Manz Engineering Ltd.

Stavely Water Treatment Plant (2007)

Stavely, Alberta, Canada

Manganese Removal Using MEL-PF type filters.

Design constraints and objectives

- **Town of 700 people.**
- **Groundwater supply not under direct influence of surface water.**
- **Manganese in well water above 0.05 mg/L, presence of hydrogen sulfide and presence of sulfur reducing bacteria.**
- **Required treatment capacity of 1,200 m^3/day or 50,000 litres per hour.**
- **Minimum chemical requirements.**
- **Minimum level of automation.**
- **Minimum complexity – Operator Level 1.**
- **Minimum backwash water to be disposed of in town lagoon through existing sanitary sewer.**

Advantages of Using MEL-PF type filters.

- **Effectively reduces manganese to below 0.05 mg/L since commissioning (improving), no odour, no taste – community is completely satisfied with treated water.**
- **Credited with greater than log 4 virus removal.**
- **Low capital cost.**
- **No media replacement.**
- **Minimum maintenance (none since construction).**
- **Minimum energy consumption.**
- **Only chemical used is sodium hypochlorite.**
- **Wastewater is less than 1% of produced water.**
- **Life expectancy is greater than 25 years.**

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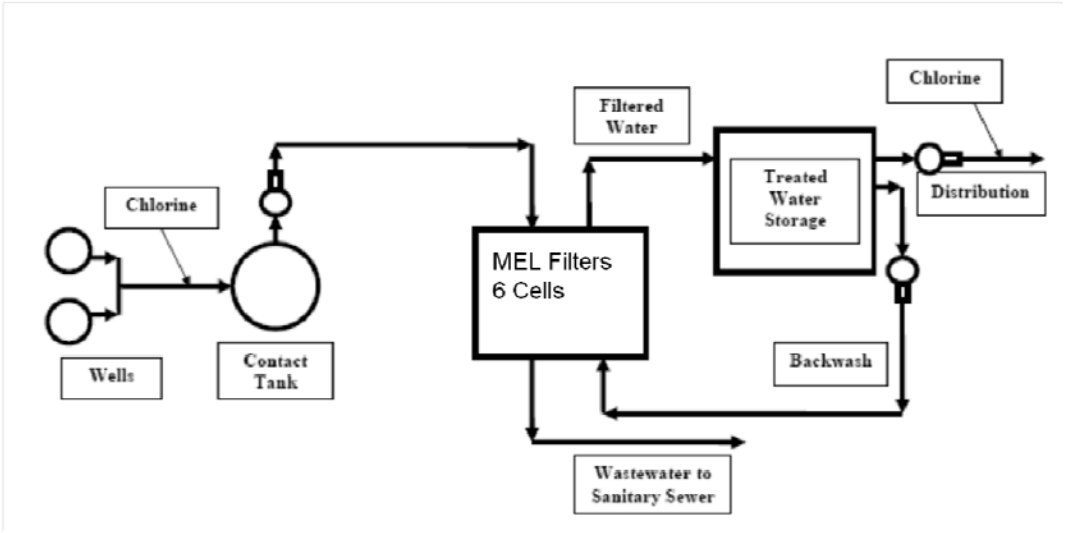
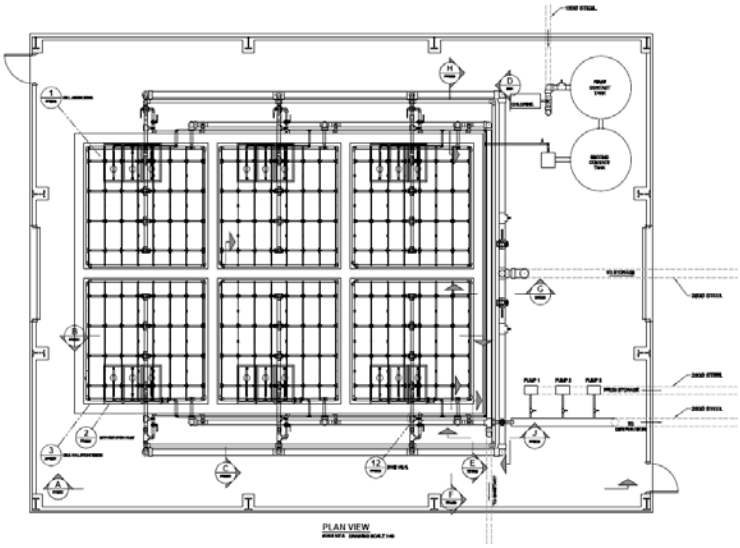
Process flow diagram for Mn removal.





- **6 (4 m x 4 m) MEL-PF type cells**
- **Each cell can treat a maximum of 10,000 L/h (Loading of 0.6 $m^3/m^2/h$)**

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