



ASSAY

A NEWSLETTER ABOUT ACID SULPHATE SOILS

No. 5 April 94

Court ruling

The Land and Environment Court has ruled against a landowner from Port Macquarie on the NSW mid-north coast, in relation to illegal excavation of PASS.

Hastings Council took legal action against the landowner who refused to seek Development Approval as required under Local Council regulations.

The landowner, while in the process of excavating a 70m x 20m x 8m lake was ordered to cease construction, neutralise any excavated acid sulphate soils and replace the soil.

David Pensini, Hastings Council, believes this is the first legal action against a landowner in relation to ASS and indicates how seriously the issue is now regarded.

Floodgates opened

Lifting floodgates combined with good, heavy rain has turned large areas of "scalded swamp country and poor weedy pastures into fields that look like an oats crop" according to Bill Petersen, a farmer on Rocky Mouth Creek, near Woodburn, north coast NSW.

Bill Petersen and neighbour Gordon Meston decided to lift the floodgates in an attempt to improve pastures and drain-water quality, both severely affected by acid sulphate soil.

Within weeks Gordon noticed fish in his drains, where he'd not seen them for years. "Cattle even started drinking from the drains, not the windmill," he said, "a sure sign of better water".

Bill has always believed "swamp country must have ample water because the best grasses are the natural swamp grasses, and without a lot of water they die out, and nothing

else will grow". At present, Bill has magnificent water couch pastures despite 20 cm of surface water.

"It's great to have life back in the swamp, both fish and pastures," said Bill. Lifting the floodgates has been so successful the farmers intend leaving them open, closing only during periods of flood.

ASS summit

The NSW Minister for Agriculture and Fisheries, Mr Ian Causley, has called a summit between farmers and fishermen in an attempt to resolve a war of words between farmers and fishermen over impacts of acid sulphate soils.

One of the major issues to be raised at the summit is agricultural expansion involving draining areas with potential acid sulphate soil. Other issues include drainage practices, water quality and possible management options.

In addition to representation from the fishing industry, farmer groups invited to attend the summit include the Cattlemen's Union, NSW Canegrowers, NSW Farmers, Sugar Milling Co-op and technical experts from Universities and CSIRO.

ASS attack water mains

Tweed Council is replacing 10 km of acid-corroded water mains at a cost of \$ 2.2 million. Council was forced to act when the mains started bursting 20 years short of their design life.

Council reported ASS had attacked the pipes' 20mm iron casing, causing major blow-outs. The replacement pipes are being wrapped in plastic and are made from a metal which is more resistant to low pH.

ASS remedy

A large scale acid sulphate soil amelioration project is under way on the foreshores of Tuggerah Lakes, NSW central coast. Acid sulphate soils along 10 km of foreshore resulted following foreshore reclamation and dredging.

Wyong Council asked NSW Soil Conservation Service (SCS) to develop a plan to ameliorate the ASS.

SCS decided the best option was to apply lime and neutralise the acidity down to 60cm. Soil tests found that the amount of lime required to raise pH to a safe level varied between sites, ranging from 10 to 30 tonne/hectare/10 cm soil layer.

Repeated tilling with large off-set discs, or deep tines behind a swamp dozer, proved the best way to mix the lime. The tilling operation is captured on video. For further information, contact Algis Sutas, SCS Gosford - phone (043) 24 3844.

ASS and aquaculture

Acid sulphate soils could affect the productivity of the rapidly growing Australian brackish water aquaculture industry, warns CSIRO Scientist with the Centre for Environmental Mechanics, Dr Ian White. With Australia importing around \$470 million worth of seafood in 1991/92, there is a strong incentive to develop this industry.

Low-lying coastal land near brackish water estuaries are prime sites for aquaculture because salt water is needed for frequent exchange with ponds. However, it is at these sites where potential acid sulphate soils (PASS) commonly occur. When excavated and used in the construction of pond walls, the PASS oxidise and become ASS.

Dr White recently attended a Regional Workshop on the Environmental Assessment and Management of Aquaculture Development in Bangkok, Thailand. Discussions included the problem acid sulphate soils represented to the aquaculture industry.

Research in SouthEast Asia reveals that acid, iron and aluminium leached from acid sulphate

soil is directly responsible for fish and prawn losses and general poor productivity.

According to Dr White, development in PASS will require complete neutralisation of excavated soil, where the soil is used in pond wall construction.

Queensland ASS

Acid sulphate soil mapping is being incorporated into a Geographic Information System (GIS) for the Herbert River Valley, Far North Queensland.

Soil scientist, Doug Smith, Queensland Department of Primary Industries, is heading the soil survey team.

The main use for the GIS will be planning a 100,000 ha cane expansion expected for the lower floodplain. For more information, contact Doug Smith on (070) 92 3107.

Club Med Byron Bay

Re-burial is the best management option for a potential acid sulphate peat to be excavated during the development of the multi-million dollar tourist resort at Byron Bay.

Responding to concern by Byron Council, Club-Mediterranee engaged a consulting team comprising NSW Agriculture, University of NSW and CSIRO to determine the potential acidity hazard of excavating sandy soils on the site for a lake expansion. Profile sampling at the site identified a discrete pyritic peat layer amongst low non-pyritic sands.

Club-Med are adopting an excavation strategy whereby any peat material excavated will be replaced below the watertable daily, to prevent oxidation. In addition, the sand, to be used for fill, will be treated with a low dose of lime to ensure no acidification.

Correction

The article entitled "ASS Gravel" in the last edition of ASSAY failed to acknowledge the authors of the NSW Road and Traffic Authority ASS Guidelines, Dr Ian White, CSIRO and Dr M Melville, University of NSW.

Editor - Richard Bush