

## Slipway Operation

### Trade Waste Guideline No. 10

#### INTRODUCTION

Trade waste discharges from slipway facilities or companies conducting marine vessel repairs have the potential to adversely affect the sewerage system. Waste waters may contain suspended solids, grease/oils, anti-fouling chemicals (e.g.: heavy metals such as copper and tin) and contaminated stormwater. Appropriate management practices at each site are therefore necessary.

#### DEFINITIONS

Tributyltin (TBT) is an organo-tin compound used in some anti-fouling paints to minimise the marine growth on shipping hulls. It is extremely toxic to marine animals and has a bio-accumulative affect.

#### KEY TRADE WASTE QUALITY REQUIREMENTS

PARAMETER	ACCEPTED LEVEL	
	METRO WWTPs	COUNTRY WWTPs*
Suspended Solids	<500 mg/L average	<50 mg/L average
pH	Between 6-10 units	Between 6-10 units
Total Dissolved Solids	<1500mg/L	<1500mg/L
Tributyltin (TBT)	100 <b>nano</b> gram/L	Dependant on capacity of receiving WWTP
Flow rate to sewer	Dependant on capacity of receiving sewer	Dependant on capacity of receiving sewer

\*Country waste water treatment plants (WWTPs) are generally only able to cope with much smaller pollutant or hydraulic loads than metropolitan WWTP's.

#### DESIGN / INSTALLATION

- Ballast, bilge and seawaters are prohibited from discharge to the sewer.
- The slipway, cleaning and wash down area is designed to minimise the area that is unroofed and is solely used for the purpose of cleaning marine growth from the hull.
- The area is bunded to contain all wash down water and exclude clean stormwater runoff from entering the slipway, in accordance with [Trade Waste Bunding Guideline No. 4](#).
- Wash water and initial, 'first flush' stormwater falling on the 'dirty' area will be accepted to sewer after appropriate pre-treatment. The 'first flush' volume is specified by the [Environment Protection Authority](#) (EPA). A rain gauge coupled to the control panel monitors rainfall events.
- When a rainfall event exceeds the 'first flush' amount, further stormwater flow is automatically directed away from sewer to the stormwater drain. **Activities likely to introduce new contamination during rainfall events are not permitted.**
- Discharge of collected wash water and 'first flush' rainfall to sewer is delayed until after a rainfall event has passed so as to avoid flooding of the sewer.
- Solids from work areas of slipway are removed by dry cleaning/sweeping prior to wash down.
- All tanks containing the waste water and treatment chemicals are bunded in accordance with [Trade Waste Bunding Guideline No. 4](#).

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## TYPICAL PRETREATMENT

All wash water and contaminated “first flush” stormwater is directed to sewer via;

- A suitably sized screening device (silt trap and/or screen with maximum 5mm size mesh) discharging via a stormwater bypass chamber to a pump chamber.
- A float operated pump transfers waste water to the settling tank.
- Chemical additions (e.g. coagulants and flocculants) into the solids settling tank, to aid separation, if the suspended solids, heavy metals, or other contaminant concentrations exceed the [Standards of Acceptance of Liquid Waste to Sewer](#).
- Waste water from the settling pit overflows to a holding tank of sufficient capacity to hold the ‘first flush’. A solenoid valve on the outlet, coupled to a control panel, opens once the stormwater ‘peak flow’ has passed the site, discharging waste water to the sewer.
- All clean stormwater (i.e. that falling after the ‘first flush’) is diverted away from sewer and discharged to the stormwater system.
- See Figure 1 for a typical layout of a contaminated stormwater treatment system.

## ADDITIONAL PRETREATMENT

- Balance tanks for waste water storage may be required depending on the hydraulic capacity of the local sewer network or WWTP.
- An oil and grease separator will be required if any oily waste waters (e.g.: engine maintenance) discharge into the system.
- Where antifouling paint containing Tributyltin (TBT) may be applied or removed, all supernatant is discharged to sewer via a Granulated Activated Carbon (GAC) bed. The GAC will require replacement as the concentration of TBT nears the 100 nano-gram per litre discharge limit.

## MAINTENANCE

It is the responsibility of site management to ensure the effective operation of all pre-treatment equipment (e.g. ongoing removal of accumulated solids, sludge removal, chemical replacement.)

## FEES AND CHARGES

An annual fee for discharge of stormwater to sewer will apply. A current fee schedule can be obtained from the Trade Waste Branch.

## ADDITIONAL INFORMATION

Mains Water Protection (AS/NZS3500-2003 Part 1), [Trade Waste Batch Treatment Guideline No.17](#), [Trade Waste Blind Tank Guideline No.3](#), [Trade Waste General Policy](#), [Trade Waste Contaminated Stormwater Guideline No.19](#),

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Figure 1: CONTAMINATED STORMWATER TREATMENT SYSTEM

