

# Trouble-Shooting Guide

# GREENSAND<sup>plus</sup><sup>TM</sup>



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## System Type: CR/IR\*

TROUBLE	CAUSE	REMEDY
1. Filter effluent clear, iron low, manganese higher than raw water.	Manganese being leached from GSP <sup>TM</sup> grains; bed is insufficiently regenerated.	Increase frequency of regeneration. Regenerate bed with sufficient oxidant selected (1 1/2 oz/cu.ft.) so high level of oxidant comes through bed. Make sure proper amount of oxidant is being used.
2. Filter effluent turbid with yellow to brownish color. Iron & manganese high.	Too much alkali being fed ahead of filter.	Reduce alkali feed. Maintain correct pH prior to filter at 6.2-6.5. Post pH correct if higher pH required in system.
	Polyphosphate being fed ahead of filter.	Discontinue polyphosphate feed.
	Channeling through filters.	Check bed surface for mounds, pockets, channeling, etc. Backwash & air-scrub if possible.
	Iron organically bound: reactions with oxidizing agent produce a non-filterable colloid.	Feed alum or other coagulant prior to filter. Amount determined in field.
3. Excessive pressure drop across bed immediately after backwashing.	Accumulation of fines at surface of bed.	Remove fines by scraping after backwashing. In severe cases bed replacement may be required.
	Backwash rate too low.	Increase backwash rate to 10-12 gpm/sq ft.
	Filter bed cemented evidenced by mounding around periphery of vessel.	Break up cemented areas with air-water wash combination. Bed replacement may be necessary.
	Well throwing fine sand, silt, and colloidal clay.	Check well supply, especially immediately after pump startup. Allow well to pump overboard at start of pumping cycle.
4. On multiple unit installations, water quality good on some units, bad on others.	Unequal distribution of pre-feed chemicals.	Inject chemical at a point where thorough mixing of chemicals with raw water occurs before diversion to the various filters.

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## System Type: CR\*

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5. Iron breakthrough before maximum  $\Delta P$  is reached.

Some iron waters filter in depth and do not build up head loss.

Backwash should be initiated by total # of gallons treated rather than by head loss. Use  $\Delta P$  as a backup to initiate backwash.

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6. Faint pink color in filter effluent.

Oxidant feed rate is too high.

Operate filter for 1-2 hours with oxidant feed off. Then reset feeder at slightly lower setting.

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## System Type: IR\*

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7. Low capacity.

Manganese oxide coating stripped from GreensandPlus grains due to insufficient regeneration. May be especially troublesome with high sulfide water.

Increase frequency of regeneration. Pre-feed  $Cl_2$  with sulfide waters. Replace bed if required.

GreensandPlus heavily iron-fouled.

Use CR method with dual-media anthracite/GreensandPlus bed to prevent iron fouling.

Excessive grain growth due to high manganese oxide buildup.

Increase frequency of regeneration. Bed replacement may eventually be required.

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\*CR - Continuous Regeneration

IR - Intermittent Regeneration

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