

Soluble iron removal

(Reference site only)



Tailored pH correction dosing package for iron oxidation at a tree nursery



TRILITY designed and manufactured a water treatment solution to remove soluble iron within the nursery's raw bore water.



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Design and manufacture a chemical dosing station to oxidise iron from within a tree nursery's raw irrigation source water.

TRILITY was engaged by a leading Victorian tree nursery to design and manufacture a water treatment solution to remove soluble iron from the nursery's raw bore water. The soluble iron in the water was gradually oxidising throughout the irrigation network causing continual system blockages, along with extensive operational time and cost ramifications.

TRILITY conducted benchtop trials using the exact source water and various iron removal technologies. On-site testing established that the raw source water had a low pH. TRILITY determined that pH correction would remove the iron by oxidising it out of solution into a non-soluble state. Coupling this knowledge with the onsite earthen pond, TRILITY worked with the nursery to devise a simple, yet robust pH correction system which enabled iron oxidation followed by natural sedimentation, effectively removing the problematic element from within the pressurised irrigation supply. Initially the dissolved iron in the raw bore water was measured at 55mg/L. After pH correction the levels of dissolved iron decreased to less than 0.03mg/L.

TRILITY's manufactured solution for this application was a high-density polyethylene (HDPE) banded intermediate bulk container (IBC) dosing station complete with an integral banded dosing cabinet and splash guards. This package enabled the safe and reliable dosing of sodium hydroxide for pH correction. The new system incorporated existing on-site assets to manage project cost and complexity. The final solution reduced the client's maintenance time and costs, and provided notable benefits to plant/tree production rates.



Who

A leading advanced tree nursery that specialises in the growing of an extensive range of both Australian native and exotic trees.

What

TRILITY designed and manufactured a chemical dosing station with integral tank bund and chemical barrier protection for operator safety. The chemical dosing station uses pH correction to oxidise the iron out of solution.

The on-site testing measured the dissolved iron in the raw bore water to be 55mg/L. After pH correction the levels of dissolved iron decreased to less than 0.03mg/L.

Where

Lancefield, Victoria.

Why

The nursery needed to remove soluble iron from its raw bore water used for irrigation. The soluble iron in the water was gradually oxidising throughout the irrigation network causing continual system blockages and extensive operational time and cost ramifications.

Snapshot

Client	Tree nursery
Type of Contract	Modular solution
Facilities	Chemical dosing station and tank bund
Technology	Sodium hydroxide dosing
Design Capacity	7.5 L/h



For further information

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