

BIOLOGICAL SLUDGE REMOVAL

Shane Mckibbin – For Earth Pty Ltd

Over the past six years For Earth has been developing biological systems to accelerate the removal of nutrients and solids from wastewater systems.

For Earth has successfully developed the Probiotic Low Energy Aeration System™ which biologically removes sludge from sewerage treatment plants' sludge storage lagoons and tanks.

The system involves the use of sub-surface aeration and also automated application of a bacteria product For Earth Bio™ which is surface sprayed at set periods. With the introduction of specific bacteria into an aerated zone, substantial biological sludge reduction is achieved within the sludge storage lagoon. The cost savings being achieved by council engineers and operators has been substantial.

Coffs Harbour Council which installed the For Earth system in August 2009 has enjoyed cost savings which have been presented in a technical paper. The paper outlines the successful results achieved at the Woolgoolga Sewerage Treatment Plant that was under considerable sludge load.

Initially the Probiotic Low Energy Aeration System was used to desludge an offline sludge storage lagoon and then this lagoon was placed online with



supernate flowing into sludge storage lagoon number two. Some of the operational and costs savings outlined in the paper are as follows.

- Production of dry sludge decreased by 47%
- Sludge handling costs reduced by \$1,400 per week
- Treated sludge transferred to drying beds dewatered in approx 10 days which was previously 3-4 weeks.
- The postponement of a \$1.5M centrifuge sludge augmentation system.
- Considerable odour reductions
- Coffs Harbour Council have extended the use of the For Earth system to three other sewerage treatment facilities.

The For Earth Biological Sludge Removal System has been taken

onboard by many councils throughout NSW. The high cost of mechanical removal, dewatering and transport of the dried sludge can vary from \$100 to \$150 per cubic metre of sludge. The For Earth system costs approximately \$5 per cubic metre. The capital cost of the automated bacteria dosing system and low energy aeration system is minimal and there is very little maintenance required. The dosing and aeration system can be retrofitted to any tank, lagoon or retention area and also easily relocated. The For Earth system is especially useful in plastic poly-lined ponds as mechanical sludge removal can damage the lining. Also the system has advantages in location where heavy machinery cannot gain access.

The For Earth system of biological sludge removal has become an accepted sludge removal process and we are seeing council engineers and operators adapt the technology to catch balance tanks, extended aeration tanks, tertiary ponds, sale yard effluent ponds, landfill leachate ponds and decommissioning of tanks and ponds.

The Probiotic Low Energy Aeration System has also successfully gained project funding by clients through the Department of Environment Climate Change, Department Primary Industry and Enviro Fund due to the environmental benefit of reduced carbon footprints through energy savings.

For further information visit www.forearth.com.au or email shanem@forearth.com.au.

SURPRISING RESULTS FROM ECOLINE STUDY

A study by Simmonds and Bristow has demonstrated the Ecoline system, the world's first commercial electrochemical system capable of disinfecting fresh water, also produces



water



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