

Wastewater Diversion Systems

UPC19

This fact sheet has been developed to assist those businesses thinking of installing, or already using, a wastewater diversion system. These systems are typically installed in wash facilities where the costs of roofing are too great or roofing of the area is simply not practical. If not installed, operated and maintained in an appropriate manner, these systems have the potential to cause pollution of stormwater systems and natural waterways. The guidelines outlined in this fact sheet must be met in the Auckland region to satisfy the Regional Council that pollution will not result from your wastewater diversion system.

How Wastewater Diversion Systems Work

These systems are typically comprised of a diversion device (typically a valve or pump) situated within a collection sump in the centre of a wash area. The device is triggered automatically usually by a connection to either your water or power supply so that when the hose or waterblaster is operated the device is activated and wastewater is diverted to the wastewater disposal system or collected for treatment and recycling in the system. When the system is not operating rainwater that falls on the wash area is allowed to flow directly to the stormwater system.

Some systems have the capability of diverting a “first flush” of rainfall to wastewater treatment and/or disposal. The first flush mechanism is designed to prevent residual contaminants, left on the wash area after use, from polluting the stormwater system and natural water.

A diversion system also has the advantage of keeping clean rainwater out of the wastewater disposal (sewage) system. Excessive amounts of rainfall entering the sewage system can indirectly cause pollution of the environment by overloading the system causing it to overflow to nearby stormwater drains and/or natural waterways.

Problems that can occur with diversion systems

- Large amounts of dirt and stones on the wash pad, even after heavy rain, that can lead to blockages of the system and/or stormwater contamination.
- A constant oily sheen flowing off the wash area during rainfall.
- Where systems have been retrofitted to existing wash areas people have failed to remove all existing sumps and replace them with the single diversion device collection sump. These existing sumps act as reservoirs of contaminants that can be washed through to the stormwater system.
- Failure to maintain system components resulting in malfunction and pollution.
- Using secondary water supply source does not trigger the diversion device.
- Leaking chemical containers stored within the wash area providing a constant source of contamination that eventually flows to the stormwater system.

Not all situations suit a Diversion System

The Regional Council’s experience is that this type of system does not work for operations involving large quantities of dirt and sediment such as earthmoving equipment, or where significant quantities of hydrocarbons are involved such as washing of machinery parts and engines. Dirt and gravel may block the diversion device allowing polluted water to flow to stormwater drains or significant amounts of rainwater to enter the sewer system. Residues of dirt and oils are unlikely to be removed by rainfall only and Council considers that the first flush mechanism will not be sufficient to ensure only clean rainwater enters the stormwater system.

Guidelines for the installation and operation of Wastewater Diversion Systems

1. All diversion systems must have a first flush mechanism to provide for at least the first 10mm of rainfall on the wash area to be diverted to the wastewater disposal system or collected for recycling.
2. The collection sump containing the diversion device must be the primary receptacle for all wastewater and stormwater runoff from the wash area catchment.
3. All wastewater must drain or be pumped from the bottom of the diversion sump to ensure no contaminated residues are left that may pollute clean rainwater flowing through the sump to the stormwater system.
4. You must have permission to carry out any building and drainage works from your local city or district council and in locations south of the harbour bridge you may require a trade waste consent from Watercare Services Ltd.
5. Ensure that all available water sources to the wash area will trigger the diversion device when operated.
6. Do not store any chemicals within the wash area catchment.
7. The system should have an alarm or water shutdown mechanism to alert users to any blockages and malfunctions so that washing cannot continue until the problem has been rectified.
8. A management plan must be developed for the system to include a daily inspection to ensure that it is functioning correctly and no blockages have occurred. Any problems found must be fixed prior to the system being reused.
9. You must also enter into a preventative maintenance and service contract with the manufacturer or a service agent authorised by the manufacturer.
10. Details of the system installed, management plan, service agreement checklist and a copy of the as-built drainage plans must be forwarded to the Regional Council prior to the system being commissioned.

Spill Detection Systems

Spill Detection Systems are often installed in bulk liquid storage, loading, transfer and refuelling areas to detect spills with some form of sensor and either divert them to the wastewater disposal system or contain the spilt material for reuse or disposal. They can also be fitted with a first flush mechanism as described above.

The Regional Council has concerns about the effectiveness of these systems in some situations. Our concerns are about the suitability of the parameters and trigger levels that may be used to set these systems into action.

If you are considering installing a Spill Detection System at your site you should contact a Pollution Control Officer at the Auckland Regional Council to discuss the system before it is installed.

Spill Response Plan

Be prepared to deal with spills on your wash area as soon as they happen to prevent them entering the diversion system. Have available appropriate containment and clean-up equipment to prevent spilt materials flowing or being washed to stormwater drains and causing pollution. If any spilt materials enter stormwater drains contact the Regional Council's **24hour Water Pollution Hotline on 377 3107** for advice and assistance.

Separate fact sheets on Vehicle & Equipment Washing are also available. These provide guidance on developing a wash facility.

The Auckland Regional Council can assist your company in developing a contingency plan or provide advice on these matters. Call the Council on 09 366 2000 and ask to speak to a member of the Pollution Control Team.