Hydrogen Sulfide Removal

For the removal of hydrogen sulfide, manganese greensand directly oxidizes sulfide and catalyzes the oxidation reaction. Increased run length and service life of manganese greensand may be realized by pre-feeding a solution of chlorine-containing compounds.
Regeneration with $KMnO_4$ should be initiated before the unit has reached the point of complete exhaustion and sulfide is detected in the treated water.

Continuous Regeneration Process

In some installations better performance may be achieved by oxidizing soluble iron, manganese, and hydrogen sulfide prior to the manganese greensand filter. This is accomplished by the continual pre-feed of a solution of $KMnO_4$, chlorine, or a combination of both. The oxidized precipitates are then filtered out in the greensand bed with subsequent removal during backwashing. The manganese greensand allows the chemical reactions to go rapidly to completion and reduces iron and manganese to the required levels. No additional regeneration is required using this method. For additional information see our manganese greensand general bulletin.

Recommended Operating Procedures for Continuously Regenerated Manganese Greensand

Backwash rate – Sufficient rate to expand bed 35-40%

Service rate – 3-5 gpm/sq. ft.

Recommended bed depth – 20-24 inches manganese greensand; 15 inches anthracite

Maximum pressure drop – 10 psi.

Physical Characteristics of Manganese Greensand

Form: Black nodular granules of manganese-coated natural greensands

Apparent Density:	85 lb./cu. ft.
Shipping Weight:	87 lb./cu. ft.
Screen Grading:	18 x 60 mesh
Effective Size:	0.30-0.35 mm.
Uniformity Coefficient:	Less than 1.60
Specific Gravity:	Approx. 2.4

Note: Regenerate manganese greensand with $KMnO_4$ before placing in service.