

Biological Additives

Trade Waste Guideline No. 7

INTRODUCTION

Pre-treatment units are designed to remove oil/grease and solids from waste waters and therefore prevent sewer blockages downstream. Periodic removal of this accumulated material is necessary. It is often proposed that specialist biological additives which produce enzymes capable of breaking down fats, protein, sugars and other carbohydrates, be introduced as a substitute for traditional servicing.

SA Water's experience is that Biological remediation is not an alternative to pumping out Grease Arresters, but may prove to compliment the operation of the pre-treatment system.

Indiscriminate use of such additives can produce waste waters, which are injurious to the sewerage system, thereby negating the benefit of pre-treatment. To ensure that such intentional biological alteration to existing or future pre-treatment systems is not a threat to the Corporation's sewerage system, its workers or the environment, compliance with this Guideline is required.

DEFINITIONS

For the purpose of this Guideline 'biological additives' refers to organisms, or products of organisms, designed to be added to previously approved or newly constructed waste water pre-treatment systems. 'Pre-treatment system' refers to any device used to lower the concentration and loading of oil/grease and/or solids in waste water prior to sewer discharge.

TRADE WASTE DIRECTIVES

- Only those biological additives specifically approved by SA Water can be added to pre-treatment systems. They shall only be used in accordance with the manufacturer's instructions, under circumstances for which approval has been given.
- Biological additive(s) containing heavy metals, emulsifying agents or those that could increase biochemical oxygen demand (B.O.D₅), total suspended solids (T.S.S.), or grease concentration of effluent entering the sewerage system, **shall not be added** to an effluent pre-treatment system.

EVALUATION PROCEDURE

To gain SA Water's approval for the use of a specific biological additive the persons or business seeking approval must satisfactorily complete the following trial procedures:

- A number of sites (minimum of 3) using approved pre-treatment systems must be agreed to by the applicant and Trade Wastes. The systems must have a minimum capacity of 1000 litres and a history of routine maintenance and be operating within their design capacity.
- SA Water will negotiate with the biological additive supplier/agent to determine a sampling and observation program based on individual site conditions.
- Sampling and analysis is to be undertaken by SA Water.
- Should the above analytical and observational results show significant improvement in waste water quality (a minimum of 10% reduction in effluent loadings) more intensive monitoring will then be required at one site. SA Water reserves the right to require additional sampling to be undertaken to adequately demonstrate product effectiveness.

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- Evaluation of product effectiveness will be based on the combination of grease trap observations and actual sample results. Sample results must support observational results and vice versa.

WHEN APPROVAL IS ISSUED

Where SA Water issues an approval for biological additive use, this will be done on the condition that:

- Interim approval will initially be given for a period of twelve months during which time SA Water may audit and sample any number of customers using the product on a random basis to ensure ongoing compliance.
- Approval will only permit use of the specific product found to be successful. Similarly the additive concentration, dosing program and equipment must be **exactly** the same as was used in the successful trial. Any proposed changes to formulation, dosing program or equipment must be formally referred to SA Water for approval.
- The biological additive supplier/agent will provide to SA Water names and addresses of all new sites, within seven days of customers agreeing to its use.
- SA Water will advise each customer of a reasonable servicing interval, based on experience gained during the trial process. The ongoing effectiveness of additive use and servicing frequency will be assessed as part of SA Water's usual site audit function.

Provided all requirements of this Guideline are met over the interim approval period, SA Water will negotiate conditions for a full approval with the additive supplier/agent.

ASSOCIATED COSTS

Costs associated with the trial will be invoiced to the product supplier/agent. These can include but may not be limited to sample analysis costs, labour costs for onsite visits and administration costs.

An estimate of SA Water's costs can be given to biological additive suppliers/agents at the beginning of each trial, however the final actual cost may vary according to the degree of success and the extent to which the trial may be extended or sampling varied.

Should the accounts for services rendered by SA Water to the biological additive suppliers/agents fall into arrears at any time, SA Water may immediately suspend the trial process upon giving written notice to all parties involved.

The cost of servicing pre-treatment systems lies with either the discharger of waste water and/or the additive supplier/agent. An arrangement between these two parties needs to be established prior to the trial commencement.

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