

Wastewater Industry - Sewage

Typical water cleansing issues

- Sewage treatment is the process of removing contaminants from wastewater and household sewage, both runoffs (effluents) domestic, commercial and institutional. It includes physical and biological processes to remove physical, chemical and biological contaminants. Its objective is to produce an environmentally safe fluid waste stream (or treated effluent) and a solid waste (or treated sludge) suitable for disposal or reuse (usually as farm fertiliser).
- Residual Chemical Oxygen Demand/Biochemical Oxygen Demand.
- Total Kjeldahl Nitrogen and Suspended Solids post effluent treatment are often major concerns.
- Total Oxidised Sulphur and suspended solid and semi-solids post effluent treatment can extrapolate to non-compliance and significant cost.
- Residual Oils, Fats and Grease discharged to the sewage conveyance network behave as an accumulating organic load leading to Septicity, Odour and Corrosion Issues within the pump wells and the network in general.
- These issues lead to increased Maintenance and Labour Costs; increased Operating Costs; and a reduction in the Life of the Plant and its Capital Equipment.

Our Solution

- Application of Solutek Organic Concentrate into selected parts of the Abattoir's wastewater treatment system.

Expected Results

- Reduction in Total Suspended Solids.
- Substantial reductions in Oil and Grease with a resultant cleaning of wastewater pipes.
- Significant reduction in Chemical Oxygen Demand.
- Reduction or elimination of Odour within the plant.
- Reduction in Kjeldahl Nitrogen.
- Aerobic and Homogeneous effluent presented to the treatment plant.
- Reduction in operating energy costs; reduction in maintenance costs; and extended plant life.

Other Major Benefits

Solutek is 100% bio-degradable, is user and environmentally safe, non-corrosive, non-hazardous and non-flammable.

Our Organic Concentrates comprise elements extracted from sustainably harvested, naturally occurring marine flora. They do not contain 'live-cell' bacteria (bio-culture) or enzyme concoctions and cannot introduce renegade bacteria into your system.

Sewage Network – Grease and Septicity

Cairns Regional Council Port Douglas Sewage Network



Background

- Following 18 years of successful use of Solutek Organic Solution by Cairns Water, it decided to introduce it into a new and problematic sewage network. The Port Douglas (Douglas Shire): This had been amalgamated into Cairns Water and the maintenance and operation of the network and Sewage Treatment Plant had become their responsibility.
- The restaurant precinct at Port Douglas was generating a vast amount of Oil and Grease. Due to an ineffective Trade Waste management system the pump wells were performing as communal Grease Traps. The accumulating organic load (Oil and Grease accumulating on the aqueous phase) lead to septicity, odour and corrosion issues within these pump wells and the network.
- The disproportional amount of well washing and education, along with sewage surges through blockages and network repairs/replacements, along with after-hour's operator call-outs, became an operational expenditure burden too great to ignore.

Results

- Solutek Organic Concentrate was introduced into 7 pump wells to reduce the accumulation of Oil and Grease in the restaurant precinct and in the pump wells that were subject to septicity due to extended retention times near the extremities of the network. Remarkable results were achieved in Phase 1 during 2010 and 2011; Phase 2 is currently under way and further information can be made available on request.

Details and Outcomes

Details

- Total Network Flow Rate: **2,500,000 L/day**
- Solutek Dose Rate: **12 mg/L (Wastewater)**
- Dosing Points No.: **7**

Outcomes

- Elimination of **Septicity** in Network
- Reduction of **Dissolved Sulphides** in Network
- Reduction in **Odour** in Network
- Reduction in **Oil and Grease** in Network
- Reduction in **Ammonia** in Network

NB (Testing is continuing at the time this report was issued. Up to date and accurate results can be obtained by contacting SolEco)

Dosing Overview—sewage treatment

Solutek is currently in use in several sewage treatment plants. It performs effectively, saving our clients' money, improving water quality and removing problems such as odour and corrosion issues.

Dosing

Solutek is typically dosed in the following way for sewage treatment:

Stage	Period	Amount (ppm)
Initial	1 - 6 weeks	14
Transition	6 - 13 weeks	12
Maintenance	13 + weeks	9



Ideally, the Solutek is added in Lift wells (pump stations) at the “head-waters” of the sewage system and in the holding ponds (or tanks) before the re-oxygenation phases.

Table One – Sewage

This table describes the amount of Solutek dosed for:

- ☐ Initial
- ☐ Transition
- ☐ Maintenance

Throughput of STP (million litres / day)	Initial dosing (14 ppm) Litres/day	Transition dosing (12 ppm) Litres/day	Maintenance dosing (9 ppm) Litres/day
100	1400	1200	900
50	700	600	450
25	350	300	225
10	140	120	90
5	70	60	45
1	14	12	9