Government of Western Australia
Department of Water and Environmental Regulation

Licence

Licence number	L8918/2015/1
Licence holder	Keysbrook Leucoxene Pty Ltd
ACN	137 091 297
Registered business address	1 Alumina Road EAST ROCKINGHAM WA 6168
DWER file number	INS-0001927
Duration	19/11/2015 to 22/11/2043
Date of amendment	22 December 2025
Premises details	Keysbrook Mineral Sands Mine 1424 Hopeland Road NORTH DANDALUP WA 6207 Legal description Lots 101, 103, 104 & 105 on Diagram 92169, Lot 300 on Plan 31012, Lots 31, 32, 33 & 34 on Plan 408493, Lots 56, 57, 59, 63 & 64 on Plan 739, Lot 20 on Plan 41621, Lot 201 on Plan 68316, Lots 507 & 508 on Diagram 91207.

Prescribed premises category description (Schedule 1, *Environmental Protection Regulations 1987*)	**Assessed production capacity**
Category 6: Mine dewatering: premises on which water is extracted and discharged into the environment to allow mining of ore.	250,000 tonnes per annual period
Category 8: Mineral sands mining or processing: premises on which mineral sands ore is mined, screened, separated or otherwise processed.	5,250,000 tonnes per annual period

This amended licence is granted to the licence holder, subject to the attached conditions, 22 December 2025, by:

Digitally signed by Tanya Johnston
Date: 2025.12.22 15:38:54 +08'00'

Tanya Johnston
A/MANAGER, RESOURCE INDUSTRIES
ENVIRONMENTAL REGULATION (STATEWIDE DELIVERY)
an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

Licence history

Date	Instrument	Summary of changes
27/03/2014	W5386/2013/1	Works approval issued to MZI Resources for mine establishment.
19/11/2015	L8918/2015/1	Initial licence issued to Keysbrook Leucoxene Pty Ltd to authorise mining operations.
03/11/2016	L8918/2015/1	Amendment Notice 1 – upgrades to WCP to include additional spiral circuit.
24/01/2020	L8918/2015/1	Licence amendment to expand the premises boundary to align with the approved mining area under MS 810, and other administrative changes.
06/04/2020	L8918/2015/1	Licence amendment to increase water discharge limit to 250,000 tonnes per year.
16/05/2023	L8918/2015/1	Department initiated amendment to realign the annual fee period and to extend expiry date.
31/07/2024	L8918/2015/1	Licence amendment to extend the mining footprint, add discharge points on Nambeelup Brook North and Dirk Brook Tributary, revised ground and surface water monitoring points and reduced premises boundaries.
22/12/2025	L8918/2015/1	Licence amendment for the Western Extension to the premises and assessment of environmental factors previously regulated under the Ministerial Statement (dust emissions and potential acid sulfate soils).

Interpretation

In this licence:

(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 means the version of the standard, guideline, or code of practice in force at the time of granting of this licence and includes any amendments to the standard, guideline or code of practice which may occur from time to time during the course of the licence;

(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 licence requires specific conditions to be met but does not provide any implied authorisation for other emissions, discharges, or activities not specified in this licence.

Licence conditions

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

Construction works

1. The licence holder must ensure that where infrastructure listed in Table 1 is required to be constructed, it is done so in accordance with the design and construction requirements outlined in Table 1.

Table 1: Works infrastructure requirements

Infrastructure	Requirements (design and construction)
In-pit tailings storage facilities	• Must be constructed within previous mine voids or on-mine-path; • Embankment walls must be constructed with clayey sand or similar with angle of repose for the outer pond wall being minimum 1:2 (V:H); • Height of embankment walls must not exceed 2.0 metres above natural ground level;
Pipelines carrying clay slimes, sand tailings and return water	Must be constructed with: • Automatic cut-outs in the event of a pipe failure; OR • Secondary containment sufficient to contain any spill for a period equal to the time between routine inspections; OR • Telemetry systems and pressure sensors along pipelines to allow detection of leaks and failures;

Infrastructure and equipment

2. The licence holder must ensure the infrastructure specified in Table 2 is maintained in good working order and operated in accordance with the requirements specified in that table.

Table 2: Infrastructure and equipment controls

	Infrastructure / equipment	Operational requirements
	Mining infrastructure and equipment	
1	Process plant / WCP	• Design capacity of plant – 600 tph; • Cladding must be maintained to ground level on all facades; • All pumps must be enclosed;
2	Mining unit / MUP	• None specified;
3	Pipelines carrying ore	• Must be equipped with telemetry systems and pressure sensors along pipelines to allow the detection of leaks and failures;
4	Process water pond(s)	• Must be lined to achieve a permeability of at least $1x10^{-9}$ m/s (or equivalent); and • Flow metering device must be installed on overflow point;
5	Return water settling pond	• Flow metering device must be installed on pump;
6	HMC stockpile pad	• Must be constructed with compacted overburden or similar; • Drainage must be designed to divert surface water runoff for collection and return to the process water pond.
	Tailings infrastructure	
1	In-pit tailings storage facilities	• Supernatant water must be collected and pumped to the process water pond(s); • Water levels must be maintained at least 500 mm below the top of the embankment wall; and • Must maintain a safety bund around the perimeter of active pits being tailed, as containment redundancy;

2	Pipelines carrying tailings and return water	• Must be equipped with telemetry systems and pressure sensors along pipelines to allow the detection of leaks and failures;
	Stormwater infrastructure	
1	Diversion channels and drains	• Must maintain a network of diversion channels and drains to divert all stormwater runoff from disturbed areas within the Premises to allow for collection and reuse in processing; • The licence holder must ensure that clean stormwater is diverted around operational areas and potentially contaminated / contaminated stormwater is retained onsite.
	Rehabilitation	
1	Overburden/topsoil stockpiles	• Must be stabilized to prevent dust lift-off where there is a risk of dust affecting sensitive receptors.

3. The licence holder must undertake inspections of the scope and type and at the corresponding frequency specified in Table 3.

4. Where any inspection required by condition 3 identifies that an appropriate level of environmental protection is not being maintained, the licence holder must:

(a) take corrective action to mitigate adverse environmental consequences as soon as practicable; and
(b) maintain a written log of all inspections undertaken, with each inspection signed off by the person who conducted the inspection.

Table 3: Inspection of infrastructure requirements

Column 1	**Column 2**	**Column 3**
Scope of inspection	**Type of inspection**	**Frequency of inspection**
Pipelines carrying ore and tailings	Visual integrity and leak assessment	Daily whilst operating; Monthly if not operating
Decant water pipelines		
In-pit tailings storage facilities	Visual integrity, leak assessment and freeboard capacity	
Process water discharge points (stream banks)	Visual for signs of erosion	Weekly when discharging

Dust emissions

5. The licence holder must ensure that no visible dust generated from the premises crosses the boundary of the premises.

6. The licence holder must not mine within 300m of any occupied residential premises.

7. The licence holder must ensure that the dust management actions specified in Table 4 are implemented to minimise dust emissions in accordance with the requirements specified in Table 4.

Table 4: Dust management actions

Activity	**Requirement**
General	• Water or slime carts must be available and utilised to wet down during mining and rehabilitation activities at all times to minimize dust emissions. • Must utilise covers, water sprays or chemical stabilisers to minimise dust liftoff from stockpiles and open areas. • Must limit vehicle speeds on the premises to minimize dust

Activity	Requirement
	generation. • Must implement additional restrictions on vehicle speeds and increase dust suppression when winds are predicted to be in excess of 23km per hour. • Must use weather forecasts to identify high-risk conditions for dust generation and implement additional dust management controls. • Must use real-time dust monitoring and alerts to inform dust management actions. • Must cease mining activities if dust suppression measures do not sufficiently reduce the risk of impacting sensitive receptors.
Rehabilitation	• Must utilise water sprays or chemical stabilisers to minimise dust liftoff from open areas. • Water or slime carts must be available to wet down areas throughout all stages of rehabilitation • Sowing of dust crops must be prioritized on open areas prior to final rehabilitation

Acid sulfate soils management

8. The licence holder must ensure that all soils are managed to prevent potential acid sulfate soils (PASS) from deteriorating groundwater quality on or surrounding the premises.

9. The Licence Holder must, at a minimum, manage potential acid sulfate soils in accordance with the requirements specified in Table 5.

Table 5: Potential acid sulfate soils controls

Activity	Requirement

PASS screening	• Testing for pH_F and pH_{FOX} must be conducted during all mine path excavation – on a weekly basis at a minimum;
	• In addition to the weekly sampling detailed above, soil material that shows indicators of PASS (such as a dark colour or suspected coffee rock) must be tested in the field for pH_F and pH_{FOX};
	• Samples that return a
	  ○ pH_F equal to or less than 4.0;
	  ○ pH_{FOX} equal to or less than 3.0; or
	  ○ a difference between pH_F and pH_{FOX} of 3 or more pH units;
	must undergo a full Suite 2 (CRS) analysis in accordance with the *Identification and investigation of acid sulfate soils and acidic landscapes, (DWER 2015)*

Suite 2 (CRS) analysis – to be completed in accordance with the *Identification and investigation of acid sulfate soils and acidic landscapes, (DWER 2015)* and *National Acid Sulfate Soils Guidance: National*	• When a Suite 2 - Chromium Reducible Sulfur (S_{Cr}) analysis is required to be undertaken due to positive PASS screening results (as outline above), a sufficient number of soil samples must be tested such that a qualified geologist can quantify the volume of PASS that has been encountered; • Tailings must undergo a Suite 2 - Chromium Reducible Sulfur (S_{Cr}) analysis on a monthly basis; • Soil and tailings that return a Net Acidity of greater than 0.03% require selective handling and neutralisation in accordance with the PASS management actions (below). Where net acidity is calculated as:

Activity	Requirement
acid sulfate soils identification and laboratory methods manual, (Sullivan et al., 2018)	▪ net acidity = potential (S_{CR}) + actual (s-TAA) + retained acidity (s-S_{NAS}) when pH_{KCl} is ≤ 4.5 (i.e. acidic conditions) ▪ net acidity = potential (S_{CR}) + actual (s-TAA) when pH_{KCl} is > 4.5 and ≤ 6.5 (i.e. near neutral conditions) ▪ net acidity = potential (S_{CR}) when pH_{KCl} is > 6.5 (i.e. alkaline conditions)
PASS management actions	• All PASS must be treated with a neutralisation agent at sufficient rates to fulfil the requirements of the PASS neutralisation validation requirements (below); • PASS that has been neutralised must be back-filled to an open pit as soon as possible; • PASS that has been neutralised and cannot be immediately back-filled to an open pit must be stored on a limestone treatment pad; • PASS ore that cannot be processed within 70 hours must be treated with a neutralisation agent at sufficient rates to fulfil the requirements of the PASS neutralisation validation requirements (below).
PASS tailings management actions	• PASS tailings must have additional neutralisation agent added during disposal to meet the PASS neutralisation validation requirements (below);
PASS neutralisation validation	The following performance criteria must be met to confirm effective treatment of PASS: • the samples have a pH_{FOX} of at least 5, to indicate that there is neutralising capacity greater than existing plus potential acidity of the soil; • soil pH_F must be in the range 6.0 to 8.5; • the neutralising material must appear well blended with the soil; • excess neutralising agent must remain within the soil until all acid generation reactions are complete and the soil has no further capacity to generate acidity. • measurements of TPA should be less than the limits of reporting. • if soils fail the above validation, additional neutralisation needs to be applied until results comply with performance criteria.

Disposal of mine tailings

10. The licence holder must ensure that tailings are deposited in accordance with the requirements and at the location(s) specified in Table 6.

Table 6: Tailings disposal requirements

Emission	Disposal requirements
Sand tailings from the WCP	Must be: • deposited directly into mined pits using cyclone stackers; or • blended with clay slimes and pumped as a wet slurry to mined pits;
Clay slimes from the thickener	Must be: • thickened and blended with sand tailings and pumped as a wet slurry to mined pits; or • used as dust suppressant on exposed areas within the Premises;
Picton tails	Must be blended with WCP tailings for disposal in mined pits as a wet slurry.

11. The licence holder must ensure the radioactivity of tailings deposited in accordance with

condition 10, as averaged over each processing campaign at Picton, does not exceed the following:

(a) 244 ppm Thorium; and
(b) 79 ppm Uranium.

Disposal of process water

12. The licence holder must ensure that all mine dewatering effluent, decant water and potentially contaminated / contaminated stormwater is captured and only discharged as process water to the discharge points authorised in condition 13.

13. The licence holder must ensure that where excess process water is required to be discharged to the environment, it is done so in accordance with the requirements specified in Table 7.

Table 7: Process water disposal requirements

Source	Discharge point reference as shown in Figure 1, schedule 1	Description	Discharge limit
Process water pond (third dam)	W1 – overflow point from process water pond	Water flows into Balgobin Brook South, via a lined spillway during the winter/spring period only	250,000 tonnes per annual period (combined)
Return water settling pond[1]	W2.7, W2.8 & W2.14 - discharge points on Nambeelup Brook North W2.9, W2.12 & W2.13 – discharge points on the Dirk Brook Tributary W2.10 & W2.11 discharge points on Balgobin Brook South	Water pumped to the nearest emergency discharge location on Nambeelup Brook North, Balgobin Brook South or Dirk Brook Tributary during the winter/spring period only	

Note 1: May be relocated in line with mining activities, and therefore not depicted in Figure 1, Schedule 1.

14. Until 31 July 2026, the licence holder must ensure that emissions from the discharge points listed in Table 7 do not exceed the limit for the corresponding parameter in Table 8 when monitored in accordance with condition 19.

Table 8: Process water discharge limits

Discharge point references as shown in Figure 1, Schedule 1	Monitoring point references as shown in Figure 1, Schedule 1	Parameter	Limit
W1	Process water pond (third dam)	pH[1]	5.5 – 8.5
		Electrical conductivity @25C[1]	2,500 µS/cm
W2.7 to W2.14	Return water settling pond[2]	Total titratable acidity[1]	40 mg/L (upper)
		Total suspended solids[1]	80 mg/L (upper)

Note 1: In-field, non-NATA accredited analysis permitted.
Note 2: May be relocated in line with mining activities, and therefore not depicted in Figure 1, Schedule 1

15. From 1 August 2026, the licence holder must ensure that emissions from the discharge points listed in Table 7 do not exceed the limit for the corresponding parameter in Table 9 when monitored in accordance with condition 19.

Table 9: Process water discharge limits

Discharge point references as shown in Figure 1, Schedule 1	Monitoring point references as shown in Figure 1, Schedule 1	Parameter	Limit
W1	Process water pond (third dam)	pH[1]	6.5 – 8.5
		Electrical conductivity @25C[1]	1,500 µS/cm
W2.7 to W2.14	Return water settling pond[2]	Total titratable acidity[1]	40 mg/L (upper)
		Total suspended solids[1]	40 mg/L (upper)

Note 1: In-field, non-NATA accredited analysis permitted.
Note 2: May be relocated in line with mining activities, and therefore not depicted in Figure 1, Schedule 1

Monitoring (general)

16. The licence holder must ensure that:

(a) all water samples are collected and preserved in accordance with AS/NZS 5667.1;
(b) all surface water sampling is conducted in accordance with AS/NZS 5667.6;
(c) all groundwater sampling is conducted in accordance with AS 2531 and AS/NZS 5667.11; and
(d) all laboratory samples are submitted to and tested by a laboratory with current NATA accreditation for the parameters being measured, unless indicated otherwise in the relevant table.

17. The licence holder must ensure that:

(a) weekly monitoring is undertaken at least 5 days apart;
(b) monthly monitoring is undertaken at least 15 days apart;
(c) quarterly monitoring is undertaken at least 45 days apart;
(d) 6-monthly monitoring is undertaken at least 4 months apart; and
(e) annual monitoring is undertaken at least 9 months apart.

18. The licence holder must ensure that all monitoring equipment used on the premises to comply with the conditions of this licence is calibrated in accordance with the manufacturer's specifications.

Emissions monitoring

19. The licence holder must undertake monitoring of discharges to surface water of the effluent at the locations and for the parameters listed in Table 10, in the corresponding units, over the averaging period and at the frequency specified in that table.

Table 10: Process water discharge monitoring

Monitoring points as shown in Figure 1, Schedule 1	Parameter	Units	Averaging period	Frequency
Process water pond (third dam)	Volumetric flow rate[1]	m^3/d	Spot sample	Continuous when discharging[2]
	pH[1]	-		• Weekly when not discharging
Return water settling	Electrical conductivity (EC) @25C[1]	µS/cm		

Monitoring points as shown in Figure 1, Schedule 1	Parameter	Units	Averaging period	Frequency
pond [3]	Turbidity	NTU		• Within 24 hours of discharge occurring then three times a week during discharge.
	Total titratable acidity[1]	mg/L		
	Total suspended solids[1]			
	Total dissolved solids[1]			
	Sulfate			Monthly
	Aluminium, arsenic, chromium, copper, iron, lead, manganese, nickel, zinc, total recoverable hydrocarbons, ammonium, total nitrogen, total phosphorus.			

Note 1: In-field, non-NATA accredited analysis permitted.
Note 2: Availability ≥90% of the measurement intervals on a monthly basis.
Note 3: May be relocated in line with mining activities, and therefore not depicted in Figure 1, Schedule 1

Process monitoring

20. The licence holder must undertake monitoring of the parameters for the process listed in Table 11, in the corresponding units and the frequency specified in that table.

Table 11: Process monitoring requirements

Process description	Parameter	Units	Frequency
Mining activities	Volume of ore processed	Tonnes	Monthly
	Volume of PASS handled	Tonnes	Monthly
Dewatering effluent	Volume of dewatering effluent sent to the process water system	kL	Monthly
	pH[1]	-	Weekly
	Electrical conductivity (EC)[1]	µS/cm	Weekly
	Total titratable acidity[1]	mg/L	Weekly
Disposal of Picton tails	Amount and location of Picton tails disposed on the Premises	Wet tonnes	Monthly

Note 1: In-field, non-NATA accredited analysis permitted.

Ambient environmental monitoring

21. The licence holder must monitor the ambient meteorological conditions at the premises in accordance with the requirements specified in Table 12.

Table 12: Monitoring of ambient meteorological conditions

Monitoring location	Parameter	Units	Height	Method
Weather station (WS), depicted in Figure 1, Schedule 1.	Wind speed	m/s	10 m	AS 3580.14
	Wind direction	degrees		
	Wind direction (standard deviation)	degrees		

Monitoring location	Parameter	Units	Height	Method
	Ambient temperature	Degrees Celsius	-	
	Rainfall	millimetres	-	

22. The licence holder must undertake monitoring of ambient dust when mining or rehabilitating in the specified Lots, between 1 October and 31 May each year, in accordance with the requirements specified in Table 13.

Table 13: Monitoring of ambient dust concentrations

Mining or rehabilitation location	Monitoring location	Parameter	Units	Frequency	Averaging period	Method
Lot 201 on Plan 68316 or Lots 507 or 508 on Diagram 91207.	DMP locations as depicted in Figure 1, Schedule 1.	PM_{10} TSP	$\mu g/m^3$	Continuous	15min	AS/NZS 3580.9.11 or AS/NZS 3580.12.1
Lot 56 on Plan 739	DMP locations as depicted in Figure 2, Schedule 1.	PM_{10} TSP	$\mu g/m^3$	Continuous	15min	
Lot 64 on Plan 739	DMP locations as depicted in Figure 3, Schedule 1.	PM_{10} TSP	$\mu g/m^3$	Continuous	15min	
Lot 63 on Plan 739	DMP locations as depicted in Figure 4, Schedule 1.	PM_{10} TSP	$\mu g/m^3$	Continuous	15min	
Lot 20 on Plan 41621 or Lots 31, 32, 33 or 34 on Plan 408493	DMP locations as depicted in Figure 5, Schedule 1.	PM_{10} TSP	$\mu g/m^3$	Continuous	15min	

23. The licence holder must, in addition to the ambient dust monitoring outlined in condition 22, when mining is occurring in the Lots specified in Table 14, undertake dust monitoring in accordance with Table 13, at the residence, if it is occupied.

Table 14: Receptor dust monitoring requirements when residential premises are occupied

When mining in the following Lot(s)	Dust monitor location
Lot 56 on Plan 739.	At the occupied dwelling on Lot 56 on Plan 739
Lot 20 on Plan 41621 or Lot 33 on deposited plan 408493 Southern half of Lot 34 on deposited plan 408493.	At the occupied dwelling on Lot 20 on Plan 41621
Lot 64 on Plan 739 or Lot 201 on Plan 68316 or Lot 508 on Diagram 91207.	At the occupied dwelling on Lot 64 on Plan 739
Lot 201 on Plan 68316 or	At the occupied dwelling on Lot 201 on Plan

When mining in the following Lot(s)	Dust monitor location
Lot 508 on Diagram 91207.	68316
Lot 508 on Diagram 91207 or Lot 507 on Diagram 91207 or Lot 201 on Plan 68316.	At the occupied dwelling on Lot 508 on Diagram 91207

24. The Licence Holder must, in the event that the concentration of an ambient dust parameter, measured in accordance with condition 22 exceeds the corresponding trigger or limit for that parameter in Table 15:

(a) determine if activities at the premises caused or contributed to the exceedance, and if so, take immediate action to reduce dust emissions in accordance with condition 7; and

(b) notify the CEO in accordance with condition 37 of any exceedance of the limit attributable to activities at the premises; and

(c) report in the annual environmental report, any exceedance of the trigger attributable to activities at the premises, and any actions taken to reduce dust emissions.

Table 15: Dust concentration triggers and limits

Parameter	Units	Trigger	Limit
PM_{10}	$\mu g/m^3$	200 $\mu g/m^3$ 1-hour average	50 $\mu g/m^3$ 24-hour average
TSP	$\mu g/m^3$	600 $\mu g/m^3$ 15-minute average	1,000 $\mu g/m^3$ 15-minute average

25. The licence holder must undertake monitoring of ambient surface water quality at the locations and for the parameters listed in Table 16, in the corresponding units, over the averaging period and at the frequency set out in that table.

Table 16: Surface water monitoring requirements

Monitoring point reference (as depicted in Figure 1, Schedule 1)	Parameter	Units	Averaging period	Monitoring frequency
WQ1 WQ2 WQ3 WQ4 WQ5 WQ6 WQ7 WQ9 WQ10 WQ11	pH[1]	-	Spot sample	Monthly, when flowing
	Electrical conductivity @ 25°C[1]	µS/cm		
	Turbidity	NTU		
	Total dissolved solids[1]	mg/L		
	Total suspended solids[1]			
	Total Titratable acidity[1]			
	Total alkalinity[1]			
	Sulfate, aluminium, arsenic, chromium, copper, iron, lead, manganese, nickel, zinc, selenium, total recoverable hydrocarbons, ammonium, total phosphorus, total nitrogen.			Quarterly

Note 1: In-field, non-NATA accredited analysis permitted.

26. The licence holder must engage a suitably qualified expert to undertake monitoring

of aquatic macroinvertebrates in accordance with the specifications in Table 17.

Table 17: Biological monitoring requirements

Monitoring point reference (as depicted in Figure 1, Schedule 1)	Sampling and analysis requirements	Method	Monitoring frequency
Balgobin Brook South: WQ1 (upstream) WQ3 (downstream)	Sampling to target the open water column, benthic substrate, debris, logs/branches and aquatic macrophytes. Macroinvertebrate taxa diversity (to the highest level of taxonomic resolution possible) and abundance Macroinvertebrate data should be provided with taxonomy and trait information (at least functional feeding groups and any sensitivity grades/information used for analysis). Analysis to include comparison of upstream and downstream sites and discussion of macroinvertebrate communities present. Provide commentary on water quality monitoring data collected at the corresponding location (in accordance with condition 25) over the annual period.	Sampling protocol in accordance with *AUSRIVAS sampling and processing manual* Analysis using SIGNAL protocol, multivariate analysis or other appropriate method.	Once annually every spring.
Nambeelup Brook North: WQ4 (upstream) WQ7 (downstream)			One baseline sampling event in spring 2026. Annually in spring, if discharging into the Nambeelup Brook North.
Dirk Brook: WQ10 (upstream) WQ11 (downstream)			One baseline sampling event in spring 2026. Annually in spring, if discharging to Dirk Brook.

27. The licence holder must undertake monitoring of ambient groundwater at the locations and for the parameters listed in Table 18, in the corresponding units, over the averaging period and at the frequency set out in that table.

Table 18: Groundwater monitoring requirements

Monitoring point reference	Parameter	Units	Averaging period	Monitoring frequency
Monitoring bores KS4 – KS14[2], KS16-KS18, KS23 - KS31 KS34 – KS46 (as depicted in Figure 1, Schedule 1)	Standing Water Level[1]	mbgl	Spot sample	Quarterly
	pH[1]	-		
	Electrical conductivity @ 25°C[1]	µS/cm		
	Total dissolved solids[1]	mg/L		
	Total titratable acidity[1]			6-monthly
	Total alkalinity[1]			
	Sulfate			Annual
	Aluminium, arsenic, chromium, copper, iron, lead, manganese, nickel, zinc			
	Gross alpha activity, gross beta activity[3]	Bq/L		

Note 1: In-field, non-NATA accredited analysis permitted.
Note 2: One quarterly monitoring requirement exemption for KS10, KS11, KS12 and KS13 is permitted when mining in Lot 62.
Note 3: Must be monitored annually in bores where total titratable acidity exceeds 40 mg/L.

Specified Actions

28. The licence holder must conduct an investigation into the groundwater quality at the premises, which must include the monitoring of ambient groundwater at the locations and for the parameters listed in Table 19, in the corresponding units, as set out in that table.

Table 19: Groundwater investigation requirements

Monitoring point reference	Parameter	Units	Method
Monitoring bores KS4 – KS14, KS16-KS18, KS23 - KS31 KS34 – KS39 (as depicted in Figure 1, Schedule 1)	Standing Water Level[1]	mbgl	Spot sample
	pH[1]	-	
	Electrical conductivity @ 25°C[1]	µS/cm	
	Total dissolved solids[1]	mg/L	
	Total titratable acidity[1]		
	Titratable alkalinity[1]		
	Sulfate, sodium, potassium, calcium, magnesium, bicarbonate and chloride *[This will indicate whether pyrite oxidation is occurring through increases in sulfate, increases in the sulfate:chloride mass ratio, and a reduction in bicarbonate ion concentrations over time]*		
	Aluminium, arsenic, chromium, copper, iron, lead, manganese, nickel, zinc lanthanum, uranium, cadmium, molybdenum, mercury, selenium *[These may be released from pyrite oxidation or weathered monazite]*		
	Radium isotopes Ra-226 and Ra-228 *[This will show which chemical constituents are causing the gross alpha and gross beta activity]*	Bq/L	

Note 1: In-field, non-NATA accredited analysis permitted.

29. The licence holder must prepare a report on the groundwater investigation conducted in accordance with condition 28, and include an analysis of the monitoring data for each groundwater bore against the ANZECC livestock water quality guidelines, and submit it to the CEO by 1 May 2026.

30. The licence holder must conduct an investigation into upgrading the process water circuit infrastructure to increase storage capacity and / or water retention time, such that either the discharge water quality criteria in condition 15 will be met by the specified timeframe, or so that discharge of process water to the environment will be prevented. The licence holder must prepare a report on this investigation and submit it to the CEO by 1 May 2026.

Records and reporting

31. The licence holder must maintain accurate and auditable books including the following records, information, reports, and data required by this licence:

(a) the calculation of fees payable in respect of this licence;

(b) any maintenance of infrastructure that is performed in the course of complying with condition 2 of this licence;

(c) monitoring programmes undertaken in accordance with conditions 19, 20, 22, 23, 25, 26 and 27 of this licence; and

(d) complaints received under condition 33 of this licence.

32. The books specified under condition 31 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 licence holder for the duration of the licence; and

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

33. The licence holder must record the following information in relation to complaints received by the licence 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 licence holder to investigate or respond to any complaint.

34. The licence holder must:

(a) undertake an audit of their compliance with the conditions of this licence during the preceding annual period; and

(b) prepare and submit to the CEO, by no later than 1 March in each year, an Annual Audit Compliance Report in the approved form.

Annual environmental report

35. The licence holder must submit to the CEO, no later than 1 March in each year, an annual environmental report which includes, but is not limited to:

(a) details of the calculation of fees payable in respect of this licence;

(b) a summary of the amount of topsoil removed, ore processed, HMC produced, tailings returned to mine voids, and Picton tails returned to the mine for blending and disposal;

(c) a summary of maintenance of infrastructure performed in the course of complying with condition 2;

(d) monitoring data /reports required by conditions 19, 20, 22, 23, 25, 26 and 27 for the preceding annual period;

(e) a summary of any complaints received and management actions taken for each complaint; and

(f) a summary of any environmental incidents and any action(s) taken.

36. The licence holder must ensure the report required by condition 35 includes an appraisal and trend analysis of the results against any baseline data and previous monitoring results.

Notifications

37. The licence holder must, within 7 days of becoming aware of any non-compliance with any condition of this licence, notify the CEO in writing of that non-compliance and include in that notification the following information:

(a) the time and date when the non-compliance occurred;

(b) if any environmental impact occurred as a result of the non-compliance and if so what that impact is and where the impact occurred;

(c) the details and result of any investigation undertaken into the cause of the non-compliance;

(d) what action has been taken and the date on which it was taken to prevent the non-compliance occurring again; and

(e) what action will be taken and the date by which it will be taken to prevent the non-compliance occurring again.

Definitions

In this licence, the terms in Table 20 have the meanings defined.

Table 20: Definitions

Term	Definition
Annual Audit Compliance Report (AACR)	means a report submitted in a format approved by the CEO (relevant guidelines and templates may be available on the Department's website).
ACN	Australian Company Number
AHD	Australian Height Datum
annual period	means a 12 month period commencing from 1 January until 31 December in the same year
AS 2531	means the Australian Standard AS 2531 *Waters – Determination of gross alpha and gross beta activities*
AS/NZS 3580.9.11	means the Australian Standard AS/NZS 3580.9.11 *Methods for sampling and analysis of ambient air, Method 9.11: Determination of suspended particulate matter — PM10 beta attenuation monitors*
AS/NZS 3580.12.1	means the Australian Standard AS/NZS 3580.12.1 *Methods for sampling and analysis of ambient air Determination of light scattering - Integrating nephelometer method*
AS/NZ 3580.14	means the Australian Standard AS/NZS 3580.14 *Methods for sampling and analysis of ambient air – meteorological monitoring for ambient air quality monitoring applications*.
AS/NZS 5667.1	means the Australian Standard AS/NZS 5667.1 *Water Quality – Sampling – Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples*
AS/NZS 5667.6	means the Australian Standard AS/NZS 5667.6 *Water Quality – Sampling – Guidance on sampling of rivers and streams*
AS/NZS 5667.11	means the Australian Standard AS/NZS 5667.11 *Water Quality – Sampling – Guidance on sampling of groundwaters*
AUSRIVAS sampling and processing manual	means the 2009 *WA AUSRIVAS sampling and processing manual, Water Science Technical Series Report No. 13*; available at: Western Australia Ausrivas sampling and processing manual
averaging period	means the time over which a limit is measured or a monitoring result is obtained
books	has the same meaning given to that term under the EP Act
Bq/L	Bequerels per litre
CEO	means Chief Executive Officer of the Department. 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
S_{CR}	Chromium Reducible Sulfur or potential sulfidic acidity
condition	means a condition to which this licence is subject under s.62 of the EP Act
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
discharge	has the same meaning given to that term under the EP Act
emission	has the same meaning given to that term under the EP Act
EP Act	means the *Environmental Protection Act 1986* (WA)
EP Regulations	means the *Environmental Protection Regulations 1987* (WA)
freeboard	means the distance between the maximum water surface elevations and the top of retaining banks or structures at their lowest point.
Identification and investigation of acid sulfate soils and acidic landscapes, (DWER 2015)	means the 2015 *Identification and investigation of acid sulfate soils and acidic landscapes;* available at: Identification and investigation of acid sulfate soils and acidic landscapes
Winter/spring period	means the period from 1 May to 31 October each year.
HMC	Heavy Mineral Concentrate
licence	refers to this document, which evidences the grant of a licence by the CEO under s.57 of the EP Act, subject to the Conditions
licence holder	refers to the occupier of the premises being the person to whom this licence has been granted, as specified at the front of this licence
mining activities	means extraction and trucking of ore using graders, bulldozers, excavators and haul trucks, stripping of topsoil and rehabilitation activities.
NATA	National Association of Testing Authorities, Australia
NATA accredited	means in relation to the analysis of a sample that the laboratory is NATA accredited for the specified analysis at the time of the analysis
National Acid Sulfate Soils Guidance: National acid sulfate soils identification and laboratory methods manual, (Sullivan et al., 2018)	means the 2018 *National Acid Sulfate Soils Guidance: National acid sulfate soils identification and laboratory methods manual* ; available at https://www.waterquality.gov.au/issues/acid-sulfate-soils/identification-and-laboratory-methods-manual
NTU	Nephelometric Turbidity Unit
PASS	potential acid sulfate soils
pH_{KCl}	means potassium chloride extractable pH
Picton tails	means 'trash' material (gangue) from secondary off-site processing at the Picton mineral separation plant
Premises	refers to the premises to which this licence applies, as specified at the front of this licence and as shown on the map in Schedule 1 to this licence
prescribed premises	has the same meaning given to that term under the EP Act
quarterly	means the 4 inclusive periods from 1 January to 31 March, 1 April to 30 June, 1 July to 30 September and 1 October to 31 December in the same year
6-monthly	means the two inclusive periods from 1 January to 30 June and 1 July to 31 December in the same year
SIGNAL protocol	means the 2003, *SIGNAL 2 – A Scoring System for Macro-invertebrate ('Water Bugs') in Australian Rivers, Monitoring River Heath Initiative Technical Report no. 31*
S_{NAS}	means retained acidity

spot sample	means a discrete sample representative of the time and place at which the sample is taken
supernatant or decant water	means process water that has separated from the tailings solids in the tailings storage facility due to the settling and consolidation of the solids, plus any rainfall run-off collected.
TAA	Titratable Actual Acidity
TPA	total potential acidity
WCP	Wet Concentrator Plant

END OF CONDITIONS

Schedule 1: Maps

Premises map showing boundary, discharge and monitoring locations

The boundary of the prescribed premises is shown in pink in the map below. The shaded area depicts the mining areas.

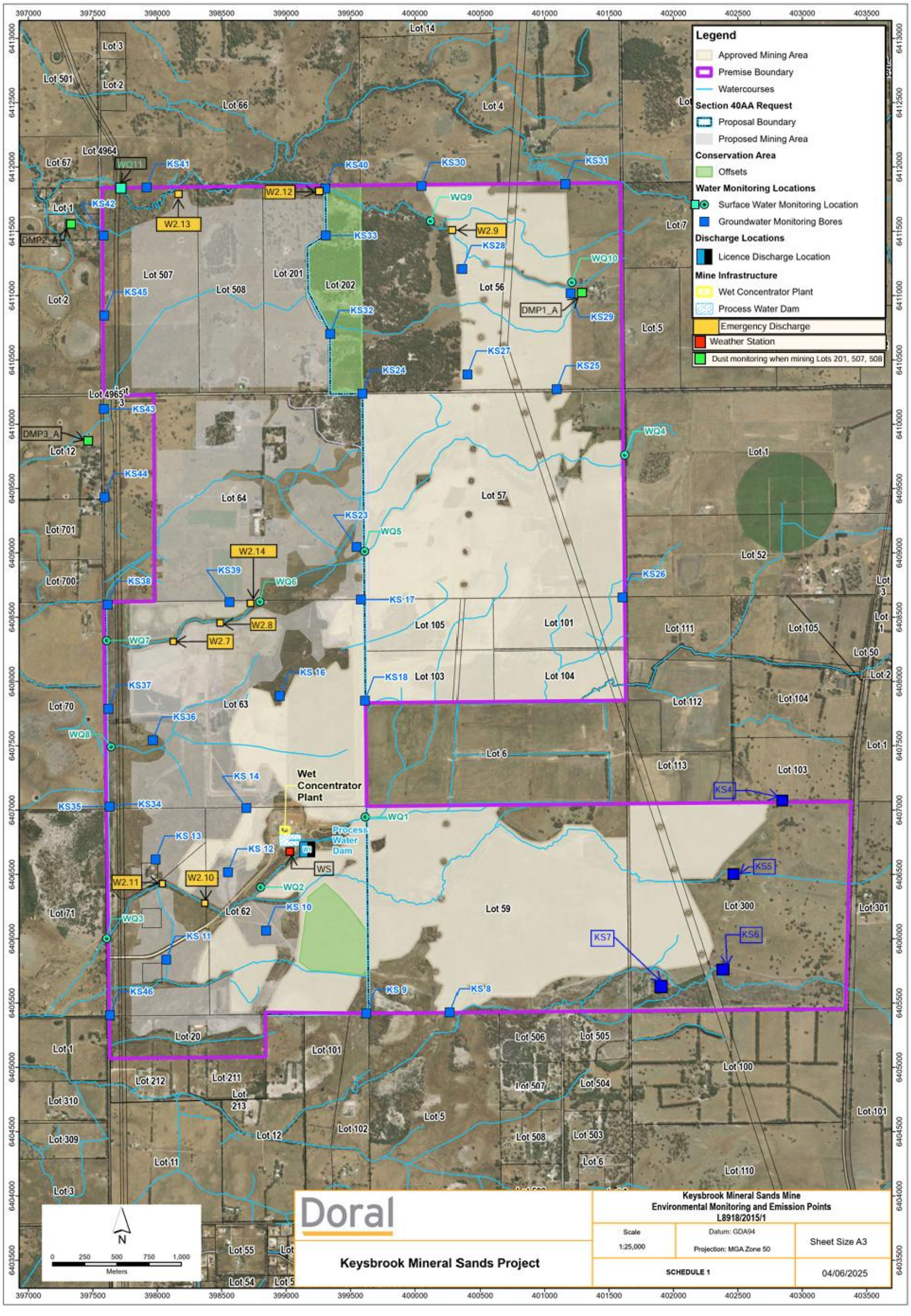

Figure 1: Map showing prescribed premises boundary, surface water discharge locations, surface and groundwater monitoring locations and fixed dust monitoring locations when mining in Lots 201, 507 and 508.

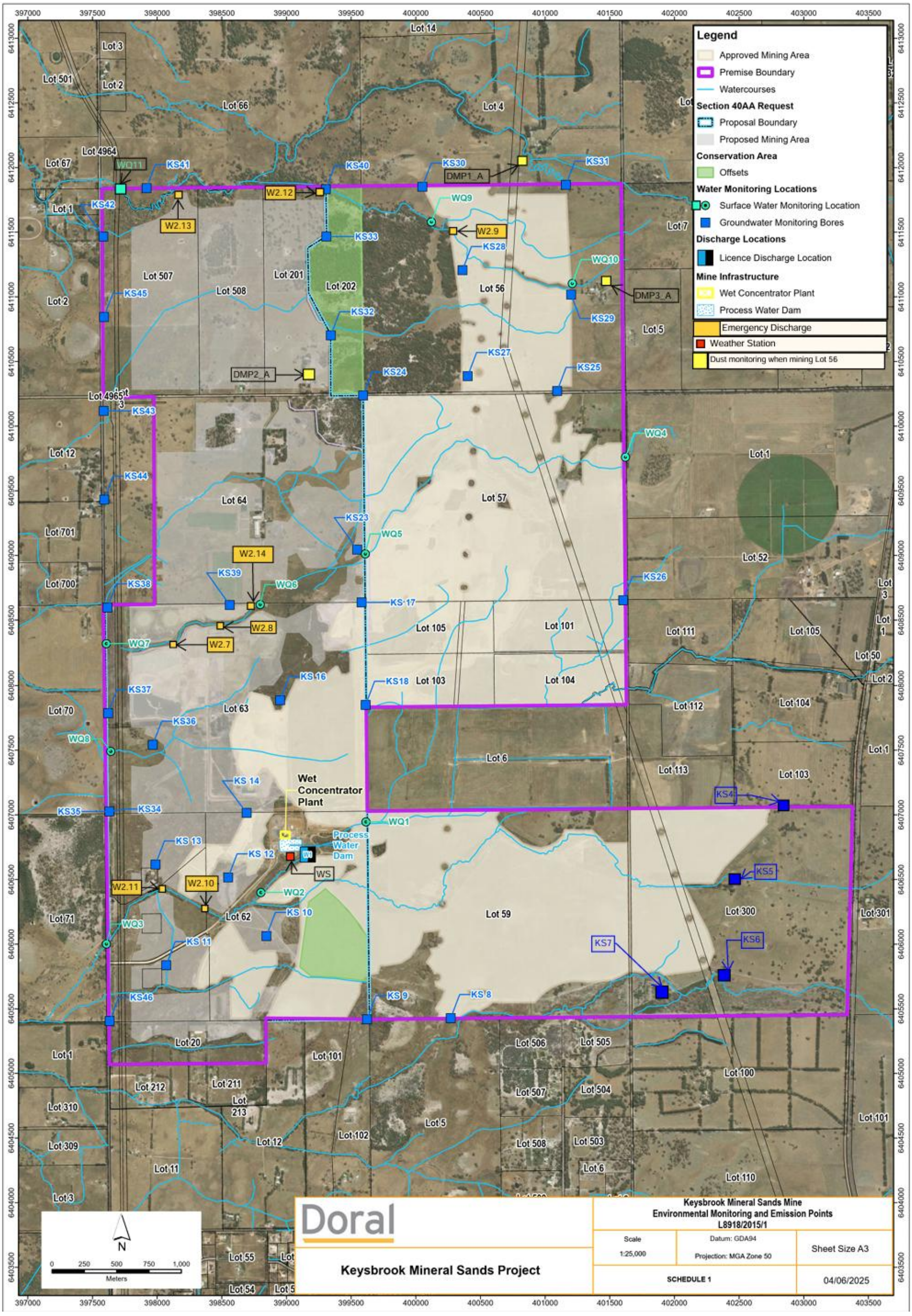

Figure 2: Map showing fixed dust monitoring locations when mining in Lot 56.

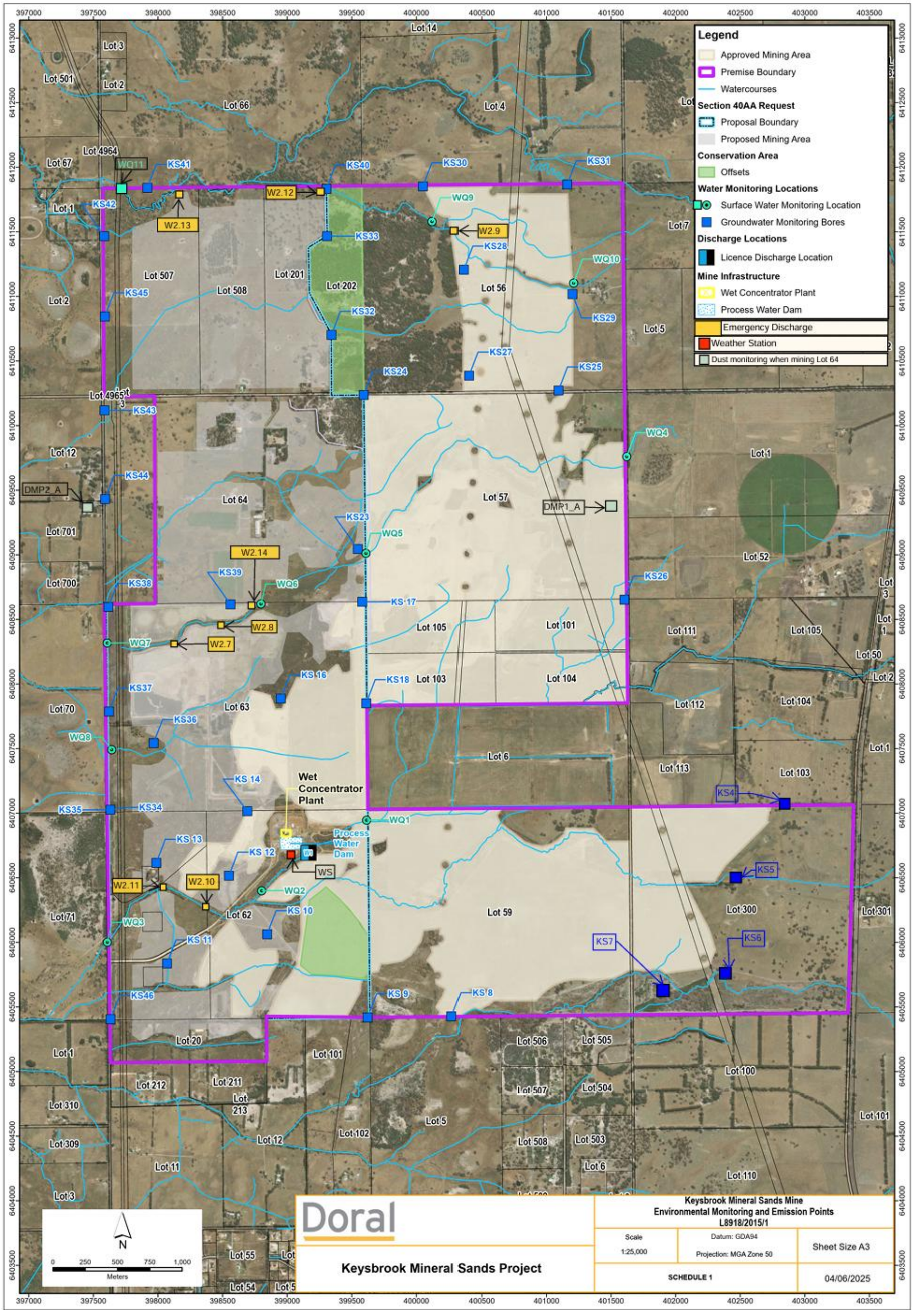

Figure 3: Map showing fixed dust monitoring locations when mining in Lot 64.

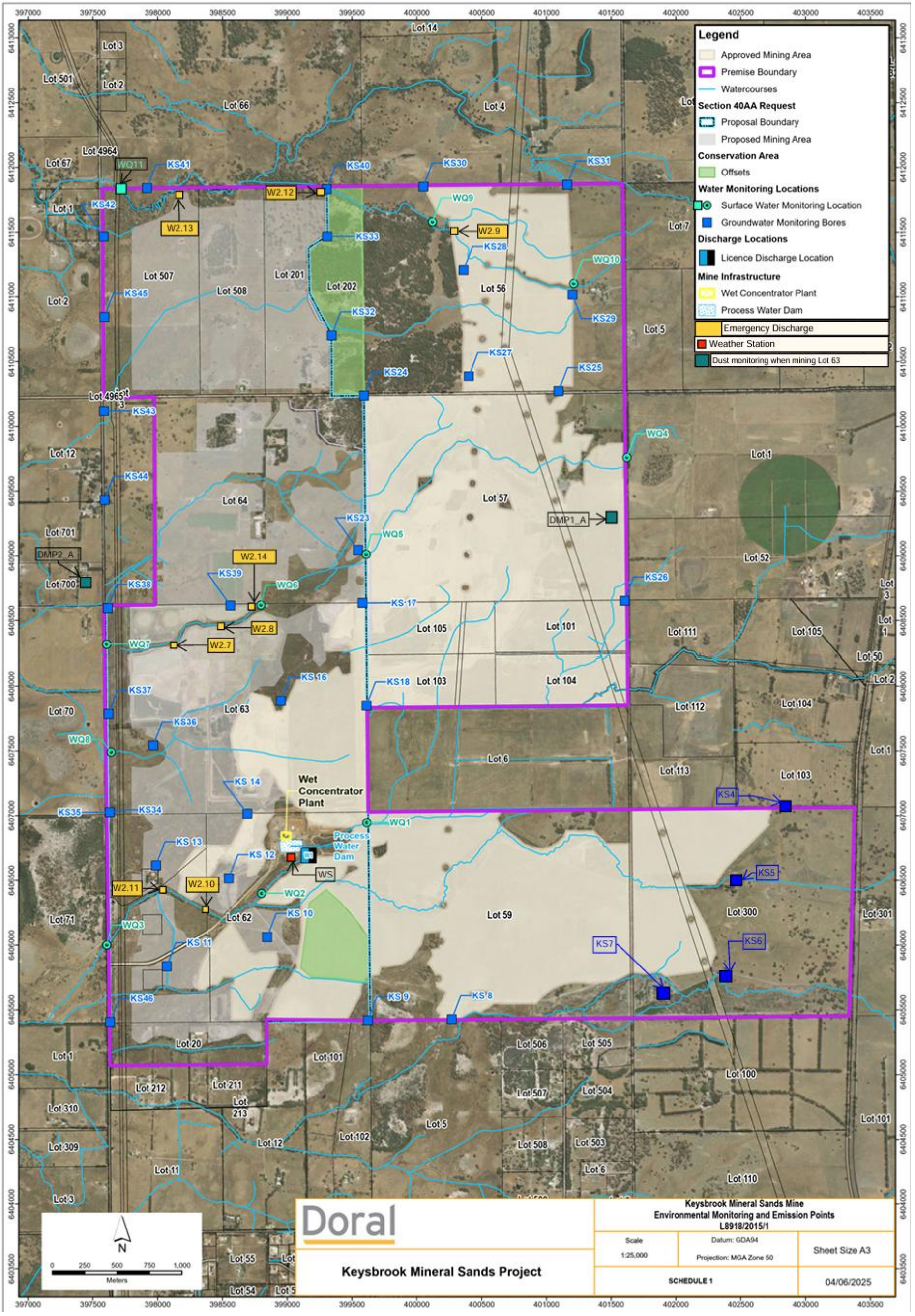

Figure 4: Map showing fixed dust monitoring locations when mining in Lot 63.

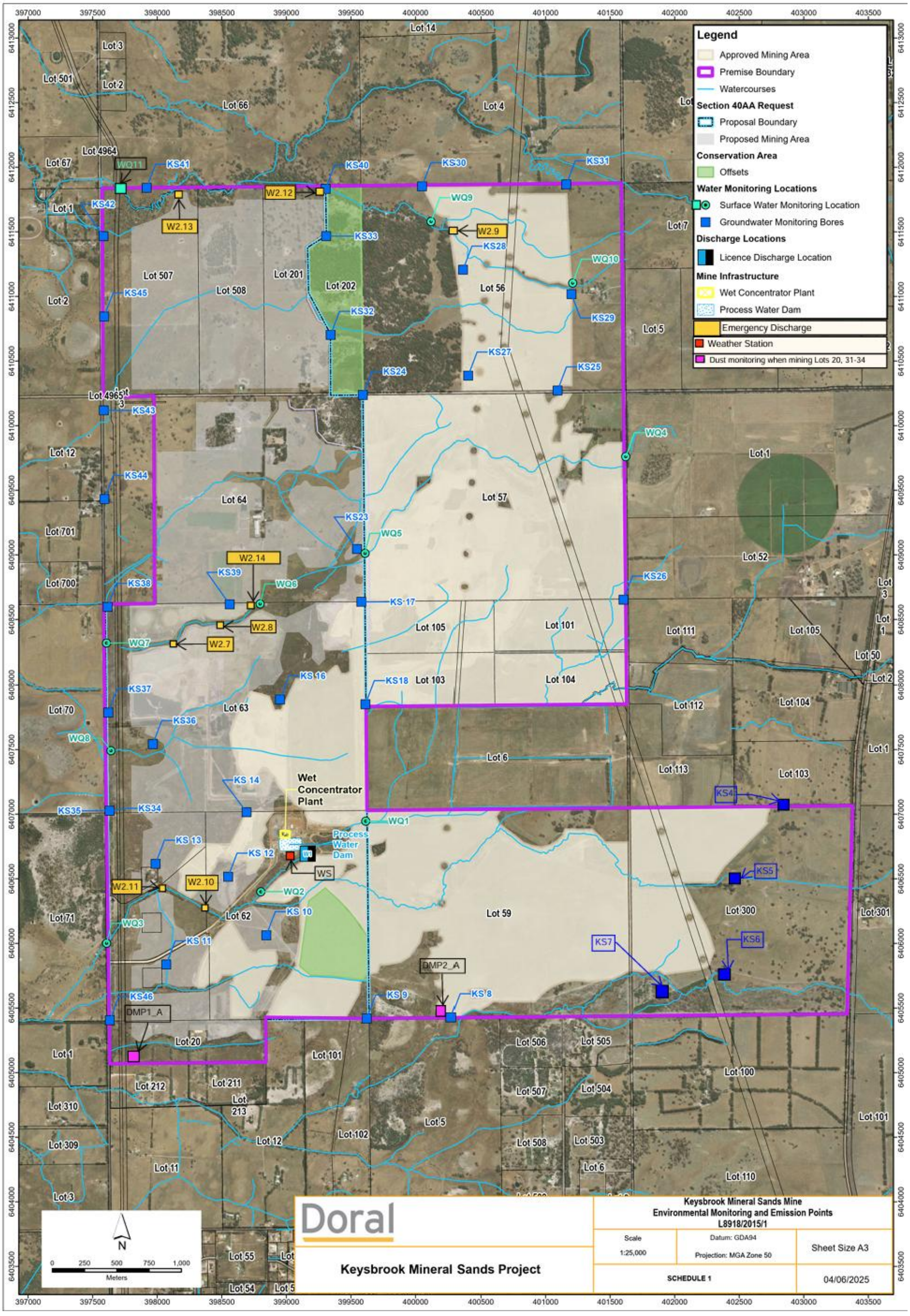

Figure 5: Map showing fixed dust monitoring locations when mining in or adjacent to Lot 20.