

Environmental Impact Statement
Project Specific Guidelines
for
Grange Resources (Tasmania) Pty Ltd
North Pit Underground Operations
Savage River Mine, Tasmania

April 2020



ENVIRONMENT PROTECTION AUTHORITY

Contents

1. Information for the Proponent	3
Purpose.....	3
Instructions.....	3
2. Key Issues	4
3. Survey and Study Requirements for Key Issues	4
4. Key Issue Information Requirements	4
6.2 Water Quality (Surface and Discharge).....	4
6.5 Waste Rock and Tailings Management.....	5
5. Other Information Required.....	5
2.1 General.....	6
6.7 Natural Values	6
6.7 Closure	6

I. Information for the Proponent

Purpose

The *Environmental Management and Pollution Control Act 1994* (the EMPC Act) requires the Board of the Environment Protection Authority (the Board) to provide guidance to the proponent about what should be included in the case for assessment.

The Board assesses the environmental aspects of the proposal, while the relevant Planning Authority (Council) assesses the planning aspects. The Board has authorised EPA Tasmania to undertake administrative tasks and establish the information base to inform decision making on its behalf.

These project specific guidelines have been prepared on the basis of a Notice of Intent submitted for North Pit Underground Operations by Grange Resources (Tasmania) Pty Ltd.

Instructions

- This document must be read in conjunction with the *General Guidelines for the preparation of an Environmental Impact Statement* (the General Guidelines).
- The General Guidelines provide detailed instructions on preparing the Environmental Impact Statement (EIS) as well as other information to be provided to the Board for its assessment. These Guidelines are available on the EPA website at <http://epa.tas.gov.au/assessment/assessment-process/guidance-documents>.
- Please ensure you refer to the latest version of the General Guidelines by downloading them directly from the EPA website link above.
- This project specific guidelines document:
 - identifies the key issues which must be addressed in the EIS;
 - details the minimum survey requirements and studies required as part of the EIS for key issues; and
 - sets out other information to be supplied for the purpose of the Board's assessment, in addition to that required by the General Guidelines, for both key issues and other issues.

The EIS should be prepared using a risk-based approach. Depending on the nature of the proposed activity and its location, some issues may be more relevant than others. **The level of detail provided on each issue should be appropriate to the level of significance of that environmental issue to the proposal.** Refer to the General Guidelines for further instructions on preparing the EIS.

The issue of guidelines should not be interpreted as excluding other matters that may emerge as significant from environmental studies, public comments or otherwise during preparation of the EIS. The assessment process may also change the level of risk associated with some of the issues. The level of detail provided in the EIS may therefore change to reflect the level of significance of that environmental issue to the proposal.

NOTE: An assessment cannot proceed to public consultation until the Board has received an EIS that meets the requirements of the General and Project Specific Guidelines, and provides sufficient information to assess the proposed activity (subject to any additional information required in response to public consultation).

Further information on the Environmental Impact Assessment (EIA) process is provided in the *Guide to EIA* available on the EPA website at <http://epa.tas.gov.au/assessment/assessment-process/guidance-documents>.

2. Key Issues

The key issues identified for this proposal, which should be the focus of the EIS, are:

Key Issues	
1	Waste rock and tailings management
2	Impacts from underground operation dewatering and onsite water management

Please refer to the General Guidelines and Sections 3 and 4 below for the information requirements associated with these key issues.

3. Survey and Study Requirements for Key Issues

The following surveys and studies will be required as part of the EIS.

Key Issue	Surveys or Studies Required	Relevant Section(s) of General Guidelines
1. Waste rock & tailings management	<ul style="list-style-type: none"> Waste rock and tailings geochemical test work, including mineralogy, acid-base accounting (ANC, MPA, NAPP), NAG_{pH}, kinetic test work, and assessment of elemental enrichment and potential for leaching. 	6.5
2. Surface water impacts	<ul style="list-style-type: none"> Water quality study assessing the potential to impact Savage River as a result of underground operation dewatering and onsite water management (including proposed diversion schemes), taking into account water quality, proposed dewatering strategy and rates, and South Lens treatment efficacy. 	6.2

4. Key Issue Information Requirements

The following information is required in addition to the requirements of the General Guidelines for key issues. Some of these requirements will support completion of the surveys and studies as detailed above.

The section numbers correspond to the relevant section of the General Guidelines.

6.2 Water Quality (Surface and Discharge)

- Discussion of the potential for acid and metalliferous drainage formation as a result of the management and storage of North Pit Underground operations waste rock. The discussion must consider the design and construction of any new waste rock dumps and the placement of waste rock on the existing dumps (See also Section 6.5).
- Description of best practice environmental management measures (as relevant) to prevent and mitigate the formation of acid and metalliferous drainage, and for collection and treatment of acid and metalliferous drainage which cannot be prevented from occurring.
- Description of the existing and proposed water management practices on the mine site, including the proposed underground dewatering strategy. This must include a description, using maps/diagrams as relevant, of the potential inputs, storage, transfer, treatment and discharge of

water from North Pit Underground operations to the receiving environment. It must include a description of the strategies and measures that will be employed to control and manage potential inflows, including underground voids, installation of diversion schemes (e.g. Upper Broderick Creek Diversion Scheme) and any other measures as relevant (e.g. upgrade of the existing West Wall Dewatering System).

- Description of the potential impacts to South Lens (including its capacity to treat AMD) and Savage River as a result of North Pit Underground dewatering operations.
- Description of management measures/strategies (as relevant) to ensure the water quality and treatment capacity of South Lens is not compromised, and an appropriate level of dilution is applied to the discharge to protect the environmental values of Savage River.
- Description of the proposed monitoring and reporting regime to ensure any water quality changes within North Pit Underground water storage voids (or other storage areas as relevant) and South Lens are identified.
- Description of proposed water quality triggers, and management actions in response to exceedance of triggers.
- The NOI refers to the potential for water from the Broderick Creek Flow Through System to contribute to the underground inflow, dependant on fracturing. The NOI proposes the development of a Broderick Creek Diversion Scheme, with the waters of Broderick Creek discharged directly to Savage River, with potentially lower pH than would otherwise occur, due to bypassing of the alkaline Broderick Creek Flow Through System. Describe the potential impact to Savage River water chemistry as a result of bypassing the alkaline Broderick Creek Flow Through System, with particular comment on potential changes to river Ca and Mg hardness and toxicity of key pollutants of concern such as Cu and Zn.

6.5 Waste Rock and Tailings Management

- Description of North Pit Underground waste rock lithology, mineralogy and geochemical characteristics, including the results of acid-base accounting test work (ANC, MPA, NAPP), NAGpH, kinetic test work (including an assessment of lag time for acid generation), a description of the metals and other elements of concern, and an assessment of the extent of elemental enrichment and potential for leaching.
- Estimation of quantities and production rates of potentially acid forming (PAF) waste rock, non-acid forming (NAF) waste rock and acid consuming (AC) waste rock.
- Description of waste rock disposal practices, including:
 - List of existing dumps that will be used and the associated disposal and encapsulation practices for each dump, including any specific measures to ensure the integrity of the dump, caps and lining are maintained.
 - Waste rock auditing practices.
 - Location, dimensions and disposal/encapsulation practices for any new proposed dumps.
- Description of tailings geochemistry, including an assessment of the acid generating (or neutralising) potential and estimated quantities and production rates, and proposed deposition within the existing TSFs.
- Description of the management of the existing TSFs, with particular consideration given to any changes required to current practices as a result of differing tailings geochemistry.

5. Other Information Required

The following information is required in addition to the requirements of the General Guidelines for issues, other than key issues.

The section numbers correspond to the relevant section of the General Guidelines.

2.1 General

- Description of proposed mining methods, extraction plans and staged mine development for phases 1 and 2, including the development of all related infrastructure to allow the proposal to proceed (e.g. vent shafts, drives, underground water management voids, Upper Broderick Creek Division Scheme etc).
- Description of any alterations to existing mine infrastructure required as a result of the proposed North Pit Underground operations.

6.7 Natural Values

- Description of the areas likely to be disturbed for development of the proposal (include a map showing the location of the likely areas of disturbance).
- The recommendation in the NOI for a natural values assessment to be undertaken of the areas likely to be disturbed by the development of surface infrastructure is supported.

6.7 Closure

- A preliminary closure plan for the underground operations, including premature (unanticipated) closure of operations. Assuming that long term prevention of acid and metalliferous drainage from unextracted cave material will be achieved by flooding of the pit, predict filling rate and full water level as relates to unextracted cave material.



ENVIRONMENT PROTECTION AUTHORITY