

RECORDED BENEFITS

- 6MW (10%) improvement in generation capacity
- No interruption of plant operation during cleaning
- Averted the need to drill new reinjection wells
- Reduced need to discharge brine to local river, improving sustainability
- An effective solution at a cost substantially lower than other options

Geothermal Power Plant Significantly Improves Reinjection Capacity

GeoSol™ Well Cleaning Program

Customer Challenge

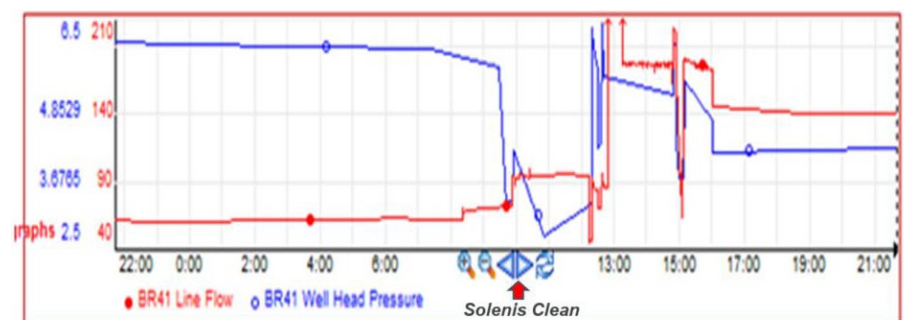
A flash steam geothermal power plant located in New Zealand was unable to maintain the reinjection capacity of its brine due to silica deposition reducing the permeability of its reinjection wells. Ultimately the silica deposition resulted in a loss of generation capacity and increased operational costs for the plant.

Recommended Solution

To help improve reinjection flow rates, Solenis recommended that the plant trial a novel well cleaning program developed by Solenis' R&D team that employs a relatively low-risk chemistry and a unique application methodology to effectively address silica deposition in geothermal conditions. Key features of the cleaning program include its ability to be monitored and controlled online and its lower cost in use compared to traditional chemical and mechanical treatments.

Results Achieved

The first well chosen for the trial when first drilled operated at flow rates of 200m³/hr at a capped pressure of 6.5 bar. However, over time, flow rates were reduced to 40m³/hr due to the loss of well permeability. Upon implementing the GeoSol well cleaning program, flow rates increased to over 200m³/hr and eventually stabilized around 140m³/hr at 4.2 bar, which represents a 350% increase in flow. In addition to improving reinjection capacity, the program enabled the plant to improve its generation capacity and reduce its costs.



Flow and pressure graph of the reinjection well before and after implementation of GeoSol well cleaning program.

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