

Detailed environmental studies have begun in relation to the potential impacts from underground mining as well as the siting of surface facilities within the lease area. These findings will be used to assess the potential impact on the environment, both social and physical, and form the basis of the Environmental Assessment (EA) document.

## Subsidence

The potential impacts of subsidence on the surface environment have been identified as a key environmental issue for the project. Both Strata Control Technology Pty Limited and Mine Subsidence Engineering Consultants Pty Limited are currently undertaking the subsidence assessment for the project. The combined use of these two leading consultants for the subsidence assessment for this project reflects the proponent's desire to ensure that this issue is comprehensively addressed during the finalisation of the mine plan design and subsequent environmental assessment.

## Surface Water Supply System

The potential impact of proposed underground mining on the surface water supply system has been identified as a key area for detailed scientific assessment. A rigorous analysis of potential effects is considered important for the proposed mining area which represents just 6% of the local water supply catchment area.

## Groundwater

A hydrogeological investigation was begun in 1997 which investigated groundwater in Yarramalong and Dooralong Valleys. Underground mining has the potential to affect shallow groundwater resources. Mackie Environmental Research has been commissioned to undertake further groundwater investigations and focus on addressing the following issues for the EA:

- potential mining impacts on usage;
- potential impacts of saline water management; and
- potential groundwater make;
- potential impacts of subsidence;
- potential regional impacts.

The results of studies to date suggest that potential groundwater risks can be satisfactorily managed. Groundwater that will be affected by the mine is well below that which is used for farming and domestic water supplies. Water in the mine will be pumped to the pit top at the surface. It is saline and unusable for any domestic or rural purpose without treatment.

## Ecology and Heritage

Several studies of flora and fauna have been undertaken for the Project, including ecological and biodiversity issues associated with the surface facilities. Additional studies are currently being undertaken by OzArk Environmental & Heritage Management Pty Ltd (OzArk EHM) to augment the data already compiled.

## Greenhouse Gases

There are several opportunities available for the mitigation of greenhouse gases for the Project. These options, along with other initiatives to offset the emission of greenhouse gases, will be the subject of detailed assessment in the EA.

## Transportation

Parsons Brinckerhoff has been commissioned to undertake a traffic and transportation study for the project.

## Visual

The W2CP will carefully consider the design, placement, materials and screening while further developing the proposal. However, given the local topography, it will be difficult to minimise visual impacts entirely through screening. Also, an innovative landscaping plan, which enhances the long term visual environment, will be considered integral to the proposal.

## Flooding

The effect on flooding as a result of subsidence from the mine has been identified as an important environmental issue associated with the Project.

Two preliminary flood studies of major catchments within the subsidence area have been prepared for the Project. The baseline flood studies demonstrated that both the Yarramalong and Dooralong Valleys are significantly floodprone.

The next phase of the study is to undertake an assessment of subsidence impacts on the flooding regime and flood liable structures. The key issues to be addressed in future investigations of the flood impact assessment in the EA report include:

- flood affected dwellings and structures;
- flood liability;
- flood hazard assessment;
- property access;
- time of ponding; and
- proposed flood mitigation measures.

## Social and Economic

The Social Impact Assessment will be prepared by Martin and Associates while economic data will be provided separately by Hunter Valley Research Foundation, a specialised group who deal specifically in economic evaluation and modelling. The combined assessment will cover the following key issues:

- Effects on primary social indicators such as house and land values, community expectations and perceived implications.
- Effects on social and community infrastructure and services including education, health and safety.
- Effects on employment and determination of flow on economic costs and benefits.
- Determination of community issues and the development of specific mitigation and offsets for the project.

Although it is considered that the overall economic and social benefits of the project will be substantially positive, the aim of the study will be to determine any specific local negative implications that can then be used to develop an appropriate compensation package for the project.

## Noise

A preliminary noise assessment report was prepared by Wilkinson Murray Pty Limited to assess the potential noise generated and resulting impact on the receiving environment as part of the initial feasibility studies for the Project.

A technical review of the Wilkinson Murray report and further noise assessment will be carried out by Atkins Acoustics Pty Limited and included in the EA document. The Noise Impact Assessment will follow the procedures recommended in the Industrial Noise Policy (INP). This will include additional background noise survey to establish the Rating Background Level (RBL) from which the anticipated noise levels generated by the proposed activities on each site will be assessed.

## Air Quality

Information collected from the monitoring network will provide existing dust levels for the area. Data collected to date indicates that suspended and deposited dust levels are well within compliance limits.

Further assessment will be carried out by Holmes Air Sciences on the likely impact on the existing air quality for inclusion in the Environmental Assessment document. This study will include assessment of both dust and gas emissions from all site operations.