



Licence

Environmental Protection Act 1986, Part V

Licensee: Matilda Operations Pty Ltd

Licence: L5206/1987/10

Registered office: Level 2
38 Richardson Street
WEST PERTH WA 6000

ACN: 166 954 525

Premises address: Wiluna Operation
WILUNA WA 6646
Being Mining tenements M53/30, M53/32, M53/468, L53/62, L53/20 and
part tenements M53/40, M53/44, M53/50, M53/26, M53/6, M53/95,
M53/96, M53/200 and M53/69 as depicted in Schedule 1

Issue date: 21 November 2013

Commencement date: 22 November 2013

Expiry date: 21 November 2018

Prescribed premises category

Schedule 1 of the *Environmental Protection Regulations 1987*

Category number	Category description	Category production or design capacity	Approved Premises production or design capacity
5	Processing or beneficiation of metallic or non-metallic ore: premises on which — (a) metallic or non-metallic ore is crushed, ground, milled or otherwise processed; or (b) tailings from metallic or non-metallic ore are reprocessed; or (c) tailings or residue from metallic or non-metallic ore are discharged into a containment cell or dam.	50,000 tonnes or more per year	1,800,000 tonnes per annual period
6	Mine dewatering: premises on which water is extracted and discharged into the environment to allow mining of ore.	50,000 tonnes or more per year	2,365,000 kL per annual period
85	Sewage facility: premises — (a) on which sewage is treated (excluding septic tanks); or from which treated sewage is discharged onto land or into waters.	More than 20 but less than 100m ³ per day	52 m ³ per day



Conditions

This Licence is subject to the conditions set out in the attached pages.

Date signed: 10 June 2016

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Tim Gentle

Officer delegated under section 20
of the *Environmental Protection Act 1986*



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Introduction

This Introduction is not part of the Licence conditions.

DER's industry licensing role

The Department of Environment Regulation (DER) is a government department for the state of Western Australia in the portfolio of the Minister for Environment. DER's purpose is to advise on and implement strategies for a healthy environment for the benefit of all current and future Western Australians.

DER has responsibilities under Part V of the *Environmental Protection Act 1986* (the Act) for the licensing of prescribed premises. Through this process DER works with the business owners, community, consultants, industry and other representatives to prevent, control and abate pollution and environmental harm to conserve and protect the environment. DER also monitors and audits compliance with works approvals and licence conditions, takes enforcement action as appropriate and develops and implements licensing and industry regulation policy.

Licence requirements

This Licence is issued under Part V of the Act. Conditions contained within the Licence relate to the prevention, reduction or control of emissions and discharges to the environment and to the monitoring and reporting of them.

Where other statutory instruments impose obligations on the Premises/Licensee the intention is not to replicate them in the licence conditions. You should therefore ensure that you are aware of all your statutory obligations under the Act and any other statutory instrument. Legislation can be accessed through the State Law Publisher website using the following link:

<http://www.slp.wa.gov.au/legislation/statutes.nsf/default.html>

For your Premises relevant statutory instruments include but are not limited to obligations under the:

- *Environmental Protection (Unauthorised Discharges) Regulations 2004* – these Regulations make it an offence to discharge certain materials such as contaminated stormwater into the environment other than in the circumstances set out in the Regulations.
- *Environmental Protection (Controlled Waste) Regulations 2004* - these Regulations place obligations on you if you produce, accept, transport or dispose of controlled waste.
- *Environmental Protection (Noise) Regulations 1997* – these Regulations require noise emissions from the Premises to comply with the assigned noise levels set out in the Regulations.

You must comply with your licence. Non-compliance with your licence is an offence and strict penalties exist for those who do not comply.



Licence holders are also reminded of the requirements of section 53 of the Act which places restrictions on making certain changes to prescribed premises unless the changes are in accordance with a works approval, licence, closure notice or environmental protection notice.

Licence fees

If you have a licence that is issued for more than one year, you are required to pay an annual licence fee prior to the anniversary date of issue of your licence. Non payment of annual licence fees will result in your licence ceasing to have effect meaning that it will no longer be valid and you will need to apply for a new licence for your Premises.

Ministerial conditions

If your Premises has been assessed under Part IV of the Act you may have had conditions imposed by the Minister for Environment. You are required to comply with any conditions imposed by the Minister.

Premises description and Licence summary

The Wiluna Gold Mine operation is owned by Matilda Operations Pty Ltd (Matilda Operations), a wholly owned entity of Blackham Resources Ltd (BLK) which acquired the Premises from Apex Gold Pty Ltd (Apex) a wholly owned subsidiary of Apex Minerals NL (AXM) on 21 March 2014.

The operation is located approximately 1,000km north east of Perth, 5km south east of the town of Wiluna and comprises mining leases and miscellaneous licences covering approximately 50 square kilometres (km²) (schedule 1). Modern operations of the Wiluna Gold Mine commenced in 1984, however prior to its sale to Matilda Operations it had been in care and maintenance (commenced 25 June 2013). The Wiluna Gold Mine is currently licensed for Categories 5, 6 & 85.

Matilda Operations holds registration R2015/2008/1 for the operation of the site landfill facility. Under Schedule 1, Part 2, category 89 of the *Environmental Protection (Rural Landfill) Regulations 1987* the landfill is classified as a Class II (Putrescible) landfill.

Matilda Operations holds a licence, issued under the *Rights in Water Irrigation Act (1914)* to dewater for mining purposes (GWL 159247(3)). There are three sources of mine water discharged to Lake Way. These sources are Bulletin underground operations, East pit underground operations and Happy Jack pit. Mine water is pumped to Wiluna Operations evaporation and settlement pond and subsequently discharged to the lake. Bulletin mine water is first staged in Lone Hand pit to further assist in settlement of suspended solids. The mine water collected in the evaporation pond is discharged via an established 10 kilometre pipeline feeding into one of the major tributaries to Lake Way, West Creek. This water enters the lake via an energy dispersion channel lined with imported competent rock to reduce the effects of erosion.

This licence also covers the following prescribed activities on the premises:

- crushing plant;
- Tailings Storage Facilities (TSFs):
 - Tailings B (formerly Calcine Dam 507mRL – decommissioned 1985, used periodically as a pond for storage and evaporation of excess process water; now redundant as a result of June 2016 amendment for TSF Cell J);
 - Tailings C (decommissioned);
 - Western Cell to RL 521m (decommissioned);
 - BIOX Dam:
 - Tailings E and Tailings F (have been joined to create one dam and recommissioned in 2011, now redundant as a result of June 2016 amendment for TSF Cell J);
 - Tailings G (decommissioned - now redundant as a result of June 2016 amendment for TSF Cell J);
 - Tailings H 516m Australian Height Datum (AHD) – two 2.5m lift approved to 521m AHD;
 - In-pit tailings:



- Golden Age pit (full – receives decant water for evaporation);
 - Republic Pit South (full – no longer in use);
 - Republic North (active landfill, very small pit, will no longer be used for the disposal of tailings);
 - Lawless pit (full –now redundant as a result of June 2016 amendment for TSF Cell J);
 - Moonlight pit (full – receives decant water for evaporation);
 - Squib pit (full – receives decant water for evaporation);
 - Essex pit (has a seepage issue – currently is not in use);
 - Adelaide pit (currently not in use);
 - Gunbarrel North pit (currently in use);
 - Gunbarrel South pit (currently in use).
- Lake Way pipeline;
 - evaporation pond;
 - heap leach operation;
 - bacterial leaching plant;
 - Carbon in Pulp (CIP)/Carbon in Leach (CIL) Gold Extraction Plant; and
 - Lake Way discharge.

The Licence covers the discharge of water from the Wiluna Gold Mine dewatering program via a settling pond, abandoned pits and a 'turkey's nest' to Lake Way via the Lake Way pipeline and West Creek.

This Licence is the successor to Licence number L5206/1987/9 and is a REFIRE licence. The conditions of the Licence were reviewed in 2013, at the time of REFIRE conversion, to better reflect the operations at the site.

August 2014 Amendment

This Licence was the result of an amendment sought by the Licensee to transfer the occupier from Apex Gold Pty Ltd (Apex) to Matilda Operations Pty Ltd, to update the Improvement Program and to reflect the most current licence format.

June 2016 Amendment

This amendment is to authorise the construction of TSF Cell J over the footprint of the existing TSFs Tailings B/Calcine Tailings, Tailings E, Tailings F and Tailings G. TSF Cell J will abut the existing Tailings H and East Pit Waste Rock Dump. New groundwater monitoring bores will be added to the ambient groundwater monitoring program (TD12J – TD 16J).

The amendment also authorises an increase to the production capacity under category 5 to 1,800,000 tonnes per annum. . As part of the increase the following additional plant will be installed:

- Crusher primary screen (replacement);
- Fine ore bin;
- New gravity circuit;
- New crusher MCC (replacement);
- Upgrade of oxygen delivery systems;
- New carbon regeneration kiln (replacement);
- Minor upgrade of process control and instrumentation systems; and
- New leach tank and associated equipment.

As part of the amendment DER has removed conditions it considers 'redundant' due to their incompatibility with the DER (2015) Guidance Statement: Licensing and Works Approvals.

Three improvement requirements have been added to the improvement program to:

- submit and implement a dust management plan for the Premises;



- complete a monitoring plan for assessing ecological impacts associated with the mine dewater discharge to Lake Way; and
- check for sampling ports on the offgas stacks within the gold processing plant.

The licences and works approvals issued for the Premises since 22 November 2004 are:

Instrument log		
Instrument	Issued	Description
L5206/1987/8	22 November 2004	Licence amendment
W4081	23 April 2008	Works approval for the construction of a tailings storage facility.
W4575/2009/1	12 November 2009	Works approval to establish four in pit TSF's and one pit to hold decant liquor from the tailings.
L5206/1987/9	15 April 2010	Amendment for the addition an in-pit TSF, Essex pit.
L5206/1987/9	6 May 2010	Licence amendment
L5206/1987/9	6 August 2010	Amendment for the addition an in-pit TSF, Adelaide pit
L5206/1987/9	25 November 2011	Licence amendment
L5206/1987/9	2012	Licence amendment, authorisation of Gunbarrel North and South pits as in-pit TSFs and Lone Hand Pit hold decant liquor from the tailings.
L5206/1987/9	19 December 2012	Licence amendment. Removal of Williamson pit
L5206/1987/10	21 November 2013	Licence reissue and amendment to REFIRE format
L5206/1987/10	28 August 2014	Licence amendment. Update to Improvement Program and transfer of occupier to Matilda Operations Pty Ltd.
L5206/1987/10	10 June 2016	Licence amendment to authorise the construction of TSF Cell J. Associated modification to groundwater monitoring program to add new bores and parameters for TSF Cell J and remove redundant bores. Increase to category 5 production capacity to 1,800,000 tonnes per annum. Authorise tyres disposal by burial in Essex Pit. Previous improvement program closed out and removed from Licence. Addition of new improvement conditions for dust management, ecological assessment of dewatering impacts and checking of sampling ports for offgas stacks.

Severance

It is the intent of these Licence conditions that they shall operate so that, if a condition or a part of a condition is beyond the power of this Licence to impose, or is otherwise *ultra vires* or invalid, that condition or part of a condition shall be severed and the remainder of these conditions shall nevertheless be valid to the extent that they are within the power of this Licence to impose and are not otherwise *ultra vires* or invalid.

END OF INTRODUCTION



Licence conditions

1 General

1.2 Interpretation

1.2.5 In the Licence, definitions from the *Environmental Protection Act 1986* apply unless the contrary intention appears.

1.2.6 For the purposes of this Licence, unless the contrary intention appears:

'Act' means the *Environmental Protection Act 1986*;

'AHD' means the Australian height datum;

'annual period' means the inclusive period from 1 January until 31 December in the same year;

'AS 4323.1' means the Australian Standard AS4323.1 *Stationary Source Emissions Method 1: Selection of sampling positions*;

'AS/NZS 5667.1' means the Australian Standard AS/NZS 5667.1 *Water Quality – Sampling – Guidance of the Design of sampling programs, sampling techniques and the preservation and handling of samples*;

'AS/NZS 5667.4' means the Australian Standard AS/NZS 5667.4 *Water Quality – Sampling – Guidance on sampling from lakes, natural and man-made*;

'AS/NZS 5667.11' means the Australian Standard AS/NZS 5667.11 *Water Quality – Sampling – Guidance on sampling of groundwaters*;

'AS/NZS 5667.12' means the Australian Standard AS/NZS 5667.12 *Water Quality – Sampling – Guidance on sampling of bottom sediments*;

'averaging period' means the time over which a limit or target is measured or a monitoring result is obtained;

'BIOX' means BIOX® treatment plant;

'bund or bunding' means an impervious structure surrounding an area ensuring containment of all materials within and has a hydraulic conductivity of less than 1×10^{-9} metres (m/s) per second;

'CEO' means Chief Executive Officer of the Department of Environment Regulation;

'CEO' for the purpose of correspondence means:

Chief Executive Officer
Department Administering the Environmental Protection Act 1986
Locked Bag 33
CLOISTERS SQUARE WA 6850
Email: info@der.wa.gov.au

'freeboard' means the distance between the maximum water surface elevations and the top of retaining banks or structures at their lowest point;

'Licence' means this Licence numbered L5206/1987/10 and issued under the Act;



'Licensee' means the person or organisation named as Licensee on page 1 of the Licence;

'NATA' means the 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;

'Premises' means the area defined in the Premises Map in Schedule 1 and listed as the Premises address on page 1 of the Licence;

'quarterly' means the 4 inclusive periods from 1 January to 31 March, 1 April to 30 June, 1 July to 31 September and 1 October to 31 December in the same year;

'Schedule 1' means Schedule 1 of this Licence unless otherwise stated;

'Schedule 2' means Schedule 2 of this Licence unless otherwise stated;

'six monthly' means the 2 inclusive periods from 1 January to 30 June and 1 July to 31 December in the same year; and

'spot sample' means a discrete sample representative at the time and place at which the sample is taken.

1.1.1 Any reference to an Australian or other standard in the Licence means the relevant parts of the the standard in force from time to time during the term of this Licence.

1.1.2 Any reference to a guideline or code of practice in the Licence means the version of that guideline or code of practice in force from time to time and shall include any amendments or replacements to that guideline or code of practice made during the term of this Licence.

1.2 Premises operation

1.2.1 The Licensee shall ensure that where wastes produced on the premises are processed on site they are only subjected to the processes in Table 1.2.1 and in accordance with the process limits in that table.

Table 1.2.1: Management of waste		
Waste type	Process	Requirements
BIOX liquors	Discharge to tailings storage facility	Neutralisation
Sewage	Biological, physical and chemical treatment	52 m ³ /day
Tyres ¹	Disposal by burial in Essex Pit	Disposed in batches separated from each other by at least 100mm of soil/inert waste and each batch consisting not more than 1000 tyres.

Note 1: Additional requirements for final cover of tyres are set out in Part 6 of the *Environmental Protection Regulations 1987*.

1.2.2 The Licensee shall ensure that material is only stored and/or treated within vessels or compounds provided with the infrastructure detailed in Table 1.2.2.

Table 1.2.2: Containment infrastructure			
Containment point reference	Storage vessel or compound	Material	Requirements



C1A	Adelaide Pit	Tailings	In pit TSF. No further tailings discharge to Adelaide Pit is authorised.
C1GBN	Gunbarrel North Pit		In-pit TSF
C1GBS	Gunbarrel South Pit		In-pit TSF
C1G	TSF G ¹		Surface TSF, compacted clayey mine waste embankment construction. No further tailings discharge authorised until wall is repaired.
C2SQ	Squib Pit	Tailings Decant Water	In-pit TSF
C2GA	Golden Age Pit		In-pit TSF
C2ML	Moonlight Pit		In-pit TSF
C2LL	Lawless Pit ¹		In-pit TSF
C2D	Decant Water Pond		HDPE lined, engineered dam
C2E	TSF E ¹		Surface TSF, compacted clayey mine waste embankment construction.
C2F	TSF F ¹		Surface TSF, compacted clayey mine waste embankment construction.
C2CL	Calcine Dam ¹		Surface TSF, compacted clayey mine waste embankment construction.
C2H	TSF H		Surface TSF, compacted clayed mine waste starter embankment, compacted tailings up-stream lifts.
C3EP	Evaporation Pond	Mine dewater	HDPE lined, engineered embankment walls
C3LH	Lone Hand Pit		Mined out open pit
-	Sewage Treatment Ponds	Sewage	
-	Bioremediation treatment cells (within the Happy Jack Waste Rock Dump)	Hydrocarbon contaminated soil	- clay lined (or equivalent) with a permeability of 10⁻⁹ m/s or less; - all leachate runoff is directed to, and contained within, an impermeable leachate collection sump with capacity to contain an 1 in 100 year, 72 hour duration rainfall event; and - the leachate collection sump is lined.

Note 1: This infrastructure will be redundant once TSF Cell J is constructed.



- 1.2.3 The Licensee shall manage all containment infrastructure in Table 1.2.1 such that a minimum top of embankment freeboard of 300mm or a 1 in 100 year/72 hour storm event (whichever is greater) is maintained.
- 1.2.4 The Licensee shall manage all wastewater treatment ponds such that :
- (a) overtopping of the ponds does not occur; and
 - (b) freeboard equal to, or greater than, 300mm is maintained;
 - (c) the integrity of the containment infrastructure is maintained; and
 - (a) for wastewater storages trapped overflows are maintained on the outlet of ponds to prevent carry-over of surface floating matter; and
 - (b) for wastewater storages vegetation and floating debris (emergent or otherwise) is prevented from encroaching onto pond surfaces or inner pond embankments.
- 1.2.5 The Licensee shall ensure that all pipelines containing alkaline water, saline water, cyanide, process liquors, and/or tailings are either:
- (a) equipped with telemetry systems and pressure sensors along pipelines to allow the detection of leaks and failures; or
 - (b) equipped with automatic cut-outs in the event of a pipe failure; and/or
 - (c) provided with secondary containment sufficient to contain any spill for a period equal to the time between inspections.
- 1.2.6 The Licensee shall:
- (a) undertake inspections as detailed in Table 1.2.3;
 - (b) where any inspection identifies that an appropriate level of environmental protection is not being maintained, take corrective action to mitigate adverse environmental consequences; and
 - (c) maintain a record of all inspections undertaken.

Table 1.2.3: Inspection of infrastructure

Scope of inspection	Type of inspection	Frequency of inspection
Mine dewater pipelines	Visual integrity	Daily when operating or weekly when not operating.
Tailings delivery pipelines	Visual integrity	
Tailings return water lines	Visual integrity	
Tailings deposition	Visual assessment of beaching	
Decant Pond	Visual assessment of pond, size and location	
Internal embankment freeboard of any active TSF	Visual to confirm required freeboard capacity is available	

- 1.2.7 The Licensee shall construct the TSF Cell J, processing plant upgrade and ancillary infrastructure in accordance with the documentation detailed in Table 1.2.4:

Table 1.2.4: Construction Requirements¹

Document	Parts	Date of Document
Blackham Resources Matilda Gold Project L5206/1987/10 Licence Amendment Supporting Document (including appendices)	All	February 2016
Knight Piesold Memorandum PE16-00323 to Blackham Resources Ltd Re: Additional Information TSF J Application	All	12 April 2016

Note 1: Where the details and commitments of the documents listed in condition 1.2.7 are inconsistent with any other condition of this Licence, the conditions of this Licence shall prevail.



- 1.2.8 For each operational TSF the Licensee shall complete a monthly water balance. The water balance shall as a minimum consider the following:
- (a) site rainfall;
 - (b) evaporation;
 - (c) decant water recovery volumes;
 - (d) seepage recovery volumes;
 - (e) volumes of tailings deposited; to derive an
 - (f) estimate of seepage losses.

2 Emissions

2.1 General

- 2.1.1 The Licensee shall record and investigate the exceedance of any descriptive or numerical limit or target specified in any part of this Licence.

2.2 Point source emissions to air

- 2.2.1 The Licensee shall ensure that where waste is emitted to air from the emission points in Table 2.2.1 it is done so in accordance with the conditions of this Licence.

Table 2.2.1: Emission points to air			
Emission point reference	Emission Point	Emission point height (m)	Source, including any abatement
Carbon Regen Kiln	Carbon regeneration kiln stack	23	Carbon regeneration kiln
Gold room	Gold furnace stack	17	Gold furnace

2.3 Point source emissions to surface water

- 2.3.1 The Licensee shall ensure that where waste is emitted to surface water from the emission points in Table 2.3.1 and identified on the map of emission points in Schedule 1 it is done so in accordance with the conditions of this Licence.

Table 2.3.1: Emission points to surface water			
Emission point reference	Emission point reference on Map of emission points	Description	Source including abatement
Lake Discharge	Lake Discharge sample point	Discharge into Lake Way via the Lake Discharge pipeline	Mine dewatering effluent via settling pond/s

- 2.3.2 The Licensee shall not cause or allow point source emissions to surface water greater than the limits listed in Table 2.3.2.

Table 2.3.2: Point source emission limits to surface water			
Emission point reference	Parameter	Limit (including units)	Averaging period
Lake Discharge	Total suspended solids	80 mg/L	Monthly



3 Monitoring

3.1 General monitoring

3.1.1 The Licensee shall ensure that:

- (a) all water samples are collected and preserved in accordance with AS/NZS 5667.1;
- (b) all wastewater sampling is conducted in accordance with AS/NZS 5667.10;
- (c) all surface water sampling is conducted in accordance with AS/NZS 5667.4, AS/NZS 5667.6 or AS/NZS 5667.9 as relevant;
- (d) all groundwater sampling is conducted in accordance with AS/NZS 5667.11;
- (e) all sediment sampling is conducted in accordance with AS/NZS 5667.12; and
- (f) all laboratory samples are submitted to a laboratory with current NATA accreditation for the parameters to be measured (unless indicated otherwise in relevant table).

3.1.2 The Licensee shall ensure that:

- (a) monthly monitoring is undertaken at least 15 days apart;
- (b) quarterly monitoring is undertaken at least 45 days apart;
- (c) six monthly monitoring is undertaken at least five months apart; and
- (d) annual monitoring is undertaken at least nine months apart.

3.1.3 The Licensee shall 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.

3.1.4 The Licensee shall, 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.

3.2 Monitoring of point source emissions to surface water

3.2.1 The licensee shall undertake the monitoring in Table 3.2.1 according to the specifications in that table.

Table 3.2.1: Monitoring of point source emissions to surface water			
Emission point reference	Parameter ¹	Units	Frequency
Lake discharge	Cumulative water throughput volume	kL	Monthly
	Total dissolved solids, arsenic, and total suspended solids	mg/L	
	pH	-	
	Antimony, cadmium, chromium, copper, lead, manganese, nickel, selenium, thallium, zinc	mg/L	Quarterly

Note 1: Non-NATA in field analysis of pH permitted.

3.3 Process monitoring

3.3.1 The Licensee shall undertake the monitoring in Table 3.3.1 according to the specifications in that table.



Table 3.3.1: Process monitoring					
Monitoring point reference	Process description	Parameter ¹	Units	Frequency	Method
PM1	BIOX liquors discharged from the neutralisation section	pH	-	Weekly	None specified
		Arsenic	mg/L		
PM2	Combined tailings streams at the tailings outfall	pH	-	Weekly	None specified
		Arsenic	mg/L		
PM3	Decant reclaim water pond	pH	-	Weekly	None specified
		Arsenic	mg/L		
PM4B PM4C PM4J	Consolidated tailings from the active TSF(s) ²	pH	-	Monthly	None specified

Note 1: Non-NATA in field analysis of pH permitted.

Note 2: Only deposition to active TSFs to be reported for the period.

3.4 Ambient environmental quality monitoring

3.4.1 The Licensee shall undertake the monitoring in Table 3.4.1, Table 3.4.2 and Table 3.4.3 according to the specifications in those tables.

Table 3.4.1: Monitoring of ambient surface water quality						
Monitoring point reference	Monitoring point location		Parameter	Units	Averaging period	Frequency
	Eastings	Northings				
LW-A1,	225629	7041287	Antimony, arsenic, cadmium, lead, copper, manganese, nickel, selenium, thallium, zinc and chromium	mg/L	Spot sample	6-monthly
LW-A2,	225571	7041181				
LW-A3,	225746	7041256				
LW-A4,	225729	7041353				
LW-A5,	226986	7041183				
LW-A6,	223948	7043201				
LW-A7,	224140	7042909				
LW-A8,	224850	7041934				
LW-A9,	228576	7041902				
LW-B1,	231484	7043492				
LW-B2,	231445	7044437				
LW-B3,	238089	7041128				
LW-B4,	241625	7035120				
LW-B5,	233525	7030647				
LW-B6,	232808	7028101				
LW-B7,	226138	7040391				
LW-B8,	229109	7038402				
LW-B9,	235320	7042173				
LW-B10,	238299	7028135				
LW-B11,	227377	7038130				
LW-B12	231758	7043284				

Table 3.4.2: Monitoring of ambient sediment quality				
Monitoring point reference and location	Parameter	Units	Averaging period	Frequency
LW-A1, LW-A2, LW-A3, LW-A4, LW-A5, LW-A6, LW-A7, LW-A8, LW-A9, LW-B1,	Antimony, arsenic, cadmium, lead, copper, manganese, nickel, selenium, thallium, zinc	mg/kg	Spot sample	6-monthly



LW-B2, LW-B3, LW-B4, LW-B5, LW-B6, LW-B7, LW-B8, LW-B9, LW-B10, LW-B11, LW-B12	and chromium			
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Table 3.4.3: Monitoring of ambient groundwater quality								
Monitoring point reference and location of monitoring points on map		Parameter ¹	Target	Limit	Units	Averaging period	Frequency	
Tailings dams bores ^{2,3}	TD1, TD2, TD3, TD4, TD5, TD6, TD7, TD8, TD9, TD10A, TD11A TD12J, TD13J, TD14J, TD15J, TD16J	Soluble arsenic	-	0.4	mg/L	Spot sample	Quarterly	
		pH	-	-	-			
		Total dissolved solids,	-	-	mg/L			
		Weak acid dissociable cyanide	-	0.5				
		Total cyanide	-	-				
		Standing water level	-	-	m(bgl)			
	TD1, TD2, TD3, TD4, TD5, TD6, TD7, TDA, TD9, TD10A, TD11A	Alkalinity, aluminium, antimony, bromide, cadmium, calcium carbonate, chloride, chromium, copper, fluoride, total iron, lead, lithium, magnesium, mercury, nitrate, potassium, strontium, sulphate, selenium, sodium, thallium, nickel and zinc	-	-	mg/L	Spot sample	Annually	
	TD12J, TD13J, TD14J, TD15J, TD16J	Alkalinity, aluminium, antimony, bromide, cadmium, calcium carbonate, chloride, chromium, copper, fluoride, total iron, lead, lithium, magnesium, mercury, nitrate, potassium, strontium, sulphate, selenium, sodium, thallium, nickel and zinc	-	-	mg/L	Spot sample	Quarterly	
	In pit tailings facilities bores ²	IPT2, IPT3, IPT4, IPT5, A1, A2, GBN1. GBN2. GBS1, GBS2, MIPT08, MIPT09, SIPT10, SIPT11, SIPT12, SIPT13	Arsenic	-	0.4	mg/L	Spot sample	Quarterly
			pH	-	-	-		
Total dissolved solids, weak acid dissociable cyanide, total cyanide			-	-	mg/L			
Standing water level			6	4	m (bgl)			
IPT2, IPT3, IPT4, IPT5, A1, A2, GBN1, GBN2, GBS1, GBS2, MIPT08, SIPT10,		Alkalinity, aluminium, antimony, bromide, cadmium, calcium carbonate, chloride, chromium, copper, fluoride, total iron,	-	-	mg/L	Spot sample	Annually	



	SIPT11, SIPT12, SIPT13	lead, lithium, magnesium, mercury, nitrate, potassium, strontium, sulphate, selenium, sodium, thallium, nickel and zinc					
Dewater storage facility bores ²	LH1, LH2, LH3	pH	-	-	-	Spot sample	Quarterly
		Total dissolved solids	-	-	mg/L		
		Standing water level	-	-	m(bgl)		
	LH1, LH2, LH3	Calcium, sodium, potassium, nitrogen, magnesium, chloride, iron, sulphate	-	-	mg/L	Spot sample	Annually
Heap Leach Bores ²	HL01	Arsenic	-	0.4	mg/L	Spot sample	Quarterly
		pH	-	-	-		
		Total dissolved solids	-	-	mg/L		
		Standing water level	-	-	m(bgl)		
	HL01	Cadmium, chromium, copper, lead, mercury, nickel, aluminium, magnesium and zinc	-	-	mg/L	Spot sample	Annually
Tailings and Decant water storage pits ²	Golden Age pit, Lawless pit, Moonlight pit, Squib pit, Essex pit, Adelaide pit, Gunbarrel North pit, Gunbarrel South pit, Republic North pit	Standing water level	-	0.7	m(bgl)	Spot sample	Quarterly

Note 1: Non- NATA in field analysis permitted for pH and TDS.

Note 2: A minimum of 90% of all bores listed in Table 3.4.3 will be sampled during any defined sampling period to allow for maintenance and operational constraints. The licensee is to take all reasonable and practicable measures to maintain these bores and will advise of their operational status within the Annual Environmental Report required by this licence.

Note 3: TD12J – TD16J to be sampled following construction of bores (i.e. not from date of amendment).

3.4.2 The Licensee shall take the specified management action outlined in Table 3.4.4 in the case of an event in Table 3.4.4.

Table 3.4.4: Management actions		
Monitoring point reference	Event	Management action
IPT2, IPT3, IPT4, IPT5, A1, A2, GBN1, GBN2, GBS1, GBS2, MIPT08, MIPT09, SIPT10, SIPT11, SIPT12, SIPT13	Upon becoming aware of any exceedance of the target in Table 3.4.3.	The licensee shall cease discharge to the receiving pit associated with the monitoring bore or pits.
		The licensee shall measure the standing water level in the monitoring bore/s and/or in pit storage facility each week until such time as standing water levels in the monitoring bore/s and/or in pit storage facility are in excess of the target in Table 3.4.3.



- 3.4.3 The Licensee shall complete an annual dewatering discharge report that assesses environmental impacts associated with the mine dewater discharge. The assessment shall include:
- (a) description of the receiving environment of Lake Way, including lake geology, topography, hydrological processes, sediment and water quality and significant flora and fauna;
 - (b) report on the dewatering discharge volumes and water quality from the Premises;
 - (c) salt and water balance estimates for the reporting period in relation to the addition of the dewatering discharge from the Premises to Lake Way;
 - (d) an assessment of the impact of the discharge on the receiving environment with comparison of impacted monitoring sites against non-impacted monitoring sites;
 - (e) an assessment of current results as compared to previous reporting periods; and
 - (f) summary of findings, conclusions and any recommendations for the improvement of the monitoring program and/or modifications for management of the discharge to reduce impact.

4 Improvements

4.1 Improvement program

- 4.1.1 The Licensee shall complete the improvements in Table 4.1.1 by the date of completion in Table 4.1.1.

Table 4.1.1: Improvement program		
Improvement reference	Improvement	Date of completion
IR1	The Licensee shall submit to the CEO and implement a dust management plan for the site, addressing: • Identification of dust sources (including unrehabilitated TSFs, open disturbed areas, stockpiles) and distance to receptors; • Seasonal average wind rose data and wind speeds for the site; • Proactive management measures to manage dust; • Reactive management measures (in response to adverse weather conditions or field observations); • Licensee's roles and responsibilities for dust management; and • Process for managing dust complaints and incident investigation.	3 months from amendment date
IR2	The Licensee shall submit to the CEO a monitoring plan to conduct an annual assessment of the ecological impacts associated with the mine dewater discharge to Lake Way. The plan shall assess diversity, abundance and function of benthic microalgae and aquatic invertebrate species at control and impacted sites at Lake Way. The biannual monitoring plan shall also include an assessment of any impacts to riparian vegetation from the dewater discharge.	3 months from amendment date
IR3	The Licensee shall report to the CEO whether sampling ports are installed on the emission points to air listed in Table 2.2.1 and if so, whether these are compliant with AS 4323.1.	3 months from amendment date



5 Information

5.1 Records

- 5.1.1 All information and records required by the Licence shall:
- (a) be legible;
 - (b) if amended, be amended in such a way that the original and subsequent amendments remain legible or are capable of retrieval;
 - (c) except for records listed in 5.1.1(d) be retained for at least 6 years from the date the records were made or until the expiry of the Licence or any subsequent licence; and
 - (d) for those following records, be retained until the expiry of the Licence and any subsequent licence:
 - (i) off-site environmental effects; or
 - (ii) matters which affect the condition of the land or waters.
- 5.1.2 The Licensee shall ensure that:
- (a) any person left in charge of the Premises is aware of the conditions of the Licence and has access at all times to the Licence or copies thereof; and
 - (b) any person who performs tasks on the Premises is informed of all of the conditions of the Licence that relate to the tasks which that person is performing.
- 5.1.3 The Licensee shall complete an Annual Audit Compliance Report indicating the extent to which the Licensee has complied with the conditions of the Licence and any previous licence issued under Part V of the Act for the Premises for the previous annual period.
- 5.1.4 The Licensee shall implement a complaints management system that as a minimum records the number and details of complaints received concerning the environmental impact of the activities undertaken at the Premises and any action taken in response to the complaint.

5.2 Reporting

- 5.2.1 The Licensee shall submit to the CEO an Annual Environmental Report within 90 calendar days after the end of the annual period. The report shall contain the information listed in Table 5.2.1 in the format or form specified in that table.

Table 5.2.1: Annual Environmental Report		
Condition or table	Parameter	Format or form ¹
-	Summary of any failure or malfunction of any pollution control equipment and any environmental incidents that have occurred during the annual period and any action taken	None specified
-	Actual annual throughputs per prescribed premises category	None specified
1.2.8	Monthly water balances over operational TSFs	None specified
2.3.1 and 2.3.2	Compliance with point source emission limits to surface water	None specified
Table 3.2.1	Monitoring of point source emissions to surface water	None specified
Table 3.3.1	Weak acid dissociable cyanide, pH, arsenic	None specified
Table 3.4.1	Antimony, arsenic, cadmium, lead, copper, manganese, nickel, selenium, thallium, zinc and chromium	None specified
Table 3.4.2	Antimony, arsenic, cadmium, lead, copper, manganese, nickel, selenium, thallium, zinc and chromium	None specified



Table 3.4.3	Arsenic, pH, total dissolved solids, weak acid dissociable cyanide, total cyanide, standing water level	None specified
	Alkalinity, aluminium, antimony, bromide, cadmium, calcium, carbonate, chloride, chromium, copper, fluoride, total iron, lead, lithium, magnesium, mercury, nitrogen, potassium, strontium, sulphate, selenium, sodium, nickel, thallium and zinc	
	pH, total dissolved solids and standing water level	
	Cadmium, chromium, copper, lead, mercury, nickel, aluminium, magnesium and zinc	
5.1.3	Compliance	Annual Audit Compliance Report (AACR)
5.1.4	Complaints summary	None specified

Note 1: Forms are in Schedule 2

- 5.2.2 The Licensee shall ensure that the Annual Environmental Report also contains:
- an assessment of the information contained within the report against previous monitoring results and licence limits and/or targets; and
 - a list of any original monitoring reports submitted to the licensee from third parties for the annual period and make these reports available on request.
- 5.2.3 The Licensee shall submit a compliance document to the CEO following the construction of each stage of the works as listed in Table 1.2.4.
- 5.2.4 The compliance document shall:
- certify that the works were constructed in accordance with the conditions of this Licence;
 - be signed by a person authorised to represent the Licensee and contain the printed name and position of that person within the company.

5.3 Notification

- 5.3.1 The Licensee shall ensure that the parameters listed in Table 5.3.1 are notified to the CEO in accordance with the notification requirements of the table.

Table 5.3.1: Notification requirements			
Condition or table (if relevant)	Parameter	Notification requirement ¹	Format or form ²
-	Breach of any limit specified in the licence	Part A: As soon as practicable but no later than 5pm of the next usual working day.	N1
		Part B: As soon as practicable	
		Submit a report within seven days of being aware of the exceedance. - The date, time and probable reason for the exceedance - The period over which the exceedance occurred - The extent of the discharge over that period and potential or known environmental consequences	None specified



		• Corrective action taken or planned to mitigate adverse environmental consequences; and • Corrective action taken or planned to prevent a recurrence of the exceedance	
3.4.3	SWL (mbgl)	Notify the CEO within 2 working days of the exceedance of the target	N1
-	Production ceasing for an unspecified period of time	As soon as practicable after the decision has been made	None specified
-	Production recommencing	At least 28 days prior to production recommencing	None specified

Note 1: Notification requirements in the Licence shall not negate the requirement to comply with s72 of the Act

Note 2: Forms are in Schedule 2



Schedule 1: Maps

Premises map

Premises and emission point map

The Premises is shown in the map below. The blue line depicts the Premises boundary. The emission point referred to in Tables 2.3.1 and 2.3.2 is also shown below.

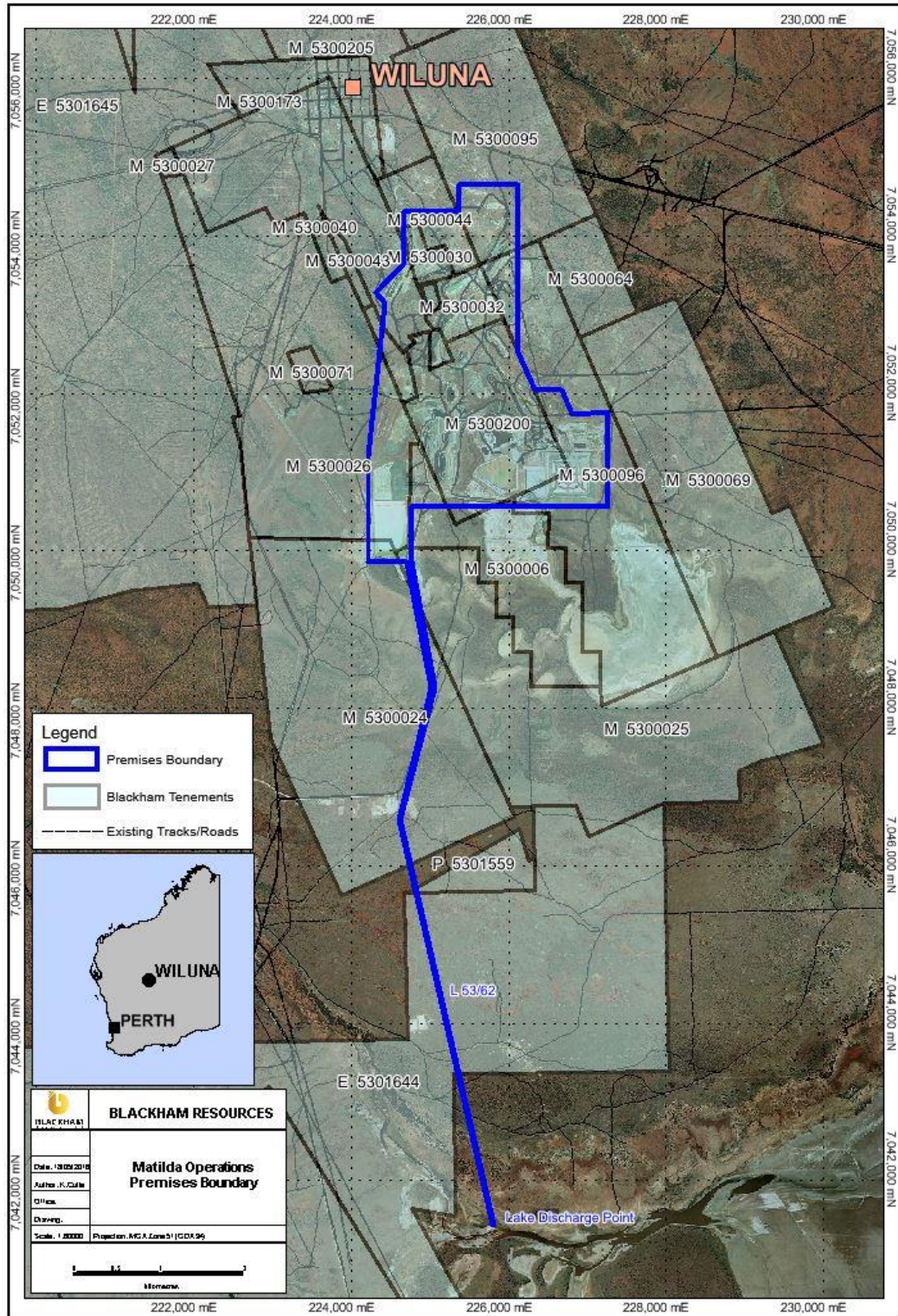


Figure 1: Premises Boundary



Map of containment infrastructure

The locations of the containment infrastructure defined in Table 1.2.2 are shown below in Figure 2 and in the following Figure 3.

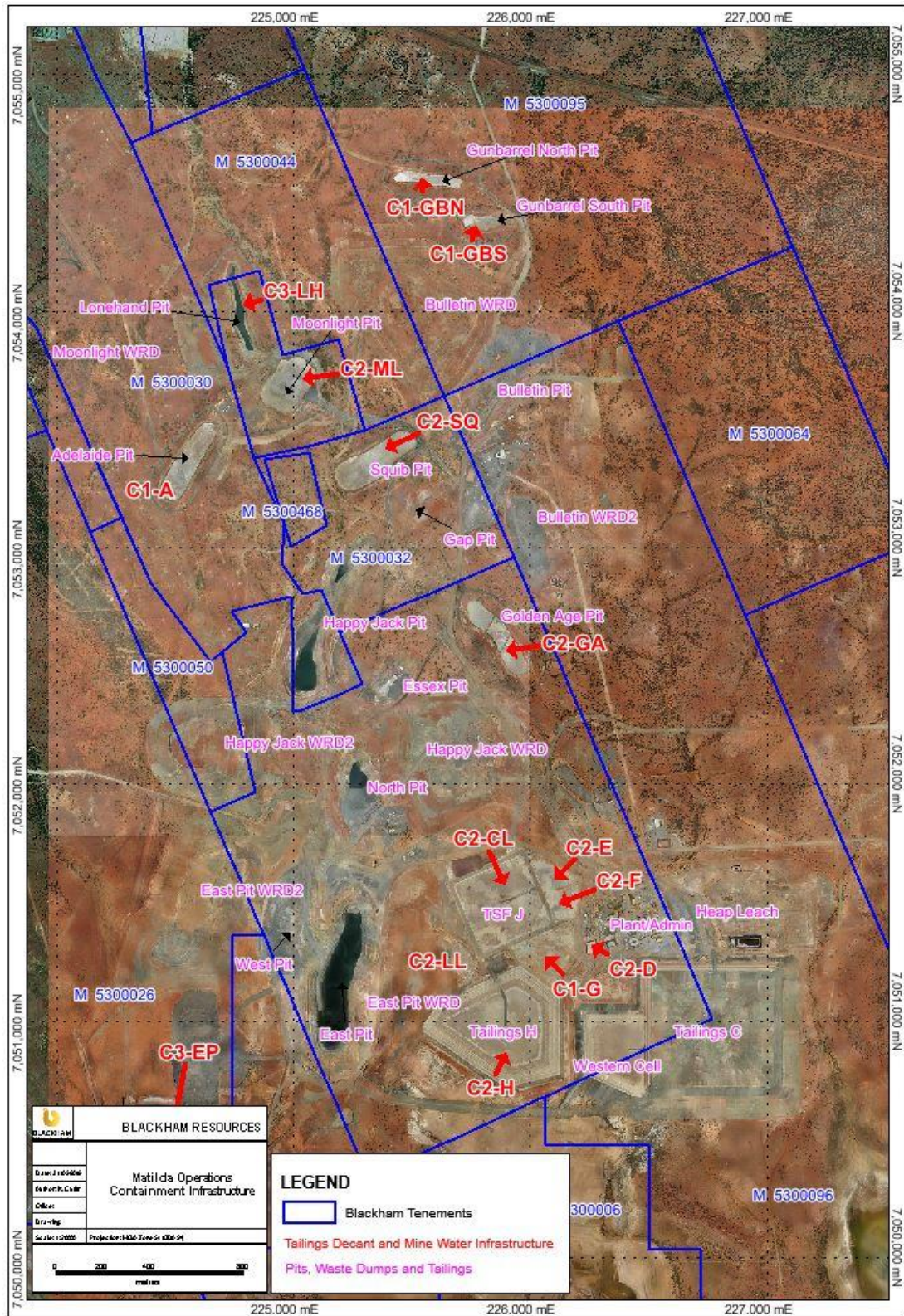


Figure 2: Locations of containment infrastructure, 1 of 2

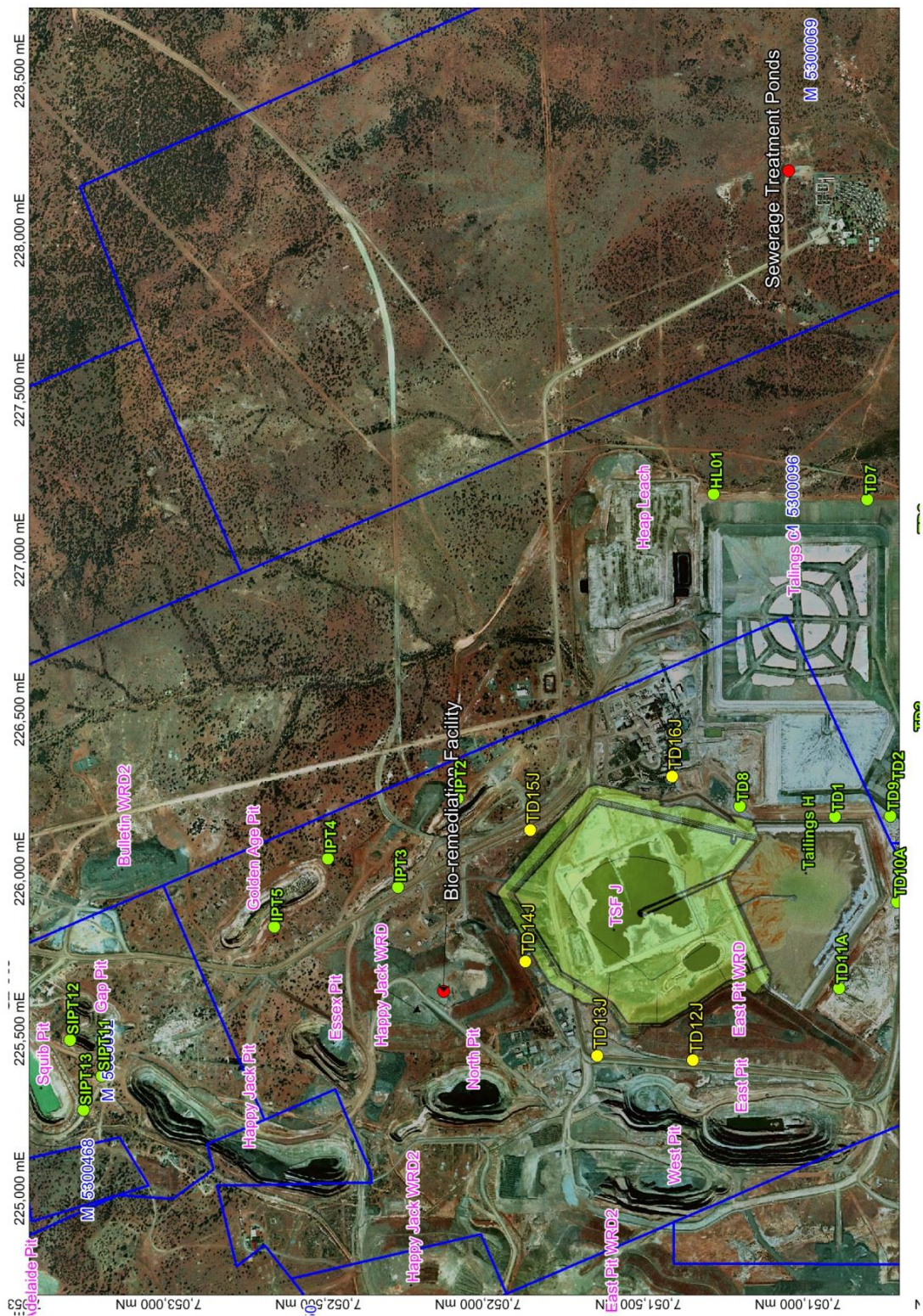


Figure 3: Locations of containment infrastructure, 2 of 2.



Map of monitoring points - 1 of 2

The locations of the monitoring points defined in Tables 3.4.1 and 3.4.2 are shown below.

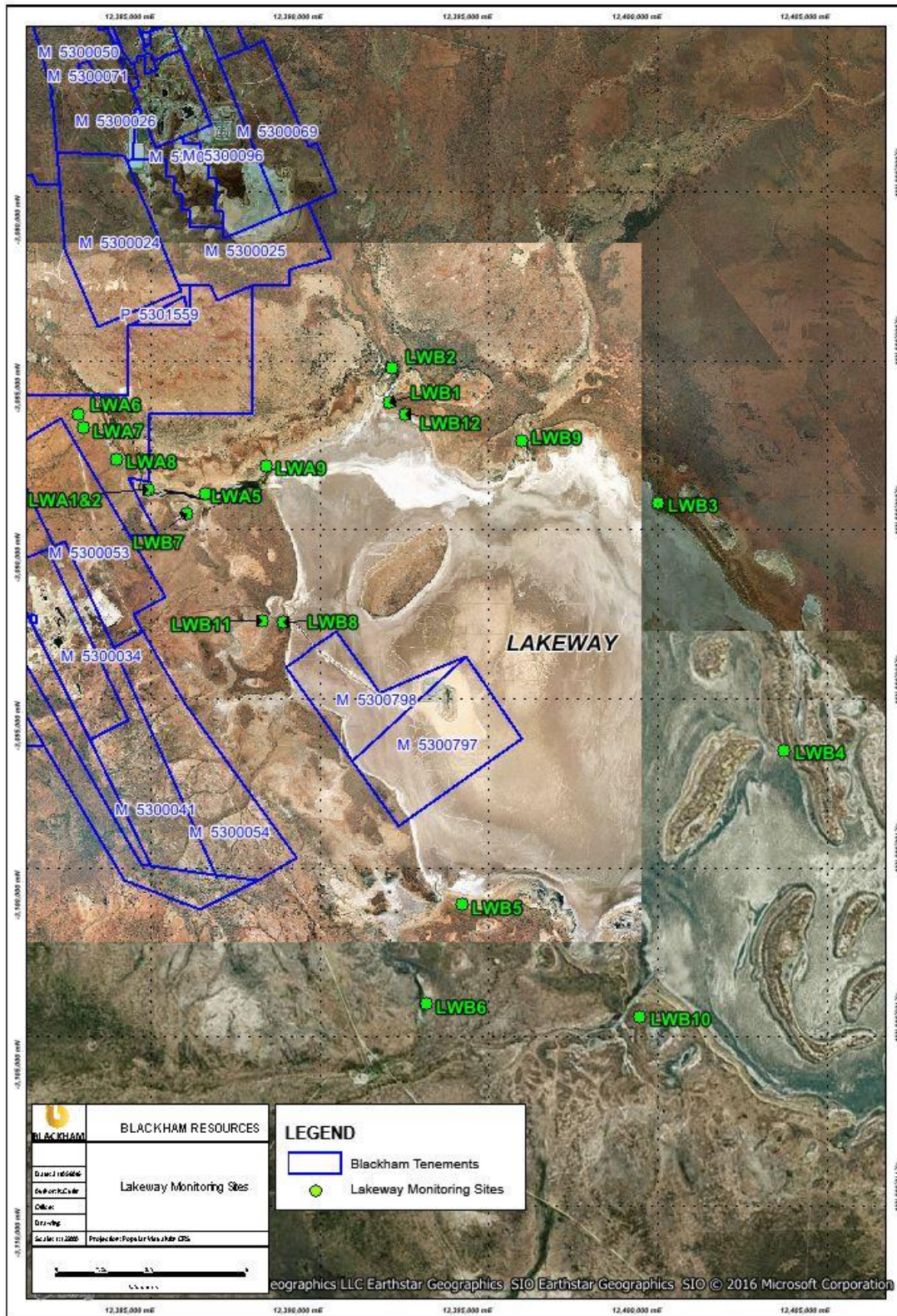


Figure 3: Lake Way surface water monitoring points.



Map of monitoring locations – 2 of 2

The locations of the monitoring points defined in Tables 3.3.1 and 3.4.3 are shown below.

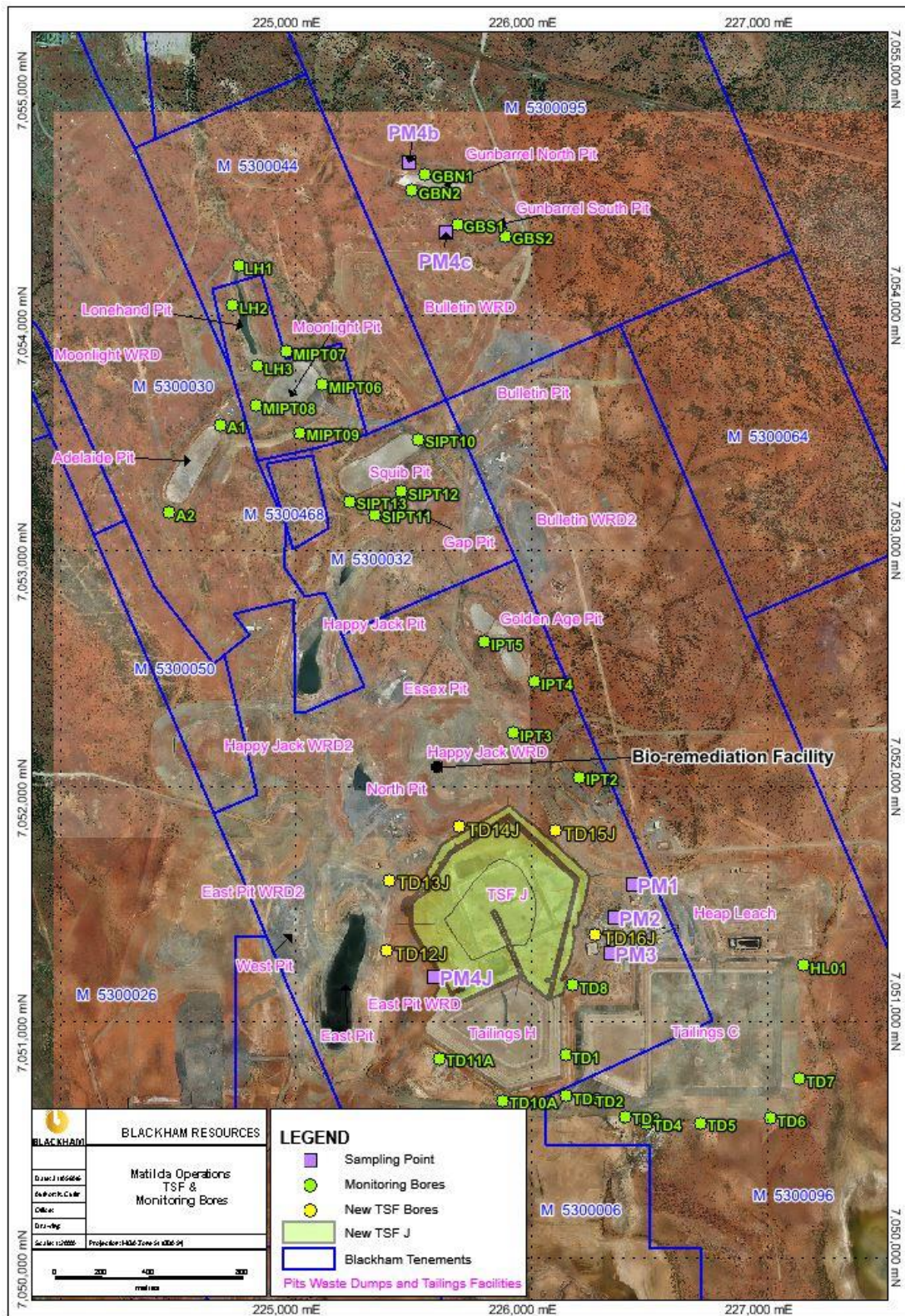


Figure 4: Environmental ambient groundwater monitoring bores and process monitoring points.



Schedule 2: Reporting & notification forms

These forms are provided for the proponent to report monitoring and other data required by the Licence. They can be requested in an electronic format.

ANNUAL AUDIT COMPLIANCE REPORT PROFORMA

SECTION A

LICENCE DETAILS

Licence Number: L5206/1987/10	Licence File Number: 2012/006906
Company Name: Matlida Operations Pty Ltd Trading as:	ABN:
Reporting period: _____ to _____	

STATEMENT OF COMPLIANCE WITH LICENCE CONDITIONS

1. Were all conditions of the Licence complied with within the reporting period? (please tick the appropriate box)

Yes ☐ Please proceed to Section C

No ☐ Please proceed to Section B

Each page must be initialled by the person(s) who signs Section C of this Annual Audit Compliance Report (AACR).

Initial:



SECTION B

DETAILS OF NON-COMPLIANCE WITH LICENCE CONDITION.

Please use a separate page for each Licence condition that was not complied with.

a) Licence condition not complied with:	
b) Date(s) when the non compliance occurred, if applicable:	
c) Was this non compliance reported to DER?:	
☐ Yes ☐ Reported to DER verbally Date _____ ☐ Reported to DER in writing Date _____	☐ No
d) Has DER taken, or finalised any action in relation to the non compliance?:	
e) Summary of particulars of the non compliance and what was the environmental impact:	
f) If relevant, the precise location where the non compliance occurred (attach map or diagram):	
g) Cause of non compliance:	
h) Action taken, or that will be taken to mitigate any adverse effects of the non compliance:	
i) Action taken or that will be taken to prevent recurrence of the non compliance:	

Each page must be initialled by the person(s) who signs Section C of this AACR

Initial:



SECTION C

SIGNATURE AND CERTIFICATION

This Annual Audit Compliance Report (AACR) may only be signed by a person(s) with legal authority to sign it. The ways in which the AACR must be signed and certified and the people who may sign the statement, are set out below.

Please tick the box next to the category that describes how this AACR is being signed. If you are uncertain about who is entitled to sign or which category to tick, please contact the licensing officer for your premises.

If the licence holder is		The Annual Audit Compliance Report must be signed and certified:
An individual	☐ ☐	by the individual licence holder, or by a person approved in writing by the Chief Executive Officer of the Department of Environment Regulation to sign on the licensee's behalf.
A firm or other unincorporated company	☐ ☐	by the principal executive officer of the licensee; or by a person with authority to sign on the licensee's behalf who is approved in writing by the Chief Executive Officer of the Department of Environment Regulation.
A corporation	☐ ☐ ☐ ☐ ☐ ☐	by affixing the common seal of the licensee in accordance with the <i>Corporations Act 2001</i> ; or by two directors of the licensee; or by a director and a company secretary of the licensee, or if the licensee is a proprietary company that has a sole director who is also the sole company secretary – by that director, or by the principal executive officer of the licensee; or by a person with authority to sign on the licensee's behalf who is approved in writing by the Chief Executive Officer of the Department of Environment Regulation.
A public authority (other than a local government)	☐ ☐	by the principal executive officer of the licensee; or by a person with authority to sign on the licensee's behalf who is approved in writing by the Chief Executive Officer of the Department of Environment Regulation.
a local government	☐ ☐	by the chief executive officer of the licensee; or by affixing the seal of the local government.

It is an offence under section 112 of the *Environmental Protection Act 1986* for a person to give information on this form that to their knowledge is false or misleading in a material particular. There is a maximum penalty of \$50,000 for an individual or body corporate.

I/We declare that the information in this annual audit compliance report is correct and not false or misleading in a material particular.

SIGNATURE: _____

NAME:
(printed) _____

POSITION: _____

DATE: ____/____/____

SEAL (if signing under seal)

SIGNATURE: _____

NAME:
(printed) _____

POSITION: _____

DATE: ____/____/____



Licence: L5206/1987/10
Form: N1

Licensee: Matilda Operations Pty Ltd
Date of breach:

Notification of detection of the breach of a limit or any failure or malfunction of any pollution control equipment or any incident which has caused, is causing or may cause pollution.

These pages outline the information that the operator must provide.

Units of measurement used in information supplied under Part A and B requirements shall be appropriate to the circumstances of the emission. Where appropriate, a comparison should be made of actual emissions and authorised emission limits.

Part A

Licence Number	
Name of operator	
Location of Premises	
Time and date of the detection	

Notification requirements for the breach of a limit

Emission point reference/ source	
Parameter(s)	
Limit	
Measured value	
Date and time of monitoring	
Measures taken, or intended to be taken, to stop the emission	

Part B

Any more accurate information on the matters for notification under Part A.	
Measures taken, or intended to be taken, to prevent a recurrence of the incident.	
Measures taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment which has been or may be caused by the emission.	
The dates of any previous N1 notifications for the Premises in the preceding 24 months.	



Name	
Post	
Signature on behalf of Matilda Operations Pty Ltd	
Date	

Decision Document

Environmental Protection Act 1986, Part V

Licensee: Matilda Operations Pty Ltd

Licence: L5206/1987/10

Registered office: Level 2
38 Richardson Street
WEST PERTH WA 6000

ACN: 166 954 525

Premises address: Wiluna Operation
WILUNA WA 6646
Being Mining tenements M53/30, M53/32, M53/468, L53/62, L53/20 and
part tenements M53/40, M53/44, M53/50, M53/26, M53/6, M53/95, M53/96,
M53/200 and M53/69 as depicted in Schedule 1

Issue date: 21 November 2013

Commencement date: 22 November 2013

Expiry date: 21 November 2018

Decision

Based on the assessment detailed in this document the Department of Environment Regulation (DER), has decided to issue an amended licence. DER considers that in reaching this decision, it has taken into account all relevant considerations and legal requirements and that the Licence and its conditions will ensure that an appropriate level of environmental protection is provided.

Decision Document prepared by: Louise Lavery
Senior Licensing Officer

Decision Document authorised by: Tim Gentle
Delegated Officer



Contents

Decision Document	1
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1 Purpose of this Document

This decision document explains how DER has assessed and determined the application and provides a record of DER's decision-making process and how relevant factors have been taken into account. Stakeholders should note that this document is limited to DER's assessment and decision making under Part V of the *Environmental Protection Act 1986*. Other approvals may be required for the proposal, and it is the proponent's responsibility to ensure they have all relevant approvals for their Premises.

2 Administrative summary

Administrative details		
Application type	Works Approval ☐ New Licence ☐ Licence amendment ☒ Works Approval amendment ☐	
Activities that cause the premises to become prescribed premises	Category number(s)	Assessed design capacity
	5	1 800 000 tonnes per annum
	6	2 365 000 kL per annual period
	85	52 m ³ per day
Application verified	Date: N/A	
Application fee paid	Date: N/A	
Works Approval has been complied with	Yes ☐ No ☐ N/A ☒	
Compliance Certificate received	Yes ☐ No ☐ N/A ☒	
Commercial-in-confidence claim	Yes ☐ No ☒	
Commercial-in-confidence claim outcome		
Is the proposal a Major Resource Project?	Yes ☐ No ☐	
Was the proposal referred to the Environmental Protection Authority (EPA) under Part IV of the <i>Environmental Protection Act 1986</i> ?	Yes ☐ No ☒	Referral decision No: Managed under Part V ☐



		Assessed under Part IV ☐
Is the proposal subject to Ministerial Conditions?	Yes ☐ No ☒	Ministerial statement No: EPA Report No:
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the <i>Environmental Protection Act 1986</i>)?	Yes ☐ No ☒	Department of Water consulted Yes ☐ No ☐
Is the Premises within an Environmental Protection Policy (EPP) Area Yes ☐ No ☒ If Yes include details of which EPP(s) here.		
Is the Premises subject to any EPP requirements? Yes ☐ No ☒ If Yes, include details here, eg Site is subject to SO ₂ requirements of Kwinana EPP.		

3 Executive summary of proposal and assessment

The Wiluna Gold Mine operation is owned by Matilda Operations Pty Ltd (Matilda Operations), a wholly owned entity of Blackham Resources Ltd (BLK) which acquired the Premises from Apex Gold Pty Ltd (Apex) a wholly owned subsidiary of Apex Minerals NL (AXM) on 21 March 2014.

The operation is located approximately 1,000km north east of Perth, 5km south east of the town of Wiluna and comprises mining leases and miscellaneous licences covering approximately 50 square kilometres (km²) (schedule 1). Modern operations of the Wiluna Gold Mine commenced in 1984, however prior to its sale to Matilda Operations it had been in care and maintenance (commenced 25 June 2013). The Wiluna Gold Mine is currently licensed for Categories 5, 6 & 85.

Matilda Operations holds registration R2015/2008/1 for the operation of the site landfill facility. Under Schedule 1, Part 2, category 89 of the *Environmental Protection (Rural Landfill) Regulations 1987* the landfill is classified as a Class II (Putrescible) landfill.

Matilda Operations holds a licence, issued under the *Rights in Water Irrigation Act (1914)* to dewater for mining purposes (GWL 159247(3)). There are three sources of mine water discharged to Lake Way. These sources are Bulletin underground operations, East pit underground operations and Happy Jack pit. Mine water is pumped to Wiluna Operations evaporation and settlement pond and subsequently discharged to the lake. Bulletin mine water is first staged in Lone Hand pit to further assist in settlement of suspended solids. The mine water collected in the evaporation pond is discharged via an established 10 kilometre pipeline feeding into one of the major tributaries to Lake Way, West Creek. This water enters the lake via an energy dispersion channel lined with imported competent rock to reduce the effects of erosion.

This licence also covers the following prescribed activities on the premises:

- crushing plant;
- Tailings Storage Facilities (TSFs):
 - Tailings B (formerly Calcine Dam 507mRL – decommissioned 1985, used periodically as a pond for storage and evaporation of excess process water; now redundant as a result of June 2016 amendment for TSF Cell J);
 - Tailings C (decommissioned);



- Western Cell to RL 521m (decommissioned);
- BIOX Dam:
 - Tailings E and Tailings F (have been joined to create one dam and recommissioned in 2011, now redundant as a result of June 2016 amendment for TSF Cell J);
 - Tailings G (decommissioned - now redundant as a result of June 2016 amendment for TSF Cell J);
 - Tailings H 516m Australian Height Datum (AHD) – two 2.5m lift approved to 521m AHD;
- In-pit tailings:
 - Golden Age pit (receives decant water for evaporation at capacity for tailings solids, ~ 50,000m³ water storage capacity);
 - Republic Pit South (full – no longer in use);
 - Republic North (active landfill, very small pit, will no longer be used for the disposal of tailings);
 - Lawless pit (full – now redundant as a result of June 2016 amendment for TSF J);
 - Moonlight pit (receives decant water for evaporation; at capacity for tailings solids, ~ 50,000m³ water storage capacity; active);
 - Squib pit (receives decant water for evaporation; at capacity for tailings solids, ~ 50,000m³ water storage capacity; active);
 - Essex pit (has a seepage issue – currently is not in use);
 - Adelaide pit (currently not authorised for use);
 - Gunbarrel North pit (currently in use: original capacity 125 000m³; 25 000 m³ remaining);
 - Gunbarrel South pit (currently in use: original capacity 175 000m³; 100 000m³ remaining).
- Lake Way pipeline;
- evaporation pond;
- heap leach operation;
- bacterial leaching plant;
- Carbon in Pulp (CIP)/Carbon in Leach (CIL) Gold Extraction Plant; and
- Lake Way discharge.

The Licence covers the discharge of water from the Wiluna Gold Mine dewatering program via a settling pond, abandoned pits and a 'turkey's nest' to Lake Way via the Lake Way pipeline and West Creek.

This Licence is the successor to Licence number L5206/1987/9 and is a REFIRE licence. The conditions of the Licence were reviewed in 2013, at the time of REFIRE conversion, to better reflect the operations at the site.

August 2014 Amendment

This Licence was the result of an amendment sought by the Licensee to transfer the occupier from Apex Gold Pty Ltd (Apex) to Matilda Operations Pty Ltd, to update the Improvement Program and to reflect the most current REFIRE licence format.

June 2016 Amendment

This amendment is to authorise the construction of TSF Cell J over the footprint of the existing TSFs Tailings B/Calcine Tailings, Tailings E, Tailings F and Tailings G. TSF Cell J will abut the existing Tailings H and East Pit Waste Rock Dump. New groundwater monitoring bores will be added to the ambient groundwater monitoring program (TD12J – TD 16J).



The amendment also authorises an increase to the production capacity under category 5 to 1,800,000 tonnes per annum. As part of the increase the following plant will be installed:

- Crusher primary screen (replacement);
- Fine ore bin;
- New gravity circuit;
- New crusher MCC (replacement);
- Upgrade of oxygen delivery systems;
- New carbon regeneration kiln (replacement);
- Minor upgrade of process control and instrumentation systems; and
- New leach tank and associated equipment.

As part of the amendment DER has removed conditions it considers 'redundant' due to their incompatibility with the DER (2015) Guidance Statement: Licensing and Works Approvals.

Three improvement requirements have been added to the improvement program to:

- submit and implement a dust management plan for the Premises;
- complete a monitoring plan for assessing ecological impacts associated with the mine dewater discharge to Lake Way; and
- check for sampling ports on the offgas stacks within the gold processing plant.



4 Decision table

All applications are assessed in line with the *Environmental Protection Act 1986*, the *Environmental Protection Regulations 1987* and DER's Operational Procedure on Assessing Emissions and Discharges from Prescribed Premises. Where other references have been used in making the decision they are detailed in the decision document.

DECISION TABLE			
Works Approval / Licence section	Condition number W = Works Approval L = Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
General conditions	Previous conditions L1.2.1 – L1.2.5	In accordance with DER's <i>Guidance Statement: Setting Conditions</i> October 2015, these standard conditions have been removed from the Licence as they are deemed to either be not enforceable, not valid (as per the meaning in the Guidance Statement) or risk-based.	DER <i>Guidance Statement: Setting Conditions</i> , October 2015
Premises operation	L1.2.1 L1.2.2 L1.2.3 L1.2.4	Containment infrastructure information has been added to Table 1.2.2 and a detailed containment infrastructure map has been added during this amendment. Adelaide Pit has been removed from the list of pits authorised to accept tailings, given the elevated arsenic concentrations in groundwater at this site, likely related to high arsenic tailings deposited at this pit in 2011- 2012. A minimum freeboard for all containment infrastructure of 300mm or capacity sufficient to contain a 1 in 100 year rainfall event over 72 hours has been provided. Conditions relating to management of wastewater treatment ponds were removed from the containment infrastructure table and added as a stand-alone condition L1.2.4 but the requirements for management of these ponds remain unchanged.	
	L1.2.5 L1.2.6	Emergency Operation – Tailings pipelines <i>Emission:</i> Release of alkaline tailings slurry (pH 9 -10) or tailings decant (pH approximately 7.7) containing elevated metals and cyanide to ground and potentially to surface water from a pipeline failure. Weak acid dissociable cyanide concentration in	Knight Piesold (2016b) Memorandum PE16-00323 to Blackham



DECISION TABLE			
Works Approval / Licence section	Condition number W = Works Approval L = Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
		tailings feed is approximately 80 – 100 mg/L, 10mg/L in the decant. <i>Impact:</i> The active mining area is very disturbed with gold mining at the site dating back 100 years. The assessed risk of discharge is if the spilled material migrates to Lake Violet and/or Lake Way due to a release during a storm event or if the spill is not attended to for a long period of time. Lake Way and Lake Violet have prior contamination of sediments due to historical tailings discharge at Lake Violet (which was remediated in the 1980s but may still present contamination) and mine dewater discharge to Lake Way. The arsenic concentration in the tailings supernatant exceeds the ANZECC guideline value for livestock drinking water. <i>Controls:</i> The tailings delivery and decant return pipelines will be contained within a bunded trench between the process plant and the TSF and equipped with an automatic pressure drop cut-out. The section of the tailings pipeline traversing TSF J will be located on the upstream crest of the embankment which will have a minimum crossfall to the tailings beaches of 2%; any leakage should flow towards the TSF. <u>Risk Assessment</u> <i>Consequence:</i> Minor <i>Likelihood:</i> Unlikely <i>Risk Rating:</i> Moderate <u>Regulatory Controls</u> Condition L1.2.5 has been placed on the Licence to require that all pipelines carrying alkaline water, saline water, cyanide, process liquors, and/or tailings must be bunded and/or contain automatic cut-outs to stop the flow in the event of pipeline failure. Condition L1.2.6 requires daily inspections of the pipelines to be completed to assess integrity <u>Risk Assessment</u> <i>Consequence:</i> Minor <i>Likelihood:</i> Unlikely	Resources Ltd <i>Re: Additional Information TSF J Application</i> , 12 April 2016



DECISION TABLE			
Works Approval / Licence section	Condition number W = Works Approval L = Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
		<i>Risk Rating: Moderate</i>	
	L1.2.7 L5.2.3 L5.2.4	DER's assessment and decision making in relation to authorising the construction and commissioning of TSF J are detailed in Appendix A. Reporting requirements associated with submission of compliance documentation for construction are detailed in conditions L5.2.3 and L5.2.4. Submission of these documents and successful completion of construction according to the documents in Table 1.2.4 is required prior to authorising operation of TSF J.	Refer Appendix A
	L1.2.8	Monthly water balances of the active TSFs will be required to be completed to assess the seepage rates for each facility. It provides a method of assessing the performance of the underdrainage system in TSF J and whether this deteriorates over time. Refer also to Appendix A for further detail of DER's assessment and decision making.	Refer Appendix A
Emissions general	L2.1.1	Descriptive limits will be set through conditions 2.3.2 and 3.4.1 of the licence and therefore condition regarding recording and investigation of exceedances of limits has been included.	N/A
Point source emissions to air including monitoring	L2.2.1 IR3 of L4.1.1	Two emission points to air, from the carbon regeneration kiln and the gold smelter, are authorised under the Licence. Improvement requirement IR 3 of L4.1.1 has been added to the Licence to determine if suitable sampling ports are installed for use on these stacks. If so, a further amendment will require an investigatory monitoring program to be completed to determine the significance of any emissions to air from these stacks.	General provisions of the <i>Environmental Protection Act 1986</i> .
Point source emissions to surface water including monitoring	L2.3.1 L2.3.2 L3.2.1 L3.4.3 L4.1.1, IR2	Due to a lack of current monitoring information on the nature and impact of the dewatering discharge to Lake Way, in part as the site has been on care and maintenance for the past 3 years these conditions have not been reassessed as part of this amendment. However the requirements for the dewatering discharge monitoring program have been reviewed and updated for consistency with the Williamson Mine applications.	General provisions of the <i>Environmental Protection Act 1986</i> .



DECISION TABLE			
Works Approval / Licence section	Condition number W = Works Approval L = Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
		Consequently L3.2.1 requires quarterly monitoring of metals and metalloids in the dewater discharge and IR2 for improvement condition 4.1.1 has been added to require the Licensee to submit a monitoring plan for an annual assessment of potential biological impacts from the dewater discharge. Condition 3.4.3 will require the annual assessment of the impacts on Lake Way from the dewatering to be reported. This report is to be submitted in conjunction with the Annual Environmental Report.	
Point source emissions to groundwater including monitoring	L – no conditions	No conditions relating to point source emissions to groundwater are included in this Licence in this section. Ambient monitoring of groundwater quality in the vicinity of open pits used for tailings deposition or decant water storage is conducted in accord with condition L3.4.1.	N/A
Emissions to land including monitoring	L – no conditions	No conditions relating to emissions to land are included in this Licence.	N/A
Fugitive emissions	L4.1.1, IR1	Former Licence conditions 2.6.1 and 2.6.2 that covered fugitive dust emissions have been removed as DER considers that these conditions are not clearly enforceable. Improvement requirement IR1 has been added to condition L4.1.1 to require a dust management plan to be submitted and implemented, given the proximity of the premises to the town of Wiluna (less than 5 km away).	DER (2015) <i>Guidance Statement: Setting Conditions</i> General provisions of the <i>Environmental Protection Act 1986</i>.
Odour	L – no conditions	No odour impacts are anticipated from the premises. No conditions relating to odour are included in the Licence.	General provisions of the <i>Environmental Protection Act</i>



DECISION TABLE			
Works Approval / Licence section	Condition number W = Works Approval L = Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
			1986.
Noise	L – no conditions	Noise has not been reassessed as part of this amendment. As the previous licence did not impose controls on noise, no specified conditions have been included in this section. The <i>Environmental Protection (Noise) Regulations 1997</i> apply.	
Monitoring general	L3.1.1 – L3.1.4	General monitoring conditions have not been reassessed as part of this amendment. General monitoring conditions are included in the licence to ensure ambient environmental monitoring specified in condition 3.4.1 of the licence is carried out in accordance with the relevant standards and at appropriate intervals.	AS/NZS 5667.1 AS/NZS 5667.10 AS/NZS 5667.4 AS/NZS 5667.6 AS/NZS 5667.9 AS/NZS 5667.11 AS/NZS 5667.12
Monitoring of inputs and outputs	L – no conditions	No conditions relating to monitoring of inputs and outputs are included in this Licence.	N/A
Process monitoring	L3.3.1	The requirement to monitor flushed leachates from the leach facility decommissioned pad and the PM4a monitoring point have been removed as it is no longer relevant to site activities. PM4J has been added in anticipation for when TSF J is operational, noting only active TSFs require monitoring during the life of the Licence. An exemption from NATA laboratory analysis has been granted for pH measurements due to the geographical remoteness of the site and the short holding time of the parameter.	October 2014 DER site inspection report (zA80694).
Ambient quality monitoring	L3.4.1	Thallium has been added to the list of parameters for analysis in Table 3.4.1. Information provided by Smith (2007) suggests that thallium could be a contaminant of concern in leachate from ore processing and in groundwater due to the potential for this element to be mobile in groundwater under a wide range of geochemical conditions. Thallium is also potentially more toxic to humans and many environmental receptors than mercury, cadmium and lead and is commonly found in elevated concentrations in drainage from mine sites (Peter and Viraraghavan, 2005). Limit of 2 mbgl (metres below ground level) for standing water level within tailings and water storage pits in Table 3.4.3 has been changed to 700 mm as this limit had	Smith, K.S., 2007. <u>Strategies to predict metal mobility in surficial mining environments.</u> Geological Society of America <i>Reviews in Engineering</i>



DECISION TABLE			
Works Approval / Licence section	Condition number W = Works Approval L = Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
		effectively imposed a 2000 mm freeboard on the in-pit facilities and therefore required correction. Additionally, the 2009 Works approval for the use of these in-pit TSFs was completed on the assessment of a 0.7 m freeboard. An exemption from NATA laboratory analysis has been granted for pH and TDS measurements due to the geographical remoteness of the site and the short holding time of the parameter. An allowance for bore maintenance has been added to the monitoring requirements of Table 3.4.3 ensuring that a minimum of 90% of all bores listed are sampled during the sampling period to allow for maintenance and operational constraints (e.g. dry bores). Bores IPT01 and IPT01A are within the footprint of the new TSF J and will be de-commissioned as part of the construction of TSF J. Consequently they have been removed from this condition. Bores TD10a and TD11a will be replaced as part of the TSF J. New bores TD12 J – TD16 J have been added to the Licence to monitor seepage impacts from new TSF J. Essex Pit bores have also been removed as they have collapsed and are unable to be used for monitoring. Also refer to the assessment and decision making in Appendix A.	<i>Geology, Vol XVII</i>, 25-45 Peter, A.L. and Viraraghavan, T., 2005. <u>Thallium: a review of public health and environmental concerns.</u> <i>Environment International</i>, 31, 493-501
	L3.4.2	This condition replaces previous condition L3.9 and has not been reassessed as part of this amendment, with the exception of removing bores made redundant by TSF J and those relating to Adelaide Pit which is no longer authorised for decant water or tailings deposition due to elevated arsenic concentrations in groundwater at this site.	N/A
	L3.4.3 L4.1.1, IR2	Previous condition L5.2.2(c) has moved to L3.4.3 and reworded to clearly state the requirements for the dewatering discharge monitoring program and associated report. Improvement requirement IR2 of L4.1.1 has been added to the licence to develop a biological monitoring plan as part of the monitoring requirements to assess the impact of the dewater discharge on Lake Way. Future amendments will add this requirement	General provisions of the <i>Environmental Protection Act 1986</i> .



DECISION TABLE			
Works Approval / Licence section	Condition number W = Works Approval L = Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
		to the monitoring required under the ambient quality monitoring section.	
Meteorological monitoring		No conditions relating to meteorological monitoring are included in the Licence.	N/A
Improvements	L4.1.1	Previous improvement condition 4.1.1 IR1 was removed from the licence as the Licensee had met this condition to supply containment infrastructure information. New IR 1, IR 2 and IR3 added to require the Licensee to: - develop and implement a dust management plan for the site, given the proximity of the premises to the town of Wiluna (less than 5 km away). - Develop a plan to assess and monitor potential ecological impacts from the dewatering discharge; and - provide information to the CEO whether sampling ports are installed on the gold smelter stack and the carbon regeneration kiln stack and if so, whether these are compliant with AS 4323.1.	Outback Ecology (2006) <i>Dewatering Discharge License Report Jan 2005 – Dec 2005</i> DER Licence L5206/1987/8
Information	L5.1.1- L5.1.4 L5.2.1 L5.2.2 L5.3.1	Standard reporting conditions have been retained on the Licence.	General provisions of the <i>Environmental Protection Act 1986</i> .
	L5.2.3 L5.2.4	Conditions relating to submission of the compliance documentation related to the construction works authorised by condition 1.2.7 are listed in conditions 5.2.3 and 5.2.4.	General provisions of the <i>Environmental Protection Act 1986</i> .
Licence Duration		No changes have been made to the Licence expiry date of 21 November 2018.	



5 Advertisement and consultation table

Date	Event	Comments received/Notes	How comments were taken into consideration
08/06/2016	Proponent sent a copy of draft instrument	No comments received.	N/A
10/06/2016	Final review of document	-	Minor edits made to correct for amendment date; cross referencing errors corrected.



6 Risk Assessment

Note: This matrix is taken from the DER Corporate Policy Statement No. 07 - Operational Risk Management

Table 1: Emissions Risk Matrix

Likelihood	Consequence				
	Insignificant	Minor	Moderate	Major	Severe
Almost Certain	Moderate	High	High	Extreme	Extreme
Likely	Moderate	Moderate	High	High	Extreme
Possible	Low	Moderate	Moderate	High	Extreme
Unlikely	Low	Moderate	Moderate	Moderate	High
Rare	Low	Low	Moderate	Moderate	High



Appendix A

Premises Construction, Commissioning and Operation – TSF J

Normal – Commissioning and Operations

Emission Description

Emission: Seepage from TSF J contaminating local groundwater.

Impact: Tailings deposited to TSF J will contain elevated levels of arsenic, antimony, and selenium in solution. Weak acid dissociable cyanide of up to 10mg/L will also be present in supernatant liquor. Groundwater in the local area is hypersaline ranging from 36 800mg/L to 200 000 mg/L TDS. The long period of mining at the site has resulted in a significant change to the phreatic groundwater levels due to mine dewatering with standing water levels between 9.8 mbgl (Republic South, bore ITP02) to 36.1 mbgl (Happy Jack ITP08) to more than 100 mbgl in East Pit (KH Morgan and Associates, 2009). Originally the levels ranged from between 10 and 2 mbgl. There is also a history of contamination of the groundwater within the active mining area due to tailings deposition in the open pits, operation of TSF H, a significant diesel spill from an underground line within the processing plant and operation of an arsenic smelter at the site in the 1940s. The current ambient groundwater monitoring program has detected total cyanide in groundwater surrounding TSF H at levels up to 1 mg/L. Groundwater in the vicinity of Adelaide Pit exceeded the arsenic limit of 0.4 mg/L for the period from 2013 to 2015, due to deposition of high concentrations of arsenic in tailings in 2011/12 from a period of poor process control within the processing plant.

Underground and open pit mining and dewatering has also resulted in an alteration in the natural groundwater flow back towards the east and north pits, a reversal of the generally southward natural regional flow of the groundwater system. The exception to this flow regime is an increase in flow rate southward induced by groundwater mounding under the tailings impoundment H and C and the dewatering evaporation ponds which lie to the south of the mining area and close to Lake Way (KH Morgan and Associates, 2009). It can be expected that while most of the mounding from TSF J will travel towards the East Pit, some of the mounding under TSF J will also migrate south.

The Wiluna mining area is naturally highly anomalous in toxic metals including arsenic which, in its natural state, was partially contained from surface spreading by adsorption into laterite layers. The impact of these metals in the groundwater system has been highly enhanced through early mining activity particularly through the poorly environmentally controlled early mining system. This early activity has resulted in a highly arsenic contaminated groundwater system (KH Morgan and Associates, 2009).

The design life of TSF J is forecast to be 4 years and 9 months for a total storage requirement of 6.04 Mt. Seepage rates have been estimated at between 2.8 – 3.3 kL/ha/day; over an approximate 40 ha TSF the rate would be approximately 112 – 132 kL/day. This is a conservative estimate assuming the central underdrainage was not operational, the decant pond exceeded the volume for a 1 in 100 year event and only the toe drain was operational (Knight Piesold, 2016b).

Controls: No liner system has been employed for TSF J. The Cell is being constructed over the base of existing TSFs Calcine Dam, Biox Dam E, Biox Dam F and Biox Dam G. It will also cover the existing Lawless In-pit TSF and be located adjacent to TSF H and Waste Rock Dump of the East Pit. The permeability at the base is estimated to be 1×10^{-6} m/s (Knight Piesold, 2016a).

Instead the following seepage controls have been employed as part of the design:

- cut off trench;



- basin underdrainage collection system comprising branch and finger drains of 100mm and 63mm diameter draincoil pipe placed within a 300mm sand layer wrapped in geotextile (refer to Figure 6 for further detail);
- underdrainage collection sumps with submersible pumps to pump seepage to the decant tower; and an
- embankment upstream toe drain.

As part of operating in accord with a Tailings Operating and Surveillance Manual the Licensee will aim to minimise the size of the supernatant pond in order to reduce the head on the tailings and therefore rate of seepage.

Risk Assessment

Consequence: Moderate

Likelihood: Possible (possible in that the contaminated groundwater may migrate south to Lake Way and add to contamination in this area; underdrainage may become blocked over time and with no liner the tailings will be expected to add to contamination of the groundwater locally to TSF J) .

Risk Rating: Moderate

Regulatory Controls

Condition 1.2.7 has been added to the Licence to ensure that the construction is completed in accord with the design documentation submitted. Compliance documentation must be submitted following construction in accord with conditions 5.2.3 and 5.2.4 prior to authorising operation of TSF J under condition 1.2.2. A minimum operational freeboard is set by condition 1.2.3 and will apply once SF J is authorised for use. Regular inspections of infrastructure will be required by condition 1.2.6 and monthly water balances required to be completed as per condition 1.2.8, to track the performance of the underdrainage system. In the event that the underdrainage system does not perform as expected, these conditions will be revised. Condition 3.4.1 requires monitoring of the ambient groundwater quality in the vicinity of TSF J. Monitoring is required to commence from the date of the amendment (as soon as the bores are constructed) so as to enable background monitoring to be completed in advance of the tailings deposition to TSF J. It is acknowledged that the background groundwater is already significantly impacted from historical mining operations, however the goal is to limit the contribution of additional contamination due to seepage from TSF J.

Residual Risk

Consequence: Moderate

Likelihood: Possible

Risk Rating: Moderate

Emergency - Commissioning and Operations

Emission Description

Emission: Overtopping of the TSF J releasing tailings supernatant or tailings slurry to surrounding land and surface water either during a storm event or due to operator error.

Impact: Tailings will contain elevated levels of arsenic, antimony, and selenium in solution. Weak acid dissociable cyanide of up to 10mg/L will also be present in supernatant and values of between 80 - 100mg/L in the tailings slurry. A release of tailings would likely flow into Lake Violet and potentially travel to Lake Way.

Controls: The TSF is designed to contain a 1 in 1000 (Annual Exceedance Probability) storm event and the embankments have a factor of safety greater than 1.1 under post seismic conditions. The TSF will be operated in accord with a Tailings Operating and Surveillance Manual which will prescribe



periodic checks of the integrity of the TSF's embankments and also check the operating freeboard of the cell. The TSF is intended to operate with a water deficit and the decant ponds should remain at a minimum size under average conditions. The TSF storage capacity is sufficient under design conditions to contain the run-off from a 1 in 100 year, 72 hr storm event without the ponds encroaching onto the external embankments.

Risk Assessment

Consequence: Major

Likelihood: Rare

Risk Rating: Moderate

Regulatory Controls

Condition 1.2.7 prescribes that the construction of TSF J and its ancillary infrastructure shall be constructed in accord with the design documentation in Table 1.2.4. This design includes the provision for capacity for a 1 in 1000 AEP storm event. Current Licence conditions 1.2.3 (minimum freeboard provision) and 1.2.6 (inspection of infrastructure frequency and requirements) shall be extended to TSF J following successful completion of the construction phase and submission of compliance documentation in accord with conditions 5.2.3 and 5.2.4.

Residual Risk

Consequence: Major

Likelihood: Unlikely

Risk Rating: Moderate

References

KH Morgan and Associates (2009) *Hydrogeological Assessment Impact for Positioning of New Inpit Tailings Facility Monitoring Bores*, unpublished report for Apex Gold Pty Ltd, 9 June 2009.

Knight Piesold (2016a) *Blackham Resources Limited Matilda Gold Project Tailings Management Feasibility Study*, prepared for Blackham Resources Limited, February 2016.

Knight Piesold (2016b) Memorandum PE16-00323 to Blackham Resources Ltd *Re: Additional Information TSF J Application*, 12 April 2016

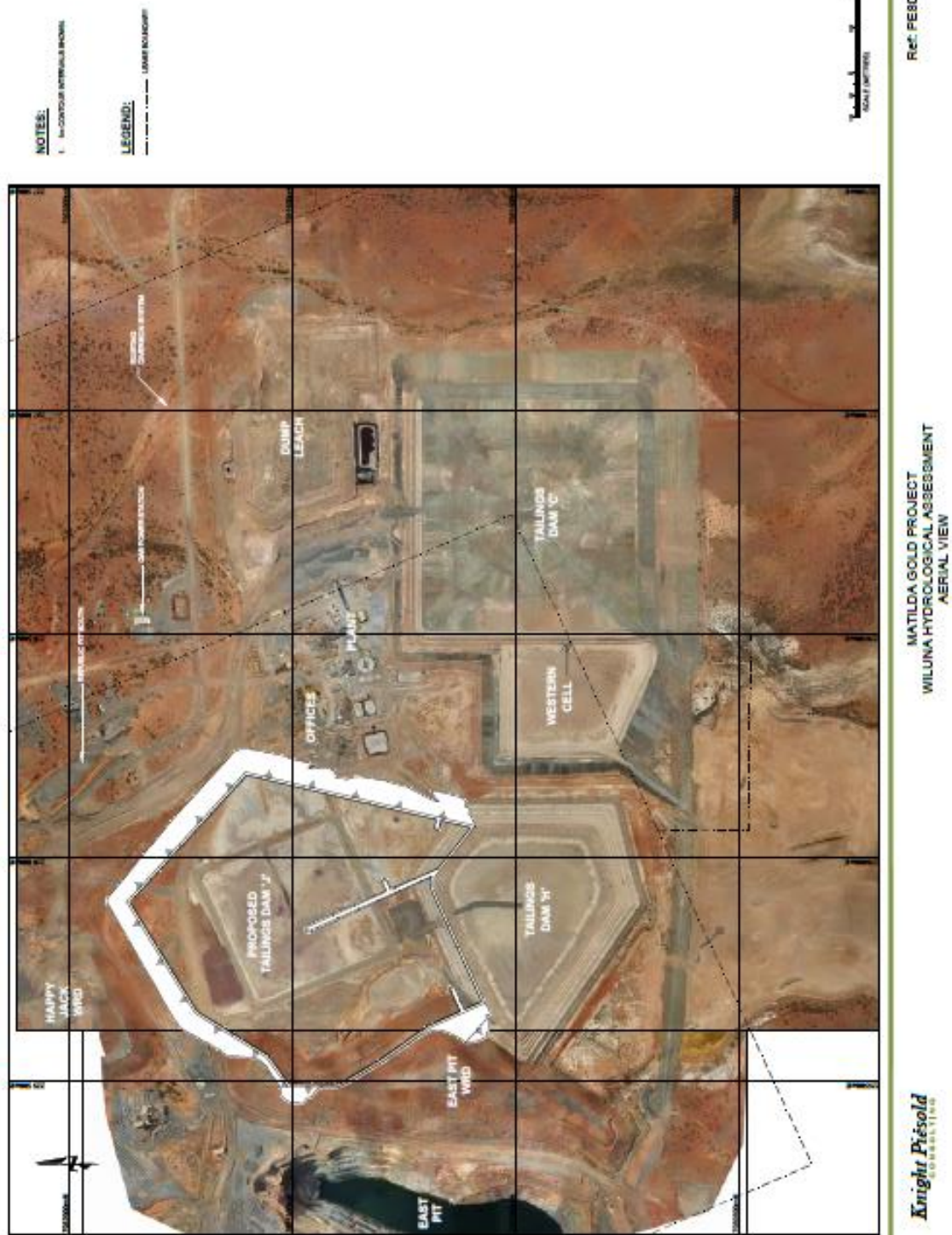


Figure 5: Location of TSF J relative to existing infrastructure

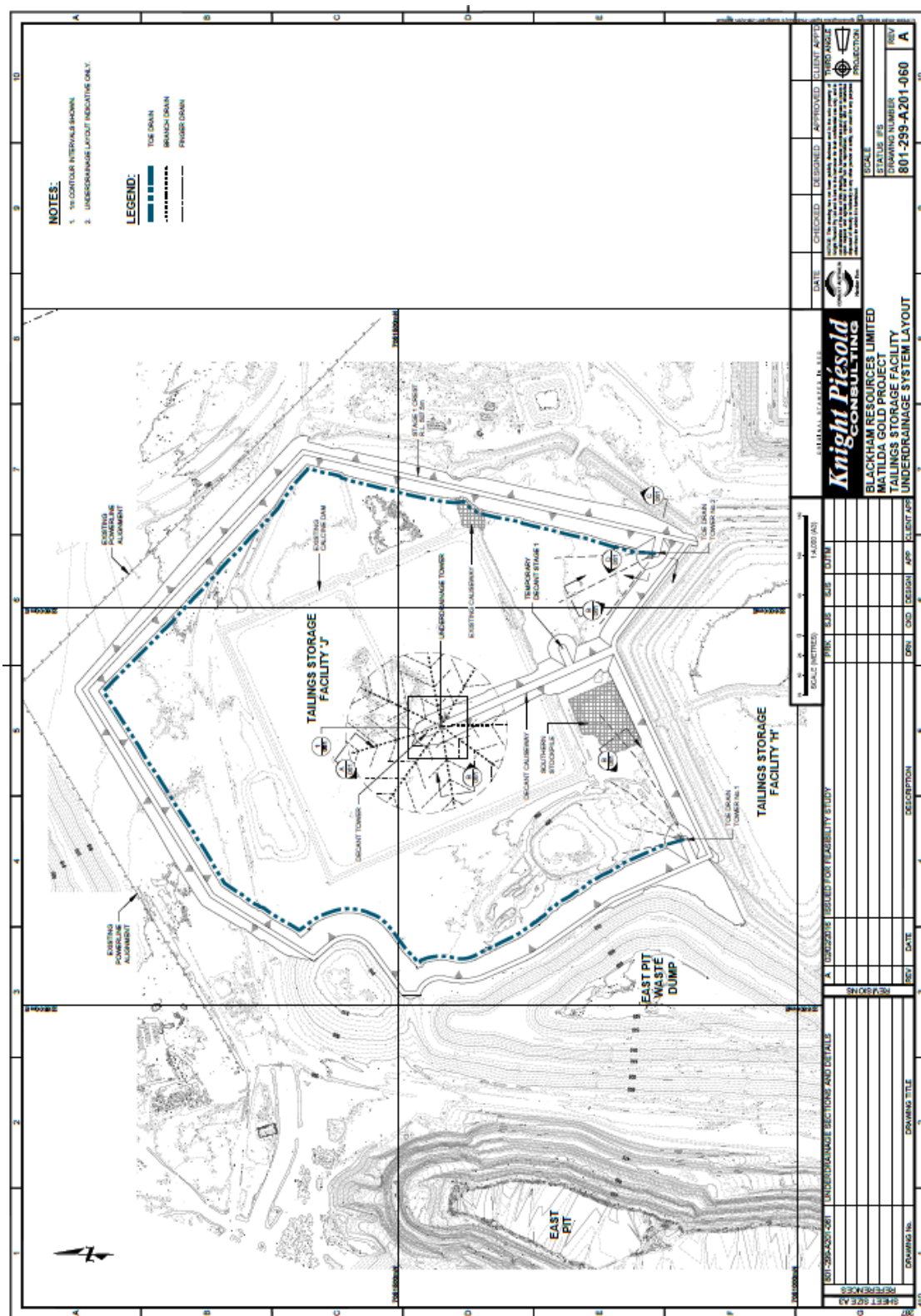


Figure 6: Drawing of TSF J, showing underdrainage detail.

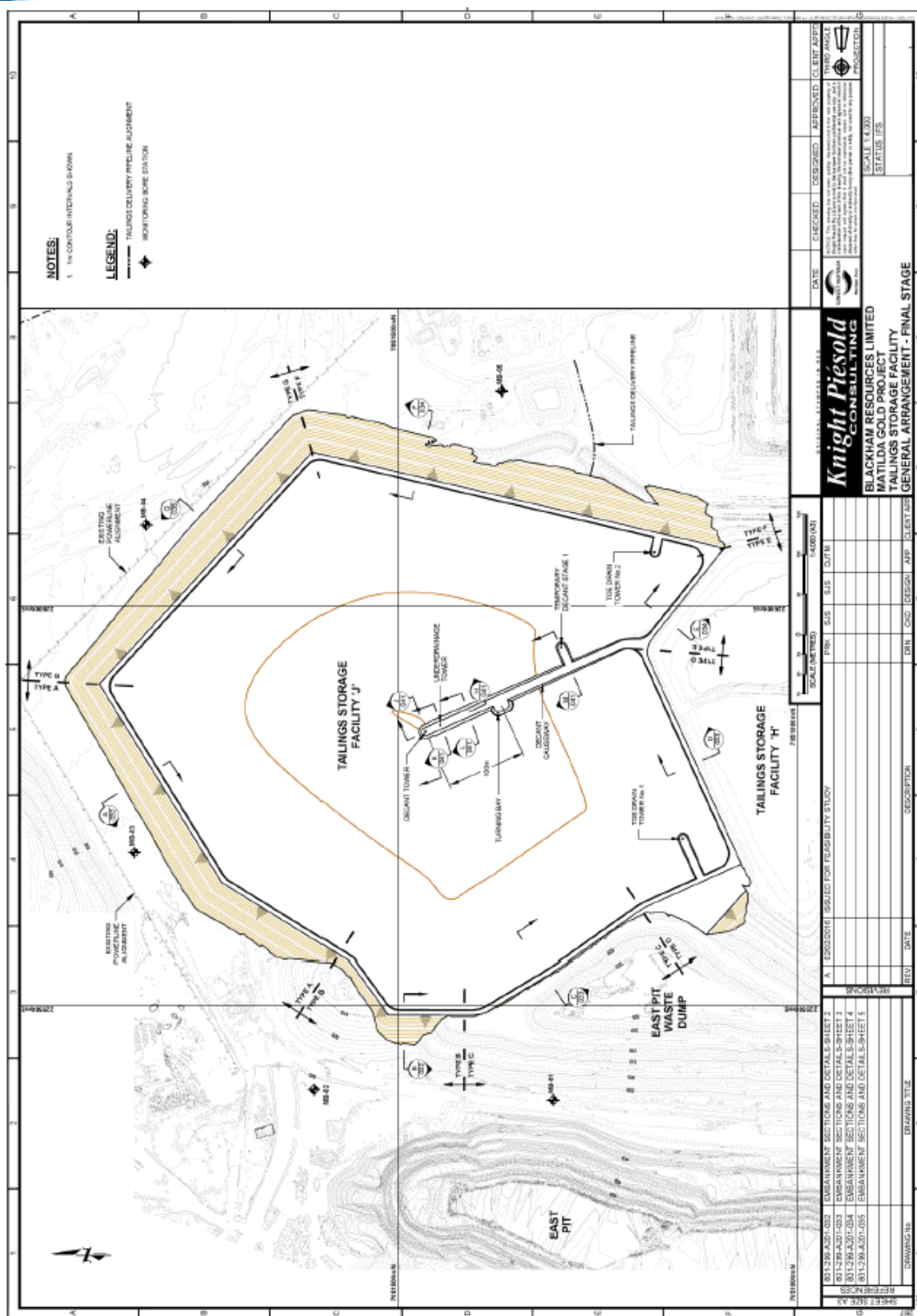


Figure 7: General arrangement drawing of TSF J at final height.