Background

AquaGate+Provect-IRM is a patented, composite-aggregate technology resembling small stones that is typically comprised of a dense aggregate core. In this application of the technology, a powdered reagent for metals stabilization (Provect-IRM™) utilized (Figure 1) with varying percentages of additive layer by percent of total weight.

![Photo of Provect-IRM coated particles](image1)

**Figure 1. Photo of Provect-IRM coated particles**

AquaGate+Provect-IRM serves as a delivery mechanism to reliably place reactive treatment and adsorptive materials into aquatic environments. The treatment material binds metals through a range of reactions including, precipitation, oxidation-reduction, and adsorption-desorption.

![Placement of AquaGate+Provect-IRM](image2)

**Figure 2. Placement of AquaGate+Provect-IRM**

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### Product Specifications

**Aggregate:** Nominal AASHTO #8 (1/4-3/8") or custom-sized to meet project-specific need
- *Limestone or non-calcareous substitute, as deemed project-appropriate

**Provect-IRM:** Powdered – Approximate 50-200 Mesh
- Multiple hydrophilic, nutrient rich organic carbon sources
- Powder ZVI – 25ft reactive surface area/lb.
- Potassium magnesium sulfate to promote iron-sulfide complexes
- Powdered activated carbon (PAC) to sequester organo-metal complexes
- **Manufacturer:** Proventus Environmental, Inc.

**Metals Stabilization:**
- From 0.5 – 5% coating quantity by weight

**Binder:** Cellulosic polymer

**Permeability:** $1 \times 10^{-2}$ to $1 \times 10^{-5}$ cm/sec

**Dry Bulk Density:** 75 – 85 lbs/ft$^3$

**Moisture:** 10 – 20% (maximum)

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*Provect-IRM is a Patented Product of Proventus Environmental Products, Inc.*

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