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BHEM Interpretation of DOM-91-1 & DOM-91-4

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In October of 2020, two boreholes in the Dominique Property, Nova Scotia, were surveyed by Eastern Geophysics utilizing a Crone Geophysics & Exploration Ltd. TDEM system. The survey data were imported into the computer modelling program Maxwell to perform limited numerical modelling studies. The modelling results are presented in Figure 4 to Figure 7, with a summary table presented in Table 1. The fit of the models are presented in Figure 2 to Figure 3 ~~Error! Reference source not found.~~

Note that the use of multiple plates (which represent anomalous sources/conductive bodies) maybe be used to represent a single source when response patterns are complex and/or when early- and late-time responses differ due to differing eddy current flow patterns within a conductive body. The responses observed in these holes are complex, and modelling results presented here are best fit solutions and may not be geologically reasonable. All quantitative values presented are rough approximations.

DOM-91-1

The only recognizable EM response signal in DOM-91-1 is a large (possibly formational) response in the early-times, evident as a migrating (down-hole) positive-peak in the Z component. Channels beyond this don't have any recognizable anomalies. This early-time weakly-conductive probably does not constitute a feature of interest.

DOM-91-4

The EM response of DOM-91-4 is quite complex. It contains at least two distinct features and a possible third beyond the hole, and spans from the early/mid-times to the late-time channels.

The first is a weakly-conductive anomaly visible in the mid-time channels at a depth of approximately 120m (represented by the green plate). The Z component is a positive-peak, signifying that it is in-hole. The X and Y components are more difficult to interpret as the

response is superimposed with another anomaly located below this one. The X looks to be a negative-peak and the Y looks to be a positive-peak. This anomaly coincides with the presence of massive pyrrhotite stringer as noted in geological logs.

The second anomaly is a more conductive and larger anomaly located near the end of the hole at a depth of approximately 160m down-hole (represented by the red plate). The Z-component is a positive peak, signifying that it is in-hole. Again, the X and Y components are more difficult to interpret as their response may overly with the anomalies above and below it. The X component appears to be a positive-to-negative shape, signifying that the source is located below the hole, and the Y component appears to be negative-to-positive, signifying that the source is located to the left of the hole. This anomaly coincides with pyrrhotite plebs and sulphide-rich skarnoids as noted in the geological logs.

Below the second anomaly is a possible third anomaly located beyond the hole (represented by the blue plate). This is apparent as a build-up at the end of the hole in the late-time channels in all three components. It must be noted that confidence in the interpretation of this anomaly is much lower because the survey does not encompass it. This anomaly may be larger and more conductive than the second anomaly. A rough distance estimate places this source roughly 25m to 75m beyond the end of the hole.

Modelling Results

The modelling results are presented in Figure 4 to Figure 7. Three plates were used to achieve the best model fit. All three plates are based on the data of hole DOM-91-4.

The green plate represents the early/mid-time anomaly observed at a depth of 120m down-hole of DOM-91-4. It is weakly conductive with a conductivity of 37 S/m. The plate is roughly 61m by 137m, dipping 62° with a dip-direction of 68°. The hole roughly intersects the center of this plate.

The red plate represents the mid-late time anomaly located at a hole-depth of approximately 160m in DOM-91-4. This plate is roughly 40m by 117m with a conductivity of 184

S/m. It has a dip angle of approximately 44° with an azimuthal direction of 60°. The bulk of the plate is located below DOM-91-4.

The blue plate represents the anomaly seen in the late-times of DOM-91-4. It is only seen as a build-up at the end of the hole, thus it is not constrained by the EM data. As such, the confidence in the modelling of this anomaly is lower than the two other anomalies. The plate is more conductive than the red plate anomaly above it, with a conductivity of approximately 366 S/m. It appears to be large, with dimensions of 82m by 227m. It dips 50° with an azimuth of 46°. It is located centrally beyond DOM-91-4.

Table 1 - Summary of plate properties. All properties should be considered as crude approximations.

Plate	Dimensions	Relative Position	Depth From Geoid	Conductivity	Dip	Dip Direction
Green	61m x 137m	Intersects DOM-91-4	117m	37 S/m	62°	68°
Red	40m x 117m	Intersects DOM-91-4, bulk below DOM-91-4	123m	184 S/m	44°	60°
Blue	82m x 227m	Beyond and below DOM-91-4	161m	366 S/m	50°	45°

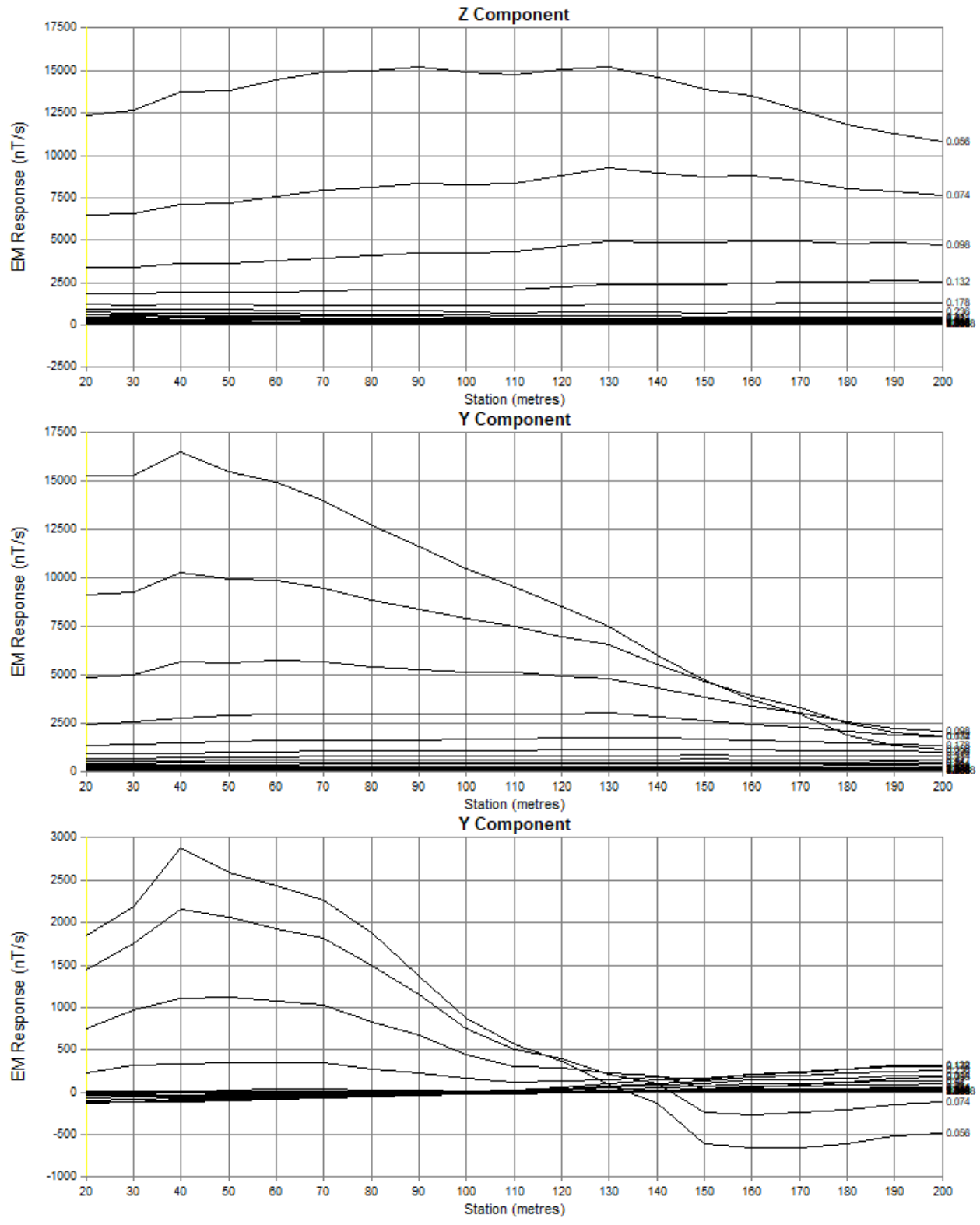


Figure 1 - Channels 1 to 20 of hole DOM-91-1. A large wavelength response is observed in all three components in the early-times. No anomalies observed in the late-time channels.

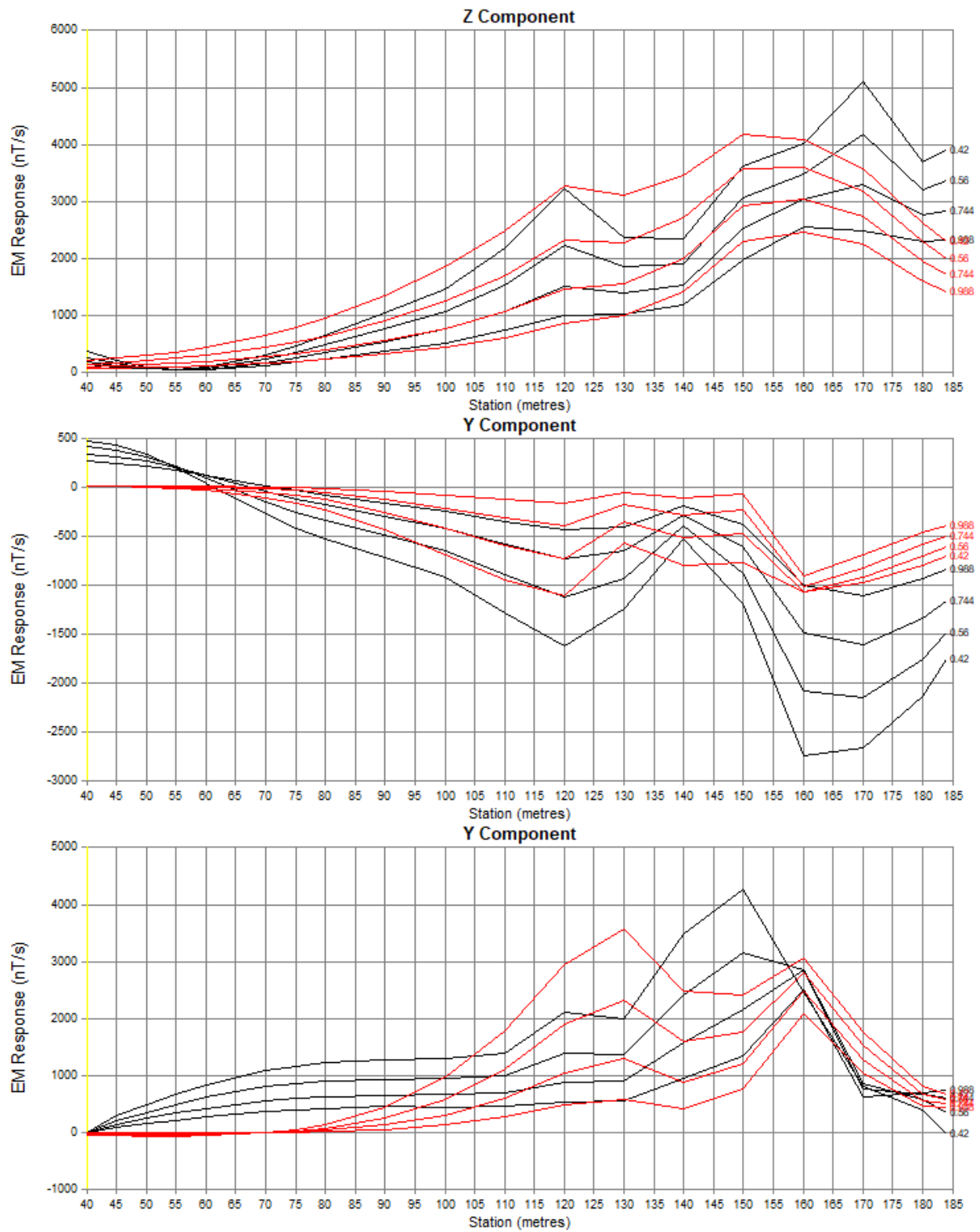


Figure 2 - Channels 8 to 11 of hole DOM-91-4. Black lines represent the actual response of the survey. The red lines represent the results of the model in Figure 4 to Figure 7.

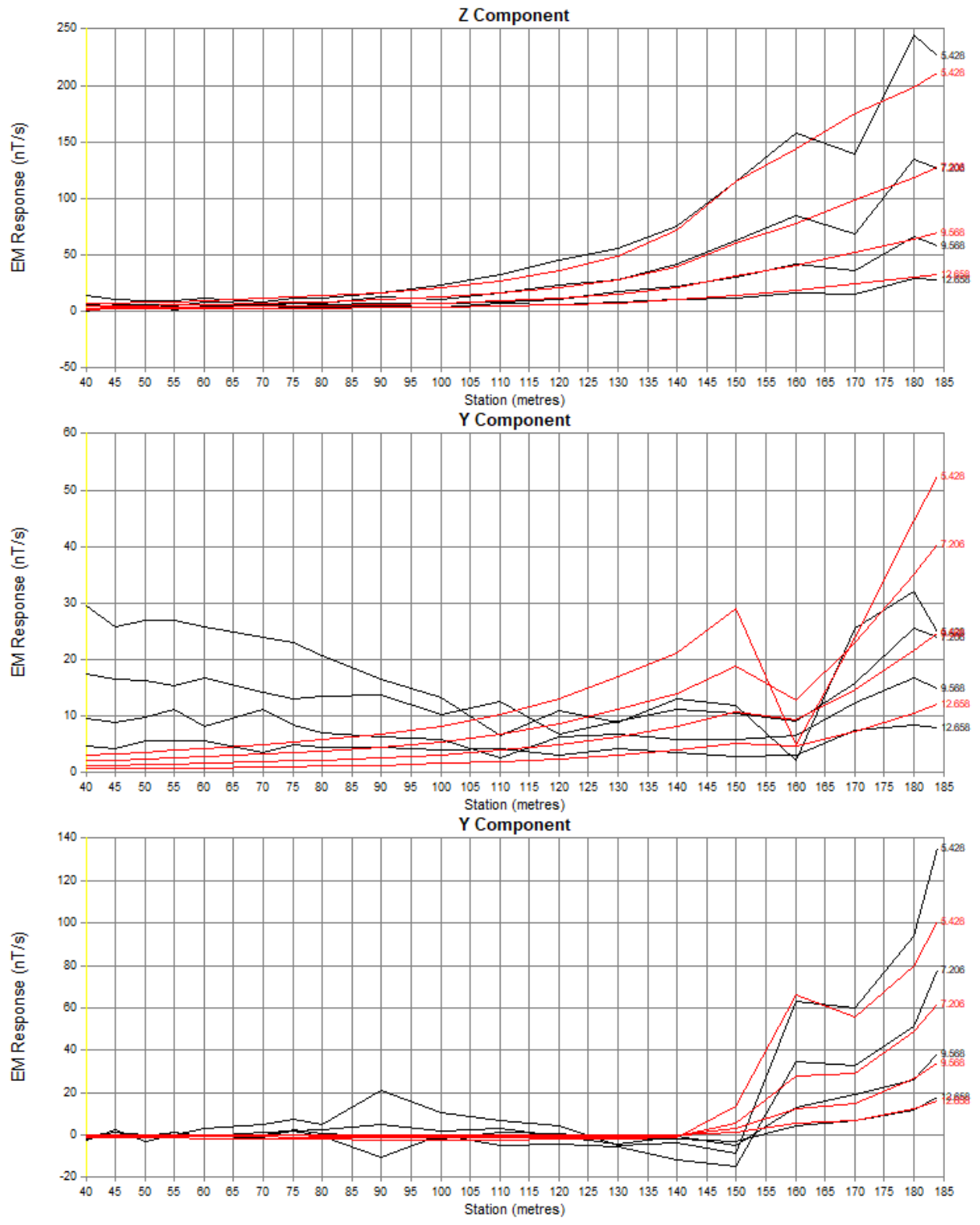


Figure 3 - Channels 17 to 20 of hole DOM-91-4. Black lines represent the actual response of the survey. The red lines represent the results of the model in Figure 4 to Figure 7.

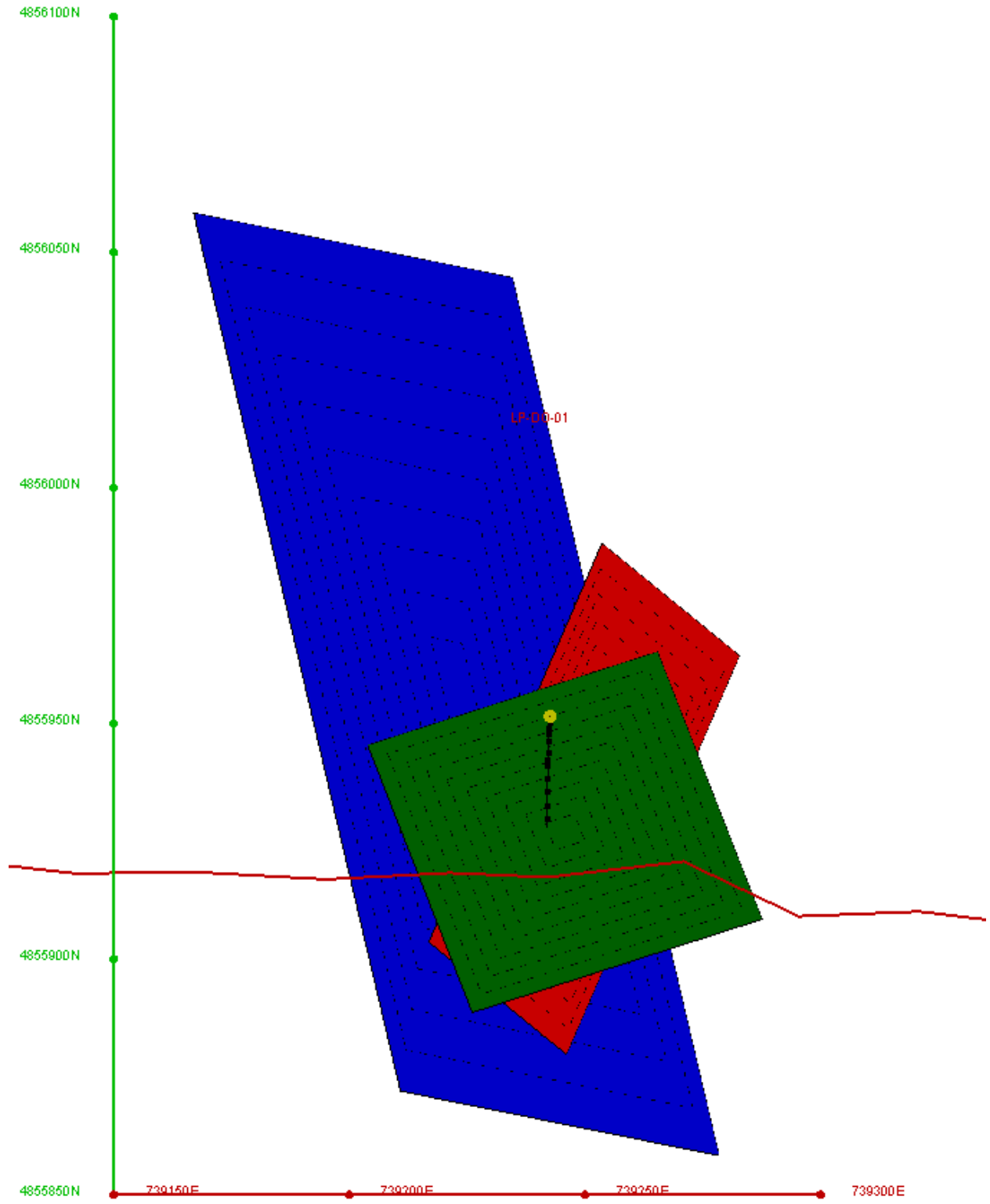


Figure 4 –Plan view.

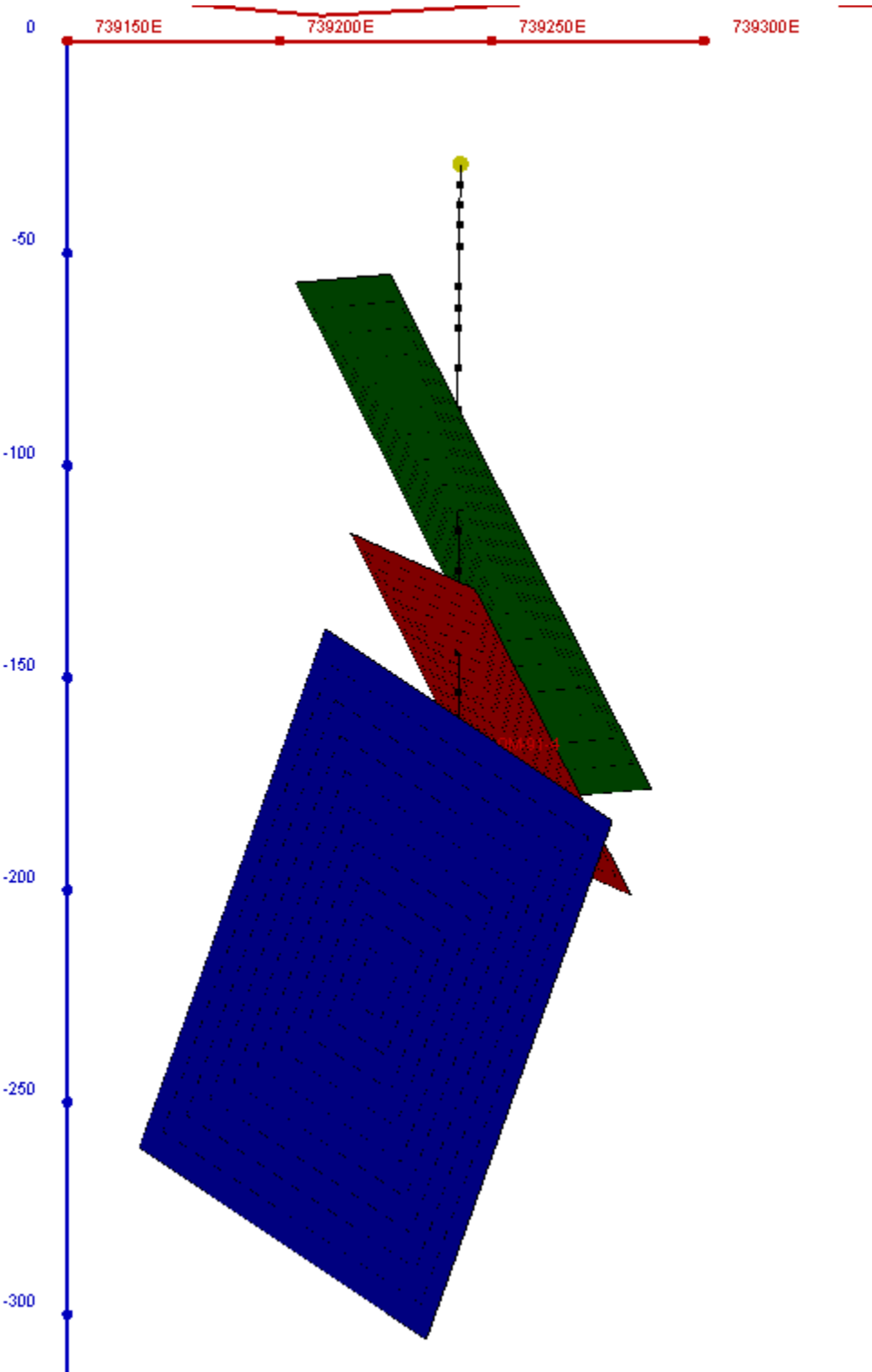


Figure 5 - View facing north.

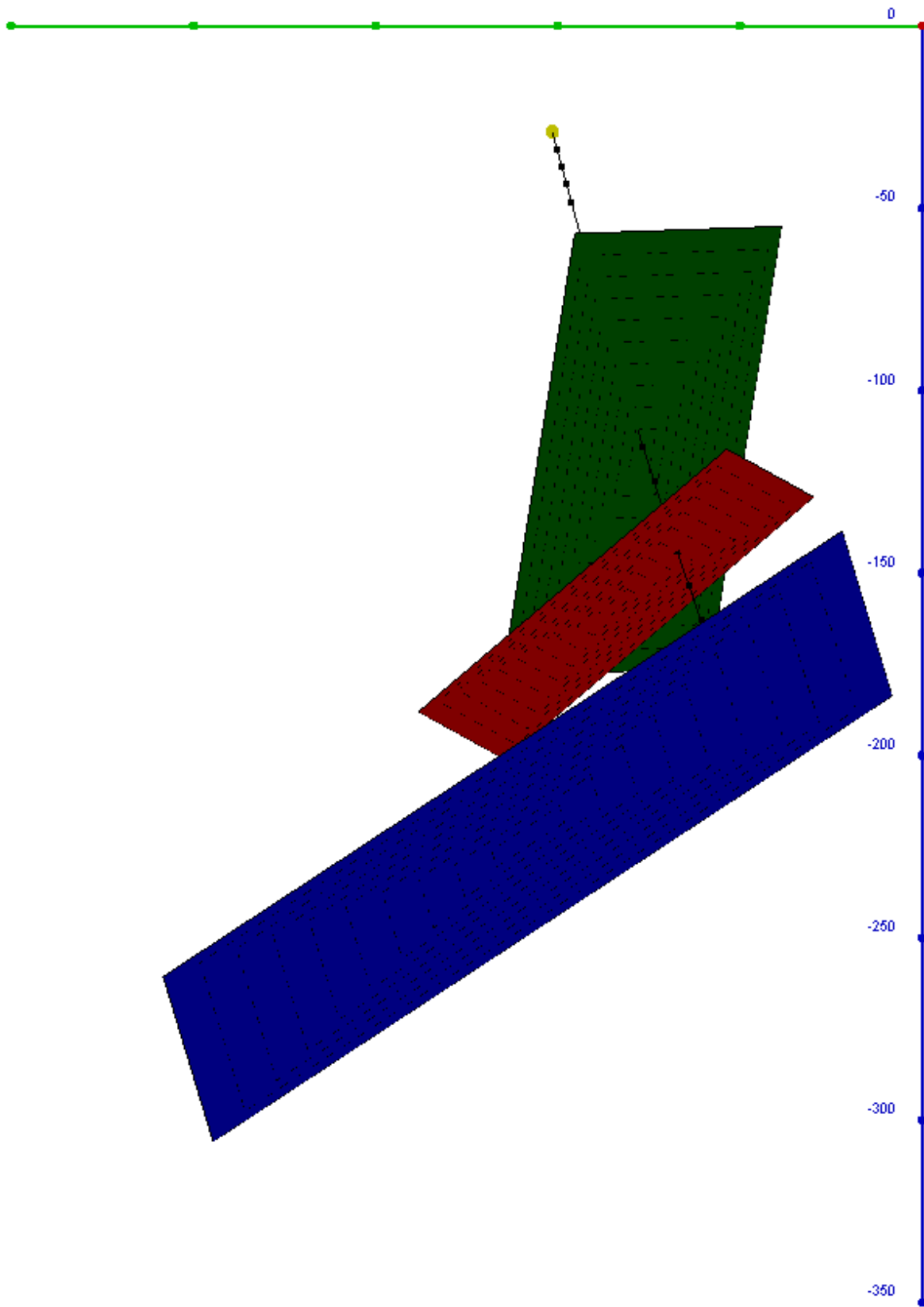


Figure 6 - View facing east.

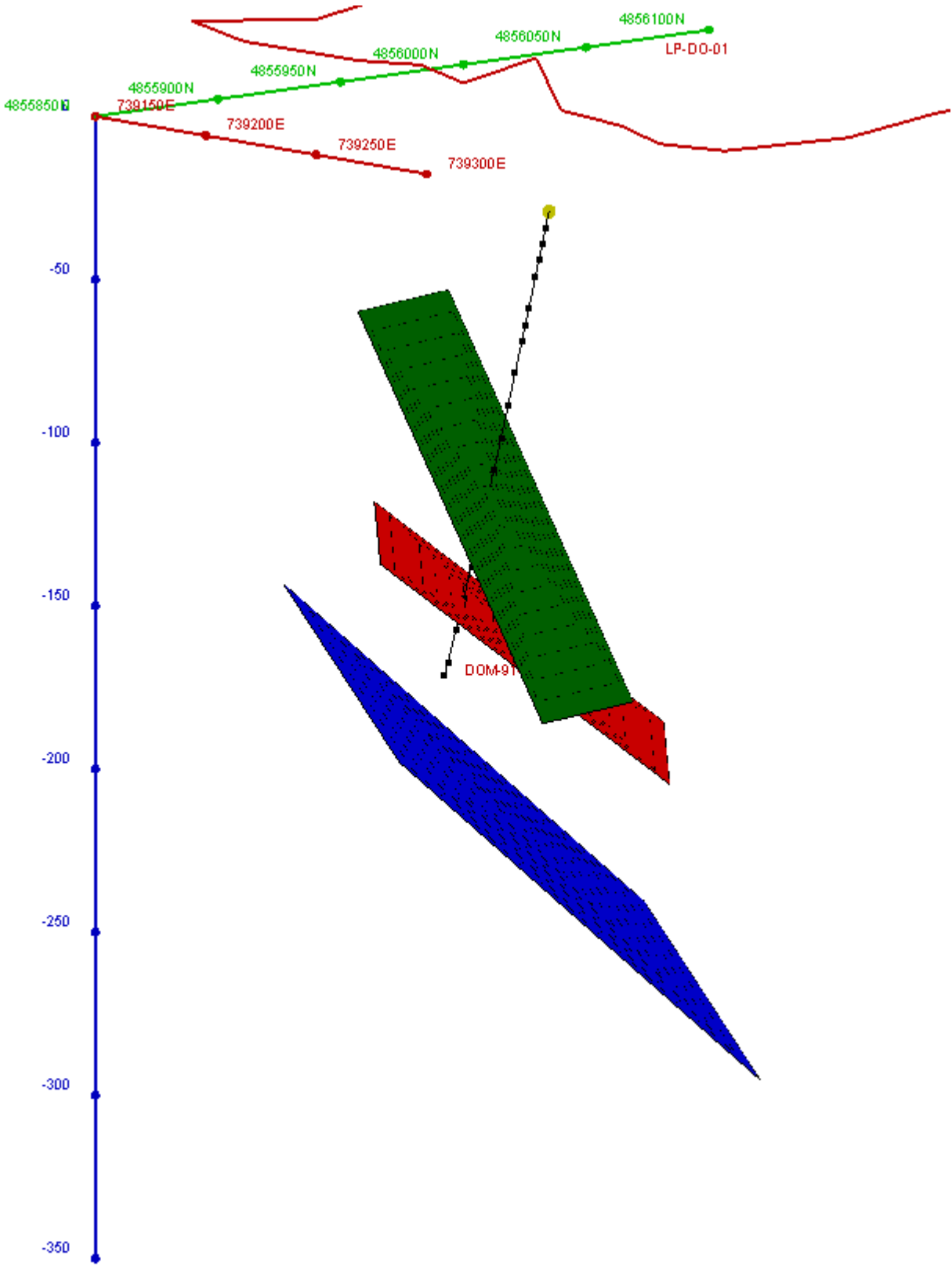


Figure 7 –Orthogonal view.