

Chapter 32
Proposed Environmental Authority Conditions

ESMERALDA GRAPHITE PROJECT

aarc ENVIRONMENTAL SOLUTIONS
APEM Group

GRAPHINEX

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32 Proposed Environmental Authority Conditions

Schedule A – General

A1

Contaminants must not be released directly or indirectly to the receiving environment, except as permitted under the conditions of this environmental authority.

A2

This environmental authority authorises the activities listed in **Table A1 – Authorised activities and locations** to the extent that they are carried out in accordance with the:

(i) maximum disturbance area; and

(ii) location.

Table A1 – Authorised activities and locations

Domain	Maximum disturbance area (hectares)	Location (MGA2020, Zone 54)	
		Easting	Northing
Mine infrastructure area	18.1	Appendix A - Authorised disturbance footprint	
Roads	136.9		
Water management infrastructure (dams, drains, sump)	28.4		
Watercourse diversion	11.5		
Mine pit footprint	79.76		
Out-of-pit waste rock dumps	103.8		
Tailings storage facilities	633.7		
Additional disturbance[1]	1,347.6		
Total disturbance	2,413.7		

Notes:

1. *Includes buffer around infrastructure required for safe operation, and other minor disturbance requiring rehabilitation such as soil stockpile areas.*

A3

All reasonably practicable measures must be taken to prevent or minimise environmental harm caused, or likely to be caused, by the activities.

A4

Unless specifically authorised by a condition of this environmental authority, this environmental authority does not authorise any of the following acts:

(a) an act that causes serious or material environmental harm or an environmental nuisance; or

(b) an act that contravenes a noise standard; or

(c) a deposit of a contaminant, or release of stormwater run-off, mentioned in section 440ZG of the *Environmental Protection Act 1994*.

A5

Plant and equipment

An appropriately qualified person must install, operate, calibrate, and maintain the plant and equipment required to carry out the activity (including monitoring devices) in a proper and effective manner.

A6

Records of installation, calibration and maintenance of plant and equipment required to carry out the activity must be kept.

A7

Record keeping

	Unless otherwise specified by a condition of this environmental authority, records, reports and plans must be provided to the administering authority upon request in the specified format.
A8	**Chemical storage** Chemicals and fuels in containers of greater than 15 litres must be stored within a secondary containment system.
A9	**Monitoring and sampling** All monitoring and sampling required by the conditions of this environmental authority must be carried out, interpreted, and recorded by an appropriately qualified person.
A10	Unless otherwise authorised in writing by the administering authority, all laboratory analyses required under this environmental authority must be carried out by a laboratory that has National Association of Testing Authorities (NATA) accreditation for such analyses.
A11	**Environmental risk management procedures** Written procedures must be developed and implemented by an appropriately qualified person that ensures: (a) all potential risks to the environment from the carrying out of the activity are identified and assessed, including: (i) during routine operations; and (ii) outside routine operations (e.g., maintenance, start up and shut down); and (iii) during preparation, rehabilitation, and closure; and (iv) in an emergency (e.g., fire, flood or other natural disaster); and (b) for each potential risk identified, any necessary measures to prevent or minimise the potential for environmental harm are implemented; and (c) staff understand their obligations under this environmental authority and the *Environmental Protection Act 1994*; and (d) environmental risk management procedures are continually reviewed and improved, based on a reasonable risk-management approach.
A12	**Contravention of conditions** The holder of this environmental authority must notify the administering authority within twenty-four (24) hours of becoming aware, or the time when the holder ought reasonably to have become aware, of an actual or potential contravention of any condition of this environmental authority via the Pollution Hotline and include: (a) the nature and circumstances of the contravention; and (b) any immediate actions taken.
A13	The holder of this environmental authority must notify the occupiers or registered owners of affected land and any other potentially impacted stakeholder as soon as reasonably practicable and no later than twenty four (24) hours after becoming aware, or the time when the holder ought reasonably to have become aware, of the event of any emergency, incident, exceedance or release that has the potential to impact on environmental values or breaches any condition of this environmental authority concerning releases of contaminants to the environment. The notification must include the following: (a) The location of the emergency, incident, exceedance or release; (b) The date and time of the emergency, incident, exceedance or release; (c) The estimated quantity and type of any substances involved in the emergency, incident, exceedance or release; (d) The potential impacts to environmental values caused by the emergency, incident, exceedance or release; and (e) Where there is potential impact on livestock or human health, precautionary measures that should be taken.

A14	As soon as reasonably practicable but no later than twenty (20) business days of becoming aware of an actual or potential contravention of any condition of this environmental authority (or a longer period agreed to in writing by the administering authority), an investigation must be undertaken to determine: (a) the circumstances and actions that contributed to the contravention; and (b) reasonably practicable measures that will be implemented to address the cause of the contravention and to prevent it recurring.
A15	As soon as reasonably practicable but no later than twenty (20) business days of investigating a contravention under the relevant condition in this environmental authority (or a longer period agreed to in writing by the administering authority), the reasonably practicable measures identified in the investigation must be implemented.
A16	The outcome of the investigation carried out under condition A14 in this environmental authority and the reasonably practicable measures implemented under the relevant condition in this environmental authority must be recorded.
A17	**Complaints** The following details must be recorded for all complaints received: (a) date and time the complaint was received; and (b) if authorised by the person making the complaint, their name and contact details; and (c) nature and details of the complaint.
A18	As soon as reasonably practicable but no later than five (5) business days of receiving a complaint (or a longer period agreed to in writing by the administering authority), an investigation must be undertaken to determine: (a) the potential circumstances and actions on site that may have contributed to the basis of the complaint; and (b) reasonably practicable measures that will be implemented to address the complaint.
A19	As soon as reasonably practicable but no later than five (5) business days of investigating a complaint under the relevant condition in this environmental authority (or a longer period agreed to in writing by the administering authority), the reasonably practicable measures identified in the investigation must be implemented.
A20	The outcome of an investigation carried out under condition A18 of this environmental authority and the reasonably practicable measures implemented under the relevant condition of this environmental authority must be recorded.
A21	When requested by the administering authority, relevant specified monitoring must be undertaken within a reasonable timeframe nominated or agreed to by the administering authority to investigate any complaint of environmental harm. The results of the investigation (including an analysis and interpretation of the monitoring results) and abatement measures, where implemented, must be provided to the administering authority within ten (10) business days of completion of the investigation, or no later than ten (10) business days after the end of the timeframe nominated by the administering authority to undertake the investigation.
A22	**Third-party reporting** The holder of this environmental authority must: (a) within one (1) year of the commencement of this environmental authority, obtain from an appropriately qualified person, a report on compliance with the conditions of this environmental authority; and (b) obtain further such reports at regular intervals, not exceeding three (3) years, from the completion of the report referred to above; and (c) provide each report to the administering authority within ninety (90) days of its completion.
A23	Where a condition of this environmental authority requires compliance with a standard, policy or guideline published externally to this environmental authority and the standard, policy or guideline is amended or changed subsequent to the issue of this environmental authority, the holder of this environmental authority must: (a) comply with the amended or changed standard, policy or guideline within two (2) years of the amendment or

	change being made, unless a different period is specified in the amended standard, policy or guideline; and (b) until compliance with the amended or changed standard, policy or guideline is achieved, continue to remain in compliance with the corresponding provision that was current immediately prior to the relevant amendment or change.
Schedule B - Air	
B1	Unless authorised by this environmental authority, the release of contaminants to air must not cause environmental harm or an exceedance of the limits as specified in this environmental authority at a sensitive or commercial place.
B2	**Air quality – particulate matter** The activity must not cause particulate matter to exceed the following levels when measured at any sensitive place or commercial place: (a) Dust deposition of 120 milligrams per square metre per day, averaged over one month, when monitored in accordance with the most recent version of *Australian Standard AS3580.10.1 Methods for sampling and analysis of ambient air—Determination of particulate matter—Deposited matter – Gravimetric method*. (b) A concentration of particulate matter with an aerodynamic diameter of less than 10 micrometres (PM_{10}) suspended in the atmosphere of 50 micrograms per cubic metre over a 24-hour averaging time, when monitored in accordance with the most recent version of either: (i) Australian Standard AS3580.9.6 Methods for sampling and analysis of ambient air—Determination of suspended particulate matter—PM10 high volume sampler with size-selective inlet – Gravimetric method; or (ii) Australian Standard AS3580.9.9 Methods for sampling and analysis of ambient air—Determination of suspended particulate matter—PM10 low volume sampler—Gravimetric method. (c) A concentration of particulate matter suspended in the atmosphere of 90 micrograms per cubic metre over a 1-year averaging time, when monitored in accordance with the most recent version of *AS/NZS3580.9.3:2003 Methods for sampling and analysis of ambient air—Determination of suspended particulate matter—Total suspended particulate matter (TSP)—High volume sampler gravimetric method*.
B3	Air quality monitoring required by this environmental authority, must be undertaken in accordance with the latest edition of: (a) the relevant Australian Standards; or (b) a method approved by any other Australian, European or North American jurisdiction/Environmental Protection Agencies (if monitoring requirements are not described in the Australian Standards).
Schedule C – Waste	
C1	Unless otherwise permitted by the conditions of this environmental authority, all waste must be lawfully reused, recycled or removed to a facility that can lawfully accept the waste.
C2	**Waste disposal** The only waste that can be disposed of on-site is waste generated on-site and is limited to: (a) waste rock; (b) concrete; (c) tailings; (d) tyres; and (e) general waste, including construction and demolition waste, green waste, putrescible waste and commercial

	waste.
C3	**Non-Mineral Waste Management Plan** A Non-Mineral Waste Management Plan must be developed and implemented for all stages of the mining activity, and include: (a) a description of the activity that may generate waste; and (b) waste management control strategies including: (i) recording of the types and amounts of wastes generated by the activity; and (ii) segregation of the wastes; and (iii) storage of the wastes; and (iv) transport of the wastes; and (v) disposal of waste; and (vi) monitoring and reporting matters concerning the waste; and (c) the hazard characteristics of the wastes generated, including disposal procedures for regulated wastes; and (d) a program for reusing, recycling or disposing of all wastes; and (e) how the waste will be dealt with in accordance with the waste and resource management hierarchy, including a description of the types and amounts of waste that will be dealt with under each of the waste management practices in the waste management hierarchy (i.e. avoidance, reuse, recycling, energy recovery, disposal); and (f) where waste is to be disposed of on-site, how the waste will be treated, handled and disposed of in a proper and effective manner; (g) where waste is to be removed to a facility that can lawfully accept the waste, how the waste will be stored, handled and transferred in a proper and effective manner; and (h) procedures for identifying and implementing opportunities to minimise the amount of waste generated, promote efficiency in the use of resources and improve the waste management practices employed; and (i) procedures for dealing with accidents, spills, and other incidents that may impact on waste management; and (j) details of any accredited management system employed, or planned to be employed, to deal with the waste; and (k) how often the performance of the waste management practices will be assessed; and (l) indicators or other criteria on which the performance of the waste management practices will be assessed; and (m) staff training and induction to the waste management program.
C4	The Non-Mineral Waste Management Plan must be regularly reviewed and updated at intervals of no greater than five (5) years.
C5	**Mineral Waste Management Plan** A Mineral Waste Management Plan must be developed and implemented for all stages of the mining activity, and include procedures for: (a) effective management of mineral waste; (b) backfilling of the mining void to natural surface level using a combination of tailings waste co-disposed with and capped by an engineered low permeability layer, and suitable waste rock; (c) the management of seepage and leachates both during operation and post-closure; (d) maintaining records of the location and nature of all mineral waste disposed of in the mining void; and (e) rehabilitation.
C6	The Mineral Waste Management Plan must be regularly reviewed and updated at intervals of no greater than five (5) years.

C7	**Storage of tyres** Tyres stored awaiting disposal or transport for take-back and recycling, or waste-to-energy options, should be stockpiled in volumes less than 3 metres in height and 200 metres squared in area and at least 10 metres from any other tyre storage area.
C8	All reasonable and practicable fire prevention measures must be implemented, including removal of grass and other materials within a ten (10) metre radius of the scrap tyre storage area.
C9	**Disposal of tyres** Disposing of scrap tyres resulting from the mining activities in waste rock dumps and the backfilled void is acceptable, provided the material is placed as deep in the waste rock as reasonably practicable, aids long-term dump stability, and does not impede backfilled tailings.

Schedule D – Noise

D1 Noise from the mining activity must not exceed the levels identified in Table D1: Noise limits.

Table D1 – Noise limits

Noise level dBA measured as:	All days		
	Day (7am to 6pm)	Evening (6pm to 10pm)	Night (10pm to 7am)
Sensitive Place – Residences			
$L_{Aeq,adj,15min}$	40	40	35

D2 All monitoring of noise emissions from the mining activity must be undertaken when the mining activity is in operation.

D3 Vibration from the mining activity must not exceed the levels identified in **Table D2: Blasting limits**.

Table D2 – Vibration limits

Blasting noise and vibration limits	Sensitive place and commercial place criteria	
	Monday to Friday 7am to 6pm; Saturday, Sunday and Public Holidays 9am – 6pm	Other times
Airblast overpressure	115 dB (Linear peak) for 9 out of 10 consecutive blasts and not greater than 120 dB (Linear peak) at any time	No blasting
Ground vibration	5 mm/second peak particle velocity for 9 out of 10 consecutive blasts and not greater than 10 mm/second peak particle velocity at any time	No blasting

D4 The following must be recorded when undertaking monitoring of noise emissions from the mining activity:

(a) all equipment in operation at the time of the noise measurement; and

(b) the mode of operation at the time of the noise measurement.

D5 All monitoring of noise emissions from the mining activity must be undertaken in accordance with the latest edition of the Noise measurement manual (available on the Queensland government website), the relevant Australian Standard and the *Environmental Protection Regulation 2019*.

Schedule E – Groundwater

E1	Contaminants must not be released to groundwater.
E2	**Groundwater monitoring bores** The construction, maintenance, operation and decommissioning of each groundwater monitoring bore must be undertaken by an appropriately qualified person in a manner that: (a) prevents contaminants entering the groundwater; and (b) ensures representative groundwater samples from the target hydrogeological unit; and (c) maintains the hydrogeological environment within the hydrogeological unit.
E3	A bore report must be kept for each monitoring bore which includes: (a) a unique identification reference number and geographic coordinate location; and (b) construction information including but not limited to the depth of bore, depth and length of casing, depth and length of screening and bore sealing details; and (c) stratigraphy and target hydrogeological unit of the bore; and (d) depth at which groundwater was intercepted and the final standing water level (SWL) after bore development.
E4	The holder of this environmental authority must replace in a suitable location any monitoring bores that are removed as a direct result of mining activities.
E5	**Groundwater monitoring** Groundwater quality must be monitored at the locations identified in **Table E1: Groundwater monitoring locations** for quality characteristics identified in **Table E2: Interim groundwater quality triggers and limits**.

Table E1 – Groundwater monitoring locations

Bore	Easting GDA94, Zone 54	Northing GDA94, Zone 54
ESMB01S	627798	7918997
ESMB01D	627804	7918987
ESMB02S	629007	7918705
ESMB02D	629007	7918702
ESMB03	627462	7918188
ESMB04S	627861	7918550
ESMB04D	627850	7918563
ESMB05S	628485	7918127
ESMB05D	628499	7918142
ESMB06S	628552	7919064
ESMB06D	628536	7919065
ESMB07S	628401	7918643
ESMB07D	628411	7918654
ESMB17	625543	7919486
Pelican	649647	7909961
Rowe 1 (RN171489)	643470	7914726
Rowe 2 (RN109343)	638819	7919903
Rowe 3 (RN157196)	629441	7921126
Rowe 4	632968	7925635

Note Monitoring not required where a monitoring bore has been removed as a direct result of mining activities.

Table E2 – Draft groundwater quality limits

Indicator	Draft WQO	Guideline
pH	6.5-8.5	Drinking Water
Electrical Conductivity	550 µS/cm	Aquatic Ecosystems
Total Dissolved Solids	500 mg/L	Aquatic Ecosystems
Ammonia N	20 µg/L	Aquatic Ecosystems
Oxidised N	-	Aquatic Ecosystems
Organic N	-	Aquatic Ecosystems
Nitrate	1.1 mg/L	Aquatic Ecosystems
Nitrite	3 mg/L	Drinking Water
Total Nitrogen	500 µg/L	Aquatic Ecosystems
Reactive Phosphorus	4 µg/L	Aquatic Ecosystems
Total Phosphorus	10 µg/L	Aquatic Ecosystems
Dissolved Oxygen	>85%	Drinking Water
Turbidity	5 NTU	Drinking Water
Suspended Solids	10 mg/L	Aquatic Ecosystem
Sulphate	25 mg/L	Aquatic Ecosystem
Cryptosporidium	0 cysts	Drinking Water
Hardness (as $CaCO_3$)	200 mg/L	Drinking Water
Sodium	30 mg/L	Drinking Water
Chloride	250 mg/L	Drinking Water
Aluminium (Dissolved)	55 µg/L	Aquatic Ecosystems
Aluminium (Total)	200 µg/L	Drinking Water
Arsenic (Dissolved)	13 µg/L	Aquatic Ecosystems
Arsenic (Total)	10 µg/L	Drinking water
Beryllium (Dissolved)	-	Aquatic Ecosystems
Beryllium (Total)	60 µg/L	Drinking Water
Boron (Dissolved)	940 µg/L	Aquatic Ecosystems
Boron (Total)	500 µg/L	Irrigation
Cadmium (Dissolved)	0.2 µg/L	Aquatic Ecosystems
Cadmium (Total)	2 µg/L	Drinking Water

Chromium (Dissolved)	1 µg/L	Aquatic Ecosystems
Chromium (Total)	50 µg/L	Drinking Water
Cobalt (Dissolved)	1.4 µg /L	Aquatic Ecosystems
Cobalt (Total)	50 µg /L	Irrigation
Copper (Dissolved)	1.4 µg/L	Aquatic Ecosystems
Copper (Total)	200 µg /L	Irrigation
Fluoride	1,000 µg/L	Irrigation
Iron (Dissolved)	280 µg/L	Aquatic Ecosystems
Iron (Total)	0.2 mg/L	Irrigation
Lead (Dissolved)	3.4 µg/L	Aquatic Ecosystems
Lead (Total)	5 µg/L	Drinking Water
Lithium (total)	2.5 µg/L	Irrigation
Manganese (Dissolved)	1.9 mg/L	Aquatic Ecosystems
Manganese (Total)	0.1 mg/L	Drinking Water
Mercury (Dissolved)	0.6 µg/L	Aquatic Ecosystems
Mercury (Total)	1 µg/L	Drinking Water
Molybdenum (Dissolved)	34 µg/L	Aquatic Ecosystems
Molybdenum (Total)	20 µg/L	Irrigation
Nickel (Dissolved)	11 µg/L	Aquatic Ecosystems
Nickel (Total)	20 µg/L	Drinking Water
Selenium (Dissolved)	11 µg/L	Aquatic Ecosystems
Selenium (Total)	4 µg/L	Drinking Water
Uranium (Dissolved)	0.5 µg/L	Aquatic Ecosystems
Uranium (Total)	10 µg/L	Irrigation
Vanadium (Dissolved)	6 µg/L	Aquatic Ecosystems
Vanadium (Total)	100 µg/L	Irrigation
Zinc (Dissolved)	8 µg/L	Aquatic Ecosystems
Zinc (Total)	2000 µg/L	Irrigation

Note: TBA values – refer to Condition E6.

E6	The holder of this environmental authority must, no later than two months after it has obtained at least 12 months of cumulative groundwater monitoring data, apply under the *Environmental Protection Act 1994* to amend this environmental authority to impose site-specific trigger limits on each parameter identified in **Table E2 – Interim groundwater quality triggers and limits**.
E7	Mining activities must not result in groundwater quality exceeding contaminant limits specified in **Table E2: Interim groundwater quality limits** at the location of any compliance bores specified in **Table E1: Groundwater monitoring location**.
E8	If groundwater quality measured in accordance with condition E5 exceeds any of the corresponding contaminant limits in **Table E2: Interim groundwater quality triggers and limits**, the holder of this environmental authority must: (a) notify the administering authority via WaTERS within twenty-four (24) hours of becoming aware; and (b) complete an investigation into the cause of the exceedance within ten (10) business days; and (c) if the investigation carried out under part (b) determines that the mining activities are a potential cause or contributor to the exceedance; (i) notify the administering authority via WaTERS within twenty-four (24) hours of making the determination; and (ii) take immediate action to ensure compliance with the relevant condition of this environmental authority and notify the administering authority of when action has been completed. If for unforeseen technical reasons WaTERS is unavailable, please contact the Pollution Hotline.
E9	Monitoring and sampling must be carried out by an appropriately qualified person and in accordance with written procedures that address and comply with the requirements of the latest version of the Queensland Government's *'Monitoring and Sampling Manual 2018 – Environmental Protection (Water) Policy 2009'* unless otherwise approved by the administering authority.
E10	The following information must be recorded and kept in relation to all groundwater monitoring: (a) the date on which the sample was taken; and (b) the time at which the sample was taken; and (c) the monitoring bore at which the sample was taken; and (d) the results of all monitoring.
E11	The information recorded under condition E10 must be submitted to the administering authority on request.
E12	The holder must provide a quantitative uncertainty analysis of the groundwater numerical model conducted by an appropriately qualified person to the administering authority before commencing excavation of the open-cut pit.
E13	**Groundwater Monitoring Program** A Groundwater Monitoring Program must be developed, implemented and maintained by an appropriately qualified person that must include: (a) groundwater monitoring bore locations, including sufficient monitoring sites between the mine pit and receptors; (b) justification for the location of the proposed groundwater monitoring locations, including: (i) sufficient background/reference monitoring sites, that are unaffected by the mining activity authorised under this EA to allow scientifically justifiable conclusions on the level of impact from the mining activity; (ii) sufficient number of monitoring bores to enable early detection of any groundwater contamination; (c) an adequate number of monitoring bores which provides sufficient spatial coverage to enable scientifically justifiable conclusions in relation to potential environmental impacts from the mining activity.

E14	The Groundwater Monitoring Program must be reviewed annually.

Schedule F – Surface water

F1	Contaminants must not be released to any waters unless otherwise permitted by a condition of this environmental authority.
F2	Water monitoring and sampling must be carried out in accordance with the requirements of the latest version of the Queensland Government's *'Monitoring and Sampling Manual 2018 – Environmental Protection (Water) Policy 2009'* unless otherwise approved by the administering authority.
F3	The following information must be recorded for all surface water, sediment, and biological monitoring: (a) the date on which the sample or in-situ record was taken; and (b) the time at which the sample or in-situ record was taken; and (c) the location co-ordinates and description of the monitoring point at which the sample was taken; and (d) the flow rate in the receiving environment at the time of sampling; and (e) the results of all monitoring; and (f) details of any exceedances of the conditions of this environmental authority.
F4	The information recorded under condition F3 must be submitted to the administering authority on request.

F5

Surface water monitoring

Surface water quality must be monitored at the locations identified in **Table F1 – Receiving water upstream background sites and downstream monitoring points** for each quality characteristic identified **Table F2 – Interim receiving water quality objectives**.

Table F1 – Receiving water upstream background sites and downstream monitoring points

Monitoring points	Sampling	Easting (GDA 2020)	Northing (GDA 2020)
Upstream monitoring points			
UW1 (Stream Order 3 Tributary)	Water Quality and Sediment	639620	7912130
UW6 (Warrigal Creek)	Streamflow, Water Quality and Sediment	625796	7917437
UW7 (Stream Order 3 Tributary)	Water Quality and Sediment	632395	7916667
UW8 (Stream Order 3 Tributary)	Streamflow, Water Quality and Sediment	630425	7918381
Downstream monitoring points			
DW3 (Stream Order 3 Tributary)	Water Quality and Sediment	626637	7919048
DW4 (Warrigal Creek)	Water Quality and Sediment	624366	7919486
DW5 (Warrigal Creek)	Water Quality and Sediment	621982	7920554

Table F2 – Draft receiving water quality objectives

Indicator	Draft WQO	Guideline
pH	6.5-8.5	Drinking Water

Electrical Conductivity	550 µS/cm	Aquatic Ecosystems
Total Dissolved Solids	500 mg/L	Aquatic Ecosystems
Ammonia N	20 µg/L	Aquatic Ecosystems
Oxidised N	-	Aquatic Ecosystems
Organic N	-	Aquatic Ecosystems
Nitrate	1.1 mg/L	Aquatic Ecosystems
Nitrite	3 mg/L	Drinking Water
Total Nitrogen	500 µg/L	Aquatic Ecosystems
Reactive Phosphorus	4 µg/L	Aquatic Ecosystems
Total Phosphorus	10 µg/L	Aquatic Ecosystems
Dissolved Oxygen	>85%	Drinking Water
Turbidity	5 NTU	Drinking Water
Suspended Solids	10 mg/L	Aquatic Ecosystem
Sulphate	25 mg/L	Aquatic Ecosystem
Cryptosporidium	0 cysts	Drinking Water
Hardness (as $CaCO_3$)	200 mg/L	Drinking Water
Sodium	30 mg/L	Drinking Water
Chloride	250 mg/L	Drinking Water
Aluminium (Dissolved)	55 µg/L	Aquatic Ecosystems
Aluminium (Total)	200 µg/L	Drinking Water
Arsenic (Dissolved)	13 µg/L	Aquatic Ecosystems
Arsenic (Total)	10 µg/L	Drinking water
Beryllium (Dissolved)	-	Aquatic Ecosystems
Beryllium (Total)	60 µg/L	Drinking Water
Boron (Dissolved)	940 µg/L	Aquatic Ecosystems
Boron (Total)	500 µg/L	Irrigation
Cadmium (Dissolved)	0.2 µg/L	Aquatic Ecosystems
Cadmium (Total)	2 µg/L	Drinking Water
Chromium (Dissolved)	1 µg/L	Aquatic Ecosystems
Chromium (Total)	50 µg/L	Drinking Water
Cobalt (Dissolved)	1.4 µg /L	Aquatic Ecosystems

Cobalt (Total)	50 µg /L	Irrigation
Copper (Dissolved)	1.4 µg/L	Aquatic Ecosystems
Copper (Total)	200 µg /L	Irrigation
Fluoride	1,000 µg/L	Irrigation
Iron (Dissolved)	280 µg/L	Aquatic Ecosystems
Iron (Total)	0.2 mg/L	Irrigation
Lead (Dissolved)	3.4 µg/L	Aquatic Ecosystems
Lead (Total)	5 µg/L	Drinking Water
Lithium (total)	2.5 µg/L	Irrigation
Manganese (Dissolved)	1.9 mg/L	Aquatic Ecosystems
Manganese (Total)	0.1 mg/L	Drinking Water
Mercury (Dissolved)	0.6 µg/L	Aquatic Ecosystems
Mercury (Total)	1 µg/L	Drinking Water
Molybdenum (Dissolved)	34 µg/L	Aquatic Ecosystems
Molybdenum (Total)	20 µg/L	Irrigation
Nickel (Dissolved)	11 µg/L	Aquatic Ecosystems
Nickel (Total)	20 µg/L	Drinking Water
Selenium (Dissolved)	11 µg/L	Aquatic Ecosystems
Selenium (Total)	4 µg/L	Drinking Water
Uranium (Dissolved)	0.5 µg/L	Aquatic Ecosystems
Uranium (Total)	10 µg/L	Irrigation
Vanadium (Dissolved)	6 µg/L	Aquatic Ecosystems
Vanadium (Total)	100 µg/L	Irrigation
Zinc (Dissolved)	8 µg/L	Aquatic Ecosystems
Zinc (Total)	2000 µg/L	Irrigation

Note: TBA values – refer to Condition F6.

F6 The holder of this environmental authority must, no later than two months after it has obtained at least 24 months of surface water monitoring data, apply under the *Environmental Protection Act 1994* to amend this environmental authority to impose site-specific trigger limits on each water quality objective identified in **Table F2: Interim receiving water quality objectives,** and **Table F4 – Contaminant release limits and trigger levels** .

F7

If a water quality characteristic measured at a downstream monitoring site identified in **Table F1 – Receiving water upstream background sites and downstream monitoring points** exceeds any contaminant limit identified in **Table F2: Interim receiving water quality objectives**, the holder of this environmental authority must compare this result to the applicable control site and if the quality measured at a downstream compliance monitoring point is greater than the quality measured at the applicable upstream control monitoring point, complete an investigation into the cause of the deterioration in water quality and the potential for environmental harm and submit a written report to the administering authority within twenty-eight (28) days outlining:

(a) details of the investigation carried out including any assumptions and limitations of the investigation; and

(b) findings of the investigation including an explanation of the cause identified; and

(c) recommendations of the investigation; and

(d) actions taken to comply with the conditions of the environmental authority and to prevent environmental harm.

F8

Contaminant release

The release of a contaminant to waters may only occur from the release points identified in **Table F3 – Contaminant release points**.

Table F3 – Contaminant release points

Release point	Easting (GDA 2020)	Northing (GDA 2020)	Monitoring point	Receiving waters description
TBA	TBA	TBA	TBA	TBA

F9

The release of a contaminant to waters in accordance with the relevant condition in this environmental authority must not exceed the release limits stated in **Table F4 – Contaminant release limits and trigger levels** when measured at the monitoring points specified in **Table F3 – Contaminant release points**.

Table F4 – Draft contaminant release limits and trigger levels

Contaminant	Trigger levels
pH (pH Unit)	6.5-8.5
Electrical conductivity (µS/cm) (EC)	550 µS/cm
Total Dissolved Solids (TDS)	500 mg/L
Total Suspended Solids (TSS)	10 mg/L
Sodium	30 mg/L
Chloride	250 mg/L
Fluoride	1.6 mg/L
Aluminium	0.055 mg/L
Arsenic	0.013 mg/L
Zinc	0.008 mg/L
Sulfur	TBA
Copper	0.0014 mg/L
Molybdenum	0.034 mg/L
Rhenium	TBA
Tellurium	TBA
Aliphatic Hydrocarbons	TBA

	Aromatic Hydrocarbons | TBA
F10	**Streamflow monitoring** The holder of this environmental authority must ensure a stream flow gauging station/s is installed, operated, and maintained to determine and record stream flows in Warrigal Creek before commencing the activity.
F11	**Release events** The release of contaminated water to waters in accordance with conditions F8 and F9 must only take place during periods of natural flow.
F12	The daily quantity of contaminated water released from each release point must be measured and recorded at the monitoring points specified in **Table F3 – Contaminant release points**.
F13	Releases to waters must be undertaken so as not to cause scouring and erosion of the bed and banks of the receiving waters or cause a material build-up of sediment in such waters.
F14	**Notification of release event** The holder of this environmental authority must notify the administering authority via WaTERS as soon as practicable and no later than twenty-four (24) hours after commencing to release water to the receiving environment. A notification must be submitted for each release point and include the following information: (a) release commencement date/time; and (b) expected release cessation date/time; and (c) release point; and (d) release volume (estimated); and (e) release flow rate; and (f) release quality including electrical conductivity and pH; and (g) receiving water/s data including the natural flow rate and water quality; and (h) any details (including available data) regarding likely impacts on the receiving water/s. If for unforeseen technical reasons WaTERS is unavailable, please contact the Pollution Hotline.
F15	The holder of this environmental authority must notify the administering authority via WaTERS as soon as practicable (nominally within twenty-four (24) hours after cessation of a release event) of the cessation of a release notified under the relevant condition of this environmental authority and provide the following information: (a) release cessation date/time; and (b) natural flow volume in receiving water; and (c) volume of water released; and (d) details regarding the compliance of the release with the relevant conditions of this environmental authority; and (e) all in-situ water quality monitoring results; and (f) any other matters pertinent to the water release event. If for unforeseen technical reasons WaTERS is unavailable, please contact the Pollution Hotline.
F16	The holder of this environmental authority must within twenty-eight (28) days after cessation of a release event

	notified under the relevant condition of this environmental authority provide a report and supporting raw data to the administering authority via WaTERS, which must include the following information: (a) all continuous and in-situ water quality monitoring results (including laboratory analyses); and (b) any further matters pertinent to the water release event. If for unforeseen technical reasons WaTERS is unavailable, please contact the Pollution Hotline.
F17	**Release limit exceedance** If the release limits defined in **Table F4 – Contaminant release limits and trigger levels** are exceeded, the holder of this environmental authority must notify the administering authority via WaTERS within twenty-four (24) hours of receiving the results. If for unforeseen technical reasons WaTERS is unavailable, please contact the Pollution Hotline.
F18	Within twenty-eight (28) days of a release that exceeds the conditions of this authority, a report must be provided to the administering authority detailing: (a) the reason for the release; and (b) the location of the release; and (c) all water quality monitoring results (including all laboratory analyses) for the relevant release point and the monitoring point/s; and (d) any general observations; and (e) all calculations; and (f) any other matters pertinent to the water release event.
F19	**Fish passage** Waterway crossings of mapped waterways must be designed and constructed to: (a) comply with a relevant work type of the *'Accepted development requirements for operational work that is constructing or raising waterway barrier works'* (DAF 2018); (b) ensure that the road between each braided waterway channel is constructed at or near bed level; and (c) provide and maintain adequate fish passage for the life of the crossing for continued fish passage under low and high flow conditions.
F20	Before commencing construction of the permanent watercourse diversion, an environmental management plan must be developed by an appropriately qualified person and submitted to the administering authority, which provides for the adequate maintenance of fish passage.
F21	**Water Management Plan** A Water Management Plan must be developed by an appropriately qualified person and implemented for all stages of the mining activity.
F22	The Water Management Plan must be reviewed annually. The review must be documented and must: (a) include a statement that the Water Management Plan has been reviewed by an appropriately qualified person; and (b) include recommended actions to ensure actual and potential environmental impacts are effectively mitigated and managed; and (c) provide details and timelines of the actions to be taken; and (d) identify any amendments made to the Water Management Plan.

F23	A copy of the Water Management Plan must be updated within three months following each annual review and kept up to date.
F24	**Erosion and Sediment Control Plan** An Erosion and Sediment Control Plan must be developed by an appropriately qualified person and implemented for all stages of the mining activity.
F25	The Erosion and Sediment Control Plan must demonstrate how erosion and sediment control measures detailed in the plan adequately minimise the release of sediment to receiving waters and must include at least the following: (a) an assessment of the size and characteristics of all catchment areas; and (b) an assessment of relevant properties of soils and waste materials; and (c) identification of receiving waters environmental values, water quality objectives and management intent; and (d) specification of minimum design criteria for erosion and sediment control structures to achieve the management intent of receiving waters; and (e) locations and descriptions of all erosion and sediment control measures; and (f) an audit schedule to ensure erosion and sediment control measures are maintained.
F26	The Erosion and Sediment Control Plan must be reviewed annually. The review must be documented and must: (a) include a statement that the Erosion and Sediment Control Plan has been reviewed by an appropriately qualified person; and (b) assess the plan against the requirements of condition F25; and (c) include recommended actions to ensure actual and potential environmental impacts are effectively managed; and (d) provide details and timelines of the actions to be taken; and (e) identify any amendments made to the Erosion and Sediment Control Plan.
F27	A copy of the Erosion and Sediment Control Plan must be updated within three months following each annual review and kept up to date.

Schedule G – Sewage Treatment

G1 The only contaminant permitted to be released to land is treated sewage effluent in compliance with the release limits stated in **Table G1: Contaminant release limits to land.**

Table G1 – Contaminant release limits to land

Contaminant	Unit	Release limit	Limit type	Frequency
5-day Biochemical oxygen demand (BOD)1	mg/L	20	Maximum	Monthly
Total suspended solids	mg/L	30	Maximum	Monthly
Nitrogen	mg/L	3-	Maximum	Monthly
Phosphorus	mg/L	15	Maximum	Monthly
E-coli	Organisms/100m	1000	Maximum	Monthly

G2	Treated sewage effluent may only be released to land in accordance with the conditions of this approval at the following locations: (a) within the nominated area(s) identified in **Table A1 – Mining domains**; and (b) other land for the purpose of dust suppression and/or firefighting.
G3	The application of treated effluent to land must be carried out in a manner such that: (a) vegetation is not damaged; (b) there is no surface ponding of effluent; and (c) there is no run-off of effluent.
G4	If areas irrigated with effluent are accessible to employees or the general public, prominent signage must be provided advising that effluent is present and care should be taken to avoid consuming or otherwise coming into unprotected contact with the effluent.
G5	All sewage effluent released to land must be monitored at the frequency and for the parameters specified in **Table G1 – Contaminant release limits to land**.
G6	The daily volume of effluent release to land must be measured and records kept of the volumes of effluent released.
G7	When circumstances prevent the irrigation or beneficial reuse of treated sewage effluent such as during or following rain events, waters must be directed to a wet weather storage or alternative measures must be taken to store/lawfully dispose of effluent.
G8	A minimum area of 3 ha of land, excluding any necessary buffer zones, must be utilised for the irrigation and/or beneficial reuse of treated sewage effluent.
G9	Treated sewage effluent must only be supplied to another person or organisation that has a written plan detailing how the user of the treated sewage effluent will comply with their general environmental duty under section 319 of the *Environmental Protection Act 1994* whilst using the treated sewage effluent.

Schedule H – Land and Biodiversity

H1	Contaminants that will or may cause environmental harm must not be directly or indirectly released to land.
H2	Any spillage of wastes, contaminants or other materials must be promptly cleaned up. Such spillages must be cleaned up using methods that minimise the release of wastes, contaminants or materials to any stormwater drainage system, roadside gutter or waters.
H3	**Topsoil management** The holder of this environmental authority must ensure that: (a) topsoil is removed and stockpiled prior to carrying out any activity; and (b) measures are implemented to ensure that the mixing and erosion of topsoil and subsoil stockpiles is prevented; and (c) a topsoil inventory is maintained.
H4	**Vegetation Clearing** Before commencing any vegetation clearing: (a) a vegetation clearing plan must be developed by an appropriately qualified person and implemented for all stages of the mining activity; and

(b) a pre-clearance survey must be undertaken by an appropriately qualified person to minimise impacts to flora and fauna species and fauna habitat.

During vegetation clearing:

(a) an appropriately qualified spotter-catcher must be present to identify and relocate significant flora and fauna species and minimise impacts to fauna habitat; and

(b) the removal of or tampering with an animal breeding place/s is not authorised without an approved Species Management Program.

Note: Activities that disturb an animal breeding place/s may require an approved species management program pursuant to section 335(4) of the Nature Conservation (Animals) Regulation 2020*. This environmental authority does not authorise the taking of protected animals.*

H5

Prescribed environmental matters

Impacts to matters of State environmental significance as a result of carrying out the mining activity must only occur within the locations and to the extent as stated in this condition.

Table G1 – Matters of State environmental significance

Matters of State environmental significance	Regional ecosystem (RE)	Location of prescribed environmental matter	Significant residual impact extent (ha)	Offset required
Prescribed regional ecosystem that intersects with an area shown as a wetland on the vegetation management wetlands map	RE 2.3.55d	Appendix A - Authorised disturbance footprint	10.45	Yes
Prescribed regional ecosystem located within a defined distance from the defining banks of a relevant watercourse or relevant drainage feature	RE 2.3.22		8.99	Yes
	RE 2.3.26a		19.07	Yes
	RE 2.3.29b		42.15	Yes
	RE 2.5.14a		7.38	Yes
	RE 2.5.17b		16.13	Yes
	RE 2.5.18a		0.42	Yes
	RE 2.5.28a		1.90	Yes

H6

All impacts to matters of State environmental significance must be determined, documented, and mapped by an appropriately qualified person and made available to the administering authority upon request. Such records may be subject to audit by the administering authority or used to verify compliance with the conditions of this environmental authority.

H7

Records of impacts to matters of State environmental significance in the relevant condition of this environmental authority must be kept for the life of the environmental authority and include:

(a) the location, size and extent of impact; and

(b) details about the condition of the matters of State environmental significance (e.g., dominant vegetation and conservation status); and

(c) a determination of whether the impact is a significant residual impact based on the criteria in the *Queensland Environmental Offsets Policy – Significant Residual Impact Guideline, 2014*.

H8

Environmental offsets

An environmental offset must be made in accordance with the *Environmental Offsets Act 2014* and the most current version of the Queensland Environmental Offsets Policy (EPP/2015/1658), for the significant residual impact to each prescribed environmental matter requiring an offset as listed in the relevant condition of this environmental authority.

	Note: Deemed conditions provided in section 16 of the Environmental Offsets Act 2014 *also apply to this authority. Any contravention of a deemed condition will be dealt with under the* Environmental Protection Act 1994*.*
H9	The notice of election for the environmental offset referred to in condition H8, if applicable, must be provided to the administering authority no less than three months before the proposed commencement of the significant residual impacts for which the environmental offset is required, unless a lesser timeframe has been agreed to by the administering authority.
H10	**Spatial records** Spatial records sufficient to demonstrate compliance with the relevant condition of the environmental authority must be kept for the life of the environmental authority.

Schedule I – Structures

I1	The consequence category of any structure must be assessed by a suitably qualified and experienced person in accordance with the Manual for assessing consequence categories and hydraulic performance of structures [ESR/2016/1933] (DETSI 2025) at the following times: (a) prior to the design and construction of the structure, if it is not an existing structure; or (b) prior to any change in its purpose or the nature of its stored contents.
I2	A consequence assessment report and certification must be prepared for each structure assessed and the report may include a consequence assessment for more than one structure.
I3	Certification must be provided by the suitably qualified and experienced person who undertook the assessment, in the form set out in the Manual for assessing consequence categories and hydraulic performance of structures [ESR/2016/1933] (DETSI 2025).
I4	All regulated structures must be designed by, and constructed under the supervision of, a suitably qualified and experienced person in accordance with the requirements of the Manual for assessing consequence categories and hydraulic performance of structures [ESR/2016/1933] (DETSI 2025).
I5	Construction of a regulated structure is prohibited unless: (a) the holder has submitted a consequence category assessment report and certification to the administering authority; and (b) certification for the design, design plan and the associated operating procedures has been certified by a suitably qualified and experienced person in compliance with the relevant condition of this authority.
I6	Certification must be provided by the suitably qualified and experienced person who oversees the preparation of the design plan in the form set out in the Manual for assessing consequence categories and hydraulic performance of structures [ESR/2016/1933] (DETSI 2025) and must be recorded in the Register of Regulated Structures.
I7	Regulated structures must: (a) be designed and constructed in compliance with the Manual for assessing consequence categories and hydraulic performance of structures [ESR/2016/1933] (DETSI 2025). (b) be designed and constructed with due consideration given to ensuring that the design integrity would not be compromised on account of: (i) floodwaters from entering the regulated dam from any watercourse or drainage line; and (ii) wall failure due to erosion by floodwaters arising from any watercourse or drainage line.

I8	Certification by the suitably qualified and experienced person who supervises the construction must be submitted to the administering authority on the completion of construction of the regulated structure, and state that: (a) the 'as constructed' drawings and specifications meet the original intent of the design plan for that regulated structure; and (b) construction of the regulated structure is in accordance with the design plan.
I9	**Operation of a regulated structure** Operation of a regulated structure, except for an existing structure, is prohibited unless the holder has submitted to the administering authority in respect of regulated structure, all of the following: (a) one paper copy and one electronic copy of the design plan and certification of the 'design plan' (b) a set of 'as constructed' drawings and specifications; (c) certification of the 'as constructed drawings and specifications'; (d) where the regulated structure is to be managed as part of an integrated containment system for the purpose of sharing the design storage allowance (DSA) volume across the system, a copy of the certified system design plan; (e) the requirements of this authority relating to the construction of the regulated structure have been met; (f) the holder has entered the details required under this authority, into a Register of Regulated Structures; and (g) there is a current operational plan for the regulated structure.
I10	**Mandatory Reporting Level** The MRL must be marked on a regulated dam in such a way that during routine inspections of that dam, it is clearly observable.
I11	The holder must, as soon as practical and within **forty-eight (48) hours** of becoming aware, notify the administering authority when the level of the contents of a regulated dam reaches the MRL.
I12	The holder must, immediately on becoming aware that the MRL has been reached, act to prevent the occurrence of any unauthorised discharge from the regulated dam.
I13	**Design Storage Allowance** The holder must, as soon as possible and within **forty-eight (48) hours** of becoming aware that the regulated dam (or network of linked containment systems) will not have the available storage to meet the DSA volume on 1 November of any year, notify the administering authority.
I14	**Annual Inspection report** Each regulated structure must be inspected each calendar year by a suitably qualified and experienced person.
I15	At each annual inspection, the condition and adequacy of all components of the regulated structure must be assessed and a suitably qualified and experienced person must prepare an annual inspection report containing details of the assessment and include recommended actions to ensure the integrity of the regulated structure.
I16	The suitably qualified and experienced person who prepared the annual inspection report must certify the report in accordance with the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures 2016* (ESR/2016/1933) DETSI 2025.
I17	The holder must:

	(a) Within twenty (20) business days of receipt of the annual inspection report, provide to the administering authority: (i) the recommendations section of the annual inspection report; and (ii) if applicable, any actions being taken in response to those recommendations. If, following receipt of the recommendations and (if applicable) actions, the administering authority requests a full copy of the annual inspection report from the holder, provide this to the administering authority within ten (10) business days of receipt of the request.
I18	**Register of regulated dams** A Register of Regulated Dams must be established and maintained by the holder for each regulated dam as per conditions I19 and I20.
I19	The holder must ensure that the information contained in the Register of Regulated Dams is current and complete on any given day.
I20	The holder must, at the same time as providing the annual return, supply to the administering authority a copy of the records contained in the Register of Regulated Dams, in the electronic format required by the administering authority.
I21	**Decommissioning** A decommissioning plan must be submitted to the administering authority prior to decommissioning any regulated structure that has been certified by a suitably qualified and experienced person.
I22	**Hydraulic Performance of Regulated Structures** All regulated structures must comply with the hydraulic performance criteria specified in this environmental authority.
I23	Each regulated structure listed in the relevant condition in this environmental authority must: (a) meet the applicable hydraulic performance criteria listed in the relevant conditions of this environmental authority for that structure; and (b) have the Design Storage Allowance and Mandatory Reporting Level calculated in accordance with the *Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933).*
I24	The hydraulic performance criteria specified in this environmental authority are the minimum mandatory performance requirements, regulated structures must be managed in a manner that ensures compliance with all conditions of this environmental authority.

Definitions

Where a word or phrase in this document is defined in this schedule or within the document, it has its corresponding meaning. Where a word or phrase in this document is not defined in this schedule, it has the meaning given to it in (in order of priority):

- the *Environmental Protection Act 1994* (EP Act), its regulations or its environmental protection policies;
- the *Acts Interpretation Act 1954*;
- the Macquarie Dictionary (taking account of the context in which the word or phrase is used in this document).

For example, environmental value, environmental harm, environmental nuisance, material environmental harm, serious environmental harm and relevant act are defined in the EP Act and groundwater is defined in the Environmental Protection Regulation 2019.

Defined words or phrases in the singular include the plural and vice versa.

Affected land means land likely to be affected by the event, incident, exceedance or release e.g. land adjacent to the tenure or connected by a watercourse or groundwater aquifer.

Ambient in relation to air quality means the immediate and extended surroundings of the activity or receiving environment.

Animal breeding place has the meaning in Schedule 7 of the Nature Conservation (Animals) Regulation 2020.

Annual inspection report means an assessment prepared by a suitably qualified and experienced person containing details of the assessment against the most recent consequence assessment report and design plan (or system design plan);

(a) against recommendations contained in previous annual inspections reports;

(b) against recognised dam safety deficiency indicators;

(c) for changes in circumstances potentially leading to a change in consequence category;

(d) for conformance with the conditions of this authority;

(e) for conformance with the 'as constructed' drawings;

(f) for the adequacy of the available storage in each regulated dam, based on an actual observation or observations taken after 31 May each year but prior to 1 November of that year of accumulated sediment, state of the containment barrier and the level of liquids in the dam (or network of linked containment systems);

(g) for evidence of conformance with the current operational plan.

ANZG 2020 means ANZECC and ARMCANZ, 2020, *Australian and New Zealand Guidelines for Fresh and Marine Water Quality,* This is available at https://www.waterquality.gov.au/anz-guidelines.

Appropriately qualified person (AQP) means a person who has professional qualifications, training, skills or experience relevant to the nominated subject matter and can give authoritative assessment, advice and analysis on performance relating to the subject matter using the relevant protocols, standards, methods or literature.

Approved species management program has the meaning in Part 6, section 335(4) of the Nature Conservation (Animals) Regulation 2020.

Assessed or assessment by a suitably qualified and experienced person in relation to a consequence assessment of a dam, means that a statutory declaration has been made by that person and, when taken together with any attached or appended documents referenced in that declaration, all of the following aspects are addressed and are sufficient to allow an independent audit of the assessment:

(a) exactly what has been assessed and the precise nature of that determination;

(b) the relevant legislative, regulatory and technical criteria on which the assessment has been based;

(c) the relevant data and facts on which the assessment has been based, the source of that material, and the efforts made to obtain all relevant data and facts; and

(d) the reasoning on which the assessment has been based using the relevant data and facts, and the relevant criteria.

Becoming aware means when the environmental authority holder or any person employed/contracted by the environmental authority holder to undertake the authorised activity:

(a) observes or is notified of information that reasonably confirms an actual or potential contravention; or

(b) receives sampling results or other data from a third-party source that confirms a contravention whether directly or via email.

Certifying, certify or certified have a corresponding meaning as 'certification'

Certification, with respect to:

(a) watercourse diversions, means assessed and approved by a suitably qualified and experienced person.

(b) 'as constructed' drawings and specifications, the certification must be by the suitably qualified person who supervised the construction of the watercourse diversion, or re-establishment of the watercourse.

Certification, with respect to regulated structures means assessment and approval must be undertaken by a suitably qualified and experienced person in relation to any assessment or documentation required by the *Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933),* including design plans, 'as constructed' drawings and specifications, construction, operation or an annual report regarding regulated structures, undertaken in accordance with the Board of Professional Engineers of Queensland Policy Certification by RPEQs (ID: 1.4 (2A)).

Certification by an appropriately qualified and experienced person means that a statutory declaration has been made by that person and, when taken together with any attached or appended documents referenced in that declaration, all of the following aspects are addressed and are sufficient to allow an independent audit at any time:

(a) exactly what is being certified and the precise nature of that certification;

(b) the relevant legislative, regulatory and technical criteria on which the certification has been based;

(c) the relevant data and facts on which the certification has been based, the source of that material, and the efforts made to obtain all relevant data and facts;

(d) the reasoning on which the certification has been based using the relevant data and facts, and the relevant criteria.

Chemical means:

(a) an agricultural chemical product or veterinary chemical product within the meaning of the *Agricultural and Veterinary Chemicals Code Act 1994* (Commonwealth), or

(b) a dangerous good under the Australian Code for the Transport of Dangerous Goods by Road and Rail approved by the Australian Transport Council, or

(c) a lead hazardous substance within the meaning of the *Workplace Health and Safety Regulation 1997*, or

(d) a drug or poison in the Standard for the Uniform Scheduling of Drugs and Poisons prepared by the Australian Health Ministers' Advisory Council and published by the Commonwealth, or any substance used as, or intended for use as:

  (i) a pesticide, insecticide, fungicide, herbicide, rodenticide, nematocide, miticide, fumigant or related product, or

  (ii) a surface-active agent, including, for example, soap or related detergent, or

  (iii) a paint solvent, pigment, dye, printing ink, industrial polish, adhesive, sealant, food additive, bleach, sanitiser, disinfectant, or biocide, or

  (iv) a fertiliser for agricultural, horticultural or garden use, or

  (v) a substance used for, or intended for use for mineral processing or treatment of metal, pulp and paper, textile, timber, water or wastewater, or

  (vi) manufacture of plastic or synthetic rubber.

Commercial place means a workplace used as an office or for business or commercial purposes, which is not part of the activity and does not include employees' accommodation or public roads.

Compliance bore refers to a groundwater monitoring bore which is the subject of compliance requirements for groundwater quality and/or level.

Construction or **constructed,** in relation to:

(a) a regulated structure, includes building a new regulated structure and lifting or otherwise modifying an existing regulated structure, but does not include investigations and testing necessary for the purpose of preparing a design plan.

(b) in relation to watercourse diversions, is the process of building, or modifying an existing diversion, but does not include investigations and testing necessary for the purpose of preparing a design plan.

Disturbance of land includes:

(a) compacting, removing, covering, exposing or stockpiling of earth;

(b) removal or destruction of vegetation or topsoil or both to an extent where the land has been made susceptible to erosion;

(c) carrying out mining within a watercourse, waterway, wetland or lake;

(d) the submersion of areas by tailings or hazardous contaminant storage and dam/structure walls;

(e) temporary infrastructure, including any infrastructure (roads, tracks, bridges, culverts, dam/structures, bores, buildings, fixed machinery, hardstand areas, airstrips, helipads etc) which is to be removed after the activity has ceased;

(f) releasing of contaminants into the soil or underlying geological strata.

However, the following areas are not included when calculating areas of 'disturbance':

(g) areas off lease (e.g. roads or tracks which provide access to the mining lease);

(h) areas previously disturbed which have achieved the rehabilitation outcomes;

(i) by agreement with the administering authority, areas previously disturbed which have not achieved the rehabilitation objective(s) due to circumstances beyond the control of the mine operator (such as climatic conditions);

(j) areas under permanent infrastructure. Permanent infrastructure includes any infrastructure (roads, tracks, bridges, culverts, dam/structures, bores, buildings, fixed machinery, hardstand areas, airstrips, helipads etc) which is to be left by agreement with the landowner;

(k) disturbance that pre-existed the grant of the tenure.

DSA means design storage allowance.

Environmental offset has the meaning in section 7 of the *Environmental Offsets Act 2014*.

Holder, for a mining tenement, means a holder of the tenement under the *Mineral Resources Act 1989*, and the holder of the associated environmental authority under the *Environmental Protection Act 1994*.

Hydrogeological unit is any soil or rock unit or zone that by virtue of its hydraulic properties has a distinct influence on the storage or movement of groundwater.

Infrastructure means water storage dams, levees, roads and tracks, buildings and other structures built for the purpose of the activity.

Land means land excluding waters and the atmosphere, that is, the term has a different meaning from the term as defined in the *Environmental Protection Act 1994.* For the purposes of the *Acts Interpretation Act 1954,* it is expressly noted that the term 'land' in this environmental authority relates to physical land and not to interests in land.

Licensed place means the mining activities carried out at the mining tenements of this environmental authority.

m means metres.
Minimise is to reduce to the smallest possible amount or degree.

Modification or modifying (see definition of 'construction').
Monitoring bore means a groundwater bore that provides access to groundwater for measuring its quality and level, and allows groundwater samples to be withdrawn for laboratory analysis.
MRL means mandatory reporting level.

NATA means National Association of Testing Authorities, Australia.

Pollution Hotline means the administering authority's 24-hour reporting service email pollutionhotline@des.qld.gov.au or telephone 1300 130 372.

Point source emissions mean emissions to air from a stationary source that are exhausted into a vent (excluding roof vents) or stack and are emitted through a single point source into the atmosphere. The term excludes fugitive emissions, emissions from ventilation shafts and steam vents and transportable point sources such as pumps and generators.

Prescribed environmental matters has the meaning in section 10 of the *Environmental Offsets Act 2014*, limited to the matters of State environmental significance listed in schedule 2 of the Environmental Offsets Regulation 2014.

Receiving environment in relation to an activity that causes or may cause environmental harm, means the part of the environment to which the harm is, or may be, caused. The receiving environment includes (but is not limited to):

(a) a watercourse;

(b) groundwater;

(c) an area of land that is not specified in Schedule A – Table A1 (Authorised Activities) of this environmental authority.

The term does not include land that is specified in Schedule A – Table A1 (Authorised Activities) of this environmental authority.

Receiving waters means the waters into which this environmental authority authorises releases of contaminated water.

REMP means Receiving Environment Monitoring Program.

Representative means a sample set which covers the variance in monitoring or other data either due to natural changes or operational phases of the mining activities.

Sensitive place includes the following and includes a place within the curtilage of such a place reasonably used by persons at that place:

(a) a dwelling, residential allotment, mobile home or caravan park, residential marina or other residential premises; or

(b) a motel, hotel or hostel; or

(c) a kindergarten, school, university or other educational institution; or

(d) a medical centre or hospital; or

(e) a protected area under the *Nature Conservation Act 1992*, the *Marine Parks Act 2004* or a World Heritage Area; or

(f) a public park or garden; or

(g) for noise, a place defined as a sensitive receptor for the purposes of the Environmental Protection (Noise) Policy 2019.

Significant residual impact has the meaning in section 8 *Environmental Offsets Act 2014*.

Suitably qualified and experienced person is as defined in Definitions, within the Guideline: Works that interfere with water in a watercourse for a resource activity— watercourse diversions authorised under the Water Act 2000 (OSW/2019/4599 Version 2.00 05/02/2019) or subsequent versions.

The Act means the *Environmental Protection Act 1994*.

µS/cm means micro siemens per centimetre.

Water is defined under Schedule 4 of the *Water Act 2000*.

Watercourse has the meaning in Schedule 4 of the *Environmental Protection Act 1994* and means:

(a) a river, creek or stream in which water flows permanently or intermittently:

(i) in a natural channel, whether artificially improved or not; or

(ii) in an artificial channel that has changed the course of the watercourse

(b) watercourse includes the bed and banks and any other element of a river, creek or stream confining or containing water

Waters includes all or any part of a creek, river, stream, lake, lagoon, swamp, wetland, unconfined surface water, unconfined water in natural or artificial watercourses, bed, and bank of any waters, non-tidal or tidal waters (including sea), stormwater channel, stormwater drain, roadside gutter, stormwater run-off, water confined in natural or artificial structures and undergroundwater (or groundwater).

WaTERS Water Tracking and Electronic Reporting System or subsequent updated system, used to submit monitoring data and notify the Queensland Government. It is available at www.waters.des.qld.gov.au or by contacting psd.help@qld.gov.au.

Water quality means the chemical, physical and biological condition of water.

Water Quality objective (WQO) - A numerical concentration limit or narrative statement that has been established to support and protect the designated uses of water at a specified site. It is based on scientific criteria or water quality guidelines but may be modified by other inputs such as social, cultural or economic constraints. WQOs are specified in the *Environmental Protection (Water and Wetland Biodiversity) Policy 2019* (Part 4, Section 11).

Appendix A. Authorised disturbance footprint

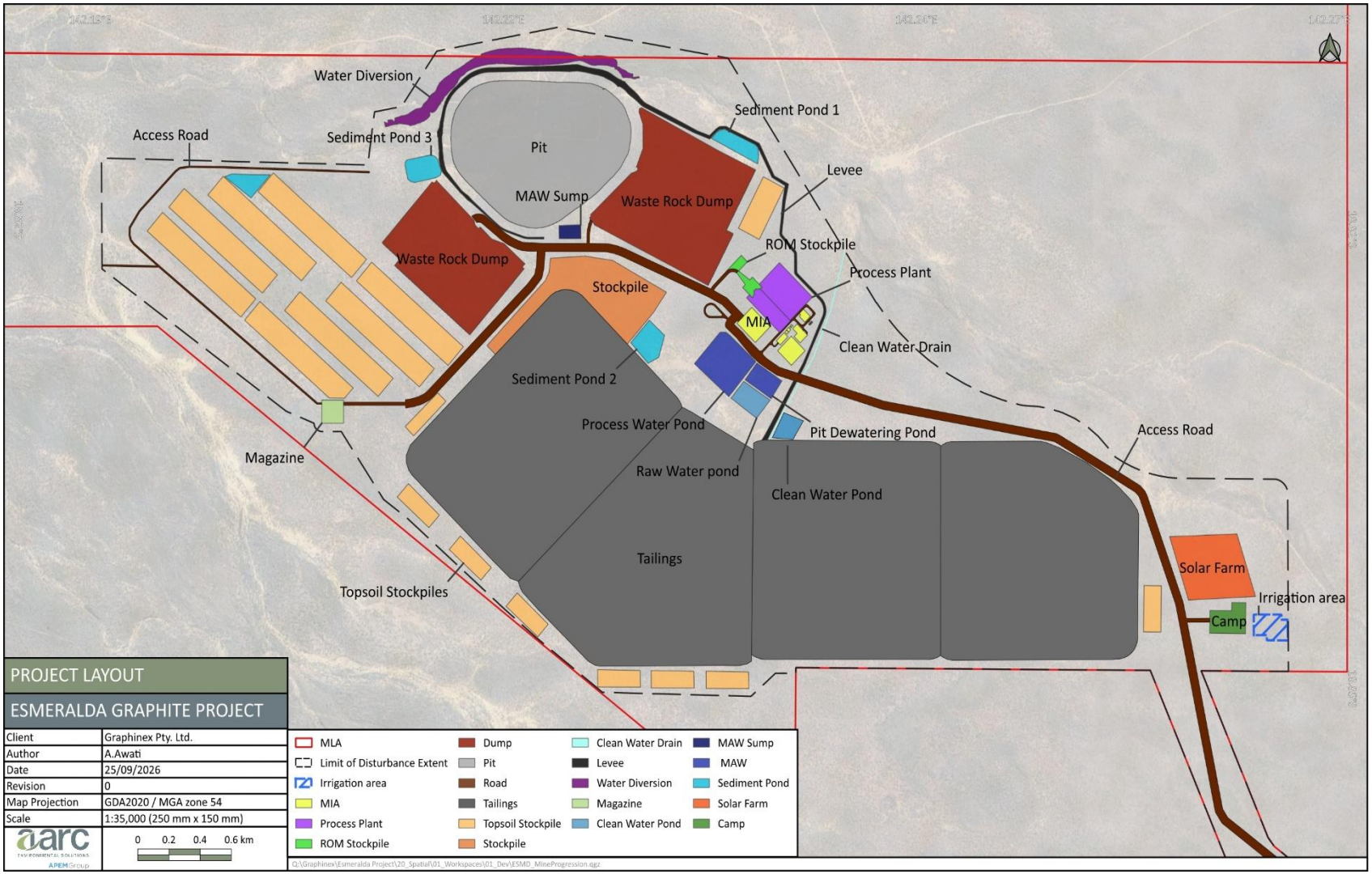


Figure 1: Project disturbance area

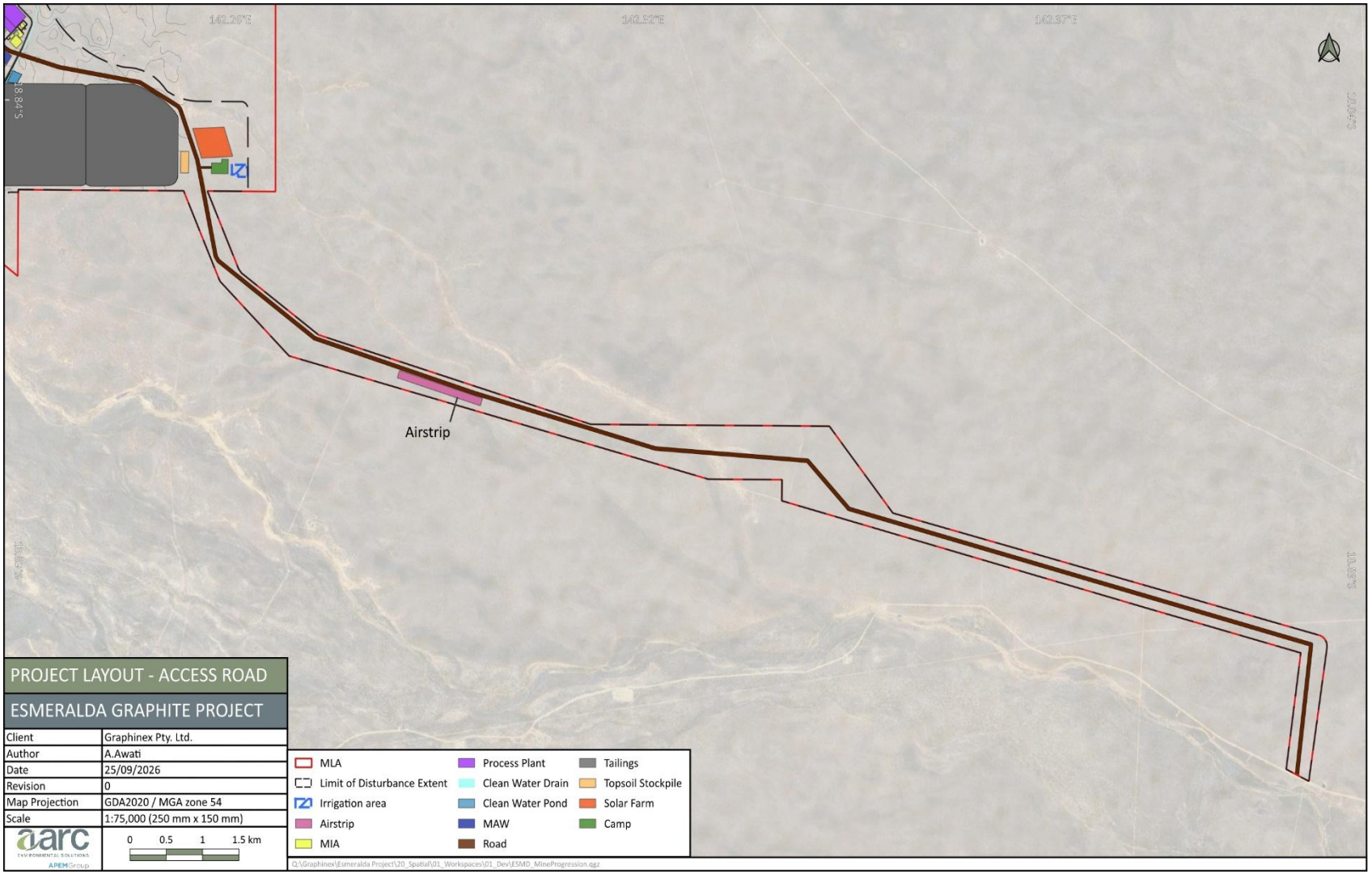


Figure 2. Project disturbance area - access road

Appendix B. REMP monitoring locations

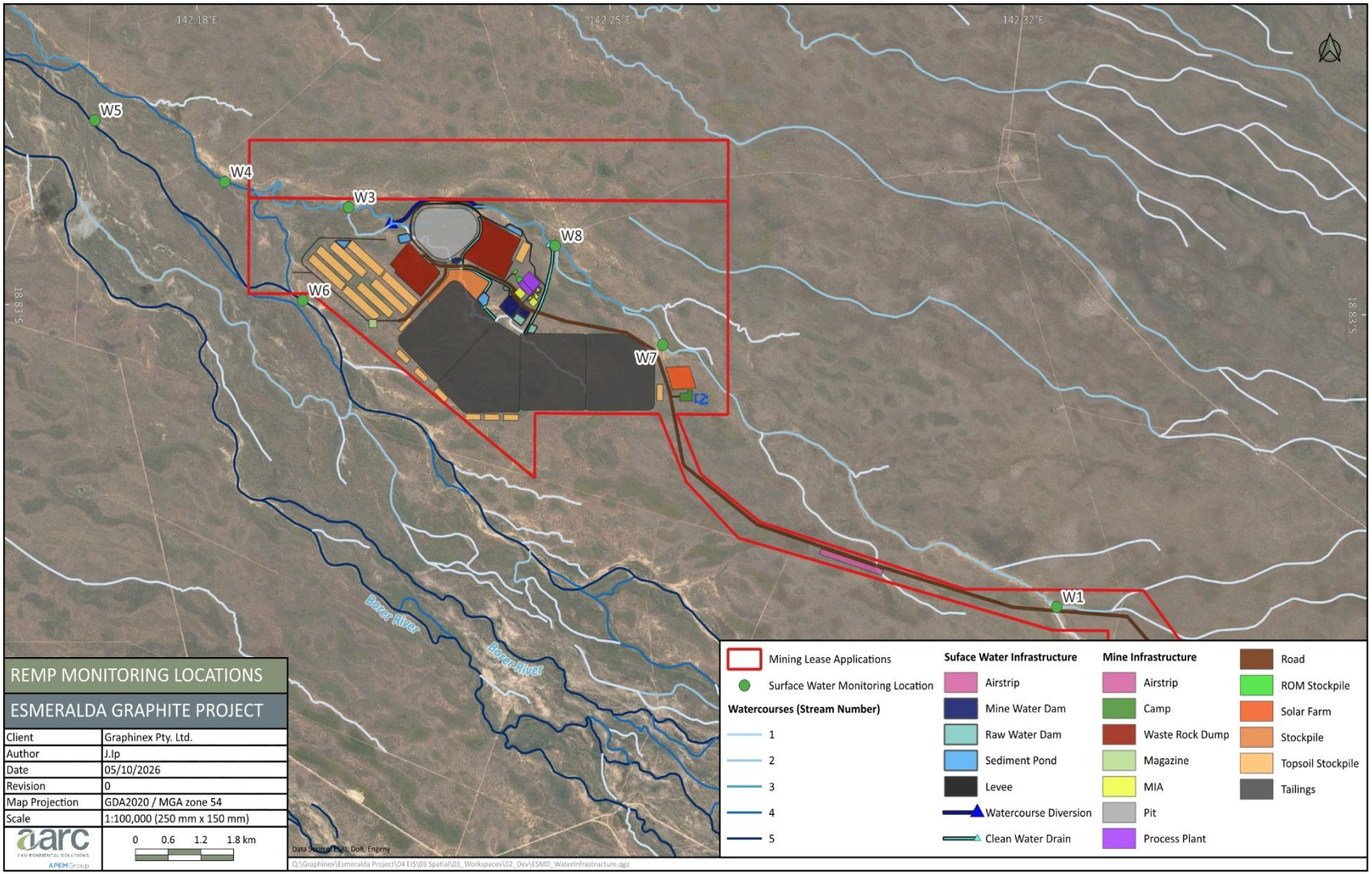


Figure 3. Surface water monitoring locations