Government of Western Australia
Department of Water and Environmental Regulation

Works Approval

Works approval number	W6813/2023/1
Works approval holder	Alcoa of Australia Limited
ACN	004 879 298
Registered business address	Levels 3 and 4 181 – 205 Davy Street Booragoon WA 6154
DWER file number	DER2023/000374
Duration	11/06/2024 to 10/06/2029
Date of issue	11 June 2024
Premises details	Pinjarra Alumina Refinery South Western Hwy PINJARRA WA 6208 Legal description – Lot 19 on Diagram 44739, Part of Lot 109 on Diagram 60089, Part of Lot 151 on Plan 10914, Lot 221 on Plan 302632, Lot 222 on Plan 302638, Part of Lot 251 on Plan 35963 and Lot 252 on Plan 35963 As defined in Schedule 1

Prescribed premises category description **(Schedule 1, *Environmental Protection Regulations 1987*)**
Category 46: Bauxite refining: premises (other than premises within paragraph (b) of category 5) on which alumina is produced from bauxite refining

This works approval is granted to the works approval holder, subject to the attached conditions, on 11 June 2024, by:

Amine Fisher

Digitally signed by Amine Fisher
Date: 2024.06.11 13:46:47 +08'00'

Amine Fisher
MANAGER PROCESS INDUSTRIES
an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

Works approval history

Date	Reference number	Summary of changes
11/06/2024	W6813/2023/1	New Works Approval Issued

Interpretation

In this works approval:

(a) the words ‘including’, ‘includes’ and ‘include’ in conditions mean “including but not limited to”, and similar, as appropriate;

(b) where any word or phrase is given a defined meaning, any other part of speech or other grammatical form of that word or phrase has a corresponding meaning;

(c) where tables are used in a condition, each row in a table constitutes a separate condition;

(d) any reference to an Australian or other standard, guideline, or code of practice in this works approval:

(i) if dated, refers to that particular version; and

(ii) if not dated, refers to the latest version and therefore may be subject to change over time;

(e) unless specified otherwise, any reference to a section of an Act refers to that section of the EP Act; and

(f) unless specified otherwise, all definitions are in accordance with the EP Act.

NOTE: This works approval requires specific conditions to be met but does not provide any implied authorisation for other emissions, discharges, or activities not specified in this works approval.

Works approval conditions

The works approval holder must ensure that the following conditions are complied with:

Construction phase

Infrastructure and equipment

1. The works approval holder must:

(a) construct and/or install the infrastructure and/or equipment;

(b) in accordance with the corresponding design and construction / installation requirements; and

(c) at the corresponding infrastructure location;

(d) as set out in Table 1.

Table 1: Design and construction / installation requirements

Item	Infrastructure and equipment	Design and construction / installation requirements	Infrastructure location
1.	Residue Filtration Plant Building 2 containing: • 6x filter presses • 6x cloth wash units • 3x cloth wash pumps • 6x press conveyors • 6x cake breakers • 2x air compressors	(a) Residue filtration plant building must be constructed as a purpose-made weatherproof, enclosed building with secondary containment that: (i) is bunded to contain not less than 110% of the capacity of the largest tank or vessel within the filtration plant building; (ii) contains and directs all drainage to a central drain connected to the filtrate wash tank; (iii) is constructed of materials that are substantially immune to attack by any corrosive substance it may contain; and (iv) is sufficiently impervious to retain and enable the recovery of any spillage. (b) Residue filtration building must be constructed with acoustic louvers on the sides of the building. (c) Air compressors must be housed within noise control enclosures. (d) Cloth wash pumps must be housed in noise control panels on the north side of the building. (e) Press conveyors must be fitted with side skirtings to prevent filter cake spillages. (f) Press conveyors must be fitted with drip trays that collect and drain all residual water from the presses. (g) Press conveyors must be constructed to direct all filter cake via cake breakers before exiting the Residue Filtration Building. (h) All pumps must be electric powered. (i) A roller shutter door/s must be installed on the building where filter cake exits the building onto the RF2 overland conveyor.	As shown in Schedule 1 Figure 2 as: Proposed Residue Filtration Building 2 (5)
2.	Residue filtration plant external bunded hardstand area containing: • Red mud storage tank	(a) The infrastructure must be located within secondary containment that: (i) is bunded to contain not less than 110% of the capacity of the largest tank or vessel within the secondary containment area;	As shown in Schedule 1 Figure 2 as: Proposed Filtrate Wash Tank (7)

Item	Infrastructure and equipment	Design and construction / installation requirements	Infrastructure location
	• Filtrate wash tank • Filter feed and booster pumps • Filtrate return pumps • Filter press pipeline	(ii) contains and directs all runoff to collection sumps with pumps installed which return collected water to the premises run-off pond and/or the filtrate wash tank; (iii) is constructed of materials that are substantially immune to attack by any corrosive substance it may contain; and (iv) is sufficiently impervious to retain and enable the recovery of any spillage. (b) Red mud storage tank and filtrate wash tank must be constructed of steel with internal agitators that are connected to start/stop alarms. (c) Red mud tank and filtrate wash tank must be fitted with high, high-high and low level alarms. (d) The filtrate wash tank must be connected and capable of receiving all wastewater generated from the filtration plant operations. (e) All pumps must be electric powered. (f) Motor fan side of the feed and booster pumps must be fitted with acoustic cowling.	Proposed Red Mud Storage Tank (8) RF2 Hardstand
3.	RF2 conveyor and transfer station MCV002 extension	(a) RFP2 conveyor must be installed with a cover. (b) Belt scrapers and belt spray bars must be fitted to RF2 conveyor that are capable of keeping the belt free of filter cake build up. (c) Low noise idlers must be installed on the MCV002 conveyor extension. (d) Acoustic panels-must be installed on transfer station 2 for noise attenuation. (e) A noise barrier must be installed around transfer station 2 for noise attenuation.	As shown in Schedule 1 Figure 2 as: RF2 conveyor (9)
4.	Residue filtration plant 1	(a) Motor fan side of the feed and booster pumps must be retrofitted with acoustic cowling. (b) Acoustic louvres must be fitted on the sides of the building in place of regular weather/ventilation louvres. (c) A roller shutter door/s must be installed on the building where filter cake exits the building onto the RF1 overland conveyor.	As shown in Schedule 1 Figure 2 as: Residue Filtration Building 1 (2)
5.	RF1 conveyor and transfer station	(a) Low noise idlers must be retrofitted on the conveyor. (b) A noise barrier must be retrofitted around the transfer station.	As shown in Schedule 1 Figure 2 as: RF1 conveyor (10)

Compliance reporting

2. The works approval holder must within 60 calendar days of all the items of infrastructure or equipment required by condition 1 being constructed and/or installed:

(a) undertake an audit of their compliance with the requirements of condition 1; and

(b) prepare and submit to the CEO an Environmental Compliance Report on that compliance.

3. The Environmental Compliance Report required by condition 2, must include as a minimum the following:

(a) certification by a suitably qualified engineer that the items of infrastructure or component(s) thereof, as specified in condition 1, have been constructed in accordance with the relevant requirements specified in condition 1;

(b) as constructed plans and a detailed site plan for each item of infrastructure or component of infrastructure specified in condition 1;

(c) a summary of monitoring undertaken pursuant to condition 5 and management actions undertaken in accordance with condition 6; and

(d) be signed by a person authorised to represent the works approval holder and contains the printed name and position of that person.

Fugitive dust – construction

4. The works approval holder must undertake the requirements specified in Table 2 for the works to minimise the generation of airbourne dust from the premises.

Table 2: Fugitive dust management requirements during construction

Dust control	Requirements
Water carts or other appropriate dust control measures.	a) Operate when visible dust is generated from external ground surface areas within the mud filtration area (refer to Figure 1). b) Operate proactively subject to weather over a 24-hour period. c) Operate when visible dust is reported by site personnel.

Monitoring of discharges to air

5. During the construction phase, the works approval holder must monitor the air quality for concentrations of the parameter/s listed in Table 3:

(a) at the corresponding monitoring location/s;

(b) in the corresponding unit;

(c) at no less that the corresponding frequency; and

(d) for the corresponding averaging period;

as set out in Table 3.

Table 3: Monitoring of ambient concentrations during the construction phase

Parameter	Monitoring location	Unit	Frequency	Averaging period	Trigger value
Particles as PM_{10}	Construction dust monitor (AQ1) as shown in Schedule 1 Figure 3	$\mu g/m^3$	Continuous	60 minutes	50 $\mu g/m^3$

6. The works approval holder must, in the event of a parameter in condition 5 Table 3 exceeding the corresponding trigger value specified in that table, undertake the management action(s) that correspond with the relevant parameter and monitoring location, within the corresponding timeframe as specified in Table 4.

Table 4: Management actions required in the event of trigger value exceedance.

Monitoring location	Parameter	Management action	Timeframe
Construction dust monitor (AQ1) as shown in Schedule 1 Figure 3	Particles as PM_{10}	a) Conduct an inspection to identify potential dust sources associated with the construction works. b) Apply any available and suitable dust suppression to identified dust sources associated with the construction works, should the inspection determine that the construction works are the source of the trigger exceedance.	Within 60 minutes of a trigger value being exceeded
		a) Cease all construction activities which are determined to be the source of the trigger exceedance	Within 120 minutes of a trigger value being exceeded if the trigger value continues to be exceeded.

Time-limited operations phase

Commencement and duration

7. The works approval holder may only commence time limited operations for items 1, 2, and 3 (FRP2) of infrastructure identified in condition 1 where the Environmental Compliance Report as required by condition 2 has been submitted by the works approval holder for those items of infrastructure. Infrastructure outlined in condition 1 Items 4 and 5 (FRP1) may operate immediately upon construction.

8. The works approval holder may conduct time-limited operations of the infrastructure and equipment specified in condition 1:

(a) for a period not exceeding 180 calendar days from the day the works approval holder meets the requirements of condition 2; or

(b) until such time as a licence for the infrastructure is granted in accordance with Part V of the *Environmental Protection Act 1986,*

whichever is sooner.

Time-limited operations requirements

9. During time-limited operations, the works approval holder must ensure that the premises infrastructure and equipment listed in Table 5 and located at the corresponding infrastructure location are maintained and operated in accordance with the corresponding requirement set out in Table 5.

Table 5: Time-limited operational requirements

	Site infrastructure and equipment	Operational requirements	Infrastructure location
1.	Residue Filtration Plant Building 2 containing: • 6x filter presses	(a) All liquids generated from pressure filtration, line flushing, draining, washdown, and spills must be contained within the building and directed to the filtrate return system.	As shown in Schedule 1 Figure 2 as: Filtration Building 2

	Site infrastructure and equipment	Operational requirements	Infrastructure location
	• 6x cloth wash units • 3x cloth wash pumps • 6x press conveyors • 6x cake breakers • 2x air compressors	(b) The residue filtration plant building secondary containment bunding must be maintained in a fit for purpose condition for containing liquids, free of damage which may impact its ability to contain fluids.	
2.	Residue filtration plant external bunded hardstand area containing: • Red mud storage tank • Filtrate wash tank • Filter feed and booster pumps • Filtrate return pumps.	(a) The bunded hardstand area must be maintained in a fit for purpose condition for containing liquids, free of damage which may impact its ability to contain fluids. (b) Runoff, drainage and spillage within the hardstand area must be directed to a collection sump/s and returned to the premises run-off pond. (c) The red mud storage tank and filtrate wash tank must be operated with high, high-high and low level alarms.	As shown in Schedule 1 Figure 2 as: Filtrate Wash Tank Red Mud Storage Tank ROCP1 Hardstand area
3.	RF2 conveyor and transfer station	(a) Conveyor must have covers in place during operation. (b) Belt scrapers and spray bars must be operated on the conveyor to keep the belt free of filter cake build up.	As shown in Schedule 1 Figure 2 as: Conveyor extension

Monitoring during time-limited operations - general

Noise verification

10. Within 90 days of the commencement date of time-limited operations, the works approval holder must retain the services of a person qualified and experienced in environmental noise assessment and who holds a membership of the Australian Acoustical Society or the Australian Association of Acoustical Consultants to:

(a) investigate the nature and extent of noise emissions from RFP1 and RFP2 to verify the accuracy of the inputs and conclusions of the noise modelling report *Alcoa Pinjarra Filtration Phase 2 Project ENIA Report February 2023 (Wood 2023)*, which includes:

(i) measurement of sound power levels for all noise sources associated with the operation of RFP1 and RFP2 and comparison with sound power levels modelled for those noise sources,

(ii) measurement of received noise levels at receptors R3, R4 and R5 identified in Schedule 1 Figure 4; or

(iii) if access to receptors R3, R4 and R5 is unavailable, then adjacent roadside measurements at R3 Logger, R4 Logger, and R5 Logger identified in Schedule 1 Figure 5, are acceptable with measurements extrapolated to determine received noise levels at the receptors; and

(iv) record all meteorological conditions; and

(b) compile and submit to the works approval holder within 90 days of the commencement date of time limited operations a report in accordance with condition 11.

11. A report prepared pursuant to condition 10(b) is to include:

(a) a description of the methods used for monitoring noise emissions, received noise levels and if applicable extrapolating received noise levels in accordance with 10(a)(iii);

(b) details and the results of the investigation undertaken pursuant to condition 10(a);

(c) an assessment of the noise emissions from the premises, against the relevant assigned levels in the *Environmental Protection (Noise) Regulations 1997* (Noise Regulations) at receptors R3, R4, and R5 identified in Schedule 1 Figure 4 and if assigned levels are exceeded the percentage of time exceeded; and

(d) an assessment of noise emissions from the premises, against the predicted received noise levels at receptors R3, R4 and R5 detailed in *Alcoa Pinjarra Filtration Phase 2 Project ENIA Report February 2023* (Wood 2023).

12. The works approval holder must submit to the CEO a copy of the report prepared pursuant to 10(b) within 100 days of the commencement date of time-limited operations.

Compliance reporting

13. The works approval holder must submit to the CEO a report on the time-limited operations within 30 calendar days of the completion date of time-limited operations or 30 calendar days before the expiration date of the works approval, whichever is the sooner.

14. The works approval holder must ensure the report required by condition 13 includes the following:

(a) a summary of the time-limited operations, including timeframes and overview of the filter cake processing operations;

(b) a summary of complaints recorded as required by condition 15;

(c) a review of performance and compliance against the conditions of the works approval; and

(d) where the conditions of this works approval have not been met, what measures will the works approval holder take to meet them, and what timeframes will be required to implement those measures.

Records and reporting (general)

15. The works approval holder must record the following information in relation to complaints received by the works approval holder (whether received directly from a complainant or forwarded to them by the Department or another party) about any alleged emissions from the premises:

(a) the name and contact details of the complainant, (if provided);

(b) the time and date of the complaint;

(c) the complete details of the complaint and any other concerns or other issues raised; and

(d) the complete details and dates of any action taken by the works approval holder to investigate or respond to any complaint.

16. The works approval holder must maintain accurate and auditable books including the

following records, information, reports, and data required by this works approval:

(a) the works conducted in accordance with condition 1;

(b) monitoring and management actions conducted in accordance with conditions 5, 6 and 10;

(c) any maintenance of infrastructure that is performed while complying with condition 9; and

(d) complaints received under condition 15.

17. The books specified under condition 16 must:

(a) be legible;

(b) if amended, be amended in such a way that the original version(s) and any subsequent amendments remain legible and are capable of retrieval;

(c) be retained by the works approval holder for the duration of the works approval; and

(d) be available to be produced to an inspector or the CEO as required.

Definitions

In this works approval, the terms in Table 6 have the meanings defined.

Table 6: Definitions

Term	Definition
books	has the same meaning given to that term under the EP Act.
CEO	means Chief Executive Officer. CEO for the purposes of notification means: Director General Department administering the *Environmental Protection Act 1986* Locked Bag 10 Joondalup DC WA 6919 info@dwer.wa.gov.au
Department	means the department established under section 35 of the *Public Sector Management Act 1994* and designated as responsible for the administration of Part V Division 3 of the EP Act.
Environmental Compliance Report	means a report to satisfy the CEO that the conditioned infrastructure and/or equipment has been constructed and/or installed in accordance with the works approval.
Noise modelling report	means the report titled Alcoa Pinjarra Filtration Phase 2 Project ENIA Report, prepared by WOOD and dated February 2023
PM_{10}	particulate matter that is 10 micrometers or less in diameter
premises	the premises to which this licence applies, as specified at the front of this works approval and as shown on the premises map Figure 1 in Schedule 1 to this works approval.
prescribed premises	has the same meaning given to that term under the EP Act.
RFP1	Existing Residue Filtration Plant 1 (as shown in Figure 2 comprising infrastructure items labelled in yellow)
RFP2	New Residue Filtration Plant 2 (as shown in Figure 2 comprising infrastructure items labelled in red)
suitably qualified engineer	means a person who holds a tertiary academic qualification in engineering and has a minimum five years of experience working in the area of civil / construction engineering or mechanical engineering
Time Limited Operations Report	means a report to satisfy the CEO that the conditioned infrastructure and/or equipment has been operated in accordance with the works approval.
works approval	refers to this document, which evidences the grant of the works approval by the CEO under section 54 of the EP Act, subject to the conditions.
works approval holder	refers to the occupier of the premises being the person to whom this works approval has been granted, as specified at the front of this works approval.

END OF CONDITIONS

Schedule 1: Maps

Premises map

The boundary of the prescribed premises is shown in the map below (Figure 1).

Figure 1: Map of the boundary of the prescribed premises (outline in red and the filtration plant outlined in green)

Residue Filtration Plant 2 Layout

RFP1 and RFP2 layout is shown in the map below (Figure 2).

Figure 2: Residue Filtration Plant 2 site layout

Air quality monitoring location

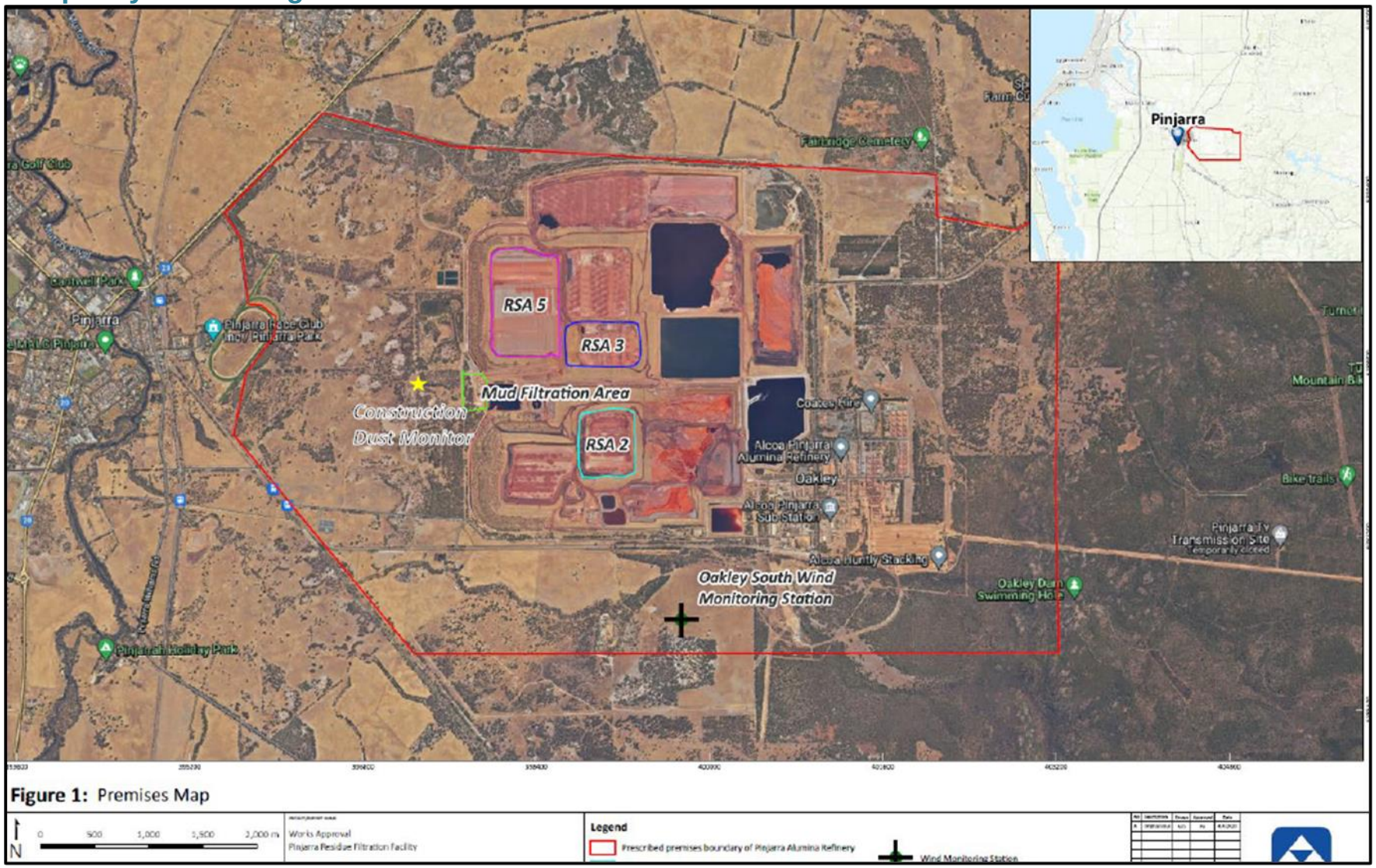

Figure 3: Site plan showing the construction phase air quality monitor location (Construction Dust Monitor).

Noise verification study receptor locations

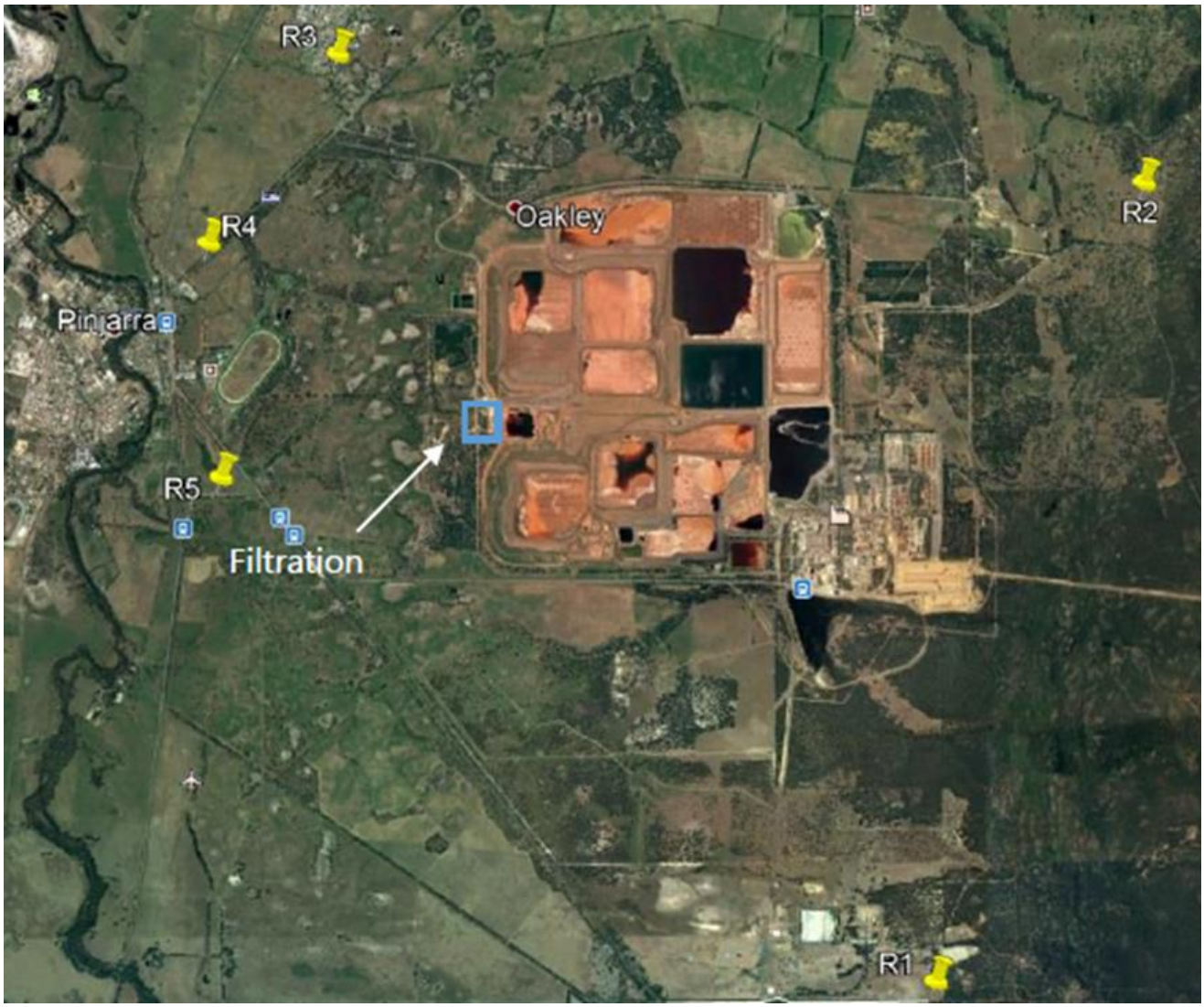

Figure 4: Noise senstive receptor location R3, R4 and R5 for noise verification monitoring.

Noise verification logger locations

Figure 5: Alternate monitoring locations for R3, R4 and R5 for noise verification monitoring.