SOUTH32
Worsley Alumina

Worsley Mine Development
CONTINUING OPERATIONS

FACT SHEET – AIR QUALITY **2022**

The **objective** for this component of the environmental review is to **maintain air quality** and **minimise emissions** so that **environmental values are protected**.

Within this assessment air quality includes the chemical, physical, biological and aesthetic characteristics of air.

INTRODUCTION

South32 Worsley Alumina is an integrated bauxite mining and alumina refining operation in the South West of Western Australia with a proud track record spanning more than 35 years.

The Worsley Mine Development is the next phase of bauxite mining near Boddington, providing access to future reserves and resources to sustain production at our Worsley Alumina refinery near Collie.

The project is a key enabler for Worsley Alumina to continue to deliver benefits to the Peel and South West regions, and Western Australia more broadly, for many years to come.

The project is currently subject to a State and Commonwealth environmental approvals process, with a comprehensive environmental review undertaken and an eight-week public review period.

BACKGROUND

The receiving environment within and surrounding the project includes:

- Sensitive receptors (including residents, employees, vegetation, fauna and community areas);
- Local air sheds; and
- The South West regional air shed.

The elements of Air Quality relevant to the receiving environment are emissions of dust and combustion products. Given the nature of the mine site and surrounds, and the scope of this project being predominantly a continuation and extension of the Boddington Bauxite Mine (BBM) and associated infrastructure, dust is the predominant source of atmospheric emissions relevant and therefore represents the focus of the impact assessment.

Greenhouse Gas (GHG) emissions have been considered separately and Worsley Alumina, in conjunction with the relevant regulators, are considering the impact of GHG in line with the GHG Emissions Guideline.

POTENTIAL IMPACTS

The potential impacts that may occur to air quality from implementing the project are:

- Generation of particulates from mining activities, including material handling, vehicle movement and wind erosion to the local airsheds; and
- Emissions of combustion products associated primarily with earthmoving and blasting activities.

The impact of dust emissions from activities associated with mining within the Primary Assessment Area (PAA) is dependent on the type and frequency of activities undertaken, meteorological conditions, composition of dust particles, nature of the source material, and the distance from the source to the receptor. Dust emissions are usually highest during the driest months (summer) and biased toward the southeast and west, due to prevailing wind conditions.

Overall, dust modelling studies show the potential for health and amenity related air quality impacts from particulate matter emissions near Boddington, is low to minimal, in terms of risk that the criterion may be exceeded. Sensitive receptors with a moderate or significant risk that the criterion may be exceeded will require additional management measures to mitigate potential impacts. The results of the analysis for proposed activities near the refinery indicates that there is likely to be a moderate incremental increase in particulate matter less than 10µm (PM10) concentrations, which may require suitable dust management measures to mitigate impacts at the nearest sensitive receptors. Impacts to the local airsheds are expected to be insignificant, due to the undulating terrain and forest vegetation land cover that enhances dust deposition.

Combustion product emissions associated with the continuation of mining activities will result in the continuation of pollutants being released to the atmosphere. However, the dispersion modelling study indicates comfortable compliance with relevant air quality assessment criteria, and the risk of any adverse potential impacts to sensitive receptors is very low.

The implementation of the project will enable continued operations of the Refinery and BRDAs. Particulate and combustion emissions from the Refinery operations will remain consistent with existing operations and are managed under the requirements of the EP Act Licence (L4504/1981/17). When considering impacts from the Refinery, it is important to consider the context of the landscape and the location of sensitive receptors. The refinery is principally surrounded by State forest with some broad scale farming properties, including isolated farmhouses. The nearest residence is approximately 7km from the refinery boundary, and the nearest urban location is Allanson approximately 11km south of the refinery.

MITIGATION

Potential impacts to air quality associated with mining activities in the PAA are proposed to be managed by Worsley Alumina's current environmental management practices.

Although the ongoing operation at the Refinery will continue to produce emissions to the local airshed, these can be effectively regulated through the Part V Licence process. The primary source of potential impacts to air quality is dust emissions, which are currently, and will continue to be, managed through the Worsley Dust Management Plan. Emissions of combustion products will be managed through optimising mine plans to ensure haulages routes provide the most efficient means of delivery of bauxite and continued use of the Overland Bauxite Conveyors (OBC) as an alternative to truck haulage.

The Dust Management Plan applies to Worsley Alumina's BBM operations, the Contingency Bauxite Mining Envelope (adjacent to the refinery), the overland conveyors and unsealed roads managed by Worsley Alumina.

Activities to minimise and mitigate dust impacts include:

- Modelling prior to commencing in new mining areas
- Minimise time between clearing and rehabilitation where practicable
- Onsite management including measurement and reporting
- Watering active haul routes & apply dust suppressants in high risk areas
- Continue to use dust collectors and water sprays on crushing plant
- Operation and maintenance of the dust monitoring network
- Tracking and investigation of community dust complaints.

PREDICTED OUTCOME

Continuation of operations associated with the project will result in emissions of dust and combustion products that will contribute to the surrounding local and regional airsheds. The primary source of potential impacts to air quality are dust emissions.

There are well-established dust management practices in place for the existing operations that will be applied to the project activities, including a monitoring network which is consistently reviewed and improved as mining activities move into new areas. It is considered that Worsley Alumina's existing management approach relevant to Air Quality (primarily dust management practices) are applicable to the continued operation of the BBM and the proposed activities within the CBME.