Government of Western Australia
Department of Water and Environmental Regulation

Licence

Licence number	L8675/2012/1
Licence holder	Millennium Minerals Pty Ltd
ACN	003 257 556
Registered business address	Suite 12, 11 Ventnor Avenue WEST PERTH WA 6005
DWER file number	DER2014/002927
Duration	30/09/2013 to 29/09/2026
Date of issue	26/09/2013
Date of amendment	18/11/2024
Premises details	Nullagine Gold Operation – Golden Eagle Project Mining Tenements M46/3, M46/47, M46/50, M46/57, M46/98, M46/129, M46/138, M46/146, M46/163, M46/164, M46/166, M46/167, M46/170, M46/182, M46/186, M46/192, M46/198, M46/199, M46/200, M46/225, M46/261, M46/262, M46/264, M46/265, M46/266, M46/267, M46/272, M46/273, M46/275, M46/276, M46/277, M46/278, M46/300, M46/426, M46/432, M46/433, M46/434, M46/436, M46/441, M46/442, M46/443, M46/444, M46/445, M46/527, G46/2, L46/33, L46/45, L46/88, L46/91, L46/98, L46/105, L46/115, P46/1675, P46/1704, P46/1705, P46/1706, P46/1755, P46/1756, P46/1757, P46/1758, P46/1824, P46/1922, and P46/1923. NULLAGINE WA 6758 As defined by the Premises map in Schedule 1

Prescribed premises category description (Schedule 1, *Environmental Protection Regulations 1987*)	Assessed production / design capacity
Category 5: Processing or beneficiation of metallic or non-metallic ore.	2,000,000 tonnes per annual period
Category 7: Vat or in situ leaching metal.	2,000,000 tonnes per annual period
Category 12: Screening etc. of material	700,000 tonnes per annual period
Category 52: Electric power generation.	10 MW
Category 73: Bulk storage of chemicals.	1,747.8 cubic metres in aggregate
Category 77: Concrete batching or cement products manufacturing	6,000 tonnes per annual period
Category 85: Sewage facility	80 cubic metres per day
Category 89: Putrescible landfill site	500 tonnes per annual period

This amended licence is granted to the licence holder, subject to the attached conditions, on 18 November 2024, by:

Fiona Westcott

Digitally signed by Fiona Westcott
Date: 2024.11.18 16:04:43 +08'00'

Fiona Westcott
MANAGER, RESOURCE INDUSTRIES
INDUSTRY REGULATION (STATE-WIDE DELIVERY)
an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

Licence history

Date	Reference number	Summary of changes
24/12/2013	L8675/2012/1	Licence amendment to allow discharge of treated effluent to TSF1.
3/07/2014	L8675/2012/1	Licence amendment to allow disposal of tyres on site.
23/10/2014	L8675/2012/1	Licence amendment to increase production capacity from 1.5 million tonnes per annum (Mtpa) to 2 Mtpa.
27/08/2015	L8675/2012/1	Licence amendment to add improvement conditions requiring a Corrective Action Plan to improve the groundwater monitoring and the development of groundwater limits. Update to licence under Departmental reform program.
19/11/2015	L8675/2012/1	Licence amendment to authorise TSF1 Stage 4 lift. Improvement conditions updated. Groundwater limits applied.
14/03/2017	L8675/2012/1	Amendment Notice 1 Licence amendment to authorise the operation of TSF2 with specific infrastructure requirements.
17/01/2019	L8675/2012/1	Amendment Notice 2 Licence amendment to include category 73 and increase the design capacity of category 85 from 50 to 80 m^3/day.
5/11/2021	L8675/2012/1	Addition of Category 51 – power generation Authorising operation of TSF2 stage 2A – to 397.3m
7/06/2024	L8675/2012/1	The licence amendment was for the following: • change of applicant details and business address (administrative amendment); • operate TSF2 Stage 2B (399 m RL); • revision and upgrade of TSF2 seepage recovery and monitoring network; • review of the licence holder's trigger action response plan and limit levels; • reduction in monitoring frequency of the wastewater treatment plant from fortnightly to monthly; and • revision of the groundwater monitoring network surrounding the Golden Eagle mining area to replace unserviceable monitoring wells with newly established wells.
18/11/2024	L8675/2012/1	The licence amendment was for the following: • Two additional prescribed premises categories: ○ Category 12: Crushing and screening unit to be installed and operated at Majuba; and

Date	Reference number	Summary of changes
		○ Category 77: Temporary, trailer mounted concrete batching plant to be set-up and operated at Golden Eagle Haulage Yard. • Amendment to existing fuel storage capacity from 1,347.8m^3 to 1,747.8m^3.

Interpretation

In this licence:

(a) the words 'including', 'includes' and 'include' in conditions mean "including but not limited to", and similar, as appropriate;

(b) where any word or phrase is given a defined meaning, any other part of speech or other grammatical form of that word or phrase has a corresponding meaning;

(c) where tables are used in a condition, each row in a table constitutes a separate condition;

(d) any reference to an Australian or other standard, guideline, or code of practice in this licence:

(i) if dated, refers to that particular version; and

(ii) if not dated, refers to the latest version and therefore may be subject to change over time;

(e) unless specified otherwise, any reference to a section of an Act refers to that section of the EP Act; and

(f) unless specified otherwise, all definitions are in accordance with the EP Act.

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

Licence conditions

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

General

1. The licence holder must record and investigate the exceedance of any descriptive or numerical limit in this licence.

2. The licence holder must ensure the limits specified in Table 1 are not exceeded.

Table 1: 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.	2,000,000 tonnes per annual period
7	Vat or in situ leaching metal.	2,000,000 tonnes per annual period
12	Category 12: Screening etc. of material	700,000 tonnes per Annual Period
52	Electric power generation.	10 MW
73	Bulk storage of chemicals.	1,747.8 cubic metres in aggregate
77	Category 77: Concrete batching or cement products manufacturing	6,000 tonnes per Annual Period
85	Sewage facility	80 cubic metres per day
89	Putrescible landfill site	500 tonnes per annual period

Note 1: *Environmental Protection Regulations 1987,* Schedule 1.

Infrastructure and equipment

3. The licence holder must construct and / or install the infrastructure listed in Table 2, in accordance with;

(a) the corresponding design and construction requirement; and

(b) at the corresponding infrastructure location,

as set out in Table 2.

Table 2: Infrastructure requirements

Infrastructure	Design and construction requirements	Infrastructure location
Pipelines (tailings and return water)	• all pipelines or sections of pipelines containing tailings and decant return water are either: ➢ equipped with telemetry; or ➢ equipped with automatic cut-outs in the event of a pipe failure; or	Not depicted

Infrastructure	Design and construction requirements	Infrastructure location
	➢ provided with secondary containment sufficient to contain any spill for a period equal to the time between routine inspections. • pipelines constructed of high-density polyethylene (HDPE); • pipelines within bunded trenches, maintained with sufficient capacity to contain any spill for a period equal to the time between routine inspections; • return water pipeline maintained with a series of valves to allow water to be diverted into the tailings line for flushing purposes via junction points; • flow meters positioned at the start and end of the tailings pipeline to monitor flows and pressure losses. In the event of pipeline failure, Shift Supervisor is to be notified and the pipeline shut down until repaired; and • spigots maintained at approximately 20 m centres around the TSF2 perimeter.	
Power plant	N/A	Location as shown in Figure 1 of Schedule 1
Crushing and screening plant	Crushing and screening plant to include: • dust covers on material transfer points and conveyors; and • sprinklers for dust suppression fitted on and around equipment.	Location listed as Majuba as shown in Figure 12 of Schedule 1
Concrete batching plant	The cement silo must be fitted with: • a relief valve which is piped to a weigh hopper or outlet within one metre of the ground to prevent overfilling; • a level indicator with an audible high level alarm which sounds if cement reaches 0.6 m below the inlet to the silo's air cleaning system and a test circuit which indicates whether the level indicator and alarm are operating correctly; • a reverse pulse air cleaning system which is designed to reduce dust emissions to less than 50 milligrams of particulate matter per cubic metre or a mechanical rapping air cleaning system with a minimum filter area of 23 m^2 or ducting which discharges air from the cement silo air cleaning system to a weigh hopper or an outlet within one metre of the ground; • a test circuit which indicates whether the level indicator and alarm are operating correctly; and • a concrete bund at the base of the silo to capture and contain and spillage of supplementary cementitious material.	Golden Eagle Haulage Yard, listed as Golden Eagle in Figure 12 of Schedule 1

Infrastructure	Design and construction requirements	Infrastructure location
Sedimentation dam	• Golden Eagle sedimentation basin sized to capture 5 m^3, and Majuba sedimentation basin sized to capture a 10% Annual Exceedance Probability (AEP) 6-hour rainfall event; • Freeboard of 300 mm; • Gravel construction; and • Maintenance (e.g. removal of accumulated sediment) as required.	One sedimentation basin located downstream of concrete batching location within Golden Eagle area and one sedimentation basin located downstream of crushing/stockpiling area within Majuba area (Figure 12 of Schedule 1)
Oil-water separator	• Must be suitable for treatment of hydrocarbons. • Must consist of an automatic closure device to retain all liquid within the system.	Golden Eagle Haulage Yard, listed as Golden Eagle in Figure 12 of Schedule 1

Compliance reporting

4. The licence holder must within 30 calendar days of an item of infrastructure or equipment required by condition 3 being installed:

(a) undertake an audit of their compliance with the requirements of condition 3; and

(b) prepare and submit to the CEO an Environmental Compliance Report on that compliance.

5. The Environmental Compliance Report required by condition 4, must include as a minimum the following:

(a) certification by the site manager that the items of infrastructure or component(s) thereof, as specified in condition 3, have been constructed in accordance with the relevant requirements specified in condition 3;

(b) as constructed plans and a detailed site plan for each item of infrastructure or component of infrastructure specified in condition 3; and

(c) be signed by a person authorised to represent the licence holder and contains the printed name and position of that person.

6. The licence holder must design, construct, and install groundwater monitoring bores in accordance with the requirements specified in

Table **3**.

Table 3: Infrastructure requirements – groundwater monitoring bores.

Infrastructure	Design, construction, and installation requirements	Bore location(s)	Timeframe
Groundwater monitoring bores:	Bore design and construction: Designed and constructed in accordance with *Minimum construction requirements for water*	As depicted in Schedule 1, Figures 4, 5, 6,	Must be constructed, developed

Infrastructure	Design, construction, and installation requirements	Bore location(s)	Timeframe
TSF2MB9S/D, TSF2MB10S/D, TSF2MB11S/D, TSF2MB12S/D, TSF2MB13S/D, TSF2MB14S/D, and TSF2MB15.	*bores in Australia 4th Ed. (National Uniform Drillers Licensing Committee (NUDLC), 2020).* Bore screens must target the part, or parts, of the aquifer most likely to be affected by contamination[1]. Where temporary / seasonal perched features are present, bores must be nested, and the perched features individually screened.	and 11.	(purged), and determined to be operational prior to recommence ment of deposition on TSF2.
	<u>Logging of borehole:</u> Soil samples must be collected and logged during the installation of the monitoring bores. A record of the geology encountered during drilling must be described and classified in accordance with the Australian Standard Geotechnical Site Investigations AS1726. Any observations of staining / odours or other indications of contamination must be included in the bore log.		
	<u>Bore construction log:</u> Bore construction details must be documented within a bore construction log to demonstrate compliance with NUDLC 2020. The construction logs shall include elevations of the top of casing position to be used as the reference point for water-level measurements, and the elevations of the ground surface protective installations.		
	<u>Bore development:</u> All installed monitoring bores must be developed after drilling to remove fine sand, silt, clay, and any drilling mud residues from around the bore screen to ensure the hydraulic functioning of the bore. A detailed record should be kept of bore development activities and included in the bore construction log.		
	<u>Installation survey:</u> The vertical (top of casing) and horizontal position of each monitoring bore must be surveyed and subsequently mapped by a suitably qualified surveyor.		
	<u>Bore network map:</u> A bore location map (using aerial image overlay) must be prepared and include the location of all monitoring bores in the monitoring network and their respective identification numbers.		

Note 1: Refer to Section 8 of Schedule B2 of the *Assessment of Site Contamination NEPM* for guidance on bore screen depth and length.

7. The licence holder must design, construct, and install any seepage recovery bores in accordance with the requirements specified in Table 4.

Table 4: Seepage Recovery Infrastructure - Design and construction requirements / installation requirements

Infrastructure	Design and construction requirement / installation	Infrastructure

	requirement	location
Seepage recovery bores	• Undertake downhole geophysical logging using resistivity and gamma tools to identify appropriate screen intervals of any new seepage recovery bore. • Ensure that the pump in each of seepage recovery bores is installed at the depth where the most contaminated groundwater enters the bore. • Install inflatable packers above and below the principal zones where contaminated water enters the bore to constrain the depth-interval where pumping would take place.	Must be situated at locations targeted to recover seepage.

8. The licence holder must, within 60 calendar days of the monitoring bores and seepage recovery bores being constructed, submit to the CEO a bore construction report evidencing compliance with the requirements of condition 6 and 7.

9. The licence holder must ensure that tailings, decant water and treated effluent from the wastewater treatment plant are only discharged into containment cells and/or ponds with the relevant infrastructure requirements and at the locations specified in Table 5 and shown in the Figures in Schedule 1.

Table 5: Containment infrastructure

Containment point reference	Containment infrastructure	Material	Requirements
C1	TSF1	Treated effluent from the wastewater treatment plant	Stage 4 lift to RL 406.5m at completion
C2	Process Pond	Tailings thickener overflow, decant return, process catchment water, and bore water from production bores 6B and 6C	Lined with high density polyethylene liner with a permeability of at least $<10^{-9}$ metres per second or equivalent.
C3	TSF2	Tailings	Construction, layout, and arrangement as shown in Figure 8, Schedule 1 Operation approved to current crest height of 399m RL after Stage 2B raise. Underdrainage system installed at the base of TSF2 draining to underdrainage collection sumps depicted in the TSF2 maps in Schedule 1. Toe drain depicted in the Figure 8, Schedule 1.

Premises operation

10. The licence holder must only accept waste onto the Premises if:

(a) it is of a type listed in Table 6;

(b) the quantity accepted is below any quantity limit listed in Table 6; and

(c) it meets any specification listed in Table 6.

Table 6: Waste acceptance

Waste type	Waste Code	Quantity limit	Specification[1]
Inert Waste Type 1	N/A	100 tonnes / year in total	None specified
Putrescible Waste	N/A		None specified
Clean Fill	N/A		None specified
Putrescible and Organic wastes			
Sewage	K130	80 m^3/day	Accepted through sewer inflow(s) only
Vegetable and food processing liquid wastes	K200		
Waste from grease traps	K110	80 m^3/day	Accepted through sewer inflow(s) only
Miscellaneous			
Inert Waste Type 2	T140	400 tonnes	Tyres only

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

11. The licence holder must ensure that where waste does not comply with Table 6 it is removed from the Premises by the delivery vehicle or, where that is not possible, stored in a segregated storage area or container and removed to an appropriately authorised facility as soon as practicable.

12. The licence holder must ensure that wastes accepted onto the Premises are only subjected to the processes set out in Table 7 and in accordance with any process limits described in that Table.

Table 7: Waste Processing

Waste type	Processes	Process limits[1]
Inert Waste Type 1	Receipt, handling, and disposal of waste by landfilling	All waste types. Disposal of waste by landfilling shall only take place within the landfill areas shown on the Premises Map in Schedule 1. The separation distance between the base of the landfill and the highest groundwater level shall not be less than 2 m.
Inert Waste Type 2		
Putrescible Waste		
Clean Fill		
Sewage	Biological, physical, and chemical treatment.	80 m^3 / day
Vegetable and food processing liquid wastes		
Waste from grease traps		

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

13. The licence holder must ensure that cover is applied and maintained on landfilled wastes in accordance with Table 8 and that sufficient stockpiles of cover are maintained on site at all times.

Table 8: Cover requirements

Waste Type	Material	Depth	Timescales
Inert Waste Type 1 Putrescible Waste	Inert and incombustible material	Sufficient to ensure the waste is completely covered and that no waste is exposed	Weekly or as soon as practicable after deposit and prior to compaction
Inert Waste Type 2	Tyres	100 mm	To be covered by the end of the working day in which the waste was deposited with sufficient quantities of Type 1 inert waste or clean fill to prevent the spread of fire and harbouring of disease vectors.

14. The licence holder must ensure that the site infrastructure and equipment listed in Table 9 and located at the corresponding infrastructure location is maintained and operated in accordance with the corresponding operational requirement set out in Table 9.

Table 9: Infrastructure and equipment requirements

Site infrastructure and equipment	Operational requirement	Infrastructure location
TSFs	• a minimum top of embankment freeboard of 1000 mm (operational freeboard of 300 mm, beach freeboard of 200 mm, and additional stormwater freeboard of 500 mm) or a 1 in 100 year / 72-hour storm event (whichever is greater) is maintained at the TSFs; • a minimum top of embankment freeboard of 300 mm is maintained at the Process Pond; • methods of operation minimise the likelihood of erosion of the embankments by wave action; • a seepage collection and recovery system is installed, maintained and used to capture seepage from TSFs; • seepage is returned to the TSFs or re-used in process; and • Tailings discharge or spigotting is to be carried out such that the supernatant pond is always maintained around the decant facility and associated pump. • The water recovery system (decant pumps and piping) is required to have a minimum capacity of 150 m^3/hr. • Water recovery must always be maximised.	Location as shown in Figure 1, 2, and 11 of Schedule 1

Site infrastructure and equipment	Operational requirement	Infrastructure location
Landfill site	• the size of the tipping face is kept to a minimum and not larger than 30 m in length and 2 m above ground level in height; • waste is levelled and compacted as soon as practicable after it is discharged; • waste is placed and compacted to ensure all faces are stable and capable of retaining restoration material; • restoration of a cell or phase takes place within 6 months after disposal in that cell or phase has been completed; and • wind-blown waste must be contained within the landfill area and that wind-blown waste is returned to the tipping area on at least a weekly basis.	Location as shown in Figure 1 of Schedule 1
Crushing and screening plant	• surface water runoff controls around crushing and screening plant to direct surface water runoff away from plant. • sprinklers fitted on the plant must be in operation when crushing/screening activities are being undertaken. • Sprinklers fitted around the plant must be used as required to control dust emissions.	Location listed as Majuba as shown in Figure 12 of Schedule 1
Concrete batch plant	• surface water runoff controls around the haulage yard and stockpile areas to redirect water away from concrete batch plant. • Any concrete slurry spills must be cleaned up or contained	Golden Eagle Haulage Yard, location listed as Golden Eagle in Figure 12 of Schedule 1
Water cart	Must be available and operational to effectively wet down dust generating areas	N/A
Sedimentation dam	Freeboard to be maintained at 300 mm at all times	Golden Eagle Haulage Yard and Majuba Crushing Plant as illustrated in Figure 12 of Schedule 1

Emissions and discharges

Point source emissions to air

15. The licence holder must ensure that where waste is emitted to air from the emission points in Table 10 and identified on the map of emission points in Schedule 1 it is done so in accordance with the conditions of this licence.

Table 10: Emission points to air

Emission point reference and location on Map of emission points	Emission Point	Emission point height (m)	Source, including any abatement
A1	Off-gas released to air via a stack	27.3 m	Carbon regeneration
A2	Off-gas released to air via a stack	10.4 m	Gold smelting
Power plant	Diesel generator exhaust stacks - 2 per generator; 20 stacks in total	7.8 m	Diesel fuelled generators

Monitoring

General monitoring

16. The licence holder must 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 groundwater sampling is conducted in accordance with AS/NZS 5667.11; and

(d) all samples are submitted to and tested by a laboratory with current NATA accreditation for the parameters being measured unless indicated otherwise in the relevant table.

17. The licence holder must ensure that:

(a) 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 5 months apart; and

(d) annual monitoring is undertaken at least 9 months apart.

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

19. The licence holder must, 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.

Monitoring of inputs and outputs

6. **20.** The licence holder must undertake the monitoring specified in

Table 11.

Table 11: Monitoring of inputs and outputs

Input / Output	Parameter	Units	Averaging Period	Frequency
Waste Inputs	Inert Waste Type 1, Putrescible Waste and Clean Fill	Tonnes or (where no weighbridge is present) m^3	N/A	Each load arriving at the landfill
Waste Inputs	Inert Waste Type 2 (Tyres)	Tonnes	N/A	Each load arriving at the landfill

Process monitoring

21. The licence holder must undertake the monitoring specified in Table 12.

Table 12: Process monitoring

Monitoring point reference	Process description	Parameter	Units	Frequency	Method
P1 being the pipe feeding TSF 1 from the wastewater-treatment plant	Treated wastewater quality	pH[1]	pH units	Monthly	AS/NZS 5667.1 AS/NZS 5667.10
		Biochemical oxygen demand	mg/L		
		Total suspended solids	mg/L		
		Total nitrogen	mg/L		
		Total phosphorus	mg/L		
		E.coli	org/100mL		
P2 being the tailings reuse water	Water recovered from the TSF2 for reuse onsite	pH[1]	pH units	Quarterly	AS/NZS 5667.1 AS/NZS 5667.11
		Electrical conductivity	µS/cm		
		Total dissolved solids	mg/L		
		Hardness	mg/L		
		Hydroxide	mg/L		
		Silicon dioxide	mg/L		
		Carbonate	mg/L		
		Bicarbonate	mg/L		
		Potassium	mg/L		
		Calcium	mg/L		
		Magnesium	mg/L		
		Chloride	mg/L		
		Sulfate	mg/L		
		Nitrate	mg/L		
		Aluminium (dissolved)	mg/L		
		Arsenic	mg/L		
		Boron	mg/L		

Monitoring point reference	Process description	Parameter	Units	Frequency	Method
P2 being the tailings reuse water	Water recovered from the TSF2 for reuse onsite	Barium	mg/L	Quarterly	AS/NZS 5667.1 AS/NZS 5667.11
		Beryllium	mg/L		
		Mercury	mg/L		
		Molybdenum	mg/L		
		Lead (dissolved)	mg/L		
		Selenium	mg/L		
		Antimony	mg/L		
		Strontium	mg/L		
		Zinc (dissolved)	mg/L		
		Chromium (VI) (dissolved)	mg/L		
		Copper	mg/L		
		Iron (dissolved)	mg/L		
		Manganese	mg/L		
		Nickel	mg/L		
-	-	Volumes of treated effluent from the Wastewater Treatment Plant deposited into the TSF1	m^3	Continuous	Flow metering device
-	-	Volumes of decant water recovered from the TSFs	m^3	Continuous	Flow metering device
-	-	Phreatic surface levels within TSFs embankments	m AHD	Monthly	Data logger
-	-	Volumes of toe drainage seepage recovered	m^3	Continuous	Flow metering device
-	-	Volume of seepage captured by recovery bores TSFB002 and TSFB003	m^3	Continuous	Flow metering device

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

Ambient environmental quality monitoring

22. The licence holder must monitor groundwater conditions at the premises in accordance with the requirements specified in Table 13 and record the results of all such monitoring.

Table 13: Monitoring of ambient groundwater quality

Monitoring point reference	Parameter	Trigger	Limit	Units	Averaging period	Frequency
GEWB02, GEWB04, GEWB06, GEWB09, GEWB014A, GEWB015, GEWB019, GEWB021, GEWB023, and GEWB026	Volume[1]	None specified	None specified	KL	Spot sample	Monthly
	Surface water level			mbgl		
	pH[1]			-		Quarterly
	Electrical conductivity[1]			µS/cm		
	Total dissolved solids[1]			mg/L		
GEWB02, GEWB015, GEWB021, GEWB024, GEWB026, M01, M02, M03, M04, MW05A, M06, M16, M17, 11SDMW08, TDMB1S/D, TDMB2S/D, TDMB3S/D, TDMB4S/D, TDMB5S/D, TDMB6S/D, TSF2MB1S/D, TSF2MB2S/D, TSF2MB3S/D, TSF2MB4S/D, TSF2MB5, TSF2MB6, TSF2MB7, TSF2MB8, TSF2MB9D/S, TSF2MB10S/D[3], TSF2MB11S/D[3], TSF2MB12S/D[3], TSF2MB13S/D[3], TSF2MB14S/D[3], TSF2MB15[3], KCB7F, KCB10, KCB12, KCB41, and TSFB001	Surface water level	5	5	mbgl	Spot sample	Monthly
	pH[1]	None specified	None specified	-	Spot sample	<u>Annual:</u> GEWB021, GEWB024, M01, M04, M16, and M17 <u>Six monthly:</u> GEWB02, GEWB015, GEWB016, MW05A, M06, and 11SDMW08 <u>Quarterly:</u> TDMB1S/D, TDMB2S/D, TDMB3S/D, TDMB4S/D, TDMB5S/D, TDMB6S/D TSF2MB1S/D, TSF2MB2S/D, TSF2MB3S/D, TSF2MB4S/D, TSF2MB5S/D, TSF2MB9D/S, TSF2MB10S/D[3], TSF2MB11S/D[3], TSF2MB12S/D[3], TSF2MB13S/D[3], TSF2MB14S/D[3], TSF2MB15[3], KCB7F, KCB10,
	Electrical conductivity			mg/L		
	Total dissolved solids					
	Hardness					
	Hydroxide					
	Silicon dioxide					
	Carbonate					
	Bicarbonate					
	Potassium					
	Calcium					
	Magnesium					
	Chloride[2]	1,200	1,500			
	Sulfate[2]	2,400	3,000	mg/L	Spot sample	
	Nitrate	40	50			
	Aluminium (dissolved)	1.6	2			
	Arsenic	4	5			
	Boron	4	5			
	Barium	4	5			
	Beryllium	0.5	0.6			
	Mercury	0.008	0.01			
	Molybdenum	0.04	0.5			
	Lead (dissolved)	0.08	0.1			
	Selenium	0.08	0.1			
	Antimony	0.024	0.03			
	Strontium[2]	3.2	4			

Monitoring point reference	Parameter	Trigger	Limit	Units	Averaging period	Frequency
	Zinc (dissolved)	2.4	3			KCB12, KCB41, and TSFB001.
	Chromium (VI) (dissolved)	0.006	0.008			
	Copper	1.6	2			
	Iron (dissolved)	400	500			
	Manganese	12.8	16			
	Nickel[2]	0.4	0.5			
	Acrylamide	None specified	None specified	µg/L		
GEWB02, GEWB015, GEWB026, MW05A, M06, and 11SDMW08	Total recoverable hydrocarbons	None specified	5	mg/L	Spot sample	Six monthly
TSF2-VWP 03, TSF2-VWP 06, TSF2-VWP 09, TSF2-VWP 12, TSF2-VWP 15, and TSF2-VWP 18	Surface water level (SWL)	None specified	5	mbgl	Spot sample	Monthly
TDMB1S/D, TDMB2S/D, TDMB3S/D, TDMB4S/D, TDMB5S/D, TDMB6S/D, TSF2MB1S/D, TSF2MB2S/D, TSF2MB3S/D, TSF2MB4S/D, TSF2MB5, TSF2MB9D/S, TSF2MB10S/D[3], TSF2MB11S/D[3], TSF2MB12S/D[3], TSF2MB13S/D[3], TSF2MB14S/D[3], TSF2MB15[3], TSFB001, KCB7F, KCB10, KCB12, and KCB41	Total cyanide	None specified	None specified	mg/L		
	Free cyanide	0.6	0.8	mg/L	Spot sample	Quarterly
	Free cyanide	0.6	0.8	mg/L	Spot sample	Quarterly

Note 1: In-field non-NATA accredited analysis permitted.
Note 2: Spatial specific Triggers and Limits are set for these analytes in Table 14.
Note 3: Bores yet to be installed.

23. The licence holder must, in the event of a parameter in conditions 22 and 23, Table 13 and 14 being equal or exceeds the corresponding trigger value specified in that condition, undertake the management actions in accordance with the Seepage Management Plan and specified in Schedule 3. The licence holder must not exceed limit values specified in conditions 22 and 23.

Table 14: Spatial specific trigger and limit values for selected analytes

Spatially grouped monitoring point reference	Parameter	Assessment trigger	Compliance limit	Units
TSF2 Distant: KCB7F, M17, and TSF2MB15[1]	Chloride	6,714[2]	8,299[2]	mg/L
	Sulphate	11,025[2]	13,769[2]	
	Nickel	1.4[2]	2.2[2]	
	Strontium	8.7[2]	12.1[2]	
TSF2 Immediate Vicinity: TSF2MB1S/D, TSF2MB2S/D, TSF2MB3S/D, TSF2MB4S/D, TSF2MB5, TSF2MB6, TSF2MB7, TSF2MB8, TSF2MB9S/D[1], TSF2MB10S/D[1], TSF2M11S/D[1], and TSF2MB14S/D[1]	Chloride	10,237[3]	18,505[3]	
	Sulphate	12,831[3]	21,246[3]	
	Nickel	0.5[4]	0.649[4]	
	Strontium	9.4[3]	13.6[3]	
TSF2 Nearby Area: TSF2MB12S/D[1], TSF2MB13S/D[1], and KCB12	Chloride	10,261[3]	17,074[3]	
	Sulphate	6,355[3]	10,052[3]	
	Nickel	0.605[2]	0.928[2]	
	Strontium	4.2[3]	5.8[3]	

Note 1: Bores yet to be installed.
Note 2: Assessment limit at Upper Tolerance Limit (UTL) and compliance limit at four standard deviations above the mean.
Note 3: Assessment limit at UTL and compliance limit based on mass balance calculations.
Note 4: Using previous trigger limit as the assessment limit and UTL as the compliance limit.

24. The licence holder must undertake a monthly water balance for TSF2. The water balance shall as a minimum consider the following:

(a) site rainfall;

(b) evaporation;

(c) decant water recovery volumes;

(d) seepage recovery volumes from all seepage recovery bores; ~~and~~

(e) toe drainage recovery volumes;

(f) volumes of tailings deposited;

(g) tailings solid content (w/w %);

(h) volume of water in tailings;

(i) TSF2 remaining filling capacity – determined via tailings level (mRL); and

(j) calculated seepage compared against predicted seepage.

7. **25.** The licence holder must, in the event of surface water level exceeding the limit in

8.

9.

Table 13, undertake the management action(s) corresponding to monitoring location(s) within the corresponding timeframe(s) as specified in Table 15.

Table 15: Management actions required in surface water level exceedance around TSF1 and TSF2.

Parameter	Trigger	Management action
Vegetation health; efflorescence	vegetation stressed or dying; or signs of stress in many individuals or several species.	Within 24 hours investigate and assess areas and confirm from further assessment of vegetation health around monitoring bore with SWL exceedance if seepage mounding is causing vegetation decline. If seepage mounding is confirmed to be causing decline, immediately adjust seepage recovery. Continue to assess vegetation health against groundwater level on a weekly basis and maintain a record of all management actions, including photos from fixed locations.

26. During the first 30 days of discharge of Beatons Creek Tailings, the licence holder must collect at least 10 individual representative tailings samples, including pore water, to determine the likely behaviour of elements under a range of leaching conditions, which may include, but not be limited to:

(a) testing using the LEAF Test Method 1313 pH-dependent leaching test (US EPA, 2017);

(b) geotechnical characterisation of tailings including: particle size distribution, volume of solids, settling test (drained and undrained), air drying test and hydraulic conductivity of the same tailings tested in (a); and

(c) testing for the contaminants listed in Table 16.

All test results shall be collated and provided in a report to the CEO no later than 60 days after the sample results become available.

Table 16: Tailings characterisation parameters

Stream	Unit	Contaminants		
Tailings leachate and pore water	mg/L	Ag – Silver	Fe – Iron	Sb – Antimony
		Al – Aluminium	Hg – Mercury	Se – Selenium
		As – Arsenic	K – Potassium	Si – Silicon
		Ba – Barium	Mg – Magnesium	Sn – Tin
		B – Boron	Mn – Manganese	Sr – Strontium
		C total – Carbon total	Mo – Molybdenum	Zn – Zinc
		C carbonate – Carbon carbonate	Na – Sodium	TDS (total dissolved solids)
		Ca – Calcium	Ni – Nickel	Total Nitrogen
		Cd – Cadmium	P – Phosphorus	Sulfur total
		Co – Cobalt	Pb – Lead	SO_4^{-2} – Sulphate

Stream	Unit	Contaminants		
		Cr – Chromium	Cu – Copper	Acrylamide
	pH unit	pH		

Inspections

27. The licence holder must:

(a) undertake inspections as detailed in Table 17;

(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 17: 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

Specified actions

28. The licence holder must undertake within a maximum of four months from the day of recommencement of deposition of tailings into TSF2, a ground-based geophysical investigation using electrical or electromagnetic methods on transects near TSF2 to identify water-carrying fracture zones that are likely to be major conduits for groundwater flow/seepage from the TSF2 and their approximate depths and extent.

29. The licence holder must submit to the CEO, within six months from the day of recommencement of deposition of tailings into TSF2, a report on hydrogeological conditions surrounding TSF2 which must include, but need not be limited to, the following:

(a) Results and interpretation of a ground-based geophysical investigation using electrical or electromagnetic methods as specified in condition 28;

(b) Review of the suitability and effectiveness of the current monitoring network (as per column 1 Table 13), based on the results of the geophysical investigation specified in condition 28 and recommendations made by SRK Consulting (2024). The review must identify whether additional bores to monitor seepage from the TSF2 are required, including their location(s) and depths. Any new additional monitoring bore must be constructed and installed as specified in Table 3. At a minimum, one additional bore needs to be identified and installed at a suitable location southern of the existing TSF2. The review must be signed by a suitably qualified hydrogeologist, with a minimum of five years relevant experience; and

(c) Review of the suitability and effectiveness of current seepage control infrastructure, based on the results of the geophysical investigation specified in condition 28. The review must identify whether additional seepage recovery

infrastructure is required to contain seepage from the TSF2 including their location, depth and/or dimensions. Any new additional seepage recovery bores must be constructed and installed as specified in Table 4. The review must be signed by a suitably qualified hydrogeologist, with a minimum of five years relevant experience.

Records and reporting

30. The licence holder must record the following information in relation to complaints received by the licence holder (whether received directly from a complainant or forwarded to them by the Department or another party) about any alleged emissions from the premises:

(a) the name and contact details of the complainant, (if provided);

(b) the time and date of the complaint;

(c) the complete details of the complaint and any other concerns or other issues raised; and

(d) the complete details and dates of any action taken by the licence holder to investigate or respond to any complaint.

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

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

(b) the works conducted in accordance with condition 3 of this licence;

(c) any maintenance of infrastructure that is performed in the course of complying with condition 14 of this licence;

(d) monitoring programmes undertaken in accordance with conditions 20, 21, 22, 23, and 24 of this licence; and

(e) complaints received under condition 30 of this licence.

32. The books specified under condition 31 must:

(a) be legible;

(b) if amended, be amended in such a way that the original version(s) and any subsequent amendments remain legible and are capable of retrieval;

(c) be retained by the licence holder for the duration of the licence; and

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

33. The licence holder must:

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

(b) prepare and submit to the CEO by no later than 90 days after the end of that annual period an Annual Audit Compliance Report in the approved form.

34. The licence holder must:

(a) implement and maintain a system which ensures that a record is made of:

(i) the waste types and quantities accepted at the site;

(ii) the waste types and quantities disposed of at the site; and

(iii) any documentary evidence to demonstrate compliance with the Class II landfill acceptance criteria.

35. The licence holder must 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 18 in the format or form specified in that table.

Table 18: Annual Environmental report

Condition or table (if relevant)	Parameter / requirement	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 11	Inert Waste Type 1, Putrescible Waste and Clean fill tonnage Inert Waste Type 2 weight	None specified
Table 12	pH, biochemical oxygen demand, total suspended solids, total nitrogen, total phosphorus, and *E. coli*	Graph showing concentration/value x time plus raw data in excel format
	pH, Electrical conductivity, Total dissolved solids, Hardness, Hydroxide, Silicon dioxide, Carbonate, Bicarbonate, Potassium, Calcium, Magnesium, Chloride, Sulfate, Nitrate, Aluminium (dissolved), Arsenic, Boron, Barium, Beryllium, Mercury, Molybdenum, Lead (dissolved), Selenium, Antimony, Strontium, Zinc, (dissolved), Chromium (VI) (dissolved), Copper, Iron (dissolved), Manganese, and Nickel	Graph showing concentration/value x time plus raw data in excel format
	Volume of treated effluent from the wastewater treatment plant deposited into the TSF1	None specified
	Volumes of decant water recovered from the TSF	None specified
	Phreatic surface levels within TSFs embankments	None specified
	Volumes of toe drainage seepage recovered	None specified
Table 13	Volume, pH, Electrical conductivity, Total dissolved solids, Hardness, Hydroxide, Silicon dioxide, Carbonate, Bicarbonate, Potassium, Calcium, Magnesium, Chloride, Sulfate, Nitrate, Aluminium (dissolved), Arsenic, Boron, Barium, Beryllium, Mercury, Molybdenum, Lead (dissolved), Selenium, Antimony, Strontium, Zinc (dissolved), Chromium (VI) (dissolved), Copper, Iron (dissolved), Manganese, Nickel, Total recoverable hydrocarbons, Total cyanide, Free cyanide and Water level	Graph showing concentration/value x time plus raw data in excel format

Condition or table (if relevant)	Parameter / requirement	Format or form[1]
Table 13	Review of suitability of the UTLs for all ambient groundwater parameters based on monitoring data results (as per SRK Consulting (2024) recommendations).	None specified
Table 13	Breach of surface water level trigger level	None specified
24	TSF water balance	Excel spreadsheet – data from each month
27	Summary of the TSF inspections including details on any breach of freeboard, seepage, spills or leaks and corrective measures undertaken to rectify any issues identified.	None specified
30	Complaints summary	None specified
33	Compliance	Annual Audit Compliance Report (AACR)[1]
34	Records of waste types and quantities received at the site and disposed of at the site.	None specified

Note 1: AACR form can be found at DWER website.

36. The licence holder must ensure that the Annual Environmental Report also contains:

(a) an assessment of the information contained within the report against previous monitoring results and Licence limits; and
(b) an assessment of sewage treatment plant performance.

37. The licence holder must submit the information in Table 19 to the CEO according to the specifications in that table.

Table 19: Non-annual reporting requirements

Condition or table (if relevant)	Parameter	Reporting period	Reporting date (after end of the reporting period)	Format or form1
-	Copies of original monitoring reports submitted to the licence holder by third parties	Not Applicable	Within 14 days of the CEOs request	As received by the Licence Holder from third parties

Notification

38. The licence holder must ensure that the parameters listed in

Table 20 are notified to the CEO in accordance with the notification requirements of the table.

Table 20: 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	
-	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
17	Calibration report	As soon as practicable	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.

Definitions

In this licence, the terms in Table 21 have the meanings defined.

Table 21: Definitions

Term	Definition
Acceptance Criteria	has the meaning defined in Landfill Definitions.
ACN	Australian Company Number
AHD	means the Australian height datum.
Annual Audit Compliance Report (AACR)	means a report submitted in a format approved by the CEO (relevant guidelines and templates may be available on the Department's website).
annual period	a 12-month period commencing from 1 October until 30 September of the immediately following year.
ANZECC 2000	means the most recent version and relevant parts of the *Australian and New Zealand Environment Conservation Council guidelines for fresh and marine water quality.*
AS 1726	means the Australian Standard AS 1726 – 1993 *Geotechnical site investigations.*
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 is a limit is measured or a monitoring result is obtained.
books	has the same meaning given to that term under the EP Act.
CEO	means Chief Executive Officer of the Department. "submit to / notify the CEO" (or similar), means either: Director General Department administering the *Environmental Protection Act 1986* Locked Bag 10 Joondalup DC WA 6919 or: info@dwer.wa.gov.au
clean fill	has the meaning defined in Landfill Definitions.

Term	Definition
Department	means the department established under section 35 of the *Public Sector Management Act 1994* (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3.
discharge	has the same meaning given to that term under the EP Act.
emission	has the same meaning given to that term under the EP Act.
EP Act	*Environmental Protection Act 1986* (WA)
EP Regulations	*Environmental Protection Regulations 1987* (WA)
freeboard	means the distance between the maximum water surface elevations and the top of the retaining banks or structures at their lowest point.
Inert Waste Type 1	has the meaning defined in Landfill Definitions.
Inert Waste Type 2	has the meaning defined in Landfill Definitions.
Landfill Definitions	means the document titled '*Landfill Waste Classification and Waste Definitions 1996*' published by the Chief Executive Officer of the Department of Environment and Conservation as amended from time to time.
licence	refers to this document, which evidences the grant of a licence by the CEO under section 57 of the EP Act, subject to the specified conditions contained within.
licence holder	refers to the occupier of the premises, being the person specified on the front of the licence as the person to whom this licence has been granted.
m	means metres.
mbgl	means metres below ground level.
mg/L	means milligrams per litre.
mm	means millimetres.
µS/cm	means micro Siemens per centimetre.
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	refers to the premises to which this licence applies, as specified at the front of this licence and as shown on the premises map(s) in Schedule 1 to this licence.
prescribed premises	has the same meaning given to that term under the EP Act.
putrescible waste	has the meaning defined in Landfill Definitions.

Term	Definition
quarterly	means the 4 inclusive periods from 1 October to 31 December and, in the following year, 1 January to 31 March, 1 April to 30 June and 1 July to 30 September.
RL	means Reduced Level.
Schedule 1	means Schedule 1 of this Licence unless otherwise stated.
Schedule 2	means Schedule 2 of this Licence unless otherwise stated.
SRK Consulting (2024)	*Nullagine Gold Project – Water Quality Triggers Review*, 03 May 2024 (DWERDT944754).
six monthly	means the 2 inclusive periods from 1 October to 31 March in the following year and 1 April to 30 September.
spot sample	means a discrete sample representative at the time and place at which the sample is taken.
TSF	means Tailing Storage Facility.
w/w %	means weight by weight percentage.
waste	has the same meaning given to that term under the EP Act.

END OF CONDITIONS

Schedule 1: Maps

Premises map

The boundary of the prescribed premises is shown in the map below (Figure 1).

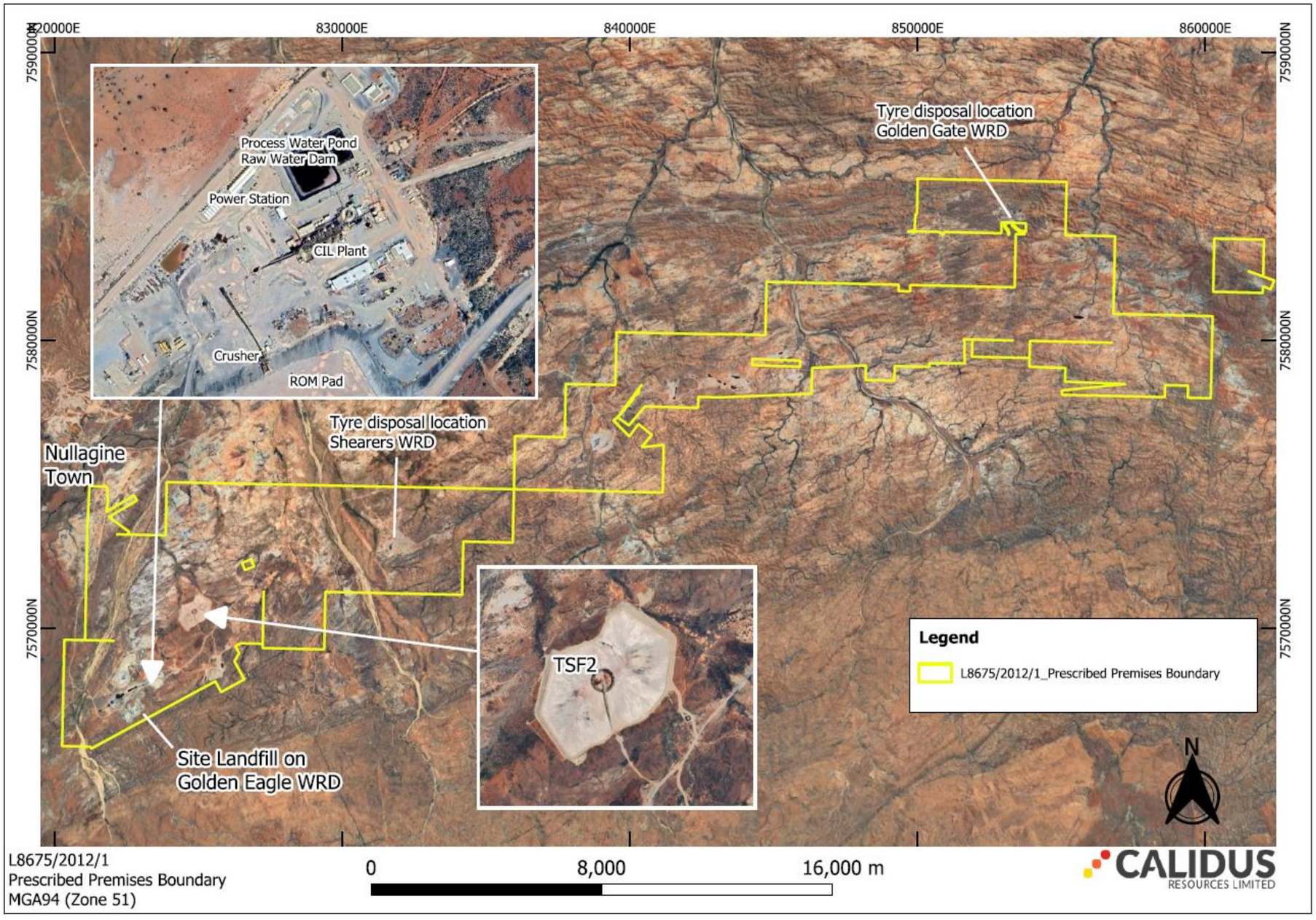

Figure 1: Map of the boundary of the prescribed premises

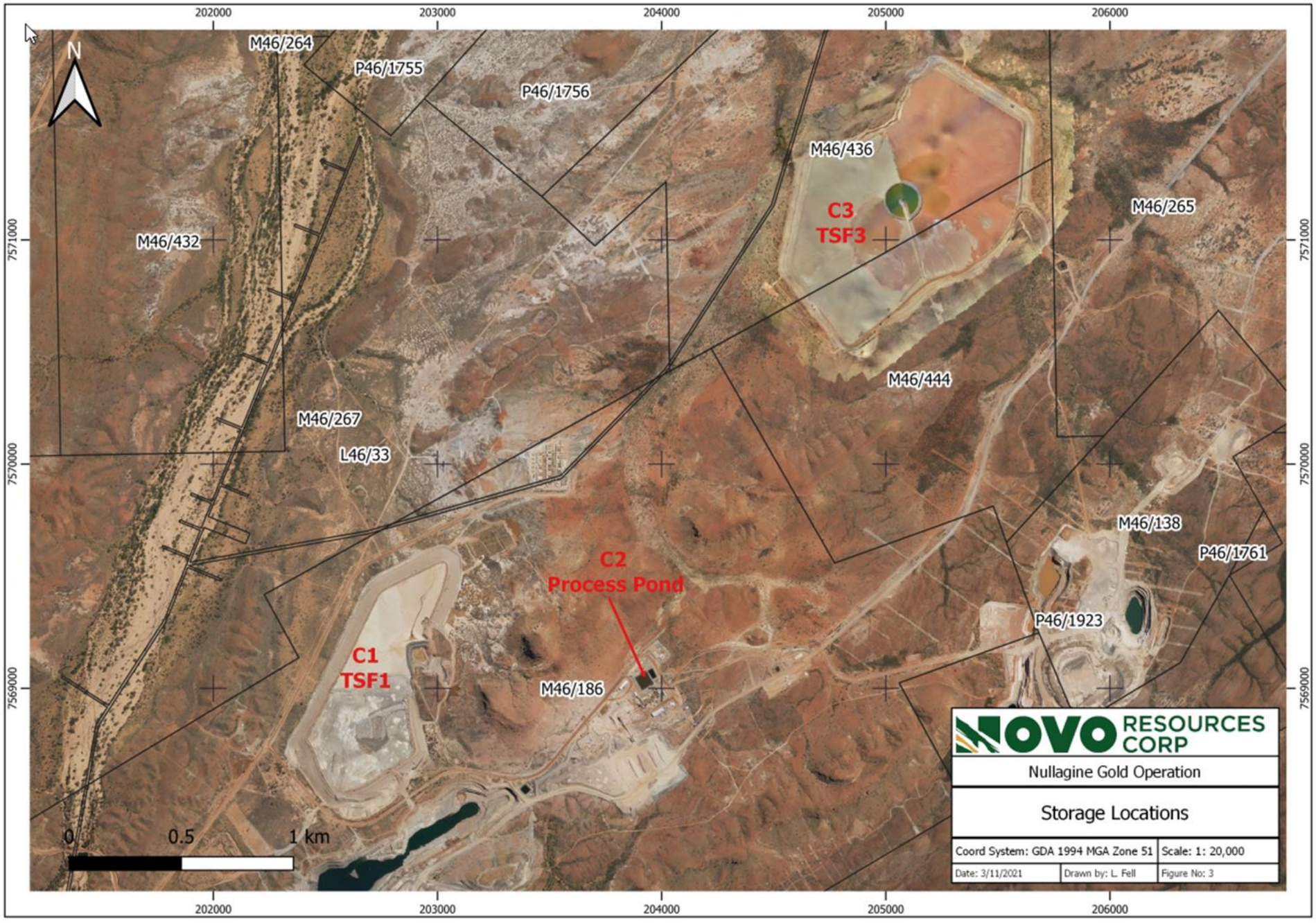

Figure 2: Storage locations C1 and C3 defined in Table 5.

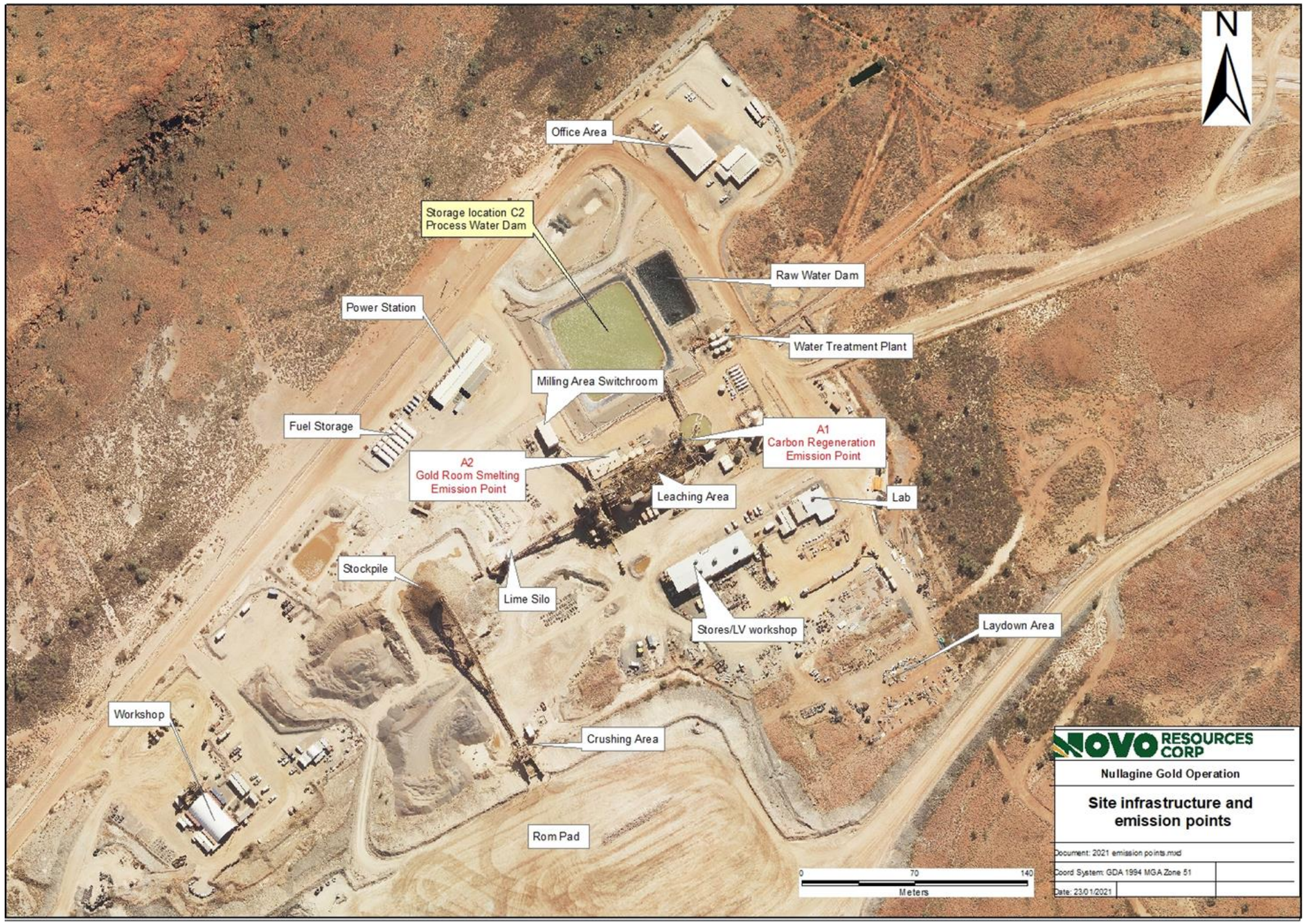

Figure 3: Storage location C2 defined in Table 5.

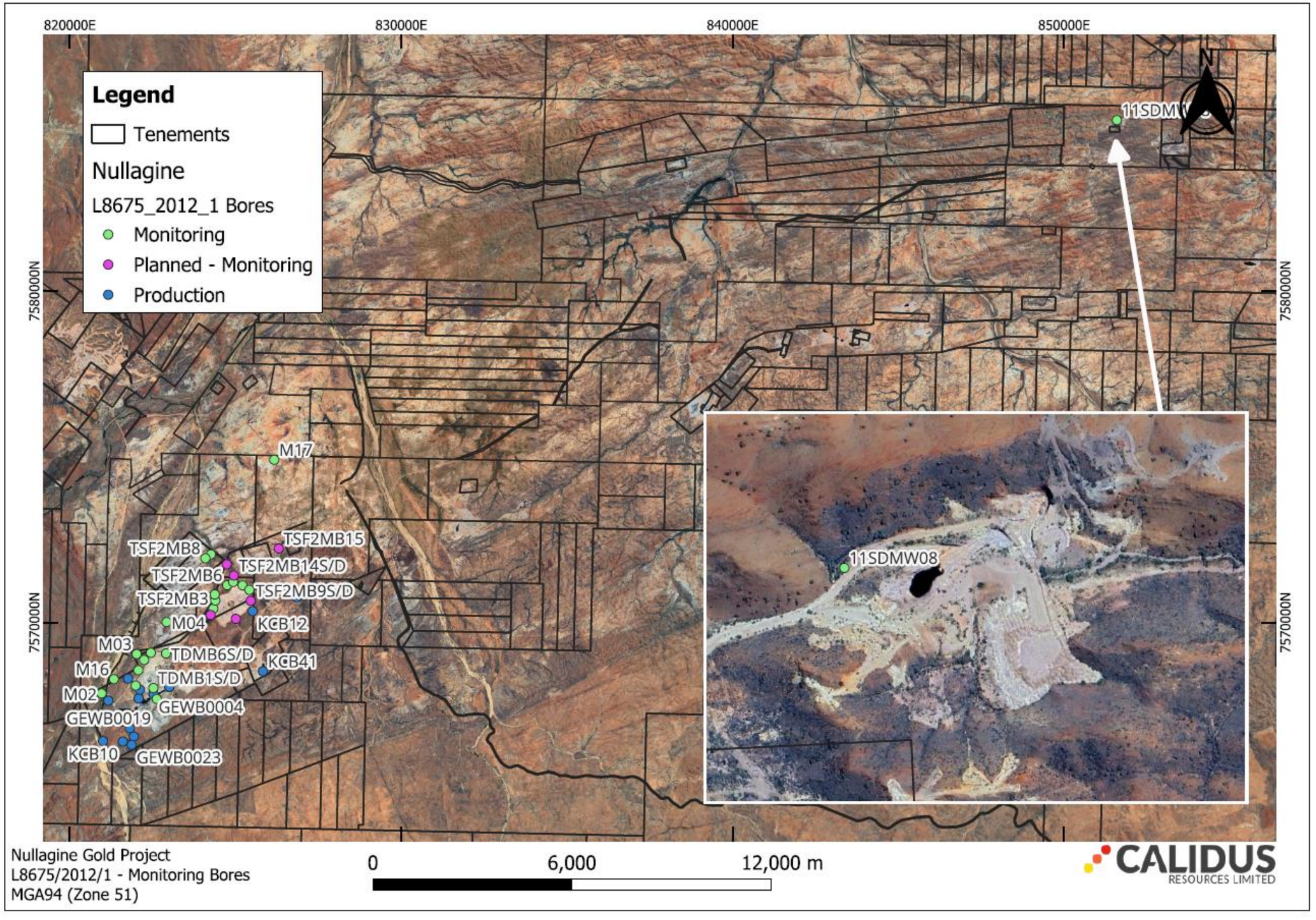

Figure 4: Monitoring points defined in

Table 13.

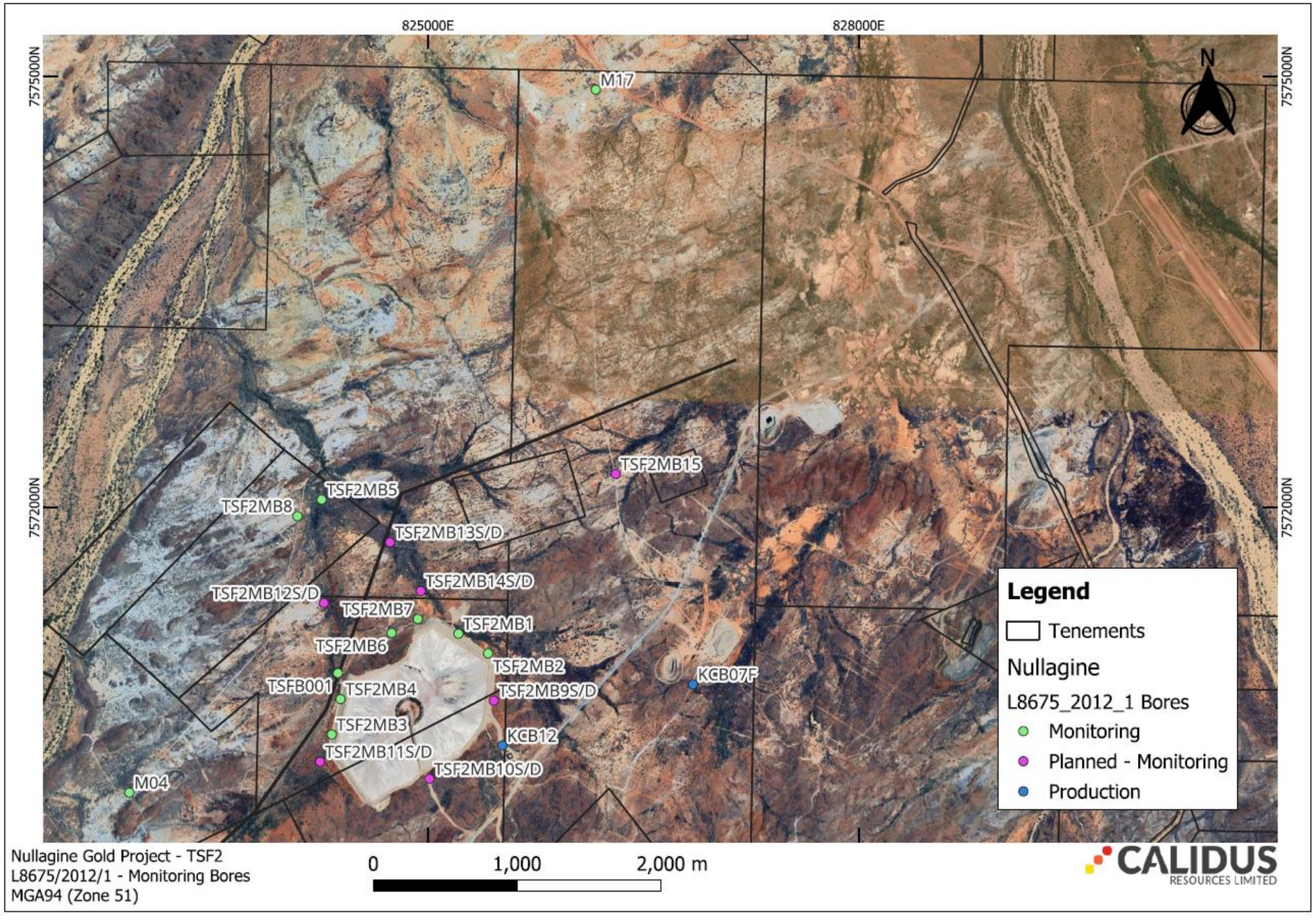

Figure 5: Locations of the TSF2 monitoring points defined in

Table 13.

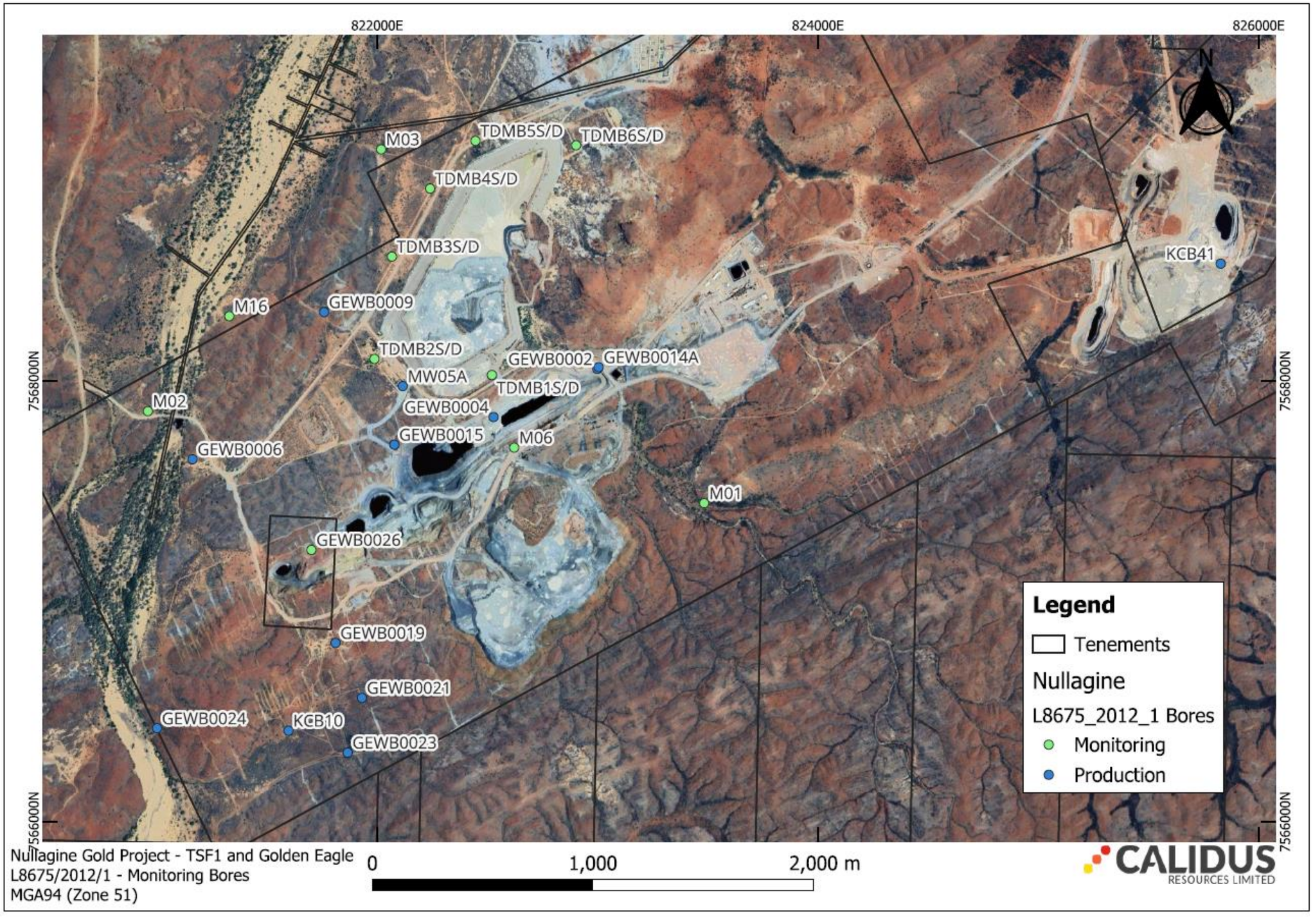

Figure 6: Locations of the TSF1 and Golden Eagle monitoring points defined in

Table 13.

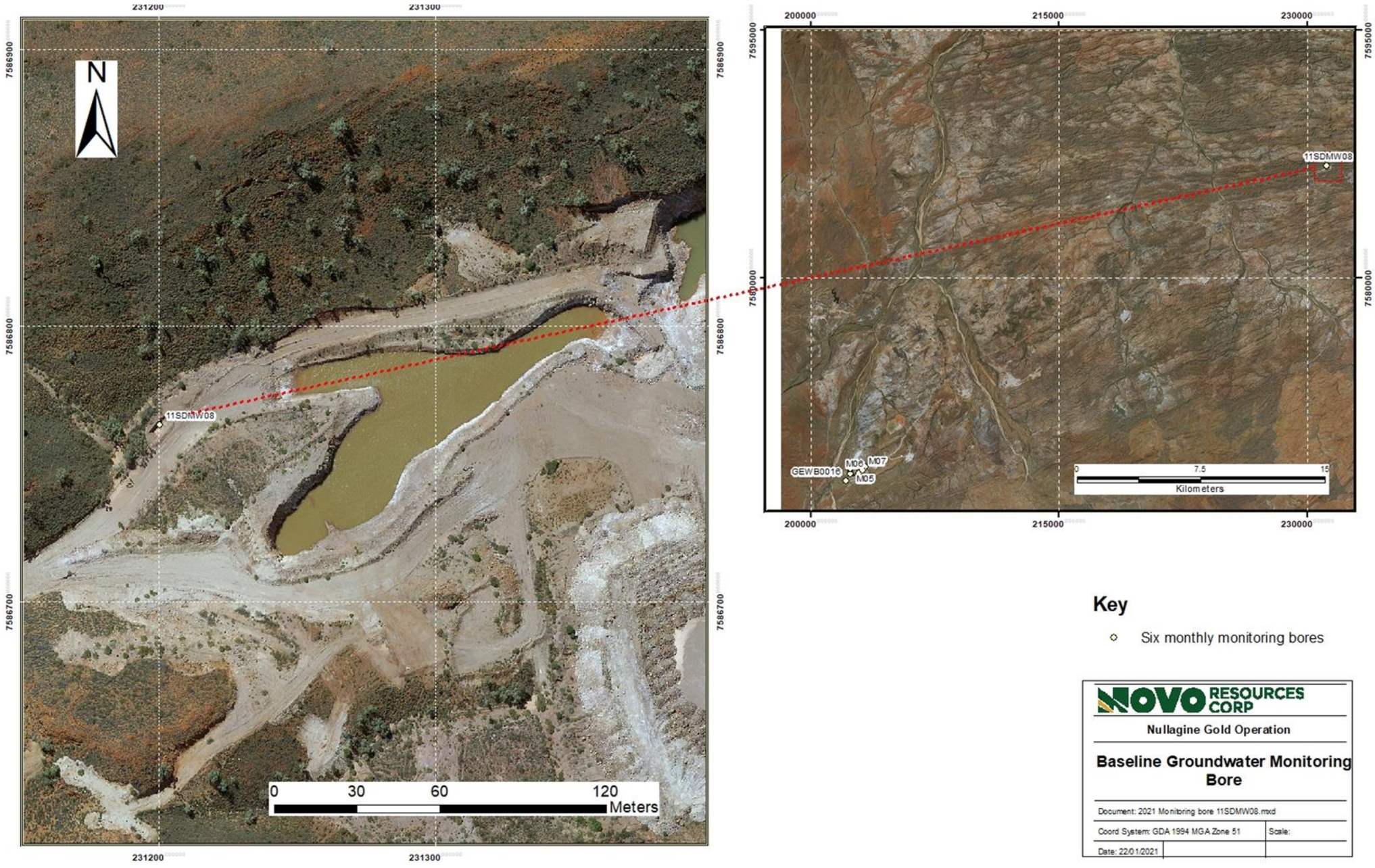

Figure 7: Baseline bore.

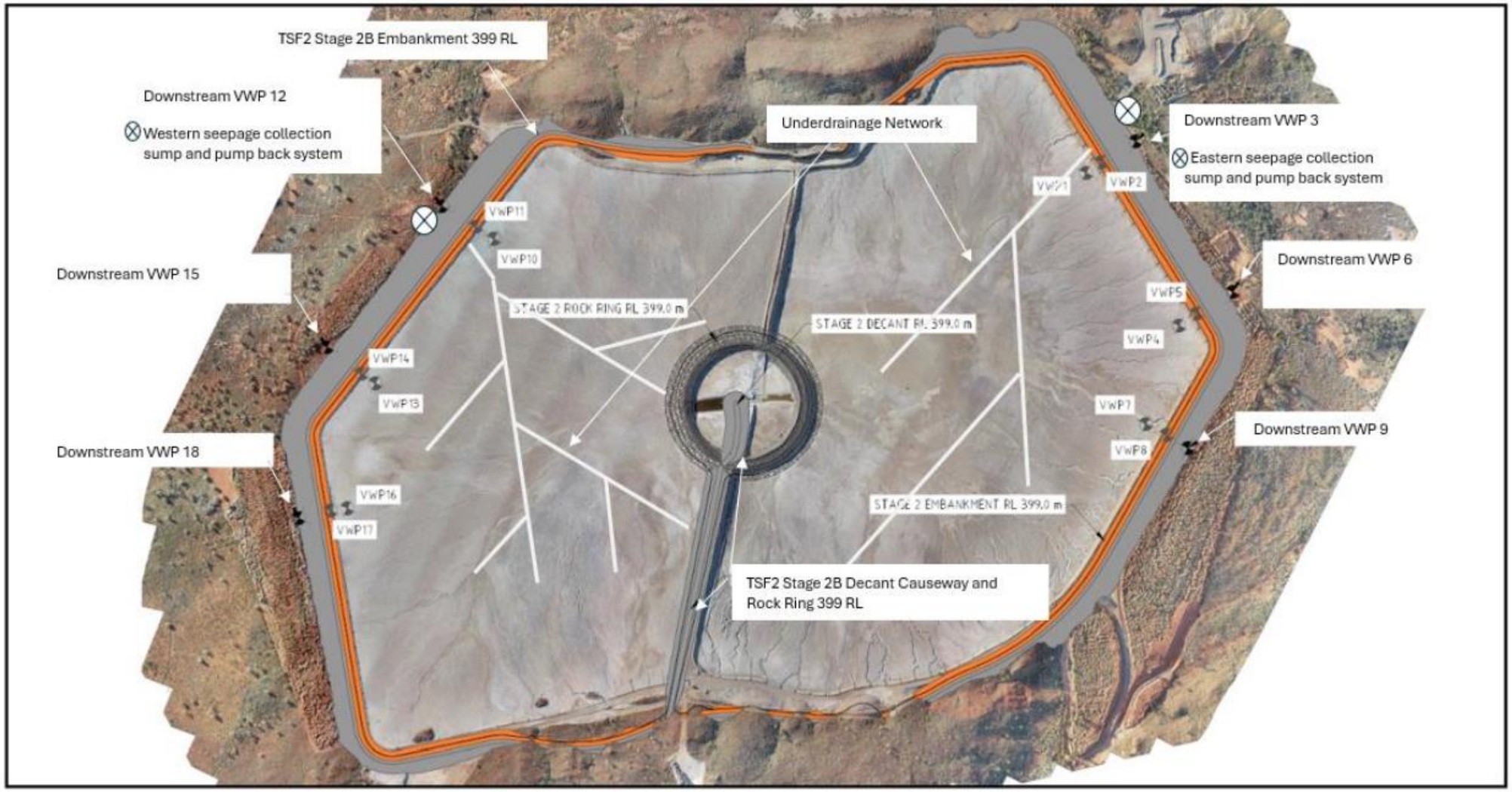

Figure 8: Diagram depicting the underdrainage system, decant structure, toe drain and piezometers.

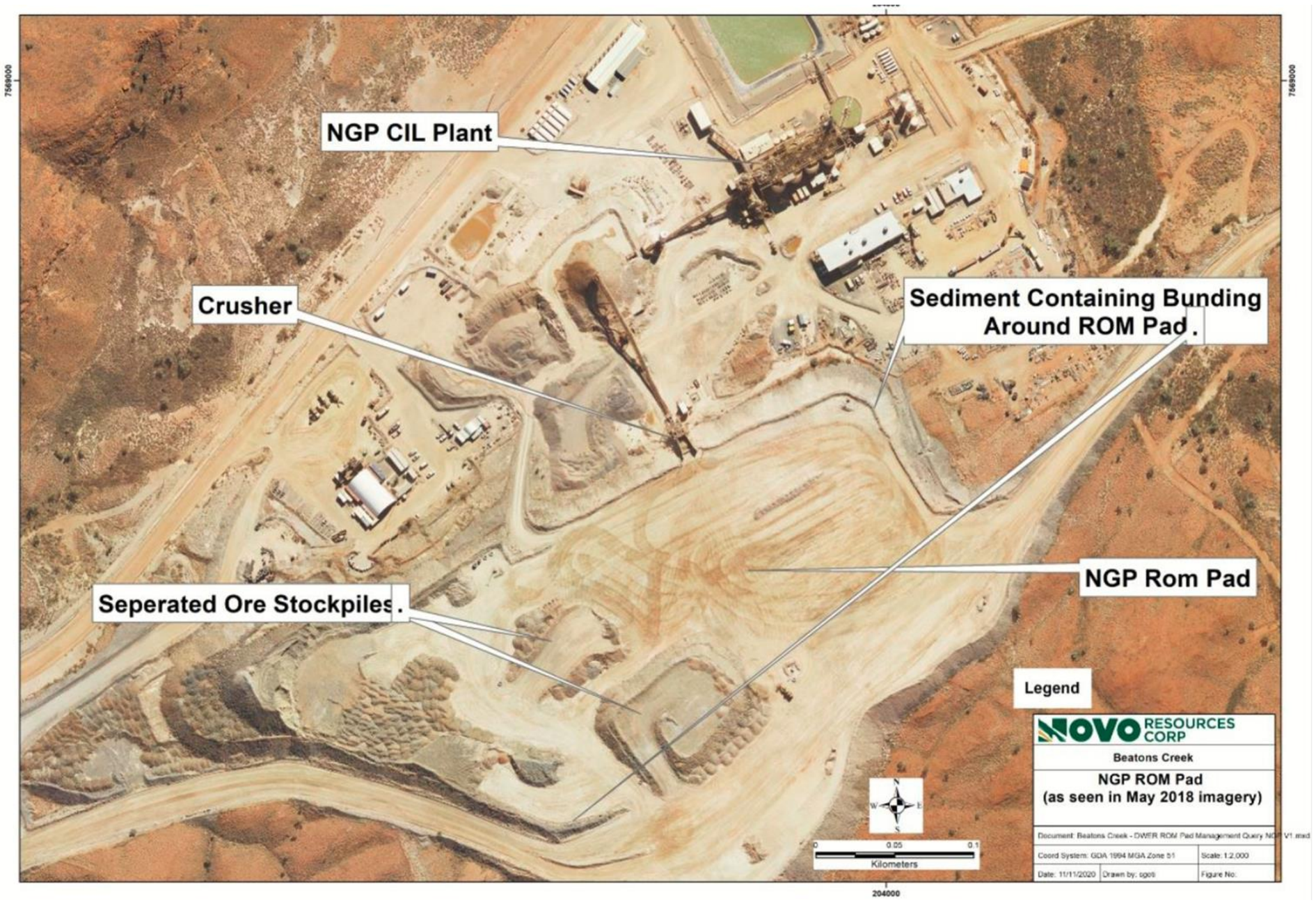

Figure 9: Location of BC and Golden Eagle ROM pads.

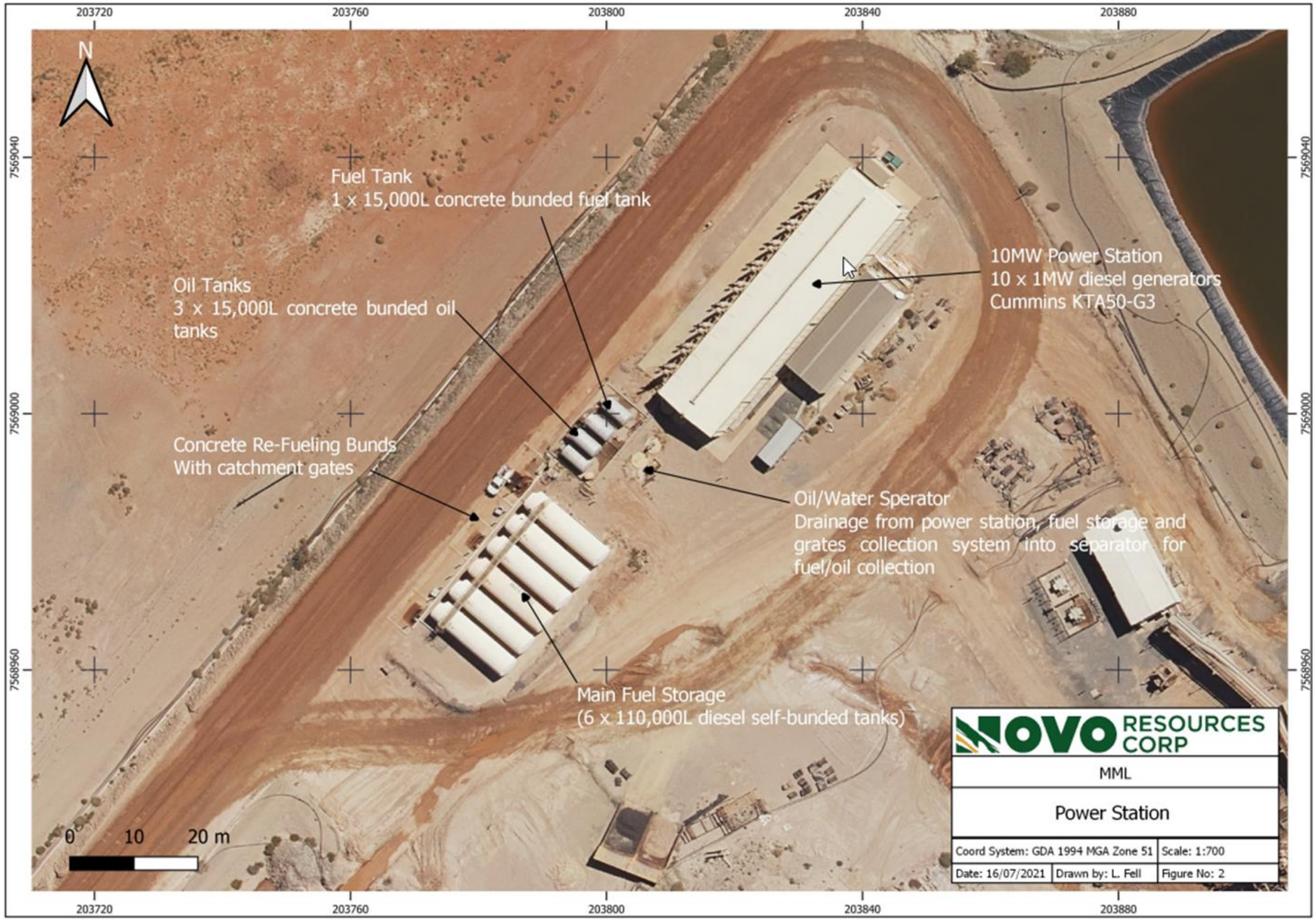

Figure 10: Location of power plant and hydrocarbon storage.

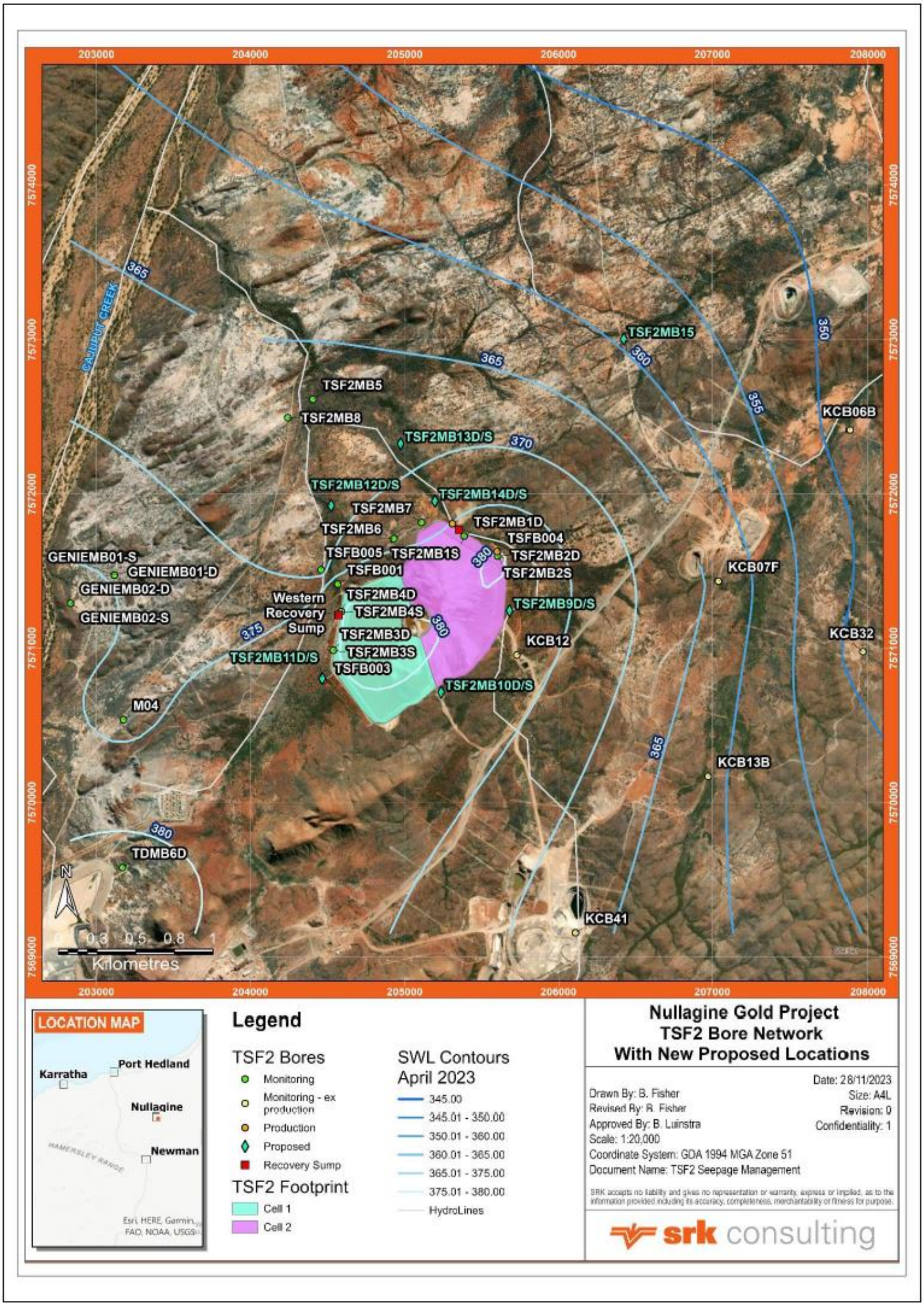

Figure 11: Existing and proposed groundwater monitoring bores, production bores and recovery sumps monitoring network around TSF2.

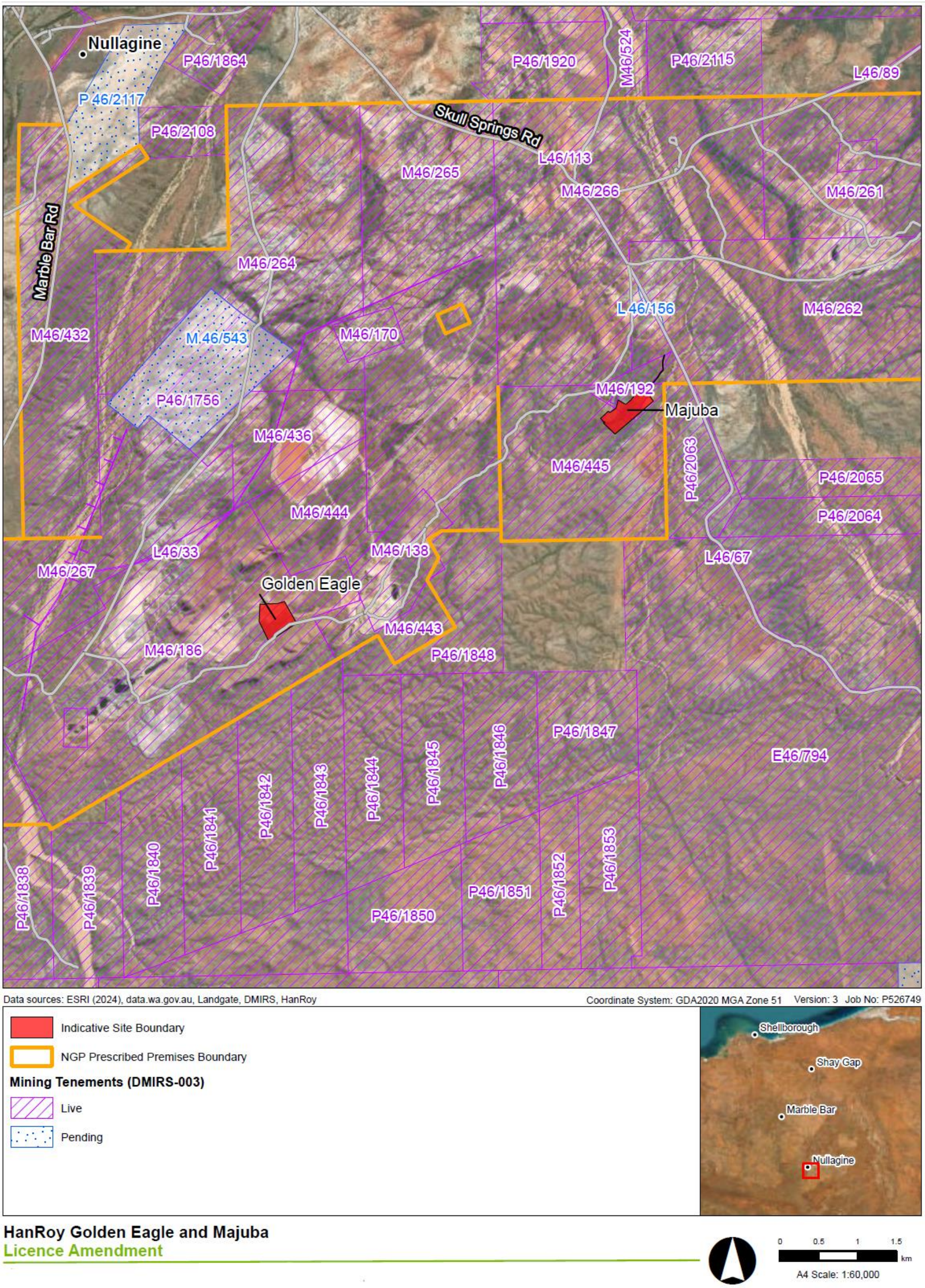

Figure 12: Location of the Golden Eagle haulage yard and Majuba crushing plant

Schedule 2: Reporting & notification forms

Licence: L8675/2012/1
Form: N1

Licence Holder: Millennium Minerals Pty Ltd
Date of breach:

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 licence holder	
Date	

Schedule 3: Management actions

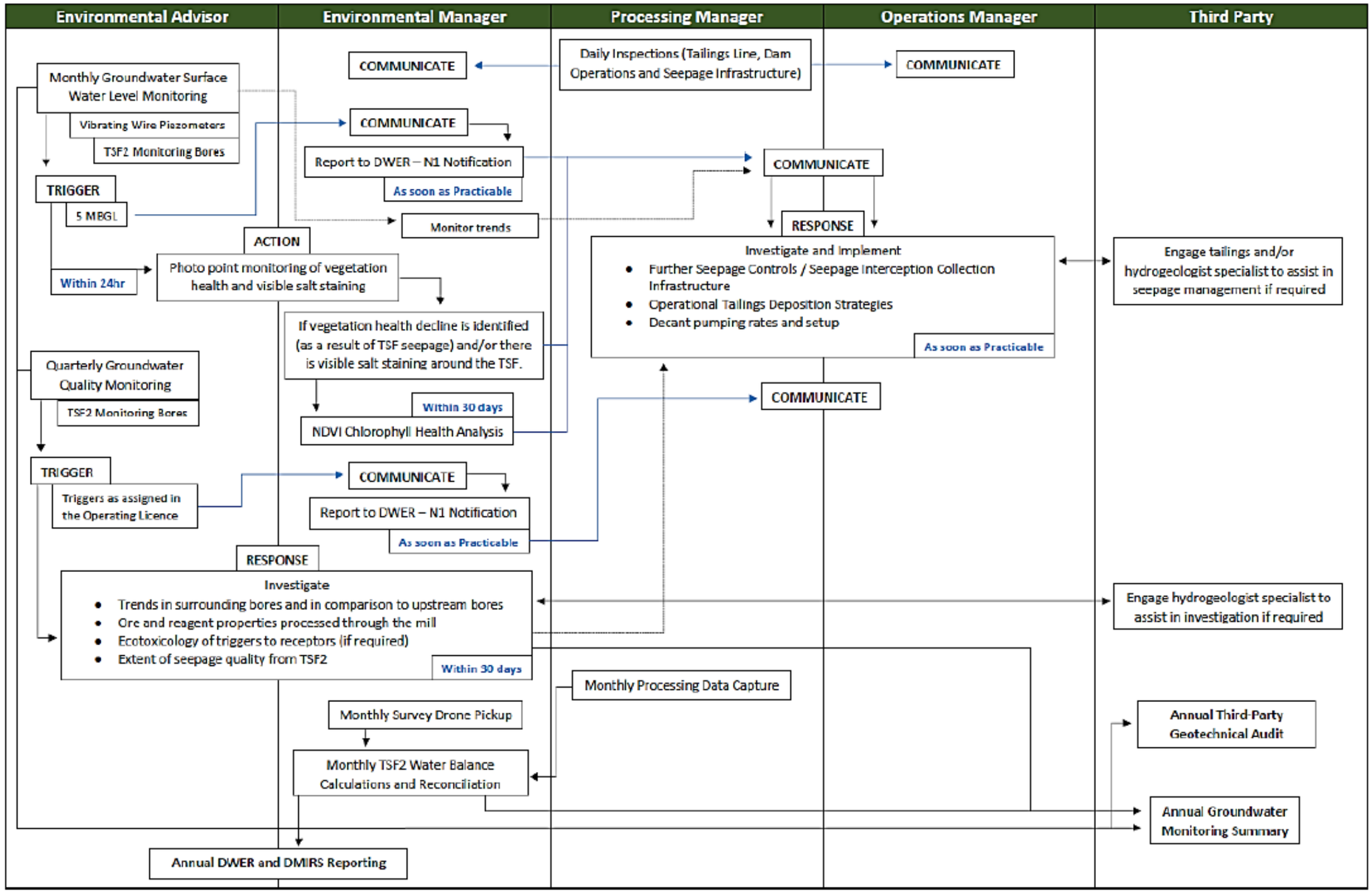

Figure 13: Flow chart for Seepage Trigger Action Response Plan