

## Rotating Biological Contactor Sewage Treatment Plant

**Customer:** Hutchinson Builders

**Location:** Hamilton Park, QLD

**Case Study ID:** CS-88

**Date:** December 2013

### Overview

Hutchinson Builders contracted Dowdens Pumping and Water Treatment on behalf of Origin Energy to design, manufacture, supply, install and commission a Rotating Biological Contactor (RBC) Sewage Treatment Plant (STP) for a 400 man camp located at their Hamilton Park South work site.

### The Problem

Hutchinson Builders required a Sewage Treatment Plant with a water quality output of Class C effluent and daily treated water production of 120 kL. The Class C treated effluent needed to be discharged onsite via a 6ha irrigation system.

#### Head Office

9-15 Industrial St  
Mackay QLD 4740  
Ph: +61 7 4969 4949  
Email: [info@dowdens.com.au](mailto:info@dowdens.com.au)

#### Brisbane Office

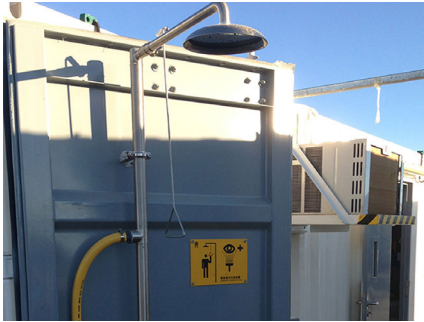
24/140 Wecker Road  
Mansfield QLD 4122  
Ph: +61 7 3828 7000  
Email: [brisbane@dowdens.com.au](mailto:brisbane@dowdens.com.au)

#### Rockhampton Office

4/415 Yaamba Road  
Park Avenue QLD 4701  
Ph: +61 7 4923 6969  
Email: [info@dowdens.com.au](mailto:info@dowdens.com.au)

#### Proserpine Office

2 Mann St  
Proserpine QLD 4800  
Ph: +61 7 4969 4940  
Email: [info@dowdens.com.au](mailto:info@dowdens.com.au)



## Our Solution

The incoming raw sewage is deposited in primary holding/settling tanks where primary settlement and anaerobic digestion occurs. The retention capacity in the holding tanks ensured proper settling of biosolids and anaerobic digestion occurred. The primary holding /settling tanks are equipped with a balancing weir, ensuring a constant flow through the plant and providing additional storage in the event of an emergency or peak flow condition. The settling tank effluent then flows through to the rotating disc stage, where aerobic treatment takes place. The surface area of the discs is sized to allow for both carbon oxidation and nitrification to take place in the rotor unit.

The turbulence created in the rotor basins ensures that the biomass is oxygenated and all matter remains suspended. Effluent from the rotating disc stage then passes through the humus tank/clarifier. Humus sludge is returned to the holding tanks utilising a small submersible pump which forms part of the recirculation process.

Treated effluent from the clarifier is pumped through a media filter to reduce the suspended solids level to meet the final treated effluent quality.

## Key Components & Features

### STP Components:

- The system is capable of treating 120kL / day of raw sewage into Class C effluent
- 12kL Duty/stand-by pump station complete with duty stand-by maceration pumps
- Emergency 30kL peak flow storage tank
- 4x 47kL Primary Settling Tanks
- 4x 1.1kW Rotating Disc Rotor Units
- Chlorine Disinfection System complete with probe and monitor
- Phosphate Removal System for Nutrient Removal
- Electrical Control Panel housed in a refurbished shipping container with air conditioning and lined panels.

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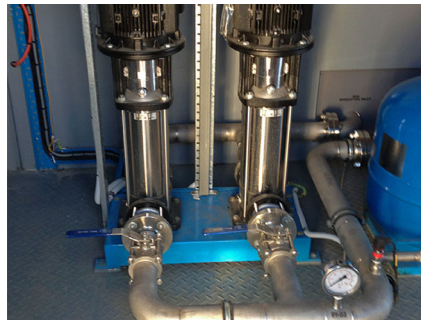
**Fully automated irrigation system supplying treated water to site included:**

- Fully automatic IRRinet control system
- Davis Weather Pro station
- Above-ground sprinklers for heavier droplets suitable for heavy clays

**Project Design Philosophy**

Dowdens Pumping & Water Treatment design philosophy for this project was:

- Cost-Effectiveness
- Innovation
- Ease of Installation
- Simple and Effective Plant Operation
- System Reliability and Reduced Ongoing Maintenance Costs



**Brands used in this project**



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