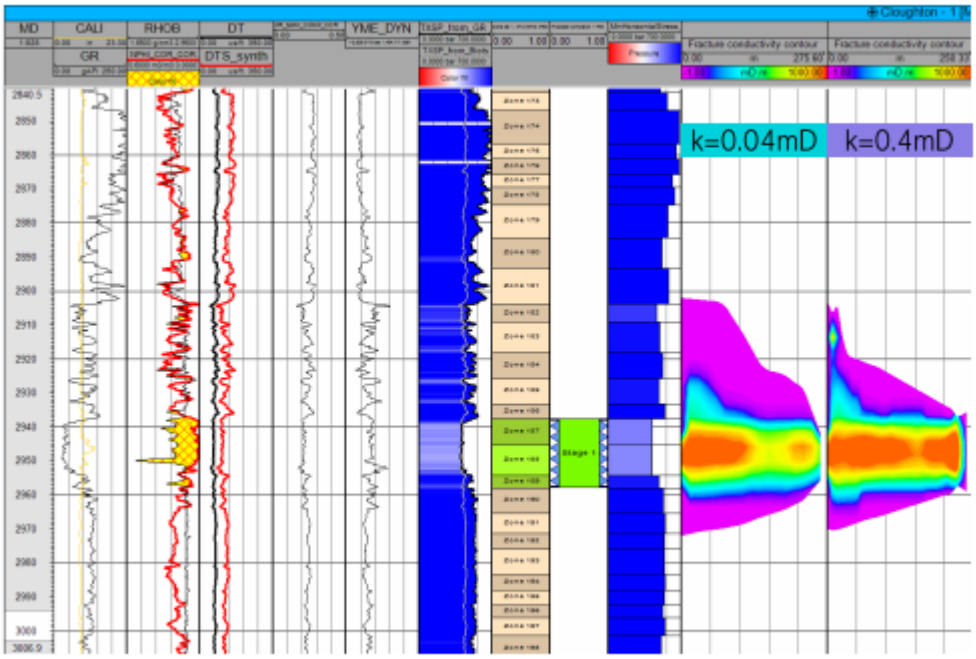
Question 5) Provide a description of the methodology proposed to be used to assess, and ensure, the proppant squeeze is maintained within the proposed mining waste facility.

Reason: The application lacks sufficient detail about the chosen injection pressure and any modelling used to support the estimate of the proposed mining waste facility. More information is needed to provide confidence the proppant squeeze will be restricted to the mining waste facility and that fluids won't spread to adjacent formations.

The fracture modelling is based on the geological characteristics of both the reservoir and surrounding lithology, which have been derived from the exploration well into the same structure, the Cloughton-1 discovery well. These characteristics include estimated stress in three dimensions, existing permeability and porosity. Given these assumptions the model can generate a forecast for the fracture shape and size and associated surface pressures, which is summarised in the accompanying document (ref "Clean Cloughton 1 Initial Stimulation modelling & design"). Due to the extremely low permeability nature of the shale layers (effective seals to fluid flow) sandwiching the reservoir sections, fracture propagation in the vertical sense is contained. Below is an example of one such single fracture stage. While the maximum vertical extent achieved during the operation is 70m the fracture propped vertical extent at the end of the operation will be around 20m, with the rest of the fracture closing.



The actual final stimulation design for the Cloughton-2 well will be conducted while drilling the well. Petrophysical logs acquired from the Cloughton-2 well will be processed to characterise the rock mechanics of the actual sands encountered. The initial modelling is then "calibrated" and further tuned on site by pumping a small amount of fluid without proppant and allowing it to leak off into the formation (the "data-fracture"). The data received from this and the logs in conjunction with further simulation modelling provides accurate measurements of fracture growth and closure that can be used to make final design changes which ensure control over fracture height and propagation length in individual lithologies.

The actual controls on fracture propagation during the operation will be described in detail in the Hydraulic Fracture Plan. The permitting of the stimulation operation is covered by a separate process.