Audit Compliance Report

2024

Ministerial Statement 728
(As amended by Ministerial Statements 1069 and 1157)

Wagerup Alumina Refinery
Production to a maximum capacity of 4.7Mtpa and associated bauxite mining

March 2025

Title page

TITLE	:	**WAGERUP ALUMINA REFINERY MINISTERIAL STATEMENT 728 (AS AMENDED BY MINISTERIAL STATEMENTS 1069 AND 1157) AUDIT COMPLIANCE REPORT 2024**
DATE	:	March 2025
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KEY WORDS	:	Wagerup Alumina Refinery, Department of Water and Environmental Regulation (DWER), Office of Environmental Protection Authority, Annual Compliance Report, Ministerial Statement 728, Alcoa of Australia Limited
ABSTRACT	:	This Audit Compliance Report summarises environmental performance for the 2024 reporting period against the requirements of Ministerial Statement 728 granted for the Wagerup Alumina Refinery – Production to a Maximum Capacity of 4.7Mtpa and Associated Bauxite Mining (and as amended by Ministerial Statements 1069 and 1157)

Contents

Part A – General

1 Introduction

This report is submitted to the Department of Water and Environmental Regulation (DWER), Department of Jobs, Tourism, Science and Innovation (JTSI) and the Shire of Waroona in accordance with the conditions of*, the Alumina Refinery (Wagerup) Agreement and Acts Amendment Act 1978* and Ministerial Statement 728 (MS728) as amended by Ministerial Statement 1069 (MS1069) and Ministerial Statement 1157 (MS1157). This Annual Audit Compliance Report is submitted to meet Condition 5 of MS728 for Wagerup Alumina Refinery and associated Bauxite mining. It covers the period from 1 January 2024 to 31 December 2024.

During the reporting period 1 January 2024 to 31 December 2024, Wagerup Refinery operated under *Environmental Protection Act 1986* Part V Licence L6217/1983/15, last amended 10 November 2020 (Licence). A report detailing analysis of environmental monitoring conducted in accordance with the Licence is submitted separately to DWER for the 2024 calendar year reporting period by 1 April 2025.

Willowdale Mine supplies bauxite to Wagerup refinery to facilitate alumina production. Mining operations complied with the Mining Management Program as approved by the Minister for State Development. A report detailing the performance of the mine and research initiatives will be submitted to JTSI by 1 June 2025.

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2 Proposal Setting

Wagerup Refinery and associated bauxite residue storage facilities are located 120 km south of Perth, 2 km north of Yarloop and 7.5 km south of Waroona (**Figure 2-1**). Wagerup is located close to the foot of the Darling Scarp and is separated from the Residue Storage Areas (RSAs) by the Southwest Highway and the Perth-Bunbury rail line (**Figure 2-2**). Bauxite is supplied to Wagerup by overland conveyor from Alcoa's Willowdale Bauxite Mine located 15 km to the east. Alumina produced at Wagerup is transported by rail to the Alcoa shipping terminal at Bunbury.

The refinery and residue operations are contained within freehold land owned by Alcoa. Land use on adjacent properties is primarily agricultural.

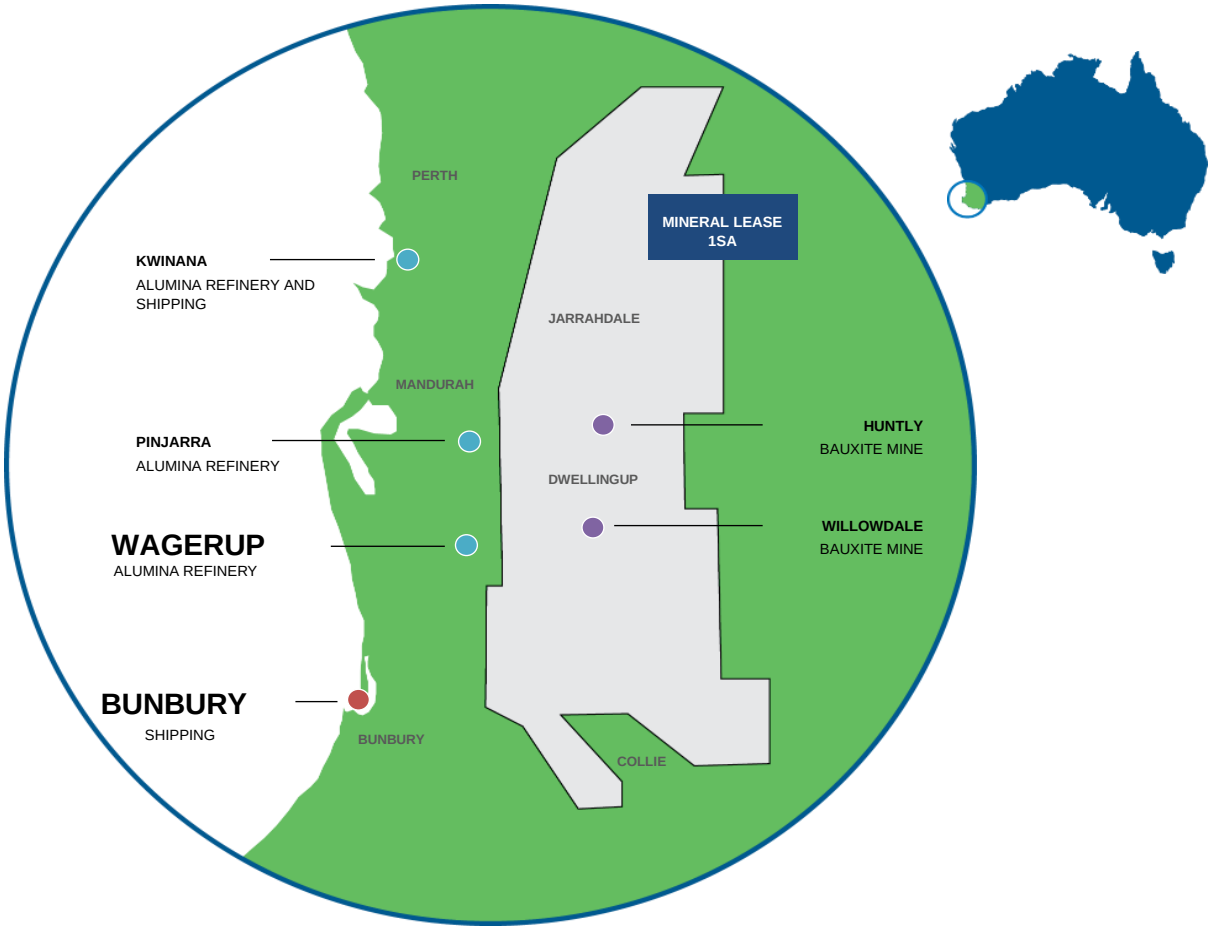


Figure 2-1 Location of Alcoa Operations in Western Australia

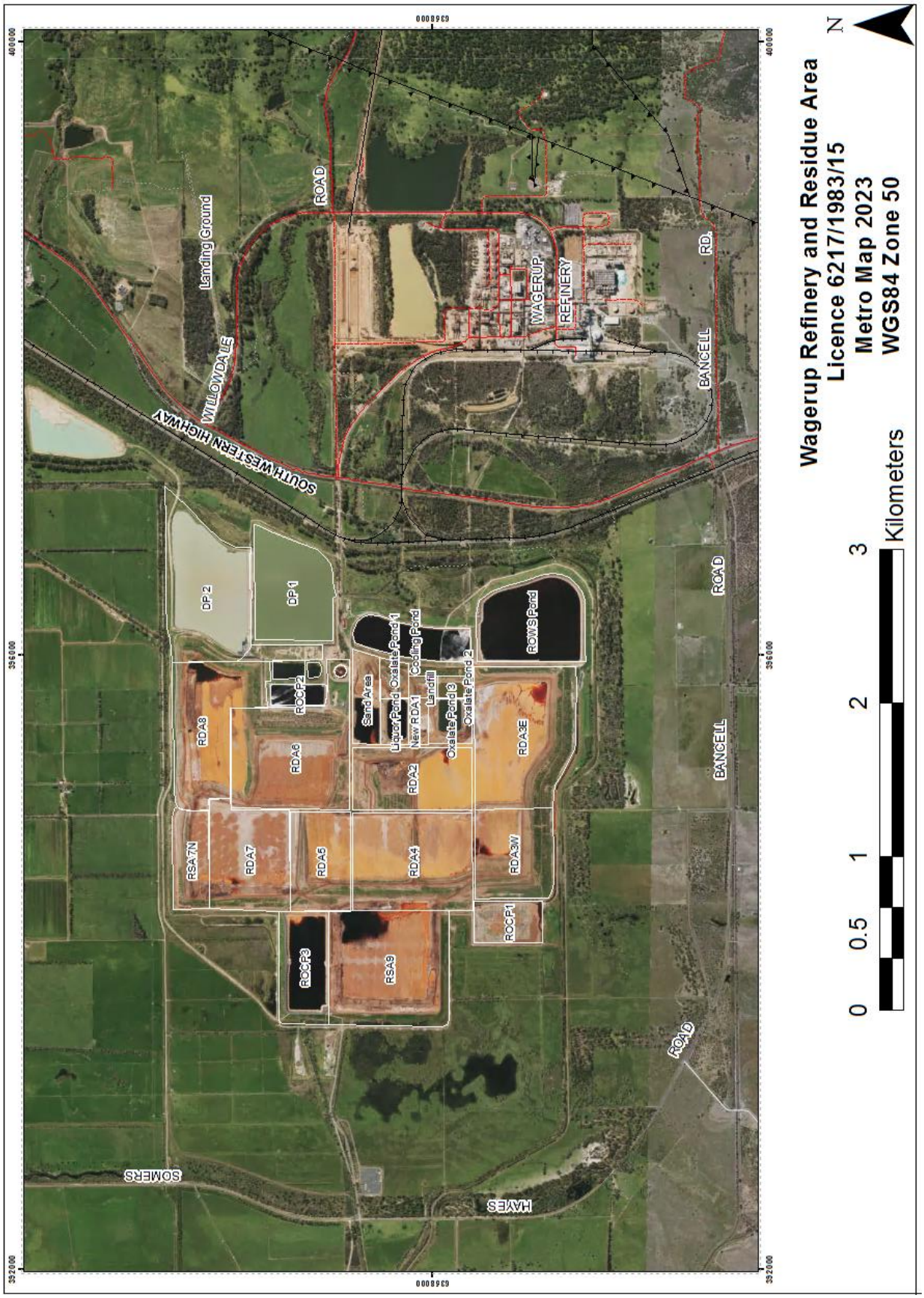


Figure 2-2 Current Aerial View of Wagerup Refinery and Residue Storage Area

2.1 Process overview

Wagerup produces alumina from bauxite using the Bayer Process. The process involves four main steps: digestion; clarification; precipitation; and calcination. In addition, two other important activities occur on site, being: generation of power and steam; and residue management.

Digestion	Bauxite is milled to sand size particles and hot concentrated caustic soda solution is added making a bauxite slurry. The hot caustic dissolves the available alumina within the bauxite.
Clarification	Sand and clay (red mud) are settled out leaving an alumina rich 'green' liquor. The settled-out sand and mud are washed and then pumped out to the residue storage area (RSA).
Precipitation	The hot 'green' liquor is cooled from approximately 100°C to 60-75°C causing alumina hydrate to crystallise. The liquor and hydrate are separated. The hydrate crystals are sized, and crystals suitably large enough are removed. Undersized hydrate crystals are returned to the process as seed crystals.
Calcination	Sized hydrate is washed and dried, then heated to 1000°C to drive off chemically bonded water leaving aluminium oxide (alumina).
Residue	For each tonne of alumina produced from Wagerup, approximately 2.5 tonnes of residue mud and sand are produced. The mud density is increased at the residue area through thickening prior to its final disposal in the RSAs. The sand is stockpiled and subsequently used for internal construction activities at residue.
Power and Steam Generation	Power and steam requirements for Wagerup are met by an onsite power station consisting of three boilers and a heat recovery steam generator (HRSG). The primary fuel supply for the power station is natural gas, with diesel available as a back-up fuel supply.

3 Current Status

In May 2005, Alcoa submitted its Environmental Review and Management Programme to the Environmental Protection Authority (EPA), seeking approval to increase production from 3.3Mtpa to 4.7Mtpa. In September 2006, MS728 was released detailing the conditions of approval for expansion of Wagerup Refinery. The conditions of MS728 superseded Ministerial Statements 95, 390 and 564.

MS728 relates to the ongoing operation of the Wagerup Refinery and a project to expand refinery production to 4.7Mtpa. The expansion project (Wagerup 3) has been suspended and accordingly, many of the Conditions within MS728 were not applicable during the period covered by this Annual Audit Compliance Report. MS728 was amended by MS1069 in 2017 and then MS1157 in 2021. The main purpose of the amendments was to allow Alcoa to incrementally increase production up to 3.3Mtpa without the construction of the third production unit.

On 13 September 2022 Alcoa notified EPA that Wagerup Alumina Refinery will not be substantially commencing the third production unit under MS1157 Condition 4 by 27 September 2022. As a result, the Wagerup Refinery continues operations under the conditions of MS728, as amended by MS1069 and MS1157. Wagerup Refinery will continue to provide this ACR report annually as required by MS728.

The status of the current proposal, in accordance with Schedule 1 of MS728 (as amended) is provided in **Appendix A**.

3.1 History of amendments to Statement 728

In 2011, Alcoa sought an extension of the Environmental Approval for the Wagerup Unit Three Project MS728 due to being unable to substantially commence the project within the approval timeframe.

In May 2012, Alcoa received MS897 amending Condition 4 of MS728 with a timeline extension to September 2016 to implement the proposal. An amendment was submitted in November 2015 seeking a change to Condition 4 allowing a further 5 years of the approval. Two Interim Implementation conditions were issued in September 2016 and August 2017, allowing a one-year timeline extension while an assessment was conducted into the change.

In December 2017, Alcoa received MS1069, providing a timeline extension to September 2022 to implement that portion of the revised proposal being the third production unit, as well as amendments to conditions in Part B of MS728 to clarify that they relate to that portion of the revised proposal being the third production unit.

During the assessment that resulted in MS728, Alcoa considered a single stage expansion for the refinery to 4.7 Mtpa. The proposal, commonly known as Wagerup 3, consisted of modifications to the existing refinery and installation of new equipment including a third production unit. Ongoing market conditions have not facilitated this approach to production growth and Alcoa is now evaluating the potential to increase refinery production in smaller increments.

In 2018, Alcoa commenced discussions with the EPA regarding this revised approach to refinery growth, to amend existing conditions under MS728 to reflect incremental production increases, initially up to 3.3Mtpa. Alcoa subsequently requested the initiation of an inquiry by the EPA into

changing the conditions of MS728 to reflect incremental production increases, while maintaining the intent of the original conditions.

In October 2018, the Minister for Environment wrote to the EPA requesting that an inquiry be initiated into changing the Ministerial Conditions for the refinery. In September 2019, Alcoa submitted a formal application for Section 46 Review of Conditions to the EPA. The assessment was finalised, and a new Ministerial Statement 1157 (MS1157) was issued on 7 January 2021.

In September 2022, Alcoa notified EPA that construction of the third production unit will not be substantially commenced as per MS1157 Condition 4.

No further changes or updates occurred during 2024

3.2 Compliance

During the reporting period, Alcoa has complied with Ministerial Conditions. See **Appendix B** - Audit Table for more information.

Part B – Research and Management Program

4 Monitoring Program

Alcoa undertakes a comprehensive environmental monitoring program as part of its obligations under key environmental licensing instruments related to the Wagerup Refinery.

During the reporting period 1 January 2024 to 31 December 2024, Wagerup Refinery operated under *Environmental Protection Act 1986* Part V Licence L6217/1983/15, last amended 10 November 2020. A report detailing analysis of environmental monitoring conducted in accordance with the Licence is submitted separately to DWER for the previous calendar year reporting period by 1 April each year.

Willowdale Mine operates under *Environmental Protection Act 1986* Part V Licence L6465/1989/10, last amended 30 November 2021. A report detailing analysis of environmental monitoring conducted in accordance with the Licence is submitted separately to DWER for the previous calendar year reporting period by 31 March each year.

Water monitoring was also conducted in accordance with the Wagerup Refinery Surface and Groundwater Operating Strategy as required by the Licence to Take Water instruments SWL97472(6), SWL99246(5), SWL151027(4), GWL102669(3) and GWL160881(3). Data is submitted to DWER for the previous calendar year reporting period by 31 March each year.

An Annual Report is submitted by our mining operations to JTSI prior to1 June each year that includes additional monitoring data and information about the Mining Operation's environmental management and research programs.

5 Investigations and voluntary air monitoring programs

As part of the 2004 Air Quality Review at Wagerup, CSIRO made several recommendations aimed at improving the understanding about air quality around the Refinery and Alcoa committed to implementing these recommendations. These commitments, in the form of an 'Air Quality Action Plan', were subsequently included in the Wagerup Refinery 2006 Environmental Improvement Plan. Progress against these actions was reviewed by the Wagerup Air Quality Technical Advisory Panel (TAP).

TAP was established in 2005 and consisted of representatives from DWER (then DEC), Chemistry Centre of Western Australia (CCWA), CSIRO, Alcoa and a community member from the Wagerup Tripartite Group. The role of this group was to assist in the development of project scopes, review and advise on whether the research and analysis conducted has adequately addressed the CSIRO Air Quality Review recommendations and provide direction for future investigations.

During 2010 and 2011 progress on the outstanding CSIRO actions stalled temporarily due to the disbandment of TAP and the Wagerup Tripartite Group. In 2012, Alcoa submitted a plan to DWER on completing the outstanding recommendations and at the end of 2014, all 8 of the outstanding recommendations had been presented to the CSIRO Resolution Committee.

DWER also requested that Alcoa Wagerup present a plan to conduct Odour and Volatile Organic Compounds (VOC) monitoring and modelling which accurately reflects current operations particularly targeting VOC emissions. Alcoa provided DWER with a VOC and Odour Monitoring and Modelling plan for approval in December 2012. Alcoa commenced actions from the plan in 2013 and in Q4 2015 Alcoa provided DWER with an updated emissions inventory and associated air quality model for the 2014 refinery configuration as part of the action plan commitments. Outcomes of the plan were presented to the Community Consultative Network (CCN) and published on Alcoa website in 2016.

Discussions continued with DWER on emission inventory improvements and Alcoa progressed with air quality modelling reviews in 2016 and into 2017. A trial of CALPUFF/WRF models to evaluate TAPM versus WRF meteorological prediction was completed, determining the continued use of TAPM to drive meteorological files for air quality modelling. Further work on the model progressed as part of the technical studies undertaken for MS728 air quality model validation, resulting in consultants proposing the final model selection of the CALMET/CALPUFF model suite.

Further emission inventory improvements continued in 2018 and 2019 and the '2018 Wagerup Refinery Emission Inventory' was submitted to EPA/DWER as part of the Section 46 application to review conditions of MS728. This is to define the current 'base emission rates' as current state rather than that defined in 2005 as part of the Environmental Review and Management Program.

An air quality modelling study for Wagerup Refinery was completed in 2020 using the CALMET/CALPUFF model suite. Output from this study was used to update the Tier 1 Health Risk Assessment for the Refinery.

As part of the Section 46 application to review conditions of MS728, Alcoa committed to an Emission Inventory Improvement Program, with 3-month, 12-month and 24-month sampling components. Sampling for the 3-month, 12-month programs and the 24-month program is complete. In addition, Wagerup has undertaken additional monitoring at the residue areas. Results of the monitoring programs will be used to update the site's emission inventory.

Air dispersion modelling works have been completed during 2024 to support a works approval application for a new residue storage area. The modelling was intended to inform the assessment of potential air quality impacts of the Wagerup refinery upon the local communities. The air dispersion modelling study incorporated site specific meteorological data, emissions information, source characteristics and the location of model receptors. Three-dimensional prognostic meteorological data was developed using the Weather Research and Forecasting (WRF) Model and this was coupled with CALMET/CALPUFF modelling suite. The output from this study is being used to update the Tier 1 Health Risk Assessment for the Refinery.

6 Noise management

6.1 Overview

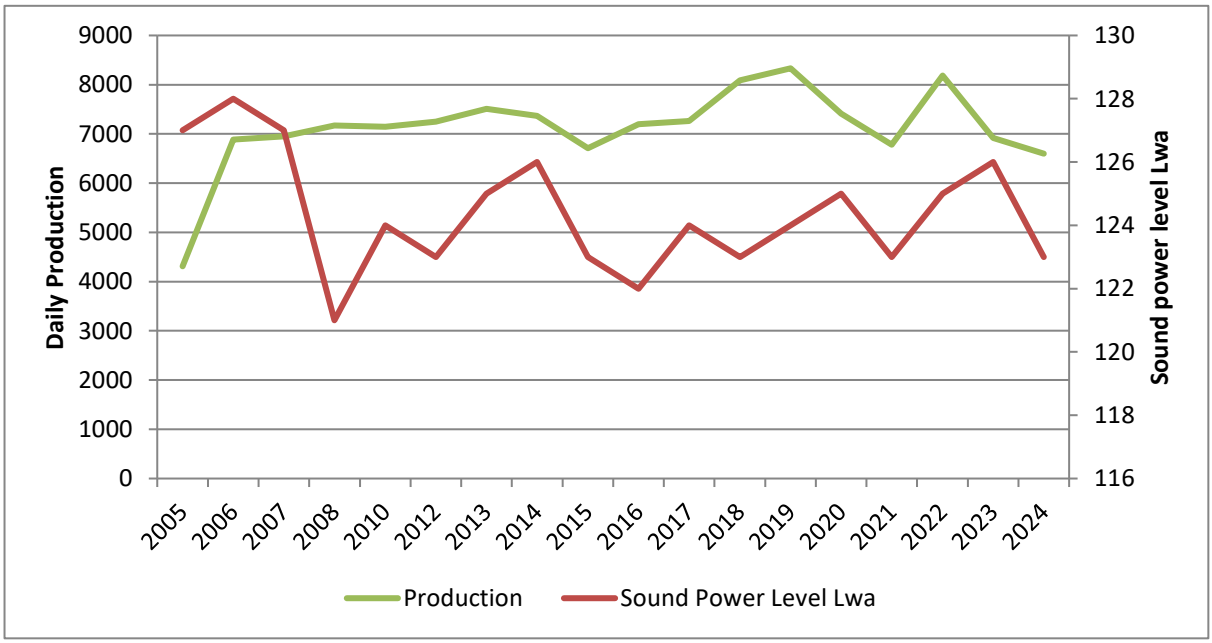
Noise management is a key focus area at Wagerup. The program to reduce noise emissions from Wagerup began in 1995 when a source noise reduction program was developed in consultation with DWER (then DEC). Since this time, substantial noise reduction measures have been implemented.

Despite the success of the reduction programs, monitoring and modelling showed that Wagerup, like many other existing industrial sites in close proximity to residential areas, periodically exceeded the allowable noise levels. A noise management strategy aimed at achieving compliance with the Noise Regulations by reducing noise emissions onsite, applying for a variation to the allowable limits, and a property acquisition program was introduced.

Noise monitoring data has shown that the sound power level of Wagerup is relatively consistent over time. The level of noise emissions from Wagerup at any given location varies from time to time and is dependent on location and weather conditions. Due to the difficulty in quantifying the actual contribution of refinery noise at noise sensitive locations, computer modelling is used.

In July 2024 Wood Engineering Consultants conducted noise level monitoring using the '20 Location'" abbreviated survey method. The purpose of the survey is to monitor noise levels within the Refinery, along with relevant production and operational data, with the objective to observe any changes in overall noise emission levels. While conducting the annual 20-point survey, there will be occasions where the plant is not operating, or the measurement location was compromised by local noise sources not representative of the area noise emissions. Some of the 20 locations will not have representative noise measurements for these occasions. To permit reasonable comparison of sound power emissions the data for the most similar previous measurement at these locations is used in these cases. The sound power levels observed during the 2024 survey are within the historical range of previous surveys as shown in **Figure 6-1.**

Figure 6-1 Summary of Wagerup sound power levels 20 location abbreviated method from 2005 to 2024



6.2 Noise variation

Despite noise reductions achieved to date, it is not technically feasible for Wagerup to comply with the noise levels specified in Regulation 8 of the *Environmental Protection (Noise) Regulations 1997* at all times. The only manner by which Alcoa can practicably reach full compliance is through a variation under Regulation 17 or through further acquisition of property; or a combination of the two.

As a result, a variation to the Noise Regulations was sought in 2001. Alcoa submitted its final report to DWER for consideration in June 2008 and continued to work with DWER to progress this application throughout 2011. In June 2012, the *Environmental Protection (Wagerup Alumina Refinery Noise Emissions) Approval* was granted by the Minister; however, a number of appeals were received. The appeals investigation was finalised by the Minister in December 2013, and a variation to the Noise Regulations was granted with the release of the *Environmental Protection (Wagerup Alumina Refinery Noise Emissions) Amendment Approval 2013* (The Approval).

The Approval included conditions requiring noise monitoring, data reporting and a requirement to show 'best endeavours' in purchasing noise affected properties in the area (Area A). Alcoa was compliant with the conditions of the Approval.

During 2024 Alcoa continued to measure noise at the continuous monitors located in accordance with the requirements of the Approval to the north and south of the refinery. Alcoa agreed to voluntarily report data collected from these monitors in this report. Alcoa commissioned Wood Engineering Consultants to review the data collected during 2024 and compare it to data collected in 2002 – 2003 (base year) and 2014 – 2024. Wood filtered the 2024 data set to reject measurements affected by wind or rain generated noise and to include only data recorded under downwind conditions, for example, when the refinery is most likely the dominant contributor to noise received at the monitoring locations. This is the same methodology used to filter data for the previous reports submitted under the Approval.

Comparison focused on the L_{A95} noise level parameter to minimise the likelihood of spurious, short-term noise events affecting the measured data. The analysis shows that noise levels measured during 2024 are generally similar to levels measured in previous years as shown in **Figure 6-2** and **Figure 6-3.** See description below for analysis between the two locations regarding previous years.
Median noise levels at Location 1, north of the Refinery, were similar to 2023 during the months of June and October. Noise levels were lower than in 2023 from July to September. Noise levels were higher than in 2023 from January to March and November and December. Noise levels were lowest on record for April and May.

Median noise levels at Location 2, south of the Refinery, were lower than 2023 during January to March and September and October. Noise levels were higher than 2023 during April to June and November to December. Other months were generally consistent with 2023 levels.

6.2.1 Variation extension application

The Approval had a two-year timeframe from 10 December 2013 to 10 December 2015. A ten-year extension to the Approval was available if Alcoa applied for the extension within the first 18 months of the Approval. Alcoa submitted an application to extend the Approval on 28 April 2015, so the Approval continues to operate until the Minister grants, or refuses to grant, the further approval.

In May 2016, DWER advised that the assessment of Wagerup's Regulation 17 extension application was dependent on the program of work Alcoa was implementing to re-build the Wagerup acoustic model, review the refinery contribution to noise levels at the Hamel town site and evaluate the reasonableness and practicability of further noise controls.

Alcoa commissioned SVT Engineering Consultants (SVT, now Wood) to update the Wagerup model, identify key equipment items contributing to noise levels received at Hamel and review commercially available acoustic reduction technology that might be applied to Wagerup to achieve 3 and 4 dB(A) reductions at Hamel.

Figure 6-2 Comparison of noise levels measured at Location 1 (North Monitor) for base period (2002 – 2003) and 2014 – 2024.

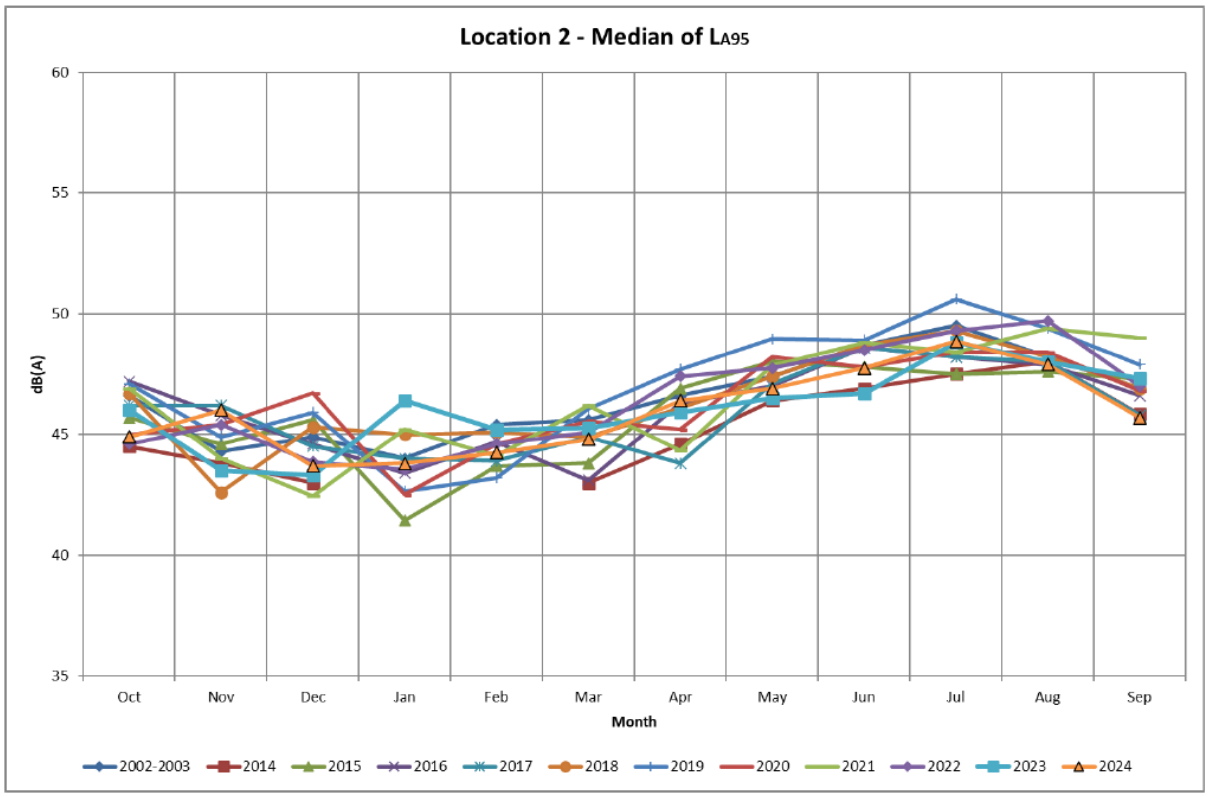
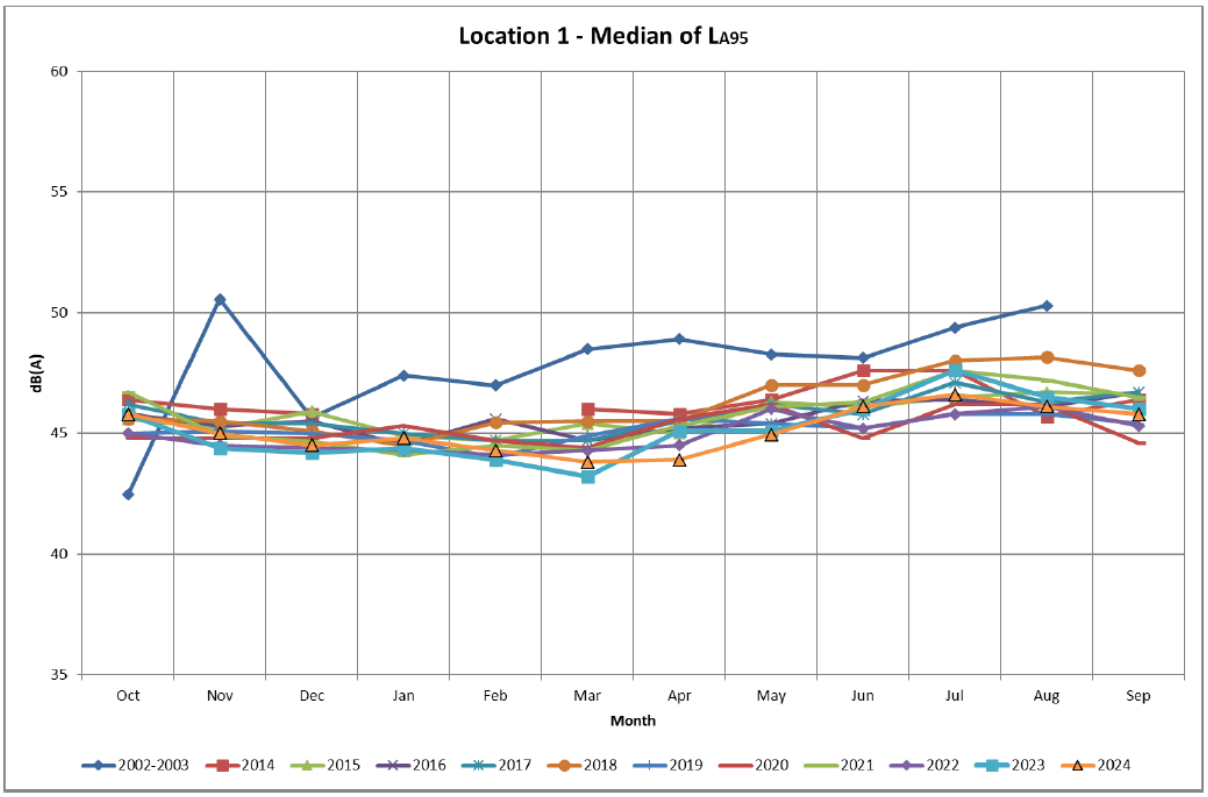


Figure 6-3 Comparison of noise levels measured at Location 2 (South Monitor) for base period (2002 – 2003) and 2014 – 2024.



Alcoa used the noise mitigation scenarios developed by SVT (now Wood) to develop a cost estimate and conduct a practicability review to identify any implications for plant operability, plant maintainability and Occupational Health and Safety (OHS) of the refinery workforce.

At the time, this work led Alcoa to the view that further noise reduction at Wagerup was not reasonable or practicable. A report documenting the program of work completed in 2016 was submitted to DWER in October 2016. DWER has advised that this information will be reviewed as part of the variation extension application.

Alcoa commissioned a peer review of the acoustic modelling and source ranking conducted by SVT (now Wood) and this was submitted to DWER in February 2017.

In August 2017 DWER advised that following receipt of the updated Wagerup model the department would commence assessment of the Regulation 17 and issued an invoice for this assessment. This invoice payment was completed in August 2017 and the assessment commenced. DWER undertook consultation on the Noise Approval over the period December 2017 to January 2018 and in 2021 requested additional information from Alcoa for the 2017-2020 period, to support the variation extension application. The requested information was supplied, and Alcoa is awaiting the outcome of the assessment and the Minister's determination.

7 Bauxite residue management

7.1 Long term residue management strategy (LTRMS)

7.1.1 Purpose of the LTRMS

The LTRMS document is designed to inform local and state governments and the wider community of Alcoa's long-term management strategies and commitments for a sustainable future in residue management. It is drafted with collaboration from key stakeholders including representatives from the local community, local government and regulatory authorities that comprise a Stakeholder Reference Group (SRG). The SRG, during discussions with Alcoa representatives, develop a set of Guiding Principles for Alcoa's consideration.

In particular, the LTRMS outlines the current short term (5 year) and midterm (25 year) management strategies for residue at Wagerup, including issues such as:

- where future residue infrastructure will be located,
- the proposed height requirements for the residue areas, and
- how environmental risks associated with residue storage will be managed.

The LTRMS also addresses closure of the residue storage area, future land use options for the residue area after closure, and current research into residue management, reuse and revegetation. It is not intended to duplicate documents or processes already in place to address current operational management issues.

The report is designed to enable stakeholders to review both the longer-term strategy and those projects on the immediate planning horizon. The LTRMS is anticipated to address the key information requirements of the planning and approval mechanisms for the five to seven-year period to which it relates, so that endorsement of this document by the Residue Planning and Liaison Group (RPLG) and the Ministers for State Development and Environment ensures streamlined approvals processes. Similarly, endorsement of the 25-year and life-of-mine planning footprints is designed to provide a basis for approval applications required for the longer term.

7.1.2 Review history

In 1992, as per MS95, condition 3 and proponent commitment 8, the Residue Planning Liaison Group (RPLG) was formed. The role of the RPLG was to facilitate the planning activity and to review and endorse the plans developed by Alcoa for submission to the Minister for State Development and the Minister for the Environment. The RPLG currently has membership from the Department of Jobs, Tourism, Science and Innovation (Chair and Coordination) (JTSI), Department of Water and Environmental Regulation (DWER), Department of Energy, Mines, Industry Regulation and Safety (DEMIRS), Department of Planning, Lands and Heritage (DPLH), Water Corporation, Department of Agriculture and Food (DAFWA), Peel Development Commission and Shire of Waroona.

The Wagerup Refinery Long Term Residue Management Strategy (LTRMS) was developed in 1995 as a single document to meet the requirements of MS390 (now superseded), condition 3 and proponent commitment 11 (Superseded MS95). The strategy was approved by the Minister for the Environment in 1997.

Five yearly reviews of the LTRMS including RPLG consultation have been ongoing. In 2000 the first 5-year review was completed and endorsed by the RPLG and included some significant improvements to the strategy. Changes included:

- the addition of the Waroona Shire Council on the RPLG;
- the strategy's planning horizon was recommended to be reduced to 25 years, and
- the LTRMS was proposed to include more detailed facilities planning information for the 5-year review period to which it relates, to allow projects on the immediate planning horizon to be reviewed as part of the long-term strategy. This structure also aims to reduce duplication in the approvals processes by providing information necessary to support the planning and approval mechanisms for the 5-year period.

In the 2005 review, Alcoa addressed the Environment Review and Management Plan for the 4.7Mtpa expansion proposal to consult on footprint and stack height options for the expanded refinery. However, due to expansion timeframes being unavailable, development of footprint options over the current 25-year planning period was difficult. To provide key stakeholders with further input on footprint options when the timing of the expansion is more certain, it was proposed to review the LTRMS again prior to commencement of construction of the expansion.

In 2006 MS390 was superseded by MS728, and conditions 13 and 16 replaced the previous requirements.

The revised plan was endorsed by the RPLG and submitted to the Minister for State Development in 2007 and published in 2008.

During 2012, the LTRMS was reviewed in consultation with a Stakeholder Reference Group (SRG) to obtain advice and feedback on strategy options. The SRG included members from local community, local government and regulatory authorities.

The 2012 LTRMS review addressed residue infrastructure requirements for the life-of-mine (2045) as well as the 25-year footprint requirements and the 5-7-year development plan. Key changes in environmental management and performance since the 2005 review were also presented; however, the focus on routine operational environmental issues was reduced in recognition of the development of the Environmental Improvement Plan (EIP) process. The EIP process, implemented in 2006, is designed to address environmental improvement opportunities for the refinery and residue area.

The 2012 LTRMS was submitted to the RPLG in December 2012. Following incorporation of the RPLG feedback, the document was then submitted to the Minister for State Development in March 2013. It was endorsed by the Minister in June 2013.

During 2017, the process to review the LTRMS was commenced, starting with consultation with an SRG utilising a similar process to the 2012 review. The 2017 consultation process and subsequent document review introduced the potential future introduction of Residue Filtration at Wagerup Refinery, including new infrastructure requirements and likely impacts on future residue area development. The 2017 LTRMS can be viewed on the Alcoa website.

The most recent LTRMS 5-year review was completed in 2022 and involved consultation with an SRG. Publication of the updated 2022 LTRMS document was completed in in 2024. Key focus areas in the consultation process that Guiding Principles were defined under were:

- reporting,
- residue reuse,
- heritage,
- dust management,
- odour and VOC emissions,
- residue emissions and human health,
- oxalate management,
- sustainability,
- water use,
- groundwater,
- visual amenity,
- residue rehabilitation,
- alternative residue storage techniques,
- separation distance,
- footprint and height, and
- closure planning.

7.2 Residue area development

There were no additional residue storage areas (RSAs) constructed in 2023. A works approval application was submitted during 2024 for the next Wagerup Residue Storage Area (RSA10) with construction expected to commence in 2025/6.

7.3 Residue rehabilitation

Rehabilitation primarily occurs on the final outer residue sand embankments of the RSAs. Rehabilitation of these areas is progressive with the primary goal of establishing a sustainable ecosystem based on native plant species. Rehabilitation is designed to fulfil three major objectives:

- Improve the visual amenity of the external embankments;
- Assist in preventing the generation of dust; and
- Enhance the conservation value of the area.

Progressive residue embankment rehabilitation was undertaken in 2024 with a two hectare area planted with native tube stock and seeds. Further rehabilitation works are planned for 2025 and 2026.

7.4 Residue research

A brief summary of the applicable research into bauxite residue by-products is provided below.

7.4.1 Residue re-use alternatives

In 2024, several trials were completed using bauxite residue by-products and several other opportunities were evaluated at a desktop level. For example, a red sand project was launched that aimed to produce a neutralised sand material that can be used as road base, an industrial fill

material, or in other sand applications. Using this product internally provides significant benefits to our bauxite residue storage processes due to its advantageous construction properties and consistent product quality control. Commercialisation of red sand requires further development and work with regulators of Waste Derived Materials.

Several opportunities for residue re-use continue to be investigated as part of Alcoa's research and development program. Alcoa's primary focus is currently on commercialisation of Red Sand which utilises the coarse fraction of residue, as well as investigations into the use of residue mud (the fine fraction) in production of cement and low carbon concrete alternatives.

To ensure that bauxite residue products aimed for reuse purposes contained no residual contaminants, investigation into leaching test methods was necessary. Alcoa led the Western Australian implementation of leaching test methods, developed in the European Union by the ECN, and this project was subsequently endorsed by DWER. A joint project with the Minerals Research Institute of Western Australia (MRIWA), the Chemistry Centre of WA and other industry sponsors was conducted to assess and validate the Leaching Environmental Assessment Framework (LEAF) tests and modelling tool (LeachXS) for their application to determine long term safety and environmental impact of the use of by products in WA[1]. The inclusion of bauxite residue as one of the by-products tested was of particular value for Alcoa.

The project was successful and delivered the following results:

- Validation of the LEAF methods 1313, 1314, 1316 under WA conditions.
- Successful completion of large laboratory column studies, field lysimeter trials and data mining using industry by-products on local soil types.
- Established a LeachXS database of local soils (controls), by products and soil/by-product mixes to allow robust predictions of the potential environmental impacts of proposed or potential by product uses.
- Provided stakeholders with access to a local provider, ChemCentre, who has received accreditation from the National Association of Testing Authorities (NATA) to perform LEAF assessments.
- Provided stakeholders with on-site training for predictive modelling and data analysis using LeachXS.

Reuse of Red Mud

Alkaloam® is the neutralised fine fraction (<2mm) of residue that is often referred to as 'red mud'. Significant work has been done to show the benefits of adding this material to sandy, acidic soils (common in coastal regions of WA) to elevate the pH and retain phosphorous, reducing overall fertiliser use and protecting sensitive waterways. The technical, social and economic aspects of Alkaloam have already been comprehensively assessed and reported in the past.

[1] Details and results of this project are outlined in the publication: Sharma, R., Black, S., Price, B., & Allen, D. (2019). Establishing Leaching Environmental Impact Assessment Framework Tools in the Development of a WA Framework for By-product Re-use and Classification. East Perth: Chem Centre Expert Solutions for Minerals Research Institute of Western Australia (MRIWA).

Alcoa also has active projects with external groups (Sao Paulo University, International Aluminium Institute (IAI), École Polytechnique Fédérale de Lausanne, Curtin University, etc) investigating the technical feasibility of using red mud in cement production. The primary focus will be on producing actual cement-based products using formulations that the team have tested/proven to date, evaluating performance, durability and leaching characteristics. Success in this field of research could potentially open large scale reuse opportunities for Red Mud.

An IAI-funded initiative to develop a Roadmap covering the potential use of bauxite residue in Portland Cement clinker production and Supplementary Cementitious Materials has been completed and is now available to the public. This Roadmap includes input from the alumina industry, the cement industry and academics, and provides the relevant information and support to address concerns, prejudices, technical and legislative barriers. In addition to the roadmap, an Excel-based tool has been developed for both alumina producers and cement producers to calculate the potential benefits of using bauxite residue in cement.

Reuse of Red Sand

Alcoa's Red Sand is currently used for the construction of residue storage areas (RSAs). Alcoa has developed a process to wash and carbonate the sand so that it can be considered for use as a building and construction material. The resulting product is known as Red Sand.

The technology to produce Red Sand has been demonstrated through a pilot plant operated at Alcoa's Wagerup refinery with the sand produced from this plant used by the Department of Main Roads in a road construction trial on Greenlands Road (Pinjarra, Western Australia), and by Fairbridge Village (Pinjarra, Western Australia) to top-dress its main oval. The pilot plant has also been operated at Alcoa's Kwinana refinery with the sand produced being used to top-dress the Alcoa Social Club oval, a series of trials with various golf clubs, and an industrial land development trial in conjunction with Landcorp.

A range of health and risk assessments have been conducted on Red Sand to ensure its safe utilisation:

1. An independent radiological assessment that has resulted in approval by the Radiological Council of Australia for the use of Red Sand in road construction and top dressing.

2. An independent health risk assessment that has been reviewed by the Department of Health, resulting in their endorsement of Red Sand for top dressing, road construction, and industrial land development.

3. An independent technical assessment, conducted by the Energy Research Centre of the Netherlands (ECN), has been undertaken to assess Red Sand against the Dutch Building Material Decree, a well-established set of criteria that are well referenced and used widely. The review did not identify any issues with the use of Red Sand in construction works within their framework.

4. An independent peer review of the Red Sand project has been conducted by KMH Environmental. The peer review process was commissioned to identify any potential risk associated with use of Red Sand, review these risks against the technical assessments and specialist investigations already conducted on Red Sand, and identify any technical gaps and recommendations for further work. The review concluded that Alcoa has taken an expansive

approach to evaluating and assessing the RB Sand™ material. No significant gaps were identified in the review.

It is proposed to be used in several applications that have been trialled and proven to perform equal to or better than virgin sand materials. These include top dressing of turf for recreational uses, road construction, and industrial land development. Red Sand is well structured and has improved phosphate retention properties compared to local sands. Red Sand has also been assessed as a growth medium for turf production, as a top-dressing soil for golf courses, as a bunker sand for golf courses, for concrete production and as a general fill material for land reclamation.

8 Community engagement

8.1 Overview

Throughout the reporting period Alcoa continued to engage with immediate neighbours, government representatives and community groups to discuss and encourage feedback on key aspects related to Wagerup operations and environmental performance.

Community meetings, local media articles and one-on-one discussions were utilised to provide information and seek community input on key aspects. Wagerup maintained a 24-hour/7-day free-call complaints response service throughout 2024. Community partnerships provide additional opportunities for interaction with the community to address and answer questions as they occurred.

8.2 Key stakeholders

Wagerup's key community stakeholders and community engagement forums are outlined below.

8.2.1 Neighbours

Residents living in towns between Waroona and Harvey are considered key stakeholders based on their proximity to Wagerup.

8.2.2 Wagerup Community Consultative Network

The Wagerup Community Consultative Network (CCN) was formed in June 2000. The CCN is an open forum with any interested party welcome to attend. The group has generally met monthly but shifted during 2010 to a bi-monthly program. It's purpose was expanded to include WDL mining operations in 2021. It is comprised primarily of representatives from Waroona and Yarloop, the Shires of Waroona and Harvey and Alcoa Wagerup management.

Meetings periodically include a guest speaker who is available to respond to enquiries about topics relevant to the group. Community members are encouraged to raise matters with the CCN by writing or emailing to the Wagerup Community Relations Manager for scheduling on the program.

CCN meeting minutes and locations (which rotate between Yarloop, Waroona and Wagerup Refinery) are published in the local paper to ensure broad community access to the information discussed.

8.2.3 Local Government

Wagerup Refinery is situated in the Shire of Waroona, however Alcoa also has significant landholdings in the Shires of Harvey and Bunbury. Neighbours of the Refinery reside in both Waroona & Harvey Shires.

Regular contact was maintained with both Shires during 2024 through Council briefings and one-on-one discussions with Shire officers including Chief Executive Officers, Shire Planners, Shire Environmental Health and Community Services Officers as required. Alcoa has commenced discussions with the Shire of Waroona in relation to the Global Industry Standards for Tailings Management (GISTM). It is expected that the information from these studies when complete, will result in updating local emergency planning for any major event.

8.2.4 State Government Representatives and Committees

Throughout the year the State Members for the Southwest region and the Federal Member for Forrest, were kept informed of the status of key issues via informal briefings and written communications.

In addition to the efforts of the Wagerup Community Relations Manager, the Pinjarra Refinery and Western Australian Operations Corporate Affairs provided briefings to the Federal member for Canning and State Member for Murray-Wellington and held forums with Local and State Government leadership of the Peel region.

Contact with opposition members of State Parliament has also been maintained through discussions and invitations to events hosted by Wagerup Refinery and personal meetings. Two topics that were highlighted to elected representatives in 2024 were the Part IV Approval for the Huntly Mine-Pinjarra Refinery and the 5 Year Mine Management Plan for Willowdale operations.

8.2.5 Government Agencies and Departments

Regular communications were maintained through 2024 with DWER, Department of Health, Southwest Development Commission and DMIRS. Correspondence included responses to requests for information and reporting against operating licence conditions and statutory requirements.

8.2.6 Education Sector

Alcoa maintained its links with local schools during the year with schools continuing to receive both financial and in-kind support via sponsorship and education programs.

Wagerup refinery continued to sponsor children's education programs for the primary school sector. Key partnerships with Youth Focus, Telethon Speech & Hearing, Connect Ed and the Earbus Foundation (focused on indigenous hearing in children). Alcoa is in discussions with these organisations and intends to continue its support for the programs.

8.3 Community partnerships

Building robust and sustainable communities is the foundation of Alcoa's community partnership program. Consequently, Alcoa seeks out partnerships that help it to:

- support social innovation and enterprise;
- value social capital;
- build social infrastructure; and
- facilitate social inclusion.

All partnership applications are reviewed in relation to four focus areas:

- Environment and Conservation;
- Leadership and Innovation;
- Health and Safety; and
- Building Capacity.

Partnerships in the area of Environmental Conservation aim to:

- Increase the number of individuals participating in environmental sustainability programs
- Address specific environmental concerns as they relate to Alcoa operations
- Seek out solutions to environmental challenges through policy and research

To meet these commitments Alcoa partners with BirdLife Australia supporting its Black Cockatoo Recovery Program, the Swan Alcoa Landcare Program, Murdoch University (Harry Butler Institute) program for water monitoring using mussels, the Department of Biodiversity, Conservation & Attractions (DBCA) Western Shield Wildlife Recovery Program and the Harvey River Restoration Trust's work to revitalise the Harvey River.

At the local Wagerup Refinery level Alcoa continued its support of each of the Wagerup Sustainability Fund accounts held by the respective Shires of Waroona and Harvey. Contributions to these Funds are based upon the annual production of Wagerup which saw more than $210,000 contributed to each account in 2024.

The Shire of Waroona major applications round to the Alco Waroona Sustainability Fund resulted in grants being made to the Waroona Bowling Club, Preston Beach Golf Club, Lake Clifton – Herron Residents Association, Drakesbrook Community Gardens Project and the Waroona Agricultural Society. In addition, more than 15 community groups benefited from the Micro Grants Program (Maximum grant value $2000) supported through the Alcoa Waroona Sustainability Fund.

The Shire of Harvey Alcoa Sustainability Fund grants round was held with allocations made to the Harvey Playground project, Harvey Golf Club, Harvey River Restoration Trust, and the Harvey Bulls Football Club.

Wagerup's employee volunteering activities continued in 2024. Through the Alcoa Foundation's ACTION program employees were able to claim a $3,000 ACTION grant from Alcoa which resulted in eleven groups benefiting in 2024.

Appendix A: Current status of proposal

Table 1: MS728 Schedule 1, Key Proposal Characteristics – current status

		Column One	Column Two	Column Three
Element	**Units**	**Current Refinery (As at 2005)**	**Authorised Extent 4.7Mtpa Expansion[2]**	**Current Status**
Physical Elements				
Refinery footprint	Hectares	183	183	183
Production				
Alumina Production	Mtpa	Approximately 2.4	Authorised to 4.7 under MS728 subject to submission of Detailed Design Report as specified by 4.7 Mtpa Expansion. Limited to 2.9 under the *Environmental Protection Act 1986* Licence L6217/1983/15 last amended 10/11/2020.	2024 Total:2.43
Raw Materials				
Bauxite mining rate	Mtpa	9	16	2024 Total: 10.5
Caustic Soda (dry)	tpa	141,000	282,000	2024 Total: 239466
Lime	tpa	110,000	200,000	2024 Total: 141624
Water	MLpa	4,800	9,600	2024 Total: 5543
Residue Disposal				
Bauxite residue	Mtpa	4.8	9.6	2024 Total: 6.083
Main Equipment Components				
Milling		• 3 SAG Mills	• Increased milling capacity	No change from column one
Ore Stockpiles		• Stockpile reclaimer and conveyor • 2 stockpiles plus one emergency	• New reclaimer and conveyors • New dust suppression and cleaning system for conveyor	No change from column one
Slurry Storage		• 4 slurry tanks	• New slurry tanks	No change from column one
Digestion		• Digester banks and flash vessels • Vapour Condenser	• Increased digestion capacity • New and upgraded pumps	No change from column one
Evaporation		• Evaporation units • Heat interchange units	• New evaporation units • New heat interchanger	No change from column one
Lime		• 1 lime silo	• Upgrade lime storage an associated equipment	No change from column one
Clarification		• Sand removal units • Washers, thickeners • Filter tanks and presses	• New filter presses • New and upgraded washer facilities • New cyclone system	No change from column one

		Column One	Column Two	Column Three
Element	**Units**	**Current Refinery (As at 2005)**	**Authorised Extent 4.7Mtpa Expansion[2]**	**Current Status**
Residue Disposal Area (RDA)	ha	• Approx. 180 hectares required for drying and storing residue	• Dry stacking area not to exceed 275 hectare drying area • New sand separation • Sand Lake wet sand area not to be increased by more than 50% • No wet stacking area • Oxalate pond not to increase by more than 1 hectare • Upgrade RDA sprinkler system	• Dry stacking area 193.88ha • Sand lake wet sand area 4.54ha • Oxalate pond 6.59ha • RDA sprinkler system upgrade completed in 2019 with approximately 2ha of additional sprinklers and laterals added to the RSA 1-3 corridor.
Precipitation		• Precipitation and seed filters • Thickeners and liquor tanks • Cooling towers and cyclone clusters	• New precipitators and seed filters • New thickeners and liquor tanks • Additional cooling capacity • New cyclone clusters	• No change from column one
Oxalate removal		• Decommissioned oxalate kiln	• Oxalate kilns with regenerative thermal oxidiser (RTO)	Oxalate kiln with RTO recommissioned in 2013 under *Part V Environmental Protection Act 1986 Works Approval W4587/2009/1.* Oxalate Bioremoval Facility commissioned in 2020 under *Environmental Protection Act 1986 Works Approval W6104/2017/1.*
Liquor Burning		• Liquor Burning	• Install an RTO	RTO installed 2006
Calciners		• 4 calciner units • 100 metre multiflue for calciners 1, 2 and 3	• 2 new calciners with multiflue • No. 4 calciner connection to multiflue	No change from column one
Alumina Storage		• 2 alumina storage bins and alumina conveyors	• Additional alumina storage • Upgrade or additional conveyor	No change from column one
Powerhouse (optional)[1]		• Turbo alternators and boilers • Gas turbine with steam generator	• 2 new 270 tph boilers • 2 new turbo alternators	No change from column one
Port Facilities		• Alumina storage and handling facilities	• Upgraded alumina handling facilities	No change from column one
Water Supply		• Licensed surface water sources	• Increased surface water supply	No change from column one

Abbreviations:

Mtpa: million tonnes per annum
tpa: tonnes per annum
tph: tonnes per hour
MLpa: million litres per annum
MW: megawatts

		Column One	Column Two	Column Three
Element	**Units**	**Current Refinery (As at 2005)**	**Authorised Extent 4.7Mtpa Expansion[2]**	**Current Status**

Note:
1: An option for 2 new 270tph boilers providing electricity and steam for the Refinery. This option has now ceased due to the implementation of the Wagerup Cogeneration Plant, referred to in EPA Bulletin 1215, Appendix 5.

Appendix B:

2024 Audit Table

Government of Western Australia
Department of Water and Environmental Regulation

AUDIT TABLE

PROPOSAL: Wagerup Alumina Refinery – Production to a Maximum Capacity of 4.7 Million Tonnes per Annum and Associated Bauxite Mining

STATEMENT: 728 (As Amended by Statement 1069 and 1157)

Note:

- Phases that apply in this table = Pre-Construction, Construction, Operation, Decommissioning, Overall (several phases).
- This audit table is a summary and timetable of conditions and commitments applying to this project. Refer to the Minister's Statement for full detail/precise wording of individual elements.
- Code prefixes: M = Minister's condition, P = Proponent's commitment.
- Acronyms list: CEO = Chief Executive Officer of OEPA; DEC = Department of Environment Regulation; DPAW = Department of Parks and Wildlife; DIA = Department of Indigenous Affairs; DMP = Department of Mining and Petroleum; DMIRS = Department of Mines Industry Regulation and Safety ; DWER = Department of Water and Environmental Regulation; EPA = Environmental Protection Authority; DoH = Department of Health; DoW = Department of Water, Minister for Env = Minister for the Environment; OEPA = Office of the Environmental Protection Authority.
- Compliance Status: C = Compliant, CLD = Completed, NA = Not Audited, NC = Non – compliant, NR = Not Required at this stage. Please note the terms VR = Verification Required and IP = In Process are only for OEPA use.

Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
728:M1.1	Implementation	The proponent shall implement the proposal as documented and described in schedule 1 of this statement and previous Assessment Bulletins, subject to the conditions and procedures of this Implementation Statement.	As per any designs, specifications of schedule 1 of Statement 728 and EPA report as well as, plans or other technical material submitted with the Works Approval Application.	Audit Compliance Report (CR)	Overall		C	Current milestones and compliance to MS728 Schedule 1 included in the Audit Compliance Report.
728:M2.1	Proponent Environmental Management Commitments	The proponent shall fulfil the environmental management commitments contained in schedule 2 of this statement.	Refer to comments provided for schedule 2 (1) to (13)	CR	Overall		C	Refer to comments provided for Schedule 2 (1) to (13) labelled 728:P1 to 728:P13 below.
728:M3.1	Proponent Nomination and Contact Details	The proponent for the time being nominated by the Minister for the Environment under section 38(6) or (7) of the Environmental Protection Act 1986 is responsible for the implementation of the proposal until such time as the Minister for the Environment has exercised the Minister's power under section 38(7) of the Act to revoke the nomination of that proponent and nominate another person as the proponent for the proposal.	Letter to the Minister for Environment outlining any changes to the proponent.	CR	Overall		C	No change to proponent during the reporting period.
728:M3.2	Proponent Nomination and Contact Details	If the proponent wishes to relinquish the nomination, the proponent shall apply for the transfer of proponent under section 3 (6a) and provide the name and address of the person who will assume responsibility for the proposal, together with a letter from that person which states that the proposal will be carried out in accordance with the conditions and procedures of this statement, and documentation on the capability of that person to implement the proposal and fulfill the conditions and procedures.	Letter to the Minister for Environment providing details of new proponent and confirming they will fulfill all obligations of approval.	Letter to Minister for Environment requesting change to proponent.	Overall		C	No change to proponent during the reporting period.

Government of Western Australia
Department of Water and Environmental Regulation

AUDIT TABLE

PROPOSAL: Wagerup Alumina Refinery – Production to a Maximum Capacity of 4.7 Million Tonnes per Annum and Associated Bauxite Mining

STATEMENT: 728 (As Amended by Statement 1069 and 1157)

Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
728:M3.3	Proponent Nomination and Contact Details	The nominated proponent shall notify the Department of Environment and Conservation of any change of the name and address of the proponent within 30 days of such change.	Letter to DWER outlining any changes to the proponent within 30 days.	Letter to DWER notifying change of name and address.	Overall	Within 30 days of such change.	C	No change to proponent during the reporting period.
728:M4.1 (As amended by MS1157)	Time limit of approval to commence	The proponent shall not commence implementation of that portion of the revised proposal being the third production unit after 27 September 2022, and any commencement prior to this date must be substantial.	Letter to DWER providing evidence that proposal has substantially commenced by 27 Sept 2022.	Letter including photographic evidence sent to DWER to confirm that project has substantially commenced.	Construction	By 27 September 2022.	CLD	13/09/2022 Alcoa notified EPA by letter that Wagerup Alumina Refinery will not be substantially commencing the third production unit under MS1157 Condition 4 by 27 September 2022. This Condition is considered closed.
728:M4.2 (As amended by MS1157)	Time limit of approval to commence	Any commencement of implementation of that portion of the revised proposal being the third production unit on or before 27 September 2022 must be demonstrated as substantial by providing the CEO with written evidence, on or before 27 September 2022.	Letter to DWER providing evidence that the proposal has substantially commenced by 27 September 2022.	Letter including photographic evidence sent to DWER to confirm that project has substantially commenced.	Construction	By 27 September 2022.	CLD	13/09/2022 Alcoa notified EPA by letter that Wagerup Alumina Refinery will not be substantially commencing the third production unit under MS1157 Condition 4 by 27 September 2022. This Condition is considered closed.
728:M5.1	Compliance Reporting	The proponent shall submit annually an audit compliance report, for the previous twelve-month period. The audit compliance report shall: 1. be endorsed by the proponent's Managing Director or a person, approved in writing by the Department of Environment and Conservation, delegated to sign on the proponent's Managing Director's behalf; 2. include a statement as to whether the proponent has complied with the conditions, procedures, commitments and actions within the Environmental Management Plans; 3. identify all non-compliance and describe the related corrective and preventative actions taken; 4. review the effectiveness of all corrective and preventative actions taken; 5. provide verifiable evidence of compliance with all the conditions, procedures and commitments; 6. describe the state of implementation of the proposal; and	Submit an Audit Compliance Report to DWER annually.	CR submitted to DWER	Overall	Annually	C	The most recent Audit Compliance Report was submitted in March 2024 for the period January 2023 to December 2023. The ACR is: 1. Endorsed by the Managing Director 2. Includes this audit table with a statement of compliance to conditions, procedures, commitments and actions 3. Identified compliance status and no non compliances were identified for 2023 4. Not applicable as no non-compliances identified 5. Verifiable evidence of compliance is recorded and available upon request 6. Includes state of implementation of the proposal in Section 3 of the ACR 7. Prepared in accordance with this condition and this audit table maintained in the format provided by DWER.

AUDIT TABLE

PROPOSAL: Wagerup Alumina Refinery – Production to a Maximum Capacity of 4.7 Million Tonnes per Annum and Associated Bauxite Mining

STATEMENT: 728 (As Amended by Statement 1069 and 1157)

Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
		7. be prepared in accordance with an audit program and in a format acceptable to the Department of Environment and Conservation.						
728:M5.2	Compliance Reporting	The proponent shall make the audit compliance report publicly available in a manner approved by the Department of Environment and Conservation.	Make the audit compliance report publicly available through publication on the Alcoa website.	CR published on the Alcoa website.	Overall	Annually	C	The 2023 Audit Compliance Report was published to the Alcoa website. News | Reports and Publications | Wagerup Alumina Refinery | Audit Compliance Reports 2023-alcoa-wagerup-refinery-annual-audit-compliance-report.pdf
728:M6.1	Performance Review	The proponent shall submit a Performance Review Report to the Environmental Protection Authority every five years after commissioning of the revised proposal, which addresses: 1. the major environmental issues associated with implementing the project, the environmental objectives for those issues; the methodologies used to achieve these; and the key indicators of environmental performance measured against those objectives; 2. the level of progress in the achievement of sound environmental performance, including industry benchmarking and the use of best available technology where practicable; 3. significant improvements gained in environmental management, including the use of external peer reviews; 4. stakeholder and community consultation about environmental performance and the outcomes of that consultation, including a report of any on-going concerns being expressed; 5. the proposed environmental objectives of the next five years, including improvements in technology and management processes.	Submit a Performance Review Report to EPA every 5 years after commissioning.	Performance Review Report submitted to EPA.	Overall	Every 5 years post commissioning	NR	Condition not triggered during reporting period as the project has not yet substantially commenced.
728:M7.1	Decommissioning Plan	Within two years following the date of this Statement, the proponent shall prepare a Preliminary Decommissioning Plan for approval by the Department of Environment and Conservation, which describes the framework to ensure that	Submit Preliminary Decommissioning Plan to DEC for approval by 14 September 2008.	Preliminary Decommissioning plan submitted to DEC.	Planning	By 14 September 2008.	CLD	Preliminary Decommissioning Plan was submitted to DEC (now DWER) on 12 September 2008.

AUDIT TABLE

PROPOSAL: Wagerup Alumina Refinery – Production to a Maximum Capacity of 4.7 Million Tonnes per Annum and Associated Bauxite Mining

STATEMENT: 728 (As Amended by Statement 1069 and 1157)

Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
		the site is left in an environmentally acceptable condition, and provides: 1. the rationale for the siting and design of plant and infrastructure as relevant to environmental protection; 2. a conceptual description of the final landform at closure; 3. a plan for a care and maintenance phase; and 4. initial plans for the management of noxious materials.						
728:M7.2	Decommissioning Plan	At least six months prior to the anticipated date of closure, or at a time agreed by the Environmental Protection Authority, the proponent shall submit a Final Decommissioning Plan designed to ensure that the site is left in an environmentally acceptable condition prepared on advice of the Environmental Protection Authority, for approval of the Department of Environment and Conservation.	Submit a Final Decommissioning Plan at least six months prior to the anticipated date of closure, or at a time agreed by the EPA. Prepare the plan in liaison with the EPA for approval by DWER.	Final Decommissioning plan submitted to EPA and DWER.	Operation	6 months prior to anticipated closure.	NR	Condition not triggered during reporting period.
728:M7.3	Decommissioning Plan	The proponent shall implement the Final Decommissioning Plan required by condition 7-2 until such time as the Minister for the Environment determines, on advice of the Department of Environment and Conservation, that the proponent's decommissioning responsibilities are complete.	Implement the actions detailed in the final decommissioning plan until Minister for Environment determines, on advice of DWER that the proponents decommissioning responsibilities are complete.	CR submitted to DWER	Decommissioning	6 months prior to anticipated closure.	NR	Condition not triggered during reporting period.
728:M7.4	Decommissioning Plan	The proponent shall make the Final Decommissioning Plan required by condition 7-2 publicly available in a manner approved by the Department of Environment and Conservation.	Publication of the final decommissioning plan.	CR published on the Alcoa website.	Operation	6 months prior to anticipated closure.	NR	Condition not triggered during reporting period.
728:M8.1 (As amended by MS1157)	Best Practice Pollution Control Measures to be Applied	As part of any Works Approval and/or Licence application (under Part V of the *Environmental Protection Act 1986*) for works included in that portion of the revised proposal being the Expansion Works, as documented and described in Schedule 1 of Ministerial Statement 728, to increase refinery production up to 3.3 million tonnes per annum (Mtpa) the	Submit a Detailed Design Report (DDR) to DWER.	Detailed Design Report submitted to DWER.	Pre-construction	For 3.3Mtpa submission	NR	Condition not triggered during reporting period.

AUDIT TABLE

PROPOSAL: Wagerup Alumina Refinery – Production to a Maximum Capacity of 4.7 Million Tonnes per Annum and Associated Bauxite Mining

STATEMENT: 728 (As Amended by Statement 1069 and 1157)

Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
		proponent shall prepare and submit a Detailed Design Report that details the best practice pollution control measures employed to minimise emissions from the Wagerup Alumina Refinery (the Refinery). The Detailed Design Report shall set out the base emission rates for the major sources for the Refinery and the design emission targets for the works. In particular, the Detailed Design Report shall demonstrate that the design of the expansion works achieves to the extent reasonably practicable the following reductions from base emission rates: (1) at least a 75% reduction in peak and average emissions rates of Volatile Organic Compounds (VOCs) and odour from slurry storage tanks vents (25A tanks); and (2) reduction to negligible emissions of VOCs and odour from calciner vacuum pumps exhaust vents for any new calciner. Note: the term “base emission” rates for production increases up to 3.3 Mtpa means emissions rates based on the Wagerup Refinery 2018 Emissions Inventory for the production at 2.85 Mtpa.						
1157:M8-1A (As amended by MS1157)	Best Practice Pollution Control Measures to be Applied	As part of any Works Approval and/or Licence application (under Part V of the *Environmental Protection Act 1986*) for works included in that portion of the revised proposal being the Expansion Works, as documented and described in Schedule 1 of Ministerial Statement 728, to increase refinery production from 3.3 Mtpa up to 4.7 Mtpa, the proponent shall prepare and submit a Detailed Design Report that details the best practice pollution control measures employed to minimise emissions from the Refinery.	Submit a Detailed Design Report to DWER.	Detailed Design Report submitted to DWER.	Pre-construction	For 4.7Mtpa submission	NR	Condition not triggered during reporting period.

Government of Western Australia
Department of Water and Environmental Regulation

AUDIT TABLE

PROPOSAL: Wagerup Alumina Refinery – Production to a Maximum Capacity of 4.7 Million Tonnes per Annum and Associated Bauxite Mining

STATEMENT: 728 (As Amended by Statement 1069 and 1157)

Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
		The Detailed Design Report shall set out the base emission rates for the major sources for the Refinery and the design emission targets for the expanded works. In particular, the design emission targets in Detailed Design Report shall demonstrate that the design emission targets of the expansion works will reasonably achieve no overall increase in VOC or odour emissions from the Refinery through the application of best practice pollution control measures. The Detailed Design Report shall analyse potential emission reduction measures for the following sources: (1) milling vents (building 25); (2) seed filtration stacks (building 44); (3) filtration tank vents (35A unit) and causticisation tank vents (35J unit); (4) sand separation stacks (building 26); (5) boilers and turbines stacks (building 110); (6) calciner stacks; (7) calciner vacuum pumps exhaust vents; and (8) 45K cooling towers. Note: the term “base emission” rates for production increases between 3.3 Mtpa to 4.7 Mtpa means emissions rates based on the Wagerup Refinery Emissions Inventory, as updated and approved by the CEO.						
1157:M8-1B (As amended by MS1157)	Best Practice Pollution Control Measures to be Applied	The proponent shall make the VOC and odour emissions rates, as set out in the Detailed Design Reports required by conditions 8-1 and 8-1A, publicly available in a manner approved by the CEO.	VOC and Odour Emissions Rates assigned in the Detailed Design Report published to the Alcoa Website	VOC and Odour Emissions Rates published to the Alcoa website.	Pre-construction	For 3.3Mtpa and 4.7Mpta submissions	NR	https://www.der.wa.gov.au/component/k2/itemlist/filter?fitem_all=6607&moduleId=94&Itemid=175 Condition not triggered during reporting period.
728:M8.2 (As amended by MS1157)	Best Practice Pollution Control Measures to be Applied	The Detailed Design Reports required by conditions 8-1 and 8-1A shall address how the design emission targets in conditions 8-1 and 8-1A will be met during stable operations. The Detailed Design Reports shall also address how best practice will be applied to minimising emissions during unstable	Detailed Design Report to outline how design emission targets will be met during stable operations and how best practice will be applied to minimise emissions during unstable operating conditions	Detailed Design Report submitted to DWER.	Pre-construction	For 3.3Mtpa and 4.7Mpta submissions	NR	Condition not triggered during reporting period.

AUDIT TABLE

PROPOSAL: Wagerup Alumina Refinery – Production to a Maximum Capacity of 4.7 Million Tonnes per Annum and Associated Bauxite Mining

STATEMENT: 728 (As Amended by Statement 1069 and 1157)

Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
		operating conditions such as during shut-downs, start-up, and equipment failure.	such as start-up, shutdown and equipment failure.					
728:M8.3 (As amended by MS1157)	Best Practice Pollution Control Measures to be Applied	In the case where best practice pollution control measures do not achieve the individual reductions in base emission rates in condition 8-1 and 8-1A, the Detailed Design Report required by the condition shall provide alternative measures to achieve equivalent overall reductions.	Detailed Design Report to outline alternative measures to achieve equivalent overall reductions should best practice pollution measures not achieve the individual reductions in 728:M8.1.	Detailed Design Report submitted to DWER.	Pre-construction	For 3.3Mtpa and 4.7Mpta submissions	NR	Condition not triggered during reporting period.
728:M8.4 (As amended by MS1157)	Best Practice Pollution Control Measures to be Applied	Detailed Design Reports referred to in conditions 8-1 and 8-1A shall be subject to independent peer review (refer to Procedure 1).	Detailed Design Report to be peer reviewed by IDRT.	Detailed Design report approved by IDRT.	Pre-construction	For 3.3Mtpa and 4.7Mpta submissions	NR	Condition not triggered during reporting period.
728:M8.5 (As amended by MS1157)	Best Practice Pollution Control Measures to be Applied	Notwithstanding the requirements of conditions 8-1, 8-1A, 8-2, 8-3 and 8-4, the proponent may implement individual works of this proposal, as described in Schedule 1 of this Statement, subject to the requirement of a Works Approval and/or Licence under Part V of the *Environmental Protection Act 1986*, on the *proviso* that the individual works: (1) have effect in reducing or offsetting air emissions (including odour) from the existing refinery, where practicable; and (2) do not significantly increase the production capacity of the refinery. Notes: 1. Best practice pollution control measures include technology, practices, and equipment which are: • proven reliable in full-scale operation and applied in similar application to achieve lower emissions; and • reasonable and practicable given the level of emissions and risk of health and/or amenity impacts from emissions. 2. A significant increase is defined as more than a 5% increase on the assessed annual production capacity for the Licence for the refinery (as	Works implemented under this proposal must have effect in reducing or offsetting air emissions and shall not increase production more than 5%.	Works Approval Application submitted in compliance to conditions.	Pre-construction	Prior to works	C	6/10/2021 Submission to DWER: Application for Works Approval for Emissions Reduction Project (25A Tanks) to support progress towards 3.045 Mtpa (not more than 5% increase on 2.9Mtpa). 2/08/2022 DWER issued Works Approval W6607/2021/1 for Emissions Reduction Project (25A Tanks). 10/06/2024 DWER granted an amendment to the Works Approval W6607/2021/1 Emissions Reduction Project (25A Tanks) to extend the expiry date until 31 August 2026. Planning works progressed under the issued works approval W6607/2021/1 during the reporting period with construction works due to commence in 2025.

AUDIT TABLE

PROPOSAL: Wagerup Alumina Refinery – Production to a Maximum Capacity of 4.7 Million Tonnes per Annum and Associated Bauxite Mining

STATEMENT: 728 (As Amended by Statement 1069 and 1157)

Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
		amended) under Part V of the *Environmental Protection Act 1986*, but in any event not greater than the approved annual alumina production as defined in Schedule 1 of Ministerial Statement 728.						
728:M9.1 (As amended by MS1157)	Air Dispersion Model Validation	Prior to submitting a Works Approval and/or Licence application (under Part V of the Environmental Protection Act 1986) for works included in that portion of the revised proposal being Expansion Works, as documented and described in Schedule 1 of Ministerial Statement 728, to increase production to 3.3 Mtpa, the proponent shall carry out data acquisition and investigations for the purpose of validation of air dispersion model predictions of ground level concentrations in the Environmental Review and Management Program (May 2005) and associated documents, to the requirements of the CEO. The data acquisition and investigations shall include: (1) twelve (12) months of meteorological data from an escarpment meteorological station; (2) twelve (12) months of vertical profile temperature and wind velocity measurements using methods acceptable to the CEO; (3) twelve (12) months of meteorological data (wind speed, direction and temperature) from up to two (2) additional meteorological stations located on the Swan Coastal Plain, using methods and at locations acceptable to the CEO; (4) investigation into the validity of the building wake dispersion scheme used in the air dispersion model, by a suitable qualified modeller; (5) investigation into the validity of modelled multiflued plume rise behaviour, in light of recent findings	Validate Air Dispersion model and include all data acquisition and investigations outlined in 9-1 (1 to 6).	Air Dispersion Model submitted to DWER.	Pre-construction	For 3.3Mtpa submissions	NR	Condition not triggered during reporting period.

AUDIT TABLE

PROPOSAL: Wagerup Alumina Refinery – Production to a Maximum Capacity of 4.7 Million Tonnes per Annum and Associated Bauxite Mining

STATEMENT: 728 (As Amended by Statement 1069 and 1157)

Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
		reported in literature, by a suitable qualified modeller; and (6) twelve (12) additional months of base case emissions rate data for key sources. Note: the "key sources" referred to in condition 9-1 are the liquor burner, calciners, 25A tank vents, 35A tanks, 35J tanks and cooling towers.						
1157:M9.1 A (As inserted by MS1157)	Air Dispersion Model Validation	Prior to submitting a Works Approval and/or Licence application (under Part V of the *Environmental Protection Act 1986*) for works included in that portion of the revised proposal being the Expansion Works, as documented and described in Schedule 1 of Ministerial Statement 728, to increase refinery production from 3.3 Mtpa up to 4.7 Mtpa, the proponent shall carry out data acquisition and investigations for the purpose of validation of air dispersion model predictions of ground level concentrations in the Environmental Review and Management Program (May 2005) and associated documents, to the requirements of the CEO. The data acquisition and investigations shall include: (1) additional investigation of techniques and approaches for measurement and assimilation of vertical wind velocity measurements into the Wagerup air dispersion model using methods acceptable to the CEO.	Validate Air Dispersion Model and include all data acquisition and investigations outlined in 9-1A (1). Integration of vertical wind velocity measurements	Air Dispersion Model submitted to DWER.	Preconstruction	For 4.7Mtpa submission	NR	Condition not triggered during reporting period.
728:M9.2 (As amended by MS1157)	Air Dispersion Model Validation	The proponent shall make use of the results of the data acquisition and investigations, referred to in conditions 9-1 and 9-1A to: (1) validate the performance of the dispersion model; and (2) provide details on whether ground level concentrations predicted with the updated air dispersion model and design emission targets set out in the Detailed	Validate the Air Dispersion Model through incorporation of data obtained through M9.1 and 9.1A and compliance to requirements of 9.2.	Air Dispersion Model submitted to DWER.	Pre-construction	For 3.3Mtpa and 4.7Mtpa submission	NR	Condition not triggered during reporting period.

AUDIT TABLE

PROPOSAL: Wagerup Alumina Refinery – Production to a Maximum Capacity of 4.7 Million Tonnes per Annum and Associated Bauxite Mining

STATEMENT: 728 (As Amended by Statement 1069 and 1157)

Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
		Design Reports referred to in conditions 8-1 and 8-1A are consistent with the predictions presented in the Environmental Review and Management Program (May 2005) and associated documents, both in the near field and the far field, up to ten (10) kilometres from the multiflued stacks. This work shall be carried out to the requirements of the CEO.						
728:M9.3 (As amended by MS1157)	Air Dispersion Model Validation	In the case that the validation of the dispersion modelling, referred to in condition 9-2, does not reasonably demonstrate ground level concentrations consistent with those predicted in the Environmental Review and Management Program (May 2005) and associated documents will be achieved, the proponent shall make revisions to the detailed engineering design and repeat the air dispersion modelling until reasonable achievement is demonstrated.	Review the detailed engineering design and repeat modelling until reasonable achievement with Ground Level Concentrations (GLCs) predicted in ERMP (2005) is demonstrated.	Air Dispersion Model validated and submitted to DWER.	Pre-construction	For 3.3Mtpa and 4.7Mtpa submission	NR	Condition not triggered during reporting period.
728:M9.4 (As amended by MS1157)	Air Dispersion Model Validation	Notwithstanding the requirements of conditions 9-1, 9-1A, 9-2 and 9-3, the proponent may implement individual works of this proposal, as described in Schedule 1 of this Statement, subject to the requirement of a Works Approval and/or Licence under Part V of the *Environmental Protection Act 1986*, on the *proviso* that the individual works: (1) have effect in reducing or offsetting air emissions (including odour) from the existing refinery, where practicable; and (2) do not significantly increase the production capacity of the refinery. Note: A significant increase is defined as more than a 5% increase on the assessed annual production capacity for the Licence for the refinery (as amended) under Part V of the *Environmental Protection Act 1986*, but in any event not greater than the	Works implemented under this proposal must have effect in reducing or offsetting air emissions and shall not increase production more than 5%.	Works Approval Application submitted to DWER in compliance to conditions.	Pre-construction	For 3.3Mtpa and 4.7Mtpa submission	C	6/10/2021 Submission to DWER: Application for Works Approval for Emissions Reduction Project (25A Tanks) to support progress towards 3.045 Mtpa (not more than 5% increase on 2.9Mtpa). 2/08/2022 DWER issued Works Approval W6607/2021/1 for Emissions Reduction Project (25A Tanks). 10/06/2024 DWER granted an amendment to the Works Approval W6607/2021/1 Emissions Reduction Project (25A Tanks) to extend the expiry date until 31 August 2026. Planning works progressed under the issued works approval W6607/2021/1 during the reporting period with construction works due to commence in 2025.

AUDIT TABLE

PROPOSAL: Wagerup Alumina Refinery – Production to a Maximum Capacity of 4.7 Million Tonnes per Annum and Associated Bauxite Mining

STATEMENT: 728 (As Amended by Statement 1069 and 1157)

Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
		approved annual alumina production as defined in Schedule 1.						
728:M10.1 (As Amended by MS1157)	Operational Performance Verification	Prior to submitting a Works Approval and/or Licence application (under Part V of the *Environmental Protection Act 1986*) for any works included in that portion of the revised proposal being the Expansion Works, as documented and described in Schedule 1, the proponent shall prepare and submit an Air Quality Management Plan/s for those works to the satisfaction of the CEO. The Air Quality Management Plan/s shall include: (1) an emission and ambient air quality monitoring program, for performance verification monitoring, that addresses emissions monitoring for the works and ambient air quality, including where practicable and appropriate, continuous monitoring; and (2) management procedures with the objective of achieving the design emission targets referred to in conditions 8-1 and 8-1A for the works under stable operating conditions, and minimising emissions during unstable operating conditions such as during start-up, shut down and equipment failure as referred to in condition 8-2. Note: During the development of the Air Quality Management Plan/s, the proponent must consult with community and stakeholders.	Prepare and submit a revised Air Quality Management Plan that includes details as per Condition 10.1.	Air Quality Management Plan submitted to DWER.	Pre-construction	Prior to submitting a works approval for 3.3Mpta and 4.7Mpta submissions.	NR	Condition not triggered during reporting period.
728:M10.2 (As Amended by MS1157)	Operational Performance Verification	The Air Quality Management Plan/s referred to in condition 10-1 shall be subject to independent peer review (refer to Procedure 1) as required by the CEO.	Air Quality Management Plan to be peer reviewed by the Independent Design Review Team (IDRT) established by DWER.	Air quality Management Plan approved by IDRT.	Pre-construction	Prior to submitting a works approval for 3.3Mpta and 4.7Mpta submissions.	NR	Condition not triggered during reporting period.
728:M10.3 (As Amended	Operational Performance Verification	The proponent shall implement the Air Quality Management Plan/s referred to in condition 10-1 throughout the	Implement the approved Air Quality Management Plan.	Air Quality Management Plan compliance	Commissioning and Operation	Prior to submitting a works approval for 3.3Mpta and	NR	Condition not triggered during reporting period.

AUDIT TABLE

PROPOSAL: Wagerup Alumina Refinery – Production to a Maximum Capacity of 4.7 Million Tonnes per Annum and Associated Bauxite Mining

STATEMENT: 728 (As Amended by Statement 1069 and 1157)

Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
by MS1157)		commissioning and operational phase of each Refinery expansion.		review available upon request.		4.7Mpta submissions.		
728:M10.4 (As Amended by MS1157)	Operational Performance Verification	The proponent shall make the Air Quality Management Plan/s referred to in condition 10-1 publicly available to the requirements of the CEO.	Air Quality Management Plan is made publicly available on the Alcoa website.	Air Quality Management Plan published on the Alcoa website.	Pre-construction	Upon submitting a works approval for 3.3Mpta and 4.7Mpta submissions.	NR	Condition not triggered during reporting period.
728:M10.5 (As Amended by MS1157)	Operational Performance Verification	In the case that the performance monitoring referred to in condition 10-1 indicates that the design emission targets referred to in the Detailed Design Reports required by conditions 8-1 and 8-1A and the management procedures referred to in condition 10-1 are not being reasonably achieved, the proponent shall make revision to the operational procedures and/or engineering design to ensure compliance with the design emission targets.	If performance monitoring results do not meet design emission targets update Operational Procedures or Engineering Design to ensure compliance.	Requirement to update Operational Procedures triggered by this condition stated in the Air Quality Management Plan	Operation		NR	Condition not triggered during reporting period.
728:M10.6 (As Amended by MS1157)	Operational Performance Verification	The proponent shall regularly review and, where appropriate, employ adaptive management practices to facilitate continuous improvement in key source emissions management at the Refinery in line with current best practice management. Note: It is expected that the outcomes of condition 10-6 will be implemented through Part V of the *Environmental Protection Act 1986*.	Emissions reduction projects identified.	Works Approval Application for emissions reduction projects submitted to DWER in compliance to conditions.	Operation		NR	Condition not triggered during reporting period.
728:M10.7 (As Amended by MS1157)	Operational Performance Verification	Notwithstanding the requirements of conditions 10-1, 10-2, 10-3, 10-4, 10-5 and 10-6, the proponent may implement individual works of this proposal, as described in Schedule 1 of this Statement, subject to the requirement of a Works Approval and/or Licence under Part V of the *Environmental Protection Act 1986*, on the *proviso* that the individual works: (1) have effect in reducing or offsetting air emissions (including odour) from the existing refinery, where practicable; and	Works implemented under this proposal must have effect in reducing or offsetting air emissions and shall not increase production more than 5%.	Works Approval Application submitted to DWER in compliance to conditions.	Overall		C	6/10/2021 Submission to DWER: Application for Works Approval for Emissions Reduction Project (25A Tanks) to support progress towards 3.045 Mtpa (not more than 5% increase on 2.9Mtpa). 2/08/2022 DWER issued Works Approval W6607/2021/1 for Emissions Reduction Project (25A Tanks). 10/06/2024 DWER granted an amendment to the Works Approval W6607/2021/1 Emissions Reduction Project (25A Tanks) to extend the expiry date until 31 August 2026. Planning works progressed under the issued works approval W6607/2021/1 during the reporting period with construction works due to commence in 2025.

AUDIT TABLE

PROPOSAL: Wagerup Alumina Refinery – Production to a Maximum Capacity of 4.7 Million Tonnes per Annum and Associated Bauxite Mining

STATEMENT: 728 (As Amended by Statement 1069 and 1157)

Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
		(2) do not significantly increase the production capacity of the Refinery. Note: A significant increase is defined as more than a 5% increase on the assessed annual production capacity for the Licence for the refinery (as amended) under Part V of the *Environmental Protection Act 1986*, but in any event not greater than the approved annual alumina production as defined in Schedule 1.						
728:M11.1 (As Amended by MS1157)	Noise	As part of any Works Approval and/or Licence application (under Part V of the *Environmental Protection Act 1986*) for any works included in that portion of the revised proposal being the Expansion Works, as documented and described in Schedule 1 of Ministerial Statement 728, the proponent shall submit a Noise Management Plan for those works to provide detail on all reasonable and practicable measures to control noise emissions incorporated in design and construction of the expansion works, to the requirements of the CEO. The Noise Management Plan shall include details of: (1) all significant noise sources, options considered for noise control, noise control measures proposed to be adopted and design target Sound Power Levels relevant to the works; (2) acoustic modelling of noise emission levels in the surrounding environment utilising the design target Sound Power Levels relevant to the works; (3) procedures for verifying that the design target Sound Power Levels have been achieved and total noise emissions from the works meet those predicted in the acoustic modelling undertaken in respect of condition 11-1(2); and (4) parties engaged in the design, acoustic modelling and noise verification	Prepare and submit a Noise Management Plan (NMP) that includes details as per Condition 11.1.	Noise Management Plan submitted to DWER.	Pre-construction		NR	Condition not triggered during reporting period.

AUDIT TABLE

PROPOSAL: Wagerup Alumina Refinery – Production to a Maximum Capacity of 4.7 Million Tonnes per Annum and Associated Bauxite Mining

STATEMENT: 728 (As Amended by Statement 1069 and 1157)

Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
		as covered by conditions 11-1(1) to 11-1(4).						
728:M11.2 (As Amended by MS1157)	Noise	The proponent shall make the Noise Management Plan required by condition 11-1 publicly available to the requirements of the CEO.	Noise Management Plan is publicly available on the Alcoa website.	Noise Management Plan to be published on the Alcoa website.	Pre-construction		NR	Condition not triggered during reporting period.
728:M11.3 (As Amended by MS1157)	Noise	The proponent shall implement the Noise Management Plan required by condition 11-1 to the requirements of the CEO.	Implement the actions and monitoring identified in the NMP.	Noise Management Plan compliance review available upon request.	Overall		NR	Condition not triggered during reporting period.
728:M11.4 (As Amended by MS1157)	Noise	Notwithstanding the requirements of conditions 11-1, 11-2 and 11-3, the proponent may implement individual works of this proposal, as described in Schedule 1 of this Statement, subject to the requirement of a Works Approval and/or Licence under Part V of the *Environmental Protection Act 1986*, on the *proviso* that the individual works: (1) have effect in reducing or offsetting air emissions (including odour) from the existing refinery, where practicable; and (2) do not significantly increase the production capacity of the Refinery. Note: A significant increase is defined as more than a 5% increase on the assessed annual production capacity for the Licence for the Refinery (as amended) under Part V of the *Environmental Protection Act 1986*, but in any event not greater than the approved annual alumina production as defined in Schedule 1 of Ministerial Statement 728.	Works implemented under this proposal must have effect in reducing or offsetting air emissions and shall not increase production more than 5%.	Works Approval Application submitted to DWER in compliance to conditions.	Overall		C	6/10/2021 Submission to DWER: Application for Works Approval for Emissions Reduction Project (25A Tanks) to support progress towards 3.045 Mtpa (not more than 5% increase on 2.9Mtpa). 2/08/2022 DWER issued Works Approval W6607/2021/1 for Emissions Reduction Project (25A Tanks). 10/06/2024 DWER granted an amendment to the Works Approval W6607/2021/1 Emissions Reduction Project (25A Tanks) to extend the expiry date until 31 August 2026. Planning works progressed under the issued works approval W6607/2021/1 during the reporting period with construction works due to commence in 2025.
728:M12.1 (As Amended by MS1069)	Water Use	Prior to submitting a Works Approval application (under Part V of the Environmental Protection Act 1986) for works included in that portion of the revised proposal being the third production unit, as documented and described in Schedule 1, the proponent shall prepare a Water Use Management	Prepare and submit a Water Use Management Plan. The Water Use Management Plan as per Condition 12.1	Water Use Management Plan submitted to DWER.	Pre-construction	Prior to the commencement of construction.	NR	Condition not triggered during reporting period.

AUDIT TABLE

PROPOSAL: Wagerup Alumina Refinery – Production to a Maximum Capacity of 4.7 Million Tonnes per Annum and Associated Bauxite Mining

STATEMENT: 728 (As Amended by Statement 1069 and 1157)

Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
		Plan to the requirements of the Minister for the Environment on the advice of the Environmental Protection Authority. The Water Use Management Plan shall describe the water use minimisation and re-use practices that will be employed so as to achieve the minimum practicable water use at the refinery.						
728:M12.2	Water Use	The proponent shall implement and comply with the Water Use Management Plan referred to in condition 12-1.	Implement the actions and practices identified in the Water Use Management Plan.	Water Management compliance review available upon request.	Overall		NR	Condition not triggered during reporting period.
728:M12.3	Water Use	The proponent shall make the Water Use Management Plan referred to in condition 12-1 publicly available.	Water Use Management Plan publicly available on Alcoa website.	Water Use Management Plan published on the Alcoa website.	Construction		NR	Condition not triggered during reporting period.
728:M13.1	Residue Disposal Areas	Prior to the commencement of construction, the proponent shall revise the Long Term Residue Management Strategy, which addresses the potential impacts of emissions from the Residue Disposal Areas, in particular the management of emissions and protection of groundwater, in consultation with the Residue Planning Liaison Group, to the requirements of the Minister for the Environment on advice from the Environmental Protection Authority.	Review the Long Term Residue Management Strategy (LTRMS) in consultation with the Residue Planning Liaison Group (RPLG) & community stakeholders. The LTRMS shall address the potential impacts of emissions from the Residue Disposal Areas, in particular the management of emissions and protection of groundwater, in consultation with the RPLG.	Revised LTRMS submitted to EPA.	Pre-construction	Prior to the commencement of construction.	NR	Condition not triggered during reporting period. See section 7.1 of the Annual Audit Compliance Report for further information.
728:M13.2	Residue Disposal Areas	The revised Long Term Residue Management Strategy referred to in condition 1 3-1 shall be subject to an independent peer review to ensure that the monitoring and management is undertaken in accordance with international best practice.	Independent review of the LTRMS to review monitoring & management against best practice.	LTRMS provided for independent peer review.	Pre-construction	Prior to the commencement of construction.	NR	Condition not triggered during reporting period. See section 7.1 of the Annual Audit Compliance Report for further information.

AUDIT TABLE

PROPOSAL: Wagerup Alumina Refinery – Production to a Maximum Capacity of 4.7 Million Tonnes per Annum and Associated Bauxite Mining

STATEMENT: 728 (As Amended by Statement 1069 and 1157)

Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
		Note 1: During the development of the Long Term Residue Management Strategy, the proponent must consult with community and stakeholders.						
728:M13.3	Residue Disposal Areas	The proponent shall make the Long Term Residue Management Strategy required by condition 13-1 publicly available.	LTRMS publicly available.	LTRMS is published on the Alcoa website.	Construction		NR	The current LTRMS is published on the Alcoa website. News | Reports and Publications | Wagerup Alumina Refinery https://www.alcoa.com/australia/en/pdf/2017-wagerup-refinery-ltrms.pdf The 2022 LTRMS is in the final approval stages and will be published on the Alcoa Website.
728:M13.4	Residue Disposal Areas	The proponent shall implement the Long Term Residue Management Strategy required under condition 13-1.	Implement the actions and practices identified in the LTRMS.	LTRMS compliance review available upon request.	Overall		NR	Condition not triggered during reporting period. See section 7.1 of the Annual Audit Compliance Report for further information.
728:M14.1	Transport Related Noise	The proponent shall demonstrate participation in a detailed review (refer Note 2) of logistical aspects of the rail transport activities associated with its operations to ensure that these activities are managed in a manner which minimises impacts on residential amenity.	Participate in the Inter-agency Working group – Rail noise impacts (coordinated by DMIRS) of the logistical aspects of rail transport associated with the refinery operations. NOTE DMIRS is responsible for establishing the inter-agency working group within 12 months following this statement.	Attendance/participation in DMIRS working group.	Overall		NR	Condition not triggered during reporting period.
728:N1 (As amended by MS1157)	Procedure 1 Independent Design Review Team	The Department of Water and Environmental Regulation, in consultation with the proponent, will establish an Independent Design Review Team (IDRT) including specialists in design, construction, commissioning and monitoring of large industrial plants and pollution control equipment. The IDRT shall seek specialist input from international experts where required. The IDRT will review the engineering design details for the Wagerup Expansion Works leading to the Works Approval and/or Licence application to advise the Department of Water and Environmental Regulation on whether the design meets international best practice in terms of pollution control, predicted emissions and emissions management and is reasonably likely to	Independent Design Review Team established by DWER.	DWER established IDRT	Overall		NR	Condition not triggered during reporting period. Procedure is to be implemented when the project reaches the detailed design stage (not yet reached).

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PROPOSAL: Wagerup Alumina Refinery – Production to a Maximum Capacity of 4.7 Million Tonnes per Annum and Associated Bauxite Mining

STATEMENT: 728 (As Amended by Statement 1069 and 1157)

Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
		achieve the emissions performance levels specified in condition 8. The IDRT will also review the Air Quality Management Plan/s required in condition 10 to ensure that the monitoring and management is undertaken in accordance with international best practice.						
728:N2	Inter-agency Working Group Rail Noise Impacts	Within 12 months following the date of this statement, the Department of Industry and Resources, will arrange for the establishment of an inter-agency working group to further define rail noise impacts, and, identifying practicable operational measures, infrastructure improvements and residential noise amelioration measures that may be necessary to mitigate the noise impacts.	Participate in the Inter-agency Working group – Rail noise impacts (coordinated by DMIRS) of the logistical aspects of rail transport associated with the refinery operations. NOTE DMIRS is responsible for establishing the inter-agency working group within 12 months following this statement.	CR, Attendance/participation in working group	Overall		NR	Participation in an Interagency Working Group commenced in October 2007, with the provision of information requested by the then DoIR. Further activity by the Working Group is on hold until Alcoa has finalised a position with respect to the proposed expansion at Wagerup.
728:M15.1	Community Consultation Mining Plans	In the preparation of mining plans, the proponent shall consult with the affected local government authorities and report results to the Mining and Management Programme Liaison Group.	Consult with affected local government when preparing mining plans and report results to the Mining and Management Programme Liaison Group (MMPLG): - detail consultation - feedback received - and action taken	CR, Consultation summarised in annual Mining and Management Program submissions to the MMPLG.	Operation		C	On 20/12/2023, the Premier approved the 2023-2027 MMP (Mining and Management Program). On the 21/10/2024 the Premier approved a technical roll-over of the 2023-2027 MMP for the 2024-2028 period. The approved MMP includes community engagement and consultation (s.4.2). The 2021-2023 TER (Triennial Environmental Review) was submitted to JTSI in May 2024 under Proponent Commitment 11 includes a summary of community consultation (s.13).
728:M15.2	Community Consultation - Mining	The proponent shall consult with residents of private properties whose amenity (dust, noise, vibration, visual) or hydrology are likely to be affected by the mining operations and report the results to the Mining and Management Programme Liaison Group. In the first instance the proponent shall consult with those residents within the predicted 35 dB(A) noise contour (worst case) for the mining operations (refer Procedure 4).	Consult with those residents within the predicted 35 dB(A) noise contour (worst case) for the mining operations and any refinery expansion in the first instance and report results to MMPLG. - detail consultation - feedback received - and action taken	CR, Consultation summarised in annual Mining and Management Program submissions to the MMPLG. Register of Contacts.	Operation		C	On 20/12/2023, the Premier approved the 2023-2027 MMP (Mining and Management Program). On the 21/10/2024 the Premier approved a technical roll-over of the 2023-2027 MMP for the 2024-2028 period. The approved MMP includes community engagement and consultation (s.4.2). The 2021-2023 TER (Triennial Environmental Review) was submitted to JTSI in May 2024 under Proponent Commitment 11 includes a summary of community consultation (s.13).

Government of Western Australia
Department of Water and Environmental Regulation

AUDIT TABLE

PROPOSAL: Wagerup Alumina Refinery – Production to a Maximum Capacity of 4.7 Million Tonnes per Annum and Associated Bauxite Mining

STATEMENT: 728 (As Amended by Statement 1069 and 1157)

Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
728:M16.1	Long-term Bauxite Residue Management – Closure Strategy Review	The proponent, in consultation with the Residue Planning Liaison Group, shall periodically review and revise its "closure strategy" for the residue storage areas at Wagerup, to the requirements of the minister for the Environment on advice from the Environmental Protection Authority. Note 1: In reviewing and revising the "closure strategy", the proponent must consult with community and stakeholders. Note 2: The proponent shall submit its revised closure strategy to the Residue Planning Liaison Group for approval and submission to the Minister for the Environment through the Minister responsible for administrating the Alumina Refinery (Wagerup) Agreement and Acts 1978	Review and revise the LTRMS with the RPLG. The LTRMS shall be submitted to the RPLG for approval and submission to the Minister for Environment through the Minister that administers the Alumina Refinery (Wagerup) Agreement Act 1978.	CR, Closure Strategy included in LTRMS.	Operation		C	The residue closure strategy is reviewed as part of the LTRMS. The LTRMS was last reviewed in 2022 and is currently being finalised for publication.
728:M16.2	Long-term Bauxite Residue Management – closure strategy implementation	The proponent shall implement the "closure strategy" required by condition 16-1 to the requirements of the Minister for the Environment, at a timing to be determined by the Minister for the Environment on advice of the Minister responsible for administrating the Alumina Refinery (Wagerup) Agreement and Acts 1978. Note: a "closure strategy" means that the bauxite residue storage areas at Wagerup shall either no longer require management at the time the proponent ceases refining operations, or if the Minister for the Environment determines that further management is necessary, the proponent shall make adequate provision for future management with no liability to the State.	Implement the actions detailed within the closure strategy.	CR, Closure Strategy implemented.	Closure		NR	Implementation of a 'closure strategy' for the residue storage area is not yet required as the Wagerup Refinery remains operational and storage areas in use.
728:M17.1	Social Impacts – Local Government Liaison	To reduce social disruption to the Waroona and Yarloop districts, the proponent shall maintain formal liaison and monitoring processes at appropriate	Formal liaison with the Shires of Waroona and Harvey where appropriate.	CR	Overall		C	During this reporting period formal local government liaison and consultation included providing local governments annual updates to the five-year mine plan, offering each local government a presentation of the plan, and inviting the Councillors and Shire staff to tour the mining operations.

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PROPOSAL: Wagerup Alumina Refinery – Production to a Maximum Capacity of 4.7 Million Tonnes per Annum and Associated Bauxite Mining

STATEMENT: 728 (As Amended by Statement 1069 and 1157)

Audit Code	Subject	Requirement	How	Evidence	Phase	Timeframe	Status	Further Information
		times with the Shire or Waroona and the Shire of Harvey.						Further information on Refinery consultation programs is provided in Section 8 of the Annual Audit Compliance report.
728:M17.2	Social Impacts – Local government Liaison Reporting Requirements	The proponent shall provide details on formal liaison and monitoring processes with the Shire or Waroona and the Shire of Harvey in its annual reporting of environmental research and operations.	Provide detail on formal liaison with Shire of Waroona & Shire of Harvey in annual report of environmental research and operations	CR	Overall		C	During this reporting period formal liaison and monitoring processes have included: ▪ Attendance at Council meetings when required ▪ Briefings and one-on-one discussions with Shire Officers including the Chief Executive Officers, Shire Planners and Shire Environmental Health Officers as required. ▪ Discussions with the Shire representative at the Community Consultative Network (CCN) meetings convened by Alcoa. A summary of communications with local Shires is provided in the 2021-2024 TER submitted to JTSI in May 2024.
728:N3	Final Rehabilitation Completion Criteria:	1. The proponent and the Mining and Management Programme Liaison Group shall regularly review and revise the final rehabilitation completion criteria, using procedures 4(2) and 4(3) 2. The review of the final rehabilitation completion criteria shall include public consultation 3. The revised final rehabilitation completion criteria shall be made publicly available. 4. Best practice principles shall be applied.	Complete regular review of completion criteria according to requirements of Procedure 3.	Completion criteria reviewed.	Overall		C	Alcoa and the MMPLG reviewed and revised the completion criteria in October 2015 to apply to rehabilitation from 2016 on (Alcoa's Bauxite Mine Rehabilitation Program, Completion Criteria and Overview of Area Certification Process, 2015 Revision). Public consultation involved advertising the Completion Criteria in the West Australian newspaper and making the relevant documents accessible on the Department of State Development's web site. All comments from the public were reviewed. The document is publicly available on the Alcoa website: News | Reports and Publications | Mining Operations | Mining Operations Rehabilitation Program In 2024, as per Condition 23 of the Ministerial Approval letter for the 2023-2027 MMP dated 20/12/2023, Alcoa, in consultation with DBCA, drafted a revised set of Rehabilitation Completion Criteria (RCC). The RCC were submitted to the Minister for State Development on the 19th December 2024. It is anticipated that the RCC will be reviewed by BSEC (which has replaced the MMPLG) mid 2025. The RCC will go out for public comment via JTSI for a period of 6 weeks once agreed with BSEC.
728:N4	Mining and Management Planning Liaison Group	The Mining and Management Programme Liaison Group comprises representatives of State Government agencies whose areas of responsibility are affected by the mining operations of the proponent. This group will continue to review the mining plans of the proponent and manage issues relating to its mining operations. The group will coordinate environmental auditing of the proponent's Mining and Management Programme.	Pre mining assessments are completed to identify potential risks associated with noise, dust, aesthetic and conservation values, and hydrological impacts. These assessments guide Alcoa to develop management plans where appropriate to manage the risks and minimise impacts.	CR, Included in Annual Environmental Review.	Overall		C	On 20/12/2023, the Premier approved the 2023-2027 MMP (Mining and Management Program). On the 21/10/2024 the Premier approved a technical roll-over of the 2023-2027 MMP for the 2024-2028 period. The approved MMP includes community engagement and consultation (s.4.2), social surrounds (amenity, noise, dust) (s.9), conservation values (s.5), and hydrology (s.7) for consideration by the MMPLG (now BSEC). As per Conditions 13 to 21 of the Ministerial Approval letter for the 2023-2027 MMP dated 20/12/2023, Alcoa WA Mining has developed a number of Management Plans to manage environmental and social risks.

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		In reviewing mining plans, the Mining and Management Planning Liaison Group shall take into account local agreement and issues that concern local property owners, including: i. Likely noise, vibration and dust impacts on residents and property from the type of mining proposed ii. Aesthetic and conservation values of the forest affected in relation to the properties; and iii. Potential hydrological impacts on private properties						
728:P1	Separation Distance	Continue to support and implement the Land Management Strategy (January 2002) as enhanced by correspondence with individual residents in Area A and B (letters dated 24 February 2005 and 21 April 2005) or any subsequent revisions agreed in consultation with the community and relevant stakeholders	Implement the Wagerup Land Management Strategy.	CR, Land title documentation	Overall		C	The Land Management Strategy continued throughout the reporting period, with Alcoa purchasing properties belonging to those residents who chose to relocate and were eligible under the scheme. Annual land management reports are available on Alcoa's website under Reports and Publications | Wagerup Alumina Refinery | Land Management Reports.
728:P2	Mine Planning and Forest Management	In addition to the 10-year mining plans to be submitted to the State under Clause 5 of the Wagerup Agreement, Alcoa will also prepare and submit to the State mining and management programmes which will specify such matters as the areas which it is proposed to mine, the method of mining, and the proposed methods of rehabilitation in accordance with the procedures to be agreed between Alcoa and the State. Alcoa undertakes to consult closely with the State on the preparation of these programmes and not to implement the programmes until agreement has been reached with the State or they have been determined by arbitration.	Prepare and submit to the State, Mining and Management programmes which will specify areas which it is proposed to mine, the method of mining and the proposed methods of rehabilitation in accordance with the procedures to be agreed between Alcoa and the State. These programmes are in addition to the 10-year mining plans to be submitted to the State under Clause 4 of the Wagerup Agreement. Alcoa undertakes to consult closely with the State on the preparation of these programmes and not to implement the programmes until	CR, Submission of the MMPs	Overall		C	On 20/12/2023, the Premier approved the 2023-2027 MMP. On the 21/10/2024 the Premier approved a technical roll-over of the 2023-2027 MMP for the 2024-2028 period. The approved 2023 – 2027 MMP includes the following information for consideration by the MMPLG: • A five-year mine plan and associated clearing schedule in Figure 3.6 • A ten-year mine plan for Willowdale in Figure 3.2

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			agreement has been reached with the State or they have been determined by arbitration. (Refer to Procedures 3 & 4)					
728:P3	Mine Planning and Forest Management	Alcoa will plan and manage its mining operations to minimise disturbance to biologically diverse areas fringing major rock outcrops and stream zones. Appropriate buffers will be maintained between these areas and mine pit boundaries. Stream crossings will be constructed in a manner which facilitates their removal and rehabilitation after use, unless required for ongoing forest management or other purposes agreed with the State's Mining and Management Programme Liaison Group (MMPLG).	Plan and manage mining operations to minimise disturbance to biologically diverse areas fringing major rock outcrops and stream zones by: ▪ Maintaining appropriate buffers between these areas and mine pit boundaries. ▪ Constructing stream crossings in a manner which facilitates their removal and rehabilitation after use, unless required for ongoing forest management or other purposes agreed with the State's MMPLG.	CR, No clearing within 50 m of rock outcrops > 1 ha. Adhering to the DoW stream zone buffer guidelines for best practice operators. Rehabilitating all stream zone crossings using best practice techniques.	Overall		C	On 20/12/2023, the Premier approved the 2023-2027 MMP (Mining and Management Program). On the 21/10/2024 the Premier approved a technical roll-over of the 2023-2027 MMP for the 2024-2028 period. The approved MMP includes requirements to minimize disturbance to biologically diverse areas fringing major rock outcrops and stream zones (s. 5.3). Alcoa WA Mining's Flora and Vegetation Management Plan also includes the requirement to minimize disturbance to rock outcrops and maintain limited disturbance buffer zone around stream zones.
728:P4	Mine Planning and Forest Management	Alcoa will continue its programme of biological surveys and support of activities contributing to the conservation of rare, endangered and priority species existing within the vicinity of its mining operations.	Continue the programme of biological surveys and support of activities contributing to the conservation of rare, endangered and priority species existing within the vicinity of its mining operations, including implementation of the Threatened Fauna Species Management Plan.	CR, Pre-mining flora and fauna surveys will be conducted in all new crusher regions to identify rare and endangered, especially protected or priority species. Management techniques contained within management plans will be continuously reviewed and	Overall		C	On 20/12/2023, the Premier approved the 2023-2027 MMP (Mining and Management Program). On the 21/10/2024 the Premier approved a technical roll-over of the 2023-2027 MMP for the 2024-2028 period. The approved MMP includes requirements for surveys (s. 3.1.1) and outcomes from biological surveys (s. 5.1 to 6.4). A Flora and Vegetation Management Plan and Fauna Management Plan guides an ongoing program of supporting activities including evaluation of cockatoo habitat conservation measures and black cockatoo ecological research. Alcoa also supports the Western Shield program under the Forest Enhancement agreement. The 2021-2023 TER (Triennial Environmental Review) was submitted to JTSI in May 2024 under Proponent Commitment 11 includes a review of the fauna conservation research program.

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				improved to minimise impact on identified species.				
728:P5	Water Resources	Bauxite mining will not take place in the eastern, lower rainfall portion of Alcoa's lease, until research shows that mining operations can be conducted without significantly increasing the salinity of water resources with exception of the Trial Mining Project in the intermediate rainfall zone which commenced in 2005 to test modelling prediction and mining and rehabilitation methods developed from the 25 years of research to date. This trial was approved by the Mining and Management Programme Liaison Group. Results from the trial mining and continuing hydrology research and modelling will form the basis for future approval by the Mining and Management Programme Liaison Group of Alcoa's plans for mining in the intermediate rainfall zone. These plans will be presented in Alcoa's annual Mining and Management Programme submission at an appropriate date.	Bauxite mining will not take place in the eastern, lower rainfall portion of Alcoa's lease without approval by the MMPLG. Results from the trial mining and continuing hydrology research and modelling will form the basis for future approval by the MMPLG of Alcoa's plans for mining in the intermediate rainfall zone. These plans will be presented in Alcoa's annual Mining and Management Programme submission at an appropriate date.	CR, MMP submissions will contain applications for clearing in the intermediate rainfall zone. Areas in the intermediate rainfall zone will not be cleared until they are on an approved MMP.	Overall		C	Access to bauxite resources is granted through annual submission of the MMP to the MMPLG (now BSEC) and approval by the Minister. On 20/12/2023, the Premier approved the 2023-2027 MMP (Mining and Management Program). On the 21/10/2024 the Premier approved a technical roll-over of the 2023-2027 MMP for the 2024-2028 period.
728:P6	Mine Rehabilitation	Alcoa will monitor the success of all its rehabilitated mined areas in consultation with the Department of Environment and Conservation.	Monitor the success of all rehabilitated Mining areas in consultation with the DBCA.	CR, Completion criteria reports for rehabilitated areas are submitted to DBCA annually for audit.	Overall		C	Rehabilitated areas in the establishment and early development stages are monitored against Completion Criteria and will be reported to DBCA in the Rehabilitation Completion Criteria Report. The approved MMP (s.3.3) and 2021-2023 TER submitted to JTSI in May 2024 under Proponent Commitment 11 include completion criteria requirements and results.
728:P7	Forest Conservation	Alcoa will forego the bauxite resources in the jarrah forest conservation areas agreed in consultation with the State's Reserve Review Committee and specified in the Alumina Refinery Agreement Amendment Act, No 99 of 1986, for as long as their conservation values remain. Mining adjacent to the conservation areas will utilise site-specific environmental management procedures agreed in consultation with the MMPLG. These will include	Alcoa will not mine the bauxite resources in the jarrah forest conservation areas agreed in consultation with the State's Reserves Review Committee and specified in the Alumina Refinery Agreement Amendment Act, No 99 of 1986, for as long as their	CR, No clearing for mining will be undertaken in conservation reserves.	Operation		C	Alcoa did not mine forest conservation areas specified in the Alumina Refinery Agreement Act, No 99 of 1986 in 2024. Access to bauxite resources is granted through annual submission of the MMP to the MMPLG (now BSEC) and approval by the Minister. On 20/12/2023, the Premier approved the 2023-2027 MMP (Mining and Management Program). On the 21/10/2024 the Premier approved a technical roll-over of the 2023-2027 MMP for the 2024-2028 period.

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		particular consideration of dieback management and mine rehabilitation requirements.	conservation values remain.					
728:P8	Forest Conservation	Alcoa will defer mining indefinitely the bauxite resources in the facilities section of the recreation zone of the Lane Poole Reserve as defined in Figure 10 of the 1994 Consultative Environmental Review. Ore extraction in the remaining areas of the recreation zone will exclude steep slopes of the Murray River valley and will be undertaken in accordance with site-specific environmental management procedures agreed with the State's MMPLG after consultation with Department of Environment and Conservation and the Lane Poole Reserve Advisory Committee.	Alcoa will not mine the bauxite resources in the facilities section of the recreation zone of the Lane Poole Reserve as defined in Figure 10 of the 1994 Consultative Environmental Review. Ore extraction in the remaining areas of the recreation zone will exclude the steep slopes of the Murray River valley and will be undertaken in accordance with site-specific environmental management procedures agreed with the State's MMPLG after consultation with DBCA and the Lane Poole Reserve Advisory Committee.	CR, No mining in the facilities section of the recreation zone of Lane Poole Reserve. No mining outside the defined mining limit for the Orion crusher region that excluded the steep Murray River valleys. The proposal to mine in the recreation area of Lane Poole Reserve will be assessed by the CAR Informal Reserve Evaluation Committee first as agreed by the Chairman of the EPA.	Operation		C	Access to bauxite resources is granted via annual submission of the MMP to the MMPLG (now BSEC) and approval by the Minister for State Development, in consultation with the Minister for Environment. On 20/12/2023, the Premier approved the 2023-2027 MMP (Mining and Management Program). On the 21/10/2024 the Premier approved a technical roll-over of the 2023-2027 MMP for the 2024-2028 period. The approved MMP requires Environmental Impact Assessment (EIA) for planned disturbance in Reserves and assessment by the ITAG (previously CAR Informal Reserves Evaluation Committee (CARIREC)) as delegated by BSEC (previously MMPLG), a process agreed by the MMPLG (now BSEC) and the Environmental Protection Authority (EPA) as required under the Regional Forest Agreement. The 2021-2023 TER submitted to JTSI under Proponent Commitment 11 includes a summary of submissions made to CARIREC (now ITAG) (s.5.2.5).
728:P9	Dieback Management	Alcoa will implement a comprehensive dieback management programme designed specifically for its mine operations in the jarrah forest. This will include the rehabilitation of dieback-affected areas adjacent to its mine operating areas, in accordance with procedures agreed with State agencies, and irrespective of the cause of introduction of the disease.	Implement a dieback management programme designed specifically for the mine operations in the jarrah forest. This will include the rehabilitation of dieback-affected areas adjacent to mine operating areas, in accordance with procedures agreed with State agencies, and irrespective of the cause of introduction of the disease.	CR, Implement Alcoa's best practice dieback management system while continuing to identify areas for improvement. Dieback Forest Rehabilitation (DFR) will be undertaken in areas identified by the Associated Works and DFR steering committee that contains DBCA and Alcoa representatives.	Overall		C	The ongoing dieback management program established under the Alcoa/DBCA Working Arrangements was implemented during the reporting period. Approved MMP (s.2.4.4 and 5.1.6) and 2021-2023 TER submitted to JTSI under Proponent Commitment 11 include dieback management requirements and results. No dieback-affected areas adjacent to Alcoa's mining operations were rehabilitated under the Dieback Forest Rehabilitation (DFR) program in 2024.

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728:P10	Environmental Research	Alcoa is committed to an ongoing research programme into all aspects of its operation that have the potential to adversely affect the environment, and into those environmental characteristics that could be adversely affected by its operations.	Implement an ongoing research programme into all aspects of the operation that have the potential to adversely affect the environment, and into those environmental characteristics that could be adversely affected by its operations.	CR, Included in Annual Environmental Review.	Operation		C	The 2021-2023 TER submitted to JTSI in May 2024 under Proponent Commitment 11 includes a review of the research programs for mine rehabilitation, fauna conservation, dieback management and catchment hydrology and salinity during the reporting period. Research project activities continued through 2024. This included studies on seed germination, fertiliser application rates, black cockatoos, quokka and chuditch, and catchment hydrology modelling.
728:P11	Environmental Research	Alcoa will submit a brief review of its research and management programme to the Department of Industry and Resources on an annual basis. Copies will be made available to relevant State agencies and the Shire of Waroona. A more detailed review will be prepared on a triennial basis.	Submit a brief review of research and management programme to JTSI on an annual basis. Copies will be made available to relevant State agencies and the Shire of Waroona. A more detailed review will be prepared on a triennial basis.	CR, Included in Annual Environmental Review.	Operation		C	Environmental performance and research reports are submitted annually to JTSI. Each three years a triennial report is submitted The 2021-2023 TER submitted to JTSI in May 2024 under Proponent Commitment 11 includes a review of the research project activities continued through 2021-2023. This included seed germination, black cockatoos, and catchment hydrology modelling. The TER is made available to other State agencies and the Shire of Waroona.
728:P12	Noise Monitoring	Noise monitoring undertaken for assessment purposes will be undertaken by a recognised acoustical consultant, in consultation with the Department of Environment and Conservation. Ongoing monitoring will be undertaken by Alcoa personnel, or consultants, appropriately trained in the measurement of environmental noise.	Noise monitoring undertaken for assessment purposes will be undertaken by a recognised acoustic consultant, in consultation with DWER. Ongoing monitoring will be undertaken by Alcoa personnel, or consultants, appropriately trained in the measurement of environmental noise.	CR, Included in Annual Environmental Review.	Operation		C	The ongoing noise management program was implemented during the reporting period. The program was developed in consultation with recognised acoustical consultants and includes noise monitoring undertaken by appropriately trained people. On 20/12/2023, the Minister for State Development approved the 2023 – 2027 inclusive MMP (Mining and Management Program) for the 2023 – 2027 period. Prior to this Alcoa was operating under the 2021 – 2025 MMP technical rollover approval letter dated 21/09/2022. The approved 2023 - 2027 MMP (s.9.3) and 2021 – 2025 MMP (s.3.6) includes requirements for noise monitoring. The 2023 AER submitted to JTSI in May 2024 under Proponent Commitment 11 includes noise monitoring overview and results (s.10). The 2023 Refinery AER submitted to DWER in March 2024 includes ongoing noise monitoring results conducted by appropriately trained personnel and acoustic consultants. The Wagerup Refinery is subject to a regulation 17 noise variation, Environmental Protection (Wagerup Alumina Refinery Noise Emissions) Approval 2012, as amended, with monitoring results included in the Annual Report.

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728:P13	Noise Monitoring	Noise levels will be monitored periodically at designated reference points and reported in the Review of Environmental Research and Operations submitted annually to the Department of Industry and Resources and distributed to relevant state and local government agencies.	Noise levels will be monitored periodically at designated reference points and reported in the Review of Environmental Research and Operations submitted annually to the Department of State Development and distributed to relevant state and local government agencies.	CR, Included in Annual Environmental Review.	Operation		C	The ongoing noise management program was implemented during the reporting period. The program includes periodic noise monitoring at a designated reference point. On 20/12/2023, the Minister for State Development approved the 2023 – 2027 inclusive MMP (Mining and Management Program) for the 2023 – 2027 period. Prior to this Alcoa was operating under the 2021 – 2025 MMP technical rollover approval letter dated 21/09/2022. The approved 2023 - 2027 MMP (s.9.3) and 2021 – 2025 MMP (s.3.6) includes requirements for noise monitoring. The 2023 AER submitted to JTSI in May 2024 under Proponent Commitment 11 includes a summary of noise monitoring results (s.10). Noise monitoring results for the refinery are reported in the MS728 AACR submitted prior to 1 April each year and distributed to DWER, JTSI and relevant shires.