NSW Government
Department of Environment and Climate Change

Acid Sulfate Soil Management Plan For Minor Works

These procedures can be adopted for the treatment of acid sulfate soils associated with minor works and are in accordance with management guidelines in the NSW Acid Sulfate Soil Manual (1998). A preliminary Assessment may be required to determine the depth of ASS or that the works are minor.

Minor Works
Minor works are considered those associated with the excavation of small amounts of acid sulfate soils such as for the installation of septic tanks, swimming pools, small dams #, service trenches and for minor drain cleaning.

Handling and Management of Excavated ASS
Excavated ASS material is to be separated from overlying topsoil and temporarily stockpiled for treatment. Treatment should directly follow excavation *.

When ASS material must be stockpiled temporarily the stockpile area must be located away from waterways and bunded to prevent any runoff to receiving waters.

Liming and Treatment Procedure for ASS
1. Lime the base of the stockpile pad 5 mm thick layer of fine grade-1 agricultural lime
2. Spread excavated ASS onto the pad in layers 10 – 30cm thick
3. Apply lime at a standard rate of 25 kg of lime (1 bag) per cubic metre of soil. Windy conditions should be avoided for safety and efficiency
4. Cultivate lime into the ASS layer well, preferably using a rotary hoe. Ensure an even homogenous mix of soil and lime is created before spreading the next soil layer.
5. Repeat steps 2 – 4 as required.
6. ASS treated in this way can be used as fill.

Minor Trenching for Services
Where service trenches can be refilled within 24 hours, excavated ASS material should be separated from overlying topsoil and temporarily stockpiled. Once trenching and laying of services is completed, ASS material should be returned to the trench first followed by the topsoil. Where ASS burial cannot be completed within 24 hours, or if there is surplus of ASS material, the liming procedure above should be adopted.

Minor Drain Cleaning
Monosulfidic Black Oozes (MBOs) form much of the “sediment” or sludge that accumulates in ASS drains. They are typically black oily layers covering the bottom sediments. MBOs are highly reactive once exposed to air and can also strip oxygen from the water when disturbed in both oxidising and reducing conditions.

Where MBOs are to be disturbed by drain cleaning they must be removed and not replaced back into the water body. Because they are highly reactive MBOs should be

treated with lime within 30 minutes of excavation. The treatment area must be bunded and away from drains and watercourses to ensure MBOs and slurry are contained.

Liming and Treatment Procedure for Monosulfidic Black Oozes

1. Excavated MBOs should be deposited within a bunded treatment area.
2. Apply fine grade-1 agricultural lime at a standard rate of 100kg of lime per cubic metre of drain sludge. Windy conditions should be avoided for safety and efficiency
3. Lime must be well mixed within the MBO slurry for effective treatment.
4. The treated MBO slurry can be allowed to drain into the groundwater dried by evaporation.
5. Any remaining solids can be treated as clean fill.

** The treatment of ASS must be carried out in accordance with standard Occupational Health and Safety Guidelines.*

 # Dams intersecting the groundwater may require a licence from the Department of Water and Energy