

Cesspit Protection

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

1. WHEN SHOULD I USE THIS BMP?

Use this Best Management Practice (BMP) as a guide when installing cesspit protection.

Most work sites occur in areas where there are surrounding stormwater cesspits, or direct pathways (e.g. roadside kerb and channels) to cesspits.

You should install cesspit protection as a form of secondary control when undertaking works to prevent contaminants entering the stormwater system.

2. WHAT'S THE AIM?

That stormwater systems must only drain rain.

There are many types of activities that occur on utility / work sites. These activities pose environmental risks, and can result in discharges of contaminants to receiving environments and adverse effects on natural habitats, eco- systems and communities.

Cesspit protection will help you to reduce the environmental risk of your site and activities by intercepting and containing contaminated run off, or filtering sediment laden water before it enters the stormwater system.

Cesspit protection is only to be used as a form of secondary control.

Always implement appropriate best management site practices and primary environmental controls to prevent problems from first occurring and minimise the amount of contaminants that you have to manage and the potential risks of discharges from your site.

3. CESSPIT PROTECTION – WHAT ARE YOU TRYING TO ACHIEVE?

There is no one solution to cesspit protection.

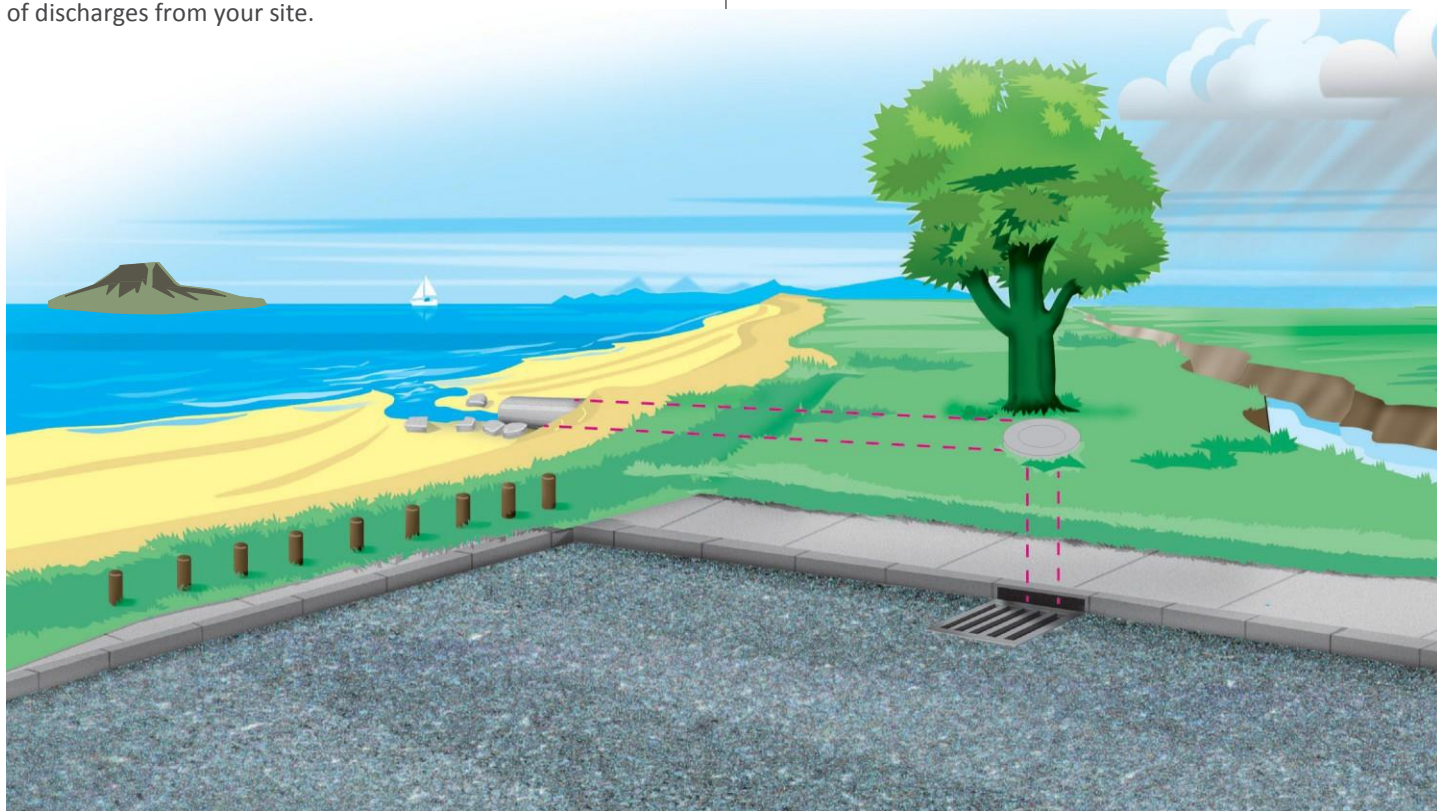
There are many methods, materials and devices that can be used to protect cesspits, these include -

- Filter cloth (geotextile) wrapping;
- Sandbags, bunds, sand socks;
- Filter bunds, socks and logs; and
- Proprietary devices such as witches' hats, filter inserts, filter bags, drain mats, drain plugs etc.

The solution that you choose will need to form part of your wider site management practices and environmental controls.

Firstly consider what you need to achieve. Do you need to completely block the cesspit, for instance when you are surface cutting? Or do you need to allow water to pass through, filtering and trapping sediment?

Once you have worked out what you need your cesspit protection to achieve, consider the following points to work out which method of protection is the most appropriate for your site and activities.



Best Management Practice - Cesspit Protection

SPECIFIC METHODS.

This section presents a number of common approaches that can be quickly and easily implemented to provide effective cesspit protection.

It is important to note that these examples are to be used only as a guide. Always remember to consider 'Section 5 – Cesspit Protection Key Points to Consider', to work out which method, or combination of methods, is the most appropriate for your site and activities.

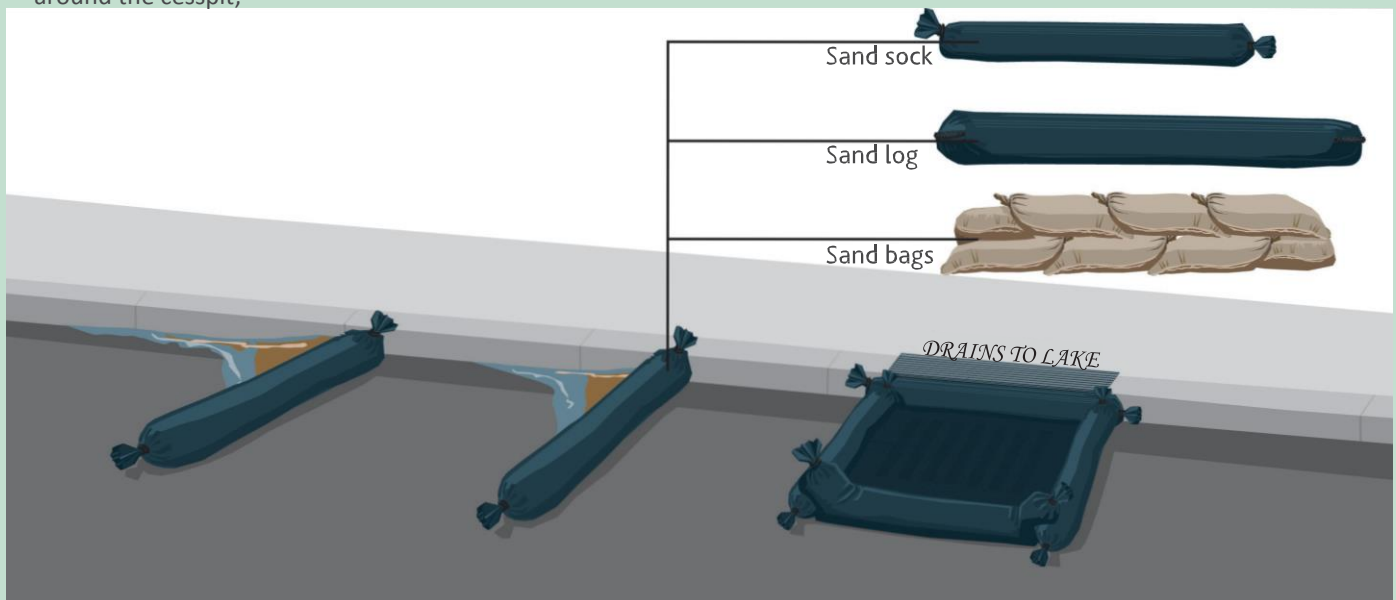
CESSPIT BUNDING OR BLOCKING.

Cesspit bunding or blocking can be used when there is a requirement to completely isolate the cesspit. This may be when undertaking high risk activities such as surface cutting or cement stabilising.

Remember that cesspit bunding or blocking prevents any water from entering the cesspit. Water may flow on to a downstream cesspit or cause flooding during rainfall events. Bunding or blocking should only be implemented as a short-term / temporary solution.

SANDBAGS OR SAND FILLED SOCKS.

- Identify pathways to cesspits. Often multiple cesspits will need to be protected;
 - Place sand bags, sand filled socks or logs in stages upslope of the cesspit. The number of controls used will depend on the amount of water that you are seeking to contain and the steepness of the area;
 - Ensure that water does not run under the controls.
This can be an issue on rough chip sealed roads;
 - Also place sand filled socks or logs immediately around the cesspit;
 - Ensure that the back entry to the cesspit is protected – place sand filled socks or logs across the front of the back entry;
 - Remove ponded water, and dispose of appropriately; and
 - Remove controls as soon as possible, or before heavy rain.
- ☑ Check positioning of controls regularly (can be disturbed between events)



DRAIN MAT.

- Identify pathways to cesspits. Often multiple cesspits will need to be protected;
- Place a drain mat over the cesspit grate;
- Ensure that water does not run under the mat.
Consider placing sandbags or sand socks on the drain mat to weigh down the edges;
- Ensure that the back entry to the cesspit is protected – place sand filled socks or logs across the front of the back entry;
- Remove ponded water, and dispose of appropriately; and
- Remove controls as soon as possible, or before heavy rain.

Best Management Practice - Cesspit Protection

CESSPIT FILTERING.

The most common form of cesspit protection is cesspit filtering – where water passes through a number of controls and sediment is filtered and trapped.

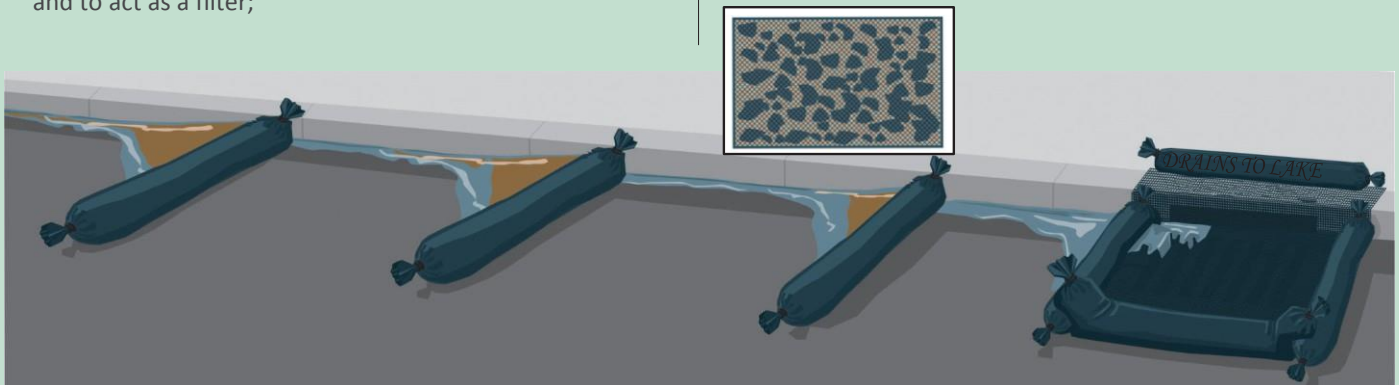
Cesspit filtering should always be used in conjunction with best management site practices and primary environmental controls.

Cesspit filtering is only appropriate for sediment control. Typical filter materials **will not** remove contaminants such as hydrocarbons (fuels and oils) or reduce the alkalinity of water that has come in to contact with concrete fines, dust, wastewater or washings.

Filter cloth used in the following methods must be of a suitable geotextile product, preferably non-woven needle punched. Geotextiles will allow water to pass while importantly trapping sediments.

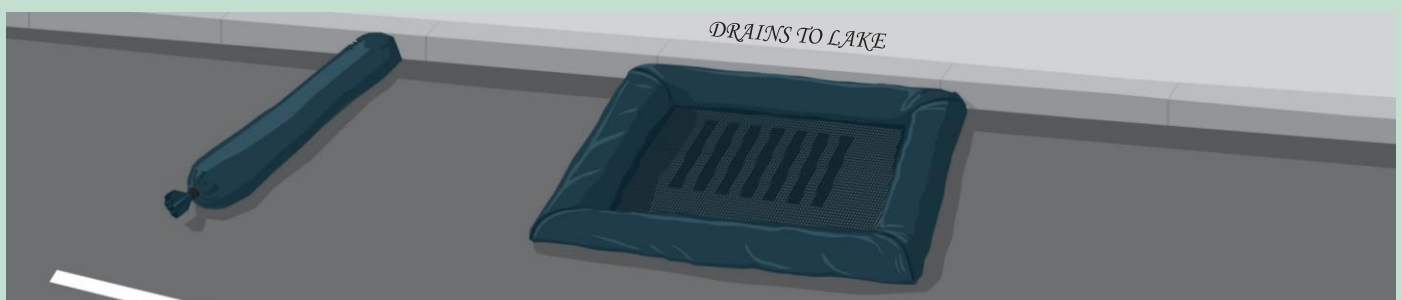
FILTER CLOTH (GEOTEXTILE) WITH FILTER SOCKS.

- Identify pathways to cesspits. Often multiple cesspits will need to be protected;
- Use two people to completely lift off the cesspit grate;
- Lay filter cloth material over the cesspit opening and fold across the back entry and up onto the pavement;
- Allow plenty of overlap of the filter cloth around the grate and back entry;
- Use two people to place the grate back into place. Place carefully into the hinged slots;
- Place filter socks around the edges of the filter cloth, to anchor the cloth in place, prevent the cloth folding up and to act as a filter;
- Consider placing a series of filter socks or logs upslope of the cesspit to act as filter dams for steep sites, larger amounts of water or water containing concentrated amounts of sediment;
- Consider leaving a gap between filter socks at the front face to act as a high flow by-pass during rainfall events;
- If there is difficulty in protecting the back entry of the cesspit, place a filter sock or log across the entry; and
- Place sand bags or sand filled socks on the cloth overlap on the footpath to anchor it in place.



PURPOSE BUILT FILTER CLOTH WITH BUILT IN GRAVEL AROUND PERIMETER TO ACT AS PRIMARY FILTER.

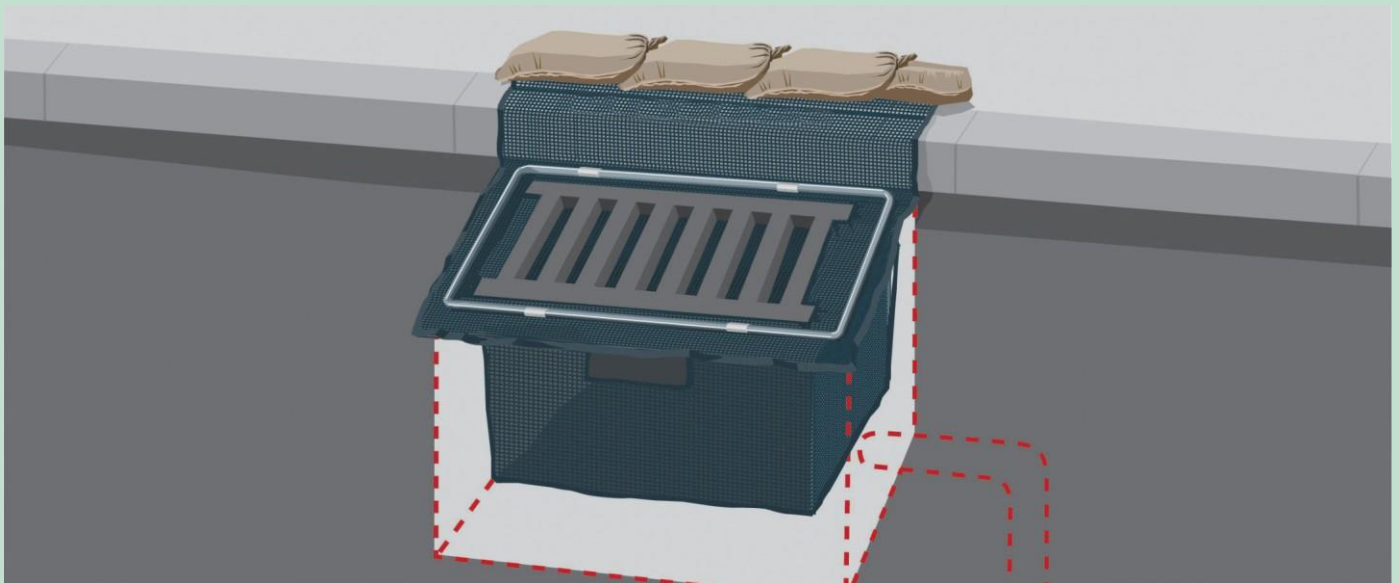
- Identify pathways to cesspits. Often multiple cesspits will need to be protected;
- Place the device over the top of the cesspit grate;
- Ensure that the device lays flat and water cannot pass under the device; and
- If back entry is not protected place a filter sock or log across the entry.



Best Management Practice - Cesspit Protection

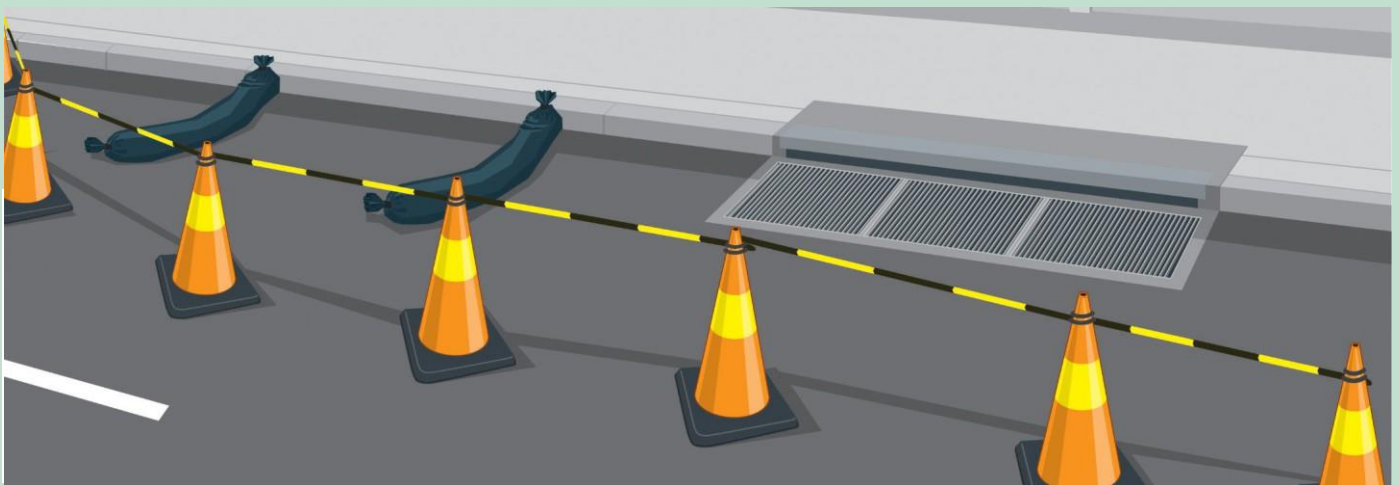
PURPOSE BUILT FILTER CLOTH WITH FILTER INSERT AND FRAME.

- Identify pathways to cesspits. Often multiple cesspits will need to be protected;
- Use two people to completely lift off the cesspit grate;
- Place the device into the cesspit chamber. Be careful not to allow it to fall into the chamber;
- Use two people to place the grate back into place. Place carefully into the hinged slots;
- Place frame over the top of the cesspit grate to anchor the filter cloth in place and to prevent the cloth from folding up;
- Place a filter sock around the cesspit, or a series of filter socks or logs up slope of the cesspit, to act as an additional filter for steep sites, larger amounts of water, or water containing concentrated amounts of sediment;
- If there is difficulty in protecting the back entry of the cesspit, place a filter sock or log across the entry; and
- Place sand bags or sand filled socks on the cloth overlap on the footpath to anchor it in place,



SERIES OF FILTER LOGS.

- Identify pathways to cesspits. Often multiple cesspits will need to be protected;
- Place a series of filter logs to act as filter dams in the kerb or channel upslope of the cesspit;
- Angle the filter logs to allow water to pool;
- Ensure that the height of the filter log is less than the kerb height to prevent overtopping and flood risks during rainfall; and
- It may be necessary to weigh down filter logs with sand bags to prevent movement during rainfall – be careful not to create a bund.



Best Management Practice - Cesspit Protection

4. CESSPIT PROTECTION - KEY POINTS TO CONSIDER.

When protecting cesspits, consider the following to work out which method of protection is most appropriate –

- The characteristics of the site – steeper sites typically result in faster flows of water which can overtop or flow past some methods of cesspit protection. cesspit protection bunds or filters with a gap in the face may help to drain away higher stormwater flows.
- The location of the site and pathways to receiving environments – are there direct pathways to the receiving environment via impervious surfaces, kerb and channels and stormwater cesspits?
- The nature and scale and activities being conducted on site.
- The potential contaminants that you are trying to manage – for example, highly alkaline water contaminated by concrete products must be prevented from entering stormwater cesspits through measures that completely protect (block) the cesspit.
- Length of time on site – for example, consider using more permanent cesspit filter inserts if on site for longer durations.
- The type of cesspit to be protected – is it a standard design?
- Safety requirements, such as manpower on site, cycle and pedestrian use / access, traffic volumes, speed limits – for example, use barriers and cones to ensure public safety around work sites.
- Risk of damage caused by vehicles - some cesspit protection measures such as bunds or large sand socks may be easily damaged by passing traffic.
- Maintenance requirements – some cesspit protection methods may blind or block quickly and require regular maintenance, can the cesspit protection be easily and safely maintained?

5. GENERAL SITE MANAGEMENT AND ENVIRONMENTAL CONTROLS.

Always try to reduce environmental risks and reliance on cesspit protection as secondary controls. Implement general and activity specific site management and environmental controls before, during and after works. The key points to remember are –

- Identify the potential risks and define how these can be mitigated or reduced through best management site practices and/or primary environmental controls.
- Identify a person who will be responsible for ensuring environmental practices and controls are followed and implemented.
- 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 contaminated water that you have to manage.

6. IMPLEMENTING CESSPIT PROTECTION.

This BMP provides general guidance on common practical approaches to cesspit protection. While the guidance provided is general, there are many points to consider when implementing a range of cesspit protection approaches and devices – these are presented below.

Due to the range of cesspit protection methods and products currently available, it is not possible to provide specific guidance on the implementation or installation procedures for each approach. Refer to manufacturer's installation instructions when available.

It is important to note that while the BMPs present a range of practical approaches, the methods / examples given are an information guide only. There are many ways of minimising risks and adverse effects of utility related activities. It is up to you to work out what is appropriate for the scale and nature of your activities, the site and type of contaminants.

Remember, the BMP methods / examples may not be complete or appropriate for all situations. The person doing or 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.

KEY POINTS TO CONSIDER.

Common to a range of cesspit protection methods and products.

- **Always make sure that cesspit protection can be safely implemented. Be aware of the health and safety risks of working in and around roads and do not install unless traffic can be managed safely.**
- When installing cesspit protection be aware of the weather conditions and forecasts of heavy rain. Cesspit protection can often cause flooding.
- If heavy rain or storms are forecast, temporarily stabilise your site, make sure your primary environmental controls are in place and consider removing cesspit protection.
- Check the lay of the land and decide where any run-off is likely to go. Often multiple cesspits will need to be protected.
- Sweep the immediate area around the cesspit.
- Use two people to safely lift and remove the cesspit grate.
- Remove any loose material around the cesspit and hinged slot.
- All points where runoff can enter the cesspit must be protected.

Best Management Practice - Cesspit Protection

7. MONITORING AND MAINTENANCE.

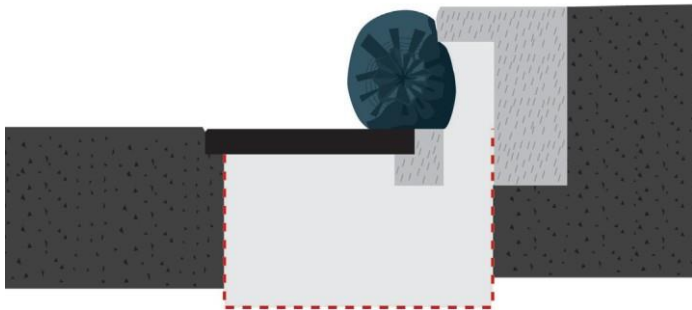
Working out and implementing the most appropriate method of cesspit protection is just the first step. You must now **regularly inspect and maintain** the cesspit protection controls, along with other site controls, that you have put in place.

Have a plan for inspections and maintenance to -

- Regularly assess cesspit protection to make sure it is operating effectively. Daily inspections are recommended for passive controls. Inspect more frequently if you are utilising cesspit protection as an active control for high risk activities such as dewatering.
- Remember that products that rely on filtration can block very quickly with sediment.
- Undertake maintenance if cesspit protection is worn, broken or ripped.
- Regularly remove any accumulated sediment.
- Adjust practices or controls if they are not working efficiently.
- Once works are complete and the site is stabilised, remove cesspit protection, inspect stormwater cesspits and remove any contamination associated with site works.

8. TIPS.

- Does the cesspit protection that you have implemented achieve its purpose?
- All points where runoff can enter the cesspit must be protected.



- Ensure that all gaps and holes are blocked between the kerb channel and cesspit protection.



- Inspect cesspit protection, along with primary environmental controls at least once a day to ensure they are working properly. Adjust practices if necessary.
- **Remember that cesspit protection measures are to be used as secondary control devices only. Cesspit protection must only be used in conjunction with other best management site practices and primary environmental controls.**

9. USEFUL LINKS AND INFORMATION.

- Go to www.rdc.govt.nz/stormwater, here you will find a range of helpful information and links to the range of pollution related resources and educational materials.
- Refer to the following Utility BMPs
 - Dewatering;
 - Trenching;
 - Potentially Contaminated Sites;
 - Spills and Emergency Management; and
 - Cesspit Protection.

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**