# Contaminated stormwater

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Unauthorised stormwater discharges to sewer are specifically prohibited under the *Water Industry Act 2012*, to prevent flooding of sewers. Unauthorised discharge of contaminated stormwater to the environment is prohibited under the *Environment Protection Act 1993* and the Environment Protection (Water Quality) Policy 2015. Therefore, to protect both the environment and the sewerage system, suitable roofing and bunding is usually required to segregate the waste water and clean stormwater streams.

In **exceptional** circumstances where roofing is not practical, we may agree to accept contaminated stormwater from work areas to sewer. This guideline sets down appropriate management practices at these sites.

## Disposal option 1 – stormwater diversion

An initial 'first flush' of stormwater cleans contaminants from the exposed work area. This contaminated water is treated, stored and discharged to sewer. Further rainfall on the exposed work area is 'cleaner', so it may in some circumstances be directed to stormwater. There are many variables that can influence stormwater first flush, such as the nature and source of the pollution, the pollutant mobility and supply and the antecedent dry period prior to rain. Runoff after the first flush may still require pre-treatment to achieve acceptable quality for release to the environment. First flush is generally limited to runoff from impervious surfaces and sites with pervious surfaces especially areas where soil erosion is anticipated are not suitable for a first flush system. See *Figure 1* for a typical layout.

### Dry weather operation

- Contaminated areas are of minimum size, bunded and sealed to contain all contaminated water and exclude non-contaminated surface water.
- While there is no rainfall, normal washing activities can be undertaken. The wastewater passes though suitable device(s) to remove large solids (e.g. silt trap and/or screen), then to a stormwater bypass/pump chamber.
- A float activated pump transfers wastewater to suitable pre-treatment device(s) (e.g. oil/grease/solids separator, settling tank) to achieve compliance with our Restricted Wastewater Acceptance Standards.
- Treated wastewater passes through the treated wastewater storage tank and discharges to sewer.

### When rainfall is detected

- When the rain gauge detects rainfall, an automatic control system shuts off water supply to the work area and the outlet to sewer. **Activities likely to introduce new contamination during rainfall events are not permitted.**
- The first flush volume of stormwater falling on the contaminated area is pumped and pre-treated in the same way as normal wastewater and stored in the treated wastewater storage tank. This tank has enough capacity to retain the first flush volume. EPA recommends the first flush tank capacity should contain runoff volume from a 10mm rainfall event when pollutants are easily mobilised such as dusts or sediments and 15mm rainfall if less mobile pollutants such as oil and grease are present, but this might vary at individual sites.

- When a rainfall event exceeds the first flush volume, the pump is deactivated. Further stormwater flow is therefore directed to the stormwater drain. Note because first flush may be variable it is the responsibility of the operator to ensure any discharges to the stormwater drainage network comply with the *Environment Protection Act 1993* and the Environment Protection (Water Quality) Policy 2015.
- When rainfall has stopped, the control system opens the outlet valve to allow discharge at a controlled rate from the treated wastewater storage tank.
- All wastewater tanks, pre-treatment devices, treatment chemicals etc, are bunded in accordance with the Trade Waste Bunding and Blind Tanks Guideline and the EPA Guideline Bunding and spill management.

## Disposal option 2

Where it cannot be guaranteed that contamination is removed during the first flush, or residual contaminants cannot be pre-treated effectively after diversion to the stormwater system, all water collected in the contaminated area is directed to sewer in accordance with our requirements. System design and operation are as for *Disposal Option 1 – Stormwater Diversion* except;

- No bypass to stormwater drain. All process water and stormwater drain to a holding tank, pending treatment and discharge.
- The holding tank has sufficient buffering capacity to prevent overflow and environmental contamination from foreseeable rainfall events. Extra capacity is provided if trade waste activities might continue during rainfall events.
- Collected wastewater is pumped from the holding tank via pre-treatment device(s) to sewer at times and flow rates specified in individual Trade Waste Discharge Authorisations. See *Figure 2* for a typical layout.

## Fees and charges

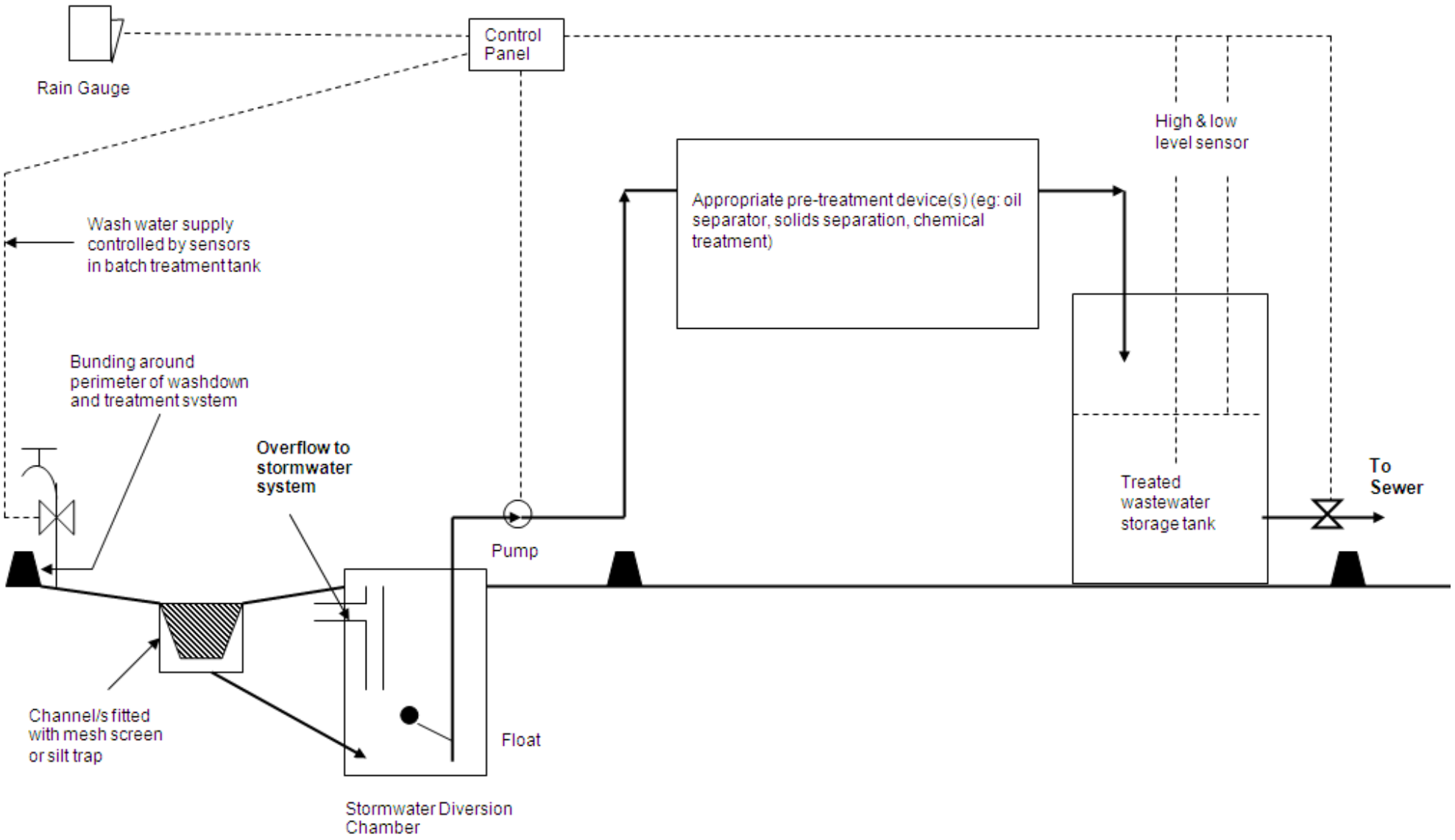
An annual fee for discharge of stormwater to sewer will apply. See the current fee schedule on our website, or call us on 1300 SA WATER.

## More information

Mains Water Protection (AS/NZS 3500.1:2015)

Backflow Prevention Requirements - Office of the Technical Regulator

# Figure 1: contaminated stormwater treatment system





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# Figure 2: treatment and disposal