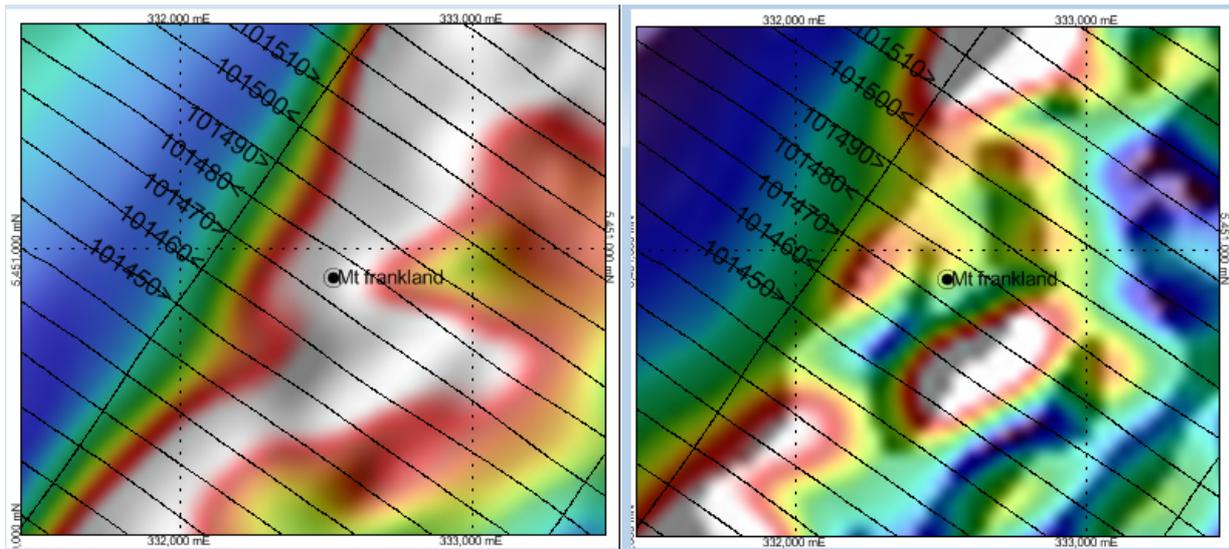


Figure 4 TMI image on left and Analytic Signal on Right

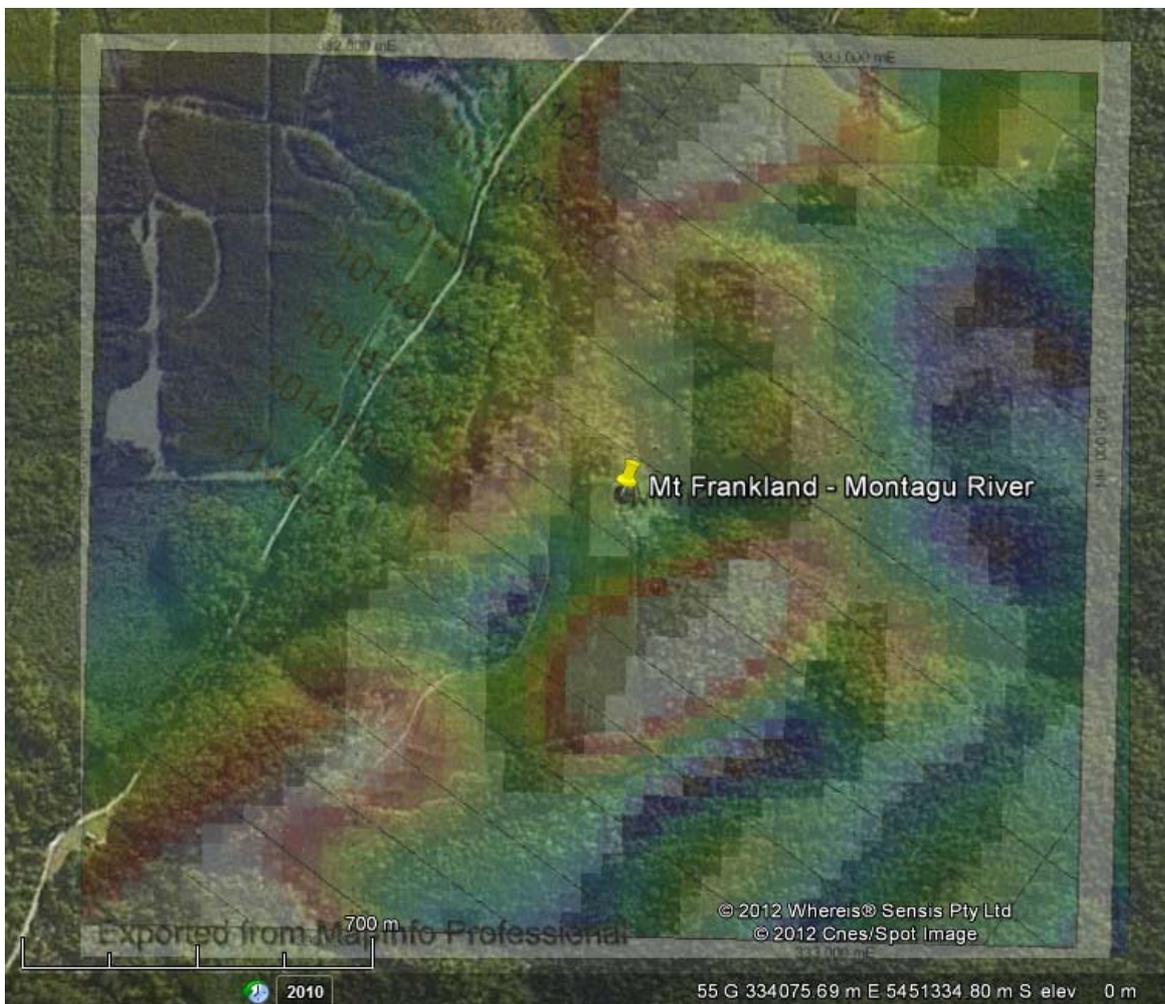


Figure 5 Google earth image with Analytic signal overlay

5 MT FRANKLAND – BLACKWATER SPUR 8

1. Magnetic Anomaly description : North end of a 2km long discrete magnetic anomaly (Figure 6)
2. Signs of Remanence: Looks like little remanence as Analytic Signal image matches TMI image very well (Figure 6)

3. Model (potent): Completed
4. Strike: 155
5. Dip & Dip Direction: 70 degrees towards 065
6. Depth to source: 40m
7. Analytic Signal Image Check: Coincident
8. Adjustment from currently planned hole: Move E about 80m and drill to SE
le Collar 324510E, 5437060N dipping 70 degrees towards 240. This is very close to the road. Collar
could also be move to the SW along the road if necessary. The road pretty much follows the
magnetic anomaly (Figure 7).

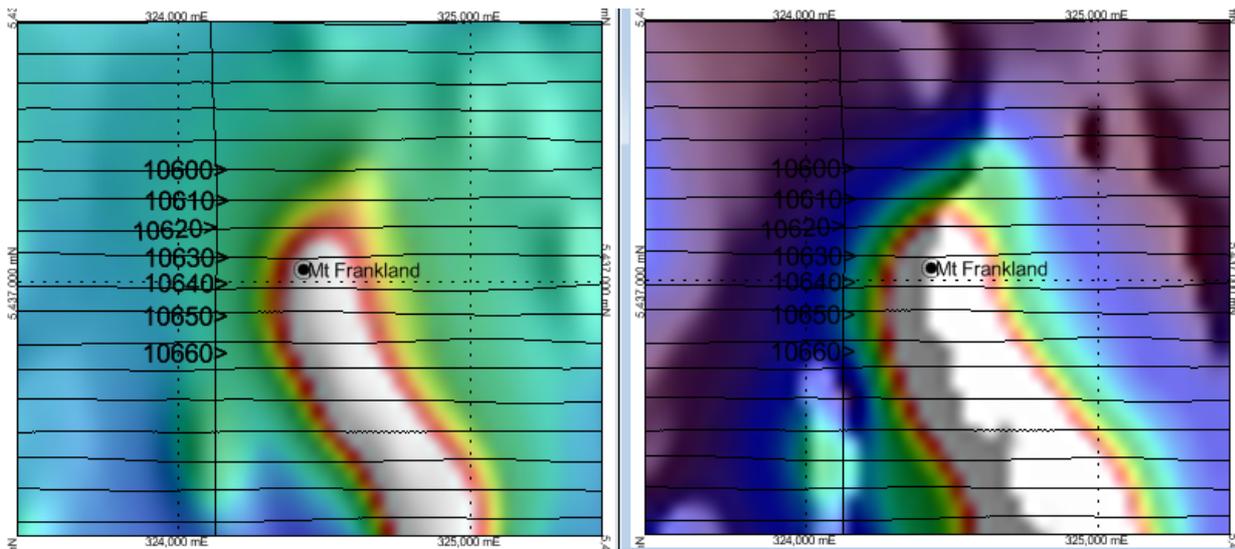


Figure 6 TMI image on left and Analytic Signal on Right

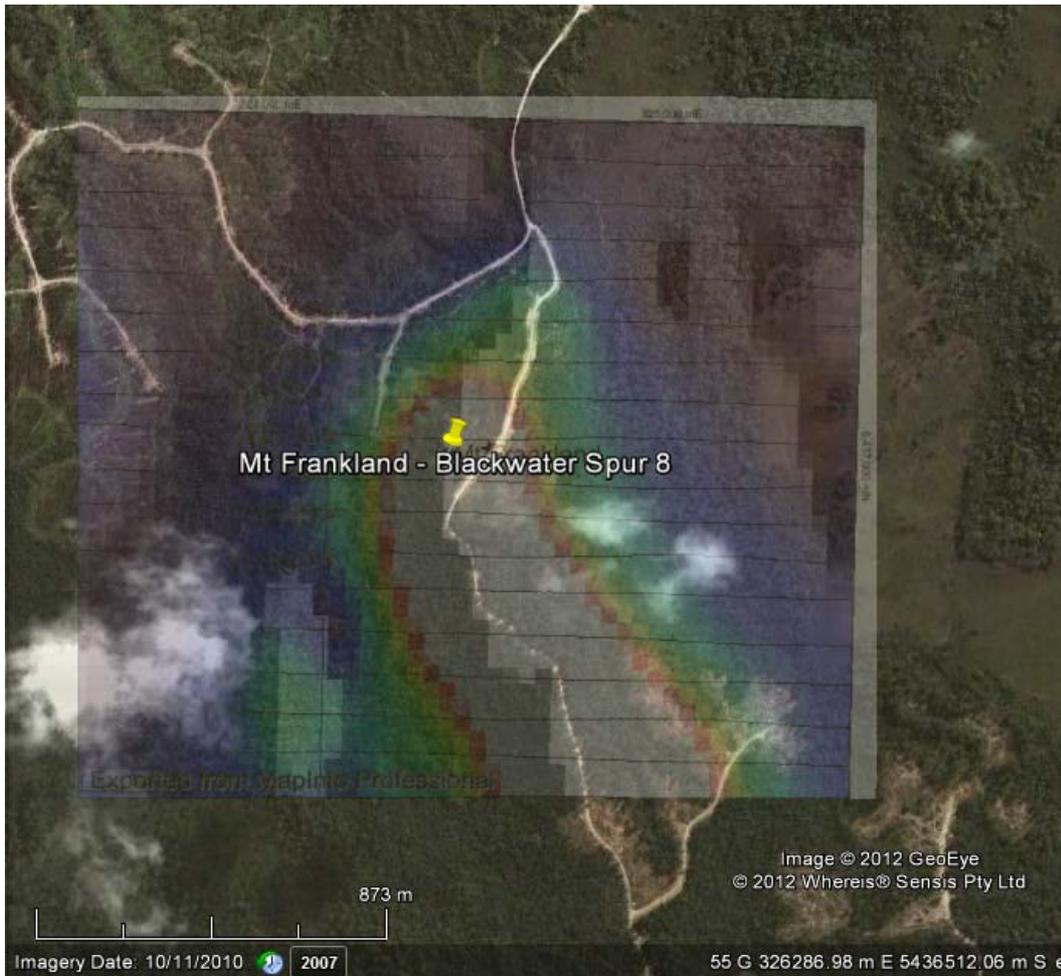


Figure 7 Google earth image with Analytic signal overlay. New hole collar marked with a star

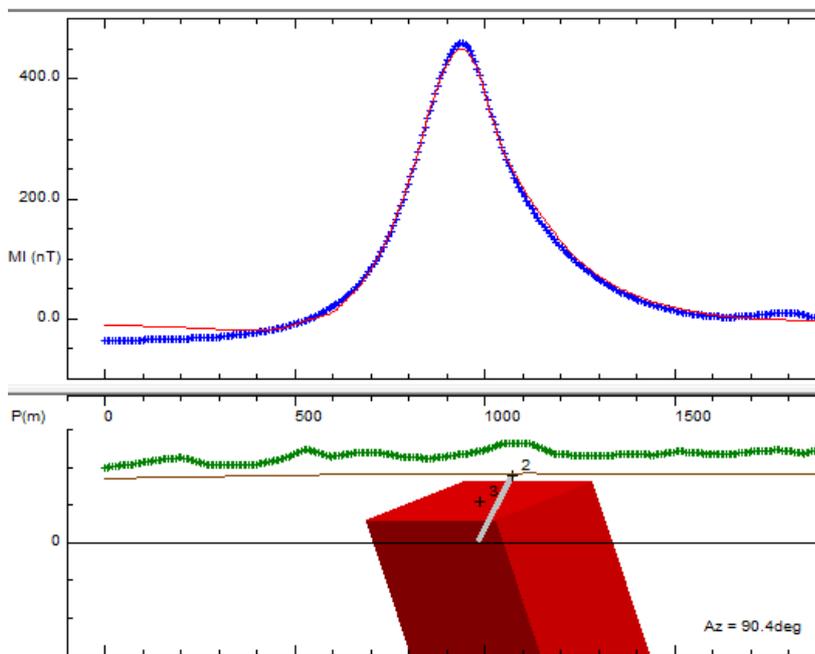


Figure 8 Data with model fit (above) and recommended drill hole in model (below)

6 3 MILE HILL

1. Magnetic Anomaly description : Discrete magnetic high
2. Signs of Remanence: The RTP1VD matches the Analytic Signal quite well (Figure 9) indicating that remanence is minor, however there is a distinct magnetic low on the west side of the anomalies indicating that some remanence is present (Figure 9 and Figure 10).
3. Model (potent): Modelling was attempted however the remanence present and complex anomaly with the superimposed response of multiple conductors (Figure 10) creates models with high uncertainty.
4. Strike: 160
5. Dip & Dip Direction: unknown
6. Depth to source: 100-120m?
7. Analytic Signal Image Check:
8. Adjustment from currently planned hole required: The best targeting strategy is to target the centre of the analytic signal anomaly with a vertical hole. This is at 319800E, 5461440N. This is only 60m from the northern planned drill hole.

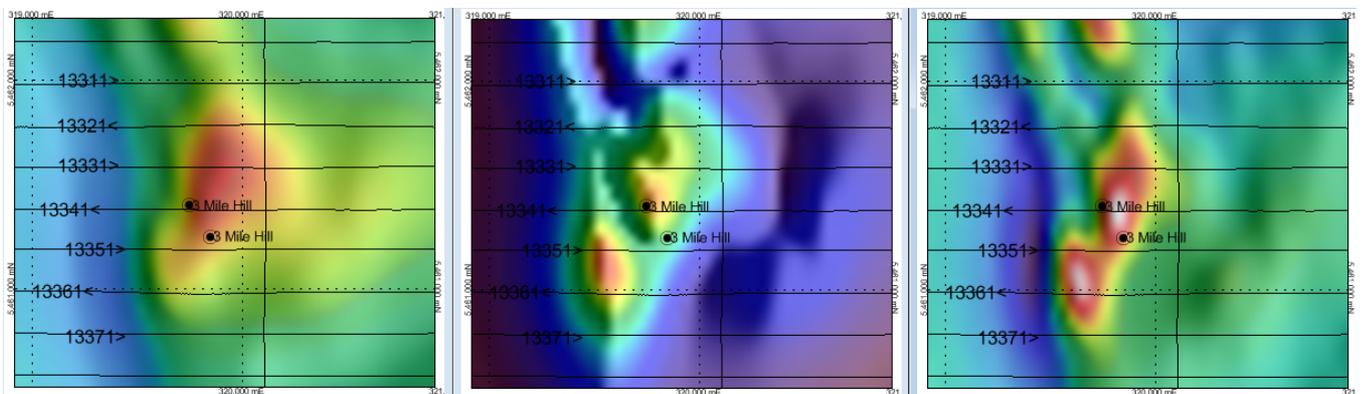


Figure 9 TMI image on left, Analytic Signal Image in Centre and RTP1VD on right. The close correlation between RTP and Ansig images indicates remanence is minor although there is some indication of remanence affecting the anomaly in the SW

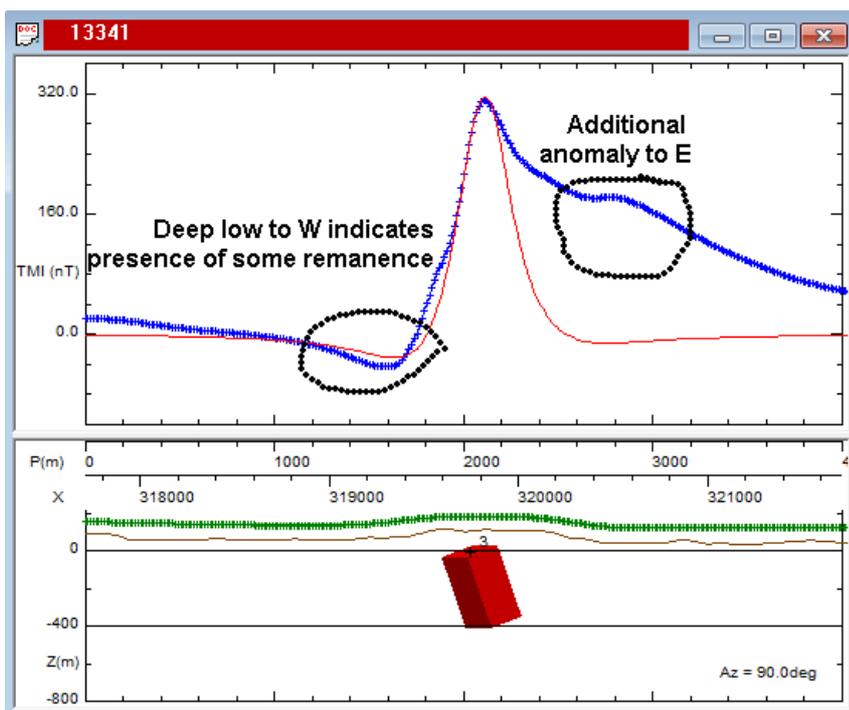


Figure 10 Data (blue) with model fit (black) showing poor fit due to complex anomaly with remanent magnetism present.

7 DUNNS

1. Magnetic Anomaly description :
2. Signs of Remanence:
3. Model (potent): Not completed
4. Strike & strike direction:
5. Dip & Dip Direction:
6. Depth to source:
7. Analytic Signal Image Check:
8. Any adjustment from currently planned hole required

8 MONTAGU

8. Magnetic Anomaly description :
9. Signs of Remanence:
10. Model (potent): Not completed
11. Strike & strike direction:
12. Dip & Dip Direction:
13. Depth to source:
14. Analytic Signal Image Check:
15. Any adjustment from currently planned hole required