

**Water TEC Seminar
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**GreensandPlus Filter Media:
Outstanding Performance with Excellent Production Capacity**

Greensand Plus is a new water filtration media for the removal of iron, manganese, hydrogen sulfide, arsenic and radium. Its physical properties are the same as manganese greensand. However, it is superior to manganese greensand because it solves all of the problems associated with traditional manganese greensand. First among these is that it is readily available. There are no delays in production or shipments. Container loads can ship direct from the manufacturing facility to any worldwide port. This will save shipping and handling costs as well as save time by getting the media to your warehouse faster than shipping from the USA to your location.

The second improvement is that GreensandPlus is a much stronger and durable media than manganese greensand. Manganese greensand could not be operated at a differential pressure higher than 10 psi. Since it uses a clay type material as its base, a high differential pressure over 10 psi would crush the media into fines that would clog the filter. This will shorten the run time between backwashes, which will eventually lead to failure of the filter bed. GreensandPlus uses a silica-based material that will not crush and can safely be operated up to 15 or 20 psi differential.

The third advantage is that the media will not soften when treating water that is low in dissolved solids, low in total hardness or over 70°F. The clay-like material used as the base for manganese greensand would tend to soften if the raw water was low in solids or hardness or over 70°F. This softening would lead to the media crushing, causing fines that would shorten the filter run time and eventually cause the filter bed to fail. The base material for GreensandPlus is a silica product that will not soften under these conditions and, therefore, can treat low solids, low hardness or warm water without any concern.

The fourth advantage of GreensandPlus is that it has more capacity than manganese greensand. Both types of media have a manganese dioxide coating. However, the coating on GreensandPlus has a higher valence which gives it about 50% more capacity. Manganese greensand has a capacity of 500 to 700 grains per ft². For GreensandPlus we use 700 to 1,200 grains/ft². This means longer run times between backwashes and less backwash waste.

The next advantage is that GreensandPlus can be conditioned and regenerated using only chlorine. It does not require potassium permanganate as has been used with manganese greensand. Any strong oxidant can be used including ozone, but chlorine only works well. Conditioning will require 4 ounces of chlorine per cubic foot with a soak time of 4 to 24 hours. This process can also be used to sterilize the system. For operations using continuous regeneration (or CR), it will be necessary to maintain a chlorine residual in the filter effluent. This will insure that the media stays regenerated.

In summation, GreensandPlus keeps all the things that are good about manganese greensand and improves on all the things that were lacking:

- Improved availability and faster shipments
- More durable, will not crush at high differential pressure
- Will not soften when treating low solids, low hardness or warm water
- Better capacity
- Does not require potassium permanganate for regeneration

Inversand Company has been the only manufacturer of manganese greensand for over 50 years. Over those 50 years, many competitive products have been introduced, some good, some bad. But none, until now, have been as good as manganese greensand. We can now state that after 50 years, GreensandPlus is a media that surpasses the performance of manganese greensand. This media is now being used extensively in the USA for municipal treatment systems. Several municipal systems that have replaced the manganese greensand in some of their filters with GreensandPlus now plan to put GreensandPlus in all of their filters. GreensandPlus is also being shipped to countries in South America, Asia, Europe and the Middle East. We also have distributors in Australia and Canada interested in importing and stocking it. Due to its superior performance, better availability and competitive price, we feel this product will quickly replace the inferior products that customers have been forced to use due to the shortage of manganese greensand. We can assure you that after 3 years of shortages, there will be no shortage of GreensandPlus. It is being produced in a new facility that has ample capacity.