

Mining Management Exploration Activities

Northern Territory of Australia – Mining Management Act 2001

It is recommended that the Mining Management Plan (MMP) is completed in conjunction with the user guide available on the [Northern Territory Government website](#).

Section 1 – Project Details

Project Name Provide new or existing project name	Nathan River Exploration Project
Authorisation Number Insert existing authorisation number, where applicable	
Operator Name Use ASIC-ABR registered name (if a company), or name of the applicant	NRR Services Pty Ltd (Australia)
Operator ABN and ACN numbers	38 634 895 800; 634 895 800
Location and Access Details Include brief description of the location, access details, and distance to nearest town or community	<p>The project is located approximately 530 km southeast of Darwin and 230 km east of Katherine in the Roper Region of the NT.</p> <p>The project can be accessed from Darwin and Katherine via the Roper Highway and Savannah Way (Nathan River Road), or from Borrooloola via the Carpentaria Highway to Bing Bong and then private haul road to the NRR operated Roper Bar Iron Ore Mine.</p>
Target Commodity Details Include target mineral commodities (i.e. gold, copper etc.)	Iron Ore
Mining Activities Summarise the mining activities (exploration) to be the subject of the proposed Authorisation or Variation. Drilling programs over a maximum of four years are supported and encouraged and can be staged. Please refer to the guidelines for further information.	<p>Completion of 854 RC drill holes for resource definition on EL29548 between August and September 2021. Drilling will be undertaken within areas of historical exploration activities.</p> <p>Activities will involve refurbishment of existing exploration tracks. The exploration activities will require the construction of an additional 11.9km of access tracks and 854 drill pads.</p> <p>Environmental disturbance will be minimal.</p>

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Proposed Schedule Include start and finish dates of ground disturbing work	August – September 2021
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Mining Interest and Land Ownership

List the mining interests (titles), the title holder name/s, the title expiry date and the Property name/Land holder (e.g. pastoralist or Aboriginal land trust) for each title.

Title Number	Title Holder	Expiry Date	Underlying Property Name or Land Holder
EL25688	NRR Mining Pty Ltd	19-08-2020	NT Portion 000 - Parcel 819 CLP
EL26759	NRR Mining Pty Ltd	30-10-2021	NT Portion 000 - Parcel 819 CLP
EL27143	NRR Mining Pty Ltd	23-08-2022	NT Portion 000 - Parcel 819 CLP
EL29548	NRR Mining Pty Ltd	26-08-2022	NT Portion 000 - Parcel 819 CLP

Please note a Land Access Agreement (LAA) is required for disturbance proposed on Pastoral Properties on Exploration Licence (EL).

Organisational Structure

Position Title	Name
CEO	Stefan Murphy
COO	Wes Martini
Operations Manager	Clint Moxham
Senior Geologist	Gavin Otto
Environmental Approvals Specialist	Greg Oliver

Section 2 – Operator Self-Assessment of the Environmental Risk

The purpose of this self-assessment is to ensure Operators complete a project risk assessment of potential environmental impacts and are aware of other legislative obligations from various Agencies. As a result of this self-assessment, further information may be required in the form of a management plan to enable full assessment of the MMP. If you have any queries please contact a Mining Officer prior to submitting the MMP. Useful resources to assist with this self-assessment are provided in the User Guide.

Environmental considerations

ASSESSMENT ASPECT	YES or NO	ACTIONS REQUIRED (if answered YES)	APPENDED INFORMATION (e.g. evidence of consultation with DEPWS and/or management plan where required).
Step 1: Are there any threatened flora and fauna species or habitats of significance that may occur in the proposed work area?	Y	The EIS (EcOz, 2012) did not identify threatened flora or habitats of significance in the proposed work area in the EIS (EcOz, 2012). Three species of vulnerable fauna were identified in the EIS: <ul style="list-style-type: none"> • Mertens' Water Monitor (<i>Varanus mertensi</i>); • Australian Bustard (<i>Ardeotis australis</i>); and • Emu (<i>Dromaius novaehollandiae</i>). 	EPBC Protected Matters Report EIS (EcOz 2012).
Step 2: Are there any known declared weeds within the proposed work area?	Y	Hyptis, a Class B declared weed, is located within the proposed work area. Control of this weed will be managed under the NRR Weed Management Plan. Annual and Perennial Mission Grass, Caltrop, Hyptis and Sida species are present at the mine site administration and Sawfish Camp areas.	NRR Weed Management Plan
Step 3: Will you be using water from bores or other sources for the operation?	Y	Water for exploration purposes will be sourced from existing mine water storage structures, primarily RBSW01.	NRR Water Management and Monitoring Plan (2020)

Environmental assessment and cultural considerations

ASSESSMENT ASPECT	YES or NO	MANAGEMENT REQUIREMENTS
<p>Step 4: Is your project likely to have a significant impact on the environment?</p>	<p>N</p>	<p>The drill program will involve constructing new drill pads and access tracks as well as utilising historical pads / tracks constructed during previous site exploration works. Impact to the environmental will be minimal.</p> <p>Disturbance of pre-existing infrastructure will comprise clearing of some regrowth and grading existing access tracks. Disturbance during construction of new infrastructure will comprise removal of vegetation from drill pad footprints and minor works to create a level 10 m x 6 m pad. New access tracks 3 m wide will be graded to drill locations.</p> <p>Vegetation Removal / Topsoil Management</p> <ul style="list-style-type: none"> Where topsoil and vegetation are encountered, they will be stockpiled adjacent to disturbed areas for rehabilitation purposes. <p>Ground Disturbance / Sediment and Erosion Control</p> <ul style="list-style-type: none"> Ground disturbance and sediment and erosion control will be managed under the NRR ground disturbance approval process which will define appropriate sediment and erosion controls as per the site Sediment and Erosion Control Plan (ESCP) for disturbed areas where required. <p>Water Management</p> <ul style="list-style-type: none"> Drilling will not be undertaken in riparian zones across the proposed work area. Water for the exploration program will be obtained from existing mine surface water storage structures. <p>Waste / Hydrocarbon Management</p> <ul style="list-style-type: none"> Waste items generate during exploration activities will be transported back to the mine and disposed appropriately. Hydrocarbons are to be managed to minimise environmental harm from loss of containment.

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ASSESSMENT ASPECT	YES or NO	MANAGEMENT REQUIREMENTS
Step 5: Are there Aboriginal sacred sites in the Project area?	N	Review of the AAPA Certificate (2017) for EL29548 did not identify sacred sites within the proposed works area.
Step 6: Are there archaeological and heritage sites in the Project area?	N	An archaeological survey report was completed for the EIS (EcOz 2012) which did not identify heritage / archaeological sites within the proposed works area. Review of the sites AAPA Certificate (AAPA 2013) did not identify sacred sites within the proposed works area.

Section 3 – Amendments

As per Section 41(3) of the *Mining Management Act*, an MMP reviewed and amended under Section 41(1)(a) is to have amendments made since the previous MMP submission clearly identified.

Section	Amendment

Delete or add rows as required

Section 4 – Activities Proposed for this MMP only

Provide relevant EL numbers

Mining Interests (i.e. titles)	EL25688	EL26759	EL27143	EL29548
Number and type of proposed exploration drill holes				854 RC holes
Maximum depth of proposed holes (m)				54
Number and size of drill pads to be cleared (Length: m x Width: m)				10 x 6
Total area of drill pads to be cleared (ha)				5.12
Number of proposed water bores				n/a
Is drilling likely to encounter groundwater in multiple or confined aquifers? (Y, N, unsure) If answering yes, please provide the number of exploration holes where this is likely to occur				N
Number of costeans				n/a
Volume to backfill costeans (Length: m x Width: m x Depth: m)				n/a
Number of bulk sample pits				n/a
Volume to backfill bulk sample pits (Length: m x Width: m x Depth: m)				n/a
Bulk sample pits approved under <i>Mineral Titles Act</i> ? (Y or N). If Yes provide approval				n/a
Line/track clearing: (length m x width m)				11,950 x 3

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Mining Interests (i.e. titles)	EL25688	EL26759	EL27143	EL29548
Area of proposed line/track clearing (ha)				3.6
Camp area to be cleared (ha)				n/a
Camp Infrastructure (i.e. demountable, tents) Please provide a complete list with measurements as required in the security calculation				n/a
Other				n/a
Total proposed area of disturbance (ha)				8.72

Staging approach based on disturbance can be proposed and will be considered by the Department.

Section 5 – Previous Disturbance (for existing Authorisations only)

The 'Disturbance Tracking' spreadsheet must be completed and attached to the MMP submission to complete this section. The spreadsheet is available on the departmental web page where this template is located.

Section 6 – Environmental Management

By checking these shaded boxes, you are agreeing to implement the following minimum environmental management standards on the project area. Where boxes have been left unchecked, justification is required.

6.1	Y	Blade-up approach for clearing will be used (i.e. no windrows, leave root stock and topsoil)
6.2	Y	Significant vegetation will be avoided during clearing (i.e. large trees, specimens providing habitat or food sources, riparian vegetation, and threatened species)
6.3	Y	Vegetation clearing during, and immediately after rainfall events, will be avoided
6.4	Y	Vegetation clearing will be kept to the minimum required to safely traverse vehicles and drill rigs along tracks and drill pads
6.5	Y	Where blade-up techniques cannot be employed, topsoil and vegetation will be stockpiled appropriately for rehabilitation purposes
6.6	Y	All employees and contractors will be trained and inducted in relation to the management of environmental risks in the work area, including weeds, waterways, threatened species, soil erosion, sacred sites and heritage areas
6.7	Y	Sumps will be lined or tanks of appropriate size to contain water, sediment and drilling fluids encountered during drilling, will be used
6.8	Y	Sumps, drill holes, and fuel stores will be located away from environmentally significant areas and water courses
6.9	Y	Excavations (sumps, costeans and pits) will be appropriately ramped to allow fauna egress
6.10	Y	Drill holes will be securely capped immediately after drilling
6.11	Y	Vehicle hygiene measures will be employed to prevent the introduction and spread of invasive species and pathogens when mobilising vehicles and equipment from one location to another
6.12	Y	Hydrocarbon spills will be minimised using liners and drip trays under machinery, and appropriately sized spill-kits available in the event of a spill
6.13	Y	Hazardous substances (including hydrocarbons) will be stored and handled in accordance with relevant Australian Standards
6.14	Y	Hydrocarbons will be stored in lined and bunded areas
6.15	Y	Waste will be stored securely while on-site to minimise windblown rubbish and access by feral animals
6.16	Y	Waste will be removed off-site and disposed of at an appropriate waste management facility
6.17	Y	All environmental incidents will be reported to the Department in accordance with Section 29 of the <i>Mining Management Act</i> .
6.18	Y	Acid and Metalliferous Drainage (AMD) and Potentially Acid Forming (PAF) material derived from drilling cuts will be managed to avoid AMD and PAF related issues on site

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6.19	N/A	Radioactive/NORM drill cuttings will be managed to avoid radiation related issues on site.
6.20	Y	Dust management will be implemented on site.

Justification and alternative management measures:

6.19 - Drilling will not encounter radioactive materials. Management of radioactive/NORM drill cuttings will not be required.

Section 7 – Rehabilitation and Closure

By checking these shaded boxes, you are agreeing to implement the following minimum rehabilitation standards on the project area. Where boxes have been left unchecked, justification is required.

A refund of security related to completed rehabilitation on site requires the submission of a rehabilitation report including photographs, an updated security calculation and updated disturbance tracking spreadsheet to the Department.

7.1	Y	Drill holes will be plugged below ground level at a minimum depth of 0.4 metres and soil mounded to prevent subsidence, within 6 months of completion of drilling.
7.2	Y	Drill holes encountering multiple or confined aquifers will be grouted with concrete.
7.3	Y	Drill samples/spoil will be returned down drill holes, buried in sumps, or removed from site.
7.4	Y	All drill hole and access markers including flagging tape, wooden markers and star pickets will be removed from site.
7.5	Y	Cut and fill drill pads will be re-contoured to be consistent with the surrounding terrain.
7.6	Y	Drill pads and compacted areas along the contour (on sloping ground) will be ripped/scarified of and tracks will be cross-ripped (zig-zag).
7.7	Y	Tracks will be rehabilitated, including pushing in all windrows, unless otherwise agreed in writing by the land holder or appropriate third party.
7.8	Y	Appropriate erosion and sediment controls will be installed where erosion is evident or likely to occur.
7.10	Y	Access through watercourses will be removed and banks restored.
7.11	Y	All previously disturbed areas will be stable, with no evidence of active soil erosion.
7.12	Y	All excavations will be backfilled within 6 months of their completion.
7.13	Y	All water bores will be decommissioned unless otherwise agreed in writing by the land holder or appropriate third party.
7.14	Y	All rubbish and infrastructure will be removed from site.
7.15	Y	Topsoil will be replaced and vegetation re-established.
7.16	Y	Contaminated soils (e.g. hydrocarbon or hazardous chemicals) will be rehabilitated or removed from site.
7.17	Y	Monitoring will be undertaken following the wet season or a significant rainfall event.

Justification and alternative management measures:

Section 8 – Required Attachments

8.1	N/A	Initial Application for Authorisation or variation of Authorisation (only if details on the form have subsequently changed).
8.2	N/A	Nomination of Operator Form, where required
8.3	Y	Security Calculation Spreadsheet
8.4	N/A	Evidence of Land Access Agreement if operating on an Exploration Licence (EL) on Pastoral Lease (e.g. two-ways exchange of email)
8.5	N/A	Disturbance tracking spreadsheet (for existing Authorisations)
8.6	Y	Spreadsheet with coordinates of proposed drill holes or polygons of target areas
8.7	Y	KML/shape files/track logs of proposed tracks, camp sites and proposed drill holes or polygons of target areas
8.8	Y	Map(s) of the work area(s) showing: <ol style="list-style-type: none"> 1. title boundaries and title numbers 2. current and proposed drill holes, or polygons of target areas 3. current and proposed tracks 4. rehabilitated areas 5. camp sites 6. heritage sites or significant environmental areas 7. environmental constraints
8.10	N/A	Radiation Management Plan (if applicable)
8.12	Y	Document(s) being appended in relation to Section 2 (if any): <ul style="list-style-type: none"> - Nathan River Iron Ore Project EIS (EcOz 2012) - NRR Weed Management Plan - EPBC Protected Matters Report - NRR Water Management and Monitoring Plan - AAPA Certificate for EL29548 - Security Calculation Spreadsheet - Drill Location Spreadsheet - Maps: <ul style="list-style-type: none"> • NRR_Area E South_Location Map of Drilling Activities_2021 • NRR_Area E South_Location Map of Drilling Activities_2021 • NRR_Location Map of Drilling Activities_2021 • NRR_Oratism_Location Map of Drilling Activities_2021

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- GIS Shapefiles:

- ES_GC_Holes.TAB
- NRR_Tracks_2021.TAB
- OR_GC_Holes.TAB
- pd_es_ps24_v1_cuttr_pit_outline.TAB
- pd_fw_pit outlines.TAB
- RB_Tracks_2014.TAB