

Fallon Forge: Analog Geologic Studies, Reanalysis of 2D Seismic Profiles, and New Potential Fields Geophysics Studies

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ABSTRACT

Substantial geologic, geochemical, and geophysical data were accumulated in Phase 1 for the Fallon area, which permitted assessment of its potential for hosting FORGE. Much of these data were evaluated within the confines of a 3D geologic model that was constructed using existing data from wells, 2D seismic profiles, gravity data, and surface geologic mapping. One cornerstone of Phase 2B will involve updating and refining the model with newly acquired data and reprocessed existing data, such that uncertainty in the model can be further reduced. New potential fields geophysical data acquisition will include gravity and ground magnetics. Where possible, a pairing of ground mag lines and closely spaced gravity stations will be aligned along the trace of 2D seismic profiles to maximize data integration and subsequent modeling. New density and magnetic susceptibility measurements of samples from of all major rock units in the 3D geological model area will complement the potential fields geophysical studies by reduce uncertainty in the 2D and 3D geophysical modeling. Many of the existing 2D seismic profiles will also be reprocessed and then paired with new gravity models and well data to maximize interpretation accuracy. Another cornerstone of Phase 2B will involve analogue studies of Mesozoic basement exposed in nearby mountain ranges to better characterize the composition and structural nature of potential EGS targets at the FORGE site. This will include detailed analysis of the distribution, orientation, and density of various structural features, such as bedding, foliations, and fractures. These data will be compared to borehole imaging data from the FOH-3D, 61-36, 86-25 and 88-24 wells improve definition of the existing fracture network.