Licence

Licence number	L9009/2016/1
Licence holder	Northern Minerals Limited
ACN	119 966 353
Registered business address	34 Colin Street WEST PERTH WA 6005
DWER file number	DER2016/002134-1
Duration	11/07/2018 to 10/07/2034
Date of amendment	29/10/2021
Premises details	Browns Range Rare Earths Project Mining Tenement M80/627 STURT CREEK WA 6770 As depicted in Schedule 1 of this licence

Prescribed premises category description (Schedule 1, *Environmental Protection Regulations 1987*)	**Assessed production capacity**
Category 5: Processing or beneficiation of metallic or non-metallic ore	131,490 tonnes per annual period
Category 89: Putrescible landfill site	499 tonnes per annual period

This amended licence is granted to the licence holder, subject to the attached conditions, on 29 October 2021, by:

Melanie Bruckberger
Digitally signed by Melanie Bruckberger
Date: 2021.10.29 13:14:47 +08'00'

Melanie Bruckberger
A/MANAGER, RESOURCE INDUSTRIES
REGULATORY SERVICES

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

Licence history

Date	Reference number	Summary of changes
24/09/2015	W5837/2015/1	New Works Approval for category 64 landfill and category 85 sewage facility for full scale operations
13/03/2017	W6007/2016/1	New Works Approval for category 5 pilot plant trial
23/10/2017	R2457/2017/1	Registration for the operation of a category 89 putrescible landfill
11/07/2018	L9009/2016/1	New Licence application to include the operation of the pilot plant trial and putrescible landfill (previously registered under R2457/2017/1)
04/09/2020	L9009/2016/1	Licence amendment to increase throughput capacity, install an ore sorting circuit, and correct the evaporation pond freeboard limit
16/07/2021	L9009/2016/1	Licence amendment to remove Event Pond freeboard requirements and to authorise Event Pond discharge during wet season via existing Gambit Waste Rock Landform (WRL)/ Run of Mine (ROM) Sediment Retention Pond, authorise options for emptying Event Ponds prior to wet season and authorise reuse of event pond water for dust suppression.
29/10/2021	L9009/2016/1	Licence amendment to allow for discharges of minor waste streams into the TSF and Evaporation Ponds.

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

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

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

(g) 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 conditions

1. The licence holder shall immediately recover, or remove and dispose of spills of wastewater, process liquors, tailings, chemicals or hydrocarbons outside an engineered containment system.
2. The licence holder shall record and investigate the exceedance of any descriptive or numerical limit in this section.
3. The licence holder shall ensure that where waste produced on the Premises are not taken off-site for lawful use or disposal, they are managed according to the requirements in Table 1.

Table 1: Management of waste

Facility[1]	Waste type	Management Strategy	Requirements
Landfill Facility	Inert Waste Type 1	Receipt, handling and disposal of waste by landfilling	<u>All waste types</u> No more than 499 tonnes per annual period of all waste types cumulatively shall be disposed of by landfilling. Disposal of waste by landfilling shall only take place within the Landfill shown on the Landfill Facility Map in Schedule 1. Waste shall be placed in a defined trench or within an area enclosed by earthen windrows. The tipping area of the Landfill shall not be greater than 2 m above ground level in height. 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. A fence or other physical barrier shall be maintained around the active landfill area which is an
	Putrescible Waste		

Facility[1]	Waste type	Management Strategy	Requirements
	Clean Fill		effective barrier to cattle, horses and stock. Undertake fortnightly inspections of the landfill fence or other physical barrier and ensure any damage to the fence is repaired within 14 days. Ensure that wind-blown waste is contained within the boundary of the landfill and that wind-blown waste is returned to the tipping area on at least a monthly basis. Ensure that no waste is burnt on the Premises. Ensure that any unauthorised fire at the Landfill is promptly extinguished.
	Inert Waste Type 2 (tyres and plastic pellets)		Tyres[2] and plastic pallets No more than 50 tyres and 5 tonnes of plastic pellets shall be disposed of by landfilling. Batches must be separated from each other by at least 100 mm of soil.

Note 1: As shown in Schedule 1: Maps, Figure 2
Note 2: Requirements for landfilling tyres are set out in Part 6 of the *Environmental Protection Regulations 1987*.

4. The licence holder shall ensure that cover is applied and maintained on landfilled wastes in accordance with Table 2 and that sufficient stockpiles of cover are maintained on site at all times.

Table 2: Cover requirements

Waste Type	Material	Depth	Frequency
Inert Waste Type 1	No cover required		
Putrescible Waste and Inert Waste Type 2 (plastic pallets)	Inert Waste Type 1 or soil	300 mm	Fortnightly
Inert Waste Type 2 (tyres)		500 mm	By the end of the working day in which the waste was deposited

5. The licence holder shall ensure that waste material is only stored and/or treated within vessels or compounds provided within the infrastructure detailed in Table 3.

Table 3: Containment Infrastructure

Storage vessel or compound[1]	Material	Requirements
Tailings Storage Facility (TSF)	Combined tailings from the beneficiation and hydrometallurgical processing facilities. Pilot Plant Wastewater Treatment Plant sludge. Event Pond Dredge sediment and water. Emergency transfer of poor-quality Event Pond water which may pose a risk to the environment if released[#]	HDPE geomembrane liner with permeability of 1 x 10^{-9} m/s Minimum top of spillway freeboard of 500 mm maintained TSF Stage 2 embankment – final elevation of Relative Level 453 m Delivered into the TSF by the tailings delivery pipeline.
Evaporation Pond	Raffinate from the hydrometallurgical plant Event Pond excess water (from annual wet season readiness activities). Emergency transfer of poor-quality Event Pond water which may pose a risk to the environment if released[#]	HDPE geomembrane liner with permeability of 1 x 10^{-9} m/s Maintain operational freeboard of no less than 300 mm Delivered to the Evaporation Pond by the raffinate pipeline or mine-water transfer pipeline.
Beneficiation Plant Event Pond and Hydrometallurgical Plant Event Pond	Potentially contaminated stormwater from the beneficiation and hydrometallurgical processing facilities. Spillage from the beneficiation and hydrometallurgical processing facilities.	HDPE geomembrane liner with permeability of 1 x 10^{-9} m/s

Water affected by a major spill, or other occurrence in the Plant that has significantly and deleteriously impacted water quality in one or both Event ponds.

6. The licence holder shall ensure that the Beneficiation Plant Event Pond and Hydrometallurgical Plant Event Pond are both emptied to maximum 0.5 m from the bottom of the ponds by 1 December each calendar year. The licence holder must dispose of event pond water using only the locations and the order, and to the requirements, defined in Table 4.

Table 4: Disposal locations for event pond water prior to wet season

Disposal location and order	Discharge point	Requirements	Discharge Point location
1) Re-use in the processing plant	N/A	N/A	N/A
2) Dust suppression	Within the prescribed premises boundary	- on disturbed areas within the premises boundary - applied with a low-pressure device - applied at a rate that will minimise runoff from disturbed areas - must meet the criteria in Condition 13 (Table 8) - sampled as per condition 22 and condition 23	Schedule 1: Maps, Figure 1
3) Disposal to the Evaporation Pond	Discharge into the Evaporation Pond via the raffinate or mine-water transfer pipeline	N/A	Schedule 1: Maps, Figure 2
4) Disposal to the TSF	Discharge into the TSF via the tailings hopper and tailings pipeline	- Sampled as per condition 22.	Schedule 1: Maps, Figure 2
5) Discharge to Gambit WRL / ROM Sediment Retention Pond	Gambit WRL / ROM Sediment Retention Pond	- sampled as per condition 22 and condition 23	Schedule 1: Maps, Figure 2 and Figure 5

7. The licence holder shall ensure that all pipelines containing tailings, tailings return water and hydrometallurgical raffinate are either:
   (a) equipped with operating telemetry systems and pressure sensors to allow detection of leaks and failures; or
   (b) equipped with flow switches in the event of a pipe failure; or
   (c) provided with secondary containment with sufficient volume to contain 12 hours of discharge.

8. The licence holder shall:
   (a) undertake inspections as detailed in Table 5;
   (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 and corrective actions undertaken.

Table 5: Inspection of infrastructure

Scope of inspection	Type of inspection	Frequency of inspection
Tailings delivery pipeline	Visual integrity	Once each 12-hour period during operation
Evaporation pond delivery pipeline		
TSF return water lines		Daily
Tailings deposition	Visual	
Tailings Storage Facility (TSF) pond	Visual to confirm size and location of the pond	
TSF freeboard	Visual to confirm required freeboard is available	
Evaporation Pond freeboard		
TSF underdrainage sump and pump outflow	Visual	
Beneficiation Plant Event Pond and Hydrometallurgical Plant Event Pond	Visual estimate of remaining capacity	
TSF downstream embankment toe	Visual	Weekly
Evaporation pond embankments	Visual integrity	
Gambit WRL / ROM Sediment Retention Pond spillway integrity	Visual integrity	Once post wet season
From the Gambit WRL / ROM Sediment Retention Pond spillway to 100 m downstream of the spillway	Visual to detect signs of erosion	

9. The licence holder shall ensure the limits specified in Table 6 are not exceeded.

Table 6: Production or design capacity

Category[1]	Category description[1]	Premises production or design capacity limit
5	Processing or beneficiation of metallic or non-metallic ore	131,490 tonnes per annual period
89	Putrescible landfill site	499 tonnes per Annual Period

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

10. The licence holder shall undertake an annual water balance for the TSF. The water balance shall as a minimum consider and include the following:
    (a) site rainfall;
    (b) evaporation;
    (c) tailings return water recovery volumes;
    (d) seepage recovery volumes; and
    (e) volumes of tailings deposited.

11. The licence holder must construct the infrastructure listed in Table 7 in accordance with:
    (a) the corresponding design and construction requirement; and
    (b) at the corresponding infrastructure location.

Table 7: Design and construction requirements

Infrastructure	Design and construction requirements	Infrastructure location
Ore sorting circuit	1. Crushed ore bin fed directly from the existing primary crusher via crusher discharge conveyor. 2. Stacker conveyor to transfer ore directly from the primary crusher to the bypass stockpile in the event the XRT ore sorter is offline. And to transfer sorted ore materials and sludge from the washing screen and clarifier to the bypass stockpile. 3. Classification screen, including dust suppression sprays to control dust generated from fines, at the point it discharges from the screen and travels via conveyor to the select stockpile. 4. Stacker conveyor from the classification screen to the oversized stockpile for oversized material to be recycled back through the existing crushing circuit. 5. Washing screen and clarifier to remove sludge fines (sludge co-deposited with sorted select material to the select stockpile for processing). 6. Wash water storage tank. 7. XRT ore sorter to sort ore prior to reporting to the existing SAG mill feed bin. 8. Conveyors to transport sorted and unsorted ore between each stage.	Located partially on ROM pad and pilot plant area; the active Fines (Select) Stockpiles located away from the edges of the ROM pad. Schedule 1, Figure 4.

Infrastructure	Design and construction requirements	Infrastructure location
	9. Dust mitigation measures to control dust generated from materials transferred via conveyors to encompass the following: • Enclosed or wet conveyance of fines material. • Misting dust suppression system on the crushed ore bin. • Washing step to remove fine material from select and rejects streams.	

12. The licence holder shall operate the ore sorter circuit outlined in Table 7 in accordance with the conditions of this Licence, following submission of the compliance documents required under condition 29.

13. The licence holder is authorised to use Beneficiation Plant Event Pond water and Hydrometallurgical Plant Event Pond water for dust suppression in accordance with the water quality limits in Table 8 and the discharge requirements in Table 9.

Table 8: Water quality limits for dust suppression

Parameter	Limit	Units	Permitted use
Total Dissolved Solids	10,000	mg/L	Haul/access roads, process plant, active mining areas, areas cleared for approved construction.
pH	Between 5.5 to 9	pH units	
Total Dissolved Solids	5,000	mg/L	Can be used on any disturbed area.
pH	Between 5.5 to 9	pH units	

Table 9: Water sources for dust suppression

Disposal point	Requirements	Disposal Point location
Within the prescribed premises boundary	- on disturbed areas within the premises boundary - applied with a low-pressure device - applied at a rate that will minimise runoff from disturbed areas - must meet the criteria in condition 13 - sampled as per condition 22 and 23.	Schedule 1: Maps, Figure 1

14. The licence holder is authorised to allow stormwater from the Beneficiation Plant Event Pond and Hydrometallurgical Plant Event Pond to discharge to the environment via an existing engineered drain which reports to the Gambit WRL / ROM Sediment Retention Pond, and then to the receiving environment via the Sediment Retention Pond spillway.

Monitoring

General monitoring

15. The licence holder shall ensure that:
    (a) all water samples are collected and preserved in accordance with AS/NZS 5667.1;
    (b) all groundwater sampling is conducted in accordance with AS/NZS 5667.11; and
    (c) 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.

16. The licence holder shall ensure that:
    (a) monthly monitoring is undertaken at least 15 days apart;
    (b) quarterly monitoring is undertaken at least 45 days apart; and
    (c) six monthly monitoring is undertaken at least 5 months apart.

17. The licence holder 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.

18. The licence holder 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.

Monitoring of inputs and outputs

19. The licence holder shall undertake the monitoring in Table 10 according to the specifications in Table 10.

Table 10: Monitoring of inputs and ouputs

Input/output	Parameter	Units	Averaging period	Frequency
Waste Inputs	Inert Waste Type 1 Inert Waste Type 2 Clean Fill Putrescible Waste	m^3	N/A	Monthly

Process monitoring

20. The licence holder shall undertake the monitoring in Table 11 according to the specifications in Table 11.

Table 11: Process monitoring

Monitoring point[1]	Parameter	Units	Frequency	Method
Evaporation pond	Volume discharged to pond	m^3	Cumulative monthly total	None specified
TSF	Volume of tailings discharged to TSF			
	Volume of WWTP sludge discharged into the TSF	m^3	Cumulative monthly total	None specified
Beneficiation Plant Event Pond and Hydrometallurgical Plant Event Pond	Volume of water discharged to the Gambit WRL / ROM Sediment Retention Pond	m^3	Cumulative monthly total	None specified
	Volume of water discharged via dust suppression	m^3	Cumulative monthly total	None specified
	Volume of poor-quality Event Pond water# discharged into the Evaporation Pond	m^3	Cumulative daily total, during each discharge event	None specified
	Volume of excess pond water discharged into the Evaporation Pond for operational needs required for wet season readiness.	m^3	Cumulative daily total, during each discharge event	None specified
	Volume of Event Pond maintenance (dredged) sludge and water discharged to the TSF	m^3	Cumulative daily total during each discharge event	None specified
	Volume of poor-quality Event Pond water# discharged into the TSF	m^3	Cumulative daily total during each discharge event	None specified

Note 1: As shown in Schedule 1: Maps, Figure 2

Water affected by a major spill, or other occurrence in the Plant that has significantly and deleteriously impacted water quality in one or both Event ponds.

Ambient environmental quality monitoring

21. The licence holder shall undertake the monitoring in Table 12 according to the specifications in Table 12.

Table 12: Monitoring of ambient groundwater quality

Monitoring point[1]	Parameter	Units	Averaging period	Frequency
Tailings Storage Facility MB01S, MB01D, MB02S, MB02D, MB03 and MB03S	Standing water level[2]	mbgl	Spot sample	Monthly
	pH[2]	pH units		
	Total Dissolved Solids[2]	mg/L		
	Electrical Conductivity[2]	µS/cm		
	Redox potential[2]	Volts		
	Total Acidity and Total Alkalinity[2]	mg/L		
	Major cations and anions sodium, potassium, calcium, magnesium, chloride, sulfate, bicarbonate **Metals, metalloids and non-metals** aluminium, arsenic, barium, beryllium, boron, cadmium, chromium, cobalt, copper, gadolinium, iron, lead, manganese, molybdenum, mercury, nickel, thorium, selenium, thallium, tin, uranium, vanadium, zinc	mg/L	Spot sample	Six monthly or immediately if monthly monitoring detects increase of background groundwater levels and/or water quality
Evaporation Pond MB04S, MB04D, MB05 and MB05S	Standing water level[2]	mbgl	Spot sample	Monthly
	pH[2]	pH units		
	Total Dissolved Solids[2]	mg/L		
	Major cations and anions sodium, potassium, calcium, magnesium, chloride, sulfate, bicarbonate **Metals, metalloids and non-metals** aluminium, arsenic, barium, beryllium, boron, cadmium, chromium, cobalt, copper, iron, lead, manganese, molybdenum, nickel, thorium, tin, uranium, vanadium, zinc	mg/L	Spot sample	Six monthly or immediately if monthly monitoring detects increase of background groundwater levels and/or water quality

Monitoring point[1]	Parameter	Units	Averaging period	Frequency
Landfill MB06, MB07, MB08 and MB09	Standing water level[2]	mbgl	Spot sample	Quarterly
	pH[2]	pH units	Spot sample	Six monthly
	Electrical Conductivity[2]	µS/cm		
	Total Dissolved Solids[2]	mg/L		
	Biochemical oxygen demand			
	Total recoverable hydrocarbons			
	chloride, fluoride, potassium, sulfate			
	total nitrogen, nitrate-nitrogen, nitrite-nitrogen, ammonia-nitrogen, total phosphorus, phosphate			
	dissolved aluminium, arsenic, cadmium, chromium, copper, iron, lead, manganese, mercury, nickel, zinc			

Note 1: As shown in Schedule 1: Maps, Figure 2
Note 2: In-field non-NATA accredited analysis permitted

Water quality monitoring

22. The licence holder shall undertake the monitoring in Table 13 according to the specifications in Table 13 for release of captured water into the environment.

Table 13: Monitoring of water quality – Pilot Plant Event Pond

Monitoring point[1]	Parameter	Units	Averaging period	Frequency
Beneficiation Plant Event Pond and Hydrometallurgical Plant Event Pond	pH[2]	pH units	Spot sample	Sample at least monthly during: 1) the wet season; and 2) dust suppression activities, if Event Pond water is utilised for dust suppression as determined by condition 6. Sample at least once prior to disposal to the Gambit WRL / ROM Sediment Retention Pond as determined by condition 6. Sample each Event Pond once during the wet season when capacity first reaches at least 80 per cent (if safe and practicable). Within six hours of discharge commencing, sample once at one sampling point which is located downstream of the event pond spillway but upstream of the Gambit WRL / ROM Sediment Retention Pond (if safe and practicable). Sample at least daily for the duration of the discharge event at a sample point located downstream of the event pond spillway but upstream of the Gambit WRL / ROM Sediment Retention Pond (if safe and practicable).
	Electrical Conductivity[2]	µS/cm		
	Total Dissolved Solids[2]	mg/L		
	Total Reportable Hydrocarbons (TRH)	µg/L		
	BTEX	µg/L		
	Total Acidity and Total Alkalinity[2]	mg/L		
	phosphorus ions, fluoride ions, sodium, potassium, calcium, magnesium, chloride, sulfate, bicarbonate aluminium, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, gadolinium, iron, lead, manganese, molybdenum, mercury, nickel, thorium, selenium, uranium, vanadium, zinc	mg/L	Spot sample	
	Uranium, thorium	Bq/L	Spot sample	

Beneficiation Plant Event Pond and Hydrometallurgical Plant Event Pond	gross-alpha, gross-beta	Bq/L	Spot sample	Samples must be taken monthly during the wet season. Samples must be taken monthly during dust suppression activities, if Event Pond water is utilised for dust suppression (as determined by condition 6). Samples must be taken within 72hours prior to each disposal event to the Gambit WRL / ROM Sediment Retention Pond as determined by condition 6.

Note 1: As shown in Schedule 1: Maps, Figure 2
Note 2: In-field non-NATA accredited analysis permitted

23. If the concentration of gross-alpha or gross-beta from the monitoring required by Table 13 exceed 0.5 Bq/L[1] then the licence holder shall undertake the monitoring in Table 14, according to the specifications in Table 14. (Note 1: methodology to consider contribution of potassium-40, as per the ANZECC & ARMCANZ (2000) methodology recommended in Section 9.2.8.3 'Derivation of guideline values'.

Table 14: Monitoring of radionuclides

Monitoring point[1]	Parameter	Units	Averaging period	Frequency
Beneficiation Plant Event Pond and Hydrometallurgical Plant Event Pond	Radium-226 Radium-228	Bq/L	Spot sample	Immediately, or within 48hrs of the results obtained by condition 22 identifying that the trigger level of 0.5Bq/L of gross alpha or gross-beta has been exceeded.

Vegetation condition monitoring

24. The licence holder shall undertake the monitoring in Table 15 according to the specifications in Table 15.

Table 15: Monitoring of vegetation quality

Monitoring location[1]	Parameter	Requirements	Method	Frequency
Vegetation condition within 100 m of the Gambit WRL / ROM Sediment Retention Pond spillway discharge release point	Vegetation condition for evidence of contaminants deposited on soil and/or stressed vegetation	The licence holder shall: a. take photographic images annually from the same four (4) fixed monitoring points[2]; b. provide a general environmental description of the site; and c. record any changes to vegetation health or composition.	Visual inspection and photographs	Annual, within 2 months of the end of the wet season

Note 1: As shown in Schedule 1: Maps, Figure 5
Note 2: Monitoring locations must comprise of 3 fixed monitoring locations within the discharge zone, and one fixed control site.

Gambit WRL / ROM Sediment Retention Pond spillway monitoring

25. The licence holder shall undertake the monitoring in Table 16 and Table 17 according to the specifications in Table 16 and Table 17, respectively.

Table 16: Monitoring of water quality downstream of Gambit WRL / ROM Sediment Retention Pond spillway

Monitoring point[1]	Parameter	Units	Requirements	Method	Frequency
Water quality downstream of Gambit WRL / ROM Sediment Retention Pond spillway	pH[2]	pH units	Collect and analyse Gambit WRL / ROM Sediment Retention Pond spillway discharge when: 1) the Event Ponds are also discharging at the same time as the Gambit WRL/ ROM Sediment Retention Pond spillway; or 2) the Event Ponds have discharged in the 24-hour period preceding a discharge occurring from the .Gambit WRL/ ROM Sediment Retention Pond spillway.	Single stage Rising Stage Sampler (RSS) positioned at maximum 30 cm above-ground	On each occasion that the SRP is discharging, and the 'Requirements' specified in this Table are met.
	Electrical Conductivity[2]	µS/cm			
	Total Dissolved Solids[2]	mg/L			
	Total Reportable Hydrocarbons (TRH)	µg/L			
	BTEX	µg/L			
	Total Acidity and Total Alkalinity[2]	mg/L			
	phosphorus ions, fluoride ions, sodium, potassium, calcium, magnesium, chloride, sulfate, bicarbonate aluminium, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, gadolinium, iron, lead, manganese, molybdenum, mercury, nickel, thorium, selenium, uranium, vanadium, zinc	mg/L			
	Uranium, thorium, gross-alpha, gross-beta	Bq/L			

Monitoring point[1]	Parameter	Units	Requirements	Method	Frequency
	radium-226, radium-228,	Bq/L	If the concentration of gross-alpha or gross-beta from the monitoring required by Table 13 has exceeded 0.5 Bq/L[1] in any of the previous two (2) Event Pond samples taken for condition 22	Single stage Rising Stage Sampler (RSS) positioned so as to capture spillway discharge	SRP discharge samples must be collected within 48hrs of the discharge event occurring. Samples must be preserved and sent to a NATA accredited laboratory for analysis as soon as practicable within the recommended sample holding time.

Note 1: As shown in Schedule 1: Maps, Figure 5
Note 2: In-field non-NATA accredited analysis permitted

Table 17: Monitoring of soil quality downstream of Gambit WRL/ ROM Sediment Retention Pond spillway

Monitoring location[1]	Parameter	Units	Requirements	Method	Frequency
Surface soil downstream of Gambit WRL / ROM Sediment Retention Pond spilway	pH[2]	pH units	If any of the water quality Parameters tested as part of the monitoring required by Table 16 exceed the *ANZECC & ARMCANZ (2000) Guidelines for short term irrigation values,* then surface soil sampling in the Gambit WRL / ROM Sediment Retention Pond spillway discharge zone is required.	Sample surface soil at depths <10 cm and between 10 to 20 cm.	Annual, within 2 months of the end of the wet season if water quality downstream of Gambit WRL / ROM Sediment Retention Pond in the preceding wet season exceeds *ANZECC & ARMCANZ (2000) Guidelines for short term irrigation values*
	Electrical Conductivity[2]	µS/cm			
	Total Reportable Hydrocarbons (TRH)	µg/kg (dry wt)			
	phosphorus, fluoride, sodium, potassium, calcium, magnesium, chloride, sulfate, bicarbonate (calcium carbonate) aluminium, arsenic, beryllium, cadmium, chromium, cobalt, copper, iron, lead, manganese, molybdenum, mercury, nickel, thorium, selenium, uranium, vanadium, zinc	mg/kg (dry wt)			
	uranium, thorium, gross-alpha, gross-beta	Bq/g			
	radium-226, radium-228,	Bq/L	If the concentration of gross-alpha or gross-beta from the monitoring required by Table 13 exceeds 0.5 Bq/L[1]	Sample surface soil at depths <10 cm and between 10 to 20 cm.	Within 2 weeks of a discharge event occurring from the Gambit WRL/ ROM Sediment Retention Pond spillway

Note 1: As shown in Schedule 1: Maps, Figure 5
Note 2: In-field non-NATA accredited analysis permitted

Information

Records

26. 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 11 of this licence;
    (c) any maintenance of infrastructure that is performed in the course of complying with conditions 3 to 8 of this licence;
    (d) monitoring programmes undertaken in accordance with conditions 15 to 25 of this licence; and
    (e) complaints received under condition 28 of this licence.

27. 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) 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.

28. 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.

Reporting

29. 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.

30. The licence holder must submit to the CEO an Annual Environmental Report (AER) which contains the information listed in Table 18 in the format or form specified in Table 18 within 90 calendar days after the end of the Annual Period.

Table 18: Annual Environmental Report

Condition or table (if relevant)	Parameter	Format or form
-	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
Condition 10	Annual water balance	None specified
Condition 19 Table 10	Waste inputs	None specified
Condition 20 Table 11	Volumes discharged	None specified
Condition 21 Table 12	Ambient groundwater monitoring results	None specified
Condition 22 Table 13	Water quality monitoring results	None specified
Condition 23 Table 14	Monitoring of radionuclides	None specified
Condition 24 Table 15	Vegetation condition monitoring results	None specified
Condition 25 Table 16	Gambit WRL / ROM Sediment Retention Pond spillway discharge monitoring results	None specified
Condition 25 Table 17	Gambit WRL / ROM Sediment Retention Pond downstream spillway discharge zone soil monitoring results (if required)	None specified
Condition 28	Complaints summary	None specified

31. The licence holder shall ensure that the Annual Environmental Report also contains:
    (a) an assessment of the information contained within the report against all previous monitoring results;
    (b) a list of any original monitoring reports submitted to the licence holder from third parties for the annual period and make these reports available on request; and
    (c) where monitoring for gross-alpha and gross-beta radiation has been undertaken in accordance with the conditions of the licence, a short report is included in the AER evaluating the collated data, the risk posed to human health and the environment and the result of any investigation(s) undertaken to determine the source of the contamination.

Notification

32. The licence holder shall ensure that the parameters listed in Table 19 are notified to the CEO in accordance with the notification requirements of Table 19.

Table 19: Notification requirements

Condition or table (if relevant)	Parameter	Notification requirement[1]	Format or form[2]
Condition 2	Breach of any limit specified in the Licence	Part A: No later than 5pm of the next usual working day.	N1
Condition 11	The licence holder must: • undertake an audit of compliance with the requirements of condition 11; and • prepare and submit to the CEO an audit report on whether or not that compliance has been met. The report must: • be certified by a suitably qualified professional engineer that each item of infrastructure listed in Table 7 meets the corresponding specifications and at the locations set out in Table 7 and has been constructed with no material defects; • where an item of infrastructure has been certified as not being located or constructed, or does not comply with the corresponding requirements, the licence holder must correct the non-compliant or defective works prior to re-certifying, or provide to the CEO a description of, and explanation for, any departures from the requirements specified in Table 7 that do not require relocation or rectification and do not constitute a material defect along with the report; • be signed by a person authorised to represent the licence holder and contains the printed name and position of that person within the company.	60 days after completion of construction	None specified
Condition 18	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

Specified actions

33. The licence holder shall ensure that the specified actions listed in Table 20 are provided to the CEO in accordance with the requirements of Table 20.

Table 20: Specified actions

Parameter	Requirement	Format or form	Timeframe
Trigger-Action-Response-Plan (TARP)	Prepare and submit to the CEO a TARP for the Beneficiation Plant Event Pond and Hydrometallurgical Plant Event Pond for the purpose of managing water quality for re-use disposal or discharge.	None specified	30 September 2021

Definitions

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

Table 21: Definitions

Term	Definition
ACN	Australian Company Number
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 January until 31 December of the same 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 5667.11	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
books	has the same meaning given to that term under the EP Act
Bq/g	Becquerels per gram
Bq/L	Becquerels per litre
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
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)

Term	Definition
freeboard	means the distance between the maximum surface elevation of contained water or solid material and the top of retaining banks or structures at their lowest point
Gambit WRL / ROM Sediment Retention Pond	Gambit Waste Rock Landform (WRL)/ Run of Mine (ROM) Sediment Retention Pond
HDPE	means high density polyethylene
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 (as amended 2019)” published by the Chief Executive Officer of the Department of Water and Environmental Regulation 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.
mbgl	means metres below ground level
mg/L	means milligrams per litre
µg/L	means micrograms per litre
µg/kg (dry wt)	means micrograms per kg on a dry weight basis
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 (Figure 1) in Schedule 1 to this licence
prescribed premises	has the same meaning given to that term under the EP Act
putrescible	has the meaning defined in Landfill Definitions
quarterly	means the 4 inclusive periods from 1 January to 31 March, 1 April to 30 June, 1 July to 30 September and 1 October to 31 December in the same year
Schedule 1	means Schedule 1 of this Licence unless otherwise stated

Term	Definition
Schedule 2	means Schedule 2 of this Licence unless otherwise stated
six monthly	means the 2 inclusive periods from 1 January to 30 June and 1 July to 31 December in the same year
Spot sample	means a discrete sample representative at the time and place at which the sample is taken
suitably qualified professional engineer	means a person who: a) holds a Bachelor of Engineering recognised by the Institute of Engineers; and b) has a minimum of five years of experience working in a relevant supervisory area of civil engineering; and c) is employed by an independent third party external to the licence holder's business, or is otherwise approved in writing by the CEO to act in this capacity
TARP	Trigger-Action-Response-Plan
TSF	means tailings storage facility
waste	has the same meaning given to that term under the EP Act
wet season	means the months December in each year and January, February and March in the following year
WWTP	means wastewater treatment plant

END OF CONDITIONS

Schedule 1: Maps

Premises map

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

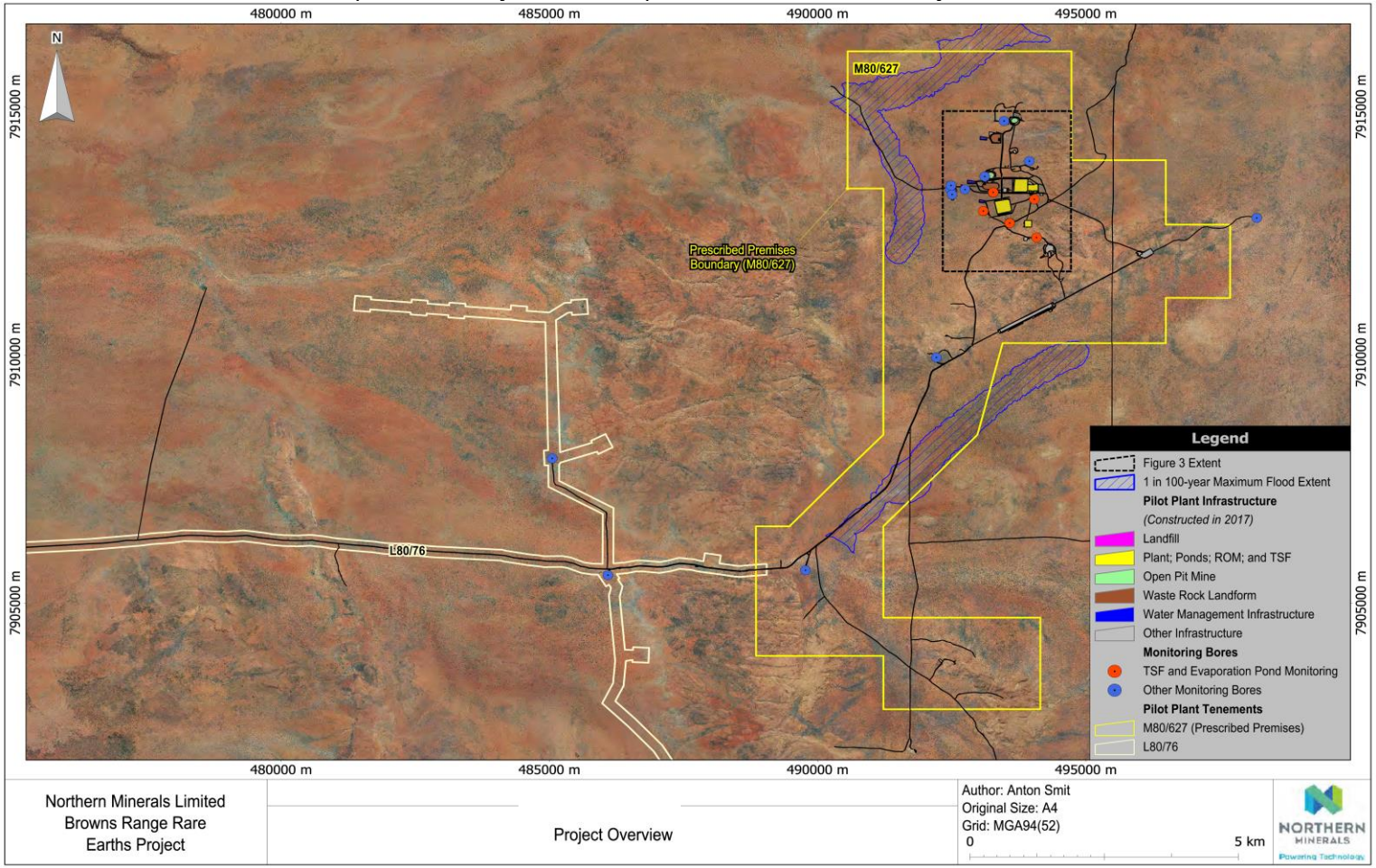

Figure 1: Map of the prescribed premises boundary

Map of Landfill Facility, containment infrastructure and monitoring locations

The location of the Landfill Facility defined in Table 1.2.1 is shown below.
The location of the containment infrastructure defined in Table 1.2.3 are shown below.
The locations of the monitoring points defined in Table 2.4.1 are shown below.

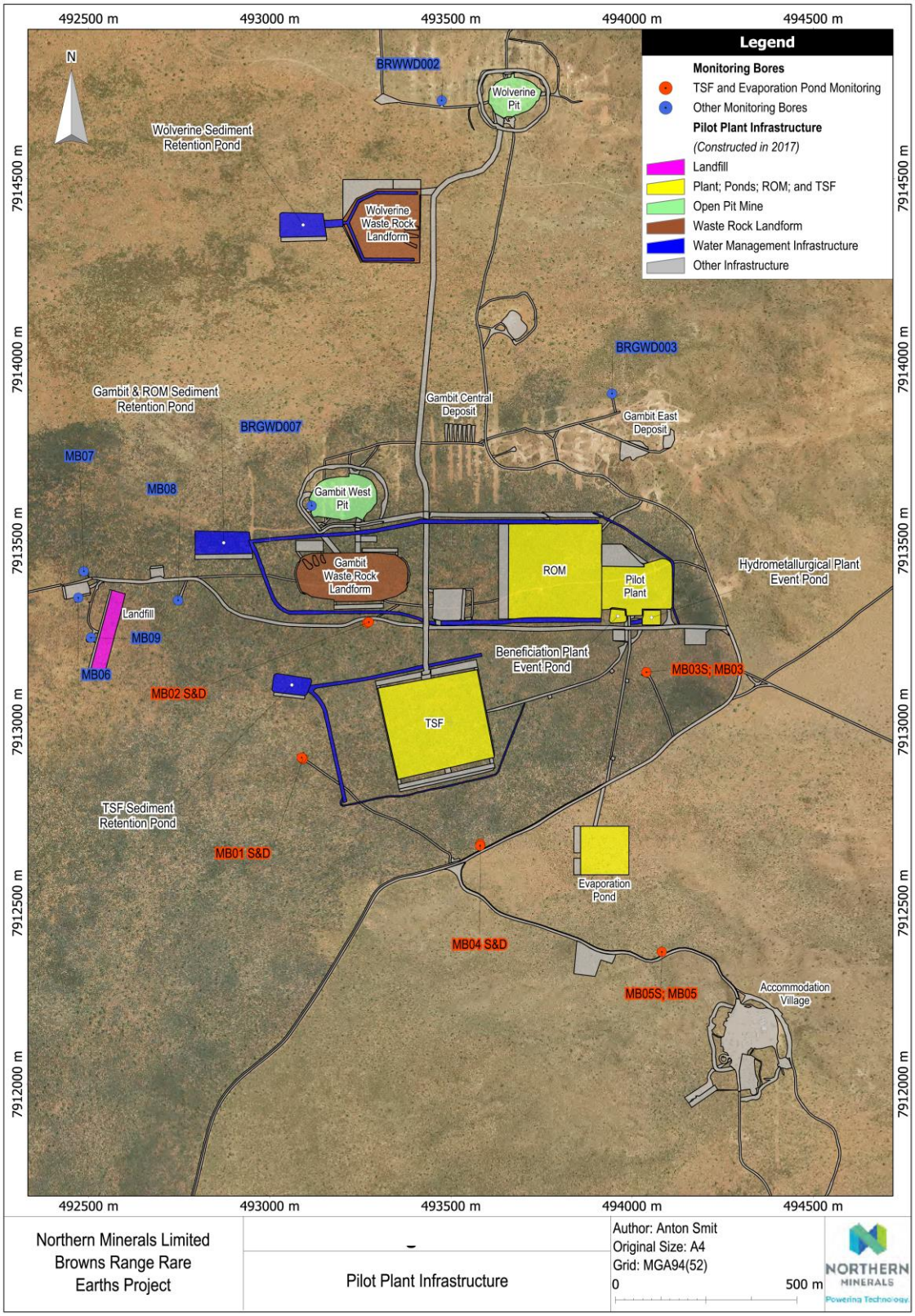

Figure 2: Map of the Landfill Facility, containment infrastructure and monitoring locations

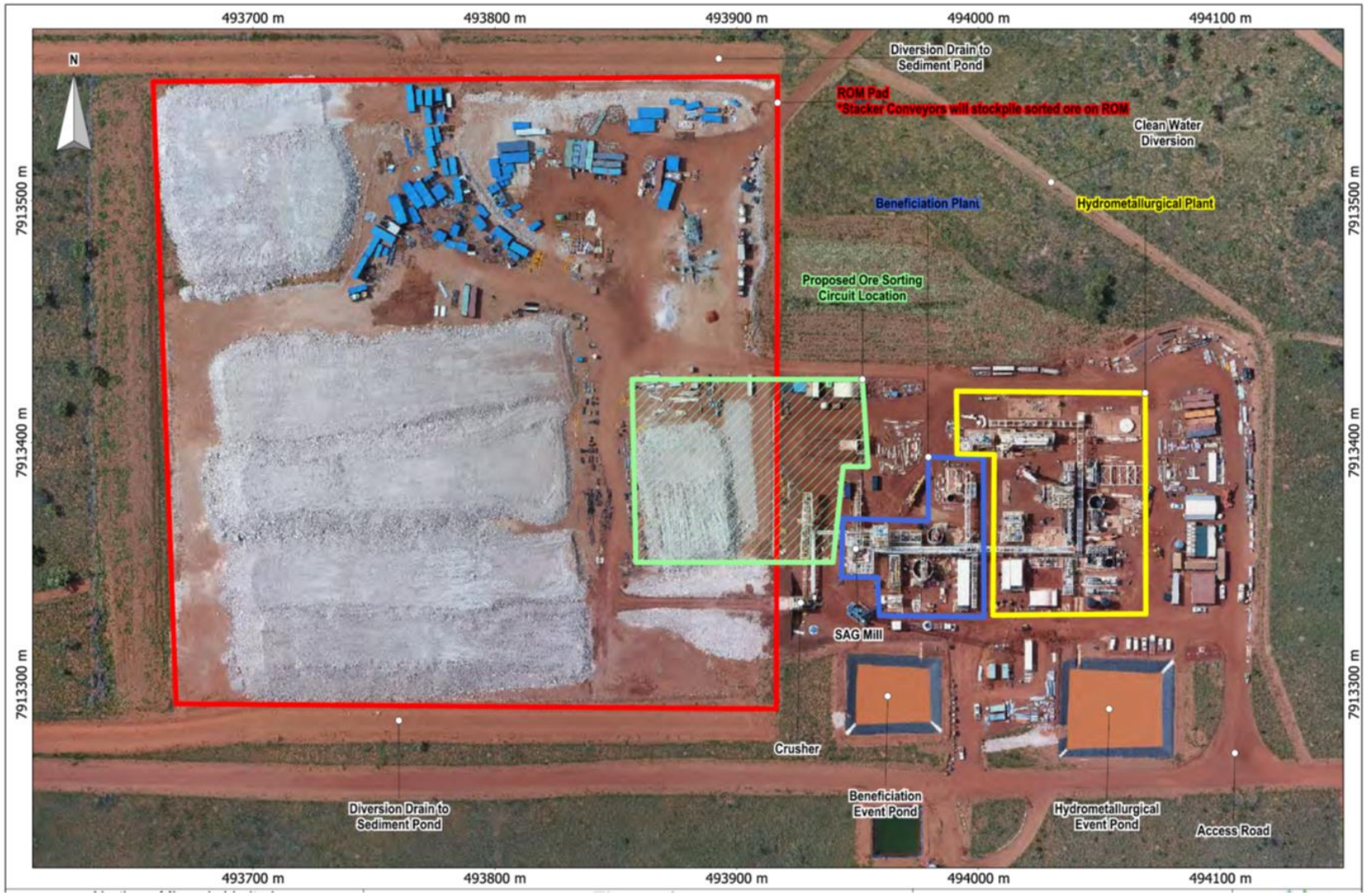

Figure 3: Map of the ore sorting circuit (indicative location)

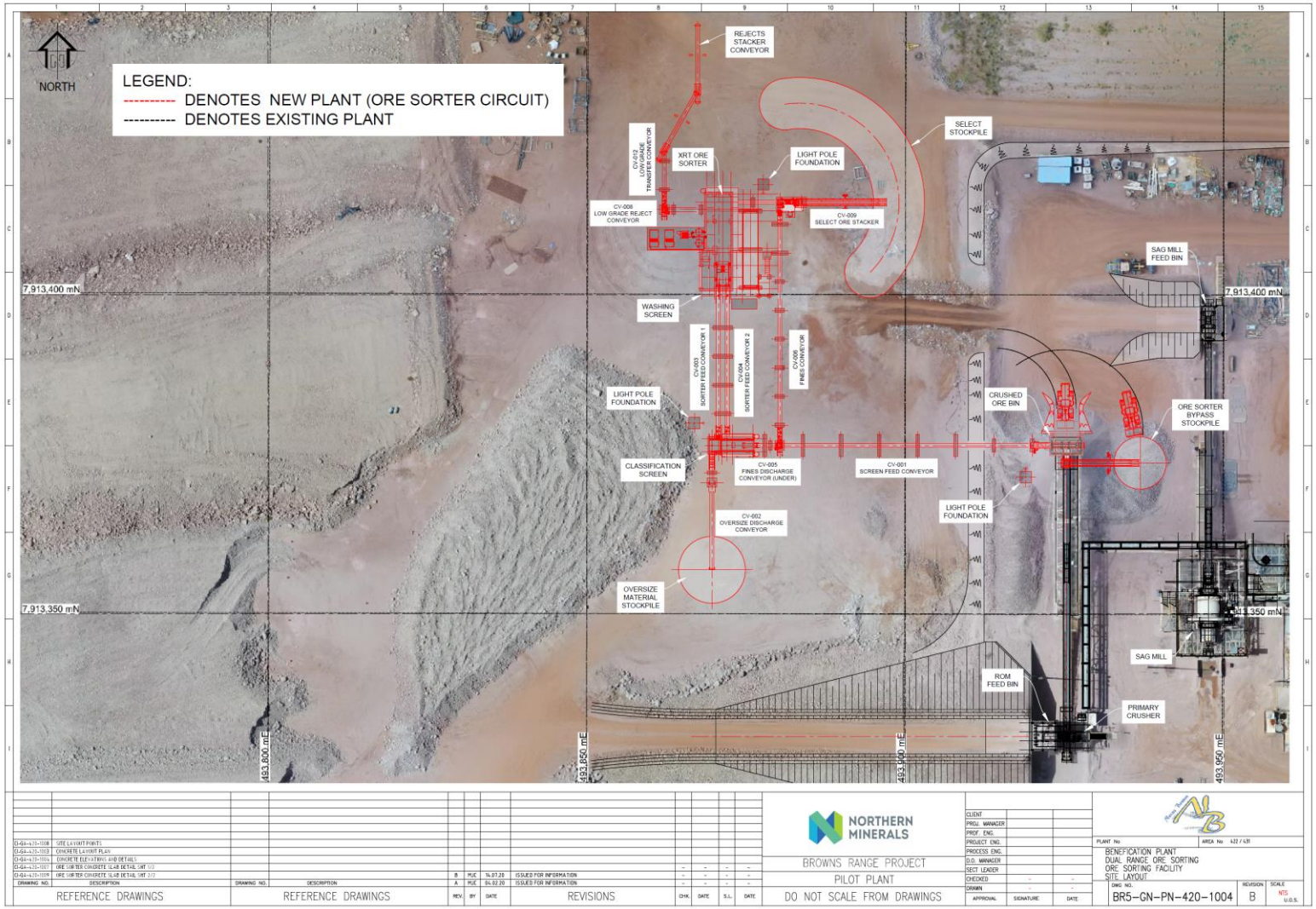

Figure 4: Map of the ore sorting circuit (general arrangement)

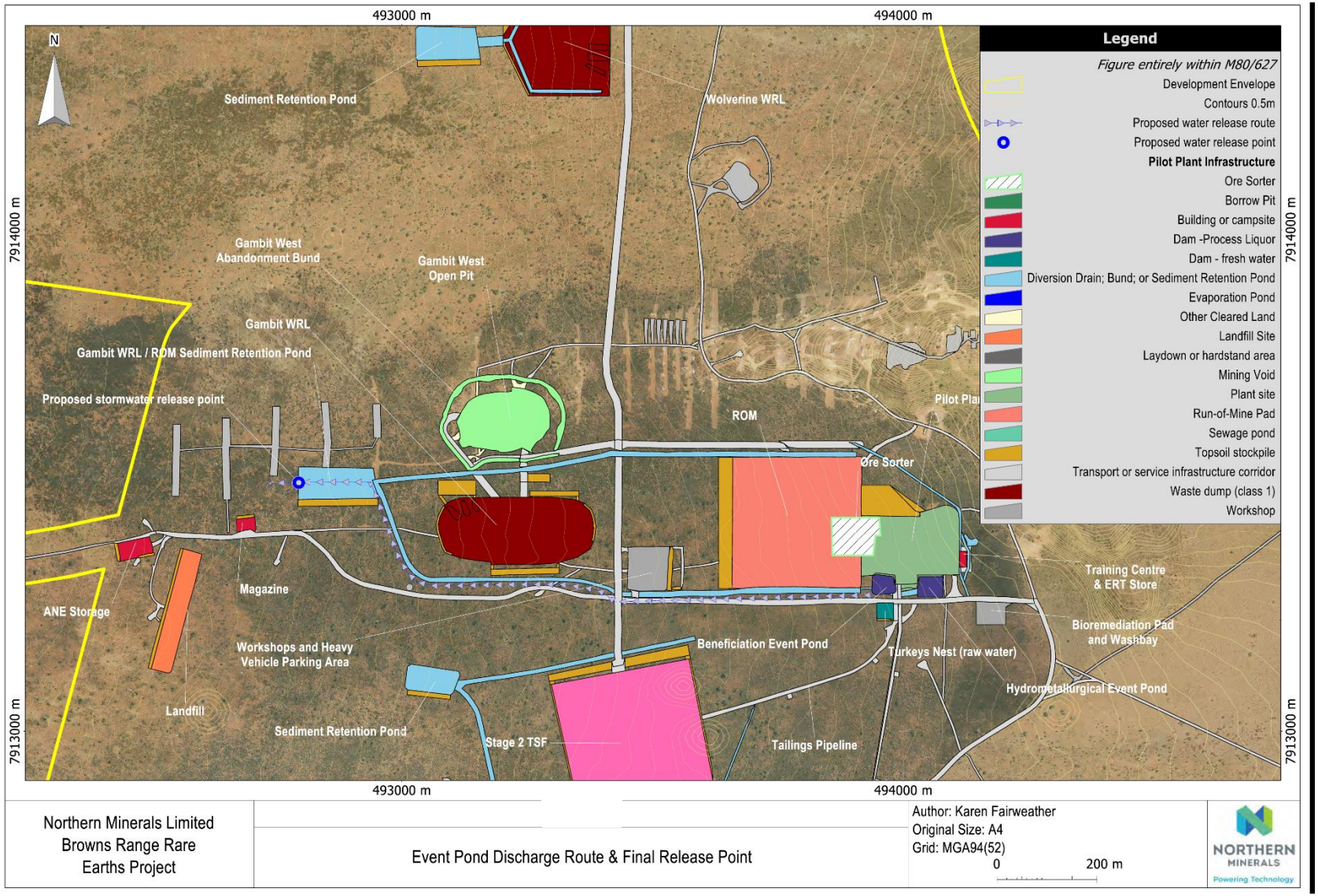

Figure 5: Gambit WRL/ROM Sediment Retention Pond stormwater release point (spillway)

Schedule 2: Reporting & notification forms

Licence: L9009/2016/1 Licence holder: Northern Minerals Limited
Form: N1 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	