

Soil Stabilization and Cementing of Settling Land Fields Surrounding Geothermal Hot Wells

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This study is investigated to a swellable polymer gel composition for use with an aqueous solution. The composition comprises water, a water soluble polymer, a water soluble crosslinking system and a swelling agent in order to manage an impermeable barrier in Hot Well site. The amounts of the polymer and the crosslinking system are effective to form a substantially uniformly reacted gel structure. The water soluble polymer comprises a mixture of polymers. The mixture of polymers comprises carboxymethylcellulose having from about a 0.65 degree of substitution to about a 0.95 degree of substitution and partially hydrolyzed polyacrylamide with a degree of hydrolysis ranging from about 10 to about 20 percent. The amount of the swelling agent was changed between 0,5 % to 3 % to maintain cementing and increased the volume of the gel when the swelling agent contacts the aqueous solution. The impermeable zones were necessary in dam site in order to eliminate contamination of fresh river waters near the Geothermal site and alluvial soil tract in the Belkızana Spa in Güçlükonak, Ilısu Dam, Şırnak city of Turkey. The impermeable barrier design were also investigated as success of elimination of soil toxicity, circular field barriers were effective in sequential sets. The water comprises from about 75 percent to about 99 percent of the weight of the composition.