

Bundara Creek Gravity Modelling

Western Desert Resources (WDR)

At the request of WDR, AsIs International has performed geophysical modelling of supplied gravity data over the Bundara Creek prospect. The resultant model indicates the gravity source may be caused by a gently west dipping body with a likely density of 2.9-2.95g/cc extending from approximately 550m below surface to over 3km depth with a strikelength of at least 10km.

The gravity data for modelling consists of FIVE lines with 500m spaced data points. FOUR of the lines are oriented E-W with ONE line oriented N-S. The E-W lines are spaced 2000m apart.

The N-S trending anomaly is approximately 10mgal, and 15km across. The actual anomaly dimensions and size are approximate due to the data lines not extending far enough to capture the edges of the anomaly with confidence (especially north and south edges) or providing a definitive gravity baseline. The anomaly is asymmetric with the steepest gradients on the eastern flank indicating the gravity source is likely to dip to the west.

A planar (1st order) regional gravity field has been approximated and incorporated into the modelling.

The modelling uses tabular N-S oriented bodies dipping to the west. A combination of forward and inverse modelling techniques was used. An initial forward model was created to match the data as closely as possible and then refined by inversion. Due to the non-unique nature of gravity modelling, a geologically plausible forward model was sought. Key features of the forward model considered for geological plausibility include density and geometry.

The resultant model suggests the source of the gravity anomaly is a gently west dipping body with a density contrast of approximately 0.23-0.25g/cc from background. Against a background density of 2.67 this would give a density of ~2.9-2.92g/cc. A single dipping tabular body was not adequate to model the observed data and a thinner more steeply dipping body was required nearer to the ground surface. The strikelength of the gravity source is not well defined as the anomaly was not well defined in the N-S direction but is at least 10km and probably 15km. The depth to top of the modelled gravity source is approximately 550m below the surface and the model extends to more than 3km depth. The gravity model is presented in Figure 1. And has been supplied as a ModelVision .tkm format file.

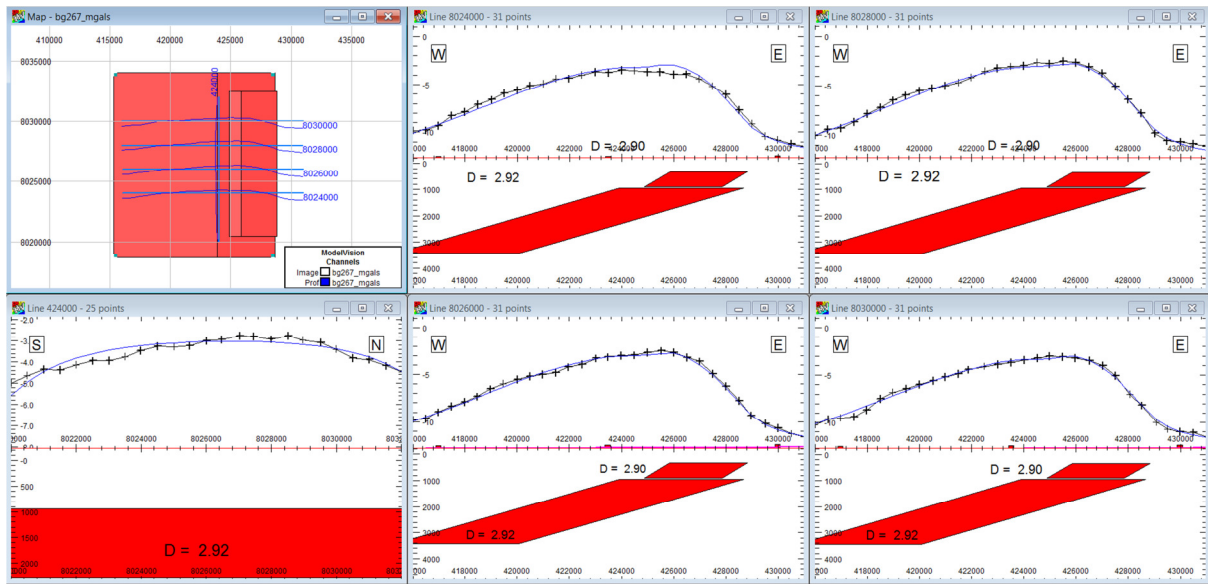


Figure 1. Results of the Bundara Creek gravity modelling. Background density is 2.67g/cc. Body labels indicate model density in g/cc. Line names indicate the average easting/northing of the line, x-axis is labelled with easting/northing of the stations. All sections should display a 1/1 horizontal/vertical relationship in the model panel.