

Oxygen Release Compound, ORC®

Microbial Fouling

Microbial Biofouling

In highly oxygenated environments, microbes which can drive the bioremediation process will flourish. Consequently, microbial biomass will increase dramatically under the enriched conditions. The biological growth can clog well screens and packing that are designed to allow groundwater flow to pass through the well.

The use of ORC in an Oxygen Barrier easily combats the problem of biofouling by generating a highly localized, elevated pH. Microbial growth is inhibited in these environments. The use of ORC does not raise pH levels throughout an entire treatment area which could jeopardize the success of bioremediation. pH is elevated and highly localized at the ORC source alone thus allowing microbes to thrive elsewhere in the treatment zone.

Iron Fouling

In oxygenated environments dissolved metals, such as iron, can oxidize and precipitate as hydroxides. The oxidized metals will deposit on the well casings and create blockages which inhibit the efficacy of oxygen distribution. This problem usually occurs when the soluble (ferrous) iron content of the treatment area is fairly high. Even in these cases, it is easily remedied by pretreatment technologies, such as the use of polyphosphates, or various cleaning methods, such as the use of hydrochloric acid, which remove the precipitates.

Since ORC releases oxygen very slowly, the possibility of iron fouling is markedly reduced when compared to other oxygen delivery systems. The use of hydrogen peroxide, for example, would be difficult to use under high iron conditions. It should be noted that where oxygen induced fouling is severe, the general feasibility of using aerobic remediation methods would be in question.

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