

ST JOHN OF GOD BUNBURY HEALTH CAMPUS

St John of God Bunbury health campus is located in the major regional centre in the south west of Western Australia. The 15 hectare site has extensive landscaping which is reticulated using ground water. As is typical of groundwater, it has high levels of iron (Fe) and (Mn), which left unsightly stains, red iron bio fouling and black manganese sludge on walk ways, feature walls, glass doors and windows.

After extensive testing it was identified that the existing manganese greensand based filtration system was in capable of removing iron and manganese to acceptable levels. Trials were then conducted using Quantum DMI-65 which increased the level of iron removal and also address the issue with manganese. The levels were reduced to well below the Australian Drinking Water Guidelines and World Health Organisation Standards for Drinking Water. In addition there is also evidence that the DMI-65 positively removed other heavy metals such as Zinc (Zn), Barium (Ba) and Arsenic (As).

Quantum DMI-65 is an extremely powerful catalytic action water filtration media that has extremely high capabilities of removing both Iron and Manganese simultaneously through low cost catalytic oxidation and retention of precipitate.

System changes required included removal of the Potassium Permanganate storage and injection system and replacing it with a Sodium Hypochlorite injection system. There were also repairs to laterals and backwash valves undertaken as the testing results in the table below highlights the effectiveness of the upgraded system.

| ANALYSIS | North Bore | Treated Water | Australian Drinking Water Guidelines (1996) |
|-------------------|------------|---------------|---|
| Total Iron (mg/L) | 11.8 | 0.005 | 0.3 ppm is regarded as acceptable. High concentrations cause staining and bio fouling |
| Manganese (mg/L) | 0.49 | 0.001 | < 0.1 ppm is regarded as acceptable. High concentrations cause staining and bio fouling |

In addition to the campus environmental benefits, the upgraded system also delivered significant operational and cost benefits. DMI-65 does not require recharging, thereby negating a need for costly Potassium Permanganate, which is a hazardous chemical, costly and difficult to operate and maintain. The campus filtration system was upgraded in 2004 and has performed consistently for more than 7 years. Quantum DMI-65 performs better and lasts longer than any other media on the market.