EROSION & SEDIMENT

Control for Urban Development

All site developers, managers, builders and everyone working onsite are responsible for preventing sediment leaving the site and impacting on the environment. This includes **maintaining effective erosion and sediment controls** while also ensuring no building materials or polluted water enters the stormwater drains or our waterways.

North Sydney Council can issue on-the-spot fines of $15,000 for an individual and $30,000 for a corporation for your first water pollution offence; and $22,500 for an individual and $45,000 for a corporation for repeat offences. More serious offences can result in penalties of up to $10 million.

BEFORE YOU START WORK

- ☑ **Has your erosion and sediment control plan been approved by the Certifying Authority?**
- ☑ **Have erosion and sediment controls been installed prior to site disturbance?**
- ☑ **Has the prevent pollution sign issued to you with the building approval been erected?**
- ☑ **Have you avoided disturbance until necessary and left grass filter strips around the site where possible?**

EROSION & SEDIMENT CONTROL PLANS

An erosion and sediment control plan (ESCP), which shows how you will control erosion and trap sediment, should be prepared and approved by the Certifying Authority (unless Council has instructed otherwise). To aid in the preparation of your ESCP, refer to the publication *Managing Urban Stormwater: Soils and Construction* (4th edition, Landcom 2004) commonly referred to as 'the Blue Book'.

WHY YOU NEED TO INSTALL EROSION & SEDIMENT CONTROLS

Impacts of poor sediment controls

- Blocked drainage systems - flooding
- Poor harbour water quality
- Loss of aquatic life and habitats
- Public safety problems from mud on roads and flooding
- Increased maintenance costs
- Weed infestation of waterways and bushland
- Loss of valuable top soil

Benefits of effective sediment control

- Reduced clean up costs
- Reduced risk of fines
- Reduced stockpile losses
- Improved wet weather working conditions
- Reduced downtime - increased productivity
- Fewer public complaints
- Improved all weather site access

SITE MANAGEMENT

- **Control** any flow of water by diverting clean water away from any disturbed areas of the site
- **Ensure** any contaminated/sediment laden water is appropriately treated/filtered prior to leaving the site
- **Minimise** disturbance and rehabilitate/revegetate areas as soon as possible
- **Maintain** erosion and sediment controls by cleaning and repairing as required
- **Stockpile** topsoil for reuse where possible. Stockpiles must be covered with an impervious material and bunded with gravel bags/sediment sausages or other measures

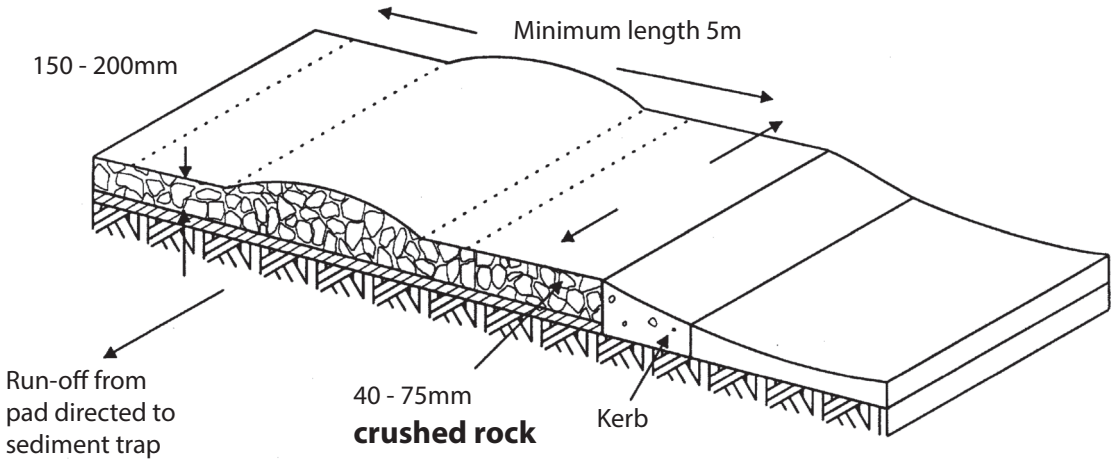
Only clear water can enter the stormwater

EROSION & SEDIMENT CONTROLS

The following examples represent good on-site sediment control practices on building sites, to reduce the impact on the environment and avoid incurring a fine. The nature of the site and its proposed development will determine which controls are required.

Site Access

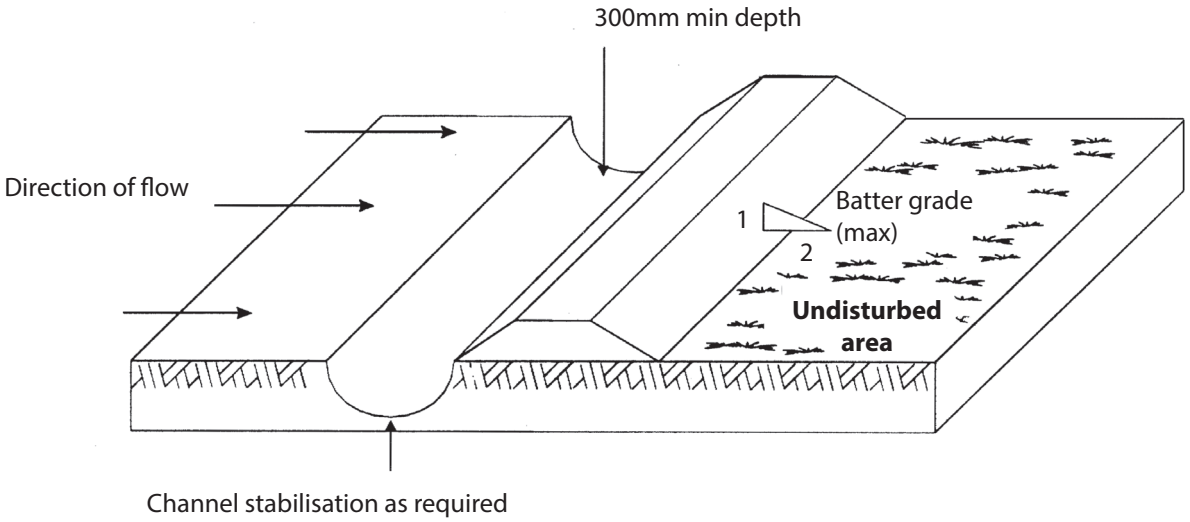
- Provide a **stabilised entry/exit point**
- Sediment or building materials should be removed from the road as required by sweeping, shoveling or sponging; **not washing**



Stabilised Driveway

Diversion of Water

- Divert run-off **away from disturbed areas and stockpiles** towards stabilised areas using banks or channels
- On steep sites line channels with turf or geotextile fabric
- Runoff should be treated (by a sediment fence or the like) before leaving the site

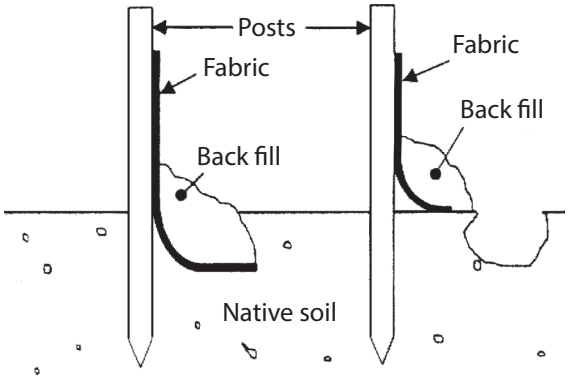


Sediment Fences

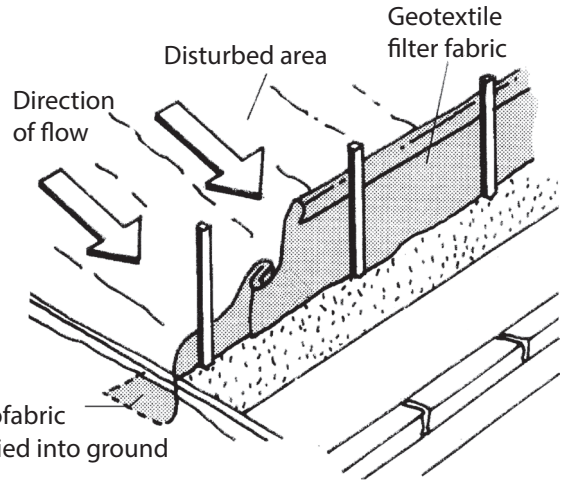
- **Sediment Fences** should be installed downslope to treat site run-off
- To be effective they need to be installed properly and **maintained regularly**

A With sediment fence fabric trenched into native soil

B With channel excavated along the front of the sediment fence



Source: Brisbane City Council



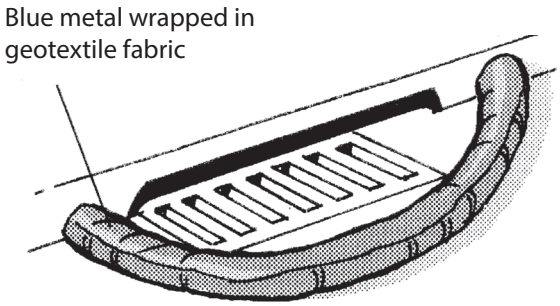
Sediment Fence

Source: SSROC

Gutter Protection

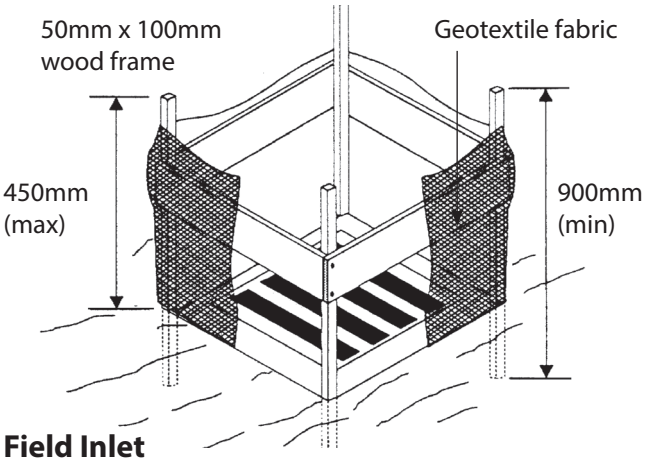
As a precautionary measure, sediment controls such as gravel sausages, gravel bags or sand bags should be installed around stormwater inlets if there is a risk of untreated run-off entering the waterways.

- Wrapping stormwater grates with geotextile fabric to filter site water runoff also reduces the sediment discharge to stormwater



Source: SSROC

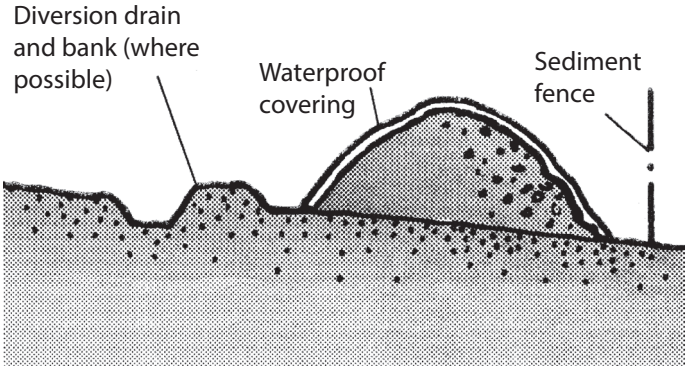
Gravel Sausage



Field Inlet

Stockpiles

- Stockpiles should be located upslope away from drainage lines
- Run-off should be diverted away from the stockpile
- Protect with a **waterproof covering**
- Install a sediment control device such as a sediment fence or gravel bags on the downslope side of the stockpile
- Stockpiles must not be stored on footpaths



Building Material Stockpiles

Source: SSROC

EXCAVATION PUMP OUT (DEWATERING)

What is it?

An excavation pump out is pumping of both rainwater and groundwater collected on construction and excavation sites.

Why is it important?

Environmental Protection

Both surface water and groundwater collected on site pose a contamination threat to stormwater and watercourses. Accumulations of mud, dirt and other contaminants may cause serious harm to the health of waterways. Similarly, groundwater seepage may contain a number of harmful contaminants such as heavy metals and toxins.

Responsibility

The construction industry has significant impact on the environment, particularly waterways. Under the *Protection of the Environment Operations Act 1997* (POEO Act) anyone who places material other than rainwater into the stormwater system or in a position where it can be washed into a stormwater system, commits an offence.

Penalties

Depending on the extent of the pollution, penalties range from on-the-spot fines of $15,000 to $45,000 or up to seven years in prison; and $10 million for a company and $2 million for an individual for Tier 1 offences under the POEO Act. Tier 2 offences are the most common type of pollution and penalties range between $2 million for companies and $500,000 for individual offenders.

Options for you to comply

There are three options for addressing collected water on site. The most appropriate option is dependent on the level of contamination.

Option 1

If the water contains sediments, it may be pumped into stormwater drains after testing, treatment and settlement. A guide of 50mg/L Total Suspended Solids is given by the *Managing Urban Stormwater: Soils and Construction 2004*. However, depending on the receiving waters environmental significance, this value of 50mg/L could decrease. In this instance the discharge must comply with ANZECC (Australian and New Zealand Environmental Conservation Council) water quality guidelines 2000. Flocculants such as gypsum may be used to help settle particles. After settlement, the top clean water may be discharged into the stormwater system and the remaining bottom sediment reused onsite or disposed of appropriately.

Note: The addition of flocculants such as gypsum reduces the pH level of the water and therefore, pH correction is necessary before pumping water into the stormwater system.

Option 2

If the water is contaminated, it should be collected and treated by a waste company for disposal at a licensed treatment facility. For further information regarding contaminated sites refer to the provisions of the *Contaminated Lands Management Act 1997* at the NSW Environment Protection Authority http://www.epa.nsw.gov.au/legislation/Actsummaries.htm#contaminated.

Option 3

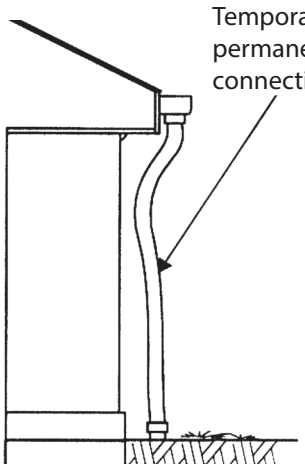
If the water is contaminated, containing heavy metals and other toxins it may be pumped into sewer with permission from Sydney Water through the negotiation of a trade waste permit. Determination of contaminant types and concentrations in the water are required prior to contacting Sydney Water. More information regarding this option can be obtained from Sydney Water on 132092 or from the Sydney Water website: http://www.sydneywater.com.au/sw/plumbing-building-developing/plumbing/trade-wastewater/index.htm

Roof Water Drainage

- Connect temporary (eg agline) or permanent downpipes to the stormwater system as soon as the roof is complete. This will reduce site wetness and downtime
- Where such connections cannot be made ensure receiving stormwater pipes are suitably covered or caped

Dust Controls

- Minimise disturbance, maximise vegetation
- Cover stockpiles
- Use water when necessary, but control runoff
- Erect dust screens (eg open weave barrier fencing) around the site



Source: Brisbane City Council

FOR MORE INFORMATION

For more detailed information, contact North Sydney Council's Environment and Building Compliance Department on 9936 8100 or by email council@northsydney.nsw.gov.au, or refer to the following document:

Document is on the web at:

http://www.northsydney.nsw.gov.au/resources/documents/????.pdf