Licence

Licence Number	L4496/1988/11
Licence Holder **ACN**	Big Bell Gold Operations Pty Ltd 090 642 809
Registered business address	Level 6, 197 St Georges Terrace PERTH WA 6000
File Number	2010/003418-1
Duration	01/10/2013 to 30/09/2023
Date of amendment	28 July 2020
Prescribed Premises	Category 5: Processing or beneficiation of ore Category 6: Mine dewatering Category 63: Class I inert landfill site Category 85: Sewage facility As defined in Schedule 2
Premises	Bluebird Gold Mine MEEKATHARRA WA 6642 Legal description - G51/9, L20/75, L51/18, L51/51, L51/78, M20/12, M20/45, M20/68, M20/70, M20/71, M20/73, M20/77, M20/107, M20/214, M20/219, M20/249, M20/421, M51/6, M51/12, M51/31, M51/33, M51/35, M51/39, M51/62, M51/75, M51/92, M51/96, M51/132, M51/190, M51/199, M51/200, M51/203, M51/209, M51/211, M51/233, M51/236, M51/237, M51/254,M51/320, M51/321, M51/374, M51/393, M51/437, M51/438, M51/439, M51/440, M51/459, M51/462, M51/463, M51/483, M51/485, M51/486, M51/492, M51/493, M51/494, M51/523, M51/539, M51/564, M51/569, M51/572, M51/575, M51/581,M51/491,M51/495, M51/666, M51/671, MW51/672, M51/757, M51/788, M51/784, M51/793, M51/794, M51/795, M51/800, M51/801, M51/819, M51/820, M51/824, M51/834 As defined in Schedule 1

This Licence is granted to the Licence Holder, subject to the following conditions, on 28 July 2020, by:

Lauren Fox
Digitally signed by Lauren Fox
Date: 2020.07.28 09:48:40 +08'00'

Lauren Fox
A/MANAGER – RESOURCE INDUSTRIES REGULATORY SERVICES
an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

Contents

Introduction

This Introduction is not part of the Licence conditions.

DWER's industry licensing role

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

DWER has responsibilities under Part V of the *Environmental Protection Act 1986* (the Act) for the licensing of prescribed premises. Through this process DWER regulates to prevent, control and abate pollution and environmental harm to conserve and protect the environment. DWER 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 Bluebird Gold Mine is run by Big Bell Gold Operations Pty Ltd (BBGO), a wholly owned entity of Westgold Resources. BBGO acquired the project areas of Yaloginda (Bluebird), Paddy's Flat and Reedy, in June 2014. The project area is located in an 85 kilometres (km) stretch south along the Great Northern Highway which spans from 25km north to 60km south of the Meekatharra town site. The Bluebird mine site is located 12 km south of Meekatharra. The dominant land use in the region is grazing of sheep and cattle on nature pastures.

The Bluebird Processing Plant, originally commissioned in 1985, is a traditional crush-grind carbon-in-leach (CIL) circuit. Gold is extracted from pregnant liquor following carbon stripping, elution and electrowinning. The Plant consists of a single stage crushing circuit, a SAG mill, two ball mills, pebble crusher followed by two leach tanks, six absorption tanks and a gold circuit. Chemicals associated with the processing operations include cyanide, hydrochloric acid, sodium hydroxide (caustic) and lime.

Tailings are deposited into the Bassett's West In-Pit Tailings Storage Facility (TSF), a 24 hectares facility surrounded by six monitoring bores. However, the facility reached capacity in 2019. In May 2016, tailings deposition within the Bluebird East Pit was approved, which was commissioned for use shortly after. Bluebird East In Pit TSF covers an area of 52 hectares, has a storage volume of approximately 9.4Mm^3 and is surrounded by four monitoring bores. The process water dam, which supplies the process plant with water and is replenished with decant water from the TSF when in operation, is surrounded by a further three monitoring bores.

Wastewater treatment plants are located at Paddy's Flat (27 m^3/day) and Bluebird (70m^3/day).

BBGO undertakes surface and underground mining operations across four project areas including Paddy's Flat, Yaloginda, Nannine and Reedy. All project areas are active mining or processing locations, with the exception of Nannine. However, this is only temporary and

operations are planned to recommence during the licence period as per the Life of Mining schedule. All mined ore will be transported to the Bluebird Mill for processing.

Dewatering occurs at all active project areas with water used for dust suppression, processing operations or where no beneficial use exists, discharged to the environment via approved discharge points. Dewatering effluent is discharged through slotted pipe which diffuses the flow rate minimising scouring or erosion of the drainage channels. Additionally, riprap is installed on the drainage channel beds at the discharge points to further reduce any potential scouring impacts.

Amendment May 2020

The CEO initiated an amendment to the type and style of the licence during May 2020 and has issued a revised licence incorporating all of the recent amendment notices. The obligations of the Licensee have not changed in making this amendment. During the consolidation of amendment notice/s; DWER has not undertaken any additional risk assessment of the Premises.

The CEO has:

- incorporated the amendment notices numbers 1, 2, 3 and 4 issued between April 2016 to July 2019 respectively as listed below in the instrument log table;
- updated that style and appearance of the Licence;
- deleted the redundant AACR form set out in schedule 1 and directed the Licensee to obtain the form from the Department's website; and
- Condition number 1.3.3 on the original licence issued in 2016 was duplicated. Condition numbers were aligned in this amendment, for example, previously condition number 1.3.3 was repeated twice which resulted subsequent conditions misnumbered. This has been resolved in this amendment and condition numbers are now aligned in orderly manner for numerical consistency and flow.
- corrected clerical mistakes and unintentional errors.

The licences and works approvals issued for the Premises since 26/09/2013 are:

Instrument log		
Instrument	**Issued**	**Description**
L4496/1988/11	26/09/2013	Licence re-issue
L4496/1988/11	7/08/2014	Licence transfer
W5845/2015/1	10/09/2015	Works approval for Cat 6 dewatering
L4496/1988/11	21/01/2016	Licence amendment to include Categories 6 and 63, updated to v2.9 format
L4496/1988/11	12/05/2016	Licence amendment for the construction and operation of the Bluebird East Pit as an in-pit tailings storage facility.
L4456/1988/11	29/04/2016	This notice was given in accordance with section 59B(9) of the *Environmental Protection Act 1986* to the new expiry date of the licence.
L4496/1988/11	23/05/2017	Amendment Notice 1: Licence holder initiated amendment and relates to the dewatering of the pit lake and groundwater at the Aladdin Pit with the dewatering effluent being discharged to Lake Annean, and the inclusion of ten additional mining tenements to the Premises description to identify the additional prescribed activities. Also, standard REFIRE format licence condition 1.2.1 was removed from the licence.
L4496/1988/11	28/03/2018	Amendment Notice 2: use the Surprise Pit for the disposal of tailings material generated at the Premises. Conditions 1.3.1, 1.3.3 and 3.4.1 of the Licence for the containment infrastructure, freeboard and ambient groundwater monitoring

		requirements respectively, have been amended to include the Surprise in-pit TSF. Condition 1.3.7 is amended to include the construction requirements for the Surprise in-pit TSF. Condition 4.3.1 is amended to include the construction notification requirements for the Surprise in-pit TSF. Construction of a new Class II landfill to replace the existing landfill and dewater the Five Mile Well pit.
L4496/1988/11	11/12/2018	Amendment Notice 3: Licensee initiated amendment seeking approval to add additional tyre burial locations in schedule 1 maps, increase category 63 approved throughput and two new inert landfills, dewater the Five Mile Well pit and the removal of the following tenements from the boundary; M51/209, M51/455 M51/781, E51/1484 and some administrative changes. Thirty three tenements were added to the licence.
L4496/1988/11	24/07/2019	Amendment 4: Licensee initiated amendment seeking approval for additional category 6 activities associated with the Kurara and Boomerang resources, to add an additional tyre disposal area and to add mining tenement L51/51 and M51/92 (added previously).
L4496/1988/11	28 July 2020	DWER initiated licence amendment to review and consolidate issued amendment notices 1, 2, 3 and 4 into the licence. During this amalgamation of amendment notices no additional risk assessment of the premises was undertaken by DWER.

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

1.1 Interpretation

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

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

'AACR' means Annual Audit Compliance Report means a report in a format approved by the CEO as presented by the Licensee or as specified by the CEO from time to time and published on the Department's website'

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

'AER' means Annual Environmental Report;

'AHD' means the Australian height datum;

'Annual Period' means the inclusive period from 1 September until 31 August in the following year;

'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 5667.10' means the Australian Standard AS/NZS 5667.10 *Water Quality –Sampling – Guidance on sampling of waste waters;*

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

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

'CEO' means Chief Executive Officer of the Department of Water and Environmental Regulation;

'CEO' for the purposes of notification means:

Chief Executive Officer
Department Administering the *Environmental Protection Act 1986*
Locked Bag 10
JOONDALUP DC WA 6027
Telephone: (08) 6367 7000
Facsimile: (08) 6367 7001
Email: info@dwer.wa.gov.au

'Department' means the department established under section 35 of the *Public Sector Management Act 1994* and designated as responsible for the administration of Division 3 Part V of the EP Act;

'DWER' means Department of Water and Environmental Regulation;

'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 L4496/1988/11 and issued under the Act;

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

'Landfill definitions' means the document titled "Landfill Waste Classification and Waste Definitions 1996" published by the Chief Executive Officer of the Department of Water and Environmental Regulation as amended from time to time;

'm' means metres;

'm^3' means cubic metres;

'mbgl' means metres below ground level;

'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;

'Putrescible waste' has the meaning defined in Landfill Waste Classification and Waste Definitions 1996 (as amended time to time) under EP Act 1986;

'quarterly' means the 4 inclusive periods from 1 September to 30 November, 1 December to 28
February in the following year, 1 March to 31 May and 1 June to 31 August;

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

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

'Schedule 3' means Schedule 3 of this Licence unless otherwise stated;

'six monthly' means the 2 inclusive periods from 1 September to 28 February in the following year and 1 March to 31 August;

'Special Waste Type 1' has the meaning defined in Landfill Waste Classification and Waste Definitions 1996 (as amended time to time) under EP Act 1986;

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

'tpa' means tonnes per annum;

'TDS' means Total Dissolved Solids;

'TRH' means Total Recoverable Hydrocarbons;

'**TSF'** means tailing storage facility;

'TSS' means Total Suspended Solids; and

'WADCN' means Weak Acid Dissociable Cyanide.

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

1.1.4 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 General conditions

1.3 Premises operation

1.3.1 The Licensee shall ensure that materials described in Table 1.3.1 are only discharged into the containment structures with the relevant infrastructure requirements and at the locations specified in Table 1.3.1 and located in the map of storages in Schedule 1.

Table 1.3.1: Containment infrastructure			
Containment point reference	**Storage vessel or compound**	**Material**	**Infrastructure requirements**
TSF	Bassetts West Pit TSF	Tailings	Decant pump
Bluebird East Pit TSF	Bluebird East Pit TSF	Tailings	Decant pump
Surprise in-pit TSF	Surprise in-pit TSF	Tailings	Decant pump
Five Mile Well evaporation pond	Five Mile Well evaporation pond	Dewatering water from the Five Mile Well pit	Managed to ensure containment of a 1 in 100 year rainfall event over 72 hours Lined to achieve a minimum permeability of 10^{-9}m/s
PWD	Process water dam	Decant water from the TSF	Lined with a membrane spray. Storage of return water from the TSF.
-	Waste water treatment ponds	Sewage waste water undergoing treatment	Managed to ensure: containment of a 1 in 100 year rainfall event over 72 hours; and vegetation and floating debris (emergent or otherwise) is prevented from encroaching onto pond surfaces and pond embankments.

1.3.2 The Licensee shall ensure that all pipelines containing tailings materials are either:
(a) equipped with automatic cut-outs in the event of a pipe failure; or
(b) provided with secondary containment sufficient to contain any spill for a period equal to the time between routine inspections; or
(c) provided with telemetry systems and pressure sensors along pipelines carrying environmentally hazardous materials to allow the detection of leaks and failures.

1.3.3 The Licensee shall maintain the freeboards as detailed in Table 1.3.2.

Table 1.3.2: Freeboard requirements	
Storage vessel or compound	**Freeboard requirements**
Bassets West Pit TSF and Bluebird East Pit TSF	Minimum freeboard of 500mm or equivalent to contain a 1 in 100 year rainfall event over 72 hours (whichever is greater).
Surprise in-pit TSF	Minimum freeboard of 3.0m measured as the distance between the maximum normal operating pond level and the surrounding natural ground level outside of the pit
PWD	Minimum freeboard of 300mm.
Five Mile Well pit evaporation pond	Minimum freeboard of 500mm

1.3.4 The Licensee shall:
(a) undertake inspections as detailed in Table 1.3.3;
(b) where any inspection identifies that an appropriate level of environmental protection is not being maintained, take corrective action to mitigate adverse environmental consequences as soon as practicable; and
(c) maintain a record of all inspections undertaken.

Table 1.3.3: Inspection of infrastructure		
Scope of inspection	**Type of inspection**	**Frequency of inspection**
Tailings pipelines	Visual integrity	Daily
Return water lines	Visual integrity	Daily
Embankment freeboard	Visual to confirm required freeboard capacity is available	Daily
Dewatering discharge pipelines	Visual integrity	Daily

1.3.5 The Licensee shall ensure that any dewatering effluent shall only be managed in the following manner:
(a) used for dust suppression in a manner that does not cause damage to surrounding vegetation; or
(b) discharged in accordance with condition 2.2.1.

1.3.6 The Licensee shall ensure that where wastes produced on the Premises are not taken off-site for lawful use or disposal, they are managed in accordance with the requirements in Table 1.3.4.

Table 1.3.4: Management of waste[1, 2]		
Waste type	**Management strategy**	**Requirements**
Inert Waste Type 1 and Type 2 (other than tyres)	Receipt, handling and disposal of waste by landfilling	Disposal of waste by landfilling shall only take place within the landfill areas shown on the landfill location map in Schedule 1. Waste shall be placed in a defined trench or within an area enclosed by earthen or rock bunds. Only one trench shall be open for deposition at any one time. The separation distance between the base of the landfill and the highest groundwater level shall not be less than 3 m. Maintain a minimum distance of at least 100 m between the previously filled areas of the landfill and the active tipping area and any surface water body.
Inert Waste Type 2 (Tyres)		Disposal of tyres shall only take place within the tyre burial areas shown on the tyre burial location maps in Schedule 1. Ensure that firefighting equipment is stored at the premises that is capable of controlling and/or abating a used tyre fire at the premises.
Special Waste Type 1	Receipt, handling and disposal of waste by landfilling	Must be wrapped in heavy duty plastic prior to acceptance

Note 1: Requirements for landfilling tyres are set out in Part 6 of *the Environmental Protection Regulation 1987*.
Note 2: Additional requirements for the acceptance of controlled waste (including asbestos and tyres) are set out in the *Environmental Protection (Controlled Waste) Regulations 2004*.

1.3.7 The Licensee shall ensure that cover is applied and maintained on landfilled wastes in accordance with Table 1.3.5 and that sufficient stockpiles of cover are maintained on site at all times.

Table 1.3.5: Cover requirements[1]			
Waste Type	**Material**	**Depth**	**Timescales**
Inert Waste Type 1 and Type 2 (Plastics)	Inert and incombustible material	150 mm	Monthly
Inert Waste Type 2 (Tyres)	Soil or other dense inert and incombustible material	1,000 mm	At regular intervals so that no more than 1,000 tyres are left exposed at any one time. As soon as practical following the achievement of final waste levels in the area(s) where tyres are disposed of.
Special Waste Type 1	Clean fill		Immediately after disposal

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

1.3.8 The Licensee shall take all reasonable and practical measures to ensure that no windblown waste escapes from the landfill area and that windblown waste is collected on at least a weekly basis and returned to the active tipping area.

1.3.9 The Licensee shall ensure the limits specified in Table 1.3.6 are not exceeded.

Table 1.3.6 Production or design capacity limits		
Category[1]	**Category description[1]**	**Premises production or design capacity limit**
5	Processing or beneficiation of metallic or non-metallic ore	2,500,000 tonnes per annual period
6	Mine dewatering	5,823,000 tonnes per annual period
63	Class I inert landfill site	3,000 tonnes per annual period
85	Sewage facility	99 cubic metres per day

Note 1: Environmental Protection Regulations 1987, Schedule 1.

1.3.10 The Licensee must install and undertake the Works for the infrastructure and equipment:
(a) specified in Column 1; and
(b) to the requirements specified in Column 2
of Table 1.3.7 below.

Table 1.3.7: Construction Requirements	
Column 1	**Column 2**
Infrastructure/Equipment	**Requirements (design and construction)**
Surprise in-pit TSF	Tailings discharge and return pipelines are located within earthen bunded areas; and The decant infrastructure is positioned at the truncated end of the porphyry unit within the pit.
Five Mile Well Pit evaporation pond	Pond is constructed to provide a minimum freeboard of 0.5 m to allow for a 1 in 100 year 72 hour rainfall event; The in-situ clays used for the pond wall construction are conditioned to achieve a permeability of 10^{-9} m/s or better; and Discharge pipeline is located within an earthen bunded area.

Table 1.3.7: Construction Requirements	
Column 1	**Column 2**
Infrastructure/Equipment	**Requirements (design and construction)**
Class I inert landfill	To be constructed at the Surprise Waste Rock Dump; Each trench (cell) is constructed so the separation distance between the base of the landfill and the highest groundwater level shall not be less than 3 m; and Earthen bunds are constructed around the facility to divert stormwater away from the waste.
Paddy's Flat Class I inert landfill	To be constructed at the location specified on the landfill map Schedule 1; Each trench (cell) is constructed so the separation distance between the base of the landfill and the highest groundwater level shall not be less than 3 m; and Earthen bunds are constructed around the facility to divert stormwater away from the waste.
Reedy Project Area Class 1 landfill	To be constructed at the location specified on the landfill map in Schedule 1. Each trench (cell) is constructed so the separation distance between the base of the landfill and the highest groundwater level shall not be less than 3 m; and Earthen bunds are constructed around the facility to divert stormwater away from the waste.
WRL tyre disposal areas	To be constructed at the locations specified on the WRL tyre disposal maps outlined in Schedule 1. Each trench (cell) is constructed so the separation distance between the base of the landfill and the highest groundwater level shall not be less than 3 m; and Earthen bunds are constructed around the facility to divert stormwater away from the waste.
Dewatering pipelines from the Boomerang, Kurara and Kurara Central pits to Lake Annean	• Built with butt welded polyvinylchloride; • Located within previously cleared transport corridors; • Located within a V-notch to minimize movement of the pipeline; • Discharge outlet into Lake Annean includes an energy diffusion device/s to minimize scouring and erosion of the lake bed; and • The dewatering discharge outlet is located so as to direct flows to deeper parts of the lake basin to prevent backflow of saline water into creeks and tributaries.

1.3.11 If any departures from the specifications in Table 1.3.7 occur, then the Licensee must provide the CEO with a list of departures which are certified as complying with Condition 1.3.11 at the same time as the certifications under Condition 1.3.13.

1.3.12 The Licensee must submit a construction compliance document to the CEO, within one month, following the construction of the Works and prior to operating the new works at the premises.

1.3.13 The Licensee must ensure the construction compliance document:
(a) is certified by a suitably qualified professional engineer or builder that each item of infrastructure specified in Condition 1.3.11, Table 1.3.7 has been constructed in

accordance with the Conditions of the Licence with no material defects; and

(b) be signed by a person authorised to represent the Licensee and contain the printed name and position of that person within the company.

2 Emissions

2.1 General

2.1.1 The Licensee shall record and investigate the exceedance of any descriptive or numerical limit specified in any part of section 2 of this Licence.

2.2 Emission to land

2.2.1 The Licensee shall ensure that where waste is emitted to land from the emission points in Table 2.2.1 and identified on the map of emission points in Schedule 1 it is done so in accordance with the conditions of this Licence.

Table 2.2.1: Emissions to land

Emission points reference and locations on Map of emission points	Description	Source including abatement
North of Reedy Drainage Channel	Dewatering discharge	Dewatering effluent from the Rand, South Emu/Triton and Jack Ryan pits. Discharged via slotted pipe. Rip rap installed in the channel near the end of the discharge pipeline. Discharged in a manner which does not cause erosion and scouring impacts, and reduces the likelihood of surface ponding.
South of Reedy Drainage Channel		

2.3 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: Emissions to surface water

Emission point reference and location on Map of emission points	Description	Requirements
Aladdin discharge point	Dewatering effluent from the Aladdin Pit and discharged to Lake Annean.	Discharged in a manner which does not cause erosion and scouring impacts, and avoids lake edges.
Lake Annean Discharge Point 2	Dewatering effluent from the Boomerange, Kurara and Kurara Central Pits	

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**	**Frequency**
Aladdin discharge point	Total Recoverable Hydrocarbons	15 mg/L	Spot sample	Quarterly
Lake Annean Discharge Point 2				

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 waste water sampling is conducted in accordance with AS/NZS 5667.10;
(c) all groundwater sampling is conducted in accordance with AS/NZS 5667.11; and
(d) all laboratory samples are submitted to and tested by a laboratory with current NATA accreditation for the parameters being measured unless indicated otherwise in the relevant table.

3.1.2 The Licensee shall ensure that:
(a) monthly monitoring is undertaken at least 15 days apart; and
(b) quarterly monitoring is undertaken at least 45 days 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 inputs and outputs

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 inputs and outputs				
Input/ Output	**Parameter**	**Units**	**Averaging period**	**Frequency**
Mine dewater discharged to North of Reedy Drainage Channel	Volume	m^3	Monthly	Cumulative monthly total
Mine dewater discharged to South of Reedy Drainage Channel				
Mine dewater discharged to Lake Annean (Aladdin discharge point)				
Mine dewater discharged to Lake Annean Discharge Point 2				

3.3 Monitoring of emissions to land

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: Monitoring of emissions to land				
Monitoring point reference	**Parameter**	**Units**	**Averaging period**	**Frequency**
- North of Reedy Drainage Channel outflow pipe - South of Reedy Drainage Channel outflow pipe	pH[1]	pH units	Spot sample	Monthly
	Aluminium (Al)	mg/L		
	Arsenic (As)			
	Cadmium (Cd)			
	Chromium (Cr)			
	Copper (Cu)			
	Lead (Pb)			
	Manganese (Mn)			
	Mercury (Hg)			
	Nickel (Ni)			
	Selenium (Se)			
	Zinc (Zn)			
	Total recoverable hydrocarbons (TRH)			
	Total dissolved solids (TDS)			
	Total suspended solids (TSS)			

Note 1: In-field non-NATA accredited analysis permitted for pH measurements.

3.4 Ambient environmental quality monitoring

3.4.1 The Licensee shall undertake the monitoring in Table 3.4.1 according to the specifications in that table and record and investigate results that do not meet any limit specified.

Table 3.4.1: Monitoring of ambient groundwater quality					
Monitoring point reference and location	**Parameter**	**Limit**	**Units**	**Averaging period**	**Frequency**
BWMB1, BWMB2, BWMB3, BWMB4, BWMB5 and BWMB 6 (Bassetts West Pit TSF) PWD1, PWD2, PWD3 (Process Water Dam) BEMB1, BEMB2, BEMB3 and BEMB4 (Bluebird East Pit TSF)[2] SB01, SB02 and SB03[3] (Surprise in-pit TSF)	Standing water level[1]	-	m(AHD)	Spot sample	Quarterly
	pH	≥6.0 to ≤9.0	-		
	Total dissolved solids (TDS)	-	mg/L		
	Arsenic (As)	0.5			
	Cadmium (Cd)	-			
	Chromium (Cr)	-			
	Copper (Cu)	0.5			
	Lead (Pb)	-			
	Mercury (Hg)	-			
	Nickel (Ni)	1.0			
	Selenium (Se)	-			
	Zinc (Zn)	20			
	Weak acid dissociable cyanide (WAD)	0.5			

Note 1: Standing water level shall be determined prior to collection of water samples.
Note 2: Water samples shall be collected from monitoring points BEMB1 to BEMB4, and be analysed for each listed parameter, prior to the deposition of tailings into the Bluebird East Pit TSF. The results shall be presented in the Annual Environmental Report as required by 4.2.1.
Note 3: Monitoring of the "Surprise in-pit TSF" is only required once deposition within the TSF commences. After deposition has commenced, on-going monitoring is required, even after deposition has ceased.

3.5 Monitoring of point source emissions to surface water

3.5.1 The Licensee shall undertake the monitoring in Table 3.5.1 according to the specifications in that table.

Table 3.5.1: Monitoring of point source emissions to surface water

Emission point reference	Parameter	Units	Averaging period	Frequency
Aladdin drainage point Lake Annean Discharge Point 2	pH	pH units	Spot sample	Quarterly
	Aluminium (Al)	mg/L		
	Antimony (Sb)			
	Arsenic (As)			
	Cadmium (Cd)			
	Chromium (Cr)			
	Copper (Cu)			
	Lead (Pb)			
	Manganese (Mn)			
	Mercury (Hg)			
	Nickel (Ni)			
	Nitrate (as NO_3)			
	Selenium (Se)			
	Sulfate (SO_4)			
	Total Recoverable Hydrocarbons (TRH)			
	Total suspended solids (TSS)			
	Total dissolved solids (TDS)			
	Zinc (Zn)			

Note 1: Monitoring of the "Lake Annean Discharge Point 2" is only required once discharge commences. After discharge has commenced, on-going monitoring is required, even after discharge has ceased.

3.6.1 The Licensee shall undertake the monitoring in Table 3.6.1 according to the specifications in that table.

Table 3.6.1: Monitoring of ambient soil quality at Lake Annean

Emission point reference	Parameter	Units	Averaging period	Frequency
Lake Annean sediment monitoring locations LA11 to LA39 as shown in Schedule 1 Maps	pH	None specified	Spot sample	Quarterly
	Aluminium (Al)	mg/kg		
	Arsenic (As)			
	Cadmium (Cd)			
	Chromium (Cr)			
	Copper (Cu)			
	Cobalt (Co)			
	Lead (Pb)			
	Manganese (Mn)			
	Mercury (Hg)			
	Nickel (Ni)			
	Selenium (Se)			
	Sulfate (SO_4)			
	Zinc (Zn)			
	Total Phosphorus (PO_4)			
	Total Nitrogen (N)			

Note 1: Monitoring of discharge to Lake Annean is only required once discharge commences. After discharge has commenced, on-going monitoring is required, even after discharge has ceased.

4 Information

4.1 Records

4.1.1 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 4.1.1(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

4.1.2 The Licensee must submit to the CEO within 90 days after the end of the annual period, an Annual Audit Compliance Report indicating the extent to which the Licensee has complied with the Conditions of this Licence for the annual period.

4.1.3 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.

4.2 Reporting

4.2.1 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 4.2.1 in the format or form specified in that table.

Table 4.2.1: Annual Environmental Report

Condition or table (if relevant)	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
Table 1.3.6	Summary of authorised activities including comparison of the approved production and design capacities and actual production/throughput for the Annual period.	None specified
3.2.1	Monitoring of dewater outputs.	None specified
3.3.1	Monitoring of point source emissions to land and comparison against the ANZECC Livestock Drinking Water Guidelines.	LR1
3.4.1	Monitoring of ambient groundwater quality and comparison against the ANZECC Livestock Drinking Water Guidelines.	GR1
3.5.1	Monitoring of emissions to surface water	WR1
3.6.1	Monitoring of sediments in Lake Annean	None specified
-	An assessment of the information contained within the report against previous monitoring results and any Licence limits.	None specified

Table 4.2.1: Annual Environmental Report		
Condition or table (if relevant)	**Parameter**	**Format or form[1]**
4.1.2	Compliance	Annual Audit Compliance Report (AACR)
4.1.3	Complaints summary	None specified

Note 1: Forms are in Schedule 2

4.2.2 The Licensee shall submit the information in Table 4.2.2 to the CEO according to the specifications in that table.

Table 4.2.2: Non-annual reporting requirements				
Condition or table (if relevant)	**Parameter**	**Reporting period**	**Reporting date (after end of the reporting period)**	**Format or form**
-	Copies of original monitoring reports submitted to the Licensee by third parties	Not Applicable	Within 14 days of the CEOs request	As received by the Licensee from third parties

4.3 Notification

4.3.1 The Licensee shall ensure that the parameters listed in Table 4.3.1 are notified to the CEO in accordance with the notification requirements of the table.

Table 4.3.1: 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. Part B: As soon as practicable	N1

Note 1: Forms are in Schedule 2

Schedule 1: Maps

Figure 1 – Premises Map

The Premises is shown in the map below. The yellow line depicts the Premises boundary.

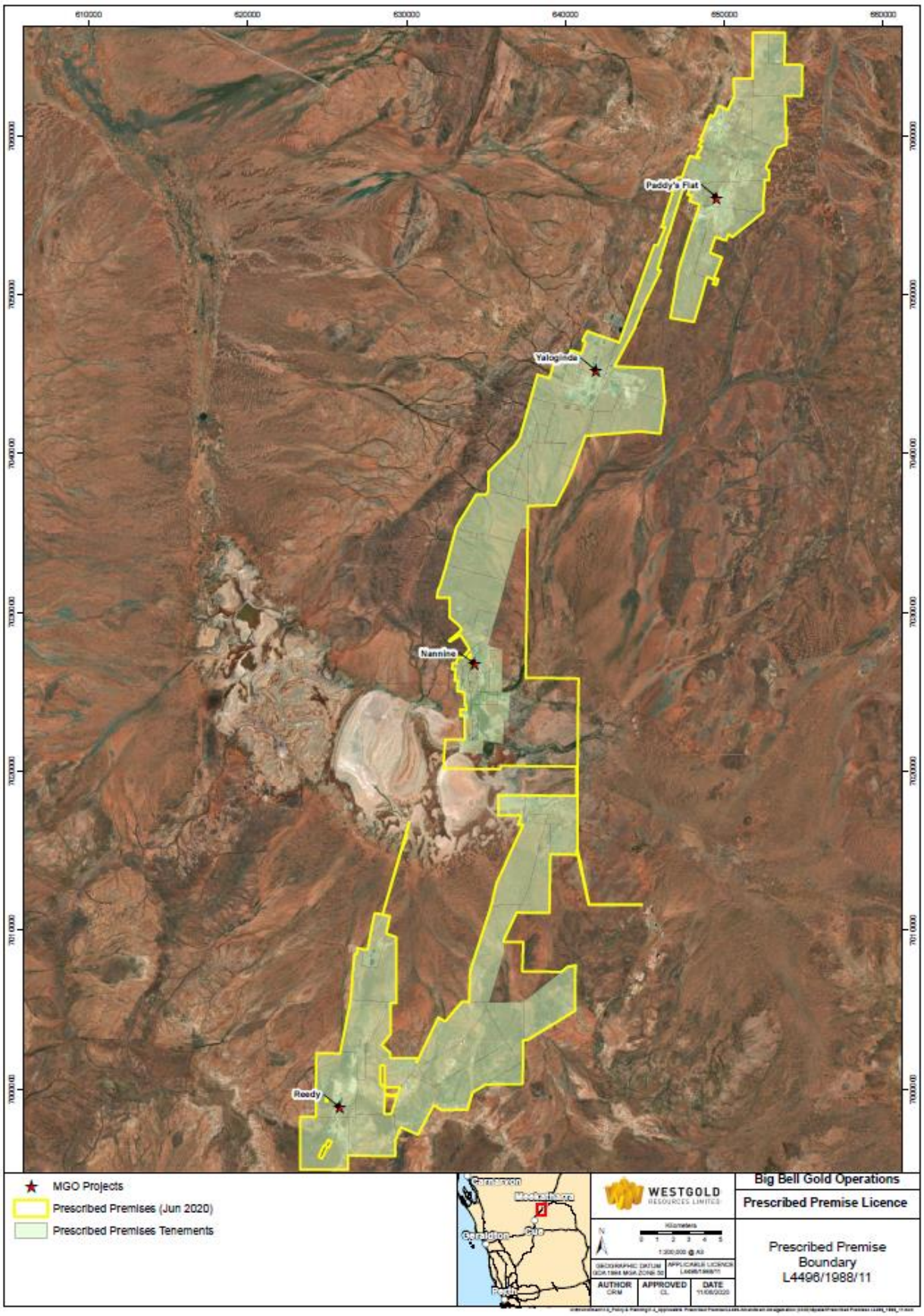


Figure 2 – North of Reedy Drainage Discharge

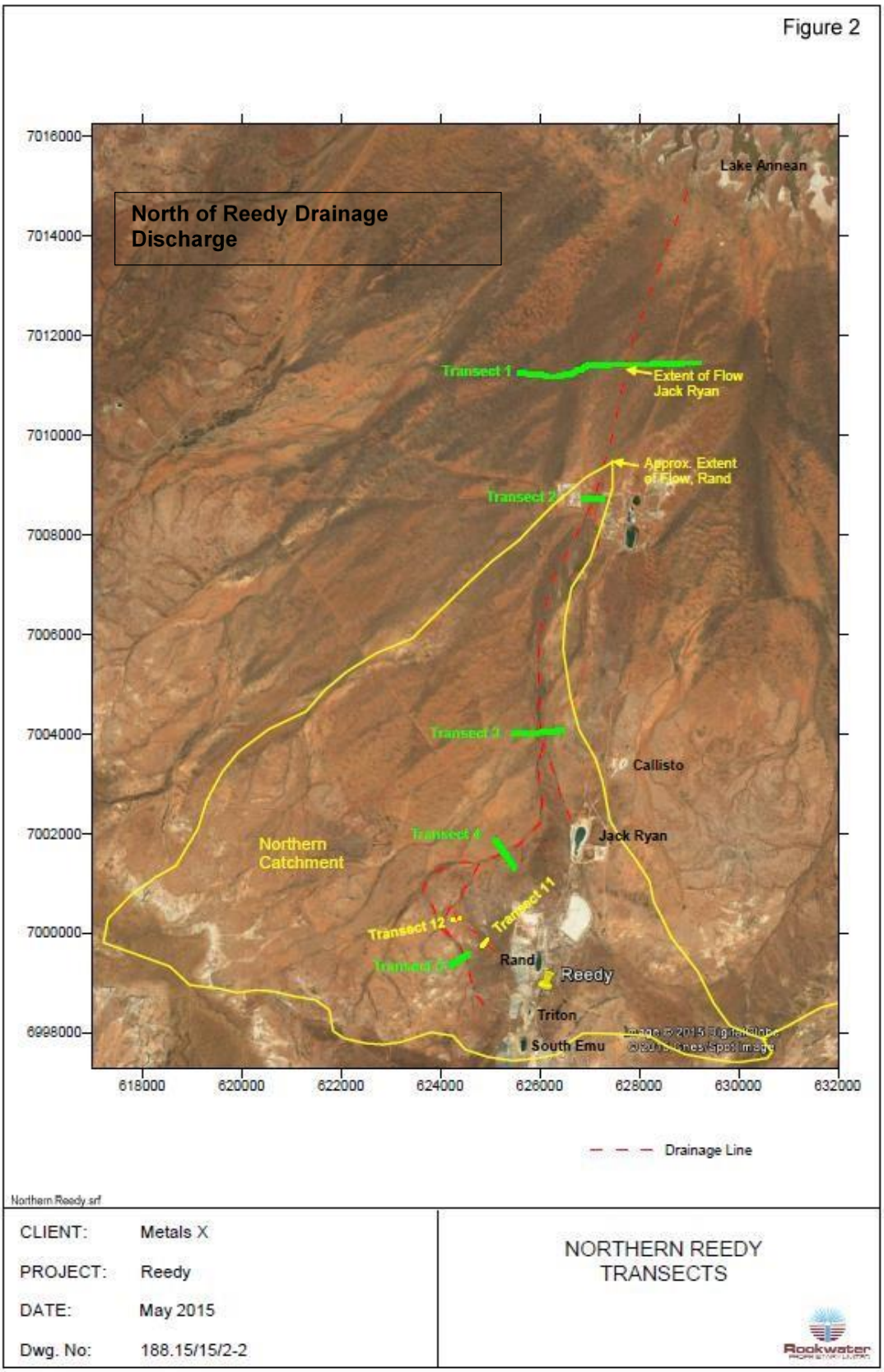


Figure 2A – North Reedy Discharge Point

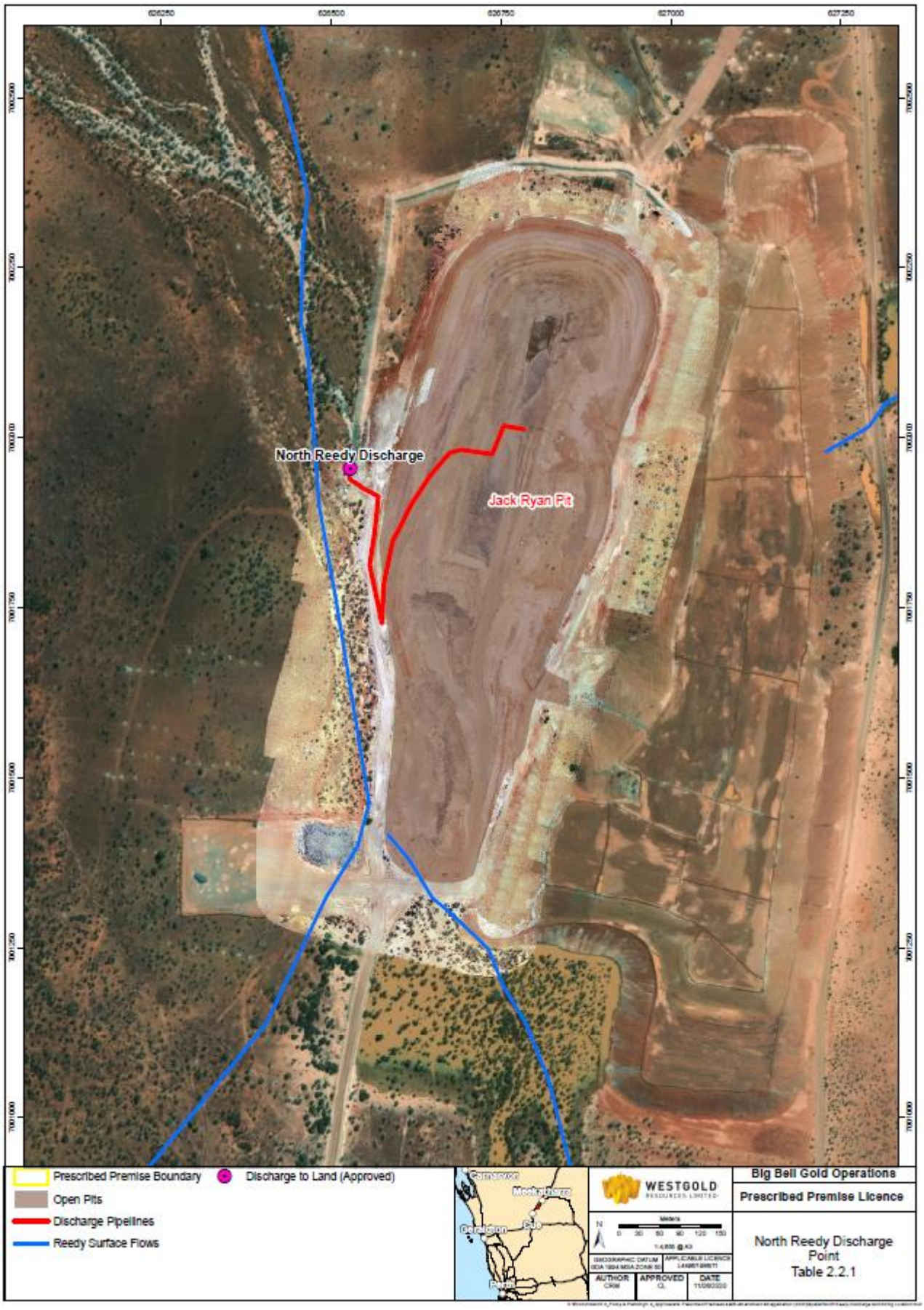


Figure 3 – South of Reedy drainage discharge

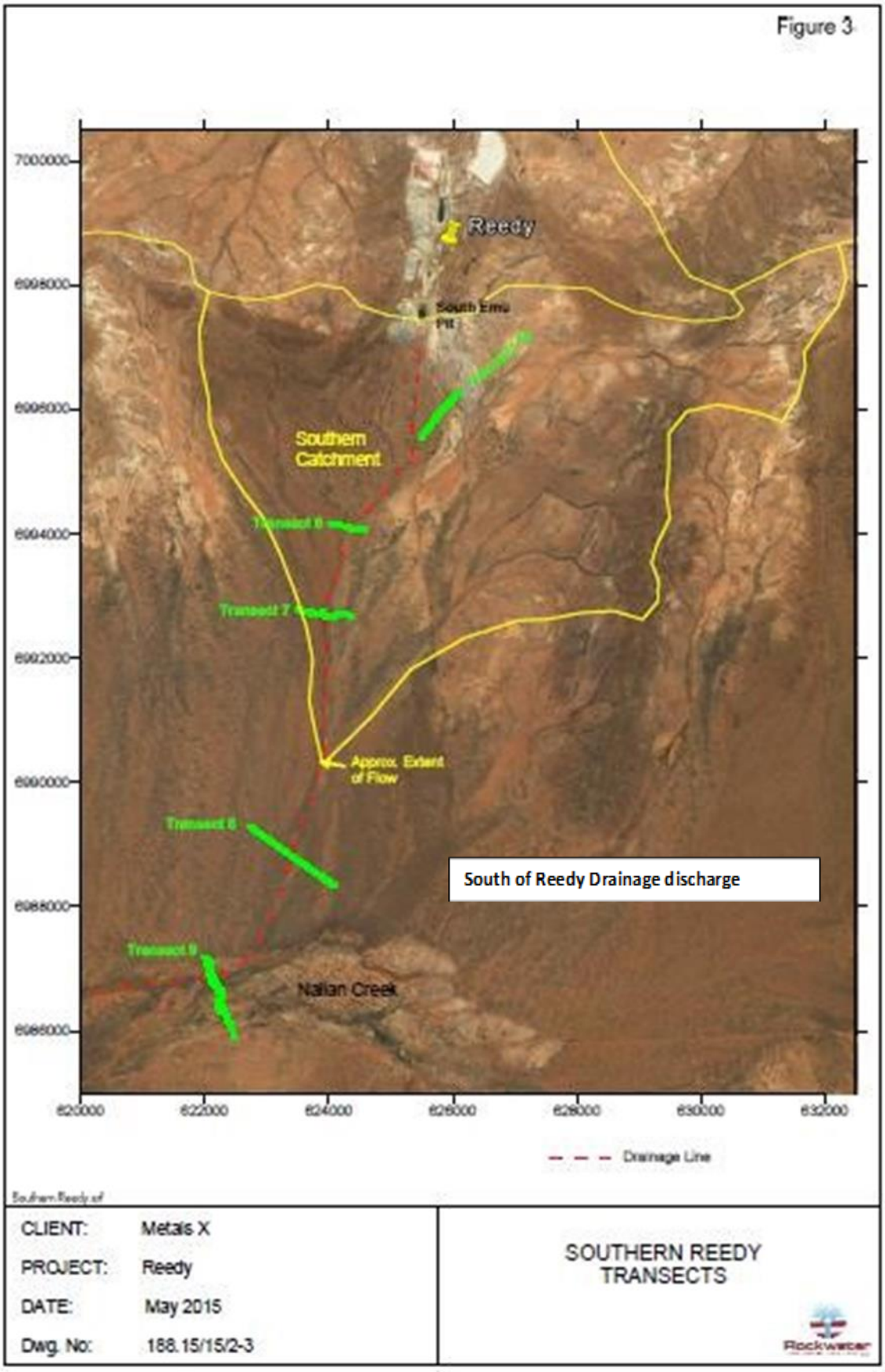


Figure 3A – South of Reedy drainage discharge point

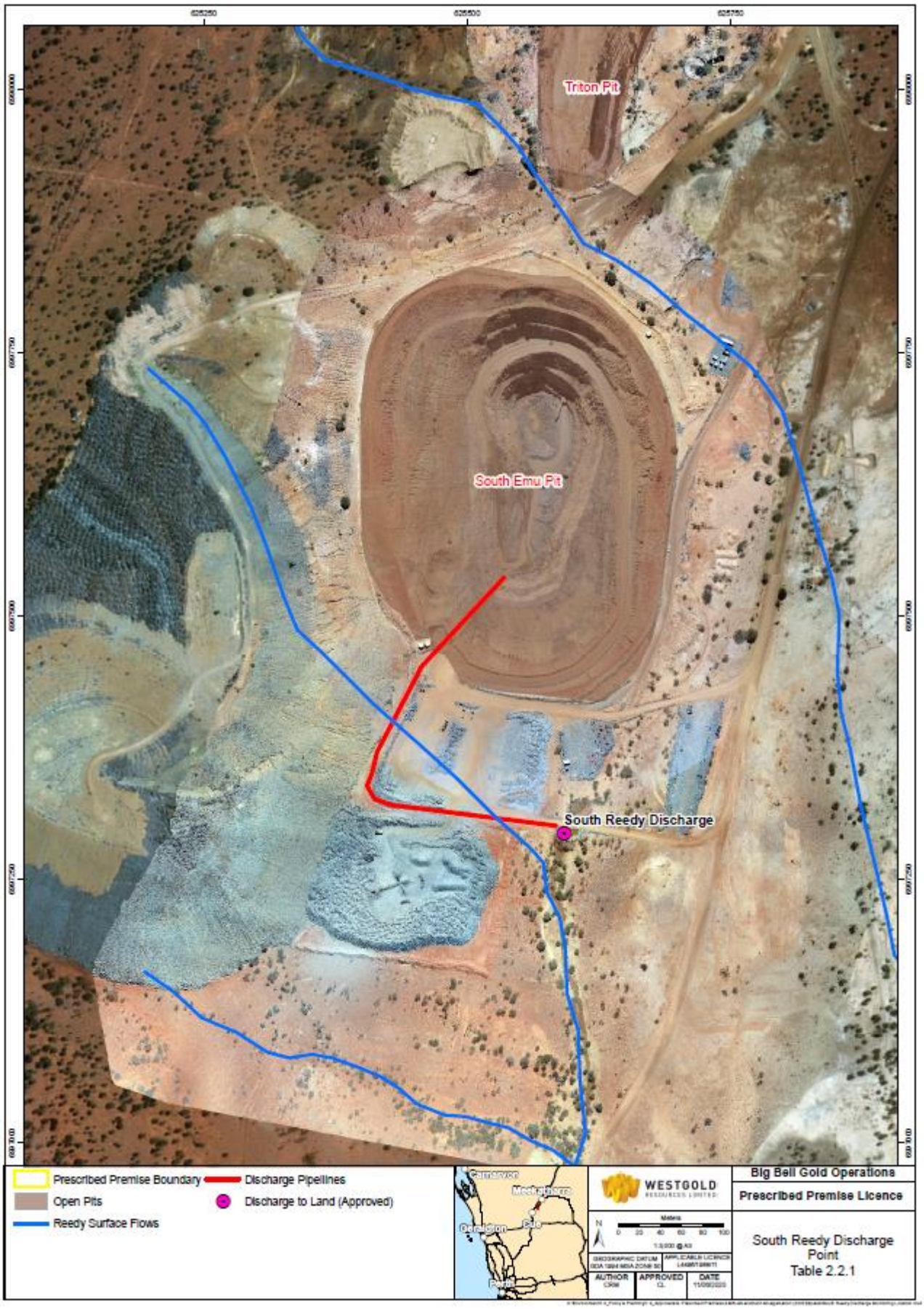


Figure 4 – Lake Annean Discharge

The location of the emission point defined in Table 2.3.1 is shown in the map below.

Figure 5 – Process Water Dam, Bluebird East In-Pit TSF, Bassetts West In-Pit TSF

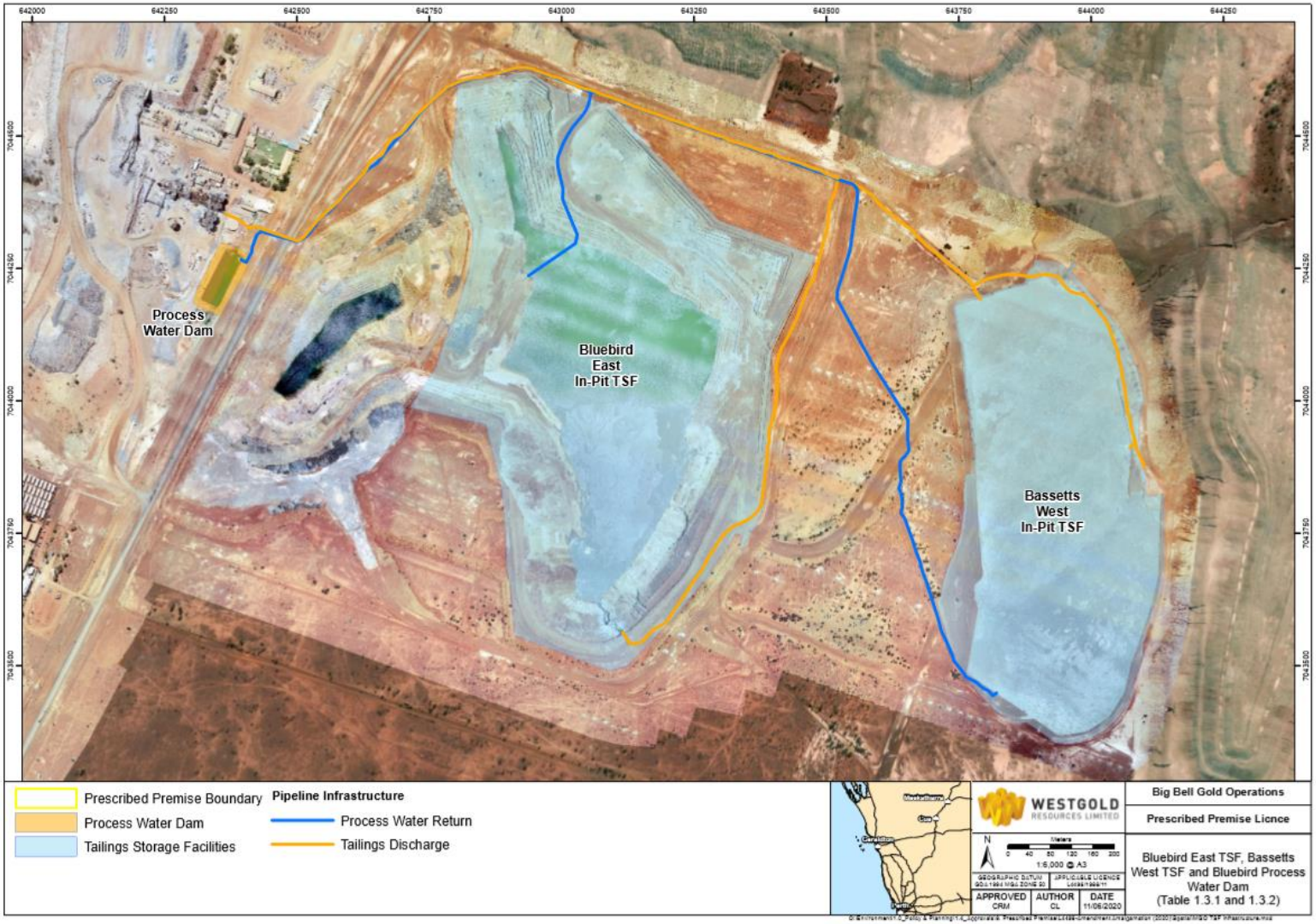


Figure 6 Process Water Dam, Bluebird East In-Pit TSF, Bassetts West In-Pit TSF monitoring bores

The locations of the monitoring points defined in Table 3.4.1 are shown in the maps below.

Bluebird East Pit TSF groundwater monitoring bores

Groundwater monitoring bore


643 000 mE
643 500 mE
EXISTING PIPELINE CORRIDOR
NORTH
7 044 500 mN
PIPELINE CORRIDOR
RETURN WATER LINE
BLUEBIRD EAST PIT TSF
7 044 000 mN
BASSETTS WEST PIT TSF
SPIGOT LOCATION
TAILINGS DELIVERY LINE
0 50 100 150 200
Scale in Metres (1 : 5000)
7 043 500 mN

Figure 7 – Lake Annean Discharge Point

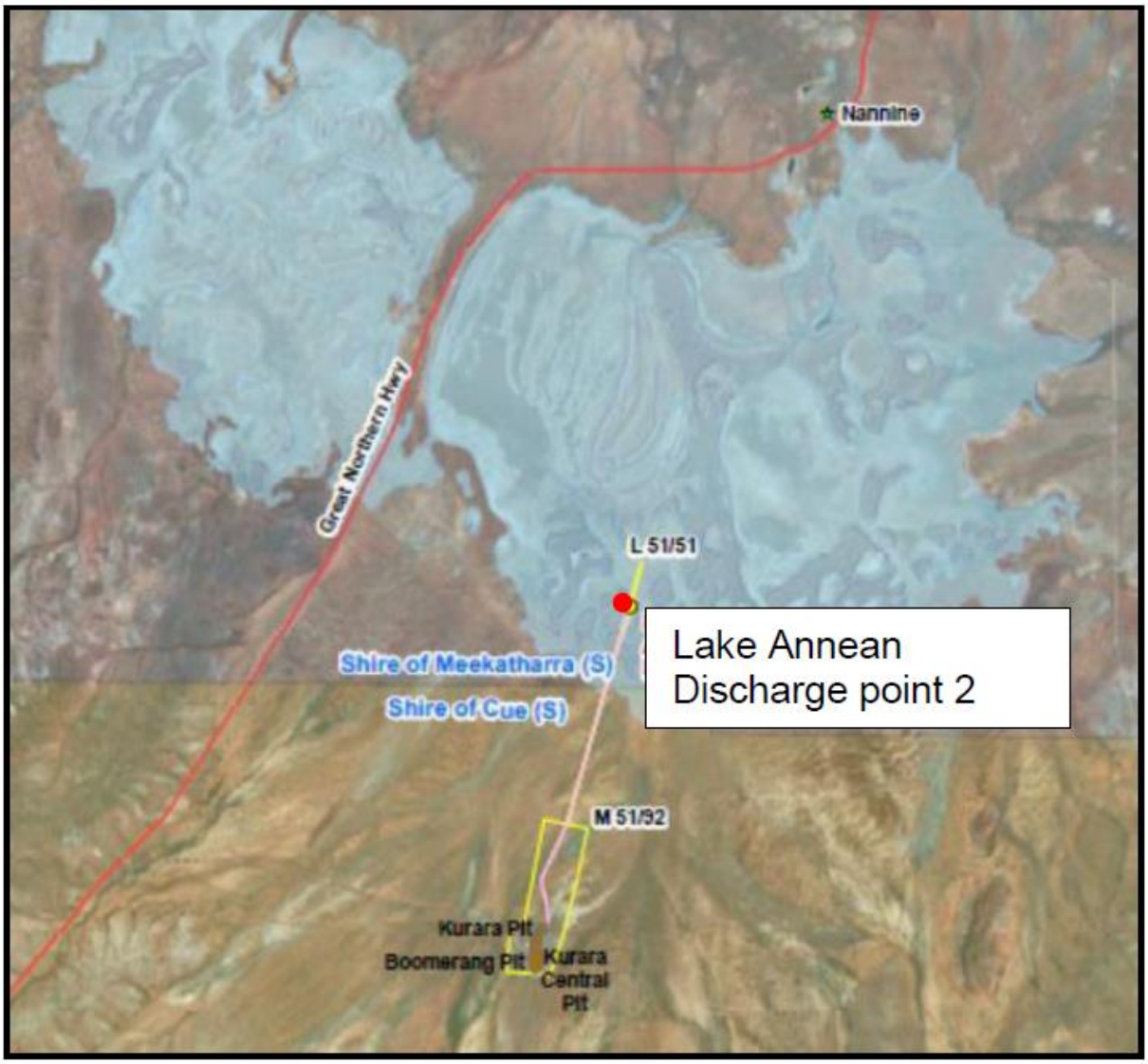
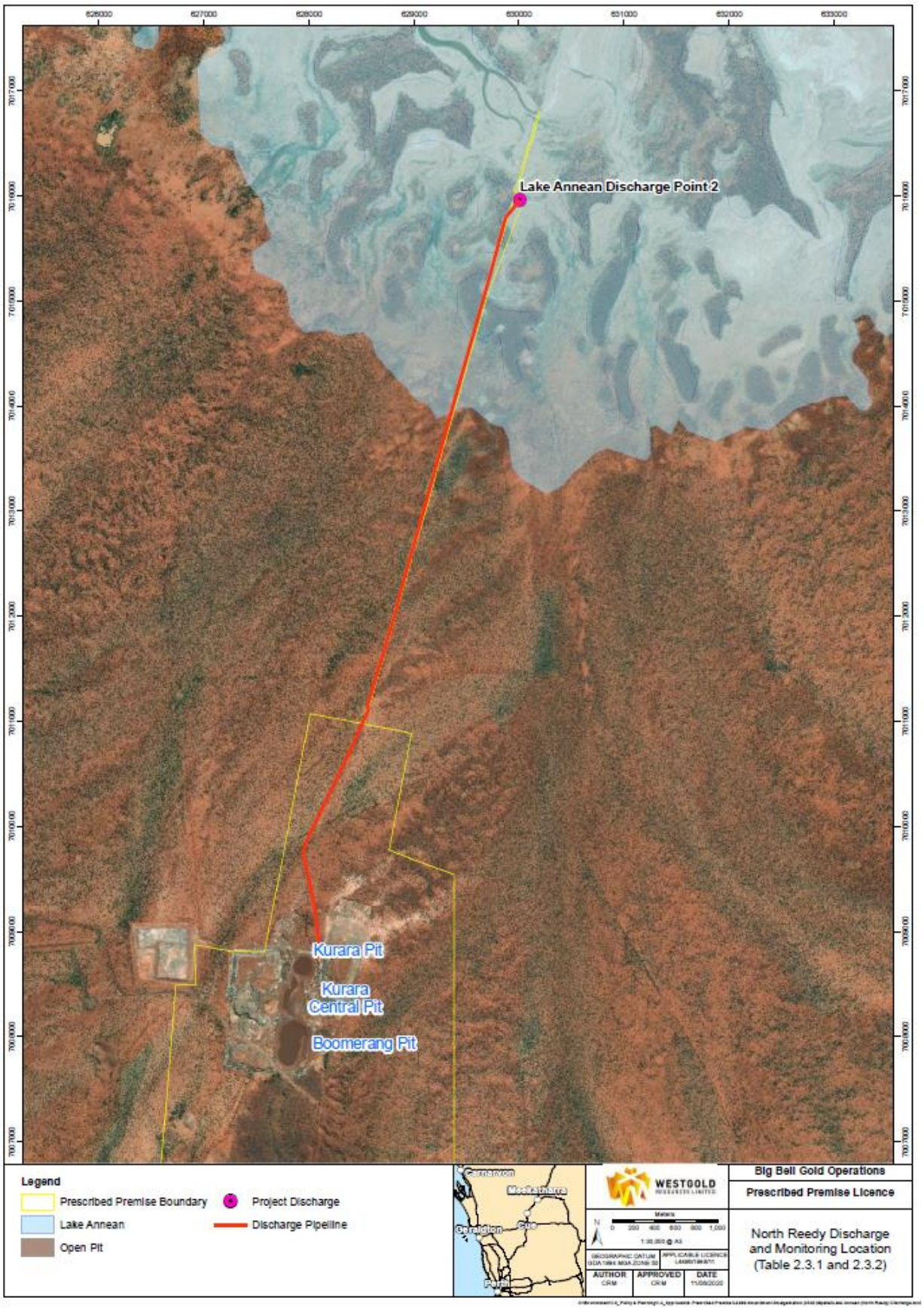


Figure 7A – Lake Annean Discharge Point



Environmental Protection Act 1986
Licence: L4496/1988/11
File number: 2010/003418-1

Figure 8 – Lake Annean Sediment Sampling Locations

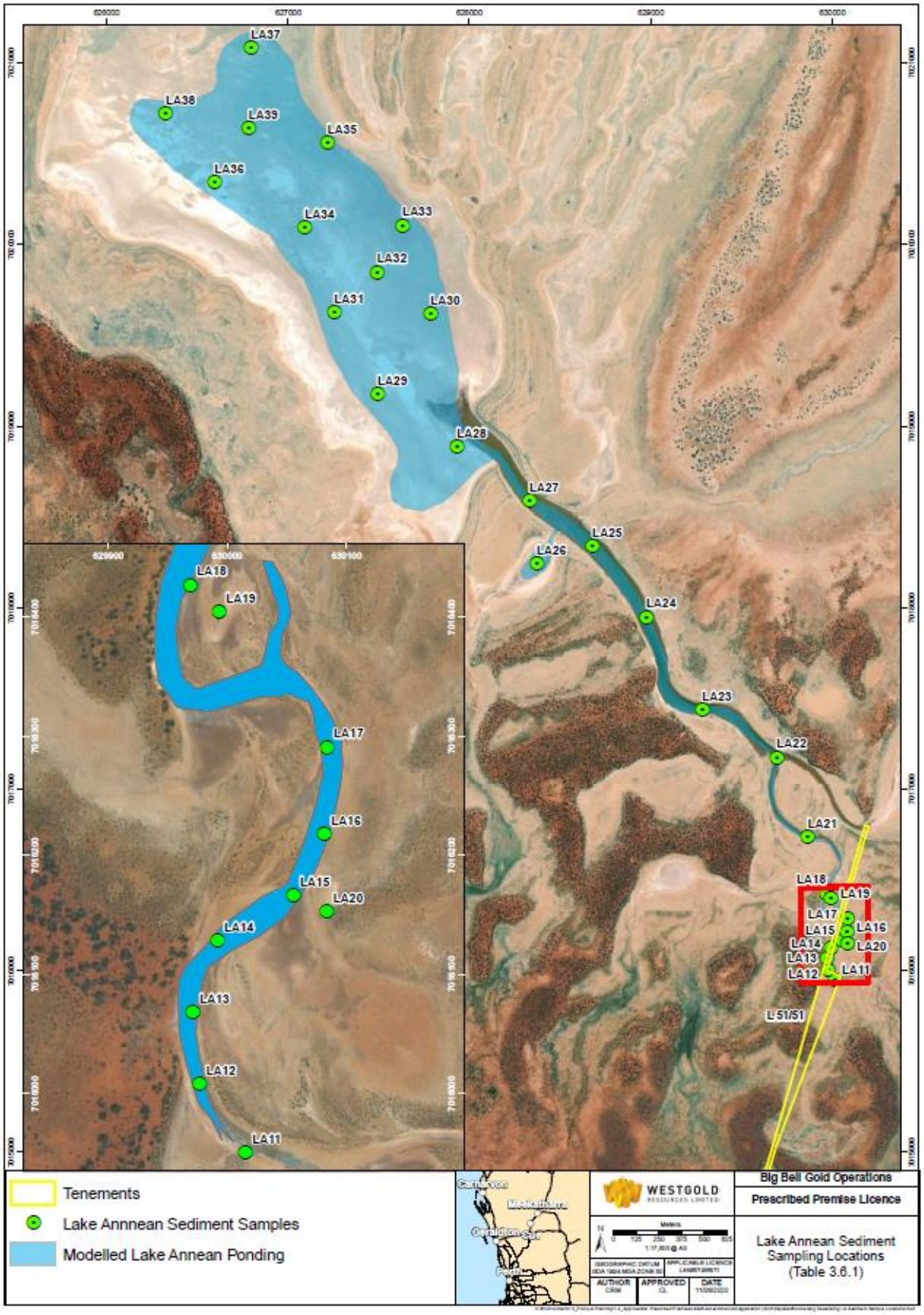


Figure 9 - Map of storage locations

The location of the TSF and Process water dam defined in Table 1.3.1 is shown below.

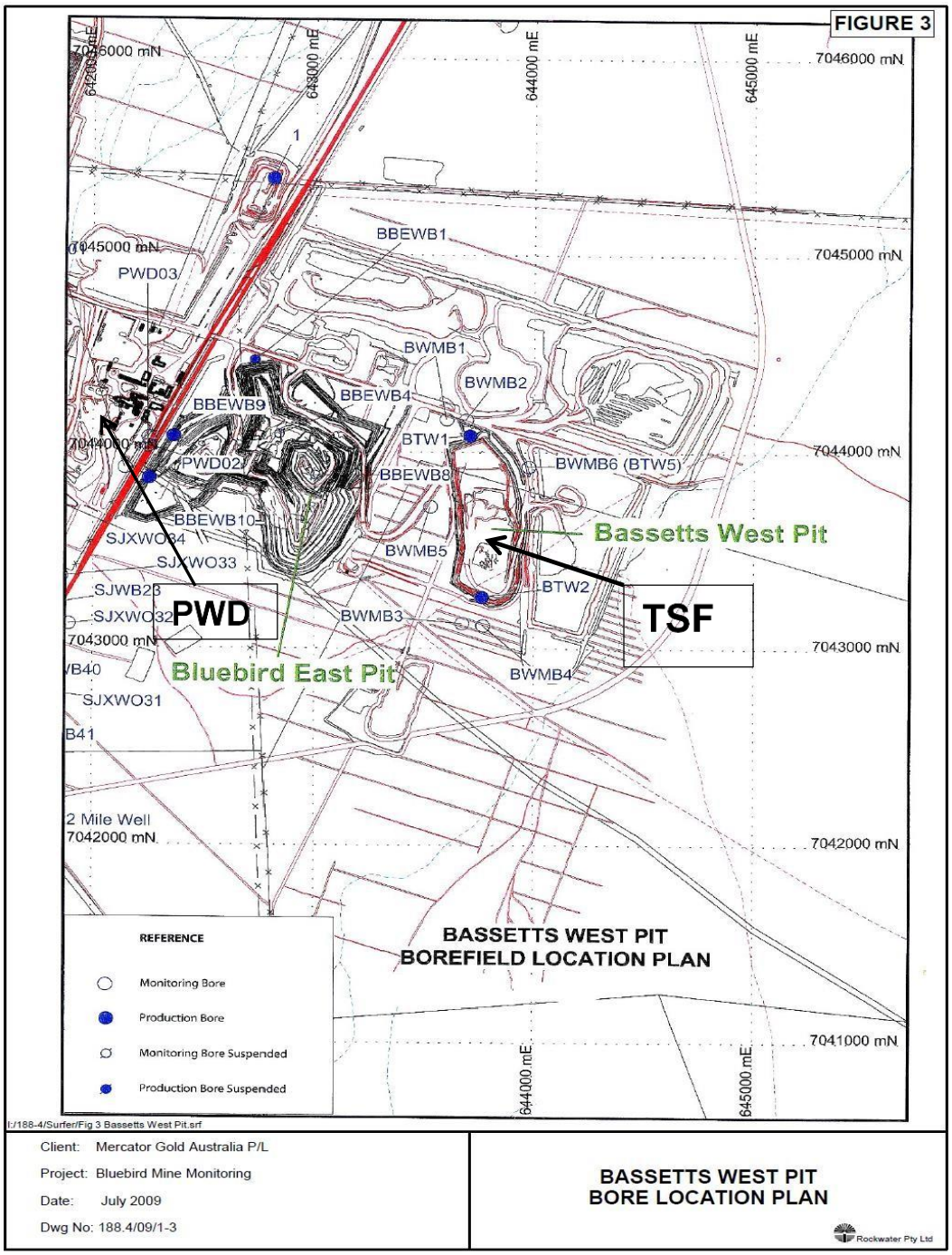


Figure 10 Aladdin WRL and Tyre Disposal Infrastructure

The locations for tyre disposal as identified in Table 1.3.4 is shown below.

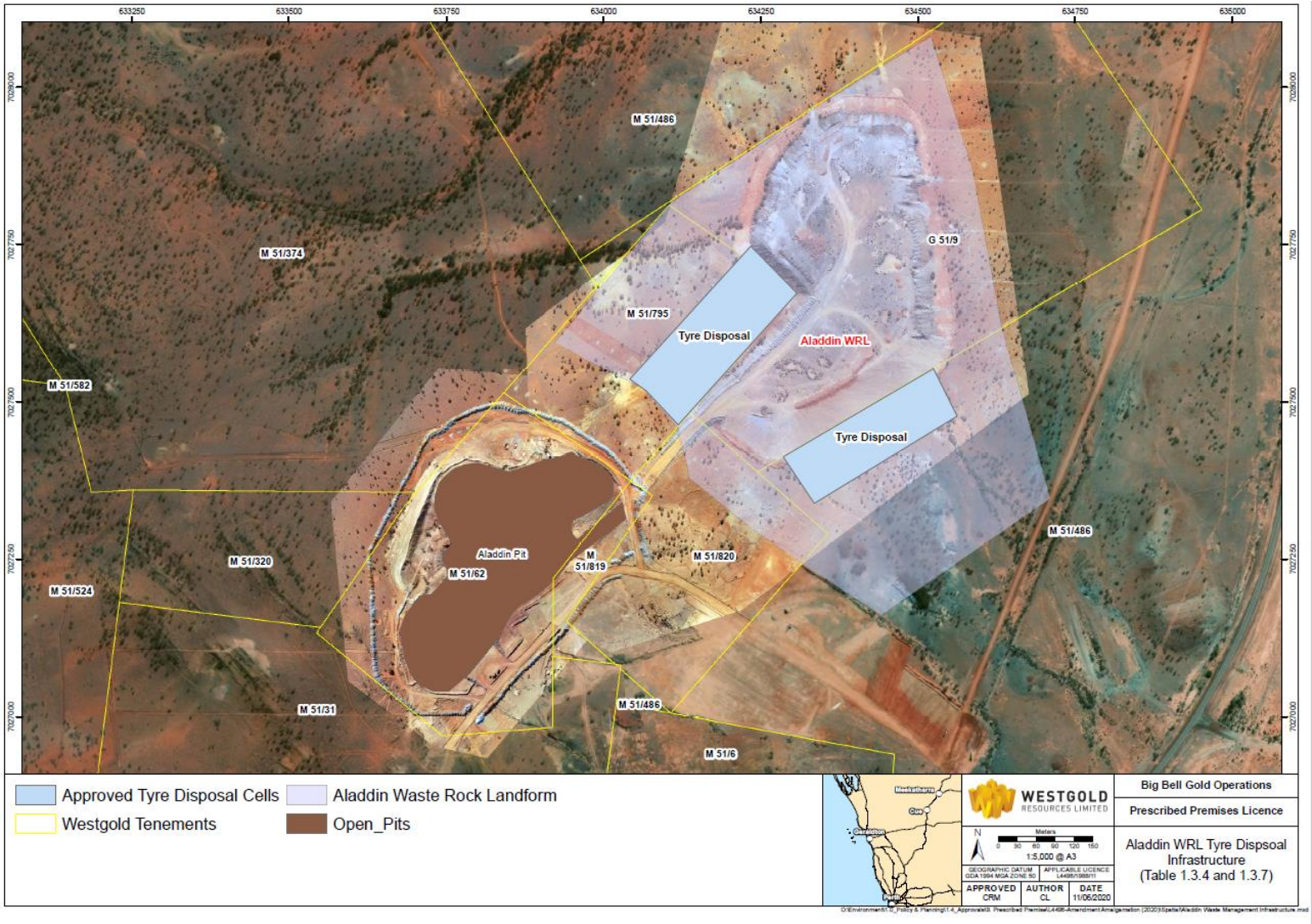


Figure 11 – Romsey Waste Management Infrastructure

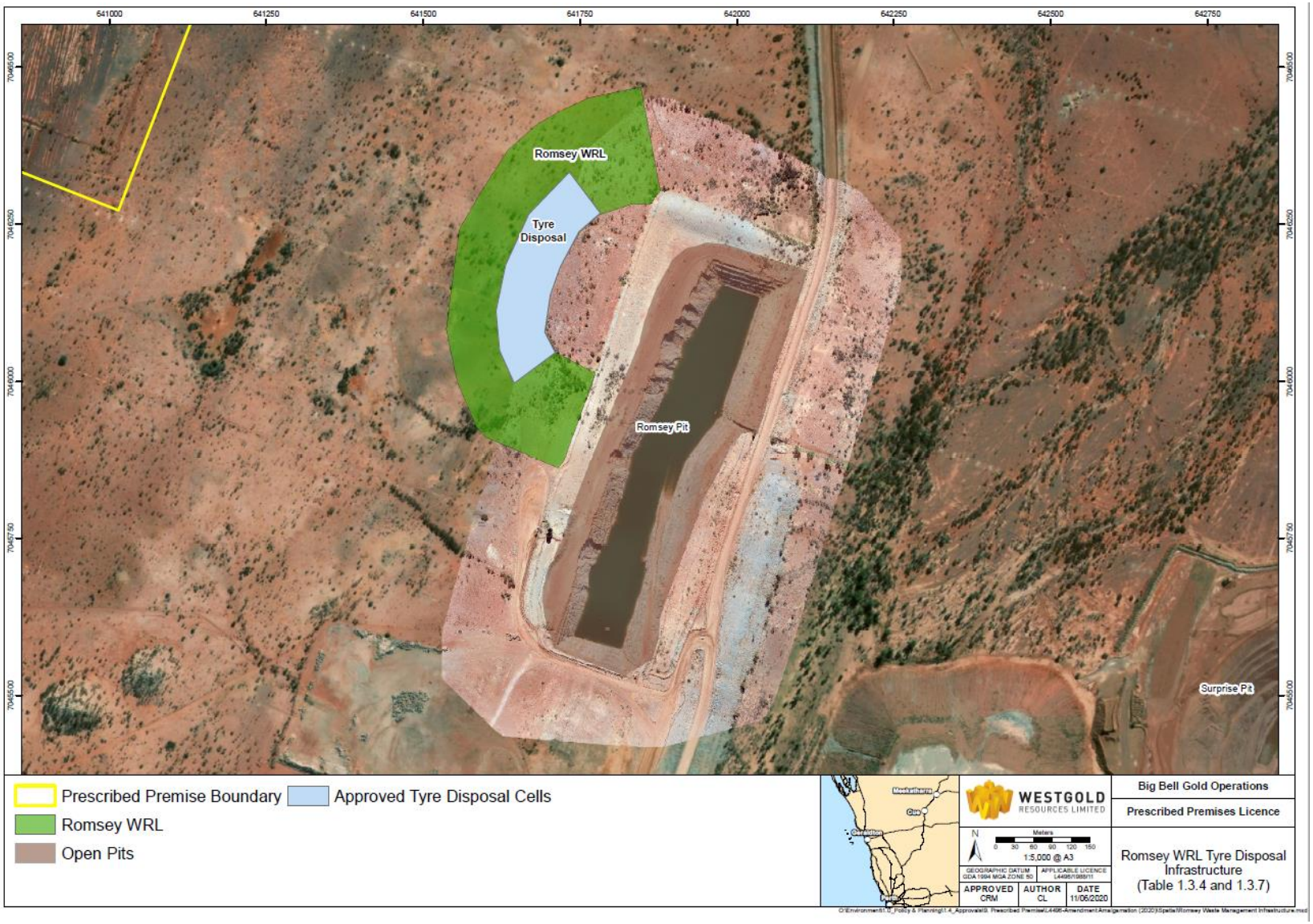


Figure 12 – Paddy's Flat Waste Management Infrastructure

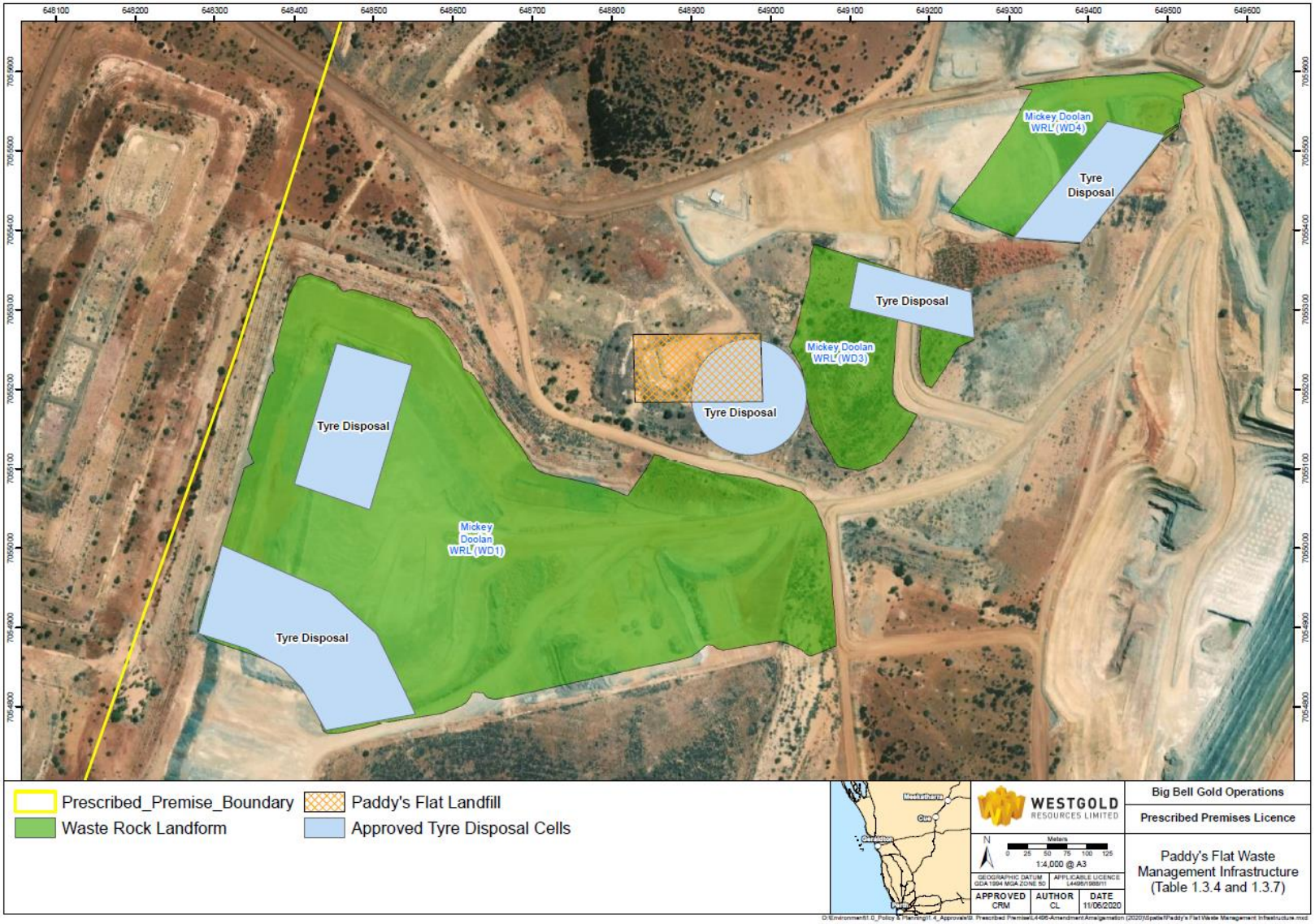


Figure 13 Five Mile Well Pit

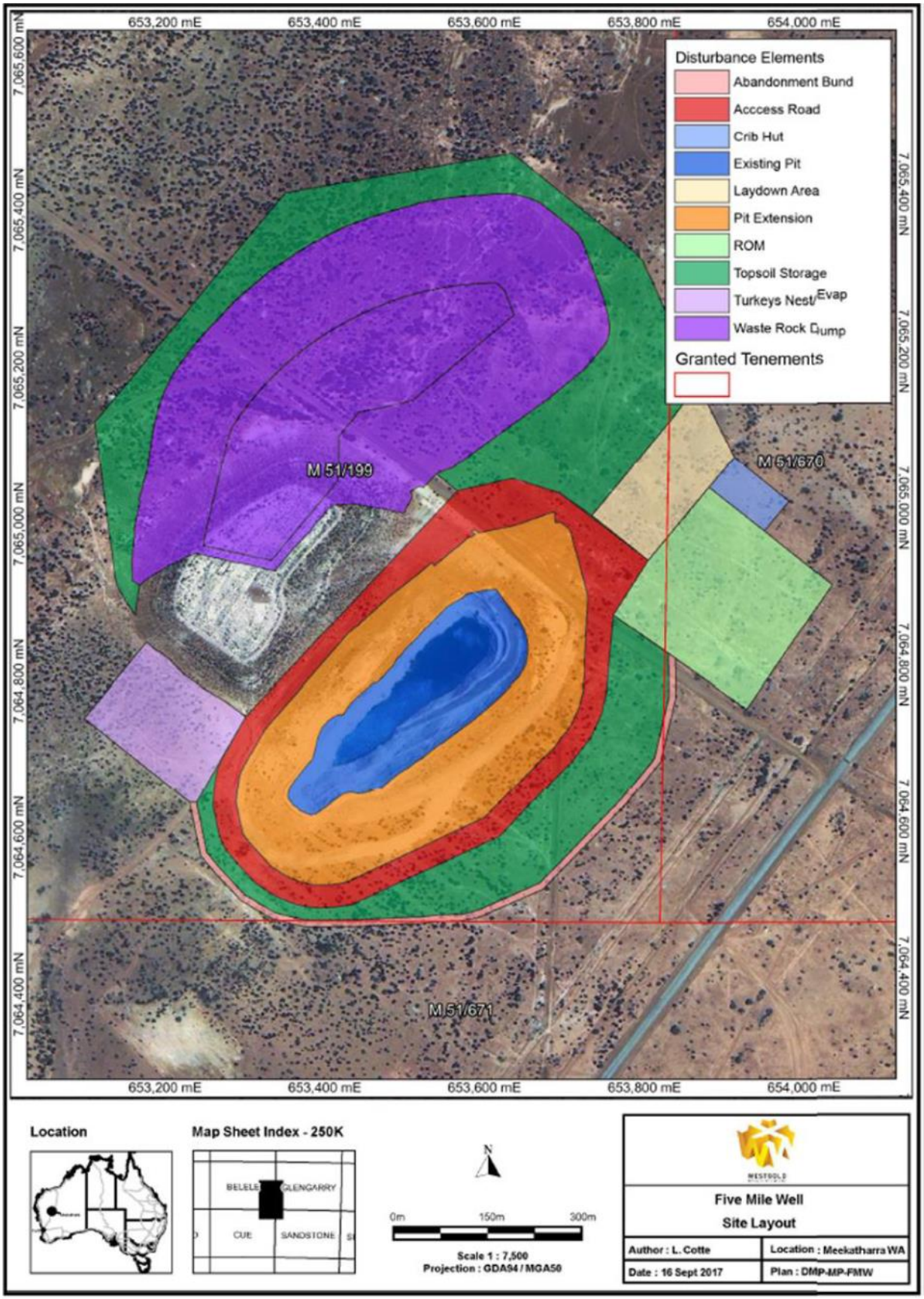


Figure 14 – Five Mile Well Tyre Disposal Location

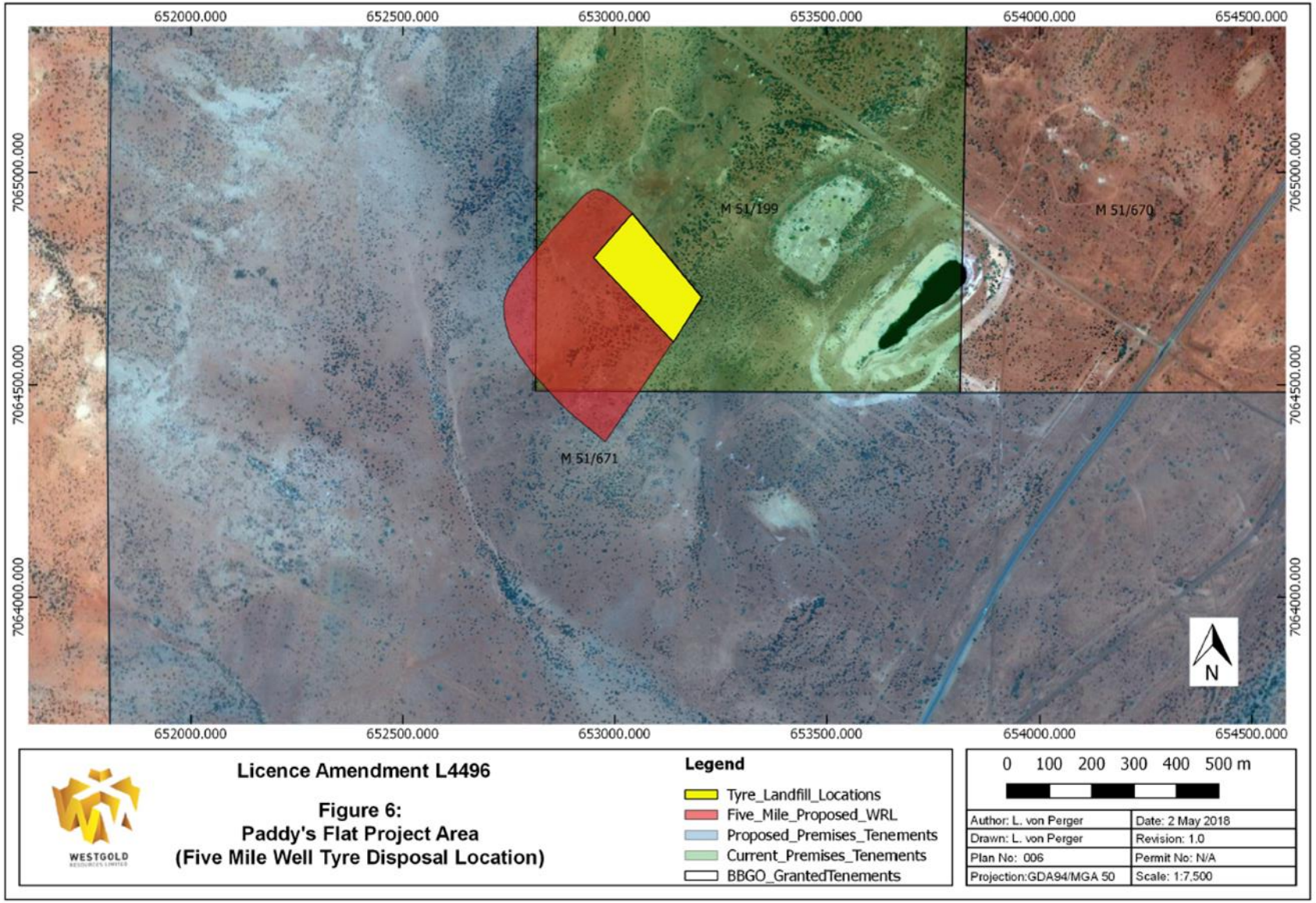


Figure 15 – Yaloginda landfill

The location of the Yaloginda landfill (in this figure marked as “New Landfill and Bioremediation Facility”) as identified in Table 1.3.4 is shown in the map below. A closer extent of the current landfill is displayed in Figure 15A.

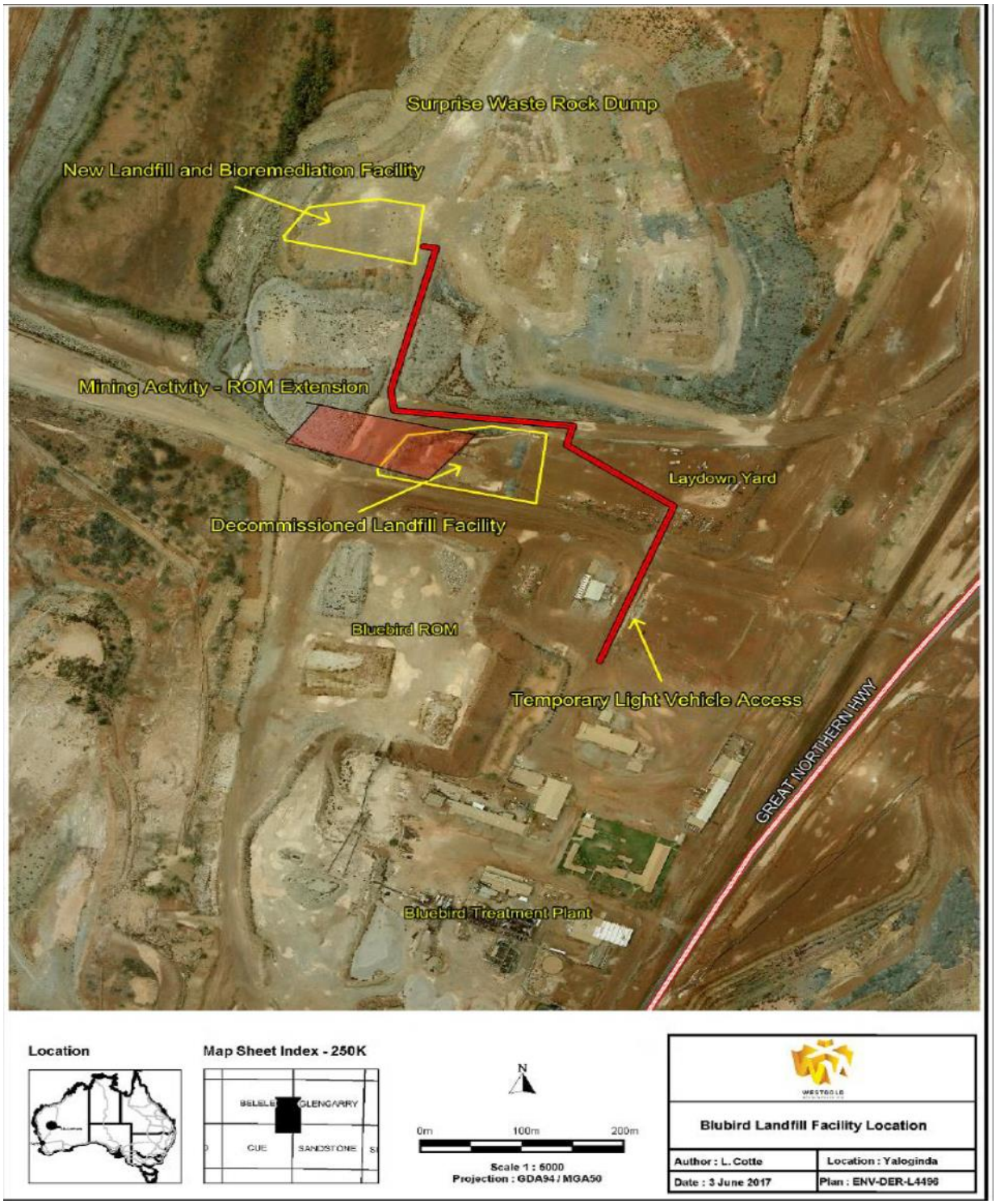


Figure 15A - Yaloginda Waste Disposal Infrastructure

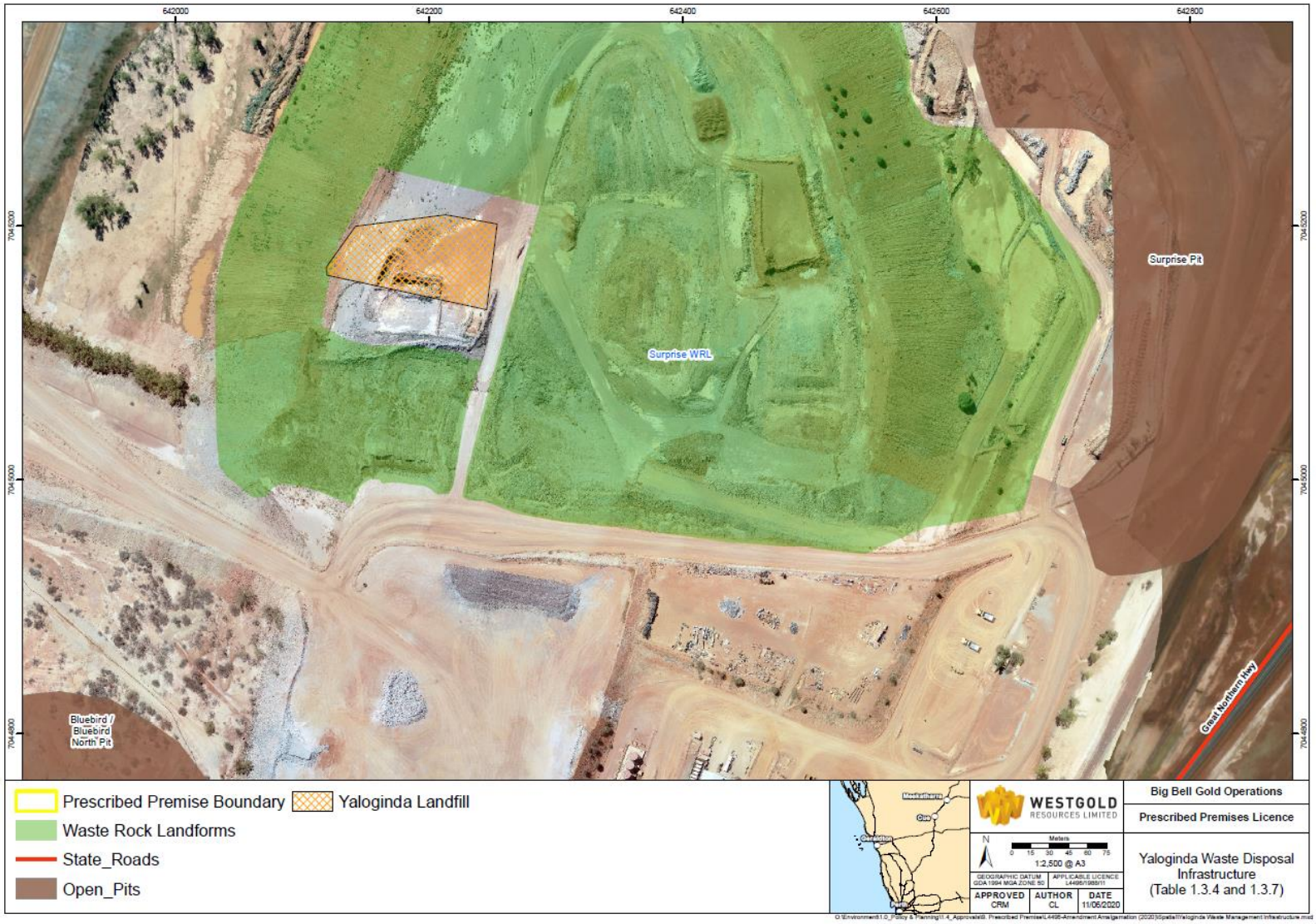


Figure 16 - Reedy's Project Area landfill

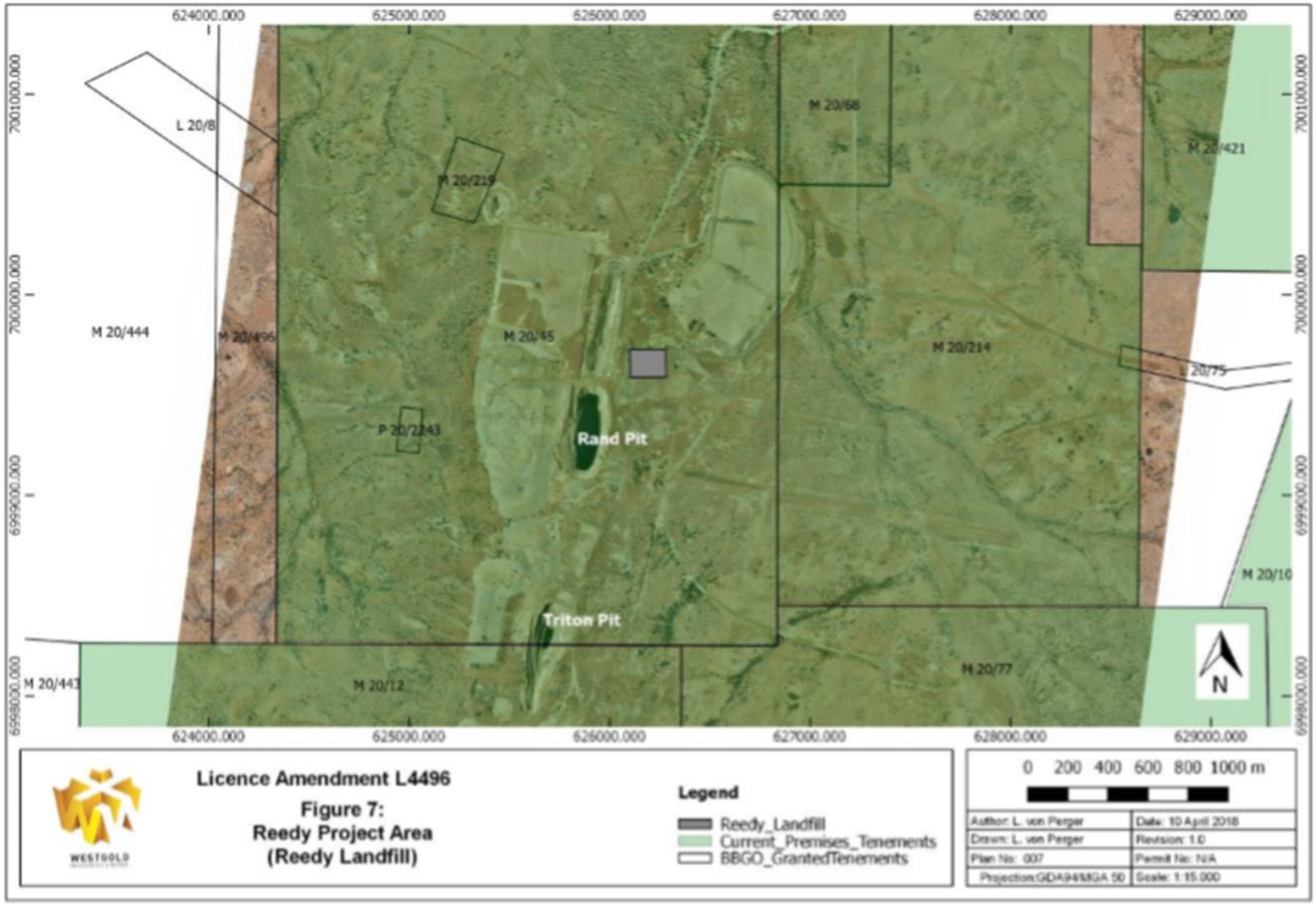


Figure 17 -Surprise in-pit TSF

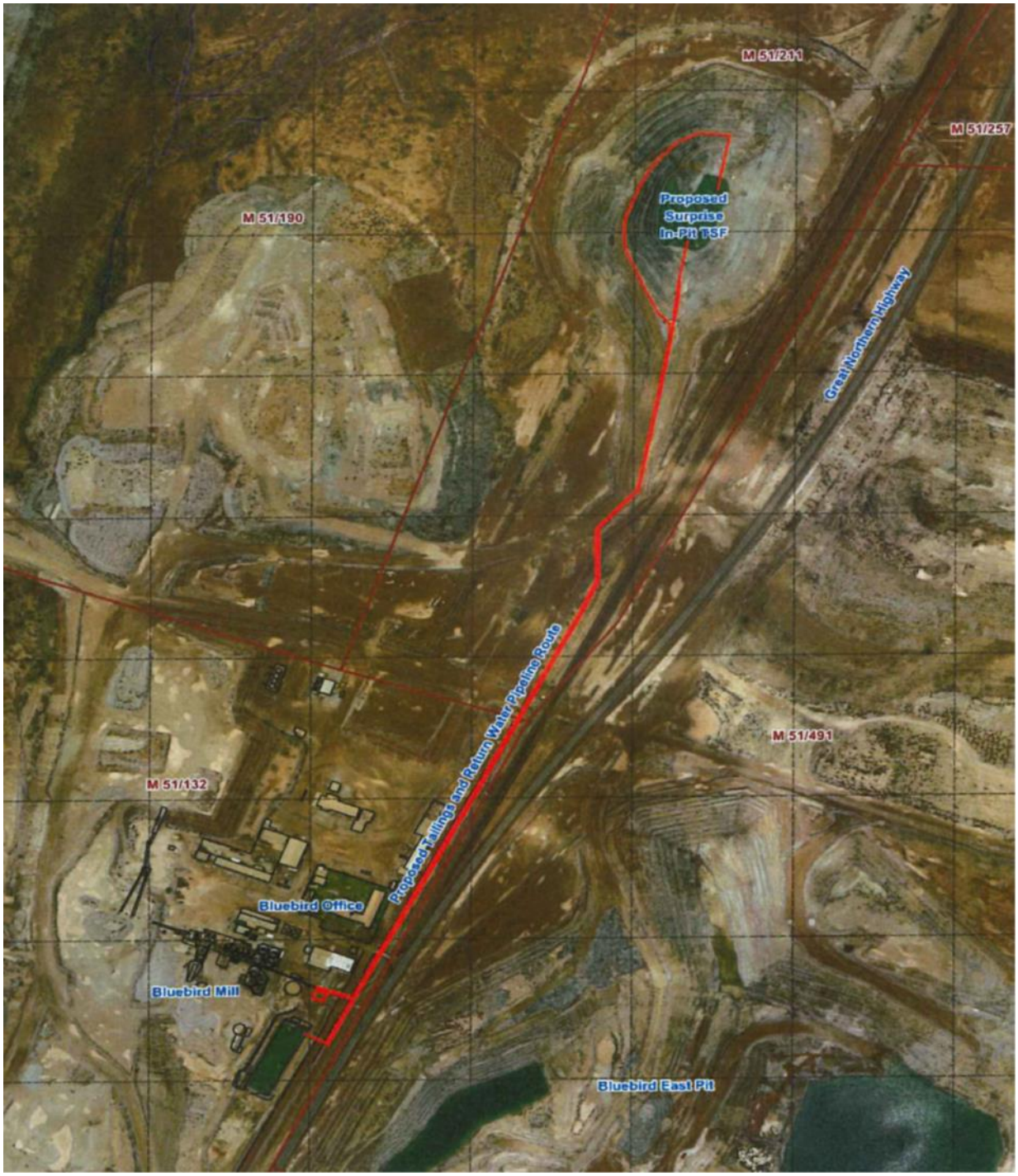
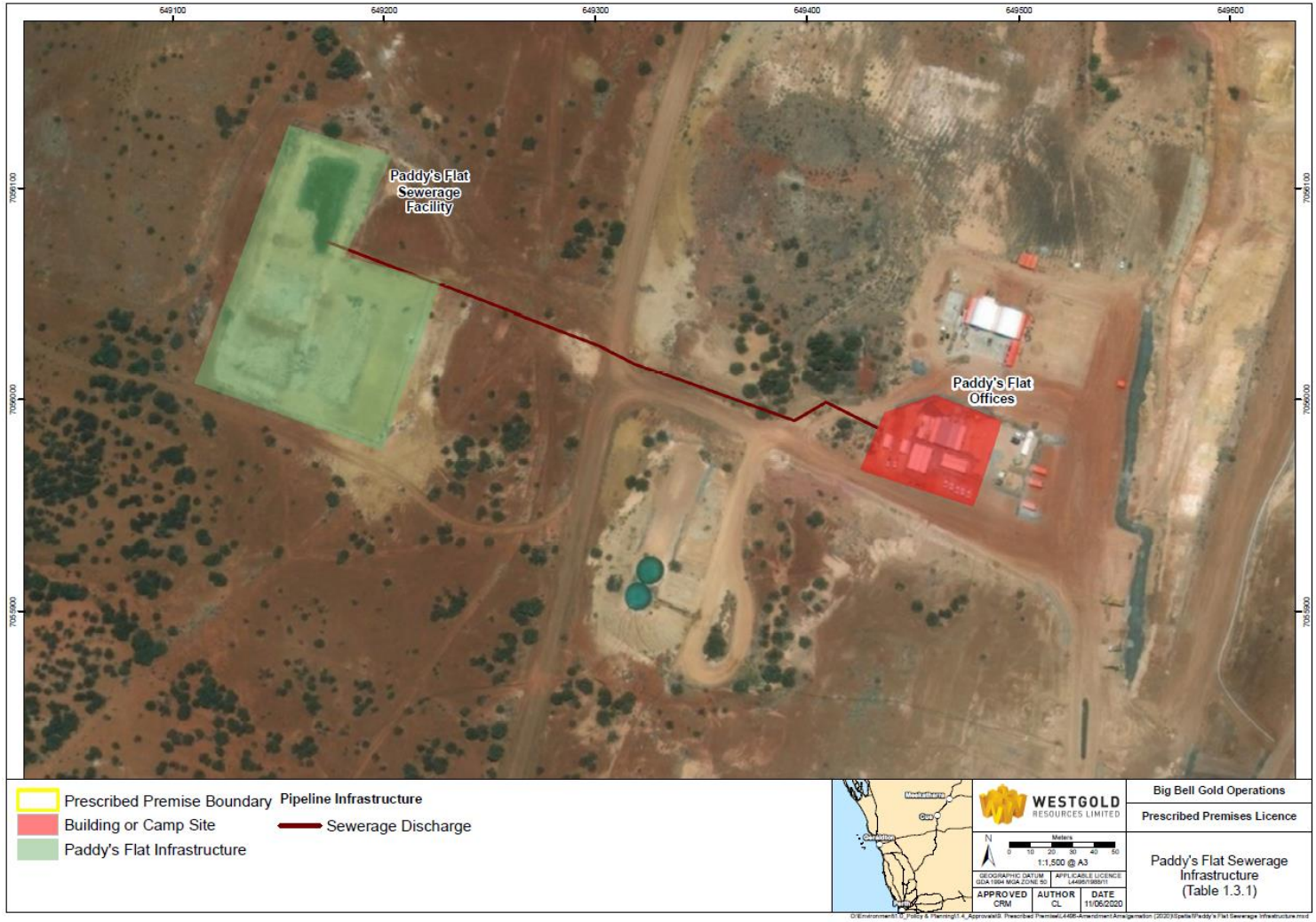


Figure 18 -Surprise in-pit TSF groundwater monitoring bores

Figure 19 – Bluebird Sewerage Infrastructure

Figure 20 – Paddy's Flat Sewerage Infrastructure



Schedule 2: Prescribed Premises Categories

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	50,000 tonnes or more per year	2,500,000 tonnes per annual period
6	Mine dewatering	50,000 tonnes or more per year	5,823,000 tonnes per annual period
63	Class I inert landfill site	500 tonnes or more per year	3,000 tonnes per year
85	Sewage facility	More than 20 but less than 100 cubic metres per day	99 cubic metres per day

Schedule 3: Forms WR1, GR1 and LR1

Licence: L4496/1988/11
Form: WR1
Name: Monitoring of emissions to surface water

Licensee: Big Bell Gold Operations Pty Ltd
Period:

Form WR1: Monitoring of emissions to surface water					
Emission point	**Parameter**	**Result**	**Averaging period**	**Method**	**Sample date & times**
Aladdin Discharge Point	pH[1]				
	Aluminium				
	Arsenic				
	Cadmium				
	Chromium				
	Copper				
	Lead				
	Manganese				
	Mercury				
	Nickel				
	Nitrate (as NO_3)				
	Selenium				
	Sulphate				
	Total Recoverable Hydrocarbons				
	Total suspended solids				
	Total dissolved solids				
	Zinc				

Signed on behalf of Big Bell Gold Operations Pty Ltd: Signature:……..

Date: …….

Form LR1

Licence: L4496/1988/11
Form: LR1
Name: Monitoring of emissions to land

Licensee: Big Bell Gold Operations Pty Ltd
Period:

Form LR1: Monitoring of emissions to land						
Emission point	**Parameter**	**Result**	**ANZECC Guidelines**	**Averaging period**	**Method**	**Sample date & times**

Signed on behalf of Big Bell Gold Operations Pty Ltd: Signature:……..

Date: …….

Form GR1

Licence: L4496/1988/11
Form: GR1
Name: Monitoring of emissions to land

Licensee: Big Bell Gold Operations Pty Ltd
Period:

Form GWR1: Monitoring of ambient groundwater quality						
Emission point	**Parameter**	**Limit**	**Result**	**Averaging period**	**Method**	**Sample date & times**

Signed on behalf of Big Bell Gold Operations Pty Ltd: Signature:……..

Date: …….

Notification form N1

Licence: L4496/1988/11 Licensee: Big Bell Gold Operations Pty Ltd
Form: N1 Period:

Notification of detection of the breach of a limit.

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……	
Date	