

Geogard SX in action

Geogard SX controls silica scale, improves operational efficiency and safety profile while reducing cost by 80%.

Increased flow output

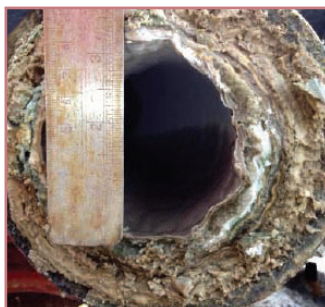
Longer productive periods

Reduces acidizing cleaning treatments

Simultaneous discharge treatment

Challenge

The Philippines is the second largest producer of electricity via geothermal wells, and correspondingly a significant problem with amorphous silica formation. The general operational procedures used to clean these silica deposits were acidizing and mechanical means, which are both costly and pose clear health and safety concerns. These methods lead to declining productivity and expensive outages multiple times a year.



Untreated line with silica scale

Results

Part of the geothermal system utilizes a low temperature brine injection scheme. The system has a high silica saturation index of 2.42 to 2.28, which explains the frequent expensive down time for pipe maintenance. It was determined, using a simultaneous discharge test on two wells, that an 8 ppm of Geogard SX was effective to produce an inhibition efficiency of 71.4% with a deposition rate of 1.2 mm per month.



After 3 months treatment with Geogard SX, 1.2 mm scale

System Conditions

System Conditions	
Geogard SX Dosage (ppm)	8
Well head pressure (Mpa)	3
Separation pressure (Mpa)	0.095
Water flow (kg/s)	10.8
Weirbox Temp (°C)	90
Supersaturated silica (ppm)	753 - 694
Silica saturation index	2.42 - 2.28
Duration test (days)	90
Reynolds' number	4.3 x 10 ⁶

Our wide selection of biocide chemistry can be tailored for any treatment scenario.

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Geogard™

Geogard is the premier line of scale inhibitors for high temperature applications such as geothermal wells, steam assisted gravity drainage and cyclic steam stimulation operations. Silica and calcium carbonate, the most common forms of scale, can form at critical juncture points on valuable equipment. Geogard provides a thermodynamically stable product, effective at low dosages to inhibit many forms of scale. Geogard products eliminate dangerous and expensive manual clean outs in a cost effective and safe manner.

	Geogard SX	Geogard CA
Application	Silica	Calcium
Thermal Stability	> 250°C	> 200°C
Typical Dosage	2–8 ppm	5–10 ppm



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