



**Licence number** L9176/2018/1

**Licence holder** Iluka Resources Limited

**ACN** 008 675 018

**Registered business address** 240 St Georges Terrace  
PERTH WA 6000

**DWER file number** DER2018/001555~3

**Duration** 29/01/2019 to 09/04/2027

**Date of issue** 30/01/2019

**Date of amendment** 08/03/2024

**Premises details** Cataby Mineral Sands Mine  
10437 Brand Highway  
CATABY WA 6507

Legal description -

Mining tenements: M70/194, M70/195, M70/196,  
M70/517, M70/518, M70/696, M70/760, M70/867,  
M70/868, M70/869, M70/1018, M70/1086

As defined by the Premises map attached to the Revised  
Licence (see Figure 1)

Prescribed premises category description (Schedule 1, <i>Environmental Protection Regulations 1987</i> )	Assessed production capacity
Category 6: Mine dewatering: premises on which water is extracted and discharged into the environment to allow mining of ore.	2.2 gigalitres per annual period
Category 8: Mineral sands mining or processing: premises on which mineral sands ore is mined, screened, separated or otherwise processed.	12,000,000 tonnes per annual period

This amended licence is granted to the licence holder, subject to the attached conditions, on 8 March 2024, by:

**A/MANAGER, RESOURCE INDUSTRIES  
REGULATORY SERVICES**

an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

## Licence and works approval history

Date	Instrument	Summary of changes
10/03/2016	W5935/2015/1	Issue of works approval to authorise mine construction works
02/06/2016	W5935/2015/1	Amendment for administrative changes to air quality monitoring conditions
30/01/2019	L9176/2018/1	Issue of licence to authorise full mining operations.
02/06/2016	W5935/2015/1	Amendment Notice 1 – extend duration by 3 months
15/04/2020	L9176/2018/1	Licence amendment to add additional aquifer re-injection wells.
28/11/2023	L9176/2018/1	Licence amendment – to amend the prescribed premises boundary and include an additional emission areas.
08/03/2024	L9176/2018/1	Department initiated amendment to correction an administrative error in condition 8, table 6 (volumetric flow rate limit)

## 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 a manner that meets or exceeds the requirements specified in that table.
2. The licence holder must not depart from the requirements specified in Table 1 except:
  - (a) where such departure does not increase risks to public health, public amenity or the environment; and
  - (b) all other conditions in this licence are still satisfied.

**Table 1: Works infrastructure requirements table**

Infrastructure	Requirements (design and construction)
'ModCod' storage ponds	<ul style="list-style-type: none"> <li>Must be constructed within active or completed mine voids;</li> <li>Pond floors must be sloped to allow the collection of supernatant water;</li> </ul>
Pipelines carrying clay slimes, sand tailings and return water	Must be constructed with: <ul style="list-style-type: none"> <li>Automatic cut-outs in the event of a pipe failure; OR</li> <li>Secondary containment sufficient to contain any spill for a period equal to the time between routine inspections; OR</li> <li>Telemetry systems and pressure sensors along pipelines to allow detection of leaks and failures;</li> </ul>
ROM pads	<ul style="list-style-type: none"> <li>Constructed with compacted overburden material or similar;</li> <li>Drainage designed to divert stormwater runoff to a constructed drainage depression or sedimentation basin.</li> </ul>

### Infrastructure and equipment

3. The licence holder must ensure that the infrastructure and equipment 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 table**

	Infrastructure/ Equipment	Description and operational requirements
	<b>Mining infrastructure and equipment</b>	
1	Process plant – WCP / WHIMS	<ul style="list-style-type: none"> <li>Design capacity of WCP 1,100 tph;</li> </ul>
2	MUPs & SSPs	<ul style="list-style-type: none"> <li>Must be located on a compacted base with drainage designed to divert stormwater runoff to a constructed drainage depression or sedimentation basin;</li> </ul>
3	Pipelines carrying HMC	Must have: <ul style="list-style-type: none"> <li>Automatic cut-outs in the event of a pipe failure; OR</li> <li>Secondary containment sufficient to contain any spill for a period equal to the time between routine inspections; OR</li> <li>Equipped with telemetry systems and pressure sensors along pipelines to allow the detection of leaks and failures;</li> </ul>

4	HMC stockpile pads	<ul style="list-style-type: none"> <li>Constructed with compacted overburden or similar;</li> <li>Constructed with an underdrainage system, where seepage is collected and diverted to the drop-out dam;</li> <li>Located within the WCP stormwater catchment control area, where surface water runoff is diverted to the drop-out dam;</li> </ul>
5	Clean water dam	<ul style="list-style-type: none"> <li>HDPE-lined dam;</li> <li>Receives clean water from production bores;</li> </ul>
6	Process water dam	<ul style="list-style-type: none"> <li>Clay-lined dam;</li> <li>Receives clean water from the clean water dam and process water from the drop-out dam;</li> </ul>
7	Drop-out dam	<ul style="list-style-type: none"> <li>Clay-lined dam;</li> <li>Receives dirty water from the WCP, interceptor pit, return water from in-pit dewatering sumps and the sedimentation pond, and reclaimed water from the 'ModCod' and sand tailings;</li> <li>Designed to overflow to the process water dam;</li> </ul>
<b>Tailings infrastructure</b>		
1	'ModCod' storage pits	<ul style="list-style-type: none"> <li>Top of embankment (total) freeboard of at least 500 mm must be maintained at all times;</li> <li>Must comprise a decant system to include supernatant water return to the drop-out dam;</li> </ul>
2	Pipelines carrying clay fines and return water	<p>Must have:</p> <ul style="list-style-type: none"> <li>Automatic cut-outs in the event of a pipe failure; OR</li> <li>Secondary containment sufficient to contain any spill for a period equal to the time between routine inspections; OR</li> <li>Equipped with telemetry systems and pressure sensors along pipelines to allow the detection of leaks and failures;</li> </ul>
<b>Stormwater infrastructure</b>		
1	Diversion channels and drains	<ul style="list-style-type: none"> <li>Must maintain a network of diversion channels and drains to divert all stormwater runoff from disturbed areas within the Premises through the sedimentation pond(s) and stormwater dam(s);</li> <li>System must be sufficient to contain a 1% AEP;</li> </ul>
2	Sedimentation pond(s)	<ul style="list-style-type: none"> <li>Temporary ponds to be constructed next to mine haul roads, to intercept stormwater runoff from stockpiles and infrastructure next to mine pits;</li> </ul>
<b>Rehabilitation</b>		
1	Overburden/topsoil stockpiles	<ul style="list-style-type: none"> <li>Must be stabilised to prevent dust lift-off where there is a risk of dust affecting sensitive receptors.</li> </ul>

4. The licence holder must undertake inspections of the scope and type specified in Table 3, at the corresponding frequency listed in that table.
5. Where any inspection conducted in accordance with condition 4 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 table**

Scope of inspection	Type of inspection	Frequency of inspection
Pipelines carrying HMC and tailings	Visual integrity, leak assessment and freeboard capacity	Daily whilst operating; Monthly if not operating
Return water pipelines		
Process water dam, drop out dam, sedimentation pond		

## Emissions to land

6. The licence holder must ensure that tailings produced from the processing of mined ore on the Premises listed in Table 4 are disposed in accordance with the corresponding requirements specified in that table.

**Table 4: Tailings disposal requirements table**

Emission	Disposal requirements	Site plan reference
Sand tailings from the WCP	Must be: <ul style="list-style-type: none"> <li>pumped as a slurry directly to completed mine voids; OR</li> <li>stacked (stockpiled) separately at the WCP overburden stockpile for later placement into mine voids</li> </ul>	Selected voids in Pits 1 – 18, as shown in Schedule 1 map
Clay slimes from the WCP	Must be: <ul style="list-style-type: none"> <li>thickened and blended with sand tailings and pumped as a wet slurry to ModCod storage pits; OR</li> <li>used as dust suppressant within the Premises</li> </ul>	'ModCod storage pits', as shown in Schedule 1 map

## Emissions to groundwater

7. The licence holder must ensure that where excess mine water is required to be discharged into the environment, it is done so in accordance with the requirements of Table 5.

**Table 5: Authorised emission points to groundwater**

Source	Emission point reference	Description
Clean water dam	P16_2; P16_6; P16_68; IW02P03	Groundwater reinjection bores Already constructed, as shown in Schedule 1 map
	P15_2; P15_4; P15_6; P15_8; P15_10; P15_12; P16_3; P16_4; P15_5; P16_7; P16_8; P16_9; P16_10; P16_11; P16_12; P16_13; P16_14; P16_15; P16_16; P16_17; P16_18; P16_19; P16_20; P16_21; P16_22; P16_25; P16_29; P16_33; P16_36; P16_40; P16_44; P16_49; P16_53; P16_57; P16_68	Groundwater reinjection bores Proposed for construction, as shown in Schedule 1 map
	Infiltration basins – Pit 1 (primary) and Pit 2 (contingency)	Open mine voids, as shown in Schedule 1 map
	Infiltration Basin – Pit 16	Open mine void, as shown in Schedule 1 map
	Pit 16 Irrigation Area	Irrigation area as shown in Schedule 1 map area

8. The licence holder must not cause or allow excess mine water to be emitted to groundwater that does not meet the limits specified in Table 6.

**Table 6: Point source emission limits to groundwater**

Emission point reference	Parameter	Limit (including units)	Averaging period
P15_2; P15_4; P15_6; P15_8; P15_10; P15_12; P16_2; P16_3; P16_4; P15_5; P16_7; P16_8; P16_9; P16_10; P16_11; P16_12; P16_13; P16_14; P16_15; P16_16; P16_17; P16_18; P16_19; P16_20; P16_21; P16_22; P16_25; P16_29; P16_33; P16_36; P16_40; P16_44; P16_49; P16_53; P16_57; P16_68; IW02P03 Infiltration basins (Pits 1 & 2) Pit 16 Irrigation Area	pH	5.5 (lower) 8.5 (upper)	Spot sample
	Electrical conductivity @ 25°C	3,000 µS/cm (upper)	
	Total dissolved solids	2,000 mg/L (upper)	
	Total suspended solids	80 mg/L (upper)	
	Titrateable Acidity (TA)	40 mg/L (upper)	
	Total Alkalinity (TAlk)	10 mg/L (lower)	
	Volumetric flow rate	1800 kL/h (upper)	N/A

## Fugitive dust controls

9. The licence holder must implement the controls listed in Table 7, in accordance with the corresponding actions/requirements specified in that table.

**Table 7: Fugitive dust controls table**

Control	Actions/requirements
Topsoil stripping	<ul style="list-style-type: none"> <li>Must schedule to avoid periods of high winds from unfavourable directions relative to sensitive receptors (including the Brand Hwy);</li> <li>Where there is a risk of dust affecting sensitive receptors, must conduct when soil conditions are moist but not saturated;</li> <li>Must cease/suspend topsoil stripping operations during high wind conditions where there is a risk of dust affecting sensitive receptors;</li> </ul>
Water carts/sprays	<ul style="list-style-type: none"> <li>Must operate when discernable levels of dust are generated from ground surfaces on the Premises and there is a risk of dust affecting sensitive receptors;</li> <li>Must operate proactively subject to weather forecasting over a 24 hour period;</li> </ul>
Dust suppressant (other than water)	<ul style="list-style-type: none"> <li>Must apply proactively to overburden/topsoil stockpiles;</li> <li>Must reapply proactively subject to visual inspection and weather forecasting;</li> </ul>
Cessation of activities	<ul style="list-style-type: none"> <li>Must cease an activity causing discernable levels of dust where dust management measures have not prevented dust liftoff and there is a risk of dust affecting sensitive receptors;</li> </ul>
Monitoring and trigger levels	<ul style="list-style-type: none"> <li>Must use meteorological data to assist in determining the potential for high dust generating activities, and take appropriate management action(s);</li> <li>Must set trigger levels on ambient air quality monitoring equipment to prevent exceedances of the limits specified in Table 11;</li> <li>Must reduce the trigger levels if necessary in response to complaint or evidence of offsite impacts; and</li> <li>Must keep a log of dust trigger exceedance events including the</li> </ul>

Control	Actions/requirements
	identification of the sources and action(s) taken to control dust.

## Acid Sulfate Soils controls

10. The licence holder must implement the actions/requirements specified in Table 8 for each aspect listed in that table.

**Table 8: Acid sulfate soils controls table**

Aspect	Actions/Requirements
Dewatering	<ul style="list-style-type: none"> <li>Must avoid unnecessary groundwater drawdown;</li> <li>Dewatering water to be managed to ensure pH <math>\geq 5.5</math> and TAlk &gt; TA;</li> <li>Exceedances of the dewatering trigger values specified in Table 9 must be managed in accordance with the relevant action(s) specified in that table;</li> </ul>
Overburden and ore	<ul style="list-style-type: none"> <li>Daily field surveys (pH<sub>F</sub> and pH<sub>FOX</sub>) must be conducted during removal of overburden containing PASS or in areas where there are indicators of PASS;</li> <li>PASS-containing overburden must be treated with lime at a minimum rate of 5 kg/t CaCO<sub>3</sub> OR re-buried within 24 hours below the groundwater level;</li> <li>PASS-containing ore may be processed with additional lime input to the WCP de-sliming circuit, with the rate of addition to be determined through pH<sub>F</sub> monitoring within the WCP water circuit;</li> <li>Reactive overburden/ore requiring stockpiling prior to treatment and burial must be stockpiled on a treatment pad comprising minimum 300 mm thick compacted crushed limestone (or other appropriate neutralisation material) and bunded with a minimum 150 mm high perimeter of compacted, crushed limestone to contain leachate runoff within the treatment pad area/prevent surface water runoff from entering the pad area;</li> </ul>
Groundwater triggers	<ul style="list-style-type: none"> <li>Must set groundwater triggers for pH and titratable acidity (TA) based upon the upper threshold limit (UTL) of background water quality in the area;</li> <li>Upon exceeding the UTL trigger criteria at the CWD, must establish the context of the exceedance and determine whether the result requires re-sampling and analysis, immediate further action, or no response;</li> <li>Increase the sampling frequency for field parameters if it is confirmed the pH and TA exceed trigger criteria in successive sampling events; and</li> <li>Prepare a contingency action plan suited to the level of risk to groundwater users and environmental receptors if it is confirmed that any groundwater quality parameter has deteriorated to levels outside of the background-based trigger levels at dewatering monitoring bores.</li> </ul>

**Table 9: Dewatering trigger values table**

Trigger criteria <sup>1,2</sup>		Action
pH	TA	
$\geq 6.0$	$\leq 40$ mg/L	<ul style="list-style-type: none"> <li>Continue 3 days per week dewatering water monitoring;</li> </ul>
$\leq 6.0$	$\leq 40$ mg/L	<ul style="list-style-type: none"> <li>Undertake neutralisation treatment;</li> <li>Increase monitoring of field parameters to daily and laboratory analysis to weekly;</li> <li>Assess mining and dewatering activities to determine possible causal factors or opportunities to mitigate impacts;</li> </ul>
$\geq 6.0$	$\geq 40$ mg/L	
$\leq 6.0$	40 – 100 mg/L	
$\leq 4.0$	$\geq 100$ mg/L	<ul style="list-style-type: none"> <li>Increase neutralisation treatment;</li> <li>Increase monitoring of field parameters to twice daily and laboratory analysis to twice weekly;</li> <li>Undertake investigations to determine the size of acidic footprint</li> </ul>

		and develop contingency plans to manage the level of risk to groundwater users and environmental receptors.
--	--	---

Note 1: As measured at the CWD inflow point.

Note 2:  $\geq$  greater than or equal to;  $\leq$  less than or equal to.

## Monitoring general

11. The licence holder must ensure that:
  - (a) all water samples are collected and preserved in accordance with AS/NZS 5667.1;
  - (b) all groundwater sampling is conducted in accordance with AS/NZS 5667.11;
  - (c) all ambient air monitoring is sited in accordance with AS 3580.1.1;
  - (d) all TSP samples are collected and analysed in accordance with AS 3580.9.3;
  - (e) all PM<sub>10</sub> samples are collected and analysed in accordance with AS 3580.9.8 or AS 3580.9.11; and
  - (f) 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.
12. 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.
13. 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.
14. The licence holder must ensure, where the requirements for calibration cannot be practicably met, or a discrepancy exists in the interpretation of the requirements, bring these issues to the attention of the CEO accompanied with a report comprising details of any modifications to the methods.

## Process monitoring

15. The licence holder must undertake monitoring of the processes listed in Table 10, for the corresponding parameter, in the units and at the frequency specified in that table.

**Table 10: Process monitoring requirements table**

Process description	Parameter	Units	Frequency
Overburden removal	Amount of overburden removed	Wet tonnes	Annual
Processing of ore	Amount of ore processed through the WCP		
	Amount of HMC produced		
Disposal of tailings	Amount and location of sand tailings and clay slimes disposed on the Premises		Quarterly
Dewatering water (as measured at the CWD inflow point)	pH	No unit	Weekly
	Electrical conductivity @ 25°C	µS/cm	
	Titratable acidity (TA)	mg/L	
	Total alkalinity (TAlk)		

## Ambient environmental monitoring and reporting

### Ambient air quality

- 16.** The licence holder must, during the period 1 October and ending 31 May the following year, undertake monitoring of ambient air quality at the locations and for the parameters listed in Table 11, in the corresponding units, at the frequency and for the duration specified in that table.

**Table 11: Ambient air monitoring requirements table**

Monitoring point reference	Parameter	Units	Frequency	Sampling duration	Limit
AQ1 – AQ2	TSP	$\mu\text{g}/\text{m}^3$	At least once every 6 days	Minimum 24 hours	260 (upper)
	PM <sub>10</sub>		Minimum of 2 samples, at least 4 weeks apart	Minimum 14 days continuous logging with 15 minute sample averages <sup>1</sup>	50 (upper)

*Note 1: Availability  $\geq 90\%$  of the measurement interval on a monthly basis.*

- 17.** The licence holder is exempt from compliance with the limits specified in Table 11 if in the case of an event in Table 12:
- (a) the corresponding management action is taken; and
  - (b) there is sufficient evidence to demonstrate the exceedance is not attributed to operations on the Premises.

**Table 12: Ambient air limit exceedance response table**

Monitoring point reference	Event/action reference	Event	Management action
AQ1	EA1	Exceedance of a limit specified in Table 11	Undertake an investigation of the exceedance, including but not limited to: <ul style="list-style-type: none"> <li>(a) the root cause analysis for the exceedance; and</li> <li>(b) any common or contributory factors for the exceedance.</li> </ul>

### Ambient groundwater quality

- 18.** The licence holder must undertake monitoring of ambient groundwater quality at the locations and for the parameters listed in Table 13, in the corresponding units, over the averaging period and at the frequency specified in that table.

**Table 13: Ambient groundwater quality monitoring requirements table**

Monitoring point and reference location	Parameter	Units	Averaging period	Monitoring frequency
CM08S CM10S CM21_M CM16S CM17S	Standing water level	m AHD	Spot sample (in-field)	Monthly
	pH	-		
	Electrical conductivity @ 25°C	µS/cm	Spot sample (laboratory determined)	
	Redox potential	mV		
	Titrateable acidity (TA)	mg/L		

Monitoring point and reference location	Parameter	Units	Averaging period	Monitoring frequency
CM23 S/M	Total alkalinity (TAlk)			
CM24 S/M	Major ions: bicarbonate, calcium, chloride, magnesium, potassium, sodium, sulfate, total dissolved solids			Quarterly
CM25S				
CM26 S/M	Metals and metalloids: aluminum, arsenic, cadmium, chromium (as CrVI and total Cr), cobalt, copper, iron, mercury, nickel, selenium, thallium, uranium, zinc			6-monthly
CM32S				
CM34S				
GDE_MW_05S				
MB03P12 S/M				
MB05P03S				
MW_14S				
MW_16S				
MW_17S				
MW_18S				
MW_20S				
MW_21S				
MW_22S				
MW_23S				
MW_24S				
MW_11S				

## Record-keeping and reporting

### Records

- 19.** The licence holder must maintain accurate and auditable books including the following records, information, reports and data required by this licence:
- the calculation of fees payable in respect of this licence;
  - the maintenance of infrastructure required to ensure that it is kept in good working order in accordance with condition 1 of this licence;
  - monitoring undertaken in accordance with conditions 15, 16, 17 and 18;
  - management actions taken in response to exceedances of the trigger levels specified in Table 9;
  - the results of investigations into limit exceedances for ambient air quality required by condition 17; and
  - complaints received under condition 20.

In addition, the books must:

- be legible;
  - if amended, be amended in such a way that the original and subsequent amendments remain legible and are capable of retrieval;
  - be retained for at least 3 years from the date the books were made; and
  - be available to be produced to an Inspector or the CEO.
- 20.** The licence holder must record the number and details of any complaints received by the licence holder relating to its obligations under this licence and its compliance with Part V of the EP Act at the Premises, and any action taken by the licence holder in response to the complaint.

### Annual audit compliance report

- 21.** 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 31 March in each year, an Annual Audit Compliance Report in the approved form.

### Annual environmental report

- 22.** The licence holder must submit to the CEO, no later than 31 March in each year, an annual environmental report which includes, but is not limited to:
- (a) results of the monitoring required by Conditions 15, 16 and 18 for the preceding annual period;
  - (b) a summary of trigger exceedance events specified in Table 9 and subsequent management actions taken for each event;
  - (c) a summary of any complaints received and management actions taken for each complaint; and
  - (d) a summary of any environmental incidents and any action(s) taken.
- 23.** The licence holder must ensure the report required by condition 20 includes an appraisal and trend analysis of the results against pre-mining baseline data and previous monitoring results.

## Definitions

In this licence, the terms in Table 14 have the meanings defined.

**Table 14: Definitions**

Term	Definition
ACN	Australian Company Number
AEP	Annual Exceedance Probability – refers to the probability that a given rainfall total accumulated over a given duration will be exceeded in any one year
AHD	Australian Height Datum
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).
annual period	means a 12 month period commencing from 1 January until 31 December
AS 3580.1.1	means the Australian Standard AS 3580.1.1 <i>Methods for sampling and analysis of ambient air – Guide to siting air monitoring equipment</i>
AS 3580.9.3	means the most recent version and the relevant parts of the Australian Standard AS 3580.9.3 <i>Methods for sampling and analysis of ambient air – Determination of total suspended particulates (TSP) – high volume sampler gravimetric method</i>
AS 3580.9.8	means the most recent version and the relevant parts of the Australian Standard AS 3580.9.8 <i>Methods for sampling and analysis of ambient air – Determination of suspended particulate matter – PM10 continuous direct mass method using a tapered element oscillating microbalance analyser</i>
AS 3580.9.11	means the most recent version and the relevant parts of the Australian Standard AS 3580.9.8 <i>Methods for sampling and analysis of ambient air – Determination of suspended particulate matter – PM10 beta attenuation monitors</i>
AS/NZS 5667.1	means the Australian Standard AS/NZS 5667.1 <i>Water Quality – Sampling – Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples</i>
AS/NZS 5667.11	means the Australian Standard AS/NZS 5667.11 <i>Water Quality – Sampling – Guidance on sampling of groundwaters</i>
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
CEO	means Chief Executive Officer of the Department. CEO for the purposes of notification means: Director General Department Administering the <i>Environmental Protection Act 1986</i> Locked Bag 10 JOONDALUP DC WA 6919 <a href="mailto:info@dwer.wa.gov.au">info@dwer.wa.gov.au</a>
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 <i>Public Sector Management Act 1994</i> and designated as responsible for the administration of Part V, Division 3 of the EP Act
department request	means a request for books or other sources of information to be produced, made by an inspector or the CEO to the licence holder in writing and sent

	to the licence holder's address for notifications, as described at the front of this licence, in relation to: <ul style="list-style-type: none"> <li>(a) compliance with the EP Act or this licence;</li> <li>(b) the books or other sources of information maintained in accordance with this licence; or</li> <li>(c) the books or other sources of information relating to emissions from the Premises</li> </ul>
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 <i>Environmental Protection Act 1986</i> (WA)
EP Regulations	means the <i>Environmental Protection Regulations 1987</i> (WA)
high wind	means wind conditions rating 7 or greater on the Beaufort Windforce Scale (i.e. wind speeds 50 km/h or greater)
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
ModCod	Modified Co-disposal – refers to a proprietary modification to the co-disposal practice of sand/clay tailings, involving the addition of flocculant at the point of deposition to provide for more efficient water recovery and faster consolidation
MS 1017	Ministerial Statement 1017
MUP	Mining Unit Plant
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
Noise Regulations	means the <i>Environmental Protection (Noise) Regulations 1997</i> (WA)
PASS	Potential Acid Sulfate Soils
pH <sub>F</sub>	field pH
pH <sub>FOX</sub>	field peroxide pH
PM	means total particulate matter including both solid fragments of material and miniscule droplets of liquid
PM <sub>10</sub>	means particles with an aerodynamic diameter of less or equal to 10 µm
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
ROM	Run Of Mine
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
six monthly	means the two inclusive periods from 1 January to 30 June and 1 July to 31 December in the same year
spot sample	means a discrete sample representative of the time and place at which the sample is taken
SSP	Surface Screening Plant

SWL	Sound Power Level
TAlk	Total Alkalinity
TSP	means total suspended particles each having an aerodynamic diameter of less than 50 µm
TA	Titrateable Acidity, a measure of Total Acidity
UTL	Upper Threshold Limit
WCP	Wet Concentrator Plant

---

**END OF CONDITIONS**

## Schedule 1: Maps

### Premises map

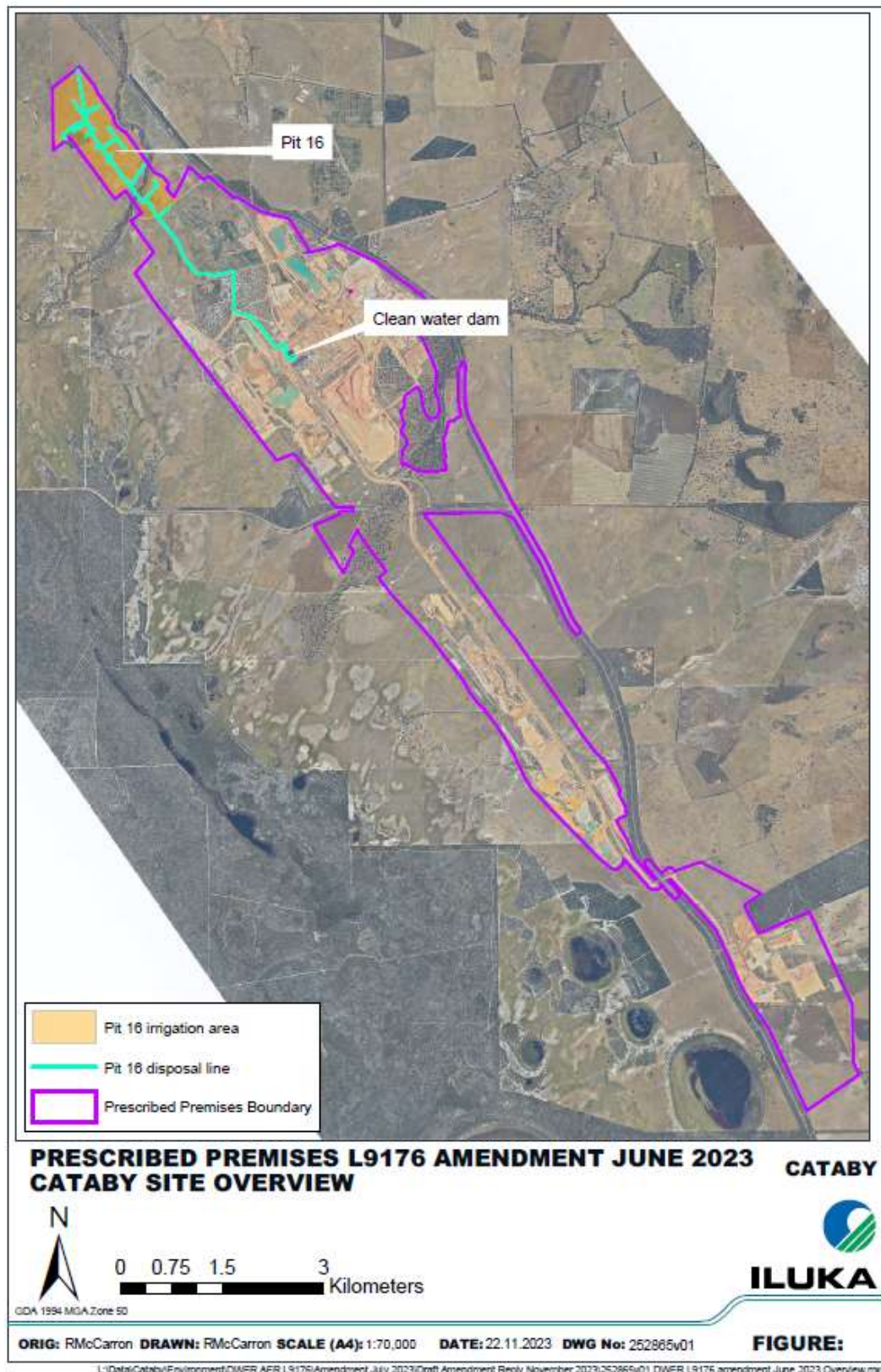


Figure 1: Map of the boundary of the prescribed premises

L9176/2018/1

IR-T06 Licence template (v5.0) (September 2019)

Site map with dust monitoring locations

The Premises is shown in the map below. The red line depicts the Premises boundary; yellow diamonds depict dust monitoring locations.

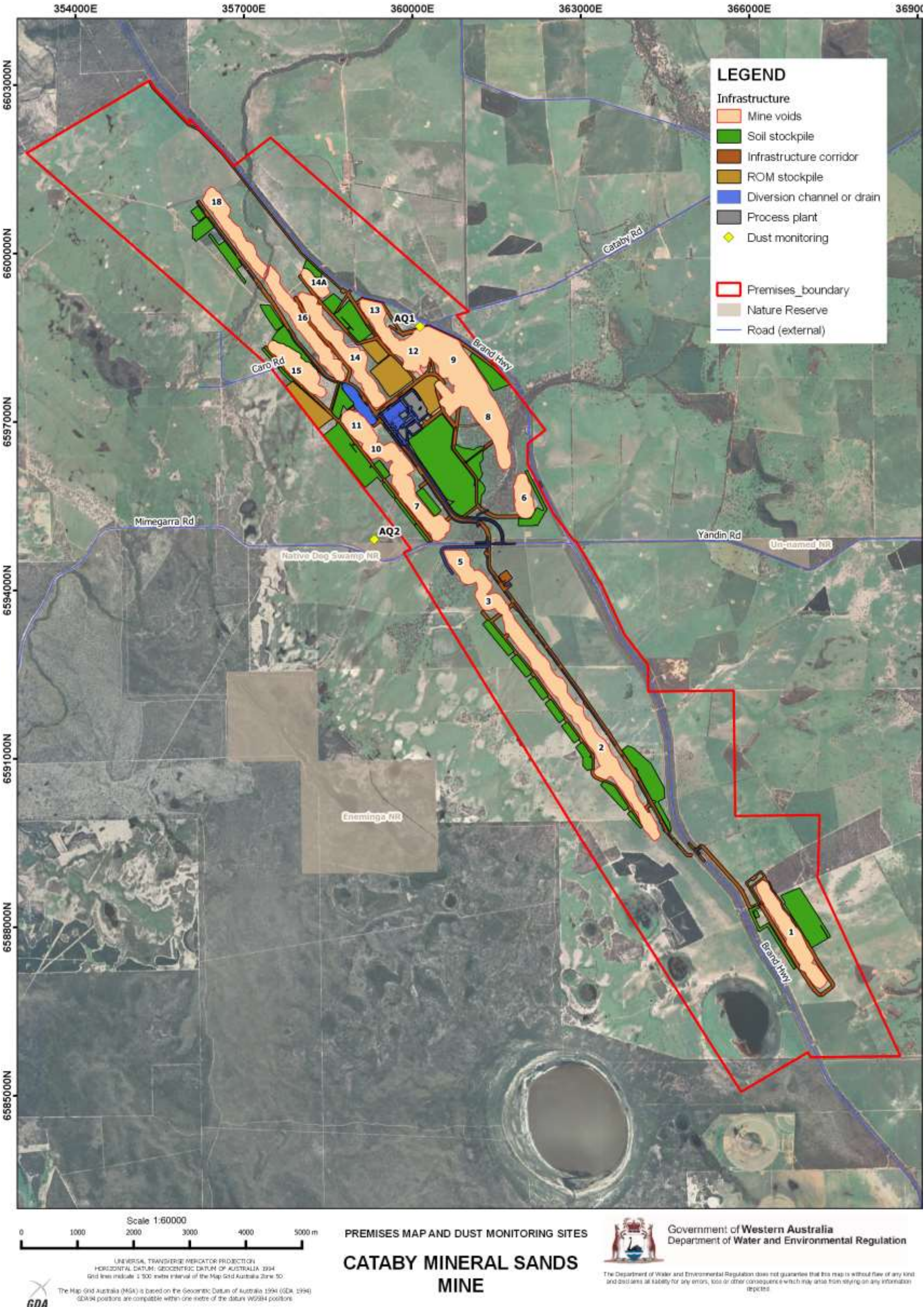


Figure 2: Site map with dust monitoring (Note: The premises boundary line depicted in red is no longer accurate – see Premises Map Figure 1)

Map of emission points to land and groundwater (North)

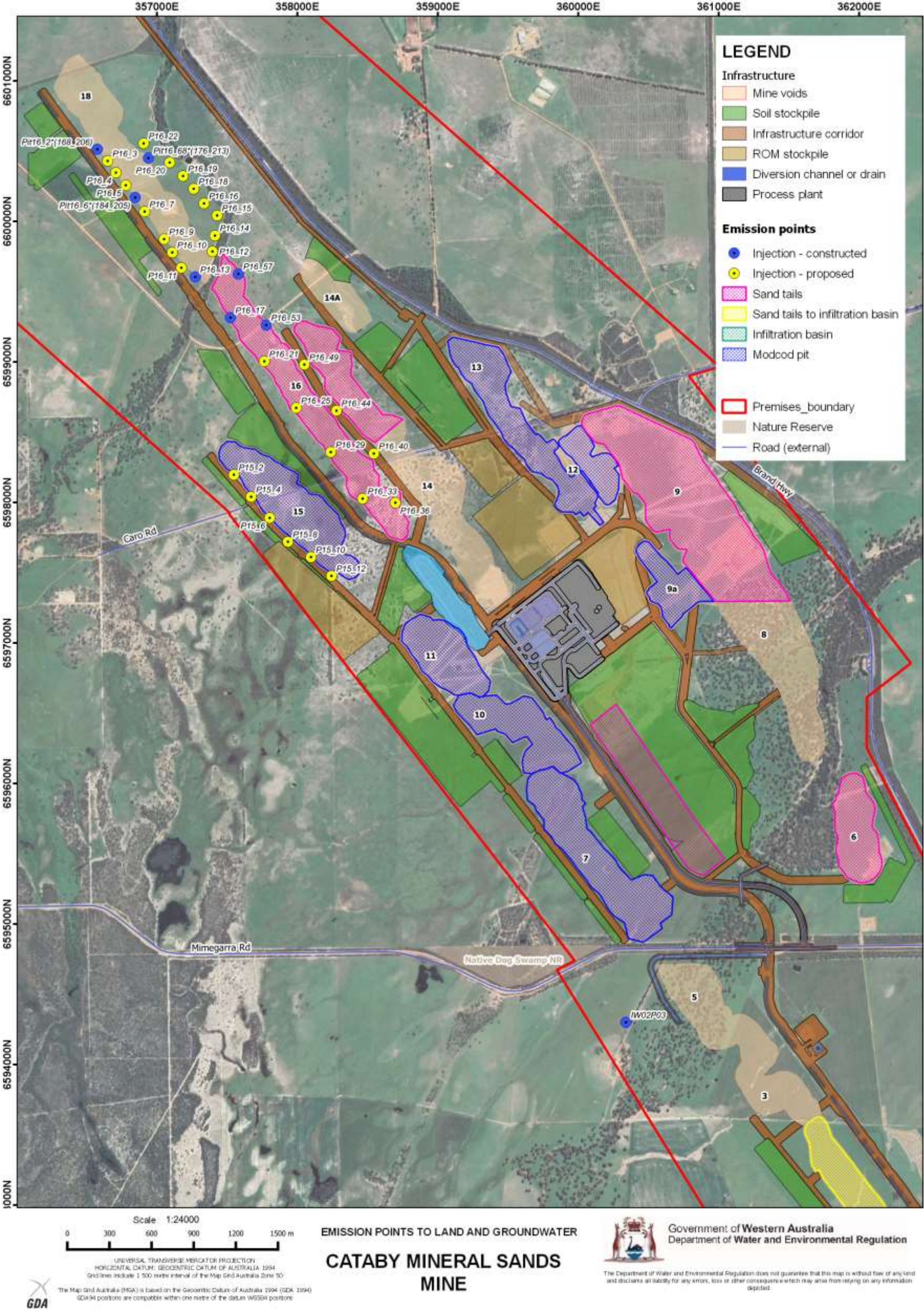


Figure 3: Map of emissions points to land and groundwater (North)

Map of emission points to land and groundwater (South)

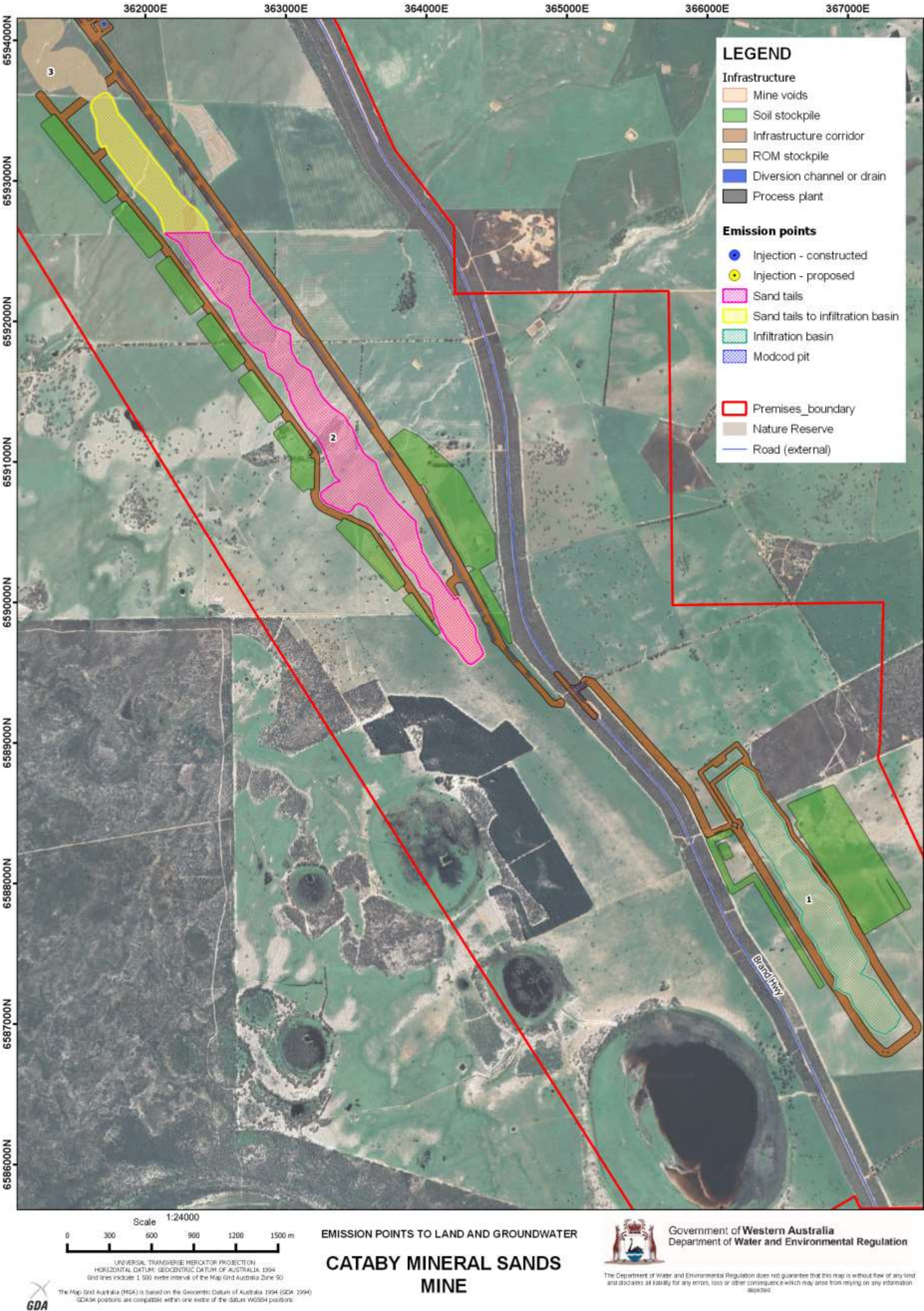


Figure 4: Map of emission points to land and groundwater (South)

## Map of groundwater monitoring locations

The location of groundwater monitoring bores is shown in the map below.

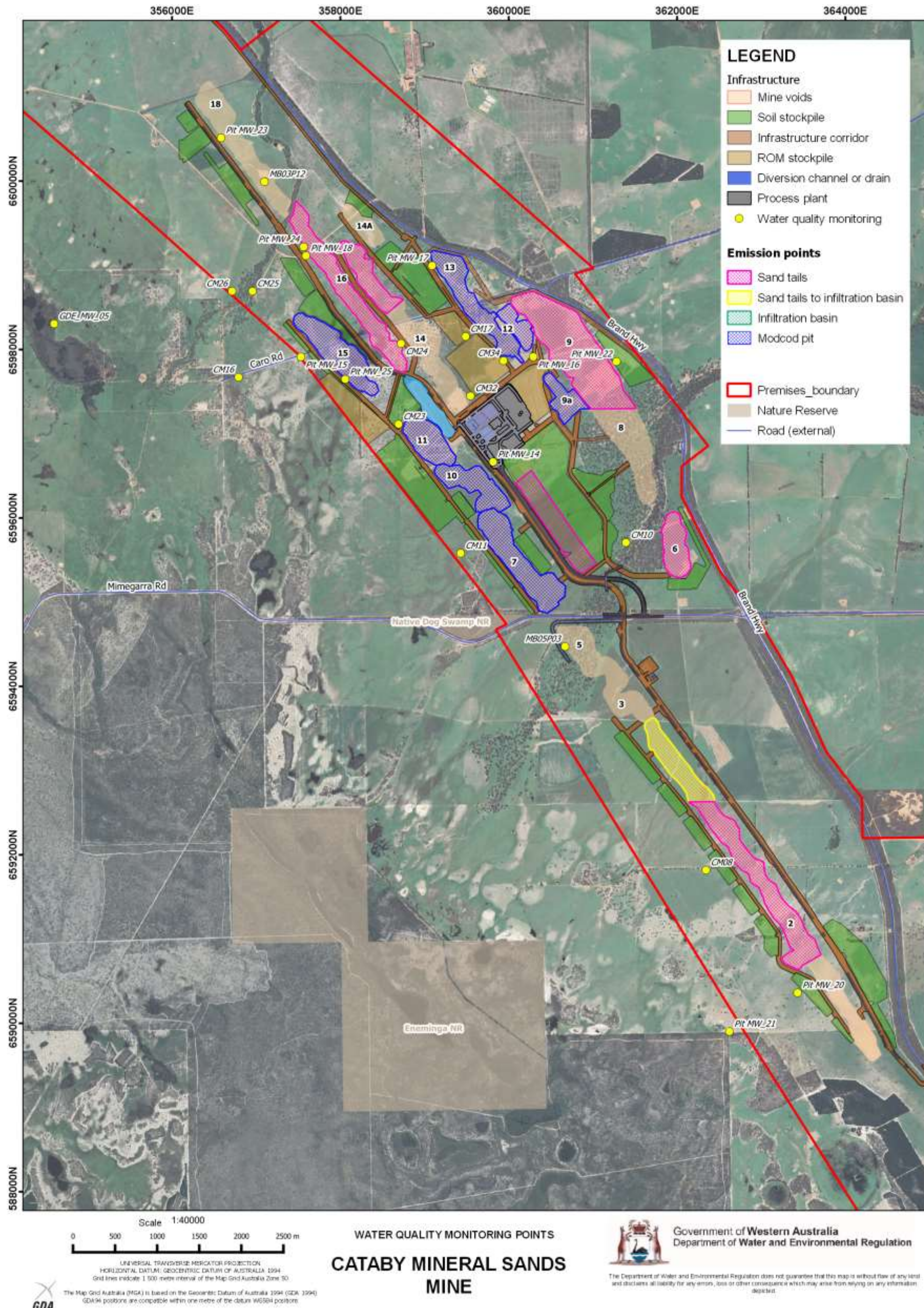


Figure 5: Map of groundwater locations

## Map of updated Pit 16 Irrigation Area

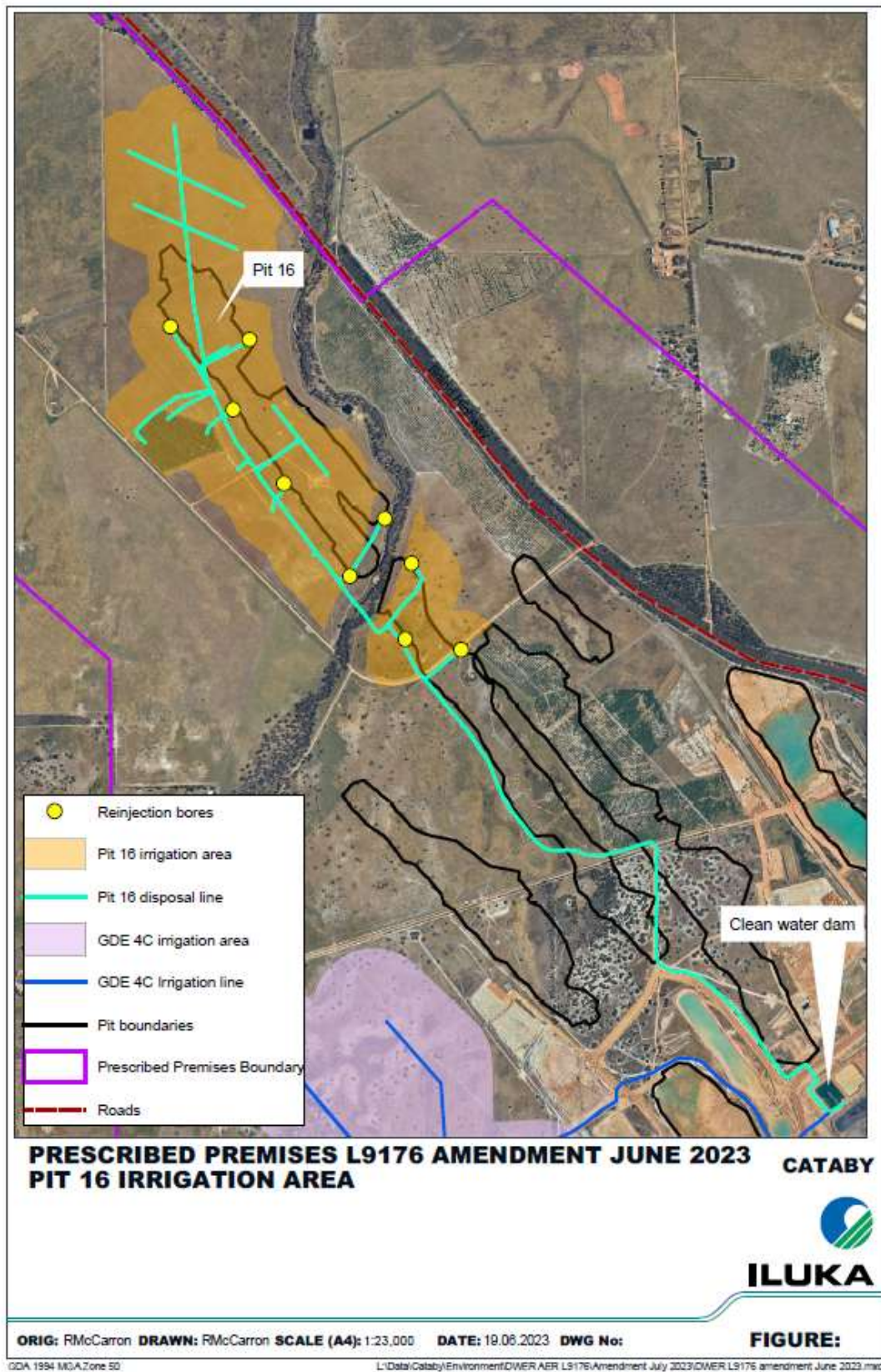


Figure 6: Pit 16 Irrigation area

## Schedule 2: Infrastructure and equipment

The primary activity infrastructure and equipment for the Premises, at the time of assessment, is listed in Table 15.

**Table 15: Infrastructure and equipment**

<b>Infrastructure and equipment</b>
<b>Fixed infrastructure and equipment</b>
WCP, WHIMS plant and UCC, including thickener(s) and associated pumps
Skid-mounted, in-pit MUPs (MU20 & MU21)
SSPs (MU02 & MU23 SSP), including slurry pipelines, pumps and stackers
HMC product stockpile pads (Mags & Non-Mags)
ROM stockpile pads (ROM North & ROM South)
Sand tailings and clay fines system, including pipelines, pumps and stackers
Clean Water Dam (CWD), Process Water Dam (PWD), Drop Out Dam (DOD)
Sedimentation / Stormwater storage dam
Return water pipeline network
Soil stockpiles – Overburden, topsoil, subsoil
Reinjection bores
<b>Mobile plant<sup>1</sup></b>
8 x Bulldozers – Sound Power Level (SWL) not exceeding 115.3 dB(A)
3 x Excavators – SWL not exceeding 113.9 dB(A)
5 x Scrapers – SWL not exceeding 110.2 dB(A)
8 x Haul trucks – SWL not exceeding 112.2 dB(A)
3 x Water carts – SWL not exceeding 110.1 dB(A)
5 x Carry graders – SWL not exceeding 111.7 dB(A)

*Note 1: The type and combination of mobile plant in use at any one time on the Premises must be managed to ensure compliance with the Noise Regulations and the limits specified in condition 16 of this licence.*