EPA Communique
April-May 2016

The Board held a regular meeting on Wednesday 13 April at the EPA Ulverstone office, following a visit to Savage River Mine (see report below), and an out of session meeting was held on Friday 6 May.

McRobies Gully Landfill, Hobart City Council – Assessment

The Board assessed a proposed extension to the McRobies Gully landfill, South Hobart, submitted by Hobart City Council, which sought to increase the final fill height of a portion of the McRobies Gully Landfill in South Hobart by 16 meters. The proposal involved an extension of the landfilling area on the north-western and north-eastern boundaries of the existing landfilling area. The proposal effectively extends the operating life of the landfill for an additional 15 years, although no increase in the existing limit of waste to be received at the landfill (85,000 tonnes per annum) was sought.

The Board concluded that the proposal could proceed with certain conditions, which also addressed the concerns raised during the public consultation when five representations were received. Issues raised included the extension of the life of the landfill and the potential for ongoing odour, noise, dust and traffic problems for nearby residents, potential impacts from windblown garbage, feral animals and weeds on adjoining lands (including Wellington Park), and the potential for impact on threatened species. In regard to the drainage and leachate issues, the Board considered that these were adequately covered by the assessment report and that potential impacts were covered in the Permit Conditions. Biodiversity and natural values were considered, including the potential impacts on the threatened Swift Parrot from the removal of habitat. Conditions were included that will require Council to plan for and undertake the appropriate management for the removal of a number of blue gums, and includes the requirement to submit a Vegetation Management Plan to the Director for approval. Issues relating to dust and odour, and noise, were also considered and conditions placed in the permit to manage the risk to the environment and to nearby residents.

The Board agreed that the assessment could be completed under delegation by the Director, and requested the Director notify the Hobart City Council, providing Council with a copy of the final Environmental Assessment Report to outline the reasons for the conditions and restrictions. The decision by the EPA Board can be viewed on the EPA website at www.epa.tas.gov.au/assessment

Savage River Rehabilitation Program

The Board received a briefing and report entitled *Savage River Rehabilitation Program – Water Quality Review – January 2014 to June 2015*. The EPA visited the Mine and received a tour by Grange Resources, with detailed briefing about the results and success of the project to improve water quality. The attached report outlines the Board's visit to Savage River Mine and the results of the SRRP.

Report on EPA Board Visit to Savage River Mine, April 2016

Savage River Mine

The EPA Board visited Grange Resources' Savage River Mine in April 2016, enabling Board members to be given a tour of the site and receive a briefing from Grange Resources' Environment and Operational Management. This covered current operations and waste management at the mine site, and focused particularly on legacy mine issues and progress with rehabilitation work.

EPA Board Members (L-R) Warren Jones, Tony Ferrier, Wes Ford, Catherine Murdoch (absent: Colin Buxton)

The Savage River mine site contains one of Australia's best deposits of high quality magnetite. The extraction of ore in this form commenced as far back as 1967 when the site was owned by Savage River Mines under the management of Pickands Mather Inc and Co. In 1997, Goldamere Pty Ltd trading as Australian Bulk Minerals began operating the open pit mine and magnetite concentrator at Savage River, and the Port Latta pelletising plant. The current operators, Grange Resources (Tasmania) Pty Ltd produces approximately 2.5 M tonne of magnetite concentrate and 2 to 3 M tonne of tailings per annum dependent on head grade. The concentrate is pumped 83 km via pipeline over rugged terrain and several rivers to the pelletising plant at Port Latta.

Magnetite processing plant

Now, the processing waste is distributed to tailings dams and inundated to prevent sulphide oxidation, and the waste rock is deposited into storage facilities and associated dumps. Under previous operations, without the current understanding of acid mine drainage and sulphide oxidation processes, hill side dumps were created and there was a failure to maintain saturated tails in the Old Tailings Dam. As a result, significant legacy acid and metalliferous drainage (AMD) and associated deposits have occurred at the site and downstream in Main Creek and Savage River.

Old Tailings Dam

The Savage River Rehabilitation Project (SRRP) was developed to manage these legacy issues and address the significant risk to the environment. This was an outcome of the *Goldamere Pty Ltd Agreement Act 1996*, which effectively placed ownership of legacy AMD at Savage River with the Tasmanian Government and indemnified Grange against liability and affect from this AMD. The SRRP has an ongoing budget for rehabilitation which is overseen by the EPA Board.

Pipe delivering concentrate to Port Latta

The EPA, in partnership with Grange Resources, implement the SRRP, which has made excellent progress with environmental improvements at the Savage River site. The North Dump Drain project, for instance, was one of the original projects undertaken to reduce copper loads in the Savage River. It involved collecting run-off from the North Dump, which produced around 15% of the total copper load from the site, and transferring it by pipe to South Lens for neutralisation and precipitation, resulting in virtually all of the copper being precipitated.

South Lens has been used for many years by Grange as the central pit for the treatment of mine dewatering before discharge to the Savage River and although it represents an ideal body of water to use for neutralisation and precipitation, its current and future capacity is unknown. Researching and establishing this capacity is another project currently under the SRRP.

South Lens

Additionally, installation of a water shedding cap and alkaline side covers to one of the larger historic waste dumps known as B dump has restricted ingress of rainfall and provided alkalinity. This has reduced the flux of acid, dissolved metals and sulphate to Main Creek and the Savage River, as has the development of the Broderick Creek alkaline flow-through. This innovative project diverted Broderick Creek, which is a tributary of Savage River, underground through a matrix of alkaline material effectively neutralizing acid and removing metals in water that leached from mine waste dumps.

South Deposit Tailings Storage

The South Deposit Tailings Storage Facility, (currently under construction) is a similarly innovative project which will allow appropriate treatment of waste for the projected life of the mine. Comprising a downstream waste rock dump buttress over the top of an alkaline flow-through, the filter-face dam structure allows controlled inflow to the flow-through which adds additional alkalinity to the degraded Main Creek while containing tailings upstream. Downstream monitoring has

shown significant improvements in water quality since construction of the new storage facility began, with evidence of progressive reductions in copper, aluminium, cobalt, manganese, nickel and zinc concentrations.

As this facility is downstream of both the Old Tailings Dam and B dump it will provide the most efficient approach to neutralisation of AMD from both ongoing ore extraction and legacy inputs within the Main Creek catchment; a key component of the SRRP. Additionally, trials of various approaches to remediating AMD at the Old Tailings Dam are currently being developed by the SRRP, in order to reduce inputs at their source.

Treated water entering Savage River

Grange has also undertaken substantial work on behalf of the SRRP on legacy weed control around the Savage River Mine site. From 1998 to 2005, the major focus was on control of broom around the town site and access roads. Once this was achieved, the focus shifted to pampas grass which until 2010, had been largely uncontrolled on site. It has infested pit walls and other inaccessible areas, making it difficult to deal with. In the past year, however, Grange introduced helicopter spraying and although this is an expensive option (eg over $75,000 was spent on this project alone last season), it has enabled the successful poisoning of pampas grass over large inaccessible areas.

Board looking at improvement in water quality entering Savage River

Over its duration, the SRRP has made impressive achievements in an improvement in the water quality and ecosystem health of the Savage River. The focus for future work will be to continue to investigate long-term solutions and rehabilitation of the largest sources of legacy AMD, such as the Old Tailings Dam and also to continue the co-treatment approach with the current mine operations for sources within B Dump and North Dump Drain, and explore the neutralisation capacity at South Lens for long term remedial solutions.

Savage River Mine current production pit