

Dewatering

If you have any questions about this procedures sheet contact Rotorua Lakes Council - Pollution Control

1. WHEN SHOULD I USE THIS SHEET?

This Best Management Practice (BMP) applies to any site where dewatering is required, including dewatering of excavations, trenches, drilling or thrusting entry / exit pits, and foundations etc.

2. WHAT'S THE AIM?

Stormwater systems must only drain rain.

Sound dewatering practices will help to reduce the amount of sediment leaving a site, helping to protect downstream receiving environments (e.g. kerb channels, stormwater cesspits, groundwater and natural water bodies) from sedimentation and water quality degradation.

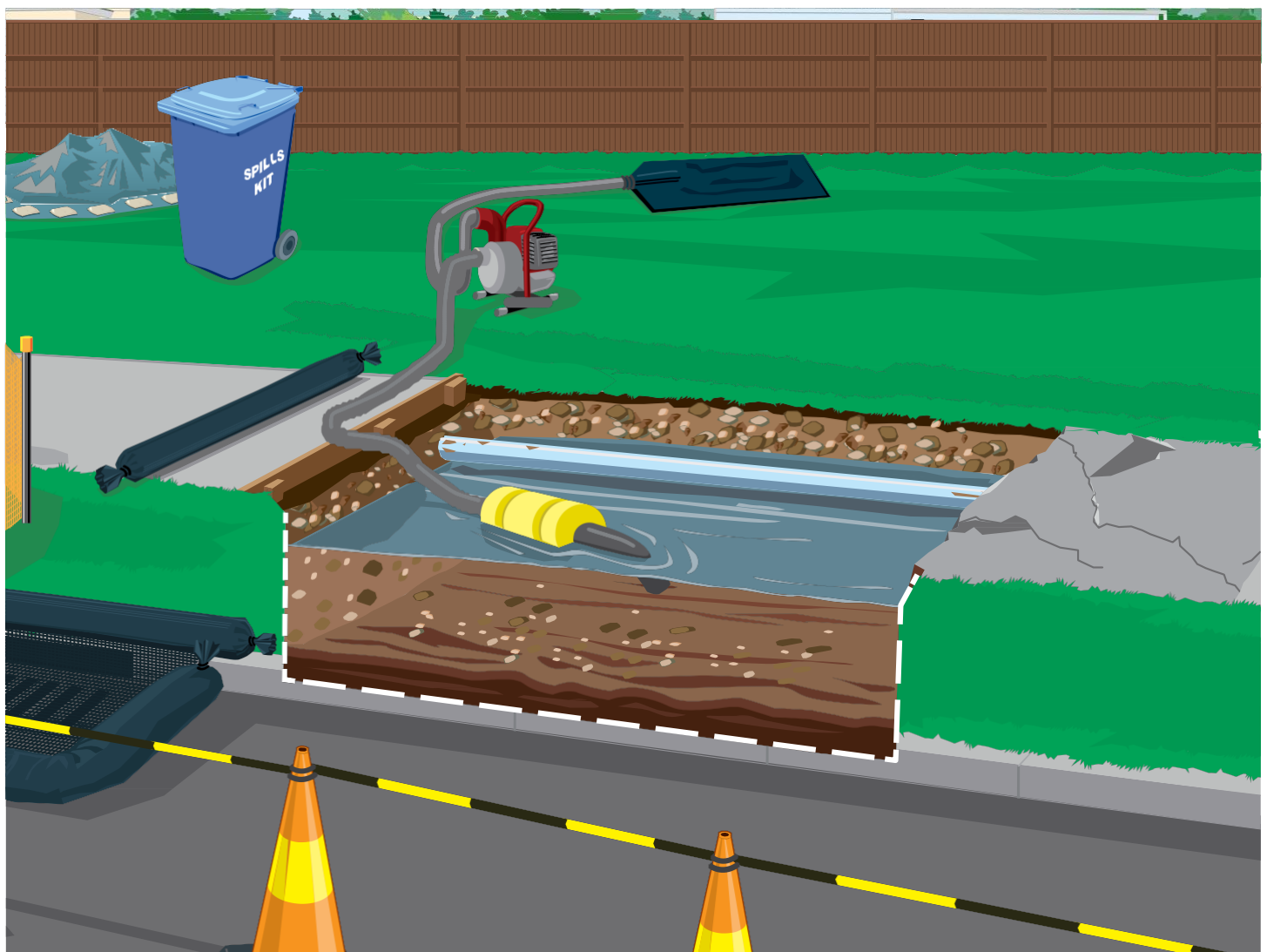
3. WHY MANAGE DEWATERING?

Sediment (e.g. clay, soils, silt and sand) is a natural substance and may appear harmless. However, if discharged to receiving environments in excess of naturally occurring levels, it can result in significant adverse effects. Dewatering can also result in other contaminants entering the receiving environment, such as heavy metals and polymers from drilling slurry.

Increased amounts of sediment in our waterways can:

- Clog the gills of fish and damage other sensitive tissues through abrasion;
- Suffocate aquatic plants, fish and insects by smothering them;
- Reduce the amount of light entering the water, which can stop plants and algae growing – removing a major food source for fish and insects;
- Interfere with fish vision making them vulnerable to predators or unable to see their prey; and
- Increase the risk of flooding.
- Decrease aesthetics values of a receiving water body and cultural

Other contaminants can result in a range of adverse effects on natural habitats and ecosystems, and may pass through the food chain and concentrate in the tissues of fish, birds or humans.



Best Management Practice - Dewatering

4. SITE MANAGEMENT AND ENVIRONMENTAL CONTROLS.

FORWARD PLANNING – BEFORE YOU START WORKS.

- Identify the potential environmental risks and define how these can be mitigated or reduced through site practices or environmental controls.
- Check the lay of the land and decide where any run-off is likely to go. Pay particular attention to receiving environments.
- Steeper sites can be more difficult to manage and may require a higher level of control.
- Have a plan to deal with incidents and emergencies.
- Identify a person who will be responsible for ensuring environmental practices and controls are followed and implemented prior to starting works.

ENVIRONMENTAL PRACTICES AND CONTROLS.

- Stage works to minimise areas where stormwater or groundwater may accumulate.
- Put in place diversions (e.g. bunding, sandbags etc.) at stages uphill of the site to divert clean stormwater around the works. This will help to reduce the amount of water that you have to manage.
- Install stormwater cesspit protection measures as a form of secondary control (refer to the Cesspit Protection BMP for more help). Often multiple cesspits will need to be protected.

- When possible, allow the sediment to settle out of the water column before dewatering.
- When decanting or using a pump to dewater, skim from near the surface of the water to avoid suction of sediments from the bottom of the excavation. A float will help you to do this.
- Consider which dewatering practice most suits your site and the amount of water that you are trying to manage.
- If required after dewatering, remove any remaining slurry along with excess spoil off site, or to a contained area such as within a silt fence.

DEWATERING TO GRASSED OR VEGETATED AREA.

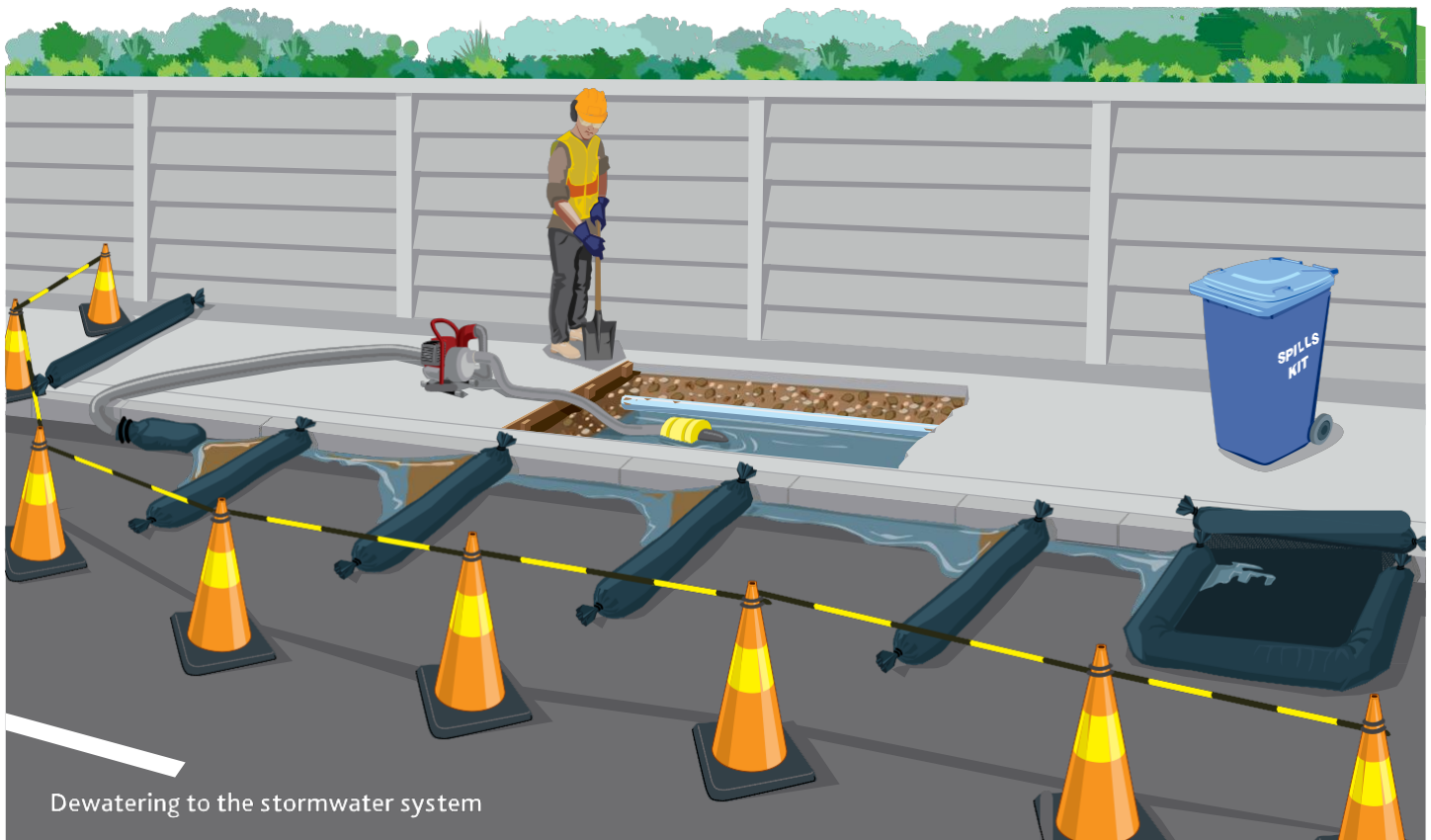
- Decant or pump water to a grassed or vegetated area well away from receiving environments.
- Pump through geotextile or a filter bag which will act as a filter and will reduce the amount of sediment to clean up.
- Make sure that the rate of flow does not exceed the ground's capacity for the water to soak in (e.g. no ponding or runoff).
- Make sure that there is no scouring at the pump outlet.
- Remove any accumulated sediment at the end of each day at least. More frequent if required.



Best Management Practice - Dewatering

DEWATERING TO THE STORMWATER SYSTEM.

- You will need approval from Rotorua Lakes Council to do this, please contact Pollution Control.
- If pumping to grassed area is not possible, an option is to pump to the stormwater system with the appropriate level of environmental controls.
- There is no one solution for what controls to put in place when dewatering to the stormwater system – it is scale and contaminant dependant and it's up to you to work out what is appropriate.
- However, consider the site constraints, e.g.
 - the steepness of the area and the space for environmental controls;
 - the amount of water that you are trying to manage and the amount of suspended sediment;
 - the nature of the site you are working in, such as in a potentially contaminated site;
 - and any other relevant factors, such as has the water come in to contact with unset concrete products.
- Allow sediment to settle out and always skim from near the surface of the water.
- Pump through geotextile or a filter bag which will reduce the amount of sediment discharged.
- Install a series of filter devices, such as filter socks, which will trap sediment while allowing water to pass through.
- Using hay bales as a filter is not an accepted best practice and will not work.
- Always install cesspit protection as a secondary control (refer to Cesspit Protection BMP for help).



Best Management Practice - Dewatering

DEWATERING, REMOVE OFF SITE.

- For a low risk option, larger volumes of water, or where site constraints or the nature of the water to be dewatered does not allow for the above options, dewater to a portable container (e.g. an International Bulk Container) or through the use of a vacuum truck.
- Once the portable container is full either leave it to settle and then siphon the water to a grassed or vegetated area or the stormwater system if acceptable

to limits with the appropriate controls in place, or remove it off site for appropriate disposal (refer to Dewatering to grassed or vegetated area above).

- When siphoning the water, make sure the sediment that has settled on the bottom is not disturbed and siphon from the top of the water.



Best Management Practice - Dewatering

**DEWATERING TO SETTLEMENT AND DETENTION DEVICES.**

- For larger more permanent sites, or where larger

volumes of water are involved, use a specially designed sediment settlement and detention device.

Best Management Practice - Dewatering

Monitoring and Maintenance.

- Regularly assess site practices and environmental controls to make sure that they are mitigating or reducing environmental risk to an acceptable level. Adjust practices or controls if they are not working efficiently.
- Regularly inspect and clean out sediment controls and secondary cesspit protection.
- Regularly sweep up any sediment or dust and dispose of it appropriately so that it will not become airborne or enter surface water.
- Once works are complete remove environmental controls. Inspect stormwater cesspits and remove any contamination associated with site works.

5. Tips.

Although this BMP presents a range of accepted best practice methods, there are many ways of achieving the above aim.

- Minimise the area of disturbance by staging works where possible.
- Inspect site controls at least once a day to ensure they are working properly.
- Remember that cesspit protection measures are only to be used as secondary sediment control devices. Correct site practices and environmental controls will reduce the reliance on these devices.

6. Useful information.

- Refer to the following Utility BMPs
- Trenching;
- Potentially Contaminated Sites;
- Spills and Emergency Management;
- Cesspit Protection; and
- General Site Management and Housekeeping.

If a discharge occurs that has the potential to, or has entered the stormwater system or natural receiving environments, contact the Rotorua Lakes Council 24 HOUR POLLUTION HOTLINE on (07) 348 4199 immediately.

For access to this BMP and to find the other BMP information sheets, go to the link below:

www.rotorualakescouncil.nz/stormwater

Important Notice: ©Rotorua Lakes Council 2012. This best management practice sheet is an information guide only and is not technical or compliance advice. Its recommendations may not be complete or appropriate for all situations, and the person doing/arranging the work remains solely responsible for making their own assessments and doing the work properly, safely and in compliance with all laws and regulations.

Our thanks to Auckland City Council for allowing us to reproduce their campaign.

**ROTORUA
LAKES COUNCIL**