ABSTRACT

Stuck pipe is one of the many problems in the geothermal drilling. The impact of the stuck pipe incident is the cost of drilling or resulting in unproductive or non-productive time (NPT). The stuck pipe incident occurred four times in three (3) wells located on the AWI-9 pad. The three wells that experienced the stuck pipe were the Awi well 9-3, 9-5 and the last one was the Awi well 9-7. The stuck pipe incident occurred on the 17-1/2” hole section at an average depth of 3000 - 4000 ft MD.

The working pipe effort by doing overpull of 300,000 lbs is carried out for every incident the pipe is stucked in the above swells. Heavier mud pumping is done so that drill cuttings can circulate to the surface and ensure a clean hole. The use of air in drilling under conditions of loss of circulation is optimal, especially for geothermal drilling. If the stuck pipe occurs in the zone where there is a reservoir, the heat-up method is also worth considering. This process helps soften the failure so that the clamped tubing can eventually be released.

With the tensile point test by determining the increase in length after being stretched, the depth of the pinch point can be determined. The average addition of pipe length after overpull ranges from 13 to 15". With an overpull margin of 358,858 lbs, the maximum pull is still safe to do and results in a series of dislodged pipes. This process is also supported by optimizing the use of air in geothermal drilling, especially when drilling conditions lose circulation, drill cuttings can be circulated to the formation pores to prevent differential pipe sticking and pack-offs. The presence of this air sludge coupled with mud pumping is more effective in tackling stuck pipes.