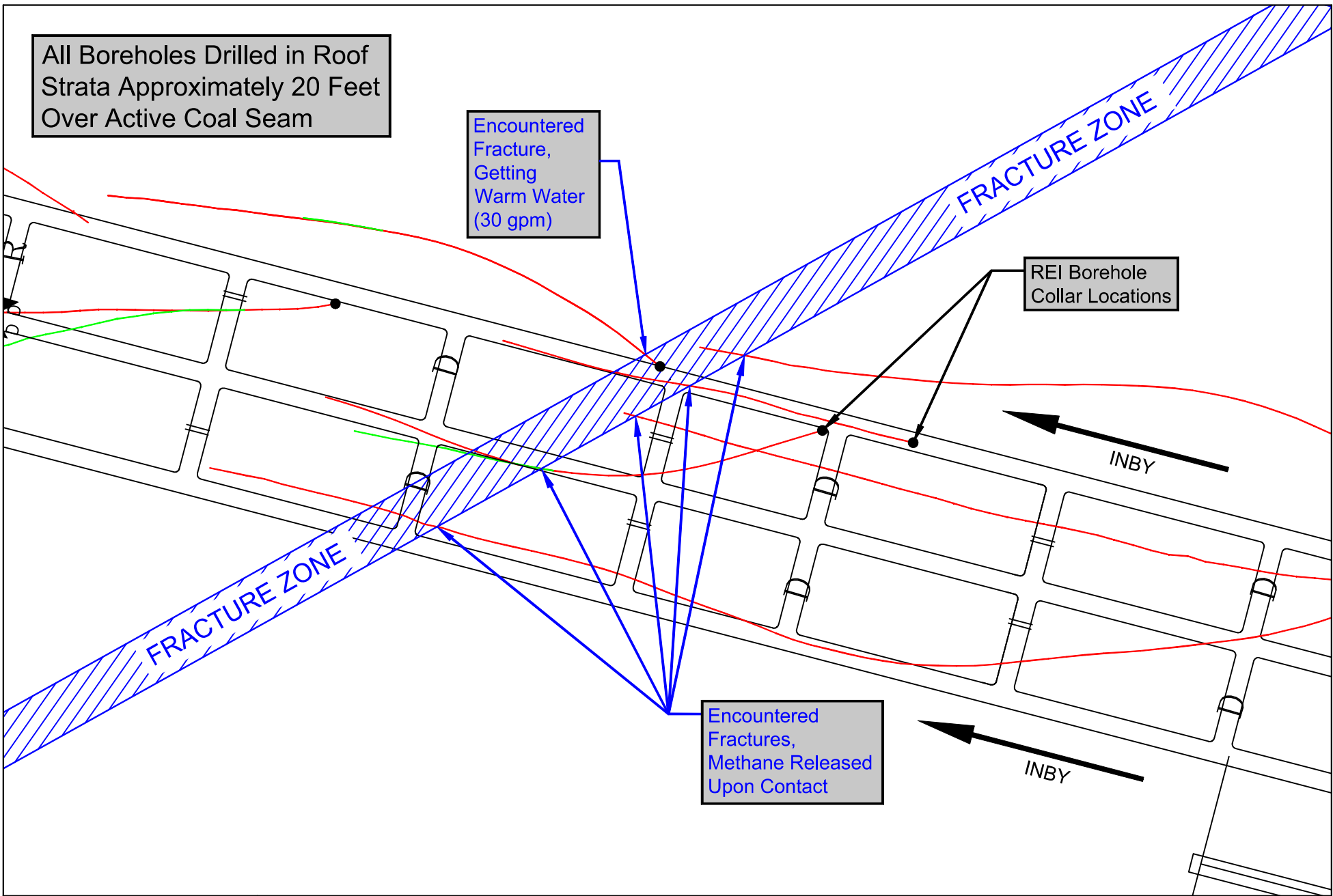


All Boreholes Drilled in Roof Strata Approximately 20 Feet Over Active Coal Seam

Encountered Fracture, Getting Warm Water (30 gpm)

REI Borehole Collar Locations



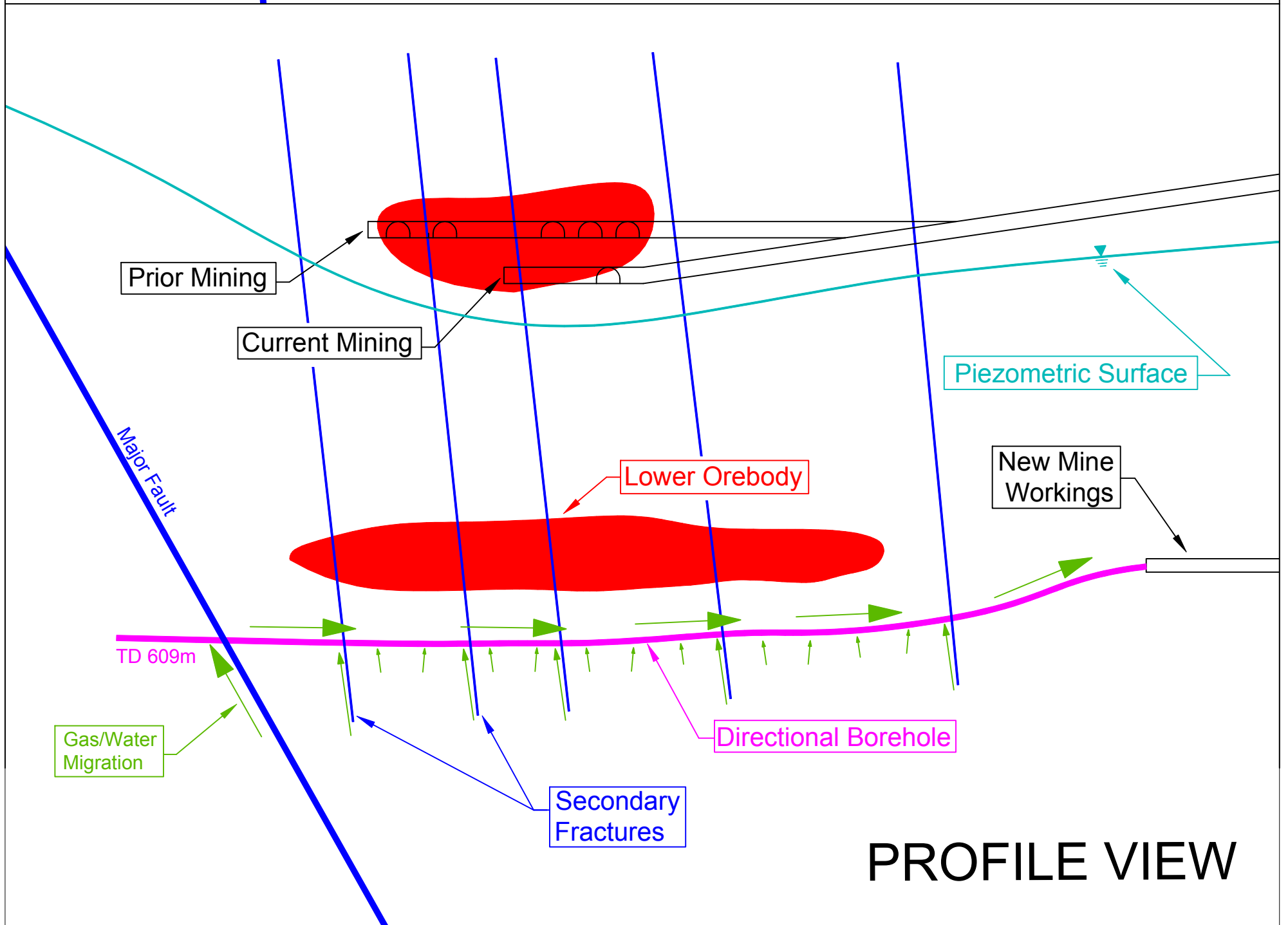
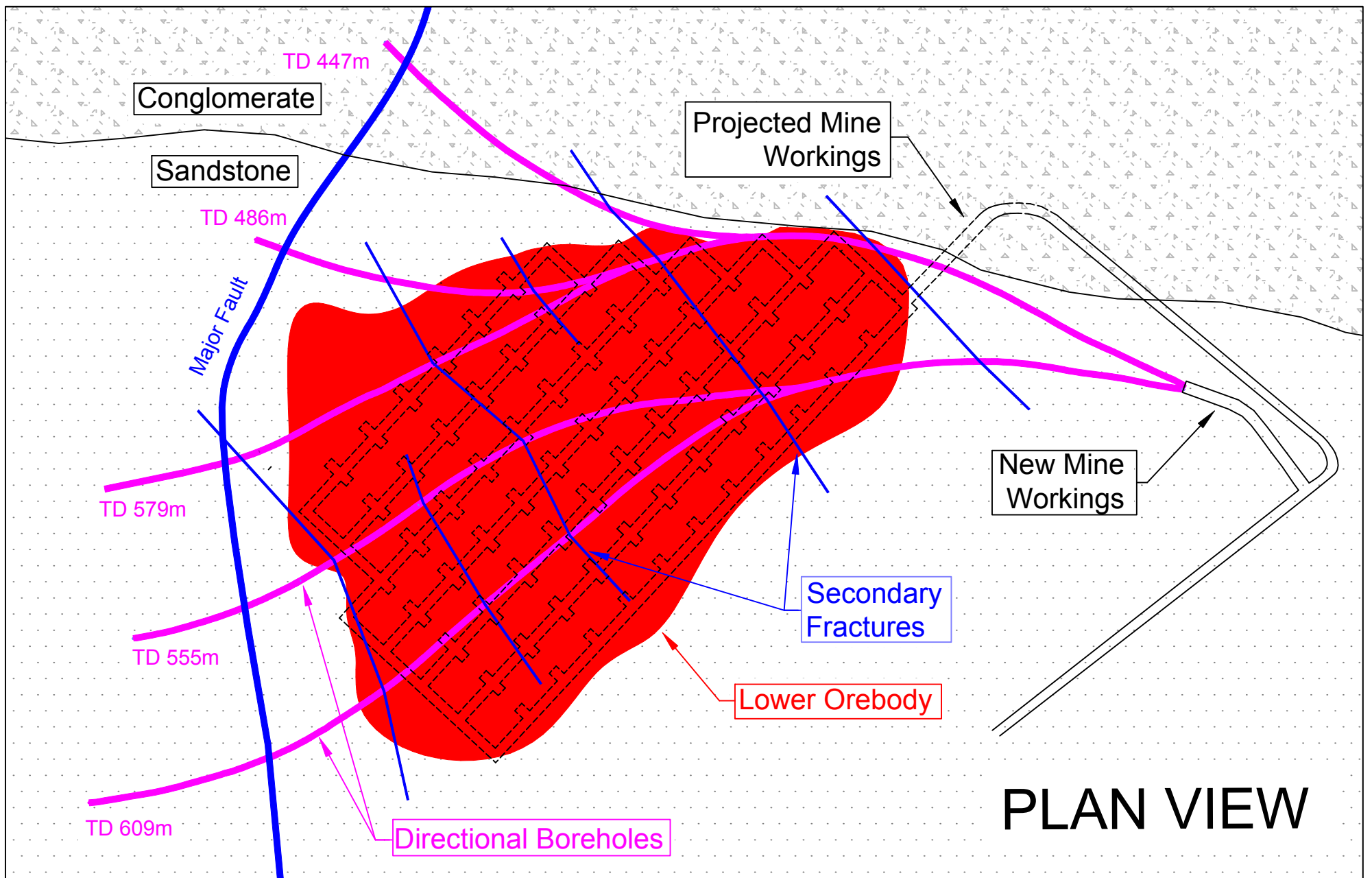
Encountered Fractures, Methane Released Upon Contact

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**REI DRILLING**  
DIRECTIONAL UNDERGROUND

### Feature-Focused Methane Drainage

REI has experience drilling methane degassification boreholes in advance of gateroad developments in a variety of situations. In this example, a longwall mine in Colorado was encountering significant gas whenever particular fracture zones were encountered. REI Drilling, as part of a long-term project, continually developed boreholes in the roof material approximately 20 feet over the active seam in advance of the gateroad CM sections in order to drain the methane prior to mining through the fractures. This process increased both safety and productivity when mining around these zones.



**Reducing Reservoir Pressure Below an Orebody in Advance of Mining:  
Water and Gas Shield Boreholes**

REI Drilling, Inc. ("REI") installed a directionally drilled manifold in Peru at a hard rock mine to control water and gas migration from lower elevation sources. The intent of the manifold was to reduce the reservoir pressure underneath a lower elevation ore-body to reduce the migration of gas and water to higher elevation mining levels. REI designed and installed an underground gas collection system to operate under vacuum to draw the gas - post water production - and route it to a vent raise for dilution into the Mine's ventilation return. This concept can also be applied to effectively reduce the piezometric surface in advance of mining at lower elevations. Underlying directionally drilled manifolds may also intercept vertical de-watering wells to further accelerate de-watering and are all concepts for consideration at hardrock mines in South America and abroad.



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